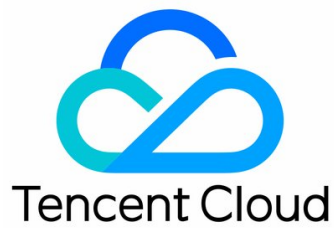


Cloud Block Storage

FAQs

Product Documentation




Copyright Notice

©2013-2019 Tencent Cloud. All rights reserved.

Copyright in this document is exclusively owned by Tencent Cloud. You must not reproduce, modify, copy or distribute in any way, in whole or in part, the contents of this document without Tencent Cloud's the prior written consent.

Trademark Notice

 Tencent Cloud

All trademarks associated with Tencent Cloud and its services are owned by Tencent Cloud Computing (Beijing) Company Limited and its affiliated companies. Trademarks of third parties referred to in this document are owned by their respective proprietors.

Service Statement

This document is intended to provide users with general information about Tencent Cloud's products and services only and does not form part of Tencent Cloud's terms and conditions. Tencent Cloud's products or services are subject to change. Specific products and services and the standards applicable to them are exclusively provided for in Tencent Cloud's applicable terms and conditions.

Contents

FAQs

Features FAQs

Billing FAQs

Performance FAQs

Snapshot FAQs

Usage FAQs

FAQs

Features FAQs

Last updated : 2021-02-08 15:02:26

What is Tencent Cloud Block Storage?

Tencent Cloud Block Storage (CBS) is a highly available and highly reliable block storage device for CVM instances. It provides a wide variety of disks to meet diversified read/write requirements. For more information on CBS, see [Overview](#).

We recommend CBS when the data frequently changes and you want to persistently store them at a faster read/write speed. CBS can be mounted to any running instance in the same availability zone, enabling you to use an instance's file system and database storage without following the instance lifecycle. For more information on the CBS operations, see [Operation Overview](#).

What are the features of Tencent Cloud CBS?

Tencent Cloud CBS comes with three disk types: Premium Cloud Storage, SSD and Enhanced SSD, all three types offer the following features:

- Elastic mounting and unmounting: elastic cloud disks can be mounted and unmounted. Up to 20 elastic cloud disks can be mounted to each CVM to be used as data disks.
- Elastic expansion: a single disk supports a maximum capacity of 32 TB. You can scale up the disk at any time.
- Snapshot backup: you can create a snapshot to back up data. This improves data reliability and allows rapid data restoration when necessary. You can also create a cloud disk from the snapshot to accelerate your business deployment.

What is the difference between COS and CBS?

[Cloud Object Storage \(COS\)](#) is available via Web APIs, and is not restricted by file systems, directory structure, number of files, or storage capacity. The service offers various SDKs and tools for business integration, which can also be used independently from CVM. COS is great when you need to access massive amounts of data but is not ideal for millisecond-level response or random read/write scenarios.

[CBS](#) needs to be used together with CVM and can only be mounted and used after the file system is partitioned or formatted. COS and CBS both have distinct performance metrics for different use cases.

What limits do cloud disks have?

- A single elastic cloud disk can be scaled up to 32 TB, and cannot be scaled down.
- Elastic cloud disks can only be mounted to CVMs within the same availability zone.
- Up to 20 elastic cloud disks can be mounted to a single CVM as data disks. You can directly mount elastic cloud disks to a CVM you are purchasing or [do so later](#).
- You can purchase up to 50 elastic cloud disks at one time on the [CBS console](#).

What are the differences between different types of cloud disks?

CBS comes with three types:

- Premium Cloud Storage: suitable for most I/O applications including Web/APP services, logical processing, as well as small and medium-sized sites.
- SSD Cloud Storage: suitable for applications including transactional workloads, as well as small and medium-sized databases.
- Enhanced SSD: suitable for latency-sensitive or high-performance applications including medium and large-sized databases, NoSQL, and log analysis.

Each Cloud Storage service offers unique performance and features at different prices. You can select the cloud disk that best suits your application requirements and budget. For more information on disk types and performance, see [Cloud Disk Types](#).

What advantages do cloud disks have?

Cloud disks offer high reliability, elasticity and performance. They are easy to use and support snapshot backup. For more information, see [Product Strengths](#).

Can elastic cloud disks be used as system disks?

No. System disks cannot be unmounted or mounted.

Can cloud disks be used as data disks?

Yes. All types of local disks and cloud disks can be used as data disks.

