Computing Cloud Service – Image Management Service

Foreword

- This course introduces Image Management Service (IMS), a computing service provided by HUAWEI CLOUD for creating and managing images.

Objectives

- After completing this course, you will:
  - Understand basic concepts, functions and application scenarios of IMS.
  - Be able to create and manage private images.

Contents

Basic Concepts

Image

An image provides information required for you to create an ECS, BMS, or disk.

IMS allows you to easily create and manage images. You can use a public, private, or shared image to create ECSs or BMSs, or an ECS or external image file to create a private image.

Basic Concepts

Image Type

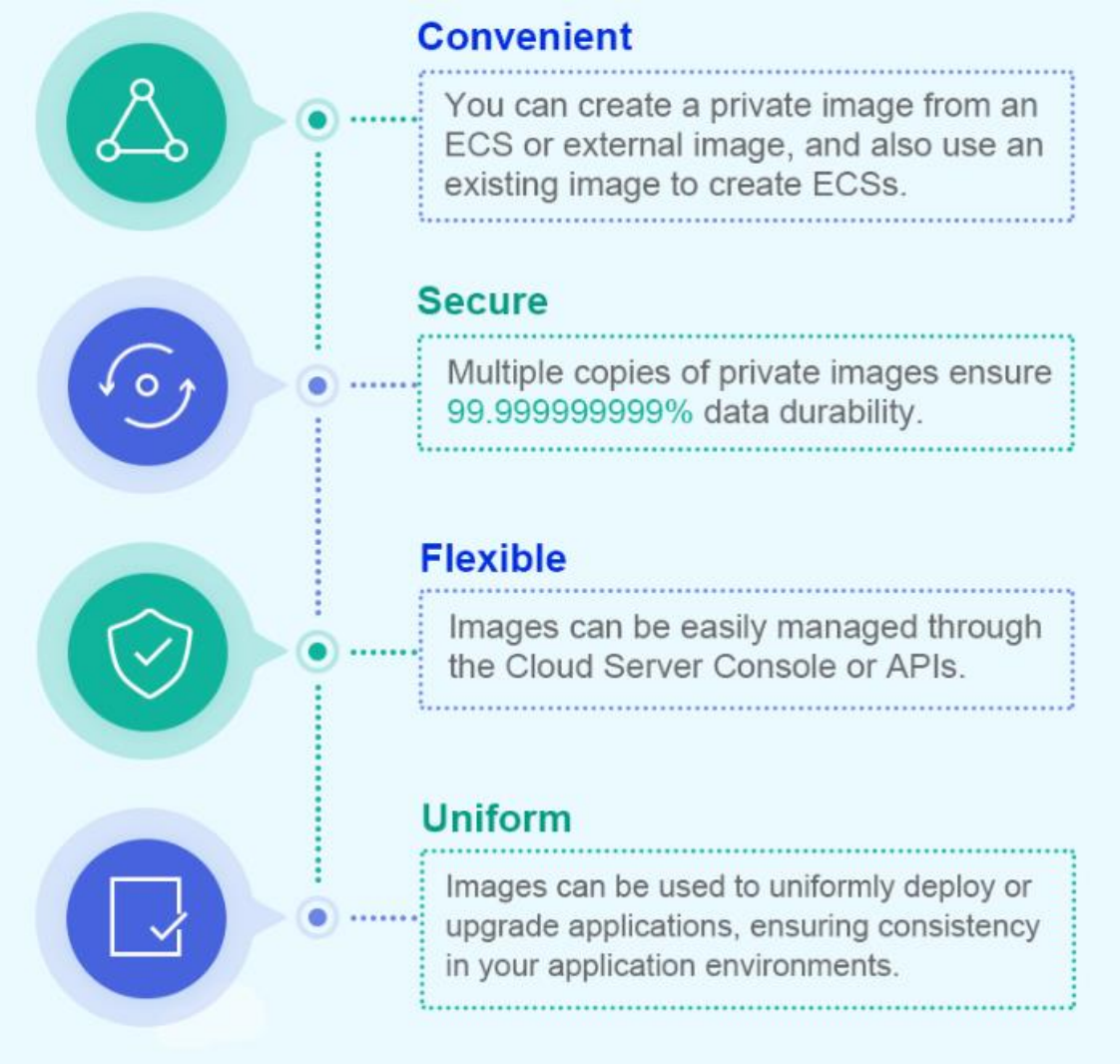
- Images are classified as public, private, and shared images.
- Public images are provided by the cloud platform, private images are created by image owners, and shared images are created and shared by others.

Private Image

- Private images can be classified into three types as follows:
- System disk image: contains an OS and necessary applications, and is used to create ECSs for migrating services to the cloud.
- Data disk image: contains only service data, and can be used to create data disks for migrating data to the cloud.
- Full-ECS image: contains an OS, applications, and data.

Product Advantages

- **Convenient**
- **Secure**
- **Flexible**
- **Uniform**



Functions

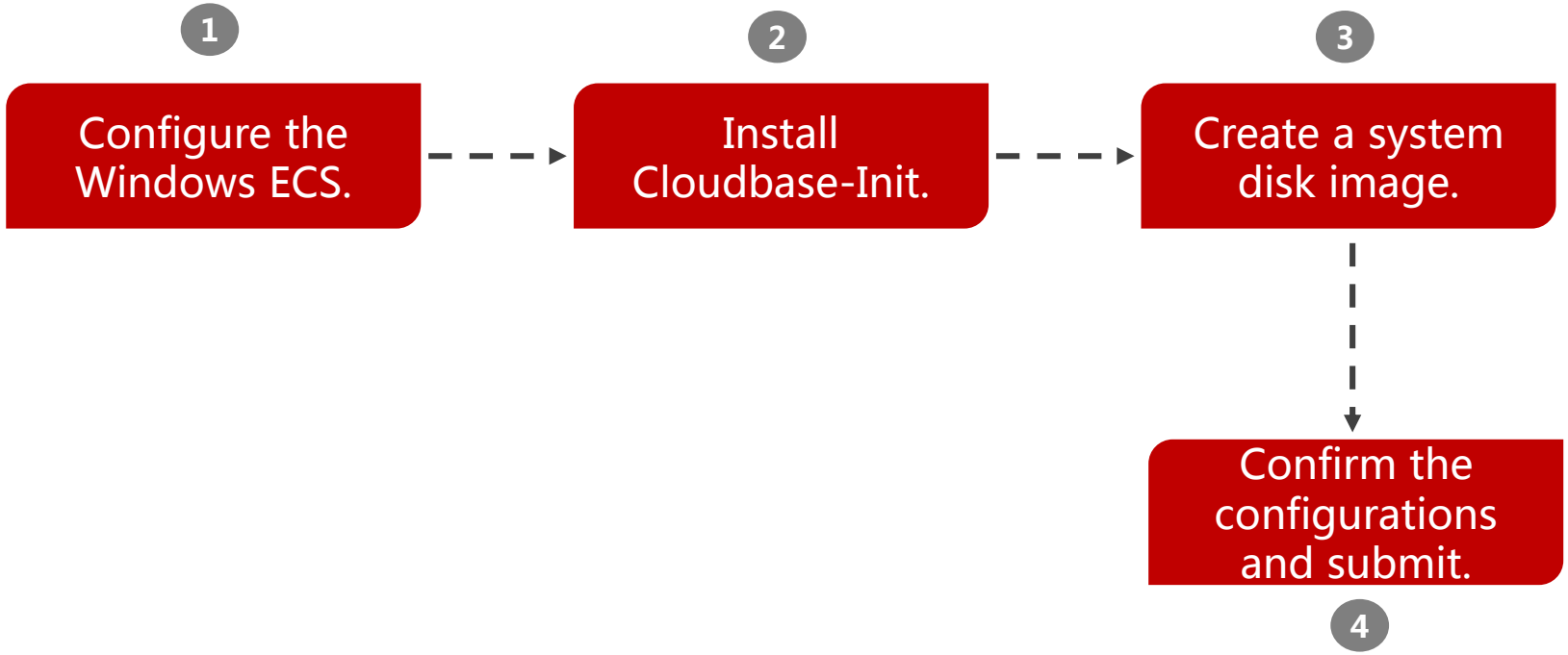
- IMS provides public images supporting popular OSs.
- You can create system disk images, data disk images, and full-ECS images.
- Private images can be modified and deleted, and system and data disk images can be shared with others.
- Existing images can be used to create ECSs and BMSs.

