



Cisco AMP PC3000 Hardware Installation Guide

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Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

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CONTENTS

CHAPTER 1

Overview 1

- Features 1
- Package Contents 3
- Serial Number Location 3
- Front Panel 5
- Front Panel LEDs 6
- Rear Panel 8
- Rear Panel LEDs 9
- Power Supply 10
- Hardware Specifications 11
- Product ID Numbers 12
- Power Cord Specifications 12

CHAPTER 2

Installation Preparation 21

- Installation Warnings 21
- Safety Recommendations 23
- Maintain Safety with Electricity 23
- Prevent ESD Damage 24
- Site Environment 24
- Site Considerations 24
- Power Supply Considerations 25
- Rack Configuration Considerations 25

CHAPTER 3

Mount the Chassis 27

- Unpack and Inspect the Chassis 27
- Rack-Mount the Chassis 27

Connect Cables, Turn on Power, and Verify Connectivity 30

CHAPTER 4

Maintenance and Upgrade 33

Power Button Shut Down 33

Remove and Replace a Drive 34

Remove and Replace a Power Supply 36



CHAPTER 1

Overview

- [Features, on page 1](#)
- [Package Contents, on page 3](#)
- [Serial Number Location, on page 3](#)
- [Front Panel, on page 5](#)
- [Front Panel LEDs, on page 6](#)
- [Rear Panel, on page 8](#)
- [Rear Panel LEDs, on page 9](#)
- [Power Supply, on page 10](#)
- [Hardware Specifications, on page 11](#)
- [Product ID Numbers, on page 12](#)
- [Power Cord Specifications, on page 12](#)

Features

The Cisco AMP PC3000 appliance supports AMP Private Cloud version 3.0 and later.

The following table lists the features of the Cisco AMP PC3000. See [Product ID Numbers, on page 12](#) for a list of the spare product IDs (PIDs) associated with the AMP PC3000. You can remove and replace drives and power supplies. For all other internal component failures, you must send your chassis for RMA.

Table 1: AMP PC3000

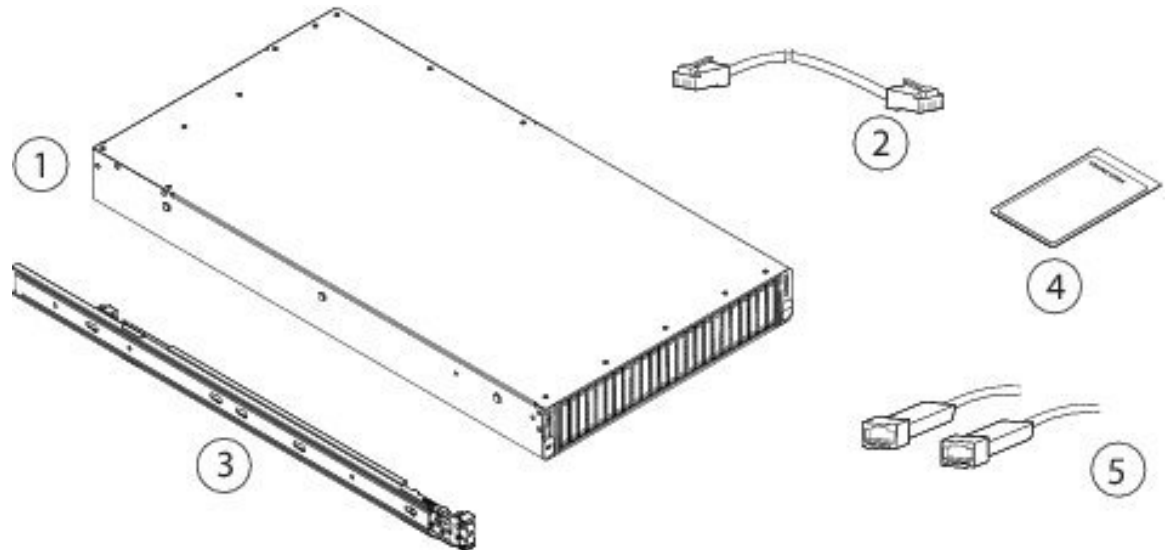
Feature	Description
Form factor	2 RU
Rack mount	Yes Standard 19-in. (48.3 cm) 4-post EIA rack
Airflow	Front to rear Cold aisle to hot aisle
Pullout asset card	Displays the serial number.

Feature	Description
Grounding hole	Yes Two threaded holes for dual-hole grounding lug. Use is optional. The supported AC power supplies have internal grounding, so no additional chassis grounding is required.
Locator beacon	Yes
Power switch	Yes
Processor	Before January 2021: Two Intel Xeon Gold 6126 processors After January 2021: Two Intel Xeon Gold 6226 processors
Memory	1.5 TB RAM
RDIMMs	Before January 2021: Twenty-four 64-GB DDR4-2666-MHz RDIMMs After January 2021: Twenty-four 64-GB DDR4-2933-MHz RDIMMs
Management ports	Two built-in dual 1/10-GB ports
USB ports	2 Version 3.0 Type A
VGA port	One 3-row 15-pin DE-15 connector Enabled by default.
SFP ports	4 fixed SFP+ ports Supported SFP cables SFP-10G-SR
Serial console port	One 1-GB RJ45 serial port running RS-232 (RS-232D TIA-561)
System power	Two 1050-W AC power supplies (hot-swappable and redundant as 1+1)
Power consumption	3196 BTU/hr
Fans	6 fans for front-to-rear cooling
Storage	Fourteen 800-GB SSDs RAID 6 Ten 1.8-TB SAS HDDs RAID 6 Two 1.2-TB SAS HDDs RAID 1 Hot-swappable
RAID controller	1

Package Contents

The following figure shows the package contents for the AMP PC3000. Note that the contents are subject to change and your exact contents might contain additional or fewer items.

Figure 1: Package Contents

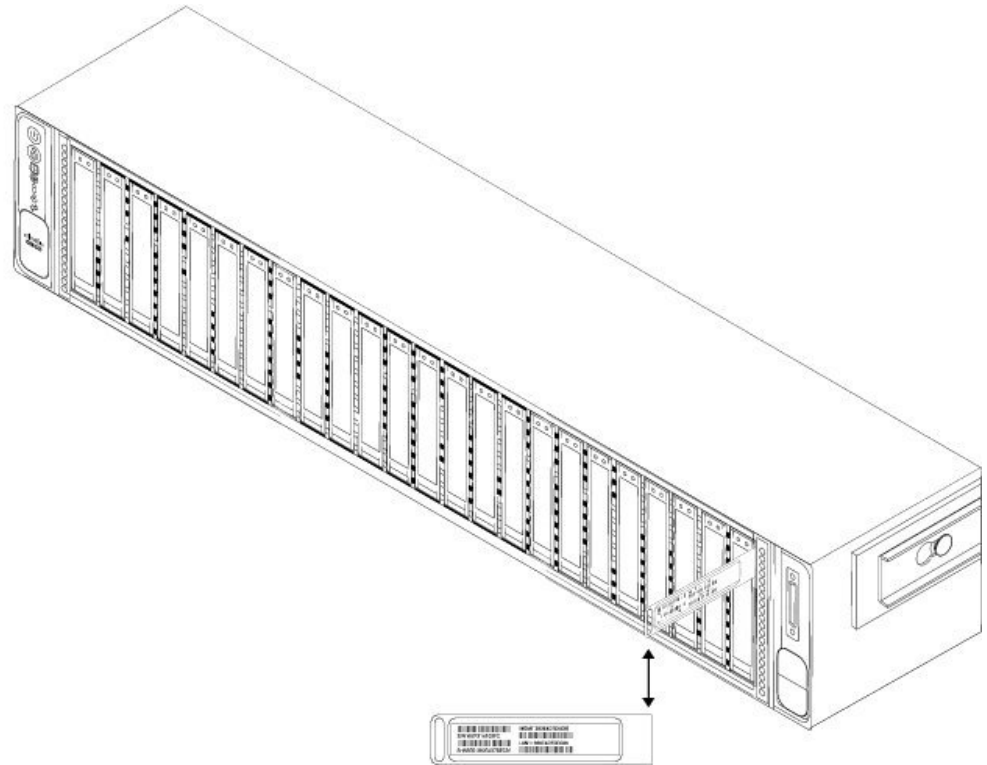


1	Chassis	2	RJ-45 to RJ-45 Cat 5 Ethernet cable, yellow six feet long (Cisco part number 72-1482-XX)
3	Cisco rail kit (Cisco part number 800-43376-02)	4	Useful Links printed document The steps in the Useful Links document send you to the documentation you need to install, set up, and configure your AMP PC3000.
5	SFP+ cables (Optional; in package if ordered.)		

Serial Number Location

The serial number (SN) for the AMP PC3000 is printed on the pullout asset card located on the front panel as shown in the following figure.

