

Alibaba Cloud Lightning Cube

Migrate data from Google Cloud Storage to OSS

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Document conventions

Style	Description	Example
	A danger notice 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.
	A warning notice 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 restart an instance.
	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings > Network > Set network type.
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	Courier font is used for commands.	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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1 Background information

This topic describes how to migrate data from Google Cloud Storage to Alibaba Cloud Object Storage Service (OSS).

Alibaba Cloud Data Transport is used as a data channel between various data stores . With Data Transport, you can migrate data from third-party data stores to OSS or between OSS buckets.

With Data Transport, you only need to log on to the console, specify a source data address and a destination OSS endpoint, and then create a migration job. After starting a migration job, you can perform management tasks for the job such as viewing the progress and status of the job. Additionally, you can generate the migration report to view the list of migrated files and the list of files that failed to migrate.



Notice:

- During a migration job, when you read data from the source data address, this produces an expense incurred by outbound traffic. You are charged by the storage service provider of the source data address.
- By default, Data Transport does not support cross-country data migration. For example, you cannot migrate data from a data address that is located in China (Beijing) to a data address that is located in US (Silicon Valley). If you have similar requirements, you must [open a ticket](#) before creating a migration job. You must apply for permission to create a cross-country migration job. You must ensure that your business is legitimate, data does not include illegal information, and data transit conforms to local rules and regulations.

This guide includes the following topics:

- [Prerequisites](#)
- [Create a migration job](#)
- [Manage migration jobs](#)

2 Preparations

This topic describes what you need to prepare before migration.

Google Cloud Storage

- Estimate the amount of data to be migrated.

Estimate the size and number of files to be migrated. You can use the `gsutil` tool or storage logs to view the capacity of a bucket. For more information, see [How to retrieve the details of a bucket](#).



Note:

You must enter an appropriate size and number of objects (files) when [creating a migration job](#).

- Create the private key of a service account for a migration job.
 1. Log on to the [IAM & admin console](#).
 2. Select Service accounts in the left-side navigation pane. Click a project in the top navigation bar, and on the tab that appears, select the required project.
 3. Click CREATE SERVICE ACCOUNT to create a service account that has the read permission of the bucket to be migrated. In the Create service account wizard that appears, specify the settings based on your needs. In Step 3, click CREATE KEY, and select JSON as the key type. Click CREATE to download the JSON file. Click CLOSE. Click DONE.



Note:

For an existing service account, click the service account name and choose EDIT > CREATE KEY. Select JSON as the key type and choose CREATE > SAVE.

