

Overview

- Features, on page 1
- Package contents, on page 4
- Serial number location, on page 5
- Front panel, on page 7
- Front panel LEDs, on page 7
- Rear panel, on page 9
- Power switch, on page 9
- Management, console, USB, and network ports, on page 10
- Network modules, on page 11
- 8-Port 10-Gbps network module , on page 11
- 4-Port 40-Gbps network module , on page 12
- 2-Port 100-Gbps network module , on page 13
- Hardware bypass network modules, on page 15
- 8-Port 1-Gbps network module with hardware bypass , on page 16
- 2-Port 40-Gbps network module with hardware bypass , on page 17
- 6-Port 1-Gbps SX/6-port 10-Gbps SR/10-Gbps LR network module with hardware bypass , on page 19
- Power supply modules, on page 21
- Fan modules, on page 24
- Supported transceivers, on page 24
- Hardware specifications, on page 30
- Product ID numbers, on page 31
- Power cord specifications, on page 34

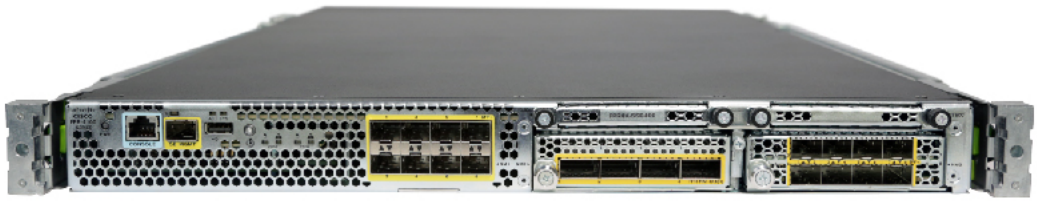
Features

The Cisco Firepower 4100 is a standalone modular security services platform. It is capable of running multiple security services simultaneously and so is targeted at the data center as a multiservice platform. The series includes the Firepower 4112, 4115, 4125, and 4145.

The Firepower 4100 supports Cisco Secure Firewall Threat Defense, Cisco Secure Firewall eXtensible Operating System (FXOS), and Cisco Secure Firewall ASA software.

The following figure shows the Firepower 4100.

Figure 1: Firepower 4100



The following table lists the features for the Firepower 4100.

Table 1: Firepower 4100 features

Feature	FPR4112	FPR4115	FPR4125	FPR4145
Form factor	1 RU Fits a standard 19-inch (48.3cm) square-hole rack			
Rack mount	Slide rails, mount ears, and screws included (4-post EIA-310-D rack)			
Airflow	Front to rear Cold aisle to hot aisle			
Memory	96 GB	192 GB	192 GB	384 GB
Maximum number of interfaces	24 With two 8-port network modules installed			
Management port	One Gigabit Ethernet Supports 1-Gbps fiber or copper SFPs			
Serial port	One Cisco Serial (RS-232 on RJ-45)			
USB port	One USB 2.0 Type A			
Network ports	Eight fixed 1-Gbps and 10-Gbps SFP+ ports (named Ethernet 1/1 through 1/8)			
Small form-factor pluggable (SFP) ports	Eight fixed 1-Gbps and 10-Gbps SFP+ ports			
Pullout asset card	Displays the serial number; on the front panel			
Grounding lug	On rear panel			
Locator beacon	On front panel			
Power switch	On rear panel			

Feature	FPR4112	FPR4115	FPR4125	FPR4145
Network modules	Two network module slots (network module 2 and network module 3)			
Supported network modules	• 8-port 10-Gbps SFP+ • 4-port 40-Gbps QSFP+ • 2-port 100-Gbps QSFP28 **Note** First supported in threat defense Version 7.3.1 and ASA Version 9.18.1. • 8-port 1-Gbps copper with hardware bypass • 2-port 40-Gbps QSFP+ (built-in) with hardware bypass • 6-port 1-Gbps SX fiber SFP (built-in) with hardware bypass • 6-port 10-Gbps SR fiber SFP+ (built-in) with hardware bypass • 6-port 10-Gbps LR fiber SFP+ (built-in) with hardware bypass			
AC power supply	Two (1+1) power supply module slots Ships with one 1100-W AC power supply module Hot-swappable		Two (1+1) power supply module slots Ships with two 1100-W AC power supply modules Hot-swappable	
DC power supply (optional)	Two (1+1) power supply module slots 950-W DC power supply module Hot-swappable			
Redundant power	1+1			
Fan	Six fan module slots 5+1 redundancy Hot-swappable			
Storage	Two SSD slots Ships with one 400-GB SSD installed in slot 1. Slot 1 is the primary SSD and should always be present. Slot 1 is reserved for the logical device application instance (threat defense or ASA). **Note** RAID is not supported. **Caution** The SSD must be installed in slot 1. Slot 2 is reserved only for the optional Malware Storage Pack (MSP).		Two SSD slots Ships with one 800-GB SSD installed in slot 1. Slot 1 is the primary SSD and should always be present. Slot 1 is reserved for the logical device application instance (threat defense or ASA). **Note** RAID is not supported. **Caution** The SSD must be installed in slot 1. Slot 2 is reserved only for the optional MSP.	

Feature	FPR4112	FPR4115	FPR4125	FPR4145
MSP (optional)	Installed in the second SSD slot only			
Network Equipment Building Systems (NEBS) certification	—	—	Certified	—

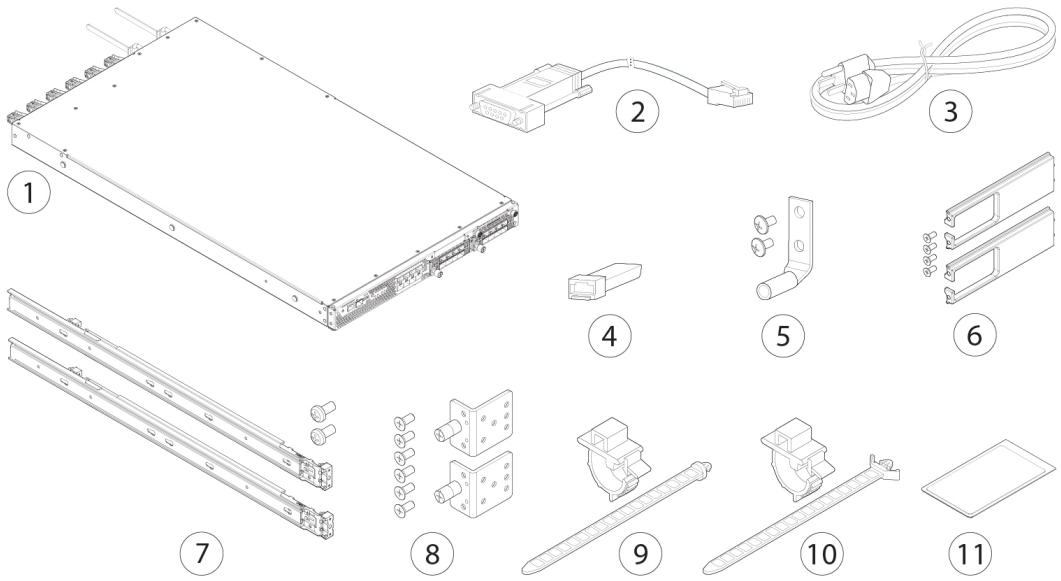
Related Topics

Product ID numbers, on page 31
Cisco Firepower 4100/9300 FXOS Compatibility
Supported transceivers, on page 24

Package contents

The following figure shows the package contents for the Firepower 4100. Note that the contents are subject to change and your exact contents might contain additional or fewer items.

Figure 2: Firepower 4100 package contents



1	Firepower 4100 chassis	**2**	Blue console cable PC terminal adapter
3	Two power cords (country-specific)	**4**	10/100/1000BASE-T SFP transceiver

5	Ground lug kit: • One ground lug #6 AWG, 90 degree, #10 post • Two 10-32 x 39-8-inch Phillips Head screws	**6**	Cable management bracket kit • Two cable management brackets • Four 8-32 x 0.375-inch Phillips screws
7	Two slide rails with two M3 x 0.5 x 6-mm screws	**8**	Two slide rail locking brackets Six 8-32 x 0.375-inch Phillips screws
9	Artesyn tie wrap and tie wrap clamp	**10**	Flextronics tie wrap and tie wrap clamp
11	*Cisco Secure Firepower 4100* This document has links to the hardware installation guide, regulatory and safety information guide, and warranty and licensing information. It also contains a QR code and URL that point to the Digital Documentation Portal. The portal contains links to the product information page, the hardware installation guide, the regulatory and safety information guide, and the getting started guide.		—

