

Cloud Backup and Recovery

User Guide

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1 Management permissions

[1.1 Creating a User and Granting CBR Permissions](#)

[1.2 Creating a Custom Policy](#)

1.1 Creating a User and Granting CBR Permissions

This section describes how to use IAM to implement fine-grained permissions control for your CBR resources. With IAM, you can:

- Create IAM users for personnel based on your enterprise's organizational structure. Each IAM user has their own identity credentials for accessing CBR resources.
- Grant users only the permissions required to perform a given task based on their job responsibilities.
- Entrust a Huawei Cloud account or cloud service to perform efficient O&M on your CBR resources.

If your Huawei Cloud account does not require individual IAM users, skip this section.

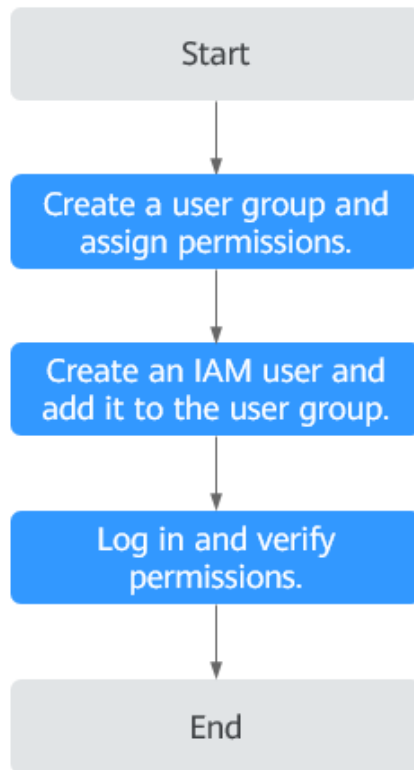
Figure [Figure 1-1](#) illustrates the procedure for granting permissions.

Prerequisites

Learn about the permissions (see [CBR Permissions](#)) supported by CBR and choose policies or roles according to your requirements. For the system policies of other services, see [System Permissions](#).

Process Flow

Figure 1-1 Process for granting CBR permissions



1. Create a user group and assign permissions.
Create a user group on the IAM console, and assign the **CBR ReadOnlyAccess** policy to the group.
2. Create an IAM user and add it to the user group.
Create a user on the IAM console and add the user to the group created in **1**.
3. Log in and verify permissions.
Log in to the CBR console as the created user and verify that the user has read-only permissions for CBR.
 - Choose **Service List > Cloud Backup and Recovery**. Then click **Buy Server Backup Vault** on the CBR console. If a message appears indicating that you do not have the permissions to perform the operation, the **CBR ReadOnlyAccess** policy has already taken effect.
 - Choose any other service in **Service List**. If a message appears indicating that you do not have the permissions to access the service, the **CBR ReadOnlyAccess** policy has already taken effect.

1.2 Creating a Custom Policy

You can create custom policies to supplement the system-defined policies of CBR. For the actions supported for custom policies, see [Permissions Policies and Supported Actions](#).

You can create custom policies in either of the following ways:

- Visual editor: Select cloud services, actions, resources, and request conditions. This does not require knowledge of policy syntax.
- JSON: Edit JSON policies from scratch or based on an existing policy.

For details about how to create custom policies, see .

This section provides examples of common CBR custom policies.

Example Custom Policies

- Example 1: Allowing users to create, modify, and delete vaults

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "cbr:*:get*",
        "cbr:*:list*",
        "cbr:vaults:update",
        "cbr:vaults:delete",
        "cbr:vaults:create"
      ]
    }
  ]
}
```

- Example 2: Denying users to delete vaults and backups

A policy with only "Deny" permissions must be used in conjunction with other policies to take effect. If the permissions assigned to a user contain both "Allow" and "Deny", the "Deny" permissions take precedence over the "Allow" permissions.

If you need to assign permissions of the **CBR FullAccess** policy to a user but want to prevent the user from deleting vaults and backups, create a custom policy for denying vault and backup deletion, and attach both policies to the group to which the user belongs. In this way, the user can perform all operations on CBR except deleting vaults or backups. The following is an example deny policy:

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Deny",
      "Action": [
        "cbr:backups:delete",
        "cbr:vaults:delete"
      ]
    }
  ]
}
```

- Example 3: Defining permissions for multiple services in a policy

A custom policy can contain the actions of multiple services that are of the global or project-level type. The following is an example policy containing actions of multiple services:

