Cisco CSS UCS Platform Series User Guide, CPS-UCS-1RU-K9 / CPS-UCS-2RU-K9

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Cisco CSS UCS Platform Series User Guide, CPS-UCS-1RU-K9 / CPS-UCS-2RU-K9

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Preface

Purpose

This document summarizes the requirements and supported features of the following Cisco Connected Safety and Security UCS Platform Series servers:

- CPS-UCS-1RU-K9
- CPS-UCS-2RU-K9

This document also includes a summary of common installation and configuration topics, and links to detailed instructions. Additional summaries are included for the applications supported on the servers, such as the Cisco Video Surveillance Manager.

Revision History

Table 1 Revision History

Document Release	Document Revision Date	Change Summary
Release 1.0	September, 2013	Initial draft
Release 1.0	September, 2015	Updated for Cisco VSM Release 7.7
Release 1.1	April, 2016	Updated to clarify that this document is for the following servers only: • CPS-UCS-1RU-K9 • CPS-UCS-2RU-K9

Related Documentation

This document describes installation of the following Cisco Connected Safety and Security servers:

- CPS-UCS-1RU-K9
- CPS-UCS-2RU-K9

Note For information about the CPS-UCSM4-1RU-K9 and CPS-UCSM4-2RU-K9 servers, see Cisco CSS UCS Platform Series User Guide, CPS-UCSM4-1RU-K9 / CPS-UCSM4-2RU-K9.

See the "Related Documentation" section for more information.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information about obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*. This document also lists all new and revised Cisco technical documentation. It is available at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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Tip See "Related Documentation" for more information and links to Cisco Video Surveillance documentation.

Command Syntax Conventions

Table 2 describes the syntax used with the commands in this document.

Table 2 Command Syntax Guide

Convention	Description
boldface	Commands and keywords.
italic	Command input that is supplied by you.
[ ]	Keywords or arguments that appear within square brackets are optional.
{ x I x I x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. You must select one.
^ or Ctrl	Represent the key labeled *Control*. For example, when you read *^D* or *Ctrl-D*, you should hold down the Control key while you press the D key.
`screen font`	Examples of information displayed on the screen.
boldface screen font	Examples of information that you must enter.
< >	Nonprinting characters, such as passwords, appear in angled brackets.
[ ]	Default responses to system prompts appear in square brackets.

CHAPTER 1

Overview

The Cisco Connected Safety and Security UCS Platform Series servers provide a hardware platform for Cisco Connected Safety and Security applications, such as the Cisco Video Surveillance Manager. This document describes the features and requirements of the supported server models and includes references to detailed installation and configuration instructions available in related documentation.

This document describes installation of the following Cisco Connected Safety and Security servers:

- Cisco Connected Safety and Security UCS C220 (CPS-UCS-1RU-K9)
- Cisco Connected Safety and Security UCS C240 (CPS-UCS-2RU-K9)

Note For information about the CPS-UCSM4-1RU-K9 and CPS-UCSM4-2RU-K9 servers, see Cisco CSS UCS Platform Series User Guide, CPS-UCSM4-1RU-K9 / CPS-UCSM4-2RU-K9.

Refer to the following topics for more information.

System Overview

Refer to the following topics for an overview of the supported server models and features.

Note The Cisco Connected Safety and Security UCS series servers support a subset of the features available on the Cisco UCS series servers.

- Server Model Comparison, page 1-2
- Cisco Connected Safety and Security UCS C220 (1RU) Overview, page 1-2
- Cisco Connected Safety and Security UCS C240 (2RU) Overview, page 1-6

Server Model Comparison

The Cisco Connected Safety and Security UCS series servers are available in a 1RU and 2RU configuration and include the following features:

Table 1-1 Supported Hardware Feature Comparison

Feature	Cisco Connected Safety and Security UCS C220 (CPS-UCS-1RU-K9)	Cisco Connected Safety and Security UCS C240 (CPS-UCS-2RU-K9)
Form-Factor	1 RU	2 RU
Processor	Single E5-2609 CPU	Dual E5-2620 CPUs
Memory	8GB,DDR3,1600-MHz RDIMM, PC3-12800	8GB/processor,DDR3,1600-MHz RDIMM, PC3-12800
I/O Hub	Patsburg	Patsburg
PCIe Riser cards	Only Riser1 and PCIe slot 1 are supported	Both Riser 1 and Riser 2 are supported. Both PCIe slot1 and slot 2 are supported.
HDD	4 large form factor (LFF) drives (3.5” hard drives)	12 LFF drives (3.5” hard drives)

Note The supported features described in Table 1-1 are a sub-set of the features supported by the Cisco UCS platform.

Cisco Connected Safety and Security UCS C220 (1RU) Overview

The Cisco Connected Safety and Security UCS C220 (1RU) is a 1RU server available in the large form factor (LFF) only, which supports up to four 3.5-inch hard drives.

Note The small form-factor (SFF) version of the Cisco Connected Safety and Security UCS C220 is not supported for Cisco Physical Security applications.

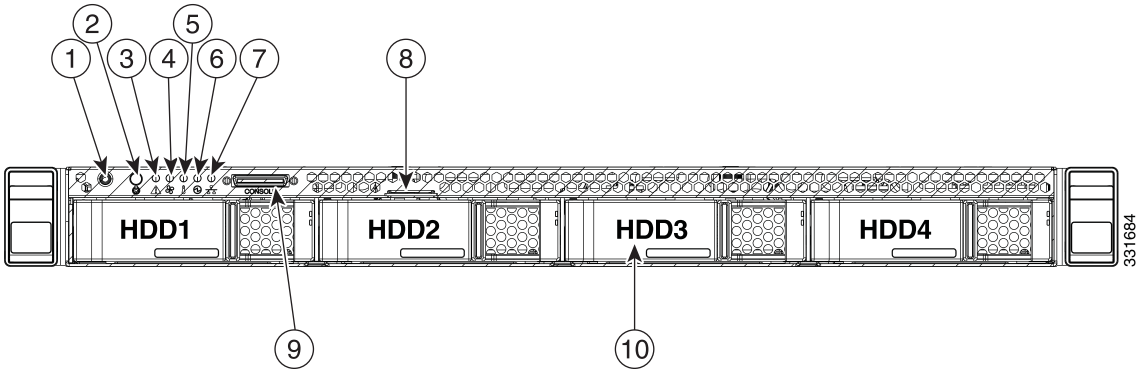
- Cisco Connected Safety and Security UCS C220 Front Panel, page 1-3

- Cisco Connected Safety and Security UCS C220 Rear Panel, page 1-4
- Summary of Cisco Connected Safety and Security UCS C220 Server Features, page 1-4

Cisco Connected Safety and Security UCS C220 Front Panel

Figure 1-1 shows the front panel features of the LFF drives version of the server.

Figure 1-1 Cisco Connected Safety and Security UCS C220 Server Front Panel Features



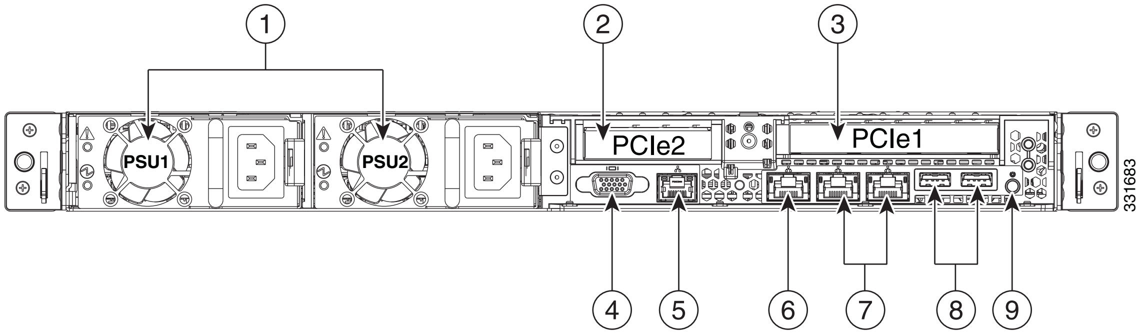
1	Power button/Power status LED	**6**	Power supply status LED
2	Identification button/LED	**7**	Network link activity LED
3	System status LED	**8**	Pull-out asset tag
4	Fan status LED	**9**	KVM connector (used with KVM cable that provides two USB, one VGA, and one serial connector)
5	Temperature status LED	**10**	Drives, hot-swappable (up to four 3.5-inch drives)

Tip See the "Cisco Connected Safety and Security UCS C220 LEDs and Buttons" section on page 1-10 for more information.

Cisco Connected Safety and Security UCS C220 Rear Panel

Figure 1-2 shows the rear panel features of the server.

Figure 1-2 Cisco Connected Safety and Security UCS C220 Server Rear Panel Features



1	Power supplies (up to two)	**6**	1-Gb Ethernet dedicated management port **Note** The CIMC can be accessed only through the 1Gb Ethernet dedicated management port.
2	Low-profile PCIe slot 2 on riser (half-height, half-length, x8 lane) **Note** The low-profile slots are not supported in the Cisco Connected Safety and Security UCS C220 (CPS-UCS-1RU-K9)	**7**	Dual 1-Gb Ethernet ports (LAN1 and LAN2) **Note** The LAN Ethernet posts are referred to as “Eth 0” and “Eth1” in the Cisco Connected Safety and Security applications, such as Cisco Video Surveillance.
3	Standard-profile PCIe slot on riser (full-height, half-length, x16 lane)	**8**	USB ports
4	VGA video connector	**9**	Rear Identification button/LED
5	Serial port (RJ-45 connector)		–

Tip See the “Cisco Connected Safety and Security UCS C220 LEDs and Buttons” section on page 1-10 for more information.

Summary of Cisco Connected Safety and Security UCS C220 Server Features

Table 1-2 lists the features of the server.

Table 1-2 Cisco Connected Safety and Security UCS C220 Server Features

Chassis	One rack-unit (1RU) chassis.
Processors	A single Intel Xeon E5-2600 Series processor is supported. CPU2 and associated DIMMs are not supported.

Table 1-2 Cisco Connected Safety and Security UCS C220 Server Features (continued)

Memory	8 BG of internal memory (DIMM[1]). See the "DIMM Memory Configuration" section on page 1-20.
Baseboard management	Pilot III BMC, running Cisco Integrated Management Controller (CIMC) firmware. • The CIMC can be accessed only through the 1Gb Ethernet dedicated management port. • See the "Cisco Integrated Management Interface (CIMC)" section on page 1-22 for more information.
Network and management I/O	The server provides these rear-panel connectors: • One 1-Gb Ethernet dedicated management port • Two 1-Gb Base-T Ethernet ports **Note** The LAN Ethernet posts are referred to as "Eth 0" and "Eth1" in the Cisco Connected Safety and Security applications, such as Cisco Video Surveillance. • One RS-232 serial port (RJ-45 connector) • One 15-pin VGA[2] connector • Two USB[3] 2.0 connectors • One front-panel KVM connector that is used with the included KVM cable, which provides two USB, one VGA, and one serial connector.
Power	Up to two 650 W power supplies are supported, including 1+1 redundancy (the 450W is not supported). Do not mix power supply types in the server. See Power Specifications, page A-2 for more information on power supplies.
Cooling	Five hot-swappable fan modules for front-to-rear cooling.
PCIe I/O	Two horizontal PCIe[4] expansion slots on risers. See the "Replacing a PCIe Card" section on page 4-13 more information. **Not Supported** Only standard-profile PCIe slots are supported. The low-profile slots are not supported
Storage	Drives are installed into front-panel drive bays that provide hot-pluggable access. Only the Large Form Factor is supported (the server can hold up to four 3.5-inch SAS or SATA hard drives). **Not Supported** • The Small Form Factor server is NOT supported. • The internal USB 2.0 port on the motherboard is NOT supported. • The optional Cisco Flexible Flash drive (SD card) is not supported.
Disk Management (RAID)	For a list of supported RAID[5] options, see the application-specific details. For example, see the "Supported RAID and Hard Drive Configurations (Cisco VSM)" section on page 2-3.

[1] DIMM = dual inline memory module

[2] VGA = video graphics array

[3] USB = universal serial bus

[4] PCIe = peripheral component interconnect express

[5] RAID = redundant array of independent disks

Cisco Connected Safety and Security UCS C240 (2RU) Overview

The Cisco Connected Safety and Security UCS C240 (CPS-UCS-2RU-K9) is available in the large form factor (LFF) only, which supports up to 12 3.5-inch hard drives.

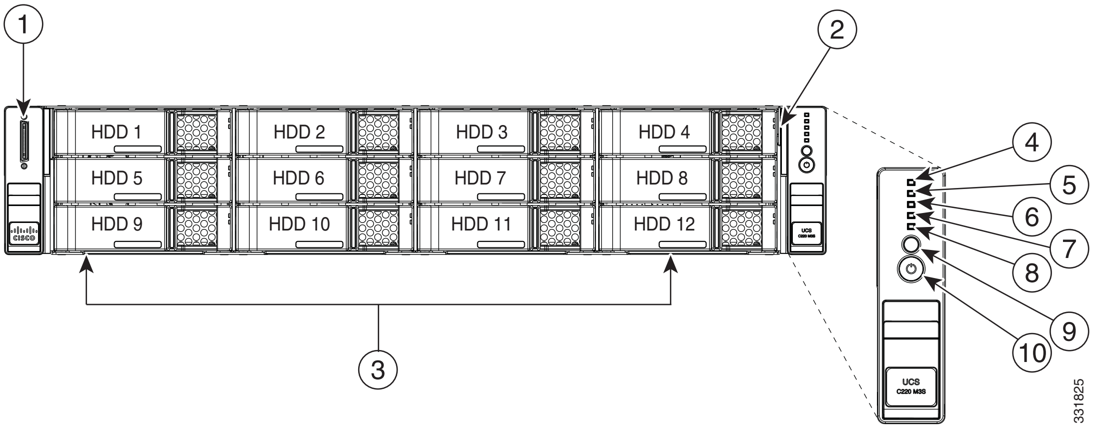
Note The small form-factor (SFF) versions of the Cisco Connected Safety and Security UCS C240 are not supported for Cisco Physical Security applications.

- Cisco Connected Safety and Security UCS C240 Front Panel, page 1-6
- Cisco Connected Safety and Security UCS C240 Rear Panel, page 1-7
- Summary of Cisco Connected Safety and Security UCS C240 Server Features, page 1-8

Cisco Connected Safety and Security UCS C240 Front Panel

Figure 1-3 shows the front panel features of the Large Form-Factor drives version of the server. This version of the server has a 12-drive.

Figure 1-3 Cisco Connected Safety and Security UCS C240 Server Front Panel Features



1	KVM connector (used with KVM cable that provides two USB 2.0, one VGA, and one serial connector)	**6**	Temperature status LED
2	Pull-out asset tag	**7**	Fan status LED
3	Drives, hot-swappable (up to twelve 3.5-inch drives)	**8**	System status LED
4	Network link activity LED	**9**	Identification button/LED
5	Power supply status LED	**10**	Power button/power status LED

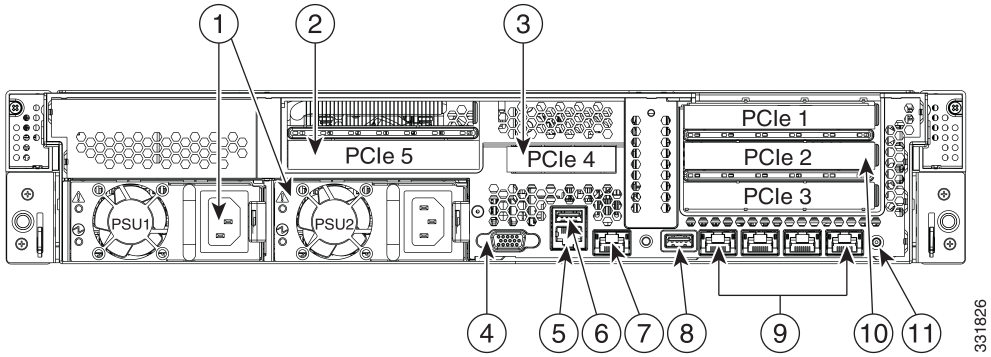
Tip See the "Cisco Connected Safety and Security UCS C240 LEDs and Buttons" section on page 1-15 for more information.

Note The backplane expander is not supported by the Cisco Connected Safety and Security UCS C240.

Cisco Connected Safety and Security UCS C240 Rear Panel

Figure 1-4 shows the rear panel features of the server.

