Cloud Virtual Machine

FAQs

Product Documentation
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Purchase

Last updated: 2020-06-15 15:00:26

Purchase

**What should I do if the CVM is not created successfully?**

If it takes a long time to create a CVM, wait to see if the CVM is created successfully. If the creation fails, you can submit a ticket for further assistance and report your problems.

**How do I terminate a CVM if it failed to be delivered?**

You can submit a ticket to contact the customer service, and provide complete server information and delivery failure screenshots to facilitate the troubleshooting.

Renew

**How do I renew an expired CVM?**

For more information, see Renew Instances.

**How do I set auto renewal for CVMs?**

For more information, see steps in Renew Instances.

**Do pay-as-you-go instances need to be renewed?**

For pay-as-you-go instances, charges are automatically deducted from the account every hour, so no renewal is needed.

Others

**Can I set auto release (termination) for CVM instances?**

Yes, you can set auto release (termination) for pay-as-you-go instances, and specify when to release them automatically. For more information, see Terminating Instances.

Should you still have any question, please submit a ticket.

**I have purchased a Linux CVM with cloud disks over 20 GB. How will it be charged if I reinstall the operating system as Windows?**
The billing for the part exceeding 20 GB of the system disk previously purchased will stop once the Windows OS is successfully installed.

**I have purchased a Windows CVM with cloud disks. How will it be charged if I reinstall the operating system as Linux?**

Because the capacity of the system disk cannot be reduced, it needs to be reinstalled at the current capacity with no additional charges. If you need to expand the system disk capacity after reinstalling the system as Linux, additional fees incur. For more information, see system disk expansion in System and Data Disks.

For more information on cloud disk prices, see Pricing List.

CVMs in overseas regions cannot reinstall between Linux and Windows operating systems.

**What are the computing components in a CVM bill?**

The computing components correspond to instance specifications. Take S5.SMALL4 for example, computing components include CPU, memory, and NVMe local disk.
Do pay-as-you-go instances need to be renewed?

For pay-as-you-go instances, charges are automatically deducted from the account every hour, so no renewal is needed.
A user has purchased a Linux-based CVM that comes with a cloud disk exceeding 20 GB. What will be the charges be if the user reinstalls the operating system as Windows?

The charges will be based on the billing mode:

- For pay-as-you-go CVMs, billing for the previously purchased system disk that exceeds 20 GB will stop once Windows OS is successfully installed.

A user has purchased a Windows-based CVM that comes with a cloud disk. What will be the charges be if the user reinstalls the operating system as Linux?

The capacity of system disks cannot be reduced. If the system disk remain as is after reinstallation, there will be no additional charges. If you need to expand the disk capacity after reinstalling to Linux OS, additional fees will apply. See System Disks and Data Disks for details on system disk expansion.

For cloud disks prices, please see Pricing List.

CVMs in overseas regions do not support switching between Linux and Windows during system reinstallation.

What are the computing components in a CVM bill?

The computing components correspond to instance specifications. Take S5.SMALL4 for example, computing components includes the CPU, memory, and NVMe local disk.
How do I log in to a CVM instance using VNC?

Tencent Cloud allows users to log in to a CVM instance by using the VNC web client. If you do not have a remote login client installed, or cannot log in using the client, the VNC web client is ideal for the situation. You can use the web client to log in remotely, view CVM instance status and perform basic instance management. For more information on detailed instructions, refer to the following articles:

- Logging in to a Linux Instance Using VNC
- Logging in to a Windows Instance Using VNC.

Why can I not use Internet Explorer 8.0 to log in to my instances?

VNC web client supports Internet Explorer 10 and later. Download the latest version of Internet Explorer. Tencent Cloud console offers a better experience using Google Chrome. It is recommended that you use Google Chrome.

How do I enable multi-user remote login on a Windows Server?

Windows Server supports multi-user remote login. For detailed instructions, refer to Setting up a Windows CVM For Multi-user Remote Login.

If the steps you take do not work, restart the instance and try again.

Does the console support multi-user login using VNC?

No, it does not. If one user is logged in, other users will not be able to do so.

How can I log in to an instance running Ubuntu as root?

The default user for Ubuntu is `ubuntu`. `root` is not enabled during the installation process. If necessary, you can enable `root` by following the following instructions:

1. Log in to the CVM instance using `ubuntu`.
2. Run the following command to set a password for `root`:
   ```bash
   sudo passwd root
   ```
3. Enter a password for `root` and press `Enter`.
4. Enter the password again and press `Enter`.
   The following message displays indicating that the password is set successfully:
   ```bash
   passwd: password updated successfully
   ```
5. Run the following command to open `sshd_config`:
   ```bash
   sudo vi /etc/ssh/sshd_config
   ```
6. Press **i** to switch to edit mode. Find **#Authentication** and change the value of **PermitRootLogin** to **yes**, as shown in the following figure:

```plaintext
# Authentication:
#LoginGraceTime 2m
PermitRootLogin yes
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10
```

If **PermitRootLogin** is commented, remove the comment marks (**#**).

7. Press **Esc** and enter **:wq** to save the file and exit vi.

8. Run the following command to restart the SSH service.

```
sudo service ssh restart
```

9. Refer to [Logging in to a Linux Instance Using the Standard Login Method](#) on how to use the following information to log in to your CVM instance running Ubuntu.
   - **Username**: root
   - **Password**: the password you set in **Step 2**.

   A successful login using root is shown in the following figure:

```
Socket connection established.
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-33-generic x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage

System information as of Tue Jan 21 09:27:02 CST 2020
System load: 0.08 Processes: 89
Usage of /: 4.6% of 49.15GB Users logged in: 0
Memory usage: 11% IP address for eth0:
Swap usage: 0%
```

```
Overheard at RubeCon: "microk8s.status just blew my mind".
https://microk8s.io/docs/commands#microk8s.status
```

```
Last login: Tue Jan 21 08:46:18 2020 from root@VM-0-12-ubuntu:
```

**What do I do if I cannot connect (log in) to my CVM instance after restarting it?**
This may be caused by high CPU and memory usage of your instance. Refer to the following articles for more information:

- Failed to Log in to a Linux CVM Due to High CPU and Memory Usage
- Failed to Log in to a Windows CVM Due to High CPU and Memory Usage

**What do I do when I connect to my CVM instance remotely and the connection times out?**

Make sure that:

- The instance is running.
- The instance is associated with security groups with the necessary security group rules. For detailed information, refer to Adding Security Group Rules.
- The instance has SSH or RDP enabled.
- The instance opened the corresponding ports. SSH by default uses port 22 and RDP uses port 3389 by default.

**Why is my remote connection to my Linux instance refused?**

Make sure that:

- The instance has SSH or RDP enabled.
- The instance opened the corresponding ports. SSH by default uses port 22 and RDP uses port 3389 by default.

**Why do I get the invalid username or password message when I remotely connect to my Linux instance?**

Make sure that:

- You used the correct username. The default user for most Linux distributions is root. Ubuntu uses ubuntu.
- You entered your password correctly. If you forgot your password, reset it. For details, refer to Resetting Instance Password.

**Why do I get the invalid username or password message when I remotely connect to my Windows instance?**

Make sure that:

- You used the correct username. The default user for Windows is Administrator.
- You entered your password correctly. If you forgot your password, reset it. For details, refer to Reset Instance Password.
- If you use a user without administrator privilege to log in, that user belongs to the Remote Desktop Users group.

**What do I do if I forgot my CVM instance login password?**

You can reset the password. For details, refer to Reset Instance Password.

**How do I log in to my Linux instance remotely?**
Tencent Cloud recommends Logging in to a Linux Instance Using Standard Login Mode. You can also:
- Logging in to a Linux Instance Using Remote Login Software.
- Logging in to a Linux Instance Using SSH
- Log in to a Linux Instance Using VNC

What do I do if I cannot connect to my Linux instance?

If you cannot connect to your Linux instance, refer to Linux Instance Login Failures for troubleshooting instructions.

If the problem persists, submit a ticket.

What do I do if I cannot connect to my Windows instance?

If you cannot connect to your Windows instance, refer to CVM Login Failure for troubleshooting instructions.

If the problem persists, submit a ticket.

What do I do if I find unusual login locations?

If you find logins you do not recognize:

1. Double check the login time from the unusual login location and see if it is from yourself or other administrators.
2. If not, perform the following steps:
   i. Reset the password immediately.
   ii. Check your instance for viruses or trojans.
   iii. Use security groups to limit logging in to specific IP addresses.
Adjust Configuration


How do I upgrade/degrade the configuration of a CVM?
Only the instances whose system disk and data disk are both cloud disks support adjusting configuration.
For more information about how to upgrade/degrade instance configuration, please see Adjusting Instance Configuration.
For more information about how to adjust bandwidth/network configuration, please see Adjusting Network Configuration.
If your configuration adjustment does not take effect, submit a ticket to contact us.

How do I check the records of configuration adjustments?
The records of configuration adjustments can be found in the operation log in the upper right corner of the Console. For a prepaid instance, an order will be generated in the income & expense statement each time the instance is upgraded or degraded.

Can bandwidth be adjusted when the CVM is renewed in Recycle Bin?
No. Adjustment to bandwidth configuration can only be made after the instance is successfully renewed in Recycle Bin.

Does a postpaid instance support adjusting configuration?
The instances whose data disk and system disk are both cloud disks support adjusting configuration. The configuration of a postpaid instance can be upgraded or degraded for unlimited times; the configuration of a prepaid instance can be upgraded for unlimited times, but can only be degraded once.

How many times can the configuration of a CVM be degraded at most?
Each instance can only be degraded once.
Reinstall System

Do CVMs support reinstalling the operating system?
Reinstalling operating system can restore an instance to its initial state when it was just started, and is an important way of recovery in case of system failure of instance. For more information, please see Reinstalling Operating System.

How long does it take to reinstall the operating system for an instance?
Generally, it takes 10 to 30 minutes to complete the re-installation after you perform the operation.

What to do in case of a slow or failed re-installation?
Generally, it takes 10 to 30 minutes to complete the re-installation after you perform the operation.

- If the re-installation is not completed after a long time but the 30 minutes have not run out, please wait.
- If the re-installation is not completed within the 30 minutes or even fails, submit a ticket to contact us.

Will re-installation of operating system cause data loss?
After the re-installation, all data on the server's system disk will be cleared and the system disk is restored to the initial state; the data on the server's data disk will not be lost, but can only be used after the data disk is mounted manually.
About D1 Instances

What is Big Data D1 instance?

Big Data D1 instance is designed specifically for Hadoop distributed computing, massive log processing, distributed file system, large data warehouse, and other business scenarios. This CVM instance type is mainly used to solve the cloud computing and storage problems of massive business data.

Which industry customers and business scenarios are Big Data D1 instances applicable to?

Big Data D1 instance is applicable to customers in the Internet, game, finance and other industries that require big data computing and storage analysis, as well as business scenarios that require massive data storage and offline computing. It can meet the storage, capacity and private network bandwidth requirements of distributed computing businesses represented by Hadoop.

