Brocade® G730 Switch Hardware Installation Guide

Installation Guide
15 December 2021

G730-Install-IG100
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Table of Contents

Introduction

This guide contains installation procedures and safety requirements for installing your switch into a rack system or as a stand-alone device.

Also provided are steps to initially configure the Brocade® G730 Switch for operation, to verify and monitor operation, to replace switch field-replaceable units (FRUs), and to install transceivers and cables. Complete technical specifications for the switch are also included.

Supported Hardware and Software

The Brocade G730 Switch is introduced in the Fabric OS® 9.1.0 software release. The following tables list the power supplies, the fan assemblies, and the rack mount kits supported on this device.

Table 1: Power Supply and Fan Assemblies

Part Number	Description
XBR-1100WPSAC-F	1100W (maximum), 100–240 VAC power supply FRU with nonport-side exhaust airflow
XBR-1100WPSAC-R	1100W (maximum), 100–240 VAC power supply FRU with nonport-side intake airflow
XBR-ENT-FAN-80-F-2	Fan assembly FRU with nonport-side exhaust airflow
XBR-ENT-FAN-80-R-2	Fan assembly FRU with nonport-side intake airflow

Table 2: Rack Mount Kits

Part Number	Description
XBR-R000294	Universal two-post mid-mount or flush-mount rack kit
XBR-R000296	Universal four-post fixed flush-mount rack kit

Notes, Cautions, and Danger Notices

Notes, cautions, and danger statements may be used in this document.

NOTE
A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

CAUTION
A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

DANGER
A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Contacting Technical Support for Your Brocade® Product

If you purchased Brocade® product support from a Broadcom® OEM or solution provider, contact your OEM or solution provider for all your product support needs.

- OEM and solution providers are trained and certified by Broadcom to support Brocade products.
- Broadcom provides backline support for issues that cannot be resolved by the OEM or solution provider.
- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information on this option, contact Broadcom or your OEM.
- For questions regarding service levels and response times, contact your OEM or solution provider.

If you purchased Brocade product support directly from Broadcom, use one of the following methods to contact the Technical Assistance Center 24x7. For product support information and the latest information on contacting the Technical Assistance Center, go to www.broadcom.com/support/fibre-channel-networking/contact-brocade-support.

Online	Telephone
For nonurgent issues, the preferred method is to log on to the Support portal at support.broadcom.com. (You must initially register to gain access to the Support portal.) Once registered, log on and then select **Brocade Products**. You can now navigate to the following sites: • **Case Management** • **Software Downloads** • **Licensing** • **SAN Reports** • **Brocade Support Link** • **Training & Education**	For Severity 1 (critical) issues, call Brocade Fibre Channel Networking Global Support at one of the phone numbers listed at www.broadcom.com/support/fibre-channel-networking/contact-brocade-support.

Document Feedback

Quality is our first concern. We have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission or if you think that a topic needs further development, we want to hear from you. Send your feedback to documentation.pdl@broadcom.com. Provide the publication title; topic heading; publication number and page number (for PDF documents); URL (for HTML documents); and as much detail as possible.

Device Overview

The Brocade G730 Switch offers the following features and capabilities:

- Up to 128 ports in a 2U switch.
  - Up to 96 autosensing ports supporting high-performance 64G small form-factor pluggable plus (SFP+) transceiver port technology in a single domain with non-volatile memory express (NVMe) support from the host to the switch port on ingress and from the switch port to the target on egress.
  - Up to 16 double density (DD) ports or SFP+ ports supporting 64G Fibre Channel speed. Each DD port is capable of 2 x 64G ports, thus providing an additional 32 ports at 64G.
- Dynamic Ports on Demand (Dynamic-POD) scaling from a base configuration of 48 ports to 128 ports (two 24-port SFP+ PODs and one 32-port SFP-DD POD).
- 8, 10, 16, 32, and 64G autosensing Fibre Channel switch and router ports.
  - A 64G optical transceiver can autonegotiate to 64G, 32G, or 16G.
  - A 32G optical transceiver can autonegotiate to 32G, 16G, or 8G.
  - A 10G optical transceiver can autonegotiate to 10G.

    NOTE

    The port speed is determined by the maximum negotiated speed between the installed transceiver and the optical transceiver at the other end of the link, including any user-configured maximum or fixed speed.
- Universal ports that self-configure as E_Ports, F_Ports, D_Ports, or EX_Ports and can be activated on a per-port basis with the optional Integrated Routing (IR) license. The Diagnostic D_Port mode provides diagnostics, troubleshooting, and verification services for the physical media.
- Brocade small form-factor pluggable plus (SFP+) optical transceivers that support any combination of short wavelength (SWL), long wavelength (LWL), or extended long wavelength (ELWL) optical media among the switch ports.
- LEDs:
  - 96 bicolor (green/amber) LEDs to indicate the status for each SFP+ port and 16 tricolor (green/amber/white) LEDs to indicate the status for each SFP-DD port.
  - One green LED to indicate valid system power.
  - One bicolor (green/amber) LED to indicate the system status.
  - Two Ethernet LEDs: one green LED to indicate link speed at 1000/100/10Mb/s and one green LED to indicate activity.
- Hardware-enabled input and output (I/O) latency statistics collection.
- Hardware-enabled VM support.
- Extended distance Fibre Channel to support long-distance native FC connectivity.
- A high-performance C3338R processor with two cores operating at 1.8 GHz that delivers high performance, scalability, and advanced Fabric Vision® functionality.
- One embedded universal serial bus (e-USB) module that provides 4 GB of persistent storage, increased serviceability, and error logging functionality by facilitating easier firmware upgrades and downloads of the system log files.
- Two hot-swappable redundant power supply FRUs.
- Three hot-swappable redundant fan assembly FRUs.
- Support for nonport-side intake or nonport-side exhaust airflow for cooling.
- Serial electrically erasable programmable read-only memory (SEEPROM) for switch identification.
- Secure boot.
- Real-time power monitoring, voltage monitoring, and fan monitoring, including airflow direction.
- Real-time digital thermometers for temperature monitoring.
- Real-time clock (RTC) with battery.
- Connectors:

- One 10/100/1000Mb/s RJ-45 Ethernet connector for the management connection. With EZSwitchSetup, this port supports switch IP address discovery and configuration, eliminating the need to attach a serial cable to configure the switch IP address.
- One RS-232 3-wire (Tx, Rx, and GND) universal asynchronous receiver/transmitter (UART) serial port to the baseboard management controller (BMC) with an RJ-45 connector for debugging the initial switch setup (if not using EZSwitchSetup) and factory default restoration. Integral LEDs remain unlit always.
- One external USB Type A connector.

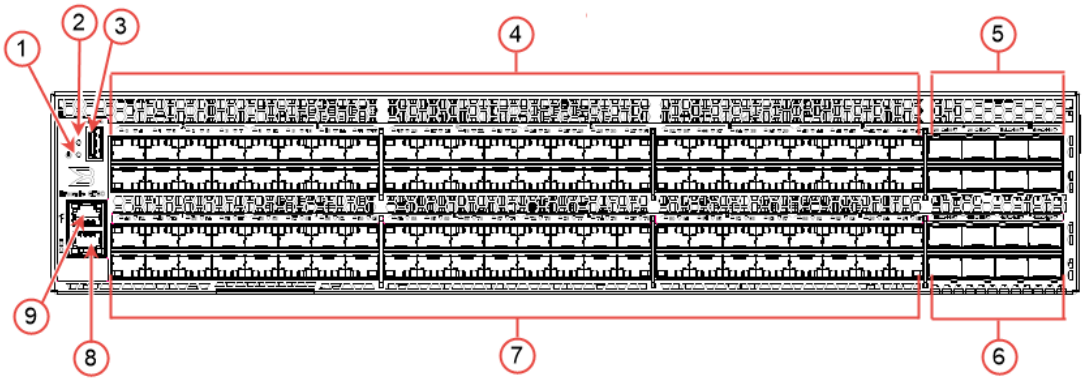
License Options

The Brocade G730 Switch uses a capacity-based Ports on Demand (POD) license method. Refer to the *Brocade Fabric OS Software Licensing Guide* for more details.

Port-Side View of the Device

The following figure shows the port-side view of the Brocade G730 Fibre Channel Switch.

Figure 1: Port-Side View



1. System Power LED
2. System Status LED
3. USB Port
4. 48 SFP+ 64G FC Ports (FC Ports 0–47)
5. 8 DD 64G Ports (FC Ports 96–111)
6. 8 DD 64G Ports (FC Ports 112–127)
7. 48 SFP+ 64G FC Ports (FC Ports 48–95)
8. UART RJ-45 Serial Console Port
9. 10/100/1000Mb/s RJ-45 Ethernet Management Port

The following figure shows the port numbering for the Brocade G730 Switch. Trunk groups are outlined in red.

Figure 2: Port Numbering for the Brocade G730 Switch

SFP+ Port Numbering

DD Port Numbering

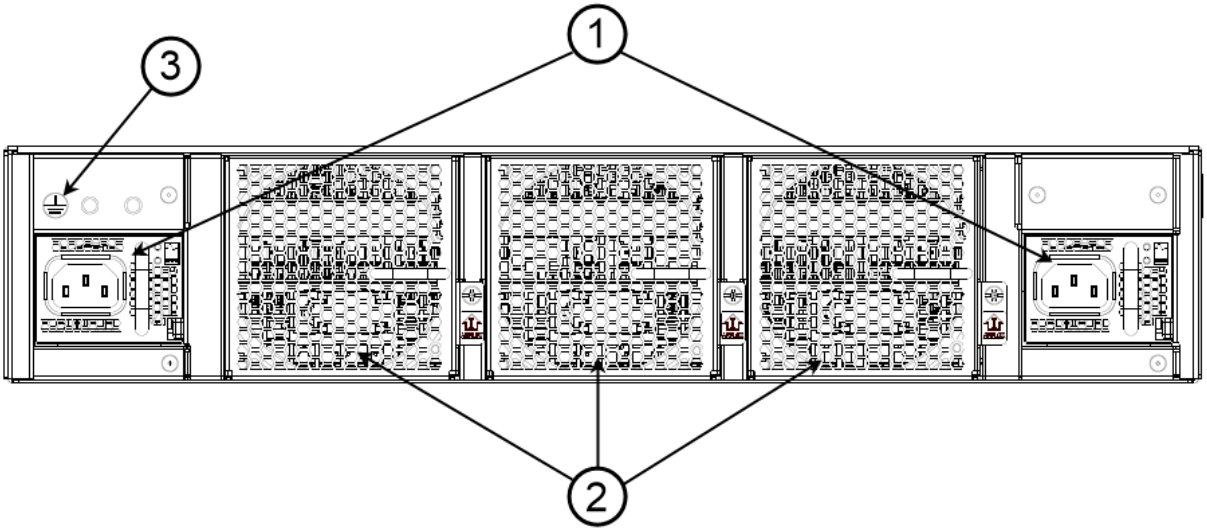
0	1	2	3	8	9	10	11	16	17	18	19	24	25	26	27	32	33	34	35	40	41	42	43
4	5	6	7	12	13	14	15	20	21	22	23	28	29	30	31	36	37	38	39	44	45	46	47
48	49	50	51	56	57	58	59	64	65	66	67	72	73	74	75	80	81	82	83	88	89	90	91
52	53	54	55	60	61	62	63	68	69	70	71	76	77	78	79	84	85	86	87	92	93	94	95

96, 97	98, 99	104, 105	106, 107
100, 101	102, 103	108, 109	110, 111
112, 113	114, 115	120, 121	122, 123
116, 117	118, 119	124, 125	126, 127

Nonport-Side View of the Device

The following figure shows the nonport-side view of the Brocade G730 Switch.

Figure 3: Nonport-Side View with AC Power Supply and Fan Assembly Units



1. Power Supply Units (PSU 1 and PSU 2 from right to left)
2. Fan Assemblies (Fan 1, 2, and 3 from right to left)
3. Ground Cable Connector

Device Management Options

You can use the management functions built into the device to monitor the fabric topology, port status, physical status, and other information. This functionality helps you analyze switch performance and accelerate system debugging. The device automatically performs a power-on self-test (POST) each time it is turned on. A RASlog message is generated for any detected startup errors.

You can manage the device using any of the management options that are listed in the following table.

Table 3: Management Options for the Device

Management Tool	Out-of-Band Support	Reference Documents
Command line interface (CLI) Up to two admin sessions and four user sessions simultaneously.	Ethernet or serial connection	*Brocade Fabric OS Administration Guide* *Brocade Fabric OS Command Reference Manual*
Brocade EZSwitchSetup EZSwitchSetup helps to complete the basic configuration for a single-switch setup.	Ethernet or serial connection	*Brocade EZSwitchSetup User Guide*
Brocade Web Tools	Ethernet or serial connection	*Brocade Fabric OS Web Tools User Guide*
Standard SNMP applications	Ethernet or serial connection	*Brocade Fabric OS MIB Reference Manual*
Management Server	Ethernet or serial connection	*Brocade Fabric OS Administration Guide* *Brocade Fabric OS Command Reference Manual*
Brocade SANnav Brocade SANnav must be purchased separately.	Ethernet or serial connection	Brocade SANnav™ documentation set

Preparing for Installation

Perform the following preliminary steps to ensure a successful installation:

- Note the safety precautions to avoid harm to you or damage to the device.
- Ensure that facility requirements are met.
- Check the shipping carton contents to make sure that everything is included.

A checklist is provided for you to use during the installation.

Safety Precautions

When using this product, observe all danger, caution, and attention notices in this manual. The safety notices are accompanied by symbols that represent the severity of the safety condition.

See Cautions and Danger Notices for translations of safety notices for this product.

General Precautions

DANGER
The procedures in this manual are for qualified service personnel.

DANGER
Before beginning the installation, see the precautions in “Power Precautions.”

DANGER
Be careful not to accidently insert your fingers into the fan tray while removing it from the chassis. The fan may still be spinning at a high speed.

CAUTION
Changes or modifications made to this device that are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION
Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.

CAUTION
Make sure the airflow around the front and back of the device is not restricted.

CAUTION
Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E" or an orange arrow with an "I."

CAUTION
Never leave tools inside the chassis.

CAUTION
To protect the serial port from damage, keep the cover on the port when not in use.

CAUTION
If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.

CAUTION
Do not install the device in an environment where the operating ambient temperature might exceed 40°C (104°F).

ESD Precautions

DANGER
For safety reasons, the ESD wrist strap should contain a series 1 megaohm resistor.

CAUTION
Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

CAUTION
Static electricity can damage the chassis and other electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.

NOTE
Wear a wrist grounding strap that is connected to the chassis ground (if the device is plugged in) or to a bench ground.

Power Precautions

DANGER
Make sure that the power source circuits are properly grounded, and then use the power cord supplied with the device to connect it to the power source.

DANGER
If the installation requires a different power cord than the one supplied with the device, make sure you use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country. The mark is your assurance that the power cord can be used safely with the device.

DANGER
This device might have more than one power cord. To reduce the risk of electric shock, disconnect all power cords before servicing.

DANGER
Remove both power cords before servicing.

DANGER
Disconnect the power cord from all power sources to completely remove power from the device.

DANGER
To avoid high voltage shock, do not open the device while the power is on.

DANGER
Batteries used for RTC/NVRAM backup are not located in operator-access areas. There is a risk of explosion if a battery is replaced by an incorrect type. Dispose of used components with batteries according to local ordinance and regulations.

CAUTION
Use a separate branch circuit for each power cord, which provides redundancy in case one of the circuits fails.

CAUTION
Ensure that the device does not overload the power circuits, wiring, and over-current protection. To determine the possibility of overloading the supply circuits, add the ampere (amp) ratings of all devices installed on the same circuit as the device. Compare this total with the rating limit for the circuit. The maximum ampere ratings are usually printed on the devices near the input power connectors.

CAUTION
The power supply switch must be in the off position when you insert the power supply into the chassis. Damage to the switch can result if a live power supply is installed.

CAUTION
Carefully follow the mechanical guides on each side of the power supply slot and make sure that the power supply is properly inserted in the guides. Never insert the power supply upside down.

NOTE
Device control processors and management modules may contain batteries for RTC or NVRAM backup. Dispose of components containing batteries as required by local ordinances and regulations.

Lifting and Weight-Related Precautions

DANGER
Use safe lifting practices when moving the product.

DANGER
Mount the devices you install in a rack as low as possible. Place the heaviest device at the bottom and progressively place lighter devices above.

DANGER
Make sure the rack housing the device is adequately secured to prevent it from becoming unstable or falling over.

CAUTION
Do not use the port cover tabs to lift the module. They are not designed to support the weight of the module, which can fall and be damaged.

CAUTION
To prevent damage to the chassis and components, never attempt to lift the chassis using the fan or power supply handles. These handles were not designed to support the weight of the chassis.

Laser Precautions

DANGER
All fiber-optic interfaces use Class 1 lasers.

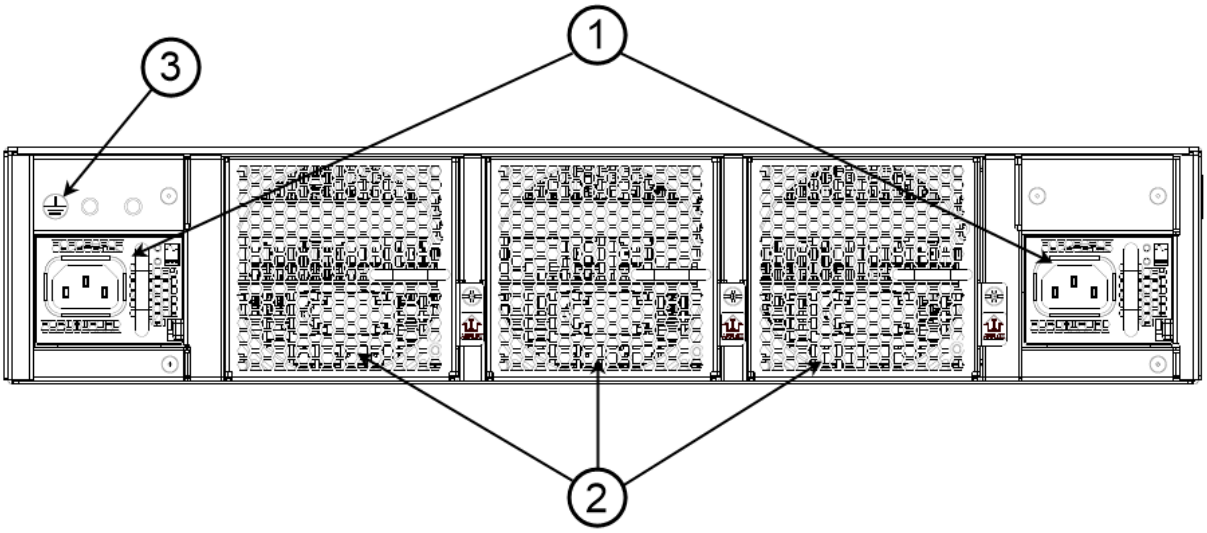
DANGER
Use only optical transceivers that are qualified by Broadcom and that comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.

Facility Requirements

Before installing the chassis and addressing facility requirements, you must earth-ground the switch chassis using one of the following two methods:

- Through chassis rack ear mounts to a grounded data center rack.
  All equipment in the rack is grounded through a reliable branch circuit connection.
- Through an explicit ground cable.
  The chassis is grounded through a ground cable using the threaded ground lug connection on the nonport side of the chassis. See item 3 in the following figure.

Figure 4: Nonport-Side View with AC Power Supply and Fan Assembly Units



1. Power Supplies
2. Fan Assemblies
3. Ground Cable Connector

After you have grounded the chassis, ensure that the following requirements are met.

Table 4: Facility Requirements

Type	Requirements
Electrical	• An adequate supply circuit, line fusing, and wire size, as specified by the electrical rating on the switch nameplate. • A circuit that is protected by a circuit breaker and grounded in accordance with local electrical codes. See the Technical Specifications section for power supply specifications.
Thermal	• Ambient air temperature not exceeding 40°C (104°F) while the switch is operating.
Rack (when rack-mounted)	• All equipment in the rack grounded through a reliable branch circuit connection. • The additional weight of the switch not to exceed the weight limits of the rack. • Rack secured to ensure stability if there is unexpected movement.

Quick Installation Checklist

The following checklists provide a high-level overview of the basic installation process from the planning stage to the point where the device comes online and is ready to be deployed. Completing all the tasks in the suggested order ensures successful installation. Print these checklists and take them to the installation site.

Preinstallation Tasks

Review all installation requirements ahead of time as part of your site preparation. Careful planning and site preparation ensure seamless installation, especially when installing multiple devices.

Table 5: Installation Prerequisites

Task	Task Details or Additional Information	Completed
Unpack the device.	Take an inventory of the hardware components included in your shipment. See Shipping Carton Contents.	
Gather the necessary components and required tools.	Review the time and items that are required at the beginning of each chapter to ensure that you have gathered all the necessary components that are required for the following installation tasks: • Mounting the Device • Installing Transceivers and Cables • Power Supply Assemblies • Fan Assemblies	
Review the safety precautions.	See Safety Precautions. For the translation of these messages, see Cautions and Danger Notices.	
Plan the installation.	Decide whether you want to install the unit on a flat surface or in a rack. For rack installation, obtain the appropriate rack mount kit. See Mounting the Device.	
Review and verify the installation requirements.	Verify that the following requirements are met. See Facility Requirements. • Power requirements • Environmental requirements • Clearance for a stand-alone or rack installation	
Gather the network configuration parameters.	• IP address: • Subnet mask: • Default gateway IP address: • Domain ID: • Time zone:	

Installation and Initial Configuration

The initial setup includes mounting the device on a flat surface or in a rack and completing the configuration tasks necessary to bring the device online and verify the operation.

Table 6: Installation and Basic System Configuration

Task	Task Details or Additional Information	Completed
Mount the device.	Choose one of the following mounting options: • Mount the device as a stand-alone unit. See Installing the Device as a Stand-alone Unit. • Mount the device in a four-post rack. See Installing the Universal Four-Post Rack Kit (XBR-R000296). • Mount the device in a two-post rack. See Installing the Universal Two-Post Rack Kit (XBR-R000294).	
Check the airflow of the power supply and fan assembly.	The airflow direction of the power supply and fan should match. The power supplies and fan trays are clearly labeled with either a green arrow with an "E" (exhaust) or an orange arrow with an "I" (intake). For more details, see Identifying the Direction of the Power Supply Assembly Airflow and Identifying the Direction of the Fan Assembly Airflow.	
Gather all components required for the initial setup.	See Items Required.	
Provide power to the device.	See Providing Power to the Device.	
Attach a management station, establish a serial connection, and change the default passwords (optional).	See Establishing a First-Time Serial Connection. After completing this task, log on to the serial port to configure the device.	
Set the IP address, the subnet mask, and the default gateway IP address.	Use the `ipaddrset` command to configure a static device IP address, subnet mask, and gateway IP address, or you can use a Dynamic Host Configuration Protocol (DHCP) server to obtain the information dynamically. See Configuring the IP Address.	
Set the date and time.	• Use the `date` command to display and set the date and time. • Use the `tstimezone` command to display and set the time zone. • Use the `tsclockserver` command to synchronize the time with an external NTP server. See Setting the Date and Time for more information.	
Customize the switch name and chassis name.	• Use the `switchname` command to change the default switch name. • Use the `chassisname` command to change the default chassis name. See Customizing the Chassis Name and Switch Name for more information.	
Establish an Ethernet connection.	By establishing an Ethernet connection, you can complete the device configuration using a serial session, Telnet, or a management application, such as Brocade SANnav Management Portal. See Establishing an Ethernet Connection.	
Optional: Configure the DNS service.	Use the `dnsconfig` command to create DNS server entries. Refer to the *Brocade Fabric OS Administration Guide* for details on using this command.	
Optional: Customize the domain ID.	Use the `configure` command to change the domain ID (the default ID is 1). See Setting the Domain ID for more information.	

Task	Task Details or Additional Information	Completed
Verify that the device operates correctly.	• Check the LEDs to verify the operation of functional parts. See Interpreting Port-Side LEDs and Interpreting Nonport-Side LEDs. • The following commands can be useful to establish an operational baseline for the device. Refer to the *Brocade Fabric OS Command Reference Manual* for more information on these commands. – `errdump` – `fanshow` – `historyshow` – `psshow` – `tempshow`	
Back up the configuration.	Use the interactive `configupload` command to back up the configuration. See Backing Up the Configuration for more information.	
Optional: Power off the device.	Enter the `sysshutdown` command and wait for the device to power down, and then unplug the power cord. See Powering Down the Device for more information.	

Shipping Carton Contents

When unpacking the device, verify that the contents of the shipping carton are complete. The shipping carton should contain the following items. Save the shipping carton and packaging in case you must return the shipment.

- The Brocade switch
- An accessory kit containing the following items:
  - A serial cable
  - Two 6-ft power cords
  - Rubber feet
  - Download instructions for Fibre Channel networking software and documents
- Inner foam

NOTE
Transceivers may be shipped in the accessory tray instead of installed in switch ports.

Mounting the Device

You can install the device in several ways:

- As a stand-alone unit on a flat surface, for example, a table top. Use the rubber feet included with the shipment to secure the device on the surface. No other equipment is required for desktop installation.
- In a four-post EIA rack: You need a Universal Four-Post Rack Kit (XBR-R000296) to install devices in EIA racks that are between L-12.7 cm to 81.28 cm deep (L-5.0 in. to 32.0 in.), where L is the chassis depth.
- In a two-post Telco rack: You need a Universal Two-Post Rack Kit (XBR-R000294) to install 1U and 2U devices in a two-post telecommunications (Telco) rack.

NOTE
Review the following precautions before mounting the device.

Precautions Specific to Mounting

The following precautions apply to mounting the device:

DANGER
Use safe lifting practices when moving the product.

DANGER
Mount the devices you install in a rack as low as possible. Place the heaviest device at the bottom and progressively place lighter devices above.

CAUTION
Make sure the airflow around the front and back of the device is not restricted.

CAUTION
Never leave tools inside the chassis.

CAUTION
Do not use the port cover tabs to lift the module. They are not designed to support the weight of the module, which can fall and be damaged.

CAUTION
To prevent damage to the chassis and components, never attempt to lift the chassis using the fan or power supply handles. These handles were not designed to support the weight of the chassis.

Installing the Device as a Stand-alone Unit

Perform the following steps to install the device as a stand-alone unit on a table:

1. Unpack the device and verify that the items listed under Shipping Carton Contents are present and undamaged.
2. Apply the adhesive rubber feet to the underside of the device. The rubber feet help prevent the device from sliding off the supporting surface.
   a) Clean the indentations at each corner of the bottom of the device to ensure that they are free of dust or other debris that might lessen the adhesion of the feet.
   b) With the adhesive side against the chassis, place one rubber foot in each indentation and press into place.
3. Place the device on a sturdy flat surface.
4. Provide power to the device as described in Providing Power to the Device.

NOTE
Do not connect the device to the network until the IP address is set correctly. For instructions on how to set the IP address, see Configuring the IP Address.

Installing the Universal Four-Post Rack Kit (XBR-R000296)

Use the following instructions to install 1U and 2U devices in EIA racks that are from L-12.7 cm to 81.28 cm (L-5.0 in. to 32.0 in.) deep, where L is the chassis depth, using the Universal Four-Post Rack Kit (XBR-R000296).

You can mount the device in a four-post rack in two ways:

- With the port side flush with the front posts.
- With the nonport side flush with the rear posts in a recessed position. A recessed position allows a more gradual bend in the fiber-optic cables that are connected to the switch and less interference in the aisle at the front of the rack.

