



Cloud Storage Services - Volume Backup Service



Foreword

- This chapter describes Volume Backup Service (VBS) on HUAWEI CLOUD.



Objectives

- On completion of this course, you will be able to:
 - Describe VBS.
 - Know the concepts, functions, application scenarios, and common operations of VBS.
 - Know the VBS advantages and the charging standards.
 - Know the frequently asked questions (FAQs) and some troubleshooting cases of VBS.



Contents

- 1. Service Overview**
2. Key Features
3. Common Operations
4. Limitations and Restrictions
5. FAQs and Troubleshooting Cases
6. Related Services



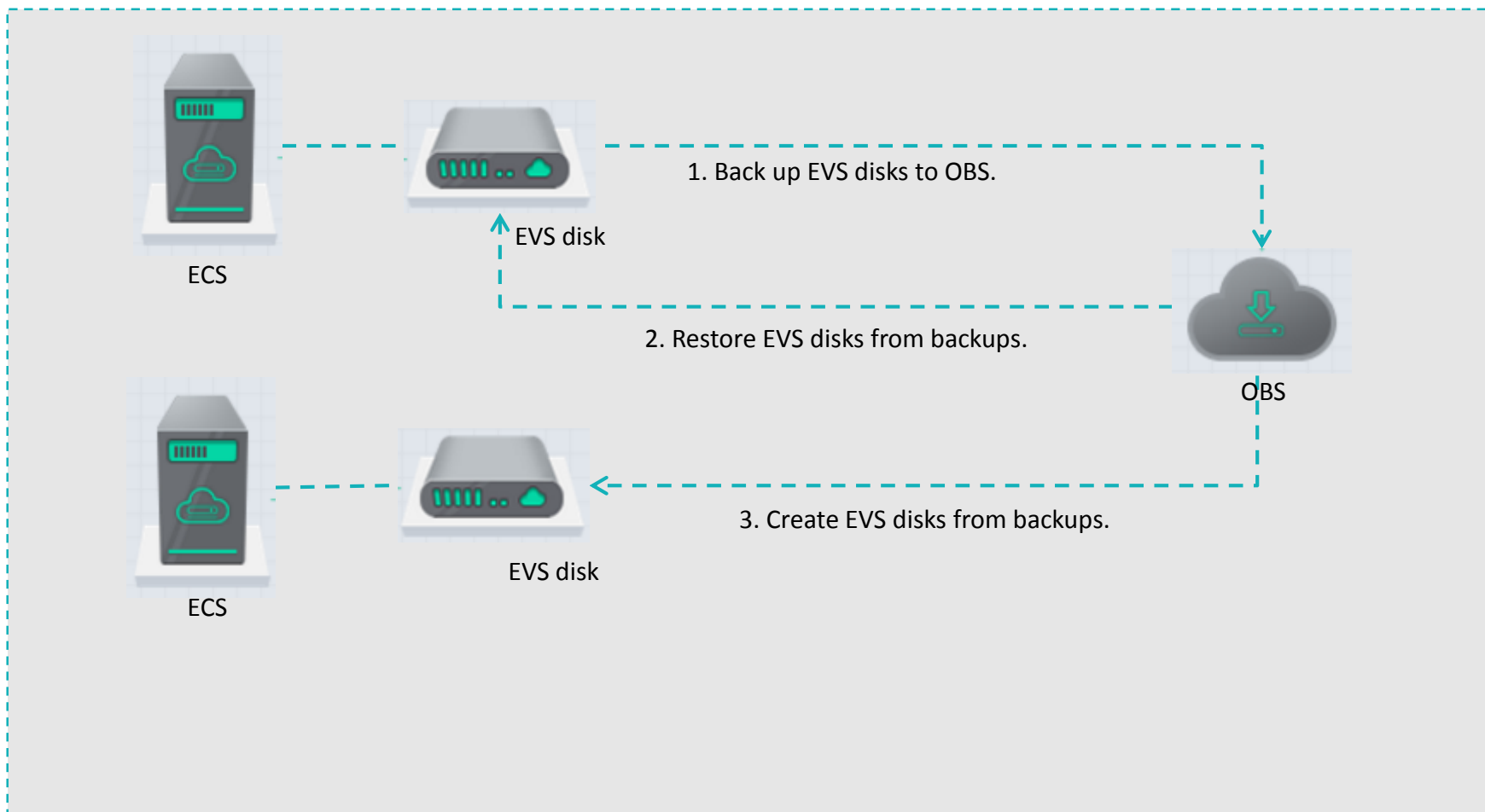
Introduction to VBS

- HUAWEI CLOUD provides Cloud Server Backup Service (CSBS) and Volume Backup Service (VBS) to protect your data against viruses, unintentional deletions, and software and hardware faults. This course introduces VBS.
- VBS secures your data. If an Elastic Volume Service (EVS) disk is faulty or encounters a logical error (for example, mis-deletion, hacker attack, and virus infection), you can use data backups to restore data quickly.



Product Architecture

Region A





Comparison with CSBS

Aspect	CSBS	VBS
Backup and restoration objects	All or part of EVS disks (including system and data disks) on a single Elastic Cloud Server (ECS)	One or more specified EVS disks (system or data disks)
Recommended scenarios	An entire ECS needs to be protected.	Only data disks need to be backed up, because the system disk does not contain personal data.
Advantages	All EVS disks on an ECS have consistent data. They are backed up at the same time, eliminating the problem of data inconsistency caused by backups generated at different points in time.	Backup cost is reduced while maintaining data security.



Main Functions

- EVS disk backup
- Policy-driven data backup
- Data backup management
- Restoration of EVS disk data from backups
- EVS disk creation from backups



Application Scenarios



Hacker Attack or Virus Infection

VBS immediately restores data to the latest snapshot point in time.



Data Mis-deletion

VBS immediately restores data to the latest snapshot point in time.



Application Update Error

VBS immediately restores data to the latest snapshot point in time.



ECS Breakdown