In addition, with the highly available architectural framework of distributed computing businesses represented by Hadoop, Big Data D1 instance features local storage design to achieve a total cost close to that of the self-built Hadoop cluster on an offline IDC, while ensuring massive storage capacity and high performance.

Big Data D1 instance features

- A single instance has throughput capacity up to 2.3 GB/sec. HDD local disk is the best choice for throughput-intensive storage. With stable and high-performing sequential read/write throughput, Big Data D1 instance is designed specifically for Hadoop distributed computing, massive log processing, large data warehouse and other business scenarios.
- Local storage has a unit price as low as 1/10. Big Data D1 instance features massive storage capacity and high performance, while ensuring optimal cost-efficiency for big data scenarios. It has a total cost close to that of the self-built Hadoop cluster on an offline IDC.
- Read/write latency is minimized to 2 ms-5 ms. Big Data D1 instance, with its high-performing and enterprise-level model, is suitable for enterprise developers.
- The billing method of pay-as-you-go is supported.

Big Data D1 instance specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>vCPU (core)</th>
<th>Memory (GB)</th>
<th>Local Data Disk</th>
<th>Private Network Bandwidth</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1.2XLARGE32</td>
<td>8</td>
<td>32</td>
<td>2 × 3720 GB</td>
<td>1.5 Gbps</td>
<td>-</td>
</tr>
<tr>
<td>D1.4XLARGE64</td>
<td>16</td>
<td>64</td>
<td>4 × 3720 GB</td>
<td>3 Gbps</td>
<td>-</td>
</tr>
<tr>
<td>D1.6XLARGE96</td>
<td>24</td>
<td>96</td>
<td>6 × 3720 GB</td>
<td>4.5 Gbps</td>
<td>-</td>
</tr>
<tr>
<td>D1.8XLARGE128</td>
<td>32</td>
<td>128</td>
<td>8 × 3720 GB</td>
<td>6 Gbps</td>
<td>-</td>
</tr>
</tbody>
</table>
### Notes on local data storage for Big Data D1 instance

Big Data D1 instance uses local disk as the data disk, which may lead to **data loss** (e.g., when the host crashes). If your application cannot guarantee data reliability, we recommend you choose an instance that can use cloud disk as the data disk.

Relationship between operating on an instance with local disk and data retention is as follows:

<table>
<thead>
<tr>
<th>Operation</th>
<th>Local Disk Data Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system restart/Console restart/Forced restart</td>
<td>Retained</td>
<td>Local disk storage is retained. Data is retained.</td>
</tr>
<tr>
<td>Operating system shutdown/Console shutdown/Forced shutdown</td>
<td>Retained</td>
<td>Local disk storage is retained. Data is retained.</td>
</tr>
<tr>
<td>Terminate (instance) on the console</td>
<td>Erased</td>
<td>Local disk storage is erased. No data is retained.</td>
</tr>
</tbody>
</table>

Do not store business data that needs to be retained for a long time on the local disk. Back up data in advance and use a highly available architecture. For long-term retention, we recommend you store the data on CBS disk.

### How can I purchase Big Data D1 local disk?

Local disk cannot be purchased separately. You can only purchase local disk when creating the D1 instance. The number and capacity of local disks depend on instance specifications.

### Does the local storage of Big Data D1 instance support snapshot?

No.

### Does Big Data D1 instance support configuration adjustment and failover?

Configuration adjustment is not supported.

Big Data D1 instance features massive data storage and uses local HDD as data disk. This instance type does not support data disk failover (e.g., when the host crashes or local disk is damaged). To prevent data loss, we recommend you use a redundancy policy, for example, a file system that supports redundancy and fault tolerance (such as HDFS and Mapr-FS). In addition, we recommend you regularly back up data to a persistent storage system, such as Tencent COS. For more information, please see [Cloud Object Storage](#).
After a local disk is damaged, you need to shut down the CVM instance so we can change the local disk. If the CVM instance has crashed, we will notify you and fix it.

**In which regions can I purchase Big Data D1 instance?**

The following availability zones are supported:

- Shanghai Zone 2
- Beijing Zone 2
- Guangzhou Zone 3

**Why cannot I find the data disk after purchasing a Big Data D1 instance?**

The local disk of a Big Data D1 instance is not mounted automatically. You can mount them as needed.

**What is the difference between Big Data D1 instance and High IO I2 instance?**

High IO I2 instance is a CVM instance designed specifically for business scenarios with low latency and high random IO. It has ultra-high IOPS performance, and is used mainly for high-performing database (relational database, NoSQL, etc.). Big Data D1 instance is a CVM instance designed specifically for business scenarios that require high sequential read/write and low-cost massive data storage. It features high-performing storage with cost efficiency and properly configured private network bandwidth.

**How is the disk throughput of Big Data D1 instance?**

Take D1.14XLARGE224 as an example, sequential read/write throughput of the local disk of Big Data D1 instances is as below:

- For a single disk, the sequential read/write speed is 190+ MB/sec (128 KB of block size and depth of 32).
- For 12 disks, the concurrent sequential read/write speed is 2.3+ GB/sec (128 KB of block size and depth of 32).

**What is the difference between the local disk of Big Data D1 instance and CBS?**

Cloud Block Storage provides a highly efficient and reliable storage device for CVM instance. It is a customizable block storage device with high availability, high reliability and low cost, and can be used as an independent scalable disk for CVM. It provides data storage at the data block level and employs a 3-copy distributed mechanism to ensure data reliability for CVM instance, meeting the requirements of different application scenarios. The local disk of Big Data D1 instance is designed specifically for business scenarios that require high sequential read/write for massive local data sets, such as Hadoop distributed computing, large-scale parallel computing, and data warehouse.
Use Limits

What are the restrictions on changing public IP addresses of CVM instances?
To change public IP addresses of CVM instances, note the following limits:

- Each account can change public IP addresses within the same region a maximum of 3 times per day.
- Each instance can only change its public IP once.
- The old public IP will be released after the change.

How many websites can be hosted on a CVM instance?
A CVM instance can host up to 5 websites, and each website can bind many domain names.

Can a CVM instance access the Amazon website?
Yes, as long as your CVM instance can connect to the public network properly.

Why am I unable to access an overseas website after I log in to my CVM instance?
You can access an overseas website from your instance only when the website satisfies regulatory requirements of the country or region where your instance is located. Ensure that your CVM instance can connect to the public network properly and that the website complies with these regulatory requirements.

How do I purchase more pay-as-you-go CVMs?
If you have reached the maximum number of pay-as-you-go instances that you can purchase, you cannot purchase more pay-as-you-go instances. For more information, see Purchase Limits.

How can I query the CVM resource quota?
To query use limits and quotas of CVM resources, see CVM instance use limits in [Use Limits Overview](https://intl.cloud.tencent.com/document/product/213/15379).
Spot Instances

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Instance Release

Why is a spot instance released automatically?

An important feature of spot instances is that the system will repossess assigned instances based on prices or the supply-demand relationship. If the market price is higher than your bid or if the CVM resource pool corresponding to your spot instances is in short supply, the process will be interrupted by the system.

Is it possible to avoid being repossessed by the system through bidding?

No. Because repossession trigged by insufficient inventory is unavoidable. You need to accept that instance repossession may occur when you deploy businesses on the spot instance.

How do I know that an instance is about to be interrupted?

Two minutes before the interruption, we will notify you in the form of metadata that the instance is about to be interrupted and repossessed.

For more information, please see Querying the Repossession Status of a Spot Instance.

How to automatically apply for spot instances after inventory recovery?

You can use cloud products that can automatically maintain the CVM cluster, such as [BatchCompute](http://console.cloud.tencent.com/batch/env), [Auto Scaling](http://console.cloud.tencent.com/autoscaling). With their cross-model and cross-availability zone capabilities, you can maintain a specified number of CVM clusters more effectively.

Price and Billing

What are the similarities and differences between spot instances and pay-as-you-go instances?

<table>
<thead>
<tr>
<th>Billing Method</th>
<th>Similarities</th>
<th>Differences</th>
</tr>
</thead>
</table>
| Spot instances          | Both of them are pay-as-you-go. There is no need to pay in advance but certain costs must be frozen. You can enable/terminate the CVM at any time and pay according to actual usage. The billing time granularity is accurate to the second, and the account will be settled every hour. | • **Price**: In most cases, the spot instance price is 10%-20% of the pay-as-you-go instance price with the same specifications.  
• **Release mechanism**: The lifecycle of a pay-as-you-go instance is controlled by the user, while spot instance may be actively repossessed by the system. |
| Pay-as-you-go instances  |                                                                               |                                                                                                                                             |
**Feature limitations**: Configuration adjustments are not allowed.

**Which price, the market price and the highest bid specified by the user, will be used for billing?**

The market price will be used for billing. You can specify a high bid to prevent instances from being repossessed due to the price. However, the system will only charge you at the current market price (the current market price will be fixed).

**How are billing periods calculated for spot instances?**

You will be billed for the period from the moment you apply for a spot instance to the moment the spot instance is manually released or interrupted by the system. The billing period is accurate to the second.

**Where can I find the current market prices of all the spot instances?**

During the beta testing period, we cannot provide a page where you can query the market prices of all instances, but it will be available in the future. Currently, most of the spot instances will be priced at 20% of the regular pay-as-you-go instances of the same model and specification.

**Where can I view the consumption details regarding spot instances?**

As with pay-as-you-go instances, you can find detailed usage and billing information of spot instances in **Billing Center > Bills** at the top of the console. Spot instances are pay-as-you-go services.

**Quotas and Limitations**

**In which regions are spot instances available? Which instance models and specifications do spot instances support?**

<table>
<thead>
<tr>
<th>Region</th>
<th>Models supported by spot instances</th>
<th>Discounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing, Shanghai, Chengdu, Chongqing, Guangzhou Open</td>
<td>All models supported by pay-as-you-go instances</td>
<td>80% off the published prices of pay-as-you-go instances with the same specifications</td>
</tr>
<tr>
<td>Guangzhou (excluding Guangzhou Zone 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong (China), Singapore, Bangkok, Seoul, Tokyo, Mumbai, Toronto, Silicon Valley, Virginia, Frankfurt, Moscow</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Are quota limits of spot instances shared by pay-as-you-go instances?**

No. Each user can have up to 50 spot instance vCPU cores in each availability zone. To raise the quota limits, please submit a ticket.

**Can I upgrade or downgrade the specifications of spot instances?**
Upgrading or downgrading the specifications of spot instances is not supported.

Do spot instances support no charges when shut down?
Spot instances do not support no charges when shut down.

Do spot instances support system re-installation?
Spot instances do not support system re-installation.
How do I view the operation logs of a CVM?
You can view the operation logs of a CVM in the upper right corner of the Console.