Table 7: Space Requirements

Chassis with Port-Side Vents	Notes	Chassis Depth	Minimum Rack Depth	Maximum Rack Depth
No	Applicable to port-side and nonport-side flush mounts.	L	L-12.7 cm (L-5 in.)	81.28 cm (32 in.)
Yes	Applicable to port-side flush mounts.	L	L-12.7 cm (L-5 in.)	81.28 cm (32 in.)
Yes	Applicable to nonport-side flush mounts.	L	L	81.28 cm (32 in.)

If the chassis depth (L) is less than 40.64 cm (16 in.), the chassis does not fit into a rack with a maximum depth of 81.28 cm (32 in.) using the Universal Four-Post Rack Kit. The maximum rack depth for a chassis less than 40.64 cm (16 in.) is 81.28 cm (32 in.) minus the difference between the chassis depth and 40.64 cm (16 in.). For example, a chassis with a depth (L) of 35.56 cm (14 in.) is 5.08 cm (2 in.) smaller than 40.64 cm (16 in.), so it installs into a rack with a maximum depth of 81.28 cm (32 in.) – 5.08 cm (2 in.), which equals 76.2 cm (30 in.).

Observe the following when mounting the device:

- Two people are required to install the device in a rack. One person holds the device, while the other person screws in the front and rear brackets.
- Hardware devices that are illustrated in these procedures are for reference only and may not depict the device that you are installing into the rack.

Time and Items Required

Allow 15 to 30 minutes to complete the installation.

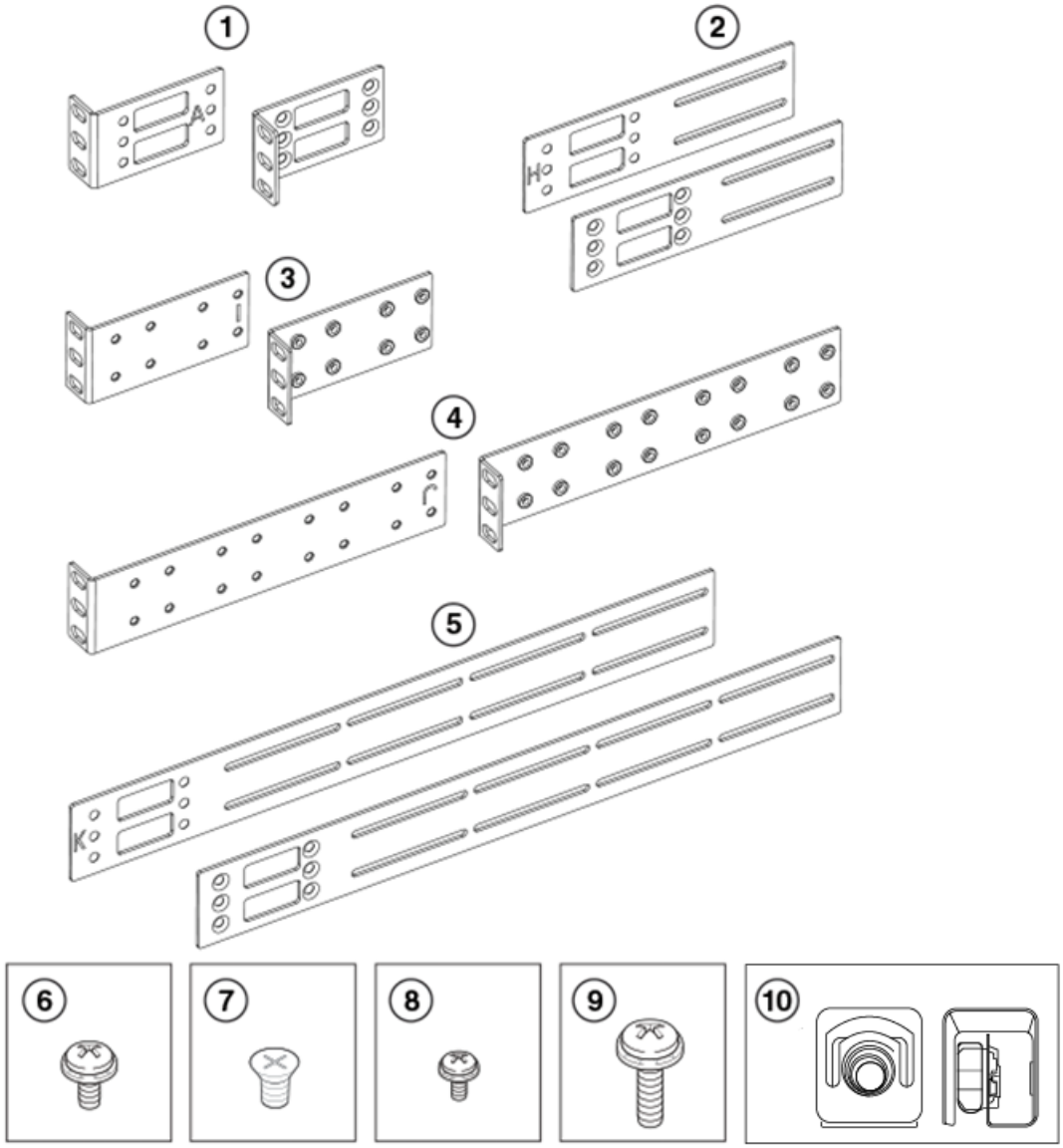
The following items are required to install the device using the Universal Four-Post Rack Kit:

- No. 2 Phillips torque screwdriver
- 1/4-in. slotted-blade torque screwdriver

Parts List

The following parts are provided with the 1U and 2U Universal Four-Post Rack Kit (XBR-R000296):

Figure 5: Universal Four-Post Rack Kit Parts



1. Front Brackets (2)
2. Extension Brackets, Medium (2)
3. Rear Brackets, Short (2)
4. Rear Brackets, Long (2)

5. Bracket Extensions, Long (2)
6. Screw, 8-32 x 5/16-in. Panhead Phillips (8)
7. Screw, 8-32 x 5/16-in. Flathead Phillips (16)
8. Screw, 6-32 x 1/4-in. Panhead Phillips (8)
9. Screw, 10-32 x 5/8-in. Panhead Phillips (8)
10. Retainer Nut, 10-32 (8)

Ensure that the items listed and illustrated are included in the kit. Note that not all parts may be used with certain installations depending on the device type.

CAUTION
Use the screws specified in the procedure. Using longer screws can damage the device.

Flush-Front Mounting

CAUTION
The device must be turned off and disconnected from the fabric during this procedure.

NOTE
The illustrations in the rack installation procedures are for reference only and may not show the device that you are installing.

Perform the following tasks to install the device in a four-post rack:

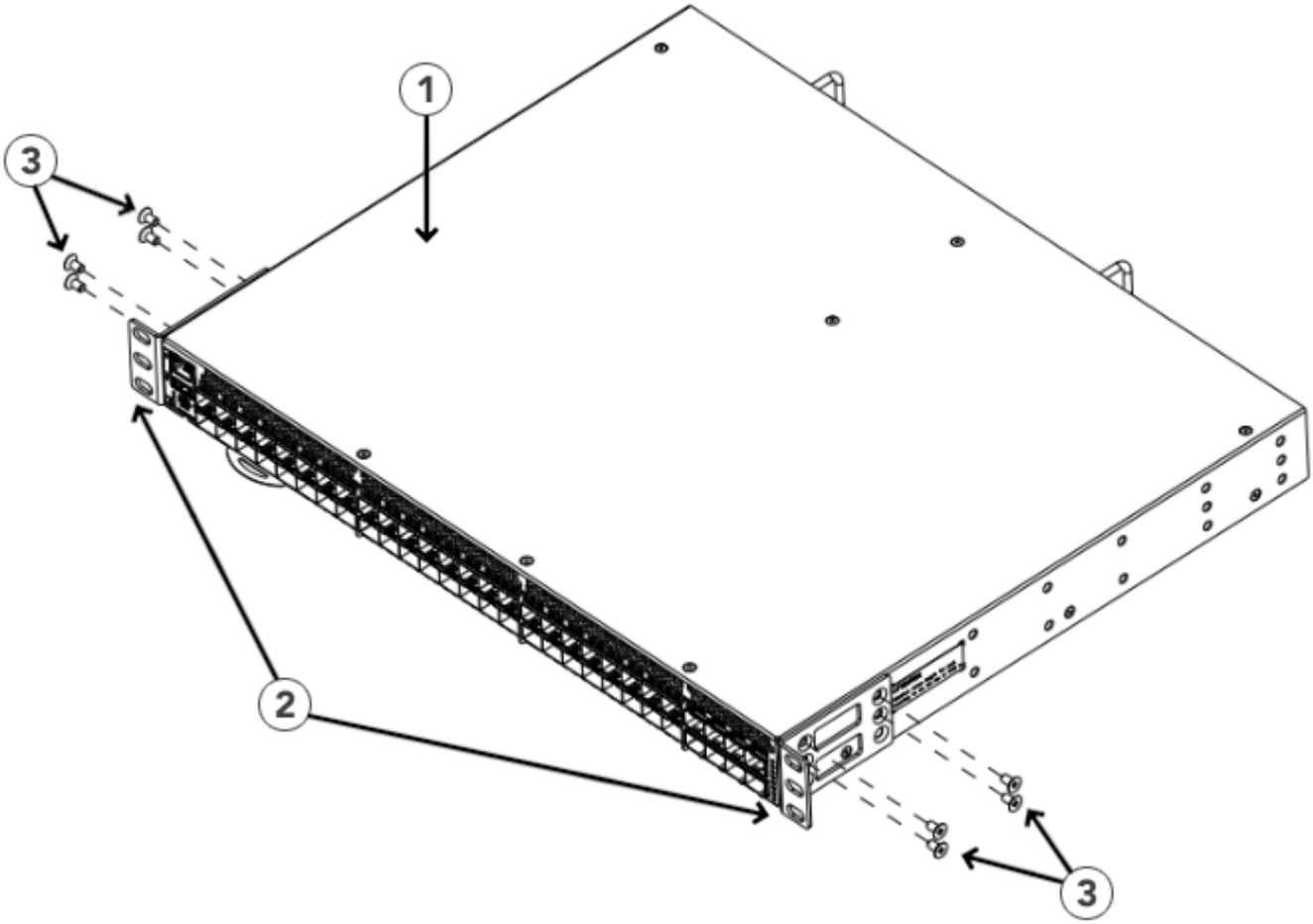
1. Attaching the Front Brackets
2. Attaching the Extension Brackets to the Device
3. Installing the Device in the Rack
4. Attaching the Rear Brackets to the Extensions
5. Attaching the Rear Brackets to the Rack Posts

Attaching the Front Brackets

Perform the following steps to attach the front brackets to the device:

1. Position the right front bracket with the flat side against the right side of the device at the front of the device.
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat Step 1 and Step 2 to attach the left front bracket to the left side of the device.
4. Tighten all 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 6: Attaching the Front Brackets



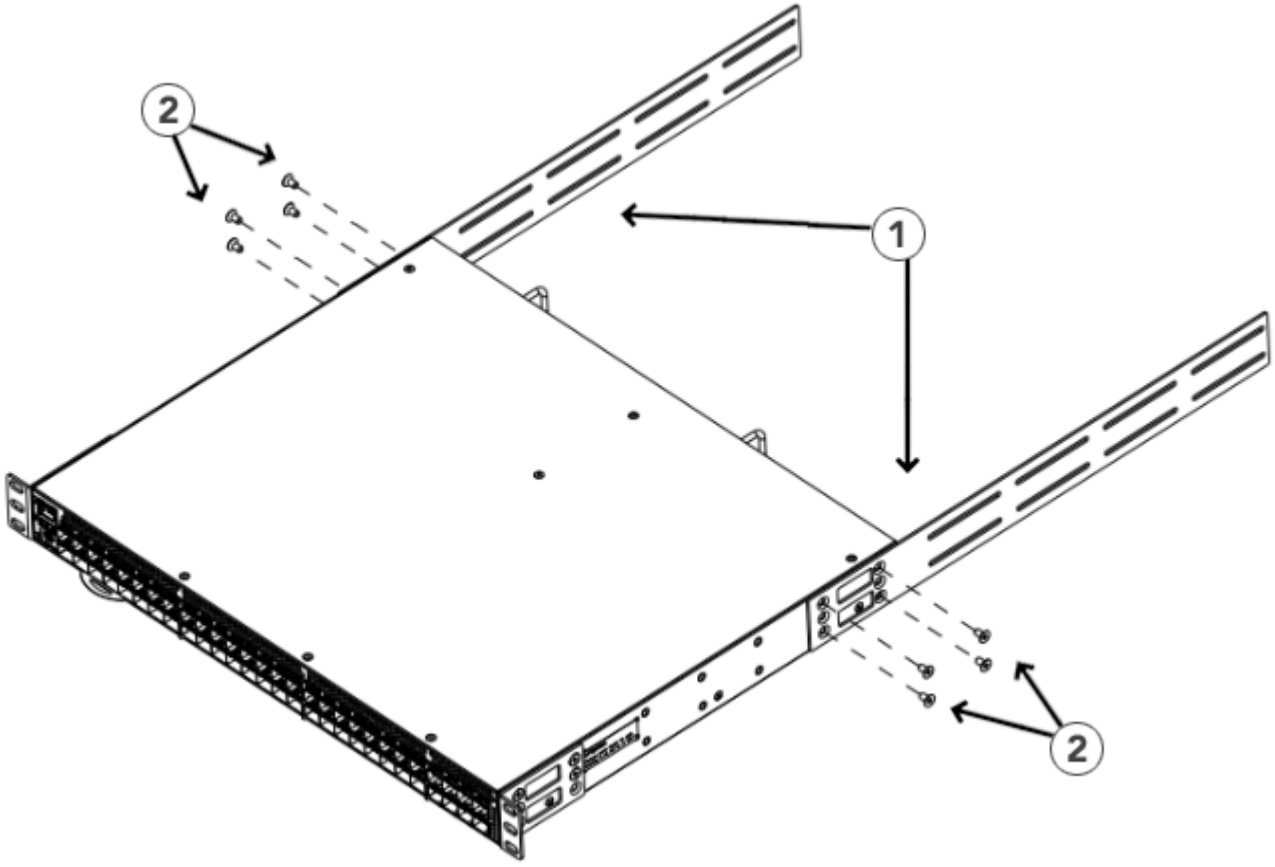
1. Brocade Device
2. Front Brackets
3. Screws, 8-32 x 5/16-in. Flathead Phillips

Attaching the Extension Brackets to the Device

Perform the following steps to attach the extension brackets to the device. You can use medium and long extension brackets for this task.

1. Select the proper length extension bracket for your rack depth.
2. Position the right extension bracket along the side of the device.
3. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket extension and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
4. Repeat Steps 2 and 3 to attach the left extension bracket to the left side of the device.
5. Tighten all 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 7: Attaching the Extension Brackets to the Device



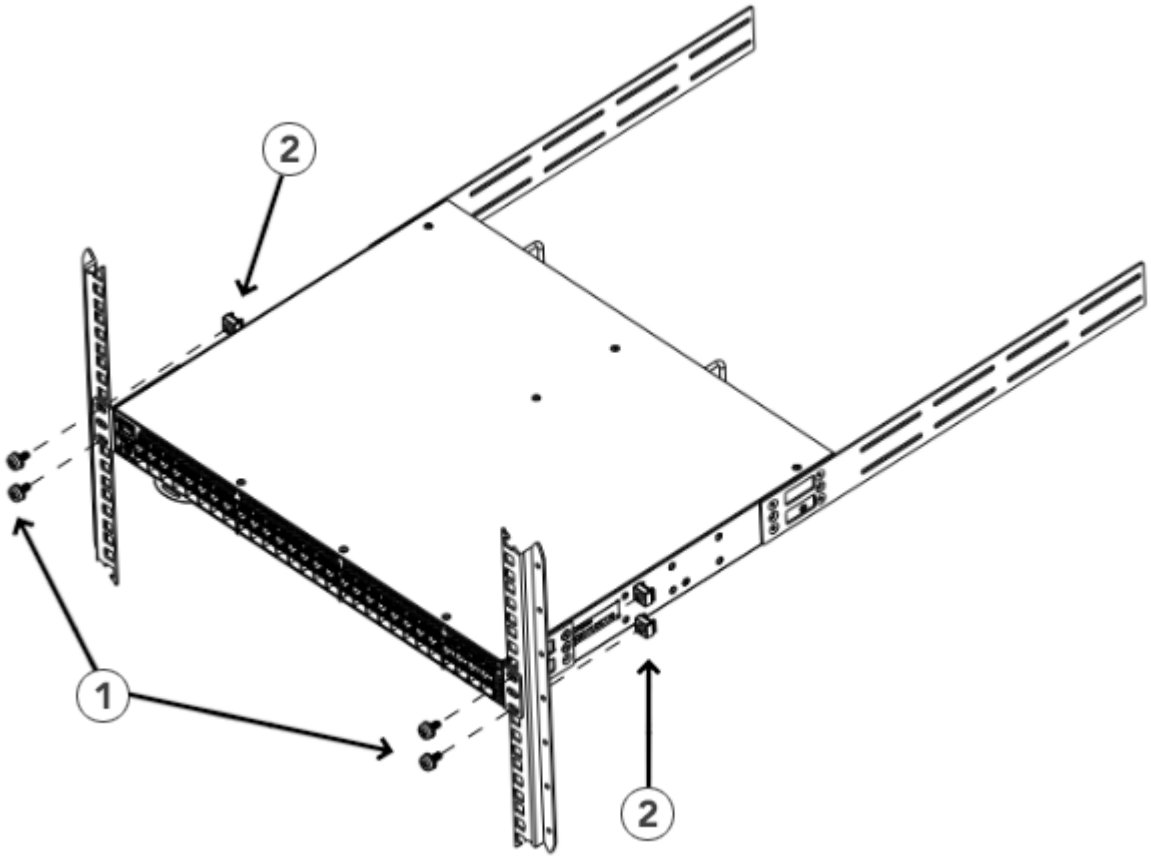
1. Extension Bracket
2. Screws, 8-32 x 5/16-in. Flathead Phillips

Installing the Device in the Rack

Perform the following steps to install the device in the rack:

1. Position the device in the rack. Provide temporary support under the device as you secure the rail kit to the rack.
2. Attach the right front bracket to the right front rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Tighten all 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 8: Positioning the Device in the Rack



1. Screws, 10-32 x 5/8-in. Panhead Phillips
2. Retainer Nuts, 10-32

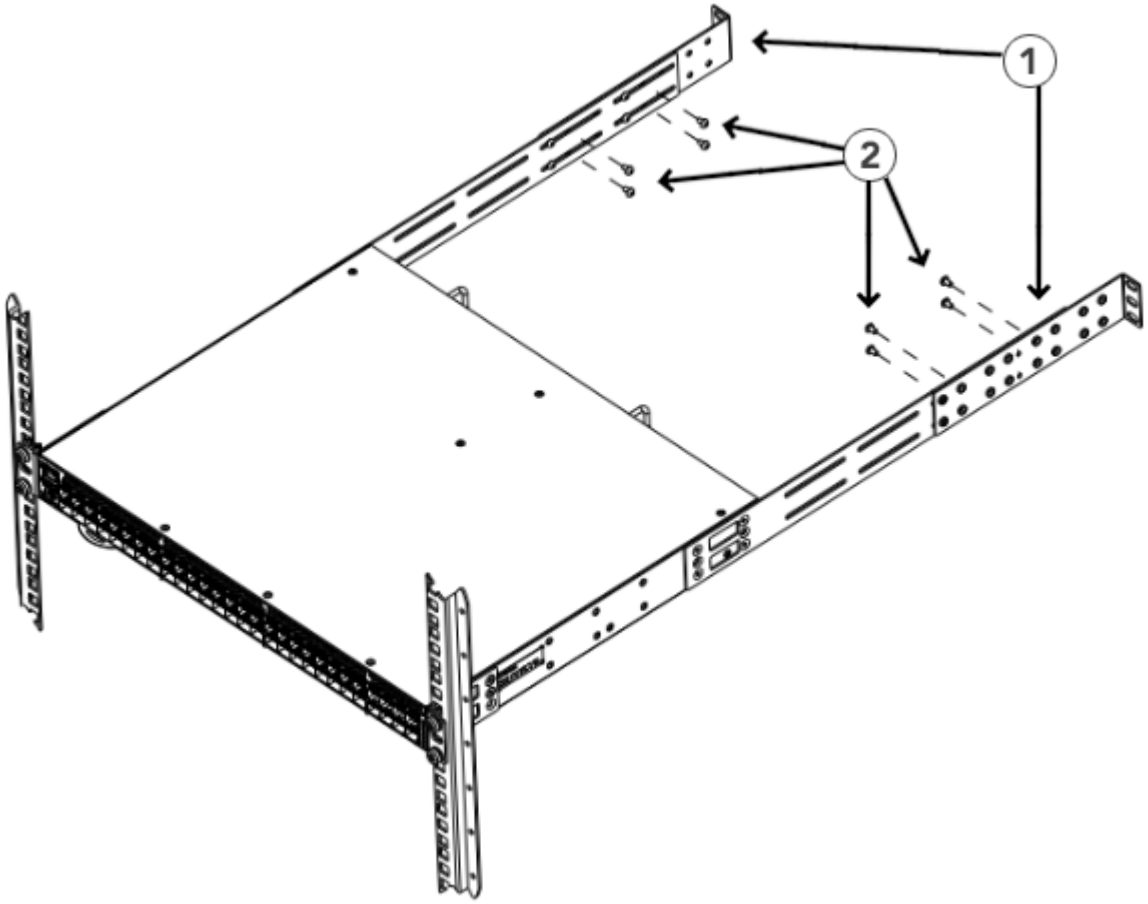
Attaching the Rear Brackets to the Extensions

Perform the following steps to attach the rear brackets to the extensions. You can use short or long rear brackets for this task, depending on the depth of your rack.

1. Select the proper length rear bracket for your rack depth.
2. Slide the right rear bracket onto the right extension bracket.
3. Attach the brackets using four 6-32 x 1/4-in. panhead screws.
   If possible, leave at least one empty vertical pair of holes between the screws for better support.

4. Repeat Step 2 and 3 to attach the left rear bracket to the left extension bracket.
5. Adjust the brackets to the rack depth and tighten all 6-32 x 1/4-in. screws to a torque of 10 cm-kg (9 in.-lb).

Figure 9: Attaching the Rear Brackets to the Extensions



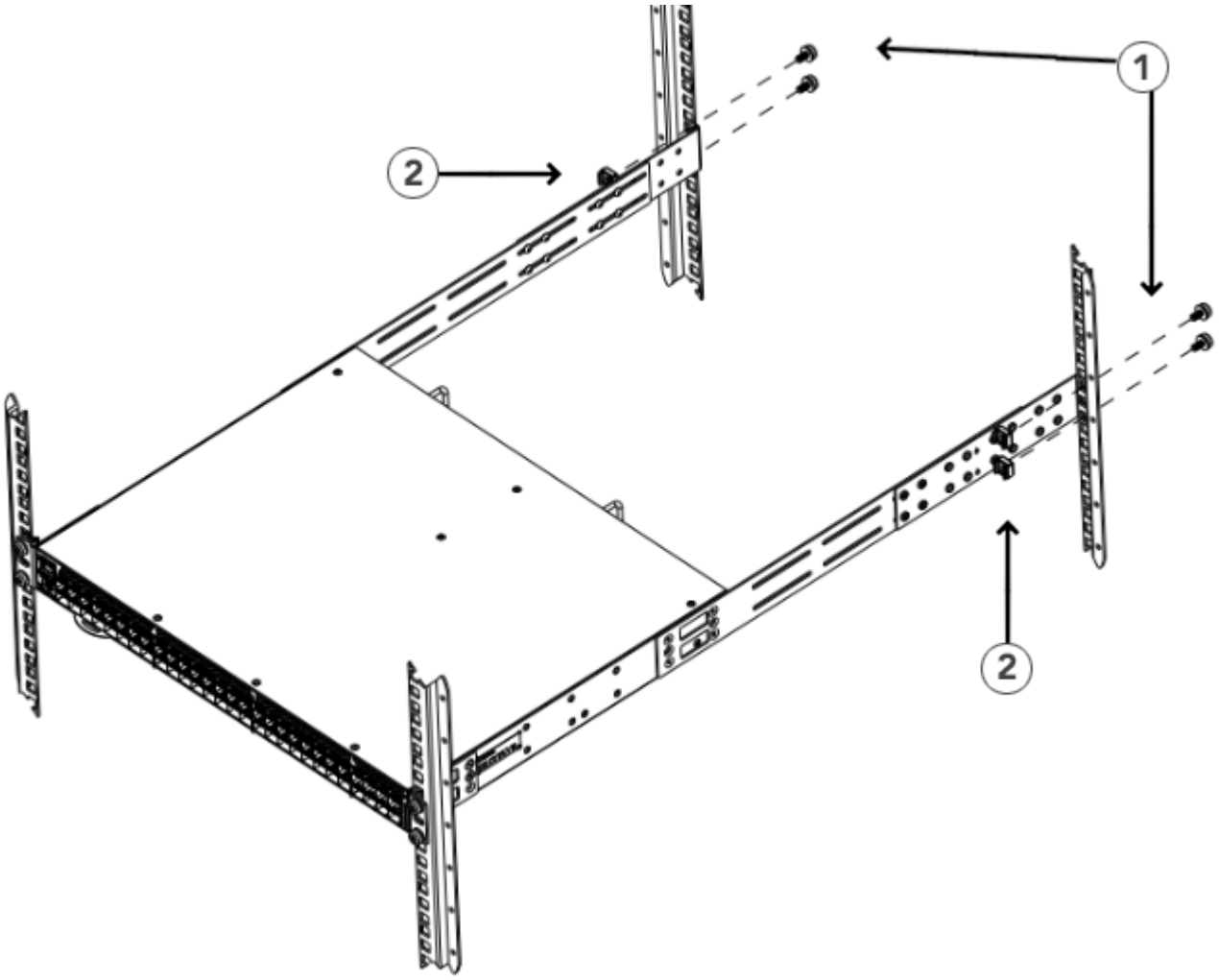
1. Rear Brackets
2. Screws, 6-32 x 1/4-in. Panhead Phillips

Attaching the Rear Brackets to the Rack Posts

Perform the following steps to attach the rear brackets to the rack posts:

1. Attach the right rear bracket to the right rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
2. Attach the left rear bracket to the left rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Tighten all 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 10: Attaching the Rear Brackets to the Rack Posts



1. Screws, 10-32 x 5/8-in. Panhead Phillips
2. Retainer Nuts, 10-32

Flush-Rear (Recessed) Mounting

Flush-rear (recessed) mounting is similar to flush-front mounting except that the brackets are reversed on the device.

CAUTION
The device must be turned off and disconnected from the fabric during this procedure.

NOTE
The illustrations in the rack installation procedures show a 1U device, but the instructions are the same for a 2U device. The illustrations in the rack installation procedures are for reference only and may not show the actual device.

