



# Firmware Management

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## Overview of Firmware

E-Series Servers use Cisco-certified firmware specific to the E-Series Server model that you are using. You can download new releases of the firmware for all supported server models from Cisco.com.

To avoid potential problems, we strongly recommend that you use the Host Upgrade Utility (HUU), which upgrades the CIMC, BIOS, and other firmware components to compatible levels. For detailed information about this utility, see the *Host Upgrade Utility Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine* at [http://www.cisco.com/en/US/products/ps12629/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12629/prod_installation_guides_list.html). This guide also provides information about the compatible HUU, CIMC, and BIOS software releases.



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**Note**

The HUU is supported on CIMC, release 2.1.0 and later releases.

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If you choose to upgrade the CIMC and BIOS firmware manually—instead of using the HUU—you must update the CIMC firmware first, and then the BIOS firmware. Do not install the new BIOS firmware until after you have activated the compatible CIMC firmware or the server will not boot.

The CIMC firmware update process is divided into the following stages to minimize the amount of time the server will be offline:

- **Installation**—During this stage, CIMC installs the selected CIMC firmware in the non-active, or backup, slot on the server.
- **Activation**—During this stage, CIMC sets the non-active firmware version as active and reboots the server, causing a disruption in service. When the server reboots, the firmware in the new active slot becomes the running version.

After you activate the CIMC firmware, you can update the BIOS firmware. The server must be powered off during the entire BIOS update process. Once the CIMC finishes rebooting, the server can be powered on and returned to service.

**Note**


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You can either upgrade an older firmware version to a newer one, or downgrade a newer firmware version to an older one.

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## 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. For detailed instructions for upgrading the firmware using the HUU, see the *Host Upgrade Utility Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine* at [http://www.cisco.com/en/US/products/ps12629/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12629/prod_installation_guides_list.html).

**Note**


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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 [Upgrading Programmable Logic Devices Firmware on the E-Series EHWIC NCE](#), on page 7.

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- **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.

## Obtaining Software from Cisco Systems

Use this procedure to download drivers, BIOS and CIMC firmware, and the diagnostics image.

## Procedure

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- Step 1** Navigate to <http://www.cisco.com/>.
- Step 2** If you are not already logged in, click **Log In** at the top right-hand 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 **Unified Computing and Servers**.
- 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 with the following categories.
- **Unified Computing System (UCSE) Server Drivers**—Contains drivers.
  - **Unified Computing System (UCSE) Server Firmware**—Contains the Host Upgrade Utility and the BIOS, CIMC, and PLD firmware images.
  - **Unified Computing System (UCSE) Utilites**—Contains the diagnostics image.
- Step 9** Click the appropriate software category link.
- Step 10** Click the **Download** button associated with software image that you want to download.  
The **End User License Agreement** dialog box appears.
- Step 11** (Optional) To download multiple software images, do the following:
- a) Click the **Add to cart** button associated with the software images that you want to download.
  - b) Click the **Download Cart** button located on the top right .  
All the images that you added to the cart display.
  - c) Click the **Download All** button located at the bottom right corner to download all the images.  
The **End User License Agreement** dialog box appears.
- Step 12** Click **Accept License Agreement**.
- Step 13** Do one of the following as appropriate:
- Save the software image file to a local drive.
  - If you plan to install the software image from a TFTP server, copy the file to the TFTP server that you want to use.  
The server must have read permission for the destination folder on the TFTP server.
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## What to Do Next

Install the software image.

# Installing CIMC Firmware from a Remote Server



## Note

To avoid potential problems, we strongly recommend that you use the Host Upgrade Utility (HUU), which upgrades the CIMC, BIOS, and other firmware components to compatible levels. For detailed information about this utility, see the *Host Upgrade Utility Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine* at [http://www.cisco.com/en/US/products/ps12629/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12629/prod_installation_guides_list.html). This guide also provides information about the compatible HUU, CIMC, and BIOS software releases.

