

Cloud Migration

COS Migration Guide

Product Documentation



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COS Migration Guide

Overview

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Object Storage Migration

Object storage migration is a cloud data migration service and tool provided by Tencent Cloud. It enables you to easily migrate data from third-party data sources to Tencent Cloud COS buckets or migrate data between different COS buckets.

Supported Data Sources

Alibaba Cloud OSS, AWS S3 (international), Azure Blob, HTTP URL list, storage systems supporting S3 protocol (such as Ceph, Minio, GCP), and Tencent Cloud COS.

Migration Mode

Fully-Managed Migration

In the fully-managed migration mode, you do not need to manually deploy an agent. The migration is performed automatically after you create a task in the console. Object storage migration will pull data from the origin server of third-party data sources via the public network and store the data in Tencent Cloud COS buckets. If it is migration between COS storage buckets, pull the source data through the private network to transmit. For the task creation process, see the specific instructions on the data source of each service provider.

Semi-managed Migration

In the semi-managed migration mode, you need to create a task in the console and manually deploy a migration agent on your own server. The agent first obtains the task you have created using a fixed network request, pulls source data over the network, and uploads the data to Tencent Cloud COS buckets. At the same time, the agent updates the progress in real time in the console, allowing you to monitor the task progress just like in fully-managed migration mode. For the task creation process, see the instructions on the data source of each service provider. For the deployment and usage of the agent, see [Using Semi-Managed Migration Agent](#).

Notes

- In the fully-managed migration mode, public network outbound traffic fees are incurred for third-party data sources. For specific fees, see the pricing of the storage service provider. **To migrate between**

Tencent Cloud COS buckets, see [Cross-Bucket Replication](#) (supports replicating incremental data only). You can also [contact us](#) to design a migration plan.

- In the semi-managed migration mode, corresponding traffic fees may be incurred depending on the server where the agent is deployed. Traffic fees will not be charged if a direct connection is established between the data source and Tencent Cloud COS. Therefore, we recommend that you use this mode if a direct connection is already established.
- In the semi-managed migration mode, both computing and network resources are dedicated. You can accurately estimate the migration speed and resource usage. This mode applies to scenarios where the data volume is large, the time for migration is urgent, or a direct connection has been established.
- The resources used in the fully-managed migration mode are shared by all migration tasks, and the migration speed and resource usage cannot be accurately estimated. This mode applies to scenarios where the data volume is small or the time for migration is sufficient.

Data Verification

- All data undergoes a simple verification to check if the data sizes are consistent.
- If the header of the source file carries a CRC-64 or Content-MD5 checksum value, it will be checked on both the source and destination files for the consistency.
- If no such checksum value is used, the source and destination files will be sampled for double check.

Transmission Security

Supported SSL/TLS-based HTTPS encrypted transfer to prevent security risks during data migration.

File Migration Time Estimation

The overall migration speed is subject to the lowest speed during each stage of the migration process and is affected by the network transmission speed and maximum concurrency level. Factors are as follows:

Affecting Factor	Description
Read speed of the migration source	<p>The read speed of the data source varies depending on the service provider. Generally:</p> <ul style="list-style-type: none"> • The speed ranges from 50 Mbps to 20,000 Mbps. • The file read QPS ranges from 500 to 5,000. (The transmission of a large number of small files is affected by the concurrency level.)
Transmission speed of Cloud Migration	<ul style="list-style-type: none"> • Cloud Migration provides a migration bandwidth of up to 2,000 Mbps in the fully-managed migration mode. • In the semi-managed migration mode, the transmission speed depends on the migration resource specifications provided by users.

Write speed of the migration destination

The default write speed of Tencent Cloud COS buckets is 15,000 Mbps, and the write QPS ranges from 3,000 to 30,000.

Using Semi-Managed Migration Agent

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Overview

msp-agent is a tool for migrating data to COS. You can deploy it on a server in your data center or in the cloud. It will execute the semi-managed migration tasks created in the Cloud Migration console, facilitating the easy migration of cloud storage data to COS.

Support Features

- Migration from all the source vendors supported in the console.
- Easy-to-deploy distributed master-worker architecture for efficient migration of a high volume of data.
- Supports Breakpoint Resume.
- Supports Traffic Control.
- Supports all features that can be entered in the console, in line with fully managed service features.
- Supports both push and pull modes. Please [contact the Storage Architect](#) to design the migration plan.
 - Push mode: Deploy the msp-agent on the host nearest to the data source to push data to the COS target bucket.
 - Pull mode: Deploy the msp-agent on the host nearest to the Tencent Cloud COS target bucket to pull data from the data source and write it into the COS target bucket.
- Supports both Dedicated Line and Public Internet networking modes, see [Network Traffic](#).
- Supports [Private Network Global Acceleration](#). Enabling the global acceleration feature will incur COS global acceleration traffic costs, which are charged by COS. For more details, see [Global Acceleration Overview](#).

CVM Model Selection

- For files with an average file size greater than 1M, a memory ratio of 1:4 is recommended for the number of server cores. For example, select 16C for cores and recommend choose 64G or more for memory. For files with an average file size less than 1M, a memory ratio of 1:2 is recommended.
- It is advisable to deploy master and worker separately. Open an additional machine with a configuration similar to or slightly smaller than the worker as the master in a cluster. This way, the stability of the entire cluster is more guaranteed.

Running environment

Suitable for Linux systems.

System Deployment Method

Installation

Download the msp-agent installation package [msp-agent](#), then decompress it. Here is the directory structure after decompression:

```
├── master
│   ├── bin
│   │   ├── msp-master
│   │   ├── start.sh
│   │   └── stop.sh
│   └── configs
│       ├── app_logger_config.yaml
│       ├── pl_config.yaml
│       └── query_logger_config.yaml
└── worker
    ├── bin
    │   ├── msp-worker
    │   ├── start.sh
    │   └── stop.sh
    └── configs
        ├── app_logger_config.yaml
        ├── pl_config.yaml
        └── query_logger_config.yaml
```

Note:

- msp-agent adopts the distributed master-worker architecture, where one master can connect to one or multiple workers.
- The 'master' directory is for the master, and the 'worker' directory is for the workers.
- If you need to deploy multiple workers, copy the entire 'worker' directory, then modify the relevant parameters before starting them using the method below.
- You can start multiple worker processes on a single server. However, you need to modify relevant parameters as detailed below to avoid port conflicts.

Configuration Parameter Description

Both the master and worker directories contain the same configs structure:

```
configs
├── app_logger_config.yaml
├── pl_config.yaml
└── query_logger_config.yaml
```

Among them, pl_config.yaml configures the main parameters for process execution; app_logger_config.yaml configures the application runtime log format; query_logger_config.yaml configures the master-slave RPC communication log format.

Log configuration

You can basically use the default log parameter settings.

Note:

Log Rolling Configuration: If the disk space is limited and the task size is large, you need to adjust the log configuration to save disk space (Migration uses the disk only for storing logs, actual file migration does not use the disk).

Master configuration

Parameter	Definition	Description
"....gRPCPort"	gRPC port for listening on the master	This parameter specifies the port used to receive the information reported by workers. This port must be opened to worker servers on the master server.
failFilePartSize	Part size of a failed file	This parameter specifies the part size of a failed file, which is 10,485,760 bytes by default. The product of this value multiplied by 10,000 is the maximum size of failed files, i.e., 100 GB. If there are both high numbers of files to be migrated and failed files, for example, more than 200 million files, you can increase this value appropriately.
fragMaxSize	Fragment size of an assigned task	<ul style="list-style-type: none"> To reduce the pressure on master-worker communication, the master packages multiple file paths into a fragment and assigns it to a worker as a subtask. <code>fragMaxSize</code> is the maximum size of files in each fragment in bytes. If the value is too small, the pressure on master-worker communication will get higher, and server resources will be wasted; if it is too large, workers will become too slow to report the completion of fragment migration and have imbalanced loads. The default value is 10737418240, i.e., 100 GB. When <code>fragMaxSize</code> or <code>fragMaxNum</code> reaches the limit during packaging, the system will stop adding more files.
fragMaxNum	Maximum number of files of an assigned task fragment	<ul style="list-style-type: none"> To reduce the pressure on master-worker communication, the master packages multiple file paths into a fragment and assigns it to a worker as a subtask. <code>fragMaxNum</code> is the maximum number of files in each fragment. If the value is too small, the pressure on master-worker communication will get higher, and server resources will be wasted; if it is too large, workers will become too slow to report the completion of fragment migration and have imbalanced loads.