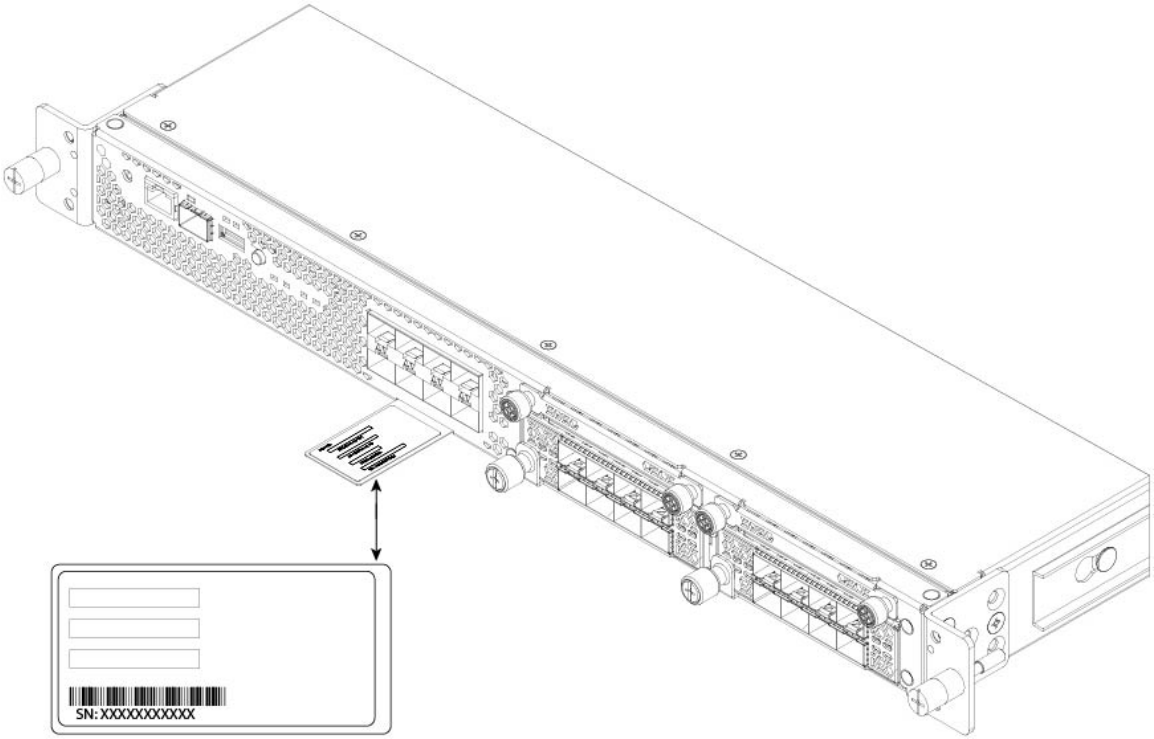
Related Topics

Power cord specifications, on page 34

Serial number location

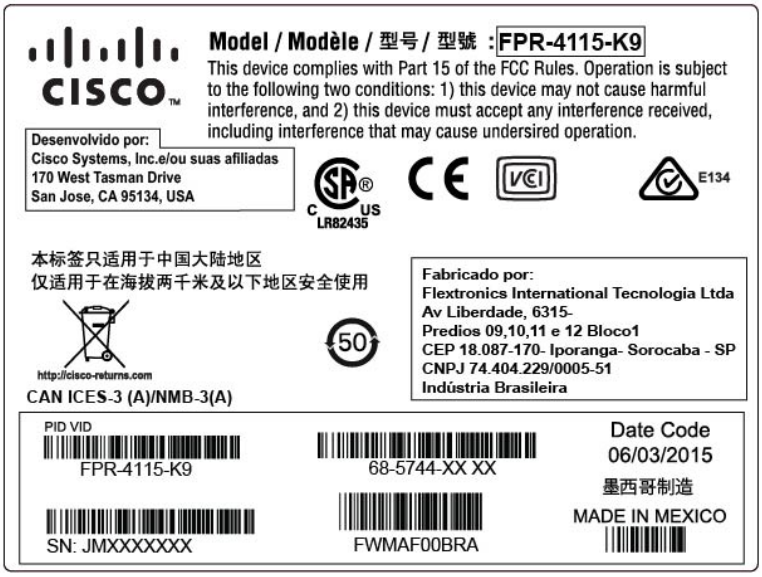
The serial number for the Firepower 4100 series chassis is located on the pullout asset card on the front panel.

Figure 3: Serial number on the 4100 chassis



You can also view additional model information on the compliance label located on the bottom of the chassis.

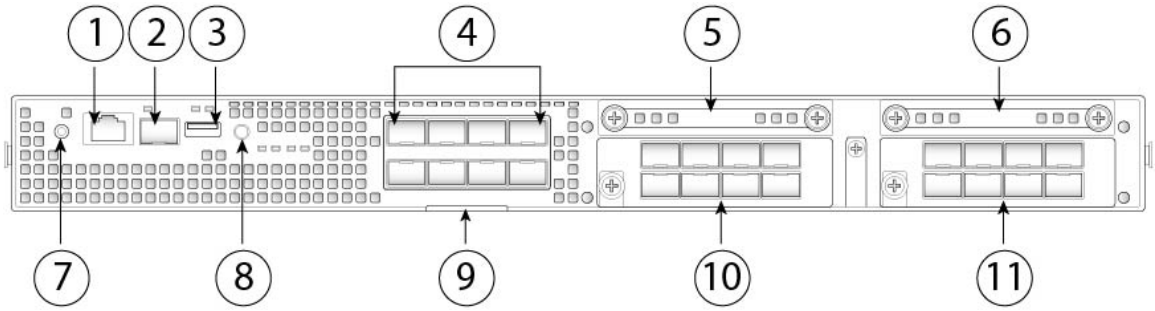
Figure 4: Compliance label on the 4100 chassis



Front panel

The following figure shows the front panel of the Firepower 4100.

Figure 5: Firepower 4100 front panel

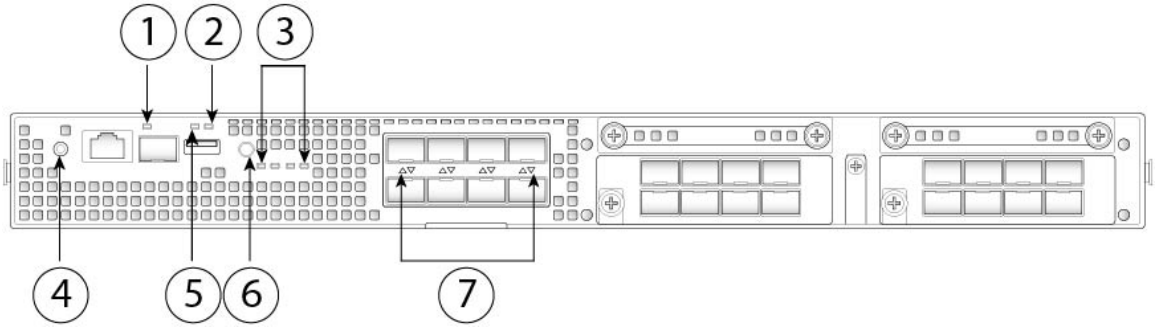


1	RJ-45 console port	**2**	Gigabit Ethernet management port
3	USB 2.0 Type A port	**4**	Eight fixed SFP+ (1-Gbps/10-Gbps) ports (in network module slot 1)
5	SSD 1 Reserved for the primary SSD; slot 1 must always be populated.	**6**	SSD 2 Reserved for the optional MSP
7	Power LED	**8**	Locator LED
9	Pullout asset card	**10**	Network module 2 **Note** The 10-Gbps network module is shown.
11	Network module 3 **Note** The 10-Gbps network module is shown.		

Front panel LEDs

The following figure and table describe the Firepower 4100 front panel LEDs.

Figure 6: Front panel LEDs



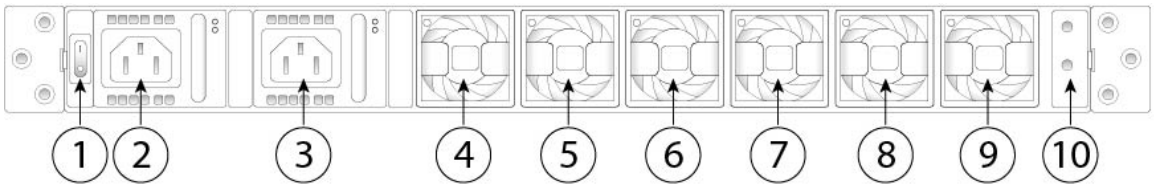
1	Management • Off—No connection or port is not in use. • Amber—No link or network failure. • Green—Link up. • Green, flashing—Network activity.	**2**	Health (SYS) • Off—System is not booting yet. • Green, flashing—Power-up diagnostics are complete and system is booting up. • Green—The system has passed power-up diagnostics. • Amber—Power-up diagnostics has failed. • Amber, flashing—Alarm; power-up diagnostics are running.
3	SSD • Off— SSD not present. • Green—SSD is present; no activity. • Green, flashing—SSD is active. • Amber—SSD failure. • Amber, flashing—Rebuilding, flashes at 1 Hz. • Amber, flashing—Predictive failure analysis (PFA) and hot spare; two fast flashes at 4 Hz, pause for 0.5 seconds.	**4**	Power • Off—Input power not detected. • Green, flashing—Appears only when you move the power switch from ON to OFF. System is shutting down and powers off once shutdown is completed. • Amber—System is powering up. • Green—System fully powered up. • Amber, flashing—Reserved.
5	Active (ACT) This LED is not supported; reserved for future use.	**6**	Locator • Off—Locate is off. • Blue—Locate is on.

7	Network activity • Off—No connection or port is not in use. • Amber—No link or network failure. • Green—Link up. • Green, flashing—Network activity.		

Rear panel

The following figure shows the rear panel of the Firepower 4100.

Figure 7: Firepower 4100 rear panel



1	Power on/off switch	**2**	Power supply module 1
3	Power supply module 2	**4**	Fan module 1
5	Fan module 2	**6**	Fan module 3
7	Fan module 4	**8**	Fan module 5
9	Fan module 6	**10**	Location for the two-post grounding lug **Note** The two-post grounding lug is included in the accessory kit.

Power switch

Power switch

The power switch is located to the left of power supply module 1 on the rear of the chassis. It is a toggle switch that controls power to the system. If the power switch is in standby position, only the 3.3-V standby power is enabled from the power supply module and the 12-V main power is OFF. When the switch is in the ON position, the 12-V main power is turned on and the system boots.

