

# Server Migration Service

## Getting Started

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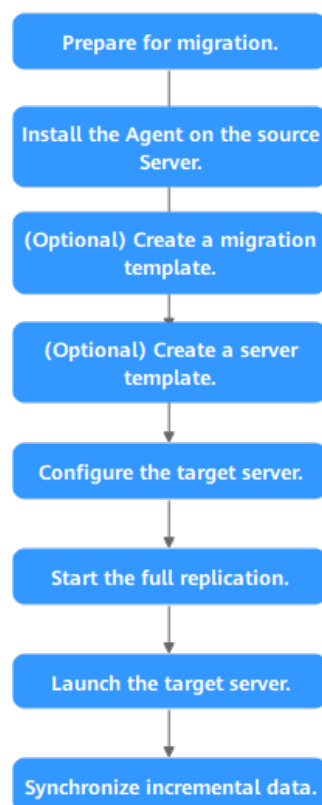
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# 1 Quick Start

The following figure shows the process of using SMS to migrate a server to Huawei Cloud.

**Figure 1-1** Process of using SMS



# 2 Preparing for Migration

---

Before using SMS, make the following preparations:

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

 NOTE

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

2. Obtain the required permissions.

If you use an account for migration, you have the required permissions by default. If you use an IAM user for migration, you need to obtain the required permissions. For more information, see [Creating a User Group and Assigning Permissions](#).

3. Obtain an AK/SK pair for your target account.

The AK/SK pair is used for authentication during the migration. To learn how to obtain an AK/SK pair, see [How Do I Create an AK/SK Pair for an Account?](#) or [How Do I Create an AK/SK Pair for an IAM User?](#)

---

 CAUTION

SMS does not support AK/SK-based authentication for federated users (virtual users).

---

4. Ensure that the source server OS is supported by SMS.

See [Supported Windows OSs](#) or [Supported Linux OSs](#).

5. Ensure that the following network requirements are met:

- a. The source server can connect to the Huawei Cloud API Gateway over TCP port 443. For more information, see [Connecting Source Servers to Huawei Cloud API Gateway](#).

 NOTE

It is recommended that all outbound ports on the source server be opened.

- b. If you want to migrate over an IPv6 network, the source environment must support IPv4/IPv6 dual-stack networks.

- c. The source server can connect to the target server. For more information, see [Connecting Source Servers to Target Servers](#).
  - For a migration over the Internet, purchase EIPs in the region you are migrating to.
  - For a migration over a private network, request a Direct Connect or VPN connection.
- d. The following ports are enabled in the security group associated with the target server to allow traffic to these ports:
  - Windows: TCP ports 8899, 8900, and 22
  - Linux: TCP port 22 for file-level migration, and ports 8900 and 22 for block-level migration

---

 **CAUTION**

- For security purposes, you are advised to open these ports only to the source server.
  - The firewall of the target server must allow traffic to these ports.
- 

To learn how to open the ports, see [How Do I Configure Security Group Rules for Target Servers?](#)

6. Ensure that the following source server requirements are met:

Available Space

- Windows
  - At least 320 MB of available space on a partition not smaller than 600 MB
  - At least 40 MB of available space on a partition smaller than 600 MB

- Linux

At least 200 MB of available space on the root partition

Source Environment

- The system time of the source server must be consistent with the local standard time to avoid Agent registration failures.
- If the source server runs Linux, **rsync** must be installed on it. You can run the **rsync -v** command to check whether **rsync** is installed.

If it is not, install it by running the following command:

- CentOS: **yum -y install rsync**
- Ubuntu: **apt-get -y install rsync**
- Debian: **apt-get -y install rsync**
- SUSE: **zypper install rsync**
- For other distributions, refer to the official website documentation.

 NOTE

**rsync** comes preinstalled on most distributions by default.



# 3 Installing the Agent on the Source Server

---

## 3.1 Installing the Agent on Windows

### Scenarios

You need to install the Agent on the source server to be migrated. During the installation, you need to enter the AK/SK pair of the Huawei Cloud account you are migrating to. After the Agent is started, it automatically reports source server information to SMS. The information is used for migration only. For details, see [What Information Does SMS Collect About Source Servers?](#)

There are two options for Windows:

- GUI-based Windows Agent (Python 3): Windows Server 2019/2016/2012 and Windows 10/8.1
- CLI-based Windows Agent (Python 2): Windows Server 2008 and Windows 7

---

 **CAUTION**

You must log in to the source server as user **Administrator**.

---

### Prerequisites

- You have obtained the AK/SK pair of your Huawei Cloud account.
  - If you use an IAM user for migration, obtain an AK/SK pair by referring to [How Do I Create an AK/SK Pair for an IAM User?](#)
  - If you use an account for migration, obtain an AK/SK pair by referring to [How Do I Create an AK/SK Pair for an Account?](#)
- You have obtained the administrator permissions for the source server.
- You have confirmed that the source server OS is supported by SMS. For details, see [Supported Windows OSs](#).


- There is no antivirus software installed on the source server. Antivirus software may prevent the Agent from starting up.

In case of Agent startup failures caused by antivirus software, see [How Do I Fix Error "Failed to start the I/O monitoring module" When I Start the Agent?](#)

## Downloading the Agent Installation File


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

**Step 2** In the navigation pane on the left, choose **Agents**.

**Step 3** In the **Windows** area, click **Agent** to download the Agent you need. Read carefully and agree to the service statement. Then click **OK**. In the displayed **Agent** window, click the  icon to next to **Agent** to download the Agent installation package.



- **Windows Agent (Python 3)**  
This is a GUI-based version designed for Windows Server 2019/2016/2012 and Windows 10/8.1.
- **Windows Agent (Python 2)**  
This is a CLI-based version designed for Windows Server 2008 and Windows 7.

