



# Installing the Server Operating System or Hypervisor

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This chapter includes the following sections:

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## Operating System or Hypervisor Installation Methods

E-Series Servers and NCE support several operating systems and hypervisors. Regardless of the platform being installed, you can install it on your server using one of the following methods:

- KVM console
- PXE installation server
- Host image mapping



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**Caution**

You must use only one method to map virtual drives. For example, you must use either the KVM console or the Host Image Mapping method. Using a combination of methods will cause the server to be in an undefined state.

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## KVM Console

The KVM console is an interface accessible from the CIMC that emulates a direct keyboard, video, and mouse connection to the server. The KVM console allows you to connect to the server from a remote location. Instead of using CD/DVD or floppy drives physically connected to the server, the KVM console uses virtual media, which are actual disk drives or disk image files that are mapped to virtual CD/DVD or floppy drives. You can map any of the following to a virtual drive:

- CD/DVD or floppy drive on your computer
- Disk image files (ISO or IMG files) on your computer
- USB flash drive on your computer

You can use the KVM console to install an operating system or hypervisor on the server and to do the following:

- Access the BIOS setup menu by pressing **F2** during bootup.
- Access the CIMC Configuration Utility by pressing **F8** during bootup.




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**Note** The CIMC Configuration Utility is not applicable to the EHWIC E-Series NCE and the NIM E-Series NCE.

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- Access the WebBIOS to configure RAID, by pressing **Ctrl-H** during bootup.

### Java Requirements to Launch the KVM Console

To launch the KVM console, you must have Java release 1.6 or later installed in your system.

If the KVM console fails to launch because the certificate is revoked by Java, you must change your Java settings. Do the following:

- 1 Access the Java control panel.
- 2 Click the **Advanced** tab
- 3 Under **Perform certificate revocation on**, choose the **Do not check (not recommended)** radio button. For more information, see [http://www.java.com/en/download/help/revocation\\_options.xml](http://www.java.com/en/download/help/revocation_options.xml).

## Installing an Operating System or Hypervisor Using the KVM Console

### Before You Begin

Locate the operating system or hypervisor installation disk or disk image file.




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**Note** The VMware vSphere Hypervisor requires a customized image. To download the customized image, see [Downloading the Customized VMware vSphere Hypervisor Image](#), on page 10.

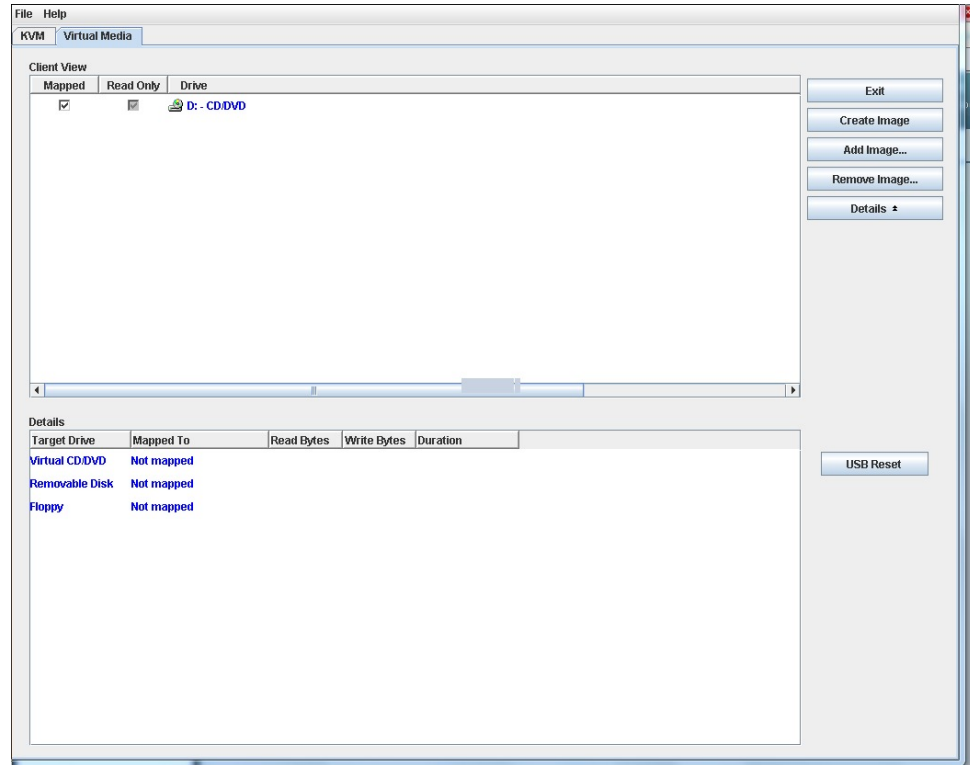
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### Procedure

