

# Image Management Service

## Getting Started

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# 1 Scenario 1: Creating a System Disk Image from a Windows ECS

If you have created and configured an ECS based on your service requirements (such as installing software and deploying an application environment), you can create a system disk image from the configured ECS. Then, any new ECSs created from this image will come with all the same software and other details preconfigured.

This guide describes how to create a system disk image from a Windows ECS.

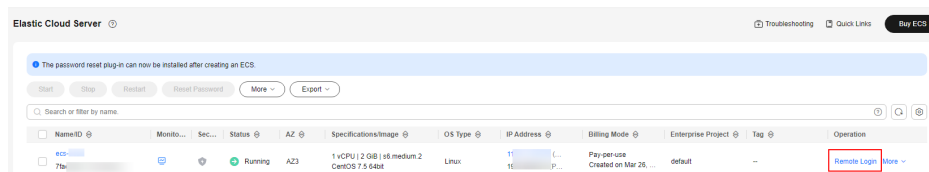
## Preparations

1. Sign up for Huawei Cloud and complete real-name authentication.  
Before using IMS, [sign up for a HUAWEI ID, enable Huawei Cloud services, and complete real-name authentication](#).  
If you have enabled Huawei Cloud services and completed real-name authentication, skip this step.
2. Top up your account.  
Ensure that your account has sufficient balance. If not, [top up your account](#).
3. Create an ECS.

## Step 1: Check the ECS

1. Log in to the management console. In the service list, choose **Compute > Elastic Cloud Server**.
2. Locate the ECS and click **Remote Login**.

Figure 1-1 Remote login



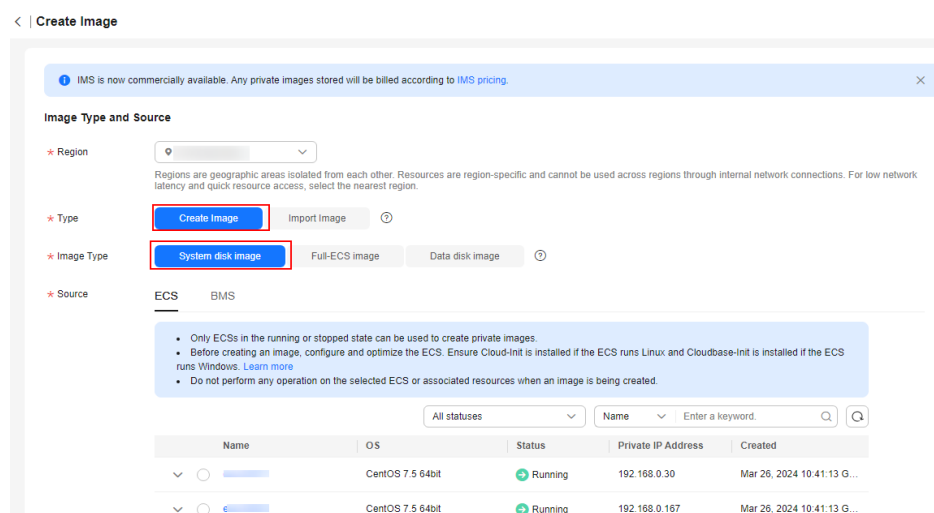
3. Perform the following operations on the ECS:

- Delete sensitive data from the ECS to prevent data leaks.
- Check the network configuration of the ECS and ensure that DHCP is configured for the ECS NICs. Enable remote desktop connection if needed. For details, see [Setting the NIC to DHCP](#) and [Enabling Remote Desktop Connection](#).
- Check whether the one-click password reset plug-in has been installed in the ECS. After the plug-in is installed, the passwords of new ECSs created from the image of this ECS can be reset on the console. For details, see [Installing the One-Click Password Reset Plug-In](#).
- Check whether Cloudbase-Init has been installed in the ECS. After Cloudbase-Init is installed, user data can be injected into the new ECSs created from the image of this ECS. For example, you can use data injection to set the password of a new ECS. For details, see [Installing and Configuring Cloudbase-Init](#).
- Check and install PV and VirtIO drivers in the ECS so that the new ECSs created from the image of this ECS support both KVM and XEN virtualization and that the network performance will be improved. For details, see [Installing PV Drivers](#) and [Installing VirtIO Drivers](#).
- Run Sysprep on the ECS so that each of the new ECSs created from the image of this ECS has a unique SID in a domain. In a cluster, each ECS must have a unique SID. For details, see [Running Sysprep](#).

