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N8550-24CD8D Switch Hardware Guide

About This Guide

This guide provides step-by-step instructions for installing the hardware and performing the initial software configuration of the N8550-24CD8D switch. After completing the installation and basic configuration procedures covered in this guide, you could refer to the PicOS® documentation for information about further software configuration.

1. N8550-24CD8D Overview

1.1 System Overview

The N8550-24CD8D switch is a high-radix, high-density, 1U platform suitable for today's data centers, and supports 400GbE, 200GbE, 100GbE and 50GbE connections.

It offers advanced L2/L3 features, and secure ZTP, which enables network operators to build large, next-generation IP fabrics. It is a perfect choice for leaf, border leaf, and spine roles within IP networks, as well as Ethernet VPN - Virtual Extensible LAN (EVPN-VXLAN) fabrics.

1.1.1 Benefits of the N8550-24CD8D

- EVPN-VXLAN architecture — N8550-24CD8D switch supports IP fabrics with EVPN-VXLAN overlays, enabling Layer 2/3 network virtualization.
- Industry-leading wire speed — N8550-24CD8D switch offers 200-Gbps wire speed.
- Include advanced PicOS® features — EVPN-VXLAN, MLAG, RoCEv2, PFC, ECN and DLB.
- High-performance packet processing and local storage — Powered by Broadcom BCM56780 Trident 4 with 240GB SSD.
- Support for channelization — Using breakout cables, each of the 200G port can be broken into 2x 100GbE, 4x 50GbE, and each of the 400G port can be broken into 4x 100GbE, 2x 200GbE, 4x 50GbE, increasing the total number of 200GbE ports per switch to 40, 100GbE ports per switch to 80, and 50GbE ports per switch to 128.
- Enables data center re-architecture with flattened pods that slash switch hop latency.
- Enables a fast response by demanding applications, such as those employed in financial exchanges by reducing intracluster switch latency.
- Saves you energy costs by highly reducing power consumption per Gbps of network traffic passing through the switch.

1.1.2 System Software and Hardware and Software Features

The N8550-24CD8D switch runs the PicOS® operating system and delivers Layer 2 and Layer 3 switching, routing, and security services.

Table 1. Hardware and Software Features Supported on N8550-24CD8D Switch Model

Switch Model	Supported System	Hardware Features	Aggregate Throughput (Bidirectional)	Software Features
N8550-24CD8D	PicOS®	<ul style="list-style-type: none">• Broadcom BCM56780 Trident 4-X9 Chip• Intel® Xeon® Processor D-1627 4-Core CPU• 2x 8GB SO-DIMM DDR4 memory• 240-GB SSD storage	16 Tbps	<ul style="list-style-type: none">• Feature-rich automation capabilities with support for Python, Ansible, and zero-touch provisioning (ZTP)• Advanced PicOS® features, such as EVPN-VXLAN, MLAG, RoCEv2, PFC, ECN and DLB

1.1.3 Channelization in N8550-24CD8D

N8550-24CD8D switch supports channelization. You can channelize the 200GbE quad small form-factor pluggable 56 (QSFP56) ports and 400GbE quad small form-factor pluggable double density (QSFP-DD) ports into interfaces by connecting breakout cables and by using CLI configuration.

Table 2. Channelization in N8550-24CD8D

Switch Model	Ports	Port Speed	Supported Channelization
N8550-24CD8D	1-24	200GbE	4x 50GbE Interfaces 2x 100GbE Interfaces
	1-24	100GbE	4x 25GbE Interfaces 2x 50GbE Interfaces
	25-32	400GbE	4x 100GbE Interfaces 2x 200GbE Interfaces
	25-32	200GbE	4x 50GbE Interfaces 2x 100GbE Interfaces
	25-32	100GbE	4x 25GbE Interfaces 2x 50GbE Interfaces

1.1.4 Components on the Front and Rear Panels

Figure 1 shows the front view of the N8550-24CD8D switch.



Figure 1.

Figure 2 shows the rear view of the N8550-24CD8D switch.



Figure 2.

Figure 3 shows the components on the front and rear of a N8550-24CD8D switch.