What if I cannot find my CVM on the console?
If your CVM is not shown on the console, verify the following:

1. Check the recycle bin to verify whether the instance has expired.
2. Check whether the instance has been terminated because it has expired for more than 7 days.
3. Check whether you have selected a wrong project.

If none of the above applies, submit a ticket to contact us.
Usage

How do I view CVMs that are in use?
You can log in to the CVM Console to view CVMs that are currently in use.

Can VM be installed on a CVM?
No.

How do I shut down an instance?
For more information, see Shutdown Instances.

How do I restart an instance?
For more information, see Restarting Instances.

How do I terminate an instance?
For more information, see Terminating Instances.

How do I query the username and password of a Linux instance?
After you create a CVM instance, its username and password will be delivered to your account through Message Center. The admin account of a Linux instance is root by default.

How do I query, partition and format disks of a Linux instance?
You can run the `df -h` command to query the total and used capacity of disks, and run the `fdisk -l` command to view disk information. For information about how to partition and format disks of Linux instances, see Initializing Cloud Disks (Smaller than 2TB) and Initializing Cloud Disks (Larger than 2TB).

How do I upload files to a Linux instance?
- You can use SCP to upload files to a Linux instance.
- You can use FTP to upload files to a Linux instance.

How do I change the owner and owner group of directories and files on a Linux instance?
If the file or directory permissions are not correctly configured on the Web server, a 403 error occurs when you access a website hosted on the instance. Before you adjust a file or directory, you must confirm the identity under which the file or directory process is running.

- You can run the `ps` and `grep` commands to query the identities under which the file or directory process is running.
- You can run the `ls -l` command to query the owners and owner groups of files and directories.
- You can run the `chmod` command to modify the permission. For example, you can run the `chmod -R www.www /tencentcloud/www/user/` command to change the owners and owner groups of all files and directories under...
the `/tencentcloud/www/user` directory to account “www”.

**How do I apply for an ICP filing for my domain name after I purchase a CVM instance?**

For each CVM instance eligible for ICP filing application, you can apply for a limited quantity of service identification numbers for ICP filings. To learn more information, see Tencent Cloud Service Used for ICP Filing Application.

**Why can’t I add sound or video cards to CVM instances?**

Tencent Cloud CVMs provide neither multimedia server, nor sound or video card components by default. Therefore, sound or video cards cannot be added to CVM instances.

**Can I transfer the unused time of a CVM instance to another CVM instance?**

No. If you want both higher flexibility and cost-effectiveness, we recommend that you purchase pay-as-you-go instances.

**How do I query the region where the IP address of a CVM instance locates?**

The IP address of a CVM instance locates in the same region where you purchased the CVM instance.

**Do CVM instances provide databases by default?**

No. To use database services, do the following:

- Deploy your own database, for example, install and build MySQL.
- Purchase TencentDB for MySQL separately.

**Can I build a database on a CVM instance?**

Yes, you can install database software and configure a database environment on a CVM instance as needed. You can also purchase TencentDB for MySQL separately.

**Do CVM instances support Oracle databases?**

Yes. Before you install an Oracle database, we recommend performing a performance stress test on the target CVM instance to ensure that the instance satisfies the read/write requirements of the database.

**When can I forcibly stop a CVM instance? What are the consequences?**

You can forcibly stop a CVM instance when the normal shutdown fails. Please note that the forced shutdown is equivalent to power outage of the instance, and can result in loss of unsaved data.
About Storage
System and Data Disks

What is the default capacity of a CVM system disk?
The system disk of a new CVM has 50 GB free space by default.

Can I change the local system disk of a CVM to a cloud disk?
- When purchasing a CVM instance, you can select the desired disk type for the CVM system disk.
- For a purchased CVM instance, if the availability zone where the purchased CVM is located has available cloud disks, you can use the change disk media type feature to change the local system disk to a cloud disk.

Which regions and availability zones support expanding the system disk capacity to more than 50 GB?
If the system disk is a cloud disk, the system disk capacity can be adjusted to more than 50 GB in all regions that support snapshots.

Can I expand the system disk capacity of a CVM when reinstalling the operating system?
It depends on the system disk type.
- If the system disk is a cloud disk, the system disk capacity can be increased but cannot be decreased.
- If the system disk is a local disk, it depends on the system disk size.
  - If the default system disk capacity of the purchased instance is 50 GB, the system disk cannot be expanded.
  - For instances purchased at an earlier time: if the system disk capacity is 20 GB or less, the system disk can be expanded to 20 GB by default. If the system disk capacity is more than 20 GB, the system disk can be expanded to 50 GB by default.

Can I increase the system disk capacity and then reinstall the operating system to decrease the system disk capacity?
The capacity of a system disk cannot be decreased.

How do I save the data on the CVM instance and then expand the system disk capacity?
To expand the system disk capacity, you can create an image and then use the image to reinstall the operating system.
What is the system disk capacity if I use an image of less than 50 GB to create or reinstall the CVM?

The image capacity does not affect the system disk capacity. The minimum system disk capacity is 50 GB.
Backup and Restore

How do I back up data for CVM?

- If your CVM uses a cloud disk, you can back up your business data by creating a system disk custom image and a data disk snapshot.
  - For more information on how to create a custom image, see Create Custom Images.
  - For more information on how to create a snapshot, please see Creating Snapshots.
- If your CVM uses a local disk, you can back up data on system disk by creating a custom image. For business data in your data disk, you still need to customize the backup policy.
  You can use FTP to back up data in the server to other places. For specific FTP deployment methods, see:
  - For Windows: Build the FTP Service (Windows)
  - For Linux: Build the FTP Service (Linux)

What are common data backup and recovery solutions?
The data backup and recovery solutions vary by application scenarios and businesses. The following recommendations can be used based on your actual needs:

- Back up the instance regularly using the CBS Snapshot feature.
- Deploy key components of an application across multiple availability zones, and copy the data as needed.
- Use Elastic Public IP for domain name mapping to ensure that the service IP can be quickly redirected to another CVM instance when the server is unavailable.
- View the monitoring data regularly and configure corresponding alarms. For more information, please see Cloud Monitor.
- Process emergency requests with auto scaling. For more information, please see Auto Scaling.
Mounting and Unmounting Cloud Disks

Last updated: 2020-06-09 15:40:05

What is a device name (mount target)?
A device name (mount target) is the location of a cloud disk mounted to the CVM instance on the disk controller bus. The selected device name matches the disk device number in Linux and matches the disk sequence number in the disk manager in Windows.

Can I mount one cloud disk to multiple CVM instances at the same time?
No, this is not supported currently. You can mount up to 20 cloud disks to the same CVM, but cannot mount the same cloud disk to multiple CVMs. To do so, you need to Unmount Cloud Disks from CVM A and then Mount it to CVM B.

Do I need to partition the cloud disk after I purchase and mount it to a CVM instance?
Yes. After you purchase a cloud disk, you must mount it to a CVM instance in the same availability zone, and then initialize it including formatting, partitioning, and creating the file system before using it as a data disk. For more information, see Mounting Cloud Disks and Initializing Cloud Disks.

Why am I unable to find the data disk that I purchased for a Linux instance?
If you purchase a data disk separately, you must partition, format and mount it to an instance, so that you can view and use its storage space. For more information, see Mounting Cloud Disks and Initializing Cloud Disks.

How many cloud disks can be mounted to one CVM instance?
A maximum of 20 data disks can be mounted to one CVM instance.

Why can’t I find the CVM to which I want to mount a cloud disk?
Check whether the CVM instance has been released. If not, ensure that it is in the same availability zone of the region as the cloud disk.

Can I mount a cloud disk to a CVM instance in another availability zone?
No. A cloud disk can only be mounted to or unmounted from a CVM instance in the same availability zone as the cloud disk.

Will I lose data in the cloud disk when I unmount it or a data disk?
Data in cloud disks will not be modified during mounting or unmounting. To ensure data consistency, we recommend that you follow the steps below:
- In Windows, we recommend that you stop all read and write operations on all file systems of the cloud disk to ensure data integrity. Otherwise, the data that is not being read or written will be lost.
- In Linux, log in to the CVM instance and run the `umount` command on the cloud disk. After the command is executed, log in to the CVM console to unmount the disk.
How do I unmount a cloud disk?
For more information, see Unmounting Cloud Disks.

Can cloud disks be mounted and unmounted?
- Cloud disks can be mounted and unmounted.
- System disks cannot be mounted or unmounted.

Can cloud disks be mounted and unmounted in batches?
- Cloud disks can be mounted and unmounted in batches.
- System disks cannot be mounted or unmounted.

Can system disks be unmounted?
No.
Expanding and Reducing Capacity of Cloud Disks

How do I expand the capacity of a cloud disk?
If your CVM uses a cloud disk, you can expand the disk capacity. For more information on how to expand the disk capacity, see Expanding Cloud Disks.

Can I reduce the capacity of a cloud disk?
No, you cannot reduce the capacity of a cloud disk. If you want to reduce the capacity of a cloud disk you purchased, we recommend that you create a cloud disk of your desired size and mount it to the same instance as the original cloud disk. Then copy the data stored in the original disk to the new disk and release the original disk.

How do I expand a system disk?
For data security, a CVM system disk cannot be expanded directly via console. You must Reinstall System to expand its capacity.

Can system disks of all kinds of cloud disks be expanded?
Yes, system disks of all kinds of cloud disks including SSD, Premium Cloud Storage, and HDD cloud disk can be expanded.

Can system disks of pay-as-you-go CVM instances be expanded?
Yes, system disks of pay-as-you-go CVM instances can be expanded.

What is the capacity range of the system disk? What is its maximum capacity?
The expanded system disk must have a capacity greater than its existing capacity but less than or equal to 500 GB.
Snapshots

Is snapshot available in all availability zones?
Yes, the snapshot feature is available in all availability zones.

Does snapshot creation affect disk performance?
Creating a snapshot will occupy a small amount of the disk I/O. We recommend creating snapshots when business is slow.

How long does it take to create a snapshot?
The time for creating a snapshot is subject to factors such as the number of disk writes, and the underlying read-write operations, but this process does not affect your use of the disk.

Do I need to shut down the CVM to roll back snapshots?
- For a cloud disk that has been mounted to a CVM, you have to shut down the CVM during rollback.
- For a cloud disk that is not mounted, you can directly perform rollback.

How is the size of the first full snapshot of a cloud disk calculated?
The first snapshot created on a cloud disk is a full snapshot that copies all the data of the cloud disk at a point in time. The snapshot size equals the used capacity of the cloud disk. For example, if the capacity of a cloud disk is 200 GB and 122 GB of its storage space is used, the size of the first full snapshot is 122 GB.

Can I download or export CVM instance snapshots to a local device?
No. Snapshots cannot be downloaded or exported to local devices. You need to create a custom image from a snapshot and then export the image.

