Upgrading Firmware

This chapter includes the following sections:

Options for Upgrading Firmware

You can use either the Cisco Host Upgrade Utility (HUU) to upgrade the firmware components or you can upgrade the firmware components manually.

- **HUU**—We recommend that you use the HUU ISO file to upgrade all firmware components, which include the CIMC and BIOS firmware.

  Note You cannot use the HUU to upgrade the Programmable Logic Devices (PLD) firmware. You must use the Cisco IOS CLI to upgrade the PLD firmware. For details, see the "Upgrading Programmable Logic Devices Firmware on the E-Series EHWIC NCE" section in the *CLI Configuration Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine*.

- **Manual Upgrade**—To manually upgrade the CIMC and BIOS firmware, you must first obtain the firmware from Cisco Systems, and then use the CIMC GUI or the CIMC CLI to upgrade it. After you upgrade the firmware, reboot the system.

  For instructions on how to obtain firmware from Cisco Systems and for CIMC and BIOS firmware installation procedures, see the "Firmware Management" chapter in the configuration guides for the version of the CIMC that you are using. The configuration guides are available at: http://www.cisco.com/en/US/products/ps12629/products_installation_and_configuration_guides_list.html.

Cisco Host Upgrade Utility Overview

The Cisco Host Upgrade Utility (HUU) is a tool that you can use to upgrade the firmware on the Cisco UCS E-Series Servers (E-Series Servers) and the Cisco UCS E-Series Network Compute Engine (NCE). The HUU provides a web-based GUI where you can choose all or specific firmware components to upgrade.

The following firmware components are available for upgrade:

- Cisco Integrated Management Controller (CIMC)

- System BIOS

- LAN on motherboard (LOM)

- RAID controllers

- Broadcom PCI adapters:

    - 5709 Dual and Quad port adapters

    - 57712 Dual port adapter

- LSI

    - LSI MegaRAID SAS 9240-4i

Note Cisco UCS E Series servers do not support saving HUU logs to RAID_SD0_1.

You cannot use the HUU to upgrade the Programmable Logic Devices (PLD) firmware. You must use the Cisco IOS CLI to upgrade the PLD firmware. For details, see the "Upgrading Programmable Logic Devices Firmware on the E-Series EHWIC NCE" section in the *CLI Configuration Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine*.

Minimum CIMC and BIOS Firmware Releases Required to Use HUU

The HUU is supported on CIMC, release 2.1.0 and later releases. To use HUU, make sure that you upgrade both the CIMC and BIOS firmware to the release specified in the table below.

Note The HUU is *not* supported on CIMC, releases 1.0 and 1.0(2). If you try to use the HUU on a server that has an older release of CIMC, you will get an error message asking you to upgrade the firmware.

The following table provides information about the minimum CIMC and BIOS releases required to use the HUU.

Table 1: Minimum CIMC and BIOS Firmware Releases Required to Use HUU

Minimum Compatible CIMC Release	Minimum Compatible BIOS Release
2.1.0	1.5.0.2

CIMC and BIOS Firmware Releases Available With HUU ISO Images

The following table provided the CIMC and BIOS firmware releases that are available for upgrade when you install a specific HUU ISO image.

Note   For latest information about the compatible CIMC, BIOS, and HUU releases, see the "Upgrading Firmware" chapter in the *Getting Started Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine*.