		<ul style="list-style-type: none"> The default value is 1,000. When <code>fragMaxSize</code> or <code>fragMaxNum</code> reaches the limit during packaging, the system will stop adding more files.
secretId	The <code>secretId</code> used to request TencentCloud APIs for Cloud Migration	<p>As the master process needs to request TencentCloud APIs for Cloud Migration to get the tasks created in the console, you need to enter the <code>secretId</code> of your key.</p> <p>Note that the key here refers to your key used to create Cloud Migration tasks, not the keys of source and target buckets.</p>
secretKey	The <code>secretKey</code> used to request TencentCloud APIs for Cloud Migration	<p>As the master process needs to request TencentCloud APIs for Cloud Migration to get the tasks created in the console, you need to enter the <code>secretKey</code> of your key. Note that the key here refers to your key used to create Cloud Migration tasks, not the keys of source and target buckets.</p>
listerIp	Private IP of the server where the master process is deployed	<p>You may create multiple tasks, and want them to run on different clusters. Therefore, you need to enter the Private IP Address of the server where the Master process is deployed. This way, the Master will only run tasks that are assigned to this server's IP during task creation in the Console.</p> <p>When creating tasks in the Console, enter the same IP in the form for the Master Node Private IP.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p>Master Node Private IP * <input type="text" value="Please enter the private IP of the primary node"/></p> </div>
useAccelerateDomain	Access the internal COS bucket holding the Failed File List using the Global Acceleration Domain	<p>To avoid the failure of saving the "Failed File List" causing the retry of migration tasks to fail, the Failed File List of tasks is uniformly saved to a bucket in domestic regions. When the msp-agent is deployed overseas, to ensure the task runs without errors, it is recommended to set this configuration to true in the configuration file.</p>

Worker configuration

Parameter	Definition	Description
"....gRPCPort"	gRPC port for listening on the worker	This parameter specifies the port used to receive the scheduling information from the master. This port must be opened to the master server on the worker server. If multiple worker processes run on a single server, you need to change this parameter to a value different from that of other workers, so as to avoid process startup failure due to port conflicts.
fileMigrateTryTimes	Number of retries	This parameter specifies the maximum number of retries after a file fails.
goroutineConcurrentNum	Number of concurrent coroutines	This parameter specifies the number of concurrent coroutines, i.e., the number of files to be migrated concurrently. The value is subject to two factors: server configuration and average file size. The more the server CPU cores, the greater the value can be set. The larger the average file size, the smaller the value can be set. As a small number of concurrent coroutines can lead to a high bandwidth usage, if the average file size is small, you should add more concurrent coroutines to increase the overall bandwidth.
baseWorkerMaxConcurrentFileNum	Queue of cached files to be migrated	To improve the assignment efficiency of distributed tasks, each worker caches a certain number of file fragments to be migrated. If the files to be migrated are small (that is, the migration QPS is high), you can increase this value to make workers less hungry during consumption. However, the larger the cache, the more the status data that the master needs to store, which will increase the master load and instability. Therefore, you should choose an appropriate value.
partSize	Part size	This parameter specifies the default part size for multipart upload during large file migration.
downloadPartTimeout	Download timeout period	This parameter specifies the file download timeout period in seconds.
uploadPartTimeout	Upload timeout period	This parameter specifies the file upload timeout period in seconds.
perHostMaxIdle	HTTP client concurrency	This parameter specifies the connection pool size per host and generally should be set to the same value as <code>goroutineConcurrentNum</code> .
addr	Private network communication	This parameter specifies the master communication address of workers, so that workers will register with the master to form a cluster. For example, if the master's <code>listenerIp</code> is <code>10.0.0.1</code> , and the

	tion address of the master	gRPC port to be listened on in the master configuration is <code>22011</code> , then set <code>addr</code> to <code>10.0.0.1:22011</code> .
sample	Whether to perform spot check	The overview section describes the cases of data consistency check after migration. If source files don't have a Content-MD5 or CRC-64 checksum, they cannot be directly checked for data consistency. In this case, you can only perform spot check to reduce their probability of inconsistency. If this parameter is set to <code>true</code> , spot check will be performed on such files.
sampleTimes	Number of sampled fragments per file	This parameter specifies the number of sampled fragments of a single file. Each sampled fragment will add one download request and increase the download traffic usage.
sampleByte	Sampled fragment size in bytes	This parameter specifies the size of each sampled fragment. The greater the value, the higher the sampling bandwidth.
useInternalAccDomain	Using the COS private network global acceleration domain	<p>Enabling this configuration as true will use the private network global acceleration domain when uploading files to the target COS bucket, enhancing the performance of data upload to COS; if the source bucket is also a COS bucket, the private network global acceleration domain will be used for downloading as well. Before enabling this configuration, please ensure that both the target COS bucket and the source COS bucket (if the migration source is a COS bucket) have global acceleration enabled.</p> <div style="border: 1px solid #00a88f; padding: 10px; margin-top: 10px;"> <p>Note: Enabling this configuration will incur COS global acceleration traffic costs, which are charged by COS. For more details, see Global Acceleration Overview .</p> </div>

Startup

- Start the master:

```
cd {path-to-msp-agent}/master && ./bin/start.sh
```

- Start the worker:

```
cd {path-to-msp-agent}/worker && ./bin/start.sh
```

Network traffic

- If the data source is a competitor:

Managed mode	Dedicated Line or Public network	Network traffic
Push Mode	Dedicated Line	Through Dedicated Line, migration performance is guaranteed; Dedicated Line is connected with COS, please contact the Storage Architect .
	Public network	Migration performance is limited by public network bandwidth.
Pull Mode	Dedicated Line	As above, peer providers will incur outbound external network traffic.
	Public network	As above, peer providers will incur outbound external network traffic.

- If the data source is Tencent Cloud COS, migrating buckets within the same region uses the private network; migrating buckets across regions uses the public network.

Migrating from AWS S3 (International)

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Overview

This document describes how to configure an Agent semi-managed migration task to migrate data from AWS S3 (International) to Tencent Cloud COS.

Note:

You need to log in to the AWS Management Console (International) for migration from AWS S3 (International).

Preparations

AWS S3

1. Log in to the AWS Console.
2. In the navigation pane, select Users and then Add User. Type in the username for the new user.
3. Select the access permission type that this group of users will have. Choose Programmatic access and AWS Management Console access.
4. Click **Next: Permissions**(Next: Permissions).On the Set permissions page, specify how to assign permissions to the new user, and grant the IAM account permission to read data (specific authorization operations include ListBuckets, HeadBucket, GetBucket, GetBucketLocation, ListObjects, HeadObject, GetObject).
5. Click **Create user**. To view the user's access keys, select show next to each password and access key you wish to view. To save the access keys, select download `.csv` , to obtain AccessKeyID and AccessKeySecret.

Note:

Create an AWS IAM account and grant relevant permissions. This is a simple guide and may change due to origin server updates. Refer to the AWS official documentation for details.

Tencent Cloud COS

1. Create a destination bucket to store the migrated data. For more details, see [Creating Bucket](#).
2. Create a Sub-user for migration and grant the necessary permissions. For a brief guide, refer to [Create and authorize the sub-account](#).
 - 2.1 Log in to the [CAM console](#).

- 2.2 Choose **Users > User List** in the left sidebar to enter the user list page.
- 2.3 Create a Sub-user, select **programmatic access** and **Tencent Cloud console access**.
- 2.4 Search for and check the **QcloudMSPFullAccess** and **QcloudCOSAccessForMSPRole** policies.
- 2.5 Complete the sub-user creation and save the **userName**, login password, SecretId, and SecretKey.

Note:

You can also log in to Cloud Migration with your root account. However, for security reasons, we recommend that you create a sub-account, use the sub-account's API key for migration, and delete the sub-account after migration.

Directions

Logging in to Cloud Migration

1. Log in to [Cloud Migration console](#).
2. Click **Object Storage Migration** in the left sidebar to enter the object storage migration page.

Creating Migration Task

1. On the object storage migration page, click **Create task** to enter the migration task configuration page and set the migration parameters.
2. Specify the migration task name.
Task name: 1 to 60 characters ([a-z], [A-Z], [0-9] and [_]). You can use this name to view the migration status and progress in the task list.
3. Task size estimation. Please accurately fill in the task size so that Tencent Cloud can better prepare resources. This field is optional.

Migration task estimation

Please try to specify the correct amount of data and number of files you want to include in this migration task. This information is only used for MSP to estimate the migration resources.

The actual amount of data to be migrated is still subject to the amount of data detected by MSP based on your migration conditions. If you leave the fields empty, or enter incorrect information, the migration task will proceed, but the migration speed may be affected by an inaccurate resource estimation in case of massive data and files.

Data	<input type="text" value="Please enter the amount of data t"/>	GB ▼
Files	<input type="text" value="Please enter the number of files t"/>	

4. Set the file source for migration.

Migration source

Service Provider *

AccessKey *

SecretKey *

Please enter the AccessKey and SecretKey to ensure access to the source data bucket.

Bucket name * Select Enter the source bucket name

Click "Refresh" on the right to get the list of available source data buckets.

Header migration mode Keep all source headers Discard all source headers Set the Header replacement rule

Headers that do not conform to the COS label naming rules will not be retained. Please refer to [COS custom Header](#)

File name filtering rule Not filtered (full amount) Only migrate files that match the prefix Only migrate files that match regular expressions

Time range Only files added or changed within the specified time range are migrated.

00:00 of start date to 00:00 of end date

~

Execution Speed Enable migration speed limit

Speed Limit Mode All Periods Unified Speed Limit Periodic Time-segmented Speed Limit

All-time speed limit controls the migration bandwidth within the specified upper limit during the entire migration process.

