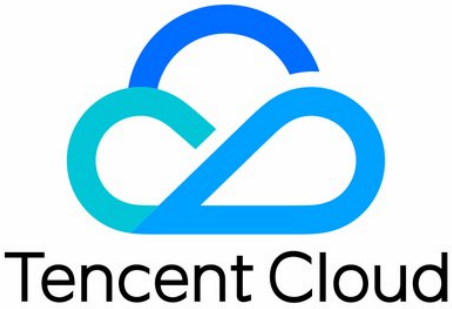
Cloud Block Storage

FAQs



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Contents

FAQs
- FAQ about Feature
- Billing FAQs
- Performance FAQs
- Snapshot
- Usage

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FAQs
FAQ about Feature

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What is Tencent Cloud Block Storage?

Tencent Cloud Block Storage (CBS) provides block-level storage for Cloud Virtual Machine (CVM) instances. It is a highly available and reliable storage medium, offering a variety of disk types to meet different read and write requirements. For more information about CBS, please refer to Overview of Cloud Block Storage.
CBS is recommended when data changes frequently, fast read and write speeds are required, and persistent data storage is needed. CBS can be mounted on any running instance in the same availability zone and can be used for instance file systems, database storage, etc. The data on CBS exists independently of the instance lifecycle. For more operations on CBS, please refer to Overview of CBS Operations.

What are the features of Tencent Cloud CBS?

Tencent Cloud CBS offers five types of cloud disks: Premium Cloud Storage, General Purpose SSD, SSD, Enhanced SSD, and Ultra-high Speed SSD. The features of CBS are as follows:

- Elastic attaching and detaching: Elastic cloud disks can be attached and detached. Up to 20 elastic cloud disks can be attached to a CVM 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: CBS supports data backup through snapshot creation, enhancing data reliability and enabling quick data recovery when necessary. It also supports the creation of new cloud disks based on snapshots, facilitating rapid business deployment.

What is the difference between COS and CBS?

- Object Storage: It features no file system, directory structure, file number, and space limit. It requires Web API interface for storage management and access, and provides SDK and tools for integration. It can be used independently without relying on cloud servers. Object storage supports access to large-scale data, but it is not suitable for scenarios requiring millisecond response or random read and write.
- Cloud Disks: These need to be paired with a cloud server and require partitioning or formatting of the file system before they can be mounted for use. Different types of cloud disks have different performance metrics to meet various 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.

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- A single CVM can support up to 20 elastic cloud disks as data disks. These can be added directly when purchasing the CVM or can be attached after the CVM has been created.
- Up to 50 elastic cloud disks can be purchased at once via the Cloud Block Storage Console.
- If a monthly subscription elastic cloud disk is not renewed within 7 days after its expiration, the system will unmount the disk from the CVM and move it to the recycle bin. For specific recovery mechanisms, please refer to Arrears Description.

> **Note**
> At present, when a monthly subscribed elastic cloud disk is attached to a monthly subscribed cloud server, you can choose the following renewal methods based on your actual needs:
> - Unified expiry time with the CVM
> - Enable monthly auto-renewal of the cloud disks
> - Attach directly without enabling auto-renewal

What advantages do cloud disks have?

Cloud disks have advantages such as reliability, elasticity, high performance, ease of use, and snapshot backup. For more details, please refer to Product Advantages.

Can elastic cloud disks be used as system disks?

No. System disks cannot be attached or detached.

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?

- Cloud disks can be attached and detached when they are used as data disks.
- System disks cannot be mounted or unmounted.

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Billing FAQs

Last updated: 2023-09-19 21:52:41

Are cloud disks billed independently?

Elastic cloud disks are billed independently. Monthly subscription and pay-as-you-go manner are supported.

How are cloud disks priced?

The billing modes for cloud disks are bill by monthly subscription and pay-as-you-go. Pricing varies by cloud disk types and billing modes. For more information, see Price Overview.

How much is the monthly subscribed cloud disk?

The billing standards for monthly subscribed cloud disks vary by region and type. For more information, see Price Overview.

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

The billing standards for pay-as-you-go cloud disks vary by region and type. For more information, see Price Overview.

How do I return the monthly subscribed CBS data disk?

