

Server Migration Service

Service Overview

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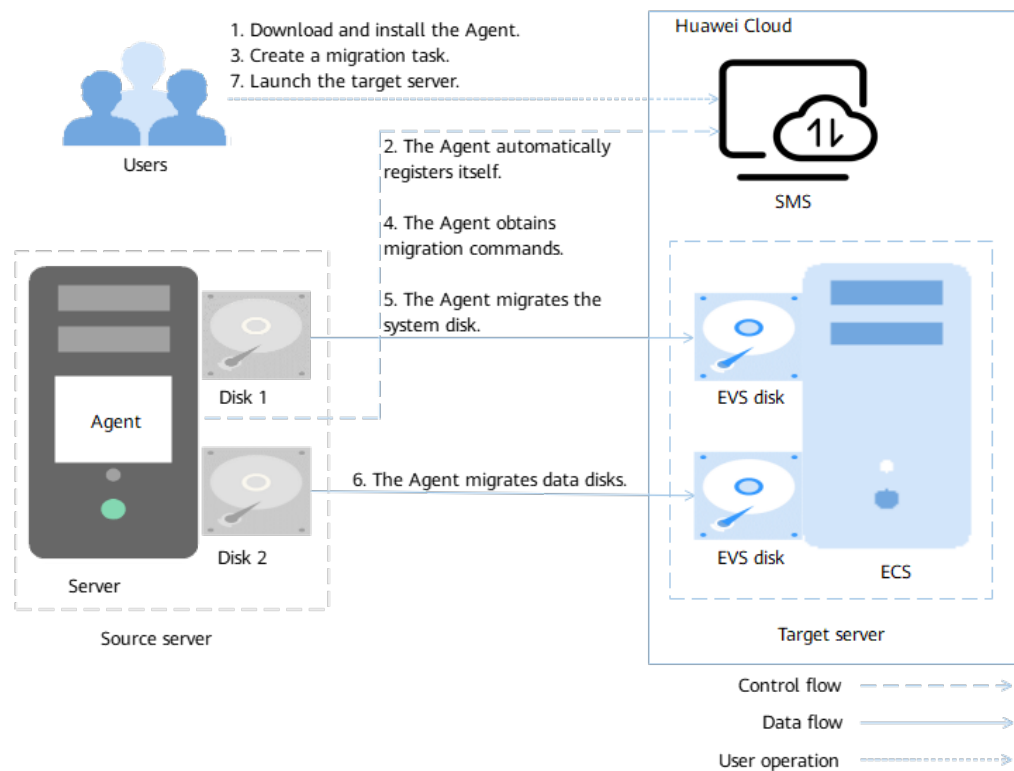
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1 What Is SMS?

Server Migration Service (SMS) helps you migrate applications and data from x86 physical or virtual servers on-premises or in private or public clouds to Elastic Cloud Servers (ECSs) on Huawei Cloud.

Figure 1-1 How SMS works



How SMS Works

You only need to perform steps 1, 3, and 7, and SMS takes care of the other steps automatically.

1. You install the Agent on a source server.

2. The Agent registers its connection status with SMS and reports the information about the source server to SMS. Then, SMS evaluates the feasibility of migration.
3. On the SMS management console, you configure the target server and start the migration.
4. The Agent executes the migration commands received from SMS.
5. The Agent starts to migrate data on the system disk from the source server to the target server.
6. The Agent starts to migrate data on data disks from the source server to the target server.
7. You launch the target server.

 **NOTE**

- **Source server** is the x86 physical server or VM running on-premises or on another cloud that you migrate data and applications away.
- **Target server** is the ECS that you migrate data and application to. The target server takes over the migrated data and applications. During the migration, data on the source server is transmitted based on the migration policy you specify and overwrites the existing data on the target server.
- **SMS** is the SMS service.

How to Access SMS

You can access SMS from the management console, or using application programming interfaces (APIs).

- Management console
You can log in to the Huawei Cloud management console and choose **Migration > Server Migration Service** on the homepage.
- HTTPS APIs
You can access SMS by calling HTTPS APIs. For details, see [Server Migration Service API Reference](#).

2 SMS Functions

2.1 Migration Feasibility Check

After you install the Agent on a source server and the Agent is authenticated using an access key ID (AK) and a secret access key (SK) of your Huawei Cloud account, the Agent automatically reports the source server details to SMS. SMS validates the source server details and determines whether the source server can be migrated. You can view the check results on **Source Check** tab page of the source server.

2.2 Migration and Synchronization for Windows

After a Windows source server passes the feasibility check, you can start the migration on the SMS console. The Agent on the source server executes the migration commands sent by SMS. During the execution, the Agent validates blocks in partitions on the source server and migrates valid blocks to the corresponding partitions on the target server. After the full migration is complete, the Agent automatically starts incremental synchronizations. You are advised to stop the services on the source server and start the services on the target server during off-peak hours.

2.3 Migration and Synchronization for Linux

After a Linux source server passes the feasibility check, you can start the migration on the SMS console. The Agent on the source server obtains migration commands from SMS and executes the commands. During the execution, the Agent migrates directories and files from the source server to the target server. After the migration is complete, the Agent automatically launches the target server.

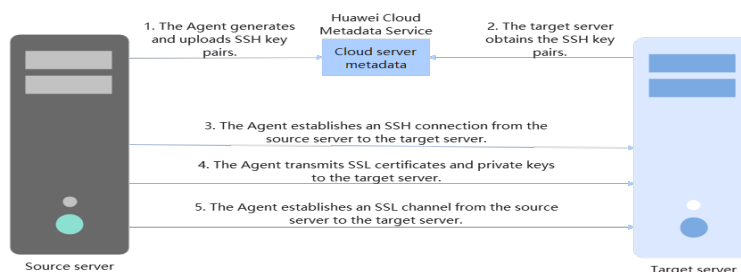
SMS does not support continuous synchronization for Linux file-level migrations. You can start an incremental synchronization manually if needed. Then the Agent on the source server will synchronize incremental data to the target server. When the incremental synchronization is complete, SMS will re-launch the target server. You are advised to stop services on the source server and start services on the

target server upon the completion of synchronization. Otherwise, multiple synchronizations are required to ensure data consistency.

2.4 Secure Transmission

After receiving migration commands from SMS, the Agent on the source server dynamically generates multiple SSH key pairs as well as multiple SSL certificates and private keys. The Agent then sends the SSH key pairs to Huawei Cloud Metadata Service. After the target server obtains the SSH key pairs from Huawei Cloud Metadata Service and restarts, the Agent sets up an SSH connection from the source server to the target server using the SSH key pairs. Then the Agent transmits the SSL certificates and private keys to the target server over the SSH connection and sets up an SSL channel from the source server to the target server.

Figure 2-1 Secure transmission from the source server to the target server



3 SMS Advantages

- Ease of use
 - You only need to install the Agent on each source server, configure migration tasks on the SMS console, and finally launch the target servers when the migration is in the **Continuous sync** state. SMS takes care of the rest.
 - You can create a migration task in only three steps: Select the source server, configure the target server, and confirm the task settings.
- Seamless migration

You can keep services running throughout the full migration process.

 - If you choose not to automatically execute incremental synchronizations after the full migration is complete, you only need to pause services on the source server briefly before the final synchronization starts. After the final synchronization is complete, you can start services on the target server immediately. This minimizes the service downtime.
 - If you choose to automatically execute incremental synchronizations after the full migration is complete, you only need to stop services temporarily before launching the target server. This minimizes the service downtime.

 **CAUTION**

SMS does not support continuous synchronization for Linux file-level migrations.

- Robust compatibility
 - SMS can migrate x86 physical servers and VMs in on-premises environments and on many popular private and public clouds.
 - SMS can migrate over 90 different operating systems (OS) distributions.
- Fast transmission
 - SMS supports **block-level migration** and migrates only **valid data blocks**.
 - The migration network utilization rate reaches above 90%.
- High security

- SMS authenticates the Agent using Access Key ID (AK)/Secret Access Key (SK) pairs.
- SMS uses dynamically generated SSL certificates and keys to encrypt transmission channels for ensuring data security.

4 Security

4.1 Shared Responsibilities

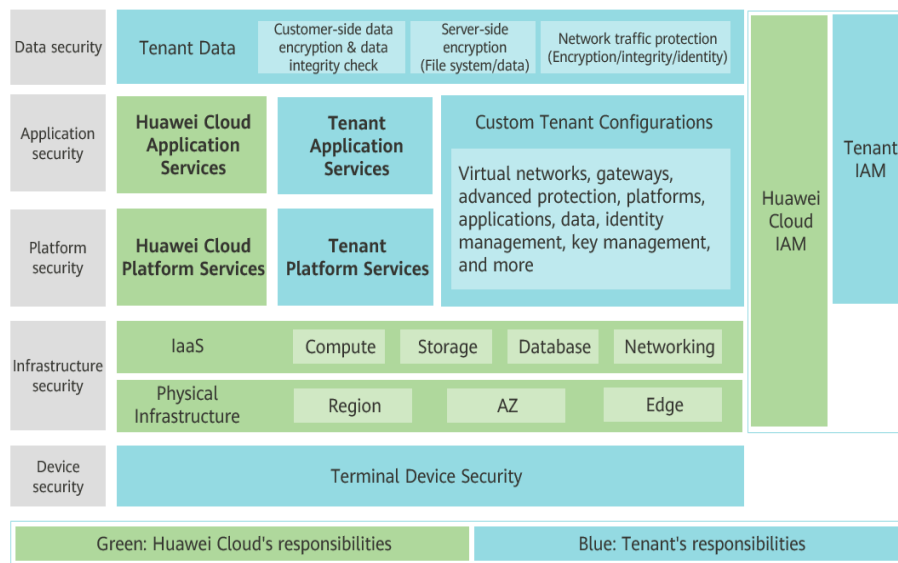
Huawei guarantees that its commitment to cyber security will never be outweighed by the consideration of commercial interests. To cope with emerging cloud security challenges and pervasive cloud security threats and attacks, Huawei Cloud builds a comprehensive cloud service security assurance system for different regions and industries based on Huawei's unique software and hardware advantages, laws, regulations, industry standards, and security ecosystem.

