



Cisco UCS Site Preparation Guide

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CONTENTS

Preface

Preface vii

Audience vii

Conventions vii

Related Cisco UCS Documentation ix

Obtaining Documentation and Submitting a Service Request ix

CHAPTER 1

Overview 1

Cisco UCS 1

Cisco UCS 5108 Blade Server Chassis 1

Cisco UCS 6100 Fabric Interconnect Series 3

Cisco UCS 6200 Fabric Interconnect Series 4

CHAPTER 2

Preparing the Site 5

Environmental Considerations 5

Temperature 6

Humidity 7

Altitude 7

Dust and Particles 7

Corrosion 7

Electromagnetic and Radio Frequency Interference 7

Grounding 8

Power Source 8

Power Budget 8

Rack Requirements 9

General Requirements for Racks 9

Rack Space 10

Rack Distance 10

CHAPTER 3**Technical Specifications 13**

Environmental Specifications for the Cisco UCS Equipment	13
Physical Specifications for the Cisco UCS Equipment	14
Power Specifications	16
Specifications for the Cisco UCS 5108 Blade Server Chassis Power Supply Units	16
Supported AC Power Cords and Plugs	19
Australia and New Zealand	19
Continental Europe	19
International	20
Israel	20
Japan and North America	21
Peoples Republic of China	22
Switzerland	22
Power Distribution Unit (PDU)	23
Power Specifications for the Cisco UCS 6100 Fabric Interconnects	23
Supported AC Power Cords and Plugs	24
Power Specifications for the Cisco UCS 6200 Fabric Interconnects	31
Supported AC Power Cords and Plugs	32
Argentina	32
Australia and New Zealand	33
Peoples Republic of China	33
Europe	34
India, South Africa, and United Arab Emirates	34
Israel	35
Italy	35
North America	36
Switzerland	37
United Kingdom	37
Cabinet Jumper Power Cord	38
Power Supply Configuration Modes	38
Blade Server Chassis and Fabric Interconnect Clearances	39
Facility Cooling Requirements	39
Chassis Airflow	39

APPENDIX A

Site Preparation and Maintenance Records 41

Contact and Site Information Checklist 41

Environmental Checklist 43

Power Checklist 43

LAN Connectivity Checklist 44

SAN Connectivity Checklist 45

Port Connection Record 45



Preface

This preface includes the following sections:

- [Audience, page vii](#)
- [Conventions, page vii](#)
- [Related Cisco UCS Documentation, page ix](#)
- [Obtaining Documentation and Submitting a Service Request, page ix](#)

Audience

This guide is intended primarily for data center administrators with responsibilities and expertise in one or more of the following:

- Server administration
- Storage administration
- Network administration
- Network security

Conventions

Text Type	Indication
GUI elements	GUI elements such as tab titles, area names, and field labels appear in this font . Main titles such as window, dialog box, and wizard titles appear in this font .
Document titles	Document titles appear in <i>this font</i> .
TUI elements	In a Text-based User Interface, text the system displays appears in <code>this font</code> .
System output	Terminal sessions and information that the system displays appear in <code>this font</code> .

Text Type	Indication
CLI commands	CLI command keywords appear in this font . Variables in a CLI command appear in <i>this font</i> .
[]	Elements in square brackets are optional.
{x y z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

**Tip**

Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

**Caution**

Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

**Timesaver**

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

**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.

SAVE THESE INSTRUCTIONS

Related Cisco UCS Documentation

Documentation Roadmaps

For a complete list of all B-Series documentation, see the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: <http://www.cisco.com/go/unifiedcomputing/b-series-doc>.

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmap* available at the following URL: <http://www.cisco.com/go/unifiedcomputing/c-series-doc>.

Other Documentation Resources

An ISO file containing all B and C-Series documents is available at the following URL: <http://www.cisco.com/cisco/software/type.html?mdfid=283853163&flowid=25821>. From this page, click **Unified Computing System (UCS) Documentation Roadmap Bundle**.

The ISO file is updated after every major documentation release.

Follow [Cisco UCS Docs on Twitter](#) to receive document update notifications.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly [What's New in Cisco Product Documentation](#), which also lists all new and revised Cisco technical documentation.

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Overview

This chapter includes the following sections:

- [Cisco UCS, page 1](#)
- [Cisco UCS 5108 Blade Server Chassis, page 1](#)
- [Cisco UCS 6100 Fabric Interconnect Series, page 3](#)
- [Cisco UCS 6200 Fabric Interconnect Series, page 4](#)

Cisco UCS

Cisco Unified Computing System (Cisco UCS) is a next-generation data center platform that unites computing, network, storage access, and virtualization services into a cohesive system that reduces the total cost of ownership (TCO) and increases business agility. This system integrates a low-latency, lossless 10-Gigabit Ethernet unified network fabric with enterprise-class, x86-architecture servers. It is an integrated, scalable, multi-chassis platform in which all resources participate in a unified management domain.

System Management is performed using Cisco UCS Manager. For configuration information, see the *Configuration Guide* for the version of Cisco UCS Central that you are using. The configuration guides are available at the following URL: http://www.cisco.com/en/US/products/ps12502/products_installation_and_configuration_guides_list.html

Cisco UCS 5108 Blade Server Chassis

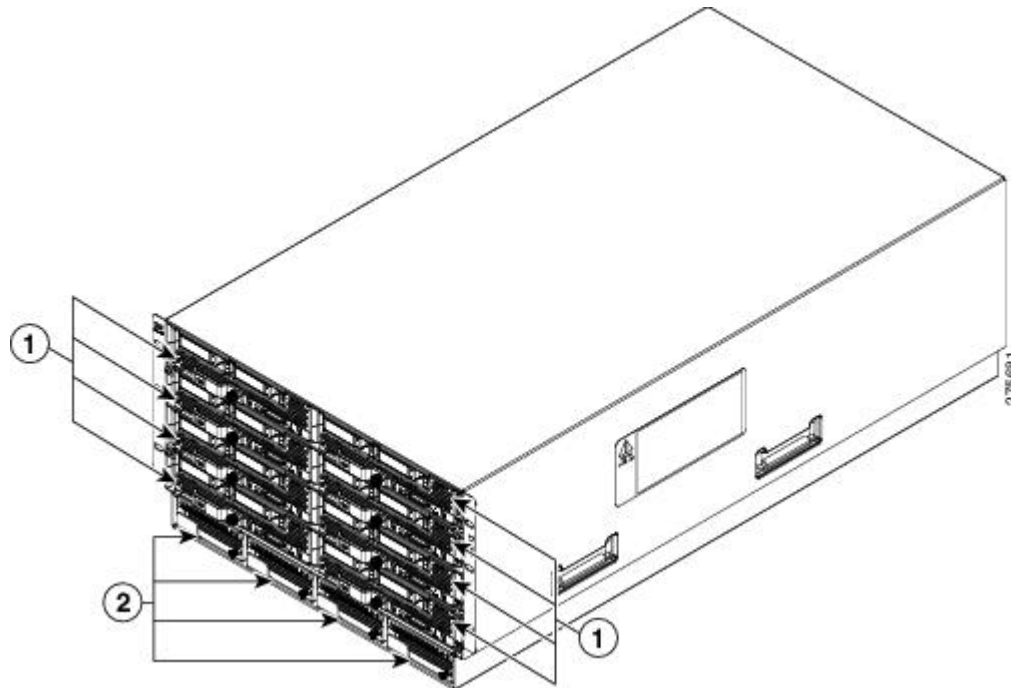
The Cisco UCS 5108 Blade Server Chassis includes the following components:

- Cisco UCS 5108 Blade Server Chassis
- Cisco UCS 2100 and 2200 Series Fabric Extenders—Up to two Fabric Extenders (FEXes), each FEX provides four or eight ports of 10-Gigabit Ethernet, Cisco Data Center Ethernet, and Fibre Channel over Ethernet (FCoE)
- SFP+ transceiver choices that include copper and fiber optic
- Power supply units—Up to four 2500 W hot-swappable power supply units (AC and DC available)

- Fan modules—Eight hot-swappable fan modules
- Cisco UCS Blade Servers —Up to eight half-wide blade servers or four full-width blade servers, each holding RAID capable hard drives

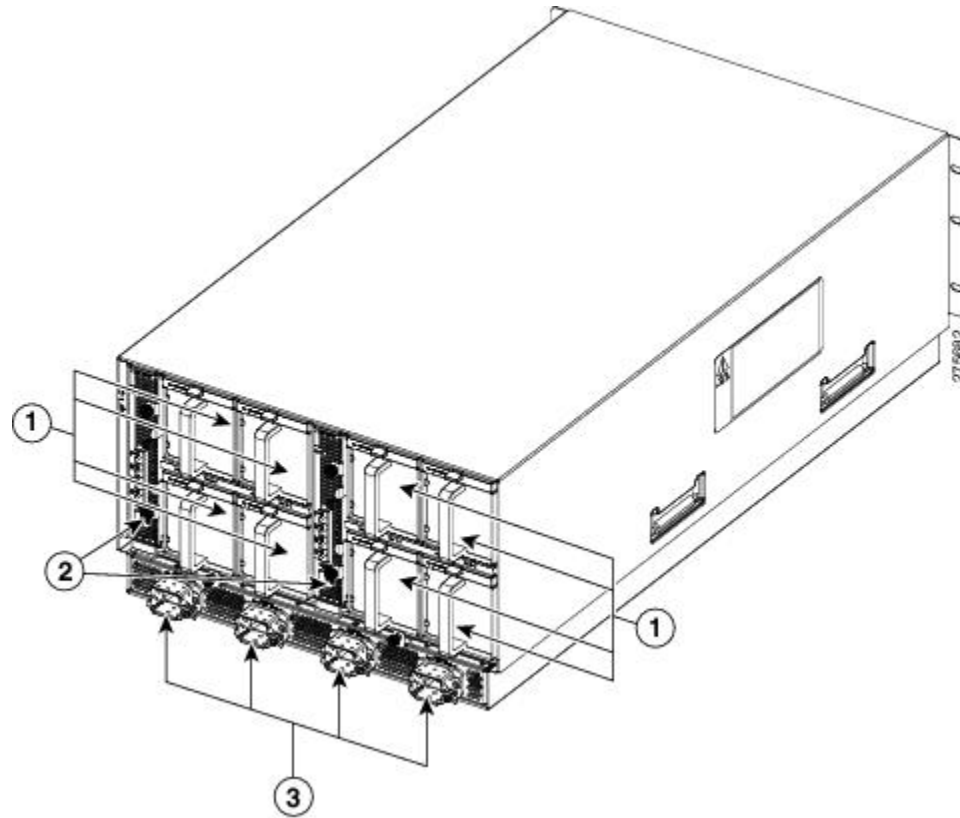
For specific instructions to install the blade server chassis and blades, see the [Cisco UCS 5108 Server Chassis Hardware Installation Guide](#).

Figure 1: Cisco UCS 5108 Blade Server Chassis (Front View)



1	Blade server (up to 8)	2	Power supplies (up to 4)
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Figure 2: Cisco UCS 5108 Blade Server Chassis (Rear View)



1	Fan modules (8)	3	Power supply AC connectors (up to 4) DC chassis available but not shown
2	Fabric Extenders (up to 2)		

Cisco UCS 6100 Fabric Interconnect Series

The Cisco UCS 6100 Series Fabric Interconnect consists of the following components:

- UCS 6100 series Fabric Interconnect (20 port and 40 port models available)
- Uplink expansion module—Can use any of the following four modules:
 - N10-E0080 with eight Fibre Channel ports
 - N10-E0600 with six 10-Gbps Ethernet ports
 - N10-E0440 with four 10-Gbps Ethernet ports and four Fibre Channel ports

- N10-E0060 provides 6 8/4/2/1 G Fibre Channel uplink connections
- Power supply units—Up to two hot-swappable power supply units
- Fan modules—Two hot-swappable modules

For information about installing the fabric interconnect, see the [Cisco UCS 6100 Series Fabric Interconnect Hardware Installation Guide](#). For translations of the warnings in those guides, see the [Regulatory Compliance and Safety Information for the Cisco Unified Computing System](#).