VBS immediately restores data to the latest snapshot point in time to ensure normal ECS running.



Advantages

Traditional disk backup

- Stores data to backup storage media, with low reliability.
- Uses dedicated backup software, needing extra expertise.
- Requires dedicated backup storage devices, with high cost on procurement and configuration.



Secure



Easy to use



Cost-effective

VBS

- Provides 99.999999999% durability for OBS data, ensuring your backup data security.
- Provides a simple GUI for you to back up or restore your data with a few clicks.
- Performs incremental backups after the initial full backup to reduce storage space occupied.
- Pays for backup storage space on a per-use basis, reducing costs.



Charging Standards

- VBS itself is currently **free of charge**.
- Because VBS backups are stored on Object Storage Service (OBS), you are **charged** for the OBS service you use by **storage capacity and storage duration**.



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Key Features

- **Online backup**
- **Permanent incremental backup**
- **OBS for backup storage**
- **Policy-driven automatic backup**



Online Backup

- Backs up EVS disks **based on snapshots**.
- Supports **on-demand** online backup at any time.
- Does **not interrupt** services.
- Does **not require uninstallation** of EVS disks.
- Requires **no agents** to be deployed in the service system.
- Minimizes impacts on customers' service systems.
- Requires no agents to be deployed on VMs.



Permanent Incremental Backup

- Offers permanent incremental backup.
- Improves backup efficiency.
- **Cuts down** the backup **window by 95%**.
- **Reduces** backup data **storage space**.
- Performs **full backup** upon the **initial backup** operation.
- Performs **incremental backup** for **subsequent backup** operations.
- Restores data to any backup point in time, independent from single backups.



OBS for Backup Storage

- VBS stores backup data on OBS, improving data availability.
- Backup data can be remotely replicated to other storage devices, improving reliability.
- OBS is inexpensive, reducing customers' costs.
- An EVS disk only occupies one snapshot no matter how many times it is backed up, relieving the burden on local storage performance and reducing local storage space.