If you choose to upgrade the CIMC and BIOS firmware manually—instead of using the HUU—you must update the CIMC firmware first, and then the BIOS firmware. Do not install the new BIOS firmware until after you have activated the compatible CIMC firmware or the server will not boot.

## Before You Begin

- Log into CIMC as a user with admin privileges.
- Obtain the CIMC firmware file from Cisco Systems. See [Obtaining Software from Cisco Systems](#), on page 2.



## Note

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

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	Server# <b>scope cimc</b>	Enters CIMC command mode.
<b>Step 2</b>	Server /cimc # <b>scope firmware</b>	Enters CIMC firmware command mode.
<b>Step 3</b>	Server /cimc/firmware # <b>update</b> <i>protocol ip-address path</i>	Specifies the protocol, IP address of the remote server, and the file path to the firmware file on the server. The protocol can be one of the following: <ul style="list-style-type: none"> <li>• <b>tftp</b></li> <li>• <b>ftp</b></li> <li>• <b>sftp</b></li> <li>• <b>scp</b></li> <li>• <b>http</b></li> </ul>
<b>Step 4</b>	(Optional) Server /cimc # <b>show detail</b>	Displays the progress of the firmware update.

This example updates the firmware:

```
Server# scope cimc
Server /cimc # scope firmware
Server /cimc/firmware # update tftp 10.20.34.56 test/dnld-ucs-k9-bundle.1.0.2h.bin
<CR> Press Enter key
Firmware update has started.
Please check the status using "show detail"
Server /cimc #
```

### What to Do Next

Activate the new firmware.

## Activating Installed CIMC Firmware

### Before You Begin

Install the CIMC firmware on the server.



**Important** While the activation is in progress, do not:

- Reset, power off, or shut down the server.
- Reboot or reset the CIMC.
- Activate any other firmware.
- Export technical support or configuration data.



**Note** If you start an activation while an update is in process, the activation will fail.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	Server# <b>scope cimc</b>	Enters CIMC command mode.
<b>Step 2</b>	Server /cimc # <b>show [detail]</b>	Displays the available firmware images and status.
<b>Step 3</b>	Server /cimc # <b>activate [1   2]</b>	Activates the selected image. If no image number is specified, the server activates the currently inactive image.

This example activates firmware image 1:

```
Server# scope cimc
Server /cimc # show detail
Firmware Image Information:
  Update Stage: NONE
  Update Progress: 100
  Current FW Version: 1.0(0.74)
```

```
FW Image 1 Version: 1.0(0.66a)
FW Image 1 State: BACKUP INACTIVATED
FW Image 2 Version: 1.0(0.74)
FW Image 2 State: RUNNING ACTIVATED
```

```
Server /cimc # activate 1
```

## Installing BIOS Firmware from the TFTP Server



### Note

To avoid potential problems, we strongly recommend that you use the Host Upgrade Utility (HUU), which upgrades the CIMC, BIOS, and other firmware components to compatible levels. For detailed information about this utility, see the *Host Upgrade Utility Guide for Cisco UCS E-Series Servers and the Cisco UCS E-Series Network Compute Engine* at [http://www.cisco.com/en/US/products/ps12629/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12629/prod_installation_guides_list.html). This guide also provides information about the compatible HUU, CIMC, and BIOS software releases.

If you choose to upgrade the CIMC and BIOS firmware manually—instead of using the HUU—you must update the CIMC firmware first, and then the BIOS firmware. Do not install the new BIOS firmware until after you have activated the compatible CIMC firmware or the server will not boot.

### Before You Begin

Obtain the CIMC firmware file from Cisco Systems. See [Obtaining Software from Cisco Systems](#), on page 2.



### Note

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

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	Server# <b>scope bios</b>	Enters the BIOS command mode.
<b>Step 2</b>	Server /bios # <b>update</b> <i>ftp-ip-address path-and-filename</i>	Starts the BIOS firmware update. The server will obtain the update firmware at the specified path and file name from the TFTP server at the specified IP address.
<b>Step 3</b>	(Optional) Server /bios # <b>show detail</b>	Displays the progress of the BIOS firmware update.