Figure 4-1 illustrates the responsibilities shared by Huawei Cloud and users.

- **Huawei Cloud:** Ensure the security of cloud services and provide secure clouds. Huawei Cloud's security responsibilities include ensuring the security of our IaaS, PaaS, and SaaS services, as well as the physical environments of the Huawei Cloud data centers where our IaaS, PaaS, and SaaS services operate. Huawei Cloud is responsible for not only the security functions and performance of our infrastructure, cloud services, and technologies, but also for the overall cloud O&M security and, in the broader sense, the security and compliance of our infrastructure and services.
- **Tenant:** Use the cloud securely. Tenants of Huawei Cloud are responsible for the secure and effective management of the tenant-customized configurations of cloud services including IaaS, PaaS, and SaaS. This includes but is not limited to virtual networks, the OS of virtual machine hosts and guests, virtual firewalls, API Gateway, advanced security services, all types of cloud services, tenant data, identity accounts, and key management.

Huawei Cloud Security White Paper elaborates on the ideas and measures for building Huawei Cloud security, including cloud security strategies, the shared responsibility model, compliance and privacy, security organizations and personnel, infrastructure security, tenant service and security, engineering security, O&M security, and ecosystem security.

Figure 4-1 Huawei Cloud shared security responsibility model



4.2 Asset Identification and Management

SMS mainly migrates data assets and configuration assets.

- Data assets:** Persistent data on source server disks is categorized as data assets. The Agent does not change the data assets on source servers. It only transfers the data assets to target servers and performs necessary configurations to ensure that the target servers can start up properly. Data assets are directly transmitted from source servers to target servers without being forwarded by any third party. To enhance the transmission security, you are advised to configure the security groups of target servers to allow access only from source servers' IP addresses.
- Configuration assets:** Source server information registered with SMS and migration tasks you configured are categorized as configuration assets. Configuration assets are used to control the migration process and are stored in the SMS database. After the migration is complete, you can delete all configuration assets.

4.3 Identity and Access Management

Identity Authentication

You can access SMS through the console, Agent, APIs, or SDKs. To access SMS through the console, you need to sign in with a Huawei Cloud account. To access SMS through the Agent, APIs, or SDKs, you need to call APIs.

SMS can authenticate API requests using the AK/SK pairs of requesters. An authenticated request must contain a signature value that is calculated based on the encrypted AK/SK pair of the requester and the specific information carried in the request body. For more information about access keys and how to obtain them, see [How Do I Create an AK/SK Pair for a Huawei Cloud Account?](#) or [How Do I Create an AK/SK Pair for an IAM User?](#)

Access Control

Working with Identity and Access Management (IAM), SMS provides system-defined policies and custom policies to enable you to securely control access to your SMS resources. For more information, see [Creating a User and Assigning Permissions](#). You are advised to create custom policies for SMS based on the principle of least privilege (PoLP).

4.4 Data Protection

SMS uses different technologies to protect your server data and personal data.

- Server data protection
SMS uses dynamically generated security certificates and keys to establish connections between source and target servers. It uses SSL to encrypt the connections and then transmit your server data over these encrypted connections.
- Personal data protection
SMS authenticates the Agent installed on each source server using AK/SK pairs and uses HTTPS for communications between the Agent with Huawei Cloud.

4.5 Auditing and Logging

Cloud Trace Service (CTS) is a log audit service intended for Huawei Cloud security. It allows you to collect, store, and query cloud resource operation records. You can use these records to track resource changes, analyze security compliance, and locate faults. To learn how to enable CTS, see [Enabling CTS](#).

After you enable CTS and configure a tracker, CTS can record operations on your SMS resources for audit. You can search for SMS traces on the CTS console to view SMS audit logs. For more information, see [Viewing CTS Traces](#).

4.6 Service Resilience

- SMS backend nodes support cross-AZ disaster recovery. If any AZ is faulty, nodes in other AZs will take over traffic.
- SMS databases are deployed in active/standby pairs. If the active node fails, services are automatically switched over to the standby node to ensure system availability.
- Flow control is configured for SMS APIs. To ensure service availability, there is a limit on the maximum number of access requests allowed. If the limit is reached, no additional requests are allowed.
- SMS supports resumable data transfer. SMS resumes the data transfer from where it left off after a network disconnection or an error is resolved.

4.7 Fault Recovery

SMS can quickly recover from a server fault through a blue-green switchover.

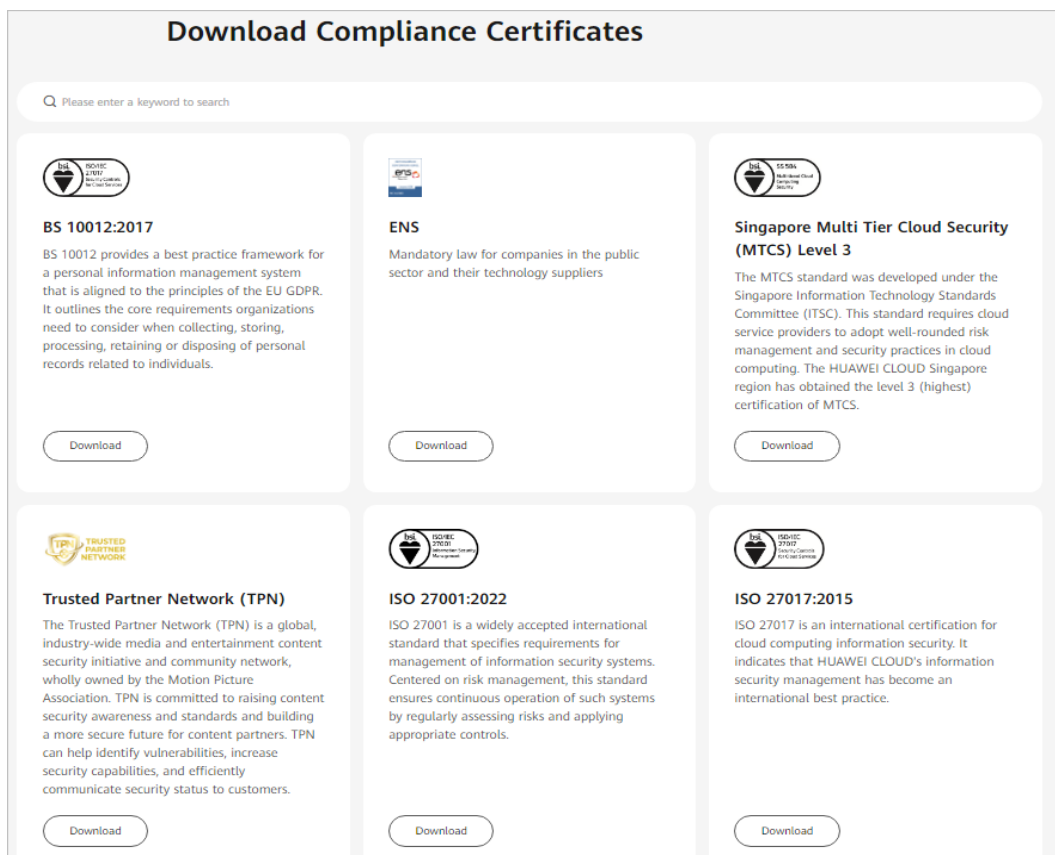
SMS also lets you use snapshots to restore data that was accidentally deleted from a target server.

4.8 Certificates

Compliance Certificates

Huawei Cloud services and platforms have obtained various security and compliance certifications from authoritative organizations, such as International Organization for Standardization (ISO). You can [download](#) them from the console.