Can cloud disks be mounted and unmounted?

- Elastic cloud disks can be mounted and unmounted.

- System disks cannot be mounted or unmounted.

Can elastic cloud disks be mounted and unmounted in batches?

- Elastic cloud disks can be mounted and unmounted in batches.
- System disks cannot be mounted or unmounted.

Billing FAQs

Last updated : 2020-10-27 11:37:07

Are cloud disks billed independently?

Elastic cloud disks are billed independently based on a pay-as-you-go basis.

How are cloud disks priced?

The billing mode for cloud disks is pay-as-you-go. Pricing varies by cloud disk types and billing modes. For more information, see [Price Overview](#).

How much is the pay-as-you-go cloud disk?

Billing standard for different types of pay-as-you-go cloud disks varies by regions. For more information, see [Price Overview](#).

How will users be notified when pay-as-you-go CBS data disks expire?

The system estimates the number of days it takes your account balance to become negative based on the current balance and your usage in the past 24 hours. If it is less than 5 days, the system will send a balance alert to your Tencent Cloud account creator and all collaborators who have subscribed to messages via email, SMS, the Message Center, etc.

How will users be notified when pay-as-you-go CBS data disks are in arrears?

Pay-as-you-go resources are billed on the hour. When your account becomes negative, the system will send a balance alert to your Tencent Cloud account creator and all collaborators who have subscribed to messages via email, SMS, the Message Center, etc.

What is the repossession mechanism for pay-as-you-go CBS data disks?

- You can continue to use the pay-as-you-go cloud disk for 2 hours from the moment your account balance becomes negative. You will be billed for this period. After 2 hours, its services will be suspended (cloud disk is unavailable and can only store data). You will still be billed according to the billing standard (even if the account balance is negative) until data is completely erased.
- If your Tencent Cloud account is topped up to a positive balance within 15 days after the cloud disk has its services suspended, the disk can be restored.
- If the balance is less than 0 for 15 days after the cloud disk has its services suspended, the pay-as-you-go disk will be repossessed. All data will be erased and **cannot be recovered**. Tencent Cloud account creator and all collaborators will be notified via email, SMS, and the console Message Center.

Performance FAQs

Last updated : 2020-01-30 09:04:37

How to measure the performance of a cloud disk?

The following metrics are generally used to describe the performance of a storage device:

- IOPS: Read/write count per second. IOPS varies by the underlying drive type of the storage device.
- Throughput: Read/written data volume per second, unit in MB/s.
- Latency: Time elapsed from sending an I/O operation to receiving an acknowledgement (in seconds).

How to test the disk performance?

We recommend you use FIO to perform pressure testing and verification on the cloud disk. For more information, see [Measuring the performance of cloud disks](#).

Does the I/O size of the application read-write affect the IOPS performance?

Yes. For a given resource, the IOPS you get is determined by the I/O size of the read and write operations of the application. Usually, when reading and writing small blocks (for example, I/O size of 256 KB), the IOPS performance of the disk can be fully used.

Does the I/O size of the application read-write affect the throughput performance?

Yes. For a given resource, the throughput you get is determined by the I/O size of the read and write operations of the application. Usually, when reading and writing large blocks (for example, I/O size of 1MB), the throughput performance of the disk can be fully used.

Can multiple disks be logically combined into one disk to get better performance?

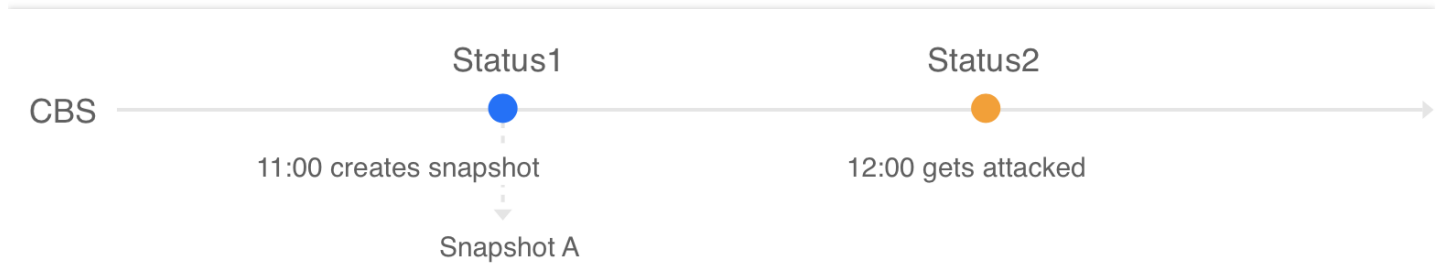
Yes. You can stripe these multiple cloud disks that are mounted to the CVM to balance I/O load to multiple disks, increasing I/O parallel capacity to implement better performance than a single disk. For more information, see [Building LVM logical volumes from multiple elastic cloud disks](#).