Policy-Driven Automatic Backup

- A backup policy can be associated with multiple EVS disks to implement automatic backup for them, greatly reducing manual works.
- You can set execution times for periodic backup to ensure data is backed up in every critical point in time.
- You can also set the number of backups, so that expired backups are deleted automatically, avoiding unnecessary backups being retained.



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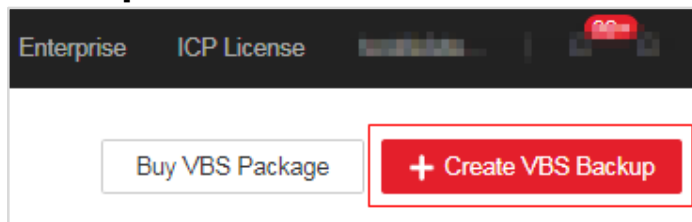
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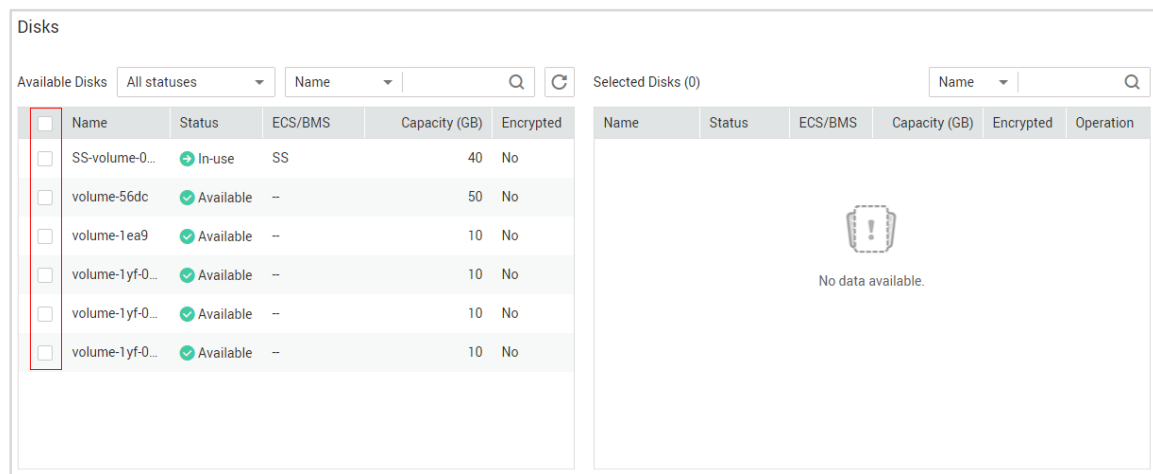
Common Operations (1)

- Creating backups

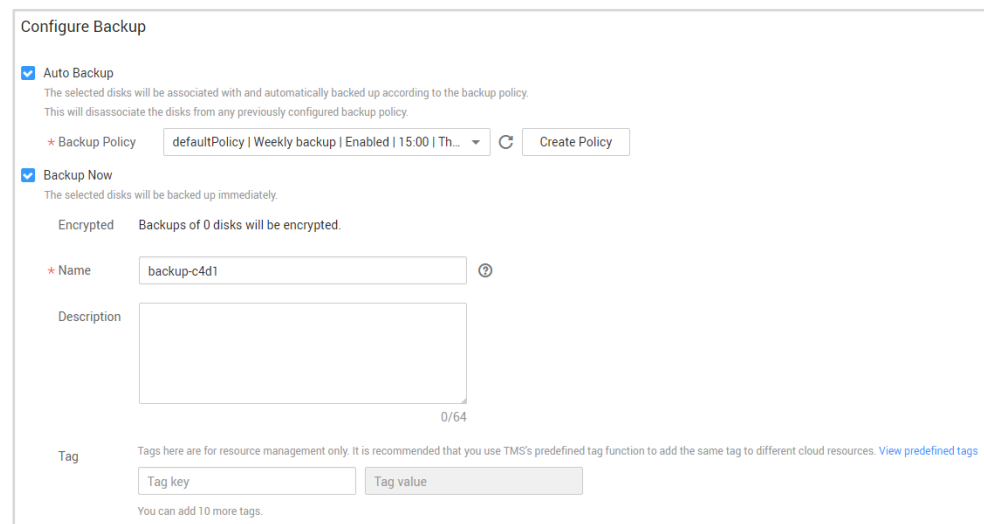
1. On the VBS page, click **Create VBS Backup**.



