

# Object Storage Migration Service

## Quick Start

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**Date** 2024-12-18



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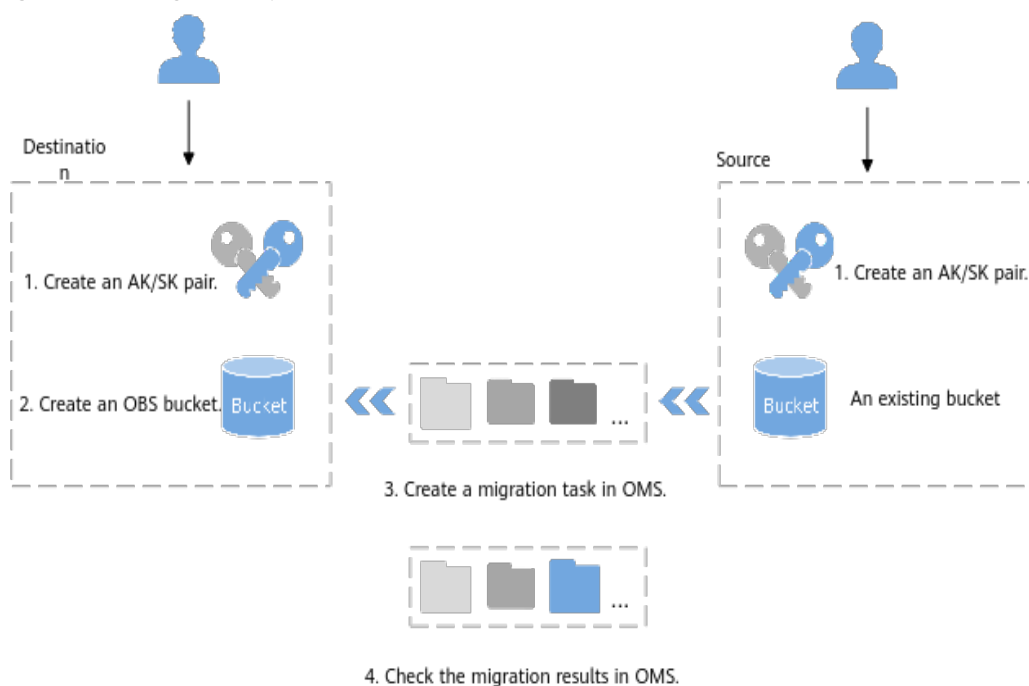
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# 1 Migration Process

You can log in to the OMS console to migrate source objects. [Figure 1-1](#) shows the migration process.

**Figure 1-1** Migration process



Process:

1. Create AK/SK pairs for the source and destination platform accounts.
  - For instructions about how to create an AK/SK pair for the source platform account, see the documentation provided by the source cloud service provider.
  - For instructions about how to create an AK/SK pair for the destination platform account, see [Creating Access Keys](#).
2. Create an OBS bucket for storing the migrated data.  
For details, see [Creating a Bucket](#).

3. Create a migration task and start the task on the OMS console.  
For details, see [Creating a Migration Task](#).
4. Check the migration result on the OMS console.
  - If the migration task succeeds, the migration is complete.
  - If the migration task fails, check the failure cause and restart the migration task.  
For details, see [Viewing a Migration Task](#) and [Managing a Migration Task](#).

# 2 Preparing for Migration

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Before you use OMS, make preparations by referring to this section.

## Registering a HUAWEI ID

[Register a HUAWEI ID and enable Huawei Cloud services.](#)

### NOTE

[Real-name authentication](#) is required for migrations to regions within the Chinese mainland.

## Creating Access Keys for the Source and Destination Accounts and Obtaining the Required Permissions

- Source
  - If the migration source is Huawei Cloud, check whether the source account has an AK/SK pair and the permissions to list buckets, obtain bucket locations, list objects, obtain object metadata, and obtain object content. If it does not have, create an AK/SK pair and assign it the required permissions by referring to [Creating an Access Key \(AK/SK\)](#) and [Obtaining Permissions for the Source Account](#).
  - If the migration source is another public cloud, create an AK/SK pair and obtain permissions by referring to "Preparing for Migration" in [Migration from Other Clouds to Huawei Cloud](#).
- Destination
  - Create an AK/SK pair and obtain permissions by referring to [Creating an Access Key \(AK/SK\)](#) and [Destination Permissions](#).