Figure 2: Serial Number on Pullout Asset Card



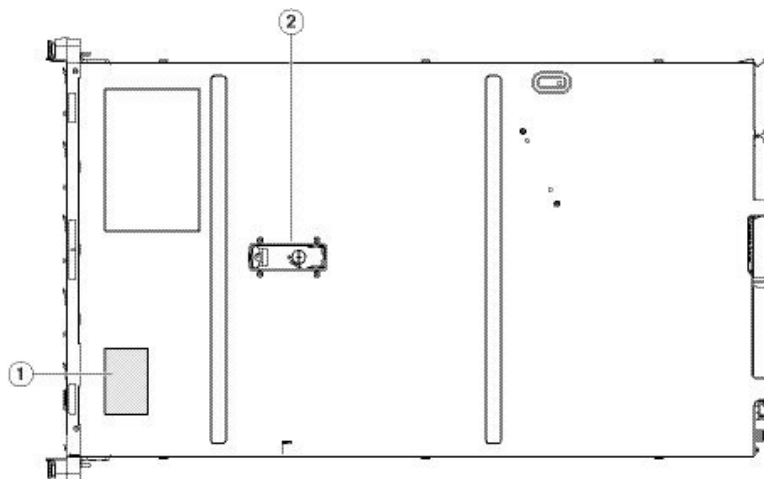
The serial number is also on the label on the cover of the chassis as shown in the following figure.



Caution

The cover latch on the top of the chassis cover is not supported. There are no internal field-replaceable parts in the AMP PC3000.

Figure 3: Serial Number Location on Cover

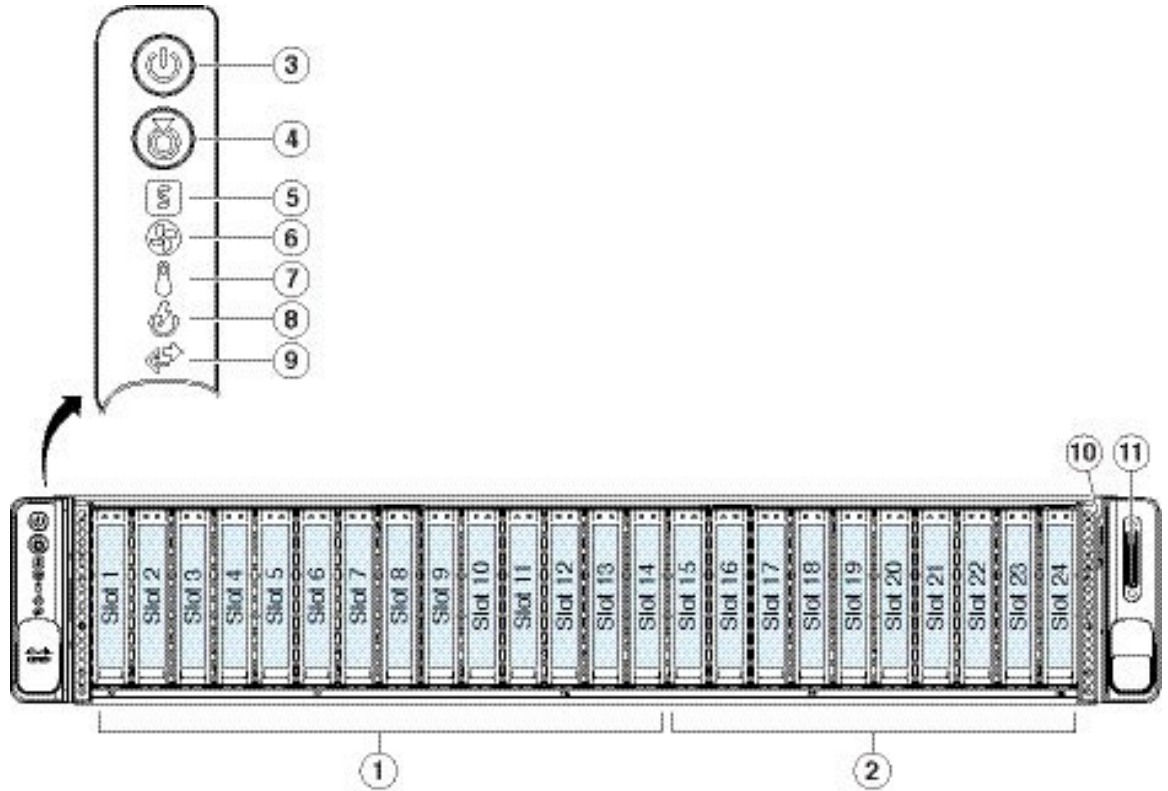


1	Serial number label
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Front Panel

The following figure shows the front panel features and disk-drive configuration for the AMP PC3000. See [Front Panel LEDs](#), on page 6 for a description of the LEDs.

Figure 4: AMP PC3000 Front Panel

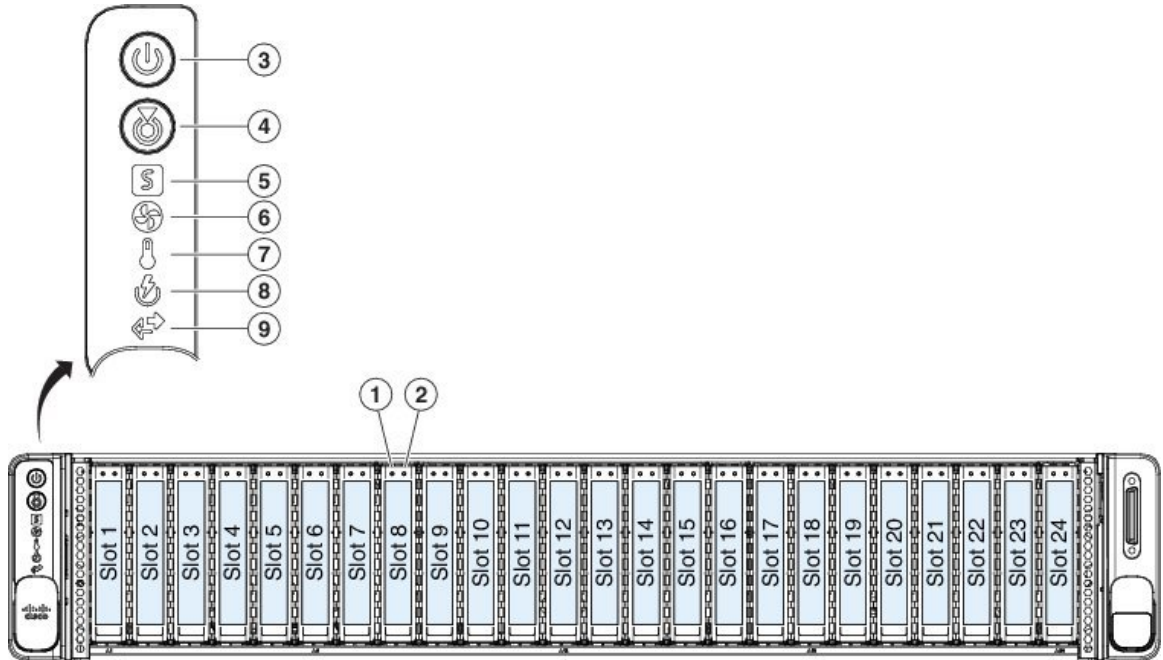


1	Drive bays 1-14 are populated with SSDs for the /data volume.	2	Drive bays 15-24 populated with SAS HDDs for the /other volume.
3	Power button/power status LED	4	Unit identification button/LED
5	System status LED	6	Fan status LED
7	Temperature status LED	8	Power supply status LED
9	Network link activity LED	10	Pullout asset card
11	KVM connector Used with KVM cable that provides one DB-15 VGA, one DB-9 serial, and two USB connectors.	-	

Front Panel LEDs

The following figure shows the front panel LEDs and describes their states.

Figure 5: Front Panel LEDs and Their States



<p>1</p>	<p>SAS/SATA drive fault</p> <ul style="list-style-type: none"> • Off—The drive is operating properly. • Amber—Drive fault detected. • Amber, flashing—The drive is rebuilding. • Amber, flashing with one-second interval—Drive locate function activated in the software. 	<p>2</p>	<p>SAS/SATA drive activity LED</p> <ul style="list-style-type: none"> • Off—There is no drive in the drive tray (no access, no fault). • Green—The drive is ready. • Green, flashing—The drive is reading or writing data.
<p>3</p>	<p>Power button/LED</p> <ul style="list-style-type: none"> • Off—There is no AC power to the appliance. • Amber—The appliance is in standby mode. • Green—The appliance is in main power mode. Power is supplied to all appliance components. 	<p>4</p>	<p>Unit identification</p> <ul style="list-style-type: none"> • Off—The unit identification function is not in use. • Blue, flashing—The unit identification function is activated.