Contents

Methods for Creating a Private Image

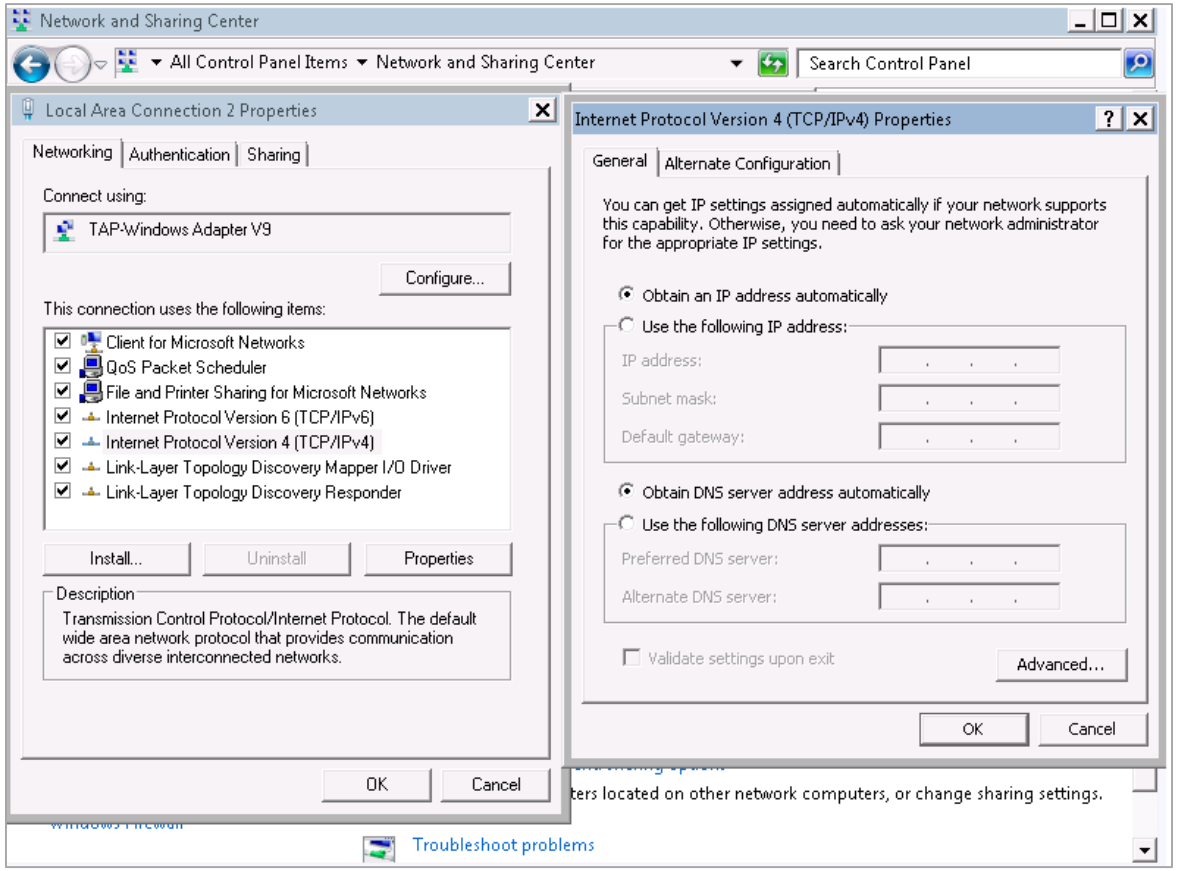
- Create a system disk image from a Windows ECS.
- Create a system disk image from a Linux ECS.
- Create a system disk image from an external image file containing a Windows OS.
- Create a system disk image from an external image file containing a Linux OS.
- Create a data disk image using an ECS data disk.
- Create a data disk image from an external image file.
- Create a full-ECS image from an ECS.
- Create a full-ECS image from a CSBS backup.

Creating a System Disk Image from a Windows ECS



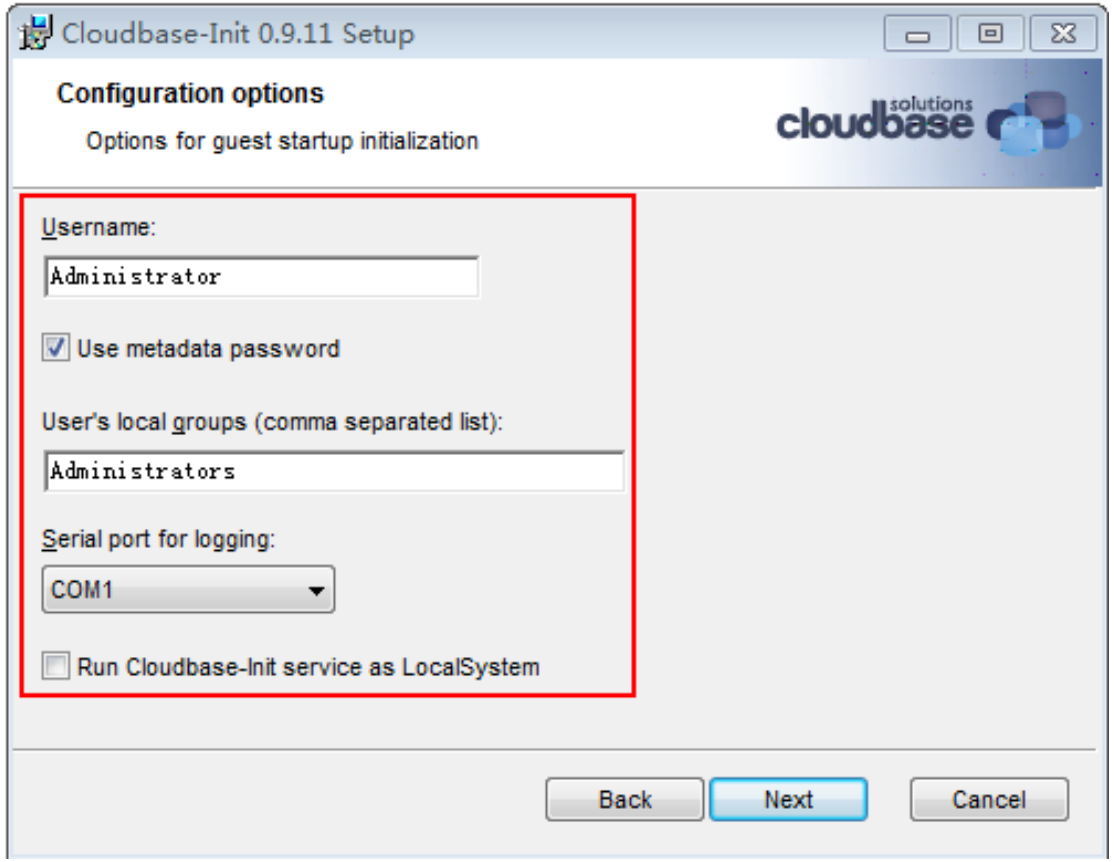
Configuring the Windows ECS

- If the ECS uses a static IP address, configure DHCP for the ECS, allowing it to dynamically obtain an IP address.



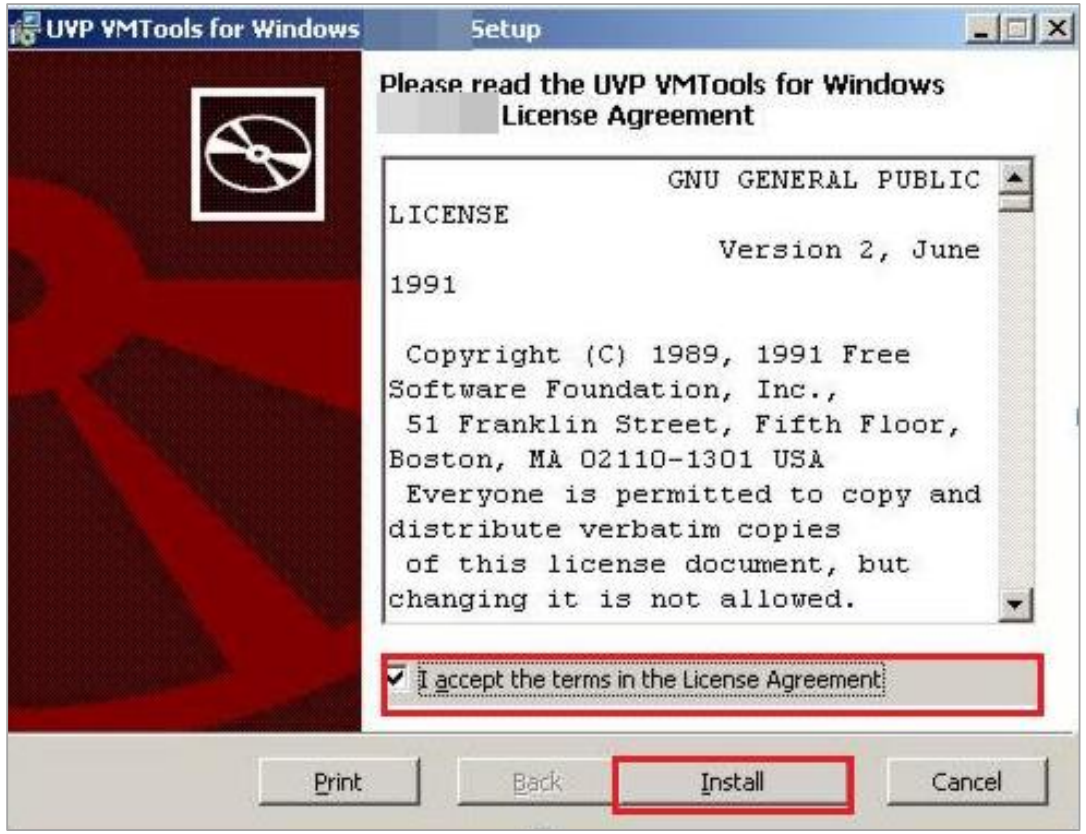
Installing Cloudbase-Init

- You are advised to install Cloudbase-Init on the ECS that will be used to create the system disk image so that new ECSs created from this image are customizable.