**Step 4** Click the  icon next to **SHA256 File** to save the file that contains the hash value to a local directory. Verify the integrity of the Agent installation package. For details, see [How Do I Verify the Integrity of the Agent Installation File?](#)



----End

## Installing the Windows Agent (Python 3)

**Step 1** Transmit the **SMS-Agent-Py3.exe** file to the source server.

**Step 2** Log in to the source server as user **Administrator** and double-click the **SMS-Agent-Py3.exe** file.

**Step 3** Click **Install** and wait for the installation to complete.

**Step 4** Click **Finish**. The SMS-Agent GUI is displayed.

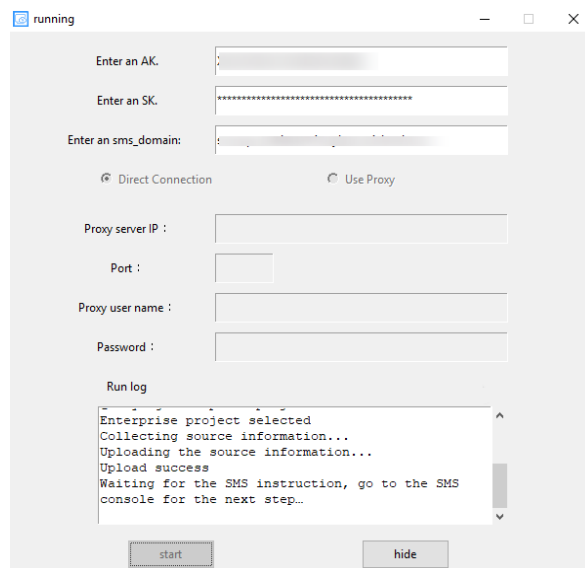
**Step 5** Enter the AK/SK pair of the account and the SMS domain name in the region you are migrating to. You can obtain the SMS domain name on the **Agents** page of the SMS console, as shown in [Figure 3-2](#).

- If you do not need to use an HTTP/HTTPS proxy, select **Direct Connection**.
- If you need to use an HTTP/HTTPS proxy, select **Use Proxy** and enter the IP address, port number, username, and password of the proxy server.

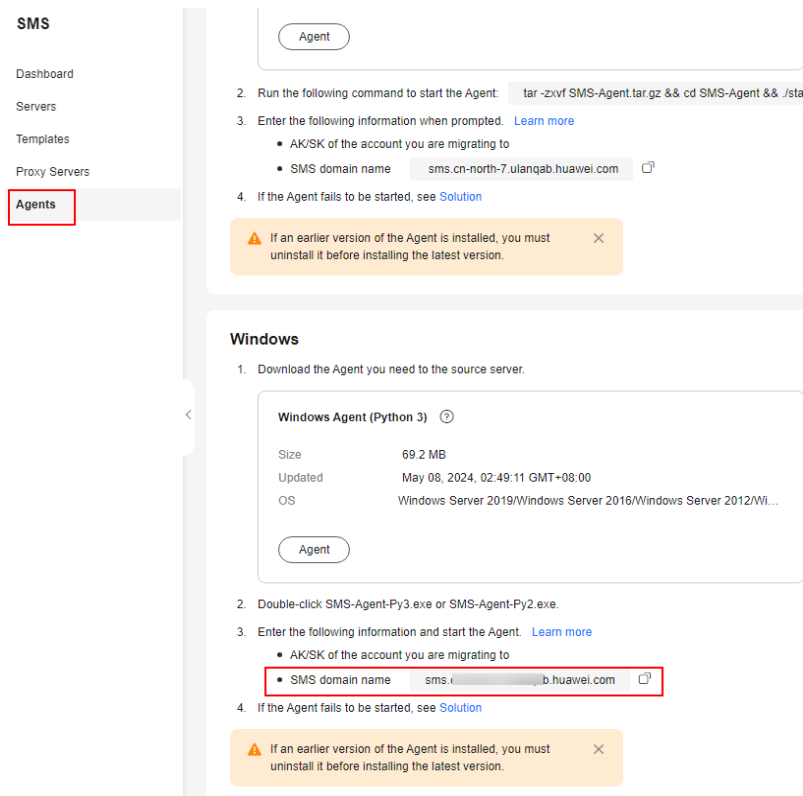
 **NOTE**

- **Proxy Server IP:** Follow the format **https://your-proxy-addr.com**. Use the protocol configured for your proxy server. HTTPS is recommended. Replace *your-proxy-addr* with the IP address of your proxy server, not that of the target server.
- **Port:** Enter the port used by the proxy server. The default port is 3128.
- **Proxy user name:** Enter the username required for using the proxy software. If none is required, leave this parameter blank.
- **Password:** Enter the password corresponding to the proxy username. If none is required, leave this parameter blank.

**Figure 3-1** Starting the Agent



**Figure 3-2** Obtaining the SMS domain name



**Step 6** You must enable the EPS service for the Huawei Cloud account you migrate to. When you start the Agent installed on a source server, the Agent lists all enterprise projects the account is allowed to access. You can select the enterprise you desire. Then the server will be migrated to the enterprise project. This enables you to isolate permissions, resources, and finance during the migration. For details, see [Migrating Servers into an Enterprise Project](#).

**Step 7** Click **Start**.

**Step 8** Carefully review the **Privacy Statement** and click **Yes** if you want to continue.

When the message "Upload success. Waiting for the SMS instruction" is displayed, the Agent has been started. You need to log in to the SMS console and perform subsequent operations.

----End

## Installing the Windows Agent (Python 2)

**Step 1** Transmit the **SMS-Agent-Py2.exe** file to the source server.

**Step 2** Log in to the source server as user **Administrator** and double-click the **SMS-Agent-Py2.exe** file.

**Step 3** Click **Install** and wait for the installation to complete.

**Step 4** Click **Finish**. The SMS-Agent CLI is displayed.

 NOTE

To manually start the Agent when needed, double-click **agent-start.exe** in the directory **C:\SMS-Agent-Py2** where the Agent was installed.

**Step 5** If you need to use an HTTP/HTTPS proxy, go to [Step 6](#).

If you do not need to use an HTTP/HTTPS proxy, go to [Step 7](#).

 NOTE

- If your source server cannot access Huawei Cloud over the Internet, a proxy server can help you. You need to configure a proxy server by yourself.
- The proxy is used for registering the source server with SMS when a Direct Connect or VPN connection is used. It is not used for data migration.

**Step 6** Configure an HTTP/HTTPS proxy server.

Go to the directory where the Agent was installed (typically **C:\SMS-Agent-Py2\config**) and edit the **auth.cfg** file. Do not edit the **auth.cfg** file unless you need to use an HTTP/HTTPS proxy server.

```
[proxy-config]
enable = true
proxy_addr = https://your-proxy-addr.com
proxy_port = proxyport
proxy_user =
use_password = false
```