To help you better use CBS services, we offer standard and 5-day free returns for monthly subscribed elastic cloud disks (i.e., data disks).

- Each account is entitled to a default **1** monthly subscribed elastic cloud disk with a 5-day no-questions-asked return policy. The valid payment will be refunded to the payer's Tencent Cloud account.
- Each account is entitled to a default of **199** annual monthly subscribed elastic cloud disks for regular self-service return each year. After deducting the fees you have already used, the refund will be returned to the payer's Tencent Cloud account in the **proportion of cash and gift cards used for the purchase**.

For refund details, please refer to Refund Policy.

How are users notified about the expiration of monthly subscribed CBS data disks?

You will receive expiration alerts on the expiration date of a monthly subscribed resource and on the 7th, 5th, and 3rd day ahead. The expiration alerts are sent to the creator account via email, SMS, and the console Message Center. Collaborators under the creator account can log in to the CVM console, and choose Message Center > Message Subscription to specify the notification methods and add message recipients. For more information about the configuration, see Overdue Payment Alert.

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How are users notified about the overdue payment of monthly subscribed CBS data disks?

You will receive overdue payment alerts on the expiration date of a monthly subscribed resource and on the 3rd, 5th, and 7th day thereafter by the specified methods. You can log in to the CVM console, and choose Message Center > Message Subscription to specify the notification methods and add message recipients.

What is the repossession mechanism for monthly subscribed CBS data disks?

The following instructions are only applicable to elastic cloud disks that support detachment. Non-elastic cloud disks that do not support detachment have the same lifecycle as CVMs. For more information, see Payment Overdue.

- 7 days before the resources expiration date, you will receive an expiration alert and a renewal reminder.
- If your account balance is sufficient and auto-renewal is enabled, cloud disk will be auto-renewed on the expiry date.
- If your cloud disk is not renewed before it expires or on the expiration date, the system limits its performance from the point in time of its expiration. Then, you will notice a significant decrease in performance when using the cloud disk.
- If you do not renew your cloud disk within 7 x 24 hours after it expires, the system will suspend the service (the cloud disk will be unavailable, but the data will be retained) and **forcibly disassociate** it from the cloud server (if any), and the cloud disk will enter the recycle bin. You can still renew and retrieve the cloud disk from the recycle bin, but the **start date of the renewal period for the retrieved cloud disk will be the expiration date of the previous period.**
- If your cloud disk is not renewed and retrieved within 7 x 24 hours after entering the recycle bin, the system will begin to release resources. The data in the expired cloud disk will be erased and **cannot be retrieved.**

Please call 4009100100 if you need further information.

How are users notified about expiration of pay-as-you-go CBS data disks?

The system estimates the available service duration every day based on your account balance and the consumption records of your pay-as-you-go resources in the past 24 hours. If the estimated service duration is less than 5 days, the system sends a balance alert to the creator of the Tencent Cloud account and the subscribed collaborators by the specified methods, such as email, SMS, and the console Message Center

How are users notified about overdue payment of pay-as-you-go CBS data disks?

For pay-as-you-go resources, fees are deducted on the hour. When your account balance becomes negative, the system sends an alert to the creator of the Tencent Cloud account and the

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subscribed collaborators by the specified methods, such as email, SMS, and the console Message Center.

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, the services will be suspended and 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 cloud disk service is suspended and the balance remains negative for more than 15 days, the system will reclaim the pay-as-you-go cloud disk. The creator and all collaborators of the Tencent Cloud account will be notified via email, SMS, and in-app messages. All data will be deleted and **cannot be recovered** during the reclaiming process.

Please call 4009100100 if you need further information.

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Performance FAQs

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How to measure the performance of a cloud disk?

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

- IOPS: The number of reads/writes per second, measured in counts. The underlying driver type of the storage device determines the different IOPS.
- Throughput: read/written data volume per second, in MB/s.
- Latency: Time that has elapsed from sending an I/O operation to receiving an acknowledgement, in seconds.

How do I test the disk performance?

We recommend using FIO for stress testing and verification of cloud disks. For specific operations, please refer to How to measure the performance of a cloud disk.

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

Indeed. For a given resource, the IOPS you obtain depends on the I/O size of the application's read and write operations. Typically, the IOPS performance of the disk can be fully utilized during small block reads and writes (for example, when the I/O size is 256KB).