Complete the following tasks to install the device in a four-post rack:

1. Attaching the Front Brackets to the Rear of the Device
2. Attaching the Extensions to the Front of the Device
3. Installing the Device in the Rack
4. Attaching the Rear Brackets to the Extensions at the Front of the Device
5. Attaching the Rear Brackets to the Front Rack Posts

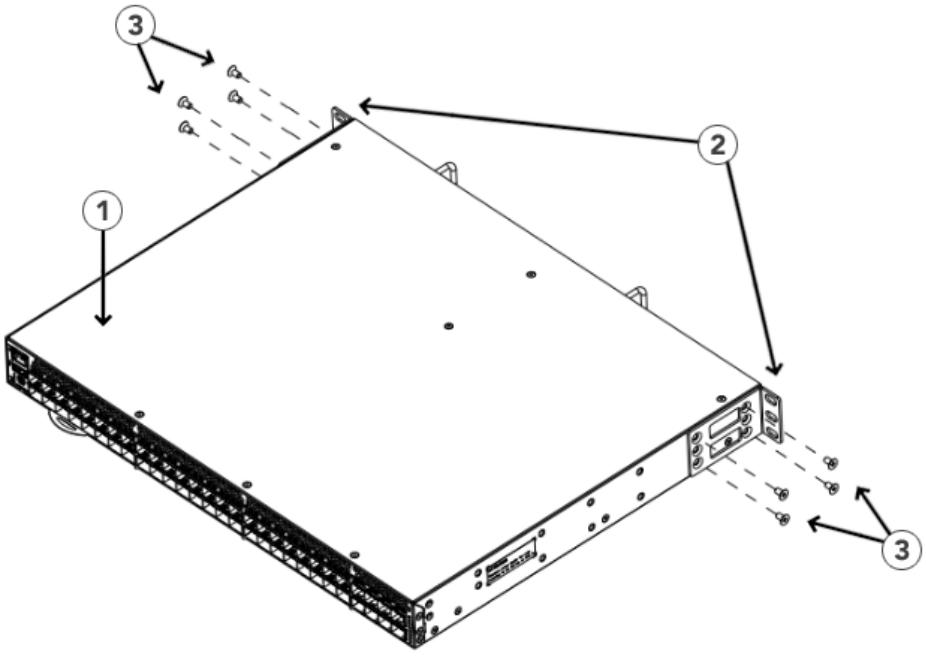
Attaching the Front Brackets to the Rear of the Device

NOTE
In this installation, the brackets are named as listed in the parts list even though the installation of the brackets is reversed from the flush-front installation.

Perform the following steps to attach the front brackets to the rear of the device:

1. Position the right front bracket with the flat side against the right rear side of the device.
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat Steps 1 and 2 to attach the left front bracket to the left side of the device.
4. Tighten all 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 11: Attaching the Front Brackets to the Rear of the Device



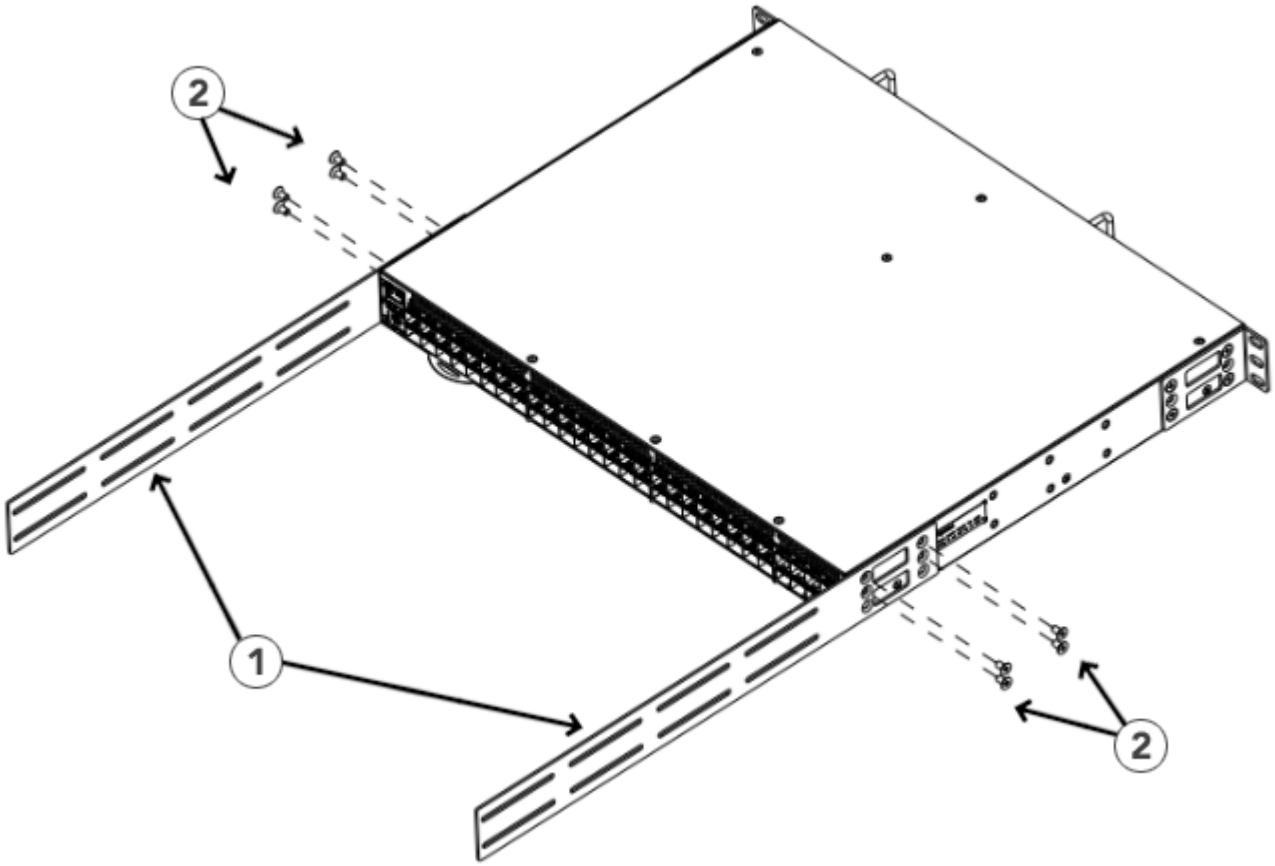
1. Brocade Device
2. Front Brackets
3. Screws, 8-32 x 5/16-in. Flathead Phillips

Attaching the Extensions to the Front of the Device

Perform the following steps to attach the extension brackets to the front of the device. You can use medium or long extension brackets for this task, depending on your rack depth.

1. Select the proper length extension bracket for your rack depth.
2. Position the right extension bracket along the side of the device.
3. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the extension brackets and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
4. Repeat Steps 2 and 3 to attach the left front extension bracket to the left side of the device.
5. Tighten all the 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 12: Attaching the Extensions to the Device



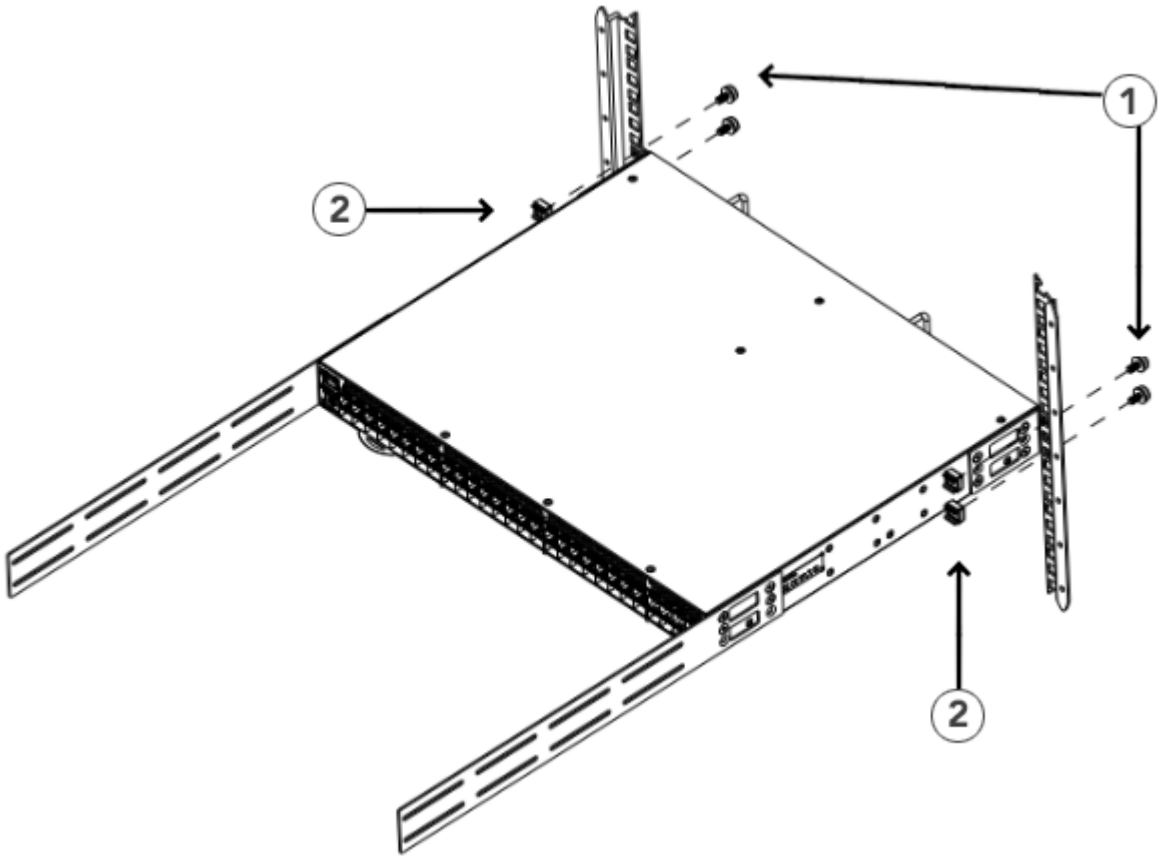
1. Extensions
2. Screws, 8-32 x 5/16-in. Flathead Phillips

Installing the Device in the Rack

Perform the following steps to install the device in the rack:

1. Position the device in the rack, providing temporary support under the device until the rail kit is secured to the rack.
2. Attach the right front bracket to the right rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Tighten all 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 13: Positioning the Device in the Rack



1. Screws, 10-32 x 5/8-in. Panhead Phillips
2. Retainer Nuts, 10-32

Attaching the Rear Brackets to the Extensions at the Front of the Device

Perform the following steps to attach the rear brackets to the extensions. The rack depth determines the use of short or long brackets.

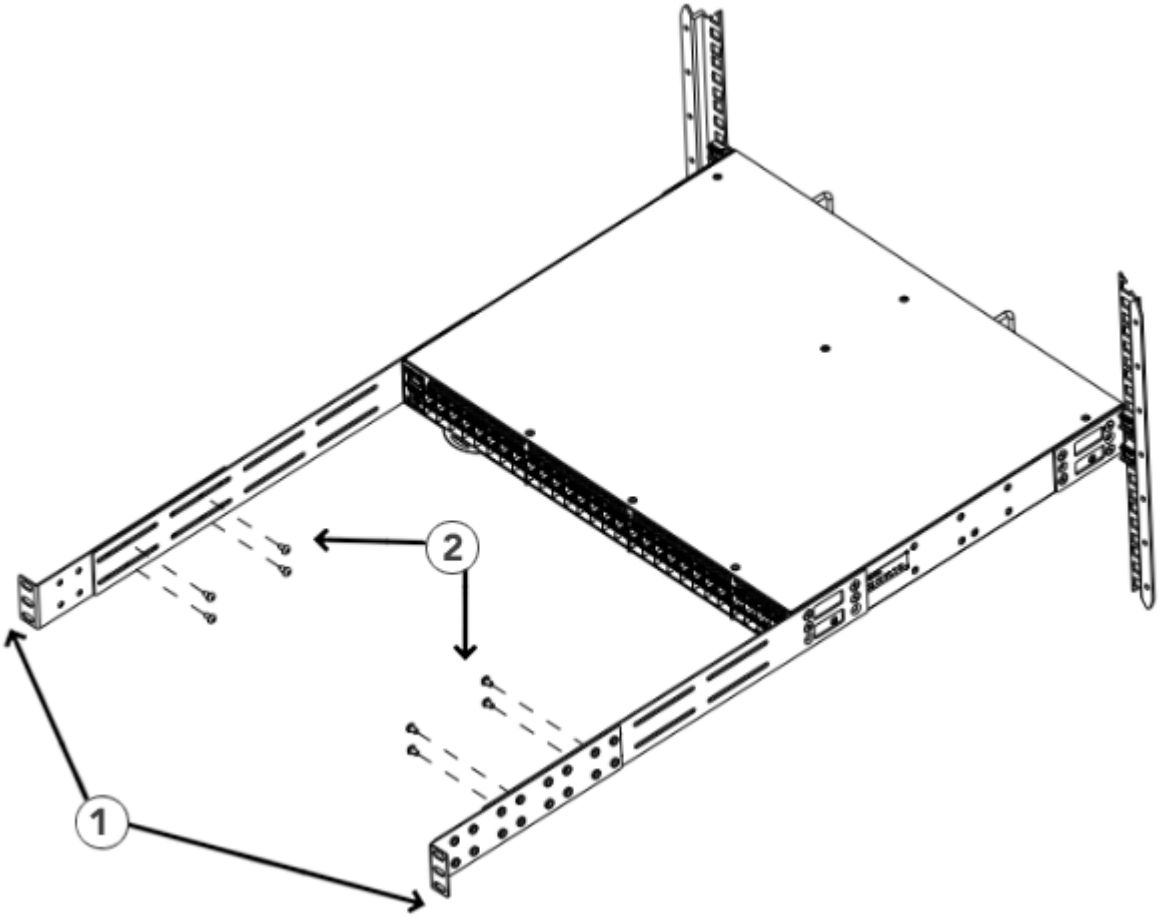
1. Select the proper length rear bracket for your rack depth.
2. Slide the right rear bracket onto the right extension.

   The short rear brackets are shown in the first figure. Use the first and third vertical pairs of holes for the screws.

   See the second figure for the positioning of the short or long brackets and screws.

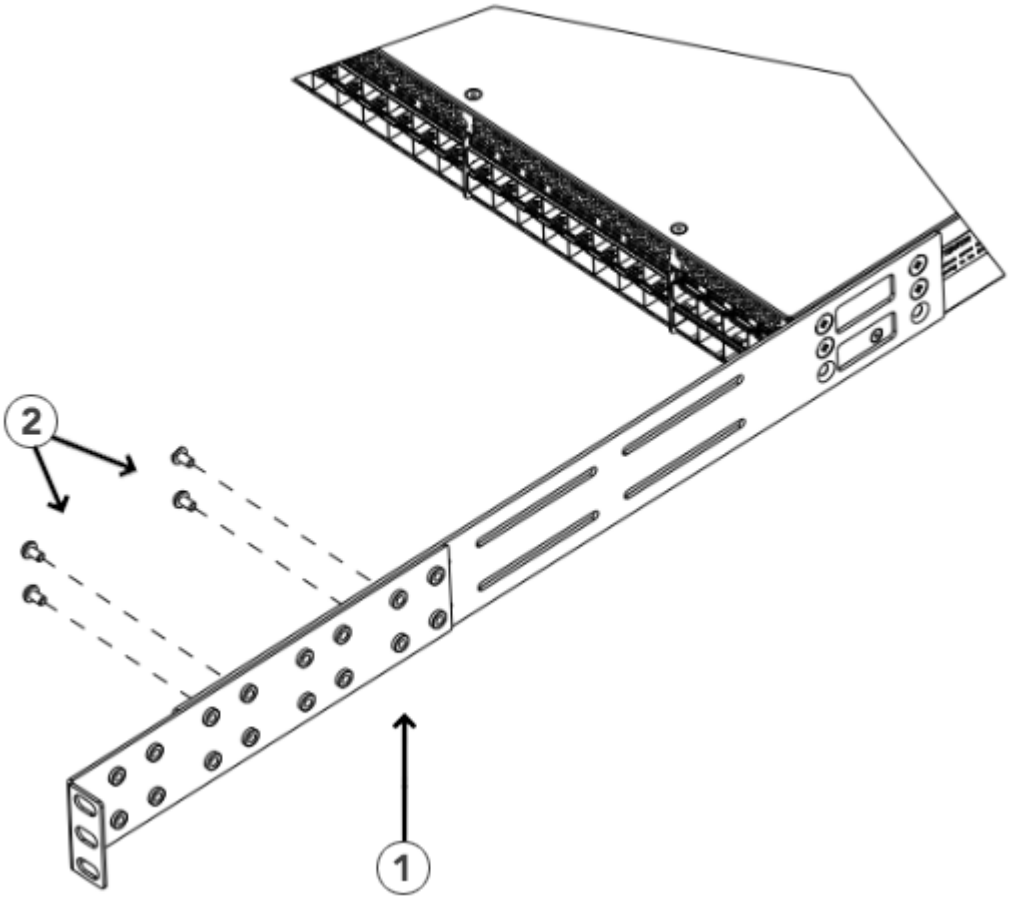
3. Attach the brackets using four 6-32 x 1/4-in. panhead screws.
4. Repeat Steps 2 and 3 to attach the left rear bracket to the left extension.
5. Adjust the brackets to the rack depth, and tighten all 6-32 x 1/4-in. screws to a torque of 10 cm-kg (9 in.-lb).

Figure 14: Attaching the Rear Brackets to the Extensions at the Front of the Device



1. Rear Brackets, Short
2. Screws, 6-32 x 1/4-in. Panhead Phillips

Figure 15: Attaching the Short or Long Rear Brackets to the Extensions



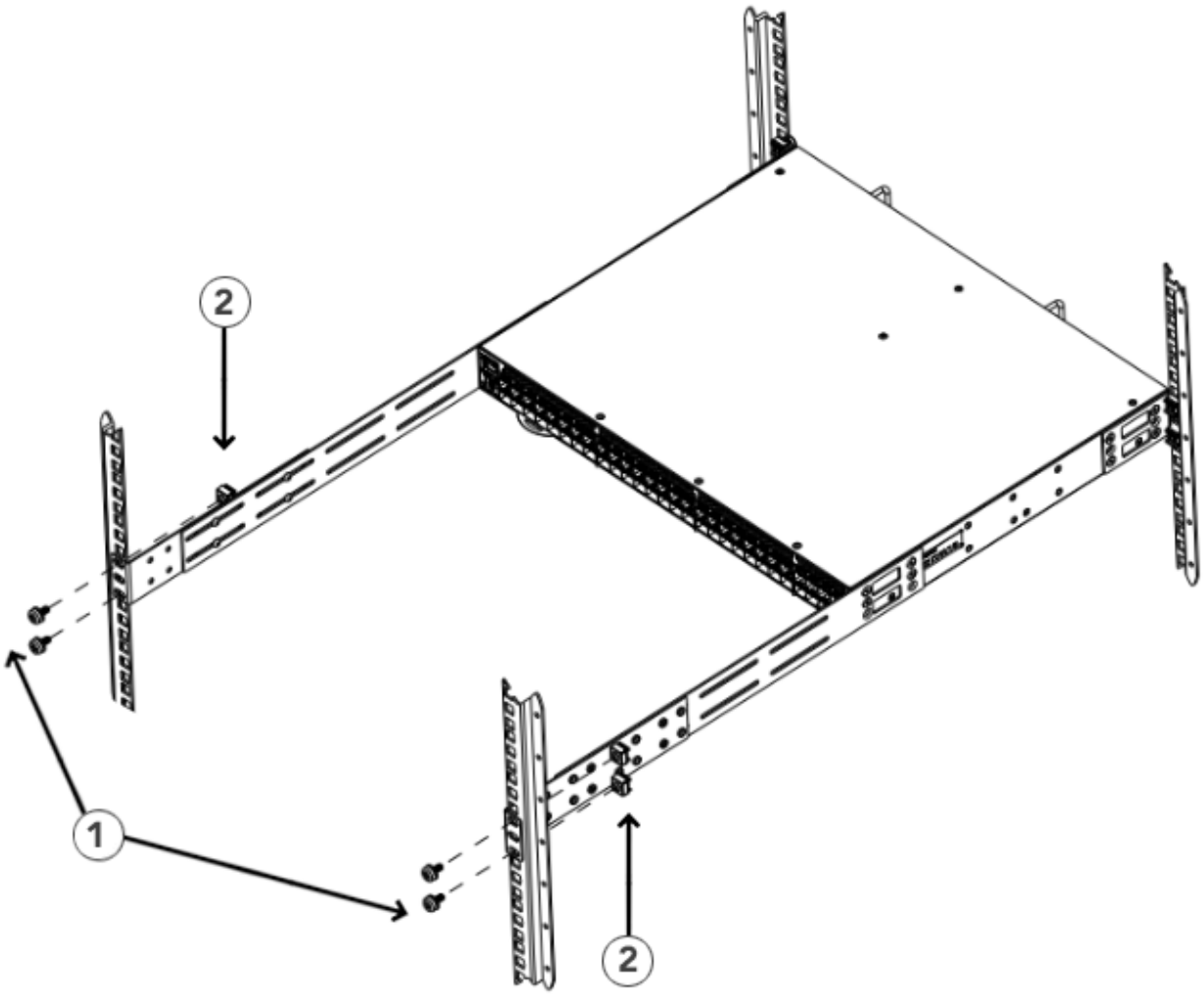
1. Rear Bracket, Short or Long
2. Screws, 6-32 x 1/4-in. Panhead Phillips

Attaching the Rear Brackets to the Front Rack Posts

Perform the following steps to attach the rear brackets to the front rack posts:

1. Attach the right rear bracket to the right front rack post using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.
2. Attach the left rear bracket to the left front rack post using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Tighten all 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 16: Attaching the Rear Brackets to the Front Rack Posts



1. Screws, 10-32 x 5/8-in. Panhead Phillips
2. Retainer Nuts, 10-32

Installing the Universal Two-Post Rack Kit (XBR-R000294)

Use the following instructions to install a Brocade 1U or 2U device in a two-post telecommunications (Telco) rack using the Universal Two-Post Rack Kit (XBR-R000294).

You can mount the device in a two-post rack in two ways:

- With the port side flush with the front posts
- With the posts mounted to the mid-section of the device

Observe the following when mounting this device:

- Two people are required to install the device in a rack. One person should hold the device, while the other person screws in the front and rear brackets.
- Hardware devices that are illustrated in these procedures are for reference only and may not depict the device that you are installing into the rack.

Time and Items Required

Allow 15 to 30 minutes to complete the installation.

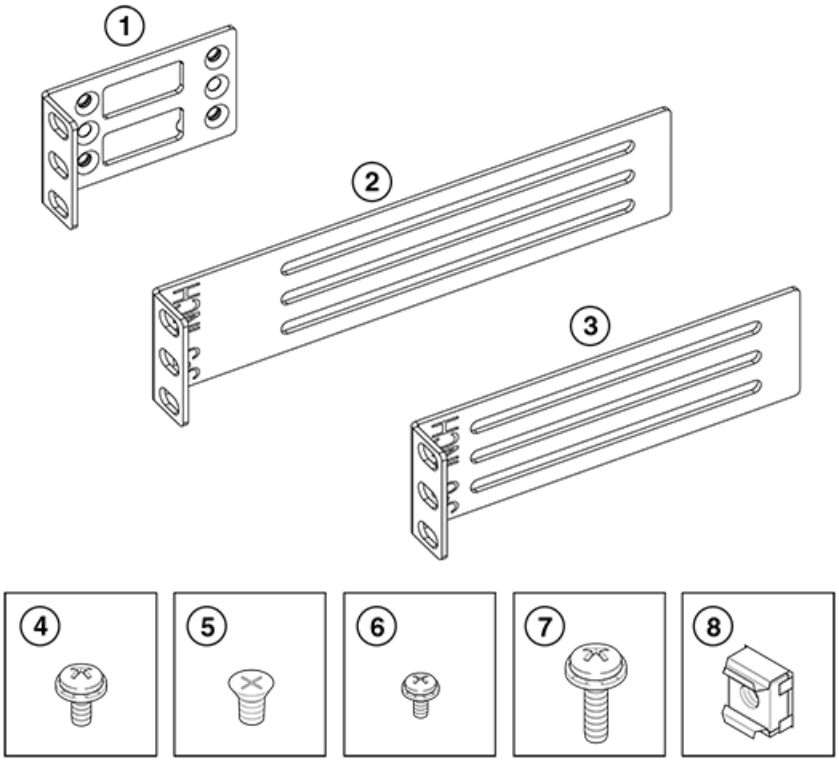
The following items are required to install the device using the Universal Two-Post Rack Kit:

- No. 2 Phillips torque screwdriver
- 1/4-in. slotted-blade torque screwdriver

Parts List

The following parts are provided with the Universal Two-Post Rack Kit (XBR-R000294).

Figure 17: Universal Two-Post Rack Kit Parts



1. Front Brackets (2)
2. Rear Brackets, 5–6-in. Post (2)
3. Rear Brackets, 3–5-in. Post (2)
4. Screw, 8-32 x 5/16-in. Panhead Phillips (8)

5. Screw, 8-32 x 5/16-in. Flathead Phillips (16)
6. Screw, 6-32 x 1/4-in. Panhead Phillips (8)
7. Screw, 10-32 x 5/8-in. Panhead Phillips (8)
8. Retainer Nut, 10-32 (8)

Ensure that the items listed and illustrated in the preceding figure are included in the kit.

NOTE
Not all parts may be used with certain installations depending on the device type.

Flush-Front Mounting

Observe the following notes when performing this procedure:

- The device must be turned off and disconnected from the fabric during this procedure.
- The figures in this document show a 1U device, but the instructions are the same for a 2U device.
- The figures for this procedure show a two-post rack with narrow posts (3-in. to 5-in.) as an example.
- The figures in the rack installation procedures are for reference only and may not show the actual device.

CAUTION
Use the screws specified in the procedure. Using longer screws can damage the device.