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
```



```
    "Action": [
      "cbr:vaults:create",
      "cbr:vaults:update",
      "cbr:vaults:delete"
    ],
  },
  {
    "Effect": "Allow",
    "Action": [
      "sfs:shares:createShare"
    ]
  }
]
```

2 Vault Management

- [2.1 Viewing a Vault](#)
- [2.2 Deleting a Vault](#)
- [2.3 Dissociating Resources from a Vault](#)
- [2.4 Migrating Resources from a Vault](#)
- [2.5 Expanding Vault Capacity](#)
- [2.6 Reducing Vault Capacity](#)
- [2.7 Managing Vault Tags](#)
- [2.8 Managing the Enterprise Projects of Vaults](#)
- [2.9 Enabling Backup Locking](#)

2.1 Viewing a Vault



You can set search criteria for querying desired vaults in the vault list.

Prerequisites

A vault has been created.

Viewing Vault Details

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 On the **Vaults** tab, view basic information about all vaults. Related parameters are described in the following table.

Table 2-1 Basic information parameters

Parameter	Description
Name/ID	Name and ID of the vault. Click the vault name to view details about the vault.
Type	Vault type
Status	Vault status. Table 2-2 describes the vault statuses.
Specifications	Vault specifications, which can be server backup or application-consistent backup <ul style="list-style-type: none"> • A server backup vault stores backups of non-database servers. • An application-consistent backup vault stores backups of database servers.
Used/Total Vault Capacity (GB)	Capacity used by the backups in the vault. It shows the space used by backups and the total vault capacity. For example: If 20/100 is displayed, 20 GB has been used out of the 100 GB vault capacity.
Associated Servers/ File Systems/Disks	Number of servers, file systems, and disks associated with the vault. You can click the number to view details of associated resources. The associated capacity shown on the details page is the total capacity of all the resources that have been associated with this vault.


Step 3 On the **Vaults** tab page, set filter criteria to view specific vaults.


- Select a value from the status drop-down list to query vaults by status. [Table 2-2](#) describes the vault statuses.

Table 2-2 Vault statuses

Status	Attribute	Description
All statuses	--	All vaults are displayed if this value is selected.
Available	A stable state	A stable state after a vault task is complete. This state allows most of the operations.

Status	Attribute	Description
Locked	An intermediate state	<p>An intermediate state displayed when a capacity expansion, billing mode change, or specifications change is in progress.</p> <p>If a vault is in this state, you can perform operations, such as applying a policy and associating servers, file systems, or disks. However, the following operations are not allowed on such a vault: expanding the vault capacity, changing the billing mode, and changing the vault specifications. Once those operations are complete, the vault status will become Available.</p>
Deleting	An intermediate state	<p>An intermediate state displayed when a vault is being deleted.</p> <p>In this state, a progress bar is displayed indicating the deletion progress. If the progress bar remains unchanged for an extended time, an exception has occurred. Contact customer service.</p>
Frozen	A stable state	<p>If your resources enter a pending deletion period in the case that your subscription has expired or your account is in arrears, or if the resources do not meet security requirements, your vault is put in the Frozen state.</p> <p>If the resources are frozen due to arrears, the state will become Available after you pay off the outstanding balance, and the resources can then be used normally. If you do not pay off the outstanding balance in time, the system automatically deletes the frozen resources after the retention period expires. If the resources are frozen due to security reasons, contact customer service.</p>
Error	A stable state	<p>A vault enters the Error state when an exception occurs during task execution.</p> <p>You can click Tasks in the navigation pane on the left to view the error cause. If the error persists, contact customer service.</p>

- Search a vault by its name or ID.
- Click **Search by Tag** in the upper right corner to search for vaults by tag.
 - On the displayed **Search by Tag** page, enter an existing tag key and value and click . The added tag search criteria are displayed under the text boxes. Click **Search** in the lower right corner.

- You can add a maximum of 10 tags by clicking . They will be applied together for a combination search.
- You can click **Reset** in the lower right corner to reset the search criteria.

Step 4 Click the name of a specific vault to view vault details.

 **NOTE**

- The values of used capacity and backup space are rounded off to integers. CBR will display 0 GB for any backup space less than 1 GB. For example, there may be 200 MB backup space used, but it will be displayed as 0 GB on the console.

----End

2.2 Deleting a Vault

You can delete unwanted vaults to reduce storage space usage and costs.

Once you delete a vault, all backups stored in the vault will be deleted.



Only pay-per-use vaults can be deleted. Yearly/monthly vaults need to be unsubscribed by following instructions in [How Do I Unsubscribe from a Vault?](#)

Prerequisites

- There is at least one vault.
- The vault is in the **Available** or **Error** state.
- To delete a hybrid cloud backup vault, ensure that corresponding backups have been deleted from both on premises and the cloud.

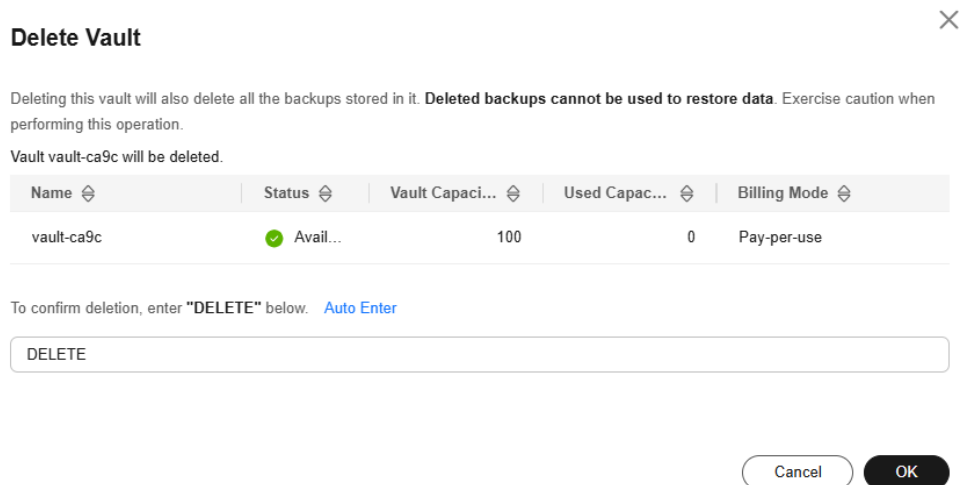
Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and choose **More > Delete** in the **Operation** column. See [Figure 2-1](#). All backups stored in the vault will be deleted once you delete a vault.

Figure 2-1 Deleting a vault



Step 3 Click **OK**.

----End

Unsubscribing from a Vault (Yearly/Monthly)

If you no longer need a vault billed in yearly/monthly mode to store backups, you can unsubscribe from the vault in either of the following methods. For details about the unsubscription rules, see [Unsubscription Rules](#).

Method 1

Step 1 Log in to the CBR console.

Step 2 Click the **Vaults** tab and locate the target vault. Click **More** > **Unsubscribe** in the **Operation** column.

Step 3 Complete the unsubscription operations as prompted.

----End

Method 2

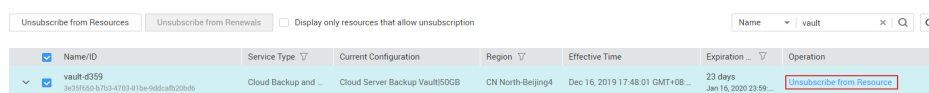
Step 1 Log in to the CBR console.

Step 2 Click **Billing** in the top navigation bar to go to the **Billing Center** page.

Step 3 In the left navigation pane, choose **Orders** > **Unsubscriptions** to view the yearly/monthly vaults you purchased.

Step 4 Select an unwanted vault and click **Unsubscribe**. See [Figure 2-2](#).

Figure 2-2 Unsubscribing from a resource package



----End

2.3 Dissociating Resources from a Vault



If you no longer need to back up an associated resource, dissociate it from your vault.

After a resource is dissociated, the vault's backup policy no longer applies to the resource. In addition, all manual and automatic backups of this resource will be deleted. Deleted backups cannot be used to restore data.

Dissociating a resource from a vault does not affect the performance of services on the resource.

Procedure

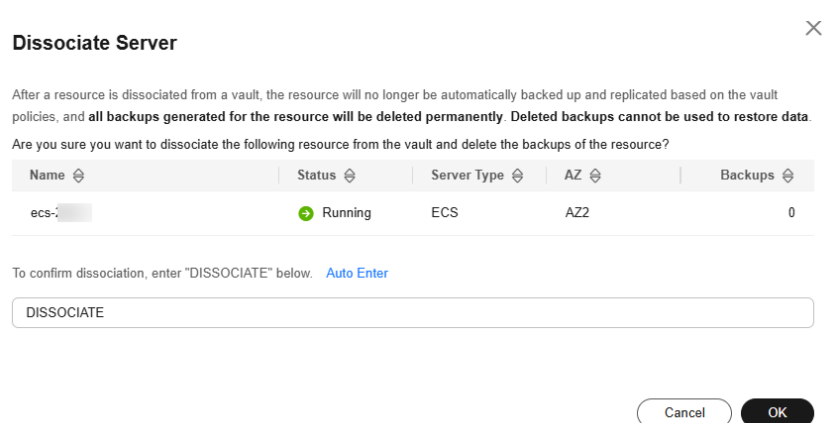
Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and click its name.

Step 3 In this example, we will be using the **Cloud Server Backups** page to illustrate the process. Click the **Associated Servers** tab. Find the target server and click **Dissociate** in the **Operation** column. See [Figure 2-3](#).

Figure 2-3 Dissociating a server



Step 4 Confirm the information and click **Yes**.

----End

2.4 Migrating Resources from a Vault



Migrating a resource means that you dissociate a resource from a vault and then associate it to another vault. All backups of the resource will be migrated to the destination vault.

Notes and Constraints

- Resources can be migrated only when the source and destination vaults are in the **Available** or **Locked** state.
- Resources can be migrated only when no task is being executed in the source and destination vaults.
- The remaining capacity of the destination vault must be greater than the size of resource backups to be migrated.
- Cross-account resource migration is currently not supported.
- Backups cannot be migrated between a single-AZ backup vault and a multi-AZ backup vault.
- The source and destination vaults must be in the same region.
- The source and destination vaults for resource migration must be of the same types. For example, resources in a server backup vault can be migrated to another server backup vault, but cannot be migrated to another disk backup vault.

Procedure

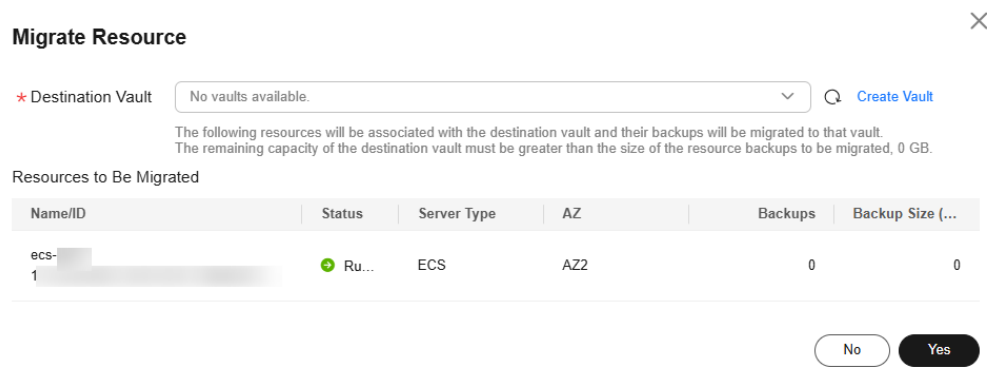
Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and click its name. In this example, we will be using the **Cloud Server Backups** page to illustrate the process.

Step 3 Click the **Associated Servers** tab. Find the target server and click **Migrate** in the **Operation** column. See [Figure 2-4](#).

Figure 2-4 Migrating a resource



Step 4 Select the destination vault and click **OKYes**.

Step 5 View the migration progress on the **Tasks** page. If **Status** changes to **Successful**, the resource has been migrated.

Step 6 Go to the destination vault to confirm that the resource has been associated and all its backups have been migrated.



----End

2.5 Expanding Vault Capacity

You can expand the size of a vault if its total capacity is insufficient.

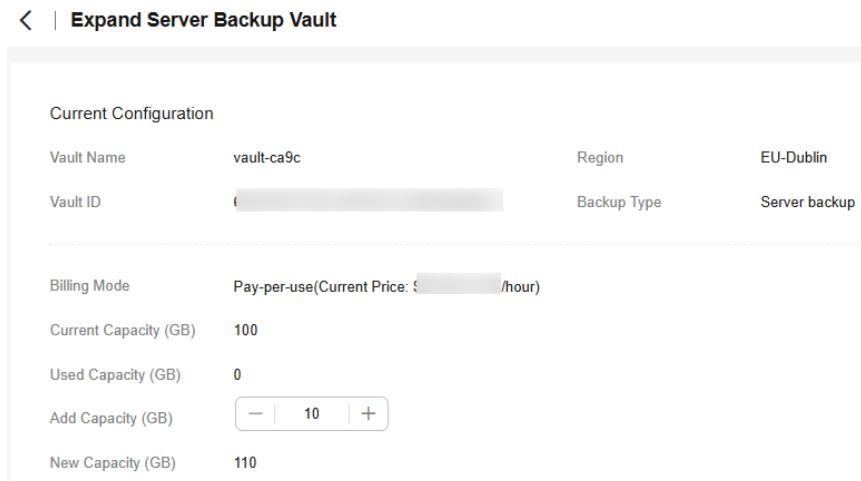
Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and choose **More > Expand Capacity** in the **Operation** column. See [Figure 2-5](#).

Figure 2-5 Expanding vault capacity



Step 3 Enter the capacity to be added. The minimum value is **1**.

Step 4 Click **Next**. Confirm the settings and click **Submit**.

Step 5 Return to the vault list and check that the capacity of the vault has been expanded.

----End



2.6 Reducing Vault Capacity

You can reduce the size of a vault if its total capacity is too much for you.

Only pay-per-use vaults can have their capacity reduced.

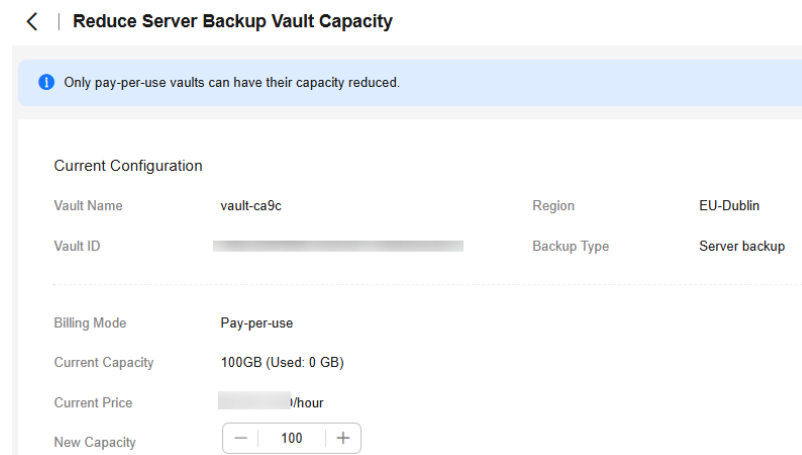
Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and choose **More > Reduce Capacity** in the **Operation** column. See [Figure 2-6](#).

Figure 2-6 Reducing vault capacity





- Step 3** Enter the new capacity. Ensure that the new capacity is greater than 125% of the used capacity. Or, the capacity reduction will fail.
- Step 4** Click **Next**. Confirm the settings and click **Submit**.
- Step 5** Return to the vault list and check that the capacity of the vault has been reduced.

----End

2.7 Managing Vault Tags

You can add, edit, or delete tags of a vault. Vault tags are used to filter and manage vaults only.

Procedure

- Step 1** Log in to the CBR console.
 1. Log in to the management console.
 2. Click  in the upper left corner and select a region.
 3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.
- Step 2** On the **Vaults** tab, click the name of the target vault and then select the **Tags** tab.
 - Adding a tag
 - a. Click **Add Tag** in the upper left corner.
 - b. In the displayed dialog box, enter the key and value of the new tag.

Tags are key-value pairs, which are used to identify, classify, and search for vaults. You can add a maximum of 10 tags for a vault, and vault tags are only used for vault search and management.

Table 2-3 describes the parameters of a tag.

Table 2-3 Tag parameter description

Parameter	Description	Example Value
Key	<p>Tag key. Each tag of a vault has a unique key. You can customize a key or select the key of an existing tag created in TMS.</p> <p>A tag key:</p> <ul style="list-style-type: none"> ▪ Can contain 1 to 36 Unicode characters. ▪ Can contain only letters, digits, hyphens (-), and underscores (_). 	Key_0001
Value	<p>A tag value can be repetitive or left blank.</p> <p>A tag value:</p> <ul style="list-style-type: none"> ▪ Can contain 0 to 43 Unicode characters. ▪ Can contain only letters, digits, hyphens (-), and underscores (_). 	Value_0001

- c. Click **OK**.
- Editing a tag
 - a. In the **Operation** column of the tag that you want to edit, click **Edit**.
 - b. In the displayed **Edit Tag** dialog box, enter a new tag value. [Table 2-3](#) describes the parameters.
 - c. Click **OK**.
- Deleting a tag
 - a. In the **Operation** column of the tag that you want to delete, click **Delete**.
 - b. In the displayed dialog box, confirm the deletion information.
 - c. Click **Yes**.

----End

2.8 Managing the Enterprise Projects of Vaults

If you need to modify the enterprise project of a vault, go to the **Enterprise Management** page to move the vault from the original enterprise project to a new one.

Procedure

- Step 1** Click **Enterprise** on the upper right of console page. By default, the **Overview** page of Enterprise Management is displayed.
- Step 2** In the navigation pane of the **Enterprise Management** page, choose **Project Management**.

- Step 3** Locate the enterprise project from which the vault will be removed. Click **View Resources** in the **Operation** column. On the **Resources** tab page, view resources in the current enterprise project.
- Step 4** Select the resources to be removed and click **Remove**. On the displayed page, select **Independent resources** for **Mode**.
- Step 5** Select the destination enterprise project to which the vault is to be added and click **OK**.

After the vault is removed from the enterprise project, you can view it in the resource list of the destination enterprise project.

----End

2.9 Enabling Backup Locking

Scenarios

To prevent the backup data from being deleted by mistake or maliciously, you can enable backup locking for vaults to improve data security.

Once enabled, all backups in the vault enter the WORM (write once, read many) status. No one can delete the backups that are in their retention periods.

This section describes how to enable backup locking for a vault. You can also enable it when purchasing a vault.

NOTE


- Backup locking does not affect normal backup, restoration, and replication operations.
- Manual backups are not affected by backup locking and can be manually deleted.
- If you enable backup locking, set **Type** of **Retention Rule** to **Time period**. In this way, even if you modify the retention rule of the policy, backups with the original policy applied will be automatically deleted based on the original expiration time, backups with the new policy applied will be retained based on the new retention rule.


Constraints

- Backup locking cannot be disabled after it is enabled.
- After backup locking is enabled, associated resources cannot be dissociated and files cannot be migrated.
- After backup locking is enabled, policy-based backups can only be deleted after they expire. You cannot manually delete them.
- After backup locking is enabled, pay-per-use vaults cannot be deleted if they contain backups, but yearly/monthly vaults can be unsubscribed from.

Enabling Backup Locking for an Existing Vault

Step 1 Log in to the CBR console.

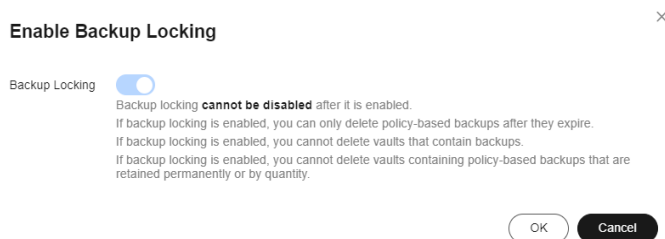
1. Log in to the management console.
2. Click  in the upper left corner and select a region.

3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 On any backup page, locate the target vault and choose **More > Enable Backup Locking** in the **Operation** column.

Step 3 In the displayed dialog box, click **OK** to enable backup locking.

Figure 2-7 Backup locking



Step 4 Click **OK**.

The vault list is displayed, and you can see that the value in the **Back Locking** column is **Enabled**.

----End

3 Backup Management

[3.1 Viewing a Backup](#)

[3.2 Sharing a Backup](#)

[3.3 Deleting a Backup](#)

3.1 Viewing a Backup

Scenario



In the backup list, you can set search criteria to filter backups and view their details. The results contain backup tasks that are running or have completed.

Prerequisites

At least one backup task has been created.

Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Click the **Backups** tab and set filter criteria to view the backups.

- You can search for backups by selecting a status from the **All statuses** drop-down list above the backup list. [Table 3-1](#) describes the backup statuses.