You can shut down the chassis in one of two ways:

- Perform a graceful shutdown using the **shutdown** commands. This may take several minutes to complete. Then toggle the power switch to the OFF position. The power LED changes from solid green to off immediately.

Caution If you move the power switch to the OFF position before the **shutdown** command sequence is complete or if you remove the system power cords before the graceful shutdown is complete, disk corruption can occur.

- Toggle the power switch to the OFF position. The power LED changes from solid green to off.

Note After removing power from the chassis either by moving the power switch to OFF or unplugging the power cord, wait at least 10 seconds before turning power back ON.

Related Topics

FXOS CLI Configuration Guide

Management, console, USB, and network ports

Management port

The Firepower 4100 chassis has a management port that requires a 1-Gbps fiber or copper SFP.

Console port

The Firepower 4100 has an RJ-45 console port. You can use the CLI to configure your Firepower 4100 through the RJ-45 serial console port by using a terminal server or a terminal emulation program on a computer.

The RJ-45 (8P8C) port supports RS-232 signaling to an internal UART controller. The console port does not have any hardware flow control, and does not support a remote dial-in modem. The baud rate is 9600. You can use the standard cable found in your accessory kit to convert the RJ-45 to DB-9 if necessary.

USB Type A port

The chassis contains a standard USB Type A 3.0 port for an external USB drive that you can use for the startup image, configuration, backup and other standard uses for flash storage.

- Supports EXT2/3/4 or VFAT/FAT32 format
- Identified as the following drive ID depending on the CLI:
  - FxOS local-mgmt—usbdrive:
  - FxOS—usbA:
  - ASA and Firewall Threat Defense—disk1:
  - ROMMON—usb:
- Output power of 5 volts, up to a maximum of 1 A (5 USB power units)

The Type A USB port does *not* support Cisco Secure Package (CSP) image upload support.

Network ports

The Firepower 4100 chassis has eight fixed ports that require 1-Gbps/10-Gbps SFP/SFP+ transceivers (fiber or copper). They are numbered from left to right starting with 1 and are named Ethernet 1/1 through Ethernet 1/8. The 4100 also has two network module slots that support different numbers of ports depending on the network module.

Each port has LEDs that represent link/activity status.

Related Topics

Front panel, on page 7

Network modules

The Firepower 4100 contains two network module slots that provide optical or electrical network interfaces. Network modules are optional, removable I/O modules that provide either additional ports or different interface types (1/10/40 Gbps). The Firepower network modules plug into the chassis on the front panel.

Related Topics

Install, remove, and replace the network module

8-Port 10-Gbps network module

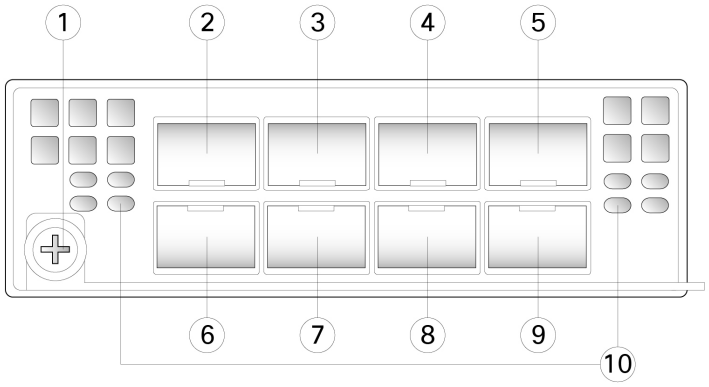
The following figure shows the front panel of the 8-port 10-Gbps single-wide network module (FPR4K-NM-8X10G). The eight ports are numbered from top to bottom, left to right.

Note Make sure you have the correct firmware package and software version installed to support this network module.

Note The FPR4K-NM-8X10G is NEBS-compliant.

Note You can fit four copper SFPs in either the top row of ports or the bottom row of ports. Both rows cannot be populated at the same time, because of the port row spacing.

Figure 8: FPR4K-NM-8X10G



1	Captive screw/handle	**2**	Ethernet *X*/1
3	Ethernet *X*/3	**4**	Ethernet *X*/5
5	Ethernet *X*/7	**6**	Ethernet *X*/2
7	Ethernet *X*/4	**8**	Ethernet *X*/6
9	Ethernet *X*/8	**10**	Network activity LEDs • Off—No connection or port is not in use. • Amber—No link or network failure. • Green—Link up. • Green, flashing—Network activity.

Related Topics

Cisco ASA Compatibility
Cisco Secure Firewall Threat Defense Compatibility Guide

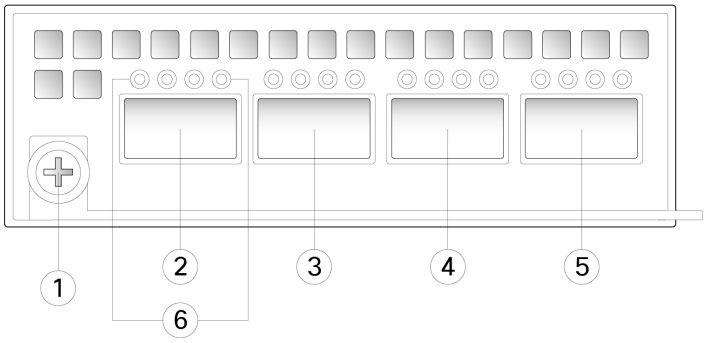
4-Port 40-Gbps network module

The following figure shows the front panel of the 40-Gbps network module (FPR4K-NM-4X40G.) The FPR4K-NM-4X40G is a single-wide module that supports hot swapping. The four ports are numbered left to right. This network module is first supported on FTD Version 6.4 and ASA Version 9.14.

Note Make sure you have the correct firmware package and software version installed to support this network module.

Note The FPR4K-NM-4X40G is NEBS-compliant.

Figure 9: FPR4K-NM-4X40G



1	Captive screw/handle	**2**	Network activity LEDs • Off—No connection or port is not in use. • Amber—No link or network failure. • Green—Link up. • Green, flashing—Network activity. • 40 Gbps—Only the leftmost LED indicates the port status. • 4x10 Gbps—Each of the port LEDS indicates the status of respective 10-Gbps channel.
3	Ethernet *X*/1	**4**	Ethernet *X*/2
5	Ethernet *X*/3	**6**	Ethernet *X*/4

Related Topics

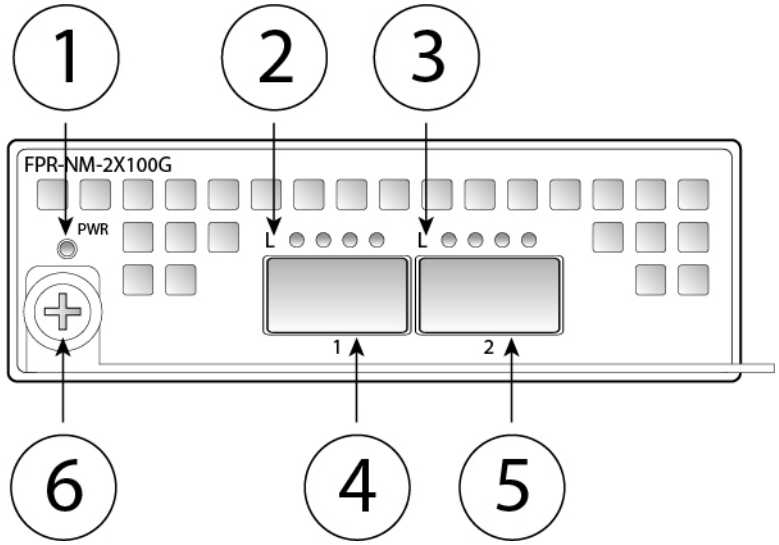
Cisco Firepower 4100/9300 FXOS Firmware Upgrade Guide
Cisco Firepower 4100/9300 FXOS Compatibility

2-Port 100-Gbps network module

The following figure shows the front panel of the 100-Gbps network module (FPR4K-NM-2X100G). The FPR4K-NM-2X100G is a two-port single-wide module that supports hot swapping. The two ports are numbered left to right.

Note Make sure you have the correct firmware package and software version installed to support this network module.

Figure 10: FPR4K-NM-2X100G



1	Power LED	**2**	Network activity LEDs • Off—No connection or port is not in use. • Amber—No link or network failure. • Green—Link up. • Green, flashing—Network activity.
3	Network activity LEDs • Off—No connection or port is not in use. • Amber—No link or network failure. • Green—Link up. • Green, flashing—Network activity.	**4**	Ethernet *X*/1
5	Ethernet *X*/2	**6**	Captive screw/handle

Note When deploying the FPR-NM-2X100G network module, it is recommended to configure the MTU to 9182 bytes or less. This setting helps prevent packet drops caused by MTU-related issues.

Related Topics

Cisco Firepower 4100/9300 FXOS Firmware Upgrade Guide
Cisco Firepower 4100/9300 FXOS Compatibility

Hardware bypass network modules

Hardware bypass (also known as fail-to-wire) is a physical layer (Layer 1) bypass that allows paired interfaces to go into bypass mode so that the hardware forwards packets between these port pairs without software intervention. Hardware bypass provides network connectivity when there are software or hardware failures. Hardware bypass is useful on ports where the Firepower security appliance is only monitoring or logging traffic. The hardware bypass network modules have an optical switch that is capable of connecting the two ports when needed. The hardware bypass network modules have built-in SFPs.

Hardware bypass is supported only on a fixed set of ports. You can pair Port 1 with Port 2, Port 3 with Port 4, but you cannot pair Port 1 with Port 4 for example.