Table 2: CIMC and BIOS Firmware Releases Available With HUU ISO Images

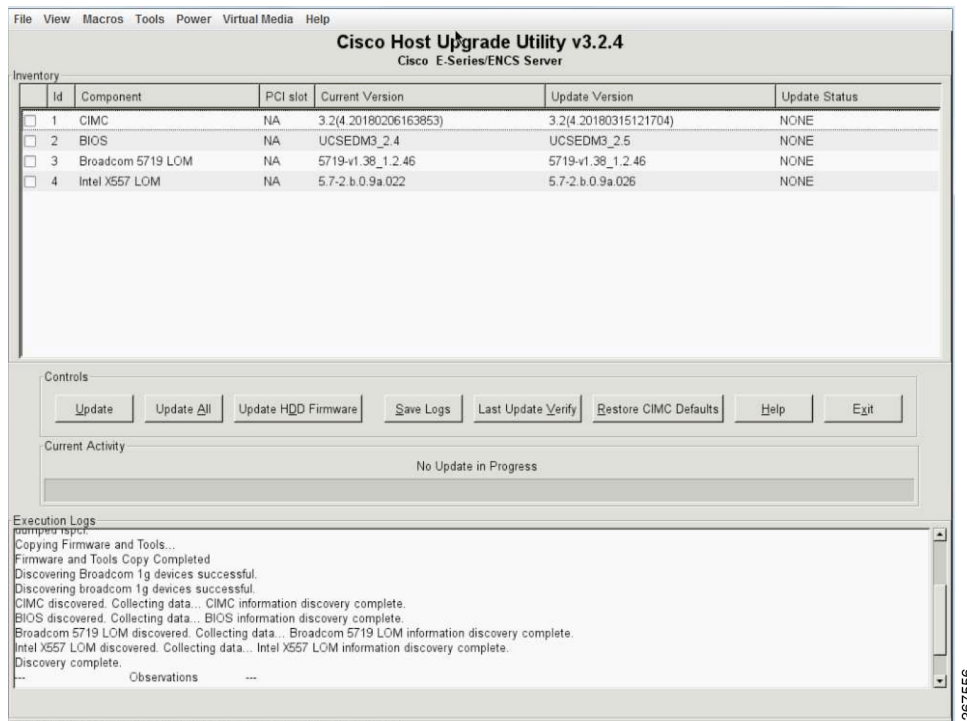| HUU ISO Image	Contains CIMC Release	Contains BIOS Release
3.1.1	3.1.1	UCSEN.1.5.0.3—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2) UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1, UCS-EN120S-M2 and UCS-E140S-M2) UCSED.2.5.0.3—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)
3.1.2	3.1.2	UCSEN.1.5.0.3—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2) UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1, UCS-EN120S-M2 and UCS-E140S-M2) UCSED.2.5.0.3—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)

HUU ISO Image	Contains CIMC Release	Contains BIOS Release
3.1.3	3.1.3	UCSEN.1.5.0.3—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2)
		UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1)
		UCSES.1.5.0.5—Applicable to the single-wide E-Series Server (UCS-EN120S-M2 and UCS-E140S-M2)
		UCSED.2.5.0.3—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)
3.1.4	3.1.4	UCSEN.1.5.0.3—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2)
		UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1)
		UCSES.1.5.0.5—Applicable to the single-wide E-Series Server (UCS-EN120S-M2 and UCS-E140S-M2)
		UCSED.2.5.0.3—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)
		UCSEM3.1.0—Applicable to the single-wide E-Series Server (UCS-E160S-M3)

HUU ISO Image	Contains CIMC Release	Contains BIOS Release
3.2.2	3.2.2	UCSEN.1.5.0.5—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2)
		UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1)
		UCSES.1.5.0.6—Applicable to the single-wide E-Series Server (UCS-EN120S-M2 and UCS-E140S-M2)
		UCSED.2.5.0.4—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)
		UCSEM3.2.4—Applicable to the single-wide E-Series Server (UCS-E160S-M3)
		UCSEDM3.2.4—Applicable to the single-wide E-Series Server (UCS-E180D-M3 and UCS-E1120D-M3)
3.2.3	3.2.3	UCSEN.1.5.0.5—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2)
		UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1)
		UCSES.1.5.0.6—Applicable to the single-wide E-Series Server (UCS-EN120S-M2 and UCS-E140S-M2)
		UCSED.2.5.0.4—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)
		UCSEM3.2.4—Applicable to the single-wide E-Series Server (UCS-E160S-M3)
		UCSEDM3.2.4—Applicable to the single-wide E-Series Server (UCS-E180D-M3 and UCS-E1120D-M3)

HUU ISO Image	Contains CIMC Release	Contains BIOS Release
3.2.4	3.2.4	UCSEN.1.5.0.5—Applicable to the EHWIC E-Series NCE and the NIM E-Series NCE (UCS-EN120E and UCS-EN140N-M2)
		UCSES.1.5.0.2—Applicable to the single-wide E-Series Server (UCS-E140S-M1)
		UCSES.1.5.0.7—Applicable to the single-wide E-Series Server (UCS-EN120S-M2 and UCS-E140S-M2)
		UCSED.2.5.0.5—Applicable to the double-wide E-Series Servers (UCS-E140D-M1, UCS-E160D-M1, UCS-E160D-M2 and UCS-E180D-M2)
		UCSEM3.2.5—Applicable to the single-wide E-Series Server (UCS-E160S-M3)
		UCSEDM3.2.5—Applicable to the single-wide E-Series Server (UCS-E180D-M3 and UCS-E1120D-M3)