2. Select EVS disks you want to back up.



3. Set the backup name and select the backup methods.





Common Operations (2)

- Creating EVS disks from backups

1. Click Create Disk.

Delete

My backups

All statuses

Name

Search by Tag

↻

<input type="checkbox"/>	Name	Status	Disk Name	Disk Capacity (GB)	Created	Encrypted	Operation
<input type="checkbox"/>	manualcp_c286_462...	Available	--	40	Nov 30, 2018 11:23:31 G...	No	Restore Disk Create Disk More

2. Configure the disk specifications.

Buy Disk [ⓘ](#) [← Back to Disk List](#)

Billing Mode

Yearly/Monthly

Pay-per-use

Disks are billed based on the purchase period, and fees need to be paid in advance. In scenarios where your resource usage period is easy to estimate, this mode is more cost effective.

Region

AP-Hong Kong

Regions are geographic areas isolated from each other. Resources are region-specific and cannot be used across regions through internal network connections. For low network latency and quick resource access, select the nearest region.

AZ

us-east-1a

Disks can only be attached to servers in the same AZ. Once a disk has been created, you cannot change the AZ of the disk.

Disk Specifications

Common I/O

40

GB

Source Backup: manualcp_c... (c4840ce1-4a3a-44e3-a4b9-...)

Max IOPS --

Advanced Settings

Not required

Configure

Auto Backup

☐ Enable **Recommended**

It is recommended that you back up EVS data. The cost of backups will be included in the final bill. 1 GB of backed up data will cost 0.314 CNY per month. (To obtain more cost-effective services, [buy a package](#)).

Tag

It is recommended that you use TMS's predefined tag function to add the same tag to different cloud resources. [View predefined tags](#)

Key

Value

Tag key

Tag value

You can add 10 more tags.

Disk Name

volume-189b

If you buy multiple disks at a time, the value you entered will be used as the prefix of disk names, and one disk name will be composed of this value and a four-digit number. For example, if you enter my_disk and set the quantity to 2, the disk names will be my_disk-0001 and my_disk-0002.

Quantity

1

2

3

4

5

6

7

8

9 month

1 year

2 year

3 year

☐ Auto Renewal

You can create 4 more disks. To obtain a higher quota, click [Increase Quota](#).

3. Confirm the disk information and click Submit.

Configure

Confirm

Pay

Details

Resource	Configuration	Billing Mode	Usage Duration	Quantity	Subtotal
	Region AZ Source Backup				
	Hong Kong us-east-1a manualcp_c286_4627c53b-7da9-4656-9b18-da22603c3c3c:c4840ce1-4a3a-44e3-a4b9-56b0d28028b6				
Disk	Capacity (GB) Disk Type Disk Encryption Device Type Disk Sharing Disk Name Tag	Yearly/Monthly	1 month	1	¥18.90
	40 Common I/O No VBD Disabled volume-189b				

Disk Price: ¥18.90

This price is an estimate and may differ from the final price. [Pricing details](#)

Previous

Submit



Common Operations (3)