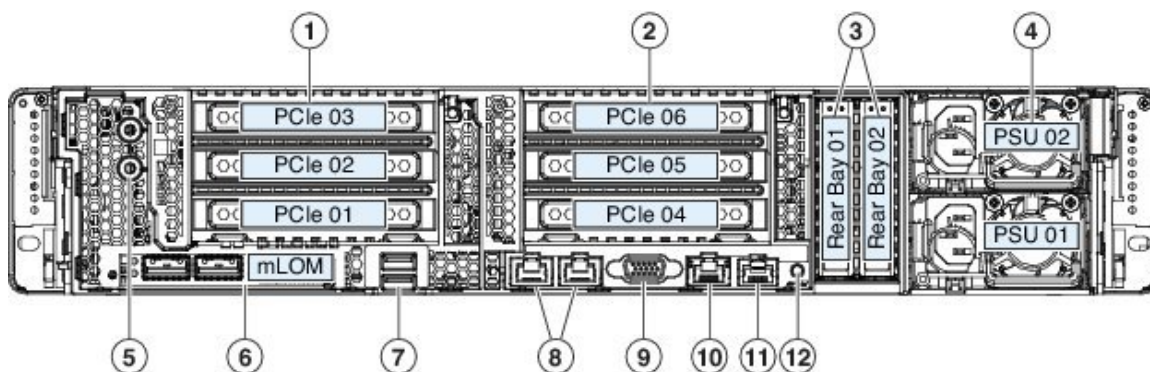
5	<p>System health</p> <ul style="list-style-type: none"> • Green—The appliance is running in normal operating condition. • Green, flashing—The appliance is performing system initialization and memory check. • Amber—The appliance is in a degraded operational state (minor fault). For example: <ul style="list-style-type: none"> • 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, 2 flashes—There is a major fault with the system board. • Amber, 3 flashes—There is a major fault with the memory DIMMs. • Amber, 4 flashes—There is a major fault with the CPUs. 	6	<p>Power supply status</p> <ul style="list-style-type: none"> • Green—All power supplies are operating normally. • Amber—One or more power supplies are in a degraded operational state. • Amber, flashing—One or more power supplies are in a critical fault state.
7	<p>Fan status</p> <ul style="list-style-type: none"> • Green—All fan modules are operating properly. • Amber, flashing—One or more fan modules breached the unrecoverable threshold. 	8	<p>Network link activity</p> <ul style="list-style-type: none"> • Off—The Ethernet Lights Out Management (LOM) port link is idle. • Green—One or more Ethernet LOM ports are link-active, but there is no activity. • Green, flashing—One or more Ethernet LOM ports are link-active, with activity.

<p>9</p>	<p>Temperature status</p> <ul style="list-style-type: none"> • Green—The appliance is operating at normal temperature. • Amber—One or more temperature sensors breached the critical threshold. • Amber, flashing—One or more temperature sensors breached the unrecoverable threshold. 		
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Rear Panel

The following figure shows the rear panel of the AMP PC3000.

Figure 6: Rear Panel



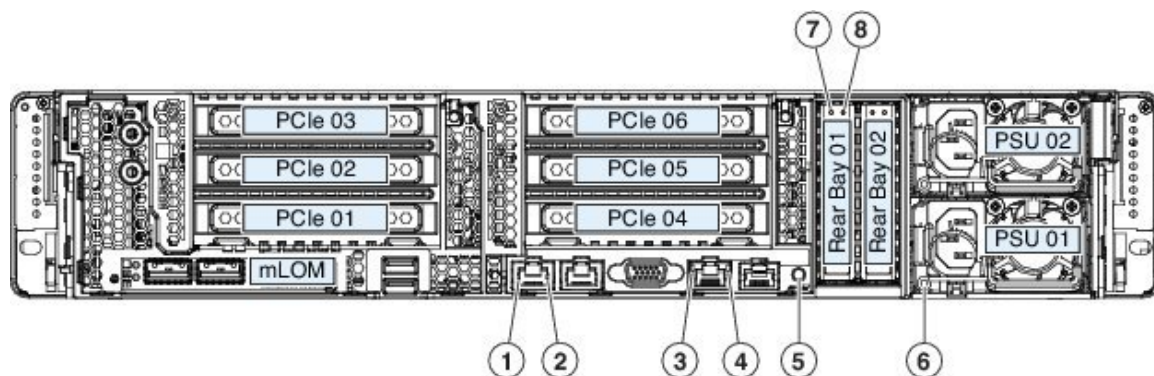
<p>1</p>	<p>PCIe riser 1 (PCIe slot 1, 2, 3) PCIe slot 3 is used for the SFP+ ports. PCIe slots 1 and 2 are not supported.</p>	<p>2</p>	<p>PCIe riser 2 (PCIe slots 4, 5, 6) PCIe riser 2 is not supported.</p>
<p>3</p>	<p>2.5-inch HDD bays containing 1.2-TB SAS HDDs for the recovery partition</p>	<p>4</p>	<p>Power supplies (two, redundant as 1+1)</p>
<p>5</p>	<p>Threaded holes for dual-hole grounding lug</p>	<p>6</p>	<p>Modular LAN-on-motherboard (mLOM) card slot (x16)</p>
<p>7</p>	<p>2 USB 3.0 Type A ports</p>	<p>8</p>	<p>Dual 1-Gb/10-Gb Ethernet ports (LAN1 and LAN2) The dual LAN ports can support 1 Gbps and 10 Gbps depending on the link partner capability.</p>
<p>9</p>	<p>VGA video port (DB-15 connector)</p>	<p>10</p>	<p>1-Gb Ethernet dedicated Cisco Integrated Management Controller (CIMC) port</p>

11	Serial port (RJ-45 connector)	12	Rear unit identification button/LED
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Rear Panel LEDs

The following figure shows the rear panel LEDs and describes their states.

Figure 7: Rear Panel LEDs and Their States



1	1-Gb/10-Gb Ethernet link speed (on both LAN1 and LAN2) <ul style="list-style-type: none"> • Amber—Link speed is 100 Mbps • Amber—Link speed is 1 Gbps • Green—Link speed is 10 Gbps 	2	1-Gb/10-Gb Ethernet link status (on both LAN1 and LAN2) <ul style="list-style-type: none"> • Off—No link is present • Green—Link is active • Green, flashing—Traffic is present on the active link
3	1-Gb Ethernet dedicated management link speed <ul style="list-style-type: none"> • Off—Link speed is 10 Mbps • Amber—Link speed is 100 Mbps • Green—Link speed is 1 Gbps 	4	1-Gb Ethernet dedicated management link status <ul style="list-style-type: none"> • Off—No link is present • Green—Link is active • Green, flashing—Traffic is present on the active link

5	<p>Rear unit identification</p> <ul style="list-style-type: none"> • Off—The unit identification function is not in use • Blue, flashing—The unit identification function is activated 	6	<p>Power supply status (one LED for each power supply unit)</p> <ul style="list-style-type: none"> • Off—No AC input (12 V main power off, 12 V standby power off) • Green, flashing—12 V main power off; 12 V standby power on • Green—12 V main power on; 12 V standby power on • Amber, flashing—Warning threshold detected but 12 V main power on • Amber—Critical error detected; 12 V main power off (for example, over-current, over-voltage, or over-temperature failure)
7	<p>SAS/SATA drive fault</p> <ul style="list-style-type: none"> • Off—The drive is operating properly • Amber—Drive fault detected • Amber, flashing—The drive is rebuilding • Amber, flashing with one-second interval—Drive locate function activated in the software 	8	<p>SAS/SATA drive activity LED</p> <ul style="list-style-type: none"> • Off—There is no drive in the drive tray (no access, no fault) • Green—The drive is ready • Green, flashing—The drive is reading or writing data

Power Supply

The following table lists the specifications for each 1050-W AC power supply (Cisco part number UCSC-PSU1-1050W) used in the AMP PC3000.

Table 2: Power Supply Specifications

Description	Specification
Power consumption	1313 BTU/hr
AC input voltage range	Nominal range: 100 to 120 V AC, 200 to 240 V AC Range: 90–132 V AC, 180–264 V AC
AC input frequency	Nominal range: 50–60 Hz Range: 47–63 Hz

Description	Specification
Maximum AC input current	12.5 A peak at 100 V AC 6.0 A peak at 208 V AC
Maximum input volt amperes	1250 VA at 100 V AC
Maximum output power for each power supply	1050 W
Maximum inrush current	15 A (subcycle duration)
Maximum hold-up time	12 ms at 1050 W
Power supply output voltage	12 V DC
Power supply standby voltage	12 V DC
Efficiency rating	Climate Savers Platinum Efficiency (80 Plus Platinum certified)
Form factor	RSP2
Input connector	IEC320 C14

Hardware Specifications

The following table lists the hardware specifications for the AMP PC3000.

Table 3: AMP PC3000 Hardware Specifications

Specification	
Dimensions (H x W x D)	3.4 x 16.9 x 29.5 in. (8.64 x 42.9 x 74.0 cm)
Maximum weight (fully loaded chassis)	57.5 lb (26.1 kg)
Temperature	Operating: 50 to 95°F (10 to 35°C) Maximum temperature is derated by 1°F/547 ft (1°C/300 m) of altitude above 3117 ft (950 m). Nonoperating: -40 to 149°F (-40 to 65°C) when the appliance is stored or transported.
Relative humidity	Operating: 8 to 90% noncondensing Nonoperating: 5 to 95% noncondensing
Altitude	Operating: 0 to 10,000 ft Nonoperating: 0 to 40,000 ft when the appliance is stored or transported

Specification	
Sound power level	5.8 Bels (measure A-weighted per ISO7779 LWAd) Operation at 73°F (23°C)
Sound pressure level	43 dBa (measure A-weighted per ISO7779 LpAM) Operation at 73°F (23°C)

Product ID Numbers

The following table lists the spare Product IDs (PIDs) associated with the AMP PC3000. The spare components are ones that you can order and replace yourself. If any internal components fail, you must RMA the entire chassis including the SFPs and SFP cables. Remove the drives and power supplies before you send the chassis for RMA. You can view an inventory of PIDs using the Cisco Integrated Management Interface (CIMC). See [Viewing Product ID \(PID\) Catalog Details](#) for more information.