This example updates the BIOS firmware:

```
Server# scope bios
Server /bios # update 10.20.34.56 //test/dnld-ucs-k9-bundle.1.0.2h.bin
<CR> Press Enter key
Firmware update has started.
Please check the status using "show detail"
Server /bios #
```



```

Update Stage: NONE
Update Progress: 0%
Current FW Version: 2.3(1.20140808133703)
FW Image 1 Version: 2.3(1.20140808133703)
FW Image 1 State: RUNNING ACTIVATED
FW Image 2 Version: 2.3(2.20140916114316)
FW Image 2 State: BACKUP INACTIVATED
Boot-loader Version: 2.3(1.20140808133703) .33
CPLD Version: 3.14
Hardware Version: 2

```

## Troubleshooting E-Series Server or NCE Access Issues

If you have problems accessing the E-Series Server or NCE, it could be that the CIMC firmware image is corrupted, or the SD card is faulty, or the file system is corrupted, or the CIMC firmware installation did not complete successfully. Do one of the following as appropriate:

- If the CIMC firmware image is corrupted, see [Recovering from a Corrupted CIMC Firmware Image, on page 8](#).
- If the SD card is faulty, see [Recovering from a Faulty SD Card](#).
- If the file system is corrupted, see [Recovering from a Corrupted File System, on page 14](#).
- If the CIMC firmware installation did not complete successfully, reinstall the CIMC firmware.



### Important

Due to security considerations, the **boot backup** command is disabled.

## Recovering from a Corrupted CIMC Firmware Image

### Before You Begin

- Connect the server to your PC. Depending on the type of server, do one of the following as appropriate:
  - Double-wide E-Series Server—Connect one end of the serial cable to the E-Series Server serial port and the other end to your PC.
  - Single-wide E-Series Server and SM E-Series NCE—First, connect a KVM connector to the E-Series Server or SM E-Series NCE's KVM port; and then connect one end of a serial cable to the DB9 port of the KVM connector and the other end to your PC.
  - EHWIC E-Series NCE— Connect the mini-USB end of the cable to the EHWIC E-Series NCE's mini-USB port; and then connect the other end of the USB cable to the USB port on your PC.



### Note

The mini-USB cable is not provided with the EHWIC E-Series NCE. You must purchase your own mini-USB cable.

- Depending on the interface option that you specify, do one of the following:
  - Dedicated—Attach an Ethernet cable to the Management (dedicated) port of the E-Series Server.



**Note** Dedicated mode is not applicable to the EHWIC E-Series NCE.

- Shared-Lom-GE2—Attach an Ethernet cable to the E-Series Server or the NCE's external GE2 interface.
  - Shared-Lom-Console—Use the Cisco IOS CLI to configure the E-Series Server or the NCE's internal Console interface.
- To view the serial output, start the Hyper Terminal or Minicom as appropriate. Do one of the following:
    - Microsoft Windows—Start Hyper Terminal.
    - Linux—Start Minicom.
  - Make sure that the communications settings are configured as: 9600 baud, 8 bits, No parity, and 1 stop bit.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	Router# <b>hw-module sm slot oir-stop</b>	Shuts down the power to the specified E-Series Server.  <b>Note</b> The Cisco 2900 series ISR G2 does not support OIR of the E-Series Servers. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the E-Series Server from the Cisco 2900 ISR G2.  <b>Note</b> The ISR G2 does not support OIR of the EHWIC E-Series NCE. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the EHWIC E-Series NCE from the router.
<b>Step 2</b>	Router# <b>hw-module sm slot oir-start</b>	Restarts the specified E-Series Server.  <b>Note</b> The Cisco 2900 series ISR G2 does not support OIR of the E-Series Servers. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the E-Series Server from the Cisco 2900 ISR G2.  <b>Note</b> The ISR G2 does not support OIR of the EHWIC E-Series NCE. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the EHWIC E-Series NCE from the router.
<b>Step 3</b>	***	From the Hyper Terminal or Minicom, enter the *** command to enter the bootloader prompt.