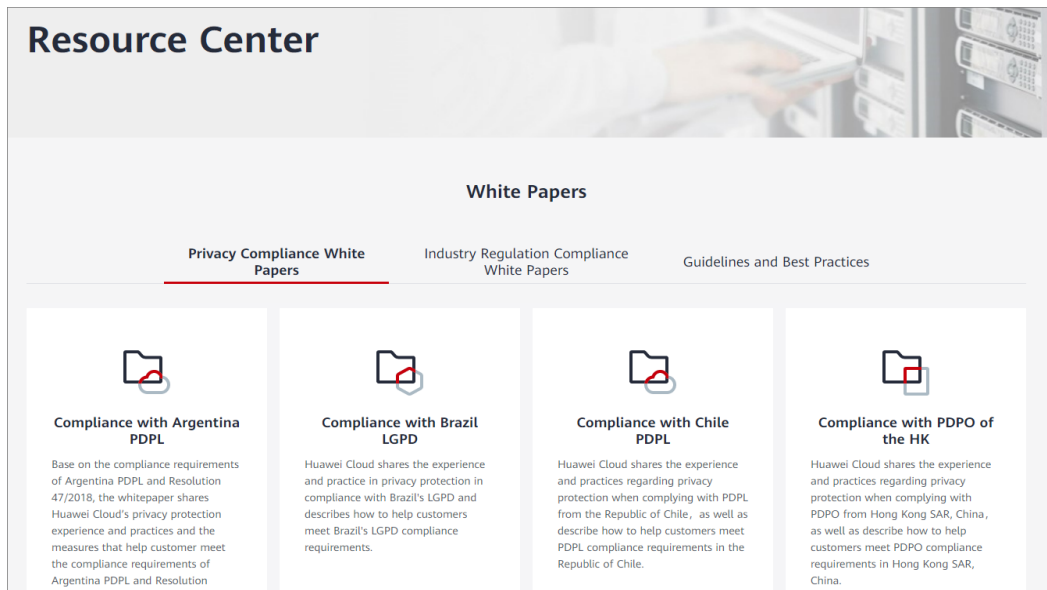
Figure 4-2 Downloading compliance certificates



Resource Center

Huawei Cloud also provides the following resources to help users meet compliance requirements. For details, see [Resource Center](#).

Figure 4-3 Resource center



5 Related Services

The following table describes the relationships between SMS and other services.

Table 5-1 Relationships between SMS and other services

Service	Interaction	Reference
ECS	SMS migrates OSs, applications, and files from source servers to Huawei Cloud ECSs.	How Do I Create an ECS?
Elastic IP (EIP)	SMS allows you to use a public network for migration. An EIP must be configured for your target server.	How Do I Set Up a Secure Migration Network for Using SMS?
Virtual Private Cloud (VPC)	Before creating a migration task, you need to configure the security group of the VPC that the target server belongs to.	How Do I Configure Security Group Rules for Target Servers?
Elastic Volume Service (EVS)	After a migration task is started, SMS attaches a temporary pay-per-use EVS disk to the target server, which will be deleted after the migration is complete.	-
Cloud Trace Service (CTS)	You can use CTS to record SMS operations for querying, auditing, or backtracking.	Viewing Traces

6 Precautions

Pre-Migration

- You need to check the OS version of the server you are migrating. If it is too old, for instance, Windows Server 2008, the kernel may be incompatible and services on the server may fail to start after the migration is complete. To prevent that, you need to evaluate whether a lift-and-shift migration is suitable for the server before the migration.
- You are advised to disable any software such as antivirus software that may prevent the SMS Agent from start on the server. If you are not sure whether there is a software conflict with the Agent, back up your data before the migration.
- Linux block-level migration is in the open beta test (OBT) stage and is only recommended for test scenarios.
- The version of the UVP VMTools installed on the server to be migrated cannot be earlier than 2.5.0. Otherwise, the server may fail to start after being migrated. If the server runs on Huawei Cloud, you can check the VMTools version or install the latest version by referring to [Installing UVP VMTools](#).

Network

- Before using SMS, you need to set up a secure network. For details, see [How Do I Set Up a Secure Migration Network for Using SMS?](#)
- You need to correctly configure security rules for the target server by referring to [How Do I Configure Security Group Rules for Target Servers?](#)
- You can [measure the network performance](#) and perform optimizations before the migration to help prevent migration failures caused by network problems.
- The migration occupies some source server resources, such as memory, CPU, disk I/O, and bandwidth. You can limit the resource allocation for the migration. Ensure that Traffic Control (TC) is installed and runs properly on Linux source servers, otherwise traffic limiting may not be applied.

Migration Time

- The migration speed is affected by factors such as network bandwidth, disk I/O, CPU and memory usage, and file size and quantity, so it is impossible to accurately estimate the migration duration. The remaining migration duration

estimated by SMS for a migration task is for reference only. For more information, see FAQs about [Migration Duration](#).

- It is recommended that data migration and service cutover be completed within 30 days.
- The time required for an incremental synchronization is affected by many factors, such as the number of incremental files, the continuity of valid blocks, and the size of incremental data. It is impossible for SMS to estimate the required time.

In-Migration

- Before a migration is complete, do not perform operations on the OS or disks of the target server, including but not limited to changing or reinstalling the OS.
- Make sure you have backed up any data on the target server that you need to save and ensure that the disks can be formatted. Disks on the target server will be formatted and re-partitioned based on the source disk settings during the migration.
- Do not restart the Agent during a Windows migration or a Linux block-level migration.
- You are advised not to start the Agent during a Linux file-level migration unless necessary, even though resumable data transmission is supported.
- If an error occurs during the migration, you are advised to provide migration logs to technical support engineers so that the fault can be resolved quickly. For details about how to get migration logs, see [Where Can I Find the Agent Run Logs?](#)

Post-Migration

- SMS migrates OS and data. It ensures data consistency before and after the migration, but does not ensure that your applications will run properly on the target server after the migration is complete. You may need to adjust your applications by yourself.
- SMS ensures data consistency before and after the migration but does not provide tools for validating data consistency. You can use third-party tools if needed.

7 Constraints

Table 7-1 lists the constraints and limitations of SMS.

Table 7-1 SMS limitations

Item	Description
Server specifications	<ul style="list-style-type: none"> Windows: Source and target servers must have more than 1 CPU and 1 GB memory. Linux: Source and target servers must have at least 1 CPU and 1 GB memory.
Source server quantity	A maximum of 1,000 source servers are allowed per account. Delete the migrated servers from the server list in a timely manner so that other servers can continue to be migrated.
OSs	<ul style="list-style-type: none"> Supported Windows OSs Supported Linux OSs A server running multiple OSs cannot be migrated.
Available disk space	<ul style="list-style-type: none"> Windows <ul style="list-style-type: none"> At least 320 MB available space on a partition not smaller than 600 MB At least 40 MB available space on a partition smaller than 600 MB Linux <ul style="list-style-type: none"> At least 200 MB of available space on the root partition
File systems	<ul style="list-style-type: none"> Windows: Only NTFS file systems are supported. Linux: Only Ext2, Ext3, Ext4, VFAT, XFS, and Btrfs file systems are supported.
Shared file systems	SMS cannot migrate files from shared file systems such as NFS or CIFS, or from NAS devices.

Item	Description
External storage of servers	SMS cannot migrate data from the external storage attached to a source server.
Encrypted files	SMS cannot migrate OSs that contain protected folders or encrypted volumes.
Servers running multi-node databases and Active Directory Domain Services (AD DS)	SMS cannot migrate servers that host active directories or multi-node databases.
Data of database applications and domain controller applications	SMS cannot migrate data of database applications and domain controller applications.
Applications bound to hardware	SMS does not support migration of OSs that contain applications bound to hardware.
Dynamic disks	Dynamic disks in Windows systems are migrated as basic disks. After the migration is complete, the target server will not have dynamic disks.
Servers added to a domain	After migrating servers added to a domain, you need to add them to the domain again.
Servers with system volumes located on disks other than the first disk	SMS cannot migrate servers whose system volumes are not on the first disk.
Thinly-provisioned volumes	SMS cannot migrate thinly-provisioned volumes.
Servers with RAID arrays	SMS cannot migrate servers with RAID arrays.
Big data clusters and container clusters	SMS cannot migrate clusters including but not limited to container clusters and big data clusters.

8 Supported OSs

8.1 Supported Windows OSs

SMS can migrate most of the popular Windows OSs. For details, see [Table 8-1](#).

To migrate a source server running a Windows OS not supported by SMS, use any of the following methods:

- Use IMS to create a system disk image for the source server from an external image file and use the image to create a server on Huawei Cloud. To learn how to create an image, see [Creating a Windows System Disk Image from an External Image File](#).
- Use a public image or a Marketplace image to create a server and deploy your applications on the server.
- Use the [Cloud Migration Service](#) on Huawei Cloud.

Table 8-1 Supported Windows OSs

OS	Bit	UEFI	Remarks
Windows Server 2008	64	No	Windows Server 2008 and Windows Server 2008 R2 cannot boot in UEFI mode.
Windows Server 2008 R2	64	No	
Windows Server 2012	64	Yes	-
Windows Server 2012 R2	64	Yes	
Windows Server 2016	64	Yes	
Windows Server 2019	64	Yes	

OS	Bit	UEFI	Remarks
Windows Server 2022	64	Yes	
Windows 7	64	No	
Windows 8.1	64	No	
Windows 10	64	Yes	

8.2 Supported Linux OSs

SMS offers file-level migration and block-level migration for Linux OSs.

- [Table 8-2](#) lists the Linux OSs available for file-level migration.

To migrate a source server running an unsupported Linux OS, use any of the following methods:

- Use IMS to create a system disk image for the source server from an external image file and use the image to create a target server on Huawei Cloud. To learn how to create an image, see [Creating a Linux System Disk Image from an External Image File](#).
- Use a public image or a Marketplace image to create a server and deploy your applications on the server.
- Use the [Cloud Migration Service](#) on Huawei Cloud.
- Linux block-level migration requires that the source glibc version be 2.14 or later. For details about the kernels available for Linux block-level migration, see [Table 8-3](#).

NOTE

- You can run the `getconf GNU_LIBC_VERSION` command to view the glibc version.
- You can run `uname -r` to view the kernel version.