Table 3-1 Backup statuses

Status	Status Attribute	Description
All statuses	--	All backups are displayed if this value is selected.
Available	A stable state	A stable state of a backup after the backup is created, indicating that the backup is currently not being used. This state allows most of the operations.
Creating	An intermediate state	An intermediate state of a backup from the start of a backup job to the completion of this job. In the Tasks list, a progress bar is displayed for a backup task in this state. If the progress bar remains unchanged for an extended time, an exception has occurred. Contact customer service.
Restoring	An intermediate state	An intermediate state when using the backup to restore data. In the Tasks list, a progress bar is displayed for a restoration task in this state. If the progress bar remains unchanged for an extended time, an exception has occurred. Contact customer service.
Deleting	An intermediate state	An intermediate state from the start of deleting the backup to the completion of deleting the backup. In the Tasks list, a progress bar is displayed for a deletion task in this state. If the progress bar remains unchanged for an extended time, an exception has occurred. Contact customer service.
Error	A stable state	A backup enters the Error state when an exception occurs. A backup in this state cannot be used for restoration, and must be deleted manually. If manual deletion fails, contact customer service.

- You can search for backups by clicking **Advanced Search** above the backup list.

You can search by specifying a backup name, backup ID, backup status, server name, server ID, server type, protection type, or the creation date.

- You can search for backups by selecting a project from the **All projects** drop-down list in the upper right corner of the backup list.

Step 3 Click the backup name to view details about the backup.

----End

3.2 Sharing a Backup

Scenarios

You can share server or disk backups with projects of other accounts. Shared backups can be used to create servers or disks.

Context

Sharer



- Backups can only be shared among projects of accounts in the same region. They cannot be shared across regions.
- Encrypted backups cannot be shared. Backups cannot be shared across regions. Account to which a backup is shared must be in the same region as the backup.
- When a sharer deletes a shared backup, the backup will also be deleted from the recipient's account, but the disks or servers previously created using the backup will be retained.

Recipient

- A recipient must have at least one backup vault to store the accepted shared backup, and the vault's remaining space must be greater than the size of the backup to be accepted.
- A recipient can choose to accept or reject a backup. After accepting a backup, the recipient can use the backup to create new servers or disks.
- When a sharer deletes a shared backup, the backup will also be deleted from the recipient's account, but the disks or servers previously created using the backup will be retained.

Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

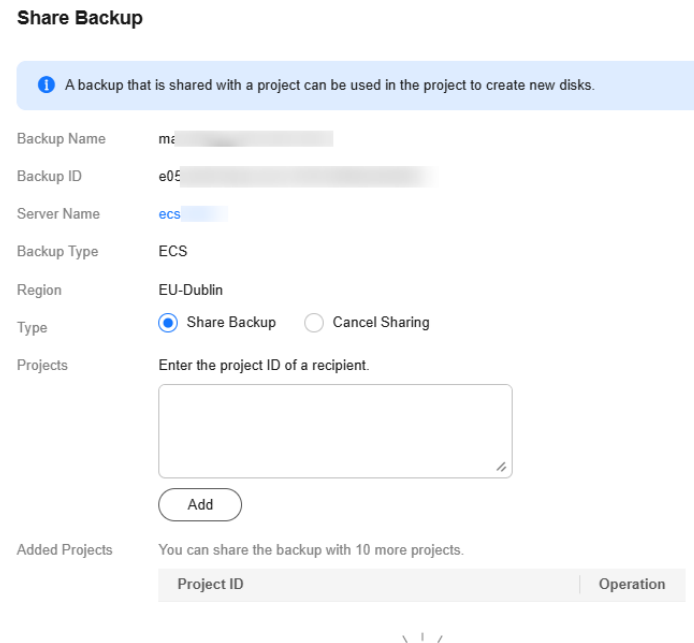
Step 2 Click the **Backups** tab and set filter criteria to view the backups.

Step 3 Locate the target backup and choose **More > Share Backup** in the **Operation** column.

The backup name, server or disk name, backup ID, and backup type are displayed.

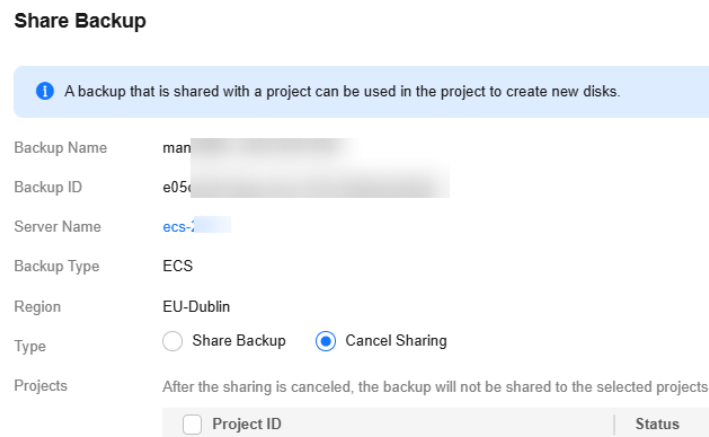
- Sharing a backup

Figure 3-1 Share Backup



1. Click the **Share Backup** tab.
2. Enter the account name of the recipient.
3. Click **Add**.
The account and project to be added will be displayed in the list. You can add multiple account names. A backup can be shared to a maximum of 10 projects.
4. Click **OK**.
 - Canceling sharing
 1. Click the **Cancel Sharing** tab, select the projects you want to cancel sharing, and click **OK**. See [Figure 3-2](#).



Figure 3-2 Cancel Sharing



----End

Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Click the **Backups** tab and then click **Backups Shared with Me**.

Step 3 Ensure that the recipient has at least one backup vault before accepting the shared backup. For how to purchase a backup vault, see [Purchase a Vault](#).

Step 4 Click **Accept**. On the displayed page, select the vault used to store the shared backup. Ensure that the vault's remaining capacity is greater than the backup size.

Step 5 View the shared backup you accepted in the backup list.

----End

3.3 Deleting a Backup

You can delete unwanted backups to reduce space usage and costs.

Deleting a backup from a hybrid cloud backup vault does not affect the corresponding backup on-premises, and vice versa.

If a backup has been used to create an image, the backup cannot be deleted. In this case, delete the image first based on the instructions in [Deleting Images](#).

CBR supports manual deletion of backups and automatic deletion of expired backups. The latter is executed based on the backup retention rule in the backup policy. For details, see [4.1 Creating a Backup Policy](#).

NOTE



- Backups are not stored on a server. Deleting backups has no impact on the server performance.
- If a backup has been created and the next backup task is in progress, CBR will not allow you to delete the most recent backup created. You can delete the backup only after the backup task is complete.
- CBR automatically creates snapshots during backup and retains the latest snapshot for each disk.

Prerequisites

- There is at least one backup.
- The backup to be deleted is in the **Available** or **Error** state.

Procedure

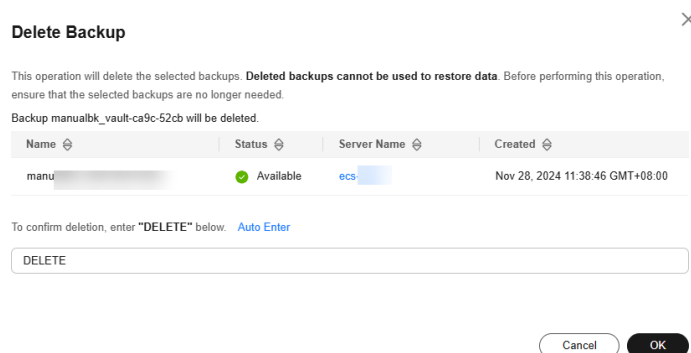
Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Click the **Backups** tab and locate the desired backup. For details, see [3.1 Viewing a Backup](#).

Step 3 Choose **More > Delete** from the **Operation** column. See [Figure 3-3](#). Alternatively, select the backups you want to delete in a batch and click **Delete** in the upper left corner to delete them.

Figure 3-3 Deleting a backup



Step 4 Click **OK**.

----End

Follow-up Procedure

When you use CBR to back up a disk, all disk data including any invisible data will be backed up. If you frequently add, delete, or modify data on the disk before each backup task, a large amount of vault space will still be occupied even after some backups are deleted. For how to reduce occupied vault space, see [How Do I Reduce the Vault Space Occupied by Backups?](#)

4 Policy Management

- [4.1 Creating a Backup Policy](#)
- [4.2 Modifying a Policy](#)
- [4.3 Deleting a Policy](#)
- [4.4 Applying a Policy to a Vault](#)
- [4.5 Removing a Policy from a Vault](#)

4.1 Creating a Backup Policy

A backup policy allows CBR to automatically back up vaults at specified times or intervals. Periodic backups can be used to restore data quickly against data corruption or loss.

To implement periodic backups, you need a backup policy first. You can use the default backup policy or create one as needed.



Peak hours of the backup service are from 22:00 to 08:00, during which there may be delays. So you are advised to evaluate your service types and schedule backups in discrete time periods.

Constraints

- Backup policies can be applied to the following types of vaults: server backup vaults, disk backup vaults, SFS Turbo backup vaults
- A backup policy must be enabled before it can be used for periodic backups.
- A maximum of 32 backup policies can be created in each account.
- When expired backups are deleted, automatic backups will be deleted, but manual backups will not.
- Only servers in the **Running** or **Stopped** state and disks in the **Available** or **In-use** state can be backed up.
- CBR by default performs a full backup for a resource in the initial backup and incremental backups in subsequent backups.
- The minimum interval between two full backups is 1 day.

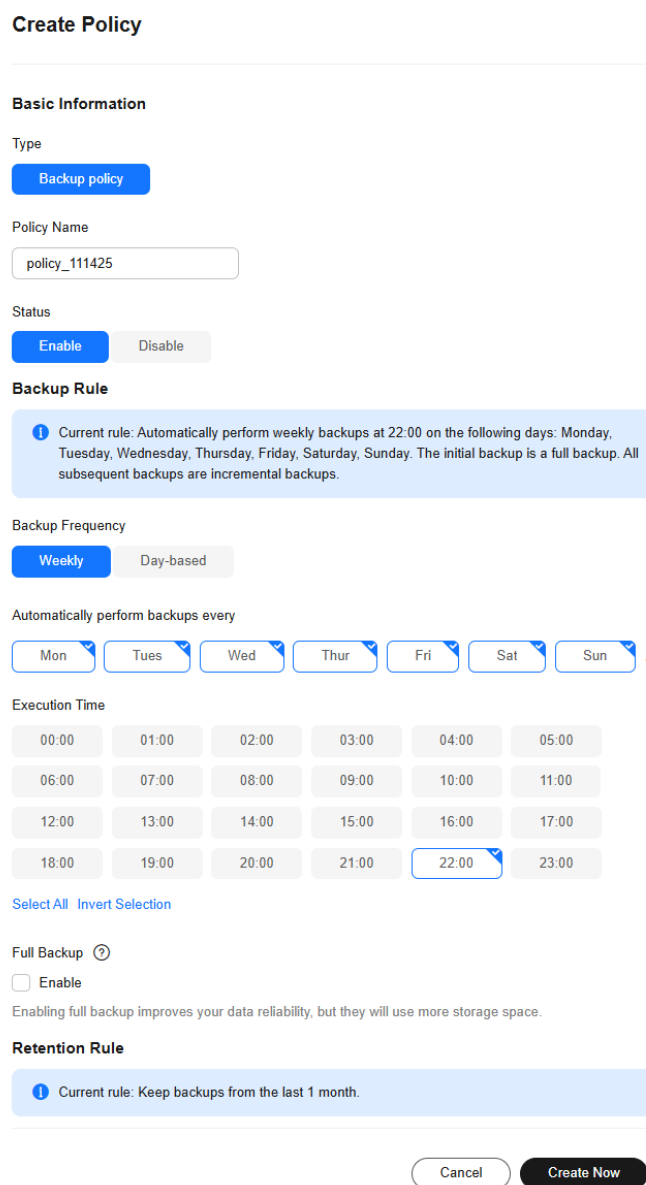
Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**.

Step 2 Choose **Policies** in the left navigation pane and click the **Backup Policies** tab. In the upper right corner, click **Create Policy**. See [Figure 4-1](#).

Figure 4-1 Creating a backup policy



Create Policy

Basic Information

Type
Backup policy

Policy Name
policy_111425

Status
Enable Disable

Backup Rule

1 Current rule: Automatically perform weekly backups at 22:00 on the following days: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday. The initial backup is a full backup. All subsequent backups are incremental backups.

Backup Frequency
Weekly Day-based


Automatically perform backups every

Mon Tues Wed Thur Fri Sat Sun

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

Select All Invert Selection

Full Backup 
 Enable
Enabling full backup improves your data reliability, but they will use more storage space.

Retention Rule

1 Current rule: Keep backups from the last 1 month.

Cancel Create Now

Step 3 Set the backup policy parameters. [Table 4-1](#) describes the parameters.

Table 4-1 Backup policy parameters

Parameter	Description	Example Value
Type	Select a policy type. In this section, we select the backup policy.	Backup policy
Name	Backup policy name A name must contain 1 to 64 characters including digits, letters, underscores (_), or hyphens (-).	backup_policy
Status	Whether to enable the backup policy.	Only after a backup policy is enabled and applied will CBR automatically back up the vault resources and deletes expired backups.
Execution Time	<p>Execution time</p> <p>Backups can be scheduled at the beginning of each hour, and you can select multiple hours.</p> <p>NOTICE</p> <ul style="list-style-type: none"> There may be a time difference between the scheduled backup time and the actual backup time. If a large amount of data needs to be backed up, you are advised to make backup less frequent to prevent the system from skipping any execution time. For example, a disk is scheduled to be backed up at 00:00, 01:00, and 02:00. A backup task starts at 00:00. Because a large amount of incremental data needs to be backed up or a heap of backup tasks are executed at the same time, this backup task takes 90 minutes and completes at 01:30. CBR performs the next backup at 02:00. In this case, only two backups are generated in total, one at 00:00, and the other at 02:00. The execution times refer to the local times of clients, not the time zone and times of the region. 	<p>00:00, 02:00</p> <ul style="list-style-type: none"> It is recommended that backups be performed during off-peak hours or when no services are running. Peak hours of the backup service are from 00:00 to 06:00, during which there may be scheduling delays. So you are advised to evaluate your service types and schedule backups outside of the backup peak hours.

Parameter	Description	Example Value
Backup Cycle	<p>Select a backup cycle.</p> <ul style="list-style-type: none"> ● Week-based cycle Specifies on which days of each week the backup task will be executed. You can select multiple days. ● Custom cycle Specifies the interval (every 1 to 30 days) for executing the backup task. 	<p>Every day</p> <p>If you select day-based backup, the first backup is supposed to be executed on the day when the backup policy is created. If the execution time on the day you create the backup policy has passed, the first backup will be executed in the next backup cycle.</p> <p>It is recommended that backups be performed during off-peak hours or when no services are running.</p>

Parameter	Description	Example Value
Retention Rule	<p>Rule that specifies how backups will be retained</p> <ul style="list-style-type: none"> • Time period You can choose to retain backups for one month, three months, six months, one year, or for any desired number (2 to 99999) of days. • Backup quantity You can set the maximum number of backups to retain for each resource. The value ranges from 2 to 99999. • Permanent 	6 months

Parameter	Description	Example Value
	<p>NOTE</p> <ul style="list-style-type: none"> - The system automatically deletes the earliest and expired backups every other day to avoid exceeding the maximum number of backups to retain or retaining any backup longer than the maximum retention period. - Expired backups are not deleted right after they are expired. They will be deleted during 08:00 to 20:00 in batches. For example, if a backup expired at 20:00 on November 23, 2024, it will be deleted during 08:00 to 20:00 on November 24, 2024. In this way, backup data can be deleted during off-peak hours. - The retention rules apply only to auto-generated backups, but not manual backups. Manual backups need to be deleted manually. - If a backup is used to create an image, the backup will not be deleted by the retention rule. It will be forcibly retained. If you delete the image created from the backup, the backup will be retained based on the original retention rule applied. (If the backup expires or is not within the most recent backups specified in the retention rule, CBR will automatically delete the backup.) - A maximum of 10 backups are retained for failed periodic backup tasks. They are retained for one month and can be deleted manually. - If a backup has been created and the next backup task is in progress, CBR will not allow you to delete the most recent backup created. You can delete the backup only after the backup task is complete. 	

 **NOTE**

More frequent backups create more backups or retain backups for a longer time, protecting data to a greater extent but occupying more storage space. Set an appropriate backup frequency as needed.

Step 4 Click **OK**.

 **NOTE**

You can locate the desired vault and choose **More > Apply Backup Policy** to apply the policy to the vault. Then you can view the applied policy on the vault details page. After the policy is applied, data will be periodically backed up to the vault based on the policy.

----End

Example

At 10:00 a.m. on Monday, a user sets a backup policy for their vault to instruct CBR to execute a backup task at 02:00 a.m. every day and retain a maximum of three backups. As of 11:00 a.m. on Saturday, three backups will be retained, which are generated on Thursday, Friday, and Saturday. The backups generated at 02:00 a.m. on Tuesday and Wednesday have been automatically deleted.

4.2 Modifying a Policy



You can modify backup policies if needed.

Prerequisites

At least one policy has been created.

Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and click the vault name to view its details.

Step 3 In the **Policies** area, click **Edit** in the row of the policy to be edited. See [Figure 4-2](#).

Figure 4-2 Editing a backup policy

Edit Policy ✕

Basic Information

Type
Backup policy

Policy Name

Status
Enabled Disabled

Backup Rule

1 Current rule: Automatically perform weekly backups at 02:00 on the following days: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday. The initial backup is a full backup. All subsequent backups are incremental backups.

Backup Frequency
Weekly Day-based

Automatically perform backups every

Mon Tues Wed Thur Fri Sat Sun

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

[Select All](#) [Invert Selection](#)

Full Backup ?
 Enable
Enabling full backup improves your data reliability, but they will use more storage space.

Retention Rule

1 Current rule: Keep backups from the last 1 month.

Cancel OK

Related parameters are described in [Table 4-1](#).

Step 4 Click **OK**.

If the retention rule is modified, the new rule does not necessarily apply to existing backups. For details, see [Why Does the Retention Rule Not Take Effect After Being Changed?](#)

Step 5 Alternatively, select **Policies** from the navigation pane on the left and edit the desired policy.

----End

4.3 Deleting a Policy



You can delete policies if they are no longer needed.

Prerequisites

At least one policy has been created.

Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**.

Step 2 Click the **Backup Policies** tab, locate the row that contains the policy you want to delete, and click **Delete**.

NOTE

Deleting a policy will not delete the backups generated based on the policy. You can manually delete unwanted backups.

Step 3 Confirm the information and click **OK**.

----End

4.4 Applying a Policy to a Vault



