



Cisco UCS 6500 Series Fabric Interconnect Hardware Installation Guide

First Published: 2022-07-14

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Preface

This preface contains the following topics:

- [Bias-Free Documentation, on page vii](#)
- [Introduction, on page vii](#)
- [Communications, Services, and Additional Information, on page ix](#)

Bias-Free Documentation



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CHAPTER 1

Overview

This chapter contains the following topics:

- [Overview, on page 1](#)

Overview

The Cisco UCS 6536 Fabric Interconnect (UCSC-FI-6536) is a 1-rack unit (RU), top of rack (TOR), fixed-port data center platform that provides both network connectivity and management capabilities to the Cisco UCS system.

The fabric interconnect can provide Ethernet and Fibre Channel connectivity to the servers in the system. The servers connect to the fabric interconnect, and then to the LAN or SAN.

High availability redundancy can be achieved when a fabric interconnect is connected to another fabric interconnect through the L1 or L2 port on each device.

Each Cisco UCS 6536 Fabric Interconnect offers the following features:

- Thirty-six QSFP28 ports capable of 100G including 4 unified ports (33-36). Ports also support:
 - Autonegotiating with peer devices to speeds of 40G, 25G, 10G, and 1G.
 - Port breakout is supported for Ethernet ports (1-32) and Unified ports (33-36).
 - Ethernet breakout is supported on chassis ports 1 through 36 when each port is configured with a breakout cable.
 - The Dynamic Ethernet Breakout feature enables converting a standard Ethernet port to a breakout port on-the-fly so that you do not need to reboot the Fabric Interconnect. Dynamic Ethernet Breakout also supports converting breakout ports back to a standard Ethernet port without a reboot.
 - FC breakout is supported on chassis ports 33 through 36 when each port is configured with a four-port breakout cable, for example 1/33/1, 1/33/2, 1/33/3, and 1/33/4 for four FC breakout ports on chassis physical port 33.



Note Fibre Channel support is only available via configuring Unified Ports (33-36) as FC breakout.

- FC breakout ports support peer communication at fixed speeds of 8Gbps, 16 Gbps, and 32 Gbps.
- All four FC breakout ports must be configured with the same speed. Mixed speeds on a QSFP port's FC breakout ports are not supported.
- Using breakout ports enables the fabric interconnect to support the maximum 16 FC ports supported by Fibre Channel.



Note Converting from Ethernet to FC breakout ports, or FC breakout ports back to Ethernet, requires a reboot/reload after changing the breakout type.

For additional information about breakout capabilities, see [Port Breakout, on page 31](#).



Note FCoE storage ports are not supported.

- One management port (one 10/100/1000BASE-T port)
- Two L1/L2 Ethernet RJ-45 ports for high availability or cluster configurations. Ethernet ports support 10/100/1000Mb speed.
- One console port (RS-232)
- One USB 3.0 port
- CPU: 4 Core, 1.8GHz, Intel 5th-Generation core processor
- Memory:
 - 32 GB DDR4 DIMMs
 - 128 GB M.2 SSD Flash Drive
 - 32 GB Boot Flash (16 MB primary, and 16 MB standby/golden)

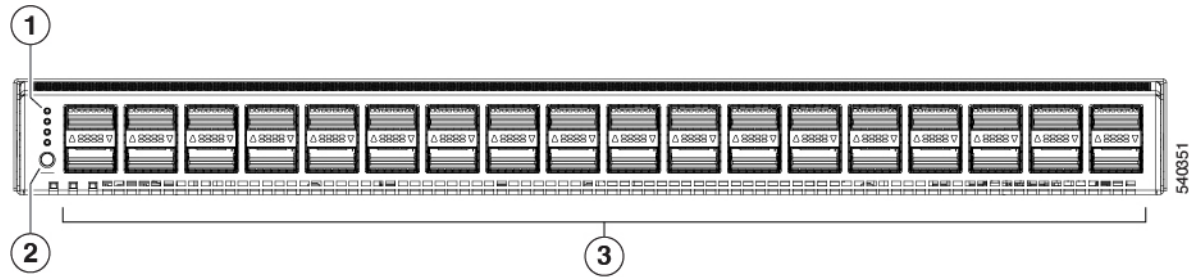
This fabric interconnect includes the following user-replaceable components:

- Fan modules (6), each is a port-side exhaust fan module with dark grey latch coloring (UCS-FAN-6536).
- Power supply modules (2). One power supply module (PSU) is the active module for operations, and the second PSU is the standby for redundancy [1+1]) with the following choices:
 - 1100-W AC power supply with dark grey latch coloring (UCS-PSU-6536-AC)



Note All fan modules and power supplies must use the same airflow direction.

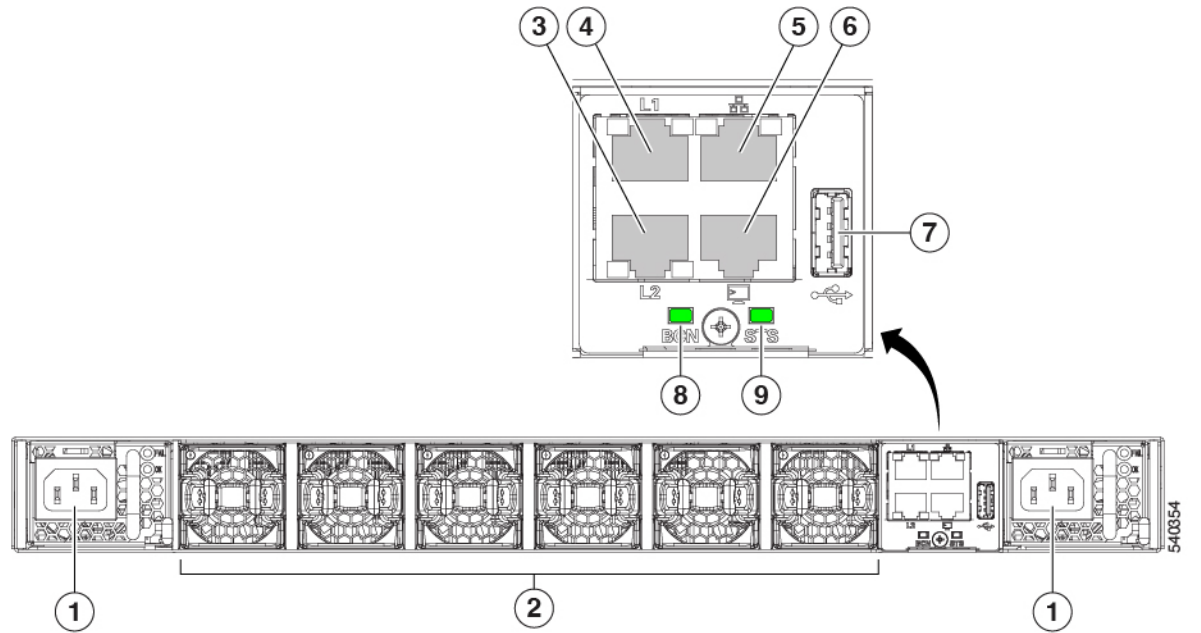
The following figure shows the fabric interconnect features on the port side of the chassis.



| | | | |
|---|--------------------|---|--------------------------------|
| 1 | LEDs | 3 | 36 40/100-Gigabit QSFP28 ports |
| 2 | Lane Select button | | |

To determine which transceivers, adapters, and cables are support the fabric interconnect, see the [Cisco Transceiver Modules Compatibility Information](#) document.

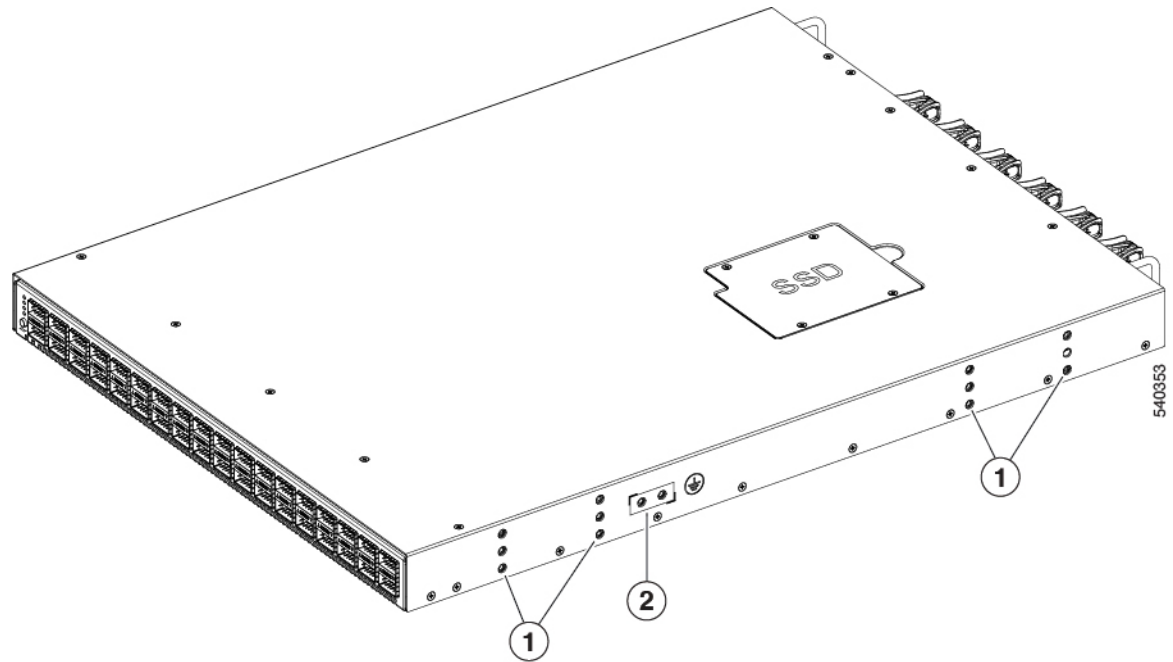
The following figure shows the fabric interconnect features on the power supply side of the chassis.



| | | | |
|---|---|---|---|
| 1 | Power supply modules (1 or 2) (AC power supplies shown) with slots numbered 1 (left) and 2 (right). For additional information, see Power Supply LEDs, on page 6 . | 2 | Fan modules (6) with slots numbered from 1 (left) to 6 (right). For additional information, see Fan Module LEDs, on page 7 . |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 3 | <p>Layer 2 (L2) Ethernet port, 10/100/100Mb autonegotiating.</p> <p>Supports high availability (HA) or clustering through an RJ-45 port.</p> <p>For additional information, see High Availability Port LEDs, on page 8.</p> | 4 | <p>Layer 1 (L1) Ethernet port, 10/100/100Mb autonegotiating.</p> <p>Supports high availability (HA) or clustering through an RJ-45 port.</p> <p>For additional information, see High Availability Port LEDs, on page 8.</p> |
| 5 | <p>Ethernet network management port (RJ45), 10/100/1000Mb autonegotiating</p> <p>For additional information, see Network Management and Console Port LEDs, on page 9.</p> | 6 | <p>Serial Console port (RJ45), 9600 baud.</p> <p>For additional information, see Network Management and Console Port LEDs, on page 9.</p> |
| 7 | <p>USB 3.0/2.0 port</p> <p>Supports booting the system and downloading scripts.</p> | 8 | <p>Beacon (BCN) LED</p> <p>For additional information, see Fabric Interconnect Chassis LEDs, on page 5.</p> |
| 9 | <p>Status (STS) LED</p> <p>For additional information, see Fabric Interconnect Chassis LEDs, on page 5.</p> | - | |

The following figure shows the side of the chassis.



| | | | |
|---|-----------------------------------|---|---------------|
| 1 | Screw holes for mounting brackets | 2 | Grounding pad |
|---|-----------------------------------|---|---------------|

Plan to position the ports in a hot aisle so that fans and power supplies intake air from the cold aisle, blow the cool air through the fabric interconnect, and exhaust the heated air into the hot aisle.

The fan and power supply modules are field replaceable. You can replace one fan module or one power supply module during operations so long as the other modules are installed and operating. If you have only one power supply installed, you can install the replacement power supply in the open slot before removing the original power supply.



Note All fan and power supply modules must have the same direction of airflow. Otherwise, the fabric interconnect can overheat and shut down.



Caution Because fans and power supply modules have port-side exhaust airflow (blue coloring for fan modules), you must locate the ports in the hot aisle. If you locate the air intake in a hot aisle, the fabric interconnect can overheat and shut down.

Fabric Interconnect Chassis LEDs

The BCN, STS, and ENV, LEDs are located on the left side of the front of the fabric interconnect. The port LEDs appear as triangles pointing up or down to the nearest port.

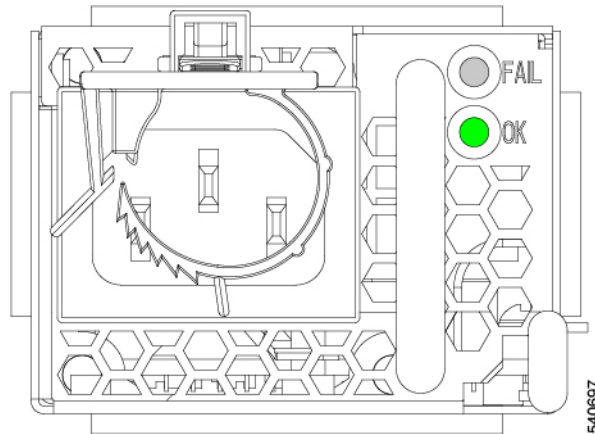
| LED | Color | Status |
|--------|----------------|--|
| BCN | Flashing blue | The operator has activated this LED to identify this fabric interconnect in the chassis. |
| | Off | This fabric interconnect is not being identified. |
| STS | Green | The fabric interconnect is operational. |
| | Flashing amber | The fabric interconnect is booting up. |
| | Amber | Temperature exceeds the minor alarm threshold. |
| | Red | Temperature exceeds the major alarm threshold. |
| | Off | The fabric interconnect is not receiving power. |
| ENV | Green | Fans and power supply modules are operational. |
| | Amber | At least one fan or power supply module is not operating. |
| (port) | Green | Port admin state is 'Enabled', SFP is present, and the interface is connected (that is, cabled, and the link is up). |
| | Amber | Port admin state is 'Disabled, or the SFP is absent, or both. |
| | Off | Port admin state is 'Enabled' and SFP is present, but interface is not connected. |

Lane Link LEDs



The Lane Link LEDs indicate which of the breakout lanes are being checked. If none of the Lane Link LEDs is lit, all four lanes are being checked.

Power Supply LEDs

The power supply LEDs are located on the right upper corner of the power supply.