- **Service provider:** Here the migration source service provider should select `AWS S3 international website`.
- **AccessKey, SecretKey:** Enter the AccessKeyID and AccessKeySecret of the previously created AWS sub-account for migration in the text box.
- **Bucket Name:** After filling in the key, click the **refresh** button on the right of the "Bucket Name" drop-down list to obtain the source COS bucket list. You can also choose to manually enter the source bucket name.
- **Header Migration Method:** If files in the source bucket have set Header/Tag and need to be reserved after migration, select reserved or set replacement rules.
- **Filename filtering rules:** Select to migrate all files in the specified bucket or only files with the specified prefix.
 - **No filtering (full):** Select to migrate all files in the specified bucket.
 - **Migrate only files matching the prefix:** Only migrate files with the specified prefix. For example, if there are files AA.jpg and AA/B.jpg in the root path of the bucket, then if you enter prefix AA, the migration will match files AA.jpg and AA/B.jpg.
 - **Migrate only files matching the regular expression:** Support input partial regular expression to match files. For example:

- `.*\.jpg$` means match all files ending with .jpg.
- `^test.*` means match all files starting with test in the root path. If files have the same prefix, such as doc/AA/, use `^doc/AA/test.*` to match all files starting with test under the specified prefix.
- `.*\/test\/.*` means match files with a subpath of test.
- **Time range:** Set the time range to migrate only newly-added or changed files over a specified time period.
- **Execution speed, speed limit mode:** Object storage of public cloud vendors has speed limits. To underwrite stable operation, please confirm with the source vendor and set the max available Mbps before migration.

5. Select the target location to migrate to.

Migration destination

Service Provider * Tencent Cloud COS

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

SecretId *

SecretKey *

Bucket name * Select Enter

The destination bucket is located at -

Select the destination bucket in the drop-down box (refresh and select)

Storage Path Save to the root directory Save to the specified directory


File with the same name Overwrite (the file in the source bucket replaces the file with the same name in the destination bucket)
 Skip if outdated (Skip the file if the one in the destination bucket is newer than the one in the source bucket.)

Storage type Use standard storage for all Use Standard Infrequent Access Storage for all Keep the original storage properties
 Save all as archive storage

Supported storage types of the migration destination include STANDARD, STANDARD_IA, INTELLIGENT TIERING and ARCHIVE. To migrate sources in ARCHIVE or DEEP_ARCHIVE, you need to restore (unfreeze) them first.

- **Service provider:** Defaults to Tencent Cloud COS.
- **SecretId, SecretKey:** Input the Tencent Cloud sub-user SecretId and SecretKey for migration.
- **Bucket Name:** After filling in the key, click the **refresh** button on the right of the "Bucket Name" drop-down list to obtain the target COS bucket list.
- **Storage path:** Specified directory for designated migration to the target bucket.
 - **Save to root directory:** Directly save files in the source bucket to the root directory of the target bucket with their original relative path. For example, if the original relative path of a file in the source bucket is `/dir/a.txt`, then the file will be saved to the target bucket path `/dir/a.txt`.

- **Save to specified directory:** Save files in the source bucket to the specified directory with their original relative path. For example, if the original relative path of a file in the source bucket is `/dir/a.txt` and your specified directory is `doc`, then the file will be saved to the target bucket path `/doc/dir/a.txt`.
- **File with the same name:** Specify the processing method for files with the same name.

 **Note:**


- If you select **overwrite** for existing files with the same name, the migration will directly overwrite them.
- If you select **skip** for existing files with the same name, the judgment will be based on the last modification time `LastModified`, i.e.:
 - If the `LastModified` of the file in the source address is later than or equal to that in the destination address, then execute **overwrite**.
 - If the `LastModified` of the file in the source address is earlier than that in the destination address, then **skip**.
- If the content of an object (file) changes during the migration process, it needs to perform secondary migration.

- **File storage method:** Based on the need for migration, set the storage method of files after migration. You can choose: standard storage, infrequent storage, retain original storage attributes, archive storage.

6. Select migration pattern.

- **Mode selection:**

- **Start fully managed migration immediately after creating a migration task:** Select managed migration. After the user clicks **Create and Start**, the cloud migration service will access the source storage via public network to migrate.
- **Manually download Agent to initiate migration after creating a migration task:** Select Agent Mode Migration. After the user clicks **Create and Start**, only the task configuration will be created. Users are advised to manually download Agent and deploy it on the migration source server before migration officially starts. For Agent Deployment, please refer to [instructions for using semi-managed migration Agent](#).
- **Scheduled selection:** Starting a scheduled task can repeat task execution and migrate incremental files from the source bucket. Except for the first task which is immediately executed, afterward it will trigger re-run based on the **schedule type** set at a fixed interval or according to the Cron setting. When running again, "file with the same name" will become "skip (retain existing files with the same name in the destination bucket)", meaning only synchronous increment files are synced.

 **Note:**

For example, set the number of run attempts to 3, repeat once an hour, start the first task at 13:00, and execute the second task at 14:00 (if the first task is not completed at this time, have to wait until the first task is done, then rerun the second task, and so on, until all 3 tasks are completed).

7. Click **Create and start** to start the migration task.

Viewing Migration Status and Progress

In the **COS migration** interface, you can view all file migration task states and progress:

- **"Task completed" status:** Green means the task is completed and all files are successfully migrated, yellow means the migration task is completed but some files have migration failure.
- Click **Retry Failed Task**, and the failed files in the task will retry migration. Files that have already been successfully migrated will not be retransmitted.
- Click **Export** can export the failed file list in the migration process.

Estimating File Migration Time

The migration speed is subject to the lowest speed at each stage of the migration process and is affected by the network transmission speed and maximum concurrency level. For more details, see [Estimating File Migration Time](#).

Migrating by HTTP URL List

Last updated: 2024-10-22 18:09:27

Operation scenarios

This article will detail how to implement data migration through URL list configuration and Agent in a semi-managed approach.

Preparations

Tencent Cloud COS

1. Create a destination bucket to store the migrated data. For more details, see [Creating Bucket](#).
2. Create a Sub-user for migration and grant the necessary permissions. For a brief guide, refer to [Create and authorize the sub-account](#).
 - 2.1 Log in to the [CAM console](#).
 - 2.2 Choose **Users > User List** in the left sidebar to enter the user list page.
 - 2.3 Create a sub-user and select **Programming access** and **Tencent Cloud console access**.
 - 2.4 Search for and check the `QcloudMSPFullAccess` and `QcloudCOSAccessForMSPRole` policies.
 - 2.5 Complete creating the sub-user and save the sub-username, login password, `SecretId`, and `SecretKey`.

Note:

You can also log in to Cloud Migration with your root account. However, for security reasons, we recommend that you create a sub-account, use the sub-account's API key for migration, and delete the sub-account after migration.

Directions

Logging in to Cloud Migration

1. log in to [Cloud Migration console](#).
2. Click **COS Migration** in the left sidebar to enter the COS Migration page.

Creating Migration Task

1. On the COS Migration page, click **Create New Task** to enter the COS migration task configuration page and set the migration parameters.

2. Set migration task name.

Task configuration

Task name *

1 to 60 characters ([a-z], [A-Z], [0-9] and [_]).

Task Name: The character length should be between 1 and 60 characters, and allowed characters include Chinese, English, 0–9, _, and -. The name set here will be used to check migration status and progress in the task list.

3. Estimate the task size. Please accurately fill in the task size to better prepare the related resources, though this is not mandatory.

Migration task estimation

Please try to specify the correct amount of data and number of files you want to include in this migration task. This information is only used for MSP to estimate the migration resources.

The actual amount of data to be migrated is still subject to the amount of data detected by MSP based on your migration conditions.

If you leave the fields empty, or enter incorrect information, the migration task will proceed, but the migration speed may be affected by an inaccurate resource estimation in case of massive data and files.

Data GB ▾

Files

4. Set the file source for migration.

Migration source

Service Provider * URL list Tencent Cloud COS AlibabaCloud OSS AWS S3 (International) Origin servers supporting S3 protocol Azure

Upload URL list file * Provide URL list file download address

Add URLs of all source files into a text file, with one URL per line. For example, you can create a text file named "urls.txt", which includes two URLs as shown below:

```
http://xxx.xxx.xxx/xxx/1.jpg
http://xxx.xxx.xxx/xxx/xxxxx/test.mp4
```

When the URL list file is ready, save it to a location where can be accessed over HTTP requests. Copy and paste the HTTP address of the file storage location in the box below. ([Download sample URL list file](#))

Note:

- Make sure that the source files/URL list files support HTTP multi-part download and public read.
- If the HTTP address of the file to be migrated includes special symbols, it's recommended to encode it to URL-encoded format.
- It's recommended to upload the files corresponding to the URL list to the target COS bucket, set them to "Public Read", copy the COS links to files and paste them here. Delete the file after the migration.

Execution Speed Enable migration speed limit

Speed Limit Mode All Periods Unified Speed Limit Periodic Time-segmented Speed Limit

Mbps

All-time speed limit controls the migration bandwidth within the specified upper limit during the entire migration process.

Service provider: Select URL list for this field.

Upload URL list file: First, paste the URLs of the files to be migrated into a text file (e.g., 1.txt), then upload this text file to a location accessible via the HTTP protocol (such as a Tencent Cloud COS bucket). Next, set the text file to public read permission and obtain a public read access link. Finally, enter the link into the input box. Cloud Migration will batch upload the files listed in the text file to COS by reading the file. After the migration task is completed, delete the text file.

Note:

- Each line of the text file should contain only one URL of the file to be migrated.
- The storage service of both the files to be migrated and the text file should support HTTP partial downloads and public read.
- If the HTTP URL of the file to be migrated contains special characters, it is recommended to perform URL encode encoding.

Execution Speed, Speed Limit Mode: All public cloud object storage services have speed limits. To ensure business stability, please confirm with the service provider and set the maximum available migration bandwidth in Mbps before migrating.

5. Select the destination for migration.

Migration destination

Service Provider *

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

SecretId *

SecretKey *

Bucket name * Select Enter

The destination bucket is located at -

Select the destination bucket in the drop-down box (refresh and select)

Bucket Path Setting Use the path in the URL for the bucket

Use the relative path in the URL except the domain name as the COS Key. For example if you want to migrate `http://test.com/game/1.apk` to COS, it will be saved as `cos://game/1.apk`.