Use file-level migration if block-level migration is not available for your source server.

Table 8-2 Linux OSs available for file-level migration

OS	Version	Bit	UEFI Support	Remarks
Red Hat	Red Hat Enterprise Linux 6.0 (Only KVM servers are supported.)	64	No	-
	Red Hat Enterprise Linux 6.1/6.2/6.3/6.4/6.5/6.7/6.8/6.9/6.10	64	No	
	Red Hat Enterprise Linux 7.0	64	No	

OS	Version	Bit	UEFI Support	Remarks
	Red Hat Enterprise Linux 7.1/7.2/7.3/7.4/7.5/7.6/7.7/7.8/7.9	64	Yes	
	Red Hat Enterprise Linux 8.0/8.1/8.2/8.3/8.4/8.5/8.7/8.8/8.9	64	Yes	
	Red Hat Enterprise Linux 9.0/9.1/9.2/9.3	64	Yes	
CentOS	CentOS 6.0 (Only KVM servers are supported.)	64	No	-
	CentOS 6.1/6.2/6.3/6.4/6.5/6.6/6.7/6.8/6.9/6.10	64	No	
	CentOS 7.0	64	No	
	CentOS 7.1/7.2/7.3/7.4/7.5/7.6/7.7/7.8/7.9	64	Yes	
	CentOS 8.0/8.1/8.2/8.3/8.4/8.5	64	Yes	
	CentOS Stream 8	64	Yes	This distribution will be identified as CentOS 8.0. This does not affect the migration.
	CentOS Stream 9	64	Yes	This distribution will be identified as CentOS 9.0. This does not affect the migration.
Oracle	Oracle Linux 6.0/6.1/6.2/6.3/6.4/6.5/6.6/6.7/6.8/6.9/6.10	64	No	-
	Oracle Linux 7.0	64	No	
	Oracle Linux 7.1/7.2/7.3/7.4/7.5/7.6/7.7/7.8/7.9	64	Yes	
	Oracle Linux 8.0/8.1/8.2/8.3/8.4/8.5/8.6/8.7/8.8	64	Yes	

OS	Version	Bit	UEFI Support	Remarks
	Oracle Linux 9.0/9.1/9.2/9.3	64	Yes	
SUSE	SUSE Linux Enterprise Server 11 SP3	64	No	-
	SUSE Linux Enterprise Server 11 SP4	64	Yes	
	SUSE Linux Enterprise Server 12 SP0	64	Yes	Btrfs file systems on this distribution cannot be migrated.
	SUSE Linux Enterprise Server 12 SP1/SP2/SP3/SP4/SP5	64	Yes	-
	SUSE Linux Enterprise Server 15 SP0/SP1/SP2/SP3/SP5	64	Yes	
	SUSE Linux Enterprise Server 15 SP4	64	No	
	Ubuntu	Ubuntu Server 12.04	64	No
Ubuntu Server 12.10		64	Yes	
Ubuntu Server 13.10		64	Yes	
Ubuntu Server 14.04/14.10		64	Yes	
Ubuntu Server 15.04/15.10		64	Yes	
Ubuntu Server 16.04/16.10		64	Yes	
Ubuntu Server 17.04/17.10		64	Yes	
Ubuntu Server 18.04		64	Yes	
Ubuntu Server 18.10		64	No	
Ubuntu Server 19.04/19.10		64	Yes	
Ubuntu Server 20.04		64	Yes	
Ubuntu Server 21.04/21.10		64	Yes	
Ubuntu Server 22.04/22.10		64	Yes	
Ubuntu Server 23.04/23.10		64	Yes	
Debian	Debian GNU/Linux 6.0.10	64	No	-
	Debian GNU/Linux 7.11.0	64	No	

OS	Version	Bit	UEFI Support	Remarks
	Debian GNU/Linux 8.0/8.1/8.2/8.3/8.4/8.5/8.6/8.7/8.8/8.9 /8.10/8.11	64	No	
	Debian GNU/Linux 9.0/9.1/9.2/9.3/9.4/9.5/9.6/9.7/9.8/9.9 /9.10/9.11/9.12/9.13	64	No	
	Debian GNU/Linux 10.0/10.1/10.2/10.3/10.4/10.5/10.6/10 .7/10.8/10.9/10.10/10.11/10.12/10.13	64	Yes	
	Debian GNU/Linux 11.0/11.1/11.2	64	Yes	
	Debian GNU/Linux 11.3/11.4/11.5/11.7	64	No	
Fedora	Fedora 23/24/25/26/27/28/29/33/34/35/36/3 7	64	No	-
	Fedora 30/31/32/38/39	64	Yes	
EulerOS	EulerOS 2.2.0	64	No	-
	EulerOS 2.3.0	64	No	
	EulerOS 2.5.0	64	No	
Amazon Linux	Amazon Linux 2.0	64	No	-
	Amazon Linux 2018.3	64	No	
	Amazon Linux 2023 AMI	64	No	-
Alibaba Cloud Linux	Alibaba Cloud Linux 3.2104	64	Yes	-
	Alibaba Cloud Linux 3.2104 (Quick Start)	64	No	
	Alibaba Cloud Linux 3.2104 SCC	64	Yes	
	Alibaba Cloud Linux 3.2104 LTS (CCSP 2.0 Level 3)	64	No	
	Alibaba Cloud Linux 2.1903 LTS	64	Yes	
	Alibaba Cloud Linux 2.1903 LTS SCC	64	No	
	Alibaba Cloud Linux 2.1903 LTS (Quick Start)	64	No	
	Alibaba Cloud Linux 2.1903 LTS (CCSP 2.0 Level 3)	64	No	

OS	Version	Bit	UEFI Support	Remarks
AlmaLinux	AlmaLinux OS 8.3/8.4/8.5/8.6/8.7/8.8/8.9/9.0/9.1/9.2/9.3	64	Yes	-
Tencent OS	TencentOS Server 2.4	64	No	-
	TencentOS Server 2.4 (TK4)	64	No	
	TencentOS Server 3.1 (TK4)	64	No	
Kylin	Kylin Linux Advanced Server V10 (Sword)	64	No	-
openEuler	openEuler 20.03	64	No	-
	openEuler 21.09	64	No	
openSUSE	OpenSUSE 15.1/15.2/15.3/15.4	64	No	-
	OpenSUSE 15.0/15.5	64	Yes	-
Rocky Linux	Rocky Linux 8.5/8.6/8.7/9.0/9.1	64	No	-
	Rocky Linux 8.3/8.4/8.8/8.9/9.2/9.3	64	Yes	

Table 8-3 Linux OSs and kernel versions available for block-level migration

OS	Kernel Version
CentOS	2.6.32-131.0.15.el6.x86_64 2.6.32-220.13.1.el6.x86_64 2.6.32-220.17.1.el6.x86_64 2.6.32-220.2.1.el6.x86_64 2.6.32-220.23.1.el6.x86_64 2.6.32-220.4.1.el6.x86_64 2.6.32-220.4.2.el6.x86_64 2.6.32-220.7.1.el6.x86_64 2.6.32-220.el6.x86_64

OS	Kernel Version
	2.6.32-279.11.1.el6.x86_64 2.6.32-279.1.1.el6.x86_64 2.6.32-279.14.1.el6.x86_64 2.6.32-279.19.1.el6.x86_64 2.6.32-279.2.1.el6.x86_64 2.6.32-279.22.1.el6.x86_64 2.6.32-279.5.1.el6.x86_64 2.6.32-279.5.2.el6.x86_64 2.6.32-279.9.1.el6.x86_64 2.6.32-279.el6.x86_64
	2.6.32-358.0.1.el6.x86_64 2.6.32-358.11.1.el6.x86_64 2.6.32-358.14.1.el6.x86_64 2.6.32-358.18.1.el6.x86_64 2.6.32-358.2.1.el6.x86_64 2.6.32-358.23.2.el6.x86_64 2.6.32-358.6.1.el6.x86_64 2.6.32-358.6.2.el6.x86_64 2.6.32-358.el6.x86_64
	2.6.32-431.11.2.el6.x86_64 2.6.32-431.1.2.0.1.el6.x86_64 2.6.32-431.17.1.el6.x86_64 2.6.32-431.20.3.el6.x86_64 2.6.32-431.20.5.el6.x86_64 2.6.32-431.23.3.el6.x86_64 2.6.32-431.29.2.el6.x86_64 2.6.32-431.3.1.el6.x86_64 2.6.32-431.5.1.el6.x86_64 2.6.32-431.el6.x86_64
	2.6.32-504.12.2.el6.x86_64 2.6.32-504.1.3.el6.x86_64 2.6.32-504.16.2.el6.x86_64 2.6.32-504.23.4.el6.x86_64 2.6.32-504.30.3.el6.x86_64 2.6.32-504.3.3.el6.x86_64 2.6.32-504.8.1.el6.x86_64 2.6.32-504.el6.x86_64