Snapshot FAQs

Last updated : 2020-12-14 11:00:07

A cloud disk has adopted a three-copy redundancy mechanism for data security. Why do we still need to use snapshots?

In situations where a logic-level data error occurs, for example, suppose a user deletes data by mistake, or if the data is damaged by a virus or file system exceptions, all three copies of the data stored will be affected and historical data cannot be restored. If you have created a snapshot previously, you can use the snapshot to restore data to the point in time the snapshot was created.



Suppose an administrator created snapshot A for a cloud disk at 11:00, and the cloud disk was infected with a virus at 12:00, which caused that data to be unusable. In this case, the three copies of the data would have been updated to status 2, and the data cannot be restored. To restore data to the uninfected status 1, you have to use the snapshot A created at 11:00.

Why does the used disk storage 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 size will be larger than the data size displayed in the file system because:

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

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:

Name	Snapshots	Images
Characteristics	Backup data of a cloud disk at a certain point in time	CVM software configuration template, which contains information about the operating system and pre-installed programs
Use Cases	<ul style="list-style-type: none"> • Regularly back up important business data • Back up data before major operations • Produce multiple copies of data 	<ul style="list-style-type: none"> • Back up systems that will remain unchanged in the short term • Deploy applications in batches • Migrate the system

Why can't some of the snapshot be used to create images?

You can create snapshots for both system disks and data disks. However, only the snapshot of a system disk can be used to create a custom image.

Why can't I delete the snapshot?

To delete a snapshot, please make sure that the snapshot you want to delete is not associated with any image. To query associated snapshots of an image, go to the [image](#) page and click the ID/Name of the image.

How are snapshots created from an image billed?

Images use the CBS snapshot service for data storage. The associated snapshots of a custom image will be billed by the storage size. To view the size of your snapshots, please go to [Snapshot Overview](#).

How are shared images billed?

The owner of shared images is charged the snapshot fee, while the recipient account will not be charged. For more information about the snapshot billing, see [Billing Overview](#).

What is a scheduled snapshot?

A scheduled snapshot is automatically created for the cloud disk according to the associated scheduled snapshot policy. To use this feature, you must first create a scheduled snapshot policy and associate it with the cloud disk. For more information, see [Scheduled Snapshots](#).

What limits do scheduled snapshots have?

A maximum of 30 scheduled snapshot policies can be created in one region. Each scheduled snapshot policy can be associated with up to 200 cloud disks. In addition, snapshots created according to the scheduled snapshot policies must comply with snapshot quota. For more information, see [Use Limits](#).

How are snapshots created?

You can create a snapshot using the following methods:

- Custom snapshot: you can manually create a snapshot to quickly save data of the cloud disk at a specified point in time. For more information, see [Creating Snapshots](#).
- Scheduled snapshot: you can associate a scheduled snapshot policy with the cloud disk to periodically create and delete snapshots.

Is snapshot available in all availability zones?

Yes.

How are snapshots billed?

Snapshots are billed according to your total snapshot storage size in each region in a **pay-as-you-go** manner; and the fee is calculated and deducted on the dot of every hour. For more information about billing, see [Billing Overview](#) and [Price Overview](#).

Do I need to unmount a disk or interrupt all reads and writes before creating a snapshot?

No. You can create a real-time snapshot while the disk is connected and in use, without affecting the normal operation of your business. However, the snapshot can only capture the written data but not cached data of the cloud disk. To ensure all application data is captured, we recommend that you suspend all disk I/O operations before creating a snapshot. For a cloud disk that is used as a system disk, we recommend that you shut down the CVM to create a more complete snapshot.

Will creating a snapshot affect the disk performance?

Creating a snapshot will occupy a small amount of the cloud disk I/O. We recommend creating snapshots during off-peak hours of your business.

How long does it take to create a snapshot?

The time it takes to create a snapshot is influenced by factors such as the number of disk writes and the underlying read-write operations. Creating a snapshot will not affect your disk use.