## Creating a Destination OBS Bucket

Create an OBS bucket to store the migrated data. For details, see [Creating a Bucket](#).

## Restoring Archive Data in the Source Bucket

If there is archive data in the source bucket, restore the data before the migration.  
For details, see [Archived Migrating Archived Data](#).



# 3 Creating a Migration Task

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## Scenarios

This section describes how to create a task to migrate your data.

### NOTE

The following uses the **File/Folder** migration method as an example.

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### CAUTION

- By default, if a task stays in a waiting state for more than 30 days, OMS automatically puts the task into a **Failed** state and clears the AK/SK pair used by the task. To prevent task failures caused by blocking, do not create tasks too frequently.
  - If an object is larger than 500 GB, migrating it takes a long time. You can [submit a service ticket](#) to whitelist the object for migration in segments.
  - During the migration, the system automatically creates a temporary folder named **OMS** in the destination bucket. Do not perform any operations on this folder, including but not limited to modifying, deleting, or adding data in the folder. Otherwise, the migration will be interrupted or fail.
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## Background

OMS supports the following migration sources:

- Huawei Cloud
- AWS
- Alibaba Cloud
- Microsoft Azure
- Tencent Cloud
- Google Cloud
- Qiniu Cloud
- QingCloud

- Baidu Cloud
- Kingsoft Cloud
- UCloud
- HTTP/HTTPS data sources

OMS makes API calls to the object storage services on source platforms during the migration. These API calls may generate fees on those platforms, and you will be responsible for those fees based on those source platform billing structures.

## Prerequisites

- You have [signed up for a HUAWEI ID and enabled Huawei Cloud services](#).
- You have obtained the AK/SK pairs and required permissions for the source and destination platform accounts.

– The source platform account needs the permissions for:

- Listing buckets
- Obtaining bucket locations
- Listing objects
- Obtaining object metadata
- Obtaining object content

To learn how to obtain these permissions, see [Source Permissions](#).

– The destination platform account needs the permissions for:


- Listing buckets
- Obtaining bucket locations
- Listing objects
- Obtaining object metadata
- Obtaining object content
- Listing uploaded parts
- Restoring archived objects

To learn how to obtain these permissions, see [Destination Permissions](#).

- You have created a bucket in OBS.
- You have created less than 1,000,000 migration tasks within the past 24 hours.
- You have less than 1,000,000 migration tasks in **Waiting** state.

## Procedure

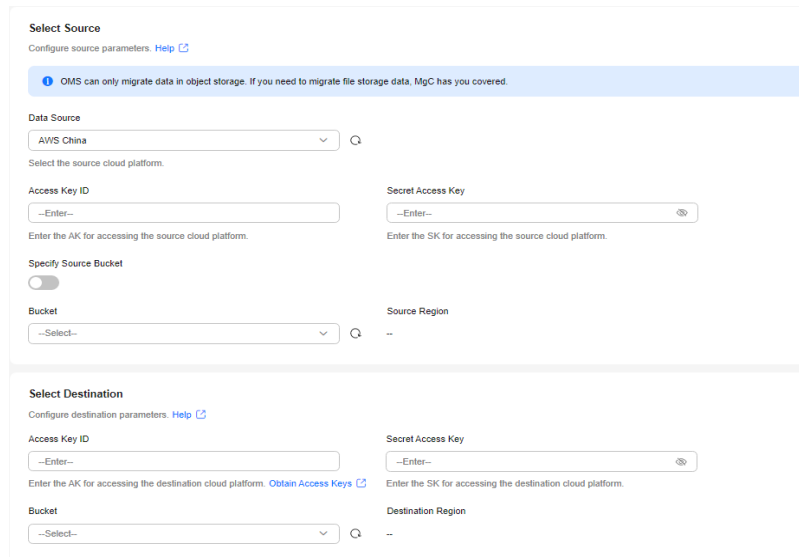
**Step 1** Log in to the [OMS console](#).

**Step 2** Click  in the upper left corner and select the desired region.

**Step 3** On the **Overview** page, click **Create Migration Task**.

Read the service disclaimer, select **I have read and agree to the service disclaimer**, and click **OK**.