Note When the appliance switches from normal operation to hardware bypass or from hardware bypass back to normal operation, traffic may be interrupted for several seconds. A number of factors can affect the length of the interruption; for example, behavior of the optical link partner such as how it handles link faults and debounce timing; spanning tree protocol convergence; dynamic routing protocol convergence; and so on. During this time, you may experience dropped connections.

There are three configuration options for hardware bypass network modules:

- Passive interfaces—Connection to a single port.

  For each network segment you want to monitor passively, connect the cables to one interface. This is how the nonhardware bypass network modules operate.

- Inline interfaces—Connection to any two like ports (10 Gb to 10 Gb for example) on one network module, across network modules, or fixed ports.

  For each network segment you want to monitor inline, connect the cables to pairs of interfaces.

- Inline with hardware bypass interfaces—Connection of a hardware bypass paired set.

  For each network segment that you want to configure inline with fail-open, connect the cables to the paired interface set.

  For the 40-Gb network module, you connect the two ports to form a paired set. For the 1/10-Gb network modules, you connect the top port to the bottom port to form a hardware bypass paired set. This allows traffic to flow even if the security appliance fails or loses power.

Note If you have an inline interface set with a mix of hardware bypass and nonhardware bypass interfaces, you cannot enable hardware bypass on this inline interface set. You can only enable hardware bypass on an inline interface set if all the pairs in the inline set are valid hardware bypass pairs.

Related Topics

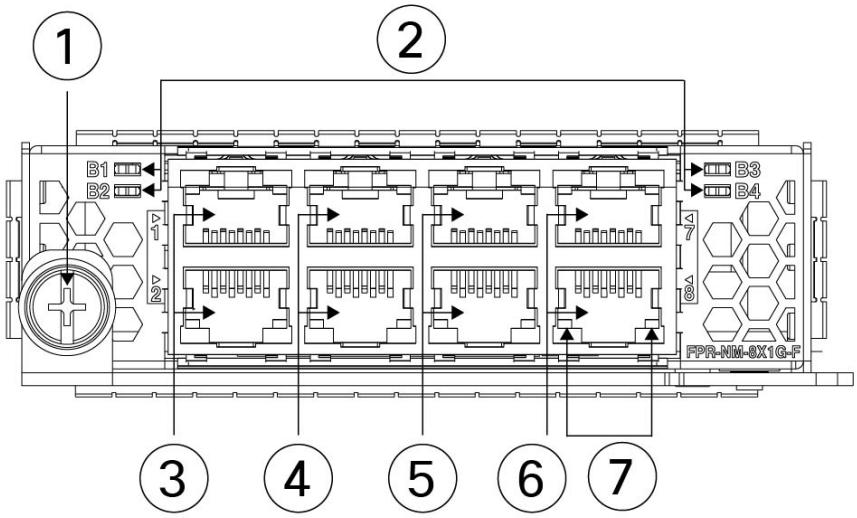
Install, remove, and replace the network module

8-Port 1-Gbps network module with hardware bypass

The following figure shows the front panel view of the 1-Gbps network module with hardware bypass (FPR-NM-8X1G-F). Pair ports 1 and 2, 3 and 4, 5 and 6, and 7 and 8 to form hardware bypass paired sets.

Note Make sure you have the correct firmware package and software version installed to support this network module.

Figure 11: FPR4K-NM-8X1G-F



1	Captive screw/handle	**2**	Bypass LEDs B1 through B4 • Green—In standby mode. • Amber, flashing—Port is in hardware bypass mode, failure event.
3	Ethernet *X*/1 Ports 1 and 2 are paired together to form a hardware bypass pair. LED B1 applies to this paired port.	**4**	Ethernet *X*/2 Ports 3 and 4 are paired together to form a hardware bypass pair. LED B2 applies to this paired port.
5	Ethernet *X*/2 Ports 5 and 6 are paired together to form a hardware bypass pair. LED B3 applies to this paired port.	**6**	Ethernet *X*/2 Ports 7 and 8 are paired together to form a hardware bypass pair. LED B4 applies to this paired port.

7	Network activity LEDs • Left LED—Green indicates network activity when a 10 Mbps/100 Mbps/1 Gbps connection is made. • Right LED—Not in use at this time.		—

Related Topics

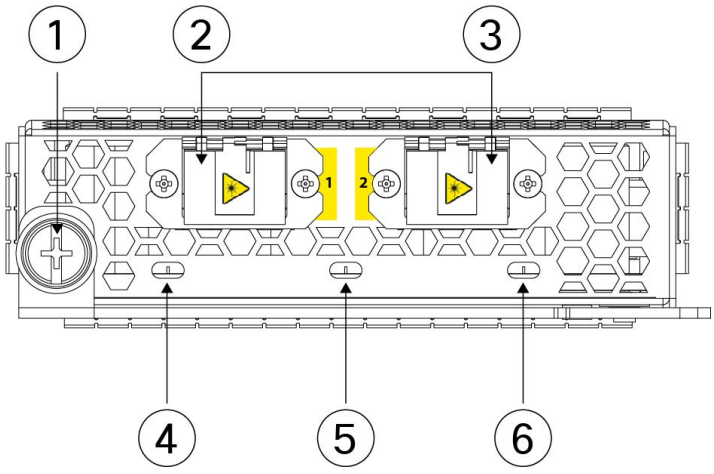
Cisco Secure Firewall ASA Compatibility
Cisco Secure Firewall Threat Defense Compatibility Guide
Cisco FXOS Troubleshooting Guide for the Firewall Threat Defense
Cisco Firepower 4100/9300 FXOS Firmware Upgrade Guide
Cisco Firepower 4100/9300 FXOS Compatibility

2-Port 40-Gbps network module with hardware bypass

The following figure shows the front panel of the 2-port 40-Gbps hardware bypass network module (FPR4K-NM-2X40G-F). The FPR4K-NM-2X40G-F is a single-wide module that does *not* support hot swapping. The two ports are numbered left to right. Pair the two ports to create a hardware bypass paired set.

Note Make sure you have the correct firmware package and software version installed to support this network module.

Figure 12: FPR4K-NM-2X40G-F



1	Captive screw/handle	**2**	Port 1 Ethernet *X*/1 Ports 1 and 2 are paired together to form a hardware bypass pair.

3	Port 2 Ethernet *X*/2 Ports 1 and 2 are paired together to form a hardware bypass pair.	**4**	Port 1 network activity LEDs: • Amber—No connection, or port is not in use, or no link or network failure. • Green—Link up, no network activity. • Green, flashing—Network activity.
5	BP (bypass LED): • Green—In standby mode. • Amber, flashing—Port is in hardware bypass mode, failure event.	**6**	Port 2 network activity LEDs: • Amber—No connection, or port is not in use, or no link or network failure. • Green—Link up, no network activity. • Green, flashing—Network activity.

The following table describes the cable specifications needed to keep the insertion loss as low as possible.

Table 2: 40-Gbps BASE-SR cable specifications

Interface	Supported cable
Ethernet 40-G BASE-SR4	50 microns core diameter
850 nm wavelength	2000/4700 (OM3/4) modal bandwidth (MHz*km)
MPO-12 port adapter	50 m cable distance

We recommend the following Cisco OM3 MTP/MPO cables.

Table 3: Cisco cables

Cisco part number	Cable length
CAB-ETH-40G-5M	5 m
CAB-ETH-40G-10M	10 m
CAB-ETH-40G-20M	20 m

Related Topics

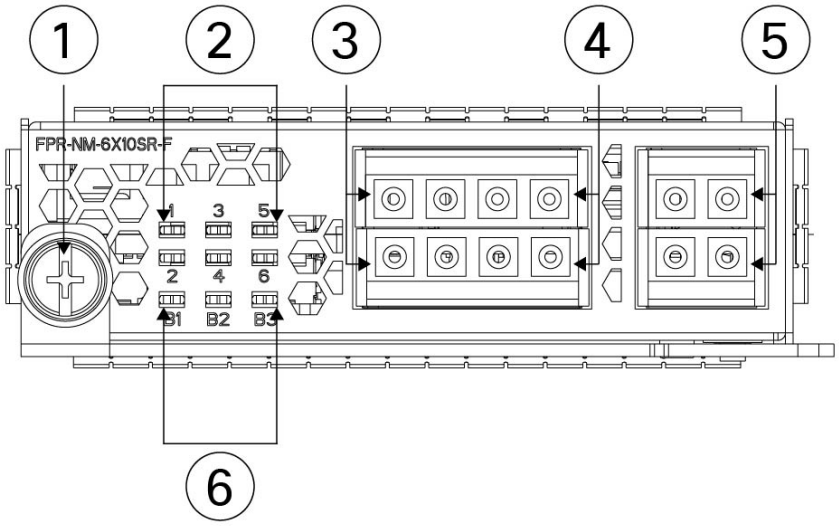
Cisco Firepower 4100/9300 FXOS Firmware Upgrade Guide
Cisco Firepower 4100/9300 FXOS Compatibility
Cisco 40GBASE QSFP Modules Data Sheet

6-Port 1-Gbps SX/6-port 10-Gbps SR/10-Gbps LR network module with hardware bypass

The following figure shows the front panel of the 1-Gbps SX, 10-Gbps SR and 10-Gbps LR hardware bypass network modules (FPR4K-NM-6X1SX-F, (FPR4K-NM-6X1SX-F, FPR4K-NM-6X10SR-F, FPR4K-NM-6X10SR-F, FPR4K-NM-6X10LR-FFPR4K-NM-6X10LR-F). This is a single-wide module that does *not* support hot swapping. The six ports are numbered from top to bottom, left to right. Pair ports 1 and 2, 3 and 4, and 5 and 6 to form hardware bypass paired sets.