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- Step 1** Load the operating system or hypervisor installation disk into your CD/DVD drive, or copy the disk image files to your computer.
  - Step 2** If CIMC is not open, log into the CIMC GUI.
  - Step 3** In the **Navigation** pane, click the **Server** tab.
  - Step 4** On the **Server** tab, click **Summary**.
  - Step 5** From the **Actions** area, click **Launch KVM Console**.

The **KVM Console** opens in a separate window.

**Step 6** From the KVM console, click the **Virtual Media** tab.



**Step 7** In the **Virtual Media** tab, map the virtual media using either of the following methods:

- Check the **Mapped** check box for the CD/DVD drive containing the operating system or hypervisor installation disk.
- Click **Add Image**, navigate to and select the operating system or hypervisor installation disk image, click **Open** to mount the disk image, and then check the **Mapped** check box for the mounted disk image.

**Note** You must keep the **Virtual Media** tab open during the installation process. Closing the tab unmaps all virtual media.

**Step 8** Set the boot order to make the virtual CD/DVD drive as the boot device.  
To set the boot order, see [Configuring the Server Boot Order](#).

**Step 9** Reboot the server.

When the server reboots, it begins the installation process from the virtual CD/DVD drive. Refer to the installation guide for the platform being installed to guide you through the rest of the installation process.

**Step 10** If disk drives are not displayed after you install the operating system or hypervisor, you must install drivers. See the appropriate operating system or hypervisor documentation for instructions on how to install drivers. For instructions on how to install drivers on a Microsoft Windows operating system, see [Installing Drivers for the Microsoft Windows Server](#), on page 8.

**What to Do Next**

After the installation is complete, reset the virtual media boot order to its original setting.

## PXE Installation Servers

A Preboot Execution Environment (PXE) installation server allows a client to boot and install an operating system or hypervisor from a remote location. To use this method, a PXE environment must be configured and available on your VLAN, typically a dedicated provisioning VLAN. In addition, the server must be set to boot from the network. When the server boots, it sends a PXE request across the network. The PXE installation server acknowledges the request, and starts a sequence of events that installs the operating system or hypervisor on the server.

PXE servers can use installation disks, disk images, or scripts to install the operating system or hypervisor. Proprietary disk images can also be used to install the platform, additional components, or applications.

**Note**

PXE installation is an efficient method for installing a platform on a large number of servers. However, considering that this method requires setting up a PXE environment, it might be easier to use another installation method.

## Installing an Operating System or Hypervisor Using a PXE Installation Server

**Before You Begin**

Verify that the server can be reached over a VLAN.

**Note**

The VMware vSphere Hypervisor requires a customized image. To download the customized image, see [Downloading the Customized VMware vSphere Hypervisor Image](#), on page 10.

**Procedure**

**Step 1** Set the boot order to **PXE**.

**Step 2** Reboot the server.

**Caution** If you are using the shared LOM interfaces to access CIMC, make sure that you do not use the CIMC GUI during the server reboot process. If you use the CIMC GUI, the GUI will disconnect during PXE installation as the boot agent overrides the IP address that was previously configured on the Ethernet ports.

If a PXE install server is available on the VLAN, the installation process begins when the server reboots. PXE installations are typically automated and require no additional user input. Refer to the installation guide for the operating system or hypervisor being installed to guide you through the rest of the installation process.

### What to Do Next

After the installation is complete, reset the LAN boot order to its original setting.

## Host Image Mapping

The Host Image Mapping feature allows you to download, map, unmap, or delete a host image. Download a host image, such as Microsoft Windows, Linux, or VMware from a remote FTP or HTTP server onto the CIMC internal repository, and then map the image onto the virtual drive of a USB controller in the E-Series Server or NCE. After you map the image, set the boot order to make the virtual drive, in which the image is mounted, as the first boot device, and then reboot the server. The host image must have .iso or .img as the file extension.

The Host Image Mapping feature also allows you to download and mount a diagnostics image. The diagnostics image must have .diag as the file extension.

## Mapping the Host Image

### Before You Begin

- Log in to CIMC as a user with admin privileges.
- Obtain the host image file from the appropriate third party.