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

Indeed. For a given resource, the throughput you obtain depends on the I/O size of the application's read and write operations. Typically, the disk's throughput performance can be fully utilized during large block reads and writes (for instance, when the I/O size is 1MB).

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

Indeed. You can stripe multiple cloud disks mounted to a cloud server, balance the I/O load across multiple disks, enhance I/O parallelism, and thus achieve higher performance beyond a single disk. For more details, please refer to Building LVM Logical Volumes with Multiple Elastic Cloud Disks.

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Snapshot

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

In the event of logical layer anomalies, such as accidental data deletion by users, system virus infection causing data damage, or file system abnormalities, the three copies of actual stored data will be simultaneously modified, making it impossible to retrieve the normal historical data. However, if a snapshot has been created at a historical point in time, it can be used to restore the data to its normal state at that point in time.
For instance, if an administrator creates a snapshot A of the cloud disk at 11:00, and the cloud disk is infected by a virus at 12:00, rendering the data unusable, the data on the three copies would have been updated to content of state 2, making data recovery impossible. Only by utilizing the snapshot A created at 11:00 can the data be restored to the uninfected state 1.

Why does the used disk capacity displayed in the file system differ from the snapshot size?

A file system 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.
- Data deletion: Deleting data involves modifying the written data blocks, while snapshots back up all modified data blocks.

If you wish to reduce the corresponding snapshot size, we recommend purchasing a new cloud disk, copying the existing files to the new disk, and then recreating the snapshot. Alternatively, you could first back up the data, then reinitialize and remount the cloud disk as a file system, copy the data back, and finally recreate the snapshot. To reinitialize the cloud disk, log in to the **Cloud Server Console**, select Cloud Disk from the left navigation bar, and choose **More** > **Reinitialize**.

What are the differences between snapshots and images?

Assuming an instance has no data disks mounted and all data is written on the system disk, creating an image alone cannot provide data protection for the system disk. This is because images do not have a scheduled creation feature. If the system disk data is damaged, it can only be traced back to the initial data when the image was created, which does not serve the purpose of data protection. The detailed differences are as follows:

Name	Snapshot	Image
Characteristics	Backup data of a cloud disk at a certain point in time	A template for cloud server software configurations, including the operating system and pre-installed applications.

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Scenarios	• Regularly back up important business data • Back up data before major operations • Application of multiple replicas of production data	• 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?

Both system and data disks can create snapshots. However, only system disk snapshots can be used to create custom images, which can then be used to create one or more instances with the same environment.

Why can’t I delete the snapshot?

Please ensure that the snapshot to be deleted has no associated images or that the associated images have been deleted. An image and its associated snapshot are bound together. When a custom image is created, the system automatically creates a related snapshot. Before deleting this snapshot, the associated image must be deleted first. You can view the associated snapshot information in the image details page by selecting the image ID in the "Image" list.

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, go to Snapshot Overview.

How are shared images billed?

Shared images only charge the snapshot fees for the current account, and the accounts with shared images are not billed. For snapshot billing details, please refer to Snapshot Billing Overview.

What is a scheduled snapshot?

Scheduled snapshots are automatically created by the system for the cloud disks associated with the scheduled snapshot policy you have created. To use this feature, you need to first create a scheduled snapshot policy and associate it with the cloud disk. For detailed operations, please refer to Scheduled Snapshots.

What limits do scheduled snapshots have?

In a single region, up to 30 scheduled snapshot policies can be created, and each policy can be associated with a maximum of 200 cloud disks. Moreover, the snapshots created by the scheduled snapshot policy adhere to the quota limitations of snapshots. For more details, please refer to Usage Limitations.

How are snapshots created?

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You can create a snapshot using the following methods:

- Manual Creation: Users can manually create snapshots to quickly save the data of the cloud disk at a specific moment. For more information, see Creating Snapshots.
- The system creates and deletes snapshots automatically at regular intervals: By associating a cloud disk with a scheduled snapshot policy, the system will create and delete snapshots according to the set schedule. For more information, see Scheduled Snapshots.

Is the snapshot feature available in all availability zones?

The snapshot feature is now supported in all availability zones.

How are snapshots billed?