**Figure 3-1** Creating a task



**Step 4** Disable **Pre-migration Evaluation**.

**Step 5** Configure the source and destination parameters.

1. Configure source parameters by referring to [Table 3-1](#).

**Table 3-1** Source parameters

Parameter	Configuration
Data Source	Select the cloud platform you are migrating data from.
Access Key ID	Enter the AK for accessing the source platform. It can contain a maximum of 100 characters.
Secret Access Key	Enter the SK for accessing the source platform. The SK matches the AK, and they group into a pair. It can contain a maximum of 100 characters.
Specify Source Bucket	Enable this option if your source account does not have the permissions required to list buckets but has the permissions to list objects in buckets, obtain object metadata, and obtain objects. Then specify the bucket or path to be migrated. For details, see <a href="#">Table 3-2</a> .

**Table 3-2** Description of **Specify Source Bucket**

If You...	Then...
<p>Enable <b>Specify Source Bucket</b></p>	<ol style="list-style-type: none"> <li>Select the region where the source bucket is located from the <b>Region</b> drop-down list.</li> <li>In the <b>Bucket</b> text box, enter the bucket or the path to be migrated. The path must have the bucket name included. For example, if the source bucket is <b>obs-test</b>, <ul style="list-style-type: none"> <li>Enter <b>obs-test</b> to migrate all data in the source bucket.</li> <li>Enter a path in format of <i>Bucket name/Path</i>, for example, <b>obs-test/file</b>, to migrate data in that path.</li> </ul> </li> <li>Click <b>Connect</b>. OMS will check whether the source platform can be connected using the information you provided. If the source platform can be connected, the system will notify you.</li> </ol>
<p>Disable <b>Specify Source Bucket</b> (This feature is disabled by default.)</p>	<ol style="list-style-type: none"> <li>Select the bucket where the source data is stored from the <b>Bucket</b> drop-down list. OMS will check whether the source platform can be connected using the information you provided. Once the source platform is connected, all buckets in your account will be listed in the <b>Bucket</b> drop-down list, provided your account has the necessary permissions to list buckets.</li> </ol>

- Configure destination parameters. For details, see [Table 3-3](#).

**Table 3-3** Destination parameters

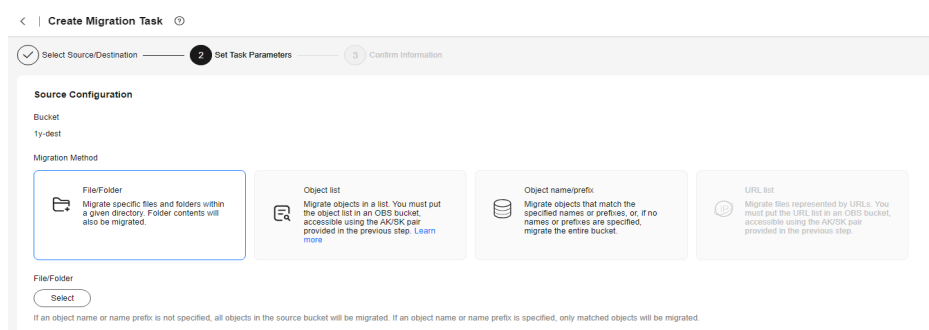
Parameter	Configuration
Access Key ID	Enter the AK for accessing Huawei Cloud. It can contain a maximum of 100 characters.
Secret Access Key	Enter the SK for accessing Huawei Cloud. The SK matches the AK, and they group into a pair. It can contain a maximum of 100 characters. Then click the <b>Bucket</b> drop-down list.
Bucket	Select an OBS bucket for storing the migrated data.