	Command or Action	Purpose
<b>Step 4</b>	ucse-cimc > <b>boot current recovery</b>	Boots the E-Series Server from the current image.
<b>Step 5</b>	Recovery-shell # <b>interface</b> [dedicated   shared-lom-console   shared-lom-ge1   shared-lom-ge2   shared-lom-ge3] <i>interface-ip-address netmask</i> <i>gateway-ip-address</i>	Specifies the IP address, subnet mask, and the gateway ip address of the specified interface.  <b>Note</b> Dedicated mode is not applicable to the EHWIC E-Series NCE.  GE3 is not applicable to the EHWIC E-Series NCE.
<b>Step 6</b>	Recovery-shell # <b>ping</b> <i>tftp-ip-address</i>	Pings the remote TFTP server in which the CIMC firmware is located to verify network connectivity.
<b>Step 7</b>	Recovery-shell # <b>update</b> <i>tftp-ip-address image-filename</i>	Installs the CIMC firmware image, which is located on a remote tftp server.
<b>Step 8</b>	Recovery-shell # <b>reboot</b>	Reboots CIMC.

This example recovers the CIMC firmware image in an E-Series Server:

```
Router# hw-module subslot 2/0 stop
Router# hw-module subslot 2/0 start

***

ucse-cimc > boot current recovery
recovery-shell# interface shared-lom-ge2 192.168.0.138 255.255.255.0 192.168.0.1
Network configuration:
  IP config: addr: 192.168.0.138 Mask: 255.255.255.0
  Gateway: 192.168.0.1
recovery-shell# ping 10.20.34.56
PING 10.20.34.56 (10.20.34.56): 56 data bytes
64 bytes from 10.20.34.56: seq=0 ttl=60 time=10.000 ms
64 bytes from 10.20.34.56: seq=1 ttl=60 time=0.000 ms
--- 10.20.34.56 ping statistics ---
10 packets transmitted, 10 packets received, 0% packet loss
round-trip min/avg/max = 0.000/1.000/10.000 ms
recovery-shell# update 10.20.34.56 update_pkg-cimc.combined.bin
downloading firmware image "update_pkg-cimc.combined.bin" from " 10.20.34.56 "
download firmware image done, size in bytes: 22384144
installing firmware image, please wait ...
activating installed image
done
Stage: NONE
Status: SUCCESS
Error: Success
recovery-shell# reboot
```

This example recovers the CIMC firmware image in an EHWIC E-Series NCE.

```
***

ucse-cimc > boot current recovery
recovery-shell# interface shared-lom-ge2 192.168.0.138 255.255.255.0 192.168.0.1
Network configuration:
  IP config: addr: 192.168.0.138 Mask: 255.255.255.0
  Gateway: 192.168.0.1
recovery-shell# ping 10.20.34.56
PING 10.20.34.56 (10.20.34.56): 56 data bytes
```

```

64 bytes from 10.20.34.56: seq=0 ttl=60 time=10.000 ms
64 bytes from 10.20.34.56: seq=1 ttl=60 time=0.000 ms
--- 10.20.34.56 ping statistics ---
10 packets transmitted, 10 packets received, 0% packet loss
round-trip min/avg/max = 0.000/1.000/10.000 ms
recovery-shell# update 10.20.34.56 update_pkg-cimc.combined.bin
downloading firmware image "update_pkg-cimc.combined.bin" from " 10.20.34.56 "
download firmware image done, size in bytes: 22384144
installing firmware image, please wait ...
activating installed image
done
Stage: NONE
Status: SUCCESS
Error: Success
recovery-shell# reboot

```

## Recovering from a Faulty SD Card

If you have problems booting the E-Series Server or NCE, it could be because the SD card is faulty. Use this procedure to recover the CIMC firmware image on a new SD card.