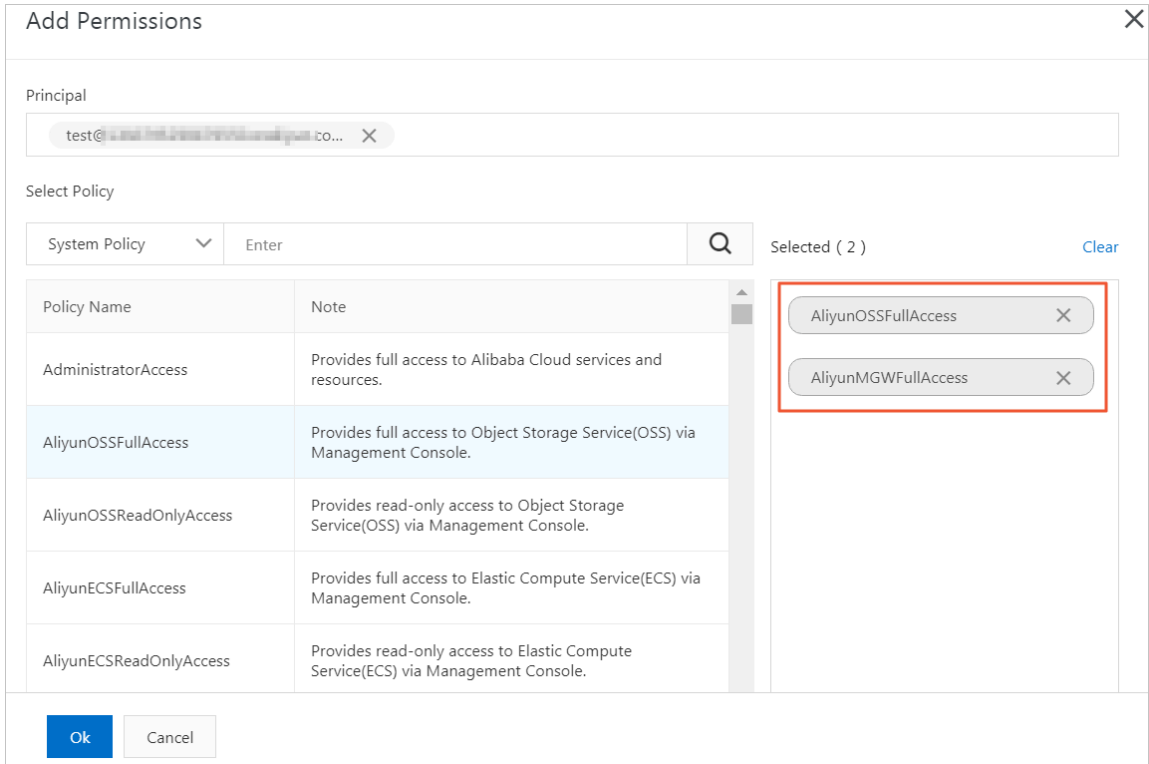
Alibaba Cloud Object Storage Service (OSS)

- Create an OSS bucket

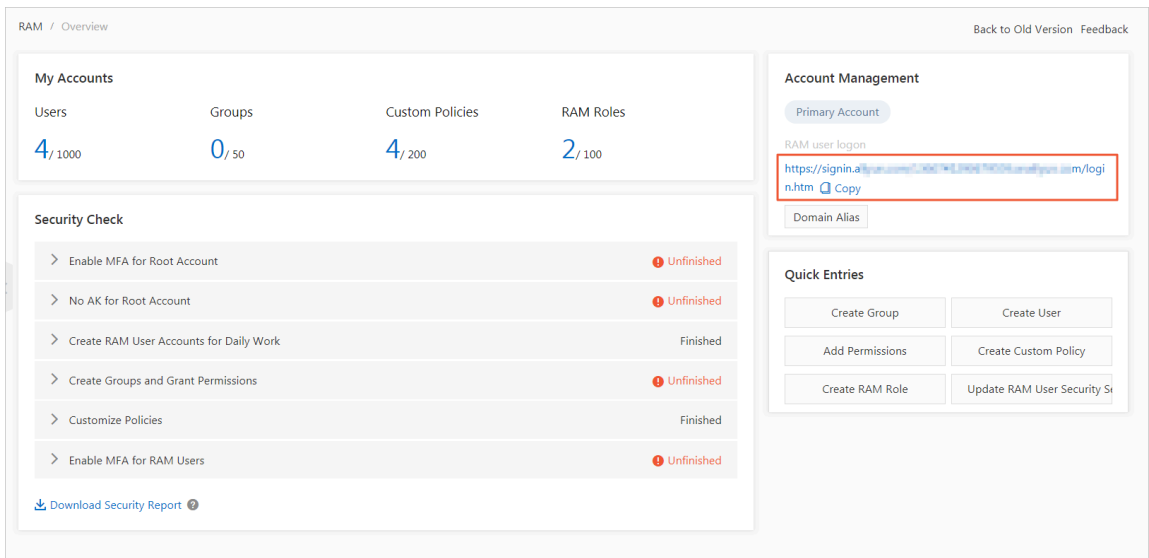
Create a destination OSS bucket to store the migrated data. For more information, see [Create a bucket](#).