Understanding the HUU User Interface

Figure 1: HUU User Interface

User Interface Name	Description
Id column	Displays the serial number of the component row.
Component column	Lists the firmware components that are available for upgrade.
PCI Slot column	Display the PCI slot information for the PCI adapter components.
Current Version column	Displays the current firmware version number that is installed for each of the listed components.
Update Version column	Displays the firmware version number that is available for upgrade for each of the listed components.
Update Status column	Displays the status of the update for each of the listed components while the update is in progress.
Update button	Initiates the firmware update for a selected component.
Update All button	Initiates the firmware update for all available components.
Save Logs button	Saves the log files.
	If an error occurs while updating the firmware, you are prompted to save the error log. Click the **Save Logs** button to save the error logs to an externally connected USB. This log can be used to identify the cause of the error and for troubleshooting.
Last Update Verify button	Verifies if the update was successful.
	Note You must first reboot HUU by clicking the **Exit** button, and then click the **Last Update Verify** button to verify the last update.
Restore CIMC Defaults button	Restores the CIMC settings to factory default settings.
Exit button	Exits the HUU. Click **Yes** at the confirmation prompt to exit.
	• If you update the CIMC and not the BIOS, when you click the **Exit** button, the CIMC will get activated but you will lose connectivity to the CIMC and KVM.
	• If you select LOM for update and you are in shared LOM mode, when you click the **Exit** button, you will lose connectivity to the CIMC and KVM.
Usage area	Lists keyboard shortcuts that you can use to perform specific tasks.

User Interface Name	Description
Current Activity area	Provides the status of an update.
Execution Logs area	Provides a log of activities and their status while an update is in progress.

Upgrading the Firmware

Basic Workflow for Using the HUU

1. Download the HUU ISO image from Cisco.com.

2. Use the KVM console or the CIMC CLI to map the HUU ISO image.

3. Set the boot order to make the virtual CD/DVD drive as the boot device.

4. From the HUU GUI, select all or specific firmware components to update.

5. After the firmware updates, click **Exit** to reboot the HUU.

6. Unmap the HUU ISO image.

7. Reboot the server.

Upgrading the Firmware Using the HUU

Procedure

Step 1   Navigate to http://www.cisco.com/.

Step 2   If you are not already logged in, click **Log In** at the top-right edge of the page and log in using your Cisco.com credentials.

Step 3   In the menu bar at the top, click **Support**.

A roll-down menu appears.

Step 4   From the Downloads (center) pane, click **All Downloads** (located at the bottom right corner).

The **Download Software** page appears.

Step 5   From the left pane, click **Products**.

Step 6   From the center pane, click **Servers—Unified Computing**.

Step 7   From the right pane, click **Cisco UCS E-Series Software**.

Step 8   From the right pane, click the name of the server model for which you want to download the software.

The **Download Software** page appears.

Step 9   Click **Unified Computing System (UCSE) Server Firmware**.

Step 10 Click the **Download** button associated with the **Cisco UCS Host Upgrade Utility** ISO image to download the image onto your PC.

The **End User License Agreement** dialog box appears.

Step 11 Click **Accept License Agreement**.

Step 12 The **Opening** *ucse-server-platform-huu***.iso** dialog box appears.

Either open the file or browse to the location where you want to save the HUU ISO image, and then click **OK**.

Step 13 You can use either the KVM Console or the CIMC CLI to map the HUU ISO image:

- To use the KVM Console, do the following:

  1. Use a browser to connect to the CIMC GUI on the server that you are upgrading.

  2. In the address field of the browser, enter the CIMC IP address for that server, and then enter your username and password to log in to the CIMC GUI.

  3. Click the **Launch KVM Console** icon on the toolbar. The KVM Console opens in a separate window.

  4. From the KVM Console, click the **Virtual Media** tab.

  5. Click **Add Image**, navigate to and select the Host Upgrade Utility ISO image, and then click **Open** to mount the image.