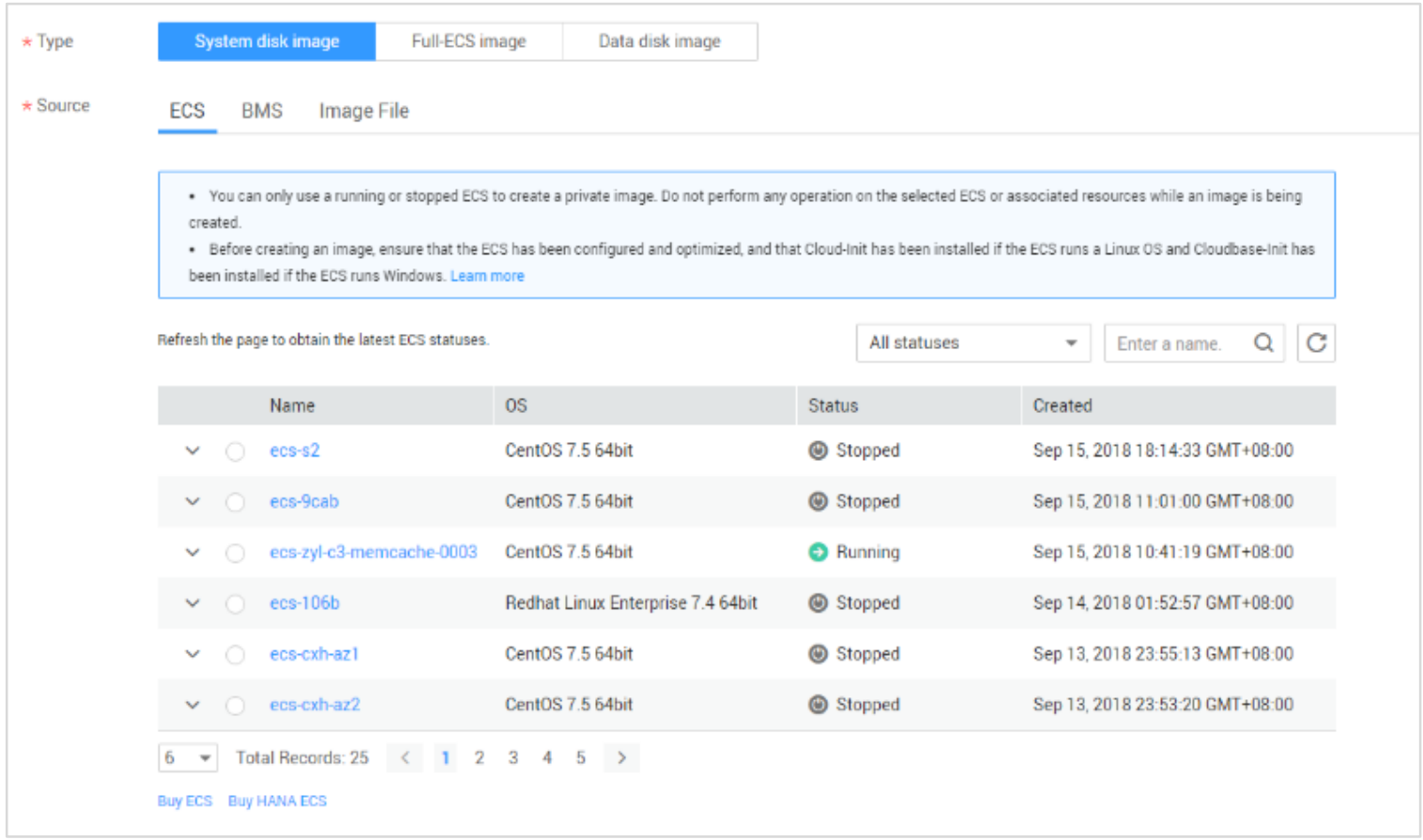
Optimizing Before Image Creation

- To ensure that the image created from an ECS supports both Xen and KVM, install the PV driver and UVP VMTools on the ECS.

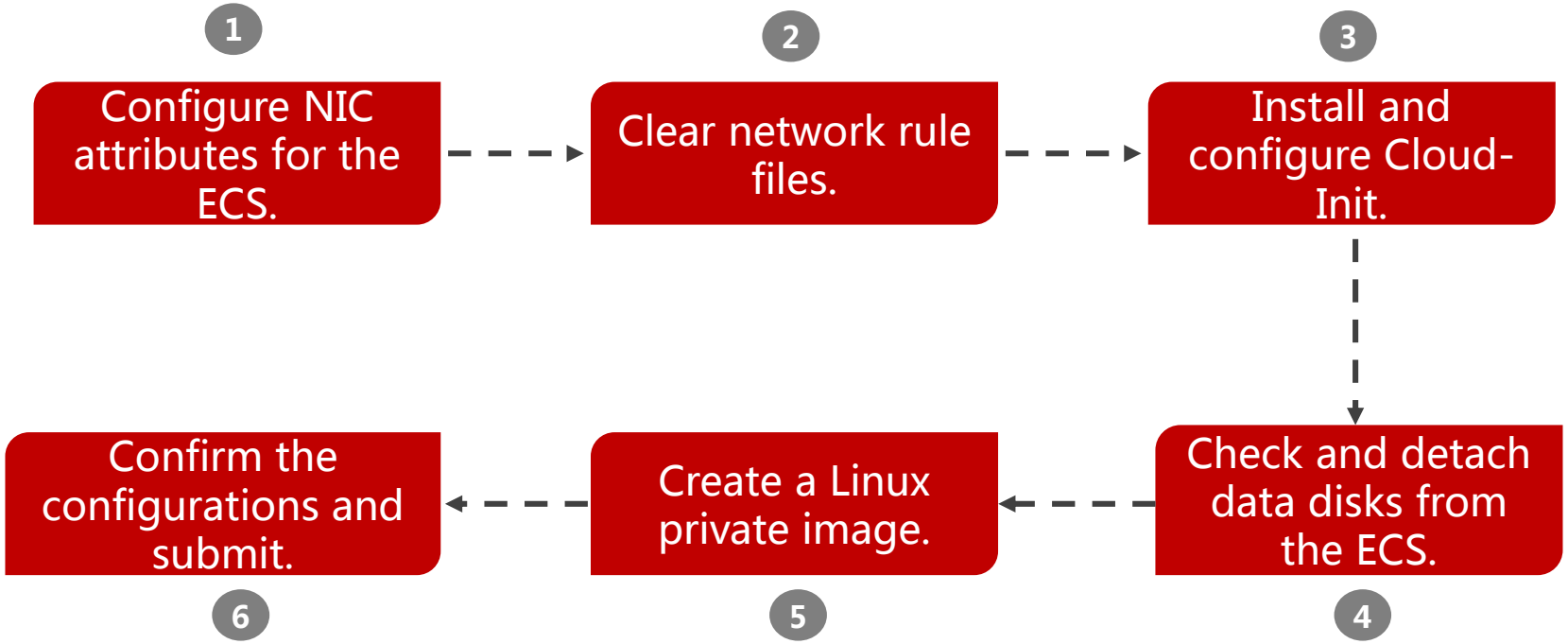


Creating a System Disk Image

- You can create a Windows system disk image from an ECS that runs a Windows OS.



Creating a System Disk Image from a Linux ECS



Configuring NIC Attributes for the ECS

- **If the ECS uses a static IP address, configure DHCP for the ECS, allowing it to dynamically obtain an IP address.**

Deleting Network Rule Files

- Before creating an image, delete network rule files on the ECS to ensure that the image will not contain them.
- Do not restart the ECS after network rule files are deleted. Otherwise, these network rules will be regenerated and included in the image.

Installing Cloud-Init

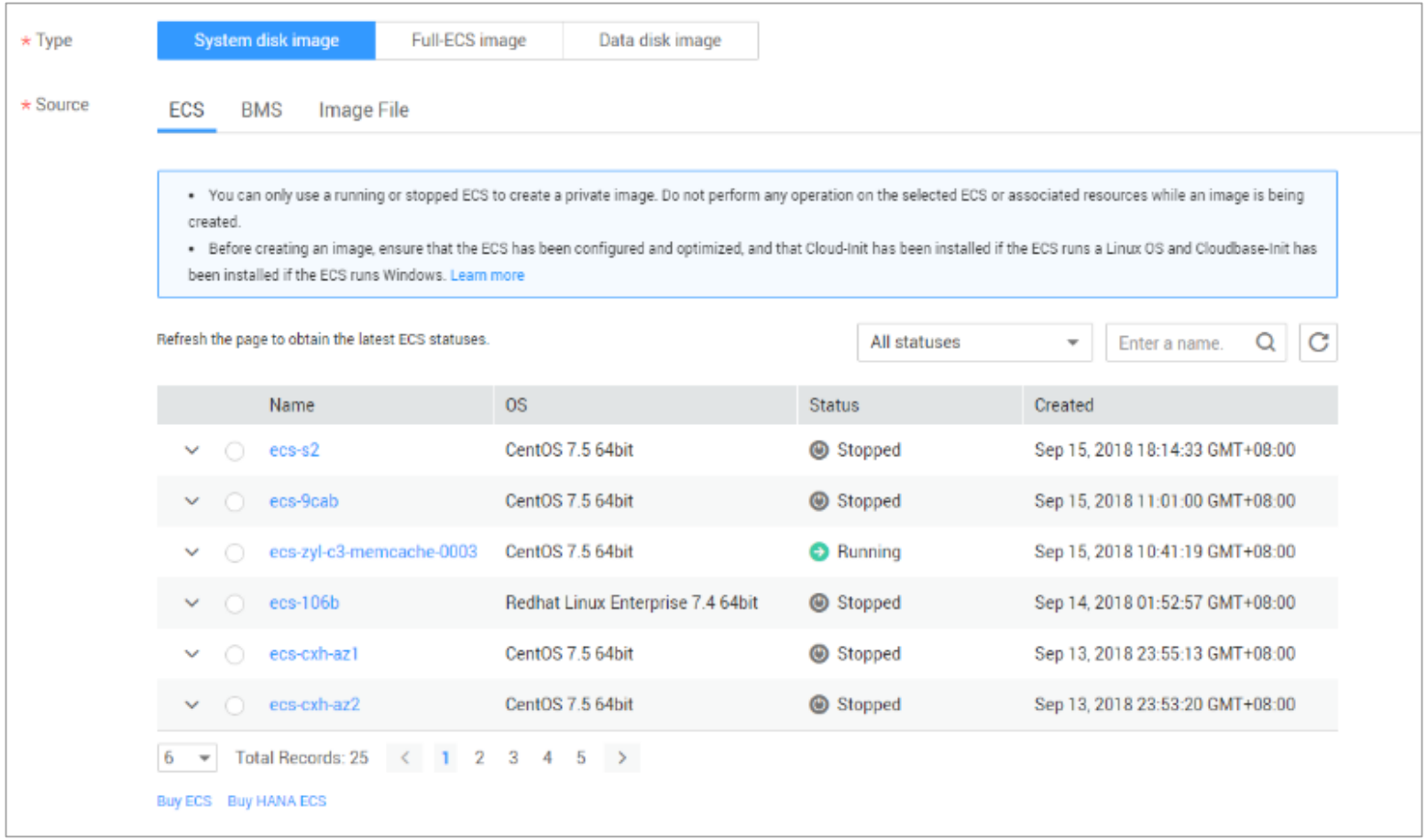
- Install Cloud-Init on the ECS before using it to create an image so that new ECSs created from the image support customization. Without Cloud-Init, ECSs are accessible only with the image password. You can perform the following steps to install Cloud-Init:
  - Check whether Cloud-Init has been installed.
  - Install Cloud-Init.
  - Configure user permissions on the ECS based on the user role.
  - Check whether Cloud-Init is successfully configured.