Figure 1-4 Cisco Connected Safety and Security UCS C240 Server Rear Panel Features



1	Power supplies (two)	**7**	1-Gb Ethernet dedicated management port
2	PCIe slot on riser 2: PCIe 5—full-height, 3/4-length, x16 lane) **Note** The SD card slots on the PCIe riser are NOT supported.	**8**	USB 2.0 port
3	PCIe slot on riser 2: PCIe 4—half-height, 3/4-length, x8 lane) **Note** The SD card slots on the PCIe riser are NOT supported.	**9**	Quad 1-Gb Ethernet ports (LAN1 and LAN2) **Note** Only LAN1 and LAN2 ports are supported (referred to as “Eth 0” and “Eth1” in the Cisco Connected Safety and Security applications, such as Cisco Video Surveillance). **Note** The LAN3 and LAN4 ports are not supported.
4	VGA video connector	**10**	PCIe slots on riser 1: PCIe 1—full-height, half-length, x8 lane PCIe 2—full-height, half-length, x16 lane PCIe 3—full-height, half-length, x8 lane
5	Serial port (RJ-45 connector)	**11**	Rear Identification button/LED
6	USB port		–

Tip See the “Cisco Connected Safety and Security UCS C240 LEDs and Buttons” section on page 1-15 for more information.

Summary of Cisco Connected Safety and Security UCS C240 Server Features

Table 1-3 lists a summary of server features.

Table 1-3 Cisco Connected Safety and Security UCS C240 Server Features

Chassis	Two rack-unit (2RU) chassis.
Processors	Two Intel Xeon E5-2600 Series processors.
Memory	8 BG of internal memory (DIMM[1]). See the "DIMM Memory Configuration" section on page 1-20.
Baseboard management	Pilot III BMC, running Cisco Integrated Management Controller (CIMC) firmware. • The CIMC can be accessed only through the 1Gb Ethernet dedicated management port. • See the "Cisco Integrated Management Interface (CIMC)" section on page 1-22.
Network and management I/O	The server provides these connectors: • One 1-Gb Ethernet dedicated management port • Two 1-Gb Base-T Ethernet LAN ports **Note** Only LAN1 and LAN2 ports are supported (referred to as "Eth 0" and "Eth1" in the Cisco Connected Safety and Security applications, such as Cisco Video Surveillance). The LAN3 and LAN4 ports are not supported. • One RS-232 serial port (RJ-45 connector) • One 15-pin VGA[2] connector • Two USB[3] 2.0 connectors • One front-panel KVM connector that is used with the included KVM cable, which provides two USB, one VGA, and one serial connector.
Power	Two 650 W power supplies are supported, including 1+1 redundancy (the 1200 W is not supported). Do not mix power supply types in the server. See Power Specifications, page A-4.
Cooling	Six hot-swappable fan modules for front-to-rear cooling.
PCIe I/O	Five horizontal PCIe[4] expansion slots on two risers. See Replacing a PCIe Card, page 4-13 for specifications of the slots.

Table 1-3 Cisco Connected Safety and Security UCS C240 Server Features (continued)

Storage	Drives are installed into front-panel drive bays that provide hot-pluggable access. Only the Large Form Factor is supported (the server can hold up to 12 3.5-inch SAS or SATA hard drives). **Not Supported** • The Small Form Factor configurations are NOT supported. • The internal USB 2.0 port on the motherboard is NOT supported. • The optional Cisco Flexible Flash drive (SD card) are not supported
Disk Management (RAID)	For a list of supported RAID[5] options, see the application-specific information. For example, see the "Supported RAID and Hard Drive Configurations (Cisco VSM)" section on page 2-3.

[1] DIMM = dual inline memory module

[2] VGA = video graphics array

[3] USB = universal serial bus

[4] PCIe = peripheral component interconnect express

[5] RAID = redundant array of independent disks

Status LEDs and Buttons

This section describes the location and meaning of LEDs and buttons and includes the following topics:

- Cisco Connected Safety and Security UCS C220 LEDs and Buttons, page 1-10
- Cisco Connected Safety and Security UCS C240 LEDs and Buttons, page 1-15

Cisco Connected Safety and Security UCS C220 LEDs and Buttons

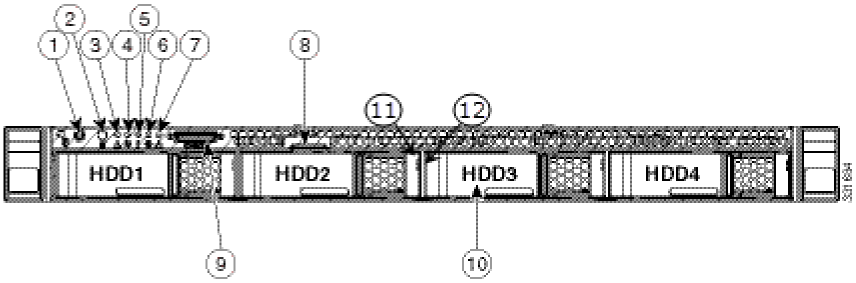
This section describes the location and meaning of LEDs and buttons and includes the following topics:

- Front Panel LEDs, page 1-10
- Rear Panel LEDs and Buttons, page 1-12
- Internal Diagnostic LEDs, page 1-14

Front Panel LEDs

Figure 1-5 shows the front panel LEDs for the Cisco Connected Safety and Security UCS C220.

Figure 1-5 Cisco Connected Safety and Security UCS C220 Server Front Panel Features



1	Power button/Power status LED	**7**	Network link activity LED
2	Identification button/LED	**8**	Pull-out asset tag
3	System status LED	**9**	KVM connector (used with KVM cable that provides two USB, one VGA, and one serial connector)
4	Fan status LED	**10**	Drives, hot-swappable (up to four 3.5-inch drives)
5	Temperature status LED	**11**	Hard drive fault LED
6	Power supply status LED	**12**	Hard drive activity LED

Table 1-4 defines the LED states for the Cisco Connected Safety and Security UCS C220.

Table 1-4 Front Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C220

LED Name	State
Power button/Power status LED	• Off—There is no AC power to the server. • Amber—The server is in standby power mode. Power is supplied only to the CIMC and some motherboard functions. • Green—The server is in main power mode. Power is supplied to all server components.
Identification	• Off—The Identification LED is not in use. • Blue—The Identification LED is activated.
System status	• Green—The server is running in normal operating condition. • Green, blinking—The server is performing system initialization and memory check. • Amber, steady—The server is in a degraded operational state. For example: – Power supply redundancy is lost. – CPUs are mismatched. – At least one CPU is faulty. – At least one DIMM is faulty. – At least one drive in a RAID configuration failed. • Amber, blinking—The server is in a critical fault state. For example: – Boot failed. – Fatal CPU and/or bus error is detected. – Server is in over-temperature condition.
Fan status	• Green—All fan modules are operating properly. • Amber, steady—One fan module has failed. • Amber, blinking—Critical fault, two or more fan modules have failed.
Temperature status	• Green—The server is operating at normal temperature. • Amber, steady—One or more temperature sensors have exceeded a warning threshold. • Amber, blinking—One or more temperature sensors have exceeded a critical threshold.
Power supply status	• Green—All power supplies are operating normally. • Amber, steady—One or more power supplies are in a degraded operational state. • Amber, blinking—One or more power supplies are in a critical fault state.
Network link activity	• Off—The Ethernet link is idle. • Green—One or more Ethernet LOM ports are link-active, but there is no activity. • Green, blinking—One or more Ethernet LOM ports are link-active, with activity.

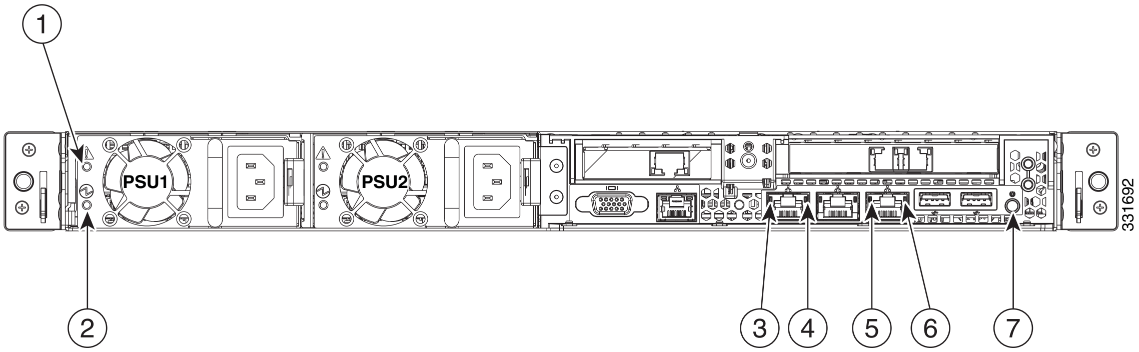
Table 1-4 Front Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C220 (continued)

LED Name	State
Hard drive fault	• Off—The hard drive is operating properly. • Amber—This hard drive has failed. • Amber, blinking—The device is rebuilding.
Hard drive activity	• Off—There is no hard drive in the hard drive sled (no access, no fault). • Green—The hard drive is ready. • Green, blinking—The hard drive is reading or writing data.

Rear Panel LEDs and Buttons

Figure 1-6 shows the rear panel LEDs and buttons for the Cisco Connected Safety and Security UCS C220.

Figure 1-6 Rear Panel LEDs and Buttons: Cisco Connected Safety and Security UCS C220



1	Power supply fault LED	**5**	1-Gb Ethernet link speed LED
2	Power supply AC OK LED	**6**	1-Gb Ethernet link status LED
3	1-Gb Ethernet dedicated management link status LED	**7**	Rear Identification button/LED
4	1-Gb Ethernet dedicated management link speed LED		–

Table 1-5 defines the LED states for the Cisco Connected Safety and Security UCS C220.

Table 1-5 Rear Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C220

LED Name	State
Power supply fault	• Off—The power supply is operating normally. • Amber, blinking—An event warning threshold has been reached, but the power supply continues to operate. • Amber, solid—A critical fault threshold has been reached, causing the power supply to shut down (for example, a fan failure or an over-temperature condition).
Power supply AC OK	• Off—There is no AC power to the power supply. • Green, blinking—AC power OK, DC output not enabled. • Green, solid—AC power OK, DC outputs OK.
1-Gb Ethernet dedicated management link speed	• Off—link speed is 10 Mbps. • Amber—link speed is 100 Mbps. • Green—link speed is 1 Gbps.
1-Gb Ethernet dedicated management link status	• Off—No link is present. • Green—Link is active. • Green, blinking—Traffic is present on the active link.
1-Gb Ethernet link speed	• Off—link speed is 10 Mbps. • Amber—link speed is 100 Mbps. • Green—link speed is 1 Gbps.
1-Gb Ethernet link status	• Off—No link is present. • Green—Link is active. • Green, blinking—Traffic is present on the active link.
Identification	• Off—The Identification LED is not in use. • Blue—The Identification LED is activated.

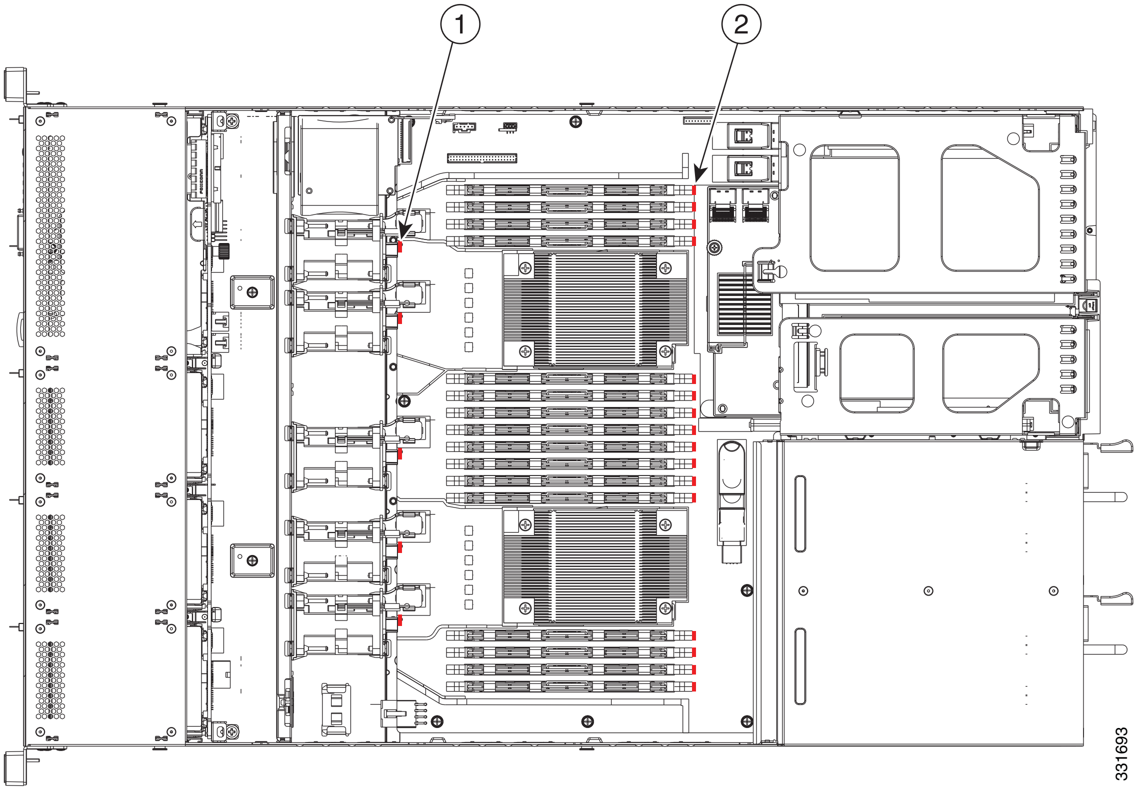
Internal Diagnostic LEDs

The server has internal fault LEDs for fan modules and DIMMs. An LED lights amber to indicate a failed component.

Note Power must be connected to the server for these LEDs to be operate.

See Figure 1-7 for the locations of these internal LEDs.

Figure 1-7 Internal Diagnostic LED Locations: Cisco Connected Safety and Security UCS C220



1	Fan module fault LEDs (one next to each fan connector on the motherboard)	**2**	DIMM fault LEDs (one next to each DIMM socket on the motherboard)

Table 1-6 describes the LED states.

Table 1-6 Internal Diagnostic LEDs, Definition of States: Cisco Connected Safety and Security UCS C220

LED Name	State
Internal diagnostic LEDs (all)	• Off—Component is functioning normally. • Amber—Component has failed.

Cisco Connected Safety and Security UCS C240 LEDs and Buttons

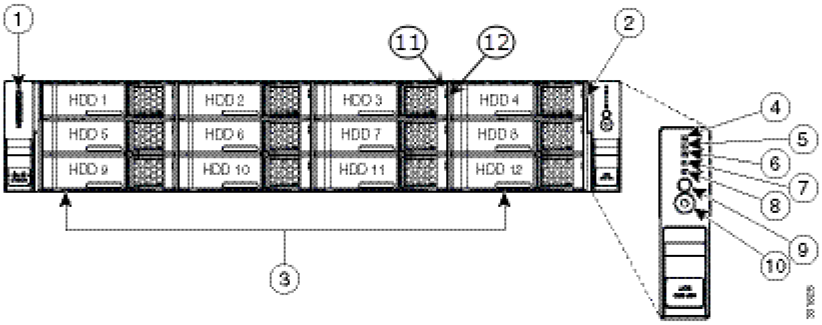
This section describes the location and meaning of LEDs and buttons and includes the following topics

- Front Panel LEDs, page 1-15
- Rear Panel LEDs and Buttons, page 1-17
- Internal Diagnostic LEDs, page 1-18

Front Panel LEDs

Figure 1-8 shows the front panel LEDs for the Cisco Connected Safety and Security UCS C240.

Figure 1-8 Cisco Connected Safety and Security UCS C240 Server Front Panel Features



1	KVM connector	**7**	Fan status LED
2	Pull-out asset tag	**8**	System status LED
3	Drives, hot-swappable (up to twelve 3.5-inch drives)	**9**	Identification button/LED
4	Network link activity LED	**10**	Power button/power status LED
5	Power supply status LED	**11**	Hard drive fault LED
6	Temperature status LED	**12**	Hard drive activity LED

Table 1-7 defines the LED states.

Table 1-7 Front Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C240

LED Name	State
Hard drive fault	• Off—The hard drive is operating properly. • Amber—This hard drive has failed. • Amber, blinking—The device is rebuilding.
Hard drive activity	• Off—There is no hard drive in the hard drive sled (no access, no fault). • Green—The hard drive is ready. • Green, blinking—The hard drive is reading or writing data.