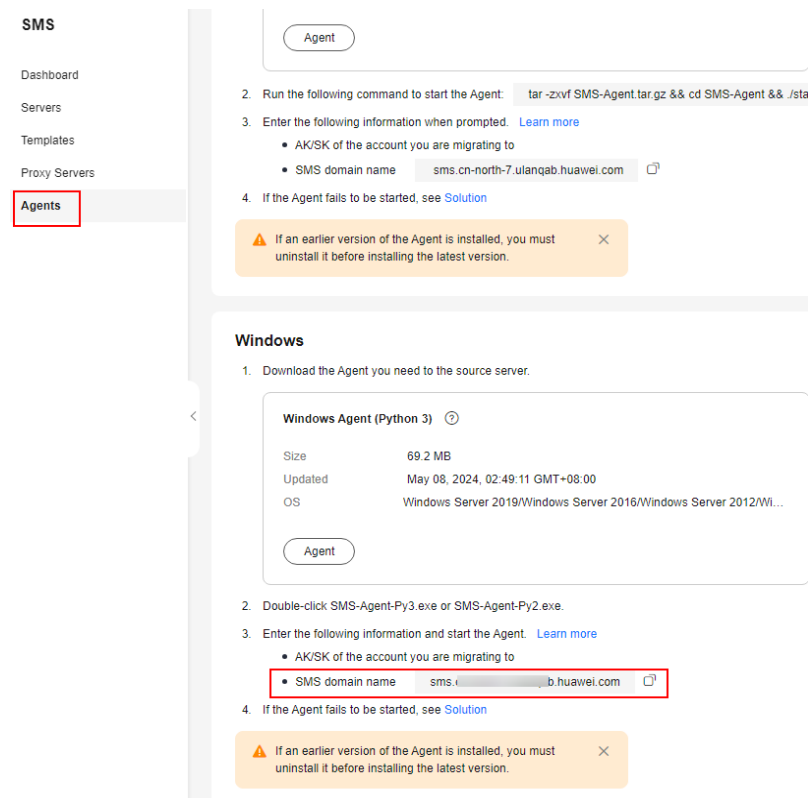
 NOTE

- **enable**: To use a proxy server, set this parameter to **true**.
- **proxy\_addr**: Replace *your-proxy-addr* with the IP address of the proxy server, not that of the target server. Use the protocol configured for your proxy server. HTTPS is recommended.
- **proxy\_user**: Enter the username for logging in to the proxy server. If no username is required, leave it blank.
- **use\_password**: If a password is required for logging in to the proxy server, set it to **true**. If none is required, set it to **false**.

**Step 7** When prompted, enter the AK/SK pair of the Huawei Cloud account and the SMS domain name in the region you are migrating to. You can obtain the SMS domain name on the **Agents** page of the SMS console, as shown in [Figure 3-3](#).

You must enable the EPS service for the Huawei Cloud account you migrate to. When you start the Agent installed on a source server, the Agent lists all enterprise projects the account is allowed to access. You can select the enterprise you desire. Then the server will be migrated to the enterprise project. This enables you to isolate permissions, resources, and finance during the migration. For details, see [Migrating Servers into an Enterprise Project](#).

**Figure 3-3** Obtaining the SMS domain name



After the authentication succeeds, the Agent starts to report source server information to SMS, and the window is closed. You can go to the **Servers** page on the SMS console to view the record of the source server.

----End

## Troubleshooting

- [How Do I Resolve Error "AK/SK authentication failed. Ensure that the system time is consistent with the standard time and the AK and SK are correct" When I Start the Agent?](#)
- [Why Wasn't My Source Server Added to the SMS Console After I Configured the Agent?](#)

## 3.2 Installing the Agent on Linux

### Scenarios

You need to install the Agent on the Linux source server to be migrated. During the installation, you need to enter the AK/SK pair of the Huawei Cloud account you are migrating to. After the Agent is started, it automatically reports source server information to SMS. The information is used for migration only. For details, see [What Information Does SMS Collect About Source Servers?](#)

## Prerequisites

- You have obtained the AK/SK pair of your Huawei Cloud account.
  - If you use an IAM user for migration, obtain an AK/SK pair by referring to [How Do I Create an AK/SK Pair for an IAM User?](#)
  - If you use an account for migration, obtain an AK/SK pair by referring to [How Do I Create an AK/SK Pair for an Account?](#)
- You have confirmed that the source server OS is supported by SMS. For details, see [Supported Linux OSs](#).

## Procedure

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

**Step 2** In the navigation pane on the left, choose **Agents**.

**Step 3** In the **Linux** area, click **Agent**. Read carefully and agree to the service statement and click **OK**. Copy the command for downloading Agent installation file and run the command on the source server.

**Step 4** In the Click **SHA256 File**. Copy the command for downloading the SHA256 file and run the command on the source server. Use the hash value contained in the SHA256 file to verify the integrity of the Agent installation package. For details, see [How Do I Verify the Integrity of the Agent Installation File?](#)

**Step 5** Decompress the Agent software package.

```
tar -zxvf SMS-Agent.tar.gz
```

**Step 6** Switch to the **SMS-Agent** directory on the source server.

```
cd SMS-Agent
```

**Step 7** If you need to use an HTTP/HTTPS proxy, go to [Step 8](#).

If you do not need to use an HTTP/HTTPS proxy, go to [Step 9](#).

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### CAUTION

- If your source server cannot access Huawei Cloud over the Internet, a proxy server can help you. You need to configure a proxy by yourself.
- The proxy is used for registering the source server with SMS when a Direct Connect or VPN connection is used. It is not used for data migration.

---

**Step 8** Configure an HTTP/HTTPS proxy.

1. Go to the **config** directory.

```
cd SMS-Agent/agent/config
```

2. Open and edit the **auth.cfg** file. Do not edit the **auth.cfg** file unless you need to use an HTTP/HTTPS proxy.

```
vi auth.cfg
```

The values shown here are for reference only.

```
[proxy-config]
enable = true
proxy_addr = https://your-proxy-addr.com
proxy_port = 3128
```

```
proxy_user = root
use_password = true
```

**NOTE**

- **enable:** To use the proxy, set it to **true**.
  - **proxy\_addr:** Enter the IP address of the proxy server. The proxy is used by the source server to access SMS. This IP address is different from the IP address of the target server. Use the protocol configured for your proxy server. HTTPS is recommended.
  - **proxy\_user:** Enter the username for logging in to the proxy server. If no username is required, leave it blank.
  - **use\_password:** If a password is required for logging in to the proxy server, set it to **true**. If none is required, set it to **false**.
3. Save the **auth.cfg** file and exit.
- ```
:wq
```