  6. In the **Client View** area, in the Mapped column, check the check box for the mounted ISO image.
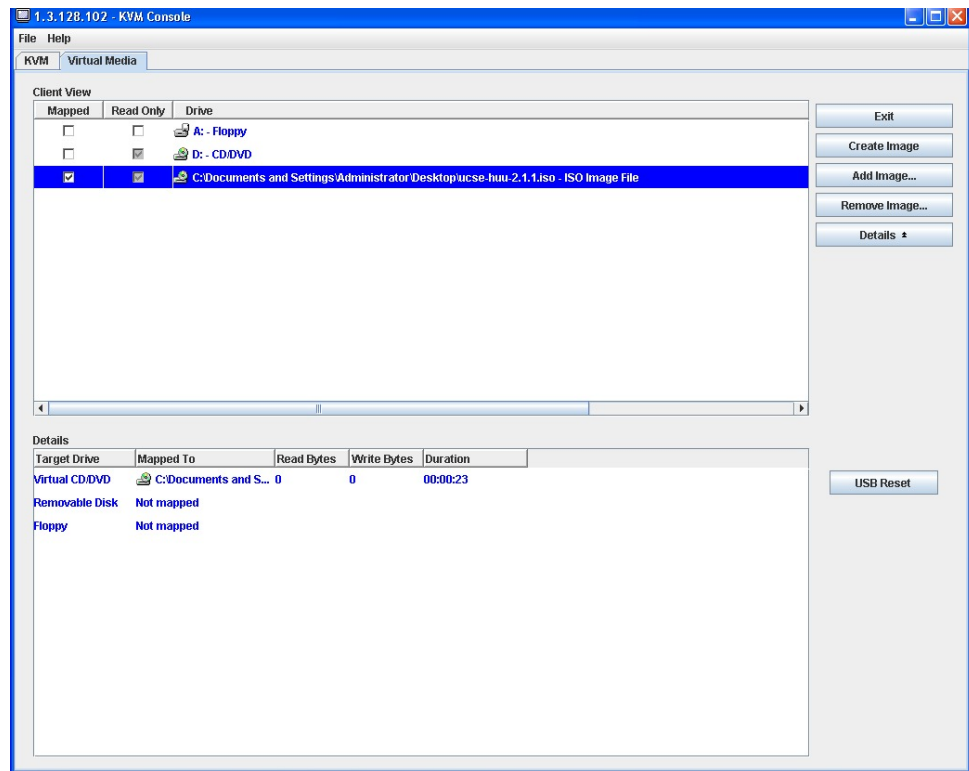
• To use the CIMC CLI, download the ISO image on to an FTP or TFTP server, and then use the following commands:

1. Server# **scope host-image-mapping**.

2. Server/host-image-mapping # **download-image** *protocol server-ip-address huu-ISO-filename*

3. Server/host-image-mapping # **map-image** *huu-ISO-filename*.

```
Server# scope host-image-mapping
Server/host-image-mapping # download-image ftp 10.20.34.56 2.1.1.iso
Username: anonymous
Password:
Image download has started.
Please check the status using "show detail".
Server/host-image-mapping # map-image 2.1.1.iso
```