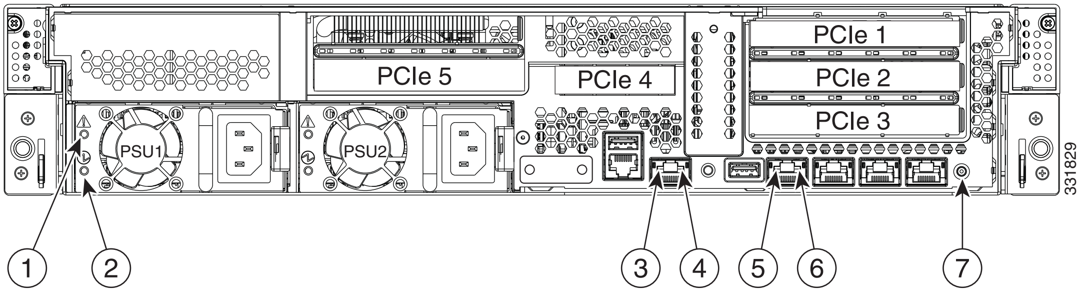
Table 1-7 Front Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C240 (continued)

LED Name	State
Network link activity	• Off—The Ethernet link is idle. • Green—One or more Ethernet LOM ports are link-active, but there is no activity. • Green, blinking—One or more Ethernet LOM ports are link-active, with activity.
Power supply status	• Green—All power supplies are operating normally. • Amber, steady—One or more power supplies are in a degraded operational state. • Amber, blinking—One or more power supplies are in a critical fault state.
Temperature status	• Green—The server is operating at normal temperature. • Amber, steady—One or more temperature sensors have exceeded a warning threshold. • Amber, blinking—One or more temperature sensors have exceeded a critical threshold.
Fan status	• Green—All fan modules are operating properly. • Amber, steady—One fan module has failed. • Amber, blinking—Critical fault, two or more fan modules have failed.
System status	• Green—The server is running in normal operating condition. • Green, blinking—The server is performing system initialization and memory check. • Amber, steady—The server is in a degraded operational state. For example: – Power supply redundancy is lost. – CPUs are mismatched. – At least one CPU is faulty. – At least one DIMM is faulty. – At least one drive in a RAID configuration failed. • Amber, blinking—The server is in a critical fault state. For example: – Boot failed. – Fatal CPU and/or bus error is detected. – Server is in over-temperature condition.
Identification	• Off—The Identification LED is not in use. • Blue—The Identification LED is activated.
Power button/Power status LED	• Off—There is no AC power to the server. • Amber—The server is in standby power mode. Power is supplied only to the CIMC and some motherboard functions. • Green—The server is in main power mode. Power is supplied to all server components.

Rear Panel LEDs and Buttons

Figure 1-9 shows the rear panel LEDs and buttons.

Figure 1-9 Rear Panel LEDs and Buttons: Cisco Connected Safety and Security UCS C240



1	Power supply fault LED	**5**	1-Gb Ethernet link speed LED
2	Power supply AC OK LED	**6**	1-Gb Ethernet link status LED
3	1-Gb Ethernet dedicated management link status LED	**7**	Identification button/LED
4	1-Gb Ethernet dedicated management link speed LED		–

Table 1-8 defines the LED states.

Table 1-8 Rear Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C240

LED Name	State
Power supply fault	• Off—The power supply is operating normally. • Amber, blinking—An event warning threshold has been reached, but the power supply continues to operate. • Amber, solid—A critical fault threshold has been reached, causing the power supply to shut down (for example, a fan failure or an over-temperature condition).
Power supply AC OK	• Off—There is no AC power to the power supply. • Green, blinking—AC power OK, DC output not enabled. • Green, solid—AC power OK, DC outputs OK.
1-Gb Ethernet dedicated management link speed	• Off—link speed is 10 Mbps. • Amber—link speed is 100 Mbps. • Green—link speed is 1 Gbps.
1-Gb Ethernet dedicated management link status	• Off—No link is present. • Green—Link is active. • Green, blinking—Traffic is present on the active link.
1-Gb Ethernet link speed	• Off—link speed is 10 Mbps. • Amber—link speed is 100 Mbps. • Green—link speed is 1 Gbps.

Table 1-8 Rear Panel LEDs, Definitions of States: Cisco Connected Safety and Security UCS C240 (continued)

LED Name	State
1-Gb Ethernet link status	• Off—No link is present. • Green—Link is active. • Green, blinking—Traffic is present on the active link.
Identification	• Off—The Identification LED is not in use. • Blue—The Identification LED is activated.

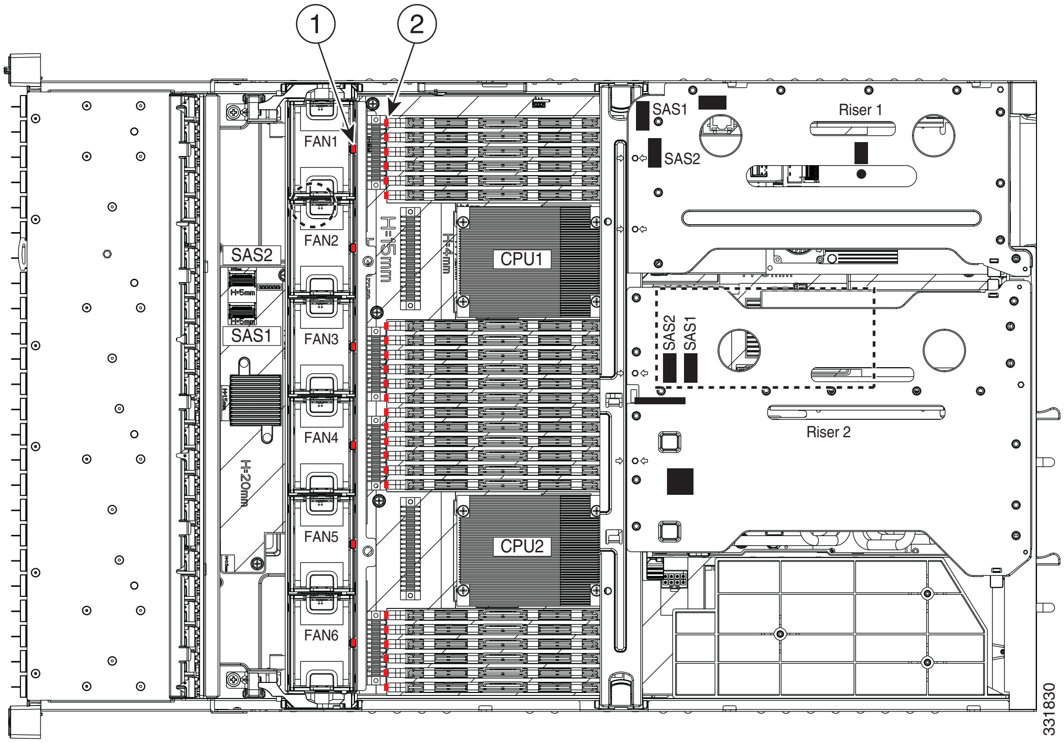
Internal Diagnostic LEDs

The server is equipped with a SuperCap voltage source that can activate internal component fault LEDs up to one half-hour after AC power is removed. The server has internal fault LEDs for fan modules and DIMMs.

To use these LEDs to identify a failed component, press the front or rear Identification button (see Figure 1-8 or Figure 1-9) with AC power removed. An LED lights amber to indicate a failed component.

See Figure 1-10 for the locations of these internal LEDs.

Figure 1-10 Internal Diagnostic LED Locations: Cisco Connected Safety and Security UCS C240



1	Fan module fault LEDs (one on each fan module)	2	DIMM fault LEDs (one next to each DIMM socket on the motherboard)

Table 1-9 describes the LED states.

Table 1-9 Internal Diagnostic LEDs, Definition of States

LED Name	State
Internal diagnostic LEDs (all)	• Off—Component is functioning normally. • Amber—Component has failed.

Supported PSBU Hardware Configurations

- DIMM Memory Configuration, page 1-20
- Supported NIC (GigE) Ports (Cisco Video Surveillance), page 1-21

DIMM Memory Configuration

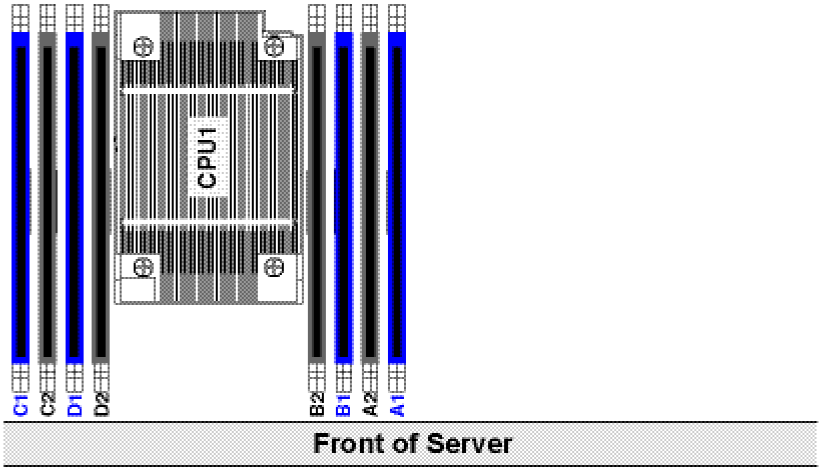
- Cisco Connected Safety and Security UCS C220 Memory, page 1-20
- Cisco Connected Safety and Security UCS C240 Memory, page 1-20

Cisco Connected Safety and Security UCS C220 Memory

The Cisco Connected Safety and Security UCS C220 (1RU) server is pre-configured with 8GB of system memory. A single 8GB DIMM is installed in slot A1. (Figure 1-11).

Note DIMMs are not field replacable or upgradable in the Cisco Connected Safety and Security UCS series servers.

Figure 1-11 DIMM Slot Numbering: Cisco Connected Safety and Security UCS C220



Note

- Only CPU 1 (and the associated channels A, B, C, and D) are supported in this release.
- CPU2 is not supported. Any DIMM modules installed in the CPU2-supported channels E, F, G, and H will be ignored and unused by the server.

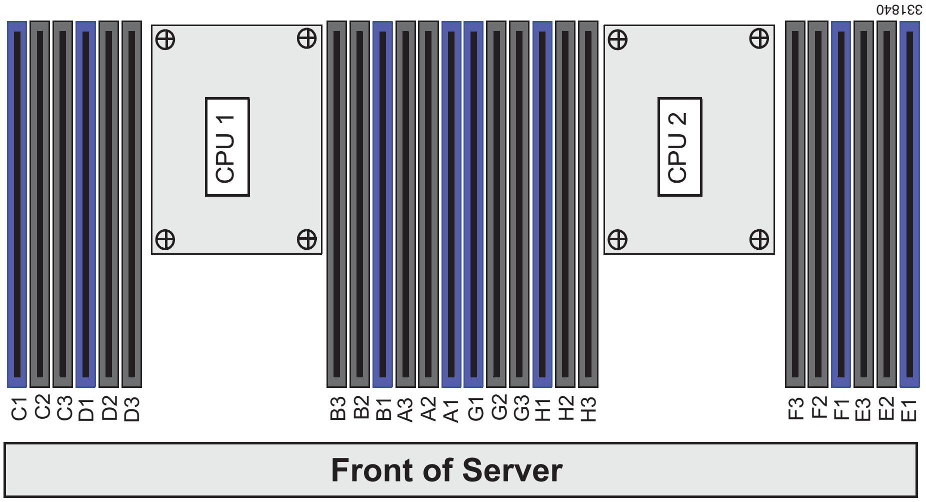
Cisco Connected Safety and Security UCS C240 Memory

The Cisco Connected Safety and Security UCS C240 (2RU) server is pre-configured with 16GB of system memory. 8GB DIMM is installed in the slots associated with each CPU (CPU1 and CPU2).

- CPU1—One 8GB DIMM is installed in slot A1 (Figure 1-12).
- CPU2—One 8GB DIMM is installed in slot E1.

Note DIMMs are not field replacable or upgradable in the Cisco Connected Safety and Security UCS series servers.

Figure 1-12 CPUs and DIMM Slots on Motherboard: Cisco Connected Safety and Security UCS C240



Supported NIC (GigE) Ports (Cisco Video Surveillance)

The Cisco Connected Safety and Security UCS series servers support the following:

- One 1-Gb Ethernet dedicated management port
- Two 1-Gb Base-T Ethernet ports

See the "System Overview" section on page 1-2 for port locations.

Note

- The LAN Ethernet posts are referred to as "Eth 0" and "Eth1" in the Cisco Connected Safety and Security applications, such as Cisco Video Surveillance.
- The Cisco Connected Safety and Security UCS series servers do NOT support the NIC redundancy modes. Only the *None* option is supported: the Ethernet ports operate independently and do not fail over if there is a problem.

Server and Accessories Part Numbers

The following servers and field replaceable units (FRUs) are supported by the Cisco Connected Safety and Security UCS Platform Series servers. Refer to these PIDs when ordering new or replacement components.

Table 1-10 Part Numbers for the Cisco Connected Safety and Security UCS Platform Series

Type	Part Number (PID)	Description
Server appliance	CPS-UCS-1RU-K9=	Cisco Connected Safety and Security UCS C220 (1RU) server
	CPS-UCS-2RU-K9=	Cisco Connected Safety and Security UCS C240 (2RU) server
Fiber Channel PCIe Cards (Optional)	CPS-AEPCI05=	Emulex LPe 12002 Dual Port 8Gb Fibre Channel HBA
Hard Drives **Note** You can order drives in bundles of 2 or 6 drives for replacement or expansion. Bundles must be the same capacity.	CPS-HDD1TI2F212=	1TB SAS 7.2K RPM 3.5 inch HDD/hot plug/drive sled mounted
	CPS-HDD2TI2F213=	2TB SAS 7.2K RPM 3.5 inch HDD/hot plug/drive sled mounted
	CPS-HDD3TI2F214=	3TB SAS 7.2K RPM 3.5 inch HDD/hot plug/drive sled mounted
RAID	CPS-RAID9271CV-8I=	MegaRAID 9271CV Raid card with 8 internal SAS/SATA parts, S
Power Supplies	CPS-PSU-650W=	650W power supply.

Server Monitoring and Management Tools

The following software tools are used to monitor server health and events:

- Cisco Integrated Management Interface (CIMC), page 1-22
- Cisco Video Surveillance Management Console, page 1-22

Cisco Integrated Management Interface (CIMC)

You can monitor the server inventory, health, and system event logs by using the built-in Cisco Integrated Management Controller (CIMC) GUI or CLI interfaces. See the user documentation for your firmware release at the following URL:

http://www.cisco.com/en/US/products/ps10739/products_installation_and_configuration_guides_list.html

For example: see the Cisco UCS C-Series Servers Integrated Management Controller GUI Configuration Guide, Release 1.5.

Cisco Video Surveillance Management Console

For Cisco Video Surveillance Manager applications, use the browser-based Cisco VSM Management Console to configure, manage and monitor the server.

See the Cisco Video Surveillance Management Console Administration Guide for more information.

Supported Applications

The current release of the Cisco Connected Safety and Security UCS series servers support the Cisco Video Surveillance Manager and associated servers and devices. See the following for more information:

- Supported Applications, page 2-1
- Related Documentation, page B-1
- The Cisco Video Surveillance 7 Documentation Roadmap available at http://www.cisco.com/go/physicalsecurity/vsm/roadmap. This document provides descriptions and links to Cisco Video Surveillance documentation, server and storage platform documentation, and other related documentation.

CHAPTER 2

Supported Applications

The current release of the Cisco Connected Safety and Security UCS series servers support the following application:

Cisco Video Surveillance Manager, Release 7.2 and Higher

Overview

The current release of the Cisco Connected Safety and Security UCS series servers support the Cisco Video Surveillance Manager (Cisco VSM) Release 7.2 and higher, including associated servers and devices.

The Cisco Connected Safety and Security UCS C220 (1RU) and Cisco Connected Safety and Security UCS C240 (2RU) servers are shipped as server appliances, meaning that the Cisco Video Surveillance Manager system software is pre-loaded in a “bare-metal” configuration.

Note These servers do not currently support additional virtual machine (VM) installations. Virtual Machine deployment is supported on separate Cisco UCS Express, and B-, C-, and E- Series platform servers. See the Cisco Video Surveillance Virtual Machine Deployment, Recovery and HA Guide for UCS Platforms for more information.

Initial Setup Procedure

To install and configure a Cisco Connected Safety and Security UCS series server appliance for the first time, complete the following high-level steps:

Procedure

Step 1 Physically install the Cisco Connected Safety and Security UCS series server appliance.