**Step 9** Start the Agent.

```
./startup.sh
```

**Step 10** Carefully review what information will be collected by the Agent, enter **y**, and press **Enter**.

**Figure 3-4** Entering y

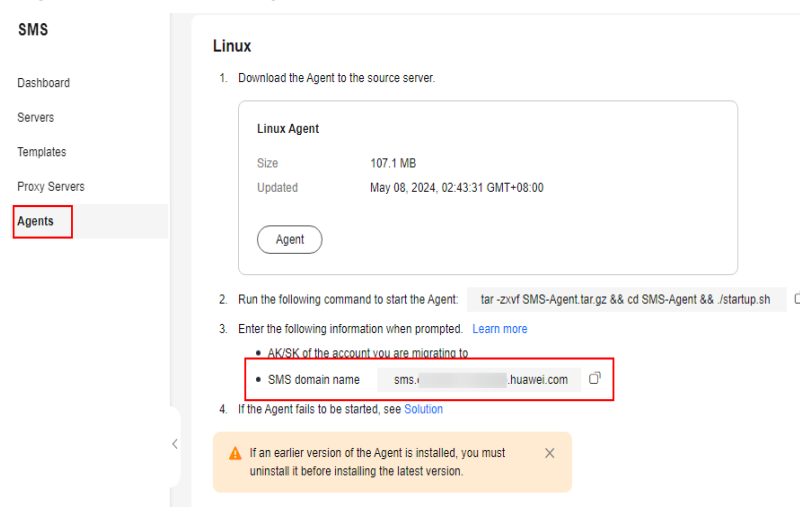
```
After being started, the migration Agent collects system configuration information and uploads the information to SMS for migration task creation. The information to be collected includes server IP address and MAC address. For details, see the Server Migration Service User Guide. Are you sure you want to collect the information?(y/n)y
```

**Step 11** Enter the AK/SK pair of the Huawei Cloud account and the SMS domain name in the region you are migrating to. You can obtain the SMS domain name on the **Agents** page of the SMS console, as shown in **Figure 3-6**.

**Figure 3-5** Entering the AK/SK pair

```
After being started, the migration Agent collects system configuration information and uploads the information to SMS for migration task creation. The information to be collected includes server IP address and MAC address. For details, see the Server Migration Service User Guide. Are you sure you want to collect the information?(y/n)y
Please input AK(Access Key ID) of Public Cloud:*****
Please input SK(Secret Access Key) of Public Cloud:*****
Please input smsdomain of Public Cloud: sms.i.huawei.com
```

**Figure 3-6** Obtaining the SMS domain name





You must enable the EPS service for the Huawei Cloud account you migrate to. When you start the Agent installed on a source server, the Agent lists all enterprise projects the account is allowed to access. You can select the enterprise you desire. Then the server will be migrated to the enterprise project. This enables you to isolate permissions, resources, and finance during the migration. For details, see [Migrating Servers into an Enterprise Project](#).

When the following information is displayed, the Agent has been started up and will start reporting source server information to SMS. You can go to the **Servers** page on the SMS console to view the record of the source server.

**Figure 3-7** Agent running

```
Select an enterprise project to register this server(input index,like 0,1...):0
selected enterprise project:
0 0 default

check sms agent start ...

sms agent start up successfully!
check the source server in Server Migration Service Console now!
[root@ecs-migrate-to-hecs1 SMS-Agent]#
```

----End

## Troubleshooting

- [How Do I Resolve Error "No such file or directory: 'rsync':'rsync'" When I Start the Linux Agent?](#)
- [How Do I Resolve Error "AK/SK authentication failed. Ensure that the system time is consistent with the standard time and the AK and SK are correct" When I Start the Agent?](#)
- [Why Wasn't My Source Server Added to the SMS Console After I Configured the Agent?](#)

# 4 (Optional) Creating a Migration Template

---

SMS allows you to create migration templates for quick configuration. When you configure the migration settings, you can use a template to quickly configure parameters **Network**, **Migration Rate Limit**, **Continuous Synchronization Region**, and **Project**. For details, see [Creating a Migration Template](#).

# 5 (Optional) Creating a Server Template

---

SMS allows you to create server templates for quick configuration. When you configure a target server, you can use a template to quickly configure parameters such as **VPC**, **Subnet**, and **Security Group**. For details, see [Creating a Server Template](#).

# 6 Configuring the Target Server

## Scenarios

Before starting the migration, you need to configure the target server. The target server is used to receive data from the source server. You can clone the target server for service testing, and launch the target server after you verify that your services can run properly on the target server.

## Prerequisites

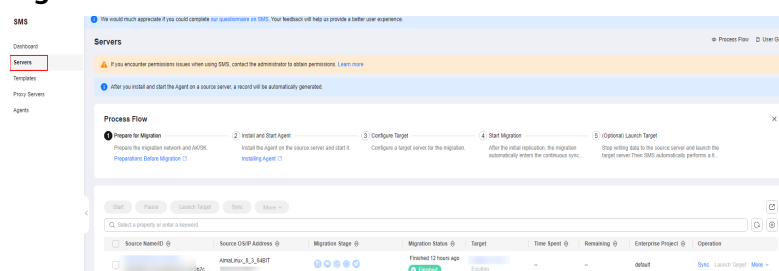
The migration is in the  stage and the status is **Ready**.

## Procedure

**Step 1** Log in to the **SMS** console.

**Step 2** In the navigation pane on the left, choose **Servers**.

**Figure 6-1** Server list



**Step 3** In the server list, locate the source server to be migrated and click **Configure** in the **Target** column.

You can also choose **More > Configure Target** in the **Operation** column.

### NOTICE

If you do not find your source server, check whether you have logged in to the account you are migrating to.

**Step 4** On the **Configure Basic Settings** page, configure parameters by referring to **Table 6-1**.

**Table 6-1** Basic parameter settings

| Parameter             | Option  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Migration Template    | N/A     | After you select a migration template, the system populates <b>Network</b> , <b>Migration Rate Limit</b> , <b>Migration Method</b> , <b>Continuous Synchronization</b> , <b>Partition Resizing</b> , <b>Region</b> , and <b>Project</b> based on the template. You can choose the default template created by the system or any one you created. To learn how to create a migration template, see <a href="#">Creating a Migration Template</a> .                                                                                                                                       |
| Network Type          | Public  | An EIP must be bound to the target server.<br><b>Public</b> is the default value of <b>Network Type</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                       | Private | A Direct Connect connection, VPN connection, VPC peering connection, VPC subnet, or Cloud Connect connection must be provisioned. The private IP address of the target server will be used for migration.                                                                                                                                                                                                                                                                                                                                                                               |
| Migration Rate Limit  | -       | You can configure the rate limiting based on the source bandwidth and service requirements.<br>If you do not want to limit the migration rate, set this parameter to <b>0</b> .<br><b>NOTE</b><br>For a Linux migration, traffic limiting is done with Traffic Control (TC). If TC is not installed on the source server, the migration rate limit you configured here will not be applied during the migration.<br>Some Linux distributions do not support traffic limiting. For example, CentOS 8 and other CentOS 8-based distributions do not come with the TC module preinstalled. |
| CPU Limit             | N/A     | These options are only available for Linux migrations. For details, see <a href="#">How Do I Set Resource Limits for SMS-Agent During a Linux Server Migration?</a>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Memory Limit          | -       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Disk Throughput Limit | -       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