- Deleting a single backup

1. In the row of the disk, choose **More** > **Delete**.

▼	<input type="checkbox"/>	autobk_f270	Available	volume-1yf-00...	10	Nov 29, 2018 16:31:21 GM...	No	Restore Disk	More ▼
▼	<input type="checkbox"/>	autobk_4b39	Available	volume-1ea9	10	Nov 29, 2018 15:01:32 GM...	No	Restore	Create Disk
▼	<input type="checkbox"/>	manualcp_839c_a9fd...	Available	-	40	Nov 29, 2018 14:16:44 GM...	No	Restore	Share Backup
									Delete

2. Confirm the deletion information and click **OK**.

Delete Backup

Are you sure you want to delete the following backup?
A deleted backup cannot be recovered. Exercise caution when performing this operation.

Name	Status	Disk Name	Disk Capacity (GB)	Created
autobk_f270	Available	volume-1yf-0001	10	Nov 29, 2018 16:31:2...

- Deleting backups in a batch

1. Select the backups you want to delete and click **Delete** in the upper left corner.

Delete	<input checked="" type="checkbox"/>	Name	Status
▼	<input type="checkbox"/>	manualcp_c286_462...	Available
▼	<input type="checkbox"/>	manualbk_6425_ecs...	Available
▼	<input type="checkbox"/>	manualcp_e619_a9fd...	Available
▼	<input checked="" type="checkbox"/>	autobk_f270	Available
▼	<input checked="" type="checkbox"/>	autobk_4b39	Available
▼	<input type="checkbox"/>	manualcp_839c_a9fd...	Available
▼	<input type="checkbox"/>	manualcp_cec3_120...	Available
▼	<input type="checkbox"/>	manualcp_cec3_533...	Available
▼	<input type="checkbox"/>	manualcp_cec3_57f3...	Available
▼	<input type="checkbox"/>	manualcp_cec3_891...	Available

2. Confirm the deletion information and click **OK**.

Delete Backup

Are you sure you want to delete the following backups?
If you delete the only backup of a disk and want to back up the disk later, you must create a full backup. A full backup is a chargeable item. A deleted backup cannot be recovered. Exercise caution when performing this operation.

Name	Status	Disk Name	Disk Capacity (GB)	Created
autobk_4b39	Available	volume-1ea9	10	Nov 29, 2018 15:01:3...
autobk_f270	Available	volume-1yf-0001	10	Nov 29, 2018 16:31:2...



Common Operations (4)

- Viewing backup details

1. Click the expansion arrow at the left of the backup name.

<input type="checkbox"/>	Name	Status	Disk Name
<input checked="" type="checkbox"/>	autobk_f270	Available	volume-1yf-00...

2. View the backup details.

<input type="checkbox"/>	Name	Status	Disk Name	Disk Capacity (GB)	Created	Encrypted	Operation
<input checked="" type="checkbox"/>	autobk_f270	Available	volume-1yf-00...	10	Nov 29, 2018 16:31:21 G...	No	Restore Disk More ▾
<div><div><div>Nameautobk_f270</div><div>IDc48fc679-ad2e-46d7-82b0-a43bfa230d32</div><div>StatusAvailable</div><div>AZus-east-1</div><div>CreatedNov 29, 2018 16:31:21 GMT+08:00</div><div>SourceVBS</div><div>EncryptedNo</div><div>KMS Key Name-</div><div>KMS Key ID-</div></div><div><div>Disk Namevolume-1yf-0001</div><div>Disk ID2dc0284b-c5aa-477d-beba-c313ba2a81c4</div><div>Disk Capacity (GB)10</div><div>Used AsData disk</div><div>Description-</div><div>SharedNo</div></div></div>							

- Searching for backups

Specify the filter criteria to search for backups.