See the "Installing the Server" section on page 3-1.

Step 2 Complete the initial server setup.

See the "Initial Server Setup" section on page 3-16.

Step 3 Use the browser-based Cisco Video Surveillance Management Console to complete the initial server setup for the Cisco Video Surveillance Manager.

See the Cisco Video Surveillance Management Console Administration Guide.

Step 4 Use the browser-based Cisco Video Surveillance Operations Manager to configure additional server options and Cisco VSM features.

See the Cisco Video Surveillance Operations Manager User Guide.

Upgrading the Cisco VSM System Software

To to update the Cisco VSM system software, use the browser-based Cisco VSM Operations Manager or Cisco VSM Management Console to install the upgrade file that contains all required packages and components.

Refer to the following for more information:

- Cisco VSM Release 7.6 and higher—See the Cisco Video Surveillance Install and Upgrade Guide for your release.
- Cisco VSM Release 7.2 to 7.5— See the **Server Upgrade** section of Cisco Video Surveillance Management Console Administration Guide for instructions to obtain and install system upgrades.

Recovering the Cisco VSM System Software

To create a bootable USB flash drive that can be used to recover an installation or perform a factory installation of Cisco VSM 7, see the following:

- Cisco VSM Release 7.6 and higher—See the Cisco Video Surveillance Install and Upgrade Guide for your release.
- Cisco VSM Release 7.2 to 7.5— See the Cisco Video Surveillance Manager Recovery Guide (Cisco Connected Safety and Security UCS Platform Series).

The recovery options include the following:

Table 2-1 Recovery Options

Option	Description
recovery	Reinstalls the operating system. • Recorded video and configurations are preserved. • RAID configurations are preserved (only the OS partitions are formatted).
factory	Restores the server to the factory default settings: **Note** You must disconnect any external storage before using this option • Reinstalls the operating system. • Clears and reconfigures the RAID. ⚠ **Caution** This action deletes all data and video files.
factory_raid5	Restores a Cisco Connected Safety and Security UCS C240 server to the factory default settings, including: **Note** Valid only on the Cisco Connected Safety and Security UCS C240 with 6 or 12 internal drives. **Note** You must disconnect any external storage before using this option. • Reinstalls the operating system. • Clears and reconfigures the RAID. ⚠ **Caution** This action deletes all data and video files.
rescue	Boot to prompt from USB media. Use this option to recover a password or for other administrative tasks

Supported RAID and Hard Drive Configurations (Cisco VSM)

Table 2-2 defines the drive configurations supported by the Cisco Video Surveillance Manager. The Cisco Connected Safety and Security UCS C220 server supports RAID 1 and 5, while the Cisco Connected Safety and Security UCS C240 server supports RAID levels 1, 5 and 6.

Table 2-2 Supported Drive Configurations

Cisco Connected Safety and Security UCS C220	2 drives	RAID 1
	4 drives	RAID 5

Table 2-2 Supported Drive Configurations (continued)

Cisco Connected Safety and Security UCS C240	2 drives	RAID 1
	6 drives	RAID 5 or RAID 6
	12 drives	RAID 5 or RAID 6

Requirements and Conditions

The following notes apply to drive configurations, recovery and expansion.

- All drives must be installed in the lowest numbered available slot.
- Hot Standby drives are not supported.
- Mixing RAID configurations is not supported. For example, 6 drives in RAID 6, and 6 drives in RAID 5).
- RAID expansion is not supported during a "Recovery" installation (RAID configuration remains the same during a "Recovery" installation).
- RAID configuration may be changed during a "Factory" reimage (note that all data will be lost unless backed up prior to the procedure).

Supported RAID Upgrade Paths

Table 2-3 defines the supported paths to add additional drives.

Table 2-3 Supported Upgrade Paths

	From	To	Notes
Cisco Connected Safety and Security UCS C220	2 drives	4 Drives/RAID 5	RAID Change, Factory Reimage required
Cisco Connected Safety and Security UCS C240	2 drives/RAID 1	6 Drives/RAID 5	RAID Change, Factory Reimage required
	2 drives/RAID 1	6 Drives/RAID 6	
	2 drives/RAID 1	12 Drives/RAID 5	
	2 drives/RAID 1	12 Drives/RAID 6	
	6 drives/RAID 5	12 Drives/RAID 6	
	6 drives/RAID 6	12 Drives /RAID 5	
	6 drives/RAID 5	12 Drives (as 1 RAID Group) /RAID 5	Factory Reimage required. Dynamic expansion of existing VD, /media partitions not supported
	6 drives/RAID 6	12 Drives (as 1 RAID Group) /RAID 6	

Note You can order drives in bundles of 2 drives. The bundles are for replacement and for expansion to get to four drives. These drives that are shipped are of the same capacity. They can be 1TB, 2TB, or 3TB. See the "Server and Accessories Part Numbers" section on page 1-22 for more information.

Note RAID configuration changes require a "Factory" reimage. All data will be lost unless backed up prior to the procedure.

Supported Hard Drives

You can order drives in bundles of 2 drives. The bundles are for replacement and for expansion to get to four drives. These drives that are shipped are of the same capacity. They can be 1TB, 2TB, or 3TB.

Requirements for All Servers

- Drives are not rebuilt when the same drive is removed and reinserted. The removed drive must be replaced with a new drive. The rebuild will start automatically.
- All drives must be of the same capacity. Drives of different capacities are not supported (for example, you cannot mix 1TB, 2TB and/or 3TB drives in the same server).
- Installation is supported only if all hard drives are in optimal state.
- You can order drives in bundles of 2 drives for replacement or expansion. See the "Server and Accessories Part Numbers" section on page 1-22.
- See the "Replacing Hard Drives" section on page 4-9 for more information.

Cisco Connected Safety and Security UCS C220 Hard Disk Configuration

- The Cisco Connected Safety and Security UCS C220 server ships with 2 or 4 disk drives (other combinations are not supported).
- Up to four large form factor (LFF) disk drives (3.5" hard drives) of 1TB, 2TB, and 3TB are supported. These are driven directly from the RAID controller and do not require any expander.
- RAID levels 1, 5 are supported. See the "Supported RAID and Hard Drive Configurations (Cisco VSM)" section on page 2-3.

Cisco Connected Safety and Security UCS C240 Hard Disk Configuration

- Cisco Connected Safety and Security UCS C240 server ships with 2 or 12 disk drives.
- Up to 12 large form factor (LFF) disk drives (3.5" hard drives) of 1TB, 2TB, and 3TB are supported. These are driven directly from the RAID controller and do not require any expander.
- RAID levels 1, 5 and 6 are supported. See the "Supported RAID and Hard Drive Configurations (Cisco VSM)" section on page 2-3.

More Information

See the following for more information:

- Related Documentation, page B-1
- The Cisco Video Surveillance 7 Documentation Roadmap available at http://www.cisco.com/go/physicalsecurity/vsm/roadmap. This document provides descriptions and links to Cisco Video Surveillance documentation, server and storage platform documentation, and other related documentation.

Installing the Server

This chapter describes how to install the server, and it includes the following sections:

Note Before you install, operate, or service a server, review the *Regulatory Compliance and Safety Information for Cisco UCS C-Series Servers* for important safety information.

Warning **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Unpacking and Inspecting the Server

Caution When handling internal server components, wear an ESD strap and handle modules by the carrier edges only.

Tip Keep the shipping container in case the server requires shipping in the future.

Note The chassis is thoroughly inspected before shipment. If any damage occurred during transportation or any items are missing, contact your customer service representative immediately.

To inspect the shipment, follow these steps:

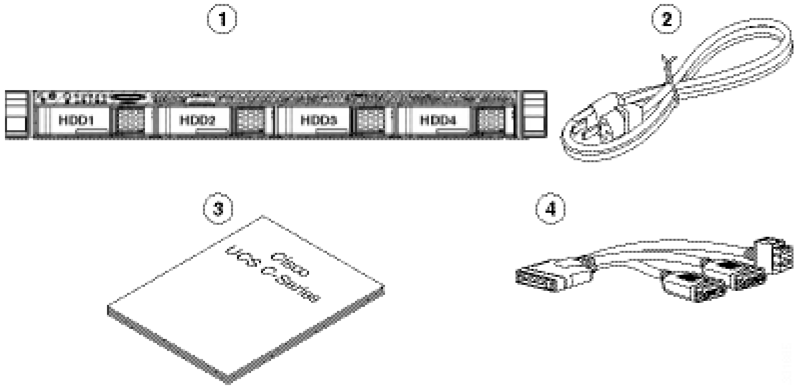
Step 1 Remove the server from its cardboard container and save all packaging material.

Step 2 Compare the shipment to the equipment list provided by your customer service representative and Figure 3-1. Verify that you have all items.

Step 3 Check for damage and report any discrepancies or damage to your customer service representative. Have the following information ready:

- Invoice number of shipper (see the packing slip)
- Model and serial number of the damaged unit
- Description of damage
- Effect of damage on the installation

Figure 3-1 Shipping Box Contents



1	Server	**3**	Documentation
2	Power cord (optional, up to two)	**4**	KVM cable

Preparing for Server Installation

This section provides information about preparing for server installation, and it includes the following topics:

- Installation Guidelines, page 3-3
- Rack Requirements, page 3-4
- Equipment Requirements, page 3-4
- Slide Rail Adjustment Range, page 3-4

Installation Guidelines

Warning **To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 40° C (104° F).**
Statement 1047

Warning **The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.**
Statement 1019

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 15 A.**
Statement 1005

Warning **Installation of the equipment must comply with local and national electrical codes.**
Statement 1074

Caution Do not block the air vents on the top of the server's cover. Do not stack another server directly on top of the C220 server. Doing so blocks the proper airflow, which could result in overheating, higher fan speeds, and higher power consumption.

Caution Avoid UPS types that use ferroresonant technology. These UPS types can become unstable with systems such as the Cisco UCS, which can have substantial current draw fluctuations from fluctuating data traffic patterns.

When you are installing a server, use the following guidelines:

- Plan your site configuration and prepare the site before installing the server. See the *Cisco UCS Site Preparation Guide* for the recommended site planning tasks.
- Ensure that there is adequate space around the server to allow for servicing the server and for adequate airflow. The airflow in this server is from front to back.

- Ensure that the air-conditioning meets the thermal requirements listed in the "Server Specifications".
- Ensure that the cabinet or rack meets the requirements listed in the "Rack Requirements" section on page 3-4.
- Ensure that the site power meets the power requirements listed in the "Server Specifications". If available, you can use an uninterruptible power supply (UPS) to protect against power failures.

Rack Requirements

This section provides the requirements for the standard open racks.

The rack must be of the following type:

- A standard 19-in. (48.3-cm) wide, four-post EIA rack, with mounting posts that conform to English universal hole spacing, per section 1 of ANSI/EIA-310-D-1992.
- The rack post holes can be square 0.38-inch (9.6 mm), round 0.28-inch (7.1 mm), #12-24 UNC, or #10-32 UNC when you use the supplied slide rails.
- The minimum vertical rack space per server must be the following:
  - Cisco Connected Safety and Security UCS C220 (1RU): one RU, equal to 1.75 in. (44.45 mm).
  - Cisco Connected Safety and Security UCS C240 (2RU): The minimum vertical rack space per server must be two RUs, equal to 3.5 in. (88.9 mm).

Equipment Requirements

Cisco Connected Safety and Security UCS C220 (1RU)

The slide rails supplied by Cisco Systems for this server do not require tools for installation. The inner rails (mounting brackets) are pre-attached to the sides of the server.

Cisco Connected Safety and Security UCS C240 (2RU)

The slide rails supplied by Cisco Systems for this server do not require tools for installation if you install them in a rack that has square 0.38-inch (9.6 mm), round 0.28-inch (7.1 mm), or #12-24 UNC threaded holes. The inner rails are pre-attached to the sides of the server.

However, if you install the slide rails in a rack that has #10-32 round holes, a bladed screwdriver is required to remove the larger square/round mounting pegs from the front of the slide rails.

Slide Rail Adjustment Range

The slide rails for this server have an adjustment range of 24 to 36 inches (610 to 914 mm).

Installing the Cisco Connected Safety and Security UCS C220 Server In a Rack

This section describes how to install the server in a rack.

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Statement 1006

To install the slide rails and the server into a rack, follow these steps:

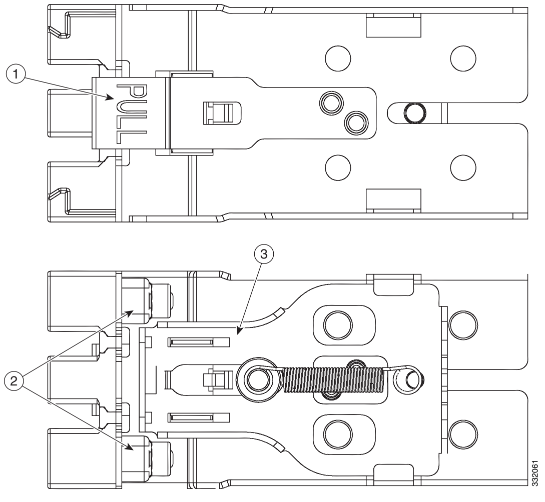
Step 1 Open the front securing latch (see Figure 3-2). The end of the slide-rail assembly marked “FRONT” has a spring-loaded securing latch that must be open before you can insert the mounting pegs into the rack-post holes.

a. On the rear side of the securing-latch assembly, hold open the clip marked “PULL.”

b. Slide the spring-loaded securing latch away from the mounting pegs.

c. Release the clip marked “PULL” to lock the securing latch in the open position.

Figure 3-2 Front Securing Latch



1	Clip marked “PULL” on rear of assembly	**3**	Spring-loaded securing latch on front of assembly
2	Front mounting pegs		--

Step 2 Install the slide rails onto the rack:

a. Position a slide-rail assembly inside the two left-side rack posts (see Figure 3-3).

Use the “FRONT” and “REAR” markings on the slide-rail assembly to orient the assembly correctly with the front and rear rack posts.

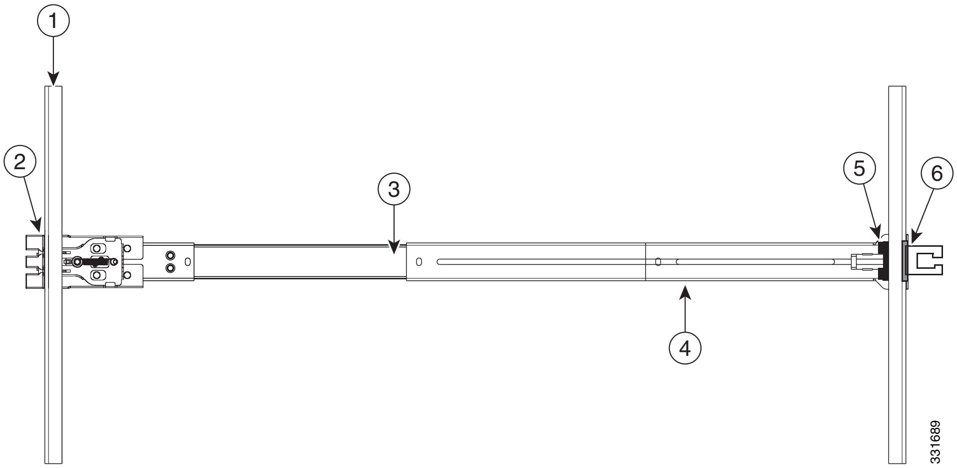
b. Position the front mounting pegs so that they enter the desired front rack-post holes from the front.

Note The mounting pegs that protrude through the rack-post holes are designed to fit round or square holes, or smaller #10-32 round holes when the mounting peg is compressed. If your rack has #10-32 rack-post holes, align the mounting pegs with the holes and then compress the spring-loaded pegs to expose the #10-32 inner peg.

c. Expand the length-adjustment bracket until the rear mounting pegs protrude through the desired holes in the rear rack post.

Use your finger to hold the rear securing latch open when you insert the rear mounting pegs to their holes. When you release the latch, it wraps around the rack post and secures the slide-rail assembly.

Figure 3-3 Attaching a Slide-Rail Assembly



1	Front-left rack post	**4**	Length-adjustment bracket
2	Front mounting pegs	**5**	Rear mounting pegs
3	Slide-rail assembly	**6**	Rear securing latch

d. Attach the second slide-rail assembly to the opposite side of the rack. Ensure that the two slide-rail assemblies are level and at the same height with each other.

e. Pull the inner slide rails on each assembly out toward the rack front until they hit the internal stops and lock in place.

