

Cisco UCS B420 M4 Server Upgrade Guide for E5-4600 v4 Series CPUs

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Introduction

This document describes the process for upgrading a Cisco UCS B420 M4 Blade Server that is currently running E5-4600 v3 CPUs to use Intel E5-4600 v4 Series CPUs. Minimum software support and upgrade and downgrade scenarios are described, including the following:

- [Upgrade Scenario: UCS Manager and the BIOS Software are Earlier Than the Minimum Supported Release Version, and the Server has Intel E5-4600 v3 Series CPUs](#)
- [Upgrade Scenario: UCS Manager and the BIOS Software are at the Minimum Supported Release Version, and the Server has Intel E5-4600 v3 Series CPUs](#)
- [Upgrade Scenario: UCS Manager Software is the Minimum Supported Release Version, the Server has Intel E5-4600 v4 Series CPUs, and the BIOS Software is Earlier Than the Minimum Supported Release Version](#)



Caution

Failure to follow the procedures in this guide when upgrading an existing server to use Intel E5-4600 v4 Series CPUs might result in a non-bootable server.

Minimum Software and Firmware Requirements

The minimum software and firmware versions that are required for the Cisco UCS B420 M4 blade server to support Intel E5-4600 v4 Series CPUs are listed in the following table.

Table 1: Software and Firmware Minimum Version Requirements

Software or Firmware	Minimum Version
Cisco UCS Manager	Release 3.1(2) or 2.2(8) (See the following Note for information about additional supported versions.)
Server CIMC	Release 3.1(2) or 2.2(8)
Server BIOS	Release 3.1(2) or 2.2(8)

**Note**

Cisco UCS Manager Release 2.2(4) introduced a server pack feature that allows Intel E5-4600 v4 CPUs to run with Cisco UCS Manager Release 2.2(4) or later, provided that the CIMC, BIOS, and Capability Catalog are all running Release 2.2(8) or later.

Upgrade Scenario: UCS Manager and the BIOS Software are Earlier Than the Minimum Supported Release Version, and the Server has Intel E5-4600 v3 Series CPUs

Before You Begin

This scenario assumes the following conditions:

- The Cisco UCS Manager software is at a version earlier than the minimum required version.
- The server is at a BIOS/CIMC version earlier than the minimum required version.
- The server is using Intel E5-4600 v3 Series CPUs.

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- Step 1** Upgrade the Cisco UCS Manager infrastructure firmware to Release 2.2(4) or later.
- Step 2** Upgrade the Capability Catalog to Release 2.2(8) or later. Use the procedures in the [Cisco UCS Manager Firmware Management Guide](#) to update the Capability Catalog.
- Step 3** Use Cisco UCS Manager to upgrade and activate the server CIMC to Release 2.2(8) or later. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).
- Step 4** Use Cisco UCS Manager to upgrade and activate the server BIOS to Release 2.2(8) or later. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).
- Step 5** Disassociate the server in Cisco UCS Manager.
- Step 6** Power off the server.
- Step 7** Remove the server from the chassis.
- Step 8** Replace the CPUs with the Intel E5-4600 v4 Series CPUs. At this time, you might also be upgrading the memory to 2400 MHz DIMMs or making other server configuration changes. Use the procedures in the [Cisco UCS B420 M4 Blade Server Installation and Service Note](#).
- Step 9** Reinsert the server in the chassis.
- Step 10** Wait for Cisco UCS Manager to automatically discover the server.
- Note** At this point, the Health LED of the server shows a critical fault and Cisco UCS Manager reports a generic error message: `WILL_BOOT_FAULT: Sensor failure asserted`. This error occurs because a board controller activation is required, which is described in the next step.
- Step 11** Wait for Cisco UCS Manager to automatically activate the board controller version.
- Note** The `show image` command in the sequence below lists the board controller versions that are available for the server. Always activate the latest board controller image version when you use the `activate firmware` command.
- Note** The server automatically reboots after it executes the `commit-buffer` command.
- ```
scope server <chassis/srever>
scope boardcontroller
```

```
show image
activate firmware <boardcontroller version>.0 force
commit-buffer
```

**Step 12** Do not continue with the next step until board controller activation completes. Verify that the activation is complete by using the `show image` command to see that `Activate-Status` returns `Ready`. This process takes a few minutes to complete successfully.

```
show version
Boardcontroller:
 Running-Vers: x.0
 Package_Vers:
 Activate-Status: Ready
```

**Step 13** Use the Cisco UCS Manager GUI to clear the `WILL_BOOT_FAULT` and reset the server CIMC:

- a) In the Navigation pane, click the Equipment tab.
- b) On the Equipment tab, expand Equipment > Chassis > Chassis number > Servers, then choose your server.
- c) In the Work pane, click the General tab.
- d) In the Actions area, click Recover Server.
- e) In the Recover Server dialog, click Reset CIMC (Server Controller), then click OK.

