

Alibaba Cloud Hybrid Backup

Best Practices

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid <i>Instance_ID</i></code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

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1 User permissions

Resource Access Management (RAM) enables you to manage user access to Alibaba Cloud resources. You can reduce risks to your Alibaba Cloud accounts by creating RAM users and managing their permissions.

You can create and manage multiple RAM users with a single Alibaba Cloud account. You can grant different permissions for each RAM user. This allows each RAM user to have different access permissions on Alibaba Cloud resources. With RAM, you do not need to share an AccessKey with another account. You can assign minimal permissions to each user to reduce as many data security risks for your enterprise as possible. For more information, see [What is Resource Access Management?](#) and [Permissions and authorization policies](#).

To use RAM to manage user permissions, you must create RAM users and groups. Then, you need to grant different permissions to each RAM user and group. This topic describes how to use RAM to manage user permissions.

Create a RAM user

1. Log on to the [Resource Access Management console](#) with your Alibaba Cloud account.
2. In the left-side navigation pane, click Users.
3. In the upper-left corner, click Create User to open the Create User dialog box.
4. Specify the required information, select Programmatic Access, and click OK.
5. After you create a user, an AccessKey is generated for the user. Click Save AccessKey.



Note:

After an AccessKey is generated, you cannot view the AccessKey in the console. You must save your AccessKey and keep it secret.

Create a user group

If you attempt to create multiple RAM users, you can group RAM users with identical responsibilities into the same group and authorize the group. This makes it easier to manage users and their permissions.

1. Log on to the [Resource Access Management console](#) with your Alibaba Cloud account.
2. In the left-side navigation pane, click Groups.
3. In the upper-right corner, click Create Group to open the Create Group dialog box.
4. Enter a group name and click OK.

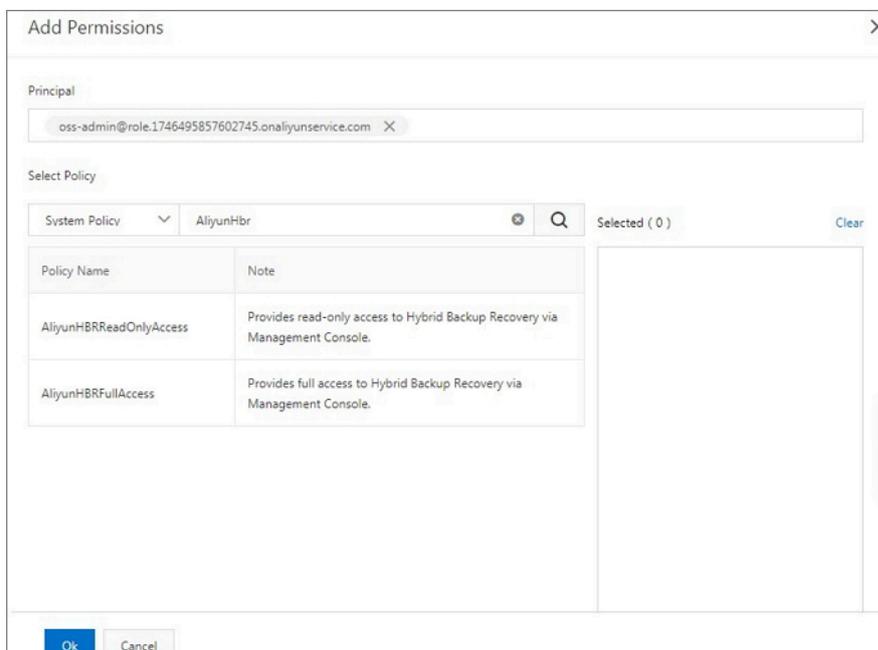
Grant permissions to a RAM user or group

By default, a new RAM user or group does not have any permissions. You need to grant permissions to the RAM user or group before using the user or group to operate resources by using the console or APIs.

Two types of permissions to use the Hybrid Backup Recovery (HBR) service are available for RAM users:

- **AliyunHbrFullAccess:** grants a RAM user full access to HBR.
- **AliyunHbrReadOnlyAccess:** grants a RAM user read-only access to HBR.

You can grant one of these permissions to a RAM user or group in the RAM console. For more information about how to authorize a RAM user or group, see [Authorize a RAM user](#).