Step 3 Insert the server into the slide rails:

Note The inner rails are pre-attached to the sides of the server at the factory. You can order replacement inner rails if these are damaged or lost (Cisco PID UCSC-RAIL1-I).

a. Align the inner rails that are pre-attached to the server sides with the front ends of the empty slide rails.

b. Push the server into the slide rails until it stops at the internal stops.

c. Push in the plastic release clip on each inner rail (labelled PUSH), and then continue pushing the server into the rack until its front latches engage the rack posts.

Step 4 Attach the (optional) cable management arm (CMA) to the rear of the slide rails:

Note The CMA is designed for mounting on either the right or left slide rails. These instructions describe an installation to the rear of the right slide rails, as viewed from the rear of server.

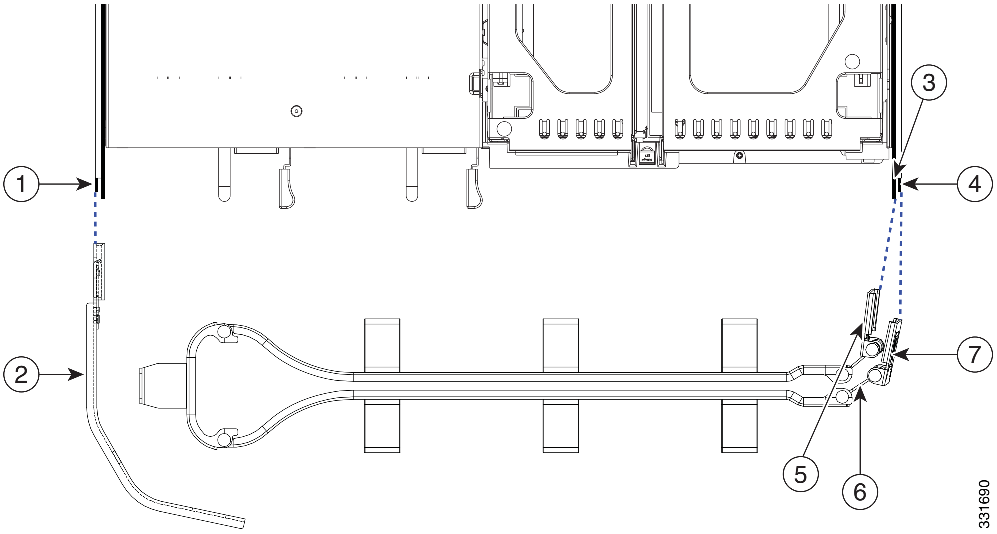
a. Slide the plastic clip on the inner CMA arm over the flange on the mounting bracket that attached to the side of the server. See Figure 3-4.

Note Whether you are mounting the CMA to the left or right slide rails, be sure to orient the engraved marking, “UP” so that it is always on the upper side of the CMA. See Figure 3-4.

b. Slide the plastic clip on the outer CMA arm over the flange on the slide rail. See Figure 3-4.

c. Attach the CMA retaining bracket to the left slide rail. Slide the plastic clip on the bracket over the flange on the end of the left slide rail. See Figure 3-4.

Figure 3-4 Attaching the Cable Management Arm (Rear of Server Shown)



1	Flange on rear of outer left slide rail	**5**	Inner CMA arm attachment clip
2	CMA retaining bracket	**6**	“UP” orientation marking
3	Flange on rear of right mounting bracket	**7**	Outer CMA arm attachment clip
4	Flange on rear of outer right slide rail		

Step 5 Continue with the "Initial Server Setup" section on page 3-16.

Installing the Cisco Connected Safety and Security UCS C240 Server In a Rack

This section contains the following sections:

Installing the Slide Rails

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

To install the slide rails and the server into a rack, follow these steps:

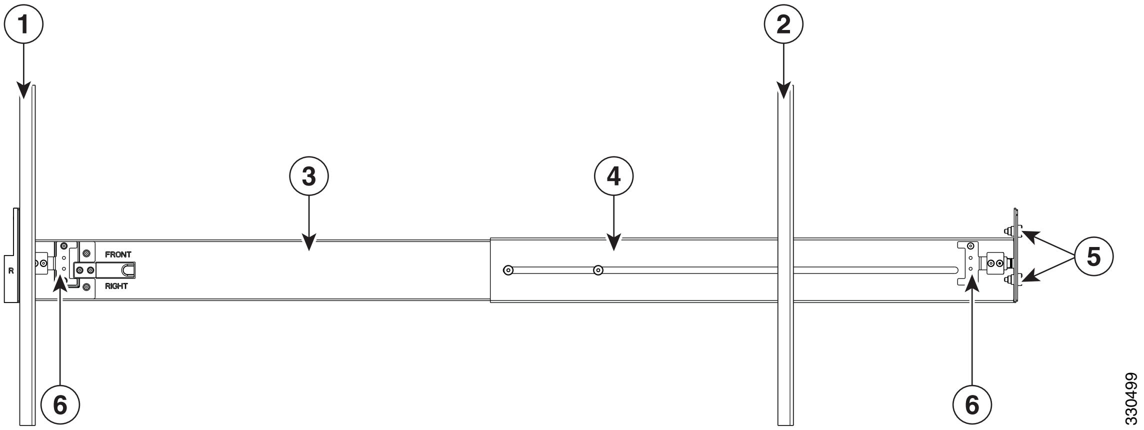
Step 1 Install the slide rails into the rack (see Figure 3-3):

a. Align the slide-rail assembly inside the rack posts with the length-adjustment bracket (Figure 3-3, item 4) toward the rear of the rack.

b. Compress the length-adjustment bracket until the mounting pegs (item 5) and locking clips (item 6) engage the desired rack holes on the front and rear rack posts.

- The mounting pegs fit square 0.38-inch (9.6 mm), round 0.28-inch (7.1 mm), or #12-24 UNC threaded holes. They fit the shape of the hole when the pegs are compressed.
- The smaller #10-32 round mounting pegs are enclosed in the center of the compressible *rear* pegs. However, to use the #10-32 pegs, you must use a bladed screwdriver to remove the square/round *front* pegs.

Figure 3-5 Attaching a Slide-Rail Assembly



1	Front-right rack post	**4**	Length-adjustment bracket
2	Rear-right rack post	**5**	Mounting pegs (two on each end of assembly)
3	Slide-rail assembly	**6**	Locking clips (one on each end of assembly)

c. Attach the second slide-rail assembly to the opposite side of the rack. Ensure that the two slide-rail assemblies are level and at the same height with each other.

d. Pull the inner slide rails on each assembly out toward the rack front until they hit the internal stops and lock in place.

Step 2 Insert the server into the slide rails (see Figure 3-6):

Caution This server weighs approximately 60 pounds (28 kilograms) when fully loaded with components. We recommend that you use a minimum of two people when lifting the server. Attempting this procedure alone could result in personal injury or equipment damage.

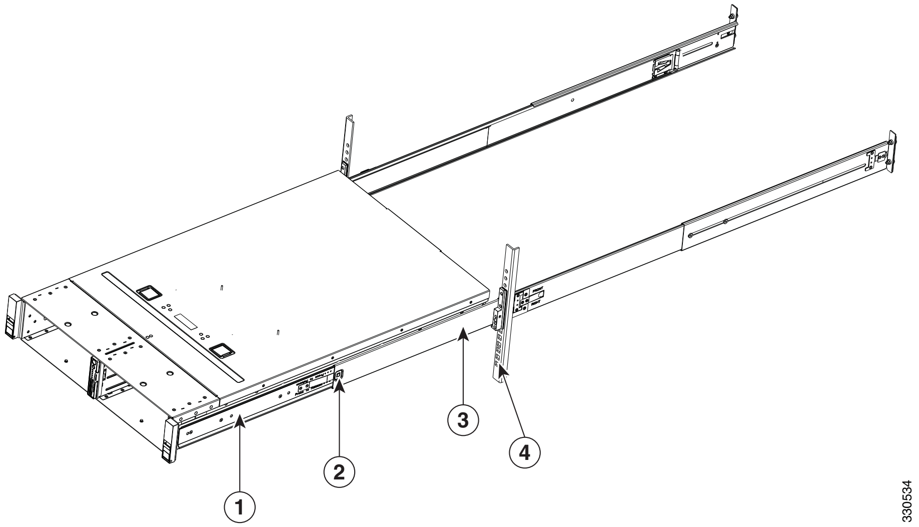
Note The inner rails are pre-attached to the sides of the server at the factory. You can order replacement inner rails if these are damaged or lost (Cisco PID UCSC-RAIL-2U-I).

a. Align the inner rails that are attached to the server sides with the front ends of the empty slide rails.

b. Push the server into the slide rails until it stops at the internal stops.

c. Push in the slide rail locking clip (item 2) on each inner rail, and then continue pushing the server into the rack until its front flanges latch onto the rack posts.

Figure 3-6 Inserting the Server Into the Slide Rails



1	Inner rail on server	**3**	Slide rail assembly on rack post
2	Slide rail locking clip	**4**	Right-front rack post

Step 3 Optional–If you want to install the cable management arm, continue with Installing the Cable Management Arm (Optional), page 3-12.

Installing the Cable Management Arm (Optional)

To install the cable management arm (CMA) to the rear of the slide rails, use the following procedure.

Note The CMA is reversible right-to-left. However when reversing, you must remove and reposition the CMA attachment tabs for correct installation. To reverse the CMA, see Reversing the Cable Management Arm (Optional), page 3-14 before installation.

Note When positioning the CMA, make sure that the CMA is correctly oriented with the "TOP" stamp on the CMA arms facing upward. See Figure 3-4.

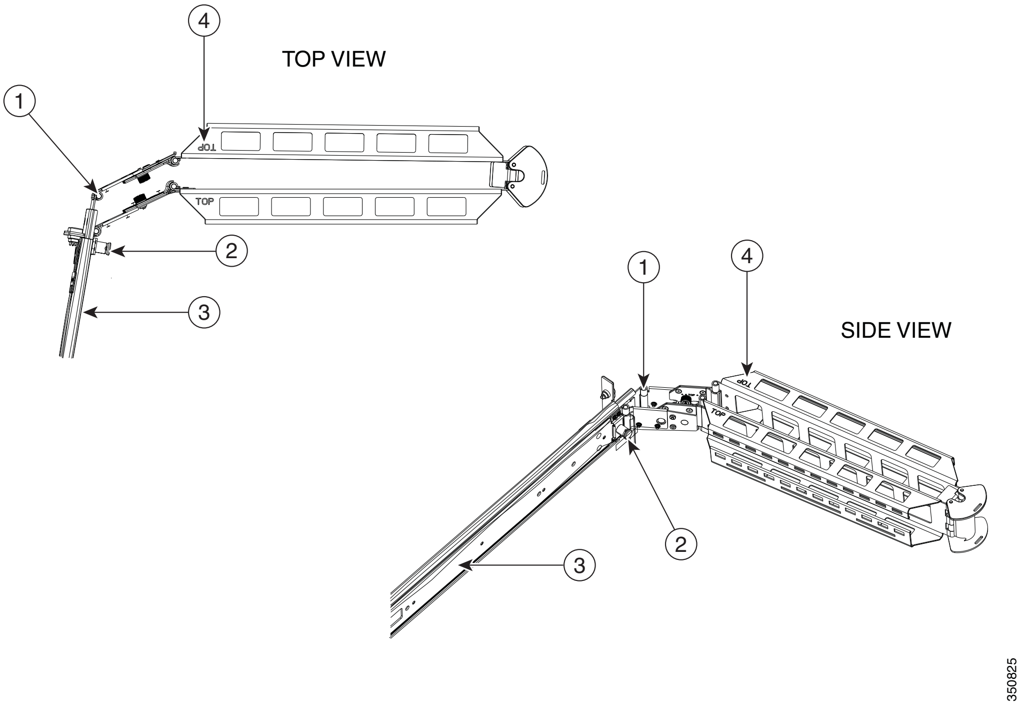
Step 1 With the server pushed fully into the rack, insert the outer CMA tab into the clip inside the rear of the outer slide rail. Insert the tab into the clip until it clicks and locks.

Step 2 Pull outward on the spring-loaded peg that is on the inner CMA tab. You can turn this peg 90 degrees to lock it in the open position.

Step 3 Push the inner CMA tab over the end of the inner rail that is attached to the server, and then release the spring-loaded peg.

The spring-loaded peg must align with and enter the hole in the inner rail to lock the CMA in place. If you turned the peg 90 degrees to lock it open, now turn it back 90 degrees to release it.

Figure 3-7 Attaching the Cable Management Arm



1	Outer CMA tab attached to outer slide rail	**3**	Rear of right slide rail assembly
2	Inner CMA tab with spring-loaded peg attached to inner rail	**4**	“TOP” stamp on CMA arms facing upward

Reversing the Cable Management Arm (Optional)

The CMA is shipped assembled for installation to the rear of the right-hand slide rails (when facing the rear of the server). The CMA is reversible so that you can mount it to the rear of either the right or left slide rails. However, you must remove and reposition the CMA tabs so that the hinges open correctly.

To reverse the CMA, use the following procedure:

Step 1 Orient the CMA so that the "TOP" stamp on the CMA arms are facing upward (see Figure 3-8).

Step 2 Reverse the entire CMA assembly 180 degrees, keeping the "TOP" stamp on the CMA arms facing upward.

Step 3 Loosen the captive thumbscrew on each CMA arm.

Step 4 Remove the CMA tab from each arm.Slide the CMA tab forward until its pegs can be removed from the keyed holes on the CMA arms.

Step 5 Install the inner CMA tab with the spring-loaded peg onto the CMA arm that is closest to the server (the inner CMA arm). The tab fits onto the side of the arm that is opposite the captive thumbscrew.

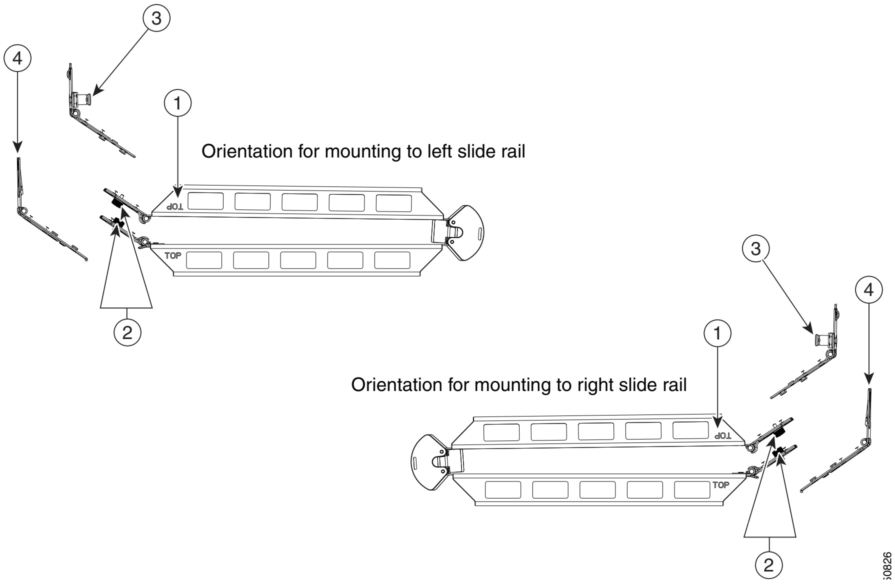
- **a.** Insert the pegs on the CMA tab into the keyed holes on the CMA arm and slide the tab to lock the pegs in place.
- **b.** Tighten the captive thumbscrew.

Step 6 Install the CMA tab with no spring-loaded tab onto the CMA arm that is farthest from the server (the outer CMA arm).The tab fits onto the side of the arm that is opposite the captive thumbscrew.

- **a.** Insert the pegs on the CMA tab into the keyed holes on the CMA arm and slide the tab to lock the pegs in place.
- **b.** Tighten the captive thumbscrew.

Step 7 Install the CMA to the slide rails using the procedure in Installing the Cable Management Arm (Optional), page 3-12.

Figure 3-8 Reversing the Cable Management Arm


3
4
1
Orientation for mounting to left slide rail
TOP
TOP
2
3
4
1
Orientation for mounting to right slide rail
TOP
TOP
2
0826

1	"TOP" stamp on CMA arms	**3**	Inner CMA tab attaches to CMA arm closest to server
2	Captive thumbscrews on CMA arms	**4**	Outer CMA tab attaches to CMA arm farthest from server

Initial Server Setup

This section includes the following topics:

- Connecting and Powering On the Server (Standalone Mode), page 3-16
- System BIOS and CIMC Firmware, page 3-18

Connecting and Powering On the Server (Standalone Mode)

This section describes how to power on the server, assign an IP address, and connect to server management when using the server *in standalone mode*.

Note UCS integration mode is not supported.