Step 14   After the image is mapped, set the boot order to make the virtual CD/DVD drive as the boot device.
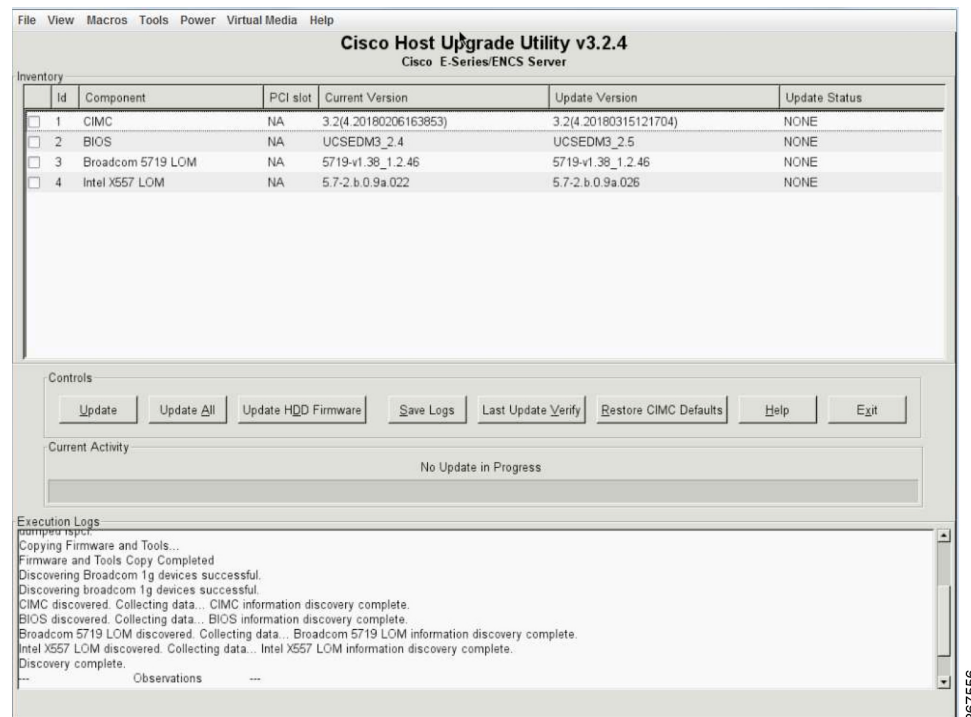
Step 15   Reboot the server.

Step 16   From the CIMC GUI, click the **Launch KVM Console** icon on the toolbar.

The HUU and the **Cisco Software License Agreement** page appears.

Step 17   Click **I Agree** to accept the licensing terms and conditions.

The **Cisco Host Upgrade Utility** GUI appears with a list of components that are available for update.

Step 18   Do one of the following:

• To update all the listed components, click **Update all**.
• To update specific components, select the components, and then click **Update**.

The status of the update is displayed in the **Update Status** column. To view details about the update status, see the **Execution Logs** area.

Note We recommend that you always update the BIOS and the CIMC firmware at the same time.

Step 19 After the firmware is updated, click **Exit**, and then click **Ok** at the confirmation prompt.

The HUU reboots.

Important
- If the BIOS firmware is selected for update, it will be the last one to update because it requires the host to be powered off. You can check the progress of the BIOS update from the CIMC GUI or CIMC CLI. After the BIOS update completes, you must use the CIMC GUI or the CIMC CLI to manually power on the host.

- If the CIMC firmware is selected for update—after you click the **Exit** button from the HUU GUI—the new CIMC firmware gets automatically activated. However, if both the BIOS and CIMC firmwares are selected for update, the CIMC firmware does not get automatically activated. You must use the CIMC GUI or the CIMC CLI to manually activate the new CIMC firmware.

- When the new CIMC firmware gets activated, you will lose network connectivity to the CIMC GUI, CIMC CLI, and virtual KVM. Also, the mapped HUU ISO image gets unmapped. To run the HUU, you must map the HUU ISO image again.

- When the LOM firmware is updated, you might lose network connectivity to the CIMC GUI and virtual KVM.

Step 20 Unmap the HUU ISO image. Do one of the following:

- From the CIMC GUI, click the **Launch KVM Console** icon on the toolbar, from the Mapped column, check the check box for the mounted HUU ISO image, and then click **Remove Image**.
- From the CIMC CLI, use the **unmap-image** command:
- `Server/host-image-mapping # `**`unmap-image`**

Step 21 Reboot the server.

Troubleshooting

Problem	Solution
Connection to the CIMC is lost after an update and reboot, and the KVM session ends.	This is expected behavior after a firmware update. Log back in to the CIMC, and then re-establish your KVM session.
Error Message: *PID, Board-Part-Number, Product-Part-Number* `is not supported by this HUU image. HUU will not boot on this machine. Press any key to reboot the server.`	This error message displays when the HUU ISO image is not supported by the server. To resolve this problem, use the HUU ISO image that is supported by the server. See Minimum CIMC and BIOS Firmware Releases Required to Use HUU, on page 2.

Problem	Solution
After using the HUU to update the Broadcom NCSI firmware, the warning prompt to update the Broadcom firmware still displays in the CIMC GUI and the CIMC CLI.	To resolve this problem, power cycle the E-Series Server to allow the new Broadcom NCSI firmware to take effect.