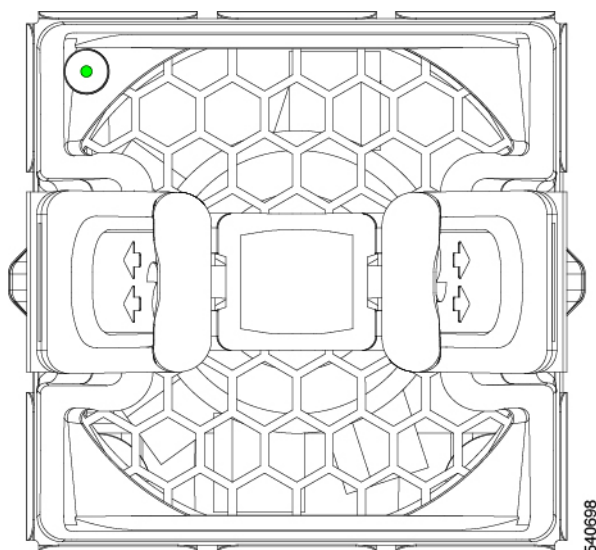


Combinations of states indicated by the OK and FAILED LEDs indicate the status for the module as shown in the following table.

|  LED |  LED | Status |
|---|---|---|
| Green | Off | Power supply is on and outputting power to the fabric interconnect. |
| Flashing green | Off | Power supply is connected to a power source but not outputting power to the fabric interconnect—power supply might not be installed in the chassis. |
| Off | Off | Power supply is not receiving power. |
| Green | Flashing amber | Power supply warning—possibly one of the following conditions: <ul style="list-style-type: none"> • High voltage • High power • Low voltage • Slow power supply fan |

Fan Module LEDs

The fan module LED is located in the upper left corner above the air holes on the front of the module.



Each fan module has a Status LED that indicates the health of the fan module.

| LED | Color | Status |
|-----|-------|---|
| STS | Green | The fan module is operational. |
| | Red | The fan module is not operational (fan is probably not functional). |
| | Off | Fan module is not receiving power. |

Management Port LEDs

The management port block consists of high availability fabric interconnect ports and serial console ports between fan 6 and PSU 2. LEDs for each port are at the top edges of each port.

See the following.

- [High Availability Port LEDs, on page 8](#)
- [Network Management and Console Port LEDs, on page 9](#)

High Availability Port LEDs

The fabric interconnect has an L1 and L2 Ethernet port which can be used for high availability or clustering. Each port has a pair of LEDs, one indicates link and the other indicates activity.

| LED Location | LED State | Indicates |
|--------------|----------------|------------------------|
| Left | Off | No physical link |
| Left | Solid Green | Physical link detected |
| Right | Off | No Activity |
| Right | Blinking Green | Activity |

Network Management and Console Port LEDs

The fabric interconnect has an RJ45 network management port and an RJ45 console port between fan 6 and PSU 2. Each port has a pair of LEDs, one indicates link and the other indicates activity.

| LED Location | LED State | Indicates |
|--------------|----------------|------------------------|
| Left | Off | No physical link |
| Left | Solid Green | Physical link detected |
| Right | Off | No Activity |
| Right | Blinking Green | Activity |



CHAPTER 2

Preparing for Installation

This chapter contains the following topics:

- [Temperature Requirements, on page 11](#)
- [Humidity Requirements, on page 11](#)
- [Altitude Requirements, on page 11](#)
- [Dust and Particulate Requirements, on page 12](#)
- [Minimizing Electromagnetic and Radio Frequency Interference, on page 12](#)
- [Shock and Vibration Requirements, on page 13](#)
- [Grounding Requirements, on page 13](#)
- [Planning for Power Requirements, on page 13](#)
- [Airflow Requirements, on page 14](#)
- [Rack and Cabinet Requirements, on page 15](#)
- [Clearance Requirements, on page 15](#)

Temperature Requirements

The fabric interconnect requires an operating temperature of 32 to 104 degrees Fahrenheit (0 to 40 degrees Celsius). If the fabric interconnect is not operating, the temperature must be between –40 to 158 degrees Fahrenheit (–40 to 70 degrees Celsius).

Humidity Requirements

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 fabric interconnect equipment. However, if the fabric interconnect is located in an unusually humid location, use a dehumidifier to maintain the humidity within an acceptable range.

Altitude Requirements

Altitude rating is based on power supply installed; see critical components list in the system CB report for altitude rating.

Dust and Particulate Requirements

Exhaust fans cool power supplies and system fans cool fabric interconnects 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 fabric interconnect and increased internal chassis temperature. Dust and particles can act as insulators and interfere with the mechanical components in the fabric interconnect. A clean operating environment can greatly reduce the negative effects of dust and other particles.

In addition to keeping your environment free of dust and particles, follow these precautions to avoid contamination of your fabric interconnect:

- Do not permit smoking near the fabric interconnect.
- Do not permit food or drink near the fabric interconnect.

Minimizing Electromagnetic and Radio Frequency Interference

Electromagnetic interference (EMI) and radio frequency interference (RFI) from the fabric interconnect can adversely affect other devices, such as radio and television (TV) receivers. Radio frequencies that emanate from the fabric interconnect can also interfere with cordless and low-power telephones. Conversely, RFI from high-power telephones can cause spurious characters to appear on the fabric interconnect monitor.

RFI is defined as any EMI with a frequency above 10 kHz. This type of interference can travel from the fabric interconnect to other devices through the power cable and power source or through the air as transmitted radio waves. The Federal Communications Commission (FCC) publishes specific regulations to limit the amount of EMI and RFI that are emitted by computing equipment. Each fabric interconnect meets these FCC regulations.

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

- Cover all open expansion slots with a blank filler plate.
- Always use shielded cables with metal connector shells for attaching peripherals to the fabric interconnect.

When wires are run for any significant distance in an electromagnetic field, interference can occur to the signals on the wires with the following implications:

- Bad wiring can result in radio interference emanating from the plant wiring.
- Strong EMI, especially when it is caused by lightning or radio transmitters, can destroy the signal drivers and receivers in the chassis and even create an electrical hazard by conducting power surges through lines into equipment.



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

The wiring is unlikely to emit radio interference if you use a twisted-pair cable with a good distribution of grounding conductors. If you exceed the recommended distances, use a high-quality twisted-pair cable with one ground conductor for each data signal when applicable.

**Caution**

If the wires exceed the recommended distances, or if wires pass between buildings, give special consideration to the effect of a lightning strike in your vicinity. The electromagnetic pulse that is caused by lightning or other high-energy phenomena can easily couple enough energy into unshielded conductors to destroy electronic fabric interconnects. You will want to consult experts in electrical surge suppression and shielding if you had similar problems in the past.

Shock and Vibration Requirements

The fabric interconnect has been shock- and vibration-tested for operating ranges, handling, and earthquake standards.

Grounding Requirements

The fabric interconnect is sensitive to variations in voltage that is supplied by the power sources. Overvoltage, undervoltage, and transients (or spikes) can erase data from memory or cause components to fail. To protect against these types of problems, ensure that there is an earth-ground connection for the fabric interconnect. You can connect the grounding pad on the fabric interconnect either directly to the earth-ground connection or to a fully bonded and grounded rack.

When you properly install the chassis in a grounded rack, the fabric interconnect is grounded because it has a metal-to-metal connection to the rack. Alternatively, you can ground the chassis by using a customer-supplied grounding cable that meets your local and national installation requirements. For U.S. installations, we recommend 6-AWG wire. Connect your grounding cable to the chassis with a grounding lug (provided in the fabric interconnect accessory kit) and to the facility ground.

**Note**

You automatically ground AC power supplies when you connect them to AC power sources.

**Note**

An electrical conducting path shall exist between the product chassis and the metal surface of the enclosure or rack in which it is mounted or to a grounding conductor. Electrical continuity shall be provided by using thread-forming type mounting screws that remove any paint or non-conductive coatings and establish a metal-to-metal contact. Any paint or other non-conductive coatings shall be removed on the surfaces between the mounting hardware and the enclosure or rack. The surfaces shall be cleaned and an antioxidant applied before installation.

Planning for Power Requirements

The fabric interconnect includes two power supplies (1-to-1 redundancy with current sharing) in one of the following combinations:



Note For $n+1$ redundancy, you can use one or two power sources for the two power supplies. For $n+n$ redundancy, you must use two power sources and connect each power supply to a separate power source.



Note Some of the power supply modules have rating capabilities that exceed the fabric interconnect requirements. When calculating your power requirements, use the fabric interconnect requirements to determine the amount of power that is required for the power supplies.

To minimize the possibility of circuit failure, make sure that each power-source circuit that is used by the fabric interconnect is dedicated to the fabric interconnect.



Note For AC input application, please refer to the following statement:



Warning **Statement 1005**—Circuit Breaker

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective devices are rated not greater than 20A (North America), 16A (Europe), and 13A (UK).



Note For the power cables to use with the power supplies, see [Power Cable Specifications, on page 57](#).

Airflow Requirements

The fabric interconnect is positioned with its ports in either the front or the rear of the rack depending on your cabling and maintenance requirements. You must have fan and power supply modules that move the coolant air from the cold aisle to the hot aisle in one of the following ways:

- Port-side exhaust airflow—Cool air enters the chassis through the fan and power supply modules in the cold aisle and exhausts through the port end of the chassis in the hot aisle.

You can identify the airflow direction of each fan and power supply module by its coloring. Blue or dark grey coloring indicates port-side exhaust airflow.



Note To prevent the fabric interconnect from overheating and shutting down, you must position the air intake for the fabric interconnect in a cold aisle. The fan and power supply modules must have the same direction of airflow (even if their coloring is different). If you must change the airflow direction for the fabric interconnect, you must shutdown the fabric interconnect before changing the modules.

Rack and Cabinet Requirements

You can install the following types of racks or cabinets for your fabric interconnect:

- Standard perforated cabinets
- Solid-walled cabinets with a roof fan tray (bottom-to-top cooling)
- Standard open four-post Telco racks

Work with your cabinet vendors to determine which of their cabinets meet the following requirements or see the Cisco Technical Assistance Center (TAC) for recommendations:

- Use a standard 19-inch (48.3-cm), four-post Electronic Industries Alliance (EIA) cabinet or rack with mounting rails that conform to English universal hole spacing per section 1 of the ANSI/EIA-310-D-1992 standard.
- The depth of a four-post rack must be 24 to 32 inches (61.0 to 81.3 cm) between the front and rear mounting rails (for proper mounting of the bottom-support brackets or other mounting hardware).

Also, you must have power receptacles that are located within reach of the power cords that are used with the fabric interconnect.

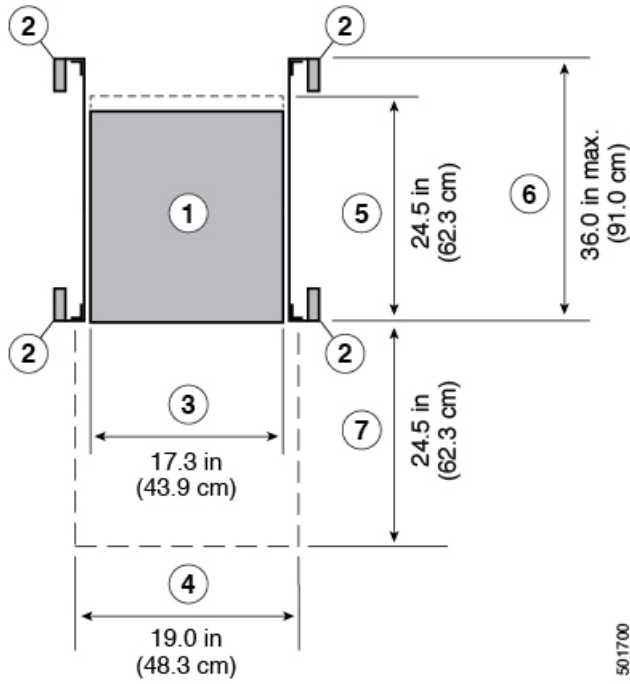


Warning Statement 1048—Rack Stabilization

The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before installation or servicing. Failure to stabilize the rack can cause bodily injury.

Clearance Requirements

Provide the chassis with adequate clearance between the chassis and any other rack, device, or structure so that you can properly install the chassis. Provide the chassis with adequate clearance to route cables, provide airflow, and maintain the fabric interconnect. For the clearances required for an installation of this chassis in a four-post rack, see the following figure.



501700

| | | | |
|---|--|---|---|
| 1 | Chassis | 5 | Depth of the chassis |
| 2 | Vertical rack-mount posts and rails | 6 | Maximum extension of the bottom-support rails 36.0 in (91.0 cm) |
| 3 | Chassis width 17.3 in (43.9 cm) | 7 | Depth of the front clearance area (equal to the depth of the chassis). |
| 4 | Width of the front clearance area (equal to the width of the chassis with two rack-mount brackets that are attached to it). 19.0 in (43.3 cm) | | |



Note Both the front and rear of the chassis must be open to both aisles for airflow.



CHAPTER 3

Installing the Fabric Interconnect

This chapter contains the following topics:

- [Safety, on page 17](#)
- [Installation Options with Rack-Mount Kits, on page 18](#)
- [Airflow Considerations, on page 18](#)
- [Installation Guidelines, on page 18](#)
- [Unpacking and Inspecting the Fabric Interconnect, on page 19](#)
- [Installing the Fabric Interconnect Using the UCS-ACC-6536 Kit, on page 20](#)
- [Grounding the Fabric Interconnect, on page 23](#)
- [Starting the Fabric Interconnect, on page 25](#)

Safety



Warning **Statement 1071**—Warning Definition

IMPORTANT SAFETY INSTRUCTIONS

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

SAVE THESE INSTRUCTIONS



Warning This unit is intended for installation in restricted access areas. Only skilled, instructed, or qualified personnel can access a restricted access area.



Warning **Statement 1030**—Equipment Installation

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

Installation Options with Rack-Mount Kits

The rack-mount kit enables you to install the fabric interconnect into racks of varying depths. You can position the fabric interconnect with easy access to either the port connections or the fan and power supply modules.

You can install the fabric interconnect using the its accessory kit (UCS-ACC-6536=), which you can order from Cisco. This option offers you easy installation, greater stability, increased weight capacity, added accessibility, and improved removability with front and rear removal.

The rack or cabinet that you use must meet the requirements listed in the [General Requirements for Cabinets and Racks](#), on page 54 section.



Note You are responsible for verifying that your rack and rack-mount hardware comply with the guidelines that are described in the referenced document.

Airflow Considerations

The fabric interconnect comes with fan and power supply modules that have port-side exhaust airflow for cooling the fabric interconnect. Make sure to position the fabric interconnect so that its port-side exhaust fan modules draw air from the cold aisle into the fabric interconnect and vent air into the hot aisle. All fan modules must have the same direction of airflow.

Installation Guidelines

When installing the fabric interconnect, follow these guidelines:

- Ensure that there is adequate clearance space around the fabric interconnect to allow for servicing the fabric interconnect and for adequate airflow.
- Ensure that the chassis can be adequately grounded. If the fabric interconnect is not mounted in a grounded rack, we recommend connecting the system ground on the chassis directly to an earth ground.
- Ensure that the site power meets the power requirements for the fabric interconnect. If available, you can use an uninterruptible power supply (UPS) to protect against power failures.



Caution Avoid UPS types that use ferroresonant technology. These UPS types can become unstable with the fabric interconnect, which can have substantial current draw fluctuations because of fluctuating data traffic patterns.