Ignore path in the URL

All files are placed directly in the root directory of the bucket, replacing files with the same name. For example, if you migrate `http://test.com/game/1.apk` to COS, it will be saved as `cos://1.apk`.

Storage Path Save to the root directory Save to the specified directory

File with the same name Overwrite (the file in the source bucket replaces the file with the same name in the destination bucket)

Skip if outdated (Skip the file if the one in the destination bucket is newer than the one in the source bucket.)

Storage type Use standard storage for all Use Standard Infrequent Access Storage for all Keep the original storage properties

Save all as archive storage

Supported storage types of the migration destination include STANDARD, STANDARD_IA, INTELLIGENT TIERING and ARCHIVE. To migrate sources in ARCHIVE or DEEP_ARCHIVE, you need to restore (unfreeze) them first.

Service Provider: The default value is Tencent Cloud COS.

SecretId, SecretKey: Enter the SecretId and SecretKey of the sub-user for migration.

Bucket name: After you enter the Key, click **Refresh** on the right side of the "Bucket Name" drop-down box to view the list of destination COS buckets.

Bucket Path Setting:

- Use the path in the URL for the bucket: The relative path in the URL, excluding the domain name, is used as the COS Key. For instance, migrating `http://test.com/game/1.apk` to COS will result in it being stored as `cos://game/1.apk`.
- Ignore path in the URL: All files are placed directly in the root directory of the bucket. Files with identical names will be overwritten. For example, migrating `http://test.com/game/1.apk` to COS will result in it being saved as `cos://1.apk`.

Storage Path: Specify the directory in the destination bucket for migration.

- Save to the root directory: Store the files in the source bucket to the root directory of the destination bucket according to the original relative paths.
- Save to the specified directory: Store the files in the source bucket to the specified directory according to the original relative paths.

For example:

For files `/a.txt` and `/dir/b.txt` in the source bucket, if "dest" is filled in this field, the paths of the two files in the destination bucket will be `/dest/a.txt` and `/dest/dir/b.txt` after migration.

If `dest/20180901` is filled in this field, the paths of the two files in the destination bucket will be `/dest/20180901/a.txt` and `/dest/20180901/dir/b.txt` after migration.

File with the same name: Specify the handling method for files with the same name.

 **Notes:**

- If the method is **Overwrite**, files in the destination bucket will be overwritten directly during migration.
- If the method is **Skip**, judgment will be performed based on the last modification time (LastModified). Specifically:
 - If the last modification time of the file in the source bucket is later than or the same as that of the file in the destination bucket, then overwrite the file in the destination bucket.
 - If the last modification time of the file in the source bucket is earlier than that of the file in the destination bucket, skip the file in the source bucket.
- Secondary migration is required if the object (file) content is changed during migration.

Storage type: Set the storage class for migrated files according to the migration requirements. Available options: Use standard storage for all, Use Standard Infrequent Access Storage for all, Keep the original storage properties, and Save all as archive storage.

6. Select migration mode.

Select migration mode

Mode Selection Create a migration task and start fully-managed migration immediately Create a migration task and download the Agent manually to start migration

Fully-Managed Migration: No additional configuration required, the MSP automatically performs the migration task after the task is created. [View details of fully-managed feature](#)

Agent migration: User deploys ([Download Agent](#)) and executes migration tasks in local. [View Details of Agent Semi-managed Migration](#)

Scheduled Task Enable Scheduled Task

After the scheduled task is enabled, the task is executed immediately to check whether the configuration is correct. After the first run, tasks are executed according to configuration. If the task has completed, the task run is reopened. When rerunning, if a file with the same name already exists in the target bucket, and the last modification time of the file in the source bucket is later than that in the target bucket, the file with the same name will be overwritten, otherwise it will be skipped.

Schedule Type Fixed interval Custom UNIX cron format

hour

Scheduled task parameters: (1) Fixed interval: If the interval is 1 hour, and the running times are 5 times, it means that after the first execution of the task, the task is executed every hour for 5 times in total. (2) Custom Unix Cron format: For example, if the expression is "35 2 * * *", and the number of executions is 5, it means that after the task is created, the task is executed at 2:35 on the day of creation, and at the same time for the next four days.

Mode Selection:

- Create a migration task and start fully-managed migration immediately: When fully-managed migration is used, Cloud Migration will access the source bucket via the public network for migration after you click "Create and Start".
- Create a migration task and download the Agent manually to start migration: When semi-managed migration is used, only task creation is completed after you click "Create and Start". You need to manually download the Agent and deploy it on the origin server before you can start the migration. For Agent deployment, see [Using Semi-Managed Migration Agent](#).

Mode Selection Create a migration task and start fully-managed migration immediately Create a migration task and download the Agent manually to start migration

Fully-Managed Migration: No additional configuration required, the MSP automatically performs the migration task after the task is created. [View details of fully-managed feature](#)

Agent migration: User deploys ([Download Agent](#)) and executes migration tasks in local. [View Details of Agent Semi-managed Migration](#)

Master Node Private IP *

Scheduled Task: Scheduled tasks can be executed repeatedly to synchronize incremental files in the source bucket. Such tasks are executed immediately for the first time and can be triggered later either after a specified interval or according to the scheduling rules set in Custom UNIX cron format. When a scheduled task is executed again, files with the same name as those in the destination bucket will be skipped. In other words, existing files with the same name in the destination bucket are retained, which means that only incremental files are synchronized.

7. Click **Create and start** to start the migration task.

Note

1. The size of a single file in the migration source is recommended to be no more than 50GB.
2. The migration speed is determined by various factors such as the total number of files, the total file size, the network status, and the service stability of the migration source. For details, see [How to Estimate Migration Time](#).

I have learned about the time required for migration and the associated costs that may arise.

Viewing Migration Status and Progress

You can view the status and progress of all file migration tasks on the Object Storage Migration page:

- For completed tasks, the message in green indicates the task is completed with all files successfully migrated, while the message in yellow indicates the migration task is completed but some files failed to be migrated.
- You can click **Retry failed task** to retry the migration of failed files involved in the task. Files that have been successfully migrated will not be retried.
- You can click **Export list of failed files** to export the list of files that failed to be migrated.

Estimating File Migration Time

The migration speed is subject to the lowest speed at each stage of the migration process and is affected by the network transmission speed and maximum concurrency level. For more details, see [Estimating File Migration Time](#).

Migrating Between Tencent Cloud COS Buckets

Last updated: 2024-10-22 18:09:27

Operation scenarios

The following will detail how to configure fully managed and semi-managed migration tasks for migrating between Tencent Cloud COS buckets, facilitating data migration.

Preparations

Tencent Cloud COS

1. Create a target storage space to store the migrated data, for more details, see [Creating Bucket](#).
2. Create a sub-user for migration and grant the required permissions:
 - 2.1 Log in to the Tencent Cloud [CAM Console](#).
 - 2.2 Select **User > User List** in the left sidebar to enter the user list page.
 - 2.3 Create a Sub-user, selecting Programming Access and Tencent Cloud Console Access.
 - 2.4 Search for and select the `QcloudMSPFullAccess` and `QcloudCOSAccessForMSPRole` policies.
 - 2.5 Complete creating the sub-user and save the sub-username, login password, `SecretId`, and `SecretKey`.

Note:

You can also log in to Cloud Migration with your root account. However, for security reasons, we recommend that you create a sub-account, use the sub-account's API key for migration, and delete the sub-account after migration.

Directions

Logging in to Cloud Migration

1. log in to [Cloud Migration console](#).
2. Click **COS Migration** in the left sidebar to enter the COS Migration page.

Creating Migration Task

1. On the object storage migration page, click **Create task** to enter the migration task configuration page and set the migration parameters.
2. Specify the migration task name.

Task configuration

Task name *

Please enter a task name

1 to 60 characters ([a-z], [A-Z], [0-9] and [_]).

Task name: 1 to 60 characters ([a-z], [A-Z], [0-9] and [_]). You can use this name to view the migration status and progress in the task list.

3. Task size estimation. Please accurately fill in the task size so that Tencent Cloud can better prepare resources. This field is optional.

Migration task estimation

Please try to specify the correct amount of data and number of files you want to include in this migration task. This information is only used for MSP to estimate the migration resources.

The actual amount of data to be migrated is still subject to the amount of data detected by MSP based on your migration conditions.

If you leave the fields empty, or enter incorrect information, the migration task will proceed, but the migration speed may be affected by an inaccurate resource estimation in case of massive data and files.

Data

Please enter the amount of data to

GB ▾

Files

Please enter the number of files to

 nbsp;nbsp;

4. Set the file source for migration.

Migration source

Service Provider *

URL list

Tencent Cloud COS

AlibabaCloud OSS

AWS S3 (International)

Origin servers supporting S3 protocol

Azure

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

AccessKey *

Please enter AccessKey

SecretKey *

Enter the SecretKey

Please enter the AccessKey and SecretKey to ensure access to the source data bucket.

Bucket name *

Select Enter the source bucket name

Please select the bucket to migrate objects



Click "Refresh" on the right to get the list of available source data buckets.

Header migration mode

Keep all source headers Discard all source headers Set the Header replacement rule

Headers that do not conform to the COS label naming rules will not be retained. Please refer to [COS custom Header](#)

File name filtering rule

Not filtered (full amount) Only migrate files that match the prefix Only migrate files that match regular expressions

Time range

Only files added or changed within the specified time range are migrated.