Procedure

Step 1 Attach a supplied power cord to each power supply in your server, and then attach the power cord to a grounded AC power outlet. See the "Server Specifications" for power specifications.

Wait for approximately two minutes to let the server boot in standby power during the first bootup.

You can verify power status by looking at the Power Status LED (see the front panel illustrations in Figure 1-1 and Figure 1-3):

- Off—There is no AC power present in the server.
- Amber—The server is in standby power mode. Power is supplied only to the CIMC and some motherboard functions.
- Green—The server is in main power mode. Power is supplied to all server components.

Note During bootup, the server beeps once for each USB device that is attached to the server. Even if there are no external USB devices attached, there is a short beep for each virtual USB device such as a virtual floppy drive, CD/DVD drive, keyboard, or mouse. A beep is also emitted if a USB device is hot-plugged or hot-unplugged during BIOS power-on self test (POST), or while you are accessing the BIOS Setup utility or the EFI shell.

Step 2 Connect a USB keyboard and VGA monitor by using the supplied KVM cable connected to the KVM connector on the front panel (see the front panel illustrations in Figure 1-1 and Figure 1-3).

Note Alternatively, you can use the VGA and USB ports on the rear panel. However, you cannot use the front panel VGA and the rear panel VGA at the same time. If you are connected to one VGA connector and you then connect a video device to the other connector, the first VGA connector is disabled.

Step 3 Set NIC mode to Dedicated and choose whether to enable DHCP or set static network settings:

a. Press the **Power** button to boot the server. Watch for the prompt to press F8.

b. During bootup, press **F8** when prompted to open the BIOS CIMC Configuration Utility. Verify that the NIC mode is set to **Dedicated** (default) to indicate that the 1GE management port is used to access the CIMC for server management (see the rear panel illustrations in Figure 1-2 and Figure 1-4 for identification of the ports).

Note The other NIC modes are NOT supported. For example: Shared LOM EXT, Shared LOM and Cisco Card.

c. Verify that the NIC redundancy setting is **None** (default):

Note The NIC redundancy modes *Active-standby* and *Active-active* are NOT supported.

d. Choose whether to enable DHCP for dynamic network settings, or to enter static network settings.

Note Before you enable DHCP, your DHCP server must be pre-configured with the range of MAC addresses for this server. The MAC address is printed on a label on the rear of the server. This server has a range of six MAC addresses assigned to the CIMC. The MAC address printed on the label is the beginning of the range of six contiguous MAC addresses.

e. (Optional) Use this utility to make VLAN settings, and to set a default CIMC user password.

Note Changes to the settings take effect after approximately 45 seconds. Refresh with **F5** and wait until the new settings appear before you reboot the server in the next step.

f. Press **F10** to save your settings and reboot the server.

Note If you chose to enable DHCP, the dynamically assigned IP and MAC addresses are displayed on the console screen during bootup.

Step 4 Connect to the CIMC for server management. Connect Ethernet cables from your LAN to the server 1 GE management port (Figure 1-2 and Figure 1-4 for identification of the ports).

Step 5 Use a browser and the IP address of the CIMC to connect to the CIMC Setup Utility. The IP address is based upon the settings that you made in Step 3 (either a static address or the address assigned by your DHCP server).

Note The default user name for the server is *admin*. The default password is *password*.

To manage the server, see the *Cisco UCS C-Series Rack-Mount Server Configuration Guide* or the *Cisco UCS C-Series Rack-Mount Server CLI Configuration Guide* for instructions on using those interfaces. The links to these documents are in the C-Series documentation roadmap:

http://www.cisco.com/go/unifiedcomputing/c-series-doc

System BIOS and CIMC Firmware

This section includes information about the system BIOS and it includes the following sections:

- Updating the BIOS and CIMC Firmware, page 3-18
- Accessing the System BIOS, page 3-19

Updating the BIOS and CIMC Firmware

Caution When you upgrade the BIOS firmware, you must also upgrade the CIMC firmware to the same version or the server will not boot. Do not power off the server until the BIOS and CIMC firmware are matching or the server will not boot.

Cisco provides the Cisco Host Upgrade Utility to assist with simultaneously upgrading the BIOS, CIMC, and other firmware to compatible levels.

The server uses firmware obtained from and certified by Cisco. Cisco provides release notes with each firmware image. There are several methods for updating the firmware:

- **Recommended method for systems running firmware level 1.2 or later**: Use the Cisco Host Upgrade Utility to simultaneously upgrade the CIMC, BIOS, LOM, LSI storage controller, and Cisco UCS P81E VIC firmware to compatible levels.

  See the *Cisco Host Upgrade Utility Quick Reference Guide* for your firmware level at the documentation roadmap link below.

  Note Your system firmware must be at minimum level 1.2 to use the Cisco Host Upgrade Utility. If your firmware is prior to level 1.2, you must use the methods below to update the BIOS and CIMC firmware individually.

- You can upgrade the BIOS using the EFI interface, or upgrade from a Windows or Linux platform.

  See the *Cisco UCS C-Series Rack-Mount Server BIOS Upgrade Guide*.
- You can upgrade the CIMC and BIOS firmware by using the CIMC GUI interface.

  See the *Cisco UCS C-Series Rack-Mount Server Configuration Guide.*
- You can upgrade the CIMC and BIOS firmware by using the CIMC CLI interface.

  See the *Cisco UCS C-Series Rack-Mount Server CLI Configuration Guide.*

For links to the documents listed above, see the documentation roadmap at the following URL:

http://www.cisco.com/go/unifiedcomputing/c-series-doc

Accessing the System BIOS

To change the BIOS settings for your server, follow these steps. Detailed instructions are also printed on the BIOS screens.

Step 1 Enter the BIOS setup utility by pressing the **F2** key when prompted during bootup.

Note The version and build of the current BIOS are displayed on the Main page of the utility.

Step 2 Use the arrow keys to select the BIOS menu page.

Step 3 Highlight the field to be modified by using the arrow keys.

Step 4 Press **Enter** to select the field that you want to change, and then modify the value in the field.

Step 5 Press the right arrow key until the Exit menu screen is displayed.

Step 6 Follow the instructions on the Exit menu screen to save your changes and exit the setup utility (or Press **F10**). You can exit without saving changes by pressing **Esc**.

CHAPTER 4

Replacing Hardware Components

This chapter describes how to install or replace hardware components.

Refer to the following topics for more information:

- Preparing for Server Component Installation, page 4-1
  - Required Equipment, page 4-2
  - Shutting Down and Powering Off the Server, page 4-2
  - Removing and Replacing the Server Top Cover, page 4-3
  - Replaceable Component Locations, page 4-6
  - Serial Number Location, page 4-9
  - Color-Coded Touch Points, page 4-9
- Installing or Replacing Server Components, page 4-9
  - Replacing Hard Drives, page 4-9
  - Replacing a PCIe Card, page 4-13
  - Replacing Additional Hardware Components (Related Documentation), page 4-18

Preparing for Server Component Installation

This section describes how to prepare for component installation, and it includes the following topics:

- Required Equipment, page 4-2
- Shutting Down and Powering Off the Server, page 4-2
- Removing and Replacing the Server Top Cover, page 4-3
- Replaceable Component Locations, page 4-6
- Serial Number Location, page 4-9
- Color-Coded Touch Points, page 4-9

For more information, see the following:

- Cisco Connected Safety and Security UCS C220: "Preparing for Server Component Installation" in the Cisco UCS C220 Server Installation and Service Guide.
- Cisco Connected Safety and Security UCS C240: "Preparing for Server Component Installation" in the Cisco UCS C240 Server Installation and Service Guide.

Required Equipment

The following equipment is used to perform the procedures in this chapter:

- Number 2 Phillips-head screwdriver
- Electrostatic discharge (ESD) strap or other grounding equipment such as a grounded mat

Shutting Down and Powering Off the Server

The server can run in two power modes:

- Main power mode—Power is supplied to all server components and any operating system on your drives can run.
- Standby power mode—Power is supplied only to the service processor and the cooling fans and it is safe to power off the server from this mode.

You can invoke a graceful shutdown or an hard shutdown by using either of the following methods:

- Use the CIMC management interface.
- Use the **Power** button on the server front panel. To use the **Power** button, follow these steps:

Step 1 Check the color of the Power Status LED (see the "Cisco Connected Safety and Security UCS C240 LEDs and Buttons" section on page 1-15).

- Green—the server is in main power mode and must be shut down before it can be safely powered off. Go to Step 2.
- Amber—the server is already in standby mode and can be safely powered off. Go to Step 3.

Step 2 Invoke either a graceful shutdown or a hard shutdown:

Caution To avoid data loss or damage to your operating system, you should always invoke a graceful shutdown of the operating system.

- Graceful shutdown—Press and release the **Power** button. The operating system performs a graceful shutdown and the server goes to standby mode, which is indicated by an amber Power Status LED.
- Emergency shutdown—Press and hold the **Power** button for 4 seconds to force the main power off and immediately enter standby mode.

Step 3 Disconnect the power cords from the power supplies in your server to completely power off the server.

Removing and Replacing the Server Top Cover

- Cisco Connected Safety and Security UCS C220 Top Cover, page 4-3
- Cisco Connected Safety and Security UCS C240 Top Cover, page 4-4

Cisco Connected Safety and Security UCS C220 Top Cover

To remove or replace the top cover of the Cisco Connected Safety and Security UCS C220server, follow these steps:

Tip You do not have to remove the cover to replace hard drives or power supplies.

Step 1 Remove the top cover (see Figure 4-1):

a. Loosen the captive thumbscrew that secures the rear edge of the cover to the chassis.

b. Press the release button.

c. Using the rubber finger pads, push the top cover toward the server rear about one-half inch (1.27 cm), until it stops.

d. Lift the top cover straight up from the server and set it aside.

Step 2 Replace the top cover:

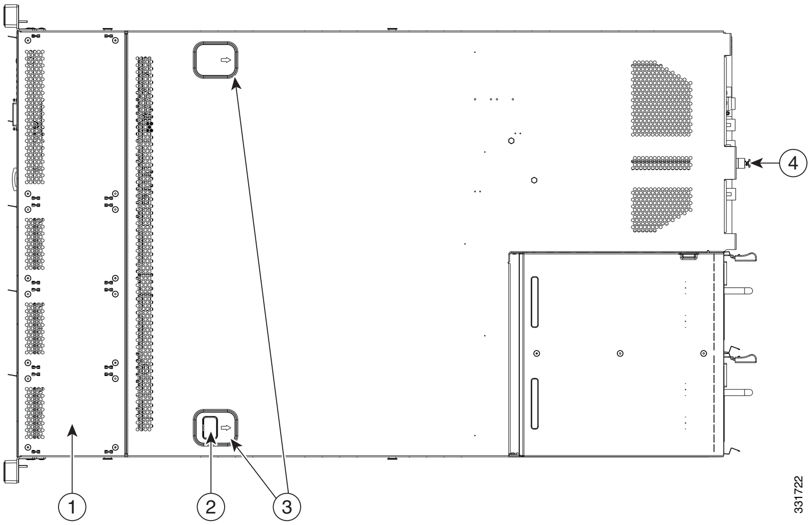
a. Place the cover on top of the server about one-half inch (1.27 cm) behind the lip of the chassis front cover panel. The cover should sit flat.

Note Make sure that the wrap-around flanged edge on the rear of the cover is correctly aligned with the chassis features so that there is clearance when sliding the cover forward.

b. Slide the top cover toward the front cover panel until it stops and the release button locks.

c. Tighten the captive thumbscrew that secures the rear edge of the cover to the chassis.

Figure 4-1 Removing the Top Cover: Cisco Connected Safety and Security UCS C220



1	Front cover panel	**3**	Rubber finger pads (two)
2	Release button	**4**	Captive thumbscrew

Cisco Connected Safety and Security UCS C240 Top Cover

To remove or replace the top cover of the Cisco Connected Safety and Security UCS C220 server, follow these steps:

Tip You do not have to remove the cover to replace hard drives or power supplies.

Step 1 Remove the top cover (see Figure 4-2).

a. Loosen the captive thumbscrew that secures the rear edge of the cover to the chassis.

b. Press the release button.

c. Using the rubber finger pads, push the top cover toward the server rear about one-half inch (1.27 cm), until it stops.

d. Lift the top cover straight up from the server and set it aside.

Step 2 Replace the top cover:

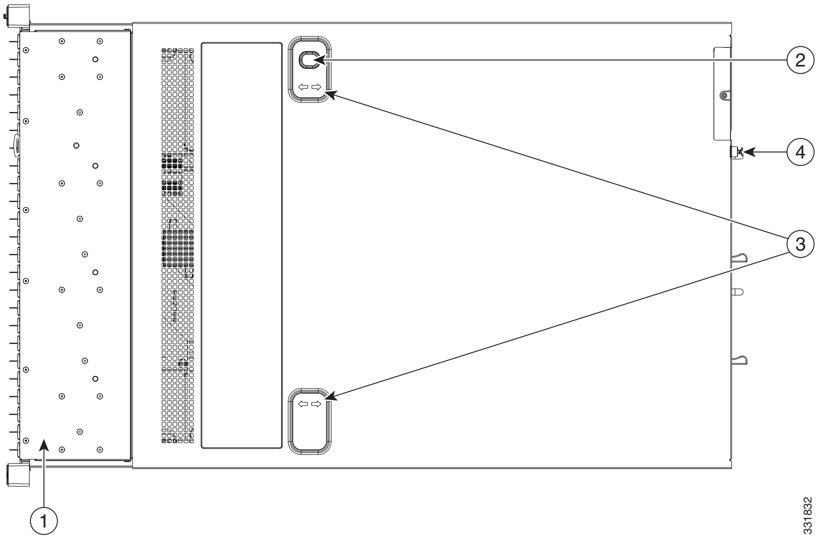
a. Place the cover on top of the server about one-half inch (1.27 cm) behind the lip of the chassis front cover panel. The cover should sit flat.

Note The rear of the cover has a wrap-around flanged edge that must be correctly aligned with the chassis rear edge when sliding the cover forward.

b. Slide the top cover toward the front cover panel until it stops and the release button locks.

c. Tighten the captive thumbscrew that secures the rear edge of the cover to the chassis.

Figure 4-2 Removing the Top Cover: Cisco Connected Safety and Security UCS C240



1	Front cover panel	**3**	Rubber finger pads (two)
2	Release button	**4**	Captive thumbscrew

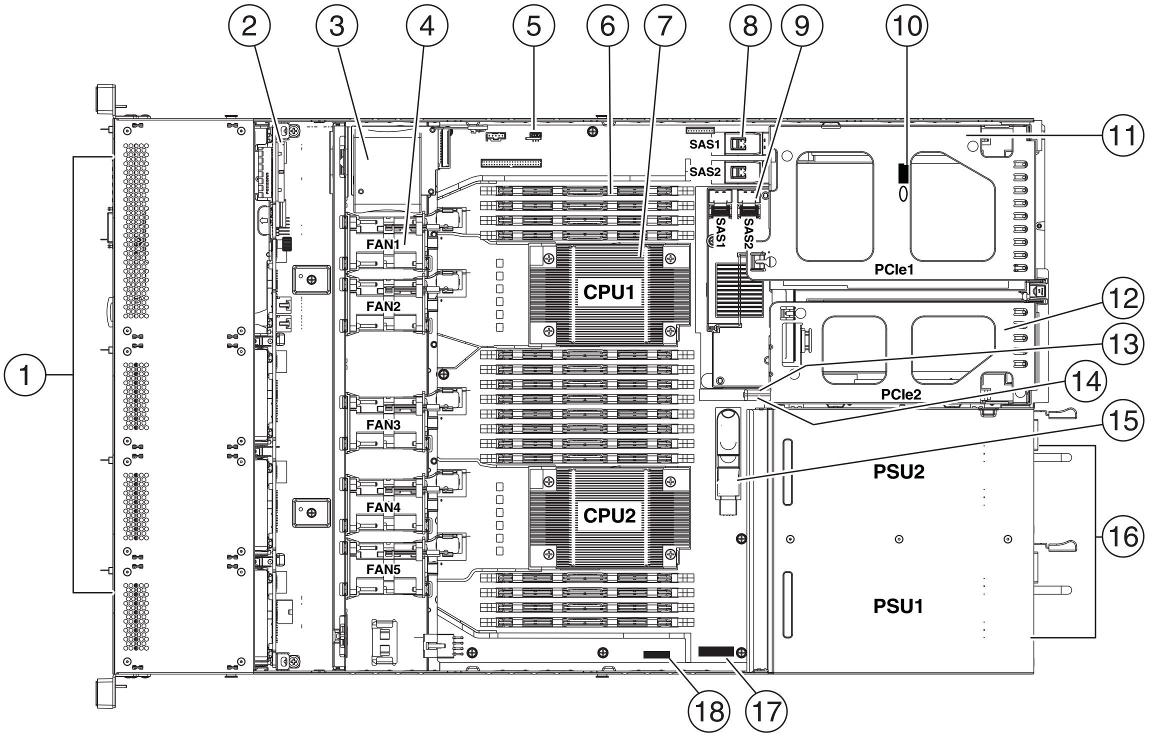
Replaceable Component Locations

- Cisco Connected Safety and Security UCS C220 Replaceable Components, page 4-6
- Cisco Connected Safety and Security UCS C240 Replaceable Components, page 4-7

Cisco Connected Safety and Security UCS C220 Replaceable Components

This section shows the locations of the components in the Cisco Connected Safety and Security UCS C220 server. The view in Figure 4-3 is from the top down with the top cover and air baffles removed.