Table 4: AMP PC3000 PIDs

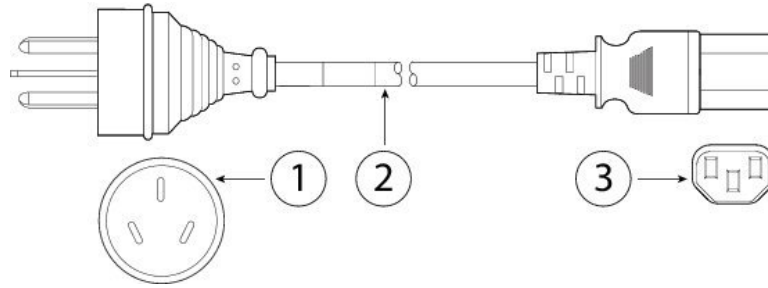
PID	Description
AMPPC-AC-1050	Power supply
AMPPC-AC-1050=	Power supply (spare)
AMPPC-HDD-1.2TB	1.2-TB hard disk drive
AMPPC-HDD-1.2TB=	1.2-TB hard disk drive (spare)
AMPPC-HDD-1.8TB	1.8-TB hard disk drive
AMPPC-HDD-1.8TB=	1.8-TB hard disk drive (spare)
AMP-S800GK3X-EP	800-GB solid state drive
AMP-S800GK3X-EP=	800-GB solid state drive (spare)
UCSC-RAILB-M4	Rail kit
UCSC-RAILB-M4=	Rail kit (spare)

Power Cord Specifications

If you do not order the optional power cord with the system, you are responsible for selecting the appropriate power cord for the product. Using an incompatible power cord with this product may result in electrical safety hazard. Orders delivered to Argentina, Brazil, and Japan must have the appropriate power cord ordered with the system.

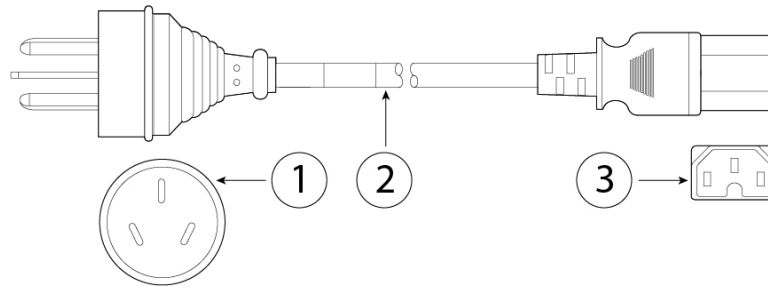
The following power cords and jumper cords are supported.

Figure 8: Argentina CAB-250V-10A-AR



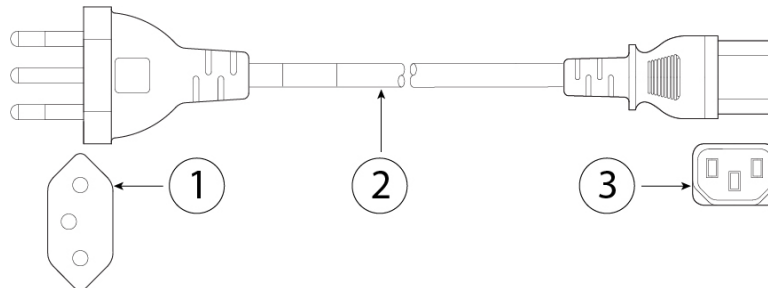
1	Plug: IRAM 2073	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C13		

Figure 9: Australia CAB-9K10A-AU



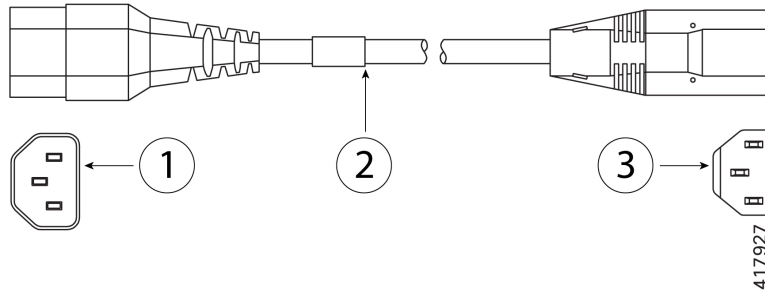
1	Plug: A.S. 3112-2000	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C15		

Figure 10: Brazil PWR-250V-10A-BZ



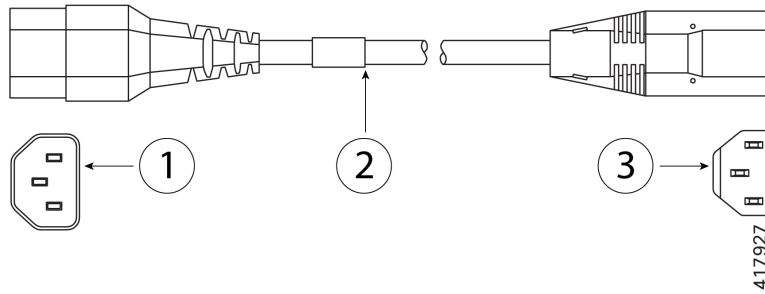
1	Plug: NBR 14136	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C13		

Figure 11: Cabinet Jumper CAB-C13-C14-2M



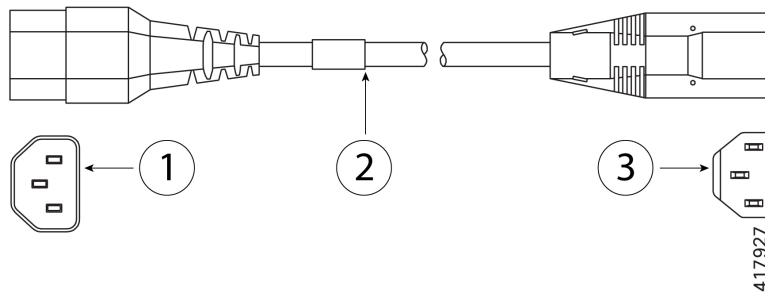
1	Plug: SS10A	2	Cord set rating: 10A, 250V
3	Connector: HS10S, C-13 to C-14		

Figure 12: Cabinet Jumper CAB-C13-C14-AC



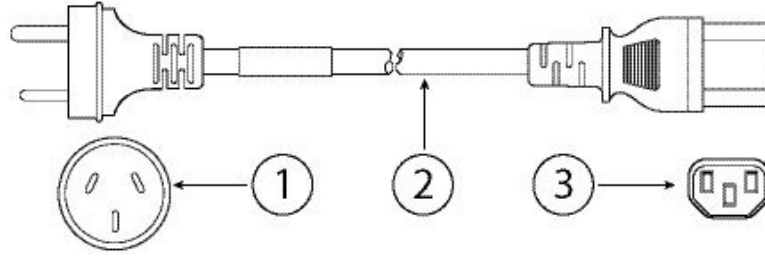
1	Plug: SS10A	2	Cord set rating: 10 A, 250 V
3	Connector: HS10S, C-13 to C-14 (recessed receptacle)		

Figure 13: Cabinet Jumper CAB-C13-CBN



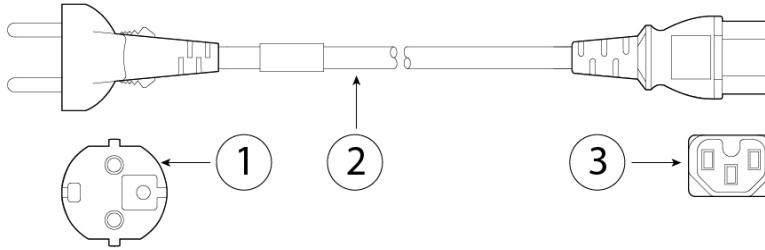
1	Plug: SS10A	2	Cord set rating: 10 A, 250 V
3	Connector: HS10S, C-13 to C-14		

Figure 14: China CAB-250V-10A-CH



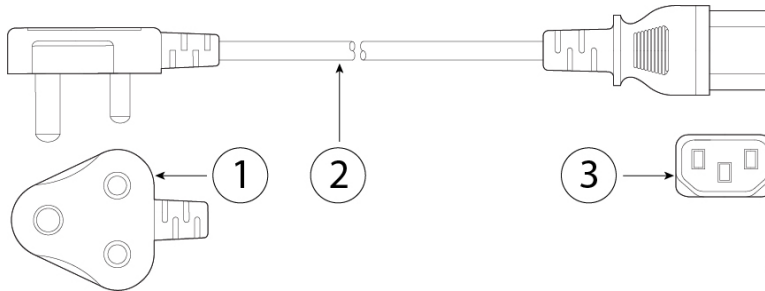
1	Plug: GB2099.1/2008	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C13		

Figure 15: Europe CAB-9K10A-EU



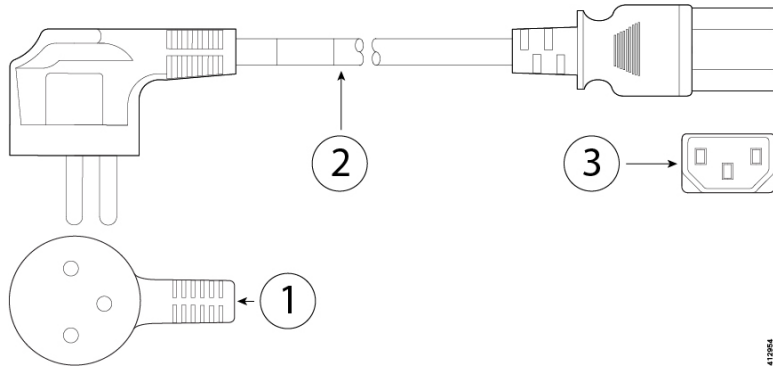
1	Plug: CEE 7/7 (M2511)	2	Cord set rating: 10 A/16 A, 250 V
3	Connector: IEC 60320/C15 (VSCC 15)		