Cisco UCS 6200 Fabric Interconnect Series

The Cisco UCS 6200 Series Fabric Interconnect consists of the following components:

- UCS 6200 Series Fabric Interconnect
- Expansion module—Can use the following module:
 - 16-port 10Gb Unified Port Expansion Module (UCS-FI-E16UP)
- Power supply units—Up to two hot-swappable power supply units, AC and DC versions available
- Fan modules—Two hot-swappable modules

For information about installing the fabric interconnect, see the [Cisco UCS 6200 Series Fabric Interconnect Hardware Installation Guide](#). For translations of the warnings in those guides, see the [Regulatory Compliance and Safety Information for the Cisco Unified Computing System](#) document.



Preparing the Site

This chapter includes the following sections:

- [Environmental Considerations, page 5](#)
- [Temperature, page 6](#)
- [Humidity, page 7](#)
- [Altitude, page 7](#)
- [Dust and Particles, page 7](#)
- [Corrosion, page 7](#)
- [Electromagnetic and Radio Frequency Interference, page 7](#)
- [Grounding, page 8](#)
- [Power Source, page 8](#)
- [Rack Requirements, page 9](#)

Environmental Considerations

Environmental factors can adversely affect the performance and life span of your Cisco UCS equipment. Cisco UCS equipment requires a dry, clean, well-ventilated, and air-conditioned environment. To ensure normal operation, you must maintain ambient airflow. If the airflow is blocked or restricted, or if the intake air is too warm, an overtemperature condition can occur and the environmental monitor on the blade servers or fabric interconnects will shut down to protect their components.

For stability and safety, it is always best to place the heavier equipment below lighter equipment in racks. With the Cisco UCS equipment, install the Cisco UCS 5108 Blade Server Chassis Series low in the rack and place the Fabric Interconnect above the blade server.

If your site has hot and cold aisles, align the rack air intake at the front to a cold aisle and exhaust at the rear to a hot aisle. Also, make sure that you do not install the Cisco UCS equipment so that it takes in warm exhaust air flow from other equipment.

Temperature

Temperature extremes can cause the Cisco UCS equipment to operate at reduced efficiency and cause a variety of problems, including early degradation, failure of chips, and failure of equipment. In addition, extreme temperature fluctuations can cause CPUs to become loose in their sockets. The Cisco UCS equipment should operate in an environment that provides an inlet air temperature not colder than 50°F (10°C) nor hotter than 95°F (35°C). If sensors on a CPU reach 179.6°F (82°C), the system will take that CPU offline.

To control the equipment temperature, you must make sure that the equipment has adequate airflow. The Cisco UCS equipment requires front-to-back airflow, which requires at least 36.0 inches (91.4 cm) of clearance in front for adequate airflow and component replacement, and at least 16 inches (40.6 cm) of clearance at the chassis rear. These distances do not include the rack front and rear doors provided that the doors are perforated to a minimum of 65% open, and assumes a traditional hot-aisle cold-aisle cooling plan for the room (the installation clearance may still be useful in rooms with other cooling plans). The Cisco R Series Racks are an ideal choice of rack. To assure that cooling air flows as designed, always use blanking panels for unused power supply or server bays. Always use blanking panels to fill empty front panel RU spaces in the rack. Using blanking panels ensures proper airflow and prevents hot air recirculation in the rack. Using a rack without blanking panels results in improper cooling that can lead to thermal warnings or even thermal damage.

Adequate ventilation is particularly important if you are operating a Cisco UCS system at high altitudes. Make sure that all slots and openings on the chassis remain unobstructed, especially the fan vents. Clean the installation site at regular intervals to avoid buildup of dust and debris, which can cause a system to overheat.

If the Cisco UCS Series systems are exposed to abnormally cold temperatures, allow a 2-hour warm-up period to bring it up to a normal operating temperature before you turn the equipment on.



Caution

If you do not allow a 2-hour warm-up period when temperatures are abnormally cold, you can damage the internal components.

Heat generated by the Cisco UCS system can vary depending on many factors, but maximums to plan for are listed in this table.

Table 1: System Heat Dissipation

Component	Maximum BTU per hour
Cisco UCS 6120XP Fabric Interconnect	1534
Cisco UCS 6140XP Fabric Interconnect	2561
Cisco UCS 6248 UP Fabric Interconnect	1998
Cisco UCS 6296 UP Fabric Interconnect	3163
Cisco UCS 5108 Blade Server Chassis (fans, power supplies, midplane)	1364
Each Cisco UCS half width blade server ¹	1350 (approximate)
Each Cisco UCS full width blade server ¹	2700 (approximate)

¹ Heat dissipation for blade servers varies from model to model, refer to the installation and service note for the blade servers in your system. Refer to http://www.cisco.com/en/US/products/ps10280/prod_installation_guides_list.html

Humidity

High humidity can cause moisture to seep into the Cisco UCS equipment. Moisture can cause corrosion of internal components and degradation of electrical resistance, thermal conductivity, and physical strength. The Cisco UCS equipment is rated to operate at 10 to 90 percent relative humidity.

Buildings in which the climate is controlled by air-conditioning in the warmer months and by heat during the colder months usually maintain an acceptable level of humidity for the equipment. However, if the Cisco UCS equipment is located in an unusually humid location, you should use a dehumidifier to maintain the humidity within an acceptable range.

Altitude

If you operate the Cisco UCS equipment at a high altitude (low pressure), the efficiency of forced convection cooling is reduced and can result in electrical problems. This condition can also cause sealed components with internal pressure, such as electrolytic capacitors, to fail or to perform at a reduced efficiency. The Cisco UCS equipment is rated to operate at altitudes from 0 to 10,000 feet (0 to 3,000 m). Above 10,000 feet (3000 m), the equipment can operate but the maximum temperature decreases 1°C for every additional 1000 feet (300 m) of elevation above 10000 feet (3000 m). You can store the equipment at altitudes of –1,000 to 30,000 feet (–305 to 9,144 meters).

Dust and Particles

Exhaust fans cool power supplies and system fan trays cool equipment by drawing in air and exhausting air out through various openings in the chassis. However, fans also ingest dust and other particles, causing contaminant buildup in the equipment and increased internal chassis temperature. A clean operating environment can greatly reduce the negative effects of dust and other particles, which act as insulators and interfere with the mechanical components in the equipment.

Corrosion

The corrosion of equipment connectors is a gradual process that can eventually lead to intermittent failures of electrical circuits. The oil from your fingers or prolonged exposure to high temperature or humidity can corrode the gold-plated edge connectors and pin connectors on various components in the Cisco UCS equipment. To prevent corrosion, avoid touching contacts on modules and protect the equipment from extreme temperatures and moist, salty environments.

Electromagnetic and Radio Frequency Interference

To reduce the possibility of EMI and RFI, follow these guidelines:

- Cover all open expansion slots with a metal filler.

- Always use shielded cables with metal connector shells for attaching peripherals to the equipment.



Note To predict and prevent strong EMI, you might need to consult experts in radio frequency interference (RFI).

Grounding

The Cisco UCS equipment is sensitive to variations in voltage supplied by the power source. Overvoltage, under voltage, and transients (or spikes) can erase data from the memory or cause components to fail. Primary system grounding for AC systems is provided through the system power cord. The AC version of the UCS chassis must be connected to a grounded outlet and all outlets must be connected to a common ground reference. For -48 V DC systems a separate chassis ground point is provided that should be connected to the common ground reference. In addition, any rack frame that holds the blade server chassis and fabric interconnects should also be connected to the common ground reference. Refer to the instructions specific to your rack for grounding steps.

Power Source

You should use dedicated power circuits (rather than sharing circuits with other heavy electrical equipment). For input-source redundancy, it is recommend that you use two dedicated power sources, each of which powers half of the power supply units in the blade server chassis and fabric interconnects. The circuits used for the Cisco UCS 5108 Blade Server Chassis must be rated for 20A, 200 to 250 VAC or up to 62 A @ -48 VDC input. The circuits used for the Cisco UCS 6100 Series Fabric Interconnect must be rated for 15A and 100-240 VAC. The circuits used for the Cisco UCS 6200 Series Fabric Interconnect must be rated for 15A and 100-240 VAC or 62 A @ -72 VDC. The receptacles for these circuits should be within 6 feet (1.8 m) of each power supply unit when it is installed in the equipment. Be sure that there is a DC shutoff switch close to the rack holding the equipment using DC power.

We recommend that you use a UPS to protect the UCS System. Using an unprotected supply exposes you to a risk of a system failure due to input supply voltage variations or failures.

Power Budget

Actual power use will vary depending on the applications used as well as the number and type of servers in your system. The best way to prevent problems in service is to plan for system maximums rather than actual or typical usage. The number of power supplies required depends on the level of redundancy as well as the number of server blades. The power supply configuration in Cisco UCS Manager supports non-redundant, N + 1 redundant, and grid redundant configurations.

To calculate maximum load for any given configuration, refer to the [Cisco UCS Power Calculator](#).

The maximum power budgets are as follows:

- Half-width blade slot: 550 W at maximum use
- Full-width blade slot: 1100 W at maximum use
- Chassis (including fabric extenders, fans, and power supplies): 600 W

In non-redundant mode, a minimum of two power supplies are required, and any additional power supplies that are present are disabled by Cisco UCS Manager and noted as spares. If power to one of the two supplies in this non-redundant system is lost, the whole chassis will power down. A spare power supply that is present but not online in a non-redundant configuration will not come online instantaneously in the event of a power supply loss, so the spare does not function the same as the +1 supply in an N + 1 configuration.

In N + 1 redundant mode, a minimum of three power supplies are required. All three power supplies are turned on and equally share the power load for the chassis. If any additional power supplies are installed, Cisco UCS Manager recognizes these unnecessary power supplies and places them on standby. If a single power supply fails, the surviving supplies can provide power to the chassis. In addition, UCS Manager turns on any power supplies that are turned off to bring the system back to N + 1 status.

In grid redundant mode, a minimum of four power supplies are required. All four power supplies share the load equally, and up to two power supplies can fail. When the system is correctly wired with power supplies 1 and 2 connected to one power grid and power supplies 3 and 4 connected to a redundant grid, a single grid can fail without affecting the operation of the system.

For more information on UCS power redundancy modes, refer to the Cisco UCS 5108 Server Chassis Installation Guide or the Cisco Unified Computing System Blade Server Chassis Power Modes white paper.

Rack Requirements

General Requirements for Racks

The Cisco UCS 5108 Blade Server Chassis and Fabric Interconnects were designed for a standard 19-inch (48.26 cm) rack (see specification EIA-310-D) that has a minimum depth of 29 inches (73.66 cm) and a maximum of 35" from front rail to rear rail. The Cisco R Series Racks are an ideal choice of rack.

If your server rack includes closing front and rear doors, the doors must have at least a 65 percent perforated area evenly distributed from top to bottom to permit adequate airflow.



Note

In a 29-inch (73.66 cm) rack, the blade server chassis will extend 3 inches (7.62 cm) outside the rear of the rack.