Complete the following tasks to install the device in the rack:

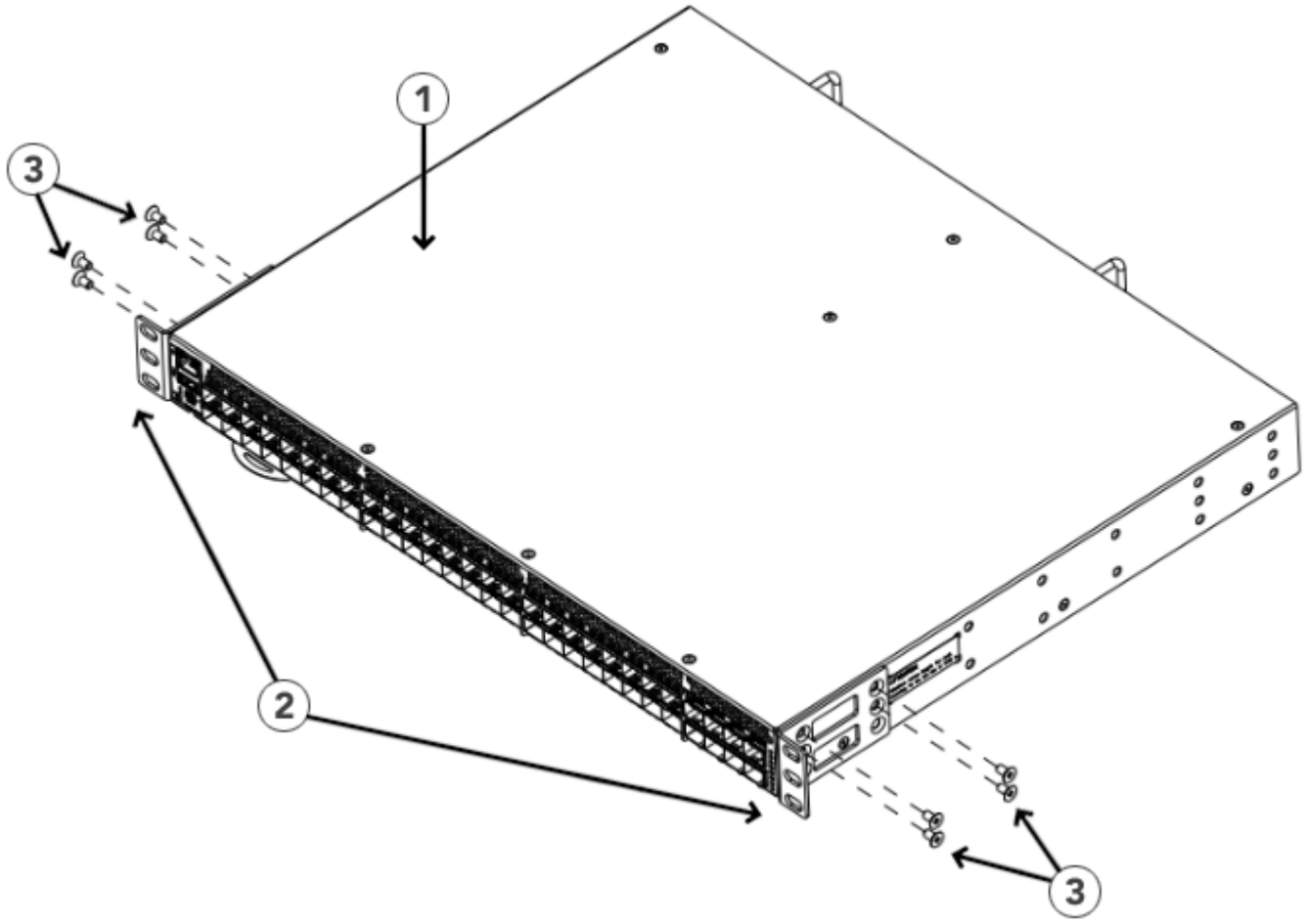
1. Attaching the Front Brackets to the Device
2. Attaching the Front Brackets to the Rack
3. Attaching the Rear Brackets to the Rack
4. Attaching the Rear Brackets to the Device

Attaching the Front Brackets to the Device

Perform the following steps to attach the front brackets to the device:

1. Position the right front bracket with the flat side against the right side of the device.
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat Steps 1 and 2 to attach the left front bracket to the left side of the device.
4. Tighten all the 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 18: Attaching the Front Brackets



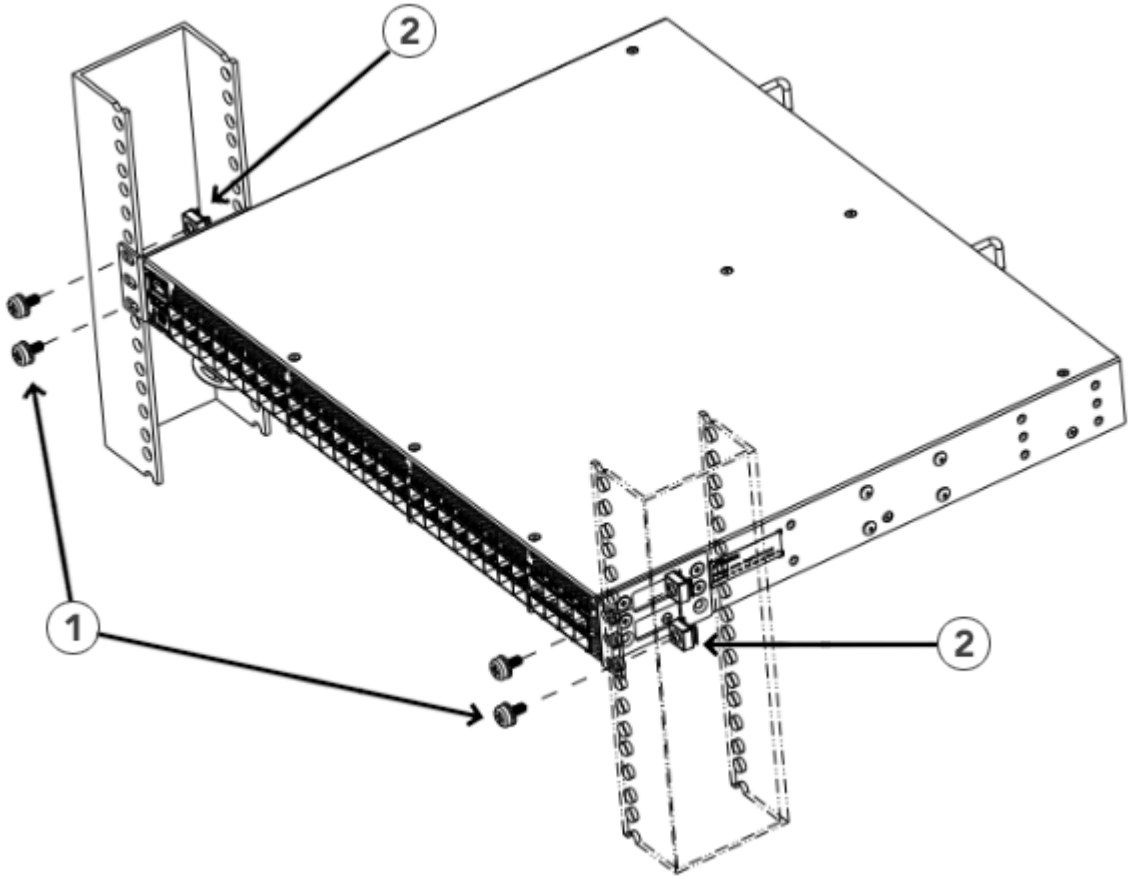
1. Brocade Device
2. Front Brackets, Right and Left
3. Screws, 8-32 x 5/16-in. Flathead Phillips

Attaching the Front Brackets to the Rack

Perform the following steps to install the device in the rack:

1. Position the device in the rack, providing temporary support under the device until the rack kit is fully secured to the rack.
2. Attach the right front bracket to the right rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Attach the left front bracket to the left rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
4. Tighten all the 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 19: Attaching the Front Brackets to the Rack



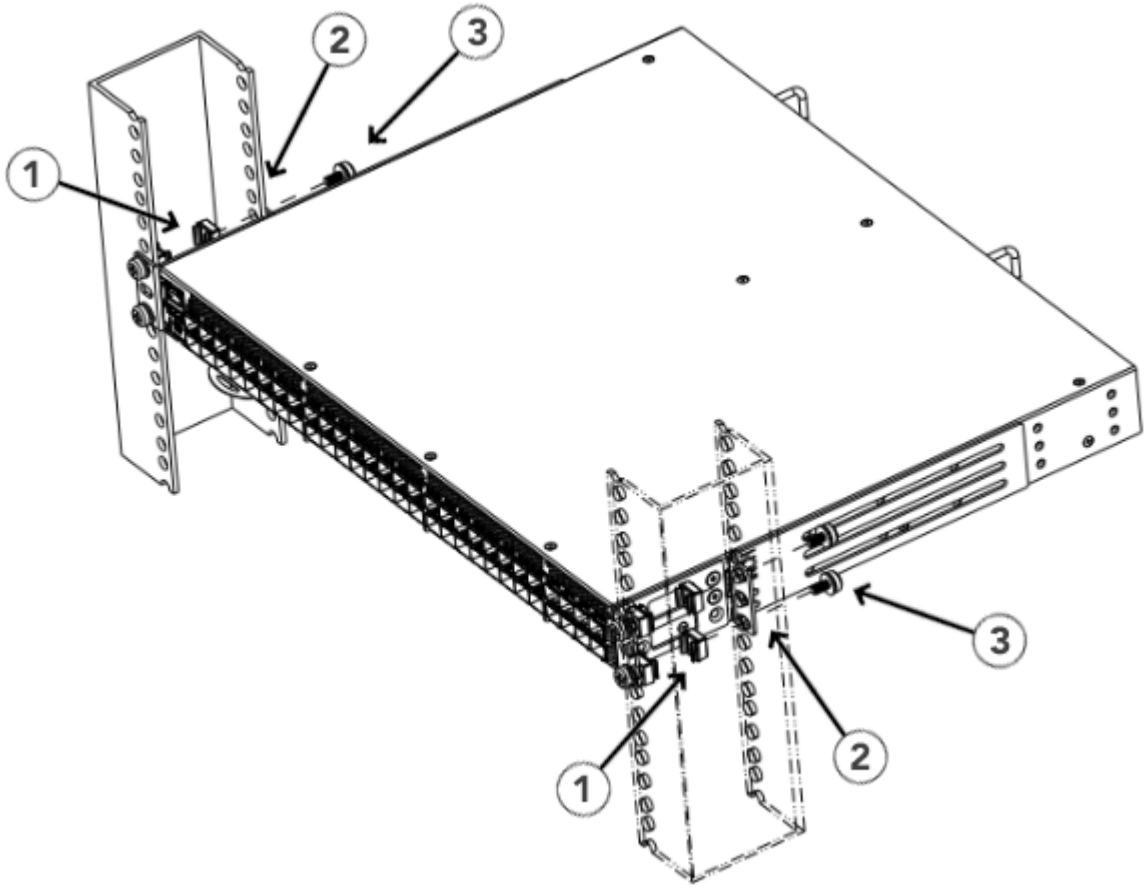
1. Screws, 10-32 x 5/8-in. Panhead Phillips
2. Retainer Nuts, 10-32

Attaching the Rear Brackets to the Rack

Perform the following steps to attach the rear brackets to the rack:

1. Select the proper length bracket for your post width. If your posts are 3 inches to 5 inches wide, use the brackets marked 3-5 INCH. If your posts are 5 inches to 6 inches wide, use the brackets marked 5-6 INCH.
2. Position the right rear bracket in the right rear of the device.
3. Attach the bracket to the right rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
4. Repeat Steps 2 and 3 to attach the left rear bracket to the left rack upright.
5. Tighten all the 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 20: Attaching the Rear Brackets to the Rack



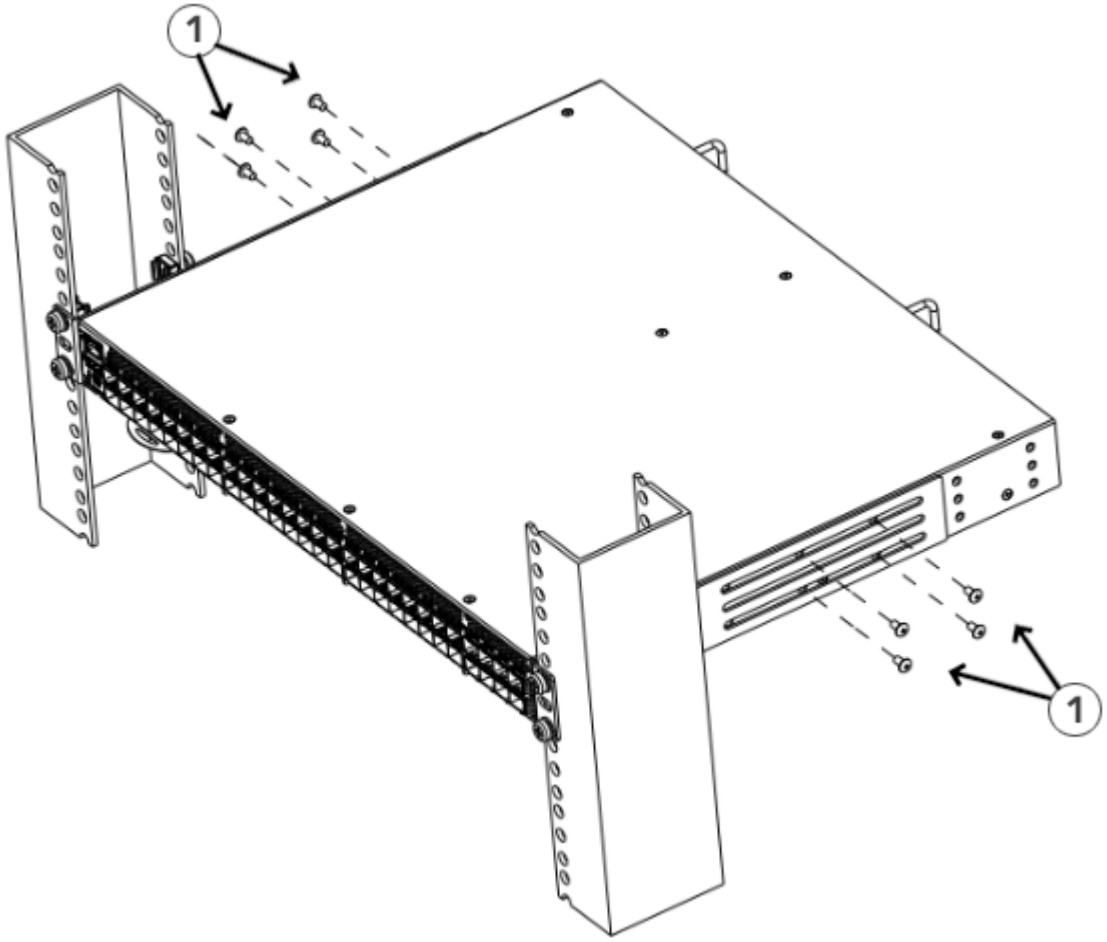
1. Retainer Nuts, 10-32
2. Rear Brackets
3. Screws, 10-32 x 5/8-in. Panhead Phillips

Attaching the Rear Brackets to the Device

Perform the following steps to attach the rear brackets to the device:

1. Align the right rear bracket to the right rear of the device and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device. Be sure to insert the screws through the upper and lower slots in the bracket.
2. Align the left rear bracket to the left rear of the device and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device. Again, use the upper and lower slots in the bracket.
3. Tighten all the 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 21: Attaching the Rear Brackets to the Device



1. Screws, 8-32 x 5/16-in. Panhead Phillips

Mid-Mounting

Observe the following notes when performing this procedure:

- The device must be turned off and disconnected from the fabric during this procedure.
- The illustrations in this document show a 1U device, but the instructions are the same for a 2U device.
- The illustrations in the rack installation procedures are for reference only and may not show the actual device.

Complete the following tasks to install the device in the rack:

1. Attaching the Front Brackets to the Device

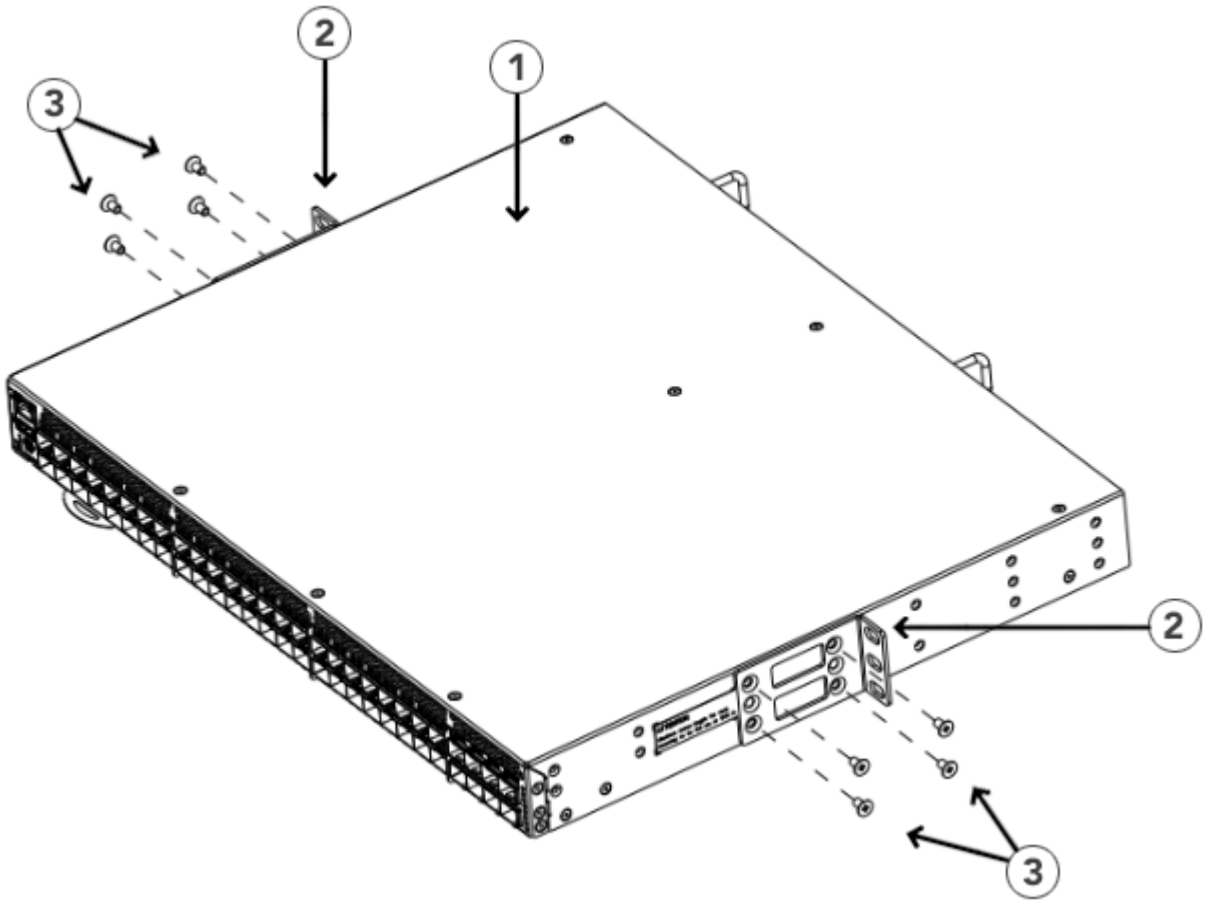
2. Attaching the Front Brackets to the Rack
3. Attaching the Rear Brackets to the Rack
4. Attaching the Rear Brackets to the Device

Attaching the Front Brackets to the Device

Perform the following steps to attach the front brackets to the device:

1. Position the right front bracket with the flat side against the right side of the device.
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat Steps 1 and 2 to attach the left front bracket to the left side of the device.
4. Tighten all 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 22: Attaching the Front Brackets



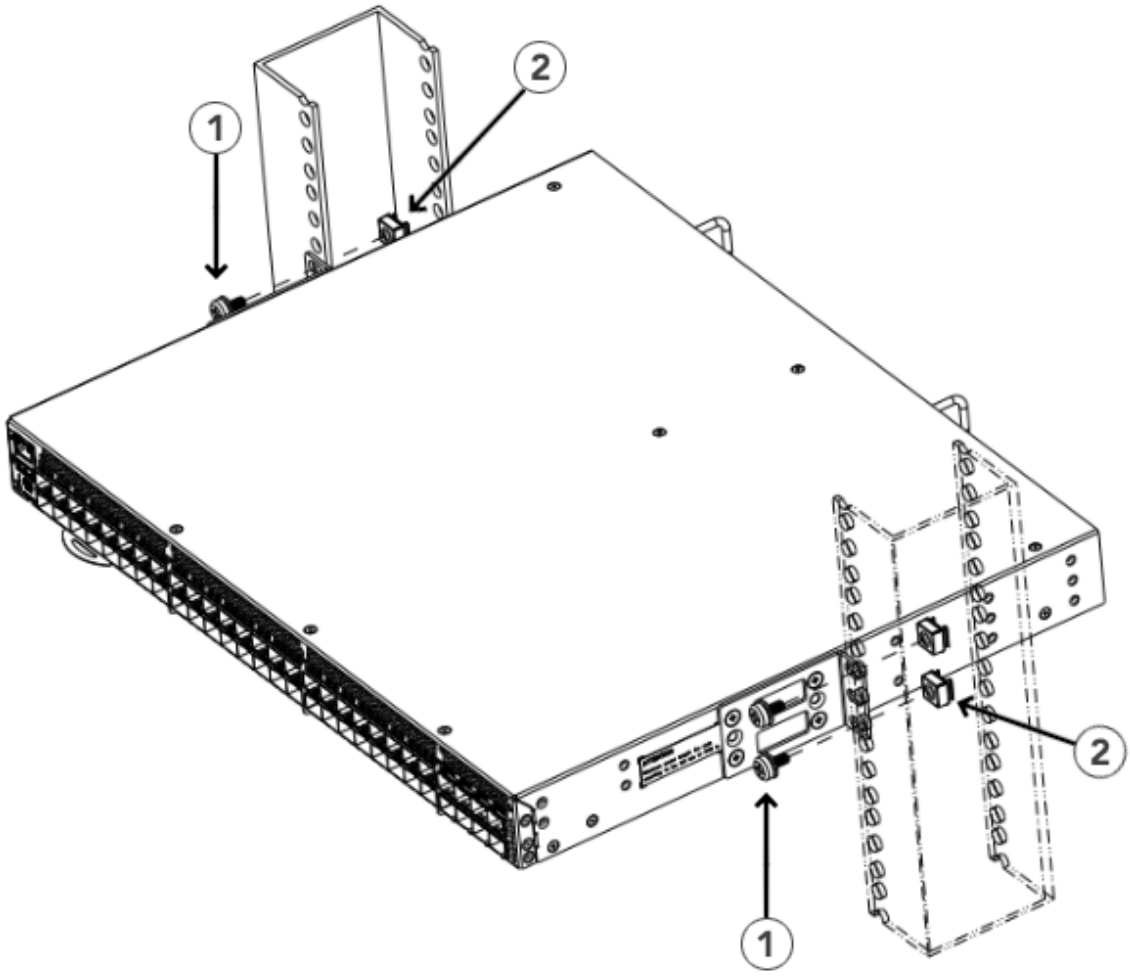
1. Brocade Device
2. Front Brackets, Right and Left
3. Screws, 8-32 x 5/16-in. Flathead Phillips

Attaching the Front Brackets to the Rack

Perform the following steps to install the front brackets to the rack:

1. Position the device in the rack, providing temporary support under the device until the rack kit is fully secured to the rack.
2. Attach the right front bracket to the right rack upright using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Attach the left front bracket to the left rack upright using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.
4. Tighten all 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 23: Attaching the Front Brackets to the Rack



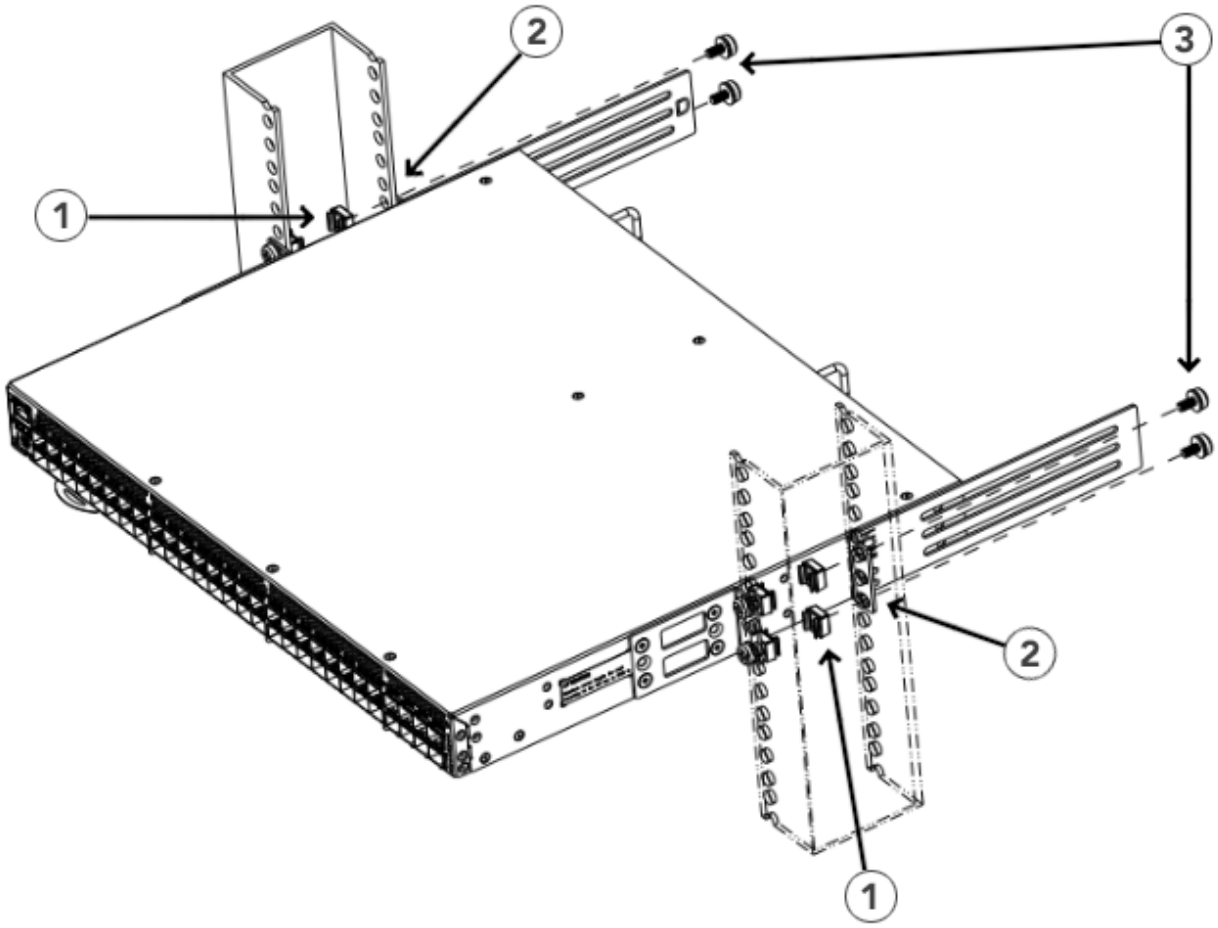
1. Screws, 10-32 x 5/8-in. Panhead Phillips
2. Retainer Nuts, 10-32

Attaching the Rear Brackets to the Rack

Perform the following steps to attach the rear brackets to the rack:

1. Select the proper length bracket for your post width. If your posts are 3 in. to 5 in. wide, use the brackets marked 3-5 INCH. If your posts are 5 in. to 6 in. wide, use the brackets marked 5-6 INCH.
2. Position the right rear bracket in the right rear of the device. Whether you are using the 3-5 INCH or the 5-6 INCH bracket, the rear end of the bracket will be flush with the back of the device.
3. Attach the brackets to the right rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts.
4. Repeat Step 2 and Step 3 to attach the left rear bracket to the left rack upright.
5. Tighten all 10-32 x 5/8-in. screws to a torque of 29 cm-kg (25 in.-lb).