Detaching Data Disks from the ECS

- If the ECS used to create the image has multiple data disks, new ECSs created using the image may be unusable. To prevent this, detach all data disks from the ECS before image creation.

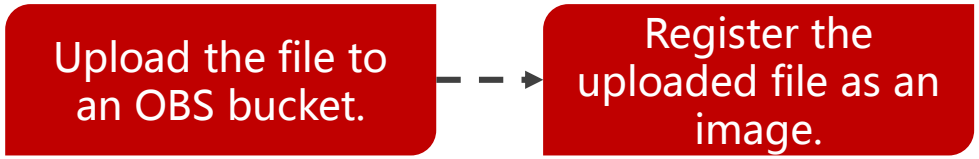
Creating the System Disk Image

- You can create a Linux system disk image from an ECS that runs a Linux OS.



Creating a Windows System Disk Image from an External Image File

- If the image file has been initialized:



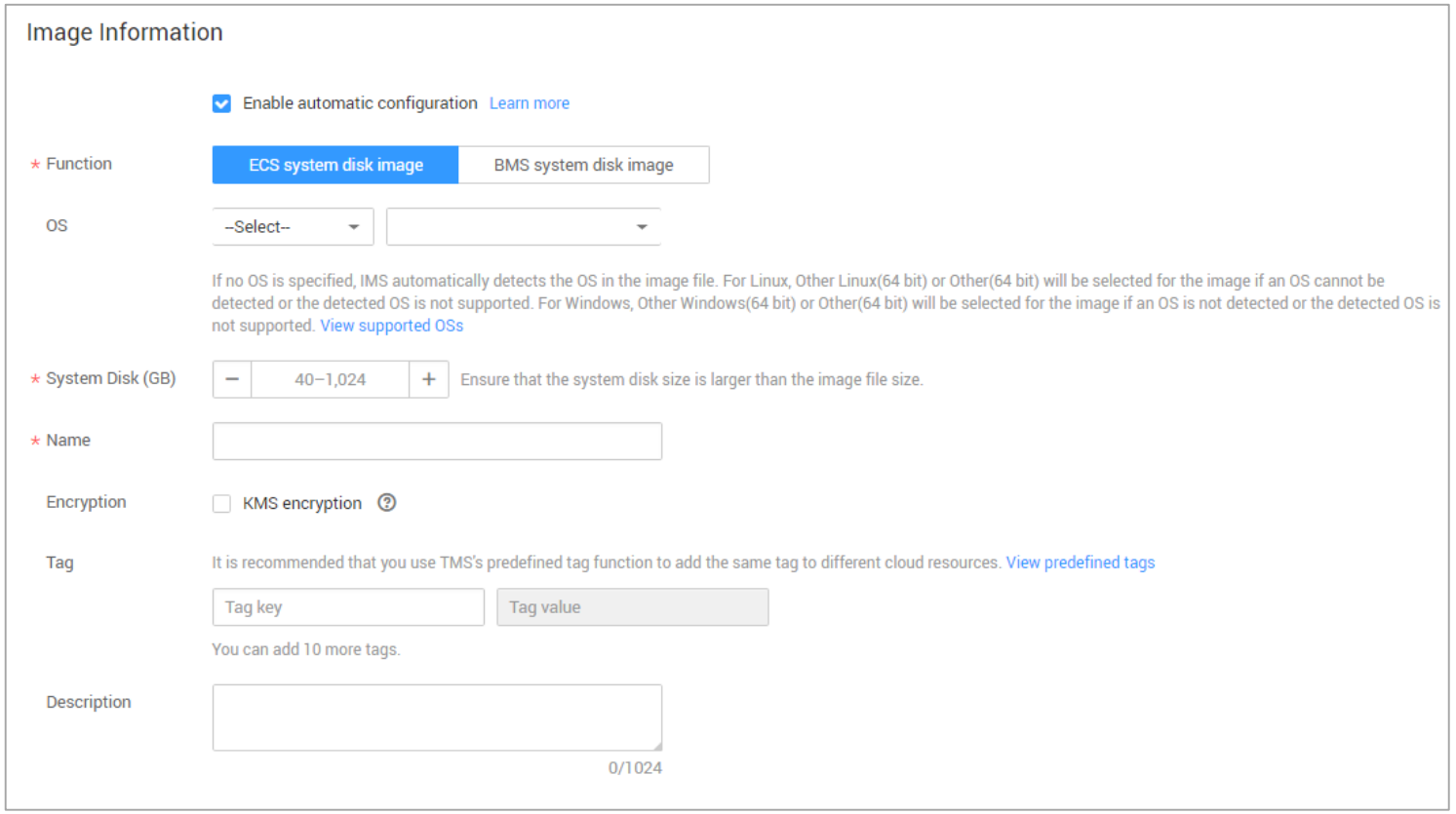
- If the image file has not been initialized:

Uploading the Image File

- Use OBS browser to upload the external image file to an OBS bucket.
- The external image file is either unencrypted or encrypted using SSE-KMS.
- The storage type of the OBS bucket must be Standard.

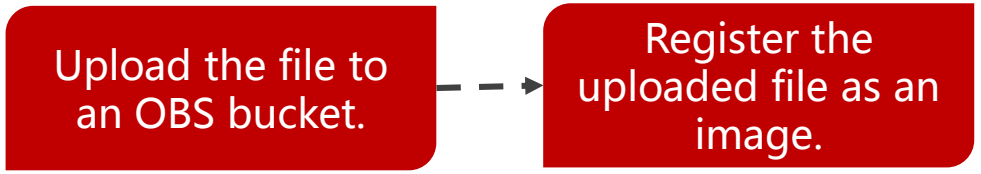
Registering an Image File as a Private Image

- Register an uninitialized image file as an uninitialized private image.
- Register an initialized image file as a normal private image.

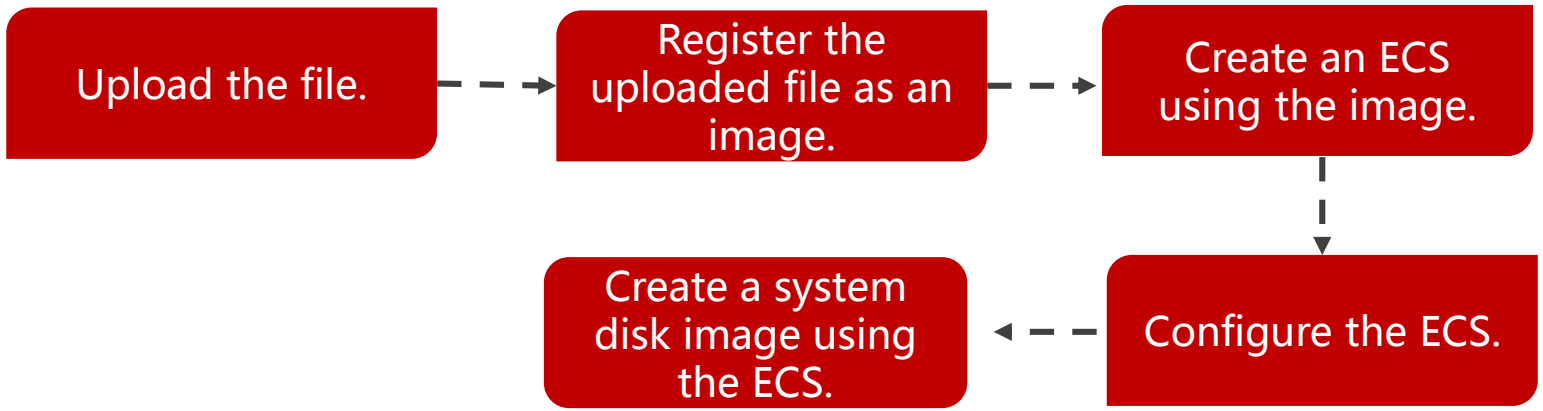


Creating a Linux System Disk Image from an External Image File

- If the image file has been initialized:

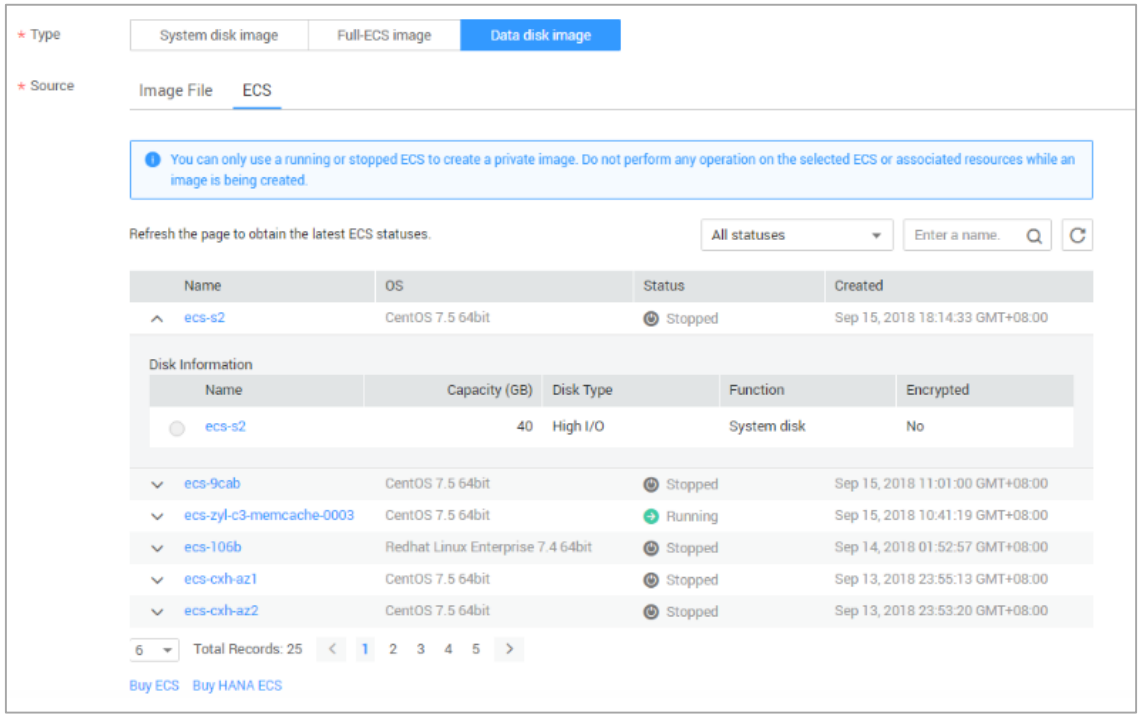


- If the image file has not been initialized:



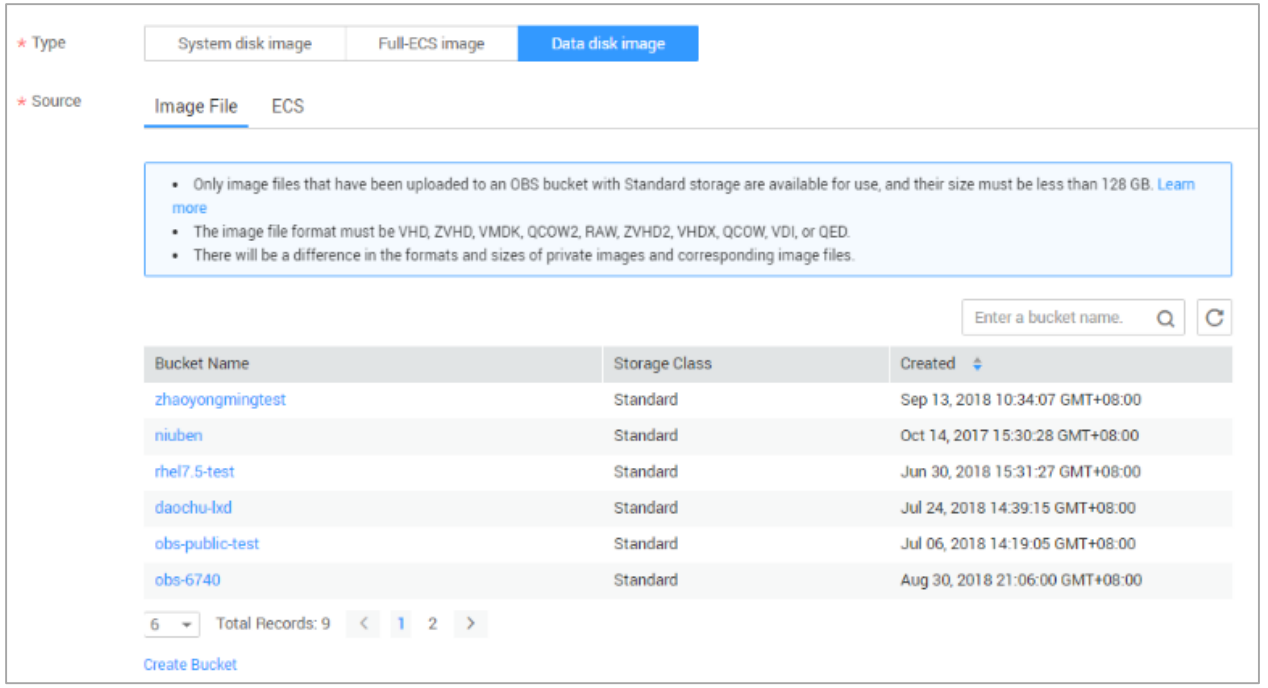
Creating a Data Disk Image from a Data Disk

- Before creating a data disk image from a data disk, ensure that the ECS has a system disk and the data disk is not empty.
- A data disk image can be used by only one data disk.



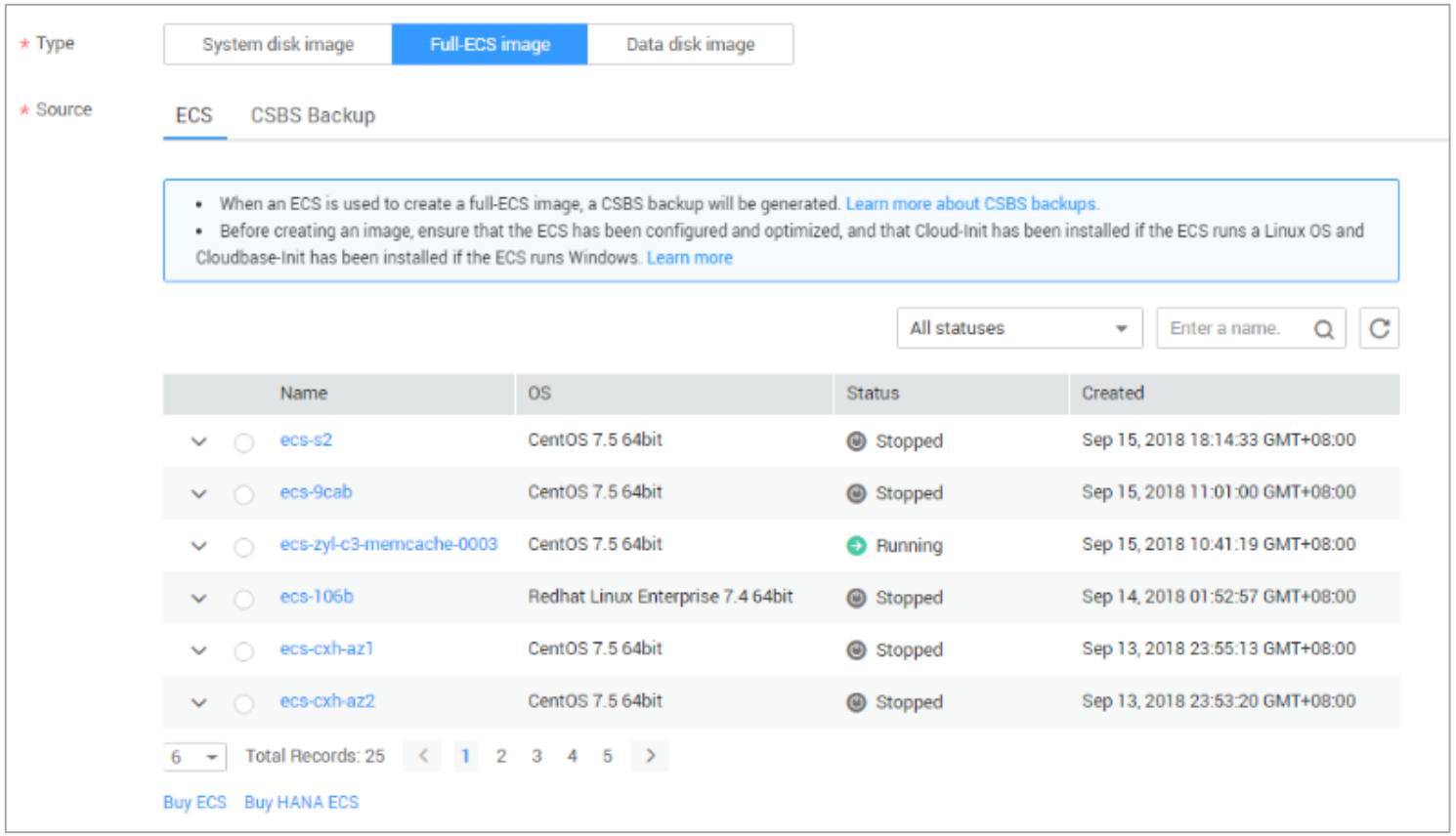
Creating a Data Disk Image from an External Image File

- The image file OS type must be Windows or Linux.
- The disk capacity ranges from 40 GB to 2048 GB.
- The image file must be uploaded to an OBS bucket, and the storage class of the OBS bucket must be Standard.
- A data disk image can be used by only one data disk.