**Step 6** Click **Next**.

**Step 7** Configure parameters in the **Source Configuration** area.

1. Select the migration method **File/Folder**, as shown in [Figure 3-2](#).

**Figure 3-2** Selecting a migration method

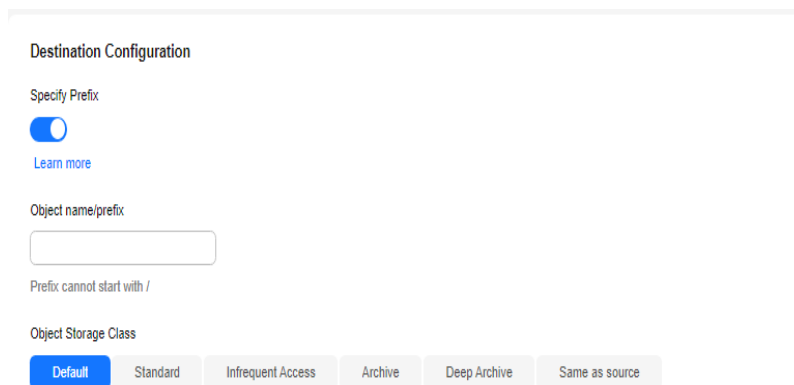


**Step 8** Configure parameters in the **Destination Configuration** area.

1. **Specify Prefix**

- If you choose to disable this feature, the names of objects remain unchanged before and after the migration.
- If choose to enable this feature, you can specify a prefix to rename or redefine the paths for objects migrated to the destination bucket.

**Figure 3-3** Entering a prefix



**NOTE**

To learn how to use **Specify Prefix**, see [Adding a Name Prefix or Path Prefix to Migrated Objects](#).

2. **Object Storage Class**

Choose the storage class that your data will be migrated to. For details about storage classes, see [Storage Classes](#).

**Step 9** (Optional) Click  before **Advanced Settings** to expand the advanced options. Configure advanced options by referring to [Table 3-4](#).

**Table 3-4** Advanced settings

Parameter	Configuration
Object Metadata	<p>Determine whether to migrate metadata.</p> <ul style="list-style-type: none"> <li>● If you select <b>Do not migrate</b>, OMS will only migrate the Content-Type and Content-Encoding metadata.</li> <li>● If you select <b>Migrate</b>, OMS will migrate supported metadata.</li> </ul> <p><b>NOTICE</b></p> <ul style="list-style-type: none"> <li>- Only Chinese characters, English characters, digits, and hyphens (-) can be migrated. Other characters cannot be migrated.</li> <li>- Even if you choose not to migrate metadata, the Content-Type and Content-Encoding metadata will still be migrated to ensure that the migration runs properly.</li> </ul>
Selective Migration	<p>Determine whether to filter source data to be migrated by time.</p> <ul style="list-style-type: none"> <li>● If you do not need to filter source data by time, disable this option.</li> <li>● If you need to filter source data by time, enable this option and specify a date and time. Then only source data modified after the specified date and time will be migrated.</li> </ul>
Server-Side Encryption	<p>Determine whether to enable server-side encryption.</p> <ul style="list-style-type: none"> <li>● If you choose to disable this option, objects will not be encrypted before they are stored to the destination bucket.</li> <li>● If you choose to enable this option, objects will be encrypted before they are stored to the destination bucket.</li> </ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>● SSE-KMS is used by default. Other encryption methods or custom encryption is not supported.</li> <li>● If the destination is a parallel file system (PFS), KMS encryption is not supported.</li> <li>● Enabling KMS-based server-side encryption may slow down the migration speed by about 10%.</li> <li>● KMS encryption is only available if KMS is supported in the region you are migrating to.</li> </ul>

Parameter	Configuration
Failed Object Record	<p>Determine whether to record the objects that fail to be migrated.</p> <ul style="list-style-type: none"><li>• If you choose to disable this option, the system will not record the objects that fail to be migrated. If the migration fails and needs to be retried, all objects in the source bucket need to be migrated again.</li><li>• If you choose to enable this option, the system will record the objects that fail to be migrated. If the migration fails and needs to be retried, you can choose to only migrate failed objects again.</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• For a migration task, no matter it is contained in a task group or not, the objects that fail to be migrated are recorded in a list named after the task name, and the list is uploaded to the <b>oms/failed_object_lists/</b> directory of the destination bucket.</li><li>• A maximum of 100,000 failed objects can be recorded in the failed object list. If more than 100,000 objects fail to be migrated in the migration task, you are advised to rectify the fault based on the existing failed object list and perform the migration again.</li><li>• This file contains information about the failed migration task, including the failure cause and time (in local UTC), URL-encoded names of failed objects, non-URL-encoded names of failed objects, and error codes returned by source SDKs.</li><li>• This file is retained in the destination bucket even after the objects in the file are successfully re-transferred. If you do not need the file, delete it manually.</li></ul>