Do automatic snapshots differ from or conflict with manual snapshots?
No. You can use both of them at the same time. However, you cannot create manual snapshots while automatic snapshots are being created.
- You cannot create a custom snapshot of a disk until its automatic disk snapshot has been created, and vice versa.
- If one snapshot created from a large disk lasts longer than two automatic snapshot intervals, the next automatic snapshot will be skipped automatically. For example, if you configure that the automatic snapshots will be created at 9:00, 10:00 and 11:00, the automatic snapshot being created at 9:00 lasts for 70 minutes and ends at 10:10, the next automatic snapshot will be created at 11:00 but not at 10:00.

Can I create snapshots for local disks?
No. We recommend that you use data redundancy at the application layer or create deployment sets for clusters to improve the availability of applications.
Are local snapshots deleted after I release the cloud disk?
No. You need to delete snapshots via console or API. For more information, see Deleting Snapshots.

Why does the used disk capacity displayed in the file system differ from the snapshot size?
A cloud disk snapshot is a block-level clone or backup. In general, the snapshot capacity will be larger than the data amount displayed in the file system due to the fact that:

- The underlying data block stores metadata of the file system.
- Some data are deleted. Deleting data modifies the data block that has been written in, which will be backed up in snapshots.

How can I prevent snapshots from being deleted by Tencent Cloud?
- Manual snapshots: they are never deleted by Tencent Cloud no matter whether their corresponding disk or instance has been released.
- Scheduled snapshots: to prevent them from being deleted, you can set the save cycle of scheduled snapshots to permanent retention. Then, only the earliest snapshots are deleted when the snapshot quota is reached. For more information, see Scheduled Snapshot and Use Limits

How can I delete snapshots to reduce backup costs?
- For cloud disk snapshots, you can delete them directly via console or API. For more information, see Deleting Snapshots.
- For snapshots associated with custom images, you must first delete custom images, and then Delete Snapshots.

Are automatic snapshots deleted after the instance expires or the cloud disk is released?
No. Automatic snapshots will not be automatically deleted after the instance expires or the cloud disk is released, they are retained based on the save cycle policy of scheduled snapshots. To modify the policy of scheduled snapshots, see Scheduled Snapshot?

How can I delete cloud disk snapshots from which an image is created?
- Snapshots from which a cloud disk is created: you can delete the snapshots separately, but then, you cannot operate a business that depends on the original snapshot data.
- Snapshots from which a custom image is created: you have to first delete the image, and then the snapshots.
- Snapshots from which an instance is created: you can delete the snapshots separately, but then, you cannot operate a business that depends on the original snapshot data.

Will the snapshot policy fail to be executed if I create a custom image or cloud disk based on the scheduled snapshot?
No.
Can a cloud disk have multiple automatic snapshot policies?

No.

How can I avoid data loss due to incorrect operations?

You can create snapshots to back up data before you perform risky operations. For example, you can create a snapshot if you need to modify critical system files, migrate instances from a classic network to a VPC, back up data, restore an instance that was released accidentally, prevent network attacks, change operating systems, or provide data support for a production environment. For more information, see Creating Snapshots. If an error occurs, you can Roll Back Snapshots to reduce risks.

I created an instance in Guangzhou region and created snapshots for data disks of the instance. I purchased another instance in Guangzhou region after the previous one expired and was released. Can I roll back the snapshots to the new instance?

No. Snapshots can only be rolled back to the cloud disk in which they are created. You can use one of these snapshots to create a cloud disk and mount the cloud disk to the new instance. For more information, see Creating Cloud Disks using Snapshots and Mounting Cloud Disks.

What are the differences between snapshots and images?

If no data disk is mounted to an instance and all data is written on the system disk, the data on the system disk cannot be protected by creating an image. Images cannot be scheduled for continuous backup. Once the system disk data is damaged, you can only recover the data to the state when the image was initially created. Therefore, images are not suitable for data protection. Specific differences are as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Snapshots</th>
<th>Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td>Backup data of a cloud disk at a certain point in time</td>
<td>CVM software configuration template, contains information including the operating system and pre-installed programs</td>
</tr>
</tbody>
</table>
| Use Cases      | • Regularly back up important business data  
|                | • Back up data before major operations       
|                | • Produce multiple copies of data           | • Back up systems that remain unchanged in a short term  
|                |                                              | • Deploy applications in batches  
|                |                                              | • Migrate the system                                                      |

How can I migrate snapshot data from account A to account B?

Snapshots cannot be migrated. If needed, you can create an image from the snapshot that you want to migrate and share the image with another account.

Can I create a custom image from data disk snapshots?

No. You must use system disk snapshots to create a custom image.
About Images
Sharing Custom Images

What is the maximum number of users an image can be shared with?
50 users.

Can the name and description of a shared image be changed?
No.

Does a shared image count toward my image quota?
No.

Are there any region limitations for a shared image on creating and reinstalling a CVM instance?
Yes. The shared image should be in the same region as the source image. The CVM instance can only be created and reinstalled in the same region.

Can a shared image be copied to other regions?
No.

Can a custom image that has been shared with other users be deleted?
Yes, but you need to cancel all sharing for this custom image first.

Can an image shared by other users be deleted?
No.

What are the risks of using a custom image shared by other users?
Tencent Cloud does not guarantee the integrity and security of images shared by other users. Please select images shared by a trusted account.

Can I share with others an image another user shared with me?
No.

What are the risks of sharing a custom image with another account?
Data and software leakage may occur. Before sharing a custom image with another account, make sure the image has no sensitive data or software. Be aware that the account you share the image with can create CVM instances from the shared image to create more custom images. The constant transfer of data will increase the risk of leakage.

Can I create an instance using an image that I shared with other users?
Yes. You can create a CVM instance using the image you shared with another account. You can also create a custom image based on the CVM instance.

**Can an image created on Server A in North China be shared with Server B in East China?**

- If both servers are under the same account, you can directly copy the image to Server B in East China. For detailed directions, see [Copying Images](#).
- If both servers are under different accounts, you need to copy the image to the East China region and then share it with the account of Server B. For detailed directions, see [Copying Images](#), [Sharing Custom Images](#), and [Cancelling Image Sharing](#).
What should I do if the Windows system fails to create a custom image?

If the Windows system fails to create a custom image, you can troubleshoot the issue as follows:

1. The creation of a custom image relies on the Windows Modules Installer provided by Microsoft. Make sure this service is working properly.
2. Some antivirus tools or Safedog may block custom image creation scripts from executing. To avoid creation failure, we recommend you disable these tools before creating a custom image.
3. If the image creation tool is interrupted by system pop-ups, remotely log in to the CVM and check and adjust the CVM configuration to block pop-ups.

Can a custom image be created from the data disk snapshot?

No. A custom image can be created from the system disk snapshot, but not from the data disk snapshot.
If you need to keep the data on the data disk of the original instance when launching 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.

How do I confirm that the data disk has been unmounted and a custom image can be created?

1. Confirm that the partition statement row of the automatically mounted data disk has already been deleted in the /etc/fstab file.
2. Execute the `mount` command to query the mounting information of all devices. Ensure that the execution result does not include the corresponding data disk partition information.

Will the custom image still exist after the instance is released?

Yes.

Can I change the operating system of an instance created from a custom image? After I change the operating system, will I still be able to use the original custom image?

Yes. You can continue to use the original custom image after changing the operating system.

Can I upgrade the CPU, memory, bandwidth, disk, and other configurations of a CVM instance enabled by a custom image?

Yes. You can upgrade all of them. For more information, see Change Instance Configuration and Adjust Network Configuration.

Can a custom image be used across regions?

No. A custom image can only be used in the same region. For example, you cannot directly launch a CVM instance in East China (Nanjing) using the custom image created from a CVM instance in East China (Shanghai).
To use a custom image across regions, copy the image to the target region first. For more information, see Copying Images.

**Where can I view the image creation progress? How long does it take to create an image?**

You can view the image creation progress on the **Images** page of the CVM Console. The time it takes to create an image depends on the size of the instance’s data.
Other FAQs

Last updated: 2020-06-09 14:24:42

What is an image?
An image is the template for CVM software configuration (operating systems, pre-installed programs, etc.). Tencent Cloud requires users to use images to launch instances. An image can launch multiple instances, and users can use it repeatedly. For more information on images, please see Overview.

What do I need to do before importing the image?
Before importing an image, you need to complete two major steps: applying for permissions and preparing image files. For more information, please see Overview.

How do I export an image for local testing?
Tencent Cloud Service Migration supports images in qcow2, vhd, raw, and vmdk formats. You can use the image export tools of virtualization platforms such as VMWare vCenter Convert or Citrix XenConvert. For more information, please reference each platform’s export tool documentation. You can also export images using Disk2vhd (Windows) or by running commands (Linux).

Can I delete a custom image that has been used to create a CVM instance?
Yes. After a custom image is deleted, it can no longer be used to launch a new CVM instance. It will not affect instances that have already been launched. If you want to delete all instances launched from this image, see Reclaiming Instances or Terminating Instances.

Can I delete a custom image that has been shared with another account?
No. You cannot delete a custom image that has been shared with another account. To delete it, you need to cancel image sharing first. For more information, see Cancelling Image Sharing.
Copying Images

Under what circumstances do I need to copy an image?
Custom images can only be used in the same region. You can perform the following operations by copying images:

- Deploy applications on the CVM instance in multiple regions.
- Migrate the CVM instance to other regions.
- Use custom images across regions.

Which images can I copy?
You can only copy custom images and cannot copy public images, service marketplace images, and images that others have shared with you.

Which regions currently support copying images?
All Tencent Cloud regions support copying images.

How long does it take to copy an image?
It depends on the network transmission speed and the task waiting queue length. To copy an image, you need to transfer the image files from a region’s availability zone to the target region’s availability zone via the network. Please wait patiently.

How much does it cost to copy an image?
Copying images across regions is free for now, but the copied image will occupy the snapshot capacity and incur a cost. For more information, see Pricing List

How do I copy the image resources under my account to other regions under another Tencent Cloud account?
You need to first copy your image to the target region, and then share the image under the target region with another Tencent Cloud account. After the image is shared, it will appear in the target account’s shared image list.

Is there a capacity limit for copying images?
No.
Changing Images (Reinstalling System)

Last updated: 2020-06-09 14:24:43

Does CVM support reinstalling the operating system?
Reinstalling the operation system is an important method to restore instances to their initial status in the event of a system failure. For more information, see Reinstalling System.

How long does it take to reinstall the operating system for an instance?
Reinstallation generally takes 10-30 minutes.

What should I do if re-installation is very slow or fails?
Reinstallation generally takes 10-30 minutes.

- If it has been less than 30 minutes, please continue to wait.
- If reinstallation does not complete within 30 minutes or fails, contact us by submitting a ticket.

Will reinstalling the operating system cause data loss?
After reinstallation, all data on the server’s system disk will be cleared and the system disk will be restored to its initial status. All data on the server’s data disk will be retained but cannot be used until the data disk is mounted manually.