OS	Kernel Version
	2.6.32-573.1.1.el6.x86_64 2.6.32-573.12.1.el6.x86_64 2.6.32-573.18.1.el6.x86_64 2.6.32-573.22.1.el6.x86_64 2.6.32-573.26.1.el6.x86_64 2.6.32-573.3.1.el6.x86_64 2.6.32-573.7.1.el6.x86_64 2.6.32-573.8.1.el6.x86_64 2.6.32-573.el6.x86_64
	2.6.32-642.11.1.el6.x86_64 2.6.32-642.1.1.el6.x86_64 2.6.32-642.13.1.el6.x86_64 2.6.32-642.13.2.el6.x86_64 2.6.32-642.15.1.el6.x86_64 2.6.32-642.3.1.el6.x86_64 2.6.32-642.4.2.el6.x86_64 2.6.32-642.6.1.el6.x86_64 2.6.32-642.6.2.el6.x86_64 2.6.32-642.el6.x86_64
	2.6.32-696.10.1.el6.x86_64 2.6.32-696.10.2.el6.x86_64 2.6.32-696.10.3.el6.x86_64 2.6.32-696.1.1.el6.x86_64 2.6.32-696.13.2.el6.x86_64 2.6.32-696.16.1.el6.x86_64 2.6.32-696.18.7.el6.x86_64 2.6.32-696.20.1.el6.x86_64 2.6.32-696.23.1.el6.x86_64 2.6.32-696.28.1.el6.x86_64 2.6.32-696.30.1.el6.x86_64 2.6.32-696.3.1.el6.x86_64 2.6.32-696.3.2.el6.x86_64 2.6.32-696.6.3.el6.x86_64 2.6.32-696.el6.x86_64

OS	Kernel Version
	2.6.32-71.14.1.el6.x86_64 2.6.32-71.18.1.el6.x86_64 2.6.32-71.18.2.el6.x86_64 2.6.32-71.24.1.el6.x86_64 2.6.32-71.29.1.el6.x86_64 2.6.32-71.7.1.el6.x86_64 2.6.32-71.el6.x86_64
	2.6.32-754.10.1.el6.x86_64 2.6.32-754.11.1.el6.x86_64 2.6.32-754.12.1.el6.x86_64 2.6.32-754.14.2.el6.x86_64 2.6.32-754.15.3.el6.x86_64 2.6.32-754.17.1.el6.x86_64 2.6.32-754.18.2.el6.x86_64 2.6.32-754.2.1.el6.x86_64 2.6.32-754.22.1.el6.x86_64 2.6.32-754.23.1.el6.x86_64 2.6.32-754.24.2.el6.x86_64 2.6.32-754.24.3.el6.x86_64 2.6.32-754.25.1.el6.x86_64 2.6.32-754.27.1.el6.x86_64 2.6.32-754.28.1.el6.x86_64 2.6.32-754.29.1.el6.x86_64 2.6.32-754.29.2.el6.x86_64 2.6.32-754.30.2.el6.x86_64 2.6.32-754.31.1.el6.x86_64 2.6.32-754.33.1.el6.x86_64 2.6.32-754.35.1.el6.x86_64 2.6.32-754.3.5.el6.x86_64 2.6.32-754.6.3.el6.x86_64 2.6.32-754.9.1.el6.x86_64 2.6.32-754.el6.x86_64

OS	Kernel Version
	3.10.0-1062.1.1.el7.x86_64 3.10.0-1062.12.1.el7.x86_64 3.10.0-1062.1.2.el7.x86_64 3.10.0-1062.18.1.el7.x86_64 3.10.0-1062.4.1.el7.x86_64 3.10.0-1062.4.2.el7.x86_64 3.10.0-1062.4.3.el7.x86_64 3.10.0-1062.7.1.el7.x86_64 3.10.0-1062.9.1.el7.x86_64 3.10.0-1062.el7.x86_64
	3.10.0-1127.10.1.el7.x86_64 3.10.0-1127.13.1.el7.x86_64 3.10.0-1127.18.2.el7.x86_64 3.10.0-1127.19.1.el7.x86_64 3.10.0-1127.8.2.el7.x86_64 3.10.0-1127.el7.x86_64
	3.10.0-1160.2.1.el7.x86_64 3.10.0-1160.2.2.el7.x86_64 3.10.0-1160.el7.x86_64
	3.10.0-123.1.2.el7.x86_64 3.10.0-123.13.1.el7.x86_64 3.10.0-123.13.2.el7.x86_64 3.10.0-123.20.1.el7.x86_64 3.10.0-123.4.2.el7.x86_64 3.10.0-123.4.4.el7.x86_64 3.10.0-123.6.3.el7.x86_64 3.10.0-123.8.1.el7.x86_64 3.10.0-123.9.2.el7.x86_64 3.10.0-123.9.3.el7.x86_64 3.10.0-123.el7.x86_64
	3.10.0-229.11.1.el7.x86_64 3.10.0-229.1.2.el7.x86_64 3.10.0-229.14.1.el7.x86_64 3.10.0-229.20.1.el7.x86_64 3.10.0-229.4.2.el7.x86_64 3.10.0-229.7.2.el7.x86_64 3.10.0-229.el7.x86_64

OS	Kernel Version
	3.10.0-327.10.1.el7.x86_64 3.10.0-327.13.1.el7.x86_64 3.10.0-327.18.2.el7.x86_64 3.10.0-327.22.2.el7.x86_64 3.10.0-327.28.2.el7.x86_64 3.10.0-327.28.3.el7.x86_64 3.10.0-327.3.1.el7.x86_64 3.10.0-327.36.1.el7.x86_64 3.10.0-327.36.2.el7.x86_64 3.10.0-327.36.3.el7.x86_64 3.10.0-327.4.4.el7.x86_64 3.10.0-327.4.5.el7.x86_64 3.10.0-327.el7.x86_64
	3.10.0-514.10.2.el7.x86_64 3.10.0-514.16.1.el7.x86_64 3.10.0-514.21.1.el7.x86_64 3.10.0-514.21.2.el7.x86_64 3.10.0-514.2.2.el7.x86_64 3.10.0-514.26.1.el7.x86_64 3.10.0-514.26.2.el7.x86_64 3.10.0-514.6.1.el7.x86_64 3.10.0-514.6.2.el7.x86_64 3.10.0-514.el7.x86_64
	3.10.0-693.11.1.el7.x86_64 3.10.0-693.11.6.el7.x86_64 3.10.0-693.1.1.el7.x86_64 3.10.0-693.17.1.el7.x86_64 3.10.0-693.21.1.el7.x86_64 3.10.0-693.2.1.el7.x86_64 3.10.0-693.2.2.el7.x86_64 3.10.0-693.5.2.el7.x86_64 3.10.0-693.el7.x86_64

OS	Kernel Version
	3.10.0-862.11.6.el7.x86_64 3.10.0-862.14.4.el7.x86_64 3.10.0-862.2.3.el7.x86_64 3.10.0-862.3.2.el7.x86_64 3.10.0-862.3.3.el7.x86_64 3.10.0-862.6.3.el7.x86_64 3.10.0-862.9.1.el7.x86_64 3.10.0-862.el7.x86_64

OS	Kernel Version
Ubuntu	4.4.0-21-generic 4.4.0-22-generic 4.4.0-24-generic 4.4.0-28-generic 4.4.0-31-generic 4.4.0-34-generic 4.4.0-36-generic 4.4.0-38-generic 4.4.0-42-generic 4.4.0-43-generic 4.4.0-45-generic 4.4.0-47-generic 4.4.0-51-generic 4.4.0-53-generic 4.4.0-57-generic 4.4.0-59-generic 4.4.0-62-generic 4.4.0-63-generic 4.4.0-64-generic 4.4.0-66-generic 4.4.0-67-generic 4.4.0-70-generic 4.4.0-71-generic 4.4.0-72-generic 4.4.0-75-generic 4.4.0-77-generic 4.4.0-78-generic 4.4.0-79-generic 4.4.0-81-generic 4.4.0-83-generic 4.4.0-87-generic 4.4.0-89-generic 4.4.0-91-generic 4.4.0-92-generic 4.4.0-93-generic 4.4.0-96-generic 4.4.0-97-generic 4.4.0-98-generic

OS	Kernel Version
	4.4.0-101-generic
	4.4.0-103-generic
	4.4.0-104-generic
	4.4.0-116-generic
	4.4.0-119-generic
	4.4.0-121-generic
	4.4.0-122-generic
	4.4.0-124-generic
	4.4.0-127-generic
	4.4.0-128-generic
	4.4.0-130-generic
	4.4.0-131-generic
	4.4.0-133-generic
	4.4.0-134-generic
	4.4.0-135-generic
	4.4.0-137-generic
	4.4.0-138-generic
	4.4.0-139-generic
	4.4.0-140-generic
	4.4.0-141-generic
	4.4.0-142-generic
	4.4.0-143-generic
	4.4.0-145-generic
	4.4.0-146-generic
	4.4.0-148-generic
	4.4.0-150-generic
	4.4.0-151-generic
	4.4.0-154-generic
	4.4.0-157-generic
	4.4.0-159-generic
	4.4.0-161-generic
	4.4.0-164-generic
	4.4.0-165-generic
	4.4.0-166-generic
	4.4.0-168-generic
	4.4.0-169-generic
	4.4.0-170-generic
	4.4.0-171-generic

OS	Kernel Version
	4.4.0-173-generic 4.4.0-174-generic 4.4.0-176-generic 4.4.0-177-generic 4.4.0-178-generic 4.4.0-179-generic 4.4.0-184-generic 4.4.0-185-generic 4.4.0-186-generic 4.4.0-187-generic 4.4.0-189-generic 4.4.0-190-generic 4.4.0-193-generic 4.4.0-194-generic 4.4.0-197-generic 4.4.0-198-generic 4.4.0-200-generic 4.4.0-201-generic 4.4.0-203-generic 4.4.0-204-generic