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**Note**

The VMware vSphere Hypervisor requires a customized image. To download the customized image, see [Downloading the Customized VMware vSphere Hypervisor Image](#), on page 10.

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**Note**

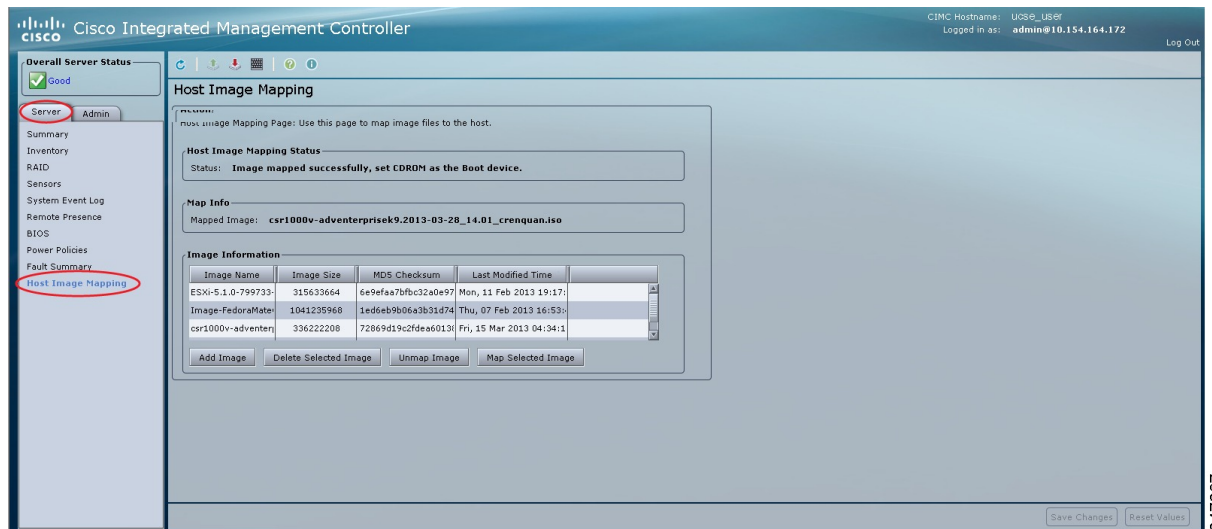
If you start an image update while an update is already in process, both updates will fail.

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## Procedure

- Step 1** In the **Navigation** pane, click the **Server** tab.
- Step 2** On the **Server** tab, click **Host Image Mapping**.

**Figure 1: Host Image Mapping**



- Step 3** From the **Host Image Mapping** page, click **Add Image**. The **Download Image** dialog box opens. Complete the following fields:

Name	Description
<b>Download Image From</b> drop-down list	The type of remote server on which the image is located. This can be one of the following: <ul style="list-style-type: none"> <li>• <b>FTP</b></li> <li>• <b>HTTP</b></li> </ul> <p><b>Note</b> Depending on the remote server that you select, the fields that display change.</p>
<b>FTP or HTTP Server IP Address</b> field	The IP address of the remote FTP or HTTP server.
<b>FTP or HTTP File Path</b> field	The path and filename of the remote FTP or HTTP server. The path and filename can contain up to 80 characters. <ul style="list-style-type: none"> <li>• If you are installing a host image, that image must have .iso or .img as the file extension.</li> <li>• If you are installing a diagnostics image, that image must have .diag as the file extension.</li> </ul>

Name	Description
Username field	<p>The username of the remote server.</p> <p>The username can contain 1 to 20 characters.</p> <p><b>Note</b> If the username is not configured, enter <b>anonymous</b> for the username and any character(s) for the password.</p>
Password field	<p>The password for the username.</p> <p>The password can contain 1 to 20 characters.</p> <p><b>Note</b> If the username is not configured, enter <b>anonymous</b> for the username and any character(s) for the password.</p>

**Step 4** Click **Download**.

The **Host Image Mapping** page opens. You can view the status of the image download in the **Host Image Mapping Status** area. After the image is downloaded and processed successfully, refresh the page. After the page refreshes, the new image displays in the **Image Information** area.

**Step 5** From the **Image Information** area, select the image to map, and then click **Map Selected Image**.

The image is mapped and mounted on the virtual drive of a USB controller. The virtual drive can be one of the following:

- HDD—Hard disk drive
- FDD—Floppy disk drive
- CD/DVD—Bootable CD-ROM or DVD drive

**Step 6** Set the boot order to make the virtual drive in which the image is mounted as the first boot device.

To set the boot order, see [Configuring the Server Boot Order](#).