Figure 16: India CAB-250V-10A-ID



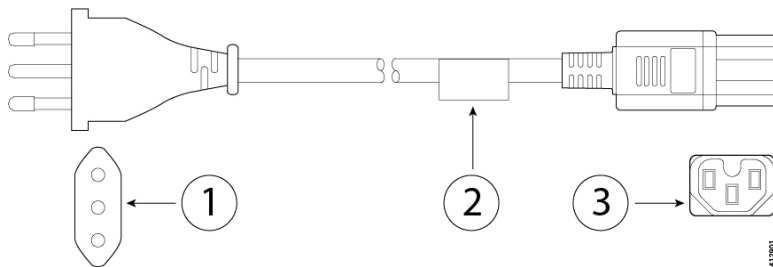
1	Plug: IS 6538-1971	2	Cord set rating: 16 A, 250 V
3	Connector: IEC 60320-C13		

Figure 17: Israel CAB-250V-10A-IS



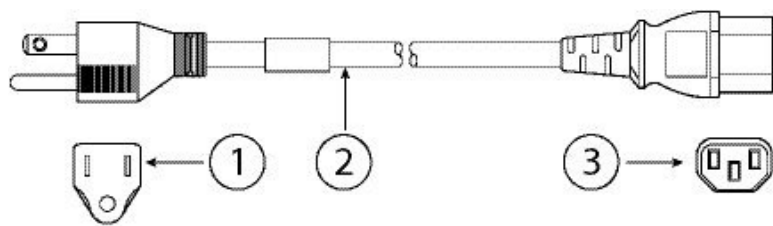
1	Plug: SI-32	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		

Figure 18: Italy CAB-9K10A-IT



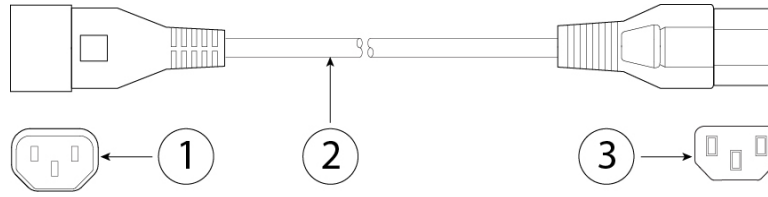
1	Plug: CEI 23-16/VII (I/3G)	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C15 (EN 60320/C15M)		

Figure 19: Japan CAB-JPN-3PIN



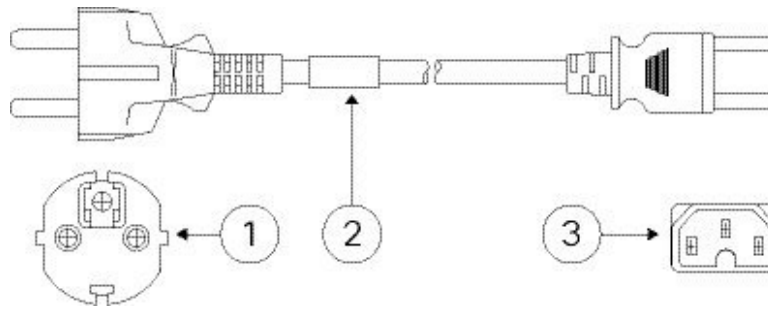
1	Plug: JIS 8303	2	Cord set rating: 12 A, 125 V
3	Connector: IEC 60320/C13		

Figure 20: Japan CAB-C13-C14-2M-JP



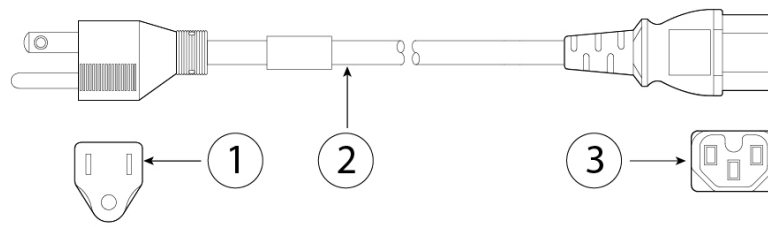
1	Plug: EN 60320-2-2/E	2	Cord set rating: 10 A, 250 V
3	Connector: EN 60320/C13 to C14		

Figure 21: Korea CAB-9K10S-KOR



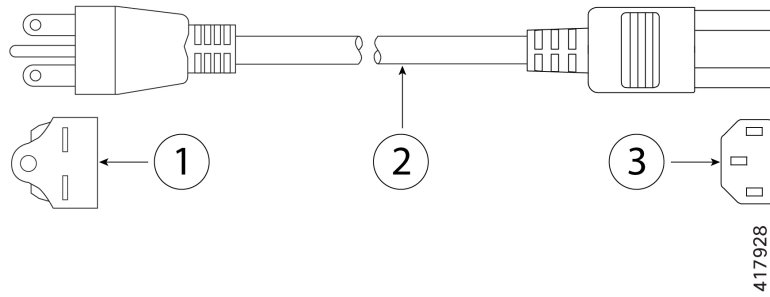
1	Plug: EL211 (KSC 8305)	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C15		

Figure 22: North America CAB-9K12A-NA



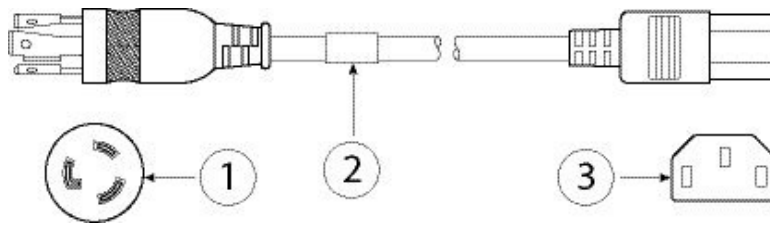
1	Plug: NEMA5-15P	2	Cord set rating: 13 A, 125 V
3	Connector: IEC 60320/C15		

Figure 23: North America CAB-N5K6A-NA



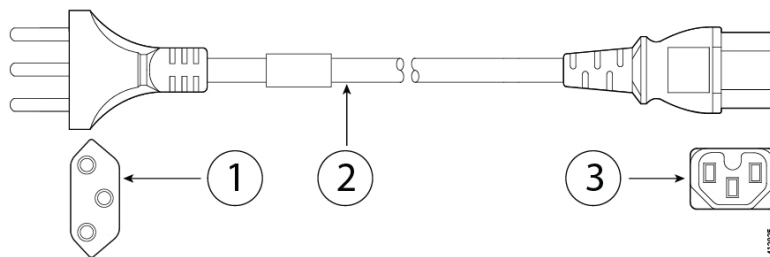
1	Plug: NEMA6-15P	2	Cord set rating: 10 A, 125 V
3	Connector: IEC 60320/C13		

Figure 24: North America CAB-AC-L620-C13



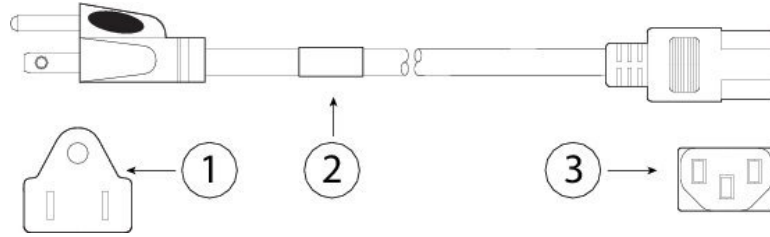
1	Plug: NEMA L6-20 (molded twist lock)	2	Cord set rating: 13 A, 250 V
3	Connector: IEC 60320/C13		

Figure 25: Switzerland CAB-9K10A-SW



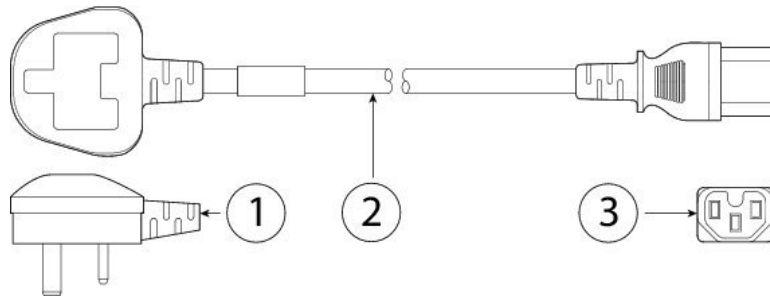
1	Plug: SEV 1011 (MP232-R)	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C15		

Figure 26: Taiwan CAB-ACTW



1	Plug: EL 302 (CNS10917)	2	Cord set rating: 10 A, 125 V
3	Connector: IEC 60320/C13		

Figure 27: United Kingdom CAB-9K10A-UK



1	Plug: BS1363A/SS145	2	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320/C15		



CHAPTER 2

Installation Preparation

- [Installation Warnings, on page 21](#)
- [Safety Recommendations, on page 23](#)
- [Maintain Safety with Electricity, on page 23](#)
- [Prevent ESD Damage, on page 24](#)
- [Site Environment, on page 24](#)
- [Site Considerations, on page 24](#)
- [Power Supply Considerations, on page 25](#)
- [Rack Configuration Considerations, on page 25](#)

Installation Warnings

Be sure to read the [REGULATORY & COMPLIANCE SAFETY INFORMATION](#) document before installing the AMP PC3000 appliance.