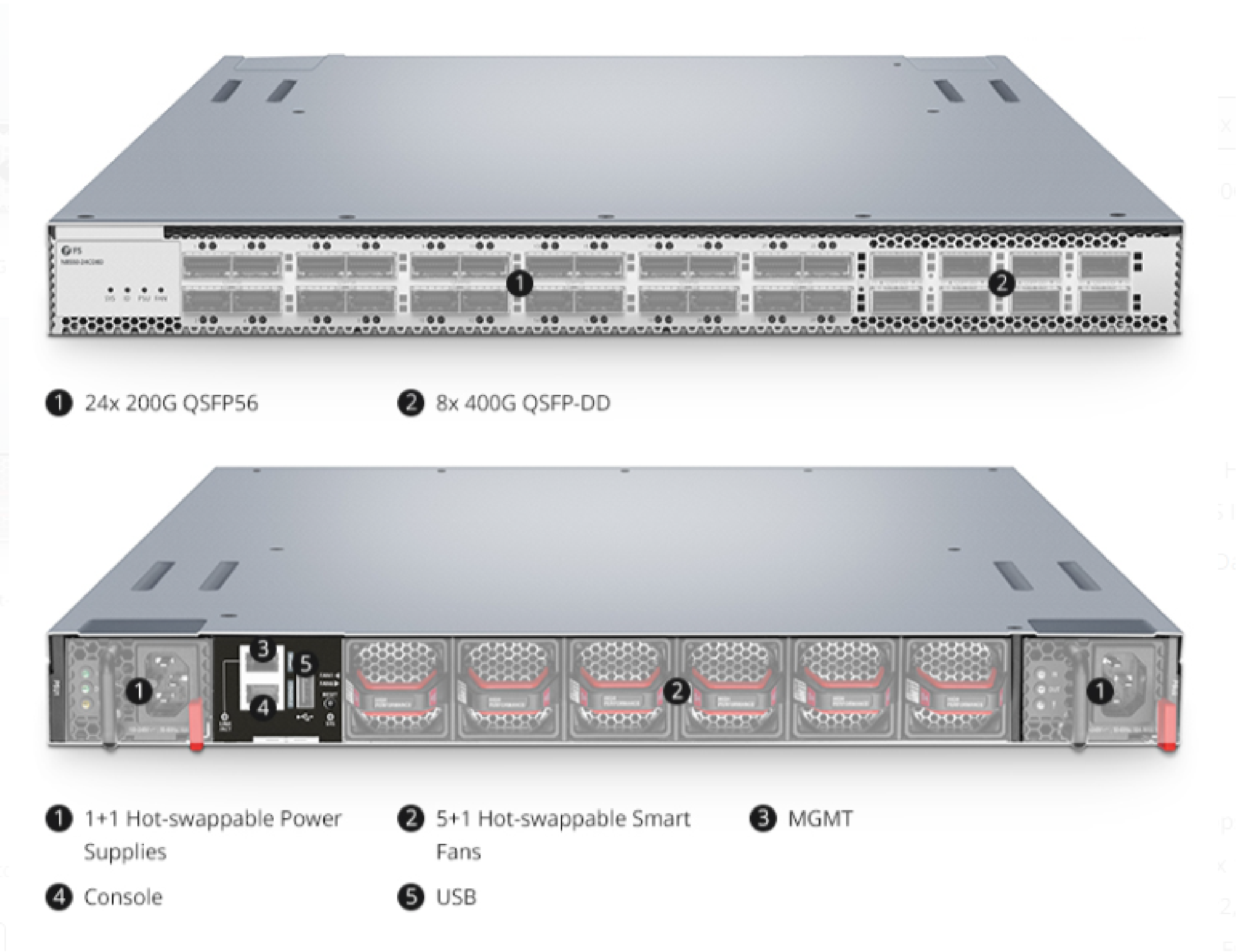


Figure 3.

1.2 Chassis

1.2.1 Chassis Physical Specifications

The N8550-24CD8D switch is a rigid sheet-metal structure that houses all components of the switch.

Table 3. Physical Specifications of the N8550-24CD8D Switch Model

Model	Height	Width	Depth	Weight
N8550-24CD8D	1.73" (4.4cm)	17.32" (44cm)	25.98" (66cm) excluding fan and power supply handles	33.06 lbs (15kg) two power supplies and fans installed

1.2.2 Field-Replaceable Units

Field-replaceable units (FRUs) are components that you can replace at your site. The FRUs in N8550-24CD8D switch are hot-removable and hot-insertable: You can remove and replace them without powering off the switch or disrupting switch functions. The N8550-24CD8D switch has the following FRUs:

- Power supplies
- Fan modules

- Transceivers

Note: Transceivers are not part of the shipping configuration. If you want to purchase any of these components, you must order them separately.

1.2.3 Chassis Status LEDs

The front panel of the N8550-24CD8D switch features three chassis status LEDs labeled SYS, PSU, FAN (see Figure 4).

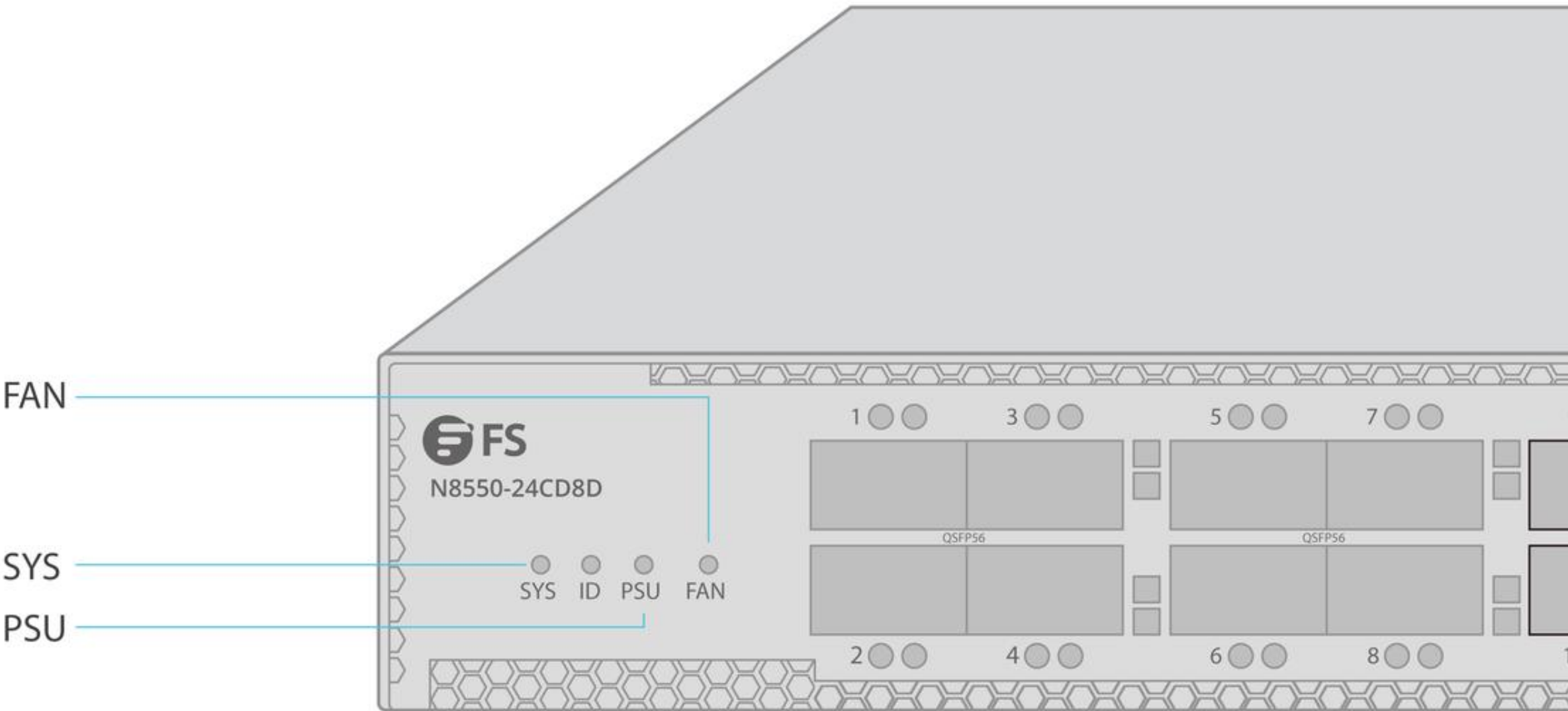


Figure 4.

Table 4. Chassis ID LED on a N8550-24CD8D Switch

LED Label	Color	State and Description
SYS LED	Off	No power supply.
	Blinking Green	The system is initializing.
	Solid Red	The system is working abnormally.
	Solid Green	The system completes initialization and works normally.
PSU LED (Front Panel)	OFF	No power supply inserted.
	Solid Red	There is a PSU working abnormally.
	Solid Green	All power supplies are operating normally.
FAN LED (Front Panel)	OFF	No fan inserted.
	Solid Green	All fans operate normally.
	Solid Red	There is fan is working abnormally.