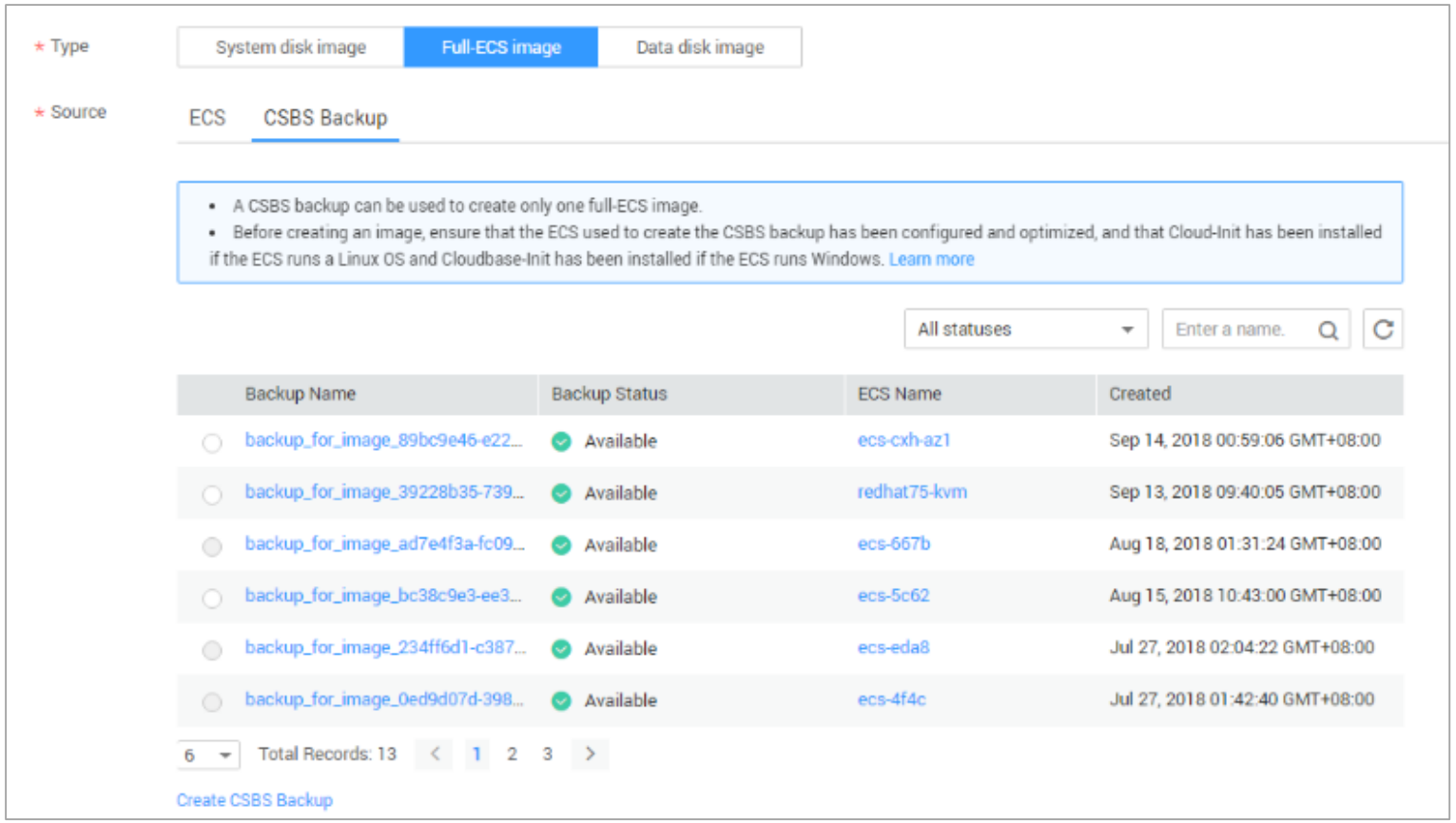
Creating a Full-ECS Image from an ECS

- You can use an ECS with data disks to create a full-ECS image containing both an OS and your service data, and this image can be used to quickly create ECSs



Creating a Full-ECS Image from a CSBS Backup

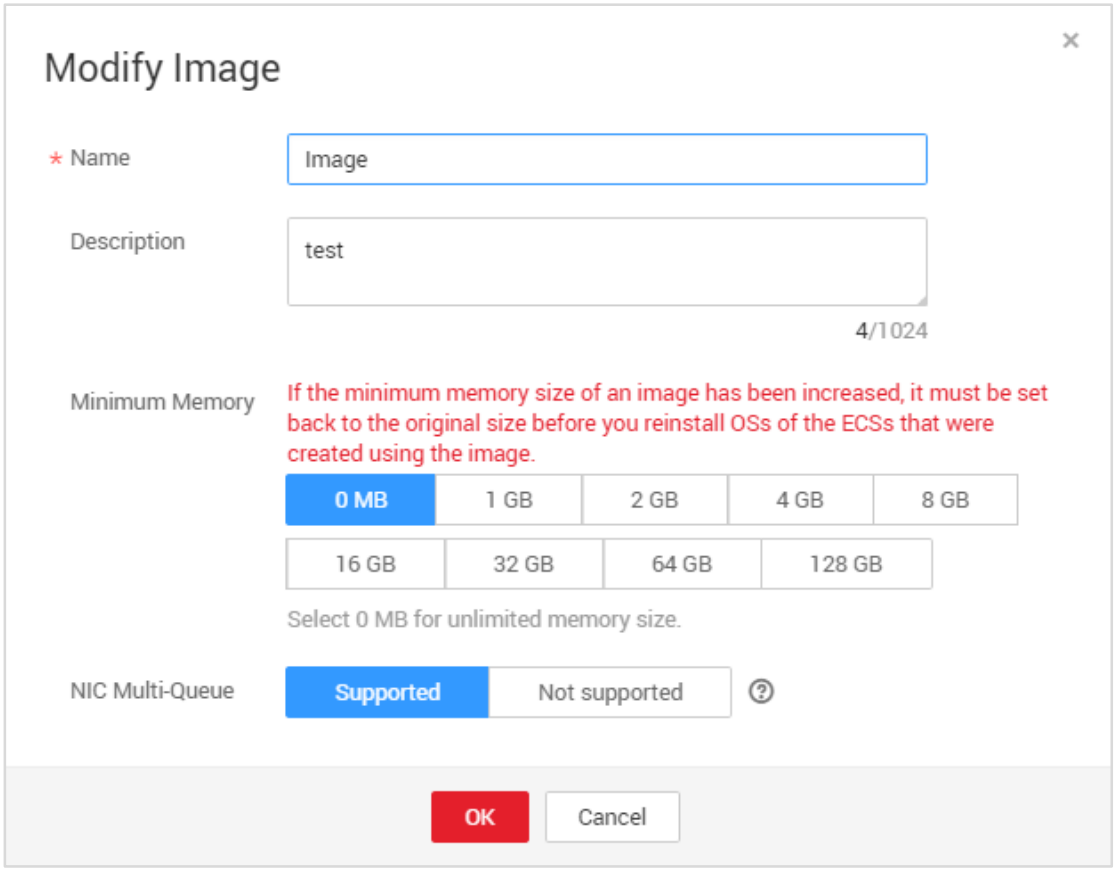
- If you have backed up an ECS, you can use the backup to create a full-ECS image and use the image to create identical ECSs.



Contents

Modifying Images

- Only private images in Normal state can be modified. You can modify the image name, description, minimum memory, maximum memory, and NIC multi-queue.

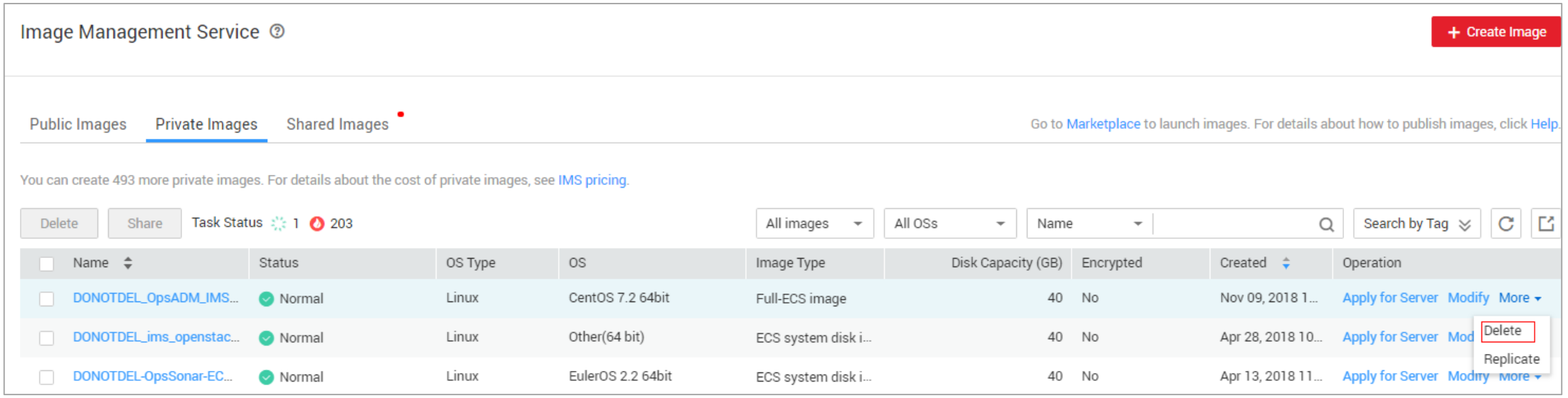


Creating ECSs from an Image

- You can use a public or private image to create an ECS.
- The only difference is that an ECS created from a public image contains an OS and pre-installed applications, and you need to install personal applications as needed. An ECS created from a private image contains an OS, pre-installed applications, and some personal applications.