You can apply a backup policy to a vault to execute backup tasks at specified times or intervals.

Constraints

You can create multiple policies, but you can apply only one backup policy to a vault.

Procedure

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and choose **More > Apply Backup Policy**. See [Figure 4-3](#).

Figure 4-3 Setting a backup policy



Step 3 Select an existing backup policy from the drop-down list or create a new one. For how to create a policy, see [4.1 Creating a Backup Policy](#).

Step 4 After the policy is successfully applied, view details in the **Policies** area of the vault details page.

----End

4.5 Removing a Policy from a Vault

Scenarios



If you need to cancel auto backup of a vault, remove the policy from the vault, or disable the policy. This section describes how to remove a policy from a vault.

Prerequisites

A policy has been applied to the vault.

Procedure

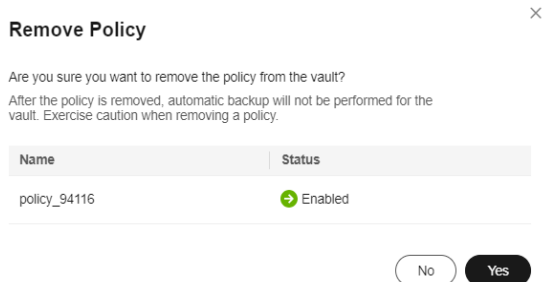
Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Find the target vault and click the vault name to view its details.

Step 3 In the **Policies** area, click **Remove Policy**. See [Figure 4-4](#).

Figure 4-4 Removing a policy



 **NOTE**

- You can remove a policy from a vault when the vault resources are being backed up. In this case, backup tasks will continue, and backups will be generated.
- After a policy is removed, backups retained by **Time period** will expire based on the retention rule, but backups retained by **Backup quantity** will not. You need manually delete unwanted backups.

Step 4 Click **Yes**.

Tasks will no longer be executed based on this policy for the vault.

----**End**

5 Application-Consistent Backup

- [5.1 Application-Consistent Backup](#)
- [5.2 Changing a Security Group](#)
- [5.3 Installing the Agent](#)
- [5.4 Creating an Application-Consistent Backup](#)
- [5.5 Uninstalling the Agent](#)

5.1 Application-Consistent Backup

Overview

There are three types of backups in terms of backup consistency:

- Inconsistent backup: An inconsistent backup contains data taken from different points in time. This typically occurs if changes are made to your files or disks during the backup. CBR cloud server backup uses the consistency snapshot technology for disks to protect data of ECSs and BMSs. If you back up multiple EVS disks separately, the backup time points of the EVS disks are different. As a result, the backup data of the EVS disks is inconsistent.
- Crash-consistent backup: A crash-consistent backup captures all data on disks at the time of the backup and does not capture data in memory or any pending I/O operations. Although it cannot ensure application consistency, disks are checked by **chkdsk** upon operating system restart to restore damaged data and undo logs are used by databases to keep data consistent.
- Application-consistent backup: An application-consistent backup captures data in memory or any pending I/O operations and allows applications to achieve a quiescent and consistent state.

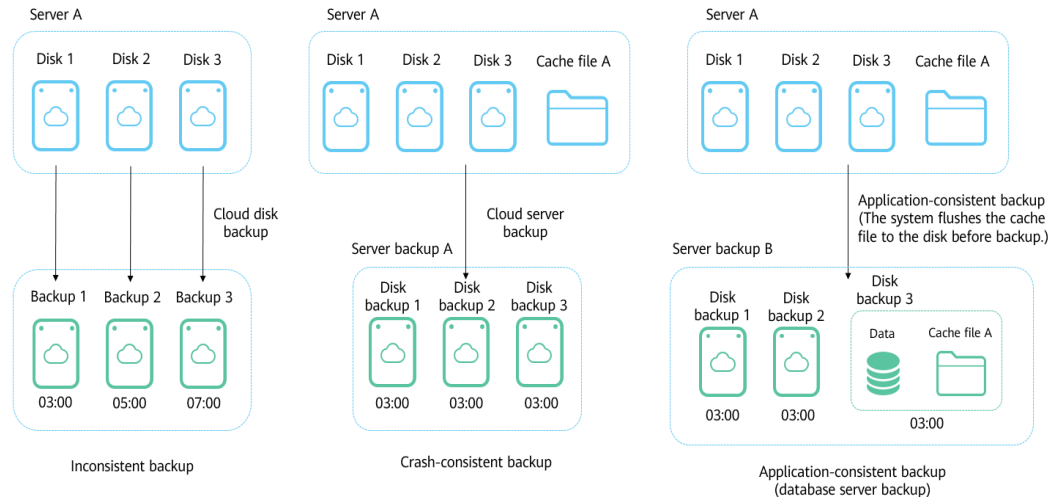
Figure 5-1 compares these backup types in detail.

CBR supports both crash-consistent backup (also called cloud server backup) and application-consistent backup.

Crash-consistent backup does not back up data in memory or pending I/O operations and cannot be used to restore applications. If your server is running a

MySQL or SAP HANA database, you can use application-consistent backup. An application-consistent backup capture application information both in memory and in pending I/O operations and can be used to quickly restore applications.

Figure 5-1 Backup consistency



Differences Between Application-Consistent Backup and Cloud Server Backup

Item	Application-Consistent Backup	Cloud Server Backup
Object	Cloud servers with MySQL or SAP HANA database deployed	Cloud servers without databases
Granularity	Cloud server	Cloud server
Vault	Server backup vault	Server backup vault
Recommended scenario	Data of cloud servers and their databases such as MySQL or SAP HANA database needs to be backed up. All data and application configurations need to be restored in case of an error.	Only data of cloud servers needs to be backed up. Such data needs to be restored in case of an error. If cloud server backup is used to back up database servers, some database configurations may fail to be restored from the backups and issues may occur when the database is restarted.

NOTICE

There are two types of vaults to store server backups. Those store backups of non-database servers are server backup vaults, and those store backups of database servers are database server backup vaults.

Application Scope

Table 5-1 lists the OSs that support the installation of Agent.

Table 5-1 OSs that support installation of the Agent

Database	OS	Version
SQL Server 2008/2012/2019	Windows	Windows Server 2008, 2008 R2, 2012, 2012 R2, and 2019 for x86_64
SQL Server 2014/2016/Enterprise Edition	Windows	Windows Server 2014, 2014 R2, and 2016 Datacenter for x86_64
MySQL 5.5/5.6/5.7	Red Hat	Red Hat Enterprise Linux 6 and 7 for x86_64
	SUSE	SUSE Linux Enterprise Server 11, 12, 15 SP1, 15 SP2 for x86_64
	CentOS	CentOS 6 and 7 for x86_64
	EulerOS	EulerOS 2.2 and 2.3 for x86_64
HANA 1.0/2.0	SUSE	SUSE Linux Enterprise Server 12 for x86_64

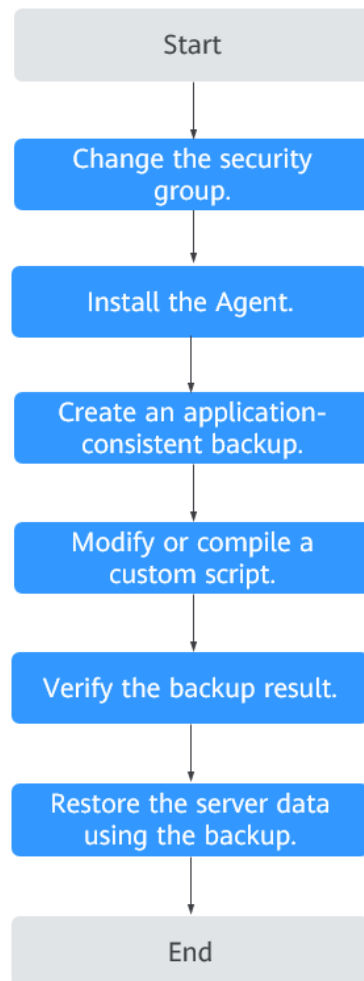
NOTE

For Windows servers, ensure that Volume Shadow Copy is installed and can run properly.

For databases that are not in the compatibility list, you can create a custom script to back up the database server by referring to [Using a Custom Script to Implement Application-Consistent Backup](#) in the *Cloud Backup and Recovery Best Practices*.

Process

Figure 5-2 shows the application-consistent backup process.

Figure 5-2 Application-consistent backup process

- Step 1** Change the security group: Before performing an application-consistent backup task, change the security group of the server you want to back up.
- Step 2** Install the agent: Change the security group and install the agent in any sequence. Ensure that the two operations are completed before backing up the desired server.
- Step 3** Create an application-consistent backup: After creating a server backup vault for storing application-consistent backups, associate it with the desired database server and then create an application-consistent backup.
- Step 4** Modify or compile a custom script: After backing up a database server on the CBR console, modify or compile a custom script on the database of the server. For details, see [Using a Custom Script to Implement Application-Consistent Backup](#).
- Step 5** Verify the backup result: After the backup is performed, verify that the backup succeeds. For details, see [Verifying the Application-Consistent Backup Result](#).
- Step 6** Use the backup to restore server data: Use the application-consistent backup to restore server data. The restored database applications and data are the same as

those at the backup point in time. For details, see [6.1 Restoring from a Cloud Server Backup](#).

----End

5.2 Changing a Security Group

Context

A security group is a collection of access control rules for ECSs that have the same security protection requirements and are mutually trusted in a VPC. After a security group is created, you can create different access rules for the security group to protect the ECSs that are added to this security group. The default security group rule allows all outgoing data packets. ECSs in a security group can access each other without the need to add rules. The system creates a security group for each cloud account by default. You can also create custom security groups by yourself.


When creating a security group, you must add the inbound and outbound access rules and enable the ports required for application-consistent backup to prevent application-consistent backup failures.

Operation Instructions

Before using the application-consistent backup function, you need to change the security group. To ensure network security, CBR has not set the inbound direction of a security group, so you need to manually configure it.

In the outbound direction of the security group, ports 1 to 65535 on the 100.125.0.0/16 network segment must be configured. In the inbound direction, ports 59526 to 59528 on the 100.125.0.0/16 network segment must be configured. The default outbound rule is 0.0.0.0/0, that is, all data packets are permitted. If the default rule in the outbound direction is not modified, you do not need to configure the outbound direction.

Procedure

- Step 1** Log in to the ECS console.
 1. Log in to the management console.
 2. Click  in the upper left corner and select a region.
 3. Under **Computing**, click **Elastic Cloud Server**.
- Step 2** In the navigation pane on the left, choose **Elastic Cloud Server** or **Bare Metal Server**. On the page displayed, select the target server. Go to the server details page.
- Step 3** Click the **Security Groups** tab and select the target security group. On the right of the ECS page, click **Modify Security Group Rule** for an ECS. Click **Change Security Group** for a BMS. In the displayed dialog box, click **Manage Security Group**.
- Step 4** On the **Security Groups** page, click the **Inbound Rules** tab, and then click **Add Rule**. The **Add Inbound Rule** dialog box is displayed, as shown in [Figure 5-3](#).

Select **TCP** for **Protocol/Application**, enter **59526-59528** in **Port & Source**, select **IP address** for **Source** and enter **100.125.0.0/16**. After supplementing the description, click **OK** to complete the setting of the inbound rule.

Figure 5-3 Adding an inbound rule

Add Inbound Rule [Learn more about security group configuration.](#)

Security Group default

You can import multiple rules in a batch.

Priority	Action	Type	Protocol & Port	Source	Description	Operation	
1-100	Allow	IPv4	Protocols/TCP (Custom)	IP address	59526-59528	100.125.0.0/16	Replicate Delete

⊕ Add Rule

Cancel OK

Step 5 Click the **Outbound Rules** tab, and then click **Add Rule**. The **Add Outbound Rule** dialog box is displayed, as shown in **Figure 5-4**. Select **TCP** for **Protocol/Application**, enter **1-65535** in **Port & Source**, select **IP address** for **Destination** and enter **100.125.0.0/16**. After supplementing the description, click **OK** to complete the setting of the outbound rule.

Figure 5-4 Adding an outbound rule

Add Outbound Rule [Learn more about security group configuration.](#)

Security Group default

You can import multiple rules in a batch.

Priority	Action	Type	Protocol & Port	Destination	Description	Operation	
1-100	Allow	IPv4	Protocols/TCP (Custom)	IP address	1-65535	100.125.0.0/16	Replicate Delete

⊕ Add Rule

Cancel OK

----End

5.3 Installing the Agent

Before enabling application-consistent backup, change the security group and successfully install the Agent on your ECSs.

If application-consistent backup is enabled but Agent is not installed on servers, application-consistent backup will fail, and a common server backup will be performed instead. To ensure that application-consistent backup is properly executed, download and install the Agent first.

Operation Instructions

- Application-consistent backup supports only x86-based ECSs, not Kunpeng-based ECSs.
- During the Agent installation, the system requires the **rdadmin** user's permissions to run the installation program. To improve O&M security, change the user **rdadmin**'s password of the Agent OS regularly and disable this user's remote login permission. For details, see [A.1.1 Changing the Password of User rdadmin](#).
- [Table 5-2](#) lists OSs that support installation of the Agent.

Table 5-2 OSs that support installation of the Agent

Database	OS	Version
SQL Server 2008/2012/2019	Windows	Windows Server 2008, 2008 R2, 2012, 2012 R2, and 2019 for x86_64
SQL Server 2014/2016/Enterprise Edition	Windows	Windows Server 2014, 2014 R2, and 2016 Datacenter for x86_64
MySQL 5.5/5.6/5.7	Red Hat	Red Hat Enterprise Linux 6 and 7 for x86_64
	SUSE	SUSE Linux Enterprise Server 11, 12, 15 SP1, 15 SP2 for x86_64
	CentOS	CentOS 6 and 7 for x86_64
	EulerOS	EulerOS 2.2 and 2.3 for x86_64
HANA 1.0/2.0	SUSE	SUSE Linux Enterprise Server 12 for x86_64

NOTE

For Windows servers, ensure that Volume Shadow Copy is installed and can run properly.

- [Table 5-3](#) lists the supported SHA256 values.

Table 5-3 SHA256 values

Package Name	SHA256 Value
Cloud Server Backup Agent-CentOS6-x86_64.tar.gz	f0c59ccb4443bcb6e874bf6e3c574914f9f8b27f3f7379e2d81956a9972802f3
Cloud Server Backup Agent-CentOS7-x86_64.tar.gz	2d3028cb794e1699bae9f65746a60ae99be17d5c4c5e7ebe6b45ff261db9c3c7
Cloud Server Backup Agent-EulerOS2-x86_64.tar.gz	4fb4cf9cb6f5b0e6c13d8ad8bf928754cb95332ee645a97fd0bb3fcbcb53d003
Cloud Server Backup Agent-RedHat6-x86_64.tar.gz	6ae3838fb5644f0f47282c211fe20c6b57a7c5c1d683cd5a1f55860d259b2054
Cloud Server Backup Agent-RedHat7-x86_64.tar.gz	40fa68a808d9da04672678b2773e3345ea6c9dee3c17d598acb66a023cc5cacc
Cloud Server Backup Agent-SuSE11-x86_64.tar.gz	346cc9f1fc0a41a817abb2db61e657a4d615449e13bc46f1c1cfbadc0b281f47
Cloud Server Backup Agent-SuSE12-x86_64.tar.gz	625279b9c9d17ddcc4210b78242efebacd73f808b86754659d243ece85a400
Cloud Server Backup Agent-WIN64.zip	b7b2067ac89f1fec635d82e3fe2ea794ce6482f9880838f34924b383be44ac4e

NOTICE



To install the Agent, the system will open the firewall of a port from 59526 to 59528 of the ECS. When port 59526 is occupied, the firewall of port 59527 is enabled, and so on.

Prerequisites

- The username and password for logging in to the console have been obtained.
- The security group has been configured.
- The **Agent Status** of the ECS is **Not installed**.
- If you use Internet Explorer, you need to add the websites you will use to trusted sites.

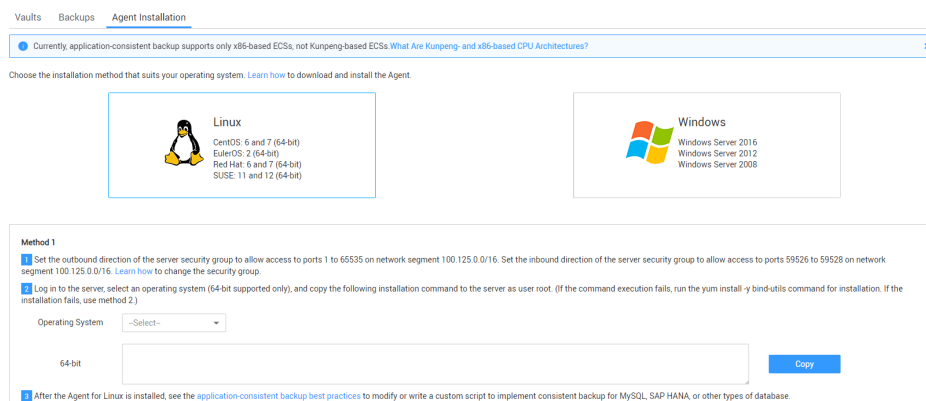
Installing the Agent for a Linux OS (Method 1)

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

Step 2 Click the **Agent Installation** tab.

Figure 5-5 Installation page for Linux



Step 3 In method 1, select the corresponding Agent version as required, and copy the installation command in step 2.

Step 4 On the ECS page, select the target server and click **Remote Login** in the **Operation** column to log in to the ECS.

 **NOTE**

Ensure that the package's SHA256 value is the same as that listed in [Table 5-3](#).

For how to obtain the software package, go to method 2. Specifically, click **Download**, and then on the displayed page, select a version based on the target ECS OS and click **OK**.

Step 5 Paste the installation command in step 2 to the ECS and run the command as user **root**.



If the execution fails, run the **yum install -y bind-utils** command to install the dig module. If the installation still fails, use method 2 to install the Agent for a Linux OS.

Step 6 After the installation is complete, Agent is running properly. To implement application-consistent backup for MySQL, SAP HANA, or other types of databases, modify or compile a custom script by referring to the *Cloud Backup and Recovery Best Practices*.

----End

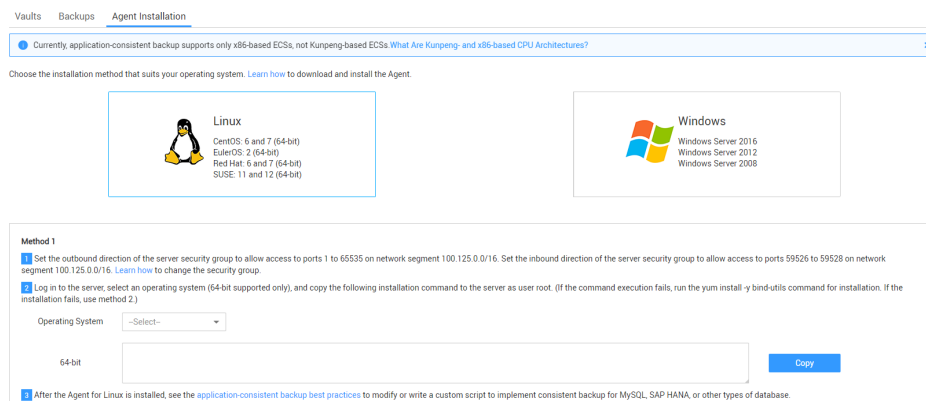
Installing the Agent for a Linux OS (Method 2)

Step 1 Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

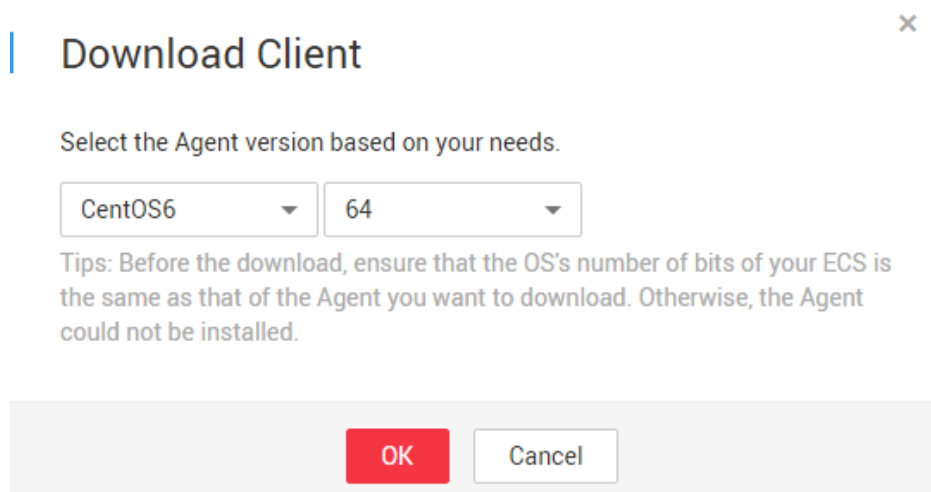
Step 2 Click the **Agent Installation** tab.

Figure 5-6 Installation page for Linux



Step 3 In method 2, click **Download**. On the displayed download page, select the version to be downloaded based on the OS of the target ECS, and click **OK**. See [Figure 5-7](#).

Figure 5-7 Downloading the Agent



- Step 4** After downloading the Agent to a local directory, check that the package's SHA256 value is the same as that listed in [Table 5-3](#).
- Step 5** Use a file transfer tool, such as Xftp, SecureFX, or WinSCP, to upload the Agent installation package to your ECS.
- Step 6** After the upload, go to the ECS page. Select the target server and click **Remote Login** in the **Operation** column to log in to the ECS.
- Step 7** Run the `tar -zxvf` command to decompress the Agent installation package to any directory and run the following command to go to the **bin** directory:

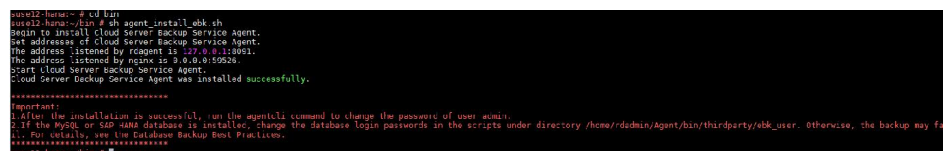
```
cd bin
```

- Step 8** Run the following command to run the installation script:

```
sh agent_install_ebk.sh
```

- Step 9** The system displays a message indicating that the client is installed successfully. See [Figure 5-8](#).



Figure 5-8 Successful client installation for Linux



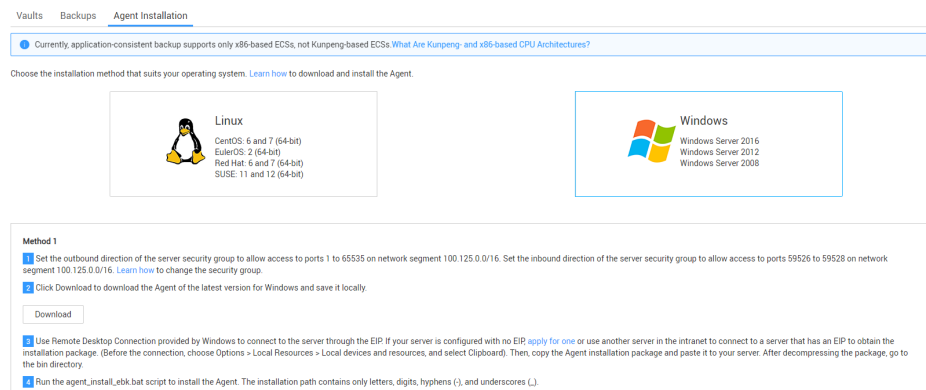
- Step 10** If the MySQL or SAP HANA database has been installed on the ECS, run the following command to encrypt the password for logging in to the MySQL or SAP HANA database:
- ```
/home/rdadmin/Agent/bin/agentcli encpwd
```
- Step 11** Use the encrypted password in [previous step](#) to replace the database login password in the script in `/home/rdadmin/Agent/bin/thirdparty/ebk_user/`.
  - Step 12** After the installation is complete, Agent is running properly. To implement application-consistent backup for MySQL, SAP HANA, or other types of databases, modify or compile a custom script by referring to the *Cloud Backup and Recovery Best Practices*.

----End

## Installing the Agent for a Windows OS (Method 1)

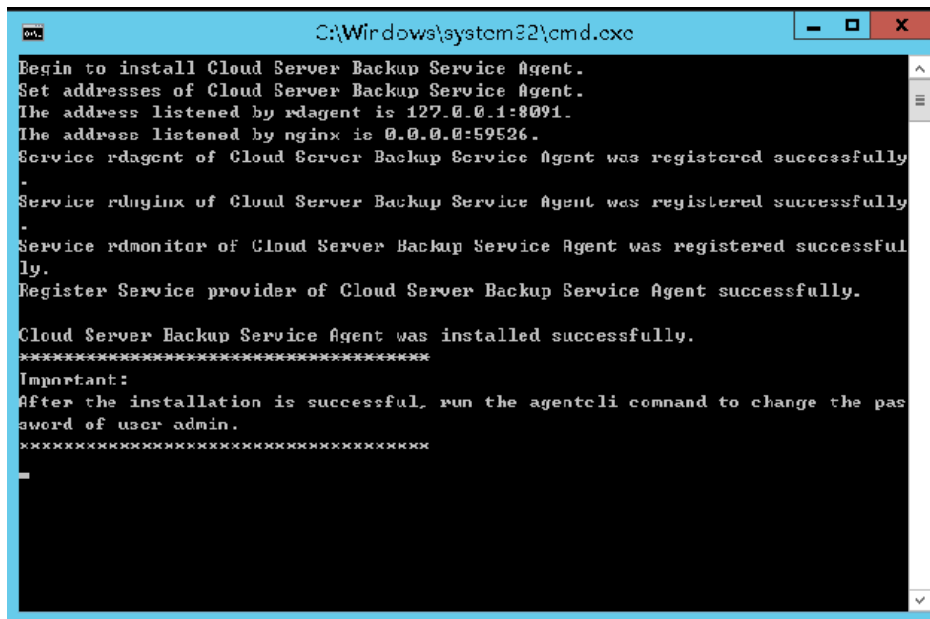
- Step 1** Log in to the CBR console.
  1. Log in to the management console.
  2. Click  in the upper left corner and select a region.
  3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.
- Step 2** Click the **Agent Installation** tab.

**Figure 5-9** Installation page for Windows



- Step 3** In method 1, click **Download**. Save the downloaded installation package to a local directory.
- Step 4** After downloading the Agent to a local directory, check that the package's SHA256 value is the same as that listed in [Table 5-3](#).
- Step 5** Use a file transfer tool, such as Xftp, SecureFX, or WinSCP, to upload the Agent installation package to your ECS.
- Step 6** Log in to the console and then log in to the ECS as the administrator.
- Step 7** Decompress the installation package to any directory and go to the *Installation path*\bin directory.
- Step 8** Double-click the **agent\_install\_ebk.bat** script to start the installation.
- Step 9** The system displays a message indicating that the client is installed successfully. See [Figure 5-10](#).



Figure 5-10 Successful client installation for Windows



----End

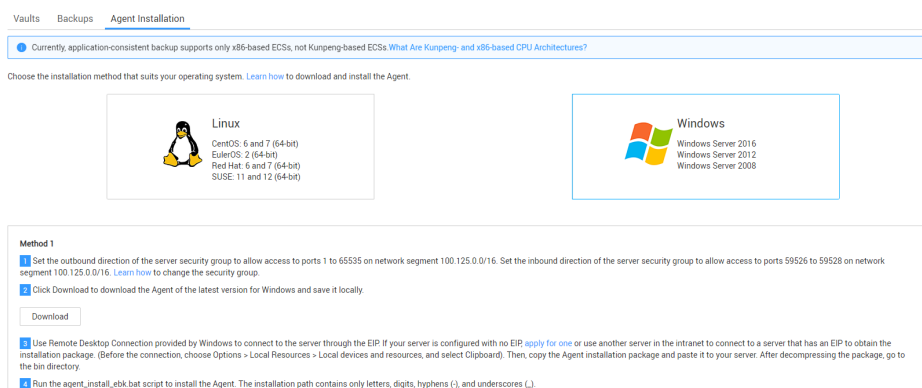
## Installing the Agent for a Windows OS (Method 2)

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

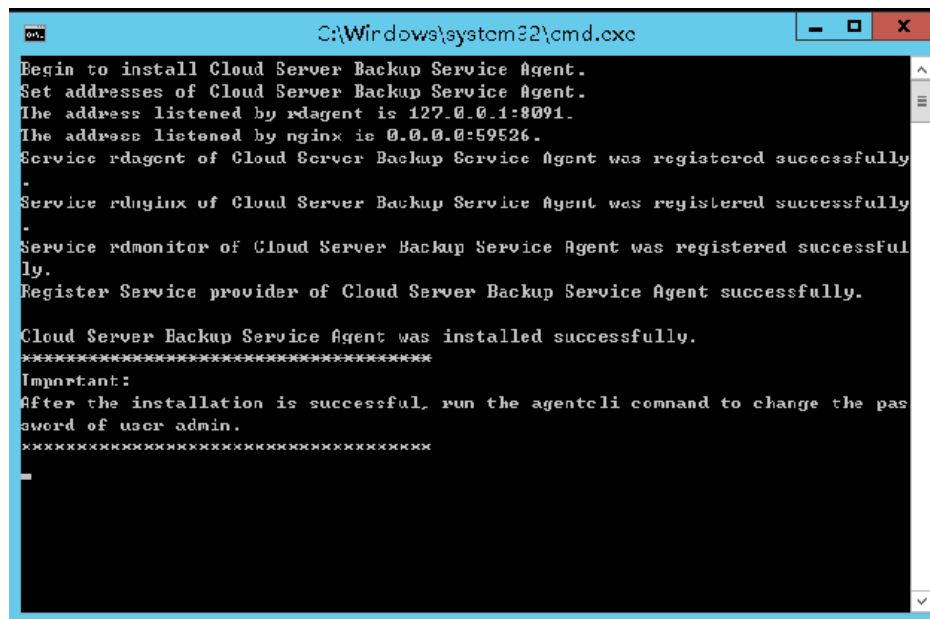
**Step 2** Click the **Agent Installation** tab.

Figure 5-11 Installation page for Windows



- Step 3** On the ECS page, select the target server and click **Remote Login** in the **Operation** column to log in to the ECS as the administrator.
- Step 4** Copy the installation commands in step 2 of method 2 to the server and run the command in the Command Prompt.
- Step 5** Copy the installation command in step 3 of method 2 to the browser. The following uses *region1* as the example region. Then press **Enter** to download the installation package.
- https://csbs-agent-region1.obs.region1.myhwclouds.com/Cloud Server Backup Agent-WIN64.zip**
- Step 6** After downloading the Agent to a local directory, check that the package's SHA256 value is the same as that listed in [Table 5-3](#).
- Step 7** Decompress the file to obtain the installation file. Decompress the installation package to any directory and go to the *Installation path*\bin directory.
- Step 8** Double-click the **agent\_install\_ebk.bat** script to start the installation.
- Step 9** The system displays a message indicating that the client is installed successfully. See [Figure 5-12](#).

**Figure 5-12** Successful client installation for Windows