Figure 4-3 Replaceable Component Locations: Cisco Connected Safety and Security UCS C220



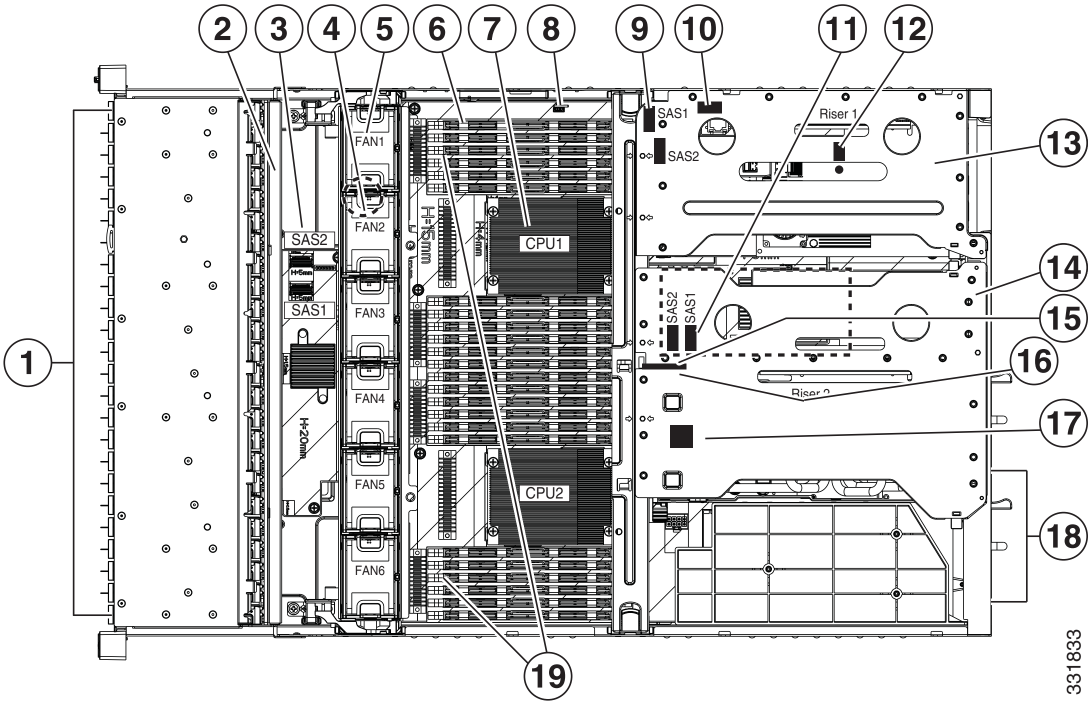
1	Drives (hot-swappable, accessed through front panel)		**10**	Trusted platform module socket on motherboard
2	Drive backplane		**11**	Standard-height PCIe riser (PCIe slot 1)
3	Mounting location on air baffle for LSI battery backup unit or SuperCap Power Module (air baffle not shown)		**12**	Half-height PCIe riser (PCIe slot 2)
4	Cooling fan modules (five)		**13**	Cisco Flexible Flash card slot SD2 socket on PCIe riser 2 (not supported)
5	SCU upgrade ROM header (PBG DYNAMIC SKU)		**14**	Cisco Flexible Flash card slot SD1 socket on PCIe riser 2 (not supported)
6	DIMM slots on motherboard (sixteen)		**15**	Internal USB 2.0 port

7	CPUs and heatsinks (two)	**16**	Power supplies (two)
8	Integrated RAID mini-SAS connectors on motherboard, SASPORT 1 and SASPORT 2	**17**	RTC battery on motherboard
9	Mezzanine RAID card, mini-SAS connectors SAS1 and SAS2	**18**	Software RAID 5 key header (SW RAID KEY)

Cisco Connected Safety and Security UCS C240 Replaceable Components

This section shows the locations of the components for the Cisco Connected Safety and Security UCS C240 server. The view in Figure 4-4 is from the top down with the top cover and air baffles removed.

Figure 4-4 Replaceable Component Locations: Cisco Connected Safety and Security UCS C240



1	Drives (hot-swappable, accessed through front panel)	**11**	Optional mezzanine RAID controller card, mini-SAS connectors SAS1 and SAS2
2	Drive backplane	**12**	Trusted platform module socket on motherboard
3	Drive backplane expander	**13**	PCIe riser 1 (three full-height slots)
4	RTC battery (on motherboard under fan tray)	**14**	PCIe riser 2 (one full-height slot and one half-height slot)
5	Fan modules (six, hot-swappable)	**15**	Cisco Flexible Flash card slot SD2 (not supported)
6	DIMM slots on motherboard (24)	**16**	Cisco Flexible Flash card slot SD1 (not supported)
7	CPUs and heatsinks (two)	**17**	Internal USB 2.0 port on motherboard

8	SCU upgrade ROM header (PBG DYNAMIC SKU)	**18**	Power supplies (two, hot-swappable access through rear panel)
9	Integrated RAID mini-SAS connectors on motherboard, SASPORT 1 and SASPORT2	**19**	RAID backup unit mounting locations (two, on air baffle not shown in this view)
10	Software RAID 5 key header (SW RAID KEY)		

Serial Number Location

The serial number for the server is printed on a label on the top of the server, near the front.

Color-Coded Touch Points

This server has color-coded touch points that indicate thumbscrews and latches on replaceable and hot-swappable components.

- Hot-swappable components have green plastic touch points. This includes the internal cooling fans and the power supplies. (An exception is the drive trays on the front panel, which are hot-swappable but not green).
- Some replaceable but non-hot-swappable components have light-blue plastic touch-points.

Installing or Replacing Server Components

Refer to the following topics for information on the components and configurations supported by the Cisco Connected Safety and Security UCS series servers.

- Replacing Hard Drives, page 4-9
- Replacing a PCIe Card, page 4-13
- Replacing Additional Hardware Components (Related Documentation), page 4-18

Note The Cisco Connected Safety and Security UCS series servers support a sub-set of the hardware and features available in the Cisco UCS series servers. Review the following information carefully.

Replacing Hard Drives

Refer to the following topics for more information:

- Cisco Connected Safety and Security UCS C220: Replacing a Hard Drive, page 4-9
- Cisco Connected Safety and Security UCS C240: Replacing a Hard Drive, page 4-11

Cisco Connected Safety and Security UCS C220: Replacing a Hard Drive

The 1RU Cisco Connected Safety and Security UCS series server (CPS-UCS-1RU-K9) is available in the large form factor (LFF) only, which supports up to four 3.5-inch hard drives.

Note The small form-factor (SFF) version of the Cisco UCS C220 is not supported for Cisco Physical Security applications.

See the "Supported Hard Drives" section on page 2-5 for more information.

This section includes the following information:

- Drive Population Guidelines, page 4-10

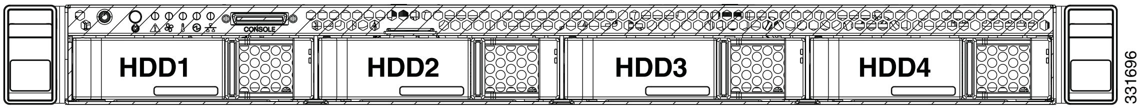
- Drive Replacement Procedure, page 4-10
- Related Information, page 4-11

Drive Population Guidelines

The Cisco Connected Safety and Security UCS C220 server supports the Large Form Factor backplane option, which supports up to four 3.5-inch hard drives.

The drive-bay numbering is shown in Figure 4-5.

Figure 4-5 Drive Numbering, Large Form Factor



Note The Small Form Factor drive version of the server is NOT supported.

Observe these drive population guidelines for optimum performance:

- When populating drives, add drives to the lowest-numbered bays first.
- Keep an empty drive blanking tray in any unused bays to ensure proper air flow.

Note The large form-factor drives version of the server does not support 3.5-inch solid state drives.

Drive Replacement Procedure

To replace or install a hot-pluggable hard drive, follow these steps:

Tip You do not have to shut down or power off the server to replace hard drives because they are hot-pluggable.

Step 1 Remove the drive that you are replacing or remove a blank drive tray from the bay:

a. Press the release button on the face of the drive tray. See Figure 4-6.

b. Grasp and open the ejector lever and then pull the drive tray out of the slot.

c. If you are replacing an existing drive, remove the four drive-tray screws that secure the drive to the tray and then lift the drive out of the tray.

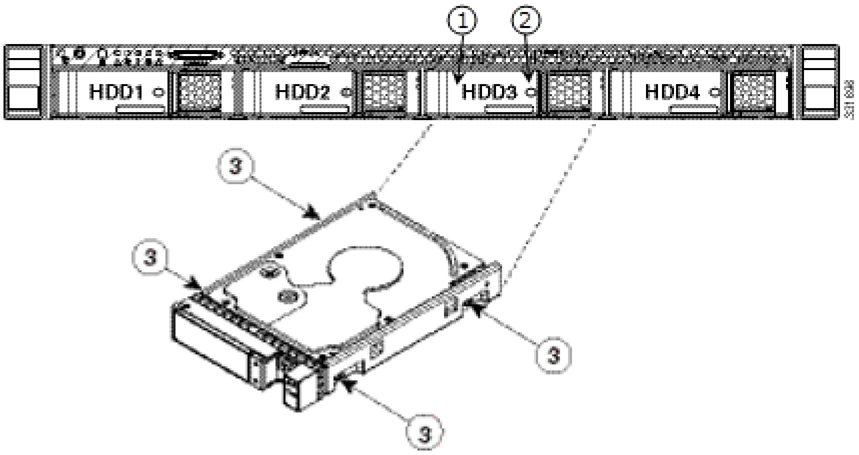
Step 2 Install a new drive:

a. Place a new drive in the empty drive tray and install the four drive-tray screws.

b. With the ejector lever on the drive tray open, insert the drive tray into the empty drive bay.

c. Push the tray into the slot until it touches the backplane, then close the ejector lever to lock the drive in place.

Figure 4-6 Replacing Hard Drives



1	Ejector lever	**3**	Drive tray securing screws (4)
2	Release button		–

Related Information

For more information about hard drive replacement, see "Replacing Hard Drives or Solid State Drives" in the Cisco UCS C220 Server Installation and Service Guide. This document also includes instructions to replace a drive backplane.

Cisco Connected Safety and Security UCS C240: Replacing a Hard Drive

The 2RU Cisco Connected Safety and Security UCS series server (CPS-UCS-2RU-K9) is available in the large form factor (LFF) only, which supports up to 12 (3.5-inch) hard drives.

Note The small form-factor (SFF) versions of the Cisco UCS C240 are not supported for Cisco Physical Security applications.

See the "Supported Hard Drives" section on page 2-5 for more information.

This section includes the following information:

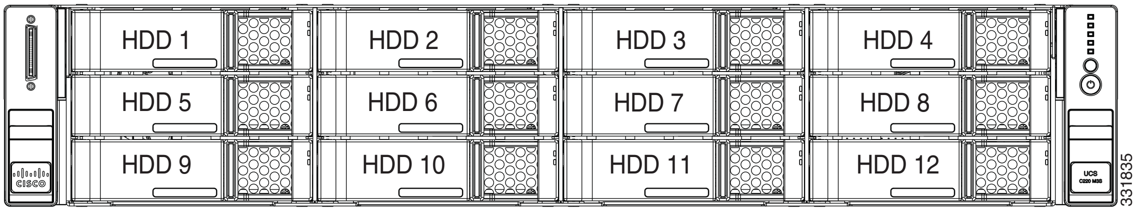
- Drive Population Guidelines, page 4-12
- Drive Replacement Procedure, page 4-12
- Related Information, page 4-13

Drive Population Guidelines

The server is orderable in the large form-factor (LFF) drive version only, which holds up to twelve 3.5-inch hard drives.

The drive-bay numbering is shown in Figure 4-7.

Figure 4-7 Drive Numbering, Large Form-Factor Drives



Observe these drive population guidelines for optimal performance:

- When populating drives, add drives in the lowest numbered bays first (populate HDD1 to HDD14).
- Keep an empty drive blanking tray in any unused bays to ensure optimal air flow and cooling.

Note The large form-factor drives version of the server does not support 3.5-inch solid state drives.

Drive Replacement Procedure

To replace or install a hot-pluggable hard drive, follow these steps:

Tip You do not have to shut down or power off the server to replace hard drives because they are hot-pluggable.

Step 1 Remove the drive that you are replacing or remove a blank drive tray from an empty bay:

a. Press the release button on the face of the drive tray.

b. Grasp and open the ejector lever and then pull the drive tray out of the slot.

c. If you are replacing an existing drive, remove the four drive-tray screws that secure the drive to the tray and then lift the drive out of the tray.

Step 2 Install a new drive:

a. Place a new drive in the empty drive tray and replace the four drive-tray screws.

b. With the ejector lever on the drive tray open, insert the drive tray into the empty drive bay.

c. Push the tray into the slot until it touches the backplane, then close the ejector lever to lock the drive in place.

Related Information

For more information about hard drive replacement, see the "Replacing Hard Drives or Solid State Drives" in the Cisco UCS C240 Server Installation and Service Guide. This document also includes instructions to replace a drive backplane.

Replacing a PCIe Card

Refer to the following topics for more information:

- Emulex LPe 12002 Dual Port 8Gb Fibre Channel HBA Card, page 4-13
- Installing or Replacing a PCIe Card: Cisco Connected Safety and Security UCS C220, page 4-13
- Installing or Replacing a PCIe Card: Cisco Connected Safety and Security UCS C240, page 4-15

⚠ **Caution** Cisco supports all PCIe cards qualified and sold by Cisco. PCIe cards not qualified or sold by Cisco are the responsibility of the customer. Although Cisco will always stand behind and support the C-Series rack-mount servers, customers using standard, off-the-shelf, third-party cards must go to the third-party card vendor for support if any issue with that particular third-party card occurs.

Emulex LPe 12002 Dual Port 8Gb Fibre Channel HBA Card

The Cisco Connected Safety and Security UCS C220 and Cisco Connected Safety and Security UCS C240 servers support the (optional) Emulex LPe 12002 Dual Port 8Gb Fibre Channel HBA (CPS-AEPCI05) card. This card is used to connect external components, such as external storage devices.

See the following for more information:

- LightPulse® LPe12000/LPe12002 Data Sheet for product overview information: http://www.cisco.com/en/US/prod/collateral/modules/ps10277/ps12571/elx_ds_all_hba_lpe12000.pdf
- Emulex LightPulse LPe12002 website, including features, specifications, and other information: http://www.emulex.com/products/fibre-channel-hbas/emulex-branded/lightpulse-lpe12002/features.html

Installing or Replacing a PCIe Card: Cisco Connected Safety and Security UCS C220

For instructions to install or replace a PCIe card, see the following topics:

- PCIe Slots: Cisco Connected Safety and Security UCS C220, page 4-14
- Replacing a PCIe Card: Cisco Connected Safety and Security UCS C220, page 4-14
- Related Documentation, page 4-15

PCIe Slots: Cisco Connected Safety and Security UCS C220

The Cisco Connected Safety and Security UCS C220 server contains a single toolless PCIe riser for horizontal installation of a PCIe card in slot 1, as shown in Figure 4-8. Table 4-1 describes the PCIe slots on these risers.

Note PCIe riser and the associated PCIe slot 2 are not supported in this release in the Cisco Connected Safety and Security UCS C220 server.