Wait for CIMC to reboot and for Cisco UCS Manager to do a shallow discovery of the server. This process takes two to three minutes. At the end of the process, the `WILL_BOOT_FAULT` is cleared.

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## Upgrade Scenario: UCS Manager and the BIOS Software are at the Minimum Supported Release Version, and the Server has Intel E5-4600 v3 Series CPUs

### Before You Begin

This scenario assumes the following conditions:

- The Cisco UCS Manager software is at Release 2.2(4), which is the minimum required version, or a later version.
- The server is running a BIOS/CIMC version that is the minimum required version or a later version.

- The server is using Intel E5-4600 v3 Series CPUs.

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- Step 1** Upgrade the UCSM Capability Catalog to Release 2.2(8) or later. Use the procedures in the [Cisco UCS Manager Firmware Management Guide](#) to update the Capability Catalog.
- Step 2** Use Cisco UCS Manager to upgrade and activate the server CIMC to Release 2.2(8) or later. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).
- Step 3** Use Cisco UCS Manager to upgrade and activate the server BIOS to Release 2.2(8) or later. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).
- Step 4** Disassociate the server in Cisco UCS Manager.
- Step 5** Power off the server.
- Step 6** Remove the server from the chassis.
- Step 7** Replace the CPUs with the Intel E5-4600 v4 Series CPUs. At this time, you might also be upgrading the memory to 2400 MHz DIMMs, or making other server configuration changes. Use the procedures in the [Cisco UCS B420 M4 Blade Server Installation and Service Note](#).
- Step 8** Reinsert the server in the chassis.
- Step 9** Wait for Cisco UCS Manager to automatically discover the server.
- Step 10** Wait for Cisco UCS Manager to automatically activate the board controller version.
- Step 11** Do not continue with the next step until board controller activation completes. Verify that the activation is complete by using the `show image` command to see that Activate-Status returns Ready. This process takes a few minutes to complete successfully.
- ```
# show version
Boardcontroller:
  Running-Vers: x.0
  Package_Vers:
  Activate-Status: Ready
```
- Step 12** Use the Cisco UCS Manager GUI to clear the WILL_BOOT_FAULT and reset the server CIMC:
- a) In the Navigation pane, click the Equipment tab.
 - b) On the Equipment tab, expand Equipment > Chassis > Chassis number > Servers, then choose your server.
 - c) In the Work pane, click the General tab.
 - d) In the Actions area, click Recover Server.
 - e) In the Recover Server dialog, click Reset CIMC (Server Controller), then click OK.
- Wait for CIMC to reboot and for Cisco UCS Manager to do a shallow discovery of the server. This process takes two to three minutes. At the end of the process, the WILL_BOOT_FAULT is cleared.
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Upgrade Scenario: UCS Manager Software is the Minimum Supported Release Version, the Server has Intel E5-4600 v4 Series CPUs, and the BIOS Software is Earlier Than the Minimum Supported Release Version

Before You Begin

This scenario may occur in a servicing situation in which a server that is already running Intel E5-4600 v4 Series CPUs must be replaced with a replacement server that is running a BIOS earlier than the required minimum.

This scenario assumes the following conditions:

- The Cisco UCS Manager software is at the minimum required version.
- The replacement server is using Intel E5-4600 v4 Series CPUs (after the CPUs are transferred from the old server)
- The replacement server is at a BIOS/CIMC version earlier than the minimum required version.

Step 1 Disassociate the server in Cisco UCS Manager.

Step 2 Power off the server.

Step 3 Transfer the Intel E5-4600 v4 CPUs from the old server to the new replacement server.

Step 4 Insert the server into the chassis .

Note The server does not boot and discovery of the server hangs waiting for BIOS POST to complete. This situation occurs because the BIOS is at an earlier version that does not support Intel E5-4600 v4 Series CPUs.

Step 5 Use the Cisco UCS Manager CLI to upgrade the BIOS. Use the following sequence of commands:

```
# scope server <chassis/blade>
chassis/server # scope bios
chassis/server/bios # show image
chassis/server/bios # update firmware <server_model>.<firmware version>
```

```
chassis/server/bios* # commit buffer
```

Note The `show image` command in the preceding command sequence lists the firmware versions available for the server. Always activate the latest firmware image version when you use the `update firmware` command.