 **Note:**
In addition to policies provided by RAM, you can also [#unique_7](#).

2 Back up data from an ECS instance that is located in a VPC but does not have an Internet connection

For ECS instances that are located in the China (Beijing), China (Shanghai), China (Hangzhou), or China (Shenzhen) region, you can use [ECS backup clients](#) to back up data. For regions that do not support ECS backup clients, you can create a NAT gateway to access the Hybrid Backup Recovery (HBR) console and [install on-premises backup clients](#) to back up data. You can use this solution when multiple ECS instances are located in the same VPC but do not have any Internet connection. When you configure an on-premises backup client in the HBR console, you can select a network type based on the information of an ECS instance. This topic describes how to create a NAT gateway.

Procedure

1. Log on to the ECS console and view the details of the ECS instance where data needs to be backed up.
2. In the `Configuration Information` section, you can view the VPC that hosts the ECS instance.
3. Log on to the NAT Gateway console, and click `Create NAT Gateway`.
4. Select a region, VPC ID, and specification based on the information of the ECS instance. The default billing cycle is one day. Purchase and activate NAT Gateway.
5. After the service is activated, you can log on to the NAT Gateway console and configure the NAT gateway.
6. Select the new NAT gateway, and choose `More > Bind EIP`.
7. Select an elastic IP address (EIP) and vSwitch, and click `OK` to bind the EIP.



Note:

If no EIP is available, you need to first apply for an EIP.

8. A default SNAT table is created. You can view the related information.
9. After a NAT gateway is created, you can select VPC as the network type when you back up data from the ECS instance.

3 Back up files from a local host without an Internet connection

If you need to back up files from a local host that does not have an Internet connection, you need to connect the host to an Alibaba Cloud VPC by using a VPN gateway or a dedicated data circuit. Then, you can create a configuration file named `hybridback up . toml`. This topic describes how to create the `hybridback up . toml` configuration file.

Prerequisites

- You have installed a backup client. For more information about how to install a backup client, see [#unique_12/unique_12_Connect_42_section_g3t_wvd_qfb](#). You do not need to activate the backup client.
- If you need to connect the local host to a VPC through a VPN gateway, you must create a VPN gateway. For more information, see [#unique_13](#).

Procedure

1. Enter the `client` folder of the client installation folder. For example, `C : \ Program Files \ Aliyun Hybrid Backup Service \ client .`
2. Create a .txt file and name the file `hybridback up . toml`.
3. Open the `hybridback up . toml` file and add the following information.

You need to replace the `Endpoint` value with an actual endpoint. Supported regions include China (Beijing), China (Shanghai), China (Hangzhou), and China (Shenzhen).

```
[ Server ]
```

```
Endpoint = "< hbr - vpc .[ cn - hangzhou ]. aliyuncs . com >"
```

4. Restart the backup service.

- Backup clients that are installed on Windows

Open the command prompt, enter `services . msc` and press Enter to open the Services dialog box, locate the Aliyun hybrid backup service, and restart the service.

- Backup clients that are installed on Linux

Run the `service hybridback up restart` command to restart the backup service.

4 Use a cache to accelerate the data backup process

The cache function is enabled by default on a backup client to accelerate the data backup process. This function helps you accelerate the data backup process by caching data entry IDs and metadata. You can disable this function or optimize the configurations of this function on source backup devices.



Note:

- The cache is only used to accelerate the data backup process, but cannot help restore data on a local host or remote host.
- You can only enable this function on a backup client whose version is 1.5.0 or later.
-

Prerequisites

You have downloaded and installed a backup client.

Procedure

You can perform the following steps to create a cache-based acceleration file. You can also disable the cache-based acceleration function or optimize the configurations of the function by configuring parameters in this file. This file is optional. If you do not create this file, the cache-based acceleration function works with the default settings.

1. You must log on to a server or virtual machine where data needs to be backed up.
2. Locate and open the installation folder of the backup client.
3. Open the subfolder of the `client` folder, and create a file named `hbr . config`

.



Note:

The `hbr . config` file must be stored in the folder where the `hybridebac kup` and `ids` applications are located.