My backups ▾	All statuses ▾	Name ▾	autobk × Q	Search by Tag ▾	↻
Disk Name	Disk Capacity (GB)	Created	Name	Encrypted	Operation
volume-1yf-00...	10	Nov 29, 2018 16:31:21 G...	ID	No	Restore Disk More ▾
volume-1 ea9	10	Nov 29, 2018 16:31:21 G...	Disk ID	No	Restore Disk More ▾
volume-1 ea9	10	Nov 22, 2018 15:01:34 GM...	KMS key ID	No	Restore Disk More ▾



Common Operations (5)

- Sharing backups with other projects

1. Click the expansion arrow at the left of the name of the backup.

Name	Status	Disk Name	Disk Capacity (GB)	Created	Encrypted	Operation
autobk_f270	Available	volume-1yf-00...	10	Nov 29, 2018 16:31:21 G...	No	Restore Disk More

Name	autobk_f270	Disk Name	volume-1yf-0001
ID	c48fc679-ad2e-46d7-82b0-a43bfa230d32	Disk ID	2dcd284b-c5aa-477d-beba-c313ba2a81c4
Status	Available	Disk Capacity (GB)	10
AZ	可用区1	Used As	Data disk
Created	Nov 29, 2018 16:31:21 GMT+08:00	Description	-
Source	VBS	Shared	No
Encrypted	No		
KMS Key Name	-		
KMS Key ID	-		
Tags			
Shares			

3. Enter the project ID which can be obtained from the **My Credential** page.

Share Backup

A backup that is shared with multiple projects cannot be simultaneously used in all projects to create disks. [Learn more](#)

Project ID

[+ Add](#)

You can share the current backup with 10 more projects.

OK Cancel

2. On the **Shares** panel, click **Share Backup**.

Shares

A backup that is shared with a project can be used in the project to create new disks.

Share Backup You can share the current backup with 10 more projects.

Project ID

4. Specify the search criteria to **Backups shared with me**, and you can view the backup.

Job Status 670

Backups shared with me

Name	Status/Progress	Disk ID
autobk_7e48	Available	06286604-c59c-4aaf-bf96-df9b01...



Common Operations (6)

- Creating a backup policy

1. On the **Policies** tab page, click **Create Policy**.

Backups **Policies**

Backup policies can be configured and enabled to automatically back up disks. [Learn more](#)

Create Policy You can create 31 more backup policies.

- Editing backup policies

1. In the row of the policy, click **Edit**.

Name/ID	Enable	Execution Time	Backup Period	Retention Rule	Associated Disks	Operation
policy-2084 d132520a-21c5-48...	Enabled	10:00	Sun	90 Days	0	Edit Associate Disk More

2. Modify the configuration parameters of the backup policy.

2. Configure the backup policy.

Create Policy

* Name policy-2084

Enable ☒

* Execution Time 00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00
08:00 09:00 **10:00** 11:00 12:00 13:00 14:00 15:00
16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00

* Backup Period ☒ Weekly ☐ Daily Sun Mon Tues Wed Thur Fri Sat

* Retention Rule ☒ Time Period 3 months ☐ Backup Quantity

Tag Tag key Tag value

You can add 10 more tags.

You can create 3,000 more backups. [Increase quota](#)

OK Cancel

Edit Backup Policy

* Name policy-2084

Enable ☒

* Execution Time 00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00
08:00 09:00 **10:00** 11:00 12:00 13:00 14:00 15:00
16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00

* Backup Period ☒ Weekly ☐ Daily Sun Mon Tues Wed Thur Fri Sat

* Retention Rule ☒ Time Period 3 months ☐ Backup Quantity

Tag Tag key Tag value

You can add 10 more tags.