1.2.4 LED on the Management Port

N8550-24CD8D switch has a management port on the Rear Panel.

The figure below shows the location of the management port on the N8550-24CD8D and the LED on the port (see Figure 5). The LED indicates link activity of the port.

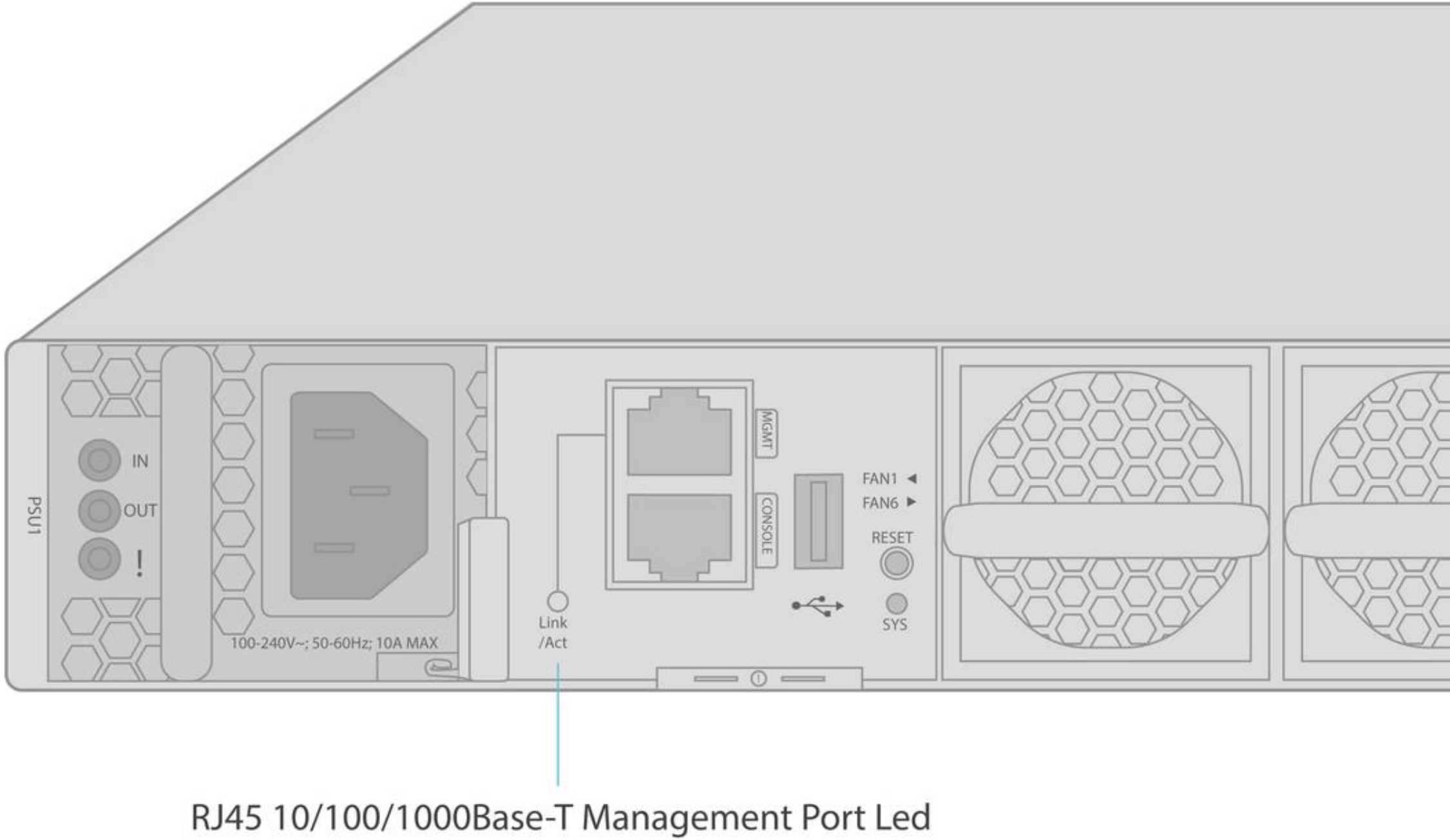


Figure 5.

Table 5. LED on the Management Port on N8550-24CD8D

LED Label	Color	State and Description
MGMT LED	OFF	No Link.
	Solid Green	Port linked operating at 10M, 100M or 1000M.
	Flashing Amber/Green	Transmit/Receive is activity, Port linked operating at 10000M.

1.2.5 Network Port LEDs

Each QSFP56 port on N8550-24CD8D switch has two LEDs, and each QSFP-DD port has one LED (see Figure 6), showing the link activity of the ports.

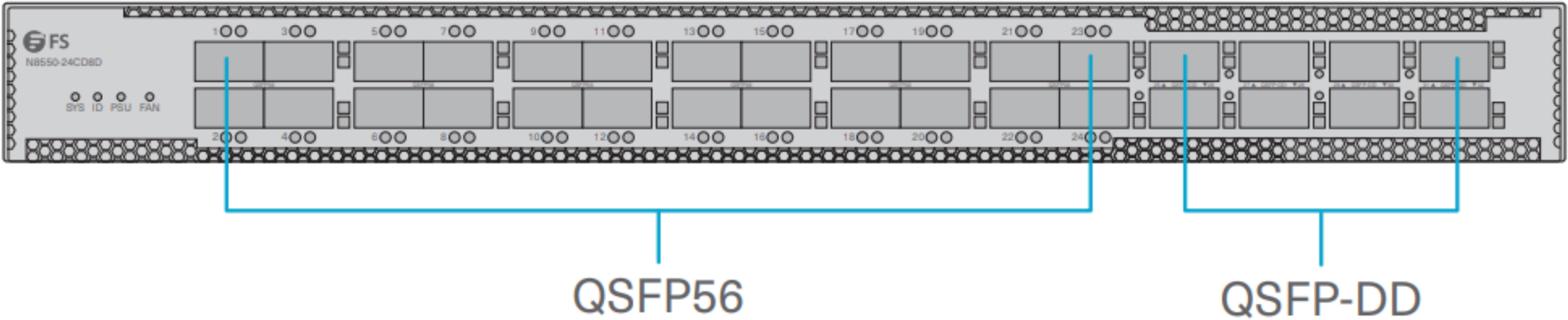


Figure 6.

Table 6. LEDs on the QSFP56 and QSFP-DD Ports on N8550-24CD8D Switch

LED Label	Color	State and Description
	Off	The port is not connected.