Note Make sure you have the correct firmware package and software version installed to support this network module.

Figure 13: FPR4K-NM-6X1SX-F, FPR4K-NM-6X10SR-F, FPR4K-NM-6X10LR-F



1	Captive screw/handle	**2**	Six network activity LEDs: • Amber—No connection, or port is not in use, or no link or network failure. • Green—Link up, no network activity. • Green, flashing—Network activity.
3	Ethernet *X*/1 (top port) Ethernet *X*/2 (bottom port) Ports 1 and 2 are paired together to form a hardware bypass pair.	**4**	Ethernet *X*/3 (top port) Ethernet *X*/4 (bottom port) Ports 3 and 4 are paired together to form a hardware bypass pair.

5	Ethernet *X*/5 (top port) Ethernet *X*/6 (bottom port) Ports 5 and 6 are paired together to form a hardware bypass pair.	**6**	Bypass LEDs B1 through B3: • Green—In standby mode. • Amber, flashing—Port is in hardware bypass mode, failure event.

The 1-Gbps SX /10-Gbps SR/10-Gbps LR network modules have the following insertion loss measurements. Insertion loss measurements help you to troubleshoot the network by verifying cable installation and performance.

Table 4: FPR4K-NM-6X1SX-F

	Operating mode	**Typical**	**Maximum**
Insertion loss	Normal Hardware bypass	0.9 dB 1.2 dB	1.4 dB 1.7 dB
	Core diameter (microns)	Modal bandwidth (MHz/km)	Cable distance **Note** Half the distance specified by the IEEE standard.
Cable and operating distance	62.5 62.5 50 50 50	160 (FDDI) 200 (OM1) 400 500 (OM2) 2000 (OM3)	110 m 137 m 250 m 275 m 500 m

Table 5: FPR4K-NM-6X10SR-F

	Operating mode	**Typical**	**Maximum**
Insertion loss	Normal Hardware bypass	0.9 dB 1.2 dB	1.4 dB 1.7 dB
	Core diameter (microns)	Modal bandwidth (MHz/km)	Cable distance **Note** Half the distance specified by the IEEE standard.

Cable and operating distance	62.5 62.5 50 50 50 50	160 (FDDI) 200 (OM1) 400 500 (OM2) 2000 (OM3) 4700 (OM4)	13 m 16.5 m 33 m 41 m 150 m 200 m

Table 6: FPR4K-NM-6X10LR-F

	Operating mode	**Typical**	**Maximum**
Insertion loss	Normal Hardware bypass	1.2 dB 1.5 dB	1.6 dB 1.9 dB
	Core diameter (microns)	Modal bandwidth (MHz/km)	Cable distance **Note** Half the distance specified by the IEEE standard.
Cable and operating distance	G.652	Single mode	5 km

Related Topics

Cisco Secure Firewall ASA Compatibility
Cisco Secure Firewall Threat Defense Compatibility Guide
Cisco FXOS Troubleshooting Guide for the Firewall Threat Defense

Power supply modules

The Firepower 4100 supports two AC or DC power supply modules so that dual power supply redundancy protection is available. Facing the back of the chassis, the power supply modules are numbered left to right, for example, PSU1 and PSU2.

Note The system power requirements are lower than the power supply module capabilities.

Note After removing power from the chassis either by moving the power switch to OFF or unplugging the power cord, wait at least 10 seconds before turning power back ON.

Attention Make sure that one power supply module is always active.

AC power supply

The power supplies can supply up to 1100-W power across the input voltage range. The load is shared when both power supply modules are plugged in and running at the same time. The power supply modules are hot-swappable.

During a Power Distribution Unit (PDU) restoration, the power supply module on the Firepower 4100 does not automatically power back on. Recovery requires you to manually reseat the power supply module or to reconnect the AC power cable.

Table 7: AC power supply module hardware specifications

Description	Specification
Input voltage	100 to 240 V AC
Maximum current	13 A (at 100 V AC) **Note** The system power requirements are lower than the power supply module capabilities.
Maximum output power	1100 W
Frequency	50 to 60 Hz
Redundancy	1+1 redundant
Efficiency at 50% load	92%

DC power supply

The power supplies can supply up to 950 W of power across the input voltage range. The load is shared when both power supply modules are plugged in and running at the same time. The power supply modules are hot-swappable.

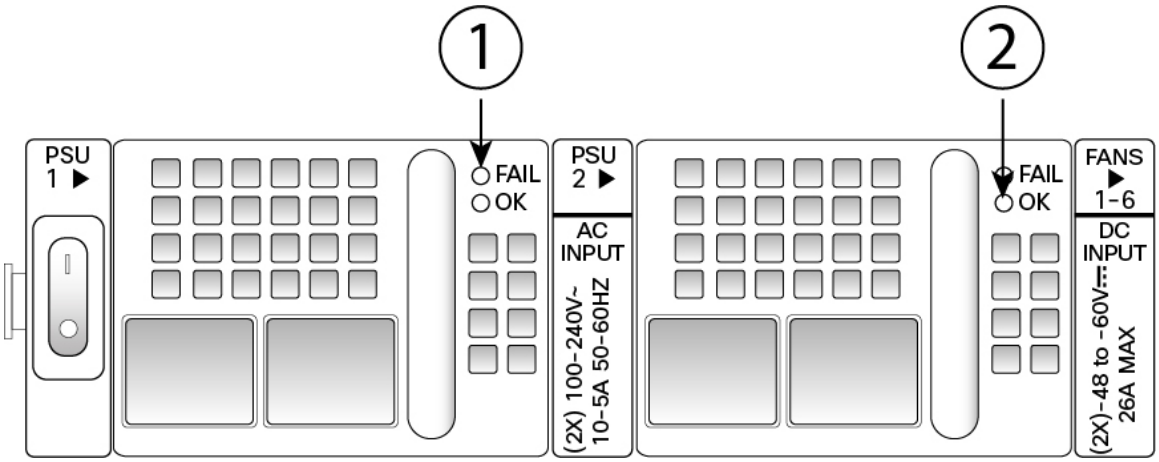
Table 8: DC power supply module hardware specifications

Description	Specification
Input voltage	-40 to -60 V DC
Maximum current	26 A (at 40 V DC)
Maximum output power	950 W
Redundancy	1+1 redundant
Efficiency at 50% load	92%

Power supply module LEDs

The following figure shows the two-color power supply LEDs. The LEDs are located on the upper right side.

Figure 14: Power supply module LEDs



1	Amber FAIL LED	**2**	Green OK LED

The following table describes the power module supply LEDs and their states.

Table 9: Power supply module LEDs and their states

	Amber LED (fail status)	**Green LED (OK status)**
No power to all power supplies	Off	Off
Power supply module failure Includes overvoltage, overcurrent, overtemperature, and fan failure	On	Off
Power supply module warning events Power supply continues to operate. With high temperature, high power, and slow fan	1 Hz flashing	Off
Power is present. 3.3 VSB on (power supply module off)	Off	1 Hz flashing
Power supply module is OK and on.	Off	On

Related Topics

Hardware specifications, on page 30
Remove and replace the power supply module

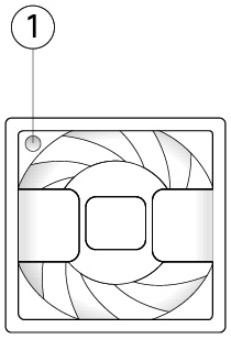
Fan modules

The Firepower 4100 requires six fan modules, which are hot-swappable. They are installed in the rear of the chassis. The system supports operation with a single fan failure (N+1 fan redundancy), but do not run the system for an extended amount of time without all fan modules installed. Keep removal and replacement time at three minutes. Remove and replace one fan module at a time. The fan modules are numbered left to right, for example, FAN1, FAN2, FAN3, FAN4, FAN5, and FAN6.

If you remove a fan or a fan fails, the other fans operate at full speed, which can be noisy.

The following figure shows the location of the fan LED.

Figure 15: Fan LED



1	Two-color LED

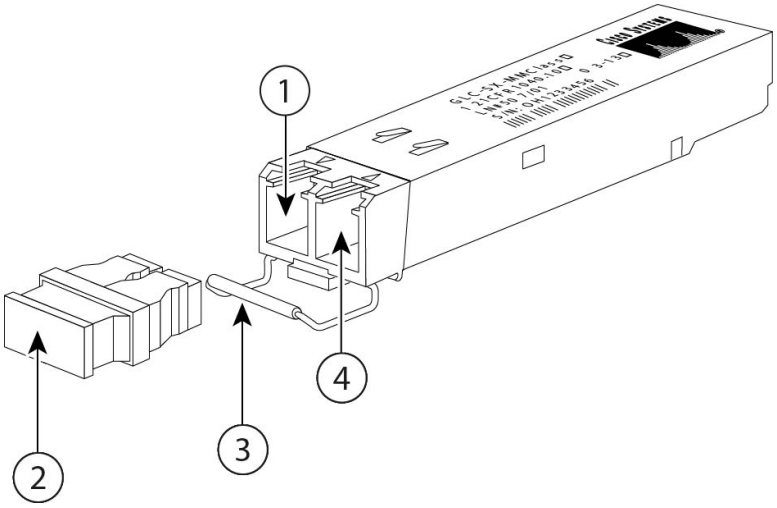
The fan module has one two-color LED, which is located on the upper left corner of the fan.

- Amber—Fan failure.
- Green—Fan running normally. It may take up to one minute for the LED status to turn green after power is on.