Take note of the following warnings:



Warning

IMPORTANT SAFETY INSTRUCTIONS

Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Read the installation instructions before using, installing, or connecting the system to the power source. Use the statement number provided at the end of each warning statement to locate its translation in the translated safety warnings for this device.

SAVE THESE INSTRUCTIONS



**Warning** **Statement 1005**—Circuit Breaker

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: USA: 120 V, 15 A (EU: 250 V, 16 A)



Warning Read the installation instructions before using, installing, or connecting the system to the power source.



Warning Before working on a chassis or working near power supplies, unplug the power cord on AC units. Disconnect the power at the circuit breaker on DC units.



Warning Before working on equipment that is connected to power lines, remove jewelry including rings, necklaces, and watches. Metal objects heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.



Warning During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.



Warning This product requires short-circuit (overcurrent) protection to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.



Warning To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.



Warning This equipment must be grounded. To reduce the risk of electric shock, never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning Ultimate disposal of this product should be handled according to all national laws and regulations.



Warning To reduce risk of electric shock or fire, installation of the equipment must comply with local and national electrical codes.



Warning The device is designed to work with TN power systems.

Safety Recommendations

Observe these safety guidelines:

- Keep the area clear and dust free before, during, and after installation.
- Keep tools away from walkways, where you and others might trip over them.
- Do not wear loose clothing or jewelry, such as earrings, bracelets, or chains that could get caught in the chassis.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Never attempt to lift an object that is too heavy for one person.

Maintain Safety with Electricity



Warning Before working on a chassis, be sure the power cord is unplugged.

Follow these guidelines when working on equipment powered by electricity:

- Before beginning procedures that require access to the interior of the chassis, locate the emergency power-off switch for the room in which you are working. Then, if an electrical accident occurs, you can act quickly to turn off the power.
- Do not work alone if potentially hazardous conditions exist anywhere in your work space.
- Never assume that power is disconnected; always check.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, frayed power cords, and missing safety grounds.
- If an electrical accident occurs:
 - Use caution; do not become a victim yourself.
 - Disconnect power from the system.
 - If possible, send another person to get medical aid. Otherwise, assess the condition of the victim, and then call for help.

- Determine whether the person needs rescue breathing or external cardiac compressions; then take appropriate action.
- Use the chassis within its marked electrical ratings and product usage instructions.
- The chassis is equipped with an AC-input power supply, which is shipped with a three-wire electrical cord with a grounding-type plug that fits into a grounding-type power outlet only. Do not circumvent this safety feature. Equipment grounding should comply with local and national electrical codes.

Prevent ESD Damage

ESD occurs when electronic components are improperly handled, and it can damage equipment and impair electrical circuitry, which can result in intermittent or complete failure of your equipment.

Always follow ESD-prevention procedures when removing and replacing components. Ensure that the chassis is electrically connected to an earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the grounding clip to an unpainted surface of the chassis frame to safely ground ESD voltages. To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

For safety, periodically check the resistance value of the antistatic strap, which should be between one and 10 megohms.

Site Environment

To avoid equipment failures and reduce the possibility of environmentally caused shutdowns, plan the site layout and equipment locations carefully. If you are currently experiencing shutdowns or unusually high error rates with your existing equipment, these considerations may help you isolate the cause of failures and prevent future problems.

Site Considerations

Considering the following helps you plan an acceptable operating environment for the chassis, and avoid environmentally-caused equipment failures.

- Electrical equipment generates heat. Ambient air temperature might not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Make sure that the room in which you operate your system has adequate air circulation.
- Ensure that the chassis cover is secure. The chassis is designed to allow cooling air to flow effectively within it. An open chassis allows air leaks, which may interrupt and redirect the flow of cooling air from the internal components.
- Always follow ESD-prevention procedures to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.

Power Supply Considerations

When installing the chassis, consider the following:

- Check the power at the site before installing the chassis to ensure that it is free of spikes and noise. Install a power conditioner, if necessary, to ensure proper voltages and power levels in the appliance-input voltage.
- Install proper grounding for the site to avoid damage from lightning and power surges.
- The chassis does not have a user-selectable operating range. Refer to the label on the chassis for the correct appliance input-power requirement.
- Several styles of AC-input power supply cords are available for the chassis; make sure that you have the correct style for your site.
- Install an uninterruptible power source for your site, if possible.

Rack Configuration Considerations

Consider the following when planning a rack configuration:

- If you are mounting a chassis in an open rack, make sure that the rack frame does not block the intake or exhaust ports.
- If your rack includes closing front and rear doors, the doors must have 65 percent open perforated area evenly distributed from top to bottom to permit adequate airflow.
- Be sure enclosed racks have adequate ventilation. Make sure that the rack is not overly congested as each chassis generates heat. An enclosed rack should have louvered sides and a fan to provide cooling air.
- In an enclosed rack with a ventilation fan in the top, heat generated by equipment near the bottom of the rack can be drawn upward and into the intake ports of the equipment above it in the rack. Ensure that you provide adequate ventilation for equipment at the bottom of the rack.
- Baffles can help to isolate exhaust air from intake air, which also helps to draw cooling air through the chassis. The best placement of the baffles depends on the airflow patterns in the rack. Experiment with different arrangements to position the baffles effectively.



CHAPTER 3

Mount the Chassis

- [Unpack and Inspect the Chassis, on page 27](#)
- [Rack-Mount the Chassis, on page 27](#)
- [Connect Cables, Turn on Power, and Verify Connectivity, on page 30](#)

Unpack and Inspect the Chassis



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. Keep the shipping container in case you need to send the chassis back due to damage.

-
- Step 1** Remove the chassis from its cardboard container and save all packaging material.
- Step 2** Compare the shipment to the equipment list provided by your customer service representative. 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
-

Rack-Mount the Chassis

You can install the chassis in a rack using the Cisco rack kit.

The rack must be of the following type:

- A standard 19-in. (48.3-cm) wide, 4-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-in. (9.6 mm), round 0.28-in. (7.1 mm), #12-24 UNC, or #10-32 UNC when you use the supplied slide rails.
- The minimum vertical rack space per chassis must be 1 RU, equal to 1.75 in. (44.45 mm).
- The slide rails for the chassis have an adjustment range of 24 to 36 in. (610 to 914 mm).



Note The slide rails supplied by Cisco Systems for the chassis do not require tools for installation if you install them in a rack that has square 0.38-in. (9.6 mm), round 0.28-in. (7.1 mm), or #12-24 UNC threaded holes.

Before you begin

Take note of the following warnings:



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:

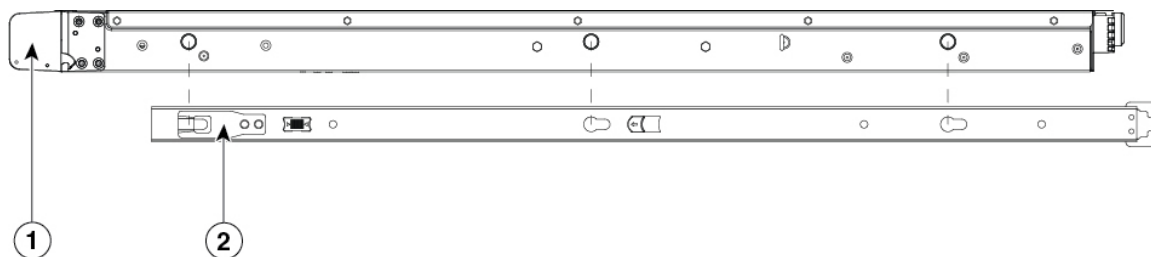
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Step 1

Attach the inner rails to the sides of the chassis:

- Align an inner rail with one side of the chassis so that the three keyed slots in the rail align with the three pegs on the side of the chassis.
- Set the keyed slots over the pegs, and then slide the rail toward the front to lock it in place on the pegs. The front slot has a metal clip that locks over the front peg.
- Install the second inner rail to the opposite side of the chassis.

Figure 28: Attach the Inner Rail to Side of Chassis

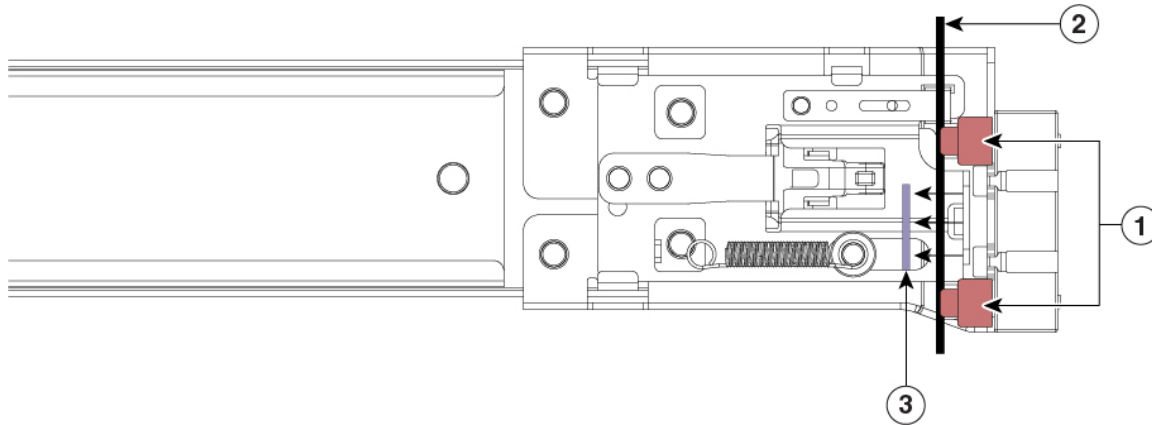


1	Front of chassis	2	Locking clip on inner rail
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Step 2 Open the front securing plate on both slide-rail assemblies. The front end of the slide-rail assembly has a spring-loaded securing plate that must be open before you can insert the mounting pegs into the rack-post holes.