24 x 200GB QSFP56 port LED	Solid Green	Port linked operating at max port speed.
	Solid Amber	The system is launching lcmgr process.
	Blinking Green	Data is being received or transmitted.
8 x 400GB QSFP-DD port LED	Off	The port is not connected.
	Solid Green	Port linked operating at max port speed.
	Solid Amber	The system is launching lcmgr process.
	Blinking Green	Data is being received or transmitted.

1.3 Cooling System

The cooling system in N8550-24CD8D switch consists of fan modules and built-in fans in the power supplies. The airflow direction depends on the fan modules and power supplies installed in the switch. You can order a N8550-24CD8D switch that supports front-to-back airflow (air enters through the front of the switch).

The fan modules are hot-removable and hot-insertable field-replaceable units (FRUs) installed in the rear panel of the switch: You can remove and replace them without powering off the switch or disrupting switch functions.

1.3.1 Fan Modules

We ship N8550-24CD8D switch with six fan modules (5+1 redundancy) preinstalled in the rear panel.

The fan module is available in one airflow direction: Front-to-back (cold air enters through the front of the switch and hot air exhausts through the back of the switch).

1.3.2 Models and Airflow Direction

Table 7. Airflow Direction in N8550-24CD8D Switch Model

Fan Modules and Power Supplies	Direction of Airflow in the Fan Modules and Power Supplies
We ship the switch with six fan modules (with front-to-back airflow) and two AC power supplies (with a red ejector lever).	Front-to-back—Cold air intake to cool the chassis is through the vents on the front panel of the chassis, and hot air exhausts through the vents on the rear panel of the chassis.

N8550-24CD8D Model with Front-to-Back Airflow

In the N8550-24CD8D switch model that has front-to-back airflow, the cold air intake to cool the chassis is through the vents on the front panel of the switch and hot air exhausts through the vents on the rear panel (see Figure 7).

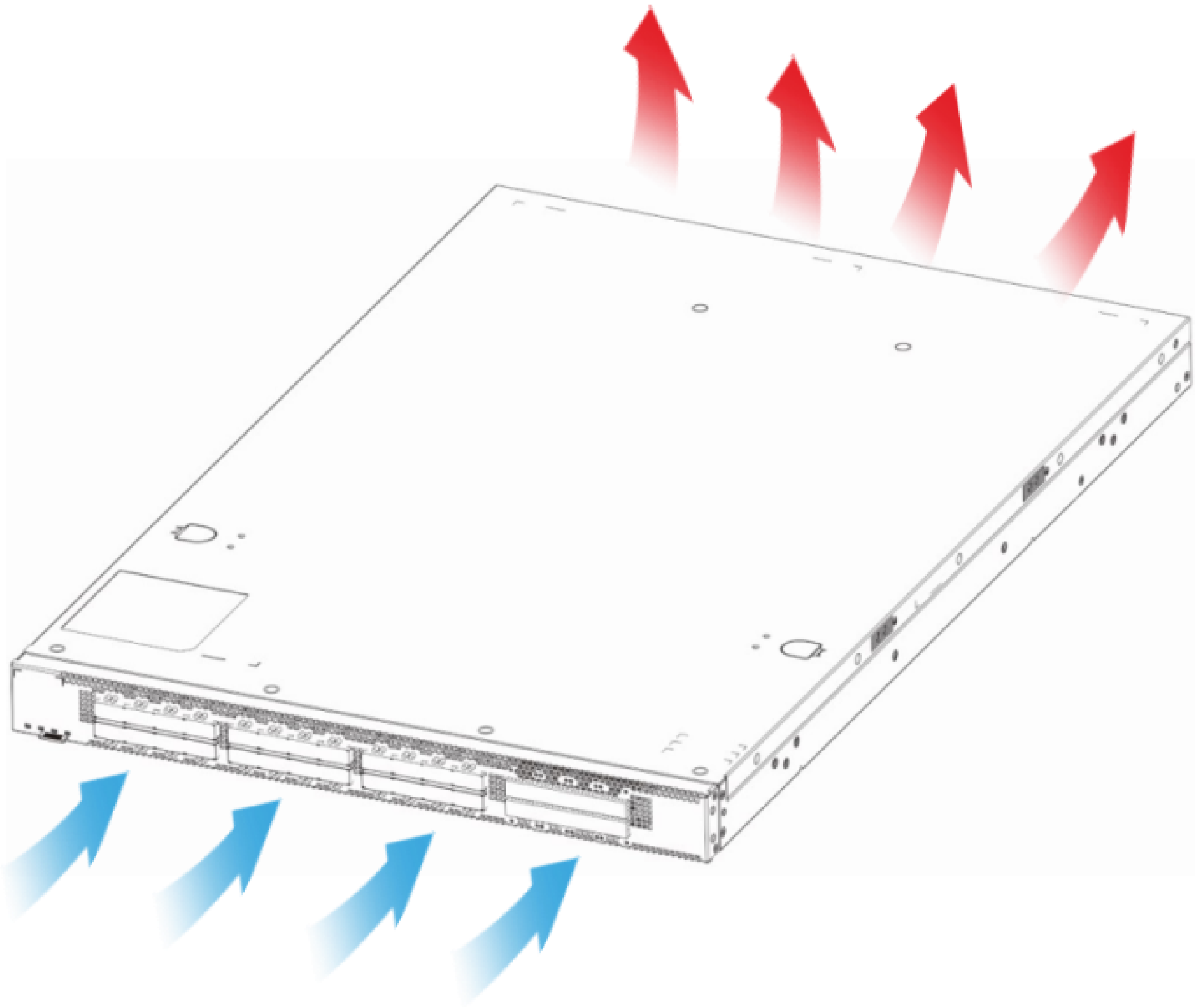


Figure 7.

1.3.3 How to Position the Switch

In front-to-back airflow, hot air exhausts through the vents on the rear panel of the switch.

For front-to-back airflow, install the fan modules with the air intake side (typically the side with the fan blades visible or the grille pattern) facing the cold aisle, and the air exhaust side (typically the side with the power connector or handle) facing the hot aisle (see Figure 8).