You can create 3,000 more backups. [Increase quota](#)

OK Cancel



Common Operations (7)

- Executing a backup policy

1. In the row of the policy, click **Execute**.

Name/ID	Enable	Execution Time	Backup Period	Retention Rule	Associated Disks	Operation
policy-2084 d132520a-21c5-48...	Enabled	10:00	Sun	90 Days	1	Edit Associate Disk More ▾
defaultPolicy 728fea9d-e32b-4c2...	Disabled	04:00	Every day	14 backups/R...	0	Edit Associate Disk Disable Execute Delete

- Deleting a backup policy

1. In the row of the policy, choose **More** > **Delete**.

Name/ID	Enable	Execution Time	Backup Period	Retention Rule	Associated Disks	Operation
policy-2084 d132520a-21c5-48...	Enabled	10:00	Sun	90 Days	1	Edit Associate Disk More ▾
defaultPolicy 728fea9d-e32b-4c2...	Disabled	04:00	Every day	14 backups/R...	0	Edit Associate Disk Disable Execute Delete

2. Confirm the policy information and click **OK**.

Execute Backup Policy

Are you sure you want to execute this backup policy now?
Back up disks associated with this policy now.

Name	Associated Disks
policy-2084	1

[OK](#) [Cancel](#)

2. Confirm the deletion information and click **OK**.

Delete Backup Policy

Are you sure you want to delete the following backup policy?
After the policy is deleted, the associated disks will no longer be backed up according to this policy.

Name	Associated Disks
policy-2084	1

[OK](#) [Cancel](#)



Common Operations (8)

- Associating EVS disks

1. In the row of the policy, click **Associate Disk**.

Name/ID	Enable	Execution Time	Backup Period	Retention Rule	Associated Disks	Operation
policy-2084 d132520a-21c5-48...	Enabled	10:00	Sun	90 Days	0	Edit Associate Disk More

2. Select the disks you want to associate with the policy and click **OK**.

Associate Disk

The selected disks will be associated with the backup policy policy-2084 and automatically backed up. Any previously associated backup policy will no longer apply. VBS encrypts the backup data of encrypted disks.

Available Disks

All statuses

Name

Selected Disks (1)

Name

Name	Status	ECS/BMS	Capacity (GB)	Encrypted	Associated
volu...	Available	-	50	No	No

Name	Status	ECS/BMS	Capacity (GB)	Encrypted	Operation
volume-1...	Available	-	50	No	

OK Cancel



Common Operations (9)

- Disassociating EVS disks

1. Expand the list of associated disks.

Name/ID	Enable	Execution Time	Backup Period	Retention Rule	Associated Disks	Operation
policy-2084 d132520a-21c5-48...	Enabled	10:00	Sun	90 Days	1	Edit Associate Disk More
Associated Disks						Disks: 1
Associate Disassociate						
All statuses Name						
<input type="checkbox"/>	Name	Status	ECS/BMS	Capacity (GB)	Encrypted	Operation
<input type="checkbox"/>	volume-11f5	Available	-	50	No	Disassociate

2. Confirm the disk information and click **OK**.

Disassociate Disk

!

Are you sure you want to disassociate the following disk?
After the disk is disassociated, automatic backup jobs will not be performed based on this backup policy.

Name	Status
volume-11f5	Available

OK

Cancel



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Limitations and Restrictions

- VBS does not support concurrent multiple backups for one EVS disk, because backup creation in such scenarios may fail and the time sequence of backups may be incorrect.
- Multiple EVS disks cannot be restored using one backup at the same time.
- EVS disks created from backups cannot be used as system disks.
- The default backup policy cannot be deleted.



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FAQs (1)

- Does VBS Support Cross-Region Backup and Restoration?
 - **No**. Currently VBS supports only backup and restoration within a region but not across regions.
- Does VBS Support Simultaneous Backup of All EVS Disks on an ECS?
 - **Yes**. You can create a backup policy and associate the backup policy with multiple EVS disks. Then the backup policy can be executed to back up the multiple EVS disks at the same time.
- Can a Disk Only Be Associated With One Policy?
 - **Yes**. If an EVS disk you select to be associated with the target policy has been associated with another one, the system will disassociate it from the original policy and then associate it with the target one.