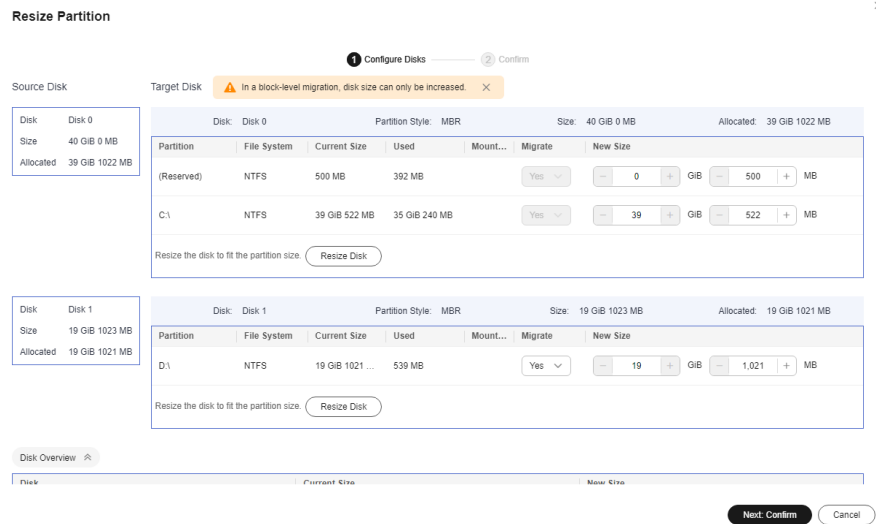
| Parameter                  | Option              | Description                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Migration Method           | Linux block-level   | Migration and synchronization are performed by block. This method is efficient but the compatibility is poor.                                                                                                                                                                                                                                                                                                   |
|                            | Linux file-level    | Migration and synchronization are performed by file. This method is inefficient, but the compatibility is excellent.                                                                                                                                                                                                                                                                                            |
|                            | Windows block-level | Migration and synchronization are performed by block. This method is very efficient and is the only migration method available for Windows servers.                                                                                                                                                                                                                                                             |
| IP Address Version         | IPv4                | IPv4 can be used for data migration.                                                                                                                                                                                                                                                                                                                                                                            |
|                            | IPv6                | On a dual-stack network, IPv6 can be used for migration. For details about the preparations and precautions for migration over IPv6, see <a href="#">Migrating Servers over an IPv6 Network</a> .                                                                                                                                                                                                               |
| Continuous Synchronization | No                  | After the full replication is complete, SMS will automatically launch the target server without synchronizing incremental data. To synchronize incremental data, you will need to click <b>Sync</b> in the <b>Operation</b> column.                                                                                                                                                                             |
|                            | Yes                 | After the full replication is complete, the migration will enter the continuous synchronization stage. During this stage, incremental data will be periodically synchronized from the source server to the target server, and you will be unable to use the target server since it has not been launched yet. To finish this stage, you will need to click <b>Launch Target</b> in the <b>Operation</b> column. |
| Partition Resizing         | No                  | The disk and partition settings from the source server will be retained on the target server.                                                                                                                                                                                                                                                                                                                   |
|                            | Yes                 | You can resize the disks and partitions on the target server. For details, see <a href="#">Resizing disks and partitions</a> .                                                                                                                                                                                                                                                                                  |
| Start Target Upon Launch   | No                  | The target server will be stopped after the migration is complete.                                                                                                                                                                                                                                                                                                                                              |
|                            | Yes                 | The target server will be started after the migration is complete.                                                                                                                                                                                                                                                                                                                                              |

| Parameter                   | Option | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measure Network Performance | No     | Network performance will not be measured.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                             | Yes    | Before the full migration starts, the packet loss rate, network jitter, network latency, bandwidth, memory usage, and CPU usage will be measured. For details, see <a href="#">How Do I Measure the Network Performance Before the Migration?</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Enable Concurrency          | No     | By default, one process is used for migration and synchronization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                             | Yes    | You need to set <b>Max. Concurrent Migrations</b> and <b>Max. Concurrent Syncs</b> , which determine the maximum number of processes the Agent can start concurrently to execute migration and synchronization. This parameter is available for Linux file-level migrations. To learn how to configure it, see <a href="#">How Do I Set the Number of Concurrent Processes for Linux File-Level Migrations?</a>                                                                                                                                                                                                                                                                                     |
| Advanced Options            | -      | <ul style="list-style-type: none"> <li>Advanced options <b>Exclude Migration Paths</b>, <b>Include Sync Paths</b>, and <b>Exclude Sync Paths</b> are available for Linux file-level migrations. For details, see <a href="#">In a Linux File-Level Migration, How Do I Exclude Directories from Migration and Synchronization?</a></li> <li>Advanced options <b>Data Compression</b> and <b>Compression Threads</b> are available for Linux block-level migrations. For details, see <a href="#">How Do I Configure Data Compression for a Linux Block-Level Migration?</a></li> <li>For a Windows block-level migration over a private network, <b>Transit IP Address</b> is available.</li> </ul> |

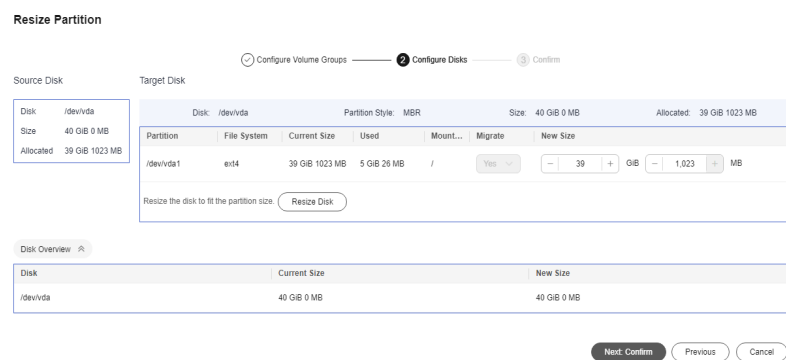
- Resizing disks and partitions

1. Select **Yes** for **Partition Resizing** and click **Resize Partition**. In the displayed dialog box, resize the disks and partitions on the target server as needed.

**Figure 6-2** Resizing disks and partitions (Windows)



**Figure 6-3** Resizing disks and partitions (Linux)



**NOTE**

- You can choose whether to migrate source partitions and resize the paired target partitions.
- For a Linux server using LVM, you can choose whether to migrate physical or logical volumes and resize the paired target volumes.