### Before You Begin

- Connect the server to your PC. Depending on the type of server, do one of the following as appropriate:
  - Double-wide E-Series Server—Connect one end of the serial cable to the E-Series Server serial port and the other end to your PC.
  - Single-wide E-Series Server and SM E-Series NCE—First, connect a KVM connector to the E-Series Server or SM E-Series NCE's KVM port; and then connect one end of a serial cable to the DB9 port of the KVM connector and the other end to your PC.
  - EHWIC E-Series NCE— Connect the mini-USB end of the cable to the EHWIC E-Series NCE's mini-USB port; and then connect the other end of the USB cable to the USB port on your PC.




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**Note** The mini-USB cable is not provided with the EHWIC E-Series NCE. You must purchase your own mini-USB cable.

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- Depending on the interface option that you specify, do one of the following:
  - Dedicated—Attach an Ethernet cable to the Management (dedicated) port of the E-Series Server.




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**Note** Dedicated mode is not applicable to the EHWIC E-Series NCE.

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- Shared-Lom-GE2—Attach an Ethernet cable to the E-Series Server or the NCE's external GE2 interface.
  - Shared-Lom-Console—Use the Cisco IOS CLI to configure the E-Series Server or the NCE's internal Console interface.
- To view the serial output, start the Hyper Terminal or Minicom as appropriate. Do one of the following:
    - Microsoft Windows—Start Hyper Terminal.

- Linux—Start Minicom.
- Make sure that the communications settings are configured as: 9600 baud, 8 bits, No parity, and 1 stop bit.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	Router# <b>hw-module sm slot oir-stop</b>	Shuts down the power to the specified E-Series Server.  <b>Note</b> The Cisco 2900 series ISR G2 does not support OIR of the E-Series Servers. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the E-Series Server from the Cisco 2900 ISR G2.  <b>Note</b> The ISR G2 does not support OIR of the EHWIC E-Series NCE. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the EHWIC E-Series NCE from the router.
<b>Step 2</b>	Remove the faulty SD card and insert a new one.	Replaces the faulty SD card.
<b>Step 3</b>	Router# <b>hw-module sm slot oir-start</b>	Restarts the specified E-Series Server.  <b>Note</b> The Cisco 2900 series ISR G2 does not support OIR of the E-Series Servers. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the E-Series Server from the Cisco 2900 ISR G2.  <b>Note</b> The ISR G2 does not support OIR of the EHWIC E-Series NCE. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the EHWIC E-Series NCE from the router.
<b>Step 4</b>	***	From the Hyper Terminal or Minicom, enter the *** command to enter the bootloader prompt.
<b>Step 5</b>	ucse-cimc > <b>boot current recovery</b>	Boots the E-Series Server or NCE from the current image.
<b>Step 6</b>	Recovery-shell # <b>interface [dedicated   shared-lom-console   shared-lom-ge1   shared-lom-ge2   shared-lom-ge3] interface-ip-address netmask gateway-ip-address</b>	Specifies the IP address, subnet mask, and the gateway ip address of the specified interface.  <b>Note</b> Dedicated mode is not applicable to the EHWIC E-Series NCE.  GE3 is not applicable to the EHWIC E-Series NCE.

	Command or Action	Purpose
<b>Step 7</b>	Recovery-shell # <b>ping</b> <i>tftp-ip-address</i>	Pings the remote TFTP server in which the CIMC firmware is located to verify network connectivity.
<b>Step 8</b>	Recovery-shell # <b>update</b> <i>tftp-ip-address image-filename</i>	Installs the CIMC firmware image, which is located on a remote tftp server.
<b>Step 9</b>	Recovery-shell # <b>reboot</b>	Reboots CIMC.