4. In the `hbr . config` file, configure the following parameters for cache-based acceleration.

Name	Description
disable_blob_cache	<ul style="list-style-type: none"> · true: disables caching data entry IDs. · false: enables caching data entry IDs.
max_blob_cache_weight	<ul style="list-style-type: none"> · Specifies the maximum percentage of system memory usage by a cache that is used to store data entry IDs. · Default value: 0.15. It indicates 15% of total system memory. · The value must be between zero and one.
cache_prefix	<ul style="list-style-type: none"> · A string that indicates a path. The location where cached data entry IDs and metadata are stored. · The path must be an absolute path.
max_retain_count	<ul style="list-style-type: none"> · The maximum number of cached data entry IDs. · The value must be an integer.
disable_file_cache	<ul style="list-style-type: none"> · true: disables a metadata cache. · false: enables a metadata cache.
file_cache_max_size_hint	<ul style="list-style-type: none"> · The maximum size of a cache file. The disk space used may exceed the specified value. · Default value: 2 GB. <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> - With a cache file of 2 GB, you can back up a maximum 4 TB of data. - If you specify a small amount of data for the parameter, the backup does not fail but the performance of the cache is affected. - The value of the parameter cannot exceed the available disk space. </div> <ul style="list-style-type: none"> · Unit: B, KB, MB, and GB The default unit is B, which indicates a byte.

Example

```

disable_blob_cache = false
max_blob_cache_weight = 0.15
    
```

```
cache_pref ix = D :\ CacheFolde r  
max_retain _count = 16  
  
disable_file_cache = false  
file_cache _max_size_ hint = 2g
```

5 How to configure a proxy server for the host where a backup client is installed

This topic describes how to configure a Windows Server as a proxy server for the host where a backup client is installed.

Context

If the host where data is to be backed up cannot access the Internet, you need to configure a proxy server for the host.

Procedure

1. Prepare a server with Internet access for configuring the proxy service.
2. Install Visual C++ Redistributable for Visual Studio 2015-2019.

[VC_redist.x64.exe](#)

[VC_redist.x86.exe](#)

3. Download the binary package of [Apache HTTP Server 2.4](#) and decompress the package.
4. Modify the configuration file `Apache24 \ conf \ httpd . conf` .



Note:

In `Define SRVROOT "\ Apache24 "`, change the path to the installation directory of Apache. When Apache is stored in the root directory of disk D, for example, you can change the path to `D :\ Apache24` .

- Load modules.

```
LoadModule proxy_module modules / mod_proxy . so
LoadModule proxy_connect_module modules / mod_proxy_
connect . so
LoadModule proxy_ftp_module modules / mod_proxy_ ftp . so
LoadModule proxy_http_module modules / mod_proxy_ http .
so
```

- Specify any port as the listening port, for example, `Listen 8888` .
- Set access permissions.

```
ProxyRequests On
ProxyVia On
< Proxy *>
Require all granted
```

```
</ Proxy >
```

5. Double-click `Apache24 \ bin \ httpd . exe` to start the proxy service.
6. Install the backup client on the host without Internet access in either of the following two ways. After the backup client is installed, you can start backup.

- Method 1

- a. Log on to the host without Internet access.
- b. Choose **Computer > Control Panel > System and Security > System > Advanced system settings > Environment Variables**.
- c. In the **Environment Variables** dialog box, click **New** in the **System variables** area.
- d. Set **Variable name** to `HBR_PROXY` and **Variable value** to a string in the format of `private IP address:listening port`, such as `http://10****:8888`.
- e. After the environment variable is configured, restart the host.
- f. Install the ECS backup client in the HBR console. For more information, see [#unique_16/unique_16_Connect_42_section_vb1_zz5_fgb](#).
If you need to install the offline backup client, see [#unique_12/unique_12_Connect_42_section_cnq_phc_ggb](#).

- Method 2

Install the backup client for the host without Internet access in the HBR console . If it is the first time you install a backup client for the host in the HBR console,

the backup client fails to be installed. In this case, perform the following steps to activate the backup client:

a. Log on to the host without Internet access. Add a `.toml` configuration file in the client directory in the installation directory of the backup client.

- Windows

A. Go to the `client` directory in the installation directory of the backup client, for example, `C:\Program Files\Aliyun Hybrid Backup Service\client`.

B. Create the configuration file `hybridbackup.toml`.

C. Add the following information to the `hybridbackup.toml` file and save the file:

```
[ Server ]
Proxy = " http://10.***.***:8888 "
```

- Linux

A. Go to the `client` directory in the installation directory of the backup client, for example, `/opt/alibabacloud/hbr/client`.

B. Create the configuration file `hybridbackup.toml`.

```
vi /opt/alibabacloud/hbr/client/hybridbackup.toml
```

C. Add the following information to the `hybridbackup.toml` file and save the file:

```
[ Server ]
Proxy = " http://10.***.***:8888 "
```

After the `.toml` file is added, restart the `hybridbackup` service.

b. Find the host for which the backup client fails to be installed in the HBR console and click `Activate Client`.

c. Start backup after the backup client is activated.