

# Alibaba Cloud Lightning Cube

**Migrate data from HTTP/HTTPS sources to OSS**

Issue: 20190603

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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. |  <b>Danger:</b><br>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.  |  <b>Warning:</b><br>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.                           |  <b>Notice:</b><br>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.                       |  <b>Note:</b><br>You can use Ctrl + A to select all files.  |
| >   | Multi-level menu cascade.  | Settings > Network > Set network type  |
| <b>Bold</b>   | It is used for buttons, menus, page names, and other UI elements.  | Click OK.  |
| <code>Courier</code><br>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 Instance_ID</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 Background information

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This topic describes how to migrate network resources to 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.

This guide includes the following topics:

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

## 2 Prerequisites

This topic describes what you need to do before creating a migration job.

### Network resources

- Estimate the amount of data to be migrated.

Estimate the size and number of files to be migrated.



#### Note:

To ensure a successful migration, you need to enter the appropriate size and number of files when [creating a migration job](#).

- Load network resources

#### 1. Create a list file on the local PC.

The list file has two columns.

- The first column includes a list of HTTP/HTTPS addresses. The migration service uses the HTTP GET method to download a file from an HTTP/HTTPS address and the HTTP HEAD method to obtain metadata of a file.
- The second column includes a list of file names. After a file is migrated, the object name of the files includes a prefix and a file name. Separate two columns with a tab (`\ t`).



#### Notice:

You must specify a file in a list file rather than a file folder.

Each line includes a file name. Separate two lines with a line feed `\ n`.

Assume that a list file is named list.txt.

```
http :// docs - aliyun . cn - hangzhou . oss . aliyun - inc . com  
/ docs / my . doc      docs / my . doc  
http :// docs - aliyun . cn - hangzhou . oss . aliyun - inc . com  
/ pics / my . jpg      pics / my . jpg
```



#### Notice:

If a file name includes special characters, such as Chinese characters, spaces, and tabs, you need to perform URL encoding.

- When a file name includes signs, you must transcode the link and file name of the file. For example, a file is named `##. jpg` . After the file name is transcoded, the file name is displayed as `## EF % BF % A5 . jpg` and you need to change the link and file name of a row in a list file as follows.

```
http :// docs - aliyun . cn - hangzhou . oss . aliyun - inc .
com / pics /## EF % BF % A5 . jpg      pics /## EF % BF % A5 .
jpg
```

- When a file name includes Chinese characters, you must transcode the link of the file and keep the file name. For example, a file is named `< a Chinese file name >. jpg` . After the file name is transcoded, the file name is displayed as `% e5 % 9b % be % e7 % 89 % 87 . jpg` and you need to change the link of a row in a list file as follows.

```
http :// docs - aliyun . cn - hangzhou . oss . aliyun - inc .
com / pics /% e5 % 9b % be % e7 % 89 % 87 . jpg      pics /< a
Chinese file name >. jpg
```

## 2. Upload the list file to OSS.

The address of the list file has the following format: `oss ://{ bucket }/{ list file name }`.