00:00 of start date to 00:00 of end date

2024-05-24 ~ 2024-05-31



Execution Speed

Enable migration speed limit

Speed Limit Mode

All Periods Unified Speed Limit Periodic Time-segmented Speed Limit

−

2000

+

Mbps

All-time speed limit controls the migration bandwidth within the specified upper limit during the entire migration process.

Service Provider: Select `Tencent Cloud COS` for this field.

AccessKey, SecretKey: Enter the AccessKey and SecretKey of the account used for migration in the text boxes.

Bucket name: Upon entering the key, click the **Refresh** button to the right of the "Bucket name" dropdown menu to retrieve a list of source object storage buckets. Alternatively, you may opt to manually input the name of the source bucket.

Header migration mode: If the file in the source bucket has headers and tags that need to be retained after migration, please select the retention option or set the replacement rule.

File name filtering rules: Choose to migrate all the files of the specified bucket or migrate only files with the specified prefix.

Time range: Specify the time range. Migrate files that are added or modified within this time period.

Execution Speed, Speed Limit Mode: All public cloud object storage services have speed limits. To ensure business stability, please confirm with the service provider and set the maximum available migration bandwidth in Mbps before migrating.

5. Select the target location to migrate to.

Migration destination

Service Provider *

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

SecretId *

SecretKey *

Bucket name * Select Enter

The destination bucket is located at -

Select the destination bucket in the drop-down box (refresh and select)

Storage Path Save to the root directory Save to the specified directory

File with the same name Overwrite (the file in the source bucket replaces the file with the same name in the destination bucket) Skip if outdated (Skip the file if the one in the destination bucket is newer than the one in the source bucket.)

Storage type Use standard storage for all Use Standard Infrequent Access Storage for all Keep the original storage properties Save all as archive storage

Supported storage types of the migration destination include STANDARD, STANDARD_IA, INTELLIGENT TIERING and ARCHIVE. To migrate sources in ARCHIVE or DEEP_ARCHIVE, you need to restore (unfreeze) them first.

Service Provider: The default value is Tencent Cloud COS.

SecretId, SecretKey: Enter the SecretId and SecretKey of the sub-user for migration.

Bucket name: After you enter the Key, click **Refresh** on the right side of the "Bucket Name" drop-down box to view the list of destination COS buckets.

Storage Path: Specify the directory in the destination bucket for migration.

- Save to the root directory: Store the files in the source bucket to the root directory of the destination bucket according to the original relative paths.


- Save to the specified directory: Store the files in the source bucket to the specified directory according to the original relative paths.

For example:

For files `/a.txt` and `/dir/b.txt` in the source bucket, if "dest" is filled in this field, the paths of the two files in the destination bucket will be `/dest/a.txt` and `/dest/dir/b.txt` after migration.

If `dest/20180901` is filled in this field, the paths of the two files in the destination bucket will be `/dest/20180901/a.txt` and `/dest/20180901/dir/b.txt` after migration.

File with the same name: Specify the handling method for files with the same name.

 **Notes:**

- If the method is **Overwrite**, files in the destination bucket will be overwritten directly during migration.
- If the method is **Skip**, judgment will be performed based on the last modification time (LastModified). Specifically:
 - If the last modification time of the file in the source bucket is later than or the same as that of the file in the destination bucket, then overwrite the file in the destination bucket.
 - If the last modification time of the file in the source bucket is earlier than that of the file in the destination bucket, skip the file in the source bucket.
- Secondary migration is required if the object (file) content is changed during migration.

Storage type: Set the storage class for migrated files according to the migration requirements. Available options: Use standard storage for all, Use Standard Infrequent Access Storage for all, Keep the original storage properties, and Save all as archive storage.

6. Select migration mode.

Select migration mode

Mode Selection Create a migration task and start fully-managed migration immediately Create a migration task and download the Agent manually to start migration

Fully-Managed Migration: No additional configuration required, the MSP automatically performs the migration task after the task is created. [View details of fully-managed feature](#)

Agent migration: User deploys ([Download Agent](#)) and executes migration tasks in local. [View Details of Agent Semi-managed Migration](#)

Scheduled Task Enable Scheduled Task

After the scheduled task is enabled, the task is executed immediately to check whether the configuration is correct. After the first run, tasks are executed according to configuration. If the task has completed, the task run is reopened. When rerunning, if a file with the same name already exists in the target bucket, and the last modification time of the file in the source bucket is later than that in the target bucket, the file with the same name will be overwritten, otherwise it will be skipped.

Schedule Type Fixed interval Custom UNIX cron format

hour

Scheduled task parameters: (1) Fixed interval: If the interval is 1 hour, and the running times are 5 times, it means that after the first execution of the task, the task is executed every hour for 5 times in total. (2) Custom Unix Cron format: For example, if the expression is "35 2 * * *", and the number of executions is 5, it means that after the task is created, the task is executed at 2:35 on the day of creation, and at the same time for the next four days.

Mode Selection:

- Create a migration task and start fully-managed migration immediately: When fully-managed migration is used, Cloud Migration will access the source bucket via the public network for migration after you click "Create and Start".
- Create a migration task and download the Agent manually to start migration: When semi-managed migration is used, only task creation is completed after you click "Create and Start". You need to manually download the Agent and deploy it on the origin server before you can start the migration. For Agent deployment, see [Using Semi-Managed Migration Agent](#).

Mode Selection Create a migration task and start fully-managed migration immediately Create a migration task and download the Agent manually to start migration

Fully-Managed Migration: No additional configuration required, the MSP automatically performs the migration task after the task is created. [View details of fully-managed feature](#)

Agent migration: User deploys ([Download Agent](#)) and executes migration tasks in local. [View Details of Agent Semi-managed Migration](#)

Master Node Private IP

Scheduled Task: Scheduled tasks can be executed repeatedly to synchronize incremental files in the source bucket. Such tasks are executed immediately for the first time and can be triggered later either after a specified interval or according to the scheduling rules set in Custom UNIX cron format. When a scheduled task is executed again, files with the same name as those in the destination bucket will be skipped. In other words, existing files with the same name in the destination bucket are retained, which means that only incremental files are synchronized.

- Click **Create and start** to start the migration task.

Note

1. The size of a single file in the migration source is recommended to be no more than 50GB.
2. The migration speed is determined by various factors such as the total number of files, the total file size, the network status, and the service stability of the migration source. For details, see [How to Estimate Migration Time](#).

I have learned about the time required for migration and the associated costs that may arise.

Cancel

Create and start

Viewing Migration Status and Progress

You can view the status and progress of all file migration tasks on the Object Storage Migration page:

- For completed tasks, the message in green indicates the task is completed with all files successfully migrated, while the message in yellow indicates the migration task is completed but some files failed to be migrated.
- You can click **Retry failed task** to retry the migration of failed files involved in the task. Files that have been successfully migrated will not be retried.
- You can click **Export list of failed files** to export the list of files that failed to be migrated.

Estimating File Migration Time

The migration speed is subject to the lowest speed at each stage of the migration process and is affected by the network transmission speed and maximum concurrency level. For more details, see [Estimating File Migration Time](#).

Migrating from Alibaba Cloud OSS

Last updated: 2025-12-31 17:29:36

Overview

The following describes how to configure fully managed and semi-managed migration tasks to migrate data from Alibaba Cloud OSS to Tencent Cloud COS.

Note:

This operation guide is for reference only, aiming to provide users with clear guidance. Some materials come from third-party public information. For specifics, refer to the relevant pages of the third party.

Preparations

Alibaba Cloud OSS

Create a RAM sub-account and grant the required permissions:

1. Log in to the RAM console.
2. Select **Personnel Management > Users > Create User**.
3. Select console password login and programming access, and then enter the user account information.
4. Save the generated account, password, AccessKeyID, and AccessKeySecret.
5. Select the user log in name, click **Add Permissions** to grant the sub-account storage space read and write permissions (AliyunOSSFullAccess).

Note:

The procedure may vary due to origin server updates. Refer to Alibaba Cloud official documentation for details.

Tencent Cloud COS

1. Create a destination bucket to store the migrated data. For more details, see [Creating Bucket](#).
2. Create a sub-user for migration and grant the required permissions:
 - 2.1 Log in to the [CAM console](#).
 - 2.2 In the left sidebar select **User > List of Users** to go to the user list page.
 - 2.3 Create a sub-user, select **programmatic access** and **Tencent Cloud console access**.
 - 2.4 Search and select the **QcloudMSPFullAccess** and **QcloudCOSAccessForMSPRole** policies.

2.5 Complete sub-user creation and save the sub-user **username**, access login password, SecretId, and SecretKey.

Note:

Cloud migration can also be performed using the root account. However, for security reasons, it is recommended to create a sub-account and use the sub-account API key for migration. After migration, delete the key.

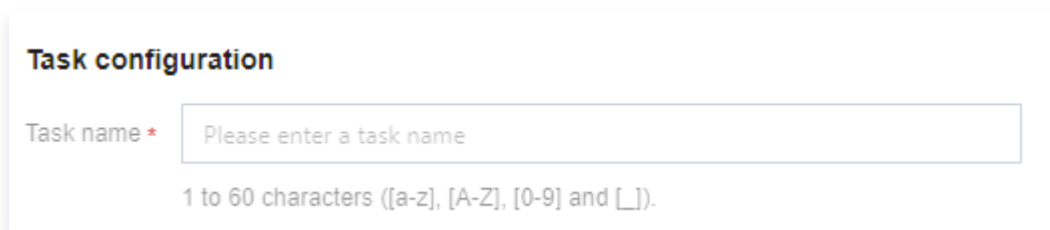
Operation Steps

Logging in to Cloud Migration

1. Log in to [Cloud Migration console](#).
2. Click **Object Storage Migration** in the left sidebar to enter the object storage migration page.