How do I create a cloud disk using a snapshot?

For more information, see [Creating Cloud Disks Using Snapshots](#).

How do I roll back snapshots?

For more information, see [Rolling Back Snapshots](#).

Do I need to shut down the CVM to roll back to a snapshot?

- For a cloud disk that has been mounted to a CVM, you have to shut down the CVM to roll back to a snapshot.
- For a cloud disk that has not been mounted, you can directly roll back to a snapshot.

Can I read a previous snapshot to restore a cloud disk?

Yes. You can use an existing snapshot created at any point in time to restore data, regardless of the snapshot's point in time.

Can I delete the source snapshot when it is being replicated?

No. It can only be deleted after the replication is complete.

Is the new snapshot created by replication still associated with the source snapshot's source disk?

The snapshot created via cross-region replication is no longer associated with the source disk of the source snapshot. The rollback feature is unavailable for replicated snapshot.

Will associated snapshots be deleted when the CVM is terminated?

No, the associated snapshots will not be deleted automatically. You can delete them via the console or an API. For more information, see [Deleting Snapshots](#).

How do I delete a snapshot?

- For cloud disk snapshots, you can delete them directly via the console or an API. For more information, see [Deleting Snapshots](#).
- For snapshots associated with custom images, you must first delete the custom images and then [delete the snapshots](#).

Can I use a snapshot created from the system disk to create a cloud disk?

No. You can only use the snapshot of the system disk to create a custom image.

Does the snapshot support the cross-region replication feature?

Yes. You can use this feature to easily migrate data and services to other regions, or construct your cross-region disaster recovery system. For more information, see [Cross-region Snapshot Replicating](#).

Usage FAQs

Last updated : 2020-12-07 12:01:13

What scenarios are cloud disks ideal for?

- You can [purchase](#) and [mount](#) elastic cloud disks to use them as data disks when the disk space on your CVM is insufficient.
- You can purchase and mount elastic cloud disks to use them as data disks when you purchase a CVM without additional data disks.
- When you have 10 GB of important data stored in an elastic cloud disk on CVM A and need to share the data with CVM B. You can directly [unmount] (<https://intl.cloud.tencent.com/document/product/362/32400>) the disk from CVM A, and then [mount](#) it to CVM B.
- When a single maximum-sized cloud disk cannot meet your storage requirements, you can purchase multiple cloud disks with equal capacity and configure LVM logical volumes to provide a larger disk capacity.
- When I/O performance of a single disk cannot meet your business requirements, you can purchase multiple cloud disks and configure RAID 0, RAID 10, etc., to enhance I/O performance.

For more information, see [Use Cases](#).

How do I select a cloud disk?

Determine your use cases before selecting a disk type.

- For general use cases including Web/APP applications, logical processing, and small and medium-sized sites, we recommend that you select Premium Cloud Storage as a more cost-efficient solution.
- For medium-sized databases and image processing users, we recommend SSD for a better performance.
- For use cases with high requirements for workloads and performance, including large databases, video business, NoSQL, and Elasticsearch, we recommend that you select Enhanced SSD for optimal performance and minimum storage latency.

What are items I should look out for when using a cloud disk?

- For an independently purchased cloud disk, use the file system's UUID or label as the file system ID when configuring the `fstab` static file system information. This will ensure kernel name consistency of the disk on CVM when any cloud disk is unmounted and remounted.
- If the cloud disk expires before CVM, the cloud disk will be restricted, unmounted, or even repossessed within a certain period. To prevent business interruption, please take note of the cloud disk's expiration date and renew it promptly.
- Consider using the `nofail` option when configuring `fstab` if unmounting a cloud disk from your CVM does not severely impact your core business. This prevents the CVM from reporting an error when it restarts after the cloud disk is unmounted.
- We recommend that you run `san policy=onlineAll` in `diskpart` before using the cloud disk in Windows.
- When unmounting a cloud disk from Windows, we recommend that you first interrupt all read/write operations on the disk, and perform the `offline` operation.

If a custom image and a data disk snapshot is used, how do I automatically mount the data disk when starting a new instance?

For more information, see the "Automatic Mounting" section in [Mounting Cloud Disks](#).

How do I purchase a cloud disk?

You can purchase a cloud disk by creating one via the console or an API. For more information, see [Creating Cloud Disks](#).

How do I view cloud disk details?