How can I replace the operating system of a CVM with an existing image?
See Reinstalling System.
Cloud-init

What is cloud-init?
Cloud-init is an open source tool that runs inside a CVM instance as a non-resident service. It is executed at startup and exits immediately after execution. It does not listen to any ports. All the Linux public images of Tencent Cloud are pre-installed with the cloud-init service. You need to run the service as the root user because the service is mainly used for the initialization of CVM instances such as configuring DNS, hostname, and IP, and the execution of some custom scripts that users specify to be executed during the first boot when creating the CVM instances.

How do I check whether the cloud-init service inside a Linux instance is working properly?

Checking the operation of cloud-init
First, log in to the instance and execute the following commands to see if any error is returned. If the execution result is returned, it means that the service is running normally. Otherwise, an error will be returned. You can troubleshoot according to the error message.

1. Delete the cloud-init cache directory.
   ```bash
   rm -rf /var/lib/cloud
   ```
2. Perform complete cloud-init initialization.
   ```bash
   cloud-init init --local
   ```
3. Pull data from the configured data source.
   ```bash
   cloud-init init
   ```
4. Cloud-init initialization involves multiple stages. To ensure sufficient dependency between the stages, config stage is specified for the cloud-init modules.
   ```bash
   cloud-init modules --mode=config
   ```
5. Specify final stage for the cloud-init modules.
   ```bash
   cloud-init modules --mode=final
   ```

What initialization operations does cloud-init perform on instances?
Tencent Cloud implements all instance initialization operations through cloud-init, ensuring the transparency of the operations inside an instance. The following briefly covers some initialization operations. For more details,
Initialization operation | Default behavior | Customization | Notes |
---|---|---|---|
**hostname initialization** | During **the first launch** of an instance, cloud-init will set the hostname of the instance according to the hostname information in `vendor_data.json`. | If you create or reinstall an instance with a custom image and you want to keep the custom hostname of the image, you can delete the configuration, `-scripts-user`, from `/etc/cloud/cloud.cfg` before creating the custom image. | After you disable `-scripts-user`, the initialization script, `/var/lib/cloud/instance/scripts/runcmd`, inside the instance will not be run. Disabling the configuration will also affect the initializations of other sub-items such as the installation of cloud monitor and cloud security and software source settings. Also, the custom script will not be run when you create the CVM. |
**/etc/hosts initialization** | During **the first launch** of an instance, cloud-init will initialize `/etc/hosts` to `127.0.0.1 $hostname` by default. | If you create or reinstall an instance with a custom image and want to keep the custom `/etc/hosts` setting of the image, you can delete the configuration, `-scripts-user and -resolv_conf and unverified_modules:['resolv_conf']`, from `/etc/cloud/cloud.cfg` before creating a custom image. | **•** After you disable `-scripts-user`, the initialization script, `/var/lib/cloud/instance/scripts/runcmd`, inside the instance will not be run. Disabling the configuration will also affect the initialization of other sub-items such as the installation of cloud monitor and cloud security and software source settings. Also, the custom script will not be run when you create the CVM. **•** Every time the CVM restarts, the `/etc/hosts` settings of some existing CVMs will be overwritten. To solve this problem, see [Modifying the etc/hosts Settings of a Linux Instance](#). |
**DNS initialization (non-DHCP scenario)** | During **the first launch** of an instance, cloud-init will set the DNS of the instance according to the nameservers information in `vendor_data.json`. | If you create or reinstall an instance with a custom image and you want to keep the custom DNS setting of the image, you can delete the configuration, `-resolv_conf and unverified_modules: ['resolv_conf']`, from `/etc/cloud/cloud.cfg` before creating the custom image. | None. |
**Software** | During **the first** | If you create or reinstall an instance with a custom image and you want to keep the custom DNS setting of the image, you can delete the configuration, `-resolv_conf and unverified_modules: ['resolv_conf']`, from `/etc/cloud/cloud.cfg` before creating the custom image. | None. |
<table>
<thead>
<tr>
<th>initialization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>launch of an instance, cloud-init will set the software source of the instance according to the write_files information in vendor_data.json.</td>
</tr>
<tr>
<td>NTP</td>
<td>During the first launch of an instance, cloud-init will set the NTP server configuration of the instance according to the NTP server information in vendor_data.json and start the NTP service.</td>
</tr>
<tr>
<td>Password</td>
<td>During the first launch of an instance, cloud-init will set the default account password of the instance according to the chpasswd information in vendor_data.json.</td>
</tr>
<tr>
<td>Key binding</td>
<td>During the first launch of an instance, cloud-init will set the default account key of the instance according to the ssh_authorized_keys information in vendor_data.json.</td>
</tr>
</tbody>
</table>
## How can I fix issues related to cloud-init?

### 1. Error due to the unmounting of cloud-init dependencies

- **Problem description:**
  
  When commands are used to check whether the cloud-init service is working properly, the following error is returned:

  ```
  Traceback (most recent call last):
  File "/usr/bin/cloud-init", line 5, in
  raise DistributionNotFound(req)
  pkg_resources.DistributionNotFound: pyyaml
  ```

- **Problem analysis:**
  
  “pkg_resources.DistributionNotFound: xxxxx” indicates that the cloud-init dependencies have been uninstalled.

- **Solution:**
  
  i. Reinstall the dependencies.

  ii. Follow [Checking the operation of cloud-init](#) to see if the error is returned again.

### 2. Error due to the modification of the default Python interpreter

- **Problem description:**
  
  An error is returned when cloud-init is run on launch.

- **Problem analysis:**
  
  When cloud-init is installed, Python 2 is used as the default Python interpreter, which means that symbolic links, `/usr/bin/python` and `/bin/python`, are linked to Python 2. Users may change the default Python interpreter to Python 3 inside the instance by directing the symbolic links, `/usr/bin/python` and `/bin/python`, to Python 3. Due to compatibility issues, an error will be returned when cloud-init is run on startup.

- **Solution:**
  
  i. Modify the Python interpreter specified in the `/usr/bin/cloud-init` file by changing `#!/usr/bin/python` or `#!/bin/python` to `#!/usr/bin/python3`. 

---

### Network initialization (non-DHCP scenario)

- During the initial launch of an instance, cloud-init will set the IP, Gateway, and Mask according to the information in `network_data.json`.

- If you create or reinstall an instance with a custom image and you want to keep the custom network information of the image, you can add `network: {config: disabled}` to `/etc/cloud/cloud.cfg` before creating the custom image.

- None.
Do not use symbolic links. Point directly to a specific interpreter.

ii. Follow Checking the operation of cloud-init to see if the error is returned again.

Cloudbase-Init

What is Cloudbase-Init?

Like cloud-init, Cloudbase-Init is a bridge by which you can communicate with Windows CVM instances. The Cloudbase-Init service is run when an instance launches for the first time. The service will read the initialization configuration information of the instance and initialize it. Subsequent operations such as resetting the password and modifying IP addresses are also done through Cloudbase-Init.

How do I check whether the Cloudbase-Init service inside a Windows instance is working properly?

Checking the operation of the Cloudbase-Init service

1. Log in to the instance.

   If you forget your password or fail to reset your password because of Cloudbase-Init service exceptions, you can reset your password by following step 2.

3. Find the Cloudbase-Init service, right-click it, and go to Properties.
Check that “Startup type” is set to “Automatic”, as shown in the following figure.

View “Logon identity” and ensure that “Local System account” is selected, as shown in the following figure.
Manually launch the Cloudbase-Init service and see if any error is returned. If any error is returned, you need to fix the issue first and check whether you have installed any security software which may stop Cloudbase-Init from performing related operations.

Open the registry, find all “LocalScriptsPlugin” keys, and ensure that their values are 2, as shown in the following figure.
Check whether CD-ROM loading is disabled. If there is an optical disc drive as shown in the figure below, it means that the loading has not been disabled; otherwise, it means that it has been disabled and needs to
How do I fix common issues related to Cloudbase-Init?

Failed to reset password during initialization

- Possible reasons:
  - The Cloudbase-Init account password is manually changed, which results in the failure to launch the Cloudbase-Init service, which further led to the failure of operations such as resetting password during initialization.
  - The Cloudbase-Init service is disabled, which led to the failure of operations such as resetting password during initialization.
  - The security software installed blocks the Cloudbase-Init service from resetting password so that the operation returns a successful result but actually failed.

- Solution:
  Follow the corresponding solution to each possible reason to fix the issue.
  i. Change the Cloudbase-Init service to LocalSystem service. For details, see step 2 in Checking the operation of the Cloudbase-Init service.
ii. Change the launch type of the Cloudbase-Init service to automatic. For details, see step 2 in Checking the operation of the Cloudbase-Init service.

iii. Unmount the security software involved or add the relevant operations of the Cloudbase-Init service to the whitelist of the security software.
There is no network connection after I log in to the CVM. How do I troubleshoot this problem?

If there is no network access (for example, the webpage is inaccessible) after your login to the CVM, you need to check DNS configuration. Set the CVM to obtain DNS address automatically by following the instructions below.

The following operations take Windows Server 2012 as an example.

1. Log in to the Windows CVM.
2. On the desktop, click Control panel -> Network and Internet -> View network status and tasks -> Change adapter settings.
3. Right-click the Ethernet and select Properties to open the “Ethernet Properties” window.
5. In the Internet Protocol Version 4 (TCP/IPv4) Properties window, select Obtain an IP address automatically and Obtain DNS server address automatically, and click OK, as shown below:
Can a VPC instance interconnect with the classic network instance?

Yes, but it has the following restriction:
The VPC IP address range (CIDR) must be 10.0.0.0/16 - 10.0.47.0/16 (including subsets). Otherwise, there will be conflicts.

Directions
Log in to the VPC Console, click the VPC ID/name to enter its details page, and then click the Classiclink tab to associate the classic network CVM to be interconnected.

How do I view classic network CVMs that are interconnected with VPC CVMs?
Log in to the VPC Console, click the VPC ID/name to enter its details page, and view classic network CVMs interconnected with VPC CVMs in Classiclink.

Can the CVM be switched to an overseas network?
The network cannot be changed for CVM after purchase. If you need an overseas network, we recommend that you return the CVM and purchase an overseas CVM.

How do I configure a private network DNS?
Please see Private Network DNS.

Within the same IP range, the VPN can obtain the IP address of an IP range but cannot access the internet. How do I solve this problem?
Please check that the following configurations are correct:

1. Are the manually added IP and the automatically obtained IP in the same IP subnet? Are the subnet masks the same? Is the default gateway configured? Is the default gateway address correct?
2. Is DNS configured and is the DNS address correct?
3. If all of the configurations above are correct, check if the statically configured IP address has an IP conflict.

If none of the above works, please submit a ticket to contact us.

How do I add CVMs under accounts A and B to the same subnet?
By default, accounts are not network interconnected. To interconnect accounts, see Creating Cross-account Peering Connection or Network Instance Interconnection Crossing Account.
Public IP

**How can a CVM without public IP access public network?**

If you did not purchase the public IP when purchasing the CVM or have returned the public IP, you can apply for an EIP on the EIP Console and bind it to your CVM to allow public network access.