---

 **CAUTION**

- In a Windows migration, the system and boot partitions are migrated by default.
- In a Windows migration, you can increase the sizes of partitions, but you cannot decrease them.
- Partition resizing is not available for Btrfs partitions on Linux.
- In a Linux migration, the system and swap partitions are migrated by default.
- You can choose to migrate all or none volume groups by configuring **Migrate All Volume Groups**.
- If you choose to migrate none of the logical volumes in a volume group, their physical volumes will not be migrated by default.
- In a Linux block-level migration, you can increase the sizes of partitions, but you cannot decrease them.
- In a Linux file-level migration, you can increase or decrease size of each partition. The new partition size must be at least 1 GB larger than the used partition space. If the current partition size is not 1 GB larger than the used partition space, the partition size cannot be decreased. For details, see [What Are the Rules for Resizing Volume Groups, Disks, and Partitions?](#)
- If the total partition size after resizing is larger than the disk size, you need to expand the disk capacity to fit the partition size.
- If the total partition size after resizing is much smaller than the disk size, you can decrease the disk size as needed.

---

2. Click **Next: Configure Disks**. Resize the disks as needed. Then confirm the configurations and click **OK**.

---

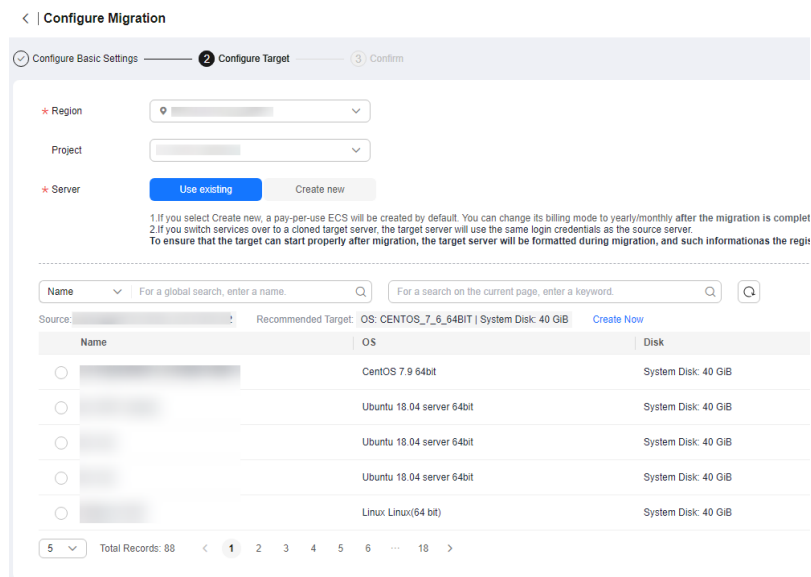
 **CAUTION**

After you click **OK**, the value of **Partition Resizing** cannot be changed from **Yes** to **No**. If you want to restore the disk partition settings as they were, locate the source server to be migrated and choose **More > Delete** in the **Operation** column. Then restart the Agent on the source server, configure the target server again, and set **Partition Resizing** to **No**.

---

**Step 5** Click **Next: Configure Target** in the lower right corner.

**Figure 6-4** Configure Target



**Step 6** On the **Configure Target** page, set parameters as prompted.

**Table 6-2** Parameters for configuring a target server

| Parameter | Option       | Operation                                                                                                                                                     |
|-----------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Region    | -            | Select a region where you want to provision the target server. Consider your service requirements when selecting a region.                                    |
| Project   | -            | Select a project in the region from the drop-down list. You can select a project only after a region is selected.                                             |
| Server    | Use existing | Select an existing server based on the recommended specifications above the server list. For details, see <a href="#">Use existing</a> .                      |
|           | Create new   | Configure <b>VPC</b> , <b>Subnet</b> , <b>Security Group</b> , and the parameters in <b>Advanced Settings</b> . For details, see <a href="#">Create new</a> . |

- Use existing

The target server must meet requirements listed below. If no existing server meets the requirements, click **Create Now** to create one based on the recommended specifications. For details, see [Purchasing an ECS](#).

 **NOTE**

Source servers can be migrated to pay-per-use or yearly/monthly ECSs. You can select ECSs of whichever billing mode is appropriate.

- A target server running Windows must have at least 2 GB of memory.
- A target server must have at least as many disks as the source server, and each disk on the target server must be at least the size recommended by the system.
- A target server must run the same OS as the source server, or there will be a server name conflict or other problems.
- A target server must be reachable by the source server. An EIP must be bound to the target server, or a VPN or Direct Connect connection must be established between the source and target.
- The security group of the target server must be correctly configured. It must be configured to allow access on TCP ports 8899, 8900, and 22 for a Windows migration, on ports 8900 and 22 for a Linux block-level migration, or on port 22 for a Linux file-level migration.

---

 **CAUTION**

- For security purposes, you are advised to open these ports only to the source server.
- The firewall of the target server must allow traffic to these ports.

---

For details, see [How Do I Configure Security Group Rules for Target Servers?](#)

- Create new
  - If you select **Recommended** for **Server Template**, a VPC, subnet, and security group will be automatically created based on source settings. You can change the recommended settings as needed.  
Advanced options such as the server name, AZ, specifications, system disk, data disk and EIP are automatically configured. You can change the settings as needed.

Figure 6-5 Recommended

The screenshot shows the 'Configure Target' step in a three-step process. The 'Region' and 'Project' are selected. Under 'Server', 'Create new' is highlighted. Below, the 'Server Template' section shows 'Recommended' as the selected option. The 'VPC' and 'Subnet' are also configured. The 'Advanced Settings' checkbox is currently unchecked.

Figure 6-6 Advanced Settings

The screenshot displays the 'Advanced Settings' section where the 'Configure now' checkbox is checked. The 'AZ' is set to 'Random'. Under 'Specifications', 'General computing' is selected, showing a list of instance types with their respective vCPU and memory configurations. The 'Image' is set to 'Public image' with 'CentOS 7.6 64bit for eu Tenant 20230516 (40 GIB)'. The 'System Disk' is set to 'High I/O' with a size of 40 GIB. A note at the bottom indicates that up to 23 more data disks can be attached.

**NOTE**

- Data disks must be either VBD or SCSI. VBD is the default device type for data disks. For details about disk device types, see [Device Types and Usage Instructions](#).
  - Data disks can be created as shared disks. For details about shared disks, see [Shared EVS Disks and Usage Instructions](#).
- If you select a custom template, the VPC, subnet, security group, AZ, and disk will be populated based on the template. You can change the settings as needed. To learn how to create a server template, see [Creating a Server Template](#).