On the outside of the assembly, push the green arrow button toward the rear to open the securing plate.

Figure 29: Front Securing Mechanism, Inside of Front End



1	Front mounting pegs	2	Rack post
3	Securing plate shown pulled back to open position		

Step 3 Install the slide rails into the rack:

- a) Align one slide-rail assembly front end with the front rack-post holes that you want to use.

The slide rail front end wraps around the outside of the rack post and the mounting pegs enter the rack-post holes from the outside-front.

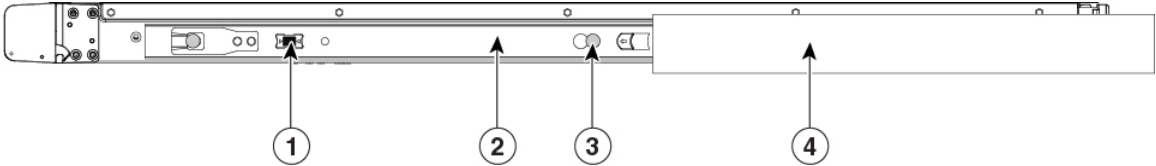
Note The rack post must be between the mounting pegs and the open securing plate.

- b) Push the mounting pegs into the rack-post holes from the outside-front.
 c) Press the securing plate release button, marked “PUSH.” The spring-loaded securing plate closes to lock the pegs in place.
 d) Attach the second slide-rail assembly to the opposite side of the rack. Make sure that the two slide-rail assemblies are at the same height with each other and are level front-to-back.
 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 4 Insert the chassis into the slide rails:

- a) Align the rear of the inner rails that are attached to the chassis sides with the front ends of the empty slide rails on the rack.
 b) Push the inner rails into the slide rails on the rack until they stop at the internal stops.
 c) Slide the release clip toward the rear on both inner rails, and then continue pushing the chassis into the rack until its front slam latches engage with the rack posts

Figure 30: Inner Rail Release Clip



1	Inner rail release clip	2	Inner rail attached to the chassis and inserted into outer rail
3	Button to unlock rail Press this button to unlock the rail so you can pull out the chassis from the rack when uninstalling or performing maintenance.	4	Outer rail attached to rack post

Step 5 (Optional) Secure the chassis in the rack more permanently by using the two screws that are provided with the slide rails. Perform this step if you plan to move the rack with chassis installed. With the chassis fully pushed into the slide rails, open a hinged slam latch lever on the front of the chassis and insert the screw through the hole that is under the lever. The screw threads into the static part of the rail on the rack post and prevents the chassis from being pulled out. Repeat for the opposite slam latch.

What to do next

Continue with [#unique_26](#).

Connect Cables, Turn on Power, and Verify Connectivity

After rack mounting the chassis, follow these steps to connect cables, turn on power, and verify connectivity.



Note AC power supplies have internal grounding and so no additional chassis grounding is required when the supported AC power cords are used. For more information about supported power cords, see [Power Cord Specifications, on page 12](#).

Before you begin

Take note of the following warnings.



Warning Laser radiation is present when the system is open.



Warning This is a Class 4 laser product. Invisible laser radiation is present. Avoid eye or skin exposure to direct or scattered radiation.



Warning Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

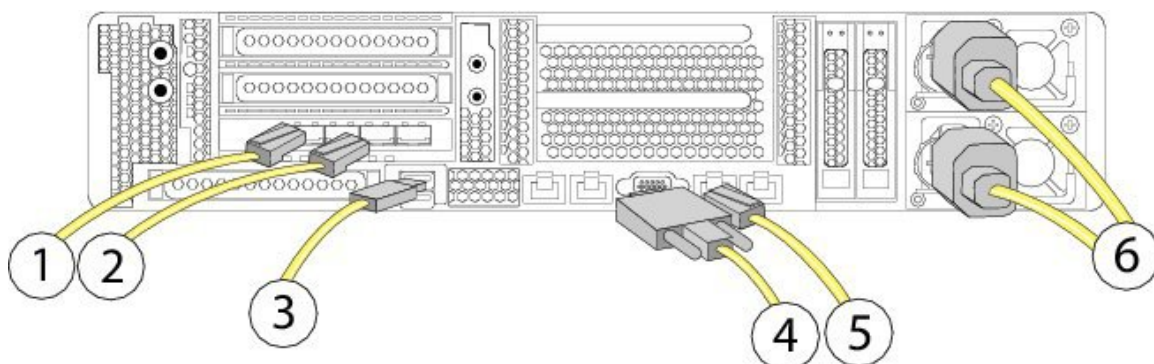
Step 1

Connect one Cisco-supported SFP+ transceiver and cable to the far left SFP port in PCIe 3 (see [Rear Panel, on page 8](#)). This is eth0 used to manage the PC3000 through the Opadmin console and should connect to a secure management network.

Each Cisco-certified SFP+ transceiver has an internal serial EEPROM that is encoded with security information. This encoding allows us to identify and validate that the SFP transceiver meets the requirements for the AMP PC3000 chassis.

Note Only Cisco certified SFP+ transceivers are compatible with the 10-G interfaces and both transceivers must be 1-G or 10-G. You cannot use one transceiver of each kind. Cisco TAC may refuse support for any interoperability problems that result from using an untested third-party SFP+ transceiver.

Figure 31: Cable Connections



<p>1</p>	<p>eth0 Private Cloud Administration Portal interface 10 Gigabit Ethernet SFP+ support Use only Cisco supported SFP+ transceivers.</p>	<p>2</p>	<p>eth1 AMP for Endpoints console interface 10 Gigabit Ethernet SFP+ support Use only Cisco supported SFP+ transceivers.</p>
<p>3</p>	<p>USB 3.0 Type A port You can connect a keyboard, and along with a monitor on the VGA port, you can access the CIMC.</p>	<p>4</p>	<p>VGA video port (DB-15 connector)</p>
<p>5</p>	<p>CIMC port 1-Gb Ethernet dedicated management port</p>	<p>6</p>	<p>Power cables</p>

Step 2

Connect a second Cisco-supported SFP+ transceiver and cable to the SFP port to the right of the eth0 port in step 1. This is eth1 used to access the AMP for Endpoints console and allows your AMP for Endpoints Connectors to perform cloud queries so should be connected to a network accessible to your endpoints.

Step 3

Connect the Ethernet cable that shipped with your appliance to the CIMC port. This should be connected to a secure management network.

- Step 4** Use the supported power cords to connect the power supplies of the chassis to your power source. For more information about supported power cords, see [Power Cord Specifications, on page 12](#).
- Step 5** Connect a keyboard to one of the USB ports and a monitor to the VGA port or use the KVM port on the front panel.
- Step 6** Power on the appliance.
- Step 7** Press **F8** at the menu options to configure the CIMC. The first time you connect to the CIMC you are prompted to set a new password. For more information about the CIMC, see the [Cisco UCS C-Series Servers Integrated Management Controller CLI Configuration Guide](#) or the [Cisco UCS C-Series Integrated Management Controller GUI Configuration Guide](#).
- Step 8** Configure the network settings (IP address, DNS) for the CIMC. You can disconnect the keyboard and monitor once the network settings have been applied.
- Step 9** Connect to the CIMC from a web browser on a computer on your secure management network using the IP address you set in step 8. At the log in prompt enter `admin` as the username and the password you set in step 7.
- Step 10** Choose HTML based KVM session from the Launch KVM option on the browser page. See the [Private Cloud Administration Portal User Guide](#) to continue setup and configuration.
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CHAPTER 4

Maintenance and Upgrade

- [Power Button Shut Down, on page 33](#)
- [Remove and Replace a Drive, on page 34](#)
- [Remove and Replace a Power Supply, on page 36](#)

Power Button Shut Down

The AMP PC3000 runs in two modes:

- Main power mode—Power is supplied to all AMP PC3000 components and all operating systems can run.
- Standby power mode—Power is supplied only to the service processor and certain components. You can safely remove power cords from the AMP PC3000 in this mode.



Caution After you shut down the AMP PC3000 to standby power, electric current is still present in the chassis. To completely remove power as directed in some maintenance procedures, you must disconnect all power cords from all power supplies on the AMP PC3000.

You can shut down the AMP PC3000 using the front panel Power button or software management. See [NEED XREF](#) for the software procedures.

Step 1 Check the Power LED:

- Amber—The AMP PC3000 is already in standby mode and you can safely remove power.
- Green—The AMP PC3000 is in main power mode and you must shut it down before you can safely remove power.

Step 2 Perform a graceful shutdown or a hard shutdown:

Caution To avoid data loss or damage to your operating system, perform a graceful shutdown of the operating system.