OS	Kernel Version
	4.15.0-20-generic
	4.15.0-22-generic
	4.15.0-23-generic
	4.15.0-24-generic
	4.15.0-29-generic
	4.15.0-30-generic
	4.15.0-32-generic
	4.15.0-33-generic
	4.15.0-34-generic
	4.15.0-36-generic
	4.15.0-38-generic
	4.15.0-39-generic
	4.15.0-42-generic
	4.15.0-43-generic
	4.15.0-44-generic
	4.15.0-45-generic
	4.15.0-46-generic
	4.15.0-47-generic
	4.15.0-48-generic
	4.15.0-50-generic
	4.15.0-51-generic
	4.15.0-52-generic
	4.15.0-54-generic
	4.15.0-55-generic
	4.15.0-58-generic
	4.15.0-60-generic
	4.15.0-62-generic
	4.15.0-64-generic
	4.15.0-65-generic
	4.15.0-66-generic
	4.15.0-69-generic
	4.15.0-70-generic
	4.15.0-72-generic
	4.15.0-74-generic
	4.15.0-76-generic
	4.15.0-101-generic
	4.15.0-106-generic
	4.15.0-108-generic

OS	Kernel Version
	4.15.0-109-generic 4.15.0-111-generic 4.15.0-112-generic 4.15.0-115-generic 4.15.0-117-generic 4.15.0-118-generic 4.15.0-121-generic 4.15.0-122-generic 4.15.0-123-generic 4.15.0-124-generic 4.15.0-128-generic 4.15.0-129-generic 4.15.0-130-generic 4.15.0-132-generic 4.15.0-134-generic 4.15.0-135-generic 4.15.0-136-generic 4.15.0-137-generic
SUSE	4.4.21-69-default 4.12.14-94.41-default 4.12.14-95.29-default 4.12.14-122.46-default 4.12.14-197.64-default

9 Disclaimer

- **Source server data collection**

After the Agent is started on a source server, it will report source server details to SMS. This information will only be used to check the feasibility of a migration. For details about what information will be collected from the source server, see [What Information Does SMS Collect About Source Servers?](#)
- **License invalidity**

After OSs, applications, and files on source servers are migrated to target servers, the SIDs and MAC addresses of the servers will change. This means that some OS or application licenses may become invalid. SMS is not responsible for this type of issue. You can use the license server on Huawei Cloud to obtain new Windows OS licenses and update or obtain application licenses at your own expense.
- **Do not perform operations on the OS or disks of target servers before the migration is complete.** This includes, but is not limited to, changing or reinstalling the OS. SMS is not responsible for any fees or data damage resulting from such actions.
- **Target server disk formatting**

During the migration, disks on the target server are formatted and re-partitioned based on the source disk settings. Any existing data on the target server will be lost. Before the migration, make sure you have backed up any data on the target server that you need to save and ensure that the disks can be formatted. SMS is not responsible for any data losses incurred.
- **Source disk data security**

SMS does not monitor data in source disks during the migration. You need to ensure the security of your source disk data yourself. If the target servers or servers in the same VPC as the target servers are infected by any Trojans or viruses migrated from the source servers, SMS is not responsible for such problems.
- **Migration errors caused by source servers**

SMS is not responsible for migration errors caused by source server problems, including but is not limited to damaged hardware (such as damaged disks or NICs), improper configurations, or software compatibility issues (such as incompatible OSs and applications), damaged data files, heavy service traffic,

or slow network speeds. You can fix these problems by yourself, but if any such problems persist, you can contact Huawei Cloud for assistance. Huawei Cloud will make every effort to assist in resolving the problems but does not guarantee all possible problems can be resolved. The following problems with a source server may lead to migration errors:

- A faulty source server OS. For example, a Windows startup file is damaged or missing.
 - An incorrectly configured source server OS. For example, GRUB or fstab is incorrectly configured on the source server.
 - Source server network problems. For example, the source server cannot access the Internet, the network is too slow, or the SSH connection or firewall is faulty.
 - Slow I/O on source server disks, too much incremental data, scattered effective clusters (on Windows), or too many small files (on Linux). These problems can slow down the migration or synchronization progress.
 - An incompatible source platform service or software
 - The Agent may be disabled by a source platform service or software, or the I/O monitoring could be disabled by antivirus software on the source server.
- If your target servers on Huawei Cloud cannot be started after the migration is complete, Huawei Cloud can provide technical support to help you solve problems, but does not promise that the all possible problems can be resolved. There are many possible reasons that a target server may be unable to start, for example:
 - The source server cannot be restarted.
 - The source server has a non-standard OS configuration.
 - The source server has drivers or software that is incompatible with Huawei Cloud.
 - To ensure compatibility with Huawei Cloud, SMS modifies the system configurations of target servers. For details, see [What Are the Differences Between Target and Source Servers After the Migration?](#) SMS can ensure data consistency before and after the migration but cannot ensure that your services run properly after the migration. You need to modify related service configurations thereafter.
 - You are advised not to add data to target servers before the service cutover or to source servers after the service cutover. If new data is generated on both your source and target servers after the service cutover, SMS cannot combine data on the source and target servers. If you want to combine the new data on the source and target servers, you must design a solution by yourself.
 - GPU server driver problems
If driver problems, such as lacking drivers for computing or graphics acceleration, occur on target GPU servers after the migration is complete, you need to install related drivers. If the problem persists, Huawei Cloud can provide technical support for you, but does not guarantee all problems can be resolved.
 - Change to Huawei Cloud EulerOS
[Huawei Cloud EulerOS](#) is an openEuler-based cloud operating system. When migrating servers running CentOS 7 or CentOS 8, SMS allows you to change

the OS to Huawei Cloud EulerOS. But you need to use [x2hce-ca](#) to evaluate compatibility between applications with Huawei Cloud EulerOS and perform the OS change only after the applications are adapted to Huawei Cloud EulerOS. If services on the target servers cannot run properly, Huawei Cloud can provide technical support for you, but does not guarantee all problems can be resolved.

- When migrating Windows servers, SMS calls some Windows APIs to obtain data. SMS is not responsible for any call failures caused by the OS configuration and hardware problems of these Windows servers. You need to solve the problems by yourself.
- Service isolation and conflicts
SMS does not check your services on source servers or target servers, let alone conflicts between them. You need to identify service conflicts and make isolation if necessary. If there are such conflicts, SMS is not responsible.

10 Service Statement

This Service Statement (hereinafter referred to as "this Statement" and "this Agreement") describes your rights, obligations, and responsibilities during your use of Huawei Cloud Server Migration Service (SMS). Please carefully read and fully understand the terms, **especially those highlighted in bold that have significant impact on your rights, such as limitations and exclusions of liability.**

You understand and agree that by using any service in this Statement, you are deemed to have read and agree to the General Terms of Service in this Statement and the Dedicated Terms of Service for the service you use. This Statement shall become legally binding on you. If you do not agree to part or all of the terms of this Agreement, you shall stop using related services.

1. General Terms of Service

1.1 Contracting Entity: This Statement is entered into by and between **Huawei Cloud Computing Technologies Co., Ltd. (or referred to as "Huawei Cloud", or "We") and you (or "User")**. Once this Statement takes effect, it has legal effect between you and Huawei Cloud. You acknowledge that you are a natural person, legal person, or other organization that has full capacity for civil conduct, and may independently carry out civil juristic acts. If you do not have the preceding qualifications, do not use this Service. Otherwise, you and your guardian shall bear all consequences caused thereby. In addition, Huawei Cloud has the right to cancel (permanently freeze) your account and claim compensation from you and your guardian. In the event that you register on behalf of a company or other legal entity or use this Service in a manner permitted by Huawei Cloud, you represent and warrant that you have the right to bind the company or legal entity to the terms of this Statement.

1.2 Separate Agreement: If you subscribe to this Service offline, purchase this Service through our partners, or purchase partner products that integrate this Service, you may sign a separate agreement with us or our partners. **You acknowledge and agree that you will remain bound by the separate agreement mentioned in this article if you are authorized to access and use this Service.** If this Statement conflicts with the separate agreement, the separate agreement shall prevail.

1.3 Agreement Update: This Statement is subject to change. We will notify you of any changes to this Statement by posting a notice on our website or by other

means. You can also visit our website to read the latest service statement. **If you do not agree to part or all of the latest Statement, please stop using this Service. By continuing to use this Service, you acknowledge that you are aware of and agree to the latest Statement.**

1.4 Service Maintenance: We may perform maintenance on this Service from time to time, including application upgrades, patch installations, or bug fixes. We will make our best, reasonable efforts to notify you when such events are planned (except for emergency maintenance). You agree to make your best, reasonable efforts to comply with any notified cooperation requirements.

1.5 Your Content

1.5.1 The definition and related regulations of "Your Content" are subject to the *Huawei Cloud Customer Agreement* (https://www.huaweicloud.com/intl/en-us/declaration-sg/sa_cua.html).

1.5.2 In terms of your content, except as required by laws and regulations or for your use of this Service, Huawei Cloud is entrusted to process your data only in accordance with your authorization and instructions and the agreement between you and us.