FAQs (2)

- **Do I Need to Stop the ECS Before Backing Up** EVS Disks on an ECS Using VBS?
 - VBS can back up EVS disks that are being used. When an ECS is running, data is written onto EVS disks on the ECS, and some newly generated data is stored in the ECS memory as cached data. During EVS disk backup, the data in the memory will not be automatically written onto EVS disks, resulting in data inconsistency between EVS disks and their backups.
 - To **ensure data consistency** and integrity, **back up EVS disks during off-peak hours** without data writing to the EVS disks, or stop writing data to the EVS disks before backup. For a strict requirement for data integrity, stop the server (cached data is written to EVS disks) and start an offline backup job.
- **Do I Need to Stop the ECS Before Restoring EVS** Disk Data with a VBS Backup?
 - **Yes.** Before restoring the EVS disk data using a VBS backup, you must stop the ECS to which the EVS disk is attached, and detach the EVS disk from the ECS. After the EVS disk data is restored, attach the EVS disk to the ECS and start the ECS.



FAQs (3)

- **Can a VBS Backup of a System Disk Be Used to Restore an ECS?**
 - **Yes.** You can restore the system disk using a VBS backup. Before restoring the system disk, you must detach it from the ECS.
 - You can also use the system disk to create new EVS disks. However, newly created EVS disks cannot be used as system disks.
- **Is There a Quota Limit on the Number of Backups?**
 - **Yes.** A quota is used to prevent resource abuse. You can submit an application to increase your quota if necessary.
- **Are My VBS Backups Retained After ECS Subscription Expires or EVS Disks Are Deleted?**
 - **Yes,** VBS backups created for EVS disks are retained when your ECS subscription expires or is canceled. VBS backups are also retained when you delete EVS disks. You can continue to use these VBS backups to create EVS disks.



FAQs (4)

- Does Backup Can Be Performed Several Times a Day?
 - Yes. Up to 24 automatic backup jobs can be executed per day. Manual backup jobs have no such restriction. The minimum frequency for policy-driven backup is once per integral hour. Manual backup can be performed at any frequency.
- Why Are CSBS Backups Displayed on the VBS Backup Page?
 - CSBS backups of ECSs are also displayed on the VBS Backups tab page and can be distinguished from VBS backups by Source in the backup details. To use CSBS to back up a server is to back up every disk of the server. These disk backups are displayed on the VBS backup list and can be directly used to restore disks. Backups whose Source is CSBS can be deleted only on the CSBS page.



Troubleshooting Cases

- When a backup is being created, its status changes to Error.
 - Delete the VBS backups in the Error state and re-create them.
- When an EVS disk is being restored, the status of the EVS changed to Failed.
 - Delete the failed EVS disk and create a new EVS disk using the backup.
- VBS backups cannot be deleted, and the status of the backups is Deletion failed.
 - Contact technical support.



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Related Services

- EVS
 - VBS provides the data backup function for EVS disks. The created data backups can be used to create EVS disks.
- CSBS
 - CSBS and VBS both provide data backup protection.
- Simple Message Notification (SMN)
 - VBS adopts SMN to notify users of VBS backup information.
- Tag Management Service (TMS)
 - Working with TMS, VBS supports tag presetting and backup filtering and management.



Summary

- Describes VBS provided on HUAWEI CLOUD.
- Introduces the concepts, functions, application scenarios, common operations, and restrictions and limitations of VBS.
- Introduces the advantages and the charging standards of VBS.
- Introduces FAQs, troubleshooting cases, and related services of VBS.



More Information

- Huawei E-Learning website:
 - <http://support.huawei.com/learning/Index!toTrainIndex>
- Huawei support case library:
 - <http://support.huawei.com/enterprise/servicecenter?lang=en>

The background of the image shows silhouettes of several groups of business professionals in a modern office environment. They are standing on a highly reflective floor, and their reflections are clearly visible. The entire scene is overlaid with a semi-transparent blue filter. In the center, the text "Thank You" is written in a large, white, sans-serif font, with the website address "www.huawei.com" in a smaller, white, sans-serif font directly below it.

Thank You

www.huawei.com