## Step 2: Create a Windows System Disk Image

1. Select the ECS and in the **Operation** column choose **More > Manage Image > Create Image**.
2. In the **Image Type and Source** area, select **Create Image** for **Type** and **System disk image** for **Image Type**. Then, select the ECS.

Figure 1-2 Creating a system disk image



3. In the **Image Information** area, enter basic information about the image.

**Figure 1-3** Image information

**Image Information**

Encryption      Unencrypted [?](#)

\* Name     

\* Enterprise Project       [C](#) [?](#)

Tag      It is recommended that you use TMS's predefined tag function to add the same tag to different cloud resources. [View predefined tags](#) [C](#)

         You can add 10 more tags.

Description     

0/1,024

Agreement       I have read and agree to the [Image Disclaimer](#).

**Table 1-1** Image parameters

Parameter	Example Value	Description
Name	win-image	Enter a name for the image.
Enterprise Project	default	Select an enterprise project from the drop-down list. This parameter is available only if you have enabled enterprise projects or your account is an enterprise account. To enable this function, contact your customer manager. An enterprise project provides central management of cloud resources on a project.
Tag	Key: usage Value: project	(Optional) Set a tag key and a tag value for the image to make identification and management of your images easier. <b>NOTE</b> If your organization has configured tag policies for images, you need to add tags to your images based on the policies. If you add a tag that does not comply with the tag policies, images may fail to be created. Contact the organization administrator to learn more about the tag policies. <ul style="list-style-type: none"><li>Each tag consists of a key and a value. The key contains a maximum of 36 characters, and the value contains a maximum of 43 characters. The key cannot be left blank or be an empty string. The value cannot be left blank but can be an empty string.</li><li>An image can have a maximum of 10 tags.</li></ul>

Parameter	Example Value	Description
Description	imageTest	(Optional) Enter a description of the image.

4. Read and agree to the image disclaimer. Click **Next**.
5. Confirm the parameter settings and click **Submit**.
6. Go back to the private image list and view the image status.

 **NOTE**

The time required for creating an image depends on the image file size, network status, and number of concurrent tasks. When the image status changes to **Normal**, the image is created successfully.

## Follow-up Procedure

After a system disk image is created, you can use it to create an ECS or change the OS of an existing ECS. This way, you can migrate data from a server to another. For details, see:

- [Creating an ECS from an Image](#)
- [Changing the OS](#)

For more information, see [Creating a System Disk Image from a Windows ECS](#).



# 2 Scenario 2: Creating a Linux System Disk Image from an External Image File

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You can import a local image or a system disk image from another cloud platform. After an image is imported, you can use it to create an ECS or reinstall the OS of an existing ECS.

This guide describes how to create a Linux system disk image from an external image file.

## Preparations

1. Sign up for Huawei Cloud and complete real-name authentication.  
Before using IMS, [sign up for a HUAWEI ID, enable Huawei Cloud services, and complete real-name authentication](#).  
If you have enabled Huawei Cloud services and completed real-name authentication, skip this step.
2. Top up your account.  
Creating a private image is free, but you will be charged for the OBS bucket you use to store the uploaded image file. Ensure that your account has sufficient balance. If not, [top up your account](#).