1.5.3 You have the right to upload, delete, and modify your content. Exercise caution when deleting or modifying data, as you will bear the consequences of the operations.

1.5.4 You shall back up your data as required. Huawei Cloud provides data backup services only in accordance with relevant laws and regulations.

1.6 You promise to take responsibility for your end users. If your end users violate laws or regulations when using services related to this Statement, or improperly use related services and cause damages to third parties or Huawei Cloud, you shall be liable for compensation.

1.7 Our Limited Warranty

1.7.1 The provision of a Huawei Cloud service is based on the availability status and product features of the cloud service at the time of provisioning, and does not constitute a commitment of Huawei Cloud to providing the cloud service for a long time after a certain lifecycle of the cloud service ends.

1.7.2 You understand and agree to our limited warranty in terms of the SLA in Clause 4.3 "Our Limited Warranty" of the *Huawei Cloud Customer Agreement* (https://www.huaweicloud.com/intl/en-us/declaration/sa_cua.html).

1.8 Statement by Both Parties

1.8.1 You understand and agree that your use of this Service must comply with applicable laws and regulations. We provide you with standard services only in accordance with your instructions and are not responsible for the legal compliance of your use of this Service. If we reasonably believe that you have violated laws, regulations, or the rights of third parties when using this Service, or violated the terms of related agreements (including *Legal Statement*, *Privacy Statement*, *Acceptable Use Policy*, *Huawei Cloud Customer Agreement*, and other agreements related to you on the Huawei Cloud official website) ("Prohibited Content"), we have the right to delete prohibited content, prohibit your use of related services and access to related content, or suspend services. In

addition, you shall compensate for all losses caused to Huawei Cloud due to your faults.

1.8.2 Huawei Cloud provides O&M only for Huawei Cloud services. You shall ensure the security and stability of your network and devices. If any device fault or network interruption occurs due to your own or third-party reasons, you shall resolve the issue in a timely manner to avoid any impacts on Huawei Cloud services.

1.8.3 When the lifecycle of a specific cloud service product reaches the end of marketing (EOM), end of service and support (EOS), or end of all service activities, we will make our best commercial efforts to notify you. After reading and understanding the notification, you can upgrade related services or migrate related services to updated software and hardware.

1.9 Disclaimer

1.9.1 You understand and agree that we are not liable for unavailability of this Service in the following situations:

- 1) Service unavailability or any legal consequences caused by your refusal to provide relevant information or the information provided does not meet service requirements
- 2) Service unavailability due to force majeure
- 3) Service unavailability due to your reasons or other non-Huawei Cloud reasons
- 4) Service unavailability during regular service maintenance

1.9.2 You understand and agree that before the lifecycle of a specific cloud service reaches the end of all service activities, we will make our best commercial efforts to notify you. You need to migrate or upgrade related workloads within a certain time window based on the notification of Huawei Cloud. If you do not upgrade the cloud service to a new version available, you agree that Huawei Cloud has the right to automatically upgrade it when the right opportunity comes. We shall not be held liable for any potential service outage arising from the upgrade.

2.0 SMS Service Terms

2.1 Service Content

This Service helps you migrate servers from on-premises infrastructure, private clouds, or public clouds to Huawei Cloud.

2.2 Collection and Processing of Your Personal Data

You understand and agree that you authorize us to collect and use your personal data for the purposes of providing this Service. The data includes (1) system configuration details of source servers; (2) hardware details of source servers; (3) disk details of source servers; (4) IP addresses of source servers; (5) IP addresses of target servers. **Your personal data will be processed within the borders of the People's Republic of China and will be deleted immediately when you delete migration tasks on the console of this Service.** You understand that the above data is necessary to provide services to you. If you choose not to provide or authorize us to collect and use of the above information, Huawei Cloud will not be able to provide you with this Service. For the entire service process, you understand and agree that Huawei Cloud is entitled to collect, use, and process

your personal data in accordance with the *Privacy Statement* (https://www.huaweicloud.com/intl/en-us/declaration/sa_prp.html).

2.3 Processing Your Content Data

You understand and agree that you and/or your end users entrust us to process your source server information and the data contained in the source servers in any format when using SMS. You have full ownership and control over the data. **You are responsible for the legality of the source and acquisition of such data as well as the legality of migrating it from source servers to the target servers, including but not limited to the compliance of cross-border data transfer. Huawei Cloud is entrusted to process your data in order to migrate the source server system and data contained on them to target servers on Huawei Cloud. Your aforementioned data will be processed within the People's Republic of China. You can control your aforementioned data at your own discretion.**

2.4 Cooperation You Need to Provide

Creating agent images

Security standards iterate and security vulnerabilities develop over time. Before the migration, you need to create agent images and perform security scanning and hardening on the images. SMS provides standard agent images for you to test SMS availability. Do not use them to migrate your services.

Configuring security groups of target servers

SMS requires that traffic from source servers be allowed over specified ports on target servers. You need to configure security groups of target servers to allow only access from source servers and take other necessary measures to ensure migration security.

2.5 Service Pricing

SMS is free, but you are billed at standard rates for the EVS disks, EVS disk snapshots, and data transfer generated during the migration process.

- **EVS disk**

SMS creates and attaches a 40 GB EVS disk to each target server temporarily during the migration. These EVS disks are billed on a pay-per-use base. After the migration is complete, these EVS disks will be released. Do not delete these EVS disks during the migration or change their billing modes to yearly/monthly, or the migration will fail.

- **EVS disk snapshot**

SMS creates snapshots of target servers for service cutover, data synchronization, and target server clones.

- **Data transfer**

Traffic is generated during the migration and is billed as follows:

- If the source public IP address is billed by bandwidth and you use the fixed bandwidth for migration over the Internet, the traffic you used will not be billed.
- If the source public IP address is billed by traffic and you migrate data over the Internet, the price is calculated by multiplying the unit price of the traffic by the amount of data migrated. For details about the unit price of the traffic, contact the provider of the source public IP address.

The amount of data migrated is the actual usage of disks on source servers.

For example, if the public IP address of a source server is billed by traffic, the unit price is \$0.15 USD/GB, and the total disk size of a source server is 500 GB (including 300 GB of used space), the cost is \$45 USD (0.15 x 300). Note that this fee is billed by the provider of the source public IP address.

- If you use **Direct Connector** or **Virtual Private Network (VPN)** for migration, the cost depends on the price of your Direct Connect or VPN connections.

2.6 Disclaimer

- **License invalidity**

After OSs, applications, and files are migrated from source servers to target servers, the SIDs and MAC addresses of the servers will change, and some OS or application licenses may become invalid. SMS is not responsible for this type of issue. You can use the license server on Huawei Cloud to obtain new Windows OS licenses and update or obtain application licenses at your own expense.

- **Fees or data damage caused by your operations**

Before a migration is complete, do not perform operations on the OS or disks of the target server, including but not limited to changing the OS and reinstalling the OS. SMS is not responsible for any fees or data damage incurred.

- **Target server disk formatting**

During the migration, disks on the target server are formatted and re-partitioned based on the source disk settings. Any existing data on the target server will be lost. Before the migration, make sure you have backed up any data on the target server that you need to save and ensure that the disks can be formatted.

- **Migration errors caused by source servers**

SMS is not responsible for migration errors caused by source server problems, including but not limited to damaged hardware (such as damaged disks and NICs), improper configurations, or software incompatibility (such as incompatible OSs and applications), damaged data files, heavy service traffic, and slow network speed. You can fix these problems by yourself, but if any such problems persist, you can contact Huawei Cloud for assistance. Huawei Cloud will make every effort to assist in resolving the problems but does not guarantee all possible problems can be resolved. Many problems on a source server may lead to migration errors, for example:

- a. A faulty source server OS. For example, a Windows startup file is damaged or missing.
- b. An incorrectly configured source server OS. For example, GRUB or fstab may be incorrectly configured on the source server.
- c. Source server network problems. For example, the source server cannot access the Internet, the network speed is too slow, or the SSH connection or firewall is faulty.
- d. Slow I/O on source server disks, too much incremental data, scattered effective clusters (on Windows), or too many small files (on Linux). These problems can slow down the migration or synchronization progress.

- e. An incompatible source platform service or software.
- f. The Agent is disabled by a source platform service or software, or the I/O monitoring is disabled by antivirus software on the source server.
- If your target servers on Huawei Cloud cannot be started after the migration is complete, Huawei Cloud can provide technical support to help you solve problems, but does not promise that the all possible problems can be resolved.
- To ensure compatibility with Huawei Cloud, SMS modifies the system configurations of target servers. SMS can ensure data consistency before and after the migration but cannot ensure that your services run properly after the migration. You need to modify related service configurations afterwards.
- You are advised not to add data to target servers before the service cutover or to source servers after the service cutover. If new data is generated on both your source and target servers after the service cutover, SMS cannot combine data on the source and target servers. If you want to combine the new data on the source and target servers, you must design your own solution.

2.7 Other Special Notes

- Log printing
During the migration, SMS prints logs on the source and target servers. After the migration is complete, SMS automatically deletes the logs on the target server, and you need to manually delete the logs from the source server. The logs contain the IP addresses and disk, mounting, and fstab details. Logs on the source server will not be uploaded to SMS.
- Configuration modification
To ensure that target servers can be started properly after the migration is complete, SMS modifies the boot, network, and system configurations of the servers.
- Cross-border data transfer
SMS is only responsible for point-to-point data migration from source servers to target servers. It is unaware of the data migrated. If your server data needs to be migrated across borders, you must ensure the compliance of the migration.