Creating Migration Task

1. On the object storage migration page, click **Create task** to enter the migration task configuration page and set the migration parameters.
2. Specify the migration task name.



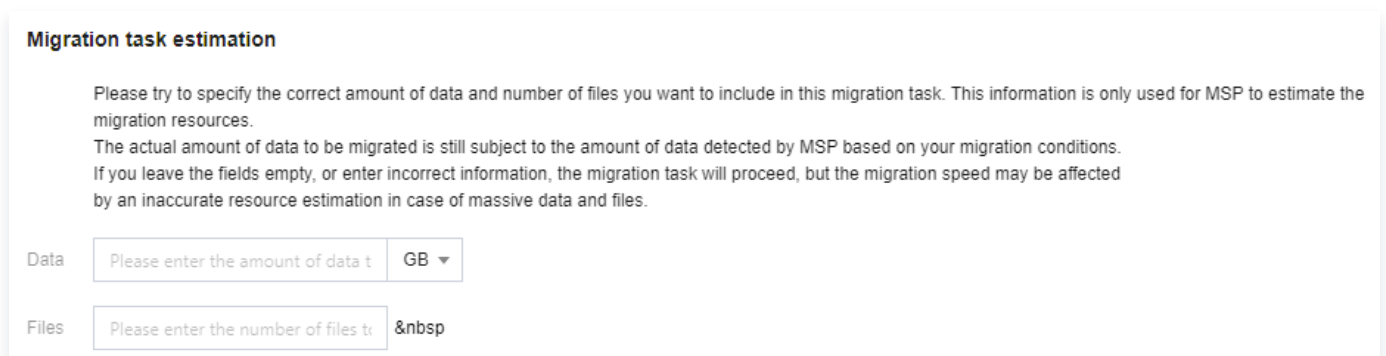
Task configuration

Task name *

1 to 60 characters ([a-z], [A-Z], [0-9] and [_]).

Task name: The character length is 1 to 60 characters. Allowed characters include Chinese, English, 0–9, _, and -. The name set here will be used to view the migration status and migration progress in the task list.

3. Task size estimation. Please accurately fill in the task size so that Tencent Cloud can better prepare resources. This field is optional.



Migration task estimation

Please try to specify the correct amount of data and number of files you want to include in this migration task. This information is only used for MSP to estimate the migration resources.

The actual amount of data to be migrated is still subject to the amount of data detected by MSP based on your migration conditions.

If you leave the fields empty, or enter incorrect information, the migration task will proceed, but the migration speed may be affected by an inaccurate resource estimation in case of massive data and files.

Data GB ▾

Files

4. Set the file source for migration.

Migration source

Service Provider *

AccessKey *

SecretKey *

Please enter the AccessKey and SecretKey to ensure access to the source data bucket.

Bucket name * Select Enter the source bucket name

Click "Refresh" on the right to get the list of available source data buckets.

Header migration mode Keep all source headers Discard all source headers Set the Header replacement rule

Headers that do not conform to the COS label naming rules will not be retained. Please refer to [COS custom Header](#)

File name filtering rule Not filtered (full amount) Only migrate files that match the prefix Only migrate files that match regular expressions

Time range Only files added or changed within the specified time range are migrated.

00:00 of start date to 00:00 of end date

Execution Speed Enable migration speed limit

Speed Limit Mode All Periods Unified Speed Limit Periodic Time-segmented Speed Limit

All-time speed limit controls the migration bandwidth within the specified upper limit during the entire migration process.

- **Service Provider:** The migration source service provider here should be `AlibabaCloud OSS`.
- **AccessKey, SecretKey:** Enter the AccessKeyID and AccessKeySecret of the account used for migration in the text boxes.
- **Bucket name:** Upon entering the key, click the **Refresh** button to the right of the "Bucket name" dropdown menu to retrieve a list of source object storage buckets. Alternatively, you may opt to manually input the name of the source bucket.
- **Header migration mode:** If the file in the source bucket has headers and tags that need to be retained after migration, please select the retention option or set the replacement rule.
- **File name filtering rules:** Choose to migrate all the files of the specified bucket or migrate only files with the specified prefix.
 - **No filtering (full):** Select to migrate all files in the specified bucket.
 - **Migrate only files matching the prefix:** Only migrate files with the specified prefix. For example, if there are files AA.jpg and AA/B.jpg in the root path of the bucket, entering the prefix AA will match and migrate files AA.jpg and AA/B.jpg.
 - **Migrate only files matching the regular expression:** Support input partial regular expression to match files. For example:
 - `.*\.jpg$` matches all files ending with .jpg.
 - `^test.*` means matching all files under the root path that start with test. If files share the same prefix, such as doc/AA/, use `^doc/AA/test.*` to match all files

starting with test under the specified prefix.

- `.*/*test/.*` matches files with a subpath named test.
- Time range:** Specify the time range. Migrate files that are added or modified within this time period.
- Execution Speed, Speed Limit Mode:** All public cloud object storage services have speed limits. To ensure business stability, please confirm with the service provider and set the maximum available migration bandwidth in Mbps before migrating.

5. Select the destination for migration.

Migration destination

Service Provider * Tencent Cloud COS

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

SecretId *

SecretKey *

Bucket name * Select Enter

The destination bucket is located at -

Select the destination bucket in the drop-down box (refresh and select)

Storage Path Save to the root directory Save to the specified directory


File with the same name Overwrite (the file in the source bucket replaces the file with the same name in the destination bucket) Skip if outdated (Skip the file if the one in the destination bucket is newer than the one in the source bucket.)

Storage type Use standard storage for all Use Standard Infrequent Access Storage for all Keep the original storage properties Save all as archive storage

Supported storage types of the migration destination include STANDARD, STANDARD_IA, INTELLIGENT TIERING and ARCHIVE. To migrate sources in ARCHIVE or DEEP_ARCHIVE, you need to restore (unfreeze) them first.

- Service Provider:** The default value is Tencent Cloud COS.
- SecretId, SecretKey:** Enter the SecretId and SecretKey of the sub-user for migration.
- Bucket name:** After you enter the Key, click **Refresh** on the right side of the "Bucket Name" drop-down box to view the list of destination COS buckets.
- Storage Path:** Specify the directory in the destination bucket for migration.
 - Save to root directory:** Directly save files in the source bucket to the root directory of the target bucket with their original relative paths. For example, if the original relative path of a file in the source bucket is `/dir/a.txt`, the file will be saved to the target bucket path `/dir/a.txt`.
 - Save to specified directory:** Save files in the source bucket to the specified directory with their original relative paths. For example, if the original relative path of a file in the source bucket is `/dir/a.txt` and the specified directory is doc, the file will be saved to the target bucket path `/doc/dir/a.txt`.

- **File with the same name:** Specify the handling method for files with the same name.

 **Notes:**

- If the method is **Overwrite**, files in the destination bucket will be overwritten directly during migration.
- If the method is **Skip**, judgment will be performed based on the last modification time (LastModified). Specifically:
 - If the last modification time of the file in the source bucket is later than or the same as that of the file in the destination bucket, then overwrite the file in the destination bucket.
 - If the last modification time of the file in the source bucket is earlier than that of the file in the destination bucket, skip the file in the source bucket.
- Secondary migration is required if the object (file) content is changed during migration.

- **Storage type:** Set the storage class for migrated files according to the migration requirements. Available options: Use standard storage for all, Use Standard Infrequent Access Storage for all, Keep the original storage properties, and Save all as archive storage.

6. Select migration mode.

- **Mode Selection:**

- Create a migration task and start fully-managed migration immediately: When fully-managed migration is used, Cloud Migration will access the source bucket via the public network for migration after you click "Create and Start".
- Create a migration task and download the Agent manually to start migration: When semi-managed migration is used, only task creation is completed after you click "Create and Start". You need to manually download the Agent and deploy it on the origin server before you can start the migration. For Agent deployment, see [Using Semi-Managed Migration Agent](#).
- **Scheduled Task: Start a scheduled task** can repeat task execution and migrate incremental files from the source bucket. Except for the first task which is immediate execution, subsequent tasks will trigger re-run based on the **schedule type** set at fixed intervals or according to Cron settings. During re-run, "file with the same name" will change to "skip (retain existing files with the same name in the destination bucket)", meaning only synchronous increment files are synced.

 **Note:**

For example, set the scheduled run count to 3, repeat every hour, start the first task at 13:00, and execute the second task at 14:00 (if the first task is not completed at this time, wait until the first task is completed before executing the second task, and so on, until all 3 tasks are completed).

7. Click **Create and Start** to start the migration task.

Viewing Migration Status and Progress

In the **Object Storage Migration** interface, you can view the status and progress of all file migration tasks.:

- For completed tasks, the message in green indicates the task is completed with all files successfully migrated, while the message in yellow indicates the migration task is completed but some files failed to be migrated.
- You can click **Retry failed task** to retry the migration of failed files involved in the task. Files that have been successfully migrated will not be retried.
- You can click **Export list of failed files** to export the list of files that failed to be migrated.