```
C:\Windows\system32\cmd.exe
Begin to install Cloud Server Backup Service Agent.
Set addresses of Cloud Server Backup Service Agent.
The address listened by rdagent is 127.0.0.1:8091.
The address listened by nginx is 0.0.0.0:59526.
Service rdagent of Cloud Server Backup Service Agent was registered successfully.
Service rdnginx of Cloud Server Backup Service Agent was registered successfully.
Service rdmonitor of Cloud Server Backup Service Agent was registered successfully.
Register Service provider of Cloud Server Backup Service Agent successfully.
Cloud Server Backup Service Agent was installed successfully.

Important:
After the installation is successful, run the agentcli command to change the password of user admin.

```

----End

## 5.4 Creating an Application-Consistent Backup



Cloud server backup supports application-consistent backup in addition to crash-consistent backup. You can use cloud server backup to back up ECSs running MySQL or SAP HANA databases, because application-consistent backup ensures that the backed-up data is transactionally consistent.

## Constraints

- Application-consistent backup is currently not supported for cluster applications, such as, MySQL Cluster. It is supported only for applications on standalone servers.
- You are advised to perform application-consistent backup in off-peak hours.

## Procedure

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

**Step 2** Create a vault for application-consistent backups by referring to [Purchasing a Server Backup Vault](#). Select **Enable** for **Application-Consistent Backup**.

**Step 3** Associate the cloud servers with the created vault. Ensure that the Agent has been installed on the servers.

**Step 4** Create a cloud server backup by referring to [Creating a Cloud Server Backup](#).

- If an application-consistent backup is created successfully, a blue letter "A" is displayed next to the backup name in the backup list.
- If an application-consistent backup fails to be created, the system automatically creates a cloud server backup instead and stores the backup in the vault, and a gray letter "A" is displayed next to the backup name in the backup list. You can view the failure cause in the **Management Information** area on the backup details page.

**Step 5** Return to the cloud server backup page as prompted. If the backup execution fails, rectify the fault based on the failure details shown on the page.

----End

## Follow-up Procedure

If data is lost due to virus attacks or database faults, you can restore the data by following instructions in [Restoring Data Using a Cloud Server Backup](#) and [Using a Backup to Create an Image](#).

# 5.5 Uninstalling the Agent

## Scenarios

This section describes how to uninstall the Agent when application-consistent backup is no longer needed.

## Prerequisites

The username and password for logging in to an ECS have been obtained.

## Uninstalling the Agent for Linux

- Step 1** Log in to the ECS and run the **su -root** command to switch to user **root**.
- Step 2** In the **home/rdadmin/Agent/bin** directory, run the following command to uninstall the Agent. **Figure 5-13** displays an example. If the word **successfully** in green is displayed, the Agent is uninstalled successfully.

```
sh agent_uninstall_ebk.sh
```

**Figure 5-13** Agent uninstalled successfully from Linux

```
user@? ~:~/bin # sh agent_uninstall_ebk.sh
You are about to uninstall the Cloud Server Backup Service Agent. This operation stops the Cloud Server Backup Service Agent service and deletes the Cloud Server Backup Service Agent and customized configuration data which cannot be recovered. Therefore, applications on the host are no longer protected.
Suggestion: Confirm whether the customized configuration data, such as customized script, has been backed up.
Are you sure you want to uninstall Cloud Server Backup Service Agent? (y/n, default:n):
>>y
Begin to uninstall Cloud Server Backup Service Agent.
Cloud Server Backup Service Agent was uninstalled successfully.
Cloud Server Backup Service Agent has been uninstalled successfully, the applications on the host are no longer protected.
```

----End

## Uninstalling the Agent for Windows

- Step 1** Log in to the ECS.
- Step 2** In the *Installation path*/bin directory, double-click **agent\_uninstall\_ebk.bat**. The window for uninstalling the Agent is displayed.

After the uninstallation is complete and successful, the window will be automatically closed. See **Figure 5-14**.

**Figure 5-14** Agent uninstalled successfully from Windows