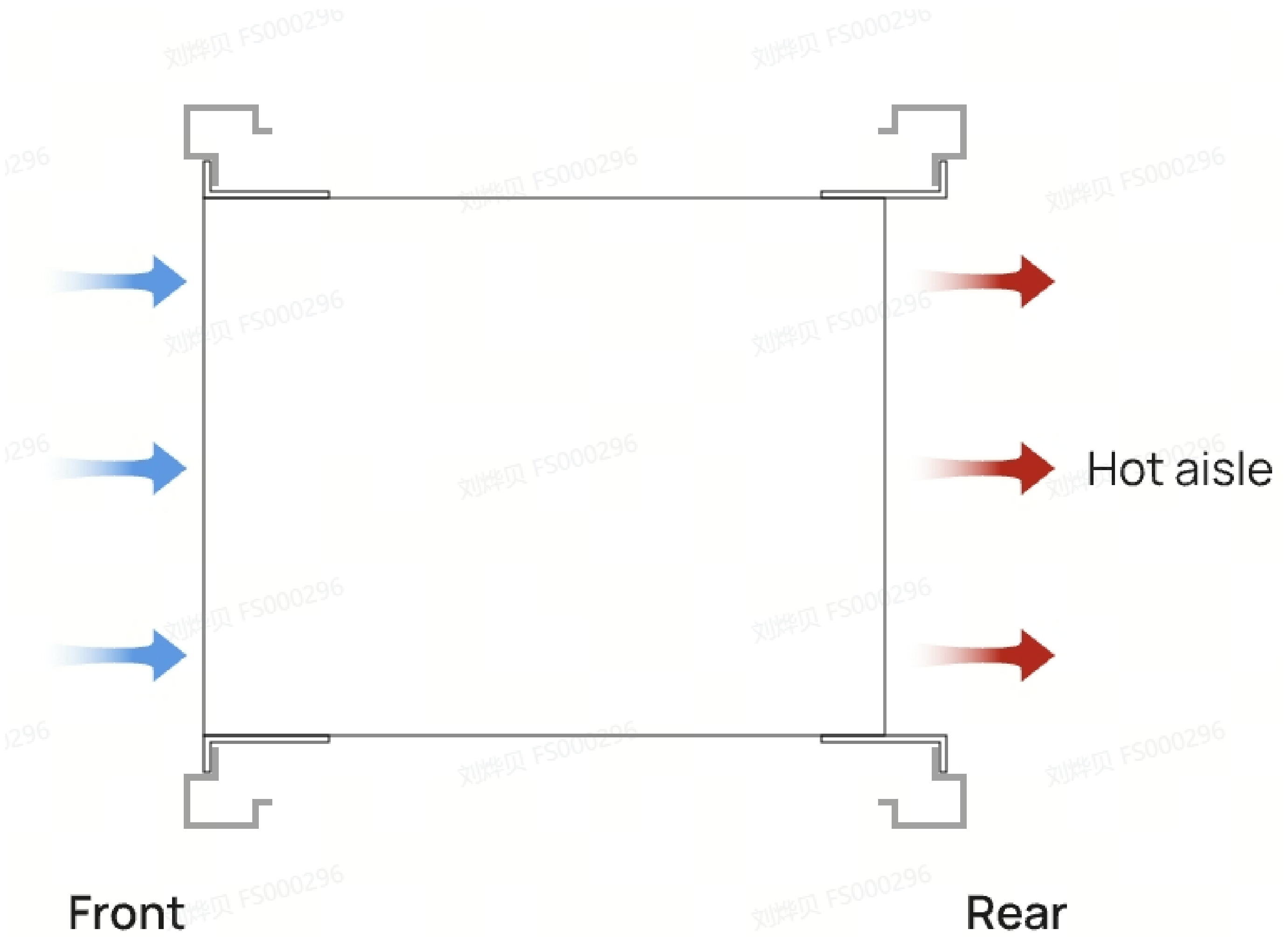


Figure 8.

1.3.4 N8550-24CD8D Fan Module Status


Each fan module on the N8550-24CD8D switch has a status LED located on the module itself, indicating its operational status.

Table 8. Fan Module Status LED

LED Label	Color	State and Description
FAN LED (Rear Panel)	OFF	No fan inserted.
	Solid Green	The fan operates normally.
	Solid Red	The fan is working abnormally.

1.4 Power System

The smart power module for the N8550-24CD8D supports power consumption management and hot swapping. It can obtain the output power, output current, and operating temperature in real time.

-  Caution

- To improve system stability and availability, you are advised to configure 1 + 1 power redundancy. The chassis configured with power redundancy works in current-sharing mode.
 - At least one power module is required. If any slot is unoccupied, install a filler panel to enable proper airflow and to keep dust out of the chassis.
 - Unplug the power cord before installing or removing the power module.

1.4.1 AC Power Supply in N8550-24CD8D Switch

You can install up to two power supplies in the power supply slots in the rear panel of the N8550-24CD8D switch chassis. On the N8550-24CD8D switch, the slots are labeled **PSU1** and **PSU2**.

1.4.2 AC Power Supply Specifications

N8550-24CD8D switch supports 1600W AC power supplies. We ship the N8550-24CD8D switch model with two AC power supplies preinstalled in the rear panel of the chassis. You can install it without powering off the switch or disrupting the switching function.

Table 9. Technical Specifications for AC Power Supplies

Item	Specification
Dimensions (W x D x H)	54.5mm x 363.8mm x 40mm (2.15 in. x 14.32 in. x 1.57 in)
Weight	2.09 lbs (0.95kg)
Input voltage	100-240V AC
Input frequency	50-60Hz
Input current	10A (MAX)
Hot swapping	Supported
Cooling	Front-to-rear airflow (air exhaust on power module panel)
Overvoltage protection	Supported
Overcurrent protection	Supported
Over-temperature protection	Supported

1.4.3 Power Cord Specifications

A detachable AC power cord is supplied with the AC power supplies. The plug end of the power cord fits into the power source outlet that is standard for your geographical location.

Table 10. Specifications of the AC Power Cord

Countries	Power Cord Standard	Male Plug	Female Connector	Voltage Compatibility	Maximum Input Amps
United States, Canada, Mexico, Puerto Rico, Guam, Japan, Virgin Islands (U.S.)	US	NEMA 5-15P	IEC60320 C13	100-250VAC	10A
United Kingdom, Hong Kong, Singapore, Malaysia, Maldives, Qatar, India	UK	BS1363	IEC60320 C13	100-250VAC	10A
Continental Europe, South Africa, Switzerland, Italy, Indonesia	EU	CEE 7	IEC60320 C13	100-250VAC	10A
China, Australia, New Zealand, Argentina	CN	GB16A	IEC60320 C13	100-250VAC	10A

1.4.4 LEDs on the AC Power Supplies

Table 11. LEDs on the AC Power Supply for N8550-24CD8D

LED	Status	Description
PSU LED (Rear Panel)	IN	Power input normal.
	OUT	Power supply is normal.
	!	Power is operating abnormally.

2. Site Planning, Preparation, and Specifications

2.1 Site Guidelines and Requirements

The equipment must be installed indoors for normal operation and prolonged service life. The following sections provide specific information to help you plan for a proper operating environment.