1. Log in to the [CBS console](#).
2. At the top of the **Cloud Block Storage** page, select the region where the disk you want to view resides.
3. Locate the disk in the list, and view disk information:
To view more information, click the ID/Name of the disk to enter the details page.

How do I view the cloud disk usage on the console?

Cloud Monitor will automatically be enabled once a CVM instance is created. You can view the usage of an initialized cloud disk that is mounted to CVMs by following the steps below:

1. Log in to the [CVM console](#) and access the **Instances** page.
2. Select the ID/Name of the target instance to access the details page.
3. Click on the **Monitoring** tab to view the instance disk usage:

What are the most common cloud disk operations?

For more information, see [Operation Overview](#).

Why can't I locate the CVM to which I want to mount a cloud disk?

Cloud disks cannot be mounted across availability zones. Ensure that the CVM instance you want to use has not been released and that it is in the same region and availability zone as your cloud disk.

Why am I unable to view the new cloud disk capacity that I mounted to a CVM instance?

Some Linux CVMs may not recognize an elastic cloud disk. You must first enable the disk hot swapping function in the CVM. For more information, see [Enabling the disk hot swapping function](#).

After manually mounting a cloud disk, you must perform subsequent operations shown below to make it usable.

Creation mode	Cloud disk capacity	Subsequent operations
Create directly	Cloud disk capacity < 2 TB	Initializing cloud disks (smaller than 2 TB)
	Cloud disk capacity ≥ 2 TB	Initializing cloud disks (larger than or equal to 2 TB)
Create from a snapshot	Cloud disk capacity = Snapshot capacity	<ul style="list-style-type: none"> Mounting to a Windows CVM: after logging in to the instance, make the disk online > Disk Management. Mounting to a Linux CVM: after logging in to the instance, run the <code>mount</code> comma
	Snapshot capacity < Cloud disk capacity ≤ 2 TB or 2 TB < Snapshot capacity < Cloud disk capacity	<ul style="list-style-type: none"> Mounting to a Windows CVM: extending partitions and file systems (Windows) Mounting to a Linux CVM: extending partitions and file systems (Linux)
	Snapshot capacity ≤ 2 TB < Cloud disk capacity	<ul style="list-style-type: none"> If the snapshot uses the MBR partition format: see Initializing Cloud Disks (Larger than 2TB) to use the GPT partition instead. This If the snapshot uses the GPT partition format: <ul style="list-style-type: none"> Mounting to a Windows CVM: extending partitions and file systems (Windows) Mounting to a Linux CVM: extending partitions and file systems (Linux)

How do I partition and format a mounted cloud disks?

For more information, see [Initializing Cloud Disks \(Smaller than 2TB\)](#) or [Initializing Cloud Disks \(Larger than 2TB\)](#).

What is the relationship between data writing and partition formatting?

A new data disk or data disk partition must be formatted before use. The disk should also be recorded with the data structure. Formatting the disk establishes a file system on the data disk for data writing. The write-in data size varies by the file systems:

- For Windows:
 - Quick formatting: assigns the file system only to partitions and rewrites the directory table with little use of your disk capacity.
 - Standard formatting: in addition to the quick formatting tasks, normal formatting scans the partitions sector by sector to identify and mark bad sectors, and fills empty blocks in the cloud disk, which means it essentially writes data to the entire disk. Hence, the capacity of the first snapshot approximates that of the cloud disk.
- For Linux: after the cloud disk is formatted and before the instances is written with data, the capacity of the first snapshot depends on the format of the disk file system.

After expanding my cloud disk, do I need to unmount existing partitions when creating a new independent partition on Linux?

Yes. To do this, please follow the steps below:

- Run the following command to unmount the data disk.

```
umount <Mount point>
```

If the mount point is `/data`, then run the following command:

```
umount /data
```

- Unmount the file systems from all partitions on the cloud disk, and perform the subsequent operations. You can run the command again to confirm that the unmounting operation is successful.

```
mount | grep '<Disk path>'
```

If the return is null, then all file systems have been unmounted from partitions on the cloud disk.

Can multiple CVMs access a cloud disk?

No. You can mount up to 20 cloud disks to the same CVM, but you cannot mount the same cloud disk to multiple CVMs. You can only share data by [unmounting the data disk](#) from CVM A and then [mounting](#) it to CVM B.

How do I identify cloud disks of the same size and type mounted to the same CVM?