You will be charged based on the total storage capacity of the snapshots you own in each region. Currently, we only support the pay-as-you-go postpaid billing method, which is settled on the hour. For more information, please refer to Billing Overview and Pricing Summary.

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

No, it's not necessary. You can create a snapshot in real-time while the disk is connected and in use, without affecting your normal operations. However, the snapshot can only capture data that has been written to the cloud disk and does not include data cached in memory by applications or the operating system. To ensure that all application data is captured in the snapshot, it is recommended that you thoroughly suspend I/O operations on the disk before creating the snapshot. For cloud disks used as system disks, it is recommended that you shut down the cloud server before creating the snapshot to ensure a more complete snapshot.

Does snapshot creation affect disk performance?

Creating a snapshot occupies 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?

It depends on the the number of disk writes and the underlying read-write operations. Creating a snapshot will not affect the normal usage of the disk.

How do I create a cloud disk by using a snapshot?

For detailed operations, please refer to Creating a Cloud Disk from a Snapshot.

How do I roll back snapshots?

For specific operations, please refer to Rolling Back Data from Snapshots.

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

- For a cloud disk that has been mounted to a CVM, you have to shut down the CVM during

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rollback.

- For a cloud disk that is not mounted, you can directly perform rollback.

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

Yes, you can use a snapshot from any point in time to restore data, regardless of when the snapshot was taken.

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 still associated with the source snapshot's source disk after replication is complete?

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. If you need to delete related snapshots, please go to the console or use the API to delete them. For more details, please refer to Delete Snapshot.

How do I delete a snapshot?

- To delete a snapshot of a cloud disk, you can do so directly from the console or via API. For detailed instructions, please refer to Deleting Snapshots.
- For associated snapshots of custom images, you must first delete the custom image before you can delete the snapshot.

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

No, it is not possible. System disk snapshots cannot be used to create cloud disks, but they can be used to create custom images.

Does the snapshot support the cross-region replication feature?

Indeed, this feature allows you to conveniently and swiftly migrate data and services to other regions. Additionally, you can build a cross-region disaster recovery system for your business based on this feature. For more details, please refer to Cross-Region Snapshot Replication.

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Usage

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What scenarios are cloud disks ideal for?

- When you find that the disk space of the purchased CVM is insufficient, you can purchase and attach elastic cloud disks to use as data disks to meet your storage needs.
- You can purchase and attach elastic cloud disks to use them as data disks when you purchase a CVM without additional data disks.
- When Server A has 10GB of important data on an elastic cloud disk that needs to be shared with Server B, you can directly detach the disk from Server A and then attach it to Server 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.
- If the I/O performance of a single disk cannot meet business requirements, you can purchase multiple cloud disks and configure RAID 0, RAID 10, and so on to enhance the I/O performance.

For more information, see Cloud Disk Application Scenarios.

How do I select cloud disk types?

Determine your use cases before selecting a disk type.

- For general use cases including Web/APP applications, logical processing, and small and medium sites, we recommend that you select Premium Cloud Disk for a higher cost efficiency.
- 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 the precautions for using cloud disks?

- For independently purchased cloud disks, when using `fstab` to configure static file system information, the file system identifier should use the UUID or label of the file system to prevent changes in the kernel name of the cloud disk in the CVM due to multiple mounts/unmounts of multiple cloud disks on the same CVM.
- If the cloud disk expires before the cloud server, it will be throttled, detached, or even reclaimed after a period of time. To prevent any impact on your business, please ensure to renew it in a timely manner.
- If unmounting a cloud disk from a CVM does not severely impact your critical business, consider using the `nofail` option when configuring `fstab` to prevent errors during system restart after the cloud disk is unmounted from the CVM.

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- We recommend that you execute the `san policy=OnlineAll` operation in `diskpart` before using the cloud disk under the Windows operating system.
- When detaching a cloud disk from a Windows operating system, it is recommended that you first interrupt all read and write operations to the disk and perform an `offline` operation.

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

For specific operations, please refer to the "Automatic Mounting" section in Attaching Cloud Disks.

How do I purchase a cloud disk?

You can create cloud disks via the console or API. For specific operations, please refer to Creating Cloud Disks.

How do I view cloud disk details?

1. Log in to the Cloud Disk 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. See below:
   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?