Supported transceivers

The SFP/SFP+/QSFP+ transceiver is a bidirectional device with a transmitter and receiver in the same physical package. It is a hot-swappable optical or electrical (copper) interface that plugs into the SFP/SFP+/QSFP+ ports on the fixed ports and the network module ports, and provides Ethernet connectivity.

Figure 16: SFP transceiver



1	Dust plug	**2**	Bail clasp
3	Receive optical bore	**4**	Transmit optical bore

Safety warnings

Take note of the following warnings:

Warning **Statement 1055—**Class 1/1M Laser

Invisible laser radiation is present. Do not expose to users of telescopic optics. This applies to Class 1/1M laser products.



Warning **Statement 1056—**Unterminated Fiber Cable

Invisible laser radiation may be emitted from the end of the unterminated fiber cable or connector. Do not view directly with optical instruments. Viewing the laser output with certain optical instruments, for example, eye loupes, magnifiers, and microscopes, within a distance of 100 mm, may pose an eye hazard.

Warning **Statement 1057—**Hazardous Radiation Exposure

Use of controls, adjustments, or performance of procedures other than those specified may result in hazardous radiation exposure.

Warning Use appropriate ESD procedures when inserting the transceiver. Avoid touching the contacts at the rear, and keep the contacts and ports free of dust and dirt. Keep unused transceivers in the ESD packing that they were shipped in.

Caution Although non-Cisco SFPs are allowed, we do not recommend using them because they have not been tested and validated by Cisco. Cisco TAC may refuse support for any interoperability problems that result from using an untested third-party SFP transceiver.

The following table lists the transceivers that are supported on the Secure Firewall 4100 fixed ports.

Table 10: FPR4112, FPR4115, FPR4125, and FPR4145 fixed ports

Port type	Transceiver PID	First supported release
Fixed SFP/SFP+ ports	• GLC-TE • GLC-SX-MMD • GLC-LH-SMD • GLC-EX-SMD • GLC-ZX-SMD • SFP-10G-SR • SFP-10G-SR-S • SFP-10G-LR • SFP-10G-LR-S • SFP-10G-ER • SFP-10G-ER-S • SFP-10G-LRM • SFP-H10GB-CUxM • SFP-H10GB-ACUxM • SFP-10G-AOCxM	Threat Defense 6.4/ASA 9.14

The following table lists the transceivers that are supported on the Secure Firewall 4100 management ports.

Table 11: FPR4112, FPR4115, FPR4125, and FPR4145 management ports

Port type	Transceiver PID	First supported release
Fixed SFP/SFP+ ports	• GLC-TE • GLC-SX-MMD • GLC-LH-SMD • GLC-EX-SMD • GLC-ZX-SMD • SFP-10G-SR • SFP-10G-SR-S • SFP-10G-LR • SFP-10G-LR-S • SFP-10G-ER • SFP-10G-ER-S • SFP-10G-LRM • SFP-H10GB-CUxM • SFP-H10GB-ACUxM • SFP-10G-AOCxM	Threat Defense 6.4/ASA 9.14

The following table lists the transceivers that are supported on the 8-port 10-Gbps network module.

Table 12: FPR4112, FPR4115, FPR4125, and FPR4145 8-port 10-Gbps network module

Port type	Transceiver PID	First supported release
FPR4K-NM-8X10G	• GLC-TE • GLC-SX-MMD • GLC-LH-SMD • GLC-EX-SMD • GLC-ZX-SMD • SFP-10G-SR • SFP-10G-SR-S • SFP-10G-LR • SFP-10G-LR-S • SFP-10G-ER • SFP-10G-ER-S • SFP-H10GB-CUxM • SFP-H10GB-ACUxM • SFP-10G-AOCxM	Threat Defense 6.4/ASA 9.14
	• SFP-10G-T-X	Threat Defense 7.6/ASA 9.22

The following table lists the tranceivers that are supported on the 4-port 40-Gbps network module.

Table 13: FPR4112, FPR4115, FPR4125, and FPR4145 4-port 40-Gbps network module

Port type	Transceiver PID	First supported release
FPR4K-NM-4X40G	• QSFP-40G-SR4 • QSFP-40G-SR4-S • QSFP-40G-CSR4 • QSFP-40G-SR-BD • QSFP-40G-LR4-S • QSFP-40G-LR4 • WSP-Q40GLR4L • QSFP-H40G-CUxM • QSFP-4SFP10G-CUxM • QSFP-H40G-ACUxM • QSFP-4X10G-ACUxM • QSFP-H40G-AOCxM • QSFP-4X10G-AOCxM	Threat Defense 6.4/ASA 9.14

The following table lists the transceivers that are supported on the 2-port 100-Gbps network module.

Table 14: FPR4112, FPR4115, FPR4125, and FPR4145 2-port 100-Gbps network module

Port type	Transceiver PID	First supported release
FPR4K-NM-2X100G	• QSFP-100G-SR4-S • QSFP-100G-LR4-S • QSFP-40/100G-SRBD • QSFP-100G-AOCxM • QSFP-100G-CUxM • QSFP-4SFP25G-CUxM • QSFP-100G-FR-S	Threat Defense 7.2/ASA 9.18
	• QSFP-100G-SM-SR • QSFP-100G-SR1.2 • QSFP-40/100-SRBD	Threat Defense 7.4/ASA 9.20
	• QSFP-100G-DR-S	Threat Defense 7.6/ASA 9.22

Related Topics

Cisco 10GBASE SFP+ Modules Data Sheet

Hardware specifications

The following table contains hardware specifications for the Firepower 4100.

Table 15: Firepower 4100 hardware specifications

Specification	4112	4115	4125	4145
Dimensions (H x W x D)	1.75 x 16.89 x 29.7 inches (4.44 x 42.90 x 75.43 cm) 1.75 x 16.89 x 31.52 inches (4.44 x 42.90 x 80.06 cm) with fans			
Weight	39.4 lb (17.87 kg) two power supply modules, two network modules, six fans 31.4 lb (14.24 kg) no power supply modules, no network modules, no fans			
System power	AC: 100/240 V AC 10 A (at 100 V), 50 to 60 Hz DC: -40 V DC to -60 V DC, 26 A (at -40 V)			
Temperature	Operating: 32 to 104° F (0 to 40° C) at sea level 1° C reduction of maximum for every 1000 ft (305 m) above sea level Nonoperating: -40 to 149°F (-40 to 65° C)			
NEBS operating temperature Firepower 4125 only	—	—	Long term: 32 to 113° F (0 to 45° C) up to 6000 ft (1829 m) Long term: 32 to 95° F (0 to 35° C) up to 6000-13,000 ft (1829-3964 m) Short term: 23 to 131°F (-5 to 55° C) up to 6000 ft (1829 m)	—
Humidity	Operating and nonoperating: 5 to 95% noncondensing			
Altitude	Operating: 10,000 ft maximum (3048 m) Nonoperating: 15,000 ft maximum (4570 m)			
NEBS operating altitude Firepower 4125 only	—	—	0 to 13,000 ft (3962 m)	—

Specification	4112	4115	4125	4145
Sound pressure	63 dBa (typical) 74 dBa (maximum)			
Declared sound power	76 dB (typical) 87 dB (maximum)			

Product ID numbers

The following table lists the PIDs associated with the Firepower 4100. All of the PIDs in the table are field-replaceable. You need a return material authorization (RMA) to return components.



Note Use the **show inventory** command in the , in the , or in the for the procedure to display a list of the PIDs for your Firepower 4100.

Table 16: Firepower 4100 PIDs

PID	Description
Chassis	
FPR4112-ASA-K9	Cisco Firepower 4112 ASA appliance, 1 RU, two network module bays
FPR4112-NGFW-K9	Cisco Firepower 4112 NGFW appliance, 1 RU, two network module bays
FPR4112-NGFW-K9	Cisco Firepower 4112 NGIPS appliance, 1 RU, two network module bays
FPR4115-ASA-K9	Cisco Firepower 4115 ASA appliance, 1 RU, two network module bays
FPR4115-NGFW-K9	Cisco Firepower 4115 NGFW appliance, 1 RU, two network module bays
FPR4115-NGIPS-K9	Cisco Firepower 4115 NGIPS appliance, 1 RU, two network module bays
FPR4125-ASA-K9	Cisco Firepower 4125 ASA appliance, 1 RU, two network module bays
FPR4125-NGFW-K9	Cisco Firepower 4125 NGFW appliance, 1 RU, two network module bays
FPR4125-NGIPS-K9	Cisco Firepower 4125 NGIPS appliance, 1 RU, two network module bays

PID	Description
FPR4145-ASA-K9	Cisco Firepower 4145 ASA appliance, 1 RU, two network module bays
FPR4145-NGFW-K9	Cisco Firepower 4145 NGFW appliance, 1 RU, two network module bays
FPR4145-NGIPS-K9	Cisco Firepower 4145 NGIPS appliance, 1 RU, two network module bays
Accessories	
FPR4K-ACC-KIT2	Firepower hardware accessory kit containing rack mounts and cables
FPR4K-ACC-KIT2=	Firepower hardware accessory kit containing rack mounts and cables (spare)
Fans	
FPR4K-S-FAN	Fan
FPR4K-S-FAN=	Fan (spare)
Network modules	
FPR4K-NM-2X40G-F	2-port 40-Gbps SR hardware bypass network module
FPR4K-NM-2X40G-F=	2-port 40-Gbps SR hardware bypass network module (spare)
FPR4K-NM-4X40G	4-port 40-Gbps QSFP+ network module
FPR4K-NM-4X40G=	4-port 40-Gbps QSFP+ network module (spare)
FPR4K-NM-6X10LR-F	6-port 10-Gbps LR hardware bypass network module
FPR4K-NM-6X10LR-F=	6-port 10-Gbps LR hardware bypass network module (spare)
FPR4K-NM-6X10SR-F	6-port 10-Gbps SR hardware bypass network module
FPR4K-NM-6X10SR-F=	6-port 10-Gbps SR hardware bypass network module (spare)
FPR4K-NM-6X1SX-F	6-port 1-Gbps SX fiber hardware bypass network module
FPR4K-NM-6X1SX-F=	6-port 1-Gbps SX fiber hardware bypass network module (spare)
FPR4K-NM-8X10G	8-port 10-Gbps SFP+ network module
FPR4K-NM-8X10G=	8-port 10-Gbps SFP+ network module (spare)