```
You are about to uninstall the Cloud Server Backup Service Agent. This operation stops the Cloud Server Backup Service Agent service and deletes the Cloud Server Backup Service Agent and customized configuration data which cannot be recovered. Therefore, applications on the host are no longer protected.
Suggestion: Confirm whether the customized configuration data, such as customized script, has been backed up.
Are you sure you want to uninstall Cloud Server Backup Service Agent? (y/n, default:n):
>>y
Begin to uninstall Cloud Server Backup Service Agent...
Service rdmonitor of Cloud Server Backup Service Agent was uninstalled successfully.
Service rdnginx of Cloud Server Backup Service Agent was uninstalled successfully.
Service rdagent of Cloud Server Backup Service Agent was uninstalled successfully.
Service rdprovider of Cloud Server Backup Service Agent was uninstalled successfully.
Delete user rdadmin of Cloud Server Backup Service Agent...
```

----End

# 6 Restoring Data

---

- [6.1 Restoring from a Cloud Server Backup](#)
- [6.2 Creating an Image from a Cloud Server Backup](#)
- [6.3 Restoring from a Cloud Disk Backup](#)
- [6.4 Creating a Disk from a Cloud Disk Backup](#)
- [6.5 Creating a File System from an SFS Turbo Backup](#)

## 6.1 Restoring from a Cloud Server Backup

When disks on a server are faulty or their data is lost, you can use a backup to restore the server to its state when the backup was created.

You can also restore the backup to another server. For details, see [How Do I Restore Data on the Original Server to a New Server?](#)

### NOTE

The system shuts down the server before restoring server data, and automatically starts up the server after the restoration is complete. If you deselect **Start the server immediately after restoration**, you need to manually start the server after the restoration is complete.

### Notes and Constraints

- When restoring from a cloud server backup, backup of a data disk cannot be restored to the system disk.
- Data cannot be restored to servers in the **Faulty** state.
- Concurrent data restoration is not supported.
- A backup of an ECS created using an ISO image cannot be used to directly restore data. You can use the backup to create an image and then provision an ECS using the image.

### Prerequisites



- Disks are running properly on the server whose data needs to be restored.



- The server has at least one **Available** backup.

## Procedure

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

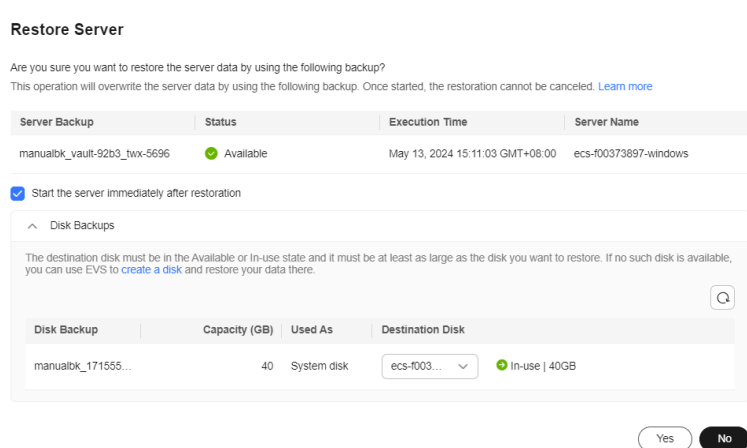
**Step 2** Click the **Backups** tab. Locate the desired backup. For details, see [3.1 Viewing a Backup](#).

**Step 3** Click **Restore Server** in the **Operation** column, as shown in [Figure 6-1](#).

### NOTICE

The current server data will be overwritten by the data captured at the time of backup. The restoration cannot be undone.

**Figure 6-1** Restoring a server



**Step 4** (Optional) Deselect **Start the server immediately after restoration**.

If you do so, manually start the server after the restoration is complete.

### NOTICE

Servers will be shut down during restoration, so you are advised to perform a restoration during off-peak hours.

**Step 5** In the **Destination Disk** drop-down list, select the target disk to which the backup will be restored.

 **NOTE**

- If the server has only one disk, the backup is restored to that disk by default.
- If the server has multiple disks, the backup is restored to the original disks by default. You can also restore the backup to a different disk of at least the same size as the original disk.
- When restoring from a cloud server backup, backup of a data disk cannot be restored to the system disk.

---

**NOTICE**

If the number of disks to be restored is greater than the number of disks that were backed up, restoration may cause data inconsistency.

For example, if the Oracle data is scattered across multiple disks and only some of them are restored, data inconsistency may occur and the application may fail to start.

---

**Step 6** Click **Yes** and confirm that the restoration is successful.

You can view the restoration status in the backup list. When the backup enters the **Available** state and no new restoration tasks failed, the restoration is successful. The resource is restored to the state when that backup was created.

For details about how to view failed restoration tasks, see [8 Managing Tasks](#).

---

**NOTICE**

If you use a cloud server backup to restore a logical volume group, you need to attach the logical volume group again.

Due to Window limitations, data disks may fail to be displayed after a Windows server is restored. If this happens, manually bring these data disks online. For details, see [Data Disks Are Not Displayed After a Windows Server Is Restored](#).

---

----End

## 6.2 Creating an Image from a Cloud Server Backup

CBR allows you to create images using ECS backups. You can use the images to provision ECSs to rapidly restore service running environments.

You can also use server backups to create images and then provision servers to restore data if your servers were accidentally deleted.

### Prerequisites

- The ECS has been optimized before being backed up, and the Cloud-Init (for Linux) or Cloudbase-Init (for Windows) tool has been installed.

- The backup is in the **Available** state, or the backup is in the **Creating** state that is marked with "Image can be created."

 **NOTE**

Once a backup creation starts, the backup enters the **Creating** state. After a period of time, a message stating "Image can be created" is displayed under **Creating**. In this case, the backup can be used for creating an image, even though it is still being created and cannot be used for restoration.



- The backup contains the system disk data.
- Only ECS backups can be used to create images.

## Notes

- Images created using a backup are the same, so CBR allows you to use a backup to create only one full-ECS image that contains the whole data of the system disk and data disks of an ECS, in order to save the image quota. After an image is created, you can use the image to provision multiple ECSs in a batch.
- A backup with an image created cannot be deleted directly. To delete such a backup, delete its image first. If a backup is automatically generated based on a backup policy and the backup has been used to create an image, the backup will not be counted as a retained backup and will not be deleted automatically.
- A backup is compressed when it is used to create an image, so the size of the generated image may be smaller than the backup size.

## Procedure

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

**Step 2** Click the **Backups** tab. Locate the desired backup. For details, see [3.1 Viewing a Backup](#).

**Step 3** In the row of the backup, choose **More > Create Image**.

**Step 4** Create an image by referring to [Creating a Full-ECS Image from a CBR Backup](#) in the *Image Management Service User Guide*.

**Step 5** Use the image to provision ECSs when needed. For details, see [Creating an ECS from an Image](#) in the *Image Management Service User Guide*.

----End

## 6.3 Restoring from a Cloud Disk Backup

You can use a disk backup to restore the disk to its state when the backup was created.

Before restoring the disk data, stop the server to which the disk is attached and detach the disk from the server. After the disk data is restored, attach the disk to the server and start the server.

### Prerequisites



- The disk to be restored is **Available**.
- Before restoring the disk data, stop the server to which the disk is attached and detach the disk from the server. After the disk data is restored, attach the disk to the server and start the server.

### Constraints

- If the server OS is changed after the system disk is backed up, the system disk backup cannot be restored to the original system disk due to reasons such as disk UUID change. You can use the system disk backup to create a new disk and copy data to the original system disk.
- Backups can only be restored to original disks. If you want to restore a backup to a different disk, use the backup to create a new disk.
- When restoring from a cloud disk backup, the backup can only be restored to the original disk. To restore backup of a data disk to a system disk, see [How Do I Restore a Data Disk Backup to a System Disk?](#)
- Concurrent data restoration is not supported.

### Procedure

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

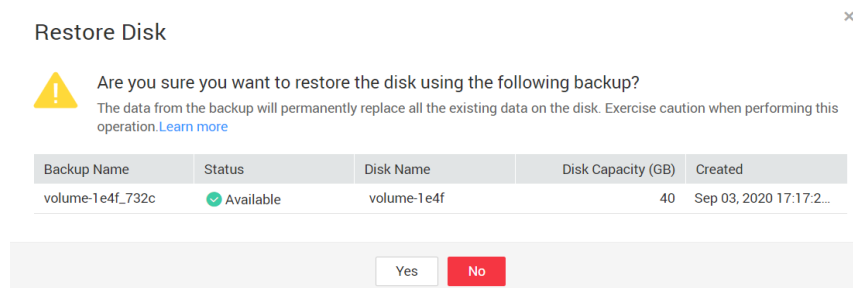
**Step 2** Click the **Backups** tab. Locate the desired backup. For details, see [3.1 Viewing a Backup](#).

**Step 3** In the row of the backup, click **Restore Disk**. The **Restore Disk** dialog box is displayed. See [Figure 6-2](#).

**NOTICE**

- The backup data will overwrite the current disk data, and the restoration cannot be undone.
- If the restore button is grayed out, stop the server, detach the disk, and then try again. After the disk data is restored, attach the disk to the server and start the server.

**Figure 6-2** Restore Disk



**Step 4** Click **Yes**. You can check whether data is successfully restored on the **Backups** tab page of **Cloud Disk Backups** or on the EVS console.

When the status of the backup changes to **Available**, the restoration is successful. The resource is restored to the state when that backup was created.

**Step 5** After the restoration is complete, re-attach the disk to the server. For details, see [Attaching a Non-Shared Disk](#).

----End

## 6.4 Creating a Disk from a Cloud Disk Backup


You can use a disk backup to create a disk that contains the same data as the backup.


Disks created using system disk backups can only be used as data disks on servers. They cannot be used as system disks.

Disk backups can only be used to create EVS disks, not servers.

### Procedure

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.

3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

**Step 2** Click the **Backups** tab. Locate the desired backup. For details, see [3.1 Viewing a Backup](#).

**Step 3** Click **Create Disk** in the **Operation** column of the backup. The button is available only when the backup status is **Available**.

**Step 4** Configure the disk parameters.

 **NOTE**

See the parameter description table in section "Purchase an EVS Disk" of the *Elastic Volume Service User Guide* for more information.

Pay attention to the following:

- You can choose the AZ to which the backup source disk belongs, or a different AZ.
- The new disk must be at least as large as the backup's source disk.

If the capacity of the new disk is greater than that of the backup's source disk, format the additional space by following the steps provided in section "Extending Disk Partitions and File Systems" of the *Elastic Volume Service User Guide*.

- You can create a disk of any type regardless of the backup's source disk type.

**Step 5** Click **Next**.

**Step 6** Go back to the disk list. Check whether the disk is successfully created.

You will see the disk status change as follows: **Creating, Available, Restoring, Available**. You may not notice the **Restoring** status because Instant Restore is supported and the restoration speed is very fast. After the disk status has changed from **Creating** to **Available**, the disk is successfully created. After the status has changed from **Restoring** to **Available**, backup data has been successfully restored to the created disk.



----End

## 6.5 Creating a File System from an SFS Turbo Backup

In case of a virus attack, accidental deletion, or software or hardware fault, you can use an SFS Turbo file system backup to create a new file system. Once created, data on the new file system is the same as that in the backup.

### Procedure

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

**Step 2** Click the **Backups** tab and locate the desired backup. For details, see [3.1 Viewing a Backup](#).

**Step 3** Click **Create File System** in the **Operation** column of the backup. The button is available only when the backup status is **Available**.

 **NOTE**

For how to create backups, see [Purchasing an SFS Turbo Backup Vault](#) and [Creating an SFS Turbo Backup](#).

**Step 4** Configure the file system parameters.

 **NOTE**

- You can learn about the parameter descriptions in table "Parameter description" under "Creating an SFS Turbo File System" in [Create a File System](#)"Create a File System" of the *Scalable File Service Turbo User Guide*.
- You can change the storage class of the file system within a certain range. For example, you can change a file system from Standard to Performance, but not from Standard to Standard - Enhanced.
- The billing mode of the new file system can only be pay-per-use.

**Step 5** Click **Create Now**.

**Step 6** Go back to the file system list and check whether the file system is successfully created.

You will see the file system status change as follows: **Creating, Available, Restoring, Available**. You may not notice the **Restoring** status because Instant Restore is supported and the restoration speed is very fast. After the file system status has changed from **Creating** to **Available**, the file system is successfully created. After the status has changed from **Restoring** to **Available**, backup data has been successfully restored to the created file system.

----End

# 7 (Optional) Migrating Resources from CSBS/VBS

## Context

Huawei Cloud has launched the next-generation backup service, CBR. If you have backups in CSBS or VBS but want to switch to CBR to manage these historical backups, you can migrate them to CBR in a few clicks.

If you have never used CSBS or VBS, or do not need the historical backups anymore, skip this section.

## Migration Rules

During migration, CBR will automatically create vaults based on the types of your historical resources.

**Table 7-1** Migration rules

| Before Migration                                                     | After Migration                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Servers or disks are associated with a backup policy.                | If backups have been generated, CBR will create a vault with the same name (up to 64 characters) as the policy name (regardless of whether the policy is enabled) and apply the policy to the vault after the vault is created.<br><br>If no backup is generated, CBR will create a vault only when the policy is enabled. The policy applying rule and vault naming rule are the same as above. |
| Servers or disks are associated with a backup or replication policy. | If no backup is generated and the policy is disabled, only the policy will be migrated.                                                                                                                                                                                                                                                                                                          |
| Backup or replication policies are not associated with any resource. | The policies will be migrated.                                                                                                                                                                                                                                                                                                                                                                   |



| Before Migration                                                    | After Migration                                                                                                                                                    |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application-consistent backup is enabled.                           | CBR will create a database server backup vault and name the vault with the policy name.                                                                            |
| Backup replicas are generated.                                      | CBR will create a replication vault named <b>default</b> to store generated backup replicas.                                                                       |
| An image is created using a backup and a tag is added to the image. | The backup will fail to be migrated. Go to the IMS console, delete the tag and then migrate the backup again. After the backup is migrated, add the tag if needed. |

Other backups, including manual backups, will be stored in a server backup vault named **default**. Different vaults will be created based on different types of resources. For example, CBR will create a disk backup vault to store the migrated disk backups.

After the migration, backups created using CBR will also be displayed on the VBS console, but you will be billed only once.

 **NOTE**

To delete backups from the VBS console, find these backups in CBR and delete them. Then, the backups will also be deleted from the VBS console.

Based on the preceding rules, the capacity of each vault created by the system is predefined as 1.2 times of the total backup size.


For example, a user has a 100 GB ECS and a 50 GB ECS. The used storage capacity of the two ECSs is 20 GB and 10 GB, respectively. The user manually has backed up the two entire ECSs using cloud server backup. During migration, the capacity of the vault automatically created will be 1.2 times of the total backup size. In this example, the total backup size multiplied by 1.2 is 36 GB. So the system will automatically create a 36 GB vault.


## Constraints

- The vaults you have purchased cannot be used for migration. Resources will automatically migrate to system-created vaults.
- Backup resources of one account only need to be migrated once.
- During the migration, do not delete the CBR backup vault that is automatically created. Use it after the migration is complete.
- After resources are migrated, disk backups and server backups will be automatically stored in CBR vaults. No further operations are required.

## Procedure

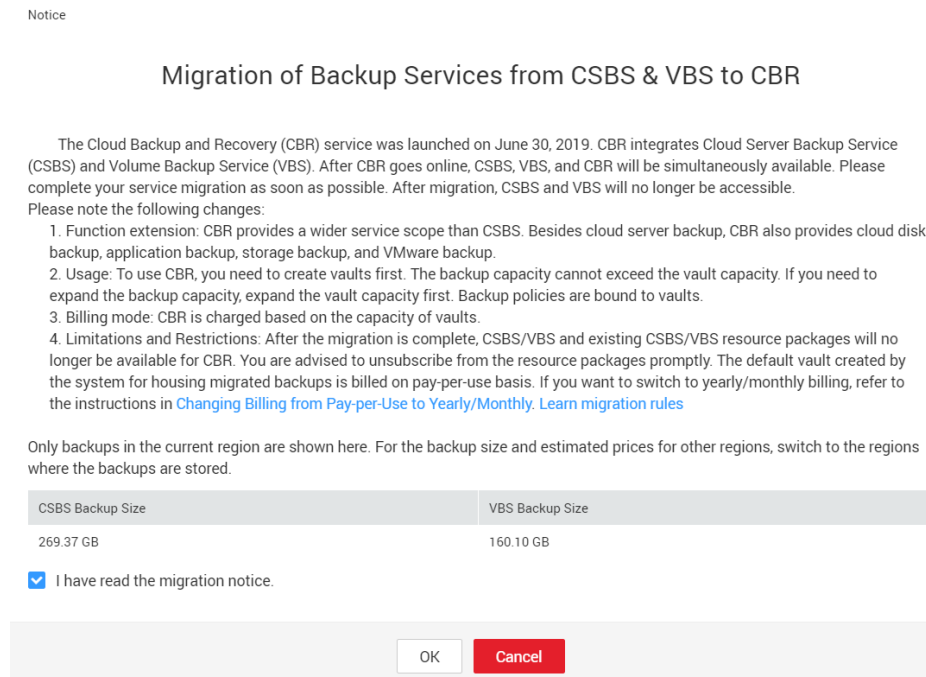
**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.

3. Click  and choose **Storage > Cloud Backup and Recovery**. Select a backup type from the left navigation pane.

**Step 2** Click **Migrate to CBR** in the upper right corner. Read the content in the displayed dialog box and click **OK**. See [Figure 7-1](#).

**Figure 7-1** Migrating resources to CBR



**Step 3** The system will automatically migrate resources. After the migration, a vault named **default** will be created and a message will be displayed in the upper part of the page indicating that the migration is successful.

----End

## FAQ

1. Why Are CBR Backups Displayed on VBS Console?  
If you have migrated data from CSBS and VBS to CBR, and created a backup on the CBR console, the same backup record will be generated on VBS Console. This is due to an underlying mechanism. VBS Console displays all backups generated by CBR, CSBS, and VBS. These backups will not be billed repeatedly.
2. How Do I Delete Backups from VBS Console?  
After you have migrated data from CSBS and VBS to CBR, backups displayed in the VBS console cannot be deleted alone. Find these backups in CBR and delete them. Then, the backups will also be deleted from the VBS console.
3. What Are the Differences Between CBR, CSBS, and VBS?  
CBR integrates CSBS and VBS. In addition, CBR supports SFS Turbo backup. The usage and billing of CBR are also different from CSBS and VBS.

4. What Can I Do If a Message Is Displayed Indicating that a Resource Has Been Bound with CSBS or VBS?

Choose **Cloud Server Backup Service** or **Volume Backup Service** from the service list. On the corresponding service console, check whether there are resources bound with policies on the **Policies** tab. If so, unbind the resources from the policy and go to the CBR console to associate the resources with a vault.

# 8 Managing Tasks

---


You can view tasks in the task list, which shows policy-driven tasks that have been executed over the past 30 days.

## Prerequisites


At least one task exists.

## Procedure for Viewing the Task Execution Status

**Step 1** Log in to the CBR console.

1. Log in to the management console.
2. Click  in the upper left corner and select a region.
3. Choose **Storage > Cloud Backup and Recovery > Tasks**.

**Step 2** Filter tasks by enterprise project, task type, task status, task ID, resource ID, resource name, vault ID, vault name, and time.

**Step 3** Click  in front of the task to view the task details.

If a task fails, you can view the failure cause in the task details.

----End

# 9 Cloud Eye Monitoring

[9.1 Viewing Basic CBR Monitoring Data](#)

[9.2 Creating an Alarm Rule](#)

## 9.1 Viewing Basic CBR Monitoring Data

### Scenarios

This section describes metrics reported by CBR as well as their namespaces and dimensions. You can use the console or [APIs](#) provided by Cloud Eye to query the metrics generated for CBR.

### Namespace

SYS.CBR

### Metrics

**Table 9-1** CBR metrics

| Metric ID       | Metric Name     | Description                            | Value Range | Monitored Object | Monitoring Period (Raw Data) |
|-----------------|-----------------|----------------------------------------|-------------|------------------|------------------------------|
| used_vault_size | Used Vault Size | Used capacity of the vault<br>Unit: GB | ≥ 0         | Vault            | 15 min                       |
| vault_util      | Vault Usage     | Capacity usage of the vault            | 0~100 %     | Vault            | 15 min                       |

## Dimensions

| Key         | Value         |
|-------------|---------------|
| instance_id | Vault name/ID |

## Viewing Monitoring Statistics

**Step 1** Log in to the management console.

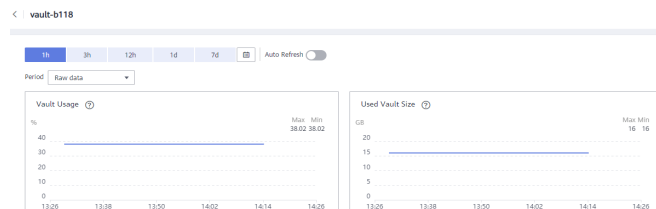
**Step 2** View the monitoring graphs using either of the following methods.

- Method 1: Choose **Storage > Cloud Backup and Recovery**. In the vault list, locate the vault whose monitoring data you want to view and choose **More > View Monitoring Data** in the **Operation** column.
- Method 2: Choose **Management & Deployment > Cloud Eye > Cloud Service Monitoring > Cloud Backup and Recovery**. In the vault list, click **View Metric** in the **Operation** column of the vault whose monitoring data you want to view.

**Step 3** View the vault monitoring data by metric or monitored duration.

**Figure 9-1** shows the monitoring graphs. For more information, see the *Cloud Eye User Guide*.

**Figure 9-1** Vault monitoring graphs



----End

## 9.2 Creating an Alarm Rule

You can create alarm rules for CBR.

Hybrid cloud backup allows monitoring on vault capacity only. On-premises operations and events cannot be monitored.

### Creating an Alarm Rule Using Cloud Eye

1. Log in to the management console.
2. Under **Management & Deployment**, select **Cloud Eye**. In the navigation pane on the left, choose **Alarm Management > Alarm Rules**.
3. On the displayed page, click **Create Alarm Rule** in the upper right corner.
4. On the displayed **Create alarm rule** page, configure the parameters.

a. Set Name and Description.

Figure 9-2 Configuring the alarm rule name and description

The screenshot shows a configuration form with two main fields: 'Name' and 'Description'. The 'Name' field contains the text 'alarm-cgnw'. The 'Description' field is empty and has a character count of '0/256' at the bottom right corner.

Parameters for configuring the rule name and description

| Parameter   | Description                                                                       | Example Value |
|-------------|-----------------------------------------------------------------------------------|---------------|
| Name        | Name of the alarm rule. The system generates a random name, which you can modify. | alarm-cgnw    |
| Description | Alarm rule description. This parameter is optional.                               | -             |

b. Configure alarm content parameters.

Figure 9-3 CBR vault-based alarm rule configuration

The screenshot displays the configuration interface for a vault-based alarm rule. It includes sections for 'Alarm Type' (Metric/Event), 'Resource Type' (Cloud Backup and Recovery), 'Monitoring Scope' (All resources/Specific resources), and 'Method' (Account template/Use existing templates/Configure manually). A table below shows a list of vaults with columns for ID, Name, and ID.

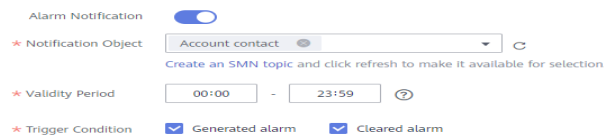
Figure 9-4 CBR event-based alarm rule configuration

The screenshot shows the configuration interface for an event-based alarm rule. It includes sections for 'Alarm Type' (Metric/Event), 'Event Type' (System event/Custom event), 'Event Source' (Cloud Backup and Recovery), and 'Monitoring Scope' (All resources/Specific resources). The 'Alarm Policy' section features a table with columns for Event Name, Trigger Mode, and Alarm Policy.

| Event Name                  | Trigger Mode   | Alarm Policy                               |
|-----------------------------|----------------|--------------------------------------------|
| Agent online                | Immediate tri. | 5 minutes - Occurrences >= 1 Count One day |
| Agent offline               | Immediate tri. | 5 minutes - Occurrences >= 1 Count One day |
| Failed to create the bac... | Immediate tri. | 5 minutes - Occurrences >= 1 Count One day |
| Failed to restore the re... | Immediate tri. | 5 minutes - Occurrences >= 1 Count One day |
| Failed to delete the bac... | Immediate tri. | 5 minutes - Occurrences >= 1 Count One day |

c. Configure alarm notifications.

**Figure 9-5** Configuring alarm notifications



**Table 9-2** Parameters for configuring alarm notifications

| Parameter           | Description                                                                                                                                                                                                                                                                                                  | Example Value |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Alarm Notification  | Whether to notify users when alarms are triggered. Notifications can be sent by email or text message, or through HTTP/HTTPS request to servers.<br>You can enable (recommended) or disable <b>Alarm Notification</b> .                                                                                      | -             |
| Notification Window | Cloud Eye sends notifications only within the notification window specified in the alarm rule.<br>If <b>Notification Window</b> is set to <b>00:00-8:00</b> , Cloud Eye sends alarm notifications only within 00:00-8:00.                                                                                    | -             |
| Notification Object | The name of the topic the alarm notification is to be sent to.<br>If you enable alarm notification, you need to select a topic. If no desirable topics are available, create one and subscribe to it first. For details about how to create a topic, see the <i>Simple Message Notification User Guide</i> . | -             |
| Trigger Condition   | The condition for triggering the alarm notification. You can select <b>Generated alarm</b> , <b>Cleared alarm</b> , or both.                                                                                                                                                                                 | -             |

- d. Click **Create**.

After the alarm rule is created, if the metric data reaches the specified threshold or a CBR event happens, Cloud Eye immediately informs you that an exception has occurred. For details, see the *Cloud Eye User Guide*.



# 10 Recording CBR Operations Using CTS

You can use Cloud Trace Service (CTS) to trace operations in CBR.

## Prerequisites

CTS has been enabled.

## Key Operations Recorded by CTS

**Table 10-1** CBR operations that can be recorded by CTS

| Operation                      | Resource Type | Trace Name        |
|--------------------------------|---------------|-------------------|
| Creating a policy              | policy        | createPolicy      |
| Updating a policy              | policy        | updatePolicy      |
| Deleting a policy              | policy        | deletePolicy      |
| Setting a vault policy         | vault         | associatePolicy   |
| Removing a policy from a vault | vault         | dissociatePolicy  |
| Creating a vault               | vault         | createVault       |
| Modifying a vault              | vault         | updateVault       |
| Deleting a vault               | vault         | deleteVault       |
| Removing resources             | vault         | removeResources   |
| Adding resources               | vault         | addResources      |
| Performing a backup            | vault         | createVaultBackup |
| Creating a backup              | backup        | createBackup      |
| Deleting a backup              | backup        | deleteBackup      |
| Synchronizing a backup         | backup        | syncBackup        |


| Operation          | Resource Type | Trace Name    |
|--------------------|---------------|---------------|
| Restoring a backup | backup        | restoreBackup |

## Viewing Audit Logs

For how to view audit logs, see section "Querying Real-Time Traces" in the *Cloud Trace Service User Guide*.

## Disabling or Enabling a Tracker

The following procedure illustrates how to disable an existing tracker on the CTS console. After the tracker is disabled, the system will stop recording operations, but you can still view existing operation records.

- Step 1** Log in to the management console.
- Step 2** In the upper left corner of the page, click  and select a region.
- Step 3** Click **Service List** and choose **Management & Governance > Cloud Trace Service**.
- Step 4** Choose **Tracker List** in the left navigation pane.
- Step 5** In the tracker list, click **Disable** in the **Operation** column.
- Step 6** Click **Yes**.
- Step 7** After the tracker is disabled, the available operation changes from **Disable** to **Enable**. To enable the tracker again, click **Enable** and then click **Yes**. The system will start recording operations again.

----End

# 11 Quotas


---

## What Is Quota?

Quotas can limit the number or amount of resources available to users, such as the maximum number of ECS or EVS disks that can be created.

If the existing resource quota cannot meet your service requirements, you can apply for a higher quota.

## How Do I View My Quotas?

1. Log in to the management console.
2. Click  in the upper left corner and select the desired region and project.
3. In the upper right corner of the page, choose **Resources > My Quotas**.  
The **Service Quota** page is displayed.
4. View the used and total quota of each type of resources on the displayed page.  
If a quota cannot meet service requirements, apply for a higher quota.

## How Do I Apply for a Higher Quota?

1. Log in to the management console.
2. In the upper right corner of the page, choose **Resources > My Quotas**.  
The **Service Quota** page is displayed.
3. Click **Increase Quota** in the upper right corner of the page.
4. On the **Create Service Ticket** page, configure parameters as required.  
In the **Problem Description** area, fill in the content and reason for adjustment.
5. After all necessary parameters are configured, select **I have read and agree to the Ticket Service Protocol and Privacy Statement** and click **Submit**.

# A Appendix

---

## A.1 Agent Security Maintenance

### A.1.1 Changing the Password of User rdadmin

#### Scenarios

- To improve O&M security, you are advised to change the user **rdadmin**'s password of the client OS regularly and disable this user's remote login permission.
- In Linux, user **rdadmin** does not have a password.
- This section describes how to change the password of user **rdadmin** in Windows Server 2012. Change the password according to actual situation in other versions.

#### Prerequisites

- The username and password for logging in to the console have been obtained.
- The username and password for logging in to a Windows ECS have been obtained.

#### Procedure

**Step 1** Go to the ECS console and log in to the Windows ECS.

**Step 2** Choose **Start > Control Panel**. In the **Control Panel** window, click **User Accounts**.

**Step 3** On the displayed **User Account Control** dialog box, select **rdadmin** and click **Reset Password**.

**Step 4** Enter the new password and click **OK**.

**Step 5** In **Task Manager**, click the **Services** tab and then click **Open Service**.

- Step 6** Select RdMonitor and RdNginx respectively. In the displayed dialog box, select **Login**, change the password to the one entered in **Step 4**, and click **OK**.

----End

## A.1.2 Changing the Password of the Account for Reporting Alarms (SNMP v3)

To enhance the system O&M security, you are advised to change the password of the account for reporting alarms.

### Prerequisites

- The username and password for logging in to the console have been obtained.
- The username and password for logging in to a server have been obtained.

### Context

This section introduces the procedures in Windows and Linux.

---

#### NOTICE

There may be security risks if you use the same password for SNMP v3 authentication and data encryption. To ensure system security, you are advised to set different passwords for SNMP v3 authentication and data encryption.

---

Obtain the initial authentication password from technical support.

#### NOTE

The password must meet the following complexity requirements:

- Contains 8 to 16 characters.
- Contains at least one of the following special characters: `~!@#%&\*()-\_+=+|[{}];:":'<.>/?
- Contains at least two of the following types of characters:
  - Uppercase letters
  - Lowercase letters
  - Numeric characters
- Cannot be the same as the username or the username in reverse order.
- Cannot be the same as the old passwords.
- Cannot contain spaces.

## Changing the Password of the Account for Reporting Alarms (SNMP v3) in Windows

**Step 1** Log in to the server where the Agent is installed.

**Step 2** Open the CLI and go to the *Installation path*\bin directory.

**Step 3** Run the **agentcli.exe chgsnmp** command, enter the server login password, and press **Enter**.