- Ensure that circuits are sized according to local and national codes. Typically, this often requires one or both of the following:
 - AC power supplies typically require at least a 15-A or 20-A AC circuit, 100 to 240 VAC, and a frequency of 50 to 60 Hz.



Caution To prevent loss of input power, ensure the total maximum loads on the circuits supplying power to the fabric interconnect are within the current ratings for the wiring and breakers.



Note For AC input application, please refer to the statement below:



Warning **Statement 1005**—Circuit Breaker

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective devices is rated not greater than 20A (North America), 16A (Europe), and 13A (UK).

Unpacking and Inspecting the Fabric Interconnect

Before you install the fabric interconnect, be sure to unpack and inspect the fabric interconnect for damage or missing components. If anything is missing or damaged, contact your customer service representative immediately.



Tip Keep the shipping container in case the chassis requires shipping at a later time.

Before you begin

Before you unpack the fabric interconnect and before you handle any fabric interconnect components, be sure that you are wearing a grounded electrostatic discharge (ESD) strap. To ground the strap, attach it directly to an earth ground or to a grounded rack or grounded chassis (there must be a metal-to-metal connection to the earth ground).

Procedure

-
- Step 1** Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all items, including the following:
- Accessory Kit
- Step 2** Check for damage and report any discrepancies or damage to your customer service representative. Have the following information ready:
- Invoice number of shipper (see packing slip)
 - Model and serial number of the damaged unit

- Description of damage
 - Effect of damage on the installation
-

Installing the Fabric Interconnect Using the UCS-ACC-6536 Kit

To install the fabric interconnect, you must attach front and rear mounting brackets to the fabric interconnect, install slider rails on the rear of the rack, slide the fabric interconnect onto the slider rails, and secure the fabric interconnect to the front of the rack. Typically, the front of the rack is the side easiest to access for maintenance.



Note You must supply the eight 10-32 or 12-24 screws required to mount the slider rails and fabric interconnect to the rack.

Before you begin

- You have inspected the fabric interconnect shipment to ensure that you have everything ordered.
- Make sure that the fabric interconnect rack-mount kit includes the following parts:
 - Front rack-mount brackets (2)
 - Rear rack-mount brackets (2)
 - Slider rails (2)
 - M4 x 0.7 x 8-mm Phillips countersink screws (12)
- The rack is installed and secured to its location.

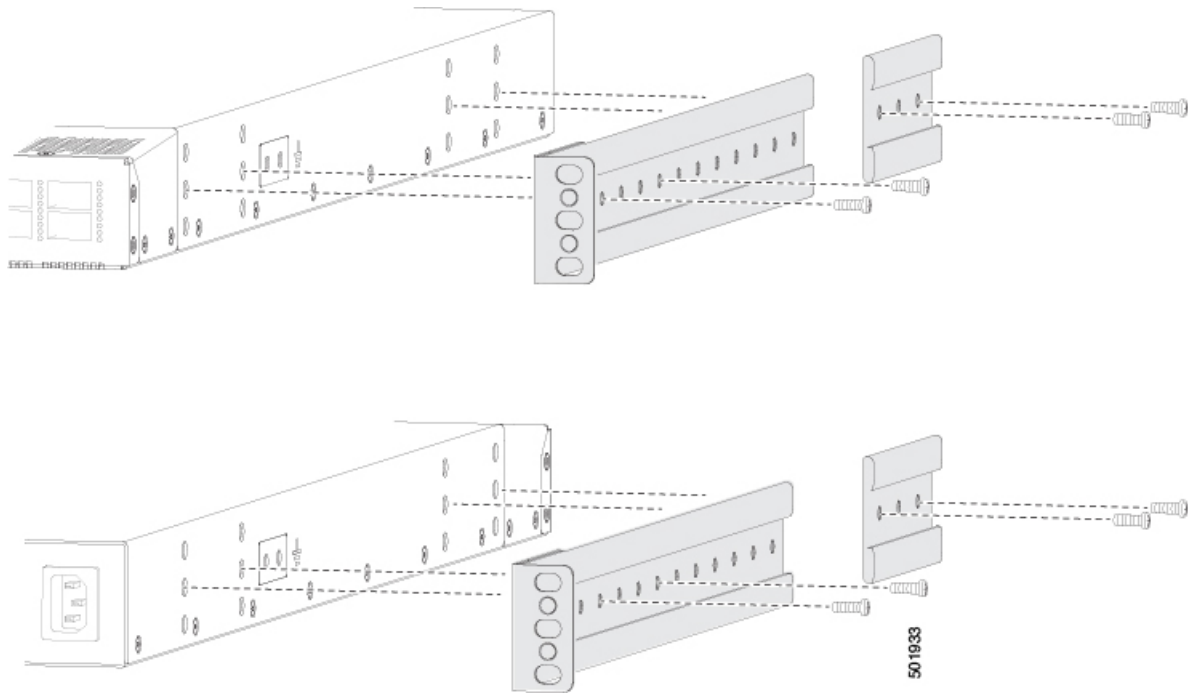
Procedure

Step 1

Install two front rack-mount brackets and the two rear rack-mount brackets to the fabric interconnect as follows:

- a) Position the fabric interconnect so that its fan and power supply modules will be in the cold aisle.
- b) Position the front rack-mount bracket and the rear rack-mount bracket so that its screw holes are aligned to the screw holes on the side of the chassis.

Note You can align the holes in the rack-mount bracket to the holes on the side of the chassis (see the two ways to mount these brackets on a typical chassis, in following figure). The holes that you use depend on the requirements of your rack and the amount of clearance required for interface cables (3 inches [7.6 mm] minimum) and module handles (1 inch [2.5 mm] minimum).



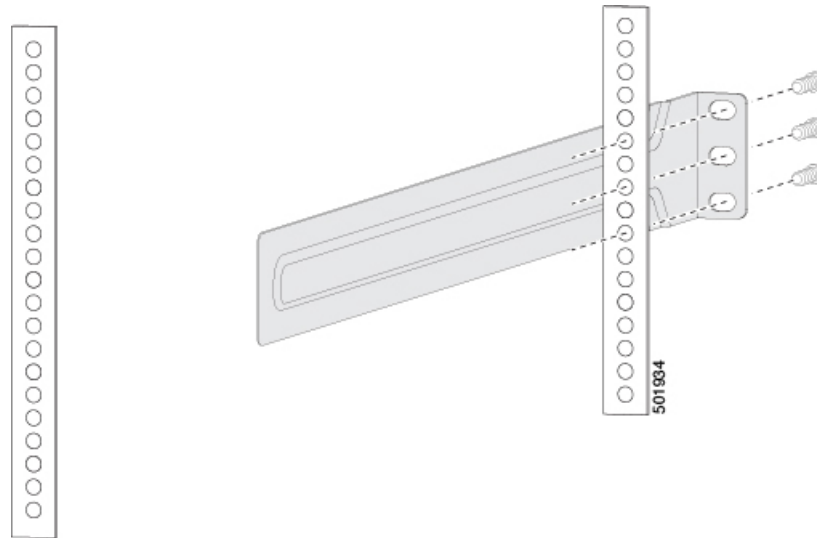
- c) Secure the front-mount bracket and the back-mount bracket to the chassis using four M4 screws and tighten each screw to 12 in-lb (1.36 N·m) of torque.
- d) Repeat Step 1 for the other front rack-mount bracket and the other back-mount bracket on the other side of the fabric interconnect and be sure to position that bracket the same distance from the front of the fabric interconnect.

Note Depending on the chassis depth, the back rack-mount bracket may not fit. In that case the back rack-mount bracket is not needed.

Step 2 If you are not installing the chassis into a grounded rack, you must attach a customer-supplied grounding wire to the chassis as explained in the [Grounding the Fabric Interconnect, on page 23](#) section. If you are installing the chassis into a grounded rack, you can skip this step.

Step 3 Install the slider rails on the rack or cabinet as follows:

- a) Determine which two posts of the rack or cabinet you should use for the slider rails. Of the four vertical posts in the rack or cabinet, two will be used for the front mount brackets attached to the easiest accessed end of the chassis, and the other two posts will have the slider rails.
- b) Position a slider rail at the desired level on the back side of the rack and use 12-24 screws or 10-32 screws, depending on the rack thread type, to attach the rails to the rack (see the following figure). Tighten 12-24 screws to 30 in-lb (3.39 N·m) of torque and tighten 10-32 screws to 20 in-lb (2.26 N·m) of torque.



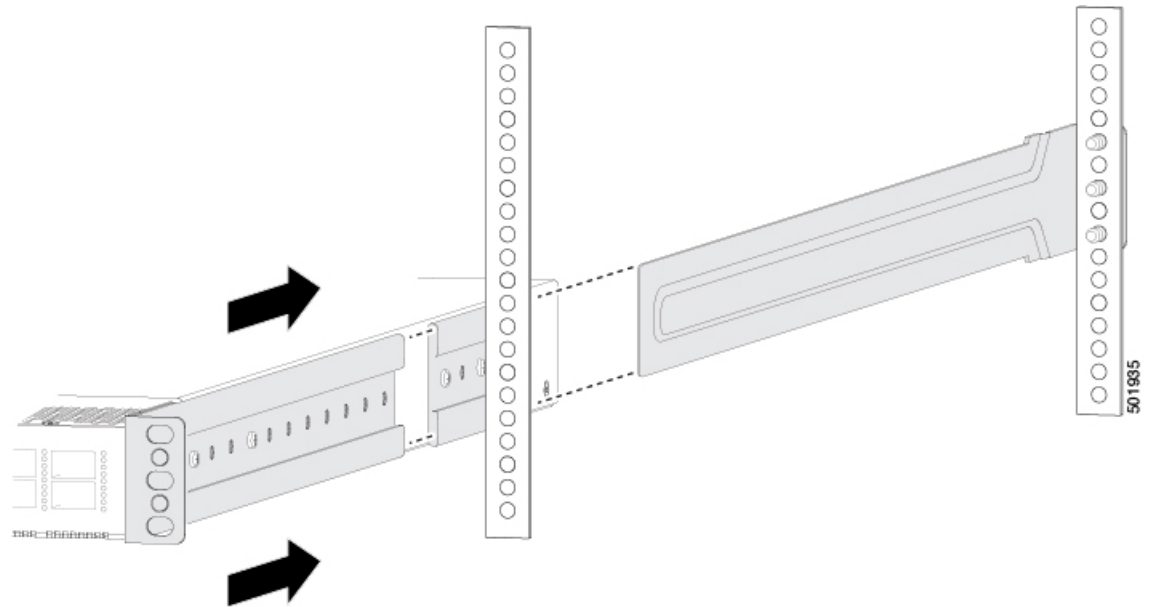
- c) Repeat Step 3 to attach the other slider rail to the other side of the rack.

To make sure that the slider rails are at the same level, you should use a level tool, tape measure, or carefully count the screw holes in the vertical mounting rails.

Step 4

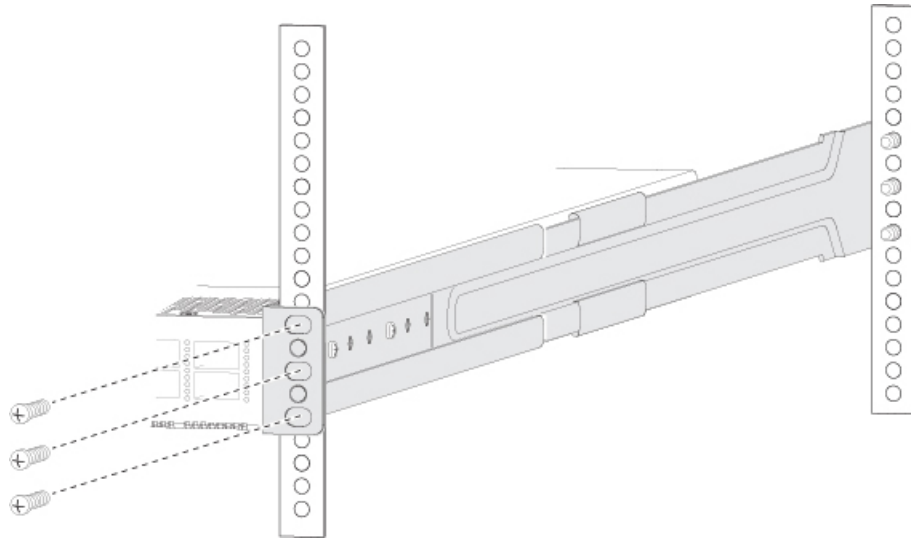
Insert the fabric interconnect into the rack and attach it as follows:

- a) Holding the fabric interconnect with both hands, position the two rear rack-mount brackets on the fabric interconnect between the rack or cabinet posts that do not have slider rails attached to them (see the following figure).



- b) Align the two rear rack-mount guides on either side of the fabric interconnect with the slider rails installed in the rack. Slide the rack-mount guides onto the slider rails, and then gently slide the fabric interconnect all the way into the rack until the front rack-mount brackets come in contact with two rack or cabinet posts.

- c) Holding the chassis level, insert screws (12-24 or 10-32, depending on the rack type) in each of the two front rack-mount brackets (using a total of six screws) and into the cage nuts or threaded holes in the vertical rack-mounting rails (see the following figure).



- d) Tighten the 10-32 screws to 20 in-lb (2.26 N·m) or tighten the 12-24 screws to 30 in-lb (3.39 N·m).

Step 5

If you attached a grounding wire to the chassis grounding pad, connect the other end of the wire to the facility ground.

Grounding the Fabric Interconnect

The fabric interconnect chassis is automatically grounded when you properly install the fabric interconnect in a grounded rack with metal-to-metal connections between the fabric interconnect and rack.



Note An electrical conducting path shall exist between the product chassis and the metal surface of the enclosure or rack in which it is mounted or to a grounding conductor. Electrical continuity shall be provided by using thread-forming type mounting screws that remove any paint or non-conductive coatings and establish a metal-to-metal contact. Any paint or other non-conductive coatings shall be removed on the surfaces between the mounting hardware and the enclosure or rack. The surfaces shall be cleaned and an antioxidant applied before installation.

You can also ground the chassis, which is required if the rack is not grounded, by attaching a customer-supplied grounding cable. Attach the cable to the chassis grounding pad and the facility ground.



Warning Statement 1024—Ground Conductor

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



Warning Statement 1046—Installing or Replacing the Unit

To reduce risk of electric shock, when installing or replacing the unit, the ground connection must always be made first and disconnected last.

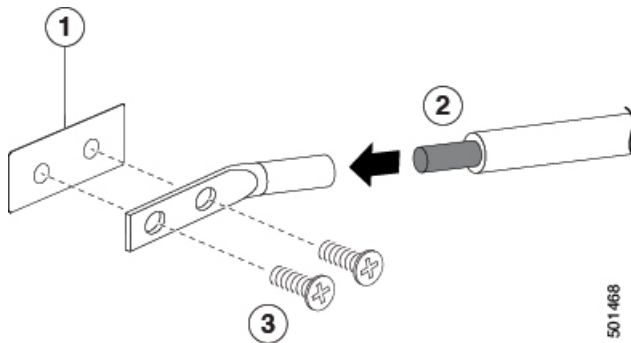
Before you begin

Before you can ground the chassis, you must have a connection to the earth ground for the data center building.