The mounting rails and mounting kits used for the Cisco UCS components require square holes in the vertical mounting racks. Racks with round threaded holes do not work with the Cisco UCS 5108 mounting rails and mounting kits.

To confirm that your chosen rack will allow clearance to service the Cisco UCS equipment, see the following table.

Table 2: Rack Clearance Requirements

Rack Side	Clearance Requirement
Front	36 inches (91.44 cm) plus additional clearance, if needed, for the mechanical lift used to move Cisco UCS equipment.
Rear	16 inches (40.64 cm) from the back side of the rack or chassis, whichever is furthest to the rear.

Rack Side	Clearance Requirement
Sides	N/A (no accessible parts)

Rack Space

This table lists the physical specifications for the unpacked Cisco UCS equipment. A rack providing 42 RU of vertical installation space is recommended, but not required. The Cisco R Series Racks are an ideal choice of rack.

Table 3: Dimensions for the Unpacked Cisco UCS Equipment

Chassis	Width	Depth	Height
Cisco UCS 5108 Blade Server Chassis	17.5 inches (44.5 cm)	32.0 inches (81.2 cm)	10.5 inches (26.7 cm) (6 RU)
Cisco UCS 6120XP Fabric Interconnect	17.3 inches (43.9 cm)	30.0 inches (76.2 cm)	1.72 inches (4.4 cm) (1 RU)
Cisco UCS 6140XP Fabric Interconnect	17.3 inches (43.9 cm)	30.0 inches (76.2 cm)	3.44 inches (8.8 cm) (2 RU)
Cisco UCS 6248UP Fabric Interconnect	17.3 inches (43.9 cm)	29.5 inches (74.9 cm)	1.72 inches (4.4 cm) (1 RU)
Cisco UCS 6296 UP Fabric Interconnect	17.3 inches (43.9 cm)	29.5 inches (74.9 cm)	3.44 inches (8.8 cm) (2 RU)

Rack Distance

A pair of UCS Fabric Interconnects can manage and provide connectivity for up to 20 Cisco UCS 5108 chassis (depending on the Cisco UCS Manager version, see the Cisco [UCS Manager release notes](#)) for more information. Ideally, all Cisco UCS 5108 chassis and UCS Fabric Interconnects will be in the same rack or in adjacent racks. In those situations, Twinax copper transceivers are ideal.

Table 4: Supported SFP+ 10 Gb Ethernet Twinax Copper Transceivers

Model	Description
SFP-H10GB-CU1M	10-Gb Ethernet—copper SFP+ (1 m, 3.28 ft.)
SFP-H10GB-CU3M	10-Gb Ethernet—copper SFP+ (3 m, 9.84 ft.)
SFP-H10GB-CU5M	10-Gb Ethernet—copper SFP+ (5 m, 16.4 ft.)

Model	Description
SFP-H10GB-ACU7M	10-Gb Ethernet—copper SFP+ (7 m, 22.9 ft.)
SFP-H10GB-ACU10M	10-Gb Ethernet—copper SFP+ (10 m, 32.8 ft.)

If distances greater than 10 meters (32.8 feet) must be spanned, the Fabric Extender supports the substitution of the copper SFP+ by optical SFP+ transceivers.

Table 5: Supported Optical SFP+ Transceivers

Model	Description
SFP-10G-SR	Short-range optical SFP+ (up to 300 m / 984 feet)
SFP-10G-LR ²	Long-range optical SFP+ (up to 10 km / 6.2 miles)
FET-10G	Short-range optical SFP+ (up to 100 m / 328 feet)

- ² While the SFP-10G-LR is supported by both the fabric interconnect and FEX, the maximum distance will introduce latency issues that will affect overall performance. The effective maximum distance for this application is 300 m.

Documentation for these transceivers is in the [Cisco SFP and SFP+ Transceiver Module Installation Notes](#).

For a Fibre Channel connection between the Chassis and fabric interconnect expansion module, the following transceivers may be used:

Table 6: Supported Fibre Channel Transceivers

Model	Description
DS-SFP-FC4G-SW	4 Gbps Fibre Channel SFP (up to 300 m / 984 feet)
DS-SFP-FC8G-SW	8 Gbps Fibre Channel SFP (up to 150 m / 492 feet)
DS-SFP-FC4G-LW ³	4 Gbps Fibre Channel SFP (up to 10 km / 6.2 miles)
DS-SFP-FC8G-LW1	8 Gbps Fibre Channel SFP (up to 10 km / 6.2 miles)

- ³ While the SFP is supported by both the fabric interconnect and FEX, the maximum distance will introduce latency issues that will affect overall performance. The effective maximum distance for this application is 300 m.

Each fabric interconnect can also support a limited number of 1-GB connections using the following models of SFP connector (this requires Cisco UCS Manager 1.4(1) or later):

Table 7: Supported 1 Gb SFP Transceivers

Model	Description
GLC-T (V03 or higher)	Short-range copper SFP (up to 300 m / 984 feet)

Model	Description
GLC-SX-MM	Short-range optical SFP (up to 300 m / 984 feet)
GLC-LH-SM	Long-range optical SFP (550 m / 1804 feet)



CHAPTER 3

Technical Specifications

This appendix includes the following sections:

- [Environmental Specifications for the Cisco UCS Equipment, page 13](#)
- [Physical Specifications for the Cisco UCS Equipment, page 14](#)
- [Power Specifications, page 16](#)
- [Blade Server Chassis and Fabric Interconnect Clearances, page 39](#)
- [Facility Cooling Requirements, page 39](#)
- [Chassis Airflow, page 39](#)

Environmental Specifications for the Cisco UCS Equipment

Table 8: Environmental Specifications for the Cisco UCS 5108 Blade Chassis

Description	Cisco UCS 5108 Blade Chassis
Operating Temperature	
0 to 10,000 feet (0 to 3000 m)	50 to 95°F (10 to 35°C)
Above 10,000 feet (3,000 m)	Subtract 1°C (1.8°F) for each 1000 feet above 10,000 feet
Nonoperating Temperature	
0 to 40,000 feet (0 to 12,190 m)	−40 to 149°F (−40 to 65°C)
Relative humidity (noncondensing)	10 to 90%
Noise (Sound power levels ⁴)	83 dBA at normal operating conditions

⁴ Based on ISO 3744.

Table 9: Environmental Specifications for the Cisco UCS 6100 Series or UCS 6200 Series Fabric Interconnect

Description	Cisco UCS 6100 Fabric Interconnect
Operating Temperature	
0 to 10,000 feet (0 to 3000 m)	50 to 95°F (10 to 35°C)
Above 10,000 feet (3,000 m)	Subtract 1°C (1.8°F) for each 1000 feet above 10,000 feet
Nonoperating Temperature	
0 to 40,000 feet (0 to 12,190 m)	-40 to 149°F (-40 to 65°C)
Relative humidity (noncondensing)	10 to 90%
Noise (Sound pressure levels ⁵)	68 dBA at normal operating conditions

⁵ Based on ISO 7779.

Physical Specifications for the Cisco UCS Equipment

The Cisco UCS 5108 Blade Server Chassis ships in a package that includes the following components:

- One blade chassis
- Up to eight half-width or four full-width blade servers
- Up to two fabric extenders
- Eight fan modules
- Up to four AC or DC power supply units
- Accessory kit
- Blanking panels for any chassis slots not filled with blade servers, fabric extenders, or power supply units

The Cisco UCS 6100 Series Fabric Interconnect ships in a package that includes the following components:

- One fabric interconnect chassis
- One expansion module
- Up to two power supply units
- Two fan modules
- Accessory kit
- Blanking panels for any power supply slot not filled

The Cisco UCS 6200 Series Fabric Interconnect ships in a package that includes the following components:

- One fabric interconnect chassis

- One expansion module
- Up to two power supply units
- Two fan modules
- Accessory kit
- Blanking panels for any power supply slot not filled

Table 10: Dimensions and Weight for the Cisco UCS Shipping Packages

Chassis	Width	Depth	Height	Weight
Cisco UCS 5108 Blade Server Chassis	25 inches (63.5 cm)	40.0 inches (101.6 cm)	33.5 inches (85.1 cm)	Up to 300 lbs. (136.1 kg)
Cisco UCS 6120 Fabric Interconnect	24 inches (61.0 cm)	40.0 inches (101.6 cm)	9.0 inches (22.9 cm)	Up to 40 lbs. (18.1 kg)
Cisco UCS 6248 Fabric Interconnect	24 inches (61.0 cm)	40.0 inches (101.6 cm)	9.0 inches (22.9 cm)	Up to 40 lbs. (18.1 kg)

Table 11: Dimensions for the Unpacked Cisco UCS Equipment

Chassis	Width	Depth	Height
Cisco UCS 5108 Blade Server Chassis	17.5 inches (44.5 cm)	32.0 inches (81.2 cm)	10.5 inches (26.7 cm) (6 RU)
Cisco UCS 6120 Fabric Interconnect	17.3 inches (43.9 cm)	30.0 inches (76.2 cm)	1.72 inches (4.4 cm) (1 RU)
Cisco UCS 6248 Fabric Interconnect	17.3 inches (43.9 cm)	29.5 inches (74.9 cm)	1.72 inches (4.4 cm) (1 RU)

Table 12: Weights and Quantities for the Cisco UCS 5108 Blade Server Chassis Components

Component	Weight per Unit	Quantity
Chassis (empty)	90 lbs. (40.8 kg)	1
B200 Blade Server	13.5 lbs (6.1 kg) ⁶	1 to 8
B230 Blade Server	18.0 lbs (8.16 kg) ₆	1 to 8
B250 Blade Server	25 lbs (11.34 kg) ₆	1 to 4
B440 Blade Server	34.5 lbs (15.65 kg) ₆	1 to 4

Component	Weight per Unit	Quantity
B22 M3 Blade Server	13.5 lbs (6.1 kg) ⁶	1 to 8
B200 M3 Blade Server	15.0 lbs (6.8 kg) ⁶	1 to 8
B420 M3 Blade Server	34.5 lbs (15.65 kg) ⁶	1 to 4
Fabric Extender	2.5 lbs. (1.1 kg)	1 or 2
Power distribution unit	5 lbs. (2.3 kg)	1
Fan module	1.8 lbs. (0.8 kg)	8
Hard disk drive module	0.8 lbs. (0.4 kg)	2 per blade server
Power supply unit	7 lbs. (3.2 kg)	1 to 4

⁶ The system weight listed here is an estimate for a fully configured system and will vary depending on peripheral devices installed.