Parameter	Configuration
Archive Data Restoration	<p>Archived data must be restored before it can be migrated. You can choose to enable this option if your source cloud service provider supports automatic restoration of archived data.</p> <ul style="list-style-type: none"> <li>• If you enable this option, the system automatically restores and migrates archived objects in the migration task. If an archive object fails to be restored, the system skips it and records it in the list of objects that failed to be migrated and continues to migrate other objects in the migration task.</li> </ul> <p><b>NOTICE</b></p> <ul style="list-style-type: none"> <li>- The following cloud service providers can automatically restore archived objects: Huawei Cloud, Alibaba Cloud, Kingsoft Cloud, and Tencent Cloud.</li> <li>- It takes at least a minute to restore an archived object. The larger the archived object is, the longer it takes to restore it, but if an archived object cannot be restored within three minutes, the restoration fails. The time needed depends on the cloud service provider. For details, see the documentation of your source cloud service provider.</li> <li>- Two types of fees are generated during archived data restoration: fees for API calls and fees for archived object restoration. These fees are billed by the source cloud service provider.</li> <li>- After the restoration is complete, archived objects will be in restored state for a certain period of time. During this period, objects can be downloaded or read. After this period expires, archived objects need to be restored again for migration. For details about how long they stay in the restored state, see the documentation of the cloud service provider.</li> <li>- The copies generated for restoring archived objects will be stored for three days by default. If there is more than 3 TB of data or more than 3 million objects in a source bucket, create a migration task group to migrate data in case the migration fails because the restored data is archived again.</li> <li>- Pausing or restarting a migration task will result in restoration of all archive data again, no matter it has been restored or not.</li> <li>- After objects are migrated from the source platform to Huawei Cloud, they are in the same storage class as the destination bucket.</li> </ul> <ul style="list-style-type: none"> <li>• If you do not enable this option, the system directly records archived objects in the list of objects that failed to be migrated, skips them, and continues to migrate other objects in the migration task.</li> </ul>



Parameter	Configuration
SMN Notification	<p>Decide whether to use SMN to get notifications about migration results.</p> <ul style="list-style-type: none"><li>• If you do not enable this option, no SMN message will be sent after the migration is complete.</li><li>• If you enable this option, you will receive an SMN message informing you of the migration results. Perform the following steps:<ol style="list-style-type: none"><li>1. Click <b>Add</b> next to the <b>SMN Topic</b> box. The <b>Select SMN Topic</b> dialog box is displayed.</li><li>2. Select a topic for publishing SMN messages and click <b>OK</b>. If OMS is not authorized to publish messages to the selected SMN topic, a <b>Warning</b> dialog box will appear after you click <b>OK</b>. If you need to complete the authorization, click <b>OK</b> to authorize OMS. Otherwise, click <b>Cancel</b> to return to the <b>Select SMN Topic</b> page and select another SMN topic.</li><li>3. Click <b>Add</b> next to the <b>SMN Template</b> box. The <b>Select SMN Template</b> dialog box is displayed. If this parameter is specified, SMN messages will be sent using the specified template. The template must use the default protocol.</li><li>4. Select a template for publishing SMN messages and click <b>OK</b>.</li><li>5. Configure <b>Trigger Condition</b>. You can select one of the following options or both:<ul style="list-style-type: none"><li>- <b>Migration succeeded</b>: An SMN message will be sent if the migration task succeeds.</li><li>- <b>Migration failed</b>: An SMN message will be sent if the migration task fails.</li></ul></li></ol></li></ul> <p><b>NOTE</b> If you experience trouble in using SMN, see <a href="#">What Do I Do If SMN Does Not Work Properly?</a></p>