Procedure

Step 1 Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire. We recommend 6-AWG wire for the U.S. installations.

Step 2 Insert the stripped end of the grounding wire into the open end of the grounding lug. Use a crimping tool to crimp the lug to the wire, see the following figure. Verify that the ground wire is securely attached to the grounding lug by attempting to pull the wire out of the crimped lug.



| | | | |
|---|---|---|---|
| 1 | Chassis grounding pad | 3 | 2 M4 screws are used to secure the grounding lug to the chassis |
| 2 | Grounding cable, with 0.75 in. (19 mm) of insulation that is stripped from one end, which is inserted into the grounding lug and crimped in place | | |

Step 3 Secure the grounding lug to the chassis grounding pad with two M4 screws, see the previous figure. Tighten the screws to 11 to 15 in-lb (1.24 to 1.69 N·m) of torque.

Step 4 Prepare the other end of the grounding wire and connect it to the facility ground.

Starting the Fabric Interconnect

You start the fabric interconnect by connecting it to its dedicated power source. If you need $n+1$ redundancy, you must connect each of the power supplies to one or two power sources. If you need $n+n$ redundancy, you must connect each power supply in a fabric interconnect to a different power source.



Note This equipment is designed to boot up in less than 30 minutes, dependent on its neighboring devices being fully up and running.

Before you begin

- The fabric interconnect must be installed and secured to a rack or cabinet.
- The fabric interconnect must be adequately grounded.
- The rack must be close enough to the dedicated power source so that you can connect the fabric interconnect to the power source by using a designated power cables.
- You have the designated power cables for the power supplies that you are connecting to the dedicated power sources.



Note Depending on the outlet receptacle on your AC power distribution unit, you might need an optional jumper power cord to connect the fabric interconnect to your outlet receptacle.

- The fabric interconnect is not connected to the network (this includes any management or interface connections).
- The fan and power supply modules are fully secured in their chassis slots.

Procedure

- Step 1** For each AC power supply, do the following:
- a) Using the recommended AC power cable for your country or region, connect one end to the AC power supply.
 - b) Connect the other end of the power cable to the AC power source.
- Step 2** Verify that the power supply LED is on and green.
- Step 3** Listen for the fans; they should begin operating when the power supply is powered.
- Step 4** After the fabric interconnect boots, verify that the following LEDs are lit:
- On the fan modules, the Status (STA or STS) LED is green.
If a fan module Status LED is not green, try reinstalling the fan module.
 - After initialization, the fabric interconnect chassis Status (labeled as STA or STS) LED is green.

- Step 5** Verify that the system software has booted, and the fabric interconnect has initialized without error messages. A setup utility automatically launches the first time that you access the fabric interconnect and guides you through the basic configuration.
-



CHAPTER 4

Connecting the Fabric Interconnect

This chapter contains the following topics:

- [Overview of Network Connections, on page 27](#)
- [Connecting a Console to the Fabric Interconnect, on page 28](#)
- [Setting Up the Management Interface, on page 29](#)
- [Connecting Interface Ports to Other Devices, on page 29](#)
- [Fabric Interconnect Configuration, on page 30](#)
- [Migrating a Cisco 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect, on page 32](#)

Overview of Network Connections

After you install the fabric interconnect in a rack and power it up, you are ready to make the following network connections:

- **Console connection**—This is a direct local management connection that you use to initially configure the fabric interconnect. You must make this connection first to initially configure the fabric interconnect and determine its IP address, which is needed for the other connections.
- **Management connection**—After you complete the initial configuration using a console, you can make this connection to manage all future fabric interconnect configurations.
- **Uplink and downlink interface connections**—These are connections to hosts and servers in the network.

Each of these connection types is explained in one of the sections that follow.



Note When running cables in overhead or subfloor cable trays, we strongly recommend that you locate power cables and other potential noise sources as far away as practical from network cabling that terminates on Cisco equipment. In situations where long parallel cable runs cannot be separated by at least 3.3 feet (1 meter), we recommend that you shield any potential noise sources by housing them in a grounded metallic conduit.

Connecting a Console to the Fabric Interconnect

Before you create a network management connection for the fabric interconnect or connect the fabric interconnect to the network, you must create a local management connection through a console terminal. And then configure an IP address for the fabric interconnect. You can use the console to perform the following functions, each of which can be performed through the management interface after you make that connection:

- Configure the fabric interconnect using the command-line interface (CLI).
- Monitor network statistics and errors.
- Configure Simple Network Management Protocol (SNMP) agent parameters.
- Download software updates.

You make this local management connection between the asynchronous serial port on a supervisor module and a console device capable of asynchronous transmission. Typically, you can use a computer terminal as the console device. On the supervisor modules, you use the console serial port.



Note Before you can connect the console port to a computer terminal, make sure that the computer terminal supports VT100 terminal emulation. The terminal emulation software makes communication between the fabric interconnect and computer possible during setup and configuration.

Before you begin

- The fabric interconnect must be fully installed in its rack, which is connected to a power source, and grounded.
- The necessary cabling for the console, management, and network connections must be available.
 - An RJ-45 rollover cable provided in the fabric interconnect accessory kit.
 - Network cabling is routed to the location of the installed fabric interconnect.

Procedure

- Step 1** Configure the console device to match the following default port characteristics:
- 9600 baud
 - 8 data bits
 - 1 stop bit
 - No parity
- Step 2** Connect an RJ-45 rollover cable to the console port on the fabric interconnect. You can find this cable in the accessory kit.

- Step 3** Route the RJ-45 rollover cable to the console or modem.
- Step 4** Connect the other end of the RJ-45 rollover cable to the console or to a modem.
-

Setting Up the Management Interface

The RJ-45 and/or SFP management ports provide out-of-band management, which enables you to use the command-line interface (CLI) to manage the fabric interconnect by its IP address. You can use one of these ports depending on the cable and connectors that you are using to connect the management interface to the network.

Before you begin

- The fabric interconnect must be powered on.
- The fabric interconnect must be initially configured using a console.

Procedure

- Step 1** Connect the management cable with RJ-45 connectors into the management port on the fabric interconnect.
- Note** Use only one of these management ports—the fabric interconnect does not support the use of both management ports.
- Step 2** Connect the other end of the cable to a 10/100/1000 RJ-45 port on a network device.
-

Connecting Interface Ports to Other Devices

Connections and Transceivers

After you perform the initial configuration for the fabric interconnect and create a management connection, you are ready to connect the interface ports on the fabric interconnect to other devices. Depending on the types of interface ports on the fabric interconnect, you will need to use interface cables with QSFP28, QSFP+, SFP+, SFP transceivers, or RJ-45 connectors to connect the fabric interconnect to other devices.



- Note** If you need to use SFP+ or SFP transceivers in a QSFP+ or QSFP28 uplink port, install a QSFP-to-SFP adapter, such as the CVR-QSFP-SFP10G adapter, in the QSFP port and then install the SFP+ or SFP transceiver. The fabric interconnect automatically sets the port speed to the speed of the installed transceiver.
-

If the transceivers that you are using can be separated from their optical cables, install the transceivers without their cables before inserting the cables into the transceivers. This helps to prolong the life of both the transceiver and cables. When removing transceivers from the fabric interconnect, it is best to remove the optical cable first and then remove the transceiver.

To determine which transceivers, adapters, and cables are supported by this fabric interconnect, see the [Cisco Transceiver Modules Compatibility](#) Information document.

Connections and Peer Devices

The Fabric Interconnect connects to peer devices through the following ways:

- IOMs and IFMs in the UCS B series blade chassis systems and UCS X Series compute node systems.
- FEX modules in the UCS C Series rack servers.
- Direct-connection in the UCS C Series rack servers.

Fabric Interconnect Configuration

Cisco UCS 6500 Series Fabric Interconnect can be configured and managed using a supported Cisco management platforms, such as Cisco Intersight management platform in Intersight Managed Mode (Cisco Intersight Managed Mode). For details, see the *Cisco Intersight Managed Mode Configuration Guide*, which is available at the following URL: [Cisco Intersight Managed Mode Configuration Guide](#) .

Fabric Interconnect Port Configuration

Port Types

The Cisco UCS 6500 Series Fabric Interconnect has the following ports which shall be configured through supported Cisco management platforms:

- Server port: Port connected to the adapter in a UCS B-series or C-series server. This is typically a converged port that can carry Ethernet and FCoE traffic.
- Uplink port: Also called as border-port. An uplink port is an Ethernet port connecting to a northbound LAN aggregation switch.
- FC Uplink port: A FC port that is connected to an uplink FC fabric. For example, an FC interface of the MDS switch.
- FCoE Uplink port: An FCoE port that is connected to an uplink FCoE fabric. For example, an FCoE interface of the MDS switch.
- Appliance port: An Ethernet server-port that is directly connected to disk array. This configuration requires FI to be in Ethernet-End-Host-Mode.
- Unified Storage port: This is an Ethernet server-port that can also support FCoE and is directly connected to a disk-array. This support FCoE, iSCSI, NFS and CIFS (for example NetApp storage and the unified target adapter). Note that this port is also called as Unified Appliance Port.



Note FCoE Storage ports are not supported.

- Monitor port: The port supporting SPAN.

Port Configuration

The following table shows the port types that can be configured. For port type definitions, see the preceding section.

| Chassis Port | Port Speed | Supported Port Type | |
|---------------|------------------|---------------------|--|
| 1 through 32 | 10G/25G/40G/100G | Native Ethernet | <ul style="list-style-type: none"> • Ethernet Uplink Port • FCoE uplink port • Appliance port (EHM only) • Monitor Port |
| 9 and 10 | 1G | Native Ethernet | Ethernet Uplink Port |
| 1 through 36 | 25G/40G/100G | Native Ethernet | Server Ports |
| 33 through 36 | 8G/16G/32G | Native FC | <ul style="list-style-type: none"> • FC uplink port • FC Storage port <p>Note All 4 FC Breakout Ports of a QSFP port must be configured at 32G, 16G, or 8G. So, in other words, FC breakout ports of the same QSFP port cannot have different speeds.</p> |
| | 100G/40G/10G/25G | Native Ethernet | <ul style="list-style-type: none"> • Ethernet Uplink Port • Server port • FCoE uplink port • Appliance port (EHM only) • Monitor Port |

Port Breakout

Port breakout is supported with the following configurations.

| Breakout Level | Ports 1 through 8 (QSFP28) | Ports 9 - through 36 (QSFP28) |
|----------------------------------|----------------------------|---|
| 4x8G FC | No | Yes on ports 33 through 36 only |
| 4x16G FC | No | Yes on ports 33 through 36 only |
| 4x32G FC | No | Yes on ports 33 through 36 only |
| 1x100G | Yes | Yes |
| 4x10G | Yes | Yes |
| 4x25G | Yes | Yes |
| 1x40G | Yes | Yes |
| 1x25G (Cisco QSA28 with SFP28) | Yes (QSA28) | Yes (QSA28) |
| 1x10G QSA or QSA28 with SFP+ | Yes (QSA28) | Yes (QSA28) |
| 1G (Cisco QSA with SFP and SFP+) | No | Yes, ports 9 and 10 only Ports 11 through 36, no |

Migrating a Cisco 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect

Migrating from a Cisco 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect is supported.

Cisco Intersight Managed Mode is required to migrate to 6500 Series Fabric Interconnects.

To migrate from a Cisco UCS 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect, refer to "Migrating to Cisco UCS 6500 Series Fabric Interconnects" in the [Cisco Intersight Managed Mode Configuration Guide](#).



CHAPTER 5

Replacing the Fabric Interconnect

This chapter contains the following topics:

- [Replacing the Fabric Interconnect, on page 33](#)

Replacing the Fabric Interconnect

Through Intersight Managed Mode, fabric interconnects can be configured and managed as a pair of peer systems in a UCS domain.

In a UCS domain, both fabric interconnects are active and share connection to other resources. When you remove one fabric interconnect, connectivity and data fails over to the other active fabric interconnect in the domain.

Replacing a fabric interconnect that is managed by Cisco Intersight Managed Mode (IMM) is a straight forward process that occurs by selecting the fabric interconnect(s) and using either of the following Replace options to start the replacement workflow.

- For single fabric interconnect replacement, use the Replace Fabric Interconnect option, which is available by selecting the fabric interconnect to be replaced.
- For dual-fabric interconnect replacement in a UCS domain, use the Replace UCS Domain option, which is available by selecting either of the fabric interconnects to be replaced.

Use the following topics to replace a fabric interconnect. When you receive your new system, install it by following the instructions in [Installing the Fabric Interconnect, on page 17](#).

Preparing a Single Fabric Interconnect for Removal, Intersight

Use Cisco IMM to perform the following task.

Procedure

Ensure that the fabric interconnect you will add has no configuration information.

- a) If you are installing a new fabric interconnect from the factory, go to [Replacing a Single Fabric Interconnect, Intersight, on page 34](#).

- b) If you are using a fabric interconnect that was previously configured, erase configuration on the fabric interconnect.

Through the fabric interconnect CLI, you can use the **erase configuration** command.

What to do next

Go to [Replacing a Single Fabric Interconnect, Intersight, on page 34](#)

Replacing a Single Fabric Interconnect, Intersight

Use the following procedure when you need to replace a fabric interconnect with the same model of fabric interconnect.

Use Cisco UCS Intersight Managed Mode (IMM) to perform software tasks after the new fabric interconnect comes online. For more information, see "Upgrades and RMA of Servers and Fabric Interconnects" in the [Cisco Intersight Managed Mode Configuration Guide](#).



Note Verify that all vNICs are either redundant or that the fabric failover is enabled.

Procedure

-
- Step 1** Label the ports and the cables that you are using so that you can refer to this information later. You should use the same cabling and port numbering for the replacement fabric interconnect.
- Step 2** Disconnect all the cable connections, including servers, FEX fabrics, and blade chassis, from the old fabric interconnect.
- Step 3** Power down the fabric interconnect by unplugging it from the power source.
- Step 4** Remove the fabric interconnect from the rack. Follow the instructions in [Removing a Cisco UCS Fabric Interconnect From a Rack, on page 39](#).
- Step 5** Install the replacement fabric interconnect into the rack. Follow the instructions in [Installing the Fabric Interconnect, on page 17](#).
- Step 6** Connect all the cable connections, including servers, FEX fabrics, and blade chassis, from the old fabric interconnect to the new fabric interconnect.
- Connect the L1/L2 cables that were disconnected to the replacement fabric interconnect.
 - Connect the data cable according to the labels that you created in Step 2.
 - Connect the power cable to the fabric interconnect and it will automatically boot and run POST tests.
- Step 7** Complete the Basic System Configuration Dialog for the new fabric interconnect, replying to the dialog's prompts as necessary.
- For an example of the Basic System Configuration Dialog, see [Configuring Fabric Interconnect B Using the Console](#).
- If there is no explicit upgrade required, the newly replaced fabric interconnect syncs the system, management plugin, and device connector images with the peer fabric interconnect while the Basic System Configuration Dialog runs after you answer the prompts.