**Tip** To determine in which virtual drive the image is mounted, see the **Host Image Update Status** area in the **Host Image Mapping** page.

**Step 7** Reboot the server.**Step 8** If the image contains an answer file, the operating system or hypervisor installation is automated and the image is installed. Otherwise, the installation wizard is displayed. Follow the wizard steps to install the image.**Step 9** If disk drives are not displayed after you install the operating system or hypervisor, you must install drivers. See the appropriate operating system or hypervisor documentation for instructions on how to install drivers. For instructions on how to install drivers on a Microsoft Windows operating system, see [Installing Drivers for the Microsoft Windows Server](#), on page 8.**What to Do Next**

- After the installation is complete, reset the virtual media boot order to its original setting.
- Unmap the host image. See [Unmapping the Host Image](#), on page 8.

## Installing Drivers for the Microsoft Windows Server



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**Note** If you purchased an E-Series Server or NCE Option 1 (E-Series Server or NCE without a preinstalled operating system or hypervisor), and you installed your own version of the Microsoft Windows Server, you must install drivers.

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The Microsoft Windows operating system requires that you install three drivers:

- On-Board Network Drivers for Windows 2008 R2
- LSI Drivers (On-Board Hardware RAID Controller) for Windows 2008 R2
- Intel Drivers for Windows 2008 R2



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**Note** Additional drivers are not needed for Windows 2012.

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If you have purchased a 10-Gigabit add-on card, you must also install the 10G PCIe Network Drivers for Windows 2008 R2.

### Procedure

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- Step 1** Download the drivers from Cisco.com. See [Obtaining Software from Cisco Systems](#).
- Step 2** Copy the driver files into a USB flash drive.
- Step 3** Install your own version of Microsoft Windows Server.  
During the installation process, you will be prompted for the LSI Drivers.
- Step 4** Plug the USB flash drive into the USB slot in the E-Series Server and then install the LSI Drivers.  
This step is applicable to E-Series Servers and the SM E-Series NCE. This step is not applicable to the EHWIC E-Series NCE and the NIM E-Series NCE.
- Step 5** After the Microsoft Windows Server installation is complete, install the On-Board Network Drivers (Broadcom) and the Intel Drivers.
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## Unmapping the Host Image

### Before You Begin

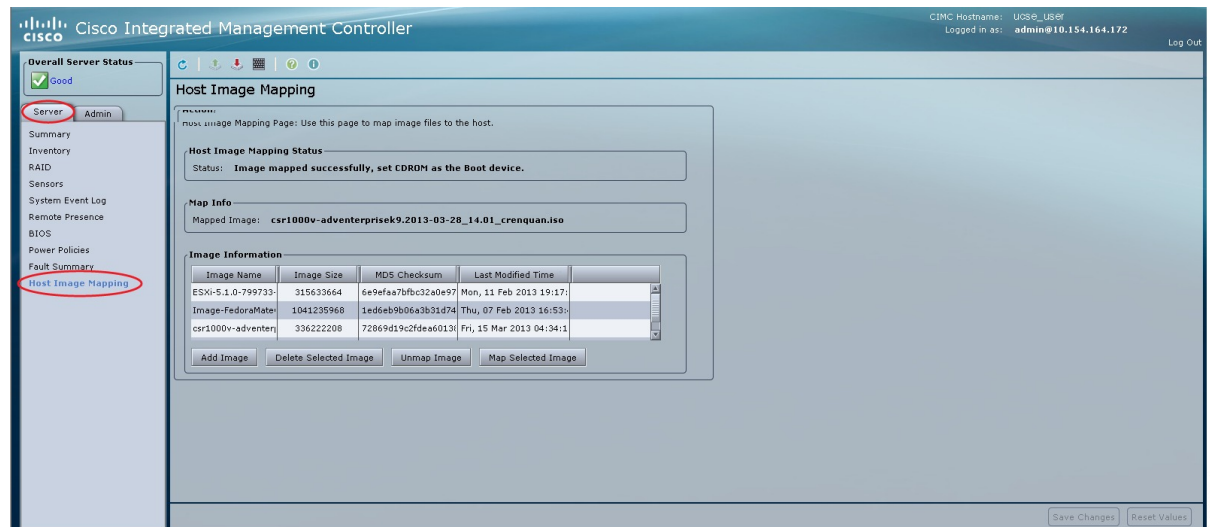
Log in to CIMC as a user with admin privileges.