## Step1: Prepare an Image File

You need to prepare an image file that meets the following requirements:

- OS: SUSE, Oracle Linux, Red Hat, Ubuntu, etc. (32-bit or 64-bit)
- Image format: VMDK, VHD, QCOW2, RAW, VHDX, QED, VDI, QCOW, ZVHD2, or ZVHD
- Image size: no larger than 128 GB. If the image size is between 128 GB and 1 TB, convert the image file into RAW or ZVHD2 and import it using fast import.
- Network: Files in the network rule directory are deleted and DHCP is configured for the NICs.
- Tools: Cloud-Init has been installed.
- Drivers: Native Xen and KVM drivers have been installed.

- File system: The disk identifier in the GRUB configuration file and fstab file are set to UUID.

**NOTE**

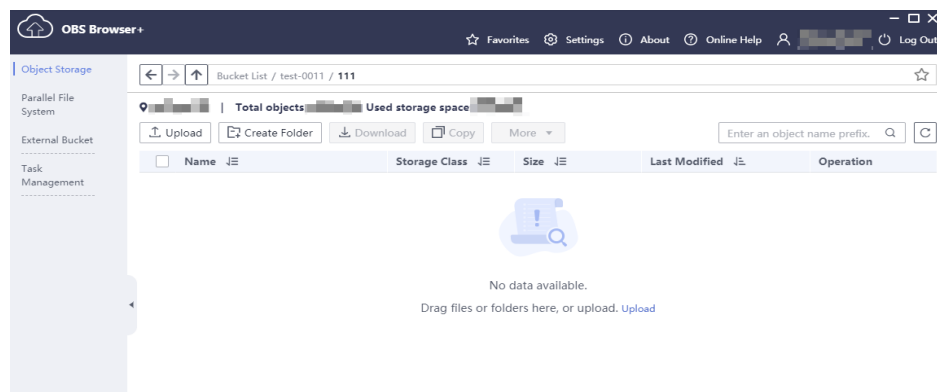
Click [here](#) to learn more about the file restrictions and how to check and configure an image file.

## Step 2: Upload the Image File

You are advised to use OBS Browser+ to upload external image files to an OBS bucket. For details, see [OBS Browser+ Best Practices](#).

For how to download OBS Browser+, see [Downloading OBS Browser+](#).

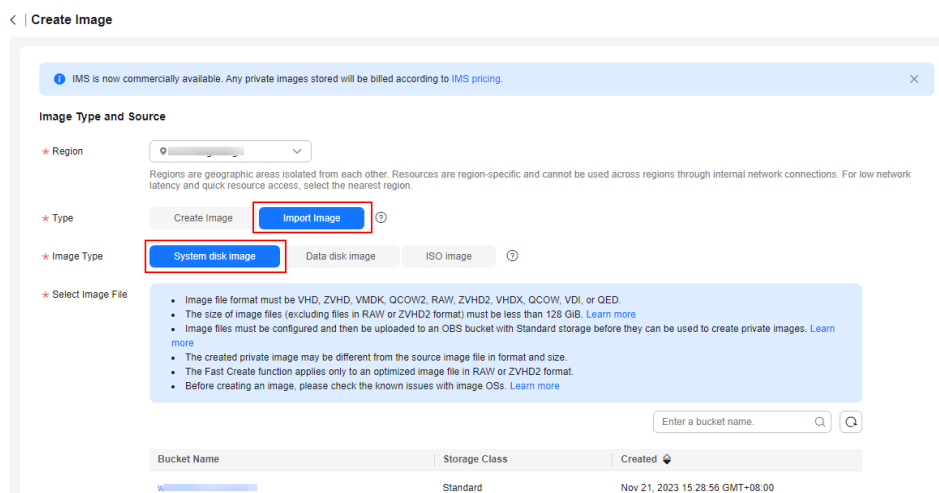
Figure 2-1 Uploading an image file



## Step 3: Register the Image File as a Private Image

1. Log in to the management console. In the service list, choose **Compute > Image Management Service**.
2. In the image list, click **Create Image** in the upper right corner.
3. In the **Image Type and Source** area, select **Import Image** for **Type** and **System disk image** for **Image Type**. Select the bucket storing the image file from the list and then select the image file.