```
Please choose operation:
1: Change authentication password
2: Change private password
3: Change authentication protocol
4: Change private protocol
5: Change security name
6: Change security Level
7: Change security model
8: Change context engine ID
9: Change context name
Other: Quit
Please choose:
```

 **NOTE**

**admin** is the username configured during the Agent installation.

**Step 4** Select the SN of the authentication password or data encryption password that you want to change and press **Enter**.

**Step 5** Type the old password and press **Enter**.

**Step 6** Type a new password and press **Enter**.

**Step 7** Type the new password again and press **Enter**.

The password is changed.

----End

## Changing the Password of the Account for Reporting Alarms (SNMP v3) in Linux

**Step 1** Log in to the Linux server using the server password.

**Step 2** Run the **TMOUT=0** command to prevent PuTTY from exiting due to session timeout.

 **NOTE**

After you run the preceding command, the system continues to run even when no operation is performed, which brings security risks. To ensure system security, run the **exit** command to exit the system after you finish the operations.

**Step 3** Run the **su - rdadmin** command to switch to user **rdadmin**.

**Step 4** Run the **/home/rdadmin/Agent/bin/agentcli chgsnmp** command, enter the server login password, and press **Enter**.

 **NOTE**

The installation path of the Agent is **/home/rdadmin/Agent**.

```
Please choose operation:
1: Change authentication password
2: Change private password
3: Change authentication protocol
4: Change private protocol
5: Change security name
6: Change security Level
7: Change security model
8: Change context engine ID
```

```
9: Change context name
Other: Quit
Please choose:
```

**Step 5** Select the SN of the authentication password or data encryption password that you want to change and press **Enter**.

**Step 6** Type the old password and press **Enter**.

**Step 7** Type a new password and press **Enter**.

**Step 8** Type the new password again and press **Enter**.

The password is changed.

----End

### A.1.3 Replacing the Server Certificate

For security purposes, you may want to use a Secure Socket Layer (SSL) certificate issued by a third-party certification authority. The Agent allows you to replace authentication certificates and private key files as long as you provide the authentication certificates and private-public key pairs. The update to the certificate can take effect only after the Agent is restarted, hence you are advised to update the certificate during off-peak hours.

#### Prerequisites

- The username and password for logging in to the console have been obtained.
- The username and password for logging in to a server have been obtained.
- New certificates in the X.509v3 format have been obtained.

#### Context

- The Agent is pre-deployed with the Agent CA certificate **bcmagentca**, private key file of the CA certificate **server.key** (), and authentication certificate **server.crt**. All these files are saved in **/home/rdadmin/Agent/bin/nginx/conf** (if you use Linux) or **\bin\nginx\conf** (if you use Windows).
- You need to restart the Agent after replacing a certificate to make the certificate effective.

#### Replacing the Server Certificate in Linux

**Step 1** Log in the Linux server with the Agent installed.

**Step 2** Run the **TMOUT=0** command to prevent PuTTY from exiting due to session timeout.

#### NOTE

After you run the preceding command, the system continues to run even when no operation is performed, which brings security risks. To ensure system security, run the **exit** command to exit the system after you finish the operations.

**Step 3** Run the **su - rdadmin** command to switch to user **rdadmin**.

**Step 4** Run the `cd /home/rdadmin/Agent/bin` command to go to the script path.

 **NOTE**

The installation path of the Agent is `/home/rdadmin/Agent`.

**Step 5** Run the `sh agent_stop.sh` command to stop the Agent running.

**Step 6** Place the new certificates and private key files in the specified directory.

 **NOTE**

Place new certificates in the `/home/rdadmin/Agent/bin/nginx/conf` directory.

**Step 7** Run the `/home/rdadmin/Agent/bin/agentcli chgkey` command.

The following information is displayed:

Enter password of admin:

 **NOTE**

`admin` is the username configured during the Agent installation.

**Step 8** Type the login password of the Agent and press **Enter**.

The following information is displayed:

Change certificate file name:

**Step 9** Enter a name for the new certificate and press **Enter**.

 **NOTE**

If the private key and the certificate are the same file, names of the private key and the certificate are identical.

The following information is displayed:

Change certificate key file name:

**Step 10** Enter a name for the new private key file and press **Enter**.

The following information is displayed:

Enter new password:

Enter the new password again:

**Step 11** Enter the protection password of the private key file twice. The certificate is then successfully replaced.

**Step 12** Run the `sh agent_start.sh` command to start the Agent.

----End

## Replacing the Server Certificate in Windows

**Step 1** Log in to the Windows server with the Agent installed.

**Step 2** Open the CLI and go to the `Installation path\bin` directory.

**Step 3** Run the `agent_stop.bat` command to stop the Agent running.

**Step 4** Place the new certificates and private key files in the specified directory.



 NOTE

Place new certificates in the *installation path*\bin\nginx\conf directory.

**Step 5** Run the **agentcli.exe chgkey** command.

The following information is displayed:

```
Enter password of admin:
```

 NOTE

**admin** is the username configured during the Agent installation.

**Step 6** Enter a name for the new certificate and press **Enter**.

 NOTE

If the private key and the certificate are the same file, names of the private key and the certificate are identical.

The following information is displayed:

```
Change certificate key file name:
```

**Step 7** Enter a name for the new private key file and press **Enter**.

The following information is displayed:

```
Enter new password:
Enter the new password again:
```

**Step 8** Enter the protection password of the private key file twice. The certificate is then successfully replaced.

**Step 9** Run the **agent\_start.bat** command to start the Agent.

```
----End
```

## A.1.4 Replacing CA Certificates

### Scenarios

A CA certificate is a digital file signed and issued by an authentication authority. It contains the public key, information about the owner of the public key, information about the issuer, validity period, and certain extension information. It is used to set up a secure information transfer channel between the Agent and the server.

If the CA certificate does not comply with the security requirements or has expired, replace it for security purposes.

### Prerequisites

- The username and password for logging in to an ECS have been obtained.
- A new CA certificate is ready.

### Replacing CA Certificates in Linux

**Step 1** Log in the Linux server with the Agent installed.

**Step 2** Run the following command to prevent logout due to system timeout:

```
TMOUT=0
```

**Step 3** Run the following command to switch to user **rdadmin**:

```
su - rdadmin
```

**Step 4** Run the following command to go to the path to the Agent start/stop script:

```
cd /home/rdadmin/Agent/bin
```

**Step 5** Run the following command to stop the Agent running:

```
sh agent_stop.sh
```

**Step 6** Run the following command to go to the path to the CA certificate:

```
cd /home/rdadmin/Agent/bin/nginx/conf
```

**Step 7** Run the following command to delete the existing CA certificate:

```
rm bcmagentca.crt
```

**Step 8** Copy the new CA certificate file into the **/home/rdadmin/Agent/bin/nginx/conf** directory and rename the file **bcmagentca.crt**.

**Step 9** Run the following command to change the owner of the CA certificate:

```
chown rdadmin:rdadmin bcmagentca.crt
```

**Step 10** Run the following command to modify the permissions on the CA certificate:

```
chmod 400 bcmagentca.crt
```

**Step 11** Run the following command to go to the path to the Agent start/stop script:

```
cd /home/rdadmin/Agent/bin
```

**Step 12** Run the following command to start the Agent:

```
sh agent_start.sh
```

```
----End
```

## Replacing CA Certificates in Windows

**Step 1** Log in to the ECS with the Agent installed.

**Step 2** Go to the *Installation path*\bin directory.

**Step 3** Run the **agent\_stop.bat** script to stop the Agent.

**Step 4** Go to the *Installation path*\nginx\conf directory.

**Step 5** Delete the **bcmagentca.crt** certificate file.

**Step 6** Copy the new CA certificate file into the *Installation path*\nginx\conf directory and rename the file **bcmagentca.crt**.

**Step 7** Go to the *Installation path*\bin directory.

**Step 8** Run the **agent\_start.bat** script to start the Agent.  
----End