- In Linux, you can view the relationship between the elastic cloud disks and the device name by running the following command:

```
ls -l /dev/disk/by-id
```

```
[root@VM_63_126_centos ~]# ls -l /dev/disk/by-id/
total 0
lrwxrwxrwx 1 root root 9 Mar  1 17:31 virtio-disk-35t32l8g -> ../../vdf
lrwxrwxrwx 1 root root 9 Mar  1 17:31 virtio-disk-je13nl0g -> ../../vdc
lrwxrwxrwx 1 root root 9 Mar  1 17:31 virtio-disk-jwz43lpg -> ../../vde
lrwxrwxrwx 1 root root 9 Mar  1 17:31 virtio-disk-punhzcju -> ../../vdd
```

- In Windows, you can view the relationship by running the following command:

```
wmic diskdrive get caption,deviceid,serialnumber
```

Or

```
wmic path win32_physicalmedia get SerialNumber,Tag
```

```
C:\Users\Administrator>wmic diskdrive get caption,deviceid,serialnumber
Caption DeviceID SerialNumber
Red Hat VirtIO SCSI Disk Device \\.\PHYSICALDRIVE0
Red Hat VirtIO SCSI Disk Device \\.\PHYSICALDRIVE1 disk-hmvcmqpm
```

Can I change a CVM system disk from a local disk to a cloud disk?

Yes. To do this, follow the steps below:

Note :

Refer to [Creating Snapshots](#) and [Creating Custom Images](#) to back up data before performing operations to ensure data security.

- Log in to the [CVM console](#) and access the **Instances** page.
- Locate the instance of which you want to change the disk, select **More > Instance Status > Shutdown** under the **Operation** column to shut down the selected instance.
- After the instance is shut down, select **More > Resource Adjustment > Change Disk Media Type**.
- In the pop-up window, select a target cloud disk type, check **I have read and agreed to Rules for Changing Disk Media Type**, and click **Change Now**.
- Double-check the information, make a payment if applicable, and wait for the process to complete.
For more information, see [Change Disk Media Type](#).

Can I unmount the data disk that came with the CVM?

Since November 2017, data disks purchased with CVMs can be unmounted and remounted. Data disks remounted to CVMs with differing expiration dates might result in lifecycle management issues. We provide various options such as expiration date alignment and auto-renewal configuration for you to better manage data risks lifecycle issues. We recommend you carefully select the appropriate option to avoid data loss caused by disk expiration.

Why is the separate cloud disk I created released together with my instance?

When mounting a cloud disk, you can decide if it should be released with the instance automatically. This can be configured via the [CBS console](#) or [ModifyDiskAttributes](#) API.

What should I do if I lost my data after restarting my Linux instance?

Follow the steps below if you lost all data in a directory (such as /data) after restart due to unmount data disk partitions:

1. Run the `fdisk -l` command to view the unmounted partitions.
2. Run the `mount /dev/vdb /data` command to mount partitions.
3. Run the `df -h` command to see if they are mounted successfully.
4. Complete your [automatic mounting](#) configurations. Then cloud disk will be automatically mounted when you start the Linux instance.

When I unmount a cloud disk, will its data be lost?

Data in cloud disks will not be modified during mounting or unmounting. To ensure data consistency, we strongly recommend that you follow the steps below:

- 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 cloud disk.
- In Windows, stop all read and write operations on all file systems of the cloud disk before unmounting. Otherwise, the data that has not finished being read or written will be lost.

How do I unmount an elastic cloud disk?

For more information, see [Unmounting Cloud Disks](#).

What happens to the system after my cloud disk expires?

The following instructions are only applicable to elastic cloud disks that support unmounting. Non-elastic cloud disks that do not support unmounting have the same lifecycle as CVMs. For more information, see [Arrears](#).

- Pay-as-you-go cloud disks:
 - You can continue to use the pay-as-you-go cloud disk for 2 hours from the moment your account balance becomes negative. You will be billed for this period. After 2 hours, the services will be suspended and the cloud disk will only store data. Until data is completely deleted, you will still be billed according to the billing standard even if the account balance is negative.
 - If your Tencent Cloud account is topped up to a positive balance within 15 days after the cloud disk has its services suspended, the disk can be restored.
 - If the account balance remains negative for more than 15 days after the cloud disk services are suspended, the pay-as-you-go disk will be repossessed. All data will be erased and **cannot be recovered**. When your cloud disk is repossessed, the Tencent Cloud account creator and all collaborators will receive a notification via email, SMS, and the console Message Center.