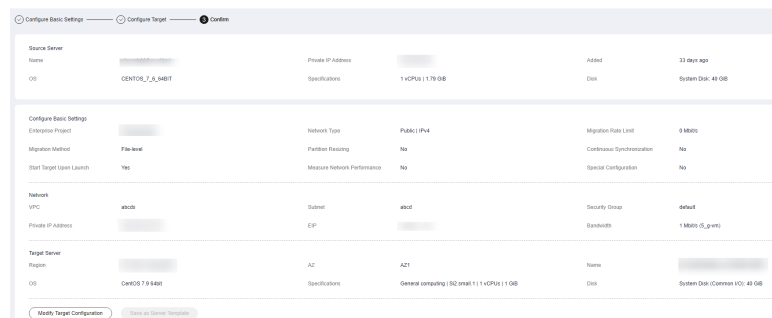
**NOTE**

If you select **Recommended** for **Server Template**, SMS will automatically:

- Create a VPC and subnet.  
If the source IP address is 192.168.X.X, SMS creates a VPC and a subnet that both belong to the network range 192.168.0.0/16.  
If the source IP address is 172.16.X.X, SMS creates a VPC and a subnet that both belong to the network range 172.16.0.0/12.  
If the source IP address is 10.X.X.X, SMS creates a VPC and a subnet that both belong to the network range 10.0.0.0/8.
- Create a security group and allow traffic to the target server over the ports required by SMS: ports 8899, 8900, and 22 for a Windows migration, ports 8900 and 22 for a Linux block-level migration, or port 22 for a Linux file-level migration.

**Step 7** Click **Next: Confirm** in the lower right corner.

**Figure 6-7** The configuration confirmation page



**Step 8** (Optional) Click **Save as Server Template**. In the displayed **Create Server Template** dialog box, enter a template name and click **OK** to save the target server settings as a template.

**NOTE**

**Save as Server Template** is available only when you select **Create new** for **Server**.

Figure 6-8 Create Server Template

**Create Server Template** [Close]

**i** The VPC, subnet, security group, and disk attributes of the target server will be saved as a new template. [Close]

Template Name:

---

Configuration [Help]

Region/Project:

VPC:

Subnet:

Security Group:

AZ:

Disk:

**Step 9** Confirm the configuration and click **Save**. In the displayed dialog box, read the migration conditions and click **OK**.

If you want to start the migration immediately, click **Save and Start**. In the displayed dialog box, read the migration conditions and click **OK**.

Figure 6-9 Saving the configuration

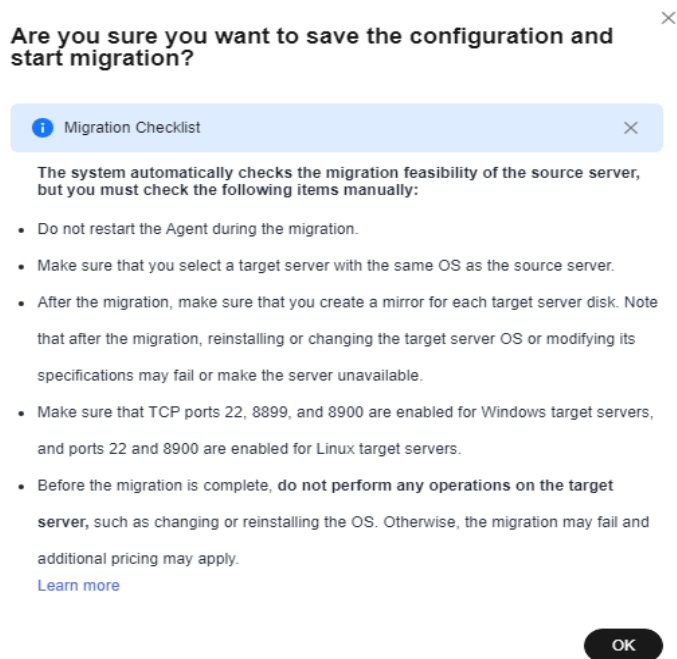
**Are you sure you want to save the configuration and start migration?** [Close]

**i** Migration Checklist [Close]


The system automatically checks the migration feasibility of the source server, but you must check the following items manually:

- Do not restart the Agent during the migration.
- Make sure that you select a target server with the same OS as the source server.
- After the migration, make sure that you create a mirror for each target server disk. Note that after the migration, reinstalling or changing the target server OS or modifying its specifications may fail or make the server unavailable.
- Make sure that TCP ports 22, 8899, and 8900 are enabled for Windows target servers, and ports 22 and 8900 are enabled for Linux target servers.
- Before the migration is complete, **do not perform any operations on the target server**, such as changing or reinstalling the OS. Otherwise, the migration may fail and additional pricing may apply.  
[Learn more](#)

**Figure 6-10** Saving the configuration and starting the migration



 **NOTE**

If  is displayed in the **Migration Stage** column, the target server has been configured.

----End

# 7 Starting the Full Replication

---


## Scenarios

The full replication replicates all data from the source server to the target server. The replication speed depends on the outbound bandwidth of the source server or the inbound bandwidth of the target server, whichever is smaller.

## Constraints

After a full replication starts, do not restart the source server or Agent, or the migration will fail.

## Prerequisites

- A target server has been configured. For details, see [Configuring the Target Server](#).
- The migration is in the  stage and the status is **Ready**.

## Procedure

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

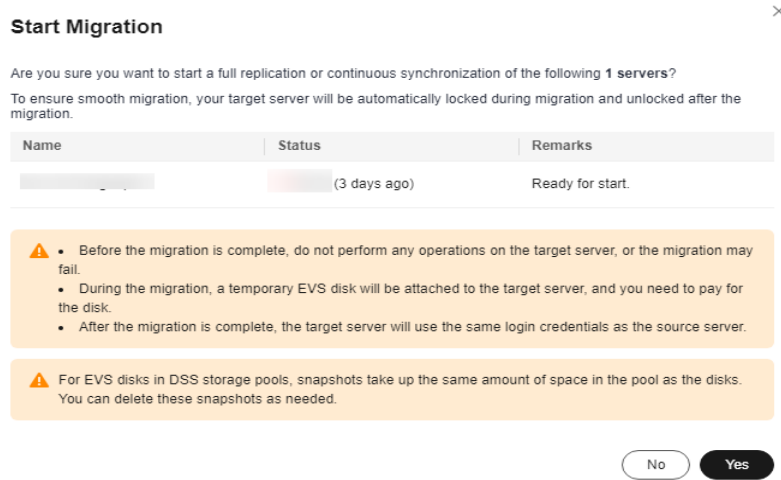
**Step 2** In the navigation pane on the left, choose **Servers**.

**Step 3** Locate the source server to be migrated and click **Start** in the **Operation** column. In the displayed **Start Migration** dialog box, click **Yes** to start a full replication.

You can also select the source server to be migrated and click **Start** above the server list. In the displayed **Start Migration** dialog box, click **Yes**.



Figure 7-1 Confirmation



**NOTE**

During the full replication, the target server is locked by default and you are not allowed to perform any operations on it. After the migration is complete, SMS automatically unlocks the target server. If you need to perform operations on the target server during the replication, unlock the target server first by referring to [Unlocking a Target Server](#).