Parameter	Configuration
Traffic Limiting	<p>Set the maximum bandwidth for the migration task during different periods.</p> <ul style="list-style-type: none"> <li>• If you do not need to limit the migration traffic, disable this option.</li> <li>• If you need to limit the migration traffic, enable this option.</li> </ul> <p>Perform the following steps:</p> <ol style="list-style-type: none"> <li>1. Specify <b>Start Time</b>, <b>End Time</b>, and <b>Maximum Bandwidth</b>. The maximum bandwidth ranges from 1 MB/s to 200 MB/s.</li> </ol> <p><b>NOTICE</b> For example, if you set <b>Start Time</b> to <b>08:00</b>, <b>End Time</b> to <b>12:00</b>, and <b>Maximum Bandwidth</b> to <b>20 MB/s</b>, the maximum migration speed is limited to 20 MB/s when the migration task runs in the period from 08:00 to 12:00. The migration speed is not limited beyond this period. The time is the local standard time of the region you are migrating to.</p> <ol style="list-style-type: none"> <li>2. Click <b>Add Rule</b>. An empty traffic limiting rule is displayed.</li> <li>3. Repeat <b>1</b> and <b>2</b> to add another traffic limiting rule. You can click <b>Delete</b> in the <b>Operation</b> column to delete a rule.</li> </ol> <p><b>NOTE</b> A maximum of five rules can be added for a migration task. You can set traffic limiting rules in the task details even after the task is created.</p>

Parameter	Configuration
Object Overwrite	<ul style="list-style-type: none"> <li>● <b>Overwrite if source newer or different size:</b> If a source object is not as large as or was last modified more recently than its paired destination object, the source object will overwrite the destination object. Otherwise, the source object will be skipped.</li> <li>● <b>Never overwrite:</b> The system will always skip source objects and keeps their paired destination objects.</li> <li>● <b>Overwrite if different CRC64 checksum:</b> If a source object has a CRC64 checksum different from the paired destination object, the source object will overwrite the destination object. Otherwise, the source object will be skipped. If either of them does not have a CRC64 checksum, their sizes and last modification times are checked.</li> </ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>- This option is only available for migration on Huawei Cloud or from Alibaba Cloud or Tencent Cloud.</li> <li>- This option is applied only when the source object has a same encryption attribute as the destination one.</li> </ul> <ul style="list-style-type: none"> <li>● <b>Always overwrite:</b> The system always allows source objects to overwrite their paired destination objects.</li> </ul>
Consistency Check	<ul style="list-style-type: none"> <li>● <b>By size and last modification time:</b> With this default setting, the system will check object consistency with object size and last modification time.</li> <li>● <b>By CRC64 checksum:</b> The system will check object consistency with CRC64 checksums. If a source object and the paired destination object have CRC64 checksums, the checksums are checked. Otherwise, their sizes and last modification times are checked.</li> </ul>
Priority	If there are a large number of tasks, you can set task priorities to control which tasks take precedence over other tasks.
Description	In the <b>Description</b> area, enter a maximum of 255 characters to briefly describe the migration task.

**Step 10** Click **Next** to enter the confirmation page.

**Step 11** Confirm the migration settings and start the migration.

1. Check that the migration settings are correct.  
If the settings are incorrect, click **Previous** to return to the previous page for modification.
2. Click **Next**. A message is displayed, indicating that the migration task is created successfully.  
You can see that the migration task is displayed in the task list.

For details about migration task statuses, see [Viewing a Migration Task](#).

 **NOTE**

After the task is created, a task name is generated for quick identification. It is displayed in the upper left corner of the task list. It is formed by concatenating the source bucket name, the destination bucket name, and a time series identifier.

**----End**

# 4 Change History

Released On	Description
2024-01-26	This issue is the ninth official release. Added Google Cloud to the source cloud vendor list.
2023-12-08	This issue is the eighth official release. Added parameter <b>Object Storage Class</b> to <a href="#">Creating a Migration Task</a> .
2022-11-04	This issue is the seventh official release. <ul style="list-style-type: none"><li>• Updated <a href="#">Creating a Migration Task</a>.</li><li>• Added <a href="#">Preparing for Migration</a>.</li></ul>
2021-03-31	This issue is the sixth official release. Optimized <a href="#">Creating a Migration Task</a> .
2021-03-10	This issue is the fifth official release. Optimized <a href="#">Creating a Migration Task</a> .
2020-08-06	This issue is the fourth official release. Optimized <a href="#">Prerequisites</a> .
2020-03-30	This issue is the third official release. Optimized the description of parameter <b>Failed Object Record</b> in <a href="#">Creating a Migration Task</a> .
2019-08-31	This issue is the second official release. Added descriptions about the traffic limit function in <a href="#">Creating a Migration Task</a> .
2019-07-25	This issue is the first official release.