## Procedure

- Step 1** In the **Navigation** pane, click the **Server** tab.
- Step 2** On the **Server** tab, click **Host Image Mapping**.

**Figure 2: Host Image Mapping**



- Step 3** Click **Unmap Image**.  
The mapped image is unmounted from the virtual drive of the USB controller.

## Deleting the Host Image

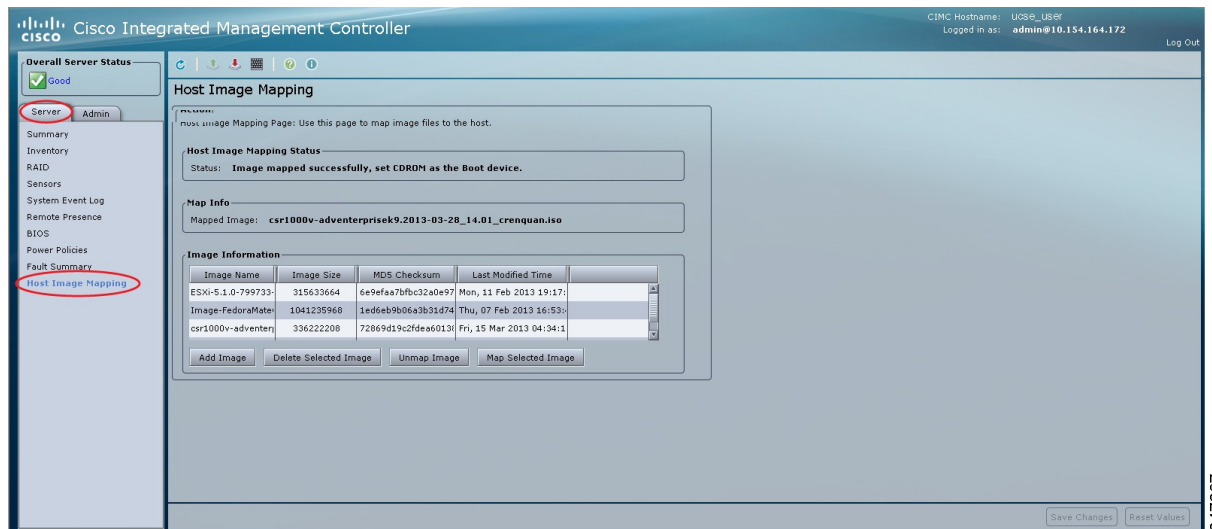
### Before You Begin

Log in to CIMC as a user with admin privileges.

## Procedure

- Step 1** In the **Navigation** pane, click the **Server** tab.
- Step 2** On the **Server** tab, click **Host Image Mapping**.

**Figure 3: Host Image Mapping**



- Step 3** If the image that you want to delete is mapped, click **Unmap Image**.
- Step 4** From the **Image Information** area, select the image to delete.
- Step 5** Click **Delete Selected Image**.  
The image is removed from the SD card.

## Downloading the Customized VMware vSphere Hypervisor Image

### Procedure

- Step 1** Navigate to <https://my.vmware.com/web/vmware/login>.  
The VMware login page appears.
- Step 2** Enter your VMware credentials, and then click **Log In**.  
If you do not have an account with VMware, click **Register** to create a free account.
- Step 3** Click **Downloads**, and then select **All Products** from the drop-down list.
- Step 4** Do one of the following as appropriate:
- To download the VMware vSphere Hypervisor 5.1 image, enter **ESXi-5.1.0-799733-custom-Cisco-2.1.0.3.iso** in the **Search** field, and then click the **Search** icon. From

the **Search Results**, click **VMware vSphere > Drivers & Tools > Cisco Custom Image for ESXi 5.1.0 GA Install CD**, and then click **Download**.

- To download the VMware vSphere Hypervisor 5.5 image, enter **ESXi-5.5.0-1331820-custom-Cisco-5.5.0.1.iso**, in the **Search** field, and then click the **Search** icon. From the **Search Results**, click **VMware vSphere > Drivers & Tools > CISCO Custom Image for ESXi 5.5.0 GA Install CD**, and then click **Download**.

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### What to Do Next

Install the VMware vSphere Hypervisor image. For installation instructions, see [Mapping the Host Image](#), on page 5.