Figure 24: Attaching the Rear Brackets to the Rack



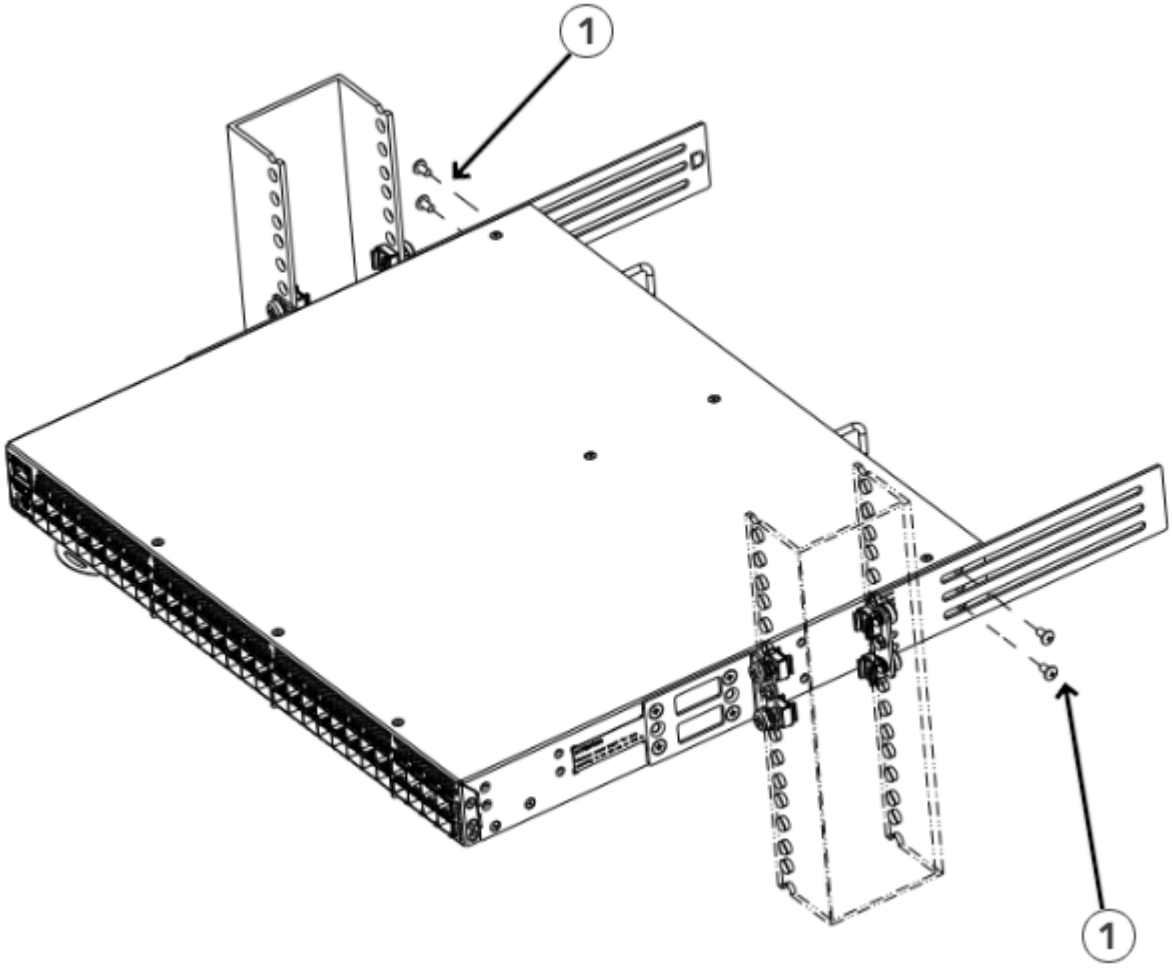
1. Retainer Nuts, 10-32
2. Rear Brackets (Right and Left)
3. Screws, 10-32 x 5/8-in. Panhead Phillips

Attaching the Rear Brackets to the Device

Perform the following steps to attach the rear brackets to the device:

1. Align the right rear bracket to the right rear of the device, and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device. Be sure to insert the screws through the upper and lower slots in the bracket.
2. Align the left rear bracket to the left rear of the device, and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device. Again, use the upper and lower slots in the bracket.
3. Tighten all 8-32 x 5/16-in. screws to a torque of 17 cm-kg (15 in.-lb).

Figure 25: Attaching the Rear Brackets to the Device



1. Screws, 8-32 x 5/16-in. Panhead Phillips

Initial Setup and Verification

After the device is installed, you need to power it on and perform some basic configuration, such as configuring the IP address, setting the date and time, establishing an Ethernet connection, and setting the domain ID.

Items Required

The following items are required for the initial setup and verification of the device:

- The device, mounted and connected to a power source, with the required power supply, fan assemblies, transceivers, and cables installed.
- A workstation computer with a terminal emulator application installed, such as PuTTY, XShell, or SecureCRT on Windows.
- An unused IP address with a corresponding subnet mask and gateway address.
- A serial cable with an RJ-45 connector.
- An Ethernet cable.
- Access to an FTP server or USB device for uploading (backing up) or downloading the device configuration (optional).

  NOTE

  Broadcom recommends the use of a USB drive that has been test validated (verified) by Broadcom:

  - SanDisk 32 CZ48 USB 3.0 Flash Drive (SDCZ48-032G-UAM46)
  - SanDisk 16 CZ48 USB 3.0 Flash Drive (SDCZ48-016G-UAM46)
  - Kingston 32GB DataTraveler 100 G3 USB 3.0 Flash Drive (DT100G3/32GB)
  - Kingston 32GB DataTraveler G4 USB 3.0 Flash Drive (DTIG4/32GB)
  - PNY Attache 3.0 4 USB 32GB Flash Drive
  - PNY Attache 3.0 4 USB 16GB Flash Drive

  These drives are not orderable from Broadcom but are generically branded and can be purchased from other suppliers.

Providing Power to the Device

Perform the following steps to provide power to the device:

1. Connect the power cords to both power supplies and then to power sources on separate circuits to protect against power failure. Ensure that the power cords have a minimum service loop of 6 inches available and that they are routed to avoid stress.

   The system power supply LEDs display amber until the power-on self-test (POST) is complete, and then the LEDs change to green. The switch usually requires several minutes to boot and complete the POST.

2. After the POST completes, verify that the switch power LED and switch status LED are green.

   For more information about how to interpret the POST, boot, and diagnostics tests, see Monitoring the Device.

Establishing a First-Time Serial Connection

Perform the following steps to log on to the device through a serial connection:

1. Connect the device with the workstation.

   Connect the serial cable to the serial port on the device and to an RS-232 serial port on the workstation.

If the serial port on the workstation is RJ-45 instead of RS-232, remove the adapter on the end of the serial cable and insert the exposed RJ-45 connector into the RJ-45 serial port on the workstation.

2. Disable any serial communication programs running on the workstation, such as synchronization programs.
3. Open a terminal emulator application, such as PuTTY, XShell, or SecureCRT on a Windows PC or TERM, TIP, or C-Kermit in a Linux environment, and configure the application as follows:
   - In a Windows environment, use the following values:

Parameter	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None (must be disabled on the host side)

NOTE
Flow control is not supported on the serial connection when attached to a remote terminal and must be disabled on the customer-side remote terminal server in addition to the host-side clients.

   - In a UNIX environment using TIP, enter the following string at the prompt:

```
tip /dev/ttyb -9600
```

     If ttyb is already in use, use ttya instead and enter the following string at the prompt:

```
tip /dev/ttya -9600
```

4. When the terminal emulator application stops reporting information, press `Enter` to display the login prompt.

```
Switch Console Login:
```

5. Log on to the device as admin, using the default password (`password`). You are prompted to change the default user name and password at initial logon. Make sure to write down the new credentials and keep this information in a secure location.

```
Fabric OS (swDir)
swDir login: admin
Password:
Please change your passwords now.
Use Control-C to exit or press 'Enter' key to proceed.
swDir:admin>
```

6. Modify the credentials. To cancel, press `Ctrl+C` .

NOTE
Initial passwords can be 8 to 40 characters long. They must begin with an alphabetic character. They can include numeric characters, the period (.), and the underscore (_) only. Passwords are case-sensitive, and they are not displayed when you enter them on the command line.

Configuring the IP Address

You can configure the device with a static IP address, or you can use a Dynamic Host Configuration Protocol (DHCP) server to set the IP address of the switch. DHCP is enabled by default. The device supports both IPv4 and IPv6 addresses.

Using DHCP to Set the IP Address

When using DHCP, the switch obtains its IP address, subnet mask, and default gateway address from the DHCP server. The DHCP client can connect only to a DHCP server that is on the same subnet as the switch. If your DHCP server is not on the same subnet as the switch, use a static IP address.

Setting a Static IP Address

Perform the following steps to set a static IP address for the device:

1. Log on to the device as admin.
2. Use the `ipaddrset` command to set the Ethernet IP address.
   - To use an IPv4 address, enter the IP address in dotted-decimal notation as prompted.

     ```
     Ethernet IP Address: [192.0.2.0]
     ```
   - To use an IPv6 address, enter the network information in colon-separated notation as prompted.

     ```
     device:admin> ipaddrset -ipv6 --add 2001:db8:8:800:200C:417A/32
     IP address is being changed...Done.
     ```
3. Complete the rest of the network information as prompted (IPv4 format shown).

   ```
   Ethernet Subnetmask: [255.255.255.0]
   Ethernet IP Address: [192.0.2.0]
   Gateway IP Address: [192.0.2.1]
   ```
4. Enter `off` to disable DHCP when prompted.

   ```
   DHCP [OFF]: off
   ```

Setting the Date and Time

The date and time settings are used for event logging, error detection, and troubleshooting. However, device operation does not depend on the date and time; a device with incorrect date or time values still functions properly.

You can synchronize the local time of the principal or primary fabric configuration server (FCS) device to that of an external Network Time Protocol (NTP) server.

Perform the following steps to set the date and time:

1. Log on to the device as admin.
2. Enter the `date ["`*`new-date`*`"]` command at the command line.

   The "*new-date*" variable specifies the new date and time and is enclosed in double quotation marks. This variable is optional; if omitted, the current date and time are displayed. The date and time are specified as a string in *mmddhhmmyy* format:

   - *mm*: Specifies the month. Valid values are 01 through 12.
   - *dd*: Specifies the date. Valid values are 01 through 31.
   - *hh*: Specifies the hour. Valid values are 00 through 23.
   - *mm*: Specifies the minutes. Valid values are 00 through 59.
   - *yy*: Specifies the year. Valid values are 00 through 37 and 70 through 99. Year values from 70 to 99 are interpreted as 1970 to 1999; year values from 00 to 37 are interpreted as 2000 to 2037.

   ```
   device:admin> date
   Thu Dec 22 14:05:10 UTC 2016
   device:admin> date "1222150617"
   ```

```
Thu Dec 22 15:06:00 UTC 2017
```

Setting the Time Zone

The default time zone is Coordinated Universal Time (UTC). The time zone must be set only once because the value is stored in nonvolatile memory.

Perform the following steps to set the time zone:

1. Log on as admin.
2. Use the `tsTimeZone --interactive` command and follow the prompts, or enter the `tsTimeZone [`*`houroffset`*`[,`*`minuteoffset`*`]]` command as follows:

   For Pacific Standard Time, enter `tsTimeZone -8,0`.

   For Central Standard Time, enter `tsTimeZone -6,0`.

   For Eastern Standard Time, enter `tsTimeZone -5,0`.

Table 8: tsTimeZone Command Parameter Selection for the U.S. Time Zones

Local Time	tsTimeZone Parameter (Difference from UTC)
Atlantic Standard	`-4,0`
Atlantic Daylight	`-3,0`
Eastern Standard	`-5,0`
Eastern Daylight	`-4,0`
Central Standard	`-6,0`
Central Daylight	`-5,0`
Mountain Standard	`-7,0`
Mountain Daylight	`-6,0`
Pacific Standard	`-8,0`
Pacific Daylight	`-7,0`
Alaskan Standard	`-9,0`
Alaskan Daylight	`-8,0`
Hawaiian Standard	`-10,0`

Synchronizing the Local Time with an External Source

Perform the following steps to synchronize the local time of the principal or primary FCS device with the time of an external NTP server:

1. Log on as admin.
2. Enter the `tsClockServer [`*`ipaddr`*`]` command.

   The *`ipaddr`* variable represents the IP address of the NTP server that the device can access. This variable is optional; by default, the value is `LOCL`.

```
switch:admin> tsclockserver 192.0.2.0
Updating Clock Server configuration...done.
Updated with the NTP servers
```

Customizing the Chassis Name and Switch Name

Changing the chassis and switch names is important for uniquely distinguishing and identifying the device and for accurate tracking of logs and errors. The messages that appear in the log are labeled with the switch name or chassis name, which makes tracking the errors much easier. Specify an easily understandable and meaningful name for the chassis and switch.

Perform the following steps to change the chassis name and then the switch name:

1. Log on to the device through Telnet using the admin account.
2. Change the chassis name by using the `chassisName` command.
   ```
   device:admin> chassisname Chassis_001
   ```
3. Change the switch name by using the `switchName` command.
   ```
   device:admin> switchname Switch_001
   Committing configuration...
   Done
   Switch name has been changed. Please re-login to the switch for the change to applied
   ```

Establishing an Ethernet Connection

Perform the following steps to establish an Ethernet connection to the device:

1. Remove the plug from the Ethernet port.
2. Ensure that the partner side of the link is set with Auto Negotiation turned on for proper operation.
3. Connect an Ethernet cable to the device Ethernet port and to the workstation or an Ethernet network that connects the workstation.

   NOTE
   At this point, the device can be accessed remotely, using either the command line or Brocade Web Tools. Ensure that the device is not being modified from any other connections during the remaining tasks in this chapter. The Ethernet management port also supports Auto MDI/MDIX.

Setting the Domain ID

Perform the following steps to set the switch domain ID:

1. Log on to the switch through Telnet using the admin account.
2. Modify the domain ID if necessary.

   The default domain ID is 1. If the switch is not powered on until after it is connected to the fabric and the default domain ID is already in use, the domain ID for the new switch is automatically reset to a unique value. If the switch is connected to the fabric after it has been powered on and the default domain ID is already in use, the fabric segments. To find the domain IDs that are currently in use, enter the `fabricShow` command on another switch in the fabric.

   Perform the following steps to modify the domain ID:

   a) Disable the switch by entering the `switchDisable` command.
   b) Enter the `configure` command. The command prompts display sequentially; enter a new value or press `Enter` to accept each default value.
   c) Enter `y` after the `Fabric param` prompt.
      ```
      Fabric param (yes, y, no, n): [no] y
      ```

d) Enter a unique domain ID (such as the domain ID used by the previous switch, if still available).

```
Domain: (1..239) [1] 3
```

e) Complete the remaining prompts or press `Ctrl+D` to accept the remaining settings without completing all the prompts.
f) Re-enable the switch by entering the `switchEnable` command.

Verifying Correct Operation

Perform the following steps to verify correct operation of the device:

1. Check the LEDs to verify that all components are functional.
2. Verify the correct operation of the device by entering the following commands from the workstation.

Command	Description
`errDump`	Displays any errors
`fanShow`	Displays fan status and information
`historyShow`	Displays the device history
`psShow`	Displays power supply status and information
`switchShow`	Displays switch status and information
`tempShow`	Displays temperature status and information

The `switchShow` command provides the following information about the device and port status.

```
G730switch:FID128:admin> switchshow
switchName:     ras030
switchType:     189.3
switchState:    Online
switchMode:     Native
switchRole:     Subordinate
switchDomain:   30
switchId:       fffc1e
switchWwn:      10:00:c4:f5:7c:02:31:98
zoning:         ON (WB_RAS159_64G_LSAN)
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    Serviceability_Testbed
HIF Mode:       OFF
Allow XISL Use: OFF
LS Attributes:  [FID: 128, Base Switch: No, Default Switch: Yes, Ficon Switch: No, Address Mode 0]
Index Port Address  Media Speed   State       Proto
==================================================
   0   0   1e0000   --    N64     No_Module   FC  (Ports on Demand license not assigned or reserved yet)
(output truncated)
  94  94   1e5e00   --    N64     No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  95  95   1e5f00   --    N64     No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  96  96   1e6000   id    N64     Online      FC  E-Port  (Trunk port, master is Port 97  )
  97  97   1e6100   id    N64     Online      FC  E-Port  10:00:d8:1f:cc:03:3e:a0 "ras232" (Trunk master)
  98  98   1e6200   --    N64     No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  99  99   1e6300   --    N64     No_Module   FC  (Ports on Demand license not assigned or reserved yet)
```

```
(output truncated)
```

The `tempshow` command shows the current temperature of the EM sensors.

```
switch:admin> tempshow
Sensor ID|Sensor Index|State      |Centigrade |Fahrenheit |
---------------------------------------------------------
1        |0           |Ok         |30         |86         |
2        |1           |Ok         |34         |93         |
3        |2           |Ok         |29         |84         |
4        |3           |Ok         |30         |86         |
5        |4           |Ok         |30         |86         |
6        |5           |Ok         |32         |89         |
(output truncated)
```

Backing Up the Configuration

Back up the configuration regularly to ensure that a complete configuration is available for downloading to a replacement switch.

Perform the following steps to back up the configuration:

1. Log on to the device as the admin user.
2. Back up the device configuration to an FTP server by entering the `configUpload` command as shown in the following example.

```
device:FID128:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]:
Server Name or IP Address [host]: 192.0.2.0
User Name [user]: anonymous
Path/Filename [<home dir>/config.txt]: home/dumps/config.fid100.txt
Section (all|chassis|FID# [all]):

configUpload complete: All selected config parameters are uploaded
2020/03/05-23:57:59, [CONF-1001], 130, FID 128, INFO, device, configUpload completed successfully for all.
```

This command uploads the device configuration to the server, making it available for downloading to a replacement device if necessary.

NOTE
If Virtual Fabrics (VF) is enabled, you need to use the `configupload -vf` command only once to upload configuration for the virtual fabric (all logical switches configured on the device). For more information, refer to the discussion of `configupload/download` in the *Brocade Fabric OS Administration Guide*.

Powering Down the Device

Perform the following steps to power down the device:

1. Shut down the Fabric OS software using the `sysShutdown` command.
2. Unplug the power cables from the power source before servicing the device or FRUs.

All devices are returned to their initial state the next time the switch is powered on.

Installing Transceivers and Cables

The device supports only transceivers that are qualified for Brocade products.

For current information on qualified transceivers supported by this device, refer to the *Brocade Transceiver Support Matrix* and the Brocade Transceiver Modules webpage on www.broadcom.com.

Precautions Specific to Transceivers and Cables

DANGER
All fiber-optic interfaces use Class 1 lasers.

DANGER
Use only optical transceivers that are qualified by Broadcom and that comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.

CAUTION
Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

Cleaning the Fiber-Optic Connectors

To avoid problems with the connection between the fiber-optic transceiver and the fiber cable connectors, clean both connectors *each time you disconnect and reconnect them*. Dust can accumulate on the connectors and cause problems such as reducing the optic launch power.

To clean the fiber cable connectors, use a fiber-optic reel-type cleaner. When not using a connector, make sure to keep the protective covering in place.

Managing Cables

The minimum bend radius for a 50-micron cable is 2 in. under a full tensile load and 1.2 in. with no tensile load. Cables can be organized and managed in various ways, for example, using cable channels on the sides of the rack or patch panels to minimize cable management. Follow these recommendations:

NOTE
Do not use tie wraps with optical cables because they are easily overtightened and can damage the optic fibers.

CAUTION
Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

- Plan for the rack space required for cable management before installing the switch.
- Leave at least 1m (3.28 ft) of slack for each port cable. This slack provides room to remove and replace the switch, allows for inadvertent movement of the rack, and helps prevent the cables from being bent to less than the minimum bend radius.
- If you are using Brocade ISL Trunking, consider grouping cables by trunking groups. The cables that are used in trunking groups must meet specific requirements, as described in the *Brocade Fabric OS Administration Guide*.
- For easier maintenance, label the fiber-optic cables and record the devices to which they are connected.
- Keep LEDs visible by routing port cables and other cables away from the LEDs.
- Use hook-and-loop style straps to secure and organize fiber-optic cables.

Installing an SFP+ Transceiver

The device supports only transceivers that are qualified for Brocade products. For current information on qualified transceivers supported by this device, refer to the *Brocade Transceiver Support Matrix* and the Brocade Transceiver Modules webpage on www.broadcom.com. If you use an unqualified transceiver, the `switchshow` command output shows the port in a Mod_Inv state. The issue is also logged in the system error log.

Perform the following steps to insert an SFP+ transceiver.

NOTE

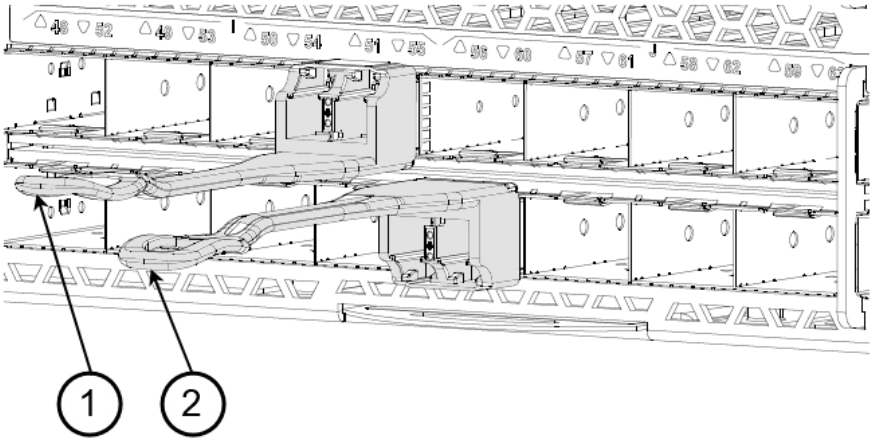
- Always use the pull tab to insert or remove a transceiver, because the SFP might be hot.
- You might find it easier to insert the cables into the transceiver first and then install the transceiver.

1. Use the pull tab on the SFP+ transceiver to help push the transceiver into the port.

   Transceivers are keyed so that they can be inserted only with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented. Push the correctly oriented transceiver into the port until it is firmly seated and the latching mechanism clicks.

   NOTE
   Each SFP+ transceiver has a 10-pad gold-plated PCB-edge connector on the bottom. The correct position to insert an SFP+ transceiver into the upper row of ports is with the gold edge down. The correct position to insert an SFP+ transceiver into the lower row of ports is with the gold edge up.

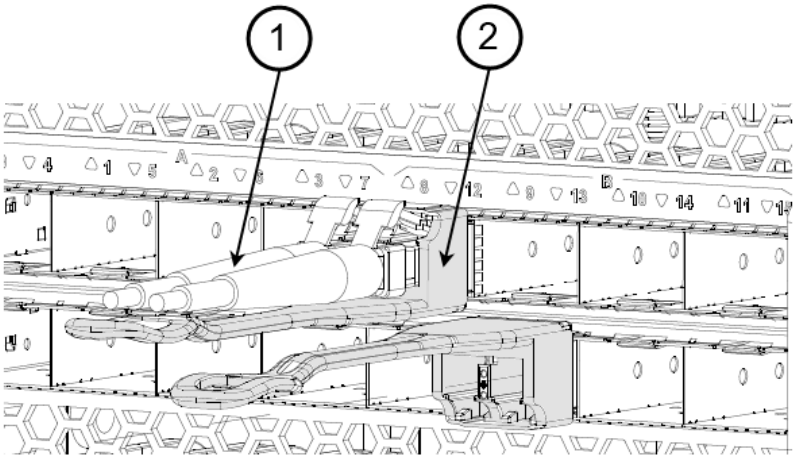
Figure 26: Installing SFP+ Transceivers



1. Pull Tab of Transceiver in Upper Row
2. Pull Tab of Transceiver in Lower Row

2. Position a cable so that the key (the ridge on one side of the cable connector) is aligned with the slot in the transceiver. Insert the cable into the transceiver until the latching mechanism clicks.

Figure 27: Installing SFP+ Cables



1. Cable and Connector
2. Transceiver

NOTE
Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented. Do not insert any unsupported cable that is intended for another type of transceiver into a regular SFP+ transceiver. You may damage the cable as well as the transceiver.

Replacing an SFP+ Transceiver

Perform the following steps to remove an SFP+ transceiver and then install a new SFP+ transceiver:

NOTE

- Replacing an SFP+ transceiver may cause disruption in the fabric or to the attached device.
- Always use the pull tab to insert or remove an SFP+ transceiver, since the SFP might be hot.

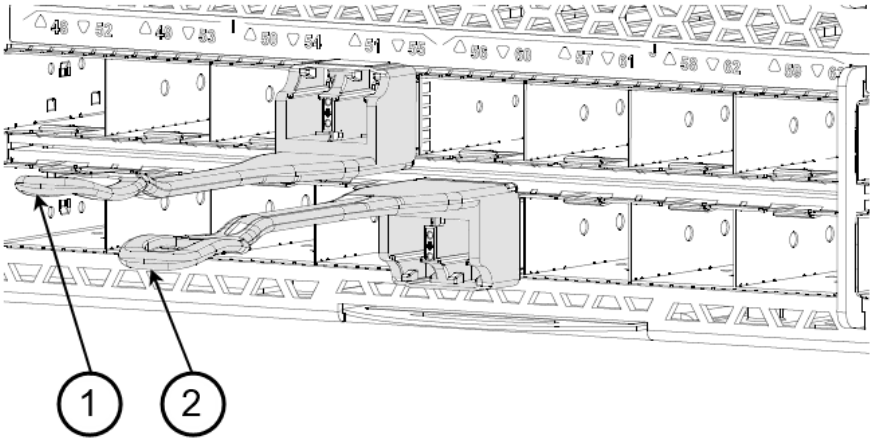
1. Remove any cables that are inserted into the transceiver.
2. Grasp the SFP+ transceiver pull tab, and pull the tab straight out.

NOTE
Grasp the tab near the body of the transceiver to reduce the chances of bending the pull tab. Avoid touching the transceiver because it may be hot.

3. To insert the replacement transceiver, use the pull tab on the SFP+ transceiver to carefully push the transceiver into the port. Transceivers are keyed so that they can be inserted only with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented.

NOTE
Each SFP+ transceiver has a 10-pad gold-plated PCB-edge connector on the bottom. The correct position to insert an SFP+ transceiver into the upper row of ports is with the gold edge down. The correct position to insert an SFP+ transceiver into the lower row of ports is with the gold edge up.

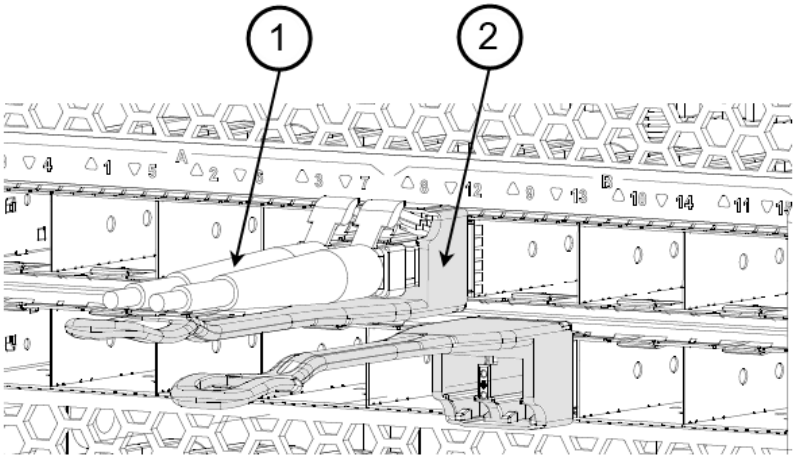
Figure 28: Installing SFP+ Transceivers



1. Pull Tab of Transceiver in Upper Row
2. Pull Tab of Transceiver in Lower Row

4. Position a cable so that the key (the ridge on one side of the cable connector) is aligned with the slot in the transceiver. Insert the cable into the transceiver until the latching mechanism clicks.

Figure 29: Installing SFP+ Cables



1. Cable and Connector
2. Transceiver

NOTE
Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented. Do not insert any unsupported cable that is intended for another type of transceiver into a regular SFP+ transceiver. You may damage the cable as well as the transceiver.

Installing an SFP-DD Transceiver

SFP double density (SFP-DD) transceivers are delivered with two dust caps. When inserting cables, remove one dust cap and insert the cable, leaving the other dust cap in place. Then remove the other dust cap and insert the next cable. If you are using only one cable in the transceiver, keep the other dust cap in place to keep the transceiver clean.

Perform the following steps to insert an SFP-DD transceiver and then insert the cables.

NOTE

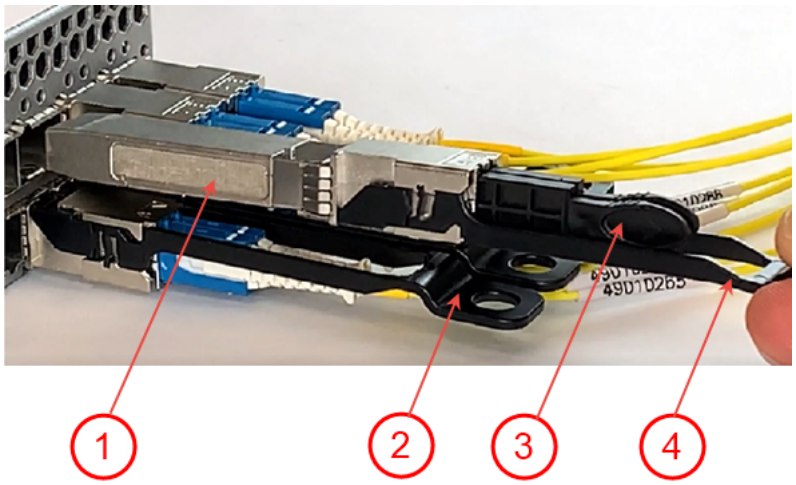
- Always use the pull tab to insert or remove a transceiver, because the SFP-DD might be hot.
- You might find it easier to insert the cables into the transceiver first and then install the transceiver.