PID	Description
FPR4K-NM-8X1G-F	8-port 1-Gbps copper hardware bypass network module
FPR4K-NM-8X1G-F=	8-port 1-Gbps copper hardware bypass network module (spare)
FPR4K-NM-2X100G	2-port 100-Gbps single-wide network module
FPR4K-NM-2X100G=	2-port 100-Gbps single-wide network module (spare)
FPR4K-NM-BLANK	Network module blank slot cover
FPR4K-NM-BLANK=	Network module blank slot cover (spare)
Power supply modules	
FPR4K-PWR-AC-1100	1100-W AC power supply module
FPR4K-PWR-AC-1100-	1100-W AC power supply module (spare)
FPR4K-PWR-DC-950	950-W DC power supply module
FPR4K-PWR-DC-950=	950-W DC power supply module (spare)
FPR4K-PSU-BLANK	Chassis power supply module blank slot cover
FPR4K-PSU-BLANK=	Chassis power supply module blank slot cover (spare)
SSDs	
FPR4K-SSD-BBLKD	SSD slot carrier
FPR4K-SSD-BBLKD=	SSD slot carrier (spare)
FPR4K-SSD400	400-GB SSD for Firepower 4112 and 4115
FPR4K-SSD400=	400-GB SSD for Firepower 4112 and 4115 (spare)
FPR4K-SSD800	800-GB SSD for Firepower 4125 and 4145
FPR4K-SSD800=	800-GB SSD for Firepower 4125 and 4145 (spare)
Rack mount	
FPR4K-RACK-MNT	Rack-mount kit
FPR4K-RACK-MNT=	Rack-mount kit (spare)
FPR4K-CBL-MGMT	Cable management brackets
FPR4K-CBL-MGMT=	Cable management brackets (spare)

Related Topics

Cisco Returns Portal

Cisco Firepower 4100/9300 FXOS Command Reference
Cisco Secure Firewall Threat Defense Command Reference
Cisco Secure Firewall ASA Series Command Reference

Power cord specifications

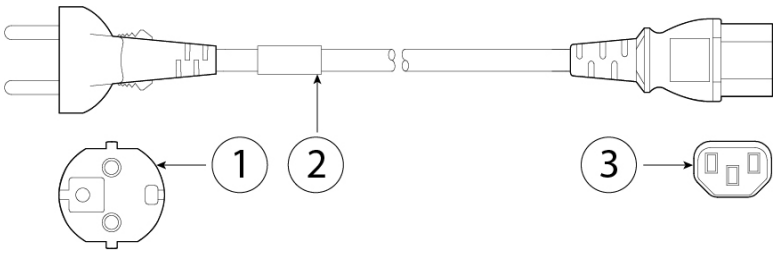
Each power supply has a separate power cord. Standard power cords are available for connection to the security appliance.

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 a 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.

Note Only the approved power cords or jumper power cords provided with the security appliance are supported.

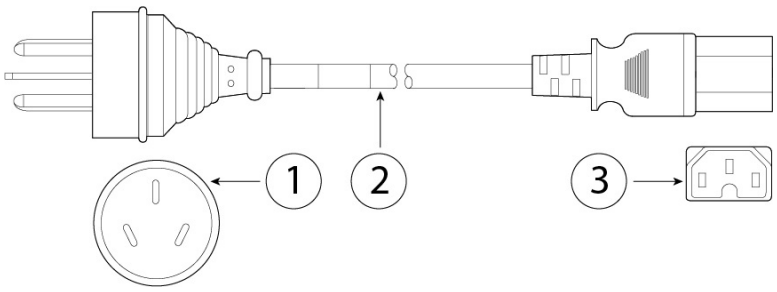
The following power cords are supported.

Figure 17: Argentina CAB-9K10A-AR



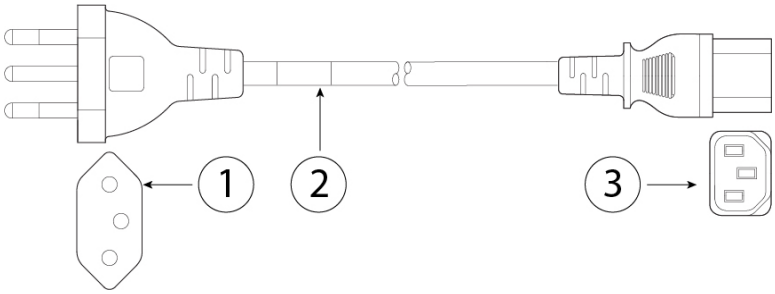
1	Plug: IRAM 2073	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 18: Australia CAB-9K10A-AU



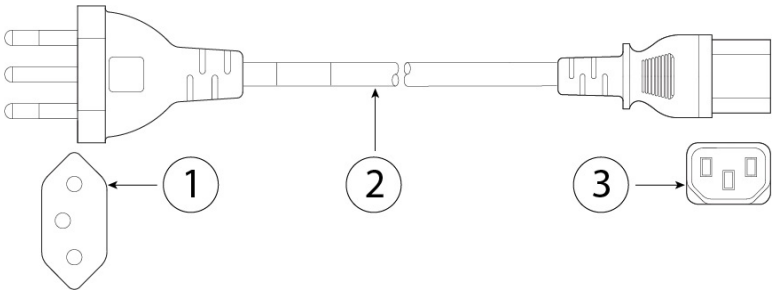
1	Plug: A.S. 3112-2000	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 19: Brazil CAB-250V-10A-BR



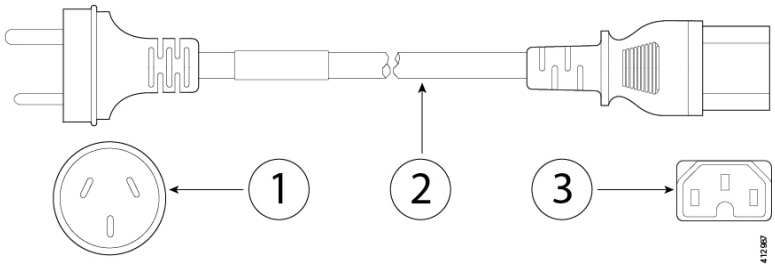
1	Plug: EL223 (NBR 14136)	**2**	Cord set rating: 10 A, 250 V
3	Connector: EL 701B (EN 60320/C13)		—

Figure 20: Brazil PWR-CORD-G2A-BZ



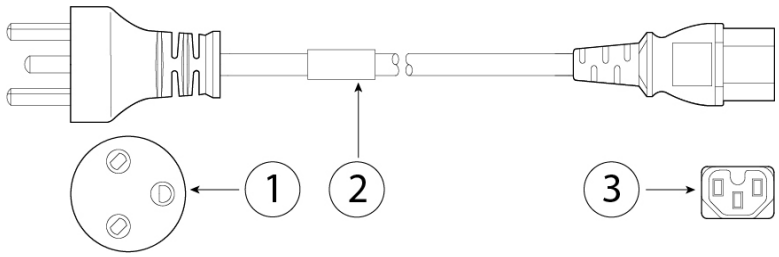
1	Plug: NBR 14136	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		—

Figure 21: China CAB-9K10A-CH



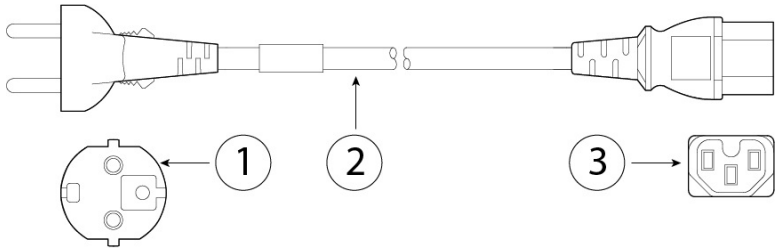
1	Plug: CCC GB2099.1, GB1002	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 22: Denmark CAB-TA-DN



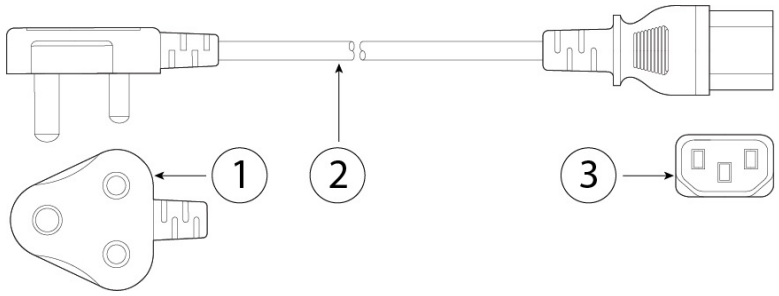
1	Plug: DK3	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		—