2.1.1 Floor Loading

- Ensure that the floor under the rack supporting the chassis is capable of supporting the combined weight of the rack and all the other components.

2.1.2 Airflow

- To ensure adequate airflow through the chassis, maintain a minimum clearance of 20 cm (7.87 in.) around air vents. Route the cables and power cords through the cable management brackets to avoid blocking air intake vents. Dust the equipment every three months to prevent blocking the ventilation openings on the housing.

2.1.3 Space


- You are advised to have a pathway of 0.8 meters (2.62 ft.) wide in the equipment room. This space ensures that you can remove the components and perform routing maintenance easily.
- The front and rear of the chassis must remain unobstructed to ensure adequate airflow and prevent overheating inside the chassis.

2.1.4 Temperature

To ensure normal operation and prolonged service life of the equipment, maintain an appropriate temperature in the equipment room. Otherwise, the equipment may be damaged.

- A high temperature can accelerate the aging process of insulation materials, greatly reducing the availability of the equipment and severely affecting its service life.

For the device’s operating temperature requirements, please refer to the [product datasheet](#).

 **Note:**


- The operating temperature is measured at a point that is 1.5 m (4.92 ft.) above the floor and 0.4 m (1.31 ft.) before the equipment with no protective plates in front or at the back of the equipment.

2.1.5 Humidity

To ensure normal operation and prolonged service life of the equipment, maintain an appropriate humidity in the equipment room. Otherwise, the equipment may be damaged.

- In an environment with a high relative humidity, the insulating material is prone to poor insulation or even electricity leakage.
- In an environment with a low relative humidity, the insulating strip may dry and shrink, resulting in screw loosening. Furthermore, internal circuits are prone to static electricity.

For the device’s operating humidity requirements, please refer to the [product datasheet](#).

 **Note:**

- The operating humidity is measured at the point that is 1.5 m (4.92 ft.) above the floor and 0.4 m (1.31 ft.) before the equipment with no protective plates in front or at the back of the equipment.

2.1.6 Cleanliness

The indoor dust takes on a positive or negative static electric charge when falling on the switch, causing poor contact of the metallic joint. Such electrostatic adhesion may occur more easily when the relative humidity is low, not only affecting the service life of the switch, but also causing communication faults. The following table lists the requirements for the dust and particles in the equipment room:

Table 12. Dust and Particle Requirement

Minimum Dust and Particle Diameter	Unit	Maximum Quantity
0.5 μm	particles/m³	3.5 × 10 ⁵
5 μm	particles/m³	3.0 × 10 ³

Apart from dust, there are also requirements on the salt, acid, and sulfide in the air of the equipment room. These harmful substances will accelerate metal corrosion and component aging. Therefore, the equipment room should be properly protected against harmful gases, such as sulfur dioxide and hydrogen sulfide. The following table lists limits on harmful gases.

Table 13. Gas Requirement

Gas	Average		Maximum (mg/m³)	
	mg/m³	cm³/m³	mg/m³	cm³/m³
Sulfur Dioxide (SO₂)	0.3	0.11	1.0	0.37
Hydrogen Sulfide (H₂S)	0.1	0.071	0.5	0.36
Chlorine (Cl)	0.1	0.034	0.3	0.1
Nitrogen Oxides (NO)	0.5	0.26	1.0	0.52

Note: • The average value is measured over one week. The maximum value is the upper limit of the harmful gas measured in one week for up to 30 minutes every day.

2.1.7 System Grounding

A reliable grounding system is the basis for stable and reliable operation, which is indispensable for preventing lightning strikes and interference. Carefully check the grounding conditions at the installation site according to the grounding specifications, and complete grounding properly based on the site situation.

• Safety Grounding

Ensure that the rack and power distribution system are securely grounded. Otherwise, electric shocks may occur when the insulation resistance between the power module and the chassis becomes small.

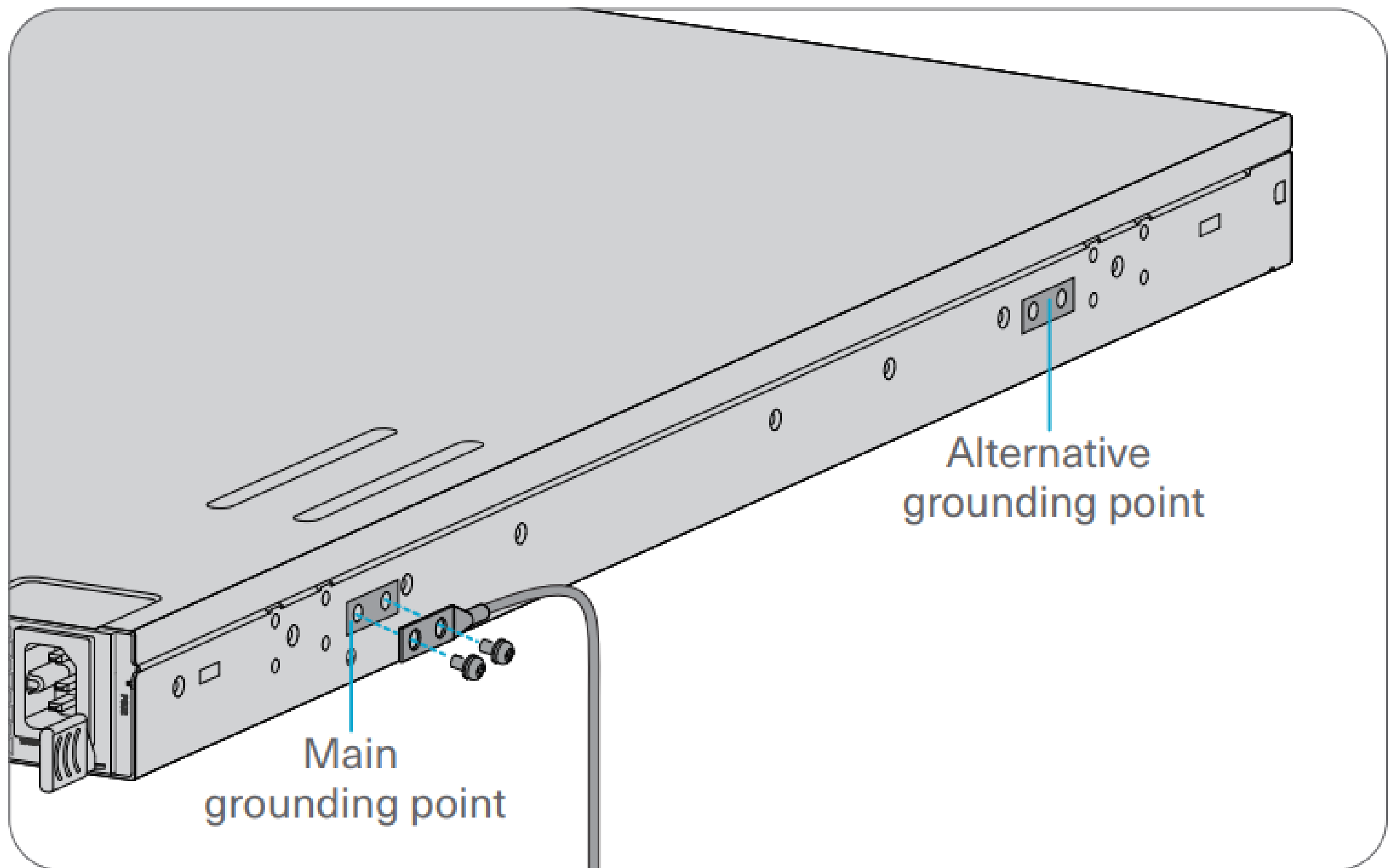
Note: • The building should provide a protective ground connection to ensure that the equipment is connected to a protective earth.