1. Use the pull tab on the SFP-DD transceiver to help push the transceiver into the port.

   Transceivers are keyed so that they can be inserted only with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented. Push the correctly oriented transceiver into the port until it is firmly seated and the latching mechanism clicks.

   For the top row of ports, insert the transceiver so that the pull tab is on the bottom. For the bottom row of ports, insert the transceiver so that the pull tab is on the top.

   Figure 30: Installing SFP-DD Transceivers

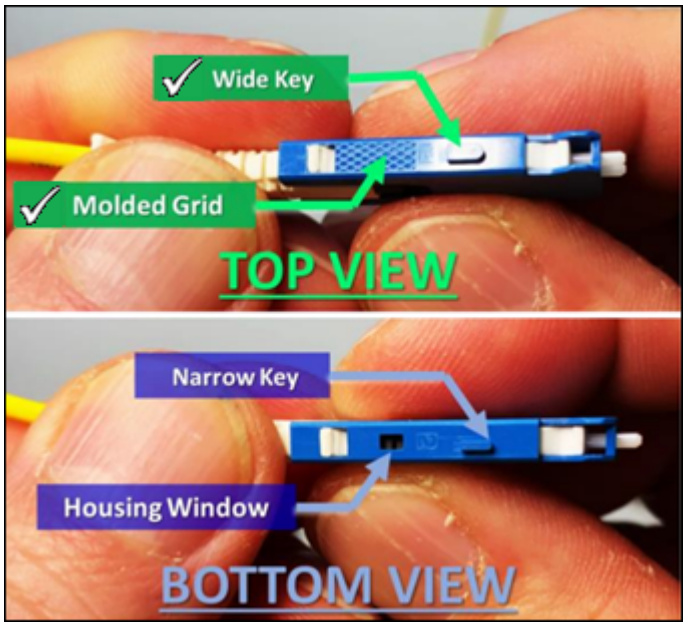


   1. SFP-DD Transceiver
   2. Pull Tab of Transceiver in Lower Row
   3. Dust Caps
   4. Pull Tab of Transceiver in Upper Row

2. Remove the first dust cap from the transceiver. Leave the second dust cap in place.
3. Position a cable so that the molded grid pattern and wide key tab on one side of the cable connector are facing up (away from the transceiver pull tab).

   Note that if you are inserting the cable into a transceiver on the lower row of ports, the molded grid pattern on the cable should be facing down (away from the transceiver pull tab).

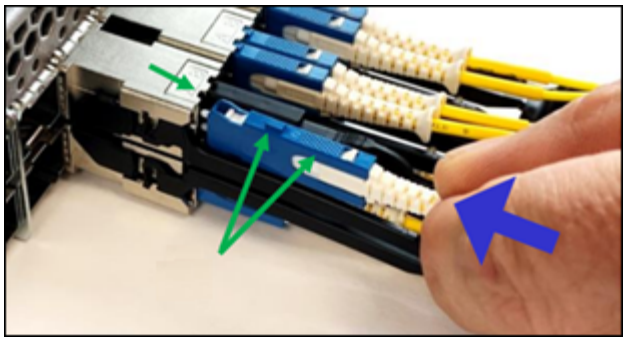
Figure 31: Orientation of the SFP-DD Connector



4. Hold the white push-pull boot, and push the connector straight into the port on the transceiver until the latching mechanism clicks.

   The connector will make two soft clicks as it enters the port, and the wide key will fit into the key slot on the SFP-DD transceiver.

Figure 32: Installing an SFP-DD Connector

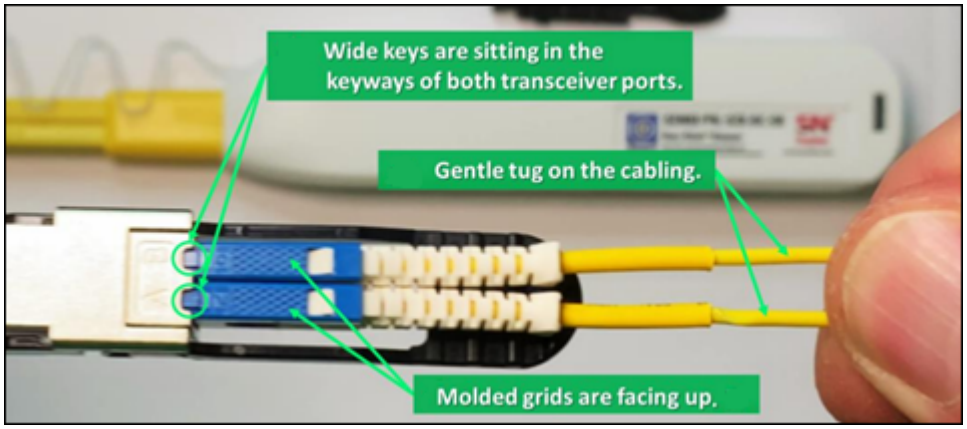


For the lower row of ports, position the connector so that the molded grid pattern is facing down (away from the pull tab).

NOTE
Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented. Do not force the cable. Do not insert any unsupported cable or a cable that is intended for another type of transceiver into an SFP-DD transceiver. You may damage the cable as well as the transceiver.

5. Gently tug on the cable to make sure that it is seated firmly.

Figure 33: SFP-DD Connectors Correctly Inserted



Remove the second dust cap, and repeat Steps 3 through 5 to insert the second cable into the transceiver.

Replacing an SFP-DD Transceiver

NOTE
Replacing an SFP-DD transceiver may cause disruption in the fabric or to the attached device.

Perform the following steps to remove an SFP-DD transceiver and then install a new SFP-DD transceiver.

1. Remove any cables that are inserted into the transceiver.
2. Grasp the SFP-DD transceiver pull tab, and pull the tab straight out.

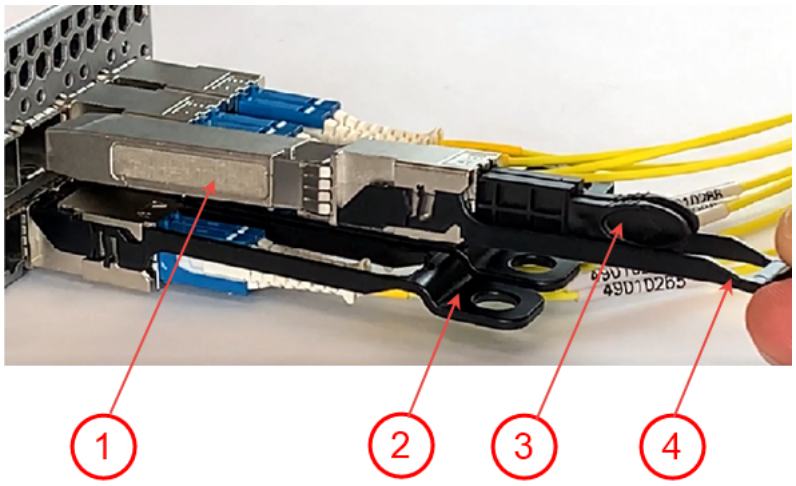
   NOTE
   Grasp the tab near the body of the transceiver to reduce the chances of bending the pull tab. Avoid touching the transceiver because it may be hot.

3. To insert the replacement transceiver, use the pull tab on the SFP-DD transceivers to help push the transceiver into the port.

   Transceivers are keyed so that they can be inserted only with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented. Push the correctly oriented transceiver into the port until it is firmly seated and the latching mechanism clicks.

   For the top row of ports, insert the transceiver so that the pull tab is on the bottom. For the bottom row of ports, insert the transceiver so that the pull tab is on the top.

Figure 34: Installing SFP-DD Transceivers

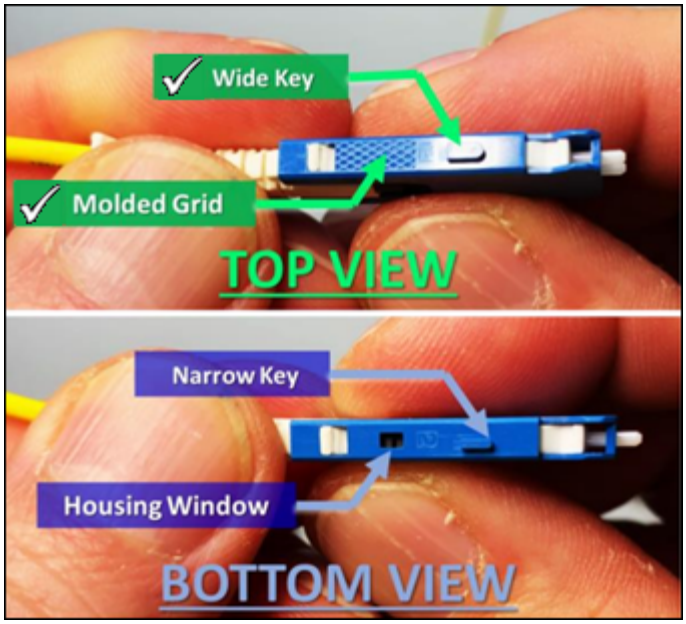


1. SFP-DD Transceiver
2. Pull Tab of Transceiver in Lower Row
3. Dust Caps
4. Pull Tab of Transceiver in Upper Row

4. Remove the first dust cap from the transceiver. Leave the second dust cap in place.
5. Position a cable so that the molded grid pattern and wide key tab on one side of the cable connector are facing up (away from the transceiver pull tab).

   If you are inserting the cable into a transceiver on the lower row of ports, the molded grid pattern on the cable should be facing down (away from the transceiver pull tab).

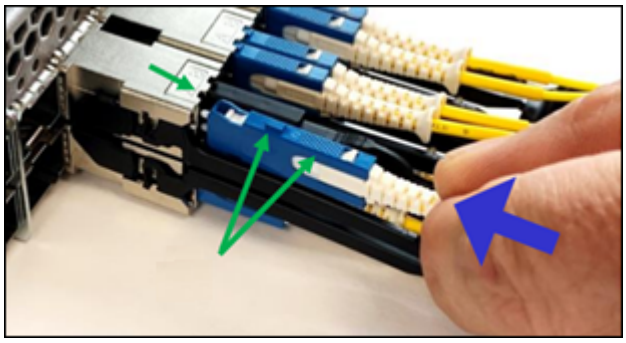
Figure 35: Orientation of the SFP-DD Connector



6. Hold the white push-pull boot, and push the connector straight into the port on the transceiver until the latching mechanism clicks.

   The connector makes two soft clicks as it enters the port, and the wide key fits into the key slot on the SFP-DD transceiver.

   Figure 36: Installing an SFP-DD Connector

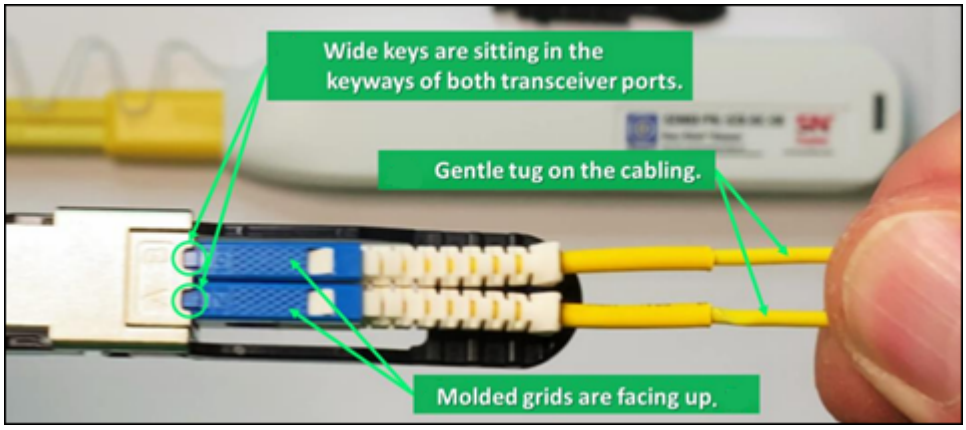


   For the lower row of ports, position the connector so that the molded grid pattern is facing down (away from the pull tab).

   NOTE
   Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented. Do not force the cable. Do not insert any unsupported cable or a cable that is intended for another type of transceiver into an SFP-DD transceiver. You may damage the cable as well as the transceiver.

7. Gently tug on the cable to make sure that it is seated firmly.

   Figure 37: SFP-DD Connectors Correctly Inserted



Remove the second dust cap, and repeat Steps 5 through 7 to insert the second cable into the transceiver.

Verifying the Operation of New Transceivers

You can use the following commands to verify if the transceivers are working correctly. Refer to the *Brocade Fabric OS Command Reference Manual* for output examples and descriptions.

- `errDump`
- `fabricShow`
- `sfpShow`
- `switchShow`

Monitoring the Device

The power-on self-test (POST) performs diagnostic tests every time the device is powered on, rebooted, or reset. The LEDs on the device indicate system activity and status.

Interpreting Port-Side LEDs

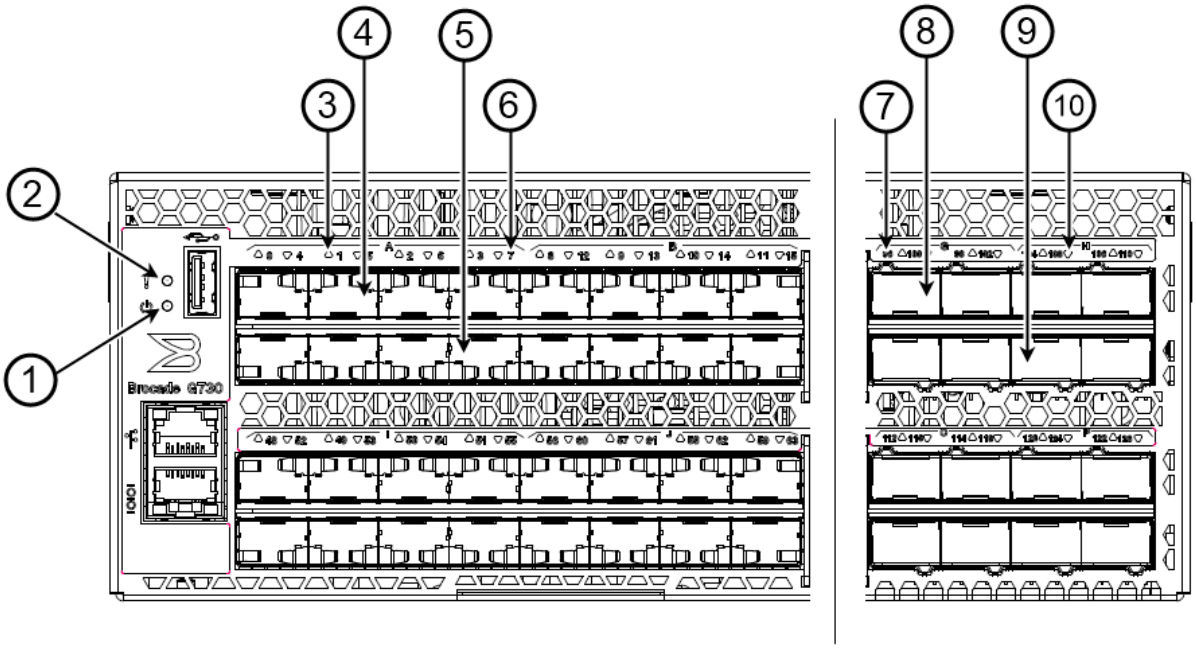
System activity and status can be determined through the activity of the LEDs on the switch.

There are 96 bicolor LEDs (green/amber) for the first 96 SFP+ ports and 16 tricolor LEDs (green/amber/white) for the SFP-DD ports. The last set of LEDs pulse once in white before indicating the FC port status in green or amber. All functionality pertaining to the green/amber colors for the last 16 LEDs remains the same as the first 96 LEDs.

The LEDs have three possible states: no light, a steady light, and a flashing light. Flashing lights may be slow, fast, or flickering. The lights are green or amber.

Sometimes, the LEDs may flash any of the colors during boot, POST, or other diagnostic tests. This flashing is normal; it indicates a problem only if the LEDs indicate an unhealthy state after all boot processes and diagnostic tests are complete.

Figure 38: Brocade G730 Port-Side LEDs



1. System Power LED
2. System Status LED
3. SFP+ (Upper) Port 1 Status LED
4. SFP+ (Upper) Port 1
5. SFP+ (Lower) Port 7
6. SFP+ (Lower) Port 7 Status LED
7. DD (Upper) Ports 96 and 97 Status LED
8. DD (Upper) Ports 96 and 97

9. DD (Lower) Ports 108 and 109
10. DD (Lower) Ports 108 and 109 Status LED

System Power LED

Use the following table to interpret the system power LED.

Table 9: System Power LED Patterns during Normal Operation

LED Color	Hardware Status	Recommended Action
No light	The system is off, or there is an internal power supply failure.	Verify that the system is powered on, that the power cables are attached, and that your power source is live. If the system power LED is not green, the unit may be faulty. Contact your solution provider.
Steady green	The system is on, and power supplies are functioning properly.	No action is required.

System Status LED

Use the following table to interpret the system status LED.

Table 10: System Status LED Patterns during Normal Operation

LED Color	Hardware Status	Recommended Action
No light	The system is off, or there is no power.	Verify that the system is on and has completed booting.
Steady green	The POST and initialization have completed. The system is on and functioning properly.	No action is required.
Steady amber (for more than 5 seconds—can take over a minute to complete the POST)	The system is going through the power-up process.	No action is required.
Steady amber (for more than a few minutes)	The system is in an unknown state, the boot failed, or the system is faulty. When the POST completes and the switch has failed, a steady amber color may result.	Perform the following steps: 1. Connect a serial cable to the system. 2. Reboot the system. 3. Check the failure indicated on the system console. 4. Contact your solution provider.
Flashing amber and green	Attention is required. Several variables can cause this status, including a single power supply failure, a fan failure, or one or more environmental ranges being exceeded.	Check the management interface and the error log for details on the cause of the status. Contact your solution provider.

Management Port LEDs

Use the following table to interpret the management port LEDs.

Table 11: Management Port LED Patterns during Normal Operation

LED Function/State	Hardware Status
Link/Speed—Green LED is on.	1000Mb/s link
Link/Speed—LED is off.	100Mb/s link
Activity—Green LED is blinking.	Presence of activity

FC Port (SFP+) Status LEDs

Use the following table to interpret the FC port status LEDs.

Table 12: FC Port Status LED Patterns during Normal Operation

LED Color	Hardware Status	Recommended Action
No light	The port has no incoming power, or there is no light or signal carrier detected.	Verify that the power LED is on, and check the transceiver and cable.
	The device may be currently initializing.	Allow 60 seconds for initialization to complete.
	The connected device is configured in an offline state.	Verify the status of the connected device.
Steady green	The port is online (connected to an external device) but has no traffic.	No action is required.
Slow-flashing green (on for 1 second; then off for 1 second)	The port is online but is segmented because of a loopback cable or incompatible device connection.	Verify that the correct device is attached to the switch.
Fast-flashing green (on for 1/4 second; then off for 1/4 second)	The port is online, and an internal loopback diagnostic test is running.	No action is required.
Flickering green	The port is online with traffic flowing through the port.	No action is required.
Steady amber	The port is receiving light or signal carrier, but it is not online yet.	No action is required.
Slow-flashing amber (on for 2 seconds; then off for 2 seconds)	The port is disabled because of diagnostics or the `portDisable` command.	Reset the port. The `portCfgPersistentDisable` command is persistent across reboots.
Fast-flashing amber (on for 1/2 second; then off for 1/2 second)	The transceiver or port is faulty.	Replace the transceiver or reset the port from the workstation.
Alternating green/amber	The port is beaconing.	No action is required.

FC Port (SFP-DD) Status LEDs

A single triple-color LED for each SFP-DD indicates the port status. When the SFP-DD LED blinks white one time, it shows the status of the first port of the SFP-DD. When it blinks white twice, it shows the status of the second port of the SFP-DD.

Use the following table to interpret the SFP-DD port status LEDs.

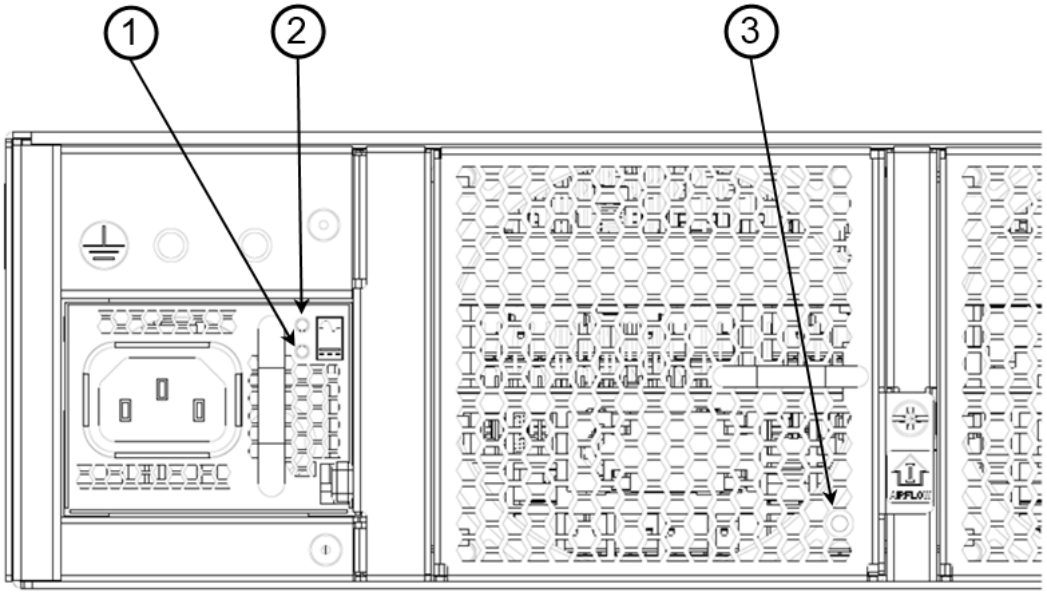
Table 13: SFP-DD Port Status LED Patterns during Normal Operation

LED Color	Hardware Status	Recommended Action
No light (LED is off)	The port has no incoming power, or there is no light or signal carrier detected.	Verify that the power LED is on, and check the transceiver and cable.
Steady green	The port is online (connected to an external device) but has no traffic.	No action is required.
Slow-flashing green (on for 2 seconds; then off for 2 seconds)	The port is online but is segmented because of a loopback cable or incompatible device connection.	Verify that the correct device is attached to the switch.
Fast-flashing green (on for 1/2 second; then off for 1/2 second)	The port is online, and an internal loopback diagnostic test is running.	No action is required.
Flickering green	The port is online with traffic flowing through the port.	No action is required.
Steady amber	The port is receiving light or signal carrier, but it is not online yet.	No action is required.
Slow-flashing amber (on for 2 seconds; then off for 2 seconds)	The port is disabled because of diagnostic tests or the `portDisable` command.	Reset the port from the workstation.
Fast-flashing amber (on for 1/2 second; then off for 1/2 second)	The transceiver or port is faulty.	Reset the transceiver or reset the port from the workstation.

Interpreting Nonport-Side LEDs

The following figure shows the LEDs on the nonport side of the switch.

Figure 39: Brocade G730 Nonport-Side LEDs



1. Power Supply DC Status LED
2. Power Supply AC Status LED
3. Fan Assembly Status LED

Power Supply LEDs

Use the following table to interpret the power supply LEDs during normal operation.

Note that if both the AC and DC status LEDs are black/off, the power supply is off.

Table 14: Nonport-Side LED Patterns during Normal Operation

LED Name	LED Color	Hardware Status	Recommended Action
Power supply AC input status (one green LED)	No light	The power supply is not receiving AC input voltage, or the AC input voltage is below the operational limit.	Verify that the power supply is properly seated and that the power cord is connected to a functioning AC power source.
	Steady green	The AC input voltage is within operational range.	No action is required.
Power supply DC output status (one bicolor LED)	Flashing yellow	The output voltage is not enabled.	Verify that the power supply is fully seated and that the captive screw is secured.
	Flashing yellow/green (2:1)	The temperature is too hot.	Verify that ambient temperature is less than 40°C, and check for intake airflow blockage.
	Flashing yellow/green (1:1)	The internal fan is out of regulation.	Replace the power supply.
	Steady yellow	The power supply is faulty or not plugged in completely.	Check the power cord, current, voltage, and temperature to determine the problem.
	Steady green	The DC output is OK.	No action is required.

Fan Assembly Status LED

Use the following table to interpret the fan assembly status LED during normal operation.

Table 15: Fan Assembly Status LED Patterns During Normal Operation

LED Color	Description	Recommended Action
No light	The fan assembly is not receiving power.	Verify that the fan FRU is seated correctly.
Steady green	The fan assembly is operating normally.	No action is required.
Steady amber (for more than 5 seconds)	The fan is faulty for one of the following reasons: • A fan assembly with mismatched airflow is present. • One or more fans in the fan assembly have failed.	Perform one of the following actions: • Replace the mismatched fan assembly with one that has the correct airflow direction. • Replace the faulty fan assembly.

NOTE
The switch requires a minimum of two fan assemblies to be functional. One fan assembly failure is supported.

Interpreting POST Results

Each time the switch is powered on, rebooted, or reset, it performs a power-on self-test (POST). The total boot time with the POST can take several minutes. The POST can be bypassed after subsequent reboots by using the `fastboot`

command or entering the `diagDisablePost` command to persistently disable the POST. The success or failure results of the diagnostic tests that run during the POST can be monitored through LED activity, the error log, or the command line interface. During the POST, the LEDs flash different colors.

The POST performs the following tasks:

- Conducts preliminary diagnostics.
- Initializes the operating system.
- Initializes the hardware.
- Runs diagnostic tests on several functions, including the circuitry, port functionality, memory, statistics counters, and serialization.

Perform the following steps to determine whether the POST completed successfully and whether any errors were detected:

1. Verify that the LEDs on the device indicate that all components are healthy. If one or more LEDs do not display a healthy state, perform the following steps:
   a) Verify that the LEDs are not set to "beacon" (this can be determined through the `switchShow` command or Web Tools).
   b) Follow the recommended action for the observed LED behavior.
2. Verify that the `diagShow` command displays that the diagnostic status for all ports in the device is OK.
3. Review the system log for errors. Errors that are detected during the POST are written to the system log, which can be viewed by using the `errShow` command.

Interpreting Boot Results

Boot performs the following tasks after the POST is complete:

- Performs universal port configuration.
- Initializes links.
- Analyzes the fabric. If any ports are connected to other switches, the switch participates in a fabric configuration.
- Obtains a domain ID and assigns port addresses.
- Constructs unicast routing tables.
- Enables normal port operation.

Running Diagnostic Tests

In addition to the POST, switch firmware includes diagnostic tests to help you troubleshoot the hardware and firmware. These diagnostics test the internal connections and circuitry, the fixed media, and the transceivers and cables in use.

The tests are implemented by command, either through a Telnet session or through a terminal setup for a serial connection to the device. Some tests require that the ports be connected by external cables to allow diagnostics to verify the serializer or deserializer interface, transceiver, and cable. Some tests require loopback plugs.

Diagnostic tests are run at supported link speeds depending on the speed of the link being tested and the type of port.

NOTE

- Diagnostic tests may temporarily lock the transmit and receive speed of the links.
- Power-cycle the device after completing offline diagnostics tests.