This example recovers the CIMC firmware from the current image in an E-Series Server:

```
Router# hw-module subslot 2/0 stop
Router# hw-module subslot 2/0 start

***

ucse-cimc > boot current recovery
recovery-shell# interface shared-lom-ge2 192.168.0.138 255.255.255.0 192.168.0.1
Network configuration:
  IP config: addr: 192.168.0.138 Mask: 255.255.255.0
  Gateway: 192.168.0.1
recovery-shell# ping 10.20.34.56
PING 10.20.34.56 (10.20.34.56): 56 data bytes
64 bytes from 10.20.34.56: seq=0 ttl=60 time=10.000 ms
64 bytes from 10.20.34.56: seq=1 ttl=60 time=0.000 ms
--- 10.20.34.56 ping statistics ---
10 packets transmitted, 10 packets received, 0% packet loss
round-trip min/avg/max = 0.000/1.000/10.000 ms
recovery-shell# update 10.20.34.56 update_pkg-cimc.combined.bin
downloading firmware image "update_pkg-cimc.combined.bin" from " 10.20.34.56 "
download firmware image done, size in bytes: 22384144
installing firmware image, please wait ...
activating installed image
done
Stage: NONE
Status: SUCCESS
Error: Success
recovery-shell# reboot
```

This example recovers the CIMC firmware from the current image in an EHWIC E-Series NCE:

```
***

ucse-cimc > boot current recovery
recovery-shell# interface shared-lom-ge2 192.168.0.138 255.255.255.0 192.168.0.1
Network configuration:
  IP config: addr: 192.168.0.138 Mask: 255.255.255.0
  Gateway: 192.168.0.1
recovery-shell# ping 10.20.34.56
PING 10.20.34.56 (10.20.34.56): 56 data bytes
64 bytes from 10.20.34.56: seq=0 ttl=60 time=10.000 ms
64 bytes from 10.20.34.56: seq=1 ttl=60 time=0.000 ms
--- 10.20.34.56 ping statistics ---
10 packets transmitted, 10 packets received, 0% packet loss
round-trip min/avg/max = 0.000/1.000/10.000 ms
recovery-shell# update 10.20.34.56 update_pkg-cimc.combined.bin
downloading firmware image "update_pkg-cimc.combined.bin" from " 10.20.34.56 "
download firmware image done, size in bytes: 22384144
installing firmware image, please wait ...
activating installed image
done
Stage: NONE
Status: SUCCESS
```

```
Error: Success
recovery-shell# reboot
```

## Recovering from a Corrupted File System

Use this procedure if you see the following error message in the CIMC boot log files.

```
UNEXPECTED INCONSISTENCY; RUN fsck MANUALLY
```

### Before You Begin

- Connect the server to your PC. Depending on the type of server, do one of the following as appropriate:
  - Double-wide E-Series Server—Connect one end of the serial cable to the E-Series Server serial port and the other end to your PC.
  - Single-wide E-Series Server and SM E-Series NCE—First, connect a KVM connector to the E-Series Server or SM E-Series NCE's KVM port; and then connect one end of a serial cable to the DB9 port of the KVM connector and the other end to your PC.
  - EHWIC E-Series NCE— Connect the mini-USB end of the cable to the EHWIC E-Series NCE's mini-USB port; and then connect the other end of the USB cable to the USB port on your PC.




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**Note** The mini-USB cable is not provided with the EHWIC E-Series NCE. You must purchase your own mini-USB cable.

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- Depending on the interface option that you specify, do one of the following:
  - Dedicated—Attach an Ethernet cable to the Management (dedicated) port of the E-Series Server.




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**Note** Dedicated mode is not applicable to the EHWIC E-Series NCE.