Tencent Cloud activates the TCOP service by default when creating a CVM, so you can view the usage of cloud disks that have been attached to the CVM and initialized through the console. The steps are as follows:

1. Log in to the Cloud Virtual Machine console and navigate to the "Instance" list page.
2. Select the ID/Name of the target instance to access the details page.
3. On the instance details page, select the **Monitoring** tab to view the usage of cloud disks under that instance, as shown in the following image:

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What are the most common cloud disk operations?

For more information, see Cloud Disk Operations Overview.

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

Cloud disks cannot be mounted across different availability zones. Please ensure that your CVM instance and cloud disk are in the same region and availability zone, and that your CVM has not been released.

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

Some Linux CVMs may not recognize elastic cloud disks. You need to enable the hot swapping feature in the CVM first. For more information, see Enabling Disk Hot Swapping.
After manually attaching a cloud disk, you must perform subsequent operations shown below to make it usable.

Creation Mode	Cloud disk capacity	See Also
Manually created	Cloud disk capacity < 2 TB	Initialize Cloud Disks (less than 2 TB)
	Cloud disk capacity ⩾ 2 TB	Initializing cloud disks (⩾ 2 TB)

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Created from a snapshot	Cloud disk capacity = Snapshot capacity	• To attach to a Windows CVM: After logging in to the instance, go to **Server Manager** > **Storage** > **Disk Management**, and the disk will be available for use once it is online. • To attach to a Linux CVM: After logging in to the instance, run the `mount <disk partition> <mount point>` command, for example, `mount /dev/vdb /mnt` to use it.
	Snapshot capacity < Cloud disk capacity ⩽ 2 TB Or: 2 TB < Snapshot capacity < Cloud disk capacity	Attach to Windows CVM: Extending Partitions and File Systems (Windows) Mount to Linux CVM instance: Extending Partitions and File Systems (Linux)
	Snapshot capacity ⩽ 2 TB < Cloud disk capacity	• If the snapshot uses a MBR partition, Please refer to Initializing Cloud Disk (greater than or equal to 2TB) to repartition using GPT. **This operation will delete the existing data.** • If the snapshot uses a GPT partition, ○ Attach to Windows CVM: Extending Partitions and File Systems (Windows) ○ Mount to Linux CVM instance: Extending Partitions and File Systems (Linux)

How do I partition and format the attached cloud disk?

For specific operations, please refer to Initializing Cloud Disks (less than 2 TB) or Initializing Cloud Disks (2 TB or more).

What is the relationship between data writing and partition formatting?

A new data disk or data disk partition must be formatted and have its data structure recorded on it before it can be used normally. The purpose of formatting is to establish the file system of the data disk. Therefore, establishing a file system on the data disk implies writing data to the disk. Moreover, different file systems write files of different sizes during formatting:

Formatting a Windows System
• Quick Format: This only assigns a file system to the partition and rewrites the directory table. The actual space occupied by a quick format is relatively small. • Normal formatting: In addition to performing quick formatting tasks, it also scans each sector of the partition to identify and mark bad sectors, filling the empty blocks of the cloud

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disk, which is equivalent to writing the full data volume of the cloud disk. At this point, the first snapshot will be approximately equal to the capacity of the cloud disk.

Formatting in Linux System

After the cloud disk is formatted and before the instance is written with data, the capacity of the first snapshot depends on the format of the disk file system.

Can the data disk capacity and the system disk capacity be aggregated?

Merging is not supported. You can expand the capacity of your data or system disk by expanding the cloud disk to increase storage space.

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

Yes. To do this, follow the steps to unmount the partition:

1. Run the following command to unmount the data disk:

```
umount <mount point>
```

If the mount point is `/data`, execute the following:

```
umount /data
```

2. Please unmount all file systems from all partitions on the cloud disk before proceeding with subsequent operations. You can repeatedly run the following command to confirm that all file systems on this disk have been unmounted.

```
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 one cloud disk?

This is currently not supported. You can attach up to 20 cloud disks to a single CVM, but multiple CVMs cannot share the same cloud disk simultaneously. Data sharing can only be achieved by detaching from CVM A and then attaching to CVM B.

The cloud disks attached to the CVM is of the same size and type. How can I distinguish them?

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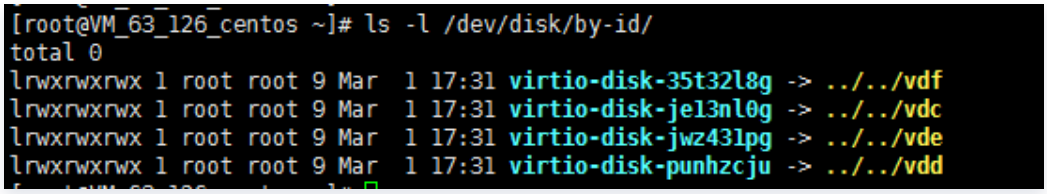
Linux OS

Check the relationship between the elastic cloud disks and the device name by running the following command:

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



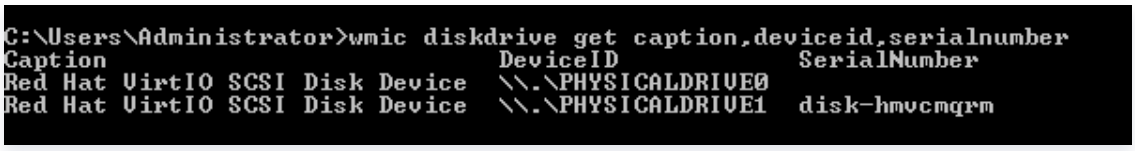
Windows OS

Check the relationship between the elastic cloud disks and the device name by running the following command:

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

Or:

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



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

Yes. To do this, follow the steps below:

> **Note**
> Before making adjustments, to ensure data safety, please create an image or create a snapshot to back up your data.

1. Log in to the Cloud Virtual Machine console and navigate to the "Instance" list page.
2. Select **More** > **Instance Status** > **Shutdown** on the right side of the row where the instance is located to perform the shutdown operation.

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3. After the instance is shut down, select **More** > **Resource Adjustment** > **Change Disk Media Type**.
4. In the pop-up "Change Disk Media" window, select the target cloud disk type, agree to the instructions, and click **Convert Now**.
5. Double-check the information, make a payment if applicable, and wait for the process to complete.

> **Note**
> - For more information on changing disk media, see Adjusting Disk Media.
> - For the cost associated with adjustments, please refer to Disk Medium Adjustment Fee.

Can I unmount a data disk that I purchased along with a CVM?

Since November 2017, data disks purchased with CVMs support detachment and reattachment. To avoid lifecycle management difficulties caused by detaching and reattaching to another CVM with a different expiration time, we provide several options during attachment, such as aligning expiration times and setting auto-renewal. Please choose an appropriate lifecycle management method to avoid data loss due to disk expiration.

I purchased a cloud disk independently to the CVM. But when I terminate the CVM, the cloud disk is released as well.

You can set whether a cloud disk is automatically released with the instance when attaching it. This can be done through the Cloud Disk Console or by using the Modify Cloud Disk Attributes API to enable or disable the automatic release feature for the cloud disk.

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

If you find that all data in a certain directory (such as /data) is lost after performing a restart operation, and it is known that the cause is due to the data disk partition not being mounted, please follow the steps below to resolve this issue:

1. Run the `fdisk -l` command to view the unmounted data disk partitions.
2. Execute the `mount /dev/vdb /data` command to mount the data disk partition.
3. Execute the `df -h` command to verify if the mount was successful.
4. By following the steps in Automatic Mounting, you can set up your Linux instance to automatically mount the corresponding cloud disk at startup.

Will data be lost during cloud disk unmounting?

Data within cloud disks remains unaltered during the process of mounting or unmounting. To maintain data consistency, we strongly advise:

- In Linux, log in to the CVM instance and run the `umount` command on the cloud disk. After the command is successfully executed, go to the console to unmount the disk.

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

How do I detach an elastic cloud disk?

For detailed instructions, please refer to 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 detachment. Non-elastic cloud disks that do not support detachment have the same lifecycle as CVMs. For more information, see Payment Overdue.

Monthly-subscribed cloud disk

- 7 days before the resources expiration date, you will receive an expiration alert and a renewal reminder.
- If your account balance is sufficient and auto-renewal is enabled, cloud disk will be auto-renewed on the expiry date.
- If your cloud disk is not renewed before it expires or on the expiration date, the system limits its performance from the point in time of its expiration. Then, you will notice a significant decrease in performance when using the cloud disk.
- If you do not renew your cloud disk within 7 x 24 hours after it expires, the system will suspend the service (the cloud disk will be unavailable, but the data will be retained) and **forcibly disassociate** it from the cloud server (if any), and the cloud disk will enter the recycle bin. You can still renew and retrieve the cloud disk from the recycle bin, but the **start date of the renewal period for the retrieved cloud disk will be the expiration date of the previous period**.