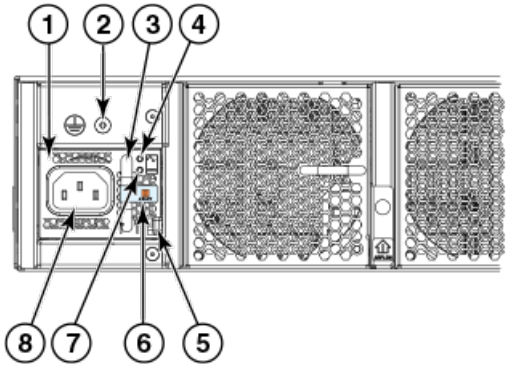
Power Supply Assemblies

The power supply assembly units in the chassis can be removed and replaced without special tools. The switch can continue to operate during the replacement.

The device supports the following types of power supplies:

- Power supply with nonport-side air exhaust. This unit moves the air from the port side to the nonport side of the device.
- Power supply with nonport-side air intake. This unit moves the air from the nonport side to the port side of the device.

Figure 40: Brocade G730 Power Supply Assembly



1. Power Supply #2
2. Grounding Screw
3. Handle
4. AC Input Status LED
5. Locking Tab
6. Airflow Label
7. DC Output Status LED
8. Power Cord Receptacle

NOTE

- The two power supply assemblies that are concurrently installed in the chassis must be of the same power type, model (airflow direction), and part number. If the airflow directions are different, an error is generated on the console.
- The power supply assembly units are hot-swappable and can be replaced one at a time. They are identical and install into either slot.
- The device can operate all the ports with one power supply assembly unit if you do not require redundancy.

Each power supply unit has one internal fan.

Precautions Specific to the Power Supply Assemblies

DANGER
Make sure that the power source circuits are properly grounded, and then use the power cord supplied with the device to connect it to the power source.

DANGER
If the installation requires a different power cord than the one supplied with the device, make sure you use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country. The mark is your assurance that the power cord can be used safely with the device.

CAUTION
Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.

CAUTION
Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E" or an orange arrow with an "I."

CAUTION
If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.

CAUTION
Use a separate branch circuit for each power cord, which provides redundancy in case one of the circuits fails.

CAUTION
To prevent damage to the chassis and components, never attempt to lift the chassis using the fan or power supply handles. These handles were not designed to support the weight of the chassis.

NOTE
The equipment installation must meet NEC/CEC code requirements. Consult local authorities for regulations.

NOTE
If the ambient temperature is above the recommended operational limits, the power supply units are shut down, which in turn shuts down the device without any warning message.

Identifying the Direction of the Power Supply Assembly Airflow

The power supply assemblies are identified by the following airflow directions:

- **Intake power supply assembly with an orange "I" label or without any label**: Pulls air from the nonport side of the switch and exhausts it out the port side.

	• Nonport-side air intake • Port-side air exhaust • Back-to-front (nonport-side to port-side) airflow • Part numbers ending with -R

- **Exhaust power supply assembly with a green "E" label**: Pulls air from the port side of the switch and exhausts it out the nonport side.

	• Port-side air intake • Nonport-side air exhaust • Front-to-back (port-side to nonport-side) airflow • Part numbers ending with -F

Power Supply Assembly Fault Indicators

Use one of the following methods to determine the status of the power supply assemblies:

- Check the power supply LEDs. See Power Supply LEDs to interpret the meaning of LED operation.
- In Web Tools, click the **Power Status** icon.
- Enter the `psShow` command at the prompt to display the power supply assembly status, as shown in the following example:

```
Device:admin> psshow
Power Supply #1 is OK
Power Supply #2 is OK
```

Power Supply Assembly Task Guide

You can perform an easy set of steps to install or replace a power supply assembly or to replace both power supply assemblies. By default, the power supply assemblies are installed in the device.

Installing an Additional Power Supply (Hot-Install)

If your device is up and running with a single power supply assembly and you want to install an extra power supply, complete the following steps:

1. Insert the new power supply assembly.
2. Plug in the power cord to the power supply assembly and the power source.
3. Turn on the power source.
4. Verify the power supply assembly OK and FAIL status LEDs.

Replacing a Power Supply (Hot-Swap)

If your device is up and running with two power supply assemblies, but one of them must be replaced, complete the following steps:

1. Power down the source for the power supply assembly being replaced.
2. Remove the power supply assembly.
3. Insert the new power supply assembly.
4. Power on the source for the new power supply assembly.
5. Verify the power supply assembly OK and FAIL status LEDs.

Replacing Both Power Supplies (Cold-Swap)

If your device is up and running with both power supply assemblies and you want to replace both of them, complete the following steps:

1. Shut down the system using the `sysShutdown` command.
2. Power down both power supply assemblies.
3. Remove the power supply assemblies being replaced.
4. Insert the new power supply assemblies.
5. Power on the power supply assemblies.
6. Verify the power supply assembly OK and FAIL status LEDs.

Time and Items Required

Installing or removing and replacing a power supply assembly should require less than 5 minutes to complete.

The following items are required to replace a power supply assembly:

- New power supply assembly (must have the same airflow direction as the power supply assembly being replaced)

Recording Critical Information about the Power Supply Assembly

You can use the following commands to record the power supply assembly configuration and operation information:

- `chassisshow`
- `historyshow`
- `psshow`
- `sensorshow`
- `tempshow`

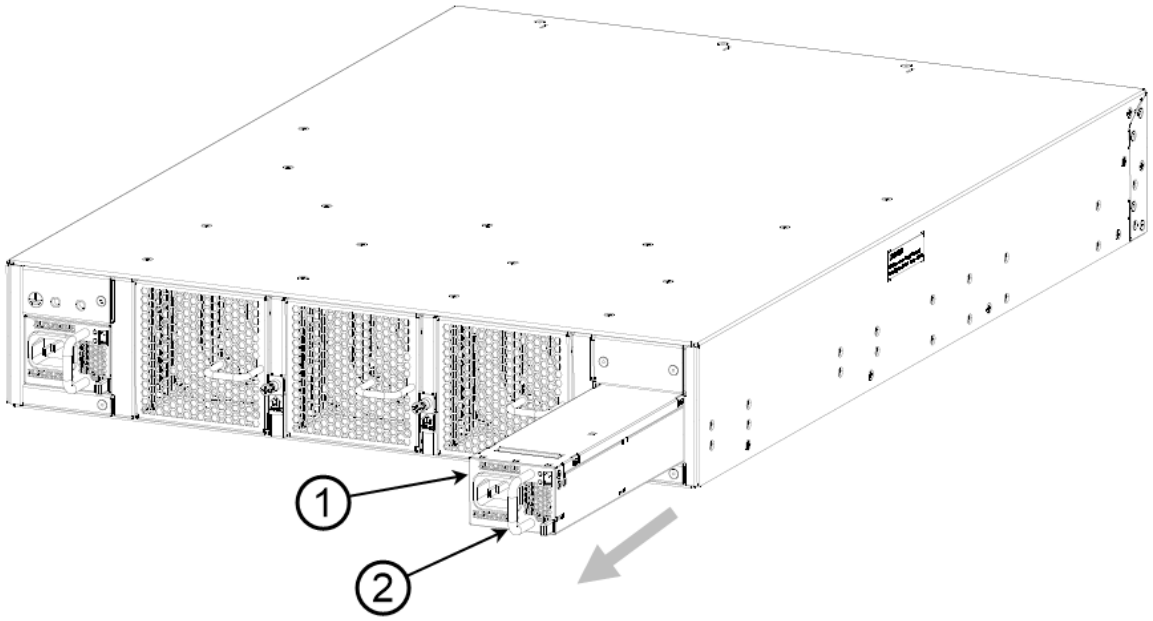
Refer to the *Brocade Fabric OS Command Reference Manual* for output examples and descriptions.

Removing a Power Supply Assembly

Perform the following steps to remove a faulty power supply assembly:

1. To leave the device in service while removing a power supply assembly, verify that the other power supply assembly (the one not being replaced) has been powered on for at least 4 seconds and has a steady green LED.

   Figure 41: Removing a Power Supply Assembly



   1. Power Supply Assembly Unit
   2. Power Supply Assembly Handle

2. Unplug the power cord from the power supply that is being replaced.
3. Push the lever on the lower-right corner of the power supply unit toward the IEC socket.
4. Remove the power supply assembly from the chassis by pulling the handle out and away from the chassis.

Inserting a New Power Supply Assembly

Perform the following steps to insert a new power supply assembly into the chassis.

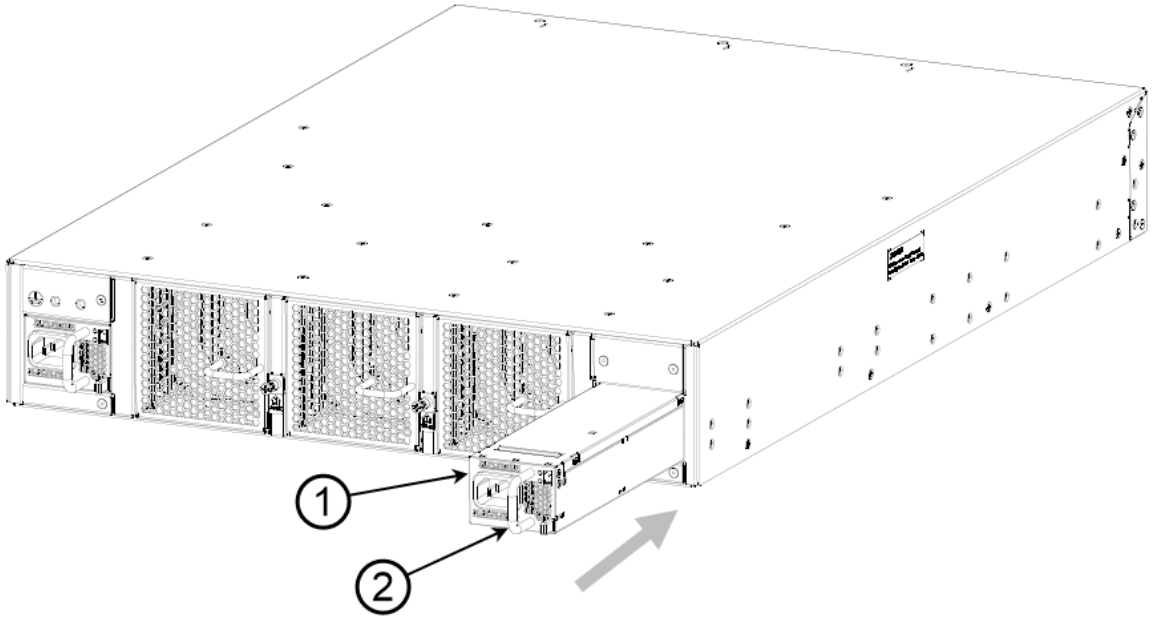
The new power supply assembly must have the same part number and airflow label (or lack thereof) as the power supply assembly already installed.

1. To leave the device in service while installing a power supply assembly, verify that the other power supply assembly (the one already installed) has been powered on for at least 4 seconds and has a steady green LED.
2. Orient the new power supply assembly unit in front of its slot and slide it into the slot until the latch on the right side is secured. Pull on the handle to ensure that it is fully seated.

   Do not force the installation. If the power supply assembly does not slide in easily, ensure that it is correctly oriented before continuing.

   CAUTION
   Carefully follow the mechanical guides on each side of the power supply slot and make sure that the power supply is properly inserted in the guides. Never insert the power supply upside down.

   Figure 42: Inserting a Power Supply Assembly



   1. Power Supply Assembly Unit
   2. Power Supply Assembly Handle
3. Plug the power cord into the power supply assembly; power is provided to the device immediately.
4. Verify that the LED on the new power supply assembly displays a steady green light while the device is operating. If the LED is not a steady green, ensure that the power supply is securely installed and seated properly.
5. Optional: Enter `psshow` to display the PSU status. The power supply assembly status can also be viewed using Web Tools.

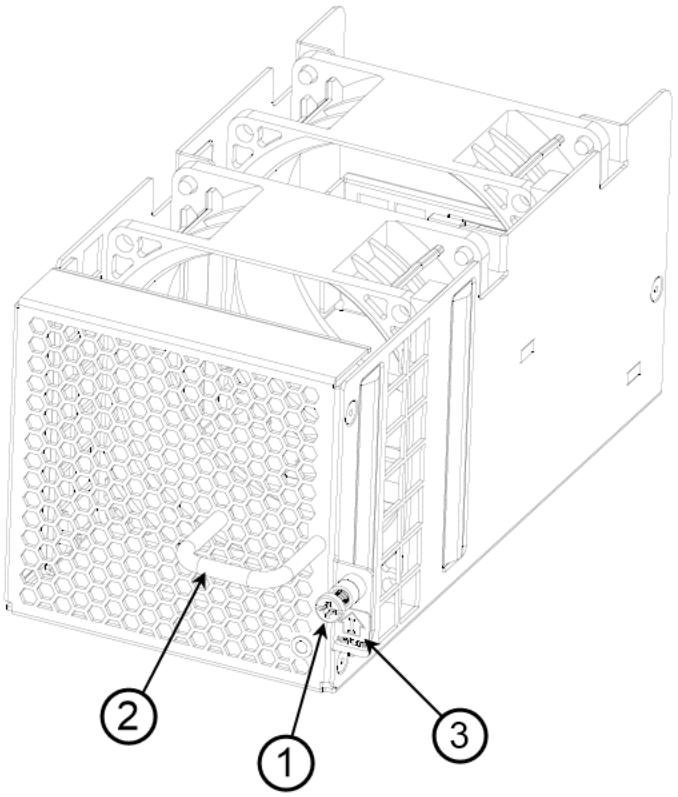
Fan Assemblies

The fan assembly units in the chassis can be removed and replaced without special tools. The device can continue operating during the replacement.

The device supports the following types of fan assemblies:

- Fan assembly with nonport-side air exhaust. This unit moves the air from the port side to the nonport side of the device.
- Fan assembly with nonport-side air intake. This unit moves the air from the nonport side to the port side of the device.

Figure 43: Fan Assembly



1. Captive Screw
2. Fan Assembly Unit Handle
3. Exhaust Label

The device fans are fixed inside the fan assemblies to provide necessary airflow to cool the whole system. Two fans are located in each unit. The system software sets the speed and measures it through the tachometer interface.

Observe the following operational notes for fan assemblies in the device:

- The three fan assemblies that are concurrently installed in the chassis must be of the same power type, model (airflow direction), and part number. If the airflow directions are different, an error is generated on the console.
- The fan assembly units are hot-swappable and can be replaced one at a time. They are identical and install into any fan slot.
- The device can operate all the ports with one faulty fan assembly if you do not require redundancy.

Precautions Specific to the Fan Assemblies

CAUTION
Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.

CAUTION
Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E" or an orange arrow with an "I."

CAUTION
If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.

CAUTION
To prevent damage to the chassis and components, never attempt to lift the chassis using the fan or power supply handles. These handles were not designed to support the weight of the chassis.

NOTE
The equipment installation must meet NEC/CEC code requirements. Consult local authorities for regulations.

Identifying the Direction of the Fan Assembly Airflow

The fan assemblies are identified by the following airflow directions:

- **Intake fan assembly with an orange "I" label or without any label**: Pulls air from the nonport side of the switch and exhausts it out the port side.

	• Nonport-side air intake • Port-side air exhaust • Back-to-front (nonport-side to port-side) airflow • Part numbers ending with -R

- **Exhaust fan assembly with a green "E" label**: Pulls air from the port side of the switch and exhausts it out the nonport side.

	• Port-side air intake • Nonport-side air exhaust • Front-to-back (port-side to nonport-side) airflow • Part numbers ending with -F

Fan Assembly Fault Indicators

Use one of the following methods to determine the status of the fan assemblies:

- Check the fan assembly status LED. See Fan Assembly Status LED to interpret the meaning of LED operation.
- In Web Tools, click the **Fan Status** icon.
- Enter the `fanShow` command at the prompt to display fan assembly status, as shown in the following example:

```
Device:admin> fanshow
Fan 1 is Ok, speed is 11695 RPM
Fan 2 is Ok, speed is 11695 RPM
Fan 3 is Faulty
```

Fan Assembly Task Guide

You can perform a set of steps to install or replace a fan assembly or to replace two or all three fan assemblies. By default, all three fan assemblies are installed in the device.

Replacing a Fan Assembly (Hot-Swap)

If your device is up and running with three fan assemblies, but one of them has failed, perform the following steps:

1. Remove the old or failed fan assembly.
2. Insert the new fan assembly.
3. Verify the fan assembly status LED.

Replacing More Than One Fan Assembly (Cold-Swap)

If your device is up and running with all three fan assemblies, but you want to replace more than one of them, perform the following steps:

1. Shut down the device using the `sysShutdown` command.
2. Remove the old or failed fan assemblies.
3. Insert the new fan assemblies.
4. Power on the device.
5. Verify the fan assembly status LEDs.

Time and Items Required

Installing or removing and replacing a fan assembly should require less than 5 minutes to complete.

The following items are required to replace a fan assembly:

- New fan assembly (must have the same airflow direction as the fan assembly being replaced)
- No. 1 Phillips-head screwdriver

Recording Critical Information about the Fan Assembly

You can use the following commands to record the fan assembly configuration and operation information:

- `chassisshow`
- `fanshow`
- `historyshow`
- `sensorshow`
- `tempshow`

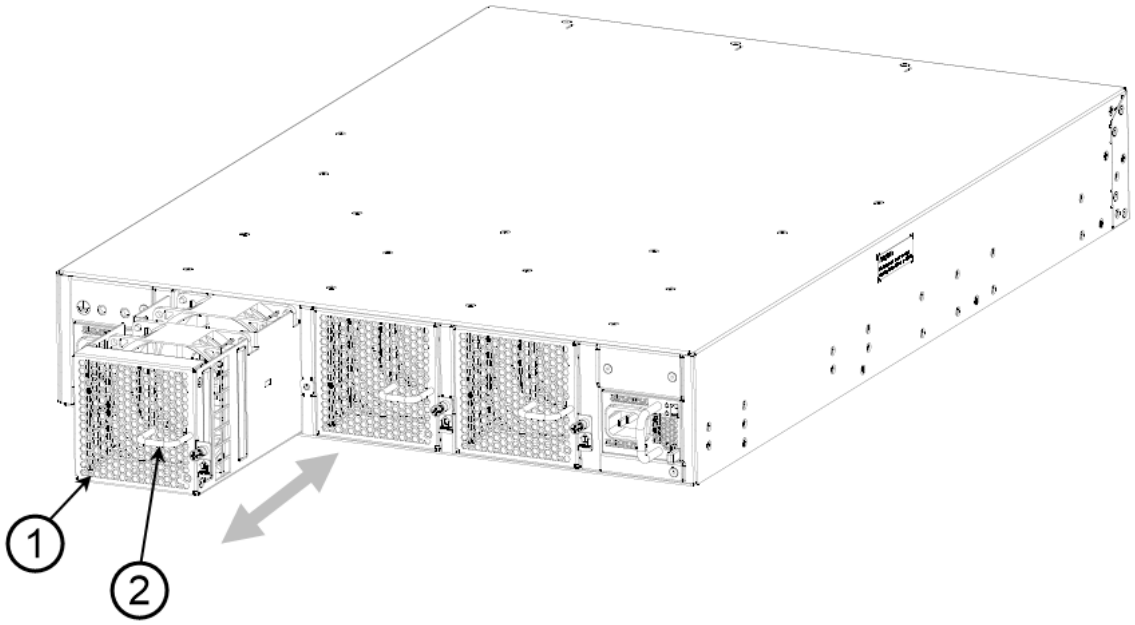
Refer to the *Brocade Fabric OS Command Reference Manual* for output examples and descriptions.

Removing a Fan Assembly

Perform the following steps to remove a faulty fan assembly:

1. To leave the device in service while removing a fan assembly, verify that the other power supplies and fan assemblies (the ones not being replaced) have been powered on for at least 4 seconds and have a steady green LED.

   Figure 44: Removing a Fan Assembly



   1. Fan Assembly Unit
   2. Fan Assembly Handle

2. Using a Phillips screwdriver, unscrew the captive screw.
3. Remove the fan assembly from the chassis by pulling the handle out and away from the chassis. The fans in the other power supply automatically switch to high speed to maintain adequate cooling.

Inserting a New Fan Assembly

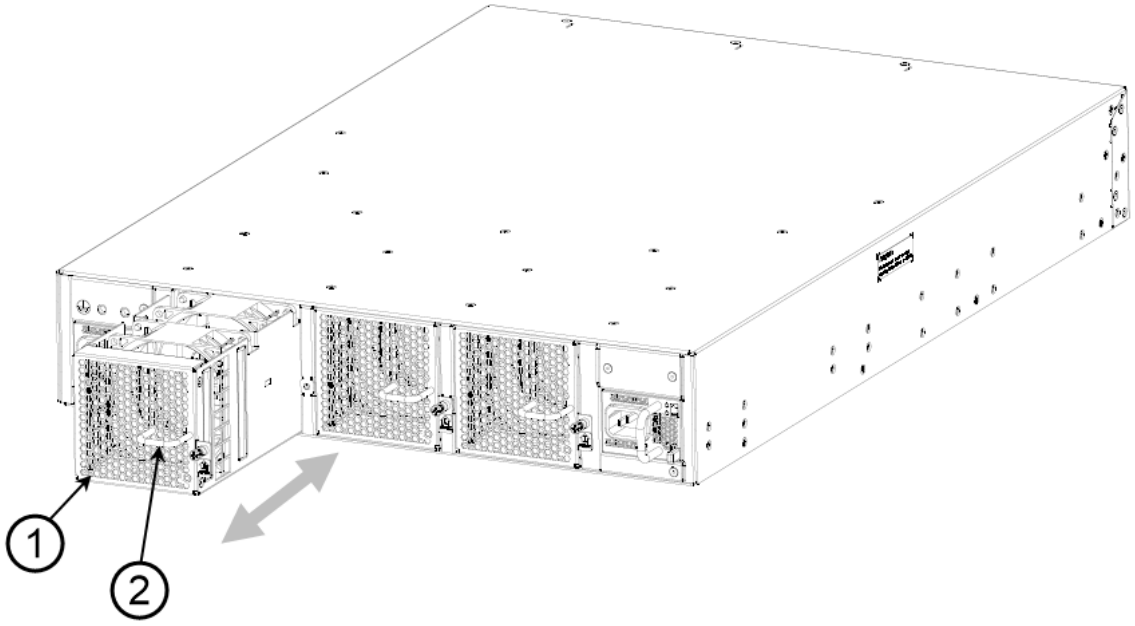
Complete the following steps to insert a new fan assembly into the chassis.

The new fan assembly must have the same part number and airflow label (or lack thereof) as the fan assemblies already installed.

1. To leave the device in service while installing a fan assembly, verify that the other fan assemblies (the ones already installed) have been powered on for at least 4 seconds and have a steady green LED.
2. Using a Phillips screwdriver, unscrew the captive screw of the filler panel that is located in the empty fan assembly slot.
3. Orient the new fan assembly with the captive screw on the right, as shown in the following figure.

   Do not force the installation. If the fan assembly does not slide in easily, ensure that it is correctly oriented before continuing.

Figure 45: Inserting a Fan Assembly



1. Fan Assembly Unit
2. Fan Assembly Handle

4. Gently push the fan assembly into the chassis until it is firmly seated.
5. Using the Phillips screwdriver, secure the fan assembly to the chassis by tightening the captive screw.
6. Verify that the LED on the new fan assembly displays a steady green light while the device is operating.
7. Optional: Enter `fanshow` to display the fan assembly status. The fan assembly status can also be viewed using Web Tools.

Verifying the Operation of the Power Supply and Fan Assemblies

You can use the following commands to verify that the power supply and fan assemblies are operational:

- `errDump`
- `fanShow`
- `psShow`
- `sensorShow`
- `switchShow`
- `tempShow`

Refer to the *Brocade Fabric OS Command Reference Manual* for output examples and descriptions.

Technical Specifications

The following tables highlight the features and specifications for the Brocade G730 Switch.

System Specifications

System Component	Description
Enclosure	2U, power from the back of the switch. • Front-to-back airflow/nonport-side exhaust. • Back-to-front airflow/nonport-side intake.
Power inlet	C14.
Power supplies	Dual, hot-swappable, redundant power supplies with integral cooling fans and status LEDs.
Fans	Three hot-swappable, redundant fan assembly units with system cooling fans and status LEDs.
Cooling	Port side to the nonport side of the switch (nonport-side exhaust) and nonport side to the port side (port-side exhaust).
System architecture	Nonblocking shared memory switch.

Fibre Channel Ports

System Component	Description
Fibre Channel ports	96 SFP+ ports that support any combination of short wavelength (SWL) and long wavelength (LWL) or extended long wavelength (ELWL) optical media. 16 DD ports that support 64G SFP-DD or SFP+ transceivers. The SFP+ ports are capable of autonegotiating to 8, 10, 16, 32, or 64G speeds depending on the SFP+ model and the minimum supported speed of the optical transceiver at the other end of the link. • A 64G optical transceiver can autonegotiate to 64G, 32G, or 16G. • A 32G optical transceiver can autonegotiate to 32G, 16G, or 8G. • A 10G optical transceiver can autonegotiate to 10G.
ANSI Fibre Channel protocol	FC-PH (Fibre Channel Physical and Signaling Interface standard) with NVMe support.
Modes of operation	Fibre Channel Class 2 and Class 3.
Fabric initialization	Complies with FC-SW-3 Rev. 6.6.
Fibre Channel over IP (FCIP)	Complies with FC-IP 2.3 of the FCA profile.
Port status	Bicolor LED (amber/green) for SFP+ ports. Tricolor LED (white/amber/green) for DD ports.

Other Ports

System Component	Description
Serial console port	One three-wire (Tx, Rx, GND) UART RJ-45 serial port.
Ethernet management port	One 1000/100/10Mb/s Ethernet port.
USB port	One external USB port.

LEDs

System Component	Description
System power LED	One green system power status LED (lower) on the port side.
System status LED	One bicolor (green/amber) system status LED (upper) on the port side.
Ethernet port link LED	One green link LED to the left of the RJ-45 connector on the port side.
Ethernet port activity LED	One activity LED to the right of the RJ-45 connector on the port side.
Serial console port LEDs	The serial console port LEDs on the port side remain off always, even when a cable is inserted and the link is active.
FC port status LEDs	112 port status LEDs on the port side of the switch: 96 bicolor (green/amber) LEDs, one for each SFP+ port, and 16 tricolor (white/amber/green) LEDs, one for each DD port.
Power supply status LEDs	One green OK status LED on each power supply assembly on the nonport side of the switch.
	One amber FAIL status LED on each power supply assembly on the nonport side of the switch.
Fan assembly status LEDs	One bicolor fan assembly status LED on each fan assembly on the nonport side of the switch.

Cables, Adapters, and Connectors

The hardware that is required for the serial connection depends on the SKU number.

System Component	Description
Serial cable	RJ-45 console cable.
RJ-45 to DB9 adapter	RJ-45 to DB9 for the console cable.
RJ-45 connector (front panel)	RJ-45 connector for the serial port.

Weight and Physical Dimensions

Empty weight refers to the device with two power supply and fan assemblies that are installed without any SFP+ or SFP-DD transceivers.