Estimating File Migration Time

The migration speed is subject to the lowest speed at each stage of the migration process and is affected by the network transmission speed and maximum concurrency level. For more details, see [Estimating File Migration Time](#).

S3 Protocol Migration

Last updated: 2024-10-22 18:09:27

Overview

The following part describes how to configure a fully-managed public network migration task to achieve data migration when the data source is a storage system that supports the S3 protocol (such as Ceph, MinIO, and GCP).

Preparations

Origin Server

Prepare the required AccessKey and SecretKey for S3 protocol interface authentication as per the origin server instructions.

Tencent Cloud COS

1. Create a destination bucket to store the migrated data. For more details, see [Creating Bucket](#).
2. Create a sub-user for migration and grant the required permissions:
 - 2.1 Log in to the [CAM console](#).
 - 2.2 Choose **Users > User List** in the left sidebar to enter the user list page.
 - 2.3 Create a sub-user, and check the Programming access and Tencent Cloud console access options.
 - 2.4 Search for and check the QcloudMSPFullAccess and QcloudCOSAccessForMSPRole policies.
 - 2.5 Complete the sub-user creation and save the username, login password, SecretId, and SecretKey.

Note:

You can also log in to Cloud Migration with your root account. However, for security reasons, we recommend that you create a sub-account, use the sub-account's API key for migration, and delete the sub-account after migration.

Directions

Logging in to Cloud Migration

1. Log in to [Cloud Migration console](#).
2. Click **Object Storage Migration** in the left sidebar to enter the object storage migration page.

Creating Migration Task

1. On the object storage migration page, click **Create task** to enter the migration task configuration page and set the migration parameters.
2. Specify the migration task name.

Task configuration

Task name *

1 to 60 characters ([a-z], [A-Z], [0-9] and []).

Task name: 1 to 60 characters ([a-z], [A-Z], [0-9] and []). You can use this name to view the migration status and progress in the task list.

3. Task size estimation. Please accurately fill in the task size so that Tencent Cloud can better prepare resources. This field is optional.

Migration task estimation

Please try to specify the correct amount of data and number of files you want to include in this migration task. This information is only used for MSP to estimate the migration resources. The actual amount of data to be migrated is still subject to the amount of data detected by MSP based on your migration conditions. If you leave the fields empty, or enter incorrect information, the migration task will proceed, but the migration speed may be affected by an inaccurate resource estimation in case of massive data and files.

Data GB ▾

Files

4. Set the file source for migration.

Migration source

Service Provider * URL list Tencent Cloud COS AlibabaCloud OSS AWS S3 (International) Origin servers supporting S3 protocol Azure

AccessKey *

SecretKey *

Please enter the AccessKey and SecretKey to ensure access to the source data bucket.

Bucket name * Enter the source bucket name

Endpoint *

Although specifying the source bucket region is optional, it is required for origin servers that need to verify the region. If the origin server is ChinaNetCenter (aka Wangsu), for example, you'll need to specify a region string like "cn-north-1."

Header migration mode Keep all source headers Discard all source headers Set the Header replacement rule
 Headers that do not conform to the COS label naming rules will not be retained. Please refer to [COS custom Header](#)

File name filtering rule Not filtered (full amount) Only migrate files that match the prefix Only migrate files that match regular expressions

Time range Only files added or changed within the specified time range are migrated.
 00:00 of start date to 00:00 of end date

Execution Speed Enable migration speed limit

Speed Limit Mode All Periods Unified Speed Limit Periodic Time-segmented Speed Limit

2000 Mbps

All-time speed limit controls the migration bandwidth within the specified upper limit during the entire migration process.

Service Provider: Select `Origin servers supporting S3 protocol` for this field.

AccessKey, SecretKey: Enter the AccessKey and SecretKey of the account used for migration in the text boxes.

Bucket name: Enter the name of the bucket to store the migrated data.

Endpoint: Enter the **complete S3 protocol endpoint** of the source bucket. (HTTP or HTTPS can be included in the domain name. If not included, HTTPS is used by default.) For S3 systems requiring region verification, enter the source region. Otherwise, leave the field blank.

Header migration mode: If the file in the source bucket has headers and tags that need to be retained after migration, please select the retention option or set the replacement rule.

File name filtering rules: Choose to migrate all the files of the specified bucket or migrate only files with the specified prefix.

Time range: Specify the time range. Migrate files that are added or modified within this time period.

Execution Speed, Speed Limit Mode: All public cloud object storage services have speed limits. To ensure business stability, please confirm with the service provider and set the maximum available migration bandwidth in Mbps before migrating.

5. Select the destination for migration.

Migration destination

Service Provider Tencent Cloud COS

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

SecretId

SecretKey

Bucket name
 Select Enter

The destination bucket is located at -

↻

Select the destination bucket in the drop-down box (refresh and select)

Storage Path
 Save to the root directory Save to the specified directory

File with the same name
 Overwrite (the file in the source bucket replaces the file with the same name in the destination bucket)
 Skip if outdated (Skip the file if the one in the destination bucket is newer than the one in the source bucket.)

Storage type
 Use standard storage for all Use Standard Infrequent Access Storage for all Keep the original storage properties Save all as archive storage

Supported storage types of the migration destination include STANDARD, STANDARD_IA, INTELLIGENT TIERING and ARCHIVE. To migrate sources in ARCHIVE or DEEP_ARCHIVE, you need to restore (unfreeze) them first.

Service Provider: The default value is Tencent Cloud COS.

SecretId, SecretKey: Enter the SecretId and SecretKey of the sub-user for migration.

Bucket name: After you enter the Key, click **Refresh** on the right side of the "Bucket Name" drop-down box to view the list of destination COS buckets.

Storage Path: Specify the directory in the destination bucket for migration.

- Save to the root directory: Store the files in the source bucket to the root directory of the destination bucket according to the original relative paths.
- Save to the specified directory: Store the files in the source bucket to the specified directory according to the original relative paths.

For example:

For files `/a.txt` and `/dir/b.txt` in the source bucket, if "dest" is filled in this field, the paths of the two files in the destination bucket will be `/dest/a.txt` and `/dest/dir/b.txt` after migration.

If `dest/20180901` is filled in this field, the paths of the two files in the destination bucket will be `/dest/20180901/a.txt` and `/dest/20180901/dir/b.txt` after migration.

File with the same name: Specify the handling method for files with the same name.

Notes:

- If the method is **Overwrite**, files in the destination bucket will be overwritten directly during migration.
- If the method is **Skip**, judgment will be performed based on the last modification time (LastModified). Specifically:
 - If the last modification time of the file in the source bucket is later than or the same as that of the file in the destination bucket, then overwrite the file in the destination bucket.
 - If the last modification time of the file in the source bucket is earlier than that of the file in the destination bucket, skip the file in the source bucket.
- Secondary migration is required if the object (file) content is changed during migration.

Storage type: Set the storage class for migrated files according to the migration requirements. Available options: Use standard storage for all, Use Standard Infrequent Access Storage for all, Keep the original storage properties, and Save all as archive storage.

6. Select migration mode.

Select migration mode

Mode Selection Create a migration task and start fully-managed migration immediately Create a migration task and download the Agent manually to start migration

Fully-Managed Migration: No additional configuration required, the MSP automatically performs the migration task after the task is created. [View details of fully-managed feature](#)

Agent migration: User deploys [\(Download Agent\)](#) and executes migration tasks in local. [View Details of Agent Semi-managed Migration](#)

Scheduled Task Enable Scheduled Task

After the scheduled task is enabled, the task is executed immediately to check whether the configuration is correct. After the first run, tasks are executed according to configuration. If the task has completed, the task run is reopened. When rerunning, if a file with the same name already exists in the target bucket, and the last modification time of the file in the source bucket is later than that in the target bucket, the file with the same name will be overwritten, otherwise it will be skipped.

Schedule Type Fixed interval Custom UNIX cron format

hour

Scheduled task parameters: (1) Fixed interval: If the interval is 1 hour, and the running times are 5 times, it means that after the first execution of the task, the task is executed every hour for 5 times in total. (2) Custom Unix Cron format: For example, if the expression is "35 2 * * *", and the number of executions is 5, it means that after the task is created, the task is executed at 2:35 on the day of creation, and at the same time for the next four days.

Mode Selection:

- Create a migration task and start fully-managed migration immediately: When fully-managed migration is used, Cloud Migration will access the source bucket via the public network for migration after you click "Create and Start".

- Create a migration task and download the Agent manually to start migration: When semi-managed migration is used, only task creation is completed after you click "Create and Start". You need to manually download the Agent and deploy it on the origin server before you can start the migration. For Agent deployment, see [Using Semi-Managed Migration Agent](#).

Select migration mode

Mode Selection Create a migration task and start fully-managed migration immediately Create a migration task and download the Agent manually to start migration

Fully-Managed Migration: No additional configuration required, the MSP automatically performs the migration task after the task is created. [View details of fully-managed feature](#)

Agent migration: User deploys [\(Download Agent\)](#) and executes migration tasks in local. [View Details of Agent Semi-managed Migration](#)

Master Node Private IP

Scheduled Task: Scheduled tasks can be executed repeatedly to synchronize incremental files in the source bucket. Such tasks are executed immediately for the first time and can be triggered later either after a specified interval or according to the scheduling rules set in Custom UNIX cron format. When a scheduled task is executed again, files with the same name as those in the destination bucket will be skipped. In other words, existing files with the same name in the destination bucket are retained, which means that only incremental files are synchronized.