- If your cloud disk is not renewed and retrieved within 7 x 24 hours after entering the recycle bin, the system will begin to release resources. The data in the expired cloud disk will be erased and **cannot be retrieved**.

Pay-as-you-go Cloud Disk

- 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 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 cloud disk service is suspended and the balance remains negative for more than 15

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days, the system will reclaim the pay-as-you-go cloud disk. The creator and all collaborators of the Tencent Cloud account will be notified via email, SMS, and in-app messages. All data will be deleted and **cannot be recovered** during the reclaiming process.

Please call 4009100100 if you need further information.

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 the cloud disk capacity after a successful purchase?

Yes, cloud disks support capacity adjustment. They can be scaled up but not scaled down.

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

No shutdown is required. Please note that after the expansion is complete, depending on the operating system type of your cloud service, you need to perform the Extending Partitions and File Systems (Windows) or Extending Partitions and File Systems (Linux) operation to allocate the expanded capacity to an existing partition, or format the expanded capacity into a new independent partition.

What are the requirements for extending the file system?

Only cloud disks support expansion, local disks cannot be expanded. For specific operation guidelines, please refer to Expansion Scenario Introduction.

Note

- We strongly recommend that you create a snapshot before expansion to ensure data security.
- If the maximum capacity of a cloud disk still cannot meet your business needs, you can build a RAID group with multiple elastic cloud disks or construct LVM logical volumes with multiple elastic cloud disks.
- The maximum disk capacity supported by MBR partition format is 2TB. If your disk partition is in MBR format and needs to be expanded to more than 2TB, it is recommended to create and mount a new data disk, use the GPT partition method, and copy the data to the new disk.

How do I expand a cloud disk?

For detailed instructions, please refer to Expanding Scenarios Overview.

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

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After successfully expanding the storage capacity of the data disk through the console, you still need to log in to the cloud server to expand the partition and file system. 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?

The maximum disk capacity supported by MBR partition format is 2TB. If your disk partition is in MBR format and needs to be expanded to more than 2TB, it is recommended to create and mount a new data disk, use the GPT partition method, and copy the data to the new disk.

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

We suggest you build a RAID group using multiple elastic cloud disks or construct LVM logical volumes with multiple elastic cloud disks.

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

For specific operations, please refer to Building a RAID Group with Multiple Elastic Cloud Disks.

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

For specific operations, please refer to Building LVM Logical Volumes with Multiple Elastic Cloud Disks.

How do I export the data from a cloud disk?

You can use FTP for data upload and download. For more information, see Building FTP Service on Windows CVM and Building FTP Service on Linux CVM.

What happens to the data when a CVM is terminated?

- The lifecycle of a system disk completely follows that of a 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 choose whether to retain the elastic cloud disk and its data outside of the CVM lifecycle.

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?

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Cloud disks cannot be recovered after formatting. We recommend you to create a snapshot before formatting.

How do I delete a cloud disk?

- The lifecycle of the system disk follows that of the CVM and can only be deleted when the instance is terminated.
- The lifecycle of a data disk (i.e., an elastic cloud disk) is independent of the CVM and can be deleted separately. For specific operations, please refer to Destroying Cloud Disks.

Can my system disk be partitioned?

Supported, but partitioning the system disk is not recommended.
Forcing partitioning with third-party tools may lead to system crashes, data loss, and other unknown risks. You can perform partition expansion after enlarging the system disk. For detailed instructions, see Online Expansion of System Disk Partition and File System.

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

Due to the characteristics of the systemd mount action in the Linux system, a systemd-related mount configuration file will be generated during the mount. If the existing `.mount` configuration information is not deleted, it will interfere with the mounting of the same directory (path: `/run/systemd/generator/`).

Issue

For instance, the data disk vdb (mounted to the directory `/opt/apps` using the disk uuid method `mount -a` in the fstab file) is now being replaced and another data disk vdc is being mounted to the same directory. If you mount the directory directly, you will not be able to read the data from vdc in the directory.

Solution

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

How do I perform 4 KiB alignment for a cloud disk in a Linux instance?

Checking whether the cloud disk is 4 KiB-aligned.

Run the following command to check whether the cloud disk is 4KiB-aligned.