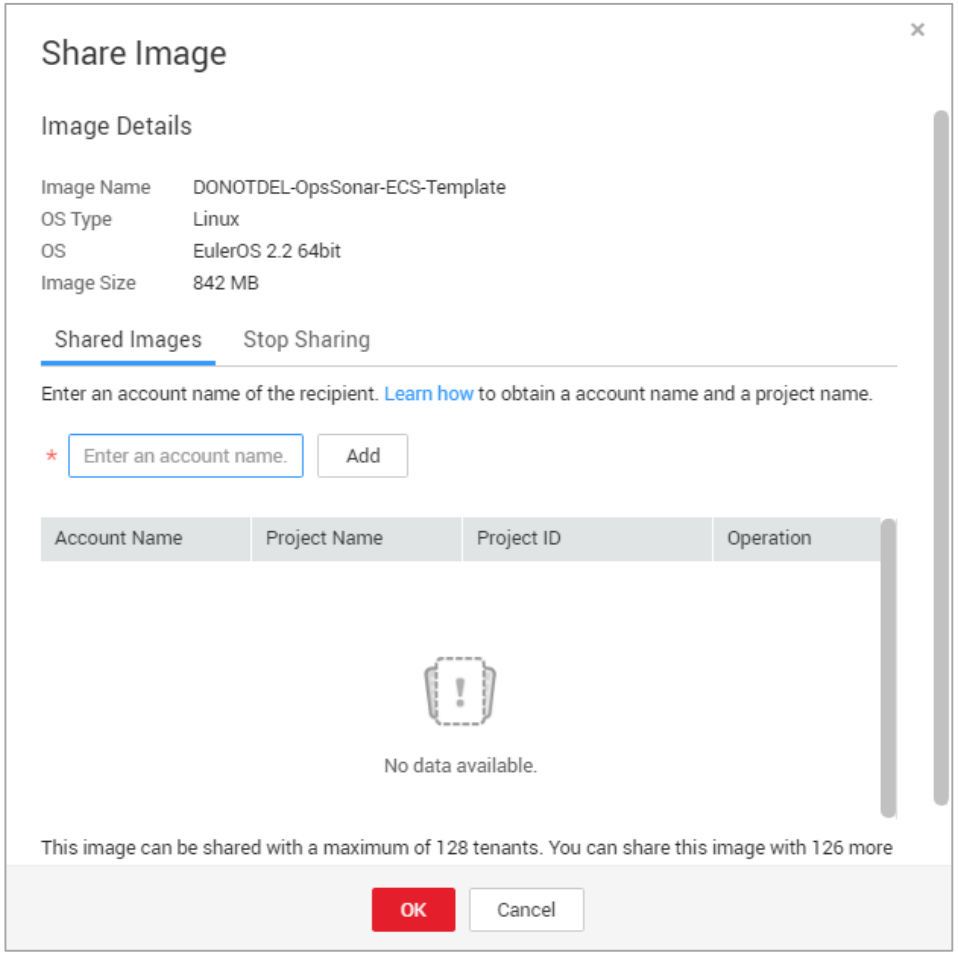
Creating ECSs from an Image

- You can delete unneeded images.



Creating ECSs from an Image

- IMS allows you to share your private images.

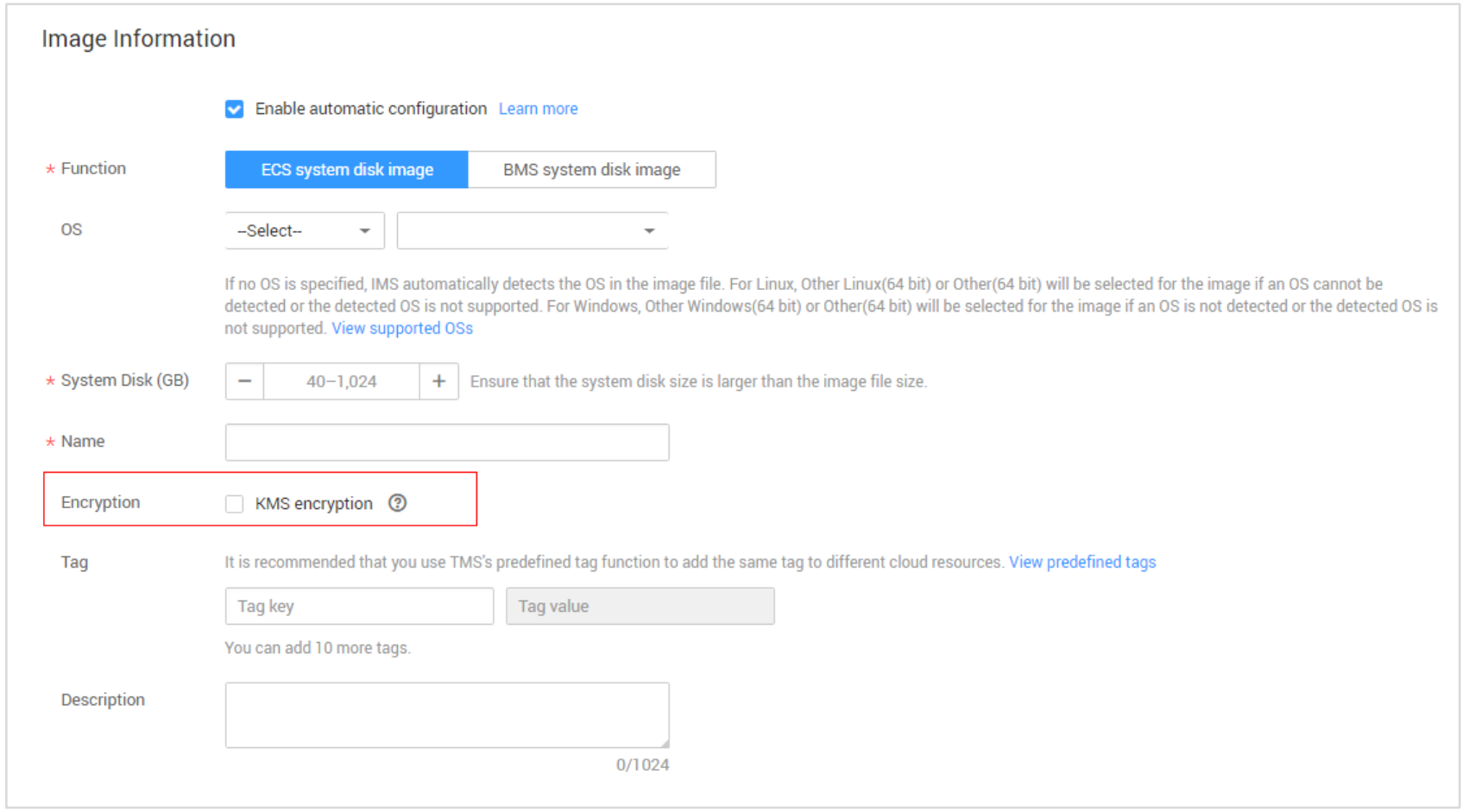


Exporting Images

- IMS allows you to export your private images to a specified storage device or other cloud platform.
- Currently, you can export only private images that are in Normal state and download them from the OBS bucket. When exporting an image, you can specify its format.
- The size of exported images varies by format, and you will be charged for image storage space used.

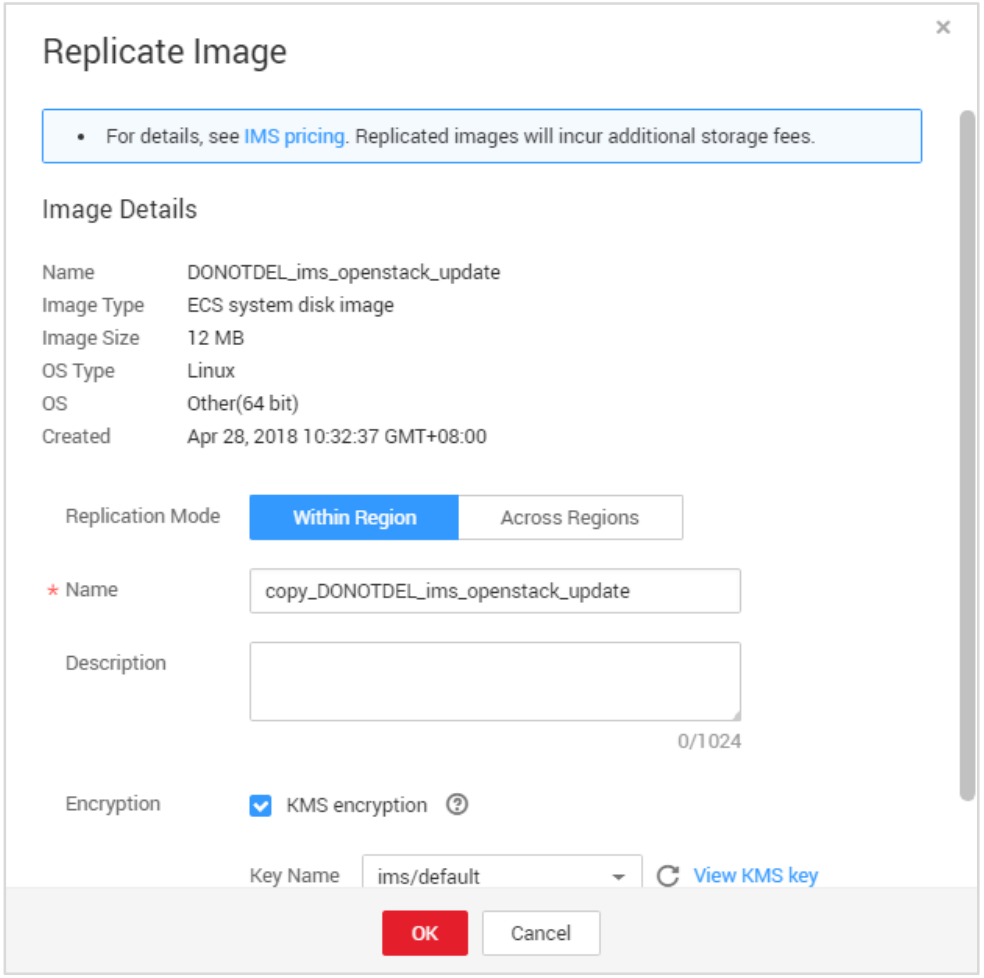
Encrypting Images

- You can create an encrypted private image to ensure image data security.