Table 13: Weights for the Cisco UCS Fabric Interconnects

Component	Weight per Unit
Cisco UCS 6120XP with two power supplies and one expansion module installed	35 lbs. (15.9 kg)
Cisco UCS 6140XP with two power supplies and two expansion modules installed	50 lbs. (22.68 kg)
Cisco UCS 6248 UP with two power supplies and one expansion module installed	32 lbs. (14.51 kg)
Cisco UCS 6296 UP with two power supplies, three expansion module, and four fan modules	50 lb (22.67 kg)

Power Specifications

Specifications for the Cisco UCS 5108 Blade Server Chassis Power Supply Units

Table 14: AC-input Gold Power Supply (N20-PAC5-2500W) Specifications

Description	Specification
Minimum Software requirement	UCS Software Release 1.0(1)
AC-input voltage	200 to 240 VAC nominal (Range: 180 to 264 VAC)

Description	Specification
AC-input frequency	50 to 60 Hz nominal (Range: 47 to 63 Hz)
AC-input current	15.5 A @ 200 VAC
Maximum Input VA	2790 VA @ 200 VAC
Maximum output power per power supply	2500 W @ 200 to 240 VAC (up to four power supplies)
Maximum inrush current	35 A < sub cycle duration
Maximum Heat Output	8525 BTU
Maximum hold up time	12 ms
Power supply output voltage	12 VDC
Efficiency Rating	Climate Savers Gold
Efficiency (80Plus Gold Certified)	10% 20% 50% 100% 88.61% 91.64% 92.21% 90.97%
Input connector	IEC320 C20

Table 15: AC-input Platinum Power Supply (UCSB-PSU-2500ACPL) Specifications

Description	Specification
Minimum Software requirement	UCS Software Release 2.0(2)
AC-input voltage	200 to 240 VAC nominal (Range: 180 to 264 VAC)
AC-input frequency	50 and 60 Hz nominal (Range: 47 to 63 Hz)
AC-input current	< 16 Amps @ 200 VAC
Maximum Input VA	2790 VA @ 200 VAC
Maximum output power per power supply	2500 W (up to four power supplies)
Maximum inrush current	35 A (sub cycle duration)
Maximum Heat Output	8530 BTU
Maximum hold up time	12 ms @ 2500 W
Power supply output voltage	12 VDC @ 208 A

Description	Specification
Power supply standby voltage	3.3 VDC @ 5A
Efficiency Rating	Climate Savers Platinum
Efficiency (80 Plus Platinum Certified)	20% 50% 100% 90% 94% 91%
Input connector	IEC320 C20

Table 16: DC-Input Power Supply (N20-DC-2500) Specifications

Item	Specification
Minimum software requirement	Cisco UCS Software Release 2.0(1)
DC-input voltage	-48 to -60 VDC
DC-input current	62 A maximum @ -48 VDC input
Output power	2500 W
Current draw at min voltage	62 A
Current draw at max voltage	50 A
Maximum KVA rating	2.5
DC input terminal block	Accepts Panduit LCD4-14AF-L or equivalent barrel-type lug terminals with 90-degree angle, two-hole tongue, which accommodates 1/0 AWG size copper wire. The connector tongue width is 0.82 in, the stud hole spacing is 5/8 in, and the hole size is 1/4 in.
Output holdup time	8 ms
Max heat dissipation	8525 BTUs/hr

DC wiring must meet your local codes and regulations, we recommend using a licensed local electrician to install the DC wiring needed.

To determine the number of power supply units needed for the blade server, remember that each single slot server is budgeted a max 550 W and each full width server is budgeted a max 1100 W. For a more detailed estimate, contact Cisco Sales.

Supported AC Power Cords and Plugs

The AC power connectors on the blade server chassis PDU use an IEC 320 C20 socket. Each chassis power supply has a separate power cord. The power cord that you use to connect the blade server power supply units to an AC power source will have an IEC 320 C19 plug on one end and on the other end one that conforms to the AC power outlet specifications for your country. See the following table to determine which cord to order for your blade server chassis power supply units. When you determine which power cord you need to order, you can verify that its plugs conform to the power outlets for your facility by clicking on its reference link.

The jumper power cords, for use in racks, are available as an optional alternative to the standard power cords. The optional jumper power cords have an IEC C19 connector (such as a Cisco RP Series PDU) on the end that plugs into the chassis' PDU and an IEC C20 connector on the end that plugs into an IEC C19 outlet receptacle. For more information, contact your Cisco Systems representative.



Note

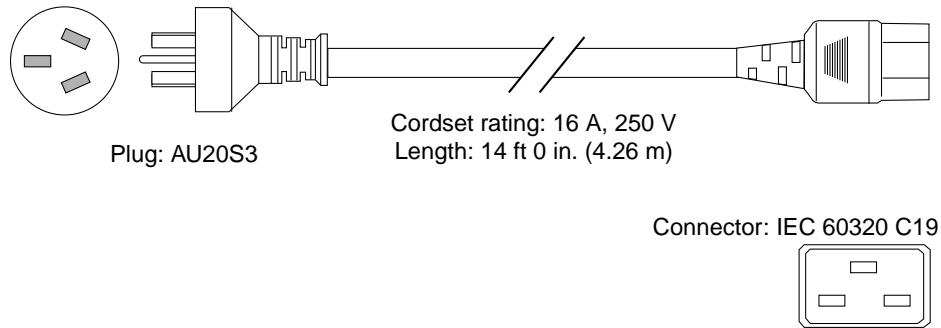
Only the regular power cords or jumper power cords provided with the chassis are supported.