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- Shared-Lom-GE2—Attach an Ethernet cable to the E-Series Server or the NCE's external GE2 interface.
  - Shared-Lom-Console—Use the Cisco IOS CLI to configure the E-Series Server or the NCE's internal Console interface.
- To view the serial output, start the Hyper Terminal or Minicom as appropriate. Do one of the following:
    - Microsoft Windows—Start Hyper Terminal.
    - Linux—Start Minicom.
  - Make sure that the communications settings are configured as: 9600 baud, 8 bits, No parity, and 1 stop bit.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	Router# <b>hw-module sm slot oir-stop</b>	Shuts down the power to the specified E-Series Server. <b>Note</b> The Cisco 2900 series ISR G2 does not support OIR of the E-Series Servers. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the E-Series Server from the Cisco 2900 ISR G2. <b>Note</b> The ISR G2 does not support OIR of the EHWIC E-Series NCE. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the EHWIC E-Series NCE from the router.
<b>Step 2</b>	Router# <b>hw-module sm slot oir-start</b>	Restarts the specified E-Series Server. <b>Note</b> The Cisco 2900 series ISR G2 does not support OIR of the E-Series Servers. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the E-Series Server from the Cisco 2900 ISR G2. <b>Note</b> The ISR G2 does not support OIR of the EHWIC E-Series NCE. To avoid damaging the router, turn off the electrical power on the router and disconnect network cables before inserting or removing the EHWIC E-Series NCE from the router.
<b>Step 3</b>	***	From the Hyper Terminal or Minicom, enter the *** command to enter the bootloader prompt.
<b>Step 4</b>	ucse-cimc > <b>boot current recovery</b>	Boots the E-Series Server or NCE from the current image.
<b>Step 5</b>	To check the file system of the specified partition and recover the corrupted file system, enter these commands.	<ol style="list-style-type: none"> <li>1 Recovery-shell # <b>fs-check [p3   p4]</b> <b>Note</b> You can only use p3 and p4 partitions with this command. Use this command on the partition that is corrupted. The corrupted partition is the one that displays the <b>run fsk</b> error message during CIMC bootup.</li> <li>2 Do the following: <ul style="list-style-type: none"> <li>• If the command output displays <b>clean</b>, it indicates that the corrupted files are recovered. Enter the <b>reboot</b> command to reboot CIMC. <b>Note</b> Skip the steps that follow.</li> <li>• If the command output does not display <b>clean</b>, proceed to Step 6.</li> </ul> </li> </ol>

	Command or Action	Purpose
<b>Step 6</b>	(Optional) If the <b>fs-check [p3   p4]</b> command does not recover the corrupted file system, and the output does not display <b>clean</b> , enter these commands to format the partitions.	<p><b>1</b> Recovery-shell # <b>sd-card format [p3   p4]</b> Formats the specified corrupted partition on the SD card.</p> <p><b>Note</b> The corrupted partition is the one that displays the <b>run fsk</b> error message during CIMC bootup.</p> <p><b>2</b> Recovery-shell # <b>reboot</b> Reboots CIMC.</p> <p><b>Note</b> Skip the steps that follow.</p> <p><b>Note</b> When the p3 partition is formatted, the CIMC configuration is lost.</p>
<b>Step 7</b>	(Optional) If the <b>sd-card format [p3   p4]</b> command does not recover the corrupted file system, enter these commands to partition and format the SD card.	<p><b>1</b> Recovery-shell # <b>sd-card partition</b> Creates partitions on the SD card.</p> <p><b>2</b> Recovery-shell # <b>sd-card format p3</b> Formats the p3 partition on the SD card.</p> <p><b>3</b> Recovery-shell # <b>sd-card format p4</b> Formats the p4 partition on the SD card.</p> <p><b>4</b> Recovery-shell # <b>reboot</b> Reboots CIMC.</p> <p><b>5</b> (Optional) Recovery-shell # <b>sd-partition show</b> Displays the current partition on the SD card.</p> <p><b>Note</b> When you partition the SD card, the contents of the SD card, such as, the configuration and ISO file, are lost.</p>
<b>Step 8</b>	Recovery-shell # <b>interface [dedicated   shared-lom-console   shared-lom-ge1   shared-lom-ge2   shared-lom-ge3]</b> <i>interface-ip-address netmask gateway-ip-address</i>	Specifies the IP address, subnet mask, and the gateway ip address of the specified interface.  <b>Note</b> Dedicated mode is not applicable to the EHWIC E-Series NCE.  GE3 is not applicable to the EHWIC E-Series NCE.
<b>Step 9</b>	Recovery-shell # <b>ping</b> <i>tftp-ip-address</i>	Pings the remote TFTP server in which the CIMC firmware is located to verify network connectivity.
<b>Step 10</b>	Recovery-shell # <b>update</b> <i>tftp-ip-address image-filename</i>	Installs the CIMC firmware image, which is located on a remote tftp server.
<b>Step 11</b>	Recovery-shell # <b>reboot</b>	Reboots CIMC.