Figure 2-2 Importing an image file



**Figure 2-3** Image information

Image Information

Enable automatic configuration [Learn more](#)

\* Function: **ECS system disk image** | BMS system disk image

Architecture: **x86** | ARM

If the system detects an architecture type different from that you set, the architecture type detected by the system prevails. If the system fails to detect the architecture type, the architecture type you set prevails.

Boot Mode: **BIOS** | UEFI

The boot mode must be the same as that of the OS contained in the image file. Otherwise, ECSs created from this system disk image will fail to start.

OS: --Select OS-- | --Select OS version--

If the OS you selected is different from the OS in the image file, IMS will use the OS in the image file if the OS can be detected. Otherwise, the OS you selected will be used for image creation. [View supported OSs](#)

\* System Disk (GiB):  + The system disk size must be larger than the image file size.

[Add Data Disk](#) You can add 3 more data disks.

\* Name:

Encryption:  KMS encryption [?](#)

\* Enterprise Project: --Select-- [?](#) [?](#)

Tag: It is recommended that you use TMS's predefined tag function to add the same tag to different cloud resources. [View predefined tags](#) [?](#)

You can add 10 more tags.


Description:

Agreement:  I have read and agree to the [Image Disclaimer](#).

**Table 2-1** Image parameters

Parameter	Example Value	Description
Enable automatic configuration	Enable	If you select this option, the system will automatically check and optimize the image file. For details, see <a href="#">What Will the System Do to an Image File When I Use the File to Register a Private Image?</a>
Function	ECS system disk image	This parameter specifies whether the image is used to create ECSs or BMSs. The value can be <b>ECS system disk image</b> or <b>BMS system disk image</b> .
Architecture	x86	The value can be <b>x86</b> or <b>ARM</b> . <ul style="list-style-type: none"> <li>If the system identifies that the architecture in the image file is different from what you set here, the identified architecture prevails.</li> <li>If the system fails to identify an architecture, the architecture you set will be used.</li> </ul>

Parameter	Example Value	Description
Boot Mode	BIOS	<p>This parameter is optional. The value can be <b>BIOS</b> or <b>UEFI</b>. For details about the differences between them, see <a href="#">How Is BIOS Different from UEFI?</a></p> <p>For details about which OSs support UEFI boot, see <a href="#">OSs supporting UEFI Boot Mode</a>.</p> <p>The boot mode must be the same as that in the image file. You need to confirm which boot mode is used in the image file. After you select the right boot mode, the boot mode will be configured for the image at the background. Select the right boot mode, or ECSs created using the image will not be able to boot up.</p>
OS	Ubuntu 20.04 server 64bit	<p>To ensure that the image can be created and used properly, select an OS consistent with that in the image file. If you do not select an OS, the system attempts to automatically identify the OS in the image file.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• If the system identifies that the OS in the image file is different from the one you select here, the identified OS prevails.</li> <li>• If the system fails to identify an OS, the OS you select will be used.</li> <li>• If the OS you selected or identified by the system is inconsistent with the actual one, ECSs created from the image file may not work properly.</li> </ul>
System Disk (GB)	40	<p>The system disk capacity (value range: 40 GB to 1024 GB). Ensure that this value is not less than the system disk capacity in the image file.</p> <p><b>NOTE</b></p> <p>If the uploaded VHD image is generated using qemu-img or similar tools, check the system disk capacity based on <a href="#">What Do I Do If the System Disk Capacity in a VHD Image File Exceeds the One I Have Specified on the Management Console When I Use This File to Register a Private Image?</a></p>