• Lightning Grounding

The surge protection system is an independent system consisting of a lightning rod, a downlead conductor, and a connector connected to the grounding system. The grounding system is usually used for power reference grounding and safety grounding of the rack.

• EMC Grounding

Grounding for the EMC design includes shielded grounding, filter grounding, noise, interference suppression, and level reference. The grounding resistance should be smaller than 1-ohm. Connect the grounding terminal to the ground before operating the equipment. There are two grounding studs in the corner of the left or right panel. They are pasted with a conspicuous label.



2.1.8 Preventing Electromagnetic Interference

Electromagnetic interference mainly comes from outside the equipment or application system and affects the equipment through capacitive coupling, inductive coupling, electromagnetic waves, and other conduction modes.

- Interference prevention measures should be taken for the power supply system.
- Keep the equipment far away from the grounding facility and surge protector facility of the power device.
- Keep the equipment far away from high-frequency current devices such as the high-power radio transmitting station and radar launcher.
- Take electromagnetic shielding measures when necessary.

2.1.9 Surge Protection

Although the equipment can guard against lightning strikes, strong lightning strikes may still damage the equipment. Take the following surge protection measures:

- Ensure that the grounding wire of the rack is in good close contact with the ground.
- Ensure that the neutral point of the AC power socket is in close contact with the ground.
- You are advised to install a power arrester in front of the power input end to enhance surge protection for the power supply.

2.2 Management Cable Specifications and Pinouts

2.2.1 Console Port Connector Pinout Information

The console port on PicOS® devices is an RS-232 serial interface, using an RJ-45 connector to connect to a console management device. The default baud rate for the console port is 115200 baud.

2.2.2 RJ-45 Management Port Connector Pinout Information

The RJ-45 connector on PicOS® network devices provides the following pinout details for the management port.

Table 14. Pin Signal Definition Table for 1000BASE-T

Pin	MDI Mode	MDI-X Mode
1	Media Dependent Interface A+	Media Dependent Interface B+
2	Media Dependent Interface A-	Media Dependent Interface B-
3	Media Dependent Interface B+	Media Dependent Interface A+
4	Media Dependent Interface C+	Media Dependent Interface D+
5	Media Dependent Interface C-	Media Dependent Interface D-
6	Media Dependent Interface B-	Media Dependent Interface A-
7	Media Dependent Interface D+	Media Dependent Interface C+
8	Media Dependent Interface D-	Media Dependent Interface C-

3. Initial Installation and Configuration

3.1 Unpack and Mount the N8550-24CD8D Switch

Below is an optimized guide for unpacking and preparing the N8550-24CD8D switch for installation, including key precautions and potential risk alerts.

3.1.1 Parts Inventory (Packing List) for a N8550-24CD8D Switch

The switch shipment includes a packing list. Check the parts you receive with the switch against the items in the packing list.

Table 15. Inventory of Components Provided with a N8550-24CD8D Switch

Component	Quantity
AC Power Cord	2
Front Mounting Bracket	2
Rear Mounting Bracket	2
Sliding Rail	2
Grounding Cable	1
Cage Nut	8
M4 Screw	12
M5 Screw	2
M6 Screw	8

3.1.2 Mount the N8550-24CD8D Switch on a Rack

Make sure the previously mentioned “2.1 Site Guidelines and Requirements” have been met before you begin the installation. Plan for the installation site, networking mode, power supply, and cabling in advance. Then, wear an ESD wrist strap, place the switch, and mount it onto the rack.

3.1.2.1 Installation Requirements

Before you begin the installation, make sure that you have the following:

- Phillips screwdriver, ESD wrist strap, and loop cable ties for securing power cords.

- Standard-sized, 19" wide cabinet with a minimum of 1U height available.
- Standard RJ-45 Ethernet cables for connecting the network devices.