This example recovers the CIMC firmware from the current image using the **fs-check p3** command in an E-Series Server:

```
Router# hw-module sm 2 oir-stop
Router# hw-module sm 2 oir-start

***

ucse-cimc > boot current recovery
recovery-shell# fs-check p3
e2fsck 1.41.14 (22-Dec-2010)
/dev/mmcblk0p3: recovering journal
/dev/mmcblk0p3: clean, 429/7840 files, 3331/31296 blocks
recovery-shell# fs-check p4
e2fsck 1.41.14 (22-Dec-2010)
/dev/mmcblk0p4: clean, 51/506912 files, 1880262/2025296 blocks
recovery-shell# reboot
```

This example recovers the CIMC firmware from the current image using the **fs-check p3** command in an EHWIC E-Series NCE:

```
***

ucse-cimc > boot current recovery
recovery-shell# fs-check p3
e2fsck 1.41.14 (22-Dec-2010)
/dev/mmcblk0p3: recovering journal
/dev/mmcblk0p3: clean, 429/7840 files, 3331/31296 blocks
recovery-shell# fs-check p4
e2fsck 1.41.14 (22-Dec-2010)
/dev/mmcblk0p4: clean, 51/506912 files, 1880262/2025296 blocks
recovery-shell# reboot
```

## Recovery Shell Commands

Recovery Shell Commands	Description
Recovery-shell # <b>dedicated-interface</b> <i>interface-ip-address netmask gateway-ip-address</i>	Specifies the IP address, subnet mask, and the gateway ip address of the dedicated interface.
Recovery-shell # <b>dedicated-interface (DEPRECATED)</b>	Shows the current configuration of the dedicated port.
Recovery-shell # <b>interface [dedicated   shared-lom-console   shared-lom-ge1   shared-lom-ge2   shared-lom-ge3]</b> <i>interface-ip-address netmask gateway-ip-address</i>	Specifies the IP address, subnet mask, and the gateway ip address of the specified interface.
Recovery-shell # <b>interface</b>	Shows the configuration on the interface.
Recovery-shell # <b>sd-card format [p3   p4]</b>	Formats the specified corrupted partition on the SD card.
Recovery-shell # <b>sd-card partition</b>	Creates partitions on the SD card.
Recovery-shell # <b>sd-partition show</b>	Displays the current partition on the SD card.

Recovery-shell # <b>ping</b> <i>tftp-ip-address</i>	Pings the remote TFTP server in which the CIMC firmware is located to verify network connectivity.
Recovery-shell # <b>update</b> <i>tftp-ip-address</i> <i>image-filename</i>	Installs the CIMC firmware image, which is located on a remote tftp server.
Recovery-shell # <b>fs-check</b> [p3   p4]	Checks the file system of the specified partition and recover the corrupted file system.
Recovery-shell # <b>active image</b>	Shows the current active image that CIMC is running, which can be image 1 or image 2.
Recovery-shell # <b>active image</b> [1   2]	Changes the active image to 1 or 2. If the specified image is already active, a message is displayed. Otherwise, the specified image is made active.  After you use the active image command, use the <b>reboot</b> command for the newly configured image to take effect.
Recovery-shell # <b>reboot</b>	Reboots the CIMC firmware.