Step 6 Wait for the update to complete. Check the status of the update and wait until the following command returns `Status: Ready`. It takes a few minutes for the `Status` to return to `Ready`.

```
chassis/server/bios # show update status
Status: Ready
```

Step 7 Activate the new BIOS using these commands:

```
chassis/server/bios # activate firmware <server_model>.<firmware version>
```

Warning: When committed this command will reset the end-point

```
chassis/server/bios # commit buffer
chassis/server/bios # exit
```

Step 8 Power cycle the server to get discovery out of the hung state:

```
chassis/server # cycle cycle-immediate
chassis/server # commit-buffer
```

Cisco UCS Manager is now able to complete auto-discovery of the server.

- Step 9** Make sure the Cisco UCS Manager infrastructure firmware is at Release 2.2(4) or later.
- Step 10** Upgrade the capability catalog to Release 2.2(7) or later.
- Step 11** Use Cisco UCS Manager to upgrade and activate the server CIMC to Release 2.2(8) or later. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).
- Step 12** Wait for the server to be discovered by Cisco UCS Manager.
- Step 13** Wait for Cisco UCS Manager to automatically activate the board controller version.
- Step 14** Do not continue with the next step until the board controller activation completes. Verify if the activation is complete by using the `show version` command.
Wait until Activate-Status returns Ready. This process takes a few minutes before it successfully completes and returns Ready.

```
# show version
BoardController:
  Running-Vers: x.0
  Package-Vers:
  Activate-Status: Ready
```

Downgrading from Intel E5-4600 v4 Series CPUs to E5-4600 v3 Series CPUs

Before You Begin



Note This downgrade procedure requires server downtime.

This scenario assumes the following conditions:

- The Cisco UCS Manager software is at the required minimum version or later.
- The server is using BIOS/CIMC that is at the required minimum version or later.
- The server is using Intel E5-4600 v4 Series CPUs.



Caution If you upgraded the server to Intel E5-4600 v4 Series CPUs and the server is running UCS firmware that added support for Intel E5-4600 v4 Series CPUs, and if you installed the Trusted Platform Module (TPM) 2.0, do not downgrade the firmware and BIOS to a version earlier than Release 2.2(8) or Release 3.1(2). If you do so, then you are vulnerable to a potential security exposure. For additional information, see "Enabling the Trusted Platform Module" in the [Cisco UCS B420 M4 Blade Server Installation and Service Note](#).

- Step 1** Disassociate the server in Cisco UCS Manager.
- Step 2** Power off the server.
- Step 3** Replace the Intel E5-4600 v4 Series CPUs with the E5-4600 v3 Series CPUs.

Use the procedures in the [Cisco UCS B420 M4 Blade Server Installation and Service Note](#).

Step 4 Reinsert the server into the chassis.

Step 5 Wait for Cisco UCS Manager to automatically discover the server.

Note At this point, the Health LED on the server shows a critical fault and Cisco UCS Manager reports a generic error message: `WILL_BOOT_FAULT: Sensor failure asserted`. This message indicates that a board controller activation is required, which is described in the next step.

Step 6 Wait for Cisco UCS Manager to automatically activate the board controller version.

Step 7 Do not continue with the next step until the board controller activation completes. Verify if the activation is complete by using the `show version` command.

Wait until Activate-Status returns Ready. This process takes a few minutes before it successfully completes and returns Ready.

```
# show version
BoardController:
  Running-Vers: x.0
  Package-Vers:
  Activate-Status: Ready
```

Step 8 Use the Cisco UCS Manager GUI to clear the `WILL_BOOT_FAULT` and reset the server CIMC:

- a) In the Navigation pane, click the Equipment tab.
- b) On the Equipment tab, expand Equipment > Chassis > Chassis number > Servers, then choose your server.
- c) In the Work pane, click the General tab.
- d) In the Actions area, click Recover Server.
- e) In the Recover Server dialog, click Reset CIMC (Server Controller), then click OK.

Wait for CIMC to reboot and for Cisco UCS Manager to do a shallow discovery of the sever. This process take two to three minutes. At the end of this process, the `WILL_BOOT_FAULT` is cleared

Note The Cisco UCS Manager bundle, including the server CIMC and BIOS, is backward-compatible with earlier supported CPUs. As a result, the following firmware downgrade steps are optional.

Step 9 (Optional) Downgrade the server CIMC. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).

Step 10 (Optional) Downgrade the server BIOS. Use the procedures in the appropriate upgrade guide (depending on your current software version): [Cisco UCS Manager Upgrade Guides](#).

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