Australia and New Zealand

Power Cord Part Number—CAB-AC-16A-AUS

Cord Set Rating—16A, 250 VAC

Figure 3: CAB-AC-16A-AUS Power Cord for the Cisco UCS 5108 Blade Server Chassis



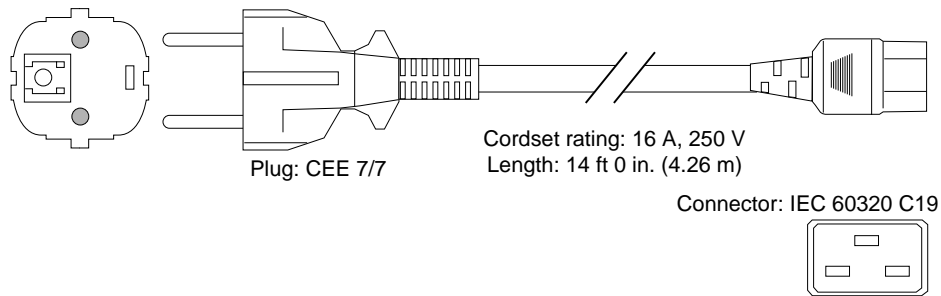
140586

Continental Europe

Power Cord Part Number—CAB-AC-2500W-EU

Cord Set Rating—16A, 250 VAC

Figure 4: CAB-AC-2500W-EU Power Cord for the UCS 5108 Blade Server Chassis



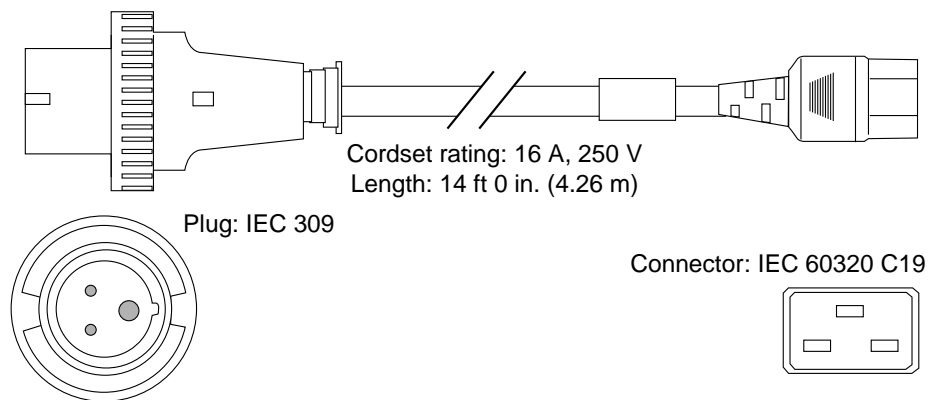
113360

International

Power Cord Part Number—CAB-AC-2500W-INT

Cord Set Rating—16A, 250 VAC

Figure 5: CAB-AC-2500W-INT Power Cord for the UCS 5108 Blade Server Chassis



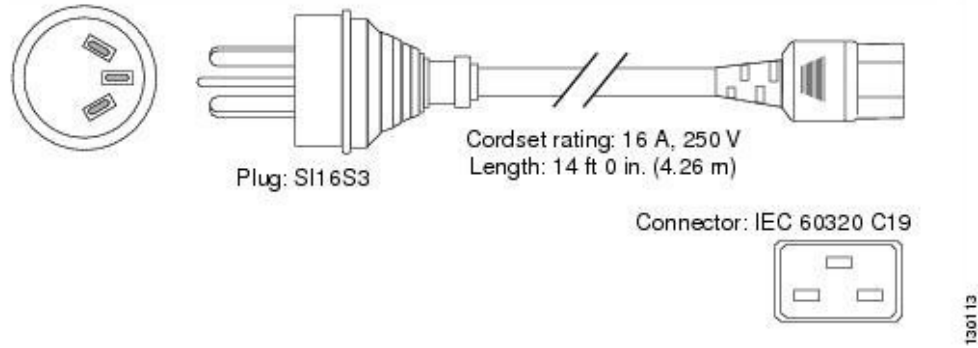
113361

Israel

Power Cord Part Number—CAB-AC-2500W-ISRL

Cord Set Rating—16A, 250 VAC

Figure 6: CAB-AC-2500W-ISRL Power Cord for the UCS 5108 Blade Server Chassis



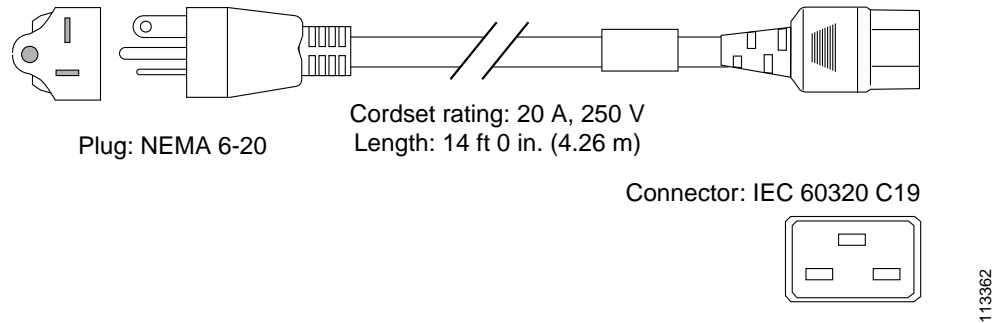
Japan and North America

Non-Locking 200 to 240 VAC operation

Power Cord Part Number—CAB-AC-2500W-US1

Cord Set Rating—16A, 250 VAC

Figure 7: CAB-AC-2500W-US1 Power Cord for the UCS 5108 Blade Server Chassis

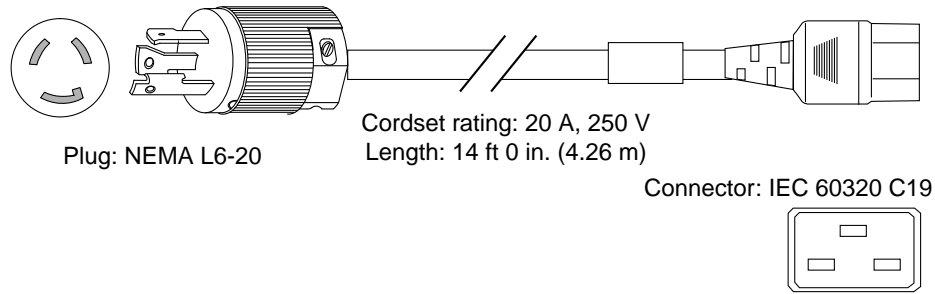


Locking 200 to 240 VAC Operation

Power Cord Part Number—CAB-AC-C6K-TWLK

Cord Set Rating—16A, 250 VAC

Figure 8: CAB-AC-C6K-TWLK Power Cord for the UCS 5108 Blade Server Chassis



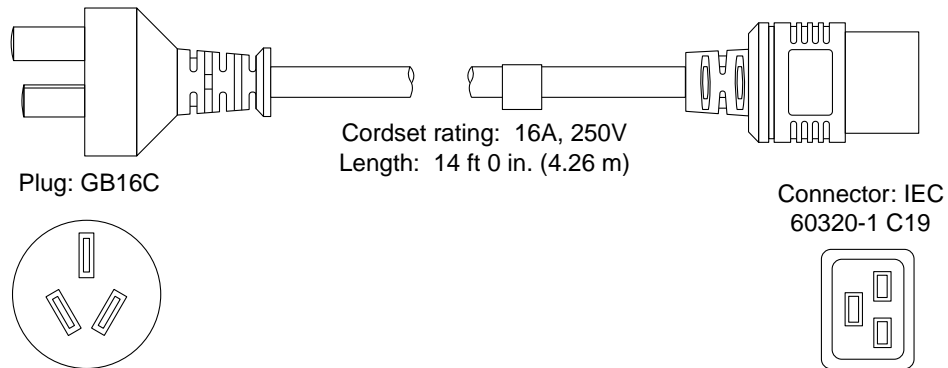
113363

Peoples Republic of China

Power Cord Part Number—CAB-AC-16A-CH

Cord Set Rating—16A, 250 VAC

Figure 9: CAB-AC-16A-CH Power Cord for the Cisco UCS 5108 Blade Server Chassis



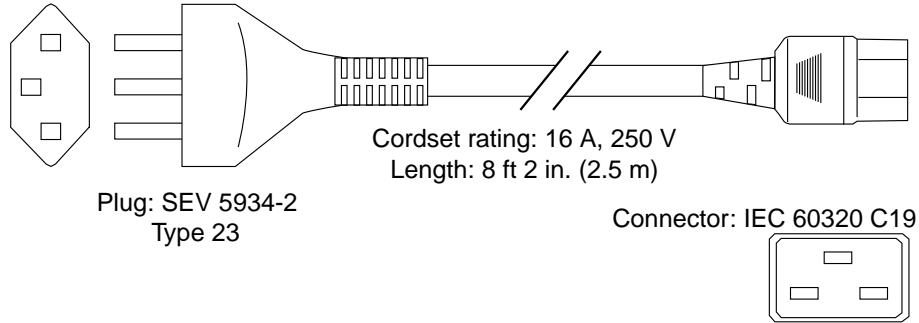
126792

Switzerland

Power Cord Part Number—CAB-ACS-16

Cord Set Rating—16A, 250 VAC

Figure 10: CAB-ACS-16 Power Cord for the UCS 5108 Blade Server Chassis



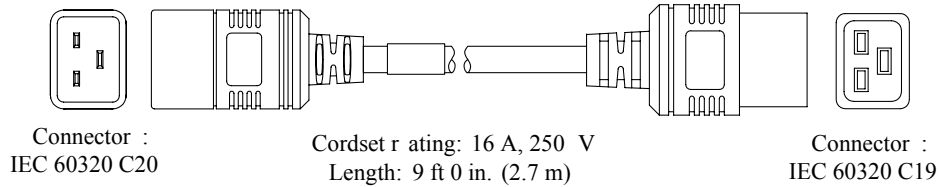
192844

Power Distribution Unit (PDU)

Power Cord Part Number—CAB-C19-CBN

Cord Set Rating—Not applicable

Figure 11: CAB-C19-CBN Power Cord for the UCS 5108 Blade Server Chassis



140587

Power Specifications for the Cisco UCS 6100 Fabric Interconnects

One power supply is required for basic operation, two power supplies provides redundancy.

Table 17: Power Specifications for the Cisco UCS 6120XP Power Supply Units

Description	Specification
AC-input voltage	90 to 264 VAC
AC-input frequency	50 to 60 Hz nominal (Range: 47 to 63 Hz)
AC-input current	7.5 Amps @ 90 VAC
Maximum Input VA	675 VA @ 90 VAC
Maximum output power per power supply	550 W @ 12 V (up to two power supplies)

Description	Specification
Maximum inrush current	35 A <sub cycle duration
Maximum Heat Output	1876 BTU/hr
Maximum hold up time	12 ms
Power supply output voltage	12 VDC

Table 18: Power Specifications for the Cisco UCS 6140XP Power Supply Units

Description	Specification
AC-input voltage	90 to 264 VAC
AC-input frequency	50 to 60 Hz nominal (Range: 47 to 63 Hz)
AC-input current	9.2 Amps @ 90 VAC
Maximum Input VA	828 VA @ 90 VAC
Maximum output power per power supply	750 W @ 12 VDC (up to two power supplies)
Maximum inrush current	35 A <sub cycle duration
Maximum Heat Output	2561 BTU/hr
Maximum hold up time	12 ms
Power supply output voltage	12 VDC

Supported AC Power Cords and Plugs

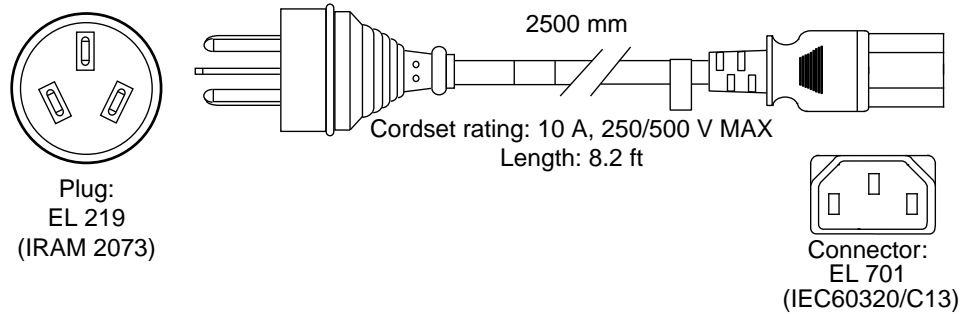
The AC power supply connector on the UCS 6100 series fabric interconnect chassis is an IEC 320 C13 socket. The power cable that you use to connect the fabric interconnect power supply units to an AC power outlet will have an IEC 320 C14 plug on one end and a plug on the other end that conforms to the AC power outlet specifications for your country. To determine which cable to order for your fabric interconnect power supply units, see the table below. When you determine which power cord you need to order, you can verify that its plugs conform to the power outlets for your facility by clicking on its reference link.

Argentina

Power Cord Part Number—SFS-250V-10A-AR

Cord Set Rating—10A, 250 VAC

Figure 12: SFS-250V-10A-AR Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



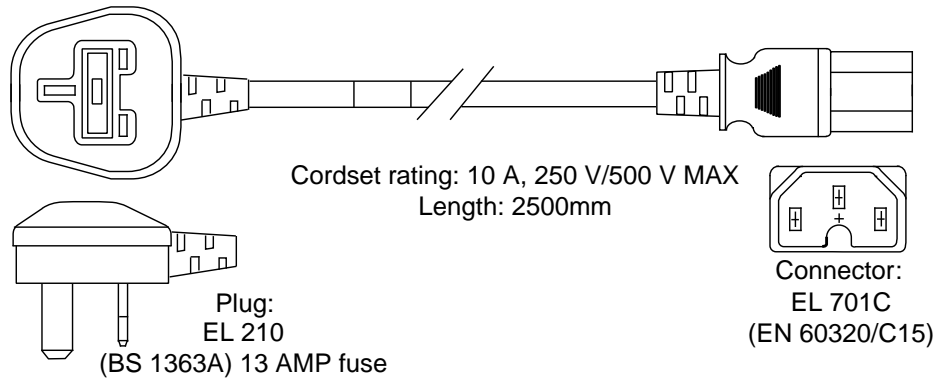
186571

Australia and New Zealand

Power Cord Part Number—CAB-9K10A-AU

Cord Set Rating—10A, 250 VAC

Figure 13: CAB-9K10A-AU Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



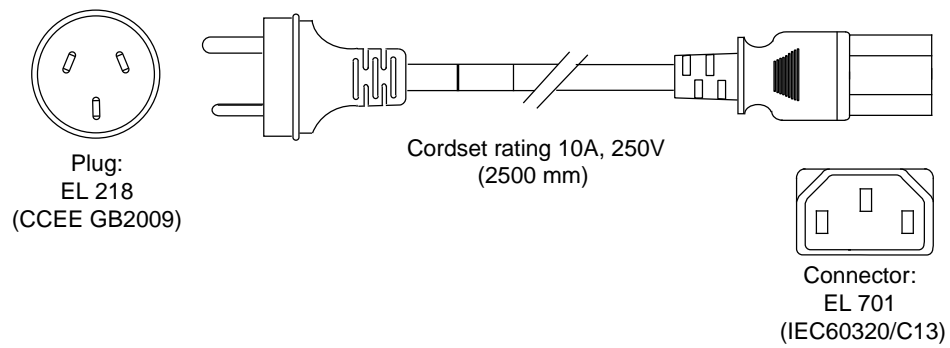
186580

Peoples Republic of China

Power Cord Part Number—SFS-250V-10A-CN

Cord Set Rating—10A, 250 VAC

Figure 14: SFS-250V-10A-CN Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



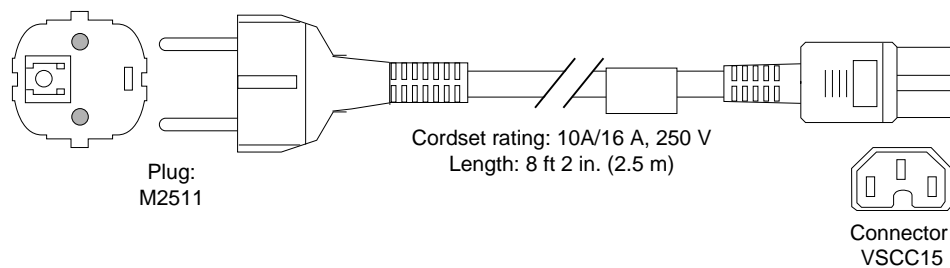
186573

Continental Europe

Power Cord Part Number—CAB-9K10A-EU

Cord Set Rating—10A, 250 VAC

Figure 15: CAB-9K10A-EU Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



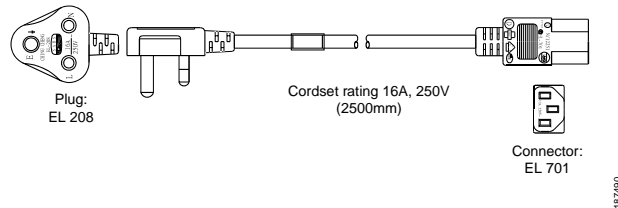
186576

India, South Africa, and United Arab Emirates

Power Cord Part Number—SFS-250V-10A-ID

Cord Set Rating—16A, 250 VAC

Figure 16: SFS-250V-10A-ID Power Cord for the Cisco UCS 6100 Series Fabric Interconnect

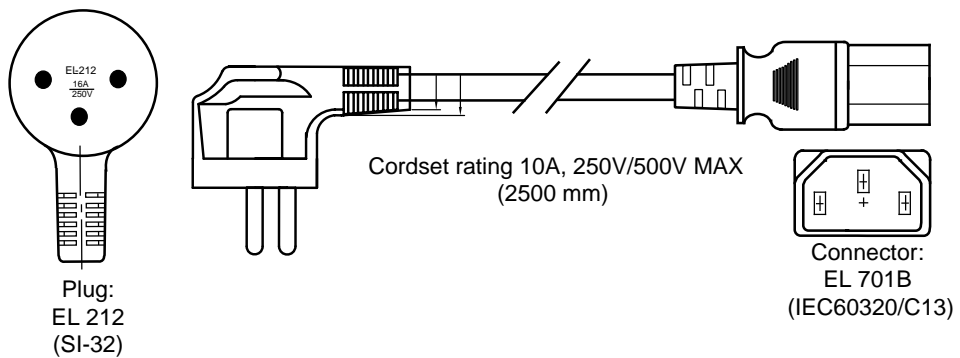


Israel

Power Cord Part Number—SFS-250V-10A-IS

Cord Set Rating—10A, 250 VAC

Figure 17: SFS-250V-10A-IS Power Cord for the Cisco UCS 6100 Series Fabric Interconnect