- **Create and authorize a RAM user**
 1. Log on to the *RAM console*.
 2. Choose **Identities > Users > Create User**.
 3. Select **Console Password Logon and Programmatic Access**, and then enter the required RAM user information.
 4. Click **OK** to save the generated RAM username, password, AccessKey ID, and AccessKey Secret.
 5. Find the RAM user, and click **Add Permissions** to grant the OSS read/write permission (**AliyunOSSFullAccess**) and **Data Transport management**

permission (AliyunMGWFullAccess) to the RAM user. The following figure shows the authorization page.



6. In the left-side navigation pane, select Overview, click the link in the RAM user logon section, and enter the username and password of the new RAM user to log on to the console.



3 Create a migration job

This topic describes the operations and considerations for data migration.

Precautions

When creating a migration job, you must note the following issues:

Step 1: Create a source data address

1. In the Create Data Address dialog box, set the required options and click OK. The options are described as follows:

Option	Required	Description
Data Type	Yes	Select Google Storage.
Data Name	Yes	The data name can be 3 to 63 characters in length. Special characters are not supported, except for hyphens (-) and underscores (_).
Bucket	Yes	Enter the name of a bucket to be migrated.
Prefix	Yes	<ul style="list-style-type: none"> • Migrate all data: indicates that all data in a bucket are migrated. When you migrate all data, you do not need to enter a prefix. • Migrate partial data: indicates that files in a specified directory or prefix are migrated. A prefix cannot start with a forward slash (/) and must end with a forward slash (/). For example: <code>/data/to/oss/</code> or <code>/docs/</code>.
Key File	Yes	Upload the JSON file that you obtained from the <i>Prerequisites</i> section.

Step 2: Create a destination data address

1. Select **Data Online Migration > Data Address**, and then click **Create Data Address**.

2. In the Create Data Address dialog box, set the required options and click OK. The options are described as follows:

Option	Required	Description
Data Type	Yes	Select OSS.
Data Region	Yes	Select a region where the destination data address is located.
Data Name	Yes	The data name can be 3 to 63 characters in length. Special characters are not supported, except for hyphens (-) and underscores (_).
OSS Endpoint	Yes	Select an endpoint based on the region where data is located. For more information, see Endpoints .
AccessKeyId and AccessKeySecret	Yes	Enter an AccessKey that is used to migrate data. For more information, see Create an AccessKey .
OSS Bucket	Yes	Select a bucket to store migration data.
OSS Prefix	No	An OSS prefix cannot start with a forward slash (/) and must end with a forward slash (/). For example: <code>data/to/oss/</code> . If you want to store data to the root directory of a bucket, you can leave the OSS Prefix field blank.




Notice:

When the name of a file to be migrated at the source data address starts with a forward slash (/), you must add an OSS Prefix to the file name, or the migration job fails. Assume that the name of a file to be migrated is `/test/test.png`. You must add an OSS Prefix to the file name such as `oss/`. After a migration job is complete, an OSS file whose name is `/test/test.png` changes to `oss//test/test.png`.

Step 3: Create a migration job

1. In the Create Job dialog box, set the required options and click Next.

The options are described as follows:

Option	Required	Description
Job Name	Yes	The job name can be 3 to 63 characters in length and contain lowercase letters , numbers, and hyphens (-). A job name cannot start or end with a hyphen (-).
Source Data Address	Yes	Select the new source data address.
Destination Data Address	Yes	Select the new destination data address.  Notice: You can open a ticket to apply for the permission to create a cross-country migration job. This occurs if the country where the source data address is located is different from the country where the destination data address is located, You must ensure that your business is legitimate, data does not include illegal information, and data transit conforms to local rules and regulations.
Migration Type	Yes	
Start Time Point of File	Yes	<ul style="list-style-type: none"> • All: All files are migrated. • Assign: Files that are created or modified after the specified time are migrated. For example, when you set the Start Time Point of File to 2018/11/01 08:00:00, only files that are created or modified after 2018 /11/01 08:00:00 are migrated. Files that are created or modified before the specified time will be disregarded.

Option	Required	Description
Migration Interval	Yes (only for Incremental migration)	The default value is 1 Hour and the maximum value is 24 Hours.
Migration Times	Yes (only for Incremental migration)	The default value is 1 time and the maximum value is 30 times.

