Installing the Server Operating System or Hypervisor

This chapter includes the following sections:

Operating System or Hypervisor Installation Methods

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

- KVM console
- PXE installation server
- Host image mapping

KVM Console

The KVM console is an interface accessible from 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.
- Access the WebBIOS to configure RAID, by pressing the **Ctrl** and **H** keys during bootup.

Installing an Operating System or Hypervisor Using the KVM Console

Because the KVM console is operated only through the GUI, you cannot install an operating system or hypervisor using the CLI. To install a platform using the KVM console, follow the instructions in the "Installing an Operating System or Hypervisor Using the KVM Console" section of the *GUI Configuration Guide for Cisco UCS E-Series Servers*.

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 LAN, typically a dedicated provisioning LAN. 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 VMware vSphere Hypervisor™ requires a customized image. To download the customized image, see Downloading the Customized VMware vSphere Hypervisor Image .

Procedure

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

Step 2 Reboot the server.
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 a Microsoft Windows, Linux, or VMware from a remote FTP, FTPS, HTTP, or HTTPS server onto the CIMC internal repository, then map the image onto the virtual drive of a USB controller in the E-Series Server. 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 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 into CIMC as a user with admin privileges.

- Obtain the host image file from the appropriate third-party.

Note VMware vSphere Hypervisor™ requires a customized image. To download the customized image, see Downloading the Customized VMware vSphere Hypervisor Image .

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

Procedure

	Command or Action	Purpose
Step 1	Server# **scope remote-install**	Enters the remote install command mode.
Step 2	Server /remote-install # **download-image** {**ftp** | **ftps** | **http** | **https**} *server-ip-address path / filename* [**username** *username* **password** *password*]	Downloads the image from the specified remote server onto the CIMC internal repository. The host image must have .iso as the file extension. The remote server can be a FTP, FTPS, HTTP, or HTTPS server. If the remote server requires user authentication, you must add the username and password of the remote server. **Note** If the image file exceeds the size limit, an error message is displayed.
Step 3	(Optional) Server /remote-install # **show detail**	Displays the status of the image download.
Step 4	Server /remote-install # **map-image**	Mounts the image on a virtual drive of the USB controller. The virtual drive can be one of the following: • HDD—Hard disk drive • FDD—Floppy disk drive • CDROM—Bootable CD-ROM
Step 5	(Optional) Server /remote-install # **show detail**	Displays the status of the host image mapping.

This example maps the host image:

```
Server# scope remote-install
Server /remote-install # download-image ftp 10.20.34.56 pub/hostimage.iso
---
Server /remote-install # show detail
Host Image Info:
  Name: HostImage.iso
  Size: 6626848
  Last Modified Time: Fri, 12 Aug 2011 21:13:27 GMT
  Host Image Status: Download Successful!!
Server /remote-install # map-image
---
status: ok
---
Server /remote-install # show detail
Host Image Info:
  Name: HostImage.iso
  Size: 6626848
  Last Modified Time: Fri, 12 Aug 2011 21:13:27 GMT
  Host Image Status: Image mapped successfully!!
```

What to Do Next

Do the following:

1 Set the boot order to make the virtual drive in which the image is installed as the first boot device. See Configuring the Server Boot Order.

2 Reboot the server. If the image contains an answer file, the operating system installation is automated and the image is installed. Otherwise, the installation wizard displays. Follow the wizard steps to install the image.

3 If disk drives are not displayed after you install the operating system or hypervisor, you must install drivers. For instructions on how to install drivers on a Microsoft Windows Server, see Installing Drivers for the Microsoft Windows Server

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

Installing Drivers for the Microsoft Windows Server

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

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

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

Procedure

Step 1 Download the drivers from Cisco.com. See Obtaining Software from Cisco Systems.

Step 2 Copy the driver files into an 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.

Step 5 After the Microsoft Windows Server installation is complete, install the On-Board Network Drivers (Broadcom) and the Intel Drivers.

Unmapping the Host Image

Before You Begin

Log into CIMC as a user with admin privileges.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope remote-install**	Enters the remote install command mode.
Step 2	Server /remote-install # **unmap-image**	Unmounts the image from the virtual drive of the USB controller.
Step 3	(Optional) Server /remote-install # **show detail**	Displays the status of the host image unmapping.

This example unmaps the host image:

```
Server# scope remote-install
Server /remote-install # unmap-image
Server /remote-install # show detail
Host Image Info:
  Name: HostImage.iso
  Size: 6626848
  Last Modified Time: Fri, 12 Aug 2011 21:13:27 GMT
  Host Image Status: Image unmapped successfully!!
```

Deleting the Host Image

Before You Begin

Log into CIMC as a user with admin privileges.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope remote-install**	Enters the remote install mode.
Step 2	Server /remote-install # **delete-image**	Removes the image from the CIMC internal repository.

This example deletes the host image:

```
Server# scope remote-install
Server /remote-install # delete-image
```

Downloading the Customized VMware vSphere Hypervisor Image

Use this procedure to download the customized VMware vSpere 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   Under the **Support Requests** pane, click **Knowledge Base**.

Step 4   In the **Search** field located on the top right corner, enter **ESXi-5.0.0-623860-custom-Cisco-2.0.1.6.iso**, and then click **Search**.

Step 5   From the **Search Results**, click **Download VMware View 5.1** to download the customized VMware vSpere Hypervisor™ image.

What to Do Next

Install the VMware vSpere Hypervisor™ image. For installation instructions, see Mapping the Host Image.