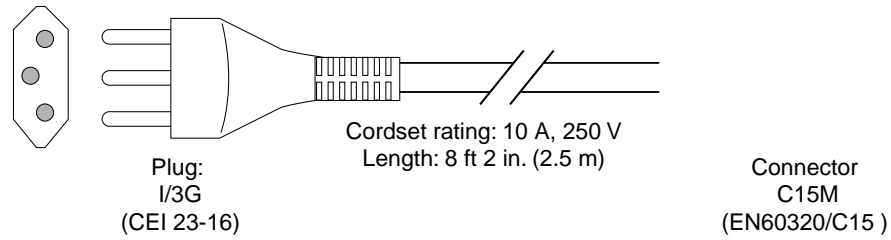


Italy

Power Cord Part Number—CAB-9K10A-IT

Cord Set Rating—10A, 250 VAC

Figure 18: CAB-9K10A-IT Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



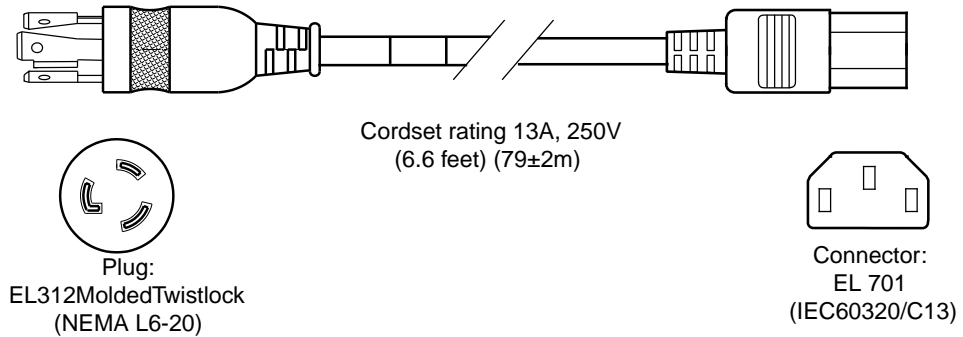
186575

North America

Power Cord Part Number—CAB-AC-250V/13A

Cord Set Rating—13A, 250 VAC

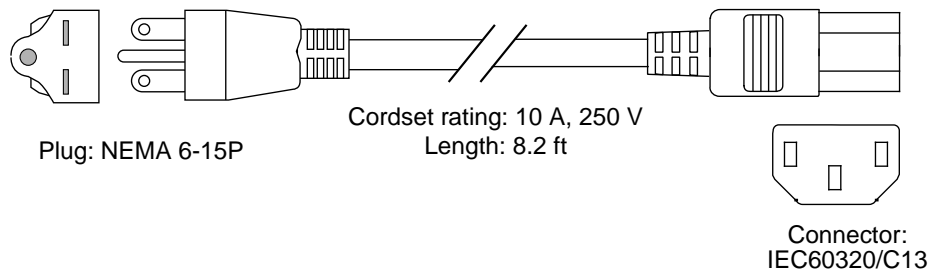
Figure 19: CAB-AC-250V/13A Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



Power Cord Part Number—CAB-N5K6A-NA

Cord Set Rating—13A, 250 VAC

Figure 20: CAB-N5K6A-NA Power Cord for the Cisco UCS 6100 Series Fabric Interconnect

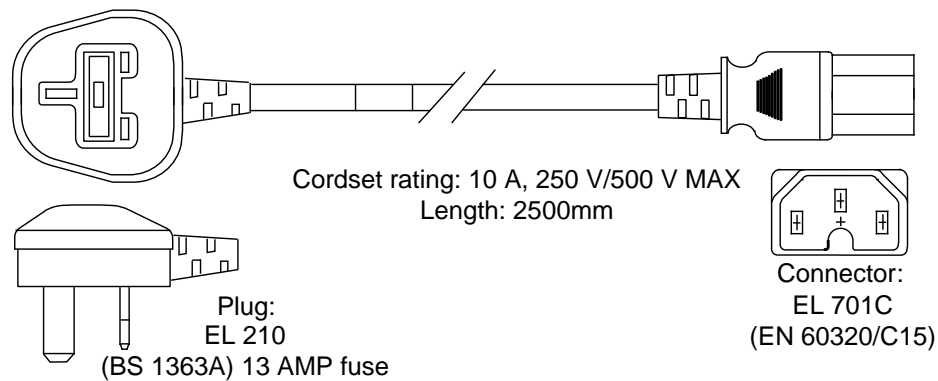


Switzerland

Power Cord Part Number—CAB-9K10A-SW

Cord Set Rating—10A, 250 VAC

Figure 21: CAB-9K10A-SW Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



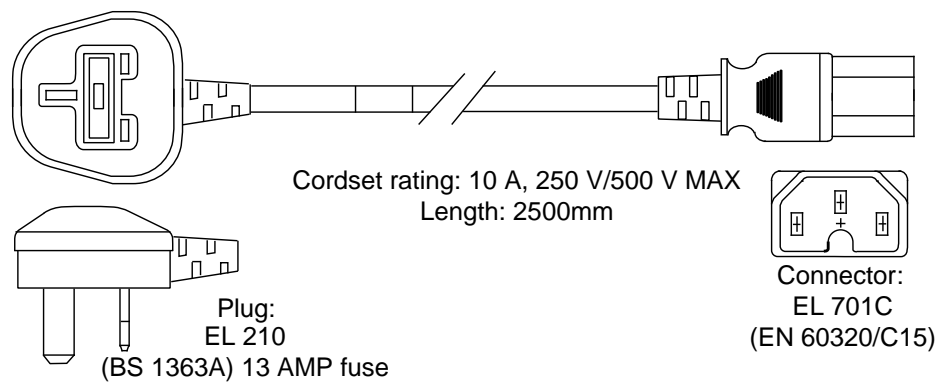
186580

United Kingdom

Power Cord Part Number—CAB-9K10A-UK

Cord Set Rating—10A, 250 VAC

Figure 22: CAB-9K10A-UK Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



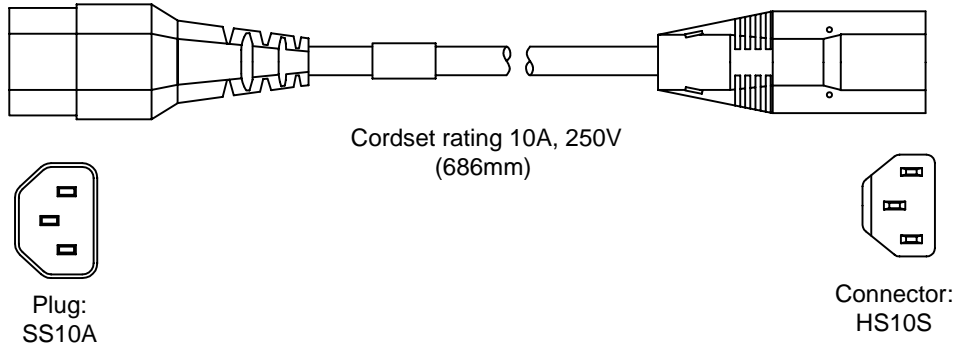
186580

Cabinet Jumper Power Cord

Power Cord Part Number—CAB-C13-C14-JMPR

Cord Set Rating—13A, 250 VAC

Figure 23: CAB-C13-C14-JMPR Power Cord for the Cisco UCS 6100 Series Fabric Interconnect



Power Specifications for the Cisco UCS 6200 Fabric Interconnects

One power supply is required for basic operation, having two power supplies provides redundancy.

Table 19: Specifications for the Cisco UCS 6248UP AC Power Supply(UCS-PSU-6248UP-AC=)

AC Power Supply Properties	Cisco UCS 6248UP fabric interconnect
Maximum output power	750 W
Input voltage	90 to 264 VAC
Frequency	50 to 60 Hz
Efficiency	87 to 92% (50 to 100% load)
RoHS compliance	Yes
Hot swappable	Yes
Heat dissipation	2497 BTU/hr (600 W)

One power supply is required for basic operation, having two power supplies provides redundancy.

Table 20: Specifications for the Cisco UCS 6248UP DC Power Supply(UCS-PSU-6248UP-DC=)

DC Power Supply Properties	Cisco UCS 6248UP fabric interconnect
Maximum output power	750 W
Input voltage	-40 to -72 VDC
DC-input current at max voltage	25 A maximum @ -40 VDC input
Efficiency	88 to 92% (50 to 100% load)
Maximum input KVA rating	820
DC input terminal block	If a replacement DC connector is needed, a Phoenix Contact part number PC 5/ 2-STF-7,62, order number 1975697 or direct equivalent. Connector information is available at: http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=1975697
Output holdup time	4 ms
RoHS compliance	Yes
Hot swappable	Yes
Heat dissipation	2497 BTU/hr (750 W)

Supported AC Power Cords and Plugs

Each power supply has a separate power cord. Standard power cords or jumper power cords are available for connection to a power distribution unit having IEC 60320 C13 outlet receptacles. The jumper power cords, for use in cabinets, are available as an optional alternative to the standard power cords.

The standard power cords have an IEC C13 connector on the end that plugs into the power supplies. The optional jumper power cords have an IEC C13 connector on the end that plugs into the power supplies, and an IEC C14 connector on the end that plugs into an IEC C13 outlet receptacle.



Note

Only the regular power cords or jumper power cords provided with the chassis are supported.