Model	Height	Width	Depth	Weight (Empty)	Weight (Fully Loaded)
Brocade G730 Switch	8.67 cm (3.41 in.)	44.00 cm (17.32 in.)	60.96 cm (24.00 in.)	18.92 kg (41.7 lb)	21.48 kg (47.35 lb)

Environmental Requirements

Condition	Operational	Nonoperational
Ambient temperature	0°C to 40°C (32°F to 104°F)	–25°C to 70°C (–13°F to 158°F)
Relative humidity (noncondensing)	10% to 85% at 40°C (104°F)	10% to 90% noncondensing
Altitude (above sea level)	0m to 3000m (9842 feet)	0m to 12,000m (39,370 feet)
Shock	20.0G, 6 ms, half-sine wave	33.0G, 11 ms, half-sine wave, 3G axis
Vibration	0.5G sine, 0.4 gms random, 5 Hz to 500 Hz	2.0G sine, 1.1 gms random, 5 Hz to 500 Hz
Airflow	Maximum: 387.37 cmh (228 cfm) Nominal: 227.67 cmh (134 cfm)	N/A

Condition	Operational	Nonoperational
Operating noise	Normal: 70.1 dB(A) with intake airflow Normal: 65.8 dB(A) with exhaust airflow	N/A

Power Supply Specifications (Per PSU)

Power Supply Model	Maximum Output Power Rating (DC)	Input Voltage	Input Line Frequency	Maximum Input Current	Input Line Protection	Maximum Inrush Current
XBR-1100WPSAC-F	1100W	100–240 VAC (nominal) 90–264 VAC (range)	50/60 Hz (nominal) 47–63 Hz (range)	~12.0A–5.0A	Both AC lines are fused	40A peak @ 240 VAC during cold startup at 25°C ambient
XBR-1100WPSAC-R	1100W	100–240 VAC (nominal) 90–264 VAC (range)	50/60 Hz (nominal) 47–63 Hz (range)	~12.0A–5.0A	Both AC lines are fused	40A peak @ 240 VAC during cold startup at 25°C ambient

Data Port Specifications (Fibre Channel)

Model Name	Port Numbers	Media Type	Description
Brocade G730 Switch	0 to 95	8, 10, 16, 32, or 64G SFP+ optical ports	Can be an F_Port, E_Port, EX_Port, D_Port, or AE_Port.
	96 to 127	16x (64G) DD optical ports	Can be an F_Port, E_Port, EX_Port, D_Port, or AE_Port.

Fibre Channel Data Transmission Ranges

Port Speed (G)	Cable Size (Microns)	Short Wavelength (SWL)	Long Wavelength (LWL)	Extended Long Wavelength (ELWL)
8	50	50m (164 ft) (OM2) 150m (492 ft) (OM3) 190m (623 ft) (OM4)	N/A	N/A
	62.5	21m (68 ft)	N/A	N/A
	9	N/A	10 km (6.2 miles)	N/A
10	50	82m (269 ft) (OM2) 300m (984 ft) (OM3) 550m (1804 ft) (OM4)	N/A	N/A
	62.5	33m (108 ft)	N/A	N/A
	9	N/A	10 km (6.2 miles)	N/A
16	50	35m (115 ft) (OM2) 100m (328 ft) (OM3) 125m (410 ft) (OM4)	N/A	N/A
	62.5	15m (49 ft)	N/A	N/A
	9	N/A	10 km (6.2 miles)	25 km (15.5 miles)

Port Speed (G)	Cable Size (Microns)	Short Wavelength (SWL)	Long Wavelength (LWL)	Extended Long Wavelength (ELWL)
32	50	70m (230 ft) (OM3) 100m (328 ft) (OM4)	N/A	N/A
	62.5	N/A	N/A	N/A
	9	N/A	10 km (6.2 miles)	25 km (15.5 miles)
64	50	70m (230 ft) (OM3) 100m (328 ft) (OM4 and OM5)	N/A	N/A
	62.5	N/A	N/A	N/A
	9	N/A	N/A	N/A

Serial Port Specifications (RJ-45 Pinout)

NOTE
These specifications are for the serial connectors on Brocade platforms only.

Pin Number	Signal	Description
1	Not supported	N/A
2	Not supported	N/A
3	TXD	Transmit data (output from G730).
4	GND	Logic ground
5	GND	Logic ground
6	RXD	Receive data (input to G730)
7	Not supported	N/A
8	Not supported	N/A

Serial Port Specifications (Protocol)

Parameter	Value
Baud	9600 (fixed speed)
Data bits	8
Parity	None
Flow control[a]	None
Stop bits	1

a. Terminal emulators must disable flow control.

Regulatory Statements

This section contains regulatory compliance statements for your device.

BSMI Statement (Taiwan)

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，
在這種情況下，使用者會被要求採取某些適當的對策。

Warning:

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Canadian Requirements

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations, ICES-003 Class A.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

CE Statement

ATTENTION
This is Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

The standards compliance label on this device contains the CE mark, which indicates that this system conforms to the provisions of the following European Council directives, laws, and standards:

- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Low Voltage Directive (LVD) 2014/35/EU
- EN 55032
- EN 55035
- EN 61000-3-2
- EN 61000-3-3

China CCC Statement

China-CCC Warning statements

在维修的时候一定要断开所有电源 (English translation"disconnect all power sources before service")

For non tropical use:

安全说明和标记	汉文	"仅适用于非热带气候条件下安全使用。"
	藏文	[illegible]
	蒙古文	"ཚ་བའི་ས་ཁུལ་གྱི་གནམ་གཤིས་མིན་པའི་ས་ཁུལ་ཁོ་ནར་ཉེན་མེད་བེད་སྤྱོད་བྱས་འཐུས།"
	壮文	Dan hab yungh youq gij dienheiq diuzgen mbouj dwg diegndat haenx ancienz sawjyungh.
	维文	غەيرى ئىسسىق بەلباغ ھاۋا كىلىماتى شارائىتىدىلا بىخەتەر ئىشلەتكىلى بولىدۇ

For altitude 2000 meter and below:

安全说明和标记	汉文	仅适用于海拔2000m以下地区安全使用。
	藏文	《2000m [illegible]》
	蒙古文	"རྒྱ་མཚོའི་ངོས་ལས་མཐོ་ཚད་སྨི2000མན་གྱི་ས་ཁུལ་ཁོ་ནར་ཉེན་མེད་བེད་སྤྱོད་བྱས་འཐུས། "
	壮文	Dan hab yungh youq gij digih haijbaz 2000m doxroengz haenx ancienz sawjyungh.
	维文	دېڭىز يۈزىدىن 2000 مېتىر تۆۋەن رايونلاردىلا بىخەتەر ئىشلەتكىلى بولىدۇ

Warning for Class A:

声 明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

English translation of above statement

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

China ROHS

China:

部件名称	有毒有害物质或元素					
	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr (VI)）	多溴联苯（PBB）	多溴二苯醚（PBDE）
光纤通道交换机 Fiber Channel Switch	×	O	O	O	O	O
IP 交换机 IP Switch	×	O	O	O	O	O
风扇/冷却组装件 Fan, Blower Assemblies	×	O	O	O	O	O
线路板部件 PCBA Cards	×	O	O	O	O	O
USB 闪存器 USB Flash Drive	×	O	O	O	O	O
电源 Power Supply Kit	×	O	O	O	O	O
光纤模块 SFP Optics	×	O	O	O	O	O

FCC Warning (U.S. Only)

This equipment has been tested and complies with the limits for a Class A computing device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, might cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Germany Statement

Machine noise information regulation – 3. GPSGV, the highest sound pressure level value is 70.0 dB(A) in accordance with EN ISO 7779.

Maschinenlärminformations-Verordnung – 3. GPSGV, der höchste Schalldruckpegel beträgt 70.0 dB(A) gemäss EN ISO 7779.

KCC Statement (Republic of Korea)

A급 기기 (업무용 방송통신기기): 이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Class A device (Broadcasting Communication Device for Office Use): This device obtained EMC registration for office use (Class A), and may be used in places other than home. Sellers and/or users need to take note of this.

Taiwan ROHS Certification

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：光纖通道交換機，型號（型式）： Brocade G630

Equipment name: Fibre Channel Switch Type designation (Type): Brocade G630

單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
風扇組件	—	○	○	○	○	○
主機板	—	○	○	○	○	○
電源供應器	—	○	○	○	○	○
光纖接頭	○	○	○	○	○	○
機箱支架及滑軌	—	○	○	○	○	○
電纜線組	○	○	○	○	○	○
外殼	○	○	○	○	○	○

備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。

Note 1 : "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2 : "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3. "—" 係指該項限用物質為排除項目。

Note 3 : The "—" indicates that the restricted substance corresponds to the exemption.

VCCI Statement

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI－A

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance might arise. When such trouble occurs, the user might be required to take corrective actions.

Regulatory Compliance

Regulatory Compliance (EMC)

- 2014/30/EU
- AS/NZS CISPR 32 (Australia) (Class A)
- CISPR 32
- CNS 13438
- EN 55032 (Class A)
- EN 55035
- EN 61000-3-2
- EN 61000-3-3
- FCC Part 15, Subpart B (Class A)
- GB 9254
- ICES-003 (Canada)
- KN 32
- KN 35
- VCCI-32 (Japan)

Regulatory Compliance (Safety)

- 2014/35/EU
- CAN/CSA-C22 No.62368-1
- EN/IEC 62368-1
- EN/UL 60825
- GB 4943.1
- UL 62368-1

Regulatory Compliance (Environmental)

- 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation, and Restriction of Chemicals (EU REACH).
- 2006/66/EC – Batteries and accumulators and waste batteries and accumulators (EU battery directive).
- 2011/65/EU – Restriction of the use of certain hazardous substances in electrical and electronic equipment (EU RoHS).
- 2012/19/EU – Waste electrical and electronic equipment (EU WEEE).
- 30/2011/TT-BCT – Vietnam circular.
- 94/62/EC – Packaging and packaging waste (EU).
- Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 - U.S. Conflict Minerals.
- SJ/T 11363 – 2006 Requirements for Concentration Limits for Certain Hazardous Substances in EIPs (China).
- SJ/T 11364 – 2006 Marking for the Control of Pollution Caused by EIPs (China).

Cautions and Danger Notices

This section contains translations of safety notices for your product.

Cautions

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

Ein Vorsichthinweis warnt Sie vor potenziellen Personengefahren oder Beschädigung der Hardware, Firmware, Software oder auch vor einem möglichen Datenverlust

Un message de mise en garde vous alerte sur des situations pouvant présenter un risque potentiel de dommages corporels ou de dommages matériels, logiciels ou de perte de données.

Un mensaje de precaución le alerta de situaciones que pueden resultar peligrosas para usted o causar daños en el hardware, el firmware, el software o los datos.

General Cautions

CAUTION
Changes or modifications made to this device that are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

VORSICHT	Falls dieses Gerät verändert oder modifiziert wird, ohne die ausdrückliche Genehmigung der für die Einhaltung der Anforderungen verantwortlichen Partei einzuholen, kann dem Benutzer der weitere Betrieb des Gerätes untersagt werden.
MISE EN GARDE	Les éventuelles modifications apportées à cet équipement sans avoir été expressément approuvées par la partie responsable d'en évaluer la conformité sont susceptibles d'annuler le droit de l'utilisateur à utiliser cet équipement.
PRECAUCIÓN	Si se realizan cambios o modificaciones en este dispositivo sin la autorización expresa de la parte responsable del cumplimiento de las normas, la licencia del usuario para operar este equipo puede quedar anulada.

CAUTION
Do not install the device in an environment where the operating ambient temperature might exceed 40°C (104°F).

VORSICHT	Das Gerät darf nicht in einer Umgebung mit einer Umgebungsbetriebstemperatur von über 40°C (104°F) installiert werden.
MISE EN GARDE	N'installez pas le dispositif dans un environnement où la température d'exploitation ambiante risque de dépasser 40°C (104°F).
PRECAUCIÓN	No instale el instrumento en un entorno en el que la temperatura ambiente de operación pueda exceder los 40°C (104°F).

CAUTION
Make sure the airflow around the front and back of the device is not restricted.

VORSICHT	Stellen Sie sicher, dass an der Vorderseite, den Seiten und an der Rückseite der Luftstrom nicht behindert wird.
MISE EN GARDE	Vérifiez que rien ne restreint la circulation d'air devant, derrière et sur les côtés du dispositif et qu'elle peut se faire librement.

PRECAUCIÓN	Asegúrese de que el flujo de aire en las inmediaciones de las partes anterior, laterales y posterior del instrumento no esté restringido.

Electrical Cautions

CAUTION
Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

VORSICHT	Bevor Sie ein Kabel in einen Anschluss einstecken, entladen Sie jegliche im Kabel vorhandene elektrische Spannung, indem Sie mit den elektrischen Kontakten eine geerdete Oberfläche berühren.
MISE EN GARDE	Avant de brancher un câble à un port, assurez-vous de décharger la tension du câble en reliant les contacts électriques à la terre.
PRECAUCIÓN	Antes de conectar un cable en cualquier puerto, asegúrese de descargar la tensión acumulada en el cable tocando la superficie de conexión a tierra con los contactos eléctricos.

CAUTION
Static electricity can damage the chassis and other electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.

VORSICHT	Statische Elektrizität kann das System und andere elektronische Geräte beschädigen. Um Schäden zu vermeiden, entnehmen Sie elektrostatisch empfindliche Geräte erst aus deren antistatischer Schutzhülle, wenn Sie bereit für den Einbau sind.
MISE EN GARDE	L'électricité statique peut endommager le châssis et les autres appareils électroniques. Pour éviter tout dommage, conservez les appareils sensibles à l'électricité statique dans leur emballage protecteur tant qu'ils n'ont pas été installés.
PRECAUCIÓN	La electricidad estática puede dañar el chasis y otros dispositivos electrónicos. A fin de impedir que se produzcan daños, conserve los dispositivos susceptibles de dañarse con la electricidad estática dentro de los paquetes protectores hasta que esté listo para instalarlos.

CAUTION
If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.

VORSICHT	Falls kein Modul oder Netzteil im Steckplatz installiert wird, muss die Steckplatztafel angebracht werden. Wenn ein Steckplatz nicht abgedeckt wird, läuft das System heiß.
MISE EN GARDE	Si vous n'installez pas de module ou de bloc d'alimentation dans un slot, vous devez laisser le panneau du slot en place. Si vous faites fonctionner le châssis avec un slot découvert, le système surchauffera.
PRECAUCIÓN	Si no instala un módulo o un fuente de alimentación en la ranura, deberá mantener el panel de ranuras en su lugar. Si pone en funcionamiento el chasis con una ranura descubierta, el sistema sufrirá sobrecalentamiento.

CAUTION
Carefully follow the mechanical guides on each side of the power supply slot and make sure that the power supply is properly inserted in the guides. Never insert the power supply upside down.

VORSICHT	Beachten Sie mechanischen Führungen an jeder Seite des Netzteils, das ordnungegemäß in die Führungen gesteckt werden muss. Das Netzteil darf niemals umgedreht eingesteckt werden.
MISE EN GARDE	Suivez attentivement les repères mécaniques de chaque côté du slot du bloc d'alimentation et assurez-vous que le bloc d'alimentation est bien inséré dans les repères. N'insérez jamais le bloc d'alimentation à l'envers.
PRECAUCIÓN	Siga cuidadosamente las guías mecánicas de cada lado de la ranura del suministro de energía y verifique que el suministro de energía está insertado correctamente en las guías. No inserte nunca el suministro de energía de manera invertida.

CAUTION
The power supply switch must be in the off position when you insert the power supply into the chassis. Damage to the switch can result if a live power supply is installed.

VORSICHT	Der Schalter des Netzteils muss in der Stellung „Aus“ stehen, wenn das Netzteil in das Gehäuse eingesetzt wird. Wenn ein spannungsführendes Netzteil (Schalterstellung "Ein") eingebaut wird, kann dies zu Beschädigungen am Switch führen.
MISE EN GARDE	Le commutateur d'alimentation doit être en position d'arrêt lorsque vous insérez la source d'alimentation dans le châssis. Si une source d'alimentation sous tension est installée, des dommages peuvent être causés.
PRECAUCIÓN	El interruptor de la fuente de alimentación debe estar en la posición de apagado en el momento de introducirla en el chasis. El conmutador puede resultar dañado si se instala una fuente de alimentación activa.

CAUTION
All devices with DC power supplies are intended for installation in restricted access areas only. A restricted access area is a location where access can be gained only by trained service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.

VORSICHT	Alle Geräte mit DC-Netzteil sind nur für die Installation in Bereichen mit beschränktem Zugang gedacht. Ein Bereich mit beschränktem Zugang ist ein Ort, zu dem nur ausgebildetes Wartungspersonal mit Spezialwerkzeug, Schloss und Schlüssel oder anderen Sicherheitsvorrichtungen Zugang hat. Dieser Zugang wird von für den Bereich zuständigen Personen überwacht.
MISE EN GARDE	Tous les équipements dotés de sources d'alimentation C.C. sont destinés à être installés uniquement dans des zones à accès réglementé. Une zone à accès réglementé est une zone dont l'accès n'est possible qu'au personnel de service qualifié utilisant un verrou, une clé ou un outil spécial, ou d'autres moyens de sécurité, et qui est contrôlée par les autorités responsables du site.
PRECAUCIÓN	Todos los dispositivos con fuentes de alimentacion de corriente continua (CC) han sido diseñados únicamente para su instalación en áreas restringidas/ zonas de acceso restringido . Se entiende como área de acceso restringido un lugar al que solo puede acceder personal de servicio mediante el uso de una herramienta especial, llave y cerrojo u otro medio de seguridad similar, y que esté controlado por la autoridad responsable de esa ubicación.

CAUTION
For the DC input circuit to the system, make sure there is a 10 Amp circuit breaker, maximum 60 VDC, double pole, on the input terminal block to the power supply. The input wiring for connection to the product should be copper wire, 16 AWG, marked VW-1, and rated minimum 90°C.

VORSICHT	Für den Eingangs-Gleichstromkreis zum System ist ein 10 A, maximum -60 V DC, doppelpoliger Stromkreisunterbrecher am Eingang zur Reihenklemme zu installieren. Bei der Eingangsverdrahtung zum Anschluss des Produkts sollte es sich um einen 16 AWG-Kupferdraht (VW-1) und einer Mindestnenntemperatur von 90° C handeln.
MISE EN GARDE	Pour le circuit d'alimentation C.C du système, assurez-vous de la présence d'un disjoncteur de 10 ampères, minimum -60 V C.C., double coupure, sur l'entrée vers le bloc d'alimentation. Les câbles d'alimentation pour le produit doivent être en fils de cuivre, 16 AWG (American Wire Gauge), marqués VW-1 et classés 90 degrés Celsius.
PRECAUCIÓN	Para el circuito de entrada de CC al sistema, verifique que existe un cortacircuitos catalogado de 10 amperios, como mínimo, -60 VCC, bipolar, en la entrada al bloque terminal. El cableado de entrada para la conexión al producto deberá ser de cable de cobre catalogado, 16 AWG, marcado con VW-1, y tener una capacidad nominal mínima para 90 grados centígrados.

CAUTION
For a DC system, use grounding wire of at least 16 AWG. The grounding wire should be attached to the DC input connector; the other end connects to the building ground.

VORSICHT	Für ein Gleichstromsystem verwenden Erdungskabel von mindestens 16 AWG (1.31 mm2) (amerikanische Norm für Drahtquerschnitte). Der Erdungsdraht sollte DC-Eingang angeschlossen werden, das andere Ende verbindet sich mit dem Baugrund.
MISE EN GARDE	Pour les systèmes d'alimentation courant continu (C.C), utilisez un fil de mise à terre d'au moins de 16 AWG (ou 1.31mm2). Le fil de mise à terre doit être relié au connecteur du circuit d'alimentation; l'autre extrémité se connecte à la prise terre du batiment.
PRECAUCIÓN	Para un sistema de CC, usar alambre de puesta a tierra de por lo menos 16 AWG (American Wire Gauge). El cable de tierra debe ser conectada a enchufe CC; el otro extremo se conecta a la tierra del edificio.

CAUTION
The DC return shall be isolated from the chassis ground (DC-I) when connections to the power supply are made.

VORSICHT	Der Gleichstromrücklauf soll von der Gehäuseerdung isoliert werden (DC-I), wenn Verbindungen zur Stromversorgung hergestellt werden.
MISE EN GARDE	La prise de terre de courant continu (CC) doit être isolée de la masse (CC-I) lorsqu'elle est connectée au bloc d'alimentation.
PRECAUCIÓN	El retorno de CC debe estar aislado de la toma de tierra de chasis (CC-I) cuando se realicen conexiones con la fuente de alimentación.

Danger Notices

A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Ein Gefahrenhinweis warnt vor Bedingungen oder Situationen die tödlich sein können oder Sie extrem gefährden können. Sicherheitsetiketten sind direkt auf den jeweiligen Produkten angebracht um vor diesen Bedingungen und Situationen zu warnen.

Un énoncé de danger indique des conditions ou des situations potentiellement mortelles ou extrêmement dangereuses. Des étiquettes de sécurité sont posées directement sur le produit et vous avertissent de ces conditions ou situations.

Una advertencia de peligro indica condiciones o situaciones que pueden resultar potencialmente letales o extremadamente peligrosas. También habrá etiquetas de seguridad pegadas directamente sobre los productos para advertir de estas condiciones o situaciones.

General Dangers

DANGER
The procedures in this manual are for qualified service personnel.

GEFAHR	Die Vorgehensweisen in diesem Handbuch sind für qualifiziertes Servicepersonal bestimmt.
DANGER	Les procédures décrites dans ce manuel doivent être effectuées par un personnel de maintenance qualifié.
PELIGRO	Los procedimientos de este manual deben llevarlos a cabo técnicos cualificados.

DANGER
Be careful not to accidently insert your fingers into the fan tray while removing it from the chassis. The fan may still be spinning at a high speed.

GEFAHR	Die Finger dürfen nicht versehentlich in das Ventilatorblech gesteckt werden, wenn dieses vom Gehäuse abgenommen wird. Der Ventilator kann sich unter Umständen noch mit hoher Geschwindigkeit drehen.
DANGER	Faites attention de ne pas insérer vos doigts accidentellement dans le boîtier du ventilateur lorsque vous le retirez du châssis. Il est possible que le ventilateur tourne encore à grande vitesse.
PELIGRO	Procure no insertar los dedos accidentalmente en la bandeja del ventilador cuando esté desmontando el chasis. El ventilador podría estar girando a gran velocidad.

Electrical Dangers

DANGER
For safety reasons, the ESD wrist strap should contain a series 1 megaohm resistor.

GEFAHR	Aus Sicherheitsgründen sollte ein EGB-Armband zum Schutz von elektronischen gefährdeten Bauelementen mit einem 1 Megaohm-Reihenwiderstand ausgestattet sein.
DANGER	Pour des raisons de sécurité, la dragonne ESD doit contenir une résistance de série 1 méga ohm.
PELIGRO	Por razones de seguridad, la correa de muñeca ESD deberá contener un resistor en serie de 1 mega ohmio.

DANGER
Make sure that the power source circuits are properly grounded, and then use the power cord supplied with the device to connect it to the power source.

GEFAHR	Stellen Sie sicher, dass die Stromkreise ordnungsgemäß geerdet sind. Benutzen Sie dann das mit dem Gerät gelieferte Stromkabel, um es an die Srromquelle anzuschließen.
DANGER	Vérifiez que les circuits de sources d'alimentation sont bien mis à la terre, puis utilisez lecordon d'alimentation fourni avec le dispositif pour le connecter à la source d'alimentation.
PELIGRO	Verifique que circuitos de la fuente de corriente están conectados a tierra correctamente; luego use el cordón de potencia suministrado con el instrumento para conectarlo a la fuente de corriente

DANGER
Remove both power cords before servicing.

GEFAHR	Trennen Sie beide Netzkabel, bevor Sie Wartungsarbeiten durchführen.
DANGER	Retirez les deux cordons d'alimentation avant toute maintenance.
PELIGRO	Desconecte ambos cables de alimentación antes de realizar reparaciones.

DANGER
Disconnect the power cord from all power sources to completely remove power from the device.

GEFAHR	Ziehen Sie das Stromkabel aus allen Stromquellen, um sicherzustellen, dass dem Gerät kein Strom zugeführt wird.
DANGER	Débranchez le cordon d'alimentation de toutes les sources d'alimentation pour couper complètement l'alimentation du dispositif.
PELIGRO	Para desconectar completamente la corriente del instrumento, desconecte el cordón de corriente de todas las fuentes de corriente.

DANGER
To avoid high voltage shock, do not open the device while the power is on.

GEFAHR	Das eingeschaltete Gerät darf nicht geöffnet werden, da andernfalls das Risiko eines Stromschlags mit Hochspannung besteht.
DANGER	Afin d'éviter tout choc électrique, n'ouvrez pas l'appareil lorsqu'il est sous tension.
PELIGRO	Para evitar una descarga de alto voltaje, no abra el dispositivo mientras esté encendido.

DANGER
Batteries used for RTC/NVRAM backup are not located in operator-access areas. There is a risk of explosion if a battery is replaced by an incorrect type. Dispose of used components with batteries according to local ordinance and regulations.

GEFAHR	Die für die RTC/NVRAM-Sicherung verwendeten Batterien, befinden sich nicht in für den Bediener zugänglichen Bereichen. Bei Ersetzen der Batterie durch einen falschen Typ besteht Explosionsgefahr. Entsorgen Sie gebrauchte Komponenten mit Batterien gemäß den lokalen Auflagen und Vorschriften.
DANGER	Les batteries utilisées pour la sauvegarde de l'horloge et de la mémoire ne sont pas remplaçables par l'opérateur. Il y a risque d'explosion si la batterie est remplacée par une d'un type incompatible. Jetez/recyclez les batteries conformément aux normes locales.
PELIGRO	Las baterías usadas para respaldo de RTC/NVRAM no se encuentran en areas de acceso del operador. Existe riesgo de explosión si una batería es remplazada por un tipo incorrecto. Deshágase de los componentes usados con las baterías según las politicas y regulaciones locales.

Dangers Related to Equipment Weight

DANGER
Make sure the rack housing the device is adequately secured to prevent it from becoming unstable or falling over.

GEFAHR	Stellen Sie sicher, dass das Gestell für die Unterbringung des Geräts auf angemessene Weise gesichert ist, so dass das Gestell oder der Schrank nicht wackeln oder umfallen kann.
DANGER	Vérifiez que le bâti abritant le dispositif est bien fixé afin qu'il ne devienne pas instable ou qu'il ne risque pas de tomber.
PELIGRO	Verifique que el bastidor que alberga el instrumento está asegurado correctamente para evitar que pueda hacerse inestable o que caiga.

Laser Dangers

DANGER
All fiber-optic interfaces use Class 1 lasers.

GEFAHR	Alle Glasfaser-Schnittstellen verwenden Laser der Klasse 1.
DANGER	Toutes les interfaces en fibre optique utilisent des lasers de classe 1.
PELIGRO	Todas las interfaces de fibra óptica utilizan láser de clase 1.

DANGER

Use only optical transceivers that are qualified by Broadcom and that comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.

GEFAHR	Verwenden Sie nur optische Transceiver, die von Broadcom zugelassen sind und die die Anforderungen gemäß FDA Class 1 Radiation Performance Standards in 21 CFR, Unterkapitel I, sowie IEC 60825 und EN60825 erfüllen. Optische Produkte, die diese Normen nicht erfüllen, können Strahlen aussenden, die für das menschliche Auge gefährlich sind.
DANGER	Utilisez uniquement des émetteurs-récepteurs optiques certifiés par Broadcom et conformes aux exigences sur la puissance de rayonnement de catégorie 1 de la FDA définies au sous-chapitre 21 CFR I et à les normes IEC 60825 et EN60825. Les produits optiques non-conformes à ces normes sont susceptibles d'émettre une lumière dangereuse pour les yeux.
PELIGRO	Utilice sólo transceptores ópticos aprobados por Broadcom y que cumplan con las normas IEC 60825 y EN60825, y con los estándares de rendimiento Clase 1 de FDA definidos en el subcapítulo I de 21 CFR. Los productos ópticos que no cumplan con estos estándares pueden emitir luz dañina para los ojos.

Revision History

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