**Can I change my public IP?**

You can change the public IP of your CVM. For more information on specific operations, please see Changing Instance Public IP.

**How do I keep a public IP unchanged?**

If you need to retain a specific public IP under your account, you can convert it to an EIP, which can be bound to the device and used to access the public network. This EIP will be retained under your account until you release it.

For more information on the related operations, see EIP.

**What is a public IP address?**

A public IP address is an unreserved IP address on the Internet. A CVM with a public IP address can be accessible to and by other computers on the Internet.

For more information, see Internet Access.

**How do I obtain the public IP address of an instance?**

For details, see Getting Public IP Addresses.

**How do I change the public IP address of an instance?**

For details, see Changing Instance Public IP.

**What are the differences between public gateways and CVMs with public IP addresses?**

Public gateways enable the public network traffic forwarding feature in the image. However, CVMs with public IP addresses do not have this feature by default. Therefore, CVMs created on Windows public image cannot function as public gateways because the Windows image has no traffic forwarding feature.

**Why can’t I change the public IP of my CVM?**

Possible reasons include:

- The CVM instance is shut down and incurs no charges when shut down.
- The public IP of the CVM has been changed.
How can I obtain the public IP address of an instance that has no public IP (IPv4) assigned during the instance creation?

- You can obtain the public IP of an instance by applying and binding an EIP to it. For the step-by-step operations, see EIP.

Private IP

What is a private IP address?

A private IP address cannot be accessed through the Internet. That is how Tencent Cloud provides private network services.

For more information, please see Private Network Access.

How do I obtain the private IP address of an instance?

For details, see Getting Private IP Addresses and Setting DNS.

Can I change the private IP address of an instance in addition to its public IP address?

Yes, you can change the private IP of an instance. For operations, see Modifying Private IP Addresses.
Elastic Public IP

Last updated: 2020-05-25 17:35:55

What are EIPs used for?

EIPs are applicable to the following scenarios:

- Disaster recovery. We strongly recommend you use EIPs for disaster recovery. For example, when one of your servers fails, you can unbind the EIP from this server and then bind it to a healthy server to quickly resume services.
- Retaining a specific public IP. If you need to retain a specific public IP under your account, you can convert it to an EIP, which can be unbound/bound with the device and used to access the public network. This EIP will be retained under your account until you "release" it.
- Other special cases. When you need to change an IP in some cases, you can convert the public IP to an EIP and then bind/unbind the EIP. With limited EIP resources available, however, each account has an EIP quota for each region. Please use and plan accordingly.

How is an EIP billed?

1. The fee displayed on the console applies to EIPs that have been idle for more than 1 hour. EIPs can be billed with an accuracy down to seconds. EIPs that have been bound/unbound multiple times are billed based on the total duration (in sec) for which they are unbound.
2. EIPs that have been idle for less than 1 hour are billed for resource occupation fee on a pro rata basis.

When is an EIP billed?

You can apply for, bind, unbind and release EIPs. With limited EIP resources available, an EIP is billed for a small usage fee only when it is unbound.

How do I stop EIP billing?

- When you no longer need an EIP, you can release it to stop the billing. For more information on the specific operations, see Releasing EIPs.
- If you need to retain an EIP but want to stop the billing, bind it to a device (CVM, NAT). A bound EIP will not be billed.

How can a CVM without public IP access public network?

If you did not purchase the public IP when purchasing the CVM or have returned the public IP, you can apply for an EIP on the EIP Console and bind it to your CVM to allow public network access.

Can I change my public IP?

You can change the public IP of your CVM. For more information on the specific operations, please see Change Instance Public IP.

How do I keep a public IP unchanged?
If you need to retain a specific public IP under your account, you can convert it to an EIP, which can be bound to the device and used to access the public network. This EIP will be retained under your account until you released it.

For more information on the related operations, see Elastic Public IP.

**Can an EIP be converted back to a public IP?**

An EIP cannot be converted back to a public IP.

**Can an EIP be retrieved?**

You can retrieve public IPs that have not been assigned to other users. For details, see Retrieve the public network IP address.
What is ENI?

Elastic Network Interface (ENI) is an elastic network interface bound to CVMs in a VPC, which can be migrated among multiple CVMs. ENI is very useful for configuring management networks and establishing highly reliable network solutions.

ENI has VPC, availability zone and subnet attributes. You can only bind it to CVMs under the same availability zone. A CVM can be bound with multiple ENIs, and the maximum number allowed varies by CVM specifications.

What are the restrictions to use ENIs on CVMs?

For details, please see use limits section in Use Limits Overview.

What is the basic information of an ENI?


How do I create an ENI?

Please see Creating an ENI.

How do I view the ENI information?

Please see Viewing ENI Information.

How do I bind an ENI to a CVM instance?

Please see Binding and Configuring CVMs.

How do I configure an ENI in the CVM instance?

Please see Binding and Configuring CVMs.

How do I modify or customize the private IP of an ENI?

CVMs in VPC support modifying and customizing the private IP of an ENI. Follow the steps below:

1. Log in to VPC Console.
2. In the left side bar, click IP and Interface > ENI to enter the ENI list page.
3. Click the ID/Name of an ENI to enter its details page to view its information.
4. Select the IPv4 address management tab and click Assign Private IP.
5. In the pop-up window, select the IP assigning method as Enter manually to enter the IP address you want to modify.
6. Click OK to complete the operation.

After the modification is made on the console, you also need to modify the configuration file of the ENI. For more information, please see Binding and Configuring CVMs.
Public Network Bandwidth

Last updated: 2020-06-03 15:46:57

What are the inbound bandwidth and outbound bandwidth for CVM instances?

- Inbound bandwidth: a bandwidth that flows into CVM instances, for example, downloading external network resources on the CVM instance.
- Outbound bandwidth: a bandwidth that flows out of CVM instances, for example, external access from the CVM instance.

How is the public network bandwidth billed for CVM instances?

For more information, see Public Network Billing.

As the bandwidth cap for pay-as-you-go instances using the bill-by-traffic billing mode is 200 Mbit/s, how do I increase the bandwidth cap?

The public network bandwidth cap depends on the billing mode and configurations of CVM instances. For more information, see Public Network Bandwidth Cap.
What is the difference between SSH key login and password login?

An SSH key allows you to log into Linux server remotely. It uses the key generator to create a key pair (public and private). The public key is added to the server, and then the user can use the private key to complete the authentication and login. This method focuses on data security and is more convenient than the manual input of the traditional password login method.

Currently, Linux instance supports both password and SSH key login, while Windows instance supports only password login. For related documentation, see:

- Log in to Linux Instance
- Log in to Windows Instance

Can I use SSH key and password logins at the same time?

When you log into Linux instance via SSH key, password login is disabled by default to improve security.

What should I do if I forget my password?

You can reset the password. For details, see Reset Instance Password.

How do I create an SSH key and what if I lose it?

For more formation on key creation, please see Managing SSH keys.

If you lose the key, resolve by the following two methods:

- Create a new key through SSH Key on the console and bind it with the original instance.
  - Create an SSH key.
  - After the key is successfully created, log in to the CVM Console.
  - Select the original instance with which you want to bind the key, click More > Password/key Load a key.
  - Then you can use the new key to log into the instance.
- After the key is successfully created, log in to the CVM Console.
- Select the original instance with which you want to bind the key, click More > Password/key Load a key.
- Reset your password through the CVM console and log into the instance with your new password. For details, see Reset Instance Password.

How do I bind/unbind an SSH key to or from the server?

Please see the Binding/Unbinding a key to or from a CVM section in Managing SSH keys.

How do I modify the SSH key name/description?

Please see the Modifying the SSH key name and description section in Managing SSH keys.

How do I delete an SSH key?

Please see the Deleting SSH keys section in the Managing SSH keys.
What are the use limits on SSH keys?
Please see the Use Limits section in SSH Key.

How to troubleshoot if I fail to log into a Linux instance using an SSH key?
Please see Unable to Log into a Linux Instance via SSH.
Port and Security Groups

This document describes FAQs pertaining to security groups and port configuration.

- For more information on how to create, configure, and manage a security group in the console, see the following documents:
  - Creating a Security Group
  - Adding a Security Group Rule
  - Managing Security Groups
  - Managing Security Group Rules
- If you are proficient in using Cloud Virtual Machine (CVM) APIs, you can also use security group APIs to configure and manage security groups.

Port-Related FAQs

**Which port(s) should be opened to the Internet before I log in to an instance?**

Generally, you need to open port 22 for Linux instances, or port 3389 for Windows instances. For more information on ports that need to be opened for other types of instances, see Security Group Use Cases.

**Which ports are commonly used in CVM?**

For more information, see Common Server Ports.

**Why should a port be opened to the Internet, and how can I open a specific port to the Internet?**

You can use the services corresponding to a port only after opening the port to the Internet in the security group. For example:

To access web pages through port 8080, the port must be opened to the Internet in the security group.

Directions for opening a port to the Internet are as follows:

1. Log in to the Security Group Console and click the security group bound to this instance to go to the details page.
2. Select Inbound/Outbound Rules and click Add Rule.
3. Enter the IP address (range) and port to be opened, and then select Allow to open the port to the Internet.

For more information on directions, see Adding a Security Group Rule.

**How can I change the default remote port of a CVM instance?**

For more information, see Changing the Default Remote Port of a CVM Instance.

**Why can I not use the service after modifying the port?**

After changing the service port, you also need to open the port to the Internet in the corresponding security group before you can use the service.
Which ports are not supported by Tencent Cloud?

- By default, TCP port 25 is blocked by Tencent Cloud. To unblock this port, see Unblocking Port 25.
- Some ports can incur security risks. Although these ports are not blocked by Tencent Cloud, they are still blocked by ISPs and therefore inaccessible. To prevent this problem, we recommend that you change ports and do not use the following ports for listening:

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Ports That May Be Blocked</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP</td>
<td>Ports 42, 135, 137, 138, 139, 445, 593, 1025, 1434, 1068, 3127, 3128, 3129, 3130, 4444, 5554, 5800, 5900, and 9996</td>
</tr>
<tr>
<td>UDP</td>
<td>Ports 1026, 1027, 1434, 1068, 5554, 9996, 1028, 1433, and 135-139</td>
</tr>
</tbody>
</table>

Security Group-Related FAQs

Why does a security group have a reject rule by default?

Security group rules take effect sequentially from top to bottom. If an allow rule that is previously set takes effect, later rules are rejected by default. If this allow rule opens all ports to the Internet, the last reject rule does not take effect. We provide this default setting due to security concerns.

How can I adjust the priority of a security group?

For more information, see Adjusting the Priority of a Security Group.

If I bind an incorrect security group to an instance, what is the impact on the instance, and how can I correct this problem?