- If an explicit upgrade is required, proceed to the next step.

Step 8 If necessary, upgrade the software bundles so that the fabric interconnects are in sync.

The Basic System Configuration Dialog will prompt you if updates are required.

Example:

```
---- Basic System Configuration Dialog ----
```

```
This setup utility will guide you through the basic configuration of
the system. Only minimal configuration including IP connectivity to
the Fabric interconnect and its clustering mode is performed through
these steps.
```

```
Type Ctrl-C at any time to abort configuration and reboot system.
To back track or make modifications to already entered values,
complete input till end of section and answer no when prompted
to apply configuration.
```

```
Enter the configuration method. (console/gui) ? console
```

```
Installer has detected the presence of a peer Fabric interconnect.
This Fabric interconnect will be added to the cluster. Continue (y/n) ? y
```

```
Enter the admin password of the peer Fabric interconnect:
Connecting to peer Fabric interconnect... done
Retrieving config from peer Fabric interconnect... done
Management Mode is : intersight
```

```
Local Fabric Interconnect
Kickstart version      : 9.3(5)I42(1b)
Management Plugin version : 1.0.9-255
local_model_no        : UCS-FI-6536
```

```
Peer Fabric Interconnect
Kickstart version      : 9.3(5)I42(1b)
Management Plugin version : 1.0.9-281
local_model_no        : UCS-FI-6536
```

```
Do you wish to update firmware on this Fabric Interconnect to the
Peer's version? (y/n): y
Updating firmware of Fabric Interconnect..... [ Please don't press Ctrl+c while
updating firmware ]
```

```
Updating images
Please wait for firmware update to complete...
```

```
<output truncated>
```

Step 9 Allow the new fabric interconnect to come online.

Step 10 In IMM, find the fabric interconnect that you removed in the Fabric Interconnects list.

Step 11 In the Fabric Interconnects list, click the checkbox to select the fabric interconnect that you removed.

Step 12 Click the Replace Fabric Interconnect icon.

This step starts the Replace workflow, which guides you through decommissioning the fabric interconnect.

Step 13 Follow the workflow to completion.

- Step 14** When the workflow is completed:
- Verify that the Domain Profile is deployed.
 - Check that all discovery and inventory workflows are triggered and successful.
 - Verify that the Server Profile is deployed.
 - Verify that the Chassis Profile is deployed.
 - Ensure that all the correct switch policies are configured.
 - Verify that all required ports, port channels, virtual Ethernet and virtual Fibre Channel interfaces are configured and up on both fabric interconnects.
 - Verify that the removed fabric interconnect is deleted from the Fabric Interconnects list.
 - Verify that end-to-end Ethernet connectivity is up.
 - Verify that end-to-end Fibre Channel connectivity is up.
 - Verify that you can launch a virtual KVM session.
-

Preparing Fabric Interconnects in a UCS Domain For Removal, Intersight

Use Cisco IMM to perform the following tasks:

Procedure

Ensure that the fabric interconnects you will add have no configuration information.

- If you are installing new fabric interconnects from the factory, go to [Replacing Fabric Interconnects in a UCS Domain, Intersight, on page 36](#).
- If you are using fabric interconnects that were previously configured, erase the configuration on both fabric interconnects.

Through the fabric interconnect CLI, you can use the **erase configuration** command.

Replacing Fabric Interconnects in a UCS Domain, Intersight

Use the following procedure when you need to replace a pair of fabric interconnects in the same domain that are the same model of fabric interconnect. For example, a Cisco UCS 6400 Series Fabric Interconnect cannot be paired with a Cisco UCS 6500 Series Fabric Interconnect in the same domain.

In a domain, each fabric interconnect operate as an active online system, not as one live systems and one standby system. If needed, this documentation will differentiate the fabric interconnects by naming them fabric interconnect A and fabric interconnect B.

Use Cisco UCS Intersight Managed Mode (IMM) to perform software tasks after the new fabric interconnects come online. For more information, see "Upgrades and RMA of Servers and Fabric Interconnects" in the [Cisco Intersight Managed Mode Configuration Guide](#).



Note Verify that all vNICs are either redundant or that the fabric failover is enabled.

Procedure

- Step 1** Label the ports and the cables that you using so that you can refer to this information later. The cabling and port numbering should be same for the replacement fabric interconnects.
- Step 2** Disconnect all the cable connections, including servers, FEX fabrics, and blade chassis, from the old fabric interconnects.
- Step 3** Power down the fabric interconnects by unplugging it from the power source.
- Step 4** Remove the fabric interconnects from the rack. Follow the instructions in [Removing a Cisco UCS Fabric Interconnect From a Rack, on page 39](#).
- Step 5** Install the replacement fabric interconnects into the rack. Follow the instructions in [Installing the Fabric Interconnect, on page 17](#).
- Step 6** Connect all the cable connections, including servers, FEX fabrics, and blade chassis, from the old fabric interconnects to the new fabric interconnects.
- Connect the L1/L2 cables that were disconnected to the replacement fabric interconnects.
 - Connect the data cable according to the labels that you created in Step 2.
 - Connect the power cable to the fabric interconnects, and it will automatically boot and run POST tests.
- Step 7** Complete the Basic System Configuration Dialog for the new fabric interconnects, replying to the dialog's prompts as necessary.

Important When configuring two fabric interconnects in the same UCS domain, make sure to configure the same IP address and domain name.

For an example of the Basic System Configuration Dialog, see [Configuring Fabric Interconnect B Using the Console](#).

- If there is no explicit upgrade required, the newly replaced fabric interconnects can be upgraded through IMM after they are claimed by Intersight, but before the RMA workflow is activated.
- If an explicit upgrade is required, you can perform the upgrade through IMM after the fabric interconnects are claimed by IMM.

- Step 8** Complete the Basic System Configuration Dialog for the new fabric interconnect pair.

Important When configuring two fabric interconnects in the same cluster, make sure to configure the same IP address and domain name.

- Step 9** If necessary, upgrade the software bundles so that the fabric interconnects are in sync.

Example:

```
---- Basic System Configuration Dialog ----
```

```
This setup utility will guide you through the basic configuration of
the system. Only minimal configuration including IP connectivity to
the Fabric interconnect and its clustering mode is performed through
these steps.
```

```
Type Ctrl-C at any time to abort configuration and reboot system.
To back track or make modifications to already entered values,
complete input till end of section and answer no when prompted
to apply configuration.
```

```

Enter the configuration method. (console/gui) ? console

Installer has detected the presence of a peer Fabric interconnect.
This Fabric interconnect will be added to the cluster. Continue (y/n) ? y

Enter the admin password of the peer Fabric interconnect:
Connecting to peer Fabric interconnect... done
Retrieving config from peer Fabric interconnect... done
Management Mode is : intersight

Local Fabric Interconnect
Kickstart version      : 9.3(5)I42(1b)
Management Plugin version : 1.0.9-255
local_model_no        : UCS-FI-6536

Peer Fabric Interconnect
Kickstart version      : 9.3(5)I42(1b)
Management Plugin version : 1.0.9-281
local_model_no        : UCS-FI-6536

Do you wish to update firmware on this Fabric Interconnect to the
Peer's version? (y/n): y
Updating firmware of Fabric Interconnect..... [ Please don't press Ctrl+c while
updating firmware ]

Updating images
Please wait for firmware update to complete...

<output truncated>

```

- Step 10** Allow the new fabric interconnects to come online.
- Step 11** Claim the new fabric interconnect pair to Intersight.
- Step 12** In IMM, in the Fabric Interconnects list, find both fabric interconnects that you replaced.
- Step 13** Click the checkbox for either of the fabric interconnects (not both) you are replacing in the domain.
- Step 14** Click the Replace UCS Domain Interconnect icon.
- This step starts the Replace workflow, which guides you through decommissioning the fabric interconnects.
- Step 15** Follow the workflow to completion.
- Step 16** When the workflow is completed:
- Verify that the Domain Profile is deployed for both fabric interconnects.
 - Check that all discovery and inventory workflows are triggered and successful for both fabric interconnects.
 - Verify that the Server Profile is deployed for both fabric interconnects.
 - Verify that the Chassis Profile is deployed for both fabric interconnects.
 - Ensure that all the correct switch policies are configured for both fabric interconnects.
 - Verify that all required ports, port channels, virtual Ethernet and virtual Fibre Channel interfaces are configured and up for both fabric interconnects.
 - Verify that both of the removed fabric interconnects are deleted from the Fabric Interconnects list.
 - Verify that end-to-end Ethernet connectivity is up for both fabric interconnects.
 - Verify that end-to-end Fibre Channel connectivity is up for both fabric interconnects.
 - Verify that you can launch a virtual KVM session on both fabric interconnects.

Removing a Cisco UCS Fabric Interconnect From a Rack



Caution Support both sides of the fabric interconnect when removing it from the rack. The slider rail and front rack-mount brackets do not have a stop mechanism. If the front of the chassis is unfastened from the rack and the chassis slides forward on the slider rails, it may slip off the end of the rails and fall out of the rack.

Procedure

-
- Step 1** Ensure that the weight of the Cisco UCS Fabric Interconnect is fully supported and that the chassis is being held by another person.
 - Step 2** Remove the two screws holding the grounding cable to the chassis (if installed).
 - Step 3** Disconnect the power cords and any console cables.
 - Step 4** Disconnect all cables that are connected to SFP28 transceivers.
 - Step 5** Remove the screws fastening the front rack-mount brackets to the mounting rails.
 - Step 6** Gently slide the Cisco UCS Fabric Interconnect toward you, off of the slider rails and out of the rack.
-

Repacking the Cisco UCS Fabric Interconnect for Return Shipment

If you need to return the fabric interconnect, remove the fabric interconnect from the rack and repack it for shipment. If possible, use the original packing materials and container to repack the unit. Contact your Cisco customer service representative to arrange for return shipment to Cisco.



CHAPTER 6

Replacing Components

This chapter contains the following topics:

- [Replacing a Fan Module, on page 41](#)
- [Replacing a Power Supply Module, on page 44](#)
- [Recycling the PCBA, on page 47](#)

Replacing a Fan Module

You can replace a fan module while the fabric interconnect is operating so long as you perform the replacement within one minute. If you cannot perform the replacement within one minute, leave the original fan module in the chassis to maintain the designed airflow until you have the replacement fan module on hand and can perform the replacement.

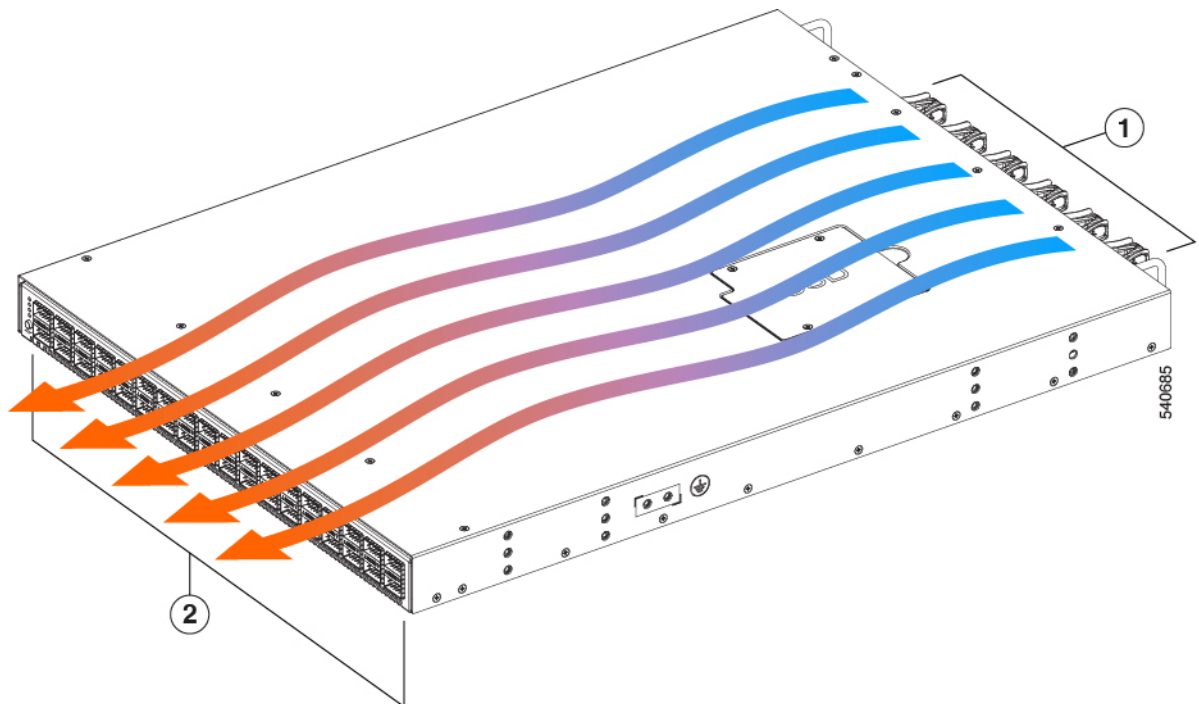


Caution

If you are replacing a module during operations, be sure that the replacement fan module has the correct direction of airflow, which means that it has the same airflow direction as the other modules in the chassis. Also, be sure that the airflow direction takes in air from a cold aisle and exhausts to a hot aisle. Otherwise, the fabric interconnect can overheat and shutdown.

If you are changing the airflow direction of all the modules in the chassis, you must shutdown the fabric interconnect before replacing all the fan and power supply modules with modules using the other airflow direction. During operations, all of the modules must have the same direction of airflow.