## Alibaba Cloud Object Storage Service

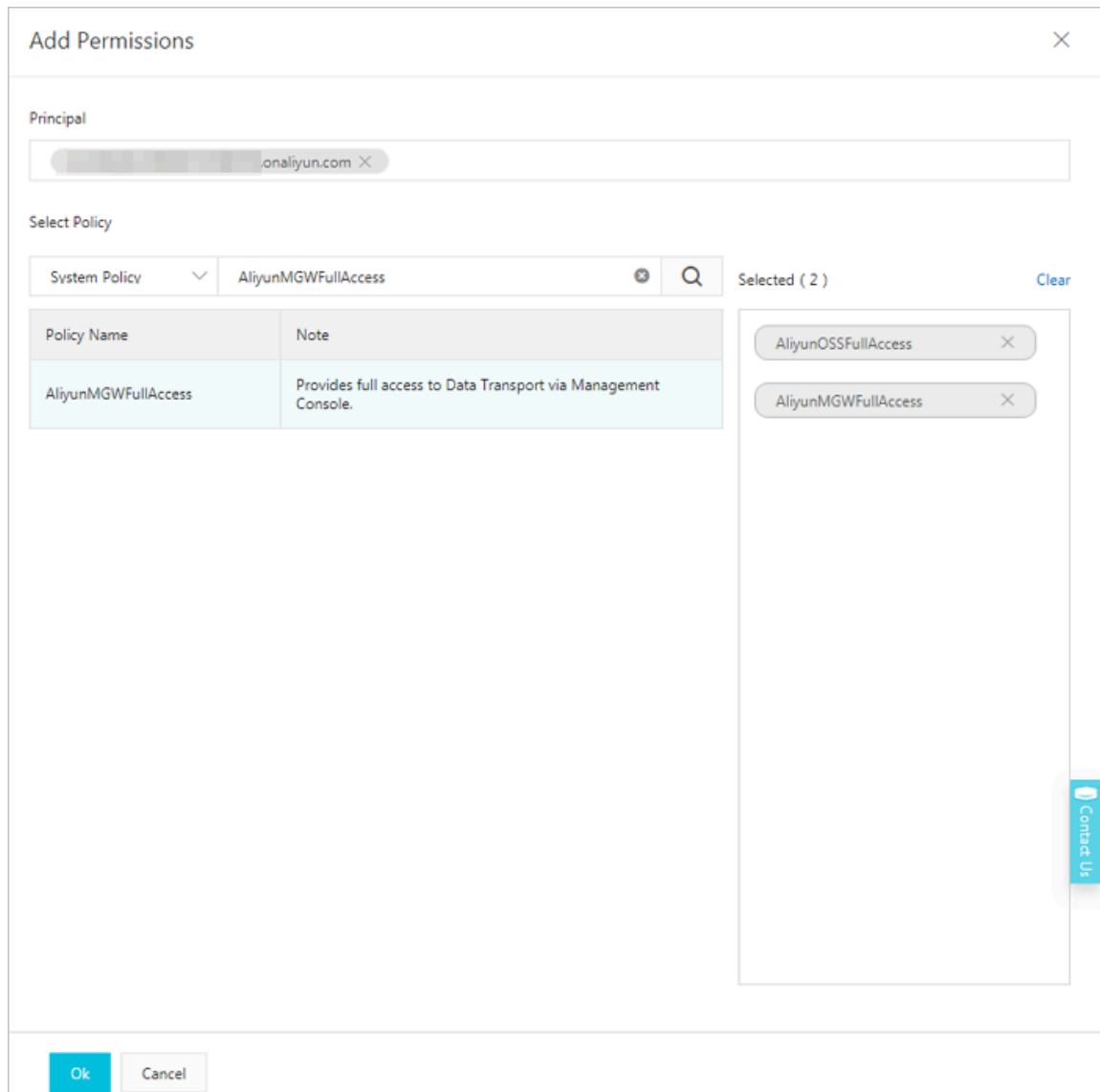
- Create a destination bucket.

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

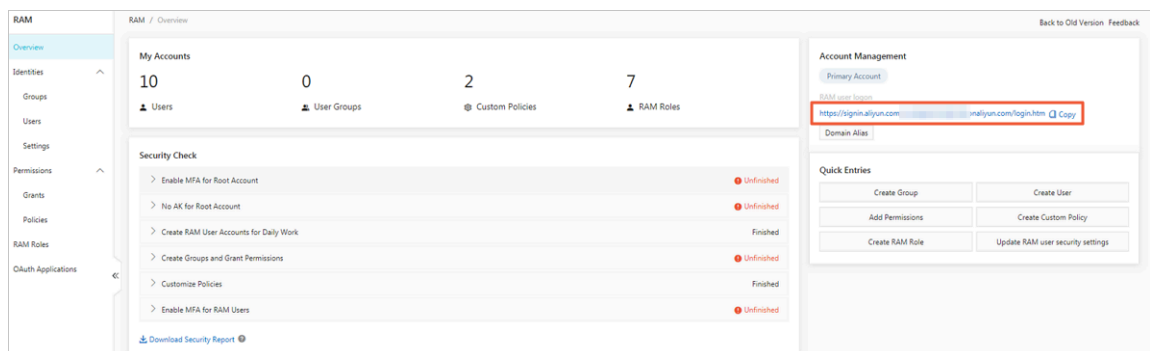
- Create and authorize a RAM user

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 User Account Information.
4. Click OK to save the generated account, password, AccessKeyID, and AccessKeySecret.
5. Select the required user account, click Add Permissions to grant the read/write permission (AliyunOSSFullAccess) and migration permission

(AliyunMGWFullAccess) for the RAM user. The Add Permissions dialog is shown in the following figure.



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 newly created RAM user to log on to the console.



## 3 Create a migration job

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This topic describes the operations and considerations for data migration.

### Precautions

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

- A migration job occupies the network resources of the source data address and destination data address. To ensure business continuity, we recommend that you specify a speed limit for a migration job or perform the migration job during off-peak hours.
- Before a migration job is performed, files at both the source data address and the destination data address are checked. The files at the destination data address are overwritten during a migration job. This occurs if the source files have the same name as the destination files, but have a later update time. If two files have the same name but different content, you must change the name of one file or back up the files.