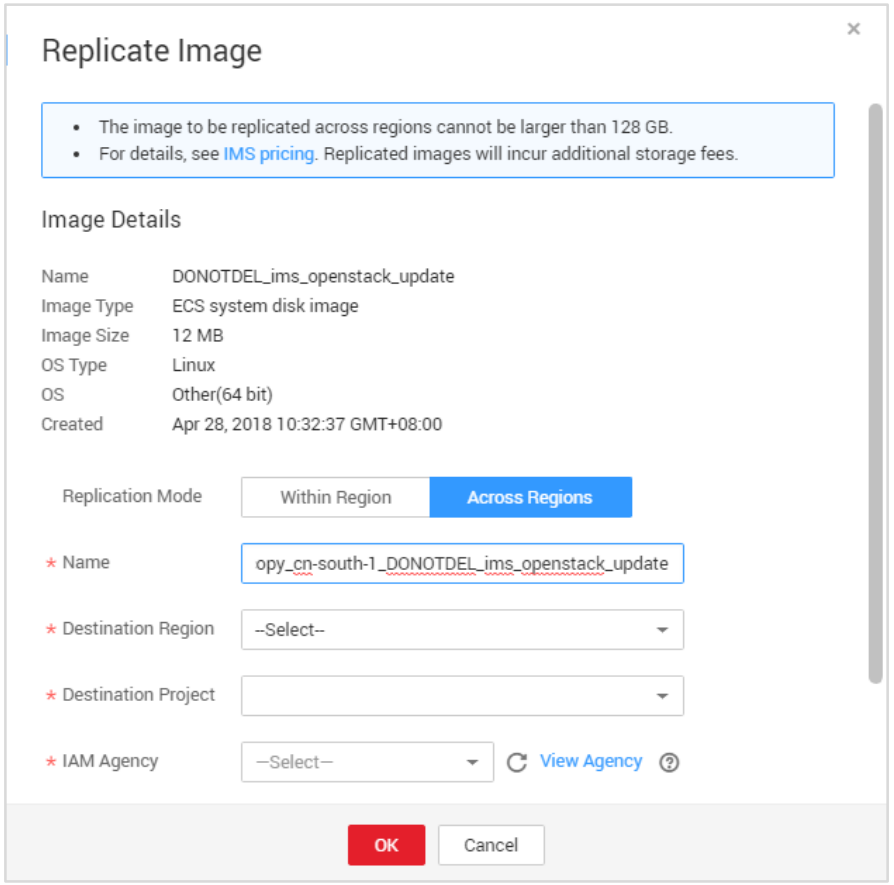
Replicating Images Within a Region

- This function helps convert an encrypted image to an unencrypted image, or the reverse.



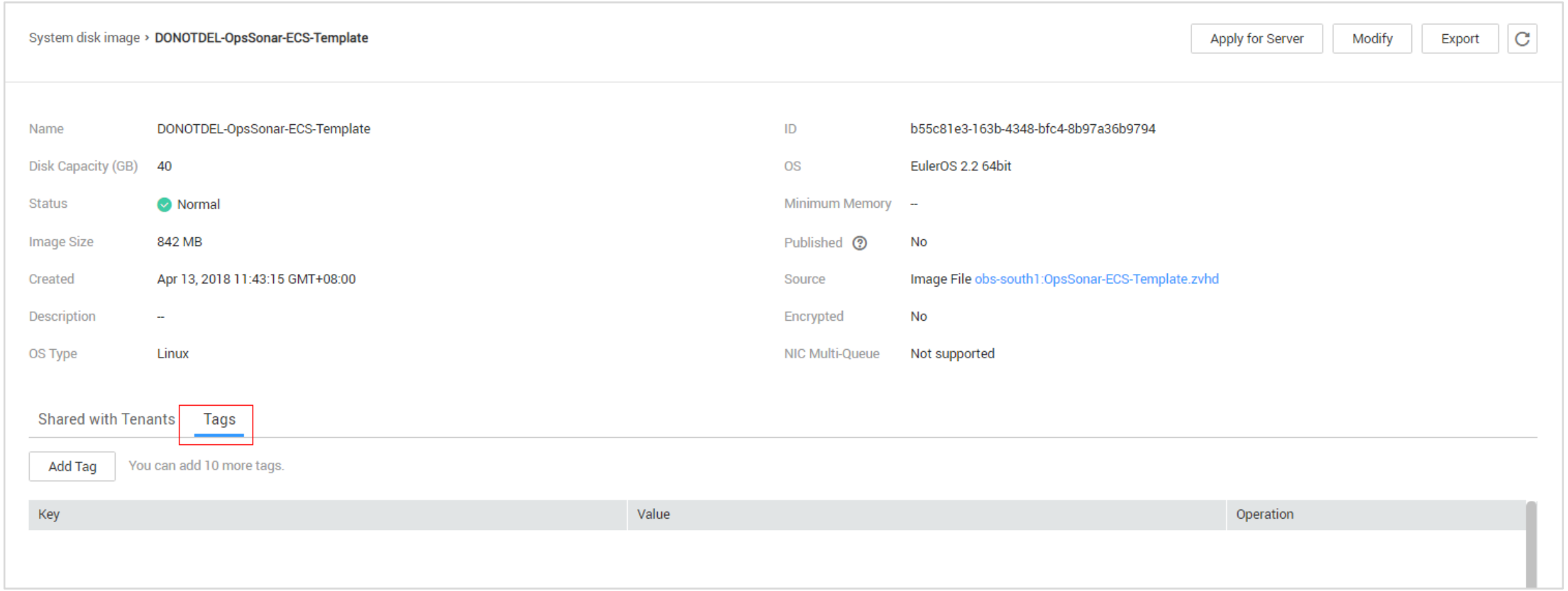
Replicating Images Across Regions

- If you have created a private image in a region, you can replicate it to other regions. This enables you to duplicate ECSs and migrate services across regions.



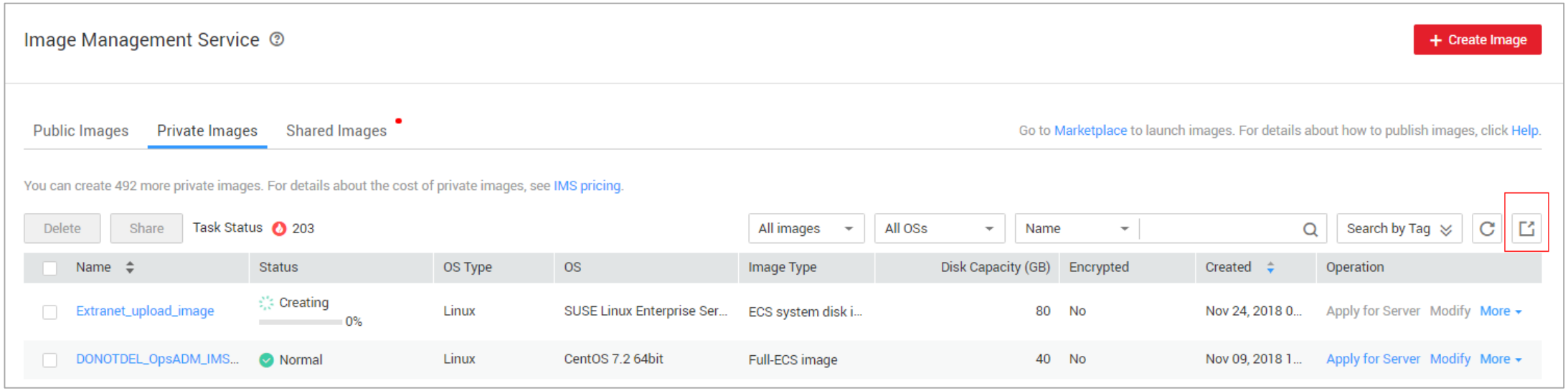
Tagging Images

- You can assign tags to private images to simplify management.



Exporting Image Information

- Information about all public and private images, such as image name, type, OS, creation time, and disk capacity, can be exported as a CSV file.



Contents

FAQs

- **How many private images can be created under an account?**
- Currently, you can create up to 50 private images under an account within a region. If you require more, submit a service ticket to request a quota increase.
- **How can I change an unencrypted image to an encrypted one?**
- You can replicate the unencrypted image and specify a key for encrypting the replicated image.
- **Must ECSs be stopped before using them to create a private image?**
- Not necessarily. IMS now allows you to create private images from running ECSs.

Contents

Related Services

- **Elastic Cloud Server (ECS):** An ECS can be made into an image or created from an image.
- **Bare Metal Server (BMS):** A BMS can be made into an image or created from an image.
- **Object Storage Service (OBS):** Images are stored in OBS buckets.
- **Data Encryption Workshop (DEW):** provides keys for encrypting private images.
- **Elastic Volume Service (EVS):** Data disks created from data disk images can be attached to ECSs.
- **Cloud Server Backup Service (CSBS):** A CSBS backup can be used to create full-ECS images, which can be used to create ECSs.
- **Cloud Trace Service (CTS):** records IMS operations for query, auditing, and backtracking.

Quiz

1. What image types does IMS support?

   A. Public image

   B. Private image

   C. Encrypted image

   D. Shared image

Quiz

1. What image types does IMS support?

   A. Public image

   B. Private image

   C. Encrypted image

   D. Shared image

Summary

- This course:
- Described what IMS is.
- Introduced basic concepts and functions of IMS.
- Discussed image creation and management.

Recommendations

- Huawei Learning
  - http://support.huawei.com/learning/Index!toTrainIndex
- HUAWEI CLOUD Help Center
  - https://support-intl.huaweicloud.com/ims/index.html


Thank You
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