Potential problems

- You may fail to remotely connect to a Linux instance (over SSH) or remotely log in to a desktop Windows instance.
- You may fail to remotely ping the public and private IP addresses of the CVM instance in this security group.
- You may fail to access the web services exposed by the CVM instance in this security group over HTTP.
- The CVM instance in this security group may fail to access Internet services.

Solutions

- If any of the preceding problems happens, you can go to "Security Group Management" in the console and change the security group rule. For example, you can change the rule to "bind only all-ports-open security groups by default".
- For more information on how to define a security group rule, see Security Groups.

What are the direction and policy of a security group?

Security group policies are divided into outbound and inbound. Outbound filters the outbound traffic of the CVM instance, whereas inbound filters the inbound traffic of the CVM instance. Security group policies are divided into those that Allow and Reject traffic.
In which order do security group policies take effect?

Security group policies take effect sequentially from top to bottom when traffic flows through the security group. When the traffic matches a policy, the policy takes effect immediately.

Why can an IP address that is rejected by a security group still access the CVM instance?

Possible reasons are as follows:

- The CVM is bound to multiple security groups, and this IP address is allowed by another security group among them.
- This IP address belongs to an approved Tencent Cloud public service.

Can iptables be used along with security groups?

Yes. Security groups and iptables can be used at the same time. Your traffic will be filtered twice in the following directions:

- Outbound: processes in your instance > iptables > security groups.
- Inbound: security groups > iptables > processes in your instance.

Why can security groups not be deleted when all CVM instances have been returned?

Check whether any CVM instances still exist in the recycle bin. If security groups are still bound to a CVM instance in the recycle bin, they cannot be deleted.

Can the name of a cloned security group be the same as that of a security group in the target region?

No. The name must be different from that of any existing security group in the target region.

Can a security group be cloned across different users?

No. This feature is currently not supported.

Is there any Tencent Cloud API that supports the cloning of a security group across projects and regions?

MC support is provided to help customers who use the console, but no Tencent Cloud API can be directly used for this purpose at the moment. You can use original Tencent Cloud APIs for batch import and export of security group rules to indirectly clone a security group across projects and regions.

When I clone a security group across projects and regions, will CVM instances managed by the security group also be copied?

No. When a security group is cloned across regions, only the inbound and outbound rules of the original security group are copied. Therefore, you need to bind CVM instances to the security group separately.
How should I configure firewall iptables on a Linux OS?

Notes:
iptables varies greatly for versions earlier and later than CentOS 7.

- In versions earlier than CentOS 7, the iptables service is used as the firewall by default. By running the `service iptables stop` command, the iptables service will first clear rules and then unload the iptables module. When the iptables service restarts, it loads rules from the configuration file. You can stop the iptables service to test whether the firewall restrictions are applied.
- In versions later than CentOS 7, the firewall service is used as the firewall by default, and the `iptables_filter` module is loaded to ensure compatibility. You can use the `iptables` command to add rules. However, the iptables service is disabled by default. After you confirm that the `iptables_filter` module is loaded, the rules take effect.

To determine the firewall, run `iptables -nvL` to view rules.

The following examples describe how to configure the iptables firewall software program.

**Scenario 1**

In an Ubuntu 14 OS, the security group and listening port are enabled, but the Telnet connection fails.

Security group inbound rules:

<table>
<thead>
<tr>
<th>Security Group Rule</th>
<th>Associate with Instance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inbound rule</strong></td>
<td>Outbound rule</td>
</tr>
<tr>
<td>Add a Rule</td>
<td>Import rule</td>
</tr>
<tr>
<td></td>
<td>Sort</td>
</tr>
<tr>
<td></td>
<td>Delete</td>
</tr>
<tr>
<td></td>
<td>Open all ports</td>
</tr>
<tr>
<td></td>
<td><strong>Source</strong></td>
</tr>
<tr>
<td></td>
<td>Protocol port</td>
</tr>
<tr>
<td></td>
<td>Policy</td>
</tr>
<tr>
<td></td>
<td><strong>IP Address</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ALL</strong></td>
</tr>
<tr>
<td></td>
<td>Allow</td>
</tr>
<tr>
<td></td>
<td><strong>TCP:8081</strong></td>
</tr>
<tr>
<td></td>
<td>Allow</td>
</tr>
</tbody>
</table>

Security group outbound rules:
Telnet connection failure:

1. Capture packets on the CVM to check whether packets are sent to the CVM.
   - If no, the packets may be blocked by the security group, upper TGW, or ISP.
   - If yes but the CVM does not respond, this issue may be caused by the iptables policy of the CVM. As shown in the following figure, the CVM does not return TCP packets to 64.11 after the TelNet connection is established.

2. After identifying that the issue is caused by the iptables policy, run `iptables -nvL` to check whether the policy opens port 8081. In this example, port 8081 is closed.
3. Run the following command to open port 8081:

```
iptables -I INPUT 5 -p tcp --dport 8081 -j ACCEPT
```

4. Check whether port 8081 is opened. If yes, the issue has been solved.

**Scenario 2**

Based on the iptables configuration, the policy has been enabled, but the destination server still cannot be pinged through.

Troubleshooting

If the information shown below appears,

```
run the following command to delete the first output rule:
```

```
```
Verify that the issue has been solved.

**How can I remove a firewall?**

**Windows instances:**

1. After logging in to the instance, choose **Start > Control Panel > Firewall Settings** to go to the "Firewall Settings" page.

2. Check whether the firewall and other security software, such as safedog, have been enabled. If yes, disable them.

**Linux instances:**

1. Run the following command to check whether the firewall policy is enabled. If no, skip step 2 and go to step 3.

   ```bash
   iptables -vnL
   ```

2. If the firewall policy is enabled, run the following command to back up the firewall policy:

   ```bash
   iptables-save
   ```

3. Run the following command to clear the firewall policy:

   ```bash
   iptables -F
   ```

**Will the firewall intercept a non-Tencent Cloud CDN CVM?**

No. If you worry that the firewall may disrupt your business, disable the firewall.
Security Group Rules

Last updated: 2020-06-03 15:37:06

When do I need to add security group rules?
To ensure the accessibility of CVM instances, you need to add security group rules in the following scenarios:

- There is no security group rule in any form for CVM instances. If your CVM instances need to access the public network or communicate with CVM instances associated to another security group in the same region, you need to add security rules.
- The application you built use a custom port or port range, instead of the default port. In this case, you need to open the custom port or port range before testing the application connectivity. For example, you set up an Nginx service on your CVM instances that listens on the TCP 1800 communication port, but your security group only opens port 80, you need to add security group rules to ensure the accessibility of the Nginx service.
- For other scenarios, see Security Group Use Cases.

What is the impact of incorrect configuration of security group rules?
If any security group rule is configured incorrectly, CVM instances fail to access other devices over the private network or public network, for example:

- You may fail to remotely connect to a Linux instance over SSH or a Windows instance via remote desktop.
- You may fail to remotely ping the public IP of a CVM instance.
- You may fail to access Web services provided by CVM instances over HTTP or HTTPS protocol.
- You may fail to access other CVM instances over private network.

Are the inbound rules and outbound rules of a security group counted separately?
A maximum of 100 inbound or outbound rules can be set for a security group.

Can I adjust the maximum number of security group rules?
Each security group can configure up to 200 security group rules, including 100 inbound rules and 100 outbound rules. One CVM instance can be associated with up to 5 security groups and adopts up to 1,000 security group rules accordingly, which meets the needs of most scenarios.

If your use goes beyond this upper limit, check for the existence of redundant rules.

- If so, remove them.
- If not, create more security groups.

Furthermore, you can submit a ticket to increase the upper limit of security group rules.
Security Groups

Last updated: 2020-06-03 15:37:06

Why does a security group have a reject rule by default?
Security group rules take effect sequentially from top to bottom. If an allow rule that is previously set takes effect, other rules are rejected by default. If this allow rule opens all ports to Internet, the last reject rule does not take effect. We provide this default setting due to security concerns.

How can I adjust the priority of a security group?
For more information, see Adjusting Security Group Priority.

If I bind an incorrect security group to an instance, what is the impact on the instance? How can I fix this problem?

Potential problems
- You may fail to remotely connect to a Linux instance over SSH or a Windows instance via remote desktop.
- You may fail to remotely ping the public IP and private IP addresses of the CVM instance in this security group.
- You may fail to access the web services exposed by the CVM instance in this security group over HTTP.
- The CVM instance in this security group may fail to access Internet services.

Solutions
- If any of the preceding problems happens, you can go to Security Groups in the console and modify the security group rule. For example, change the rule to "bind only all-ports-open security groups by default".
- For more information on how to set a security group rule, see Security Groups.

What are the direction and policy of a security group rule?
Security group policies include outbound and inbound. Outbound filters the outbound traffic of the CVM instance, whereas inbound filters the inbound traffic of the CVM instance.
Security group policies are divided into those that Allow and Refuse traffic.

In which order do the security group policies take effect?
Security group policies take effect sequentially from top to bottom when traffic flows through the security group. Once the traffic matches a policy, the policy takes effect immediately.

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No. When a security group is cloned across regions, only the inbound and outbound rules of the original security group are copied. Therefore, you need to bind CVM instances to the security group separately.

What is a security group?
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.

Each CVM instance is bound to at least one security group, which must be specified when the instance is created. CVM instances are interconnected in the same security group but cannot communicate with CVM instances across security groups. However, you can authorize the interconnection between two security groups. For more information, see Security Groups.

Why should I choose a security group when creating CVM instances?
Before creating CVM instances, you must choose a security group to partition security domains of the application environment and authorize security group rules, thus realizing a proper network security isolation.
What should I do if there is no security group before I create CVM instances?

In this case, you may choose to create a security group. A security group supports the following rules. You can open IPs or ports as needed.

- **ICMP**: opens to the ICMP protocol, and allows ping the server over the public network.
- **TCP:80**: opens port 80, and allows access to Web services over HTTP.
- **TCP:22**: opens port 22, and allows a remote connection to Linux CVMs over SSH.
- **TCP:443**: opens port 443, and allows access to Web services over HTTPS.
- **TCP:3389**: opens port 3389, and allows a remote connection to Windows CVMs over RDP.
- Opens to private network, and allows private network access among different cloud resources (IPv4).

When will the default security group rule be used to a security group?

The default security group rule will be used in the following situations:

- If you purchase and create a CVM instance with **Custom Configuration**, a default security group is created for you automatically, which uses the default security rule. Its inbound rule opens all ports and outbound rule allows all accesses.
  
  However, for the sake of security, we recommend you associate your CVM with a new security group that only opens the must-open ports to avoid unnecessary security risks.

- You choose a template when creating a security group on the CVM console. Supported templates include Windows login, Linux login, Ping, HTTP(80) and HTTPS(443).
Does CVM come with FTP?
Yes. You can install and configure FTP as needed.
- To build FTP sites using Windows’ built-in FTP service, see Building the FTP Service (Windows).
- To build FTP sites using vsftpd software, see Building the FTP Service (Linux).