Can I change the cloud disk type after a successful purchase?

No. However, you can create a snapshot for data backup and then use the snapshot to create a cloud disk of your needed type.

Can I adjust cloud disk capacity after a successful purchase?

Yes. Cloud disks support capacity adjustment. Cloud disk capacity can be [expanded](#), but not reduced.

Do I have to shut down the CVM instance before a cloud disk expansion?

No. Please note that you need to assign the expanded capacity to an existing partition, or format it into an independent new partition. Directions on the operating system of the CVM: [Extending Partitions and File Systems \(Windows\)](#) or [Extending Partitions and File Systems \(Linux\)](#).

What are the requirements for extending the file system?

Only cloud disks support expansion. Local disks cannot be expanded. For more information, see [Cloud Disk Expansion Scenarios](#).

Note :

- We strongly recommend that you create a snapshot before expansion to ensure data security.
- If the maximum capacity of the cloud disk cannot meet your business needs, please try [building up RAID groups](#) or [building LVM logical volumes with multiple elastic cloud disks](#).
- MBR partition supports disk with a maximum capacity of 2 TB. When you partition disk with a capacity greater than 2 TB, we recommend that you create and mount a new data disk and use the GPT partition format to copy data.

How do I expand a cloud disk?

For more information about expansion operations, see [Cloud Disk Expansion Scenarios](#).

Why does the capacity seem unchanged after I expanded my data disk?

The expansion on the console only increases the storage capacity of the data disk. You also need to log in to your CVM instance and extend the partitions and file systems. For more information, see:

- [Extending Partitions and File Systems \(Windows\)](#)
- [Extending Partitions and File Systems \(Linux\)](#)

Do CVMs support CPU/memory expansion?

If the system disk of the CVM is a cloud disk, you can adjust its CPU and memory.

What should I do if the cloud disk is partitioned in MBR format and cannot be expanded?

MBR partition supports disk with a maximum capacity of 2 TB. When you partition disk with a capacity greater than 2 TB, we recommend that you create and mount a new data disk and use the GPT partition format to copy data.

What should I do if a cloud disk cannot meet my business requirements even at its maximum capacity?

We recommend you [build up RAID groups](#) or [build LVM logical volumes with multiple elastic cloud disks](#).

How do I build up a RAID group by using multiple elastic cloud disks?

For more information, see [Building Up RAID Groups](#).

How do I build LVM logical volumes by using multiple elastic cloud disks?

For more information, see [Building LVM Logic Volumes with Multiple Elastic Cloud Disks](#).

How do I export the data from a cloud disk?

You can use FTP to upload and download data. For more information, see [Building the FTP Service \(Windows\)](#) and [Building the FTP Service \(Linux\)](#).

What happens to the data when a CVM is terminated?

- The lifecycle of a system disk is the same as that of the CVM. When the CVM is terminated, the data stored in the system disk will also be terminated.
- The lifecycle of a data disk (that is, an elastic cloud disk) is independent from that of a CVM. You can decide if an elastic cloud disk and its data will be retained after a CVM expires.

Therefore, we recommend that you use elastic cloud disks to store data that needs to be saved for a long term.

How can cloud disks be recovered after being formatted?

Cloud disks cannot be recovered after being formatted. We recommend that you [create a snapshot](#) before formatting.

How do I delete a cloud disk?

- The lifecycle of a system disk is the same as the CVM. It can only be deleted when the [CVM instance is terminated](#).
- The lifecycle of a data disk (that is, an elastic cloud disk) is independent from that of the CVM. It can be deleted separately. For more information, see [Terminating cloud disks](#).

Can my system disk be partitioned?

No.

How do I update the mounting information at the mount point?

LinuxOS supports the `systemd mount` command which will generate a mounting configuration file on top of the existing `.mount` file. Mounting to the same directory `/run/systemd/generator/` will be affected by this command.

Issue

Assume you have mounted the data disk vdb to the directory `/opt/apps` (run the `mount -a` command on the `fstab` file based on disk uuid). Now, you want to mount a new data disk vdc to the same directory and replace the old one. If you directly mount vdc to the directory, you will not be able to read the data.

Solution

1. Delete the configuration of the corresponding mount point (for example, run the `rm /run/systemd/generator/opt-apps.mount` command).
2. Run the `reload` command (for example, use `systemctl daemon-reload`).
3. Mount the data disk (for example, run the `mount /dev/vdc /opt/apps` command).