**Step 4** Click to view the replication progress.

**Step 5** Wait for the full replication to complete.

- If you set **Continuous Synchronization** to **No** when you configure the migration settings, after the full replication is complete, the migration will go the next stage **Target Launch**, and the target server will be launched to complete the migration automatically.
- If you set **Continuous Synchronization** to **Yes** when you configure the migration settings, after the full replication is complete, the migration will be in the **Continuous sync** status, and any new or modified data will be automatically synchronized from the source server to the target server. You will need to manually launch the target server to complete the migration. For details, see [Launching the Target Server](#).

----End

# 8 Launching the Target Server

If you set **Continuous Synchronization** to **Yes** when configuring the migration settings, after the full replication is complete, you will need to manually launch the target server to complete the migration.

## NOTE

If you set **Continuous Synchronization** to **No**, skip this section as the system will automatically launch the target server after the full replication is complete.

## Scenarios

You can launch the target server when the migration is in the **Continuous sync** status, and continuous synchronization will be interrupted. After the target server is launched, you can start an incremental synchronization by clicking **Sync** in the operation column.

Before launching the target server, you can clone the target server for service testing, and only launch the target server after tests confirm there are no issues.

## NOTE

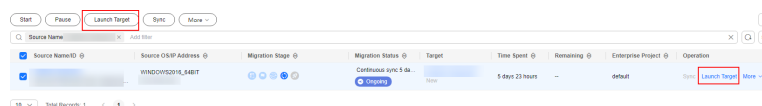
The cloned server must be in the same AZ as the target server, but can be in a different VPC.

## Procedure

- Step 1** Log in to the **SMS** console.
- Step 2** In the navigation pane on the left, choose **Servers**.
- Step 3** Locate the target server you want to launch, and click **Launch Target** in the **Operation** column.

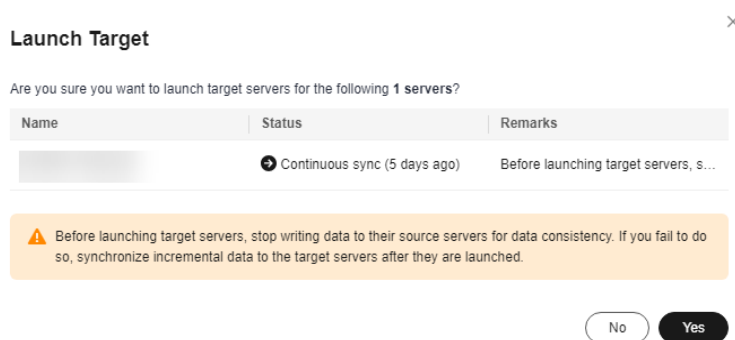
Alternatively, select the server you want to launch, and click **Launch Target** above the server list.

**Figure 8-1** Launch Target



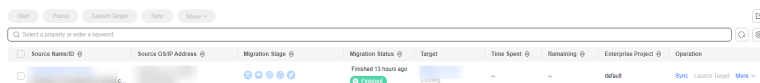
**Step 4** In the displayed **Launch Target** dialog box, click **Yes**.

**Figure 8-2** Confirmation



**Step 5** Check whether the **Status** has changed to **Finished**. If it has, the target server has been launched and the migration is complete.

**Figure 8-3** Migration completed



----End

# 9 Synchronizing Incremental Data

## Scenarios

After the target server is launched, if there are data changes on your source server, you can synchronize the incremental data from the source server to the target server.

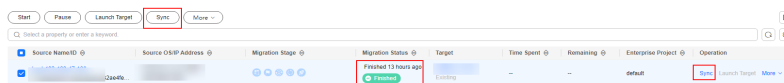
The data changes on the target server will be overwritten by the data synchronized from the source server. For details, see [Will an Incremental Synchronization Overwrite the Existing Data on a Launched Target Server?](#)

### NOTE

Only tasks in the **Finished** status can be synchronized.

## Procedure

- Step 1** Log in to the [SMS](#) console.
- Step 2** In the navigation pane on the left, choose **Servers**.
- Step 3** In the server list, locate the source server you want to synchronize and click **Sync** in the **Operation** column.



- Step 4** In the **Sync Incremental Data** dialog box, carefully read the tips, enable **Verify Consistency** if needed, and click **OK**. For details about this option, see [How Do I Verify Data Consistency Between the Source and Target Servers?](#)

### Synchronize Incremental Data ✕

Are you sure you want to synchronize incremental data of the following **1 servers**?

To ensure smooth synchronization, your target server will be automatically locked during the synchronization and unlocked after the synchronization.

| Name | Status                   | Remarks                    |
|------|--------------------------|----------------------------|
|      | Finished (5 minutes ago) | Ready for synchronization. |

Change to EulerOS

Verify Consistency

Do not perform any operations on the target server during the synchronization, or the synchronization may fail. After the synchronization, your target server will use the same login credentials as the source server. During the synchronization, a temporary EVS disk is created and attached to the target server.

For EVS disks in DSS storage pools, snapshots take up the same amount of space in the pool as the disks. You can delete these snapshots as needed.

During Linux incremental data synchronization, some source configurations directories to are not synchronized. [Learn more](#)

----End

# 10 Change History

| Released On | What's New                                                                                                                                                                               |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2023-08-29  | This issue is the ninth official release.<br>Added the description of IP address version to <a href="#">Configuring the Target Server</a> .                                              |
| 2023-05-24  | This issue is the eighth official release.<br>Added the description of concurrent migration in <a href="#">Configuring the Target Server</a> .                                           |
| 2023-02-25  | This issue is the seventh official release.<br>Added the descriptions of advanced migration options and cgroups-based resource limits to <a href="#">Configuring the Target Server</a> . |
| 2023-01-06  | This issue is the sixth official release.<br>Added the description of network performance measurement to the basic configurations in <a href="#">Configuring the Target Server</a> .     |
| 2022-12-02  | This issue is the fifth official release.<br>Added the procedure of obtaining the SMS domain name to <a href="#">Installing the Agent on the Source Server</a> .                         |
| 2022-11-14  | This issue is the fourth official release.<br>Added <a href="#">Synchronizing Incremental Data</a> .                                                                                     |
| 2022-10-13  | This issue is the third official release.<br>Added the description of "Start Target Upon Launch" in <a href="#">Configuring the Target Server</a> .                                      |
| 2022-03-14  | This issue is the second official release.<br>Updated the content about partition resizing in <a href="#">Configuring the Target Server</a> .                                            |

| Released On | What's New                                                        |
|-------------|-------------------------------------------------------------------|
| 2021-05-10  | This issue is the first official release.<br>New version release. |