How do I upload files to a Windows CVM?
- For a local Windows, see Uploading Files from Windows to a Windows CVM using MSTSC.
- For a local Linux, see Uploading Files from Linux to Windows CVM using RDP.
- For a local MacOS, see Uploading Files from MacOS to Windows CVM using MRD.

How does a local host transfer data to and from a Windows CVM?
To transfer data:
- Install QQ.exe and other tools separately on the local host and Windows CVM.
- Upload Files from Windows to a Windows CVM using MSTSC
- Build the FTP Service (Linux) on the local host.

How do I upload files to a Linux CVM using WinSCP?
For more information, see Uploading Files via WinSCP to a Linux CVM from Windows.

How do I upload files to or download files from a Linux CVM?
For more information, see Uploading Files via SCP to a Linux CVM from Linux.

What should I do if the client-server connection times out during FTP file upload?
The server firewall or security group may have blocked the connection. Follow the steps below to troubleshoot this issue:

1. Check the server’s firewall settings.
2. Disable the firewall or add rules.
OPS

Do you have any advice regarding OPS for small websites hosted on CVM?

To maintain the website applications, you can:

- Back up data to the cloud disk daily. For more information, see Creating Snapshots.
- Use SSL Certificates Service for identity verification and encrypted connections.
- Install anti-virus plugins or anti-DDoS services or purchase Cloud Workload Protection.
- Monitor the traffic to and from the website and identify exceptions in the traffic range. Add the security group rules of denied access to temporarily control the exception request of a single point. For more information, see Getting Monitoring Statistics and Adding Security Group Rules.
- Monitor the performance of CVM instances and the cloud disk, and mark the traffic/access peak period. Familiarize yourself in advance with upgrade/degrade, auto scaling, or cloud disk expansion to respond to request surges. For more information, see Change Instance Configuration, What is Auto Scaling (AS)?, or Cloud Disk Expansion Scenarios.
- Update the admin password regularly for scenarios where you log in to CVM instances with the root/Administrator username and password. For more information, see Reset Instance Password.
- Update the software patches regularly.
Access Control

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How can I create a custom policy?

If preset policies do not meet your requirements, you can create a custom policy.

The syntax for creating a custom policy is as follows:

```
{
  "version": "2.0",
  "statement": [
    {
      "action": ["Action"],
      "resource": "Resource",
      "effect": "Effect"
    }
  ]
}
```

- **Action**: replace this with the operation to be allowed or denied.
- **Resource**: replace this with the resources that you want to authorize.
- **Effect**: replace this with "Allow" or "Deny".

How should I configure the read-only policy for a CVM?

To allow a user to query CVM instances but not to create, delete, start, or shut down the instances, enable the QcloudCVMInnerReadOnlyAccess policy.

To do this, log in to the CAM console. On the Policy Management page, search for **CVM** to find the policy.

The policy syntax is as follows:

```
{
  "version": "2.0",
  "statement": [
    {
      "action": ["name/cvm:Describe*", "name/cvm:Inquiry*"],
      "resource": "*",
      "effect": "allow"
    }
  ]
}
```

The preceding policy grants users the permissions to perform the following operations:

- All operations starting with "Describe" in CVM
All operations starting with "Inquiry" in CVM

How can I configure the read-only policy for CVM-related resources?

To allow a user to query CVM instances and relevant resources (VPC and CLB instances) but not to create, delete, start, or shut down the instances and relevant resources, enable the QcloudCVMReadOnlyAccess policy.

To do this, log in to the CAM console. On the Policy Management page, search for CVM to find the policy.

The policy syntax is as follows:

```json
{
  "version": "2.0",
  "statement": [
    {
      "action": [
        "name/cvm:Describe*",
        "name/cvm:Inquiry*"
      ],
      "resource": "+",
      "effect": "allow"
    },
    {
      "action": [
        "name/vpc:Describe*",
        "name/vpc:Inquiry*",
        "name/vpc:Get*"
      ],
      "resource": "+",
      "effect": "allow"
    },
    {
      "action": [
        "name/clb:Describe*"
      ],
      "resource": "+",
      "effect": "allow"
    },
    {
      "effect": "allow",
      "action": "name/monitor:*",
      "resource": "+"
    }
  ]
}
```

The preceding policy grants users the permissions to perform the following operations:

- 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 CLB
- All operations in the monitor
Offline Migration

Why do COS upload and migration take so long?
The upload duration is related to the image file size and the bandwidth. We recommend you use compressed image formats (qcow2 or vhd) to reduce transfer and migration time.

Why did the migration task fail?
- Tencent Cloud’s service migration currently supports the following image formats: qcow2, vpc, vmdk, and raw. Please confirm your image is in one of these formats.
- Please confirm that your image file has already been uploaded to COS and ensure that the file is not damaged or corrupted.
- Please make sure the CVM/cloud disk you want to migrate to is in normal use. Expired devices cannot be migrated.

How do I troubleshoot the error cause prompted by a migration task?
- If "image file verification failed" is displayed, it is usually because the capacity of the system disk or data disk you want to migrate to is smaller than the capacity of the source disk or the size of the image file. Please adjust the capacity of the system disk or data disk and try again.
- If “failed to obtain the metadata of the image file” is displayed, it is usually because the image file is damaged or the image file format is not supported. Please check whether there are errors in the process of creating, exporting, and uploading the image. You can also use image file in qcow2, vpc, vmdk, or raw format and try again.
- If messages such as "task timeout", "system error", and "other reasons" are displayed, or if you retried the migration task but it failed again, you can [contact us](https://cloud.tencent.com/document/product/213/39047) for help.

Online Migration

What operating systems and disk types are supported?
- Mainstream Linux operating systems such as CentOS and Ubuntu are supported.
- Migration is not related to disk type and usage.

Where can I download the online migration tool?
Currently, the online migration tool cannot be downloaded. If you have such needs, please contact your sales rep or submit a ticket to apply for permission and obtain the related documentation.
How do I use the online migration tool?

The online migration tool must be copied to the source server. You need to modify the configuration files depending on the state of the machine. You can write a script to perform batch processing.

Do I need to retain the tool after migration is complete?

No, you do not need to retain the tool. Once migration is complete, you can delete the tool on the source server.

What about migration speed and cost?

- Speed: This primarily depends on the CVM bandwidth. We tested a 1u1g pay-as-you-go CVM with 100mbps of bandwidth, and the migration rate was around 12MB/second. The actual migration rate will be about 9MB/second.
- Cost: The migration tool is free to use. However, because the data is transferred over the public internet, you will be charged for the small amount of resources used during migration. For details, please refer to the prices listed on the Tencent Cloud website.

Can I migrate multiple CVMs at the same time?

Yes, migration of multiple CVMs at the same time is supported. As they are migrated to different CVMs, they are not interrelated.
Region and Availability Zone

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How can I view regions and availability zones?
To view regions and availability zones, use either of the following methods:

- View the Regions and Availability Zones document.
- Use APIs to view regions and availability zones.
  - To view regions, use the DescribeRegions API.
  - To view availability zones, use the DescribeZones API.

Which CVM regions and availability zones are available, and how do I choose from them?
For more information on available CVM regions and availability zones, see Regions and Availability Zones. For more information on how to choose regions and availability zones, see How to Choose Regions and Availability Zones.

Can I change the region of a purchased CVM?
No. Region change is not supported for purchased CVMs. To change regions or availability zones, use either of the following methods:

- Terminate the instance and then repurchase the instance.
- Use the original instance to create a custom image. Then, use the custom image to create an instance, start the instance, and update the instance configuration in a new availability zone.
  - Create a custom image for the current instance. For more information, see Creating Custom Images.
  - If the network environment of the current instance is a VPC instance and the private IP address needs to be retained after the instance is migrated to a new availability zone, delete the subnet in the current availability zone and then create a subnet in the new availability zone with the same IP address range as that of the original subnet.
    - If the subnet to be deleted contains available instances, first migrate all instances in the subnet to the new subnet.
  - Use the created custom image to create another instance in the new availability zone.
    - You can choose the instance type and configuration to be the same as those of the original instance or new ones for the new instance. For more information, see Creating Instances.
  - If an elastic public IP address is associated with the original instance, disassociate it from the original instance and associate it with the new instance. For more information, see Elastic IP Addresses (EIPs).
v. (Optional) If the billing method of the original instance is pay-as-you-go, you can terminate it. For more information, see Terminating Instances.

Can Tencent Cloud users in China enjoy the same product quality and services as resources in China for resources that they have purchased in other countries or regions?

Yes. The Tencent Cloud Chinese website provides products and services of the same quality to all users. Service benefits on the Tencent Cloud Chinese website do not vary with the purchase region.

Can I use the replication feature of a custom image to migrate a CVM in China to another country or region?

- No. Images can be replicated only within the same country or region. To replicate images between different countries, submit a ticket.

What are the differences between instances in regions in and outside China, and how do I determine which region is suitable for me?

Instances in other countries or regions are deployed in regions outside China. For users outside China, regions outside China have obvious geographical and market advantages. They provide fast local network connections and can meet international customers’ requirements. Therefore, regions outside China are suitable for users who run businesses in other countries or regions.

- For more information on supported regions, see Regions and Availability Zones.

Can I change the OS of a CVM instance purchased in a region outside China between Linux and Windows?

CVM instances in all regions support reinstalling an operating system (OS) of the same type. For example, reinstalling the Linux OS on CVM with a Linux OS or reinstalling the Windows OS on a CVM with a Windows OS. Only CVM instances in Mainland China support reinstalling an OS of a different type. For example, reinstalling a Linux OS on a CVM with a Windows OS or reinstalling a Windows OS on a CVM with a Linux OS.

How do I apply for after-sales services for products purchased in regions outside China?

If you have purchased a product on the Tencent Cloud official website, call the Tencent Cloud 24/7 service hotline (95716) or submit a ticket.

How do I deploy CVM instances in regions outside China?

CVM instances in regions in and outside China adopt the same deployment method if they have the same type of OS.

Can I migrate instances from Chinese regions to overseas regions?

The region and availability zone of an instance are not changeable. To use an instance in other countries or regions, you need to repurchase the instance.
Why can I purchase some instance types in Chinese regions but cannot do so in overseas regions?

Some regions may not support certain instance types. For information on supported instance types, you can go to the CVM purchase page to view instance purchase information.

If I am using an instance in an overseas region to build a website and my customers use a domain name to access the website, is ICP filing required for the domain name?

The ICP filing is required for domain names of websites in Mainland China, and unnecessary for those in Hong Kong, Macao and Taiwan regions (China) and other countries. For more information, see ICP Filing Overview.

Do instances in different regions have the same price?

The price of an instance includes the prices for the instance type, storage, and network bandwidth. If the prices for the instance type, storage, and network bandwidth are different, the instance price will be different. For more information on pricing, see Pricing.