Fans intake air, blow it through the chassis, and exhausts heated air through the port side. Make sure to install fans correctly for proper airflow.



| | |
|---|------------------------|
| 1 | Fan side, intake air |
| 2 | Port side, exhaust air |

Removing a Fan Module



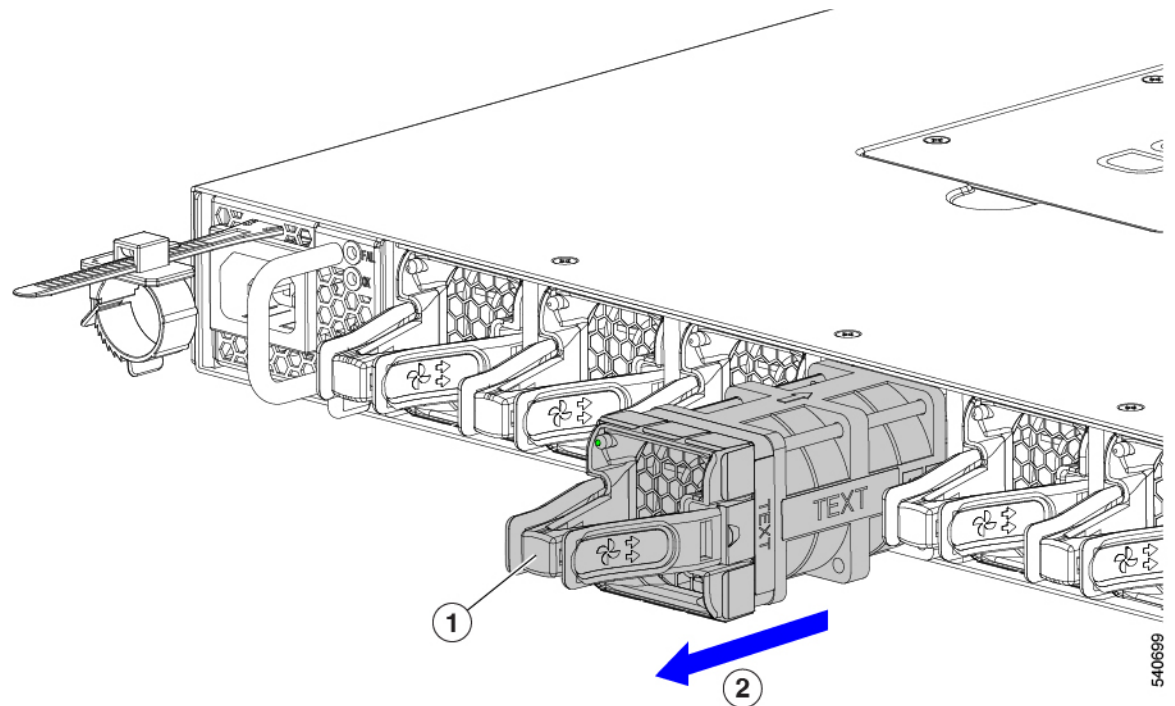
Warning The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

Procedure

Step 1 On the fan module that you are removing, press the two sides of the fan module handle next to where it connects to the fan module and pull on the handles enough to unseat it from its connectors.

Step 2 Holding the handle, pull the module out of the chassis.

Caution Do not touch the electrical connectors on the back side of the module and prevent anything else from coming into contact with and damaging the connectors.



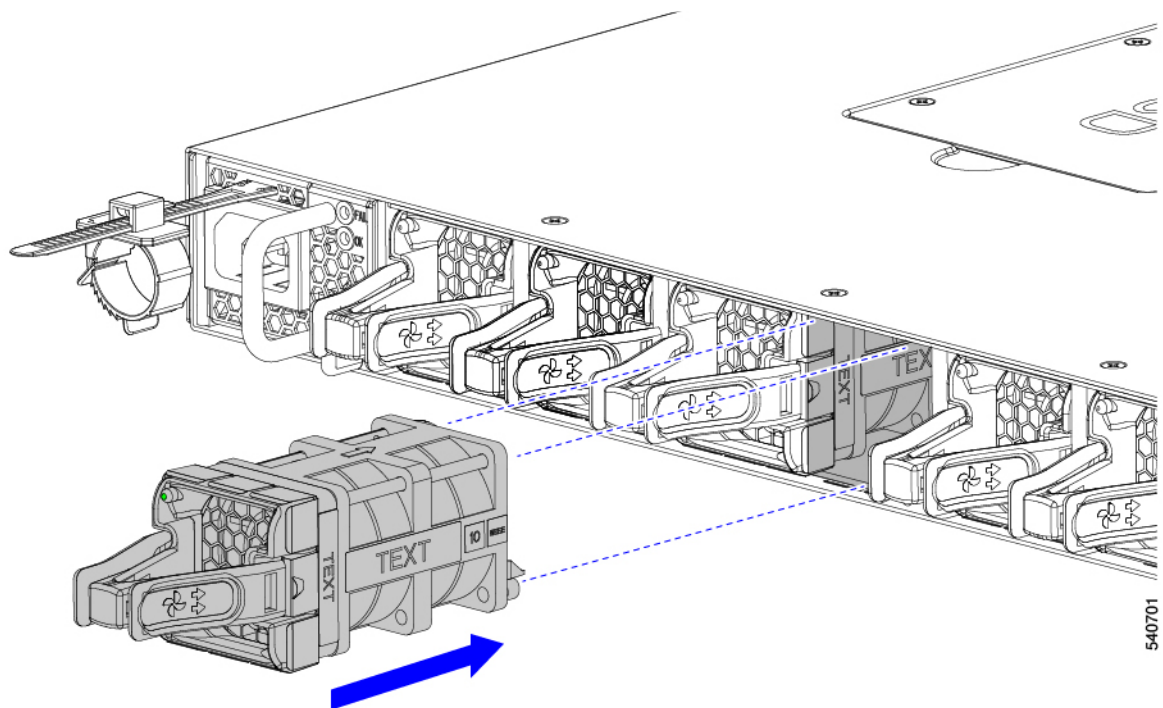
Installing a Fan Module

Before you begin

- A fan slot must be open and ready for the new fan module to be installed.
- You must have a new fan module on hand and ready to install within one minute of removing the original fan module if the fabric interconnect is operating.
- The new fan module must have the same airflow direction as the other fan and power supply modules installed in the fabric interconnect.

Procedure

- Step 1** Holding the fan module by its handle, align the back of the fan module (the side with the electrical connectors) to the open fan slot in the chassis.
- Step 2** Slide the fan module into the slot until it clicks in place.



Step 3 Verify that the Status LED turns on and becomes green.

Replacing a Power Supply Module

The fabric interconnect requires two power supplies for redundancy. With one power supply providing the necessary power for operations, you can replace the other power supply during operations so long as the new power supply has the same airflow direction as the other modules in the chassis.

You can replace a power supply with another supported power supply that has the same power source type and the same wattage rating as the other installed power supply. Additionally, the airflow direction of the power supply must match or conform to the airflow direction of the installed fan modules. For the airflow direction used by the fabric interconnect, see the coloring of the fan modules.

Removing an AC Power Supply

To remove an AC power supply, you must first disconnect the power cable and then remove the module from the chassis.

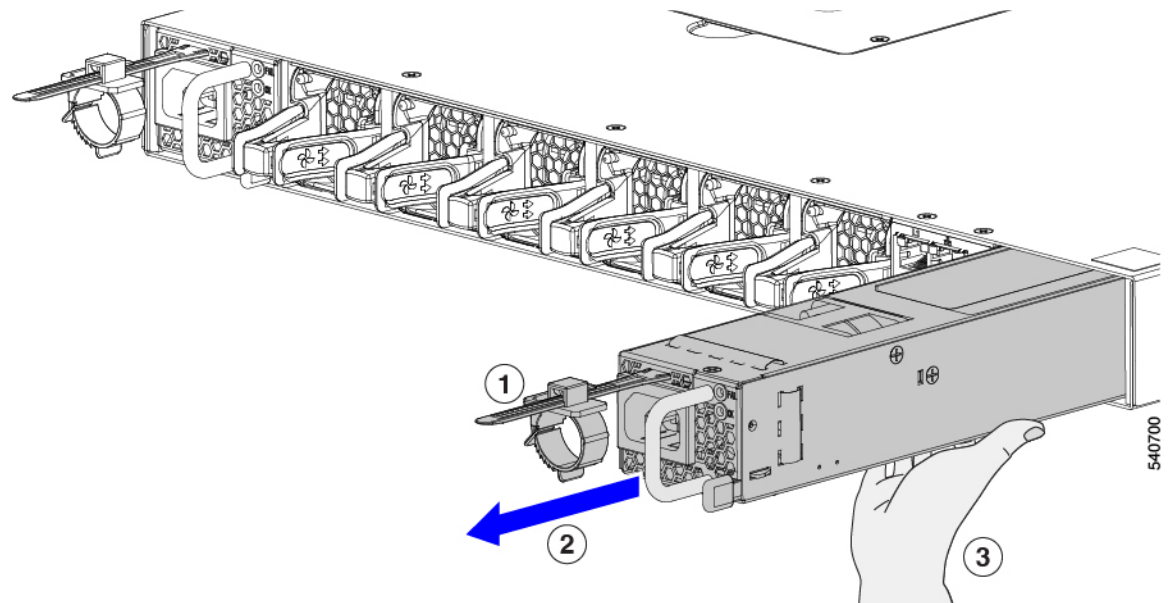
Before you begin

- To replace a power supply during operations, you must have a functioning power supply providing power to the fabric interconnect while you replace the other power supply. If there is only one power supply installed in the fabric interconnect and you need to replace it, install the new power supply in the open slot and power it up before removing the original power supply.

- Ensure that the chassis is grounded. For grounding instructions, see [Grounding the Fabric Interconnect](#), on page 23.

Procedure

- Step 1** Pull the power cord out from the power receptacle on the power supply to be removed and verify that the LED turns off (1 in the following illustration).
- Note** The LED might be on and amber colored to indicate that the input power has been disconnected.
- Step 2** Remove the power supply from the chassis by grasping the handle and pulling the power supply part way out of the chassis (2).
- Step 3** Place your other hand under the power supply to support it while you slide it out of the chassis (3).
Either place the power supply on an antistatic surface or pack it in its packing materials.



- Step 4** If the power supply slot is to remain empty, install a blank power supply filler panel (part number N2200-P-BLNK).

What to do next

You are ready to install the replacement power supply.

Installing an AC Power Supply

You can replace one power supply while the other one provides power to the fabric interconnect.

Before you begin

- The power supply that you are installing must be capable of using the same airflow direction as the fan trays installed in the same fabric interconnect and it must use the same type of power source as the other power supply installed in the same fabric interconnect.



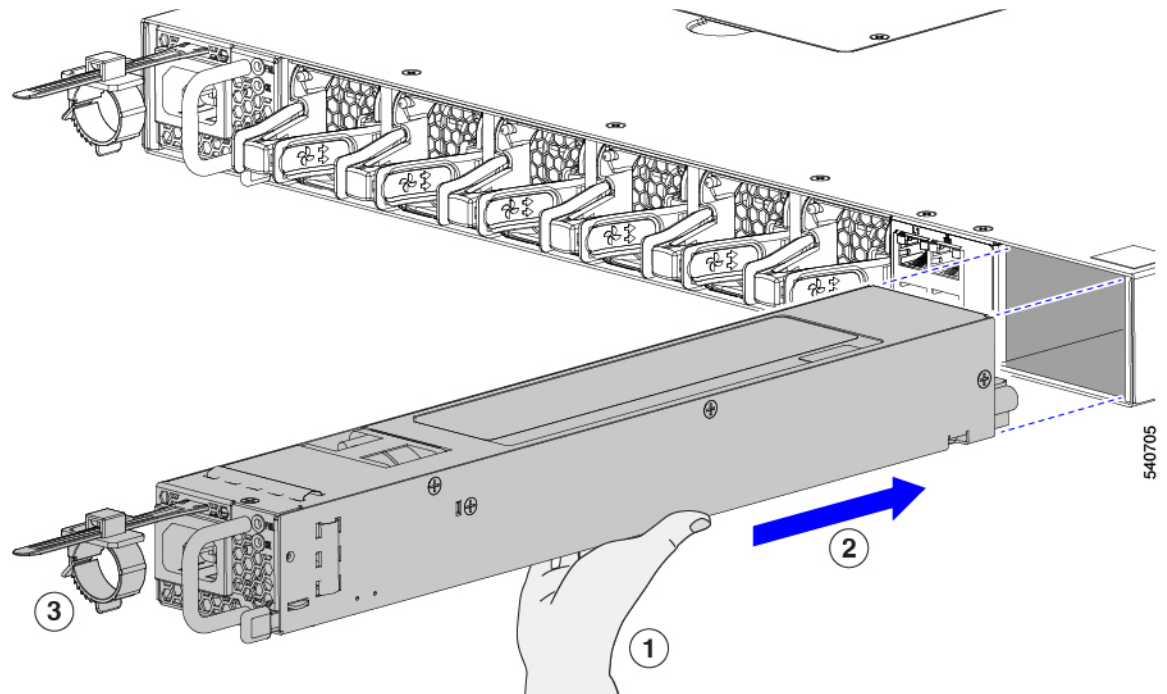
Note If the power supply that you are replacing has a different color handle than the replacement power supply, verify that it has or will have the same airflow direction as the other modules in the fabric interconnect.

- An AC power source must be within reach of the power cable that will be used with the replacement power supply. If you are using $n+n$ power redundancy, there must be a separate power source for each power supply installed in the chassis. Otherwise, only one power source is required.
- There must be an earth ground connection to the chassis that you are installing the replacement module. Typically, the chassis is grounded by its metal-to-metal connection with a grounded rack. If you need to ground the chassis, see [Grounding the Fabric Interconnect, on page 23](#).

Procedure**Step 1**

Holding the replacement power supply with one hand underneath the module (1 in the following illustration) and the other hand holding the handle, align the back end of the power supply (the end with the electrical connections) to the open power supply slot before carefully sliding the power supply all the way into the slot (2).

Note If the power supply does not fit into the open slot, turn the module over before sliding it carefully into the open slot.



- Step 2** Test the installation by trying to pull the power supply out of the slot without using the release latch. If the power supply does not move out of place, it is secured in the slot. If the power supply moves, carefully press it all the way into the slot until it clicks in place.
- Step 3** Attach the power cable to the electrical outlet on the front of the power supply (3).
- Step 4** Make sure that the other end of the power cable is attached to the appropriate power source for the power supply.
- Note** Depending on the outlet receptacle on your power distribution unit, you might need the optional jumper cable to connect the fabric interconnect to your outlet receptacle.
- Step 5** Verify that the power supply is operational by making sure that the power supply OK LED is green and the FAIL LED is dark.

Recycling the PCBA

The PCBA is secured to the fabric interconnect's sheet metal through the following:

- 32 M3 screws.
- Two M5 hex nuts.

You must disconnect the PCBA from the sheet metal before recycling the PCBA.

Before you begin



Note **For Recyclers Only!** This procedure is not a standard field-service option. This procedure is for recyclers who will be reclaiming the electronics for proper disposal to comply with local eco design and e-waste regulations.

To remove the printed circuit board assembly (PCBA), the following requirements must be met:

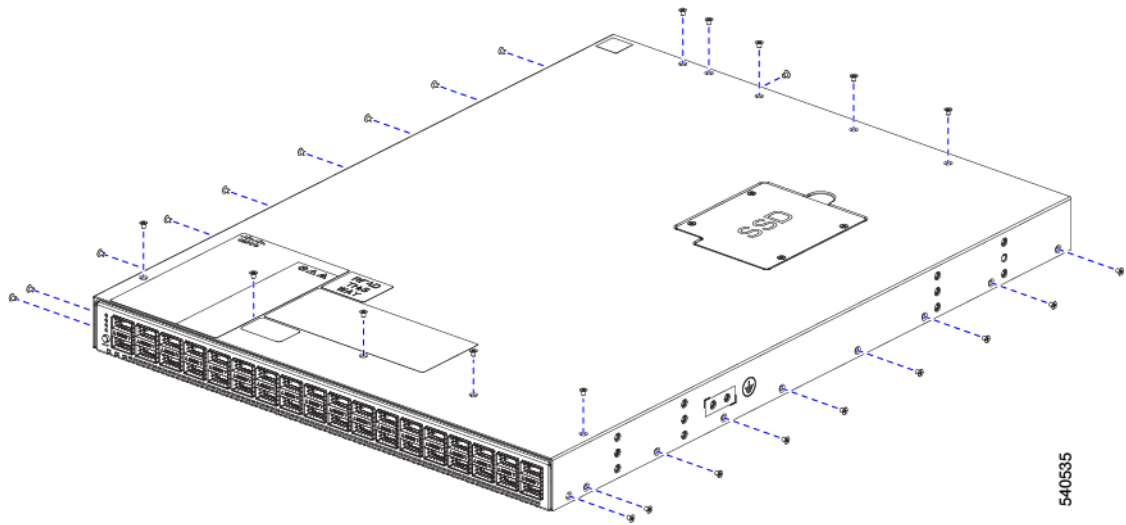
- The fabric interconnect must be disconnected from facility power.
- The fabric interconnect must be removed from the equipment rack.