```
fdisk -lu
```

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As shown below, if the Start value in the command output is divisible by 8, then the disk is 4 KiB-aligned.

```
   Device Boot      Start         End      Blocks   Id  System
/dev/vdb1            2048    20971519    10484736   83  Linux
```

Instructions

> **Note**
> The alignment operation will erase the existing data on the cloud disk. Please proceed with caution! If necessary, please create a snapshot in advance to prevent the loss of your business data.

fdisk tool (supports MBR partitioning)

1. Run the following command to access the fdisk tool.

   ```
   fdisk /dev/vdb
   ```

2. Enter **n** and press **Enter** to start creating a new partition. As shown below:

   ```
   Command (m for help): n
   Partition type
      p   primary (0 primary, 0 extended, 4 free)
      e   extended (container for logical partitions)
   Select (default p):
   ```

   The returned information indicates that there are two types of disk partitions:
   - **p** denotes the primary partition.
   - **e** denotes an extended partition.

3. Taking the creation of a primary partition as an example, enter **p** and press **Enter** to start creating a primary partition, as shown below:

   ```
   Select (default p): p
   Partition number (1-4, default 1):
   ```

   In the echoed information, **Partition number** represents the primary partition number, and you can choose between 1 – 4, as shown below:

4. For example, to select partition number 1, enter the primary partition number **1** and press **Enter**. As shown in the following figure:

   ```
   Partition number (1-4, default 1): 1
   First sector (2048-20971519, default 2048):
   ```

   In the echo information, **First sector** represents the initial cylinder area, which can be selected from 2048 to 125829119, with 2048 as the default.

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5. For example, select the default initial cylinder number 2048 and press **Enter**. As shown in the figure below:

```
First sector (2048-20971519, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-20971519, default 20971519):
```

In the echo information, **Last sector** indicates the end of the cylinder area. You can choose from 2048 to 20971519, with 20971519 being the default.

6. For instance, select the default ending cylinder number 20971519 and press **Enter**, as illustrated below:

```
Last sector, +sectors or +size{K,M,G,T,P} (2048-20971519, default 20971519):

Created a new partition 1 of type 'Linux' and of size 10 GiB.

Command (m for help):
```

7. Enter **p** and press **Enter** to view the details of the newly created partition. As shown in the figure below, this indicates that it has been aligned to 4KiB.

```
Command (m for help): p
Disk /dev/vdb: 10 GiB, 10737418240 bytes, 20971520 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xef409768

Device     Boot Start      End  Sectors Size Id Type
/dev/vdb1        2048 20971519 20969472  10G 83 Linux

Command (m for help):
```

8. Enter **w** and press **Enter** to write the partition results into the partition table.

Parted Tool (Supports GPT Partitioning)

1. Run the following command to access the parted tool:

```
parted /dev/vdb
```

2. Run the following command to set the disk partition format to GPT.

```
mklabel gpt
```

3. Enter `unit s` and press **Enter** to set the disk's measurement unit to cylinders.
4. For instance, to create a partition for the entire disk, enter `mkpart opt 2048s 100%` and press **Enter**. Here, 2048s represents the starting capacity of the disk, and 100% represents

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the ending capacity. This is just a reference, and you can plan the number and capacity of disk partitions according to your business needs.

5. Enter **p** and press **Enter** to check whether the disk partition format has been successfully set. As shown in the figure below, this indicates that it is 4KiB-aligned.

```
(parted) p
Model: Virtio Block Device (virtblk)
Disk /dev/vdb: 20971520s
Sector size (logical/physical): 512B/512B
Partition Table: gpt
Disk Flags:

Number  Start  End        Size       File system  Name  Flags
 1      2048s  20969471s  20967424s                opt

(parted)
```

6. Enter **q** and press **Enter** to exit the parted partition tool.

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