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11 Billing

SMS is free, but you are billed at standard rates for EVS disks, EVS disk snapshots, and data transfer during the migration process.

- **EVS disk**

SMS creates and attaches a 40-GB EVS disk to each target server temporarily during the migration. These EVS disks are billed on a pay-per-use basis. After the migration is complete, these EVS disks will be released. Do not delete these EVS disks during the migration or change their billing modes to yearly/monthly, or the migration will fail.

For pricing details about EVS, see [EVS Pricing Details](#).

For example, if a 40-GB high I/O EVS disk with the unit price of \$0.0002 USD/GB-hour is used for 10 hours during migration, the EVS disk price is \$0.08 USD (0.0002 x 40 x 10).

- **EVS disk snapshot**

SMS creates snapshots for service cutover, data synchronization, and cloning target servers. For details about these snapshots for of target servers, see [What Are the Snapshots of a Target Server Used for?](#)

EVS snapshots are free. For more information, see [EVS Snapshot](#).

- **Data traffic**

Traffic is generated during the migration and is billed as follows:

- If the source public IP address is billed by bandwidth and you use the fixed bandwidth for migration over the Internet, the traffic you used will not be billed.
- If the source public IP address is billed by traffic and you migrate data over the Internet, the price is calculated by multiplying the unit price of traffic by the amount of data migrated. For details about the unit price of traffic, contact the provider of the source public IP address. The amount of data migrated is the actual usage of disks on source servers.

If the public IP address is billed by traffic, the unit price is \$0.15 USD/GB, and the total disk size of a source server is 500 GB (including 300 GB of used space), the cost is \$45 USD (0.15 x 300). Note that this fee is charged by the provider of the source public IP address.

- If you use [Direct Connect](#) or [Virtual Private Network \(VPN\)](#) for migration, the cost depends on the price of your Direct Connect or VPN connections.

 **CAUTION**

The preceding fees are for reference only. The actual fees may vary.

12 Permissions Management

You can use [IAM](#) for free to manage SMS permissions and grant your employees different permissions, to ensure secure access to your resources.

With IAM, you can use your Huawei Cloud account to create IAM users for your employees, and assign permissions to the users to control their access to specific resources of various types.

 **NOTE**

For example, you can create IAM users for software developers, and assign specific permissions to allow them to use SMS but disallow them to delete any resources or perform any high-risk operations.

If your Huawei Cloud account does not need individual IAM users for permissions management, you can skip this section.

For more information about IAM, see the [IAM Service Overview](#).

SMS Permissions

By default, new IAM users do not have any permissions assigned. To assign permissions to these new users, add them to one or more groups and attach permissions policies or roles to these groups. Users inherit permissions from the groups they are added to, and then they can perform specified operations on cloud services.

 **NOTE**

A Huawei Cloud account has all the permissions required for using SMS by default. If you use your Huawei Cloud account to perform a migration, no authorization is required.

SMS is a global service deployed for all physical regions. SMS permissions are assigned to users in the Global project, so the users do not need to switch regions when accessing SMS.

Table 12-1 lists all the system-defined policies and roles of SMS. Huawei Cloud services interwork with each other, and some SMS policies and roles are dependent on the policies and roles of other services. When assigning SMS permissions to users, you need to also assign dependent roles for the SMS permissions to take effect.

Table 12-1 Common operations supported by each system-defined policy or role

Operation	SMS FullAccess (Global)	OBS OperateAccess (OBS)	EVS FullAccess	ECS FullAccess	VPC FullAccess
Creating migration tasks	√	x	√	√	√
Viewing migration progresses	√	x	x	x	x

IAM supports two types of policies: system-defined policies and custom policies.

- If an IAM user needs all SMS permissions, attach the preceding system-defined policies to the user group to which the user has been added.
- If an IAM user only needs some SMS permissions, you can create custom policies and attach these policies to the user group to which the user has been added.

For details, see [Creating a User and Assigning Permissions](#).

 **NOTE**

Compared with system-defined policies, custom policies provide more fine-grained and secure permissions control.

Dependent Policy Configuration

To grant an IAM user the permissions to view or use resources of other cloud services on the SMS console, you must first grant the SMS FullAccess or SMS ReadOnlyAccess policy to the user group to which the user belongs and then grant the dependency policies and roles listed in [Table 12-2](#).

Table 12-2 Roles and policies of other services that the SMS Console depends on

Console Function	Dependent Services	Roles or Policies Required
Creating a migration task	ECS EIP VPC Image Management Service (IMS) EVS	An IAM user with the SMS FullAccess permissions assigned can use this function only after the ECS FullAccess, VPC FullAccess, IMS FullAccess, EVS FullAccess, and EIP FullAccess permissions are assigned.

Console Function	Dependent Services	Roles or Policies Required
Viewing the migration progress	/	No other roles or policies are required. An IAM user with the SMS ReadOnlyAccess permissions can use this function directly.
Creating a migration template	/	No other permissions are required. An IAM user with the SMS FullAccess permissions can use this function directly.
Creating a server template	VPC EVS ECS	An IAM user with the SMS FullAccess permissions assigned can use this function only after the ECSReadOnlyAccess, VPC ReadOnlyAccess, and EVS ReadOnlyAccess permissions are assigned.
Configuring the Agent	ECS EIP VPC IMS EVS	An IAM user with the SMS Full Access permissions assigned can use this function only after the ECS FullAccess, VPC FullAccess, IMS FullAccess, EVS FullAccess, and EIP FullAccess permissions are assigned.

13 Change History

Released On	What's New
2024-03-04	This issue is the thirty-fifth official release. Updated Supported Linux OSs .
2024-02-23	This issue is the thirty-fourth official release. <ul style="list-style-type: none"> Added Alibaba Cloud Linux 3.2104, Alibaba Cloud Linux 2.1903, and Amazon Linux 2023 AMI to Supported Linux OSs.
2023-12-07	This issue is the thirty-third official release. Updated Precautions and Disclaimer .
2023-08-15	This issue is the thirty-second official release. Added Windows Server 2022 to Supported Windows OSs .
2023-07-24	This issue is the thirty-first official release. Updated Secure Transmission .
2023-06-27	This issue is the thirtieth official release. Added openSUSE and Rocky Linux to Supported Linux OSs .
2023-06-19	This issue is the twenty-ninth official release. Updated Precautions , Constraints , and Disclaimer .
2023-05-10	This issue is the twenty-eighth official release. <ul style="list-style-type: none"> Updated Constraints. Added the statements about GPU server driver problems and change to Huawei Cloud EulerOS in Disclaimer.

Released On	What's New
2023-03-31	This issue is the twenty-seventh official release. Added Kylin and openEuler to Supported Linux OSs .
2023-03-14	This issue is the twenty-sixth official release. Updated Disclaimer .
2023-01-28	This issue is the twenty-fifth official release. Updated Supported Linux OSs .
2023-01-12	This issue is the twenty-fourth official release. Updated Constraints .
2022-12-13	This issue is the twenty-third official release. Updated Supported Linux OSs .
2022-10-08	This issue is the twenty-second official release. <ul style="list-style-type: none"> • Updated Supported Linux OSs. • Added Security.
2022-09-27	This issue is the twenty-first official release. Updated Constraints .
2022-08-12	This issue is the twentieth official release. Updated Constraints .
2022-07-13	This issue is the nineteenth official release. Updated Disclaimer .
2022-06-29	This issue is the eighteenth official release. Updated Supported Linux OSs .
2022-05-05	This issue is the seventeenth official release. Updated Constraints .
2022-04-07	This issue is the sixteenth official release. Updated Disclaimer .
2022-04-01	This issue is the fifteenth official release. Updated Supported Linux OSs .
2021-01-27	This issue is the fourteenth official release. Updated Supported Linux OSs .
2021-10-20	This issue is the thirteenth official release. Updated Supported Linux OSs .
2021-07-09	This issue is the twelfth official release. Updated Supported OSs .

Released On	What's New
2021-03-24	This issue is the eleventh official release. Added Kernel versions supported by Linux block-level migration .
2021-03-15	This issue is the tenth official release. Updated the Ubuntu type in Supported OSs .
2021-03-10	This issue is the ninth official release. Optimized Permissions Management .
2021-01-14	This issue is the eighth official release. Added support for RHEL 7.9, RHEL 8.1, RHEL 8.2, CentOS 7.9, CentOS 8.1, CentOS 8.2, and Oracle 7.9 in Supported OSs .
2020-01-20	This issue is the seventh official release. Optimized Permissions Management .
2019-10-23	This issue is the sixth official release. Added support for Ubuntu 12.10, Ubuntu 13.04, Ubuntu 13.10, Ubuntu 14.10, Ubuntu 15.04, Ubuntu 16.10, Oracle 6.1, and Oracle 6.2 in Supported OSs .
2019-09-12	This issue is the fifth official release. <ul style="list-style-type: none"> Updated Supported OSs.
2019-08-30	This issue is the fourth official release. Optimized Billing .
2019-07-31	This issue is the third official release. Added Billing .
2019-06-30	This issue is the second official release. <ul style="list-style-type: none"> Updated Supported OSs. Added Permissions Management.
2018-09-30	This issue is the first official release.