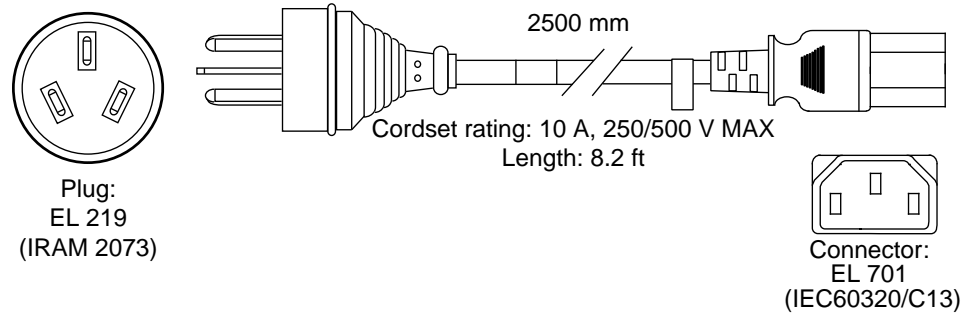
Argentina

Power Cord—SFS-250V-10A-AR

Plug—250 VAC 10 A IRAM 2073

Length—8.2 feet / 2.5 meters

Figure 24: SFS-250V-10A-AR



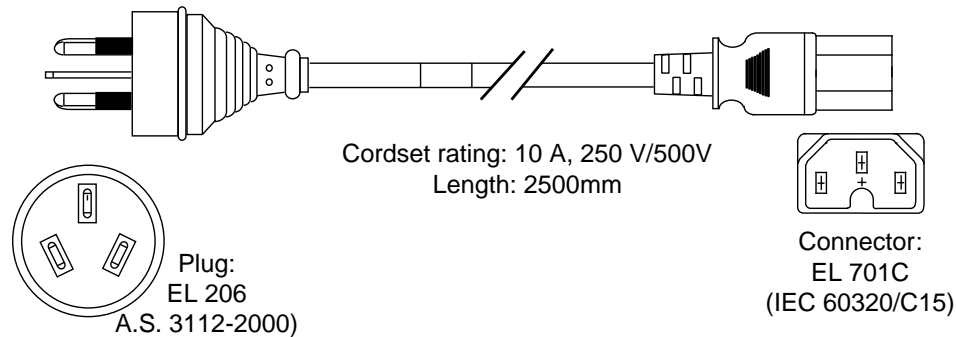
Australia and New Zealand

Power Cord—CAB-9K10A-AU

Plug—250 VAC 10 A 3112

Length—8.2 feet / 2.5 meters

Figure 25: CAB-9K10A-AU



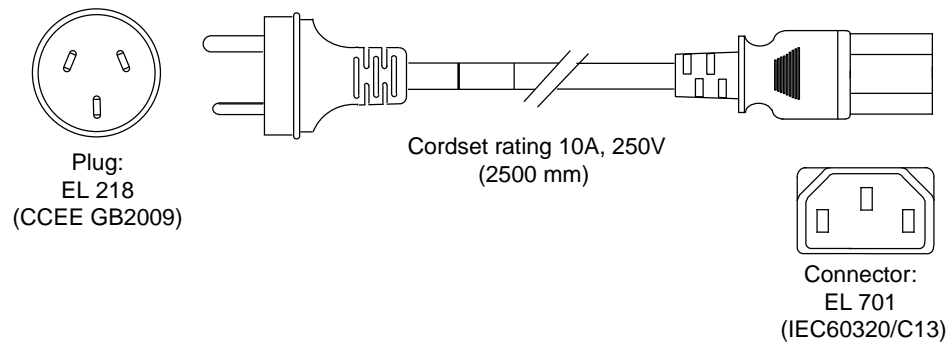
Peoples Republic of China

Power Cord—SFS-250V-10A-CN

Plug—250 VAC 10 A GB 2009

Length—8.2 feet / 2.5 meters

Figure 26: SFS-250V-10A-CN



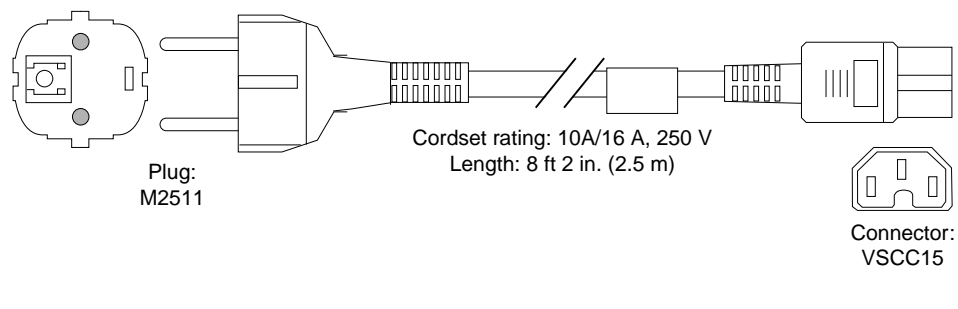
Europe

Power Cord—CAB-9K10A-EU

Plug—250 VAC 10 A M 2511

Length—8.2 feet / 2.5 meters

Figure 27: CAB-9K10A-EU



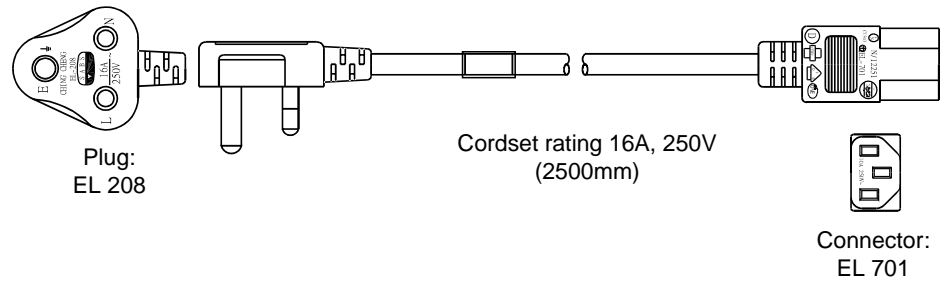
India, South Africa, and United Arab Emirates

Power Cord—SFS-250V-10A-ID

Plug—250 VAC 16A EL-208

Length—8.2 feet / 2.5 meters

Figure 28: SFS-250V-10A-ID



187490

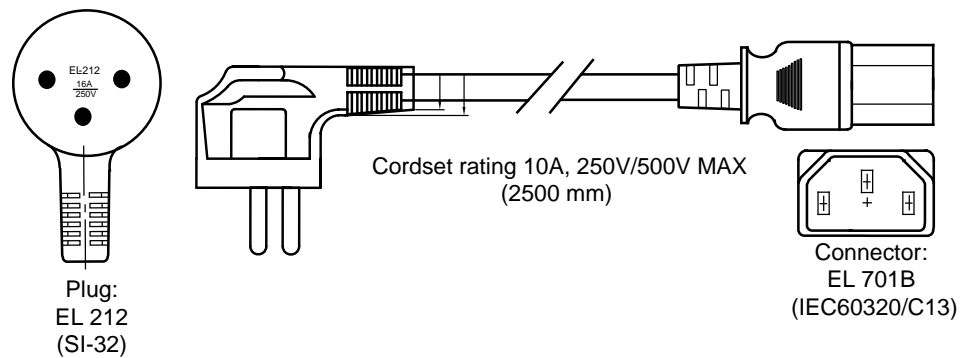
Israel

Power Cord—SFS-250V-10A-IS

Plug—250 VAC 10 A SI32

Length—8.2 feet / 2.5 meters

Figure 29: SFS-250V-10A-IS



186574

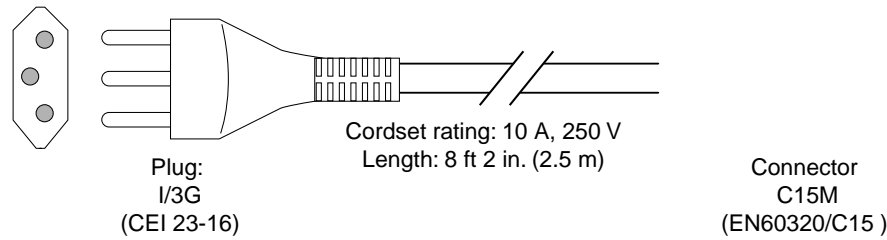
Italy

Power Cord—CAB-9K10A-IT

Plug—250 VAC 10 A CEI 23-16

Length—8.2 feet / 2.5 meters

Figure 30: CAB-9K10A-IT



186575

North America

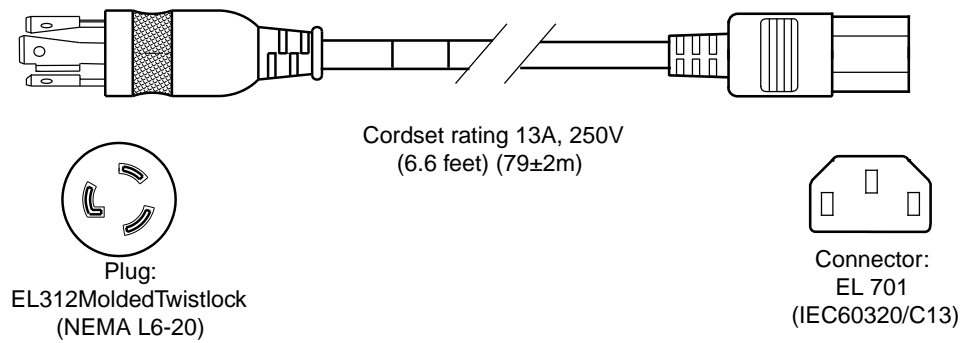
CAB-AC-250V/13A

Power Cord—CAB-AC-250V/13A

Plug—250 VAC 13 A IEC60320

Length—6.6 feet / 2.0 meters

Figure 31: CAB-AC-250V/13A



186568

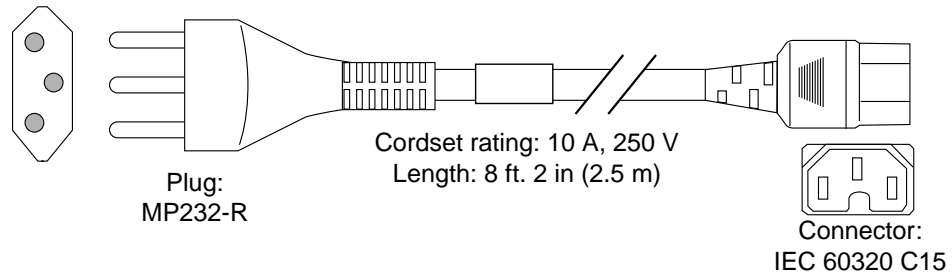
CAB-N5K6A-NA

Power Cord—CAB-N5K6A-NA

Plug—250 VAC 13 A NEMA 6-15

Length—8.2 feet / 2.5 meters

Figure 32: CAB-N5K6A-NA



186578

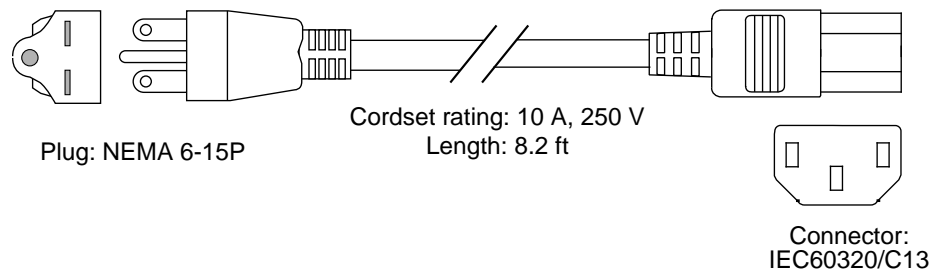
Switzerland

Power Cord—CAB-9K10A-SW

Plug—250 VAC 10 A MP232

Length—8.2 feet / 2.5 meters

Figure 33: CAB-9K10A-SW



186570

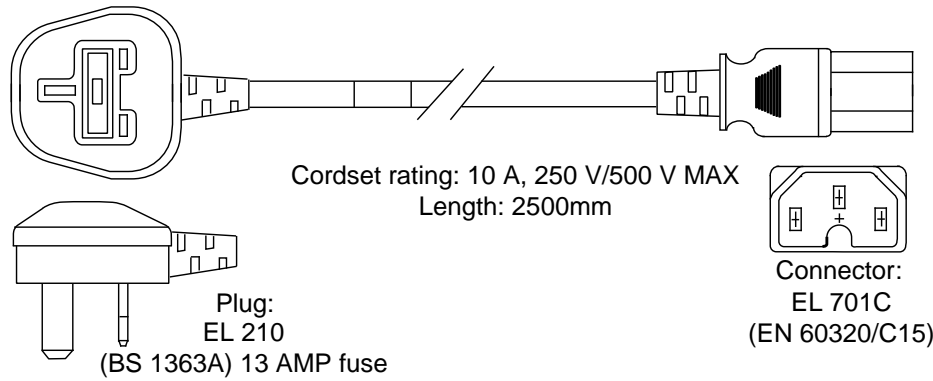
United Kingdom

Power Cord—CAB-9K10A-UK

Plug—250 VAC 10 A BS1363 (13 A fuse)

Length—8.2 feet / 2.5 meters

Figure 34: CAB-9K10A-UK



Cabinet Jumper Power Cord

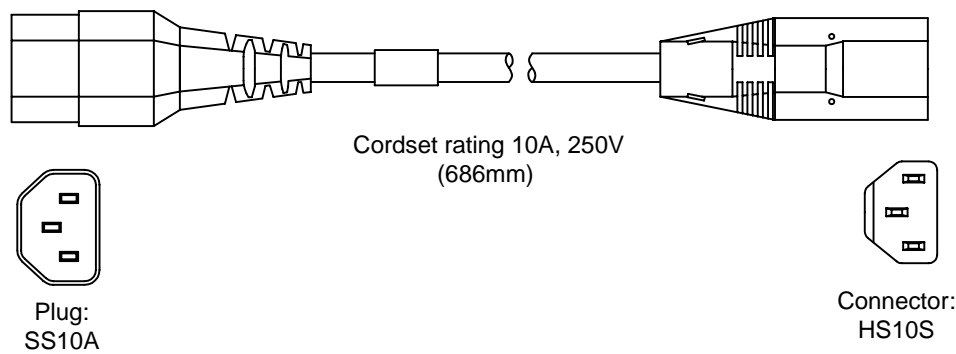
Power Cord—CAB-C13-C14-JMPR

Plug— 250 VAC 13 A, C13-C14 Connectors

Length—2.2 feet / 0.7 meters

The following figure shows the plug connector on the optional jumper power cord for the Cisco UCS 6200 Series Fabric Interconnect. The plug plugs in to the Cisco UCS 6200 Series Fabric Interconnect power supply, while the connector plugs into the receptacle of a power distribution unit for a cabinet.