### Step 1: Create a source data address

1. Log on to the [Data Transport console](#).
2. Choose Data Online Migration > Data Address, and then click Create Data Address.
3. 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 Http/Https.   |
| Data Name | Yes      | The data name can be 3 to 63 characters in length. Special characters are not supported, except for hyphens (-) and underscores (_). |
| File Path | Yes      | Enter oss://{bucket}/{the name of a list file}.<br><br>For more information, see <a href="#">Create a list file</a> .                |

| Option                            | Required | Description   |
|-----------------------------------|----------|---|
| List Access Endpoint              | Yes      | Enter the appropriate endpoint based on the comparison table for regions and endpoints. For more information, see <a href="#">Regions and endpoints</a> . |
| List Access AK and List Access SK | Yes      | Enter an Accesskey that is used to migrate data.  |

4. You must apply for whitelist permissions because this feature is still in the beta testing phase. Click Application.
5. Enter the required information and submit the beta testing application for migration. After the application has been approved, you will receive an SMS notification.

#### Step 2: Create a destination data address

1. Choose Data Online Migration > Data Address and 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 <a href="#">Endpoints</a> .                  |
| AccessKeyId and AccessKeySecret | Yes      | Enter an AccessKey to migrate data. For more information, see <a href="#">Create an AccessKey</a> .                                  |
| OSS Bucket                      | Yes      | Select a bucket to store migration data.   |

| Option     | Required | Description   |
|------------|----------|---|
| OSS Prefix | No       | An OSS prefix cannot start with a forward slash (/) and must end with a forward slash (/). For example: data / to / oss /. If you want to store data to the root directory of a bucket, you can leave the OSS Prefix field blank. |

### Step 3: Create a migration job

1. Choose Data Online Migration > Migration Jobs and click Create Job.
2. In the Create Job dialog box, read the Terms of Data Transport, select I understand the above terms and conditions, activate Data Transport, and then click Next.
3. 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 3 to 63 characters in length and can contain lowercase letters, numbers, and hyphens (-). A job name cannot start or end with a hyphen (-). |
| Source Data Address      | Yes      | Select the created source data address.  |
| Destination Data Address | Yes      | Select a destination data address that you have created.   |

| Option         | Required | Description  |
|----------------|----------|--|
| Migration Type | Yes      | <p>Before you start a migration job, Data Transport compares files of the source data address with those of the destination data address. The files at the source data address are disregarded during migration. This occurs if the source files with an earlier update time have the same name, ContentType, and size as the destination files. However, all the other files are migrated.</p> <ul style="list-style-type: none"><li>· <b>Full:</b> performs a full migration. After all of the files are migrated, a migration job is closed. When you perform a full migration job again, the migration service only migrates files that have been changed after the last full migration job.</li></ul> |

4. On the Performance tab, navigate to the Data Prediction section, 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](#).

5. This step is optional. On the Performance tab, navigate to the Flow Control area and set the Time Range and the Max Flow, and then click Add.

**Note:**

To ensure business continuity, we recommend that you set the Time Range and Max Flow based on the fluctuation of visits.

6. Click Create. Wait until a migration job is complete.



## 4 Manage migration jobs

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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, only one migration job status is displayed. The status can be one of the following:

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

### Modify flow control settings

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

1. In the [Data Transport console](#), choose **Data Online Migration > Migration Jobs**. On the Migration Jobs page, locate a migration job and click **Manage** next to the job.
2. Click **Stop** and ensure that the job is stopped.
3. On the Flow Control Time Schedule chart, click **Reset**.
  - To add a flow control setting, select the appropriate Time Range and Max 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.
4. Click **OK** and click **Start** to restart the job.

### View a migration report

1. On the Migration Jobs page, locate a job and click **Manage** next to the job.

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

In a migration report, the following file names appear in the **File list** section:

- The name of a file ends with `_total_list.txt`. This file contains a list of total migration files.
  - The name of a file ends with `_completed_list.txt`. This file contains a list of successful migration files.
  - The name of a file ends with `_error_list.txt`. This file contains a list of failed migration files.
3. In the [OSS console](#), locate the automatically generated folder `aliyun_mgw_import_report/`. The three files that appear in the migration report are included in this folder. You can download and view the detailed list of files. We recommend that you use the [ossbrowser](#) tool to view these files.

The file formats are as follows:

- The file name includes the source data address, file name, file size (measured in bytes), and last modified time. This file contains a list of total migration files. The format of the data source address is: `< vendor >://< bucketName >/< prefix >/< objectName >`. For example, `oss :// bucket - test1022 / myprefix / testfile . txt`.
- The file name includes the file name, file size (measured in bytes), checksum (CRC64), and migration completion time. This file contains a list of successful migration files.
- The file name includes the file name, migration start time, migration end time, and error description. This file contains a list of failed migration files.

### Retry after a migration failure

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

### More information

For more information, see the following topics:

- *Migrate data between Alibaba Cloud Object Storage Service (OSS) buckets*
- *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 from Google Cloud Storage to OSS*
- *Migrate data between NAS file systems*
- *Migrate data from NAS to OSS*
- *Migrate data from ECS instances to OSS*