Figure 23: Europe CAB-AC-EUR



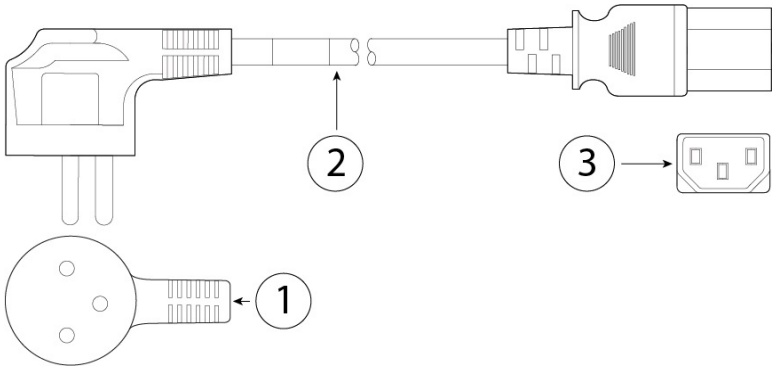
1	Plug: CEE 7/7	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 24: India CAB-250V-10A-ID



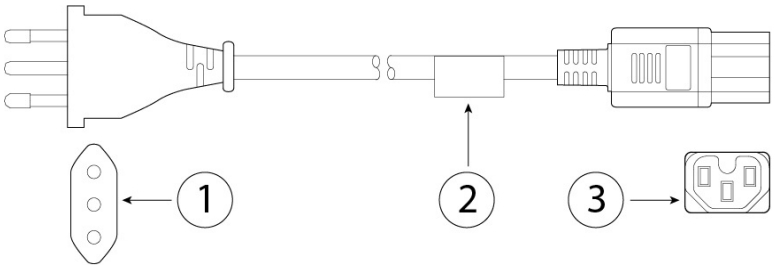
1	Plug: IS 6538-1971	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		—

Figure 25: Israel CAB-250V-10A-IS



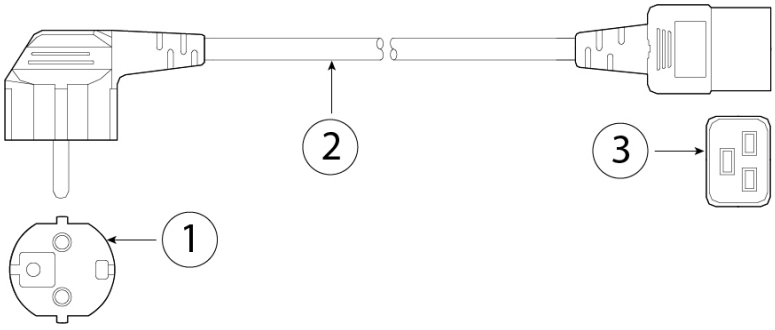
1	Plug: SI-32	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		—

Figure 26: Italy CAB-9K10A-IT



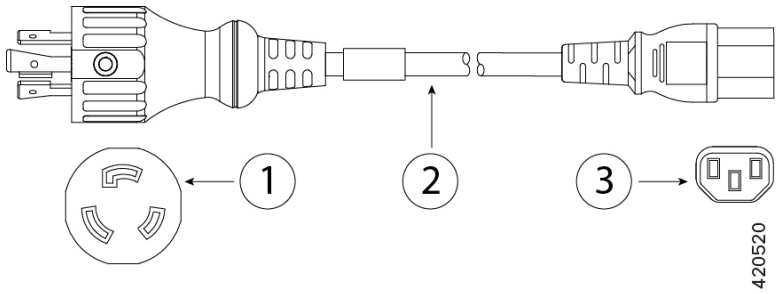
1	Plug: CEI 23-16/VII	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 27: Korea CAB-9K10A-KOR



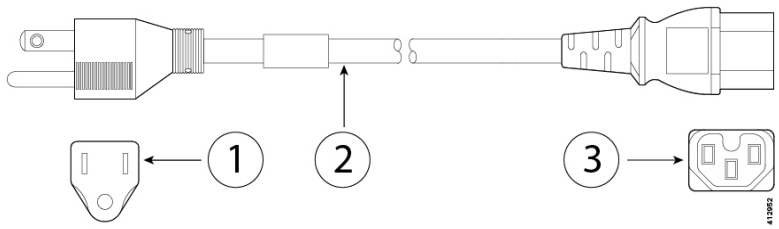
1	Plug: CEE 7/7	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C19		—

Figure 28: Japan CAB-L620P-C13-JPN



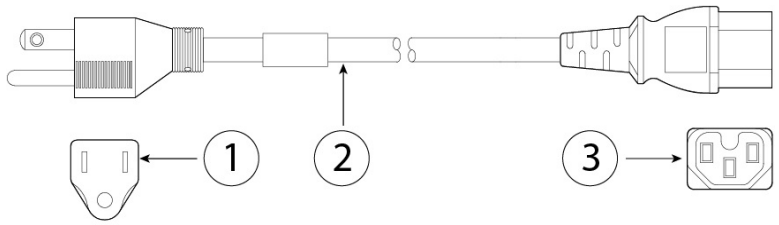
1	Plug: NEMA L6-20P	**2**	Cord set rating: 15 A, 250 V
3	Connector: IEC 60320-C13		—

Figure 29: Japan CAB-TA-JP



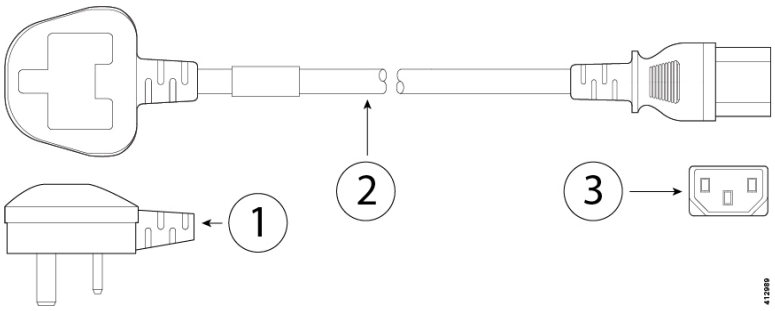
1	Plug: NEMA5-15P/JIS 8303	**2**	Cord set rating: 12 A, 125 V
3	Connector: IEC 60320-C15		—

Figure 30: North America CAB-TA-NA



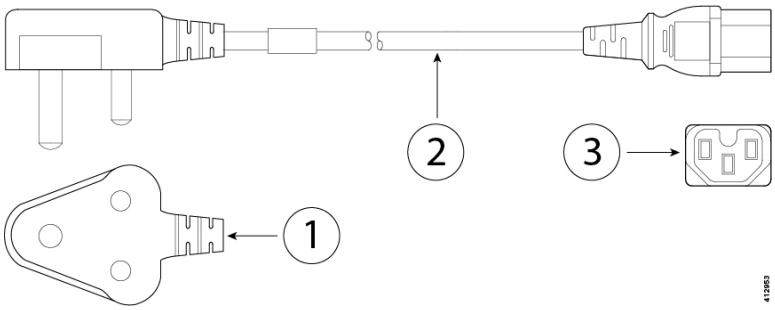
1	Plug: NEMA5-15P	**2**	Cord set rating: 12 A, 125 V
3	Connector: IEC 60320-C15		—

Figure 31: Saudi Arabia ATA187PWRCORD-SAUD



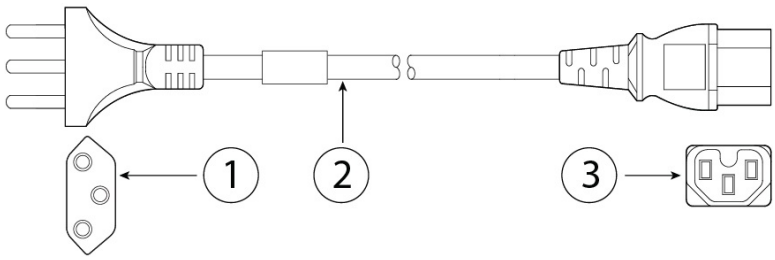
1	Plug: BS1363A/SS145	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		—

Figure 32: South Africa CAB-9K10A-SA



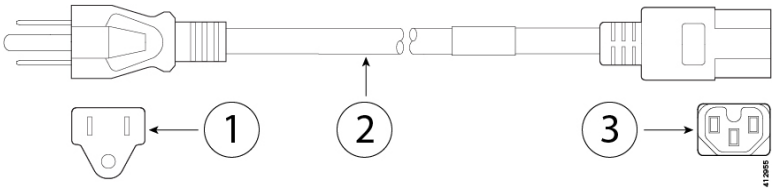
1	Plug: SABS 164	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 33: Switzerland CAB-9K10A-SW



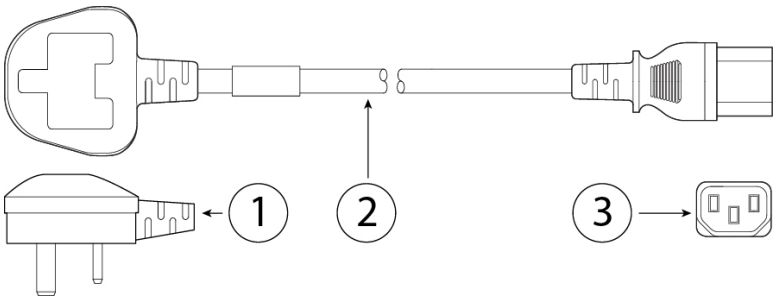
1	Plug: SEV 1011	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C15		—

Figure 34: Taiwan CAB-9K10A-TWN



1	Plug: CNS10917-2	**2**	Cord set rating: 10 A, 125 V
3	Connector: IEC 60320-C15		—

Figure 35: United Kingdom CP-PWR-CORD-UK



1	Plug: BS1363A/SS145	**2**	Cord set rating: 10 A, 250 V
3	Connector: IEC 60320-C13		—