Parameter	Example Value	Description
Data Disk (GB)	Not add	<p>You can also add data disks to the image. You need to obtain an image file containing data disks in advance. This function is used to migrate VMs and data disks from other platforms to the current platform.</p> <p>To add data disks, click , configure the data disk capacity, and click <b>Select Image File</b>. In the displayed dialog box, select the target bucket and then the target image file containing the data disk.</p> <p>A maximum of three data disks can be added.</p>
Name	Ubuntulma ge	Enter a name for the image.
Encryption	Not select	<p>(Optional) If you want to encrypt the image, select <b>KMS encryption</b> and select the key to be used from the key list. After you select <b>KMS encryption</b>, the system will create a default key <b>ims/default</b> for you. You can also select a key from the key list.</p> <p>For how to encrypt an image, see <a href="#">Creating Encrypted Images</a>.</p> <p><b>NOTE</b> If the encrypted image needs to be shared with other tenants, use a custom key to encrypt it. Otherwise, the key cannot be authorized to other tenants, causing the sharing failure.</p>
Enterprise Project	default	<p>Select an enterprise project from the drop-down list. This parameter is available only if you have enabled enterprise projects or your account is an enterprise account.</p> <p>An enterprise project provides central management of cloud resources on a project.</p>

Parameter	Example Value	Description
Tag	Key: usage Value: project	(Optional) Set a tag key and a tag value for the image to make identification and management of your images easier. You are advised to create predefined tags in TMS. For details, see <a href="#">Creating Predefined Tags</a> . <b>NOTE</b> If your organization has configured tag policies for images, you need to add tags to your images based on the policies. If you add a tag that does not comply with the tag policies, images may fail to be created. Contact the organization administrator to learn more about the tag policies. <ul style="list-style-type: none"><li>• Each tag consists of a key and a value. The key contains a maximum of 36 characters, and the value contains a maximum of 43 characters. The key cannot be left blank or be an empty string. The value cannot be left blank but can be an empty string.</li><li>• An image can have a maximum of 10 tags.</li></ul>
Description	imageTest	(Optional) Enter a description of the image.

4. Read and agree to the image disclaimer. Click **Next**.
5. Confirm the parameter settings and click **Submit**.
6. Go back to the private image list. When the image status changes to **Normal**, the image is created successfully.

## Follow-up Procedure

After a system disk image is created, you can use it to create an ECS or change the OS of an existing ECS. This way, you can migrate data from a server to another. For details, see:

- [Creating an ECS from an Image](#)
- [Changing the OS](#)

For more information, see [Creating a Linux System Disk Image from an External Image File](#).

# 3 Practices

Common practices are provided to help you easily use IMS.

## Create a Private Image

Practice	Description
<a href="#">Creating a Windows Image Using VirtualBox and an ISO File</a>	Describes how to create a Windows image using VirtualBox. To do so, you need to install VirtualBox, use it to create a VM from an ISO file, configure the VM, and generate a VHD image using the configured VM.
<a href="#">Creating a Linux Image Using VirtualBox and an ISO File</a>	Describes how to create a Linux image using VirtualBox. To do so, you need to install VirtualBox, use it to create a VM from an ISO file, configure the VM, and generate a VHD image using the configured VM.
<a href="#">Creating a Private Image Using Packer</a>	Describes how to create an Ubuntu 22.04 Server 64-bit private image from a CentOS 8.2 ECS using Packer and upload it to the cloud platform.
<a href="#">Converting the Image Format</a>	Describes how to use qemu-img or Huawei qemu-img-hw to convert the image format. qemu-img can be used for mutual conversion of formats VHD, VMDK, QCOW2, RAW, VHDX, QCOW, VDI, and QED but cannot be used for the format conversion to ZVHD or ZVHD2. To convert an image file to any of the two formats, use qemu-img-hw.

## Optimize Images

Practice	Description
<a href="#">Cleaning Up the Disk Space of a Windows ECS</a>	Describes how to clean up the disk space of a Windows ECS.

## Migrate Images

Practice	Description
<a href="#">Migrating ECSs Across Accounts and Regions</a>	Describes how to migrate an ECS with a website deployed across regions and accounts.
<a href="#">Migrating Service Data Across Accounts (Data Disks)</a>	Generally, service data is stored on data disks. To migrate service data across accounts, you need to create data disk images and share them with the target account.