Gather the following tools before you start this procedure:

- #2 Phillips screwdriver
- 8mm hex wrench

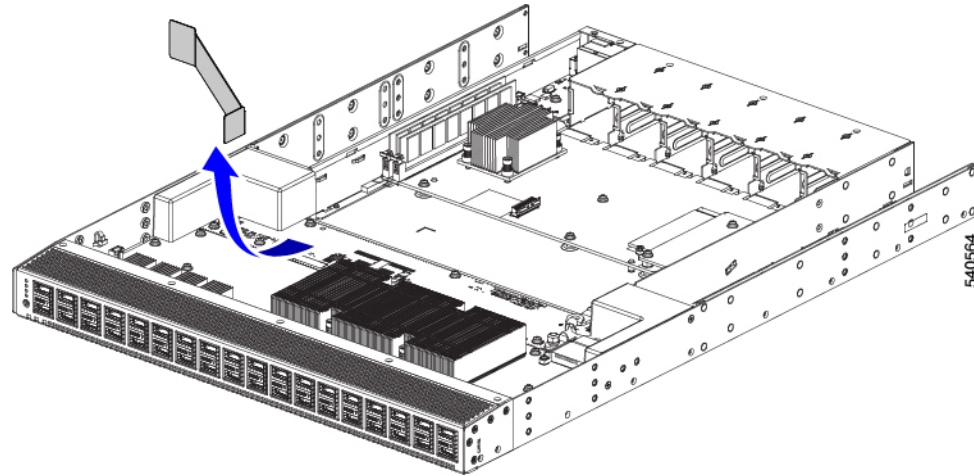
Procedure

- Step 1** Remove the power supply units (PSUs).
See [Removing a Fan Module, on page 42](#).
- Step 2** Remove the power supply units (PSUs).
See [Removing an AC Power Supply, on page 44](#)
- Step 3** Remove the cover.
- Using a #2 Phillips screwdriver, remove 29 countersink screws.
 - Lift the top cover off of the fabric interconnect.

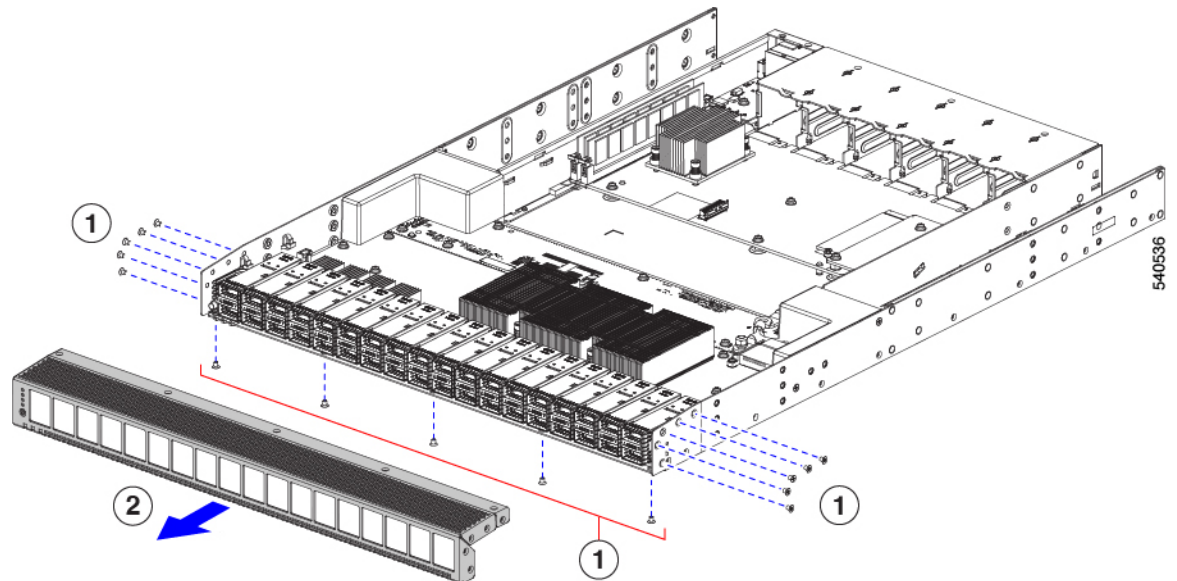


- Step 4** Grasp the center of the airflow baffle and pull it toward the port side of the fabric interconnect to remove it.

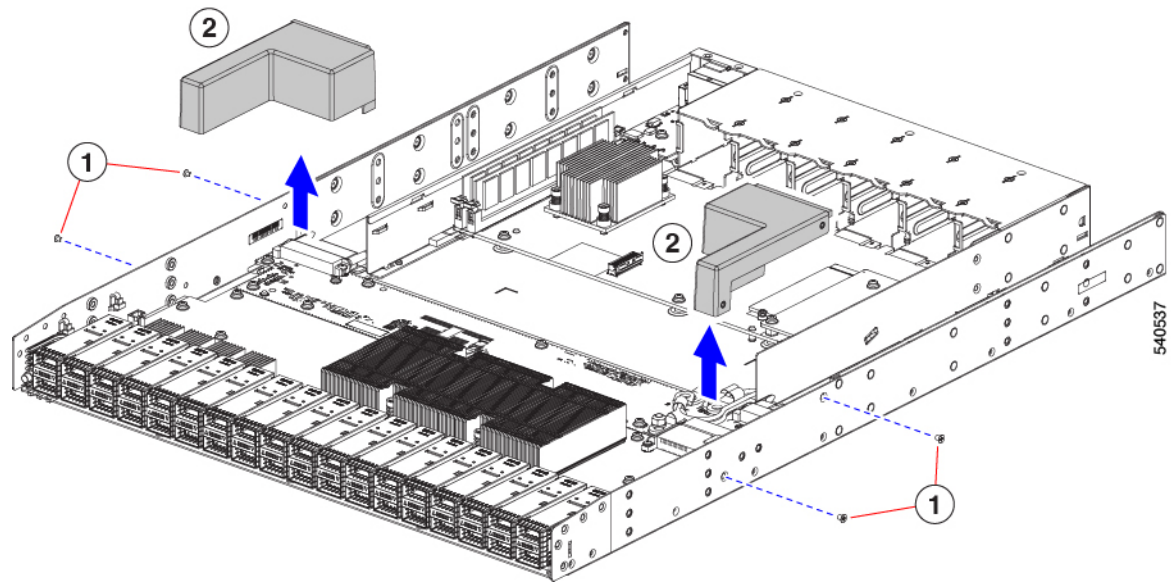
The airflow baffle is held in place by adhesive, so just apply enough force to break the adhesive.



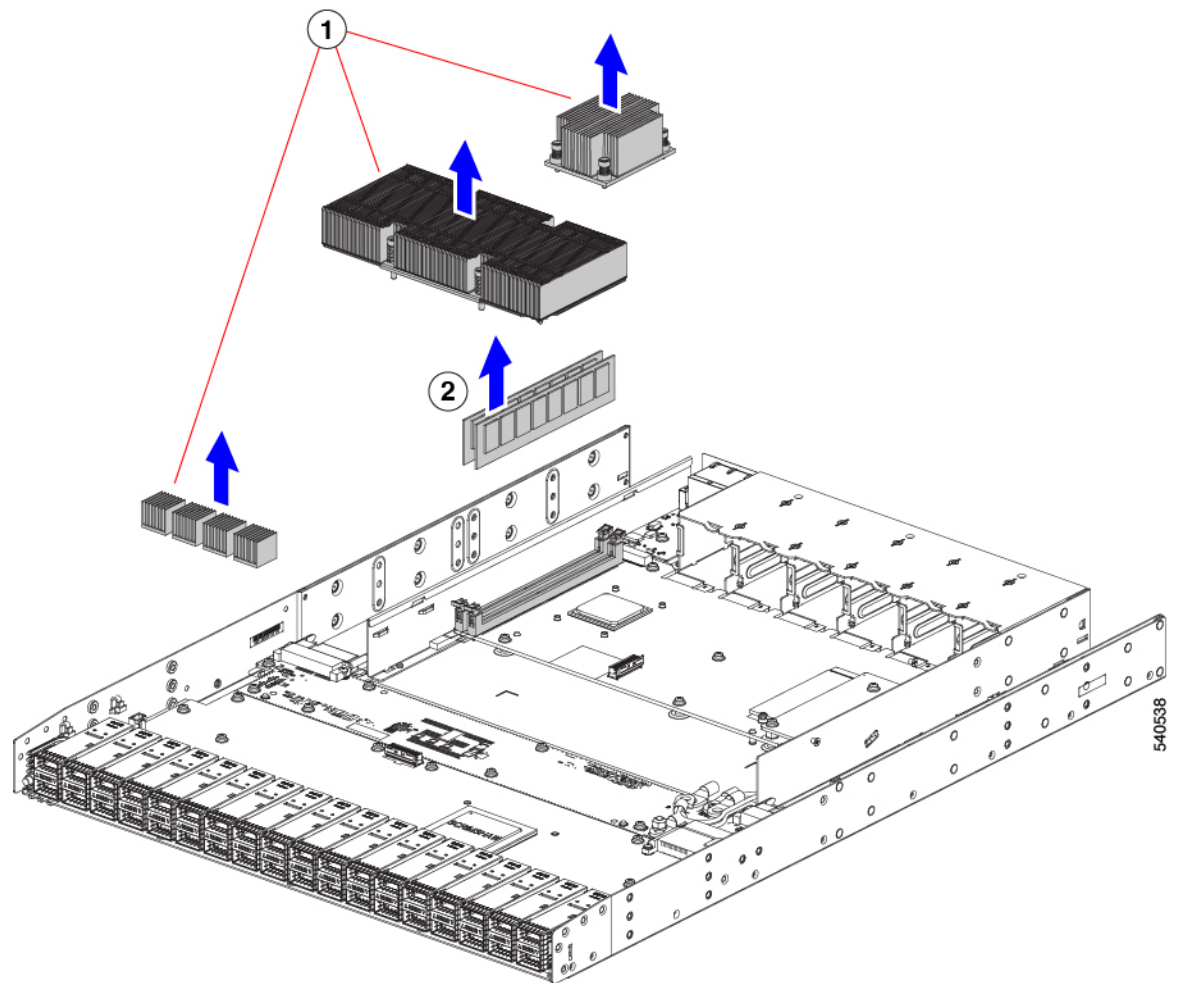
- Step 5** Remove the faceplate.
- a) Using a #2 Phillips screwdriver, remove 15 countersink screws.
 - b) Slide the faceplate off of the fabric interconnect.



- Step 6** Remove the PSU baffles.
- a) Using a #2 Phillips screwdriver, remove four screws (2 screws per baffle.)
 - b) Grasp each baffle and lift it off of the PCBA.

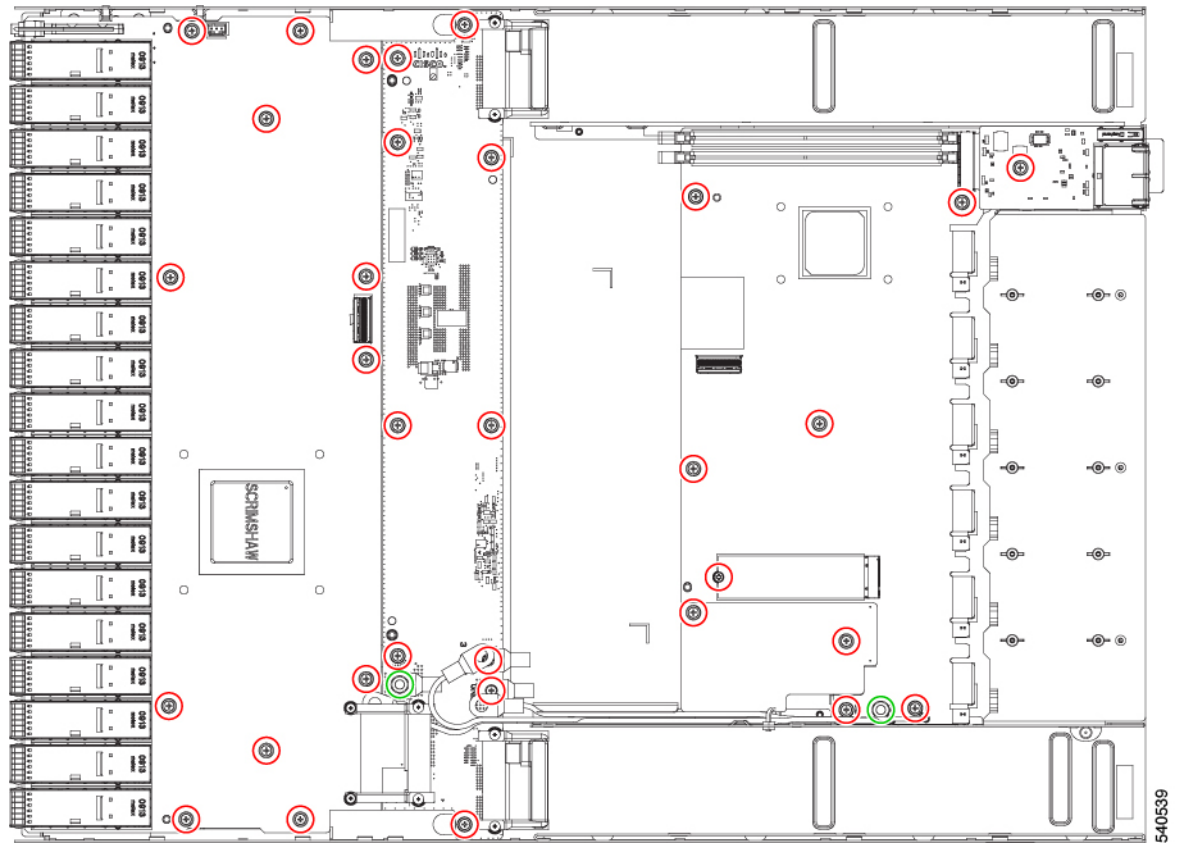
**Step 7** Remove the heatsinks and DIMMs.

- a) Using a #2 Phillips screwdriver, remove the screws that secure the heatsinks to the PCBA.
- b) Lift each of the heatsinks off of the PCBA.
- c) Grasp and remove the DIMMs from their sockets.

**Step 8**

Remove the PCBA.