- Graceful shutdown—Press and release the Power button. The operating system performs a graceful shutdown and the AMP PC3000 goes into standby mode. The power LED is amber.
- Emergency shutdown—Press and hold the Power button for four seconds to force the main power off and immediately enter standby mode.

- Step 3** If a maintenance procedure instructs you to completely remove power from the AMP PC3000, disconnect all power cords from the power supplies.

Remove and Replace a Drive



Note The drives are hot-swappable. You do not have to shut down the FMC to remove or replace drives.



Note You cannot add more drives to your FMC. You can only replace the drives in the slots that are supported for your model.

Before you begin



Warning To reduce risk of electric shock and fire, take care when connecting units to the supply circuit so that wiring is not overloaded.



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



Warning This equipment must be grounded. To reduce the risk of electric shock, never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning Only trained and qualified personnel should be allowed to install, replace, or service this equipment.



Warning There are no serviceable parts inside. To avoid risk of electric shock, do not open.



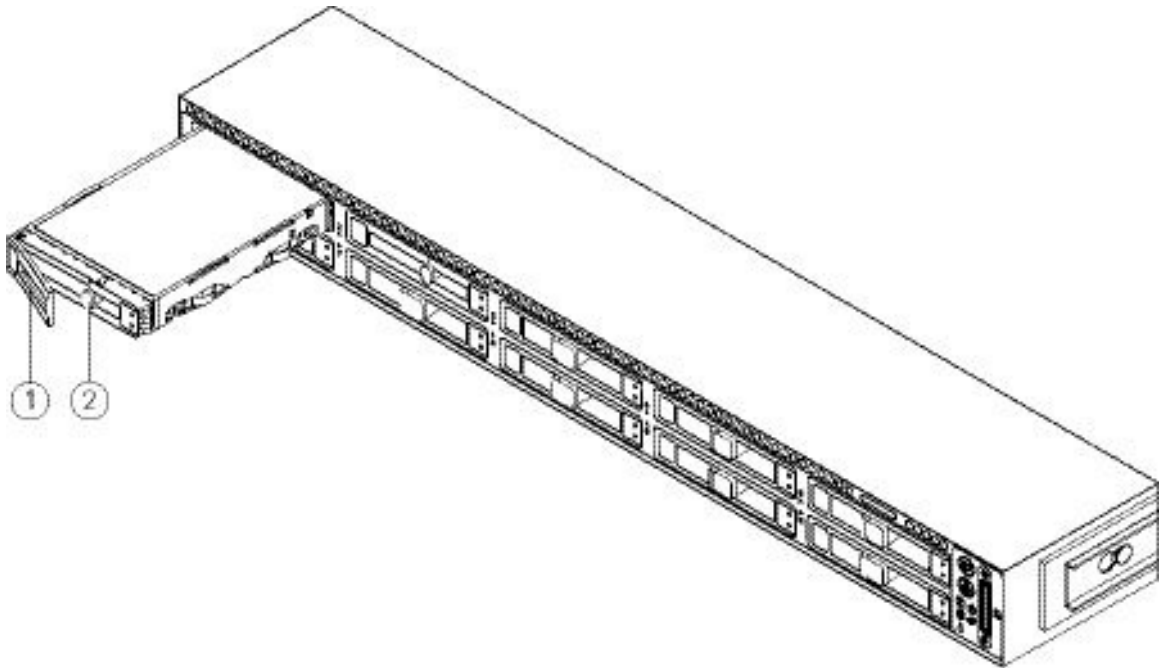
Warning To reduce risk of electric shock or fire, installation of the equipment must comply with local and national electrical codes.

Step 1

Remove the drive that you are replacing:

- 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.

Figure 32: Remove the Drive

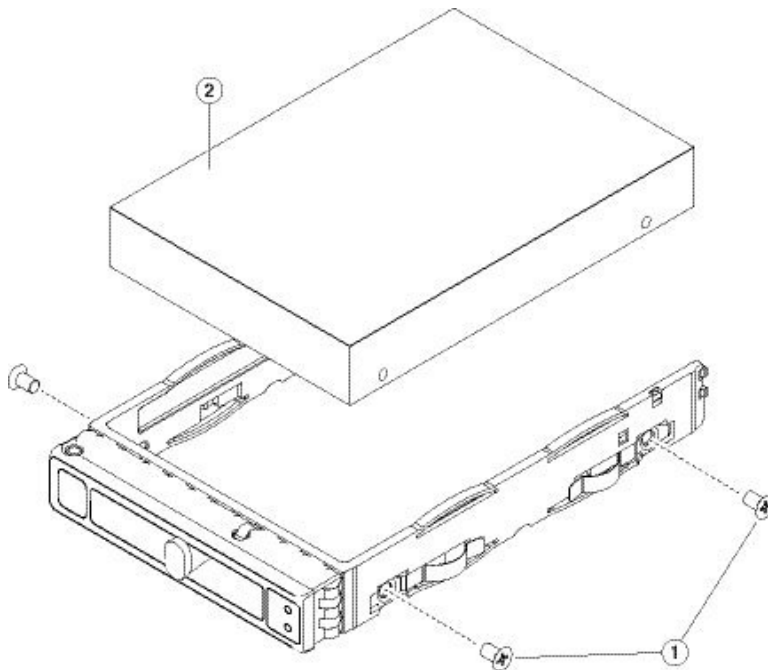


1	Ejector handle	2	Release button
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Step 2

Remove the four drive-tray screws that secure the drive to the tray and then lift the drive out of the tray.

Figure 33: Remove the Drive Tray



3	Drive tray screws (two on each side)	4	Drive removed from drive tray
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Step 3

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, and then close the ejector lever to lock the drive in place.

Remove and Replace a Power Supply

The FMC ships with two power supplies, which are redundant and hot-swappable. One is the active power supply and the other is the standby power supply (1+1).

This FMC also supports cold redundancy. Depending on the power being drawn by the FMC, one power supply might actively provide all power to the system while the remaining power supply is put into a standby state. For example, if the power consumption can be satisfied by power supply 1, then power supply 2 is put into a standby state.

**Caution**

When you replace power supplies, do not mix power supply types in the FMC. Both power supplies must be the same wattage and Cisco PID.



Trouble Power supply health monitoring notifies you if the power supply loses power or malfunctions so that redundancy is lost. Check the power supply cables to make sure they are functioning. If they are and errors are still occurring, replace the power supply.

Before you begin

Take note of the following warnings:



Warning To reduce risk of electric shock and fire, take care when connecting units to the supply circuit so that wiring is not overloaded.



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



Warning This equipment must be grounded. To reduce the risk of electric shock, never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning Only trained and qualified personnel should be allowed to install, replace, or service this equipment.



Warning There are no serviceable parts inside. To avoid risk of electric shock, do not open.



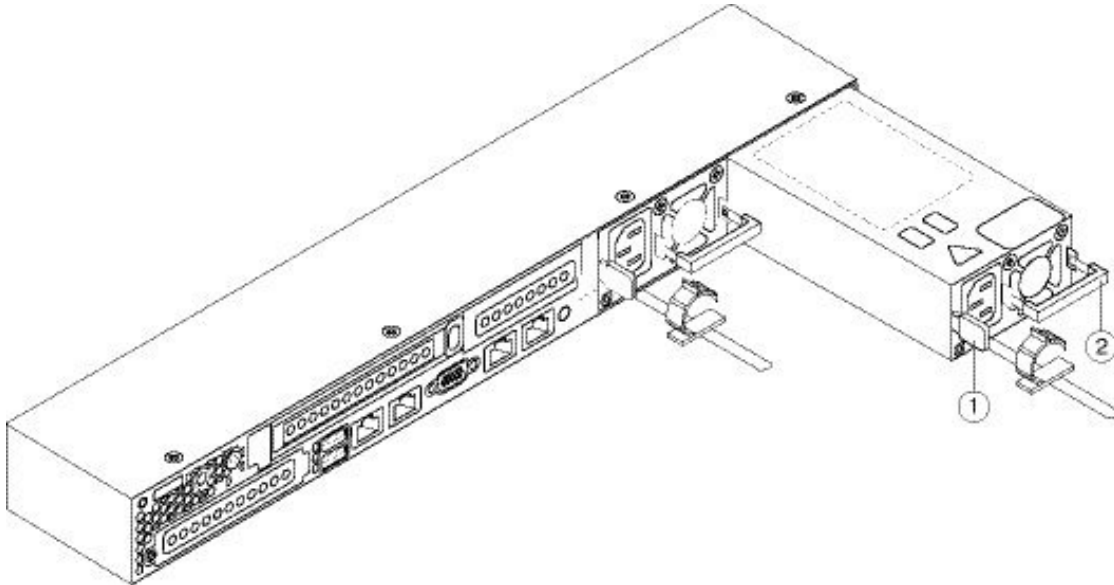
Warning To reduce risk of electric shock or fire, installation of the equipment must comply with local and national electrical codes.

Step 1

Remove the power supply:

- a) Grasp the power supply handle while pinching the release lever toward the handle.
- b) Pull the power supply out of the bay.

Figure 34: Remove and Replace the AC Power Supply



1	Release lever	2	Handle
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Step 2

Install a new power supply:

- a) Grasp the power supply handle and insert the new power supply into the empty bay.
- b) Push the power supply into the bay until the release lever locks.
- c) Connect the power cord to the new power supply.
- d) If you shut down the FMC, press the Power button to return it to main power mode.