Figure 4-8 Rear Panel, Showing PCIe Slots

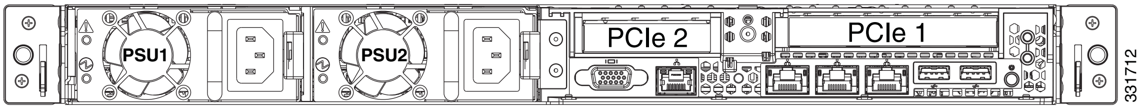


Table 4-1 PCIe Expansion Slots

Slot Number	Electrical Lane Width	Connector Length	Card Length[1]	Card Height [2]	NCSI[3] Support
1 (on riser 1)	Gen-3 x16	x24 extended	1/2 length	Full-height	Yes[4]
2 (on riser 2)[5]	Not supported in this release.				

[1] This is the supported length because of internal clearance.

[2] This is the size of the rear panel opening.

[3] Network Communications Services Interface protocol

[4] Slot 1 can operate when the server is in standby power mode.

[5] Slot 2 is not available in single-CPU configurations.

Replacing a PCIe Card: Cisco Connected Safety and Security UCS C220

Note If you are installing a Cisco UCS Virtual Interface Card, there are prerequisite considerations. See "Special Considerations for Cisco UCS Virtual Interface Cards" in the Cisco UCS C220 Server Installation and Service Guide.

Note If you are installing a RAID controller card, see "RAID Controller Considerations" in the Cisco UCS C220 Server Installation and Service Guide for more information about supported cards and cabling.

To install or replace a PCIe card, follow these steps:

Step 1 Remove a PCIe card (or a blank filler panel) from the PCIe riser:

a. Shut down and power off the server as described in the "Shutting Down and Powering Off the Server" section on page 4-2.

b. Slide the server out the front of the rack far enough so that you can remove the top cover. You might have to detach cables from the rear panel to provide clearance.

Caution If you cannot safely view and access the component, remove the server from the rack.

c. Remove the top cover as described in the "Removing and Replacing the Server Top Cover" section on page 4-3.

d. Remove any cables from the ports of the PCIe card that you are replacing.

Tip Label the cables when you disconnect them to aid correct connection to the new card.

e. Lift straight up on both ends of the PCIe riser to disengage it from the socket on the motherboard.

f. Pull evenly on both ends of the PCIe card to remove it from the socket on the PCIe riser.

If the riser has no card, remove the blanking panel from the rear opening of the riser.

Step 2 Install a new PCIe card:

a. Align the new PCIe card with the empty socket on the PCIe riser.

Note Align and insert the card's rear panel tab into the riser's rear panel opening at the same time you align the card with the empty socket.

b. Push down evenly on both ends of the card until it is fully seated in the socket.

c. Ensure that the card rear panel tab sits flat against the PCIe riser rear panel opening.

d. Position the PCIe riser over its socket on the motherboard and over the alignment features (see "Replacing the PCIe Riser").

e. Carefully push down on both ends of the PCIe riser to fully engage its circuit board connector with the socket on the motherboard.

f. Replace the top cover.

g. Replace the server in the rack, replace cables, and then power on the server by pressing the **Power** button.

h. If the card that you replaced was a RAID controller, continue with "Restoring RAID Configuration After Replacing a RAID Controller".

Related Documentation

For more information, see "Replacing a PCIe Card" in the Cisco UCS C220 Server Installation and Service Guide. Topics include:

- Special Considerations for Cisco UCS Virtual Interface Cards
- RAID Controller Card Cable Routing
- Installing Multiple PCIe Cards and Resolving Limited Resources

Installing or Replacing a PCIe Card: Cisco Connected Safety and Security UCS C240

For instructions to install or replace a PCIe card, see the following topics:

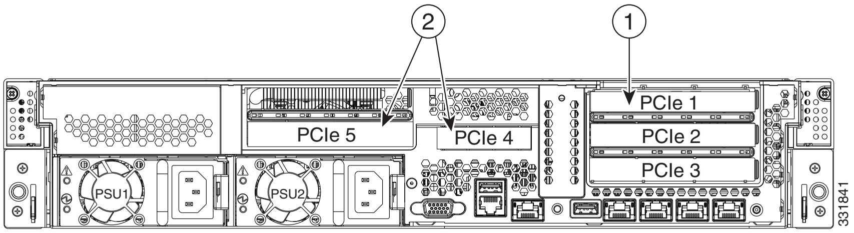
- PCIe Slots: Cisco Connected Safety and Security UCS C240, page 4-16

- Replacing a PCIe Card: Cisco Connected Safety and Security UCS C220, page 4-14
- Related Documentation, page 4-15

PCIe Slots: Cisco Connected Safety and Security UCS C240

The server contains two toolless PCIe risers for horizontal installation of PCIe cards. See Figure 4-9 and Table 4-2.

Figure 4-9 Rear Panel PCIe Slots: Cisco Connected Safety and Security UCS C240



1	PCIe riser 1 (slots 1, 2, and 3)	**2**	PCIe riser 2 (slots 4 and 5)

Table 4-2 PCIe Expansion Slots: Cisco Connected Safety and Security UCS C240

Slot Number	Electrical Lane Width	Connector Length	Card Length[1]	Card Height [2]	NCSI[3] Support
1	Gen-3 x8	x16 connector	3/4 length	Full-height	No
2	Gen-3 x16	x24 extended	3/4 length (10.5 in./26.67 cm)	Full-height	Yes[4]
3	Gen-3 x8	x16 connector	1/2 length	Full-height	No
4 [5]	Gen-3 x8	x16 connector	1/2 length	Half-height	No
5 [6]	Gen-3 x16	x24 extended	3/4 length 10.5 in./26.67 cm)	Full-height, also supports double-width cards	Yes

[1] This is the supported length because of internal clearance.
[2] This is the size of the rear panel opening.
[3] Network Communications Services Interface protocol
[4] Slot 2 can operate when the server is in standby power mode.
[5] Slot 4 is not available in single-CPU configurations.
[6] Slot 5 is not available in single-CPU configurations.

Replacing a PCIe Card: Cisco Connected Safety and Security UCS C240

Note If you are installing a Cisco UCS Virtual Interface Card, there are prerequisite considerations. See “Special Considerations for Cisco UCS Virtual Interface Cards”.

Note If you are installing a RAID controller card, see “RAID Controller Considerations” for more information about supported cards and cabling.

To install or replace a PCIe card, follow these steps:

Step 1 Remove a PCIe card (or a blank filler panel) from the PCIe riser assembly:

a. Shut down and power off the server as described in the "Shutting Down and Powering Off the Server" section on page 4-2.

b. Slide the server out the front of the rack far enough so that you can remove the top cover. You might have to detach cables from the rear panel to provide clearance.

⚠ **Caution** If you cannot safely view and access the component, remove the server from the rack.

c. Remove the top cover as described in the "Removing and Replacing the Server Top Cover" section on page 4-3.

d. Disconnect cables from any PCIe cards that are installed in the PCIe riser.

Tip Label the cables when you disconnect them to aid correct connection to the new card.

e. Use the finger holes to lift straight up on both ends of the riser to disengage its circuit board from the socket on the motherboard. Set the riser on an antistatic mat.

f. Push down on the securing clip on the hinged card retainer and then swing open the retainer to free the rear-panel tab of the existing card (or blanking panel). See Figure 4-10.

Note Slot 5 on PCIe riser 2 has an additional plastic retaining clip that stabilizes the front end of a card. Push down on this clip before pulling the card from the riser socket (see Figure 4-10).

g. Pull evenly on both ends of the PCIe card to disengage it from the socket on the PCIe riser (or remove a blanking panel) and then set the card aside.

Step 2 Install a PCIe card:

a. Align the new PCIe card with the empty socket on the PCIe riser.

b. Push down evenly on both ends of the card until it is fully seated in the socket.

Ensure that the card rear panel tab sits flat against the PCIe riser rear panel opening.

c. Close the hinged card retainer over the rear panel tab of the card and push in on the retainer until its clip clicks into place to secure the card.

d. Position the PCIe riser over its socket on the motherboard and over its alignment features in the chassis (see "Replacing the PCIe Riser").

e. Carefully push down on both ends of the PCIe riser to fully engage its circuit board connector with the socket on the motherboard.

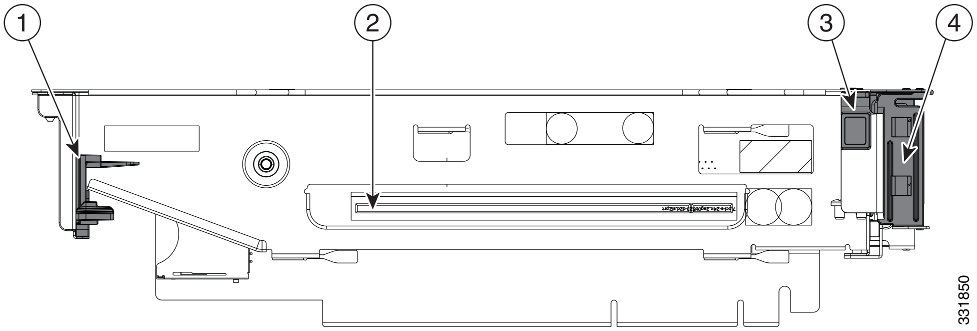
f. Connect cables to the PCIe card. See "RAID Controller Considerations" for more information about supported cards and cabling.

g. Replace the top cover.

h. Replace the server in the rack, replace cables, and then power on the server by pressing the **Power** button.

i. If you replaced a RAID controller card, continue with "Restoring RAID Configuration After Replacing a RAID Controller".

Figure 4-10 PCIe Riser card Retainers (Slot 5 on PCIe Riser 2 Shown)



1	Long card retainer (on riser 2, slot 5 only)	**3**	Securing clip on hinged card retainer
2	Card socket on riser	**4**	Hinged card retainer

Related Documentation

For more information, see "Replacing a PCIe Card" in the Cisco UCS C240 Server Installation and Service Guide. Topics include:

- Special Considerations for Cisco UCS Virtual Interface Cards
- RAID Controller Card Cable Routing
- Installing Multiple PCIe Cards and Resolving Limited Resources

Replacing Additional Hardware Components (Related Documentation)

For instructions to replace additional hardware components, refer to the following documentation:

- Cisco Connected Safety and Security UCS C220: "Installing or Replacing Server Components" in the Cisco UCS C220 Server Installation and Service Guide.
- Cisco Connected Safety and Security UCS C240: "Installing or Replacing Server Components" in the Cisco UCS C240 Server Installation and Service Guide.

Note The Cisco Connected Safety and Security UCS series servers support a sub-set of the hardware and features available in the Cisco UCS series servers. Review the information in this document carefully, including the "Overview" section on page 1-1.

This documentation includes the following topics:

- Replacing Hard Drives
- Replacing Fan Modules
- Replacing a PCIe Card
- Replacing Power Supplies

Tip See also the "Related Documentation" section on page B-1 and www.cisco.com/go/unifiedcomputing/c-series-doc for links to additional information on the Cisco UCS-series servers.

APPENDIX A

Server Specifications

This appendix lists the technical specifications for the server and includes the following sections:

- Cisco Connected Safety and Security UCS C220 (1RU) Specifications, page A-1
- Cisco Connected Safety and Security UCS C240 (2RU) Specifications, page A-3

Cisco Connected Safety and Security UCS C220 (1RU) Specifications

- Physical Specifications, page A-1
- Environmental Specifications, page A-2
- Power Specifications, page A-2

Physical Specifications

Table A-1 lists the physical specifications for the server.

Table A-1 Physical Specifications

Description	Specification
Height	1.7 in. (4.3 cm)
Width	16.9 in. (42.9 cm)
Depth	28.5 in. (72.4 cm)
Weight (fully loaded chassis)	35.6 lb. (16.1 Kg)

Environmental Specifications

Table A-2 lists the environmental specifications for the server.

Table A-2 Environmental Specifications

Description	Specification
Temperature, operating:	41 to 104°F (5 to 40°C) Derate the maximum temperature by 1°C per every 305 meters of altitude above sea level.
Temperature, non-operating	–40 to 149°F (–40 to 65°C)
Humidity (RH), noncondensing	10 to 90%
Altitude, operating	0 to 10,000 feet
Altitude, non-operating	0 to 40,000 feet
Sound power level Measure A-weighted per ISO7779 LwAd (Bels) Operation at 73°F (23°C)	5.4
Sound pressure level Measure A-weighted per ISO7779 LpAm (dBA) Operation at 73°F (23°C)	37

Power Specifications

Up to two 650 W power supplies are supported, including 1+1 redundancy (the 450W is not supported).

Note

- You can get more specific power information for your exact server configuration by using the Cisco UCS Power Calculator: http://www.cisco.com/assets/cdc_content_elements/flash/dataCenter/cisco_ucs_power_calculator/
- Do not mix power supply types in the server. Both power supplies must be 650W (the 450W is not supported).

Table A-3 lists the specifications for each 650W power supply (Cisco part number CPS-PSU-650W=).

Table A-3 Power Supply Specifications

Description	Specification
AC input voltage range	90 to 264 VAC (self-ranging, 180 to 264 VAC nominal)
AC input frequency	Range: 47 to 63 Hz (single phase, 50 to 60Hz nominal)
AC line input current (steady state)	7.6 A peak at 100 VAC 3.65 A peak at 208 VAC
Maximum output power for each power supply	650 W
Power supply output voltage	Main power: 12 VDC Standby power: 12 VDC

Cisco Connected Safety and Security UCS C240 (2RU) Specifications

- Physical Specifications, page A-1
- Environmental Specifications, page A-3
- Power Specifications, page A-2

Physical Specifications

Table A-1 lists the physical specifications for the server.

Table A-4 Physical Specifications

Description	Specification
Height	3.4 in. (8.70 cm)
Width (including slam-latches)	17.5 in. (44.55 cm)
Depth	28.0 in. (71.23 cm)
Weight (fully loaded)	60.0 lbs. (27.2 Kg)

Environmental Specifications

Table A-2 lists the environmental specifications for the server.

Table A-5 Environmental Specifications

Description	Specification
Temperature, operating:	41 to 104°F (5 to 40°C) Derate the maximum temperature by 1°C per every 305 meters of altitude above sea level.
Temperature, non-operating	–40 to 149°F (–40 to 65°C)
Humidity (RH), noncondensing	10 to 90%
Altitude, operating	0 to 10,000 feet
Altitude, non-operating	0 to 40,000 feet
Sound power level Measure A-weighted per ISO7779 LwAd (Bels) Operation at 73°F (23°C)	5.8
Sound pressure level Measure A-weighted per ISO7779 LpAm (dBA) Operation at 73°F (23°C)	43

Power Specifications

Up to two 650 W power supplies are supported, including 1+1 redundancy (the 1200W is not supported).

Note

- You can get more specific power information for your exact server configuration by using the Cisco UCS Power Calculator: http://www.cisco.com/assets/cdc_content_elements/flash/dataCenter/cisco_ucs_power_calculator/
- Do not mix power supply types in the server. Both power supplies must be 650W (the 1200W is not supported).

Table A-6 lists the specifications for each 650W power supply (Cisco part number CPS-PSU-650W=).

Table A-6 Power Supply Specifications

Description	Specification
AC input voltage range	90 to 264 VAC (self-ranging, 180 to 264 VAC nominal)
AC input frequency	Range: 47 to 63 Hz (single phase, 50 to 60Hz nominal)
AC line input current (steady state)	7.6 A peak at 100 VAC 3.65 A peak at 208 VAC
Maximum output power for each power supply	650 W
Power supply output voltage	Main power: 12 VDC Standby power: 12 VDC

APPENDIX B

Related Documentation

This document describes installation of the following Cisco Connected Safety and Security servers:

- CPS-UCS-1RU-K9
- CPS-UCS-2RU-K9

Note For information about the CPS-UCSM4-1RU-K9 and CPS-UCSM4-2RU-K9 servers, see Cisco CSS UCS Platform Series User Guide, CPS-UCSM4-1RU-K9 / CPS-UCSM4-2RU-K9.

You can access the most current information and documentation online at the following URLs:

Cisco CSS UCS Platform Series User Guide, CPS-UCS-1RU-K9 / CPS-UCS-2RU-K9 (this document):

www.cisco.com/go/physicalsecurity/ucs/install

Additional Cisco UCS C-Series Server Documentation:

www.cisco.com/go/unifiedcomputing/c-series-doc

Cisco UCS C-Series Regulatory Compliance and Safety Information:

www.cisco.com/go/physicalsecurity/ucs/rcsi

Cisco Physical Security Product Information:

www.cisco.com/go/physicalsecurity/

Cisco Video Surveillance 7 Documentation Roadmap:

Descriptions and links to Cisco Video Surveillance documentation, server and storage platform documentation, and other related documentation.

http://www.cisco.com/go/physicalsecurity/vsm/roadmap

Cisco Video Surveillance Manager Documentation Website:

www.cisco.com/go/physicalsecurity/vsm/docs