2. On the Performance tab, navigate to the Data Prediction area and enter the Data Size and File Count.



Note:

To ensure a successful migration, you must estimate the amount of data to be migrated. For more information, see [Estimate the amount of data to be migrated](#).

4 Manage migration jobs

This topic describes several subsequent operations after you create a migration job.


View the status of a migration job

After you create a migration job, one of the following states is displayed for the job:

- **Migrating.** This state indicates that data is being migrated. The migration process takes a while.
- **Create Failed.** This state indicates that you failed to create the migration job. You can view the cause of the failure and create a new migration job.
- **Completed.** This state indicates that the migration job is complete. You can view the migration report.
- **Failed.** This state indicates that the migration job fails. You can view the migration report and migrate the files that failed to be migrated.

Modify flow control settings

During migration, you can modify flow control settings at any time based on your needs.

1. Log on to the [Data Transport console](#).
2. Choose **Data Online Migration > Migration Jobs**. On the Migration Jobs page, find a migration job and click **Manage**.
3. Click **Stop** and ensure that the job is stopped.
4. On the **Flow Control Time Schedule** chart, click **Reset**.
 - To add a flow control setting, select an appropriate time range and maximum flow, and click **Add**.
 - To delete a flow control setting, click  next to the flow control setting.
 - To modify a flow control setting, you must first delete the previous setting and add a new flow control setting.
5. Click **OK** and click **Start** to restart the job.

View a migration report

1. On the Migration Jobs page, find a job and click **Manage**.

2. Click **Generate Migration Report**. After a report is generated, click **Export** to export the report.

In a migration report, the following files appear in the **File lists** section:

- The file whose name ends with `_total_list`. This file contains a list of all files that need to be migrated.
- The file whose name ends with `_completed_list`. This file contains a list of files that are successfully migrated.
- The file whose name ends with `_error_list`. This file contains a list of files that failed to be migrated.

3. In the *OSS console*, find the generated folder `aliyun_mgw_import_report/`.

The folder includes the three files that appear in the migration report. You can download the files and view the detailed list included in each file. We recommend that you use the *ossbrowser* tool to view these files.

Each list consists of four columns. The description of four columns is provided as follows:

- For the file whose name ends with `_total_list`, the four columns include the source data address, name, size (measured in Bytes), and last modification time of each file that needs to be migrated. The format of the data source address: `<vendor>://<bucketName>/<prefix>/<objectName>`. Example: `oss://bucket-test1022/myprefix/testfile.txt`.
- For the file whose name ends with `_completed_list`, the four columns include the name, size (measured in Bytes), CRC-64 checksum, and completion time of each migrated file.
- For the file whose name ends with `_error_list`, the four columns include the name, start time, completion time, and error description of each file that failed to be migrated.

Retry after a migration failure

If a migration job fails, you can view the file whose name ends with `_error_list` to find the causes of the failure and troubleshoot the issue. On the **Migration Jobs** page, find the failed job, click **Manage**, and click **Retry** to migrate the files that failed to be migrated.

More information

For more information, see the following topics:

- [Migrate data between Alibaba Cloud Object Storage Service \(OSS\) buckets](#)
- [Migrate data from HTTP/HTTPS sources to OSS](#)
- [Migrate data from Tencent Cloud Object Service \(COS\) to OSS](#)
- [Migrate data from Amazon Simple Storage Service \(Amazon S3\) to OSS](#)
- [Migrate data from Azure Blob to OSS](#)
- [Migrate data from Qiniu Cloud-Object Storage \(KODO\) to OSS](#)
- [Migrate data from Baidu Object Storage \(BOS\) to OSS](#)
- [Migrate data from Kingsoft Standard Storage Service \(KS3\) to OSS](#)
- [Migrate data from UPYUN Storage Service \(USS\) to OSS](#)
- [Migrate data between NAS file systems](#)
- [Migrate data from NAS to OSS](#)
- [Migrate data from ECS instances to OSS](#)