- a) Using a #2 Phillips screwdriver, remove the 32 M3 screws (shown in red circles) that secure the PCBA to the sheet metal.
- b) Using an 8mm hex wrench, remove the two M5 hex nuts (shown in green circles) that secure the PCBA to the sheet metal.



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c) Lift the PCBA off of the sheet metal.

Step 9

Recycle or dispose of the PCBA in compliance with your local e-waste regulations.



APPENDIX A

Specifications

This appendix contains the following topics:

- [Rack Specifications, on page 53](#)
- [System Specifications, on page 55](#)
- [Power Specifications, on page 56](#)
- [Power Cable Specifications, on page 57](#)
- [Regulatory Standards Compliance Specifications, on page 58](#)

Rack Specifications

Observe the following rack specifications for the Cisco UCS 6500 Series Fabric Interconnect.

Overview of Racks

You can install the fabric interconnect in the following types of cabinets and racks, assuming an external ambient air temperature range of 0 to 104°F (0 to 40°C):

- Standard perforated cabinets
- Solid-walled cabinets with a roof fan tray (bottom to top cooling)
- Standard open racks



Note If you are selecting an enclosed cabinet, we recommend one of the thermally validated types, either standard perforated or solid-walled with a fan tray.



Note We do not recommend that you use racks that have obstructions (such as power strips), because the obstructions could impair access to field-replaceable units (FRUs).

General Requirements for Cabinets and Racks

The cabinet or rack must also meet the following requirements:

- Standard 19-inch (48.3 cm) (two- or four-post EIA cabinet or rack, with mounting rails that conform to English universal hole spacing per section 1 of ANSI/EIA-310-D-1992). For more information, see [Requirements Specific to Perforated Cabinets, on page 54](#).
- For a one RU (rack unit) fabric interconnect, the minimum vertical rack space requirement per chassis is 1.75 inches (4.4 cm)
- The width between the rack-mounting rails must be at least 17.75 inches (45.0 cm) if the rear of the device is not attached to the rack. For four-post EIA racks, this measurement is the distance between the two front rails.

Four-post EIA cabinets (perforated or solid-walled) must meet the following requirements:

- The minimum spacing for the bend radius for fiber-optic cables should have the front-mounting rails of the cabinet offset from the front door by a minimum of 3 inches (7.6 cm).
- The distance between the outside face of the front mounting rail and the outside face of the back mounting rail should be 23.0 to 30.0 inches (58.4 to 76.2 cm) to allow for rear-bracket installation.

Requirements Specific to Standard Open Racks

If you are mounting the chassis in an open rack (no side panels or doors), ensure that the rack meets the following requirements:

- The minimum vertical rack space per chassis must be equal to the rack unit (RU) of the chassis. One rack unit is equal to 1.75 inches (4.4 cm).
- The distance between the chassis air vents and any walls should be 2.5 inches (6.4 cm).

Requirements Specific to Perforated Cabinets

A perforated cabinet has perforations in its front and rear doors and side walls. Perforated cabinets must meet the following requirements:

- The front and rear doors must have at least a 60 percent open area perforation pattern, with at least 15 square inches (96.8 square cm) of open area per rack unit of door height.
- The roof should be perforated with at least a 20 percent open area.
- The cabinet floor should be open or perforated to enhance cooling.

The Cisco R Series rack conforms to these requirements.

Cable Management Guidelines

To help with cable management, you might want to allow additional space in the rack above and below the chassis to make it easier to route all of the fiber optic or copper cables through the rack.

System Specifications

Observe the following system specifications when installing and operating the Cisco UCS 6500 Series Fabric Interconnect.

Environmental Specifications

| Environment | | Specification |
|-------------------|-------------------------------|--------------------------------------|
| Temperature | Ambient operating temperature | 32 to 104°F (0 to 40°C) |
| | Ambient nonoperating | –40 to 158°F (–40 to 70°C) |
| Relative humidity | Nonoperating | 5 to 95% |
| Altitude | Operating | 0 to 13,123 feet (0 to 4,000 meters) |

Fabric Interconnect Dimensions

| Fabric Interconnect | Width | Depth | Height |
|------------------------------------|-----------------------|-----------------------|-----------------------------|
| Cisco UCS 6536 Fabric Interconnect | 17.3 inches (43.9 cm) | 24.7 inches (62.7 cm) | 1.72 inches (4.4 cm) (1 RU) |

Fabric Interconnect and Module Weights and Quantities

| Component | Weight per Unit | Quantity |
|--|-----------------------|---|
| Cisco UCS 6536 Fabric Interconnect Chassis (UCS-6536-FI) | 18.8 lb (8.5 kg) | 1 |
| Fan Module (UCS-FAN-6536), Port-side exhaust (dark grey) | — 0.6 lb (0.3 kg) | 6 |
| Power Supply module – 1100-W AC port-side exhaust (dark grey) (UCS-PSU-6536-AC) | — 2.42 lb (1.1 kg) | 2 (1 for operations and 1 for redundancy) |

Transceiver and Cable Specifications

To determine which transceivers, adapters, and cables are supported by this fabric interconnect, see <https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html>.

To see the transceiver specifications and installation information, see <https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html>.

Fabric Interconnect Power Input Requirements

The following table lists the typical amount of power that the fabric interconnect consumes. It also lists the maximum amount of power that you must provision for the fabric interconnect and power supply for peak conditions.



Note Some power supplies have capabilities that are greater than the maximum power requirements for a fabric interconnect. To determine the power consumption characteristics for the fabric interconnect, use the typical and maximum requirements that are listed in the following table.

Power Specifications

Power specifications include the specifications for each type of power supply module.

1100-W AC Power Supply Specifications

These specifications apply to the fabric interconnect's AC power supply modules (UCS-PSU-6536-AC).

| Characteristic | Specification |
|---------------------------------------|---|
| AC input voltage | Nominal range: 100 and 240 VAC (Range: 90-132 VAC, 180-264 VAC) |
| AC input frequency | Nominal range: 50 to 60 Hz (Range: 47-63 Hz) |
| Maximum AC input current | 13 A at 100 VAC 6 A at 240 VAC |
| Maximum input volt-amperes | 1300 VA at 100 VAC |
| Maximum output power per power supply | 1100 W |
| Maximum inrush current | 33 A |
| Maximum hold-up time | 12 ms at 1100 W |
| Power supply output voltage | 12 VDC |
| Power supply standby voltage | 12 VDC |
| Efficiency rating | Climate Savers Platinum Efficiency (80Plus Platinum certified) |
| Form factor | RSP1 |

Power Cable Specifications

The following sections specify the power cables that you can order and use with this fabric interconnect.

Power Cable Specifications for AC Power Supplies

| Power Type | Power Cord Part Number | Cord Set Description |
|---------------------------|------------------------|--|
| | CAB-C13-C14-2M | Power Cord Jumper, C13-C14 Connectors, 6.6 feet (2.0 m) |
| | CAB-C13-CBN | Cabinet jumper power cord, 250 VAC, 10 A, C14-C13 connectors, 2.3 feet (0.7 m) |
| Argentina | CAB-250V-10A-AR | 250 V, 10 A, 8.2 feet (2.5 m) |
| Australia | CAB-9K10A-AU | 250 VAC, 10 A, 3112 plug, 8.2 feet (2.5 m) |
| Brazil | CAB-250V-10A-BR | 250 V, 10 A, 6.9 feet (2.1 m) |
| European Union | CAB-9K10A-EU | 250 VAC, 10 A, CEE 7/7 plug, 8.2 feet (2.5 m) |
| India | CAB-IND-10A | 10 A, 8.2 feet (2.5 m) |
| India | CAB-C13-C14-2M-IN | Power Cord Jumper, C13-C14 Connectors, 6.6 feet (2.0 m) |
| India | CAB-C13-C14-3M-IN | Power Cord Jumper, C13-C14 Connectors, 9.8 feet (3.0 m) |
| Israel | CAB-250V-10A-IS | 250 V, 10 A, 8.2 feet (2.5 m) |
| Italy | CAB-9K10A-IT | 250 VAC, 10 A, CEI 23-16/VII plug, 8.2 feet (2.5 m) |
| Japan | CAB-C13-C14-2M-JP | Power Cord Jumper, C13-C14 Connectors, 6.6 feet (2.0 m) |
| North America | CAB-9K12A-NA | 125 VAC, 13 A, NEMA 5-15 plug, 8.2 feet (2.5 m) |
| North America | CAB-AC-L620-C13 | NEMA L6-20-C13, 6.6 feet (2.0 m) |
| North America | CAB-N5K6A-NA | 200/240V, 6A, 8.2 feet (2.5 m) |
| Peoples Republic of China | CAB-250V-10A-CN | 250 V, 10 A, 8.2 feet (2.5 m) |
| South Africa | CAB-250V-10A-ID | 250 V, 10 A, 8.2 feet (2.5 m) |

| Power Type | Power Cord Part Number | Cord Set Description |
|---|------------------------|---|
| Switzerland | CAB-9K10A-SW | 250 VAC, 10 A, MP232 plug, 8.2 feet (2.5 m) |
| United Kingdom | CAB-9K10A-UK | 250 VAC, 10 A, BS1363 plug (13 A fuse), 8.2 (2.5 m) |
| All except Argentina, Brazil, and Japan | NO-POWER-CORD | No power cord included with fabric interconnect |

Regulatory Standards Compliance Specifications

The following table lists the regulatory standards compliance for the fabric interconnect.

Table 1: Regulatory Standards Compliance: Safety and EMC

| Specification | Description |
|-----------------------|---|
| Regulatory compliance | Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC. |
| Safety | <ul style="list-style-type: none"> • UL 60950-1 • CAN/CSA 22.2 No 60950-1-07 • AS/NZS 60950.1 • EN 60950-1 plus Am2 • IEC 60950-1 plus Am 2 with all country deviations • UL 62368-1 • CAN/CSA 22.2 No 62368-1 • EN 62368-1 • IEC 62368-1 with all country deviations • Additional Certifications may be required as countries adopt new Standards like IEC 62368-1 |

| Specification | Description |
|----------------|--|
| EMC: Emissions | <ul style="list-style-type: none">• 47CFR Part 15 (CFR 47) Class A• AS/NZS CISPR22 Class A• CISPR22 Class A• EN55022 Class A• ICES003 Class A• VCCI Class A• EN61000-3-2• EN61000-3-3• KN22 Class A• CNS13438 Class A |
| EMC: Immunity | <ul style="list-style-type: none">• EN55024• CISPR24• EN300386• KN 61000-4 series |
| RoHS | The product is RoH-6 compliant with exceptions for leaded-ball grid-array (BGA) balls and lead press-fit connectors. |



APPENDIX **B**

Additional Kits

This appendix contains the following topics:

- [Rack Mount Kit UCS-ACC-6536=](#), on page 61

Rack Mount Kit UCS-ACC-6536=

The following table lists and illustrates the contents for the 1-RU rack-mount kit (UCS-ACC-6536=).

| Illustration | Description | Quantity |
|----------------|---|----------|
| | Rack-mount kit <ul style="list-style-type: none"> • Front brackets (2) • Rear brackets (2) • Slider rails (2) • M4 Phillips pan-head screws (6) | 1 |
| | Ground lug kit <ul style="list-style-type: none"> • Two-hole lug (1) • M4 x 8-mm Phillips pan-head screws (2) | 1 |
| Not applicable | EAC Compliance document | 1 |
| Not applicable | Hazardous substances list for customers in China | 1 |



APPENDIX **C**

Site Planning and Maintenance Records

This appendix contains the following topics:

- [Site Preparation Checklist, on page 63](#)
- [Contact and Site Information, on page 65](#)
- [Chassis and Module Information, on page 66](#)

Site Preparation Checklist

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

Consider heat dissipation when sizing the air-conditioning requirements for an installation.

Table 2: Site Planning Checklist

| Task No. | Planning Activity | Verified By | Time | Date |
|----------|--|-------------|------|------|
| 1 | Space evaluation: <ul style="list-style-type: none">• Space and layout• Floor covering• Impact and vibration• Lighting• Maintenance access | | | |

| Task No. | Planning Activity | Verified By | Time | Date |
|----------|--|-------------|------|------|
| 2 | Environmental evaluation: <ul style="list-style-type: none"> • Ambient temperature • Humidity • Altitude • Atmospheric contamination • Air flow | | | |
| 3 | Power evaluation: <ul style="list-style-type: none"> • Input power type • Power receptacles • Receptacle proximity to the equipment • Dedicated circuit for power supply • Dedicated (separate) circuits for redundant power supplies • UPS for power failures | | | |
| 4 | Grounding evaluation: <ul style="list-style-type: none"> • Circuit breaker size • CO ground (AC- powered systems) | | | |

| Task No. | Planning Activity | Verified By | Time | Date |
|----------|--|-------------|------|------|
| 5 | Cable and interface equipment evaluation: <ul style="list-style-type: none"> • Cable type • Connector type • Cable distance limitations • Interface equipment (transceivers) | | | |
| 6 | EMI evaluation: <ul style="list-style-type: none"> • Distance limitations for signaling • Site wiring • RFI levels | | | |

¹ Verify that the power supply installed in the chassis has a dedicated AC source circuit.

² UPS = uninterruptible power supply.

³ EMI = electromagnetic interference.

⁴ RFI = radio frequency interference.

Contact and Site Information

Use the following worksheet to record contact and site information.

Table 3: Contact and Site Information

| | |
|-----------------------------|--|
| Contact person | |
| Contact phone | |
| Contact e-mail | |
| Building/site name | |
| Data center location | |
| Floor location | |
| Address (line 1) | |
| Address (line 2) | |

| | |
|----------|--|
| City | |
| State | |
| Zip code | |
| Country | |

Chassis and Module Information

Use the following worksheets to record information about the chassis and modules.

Contract Number _____

Chassis Serial Number _____

Product Number _____

Table 4: Network-Related Information

| | |
|------------------------|--|
| System IP address | |
| System IP netmask | |
| Hostname | |
| Domain name | |
| IP broadcast address | |
| Gateway/router address | |
| DNS address | |
| Modem telephone number | |

Table 5: Module Information

| Slot | Module Type | Module Serial Number | Notes |
|------|-------------|----------------------|-------|
| 1 | Fixed | | |

Table 6: Fabric Interconnect Port Connection Record

| Fabric Interconnect A or B | | Connected to | | | | | |
|----------------------------|------|--------------|-----|------|----------------------|--------------------|------------------|
| Slot | Port | Chassis | FEX | 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 | | | | | | |
| | 22 | | | | | | |
| | 23 | | | | | | |
| | 24 | | | | | | |
| | 25 | | | | | | |

| Fabric Interconnect A or B | | Connected to | | | | | |
|----------------------------|------|--------------|-----|------|----------------------|--------------------|------------------|
| Slot | Port | Chassis | FEX | Port | LAN or SAN Pin Group | Port Channel Group | Connection Notes |
| | 26 | | | | | | |
| | 27 | | | | | | |
| | 28 | | | | | | |
| | 29 | | | | | | |
| | 30 | | | | | | |
| | 31 | | | | | | |
| | 32 | | | | | | |
| | 33 | | | | | | |
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