7. Click **Create and Start** to start the migration task.

Note

1. The size of a single file in the migration source is recommended to be no more than 50GB.
2. The migration speed is determined by various factors such as the total number of files, the total file size, the network status, and the service stability of the migration source. For details, see [How to Estimate Migration Time](#).

I have learned about the time required for migration and the associated costs that may arise.

Viewing Migration Status and Progress

You can view the status and progress of all file migration tasks on the Object Storage Migration page:

- For completed tasks, the message in green indicates the task is completed with all files successfully migrated, while the message in yellow indicates the migration task is completed but some files failed to be migrated.
- You can click **Retry failed task** to retry the migration of failed files involved in the task. Files that have been successfully migrated will not be retried.
- You can click **Export list of failed files** to export the list of files that failed to be migrated.

Estimating File Migration Time

The migration speed is subject to the lowest speed at each stage of the migration process and is affected by the network transmission speed and maximum concurrency level. For more details, see [Estimating File Migration Time](#).

Azure Blob Migration

Last updated: 2025-12-31 17:33:30

Scenarios

The following context will provide a detailed introduction on how to configure a fully managed migration task and a semi-managed migration task to achieve data migration when the source Cloud Object Storage (COS) is deployed in Azure Blob.

Preparations

Azure Blob Storage

1. You can click **storage account** in the Azure console and then select the storage account pending migration.
2. Click **access key** in the left sidebar of the storage account webpage pending migration to view the key and concatenated string.

Note:

The above procedure may vary due to updates to the origin server. Please refer to the Azure official documentation for the latest information.

Tencent Cloud Object Storage COS

1. Create a destination bucket to store the migrated data. For details, see [create a bucket](#).
2. Create a Sub-user for migration and grant relevant permissions:
 - 2.1 Log in to the [Cloud Access Management console](#) of Tencent Cloud.
 - 2.2 In the left sidebar, select **Users > User List** to access the user list page.
 - 2.3 Create a Sub-user, select **Programming access** and **Visit Tencent Cloud Console**.
 - 2.4 Search and select the **QcloudMSPFullAccess** and **QcloudCOSAccessForMSPRole** policies.
 - 2.5 Complete the sub-user creation and save the **Username**, access login password, SecretId, and SecretKey.

Note:

Cloud migration can also be performed using the main account. However, for security reasons, it is recommended to create a sub-account and use the sub-account API key for migration. Delete it after migration.

Operation Steps

Logging in to Cloud Migration

1. Log in to [Cloud Migration](#).
2. Click in the left sidebar **COS migration** to enter the COS migration webpage.

Create a migration task.

1. On the COS migration webpage, click **Create Task** to enter the COS migration task configuration page and set up migration parameters.

2. Set migration task name.

Task name: The character length ranges from 1 to 60 characters. Allowed characters include Chinese, English, 0–9, _, and -. The name set here will be used to view the migration status and migration progress in the task list.

3. Estimate task size. Accurately fill in the task size so that we can better prepare relevant resources. Optional.

Migration task estimation

Please try to specify the correct amount of data and number of files you want to include in this migration task. This information is only used for MSP to estimate the migration resources.
The actual amount of data to be migrated is still subject to the amount of data detected by MSP based on your migration conditions.
If you leave the fields empty, or enter incorrect information, the migration task will proceed, but the migration speed may be affected by an inaccurate resource estimation in case of massive data and files.

Data GB

Files

4. Set the file source to migrate.

Migration source

Service Provider * URL list Tencent Cloud COS AlibabaCloud OSS AWS S3 (International) Origin servers supporting S3 protocol Azure

Storage Account *

Key *

Please enter the storage account and key so that you have the permission to access the source container.

Container * Enter container name

Header migration mode Keep all source headers Discard all source headers Set the Header replacement rule
Headers that do not conform to the COS label naming rules will not be retained. Please refer to [COS custom Header](#)

File name filtering rule Not filtered (full amount) Only migrate files that match the prefix Only migrate files that match regular expressions

Time range Only files added or changed within the specified time range are migrated.
00:00 of start date to 00:00 of end date

Execution Speed Enable migration speed limit

Speed Limit Mode All Periods Unified Speed Limit Periodic Time-segmented Speed Limit
- 2000 + Mbps

All-time speed limit controls the migration bandwidth within the specified upper limit during the entire migration process.

- Service Provider:** The migration source service provider should be `AZURE`.
- Storage Account, Key:** Enter the **storage account** and **key** applicable to migration in the key text box.

Note:

Migrate files from Azure Blob to COS. SAS (Shared Access Signature) cannot be used for identity authentication.

- Container:** Enter the name of the container to be migrated and the concatenated string. If the concatenated string is not input, it defaults to `core.windows.net`.
- Header migration mode:** If files in the source bucket have Headers/Tags set and need to be reserved after migration, select to retain or set replacement rules.
- File name filtering rules:** Select to migrate all files in the specified bucket or only files with a specified prefix.
- Time range:** Set the start time range to only migrate files that are newly added or changed within a specified time period.
- Execution Speed, Speed Limit Mode:** Object storage from public cloud vendors has speed limits. To underwrite business stability, please confirm with the source vendor and set the max available migration Mbps before migration.

5. Select the target location to migrate to.

Migration destination

Service Provider * Tencent Cloud COS

Please enter the SecretId and SecretKey to obtain the access to COS, or [create SecretId and SecretKey](#)

SecretId *

SecretKey *

Bucket name * Select Enter

The destination bucket is located at -

Select the destination bucket in the drop-down box (refresh and select)

Storage Path Save to the root directory Save to the specified directory

File with the same name Overwrite (the file in the source bucket replaces the file with the same name in the destination bucket) Skip if outdated (Skip the file if the one in the destination bucket is newer than the one in the source bucket.)

Storage type Use standard storage for all Use Standard Infrequent Access Storage for all Keep the original storage properties Save all as archive storage

Supported storage types of the migration destination include STANDARD, STANDARD_IA, INTELLIGENT TIERING and ARCHIVE. To migrate sources in ARCHIVE or DEEP_ARCHIVE, you need to restore (unfreeze) them first.

- Service Provider:** Defaults to Tencent Cloud COS.
- SecretId, SecretKey:** Manually input the Tencent Cloud sub-user SecretId and SecretKey for migration.
- Bucket name:** After filling in the key, click the **refresh** button on the right of the "Bucket Name" drop-down list to obtain the target COS bucket list.
- Storage Path:** Specify the directory in the target bucket for migration.
 - Save to the root directory:** Directly save files in the source bucket to the root directory of the target bucket with their original relative paths.
 - Save to the specified directory:** Keep the original relative paths of files in the source bucket and save them to the specified directory.

For example: the files `/a.txt` and `/dir/b.txt` in the source bucket. Fill "dest" in the text box, so after migration, the paths of these two files in the target bucket will be: `/dest/a.txt` and `/dest/dir/b.txt`.

If `dest/20180901` is filled in the text box, then after migration, the paths of these two files in the target bucket will be: `/dest/20180901/a.txt` and `/dest/20180901/dir/b.txt`.
- File with the same name:** Specify the processing method for files with the same name.

Note:

- If a file with the same name selects **overwrite**, it will directly overwrite the file with the same name during migration.
- If a file with the same name selects **skip**, it will be judged based on the last modified time LastModified.
 - If the LastModified of the file in the source address is later than or equal to that in the destination address, then execute overwrite.
 - If the LastModified of the file in the source address is earlier than that in the destination address, then skip.
- If the content of an object (file) changes during the migration process, secondary migration is needed.

- **Storage type:** Based on migration needs, set the storage method for files after migration. You can choose: standard storage, infrequent storage, retain original storage attributes, or archive storage.

6. Select migration mode.

- **Mode Selection:**
 - **Create a migration task and start fully-managed migration immediately:** Select managed migration. After the user clicks **Create and start**, the cloud migration service will access the source storage via public network to migrate.
 - **Create a migration task and download the Agent manually to start migration:** Select Agent Mode Migration. After the user clicks **Create and Start**, only the task configuration will be created. Users are advised to manually download the Agent and deploy it on the migration source server before migration officially starts. For Agent Deployment, please refer to [instructions for using semi-managed migration Agent](#).
- **Scheduled Task:** Starting a scheduled task allows repeated task execution and migrates incremental files from the source bucket. Except for the first task which is executed immediately, subsequent tasks will trigger re-run based on the **schedule type** set at fixed intervals or according to Cron settings. During re-run, "files with the same name" will change to "skip (retain existing files with the same name in the destination bucket)", meaning only incremental files are synchronized.

ⓘ Note:

For example, set the scheduled run count to 3, repeat every hour, start the first task at 13:00, and execute the second task at 14:00 (if the first task is not completed at this point, wait until it finishes before rerunning the second task, and so on, until all 3 tasks are completed).

7. Click **Create and start** to initiate the migration task.

Viewing Migration Status and Progress

In the **COS migration** interface, you can view the status and progress of ALL file migration tasks.

- **"Task completed" status:** Green indicates the task is completed and all files are successfully migrated, yellow indicates migration task completion but partial files failed to migrate.
- Click **Retry Failed Task** to retry migration for failed files in the task. Files that have already been successfully migrated will not be retransmitted.
- Click **Export** can export the file list of failed items during the migration process.

How to Estimate File Migration Time

Migration speed is determined by the lowest speed in each step of the migration process, subject to the impact of network transmission speed and maximum concurrency number. For details, see [estimate file migration time](#).