Figure 35: CAB-C13-C14-JMPR, Jumper Power Cord



Power Supply Configuration Modes

You can configure power modes to either use the combined power provided by the installed power supply units or to provide power redundancy when there is a power outage.

The power supplies are all operated in parallel output. You should connect two separate input sources (grids) to have the highest level of availability (grid redundancy). The system will operate on two power supplies

(2+2 redundancy) for the Cisco UCS 5108 blade server chassis and one power supply (1+1 redundancy) for the Cisco UCS 6100 Series Fabric Interconnect. More detail is at:

- http://www.cisco.com/en/US/docs/unified_computing/ucs/hw/chassis/install/overview.html#wp1245307

Blade Server Chassis and Fabric Interconnect Clearances

You must provide adequate clearance for installing the chassis, replacing modules, and allowing airflow to and from the equipment. The blade server chassis and fabric interconnect require at least 36.0 inches (91.4 cm) of clearance in front to replace a blade or a fabric interconnect. They also require at least 16 inches (40.6 cm) of clearance in back of the equipment to install and replace their components. No side clearance is required because there are no components to replace on the sides of the chassis. No clearance or empty rack units are required between the equipment.

**Note**

If you need more space for the mechanical lift, include the additional space with the clearance for the front of the chassis.

For the blade server chassis and fabric interconnect, the clearances for installation and replacement of components is adequate for the cooling airflow. Side clearance is not needed for installation, replacement, or airflow.

Facility Cooling Requirements

The Cisco UCS components dissipate considerable power and generate considerable heat. The major components require the following heat dissipation:

- Cisco UCS 6120XP Fabric Interconnect dissipates up to 1534 BTUs per hour
- Cisco UCS 6140XP Fabric Interconnect dissipates up to 2561 BTUs per hour
- Cisco UCS 6248 UP Fabric Interconnect dissipates up to 1998 BTUs per hour
- Cisco UCS 6296 UP Fabric Interconnect dissipates up to 3163 BTUs per hour
- Cisco UCS 5108 Blade Server Chassis dissipates up to 1364 BTUs per hour
- Each half width Blade Server dissipates approximately 1350 BTUs per hour
- Each full width Blade Server dissipates approximately 2700 BTUs per hour

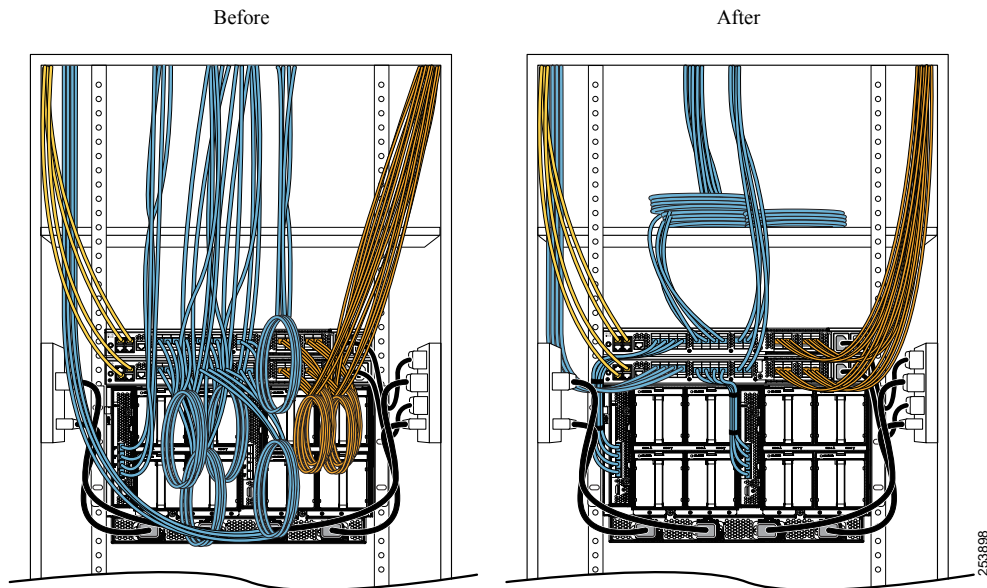
Chassis Airflow

The Cisco UCS 5108 chassis and the Cisco UCS Fabric Interconnects each use front-to-back airflow for cooling, and both components are designed to work in a hot-aisle/cold-aisle environment.

Cable management can be an important factor in preventing overheating issues. In the figure below, the "before" illustration shows cables blocking the rear of the chassis, and preventing the fans from exhausting warm air from the chassis. This situation causes failed DIMMs in the blade servers, and seemingly random

server shutdowns when internal temperatures exceed specification. Use cable ties and other wiring practices to keep the rear of the chassis unobstructed as shown in the "after" illustration.

Figure 36: Cable Management





Site Preparation and Maintenance Records

This appendix includes the following sections:

- [Contact and Site Information Checklist, page 41](#)
- [Environmental Checklist, page 43](#)
- [Power Checklist, page 43](#)
- [LAN Connectivity Checklist, page 44](#)
- [SAN Connectivity Checklist, page 45](#)
- [Port Connection Record, page 45](#)

Contact and Site Information Checklist

Planning the location and layout of your equipment rack is essential for successful equipment operation, ventilation, and accessibility.

This table lists the site planning tasks that we recommend that you complete before you install the Cisco UCS equipment. Your completion of each task ensures a successful installation.

Table 21: Site Identification and Contact Checklist

Planning Activity	Verification Time and Date
Customer name	
Site location/name	
Site address	
Site shipping address	

Planning Activity	Verification Time and Date
Site/installation contact	Name Title Telephone Mobile telephone Off-hours telephone FAX Pager E-mail
Technical contact (if different from above contact)	Name Title Telephone Mobile telephone Off-hours telephone FAX Pager E-mail
What are the hours of operation?	
Are there any unique building and room access procedures? For example, "Visiting personnel must request access 48 hours in advance, must have photo ID bearing company name, and must be escorted by Customer personnel."	
Is this a union shop? List any special requirements? For example, "Must install or apply power during weekend."	Yes No What are the requirements?
Are there any special security or safety procedures? For example, "Must wear safety glasses" or "Must wear safety shoes and hard hat."	What are the special procedures?
What is the location of the rack where the system will be installed?	Floor: Room: Location in room:

Environmental Checklist

Use this checklist to record environmental information for the installation site.

Table 22: Environmental Checklist

Is there sufficient air flow for cooling the system?	Yes No
What type of floor covering is used?	Hard surface Other (describe)
Is the floor covering antistatic?	Yes No
Will the floor need to be protected during installation?	Yes No
Is there enough space in the rack to store this system? (at least 14 RU)	Yes No
Will cables be routed under the floor or overhead?	Under the floor Overhead Other (describe)
Is there sufficient space for equipment or rack access from the front and rear when it is in its final position?	Yes No
What is the agreed upon plan to rectify any outstanding environmental points? Include any notes needed by the implementation team.	

Power Checklist

Use this checklist to record information about the power setup and requirements.

Table 23: Power Checklist

1	<p>Is the correct AC or DC power source available for the blade server chassis?</p> <ul style="list-style-type: none"> Are there one to four power drops provided to power each power supply unit (one power drop per power supply unit)? 	<p>Yes No</p> <p>Yes No</p>
2	<p>Is the correct AC or DC power source available for the fabric interconnect?</p> <ul style="list-style-type: none"> Are two power drops provided to power both power supply units? 	<p>Yes No</p> <p>Yes No</p>

3	Have the appropriate power cables been ordered for the server chassis?	Yes No
4	Have the appropriate power cables been ordered for the fabric interconnect power supply units?	Yes No
5	Are the power receptacles positioned so that all of the power cables can connect the server chassis and fabric interconnects to AC power?	Yes No How far are the receptacles from the power supply units?
6	Any restrictions as to when you can power up the Cisco equipment?	Yes No Details:
7	Has a DC shutoff switch with appropriate ratings been ordered for all required DC circuits?	Yes No Details:
8	What is the agreed upon plan to rectify the outstanding power issues? Include any notes needed by the implementation team.	

LAN Connectivity Checklist

Use this checklist to record information about LAN connectivity.

Table 24: LAN Connectivity Checklist

1	Network switch for the UCS system to connect to. Note 10 Gbps Ethernet connection is required.	
2	Are the required 10 Gbps Ethernet optics available on the customer upstream network equipment to connect to the UCS system? (For example: "X2 optics on Catalyst 6000" or "SFP+ optics on Cisco Nexus 7000")	Yes No If yes, state the model or type.
3	Are cables available to connect the UCS Fabric Interconnect to the upstream 10 Gbps Ethernet network ports? (For example, "SMF")	Yes No If yes, state the type.
4	What is the agreed upon plan to rectify the outstanding LAN connectivity issues? Include any notes needed by the implementation team.	

SAN Connectivity Checklist

Table 25: SAN Connectivity Checklist

1	SAN switch that the UCS system will connect to.	Make and model: Software version:
2	SAN array that the UCS system will connect to.	SAN array: Software version:
3	Are the required optics available on the customer's SAN switch to provide FC connectivity to the UCS Fabric Interconnect?	Yes No
4	Are the required cables available to connect the customer's SAN switch to the UCS system? For example, "UCS Fabric Interconnect FC optic is SFP-10G-SR."	Yes No If yes, what are the length, type (fiber or copper), and quantity?
5	What is the agreed upon plan to rectify the outstanding SAN connectivity issues? Include any notes needed by the implementation team.	

Port Connection Record

Use this checklist to record information about the cabling between fabric interconnects and chassis'.

Table 26: Fabric Interconnect Port Connection Record

Fabric Interconnect A or B		Connected to						
Slot	Port	Chassis	I/OM	Port	LAN or SAN Pin Group	Port Channel Group	Connection Notes	
1	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

Fabric Interconnect A or B		Connected to					
Slot	Port	Chassis	I/OM	Port	LAN or SAN Pin Group	Port Channel Group	Connection Notes
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						

Fabric Interconnect A or B		Connected to						
Slot	Port	Chassis	I/OM	Port	LAN or SAN Pin Group	Port Channel Group	Connection Notes	
2	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							