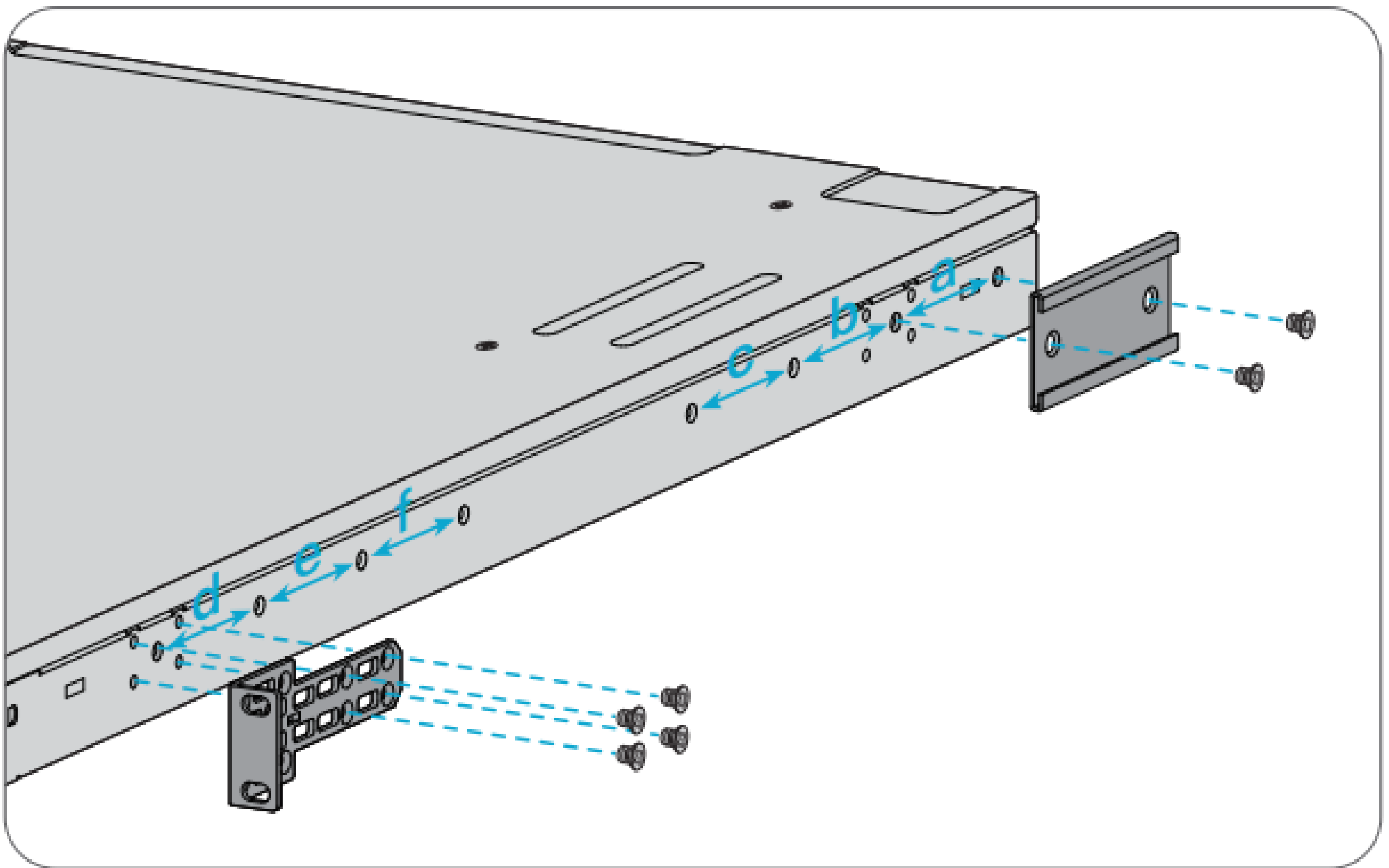
3.1.2.2 Installation Guidelines

Please verify that the front and rear brackets of the rack are in the right locations before mounting. If the front brackets are too close to the front door, there will not be sufficient clearance between the front panel and the door. As a result, the front door cannot be closed after Ethernet cables and optical fibers are connected to the chassis. Generally, maintain a minimum clearance of 10 mm (0.39 in.) between the front panel and the front door. Before installation, verify the following guidelines are met:

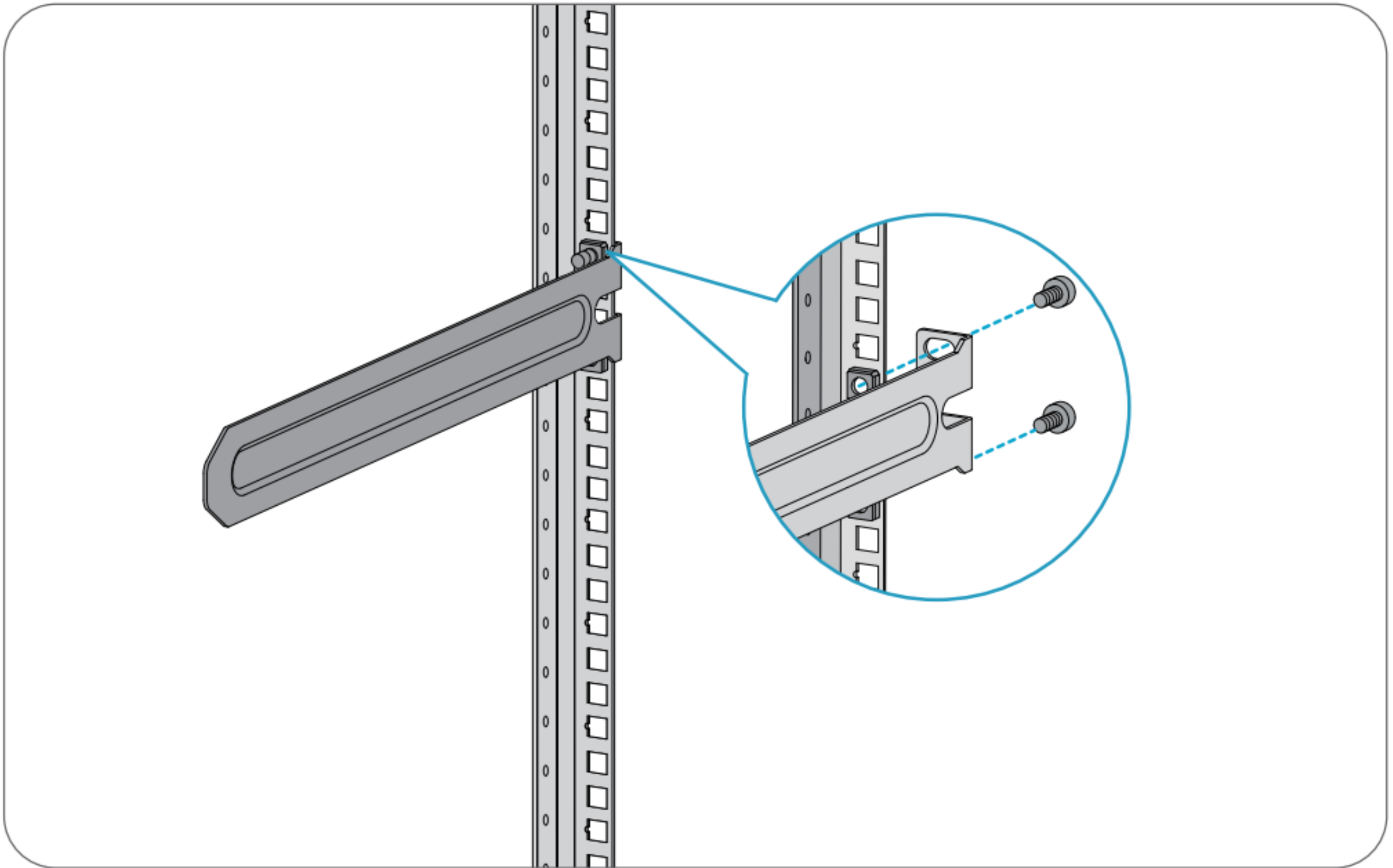
- The rack has been secured.
- The various components in the rack have been installed.
- There are no obstacles inside or around the rack when installing the switch.

3.1.2.3 Mount the Brackets

- Secure the front mounting brackets and sliding rails to the two sides of the switch with M4 screws.



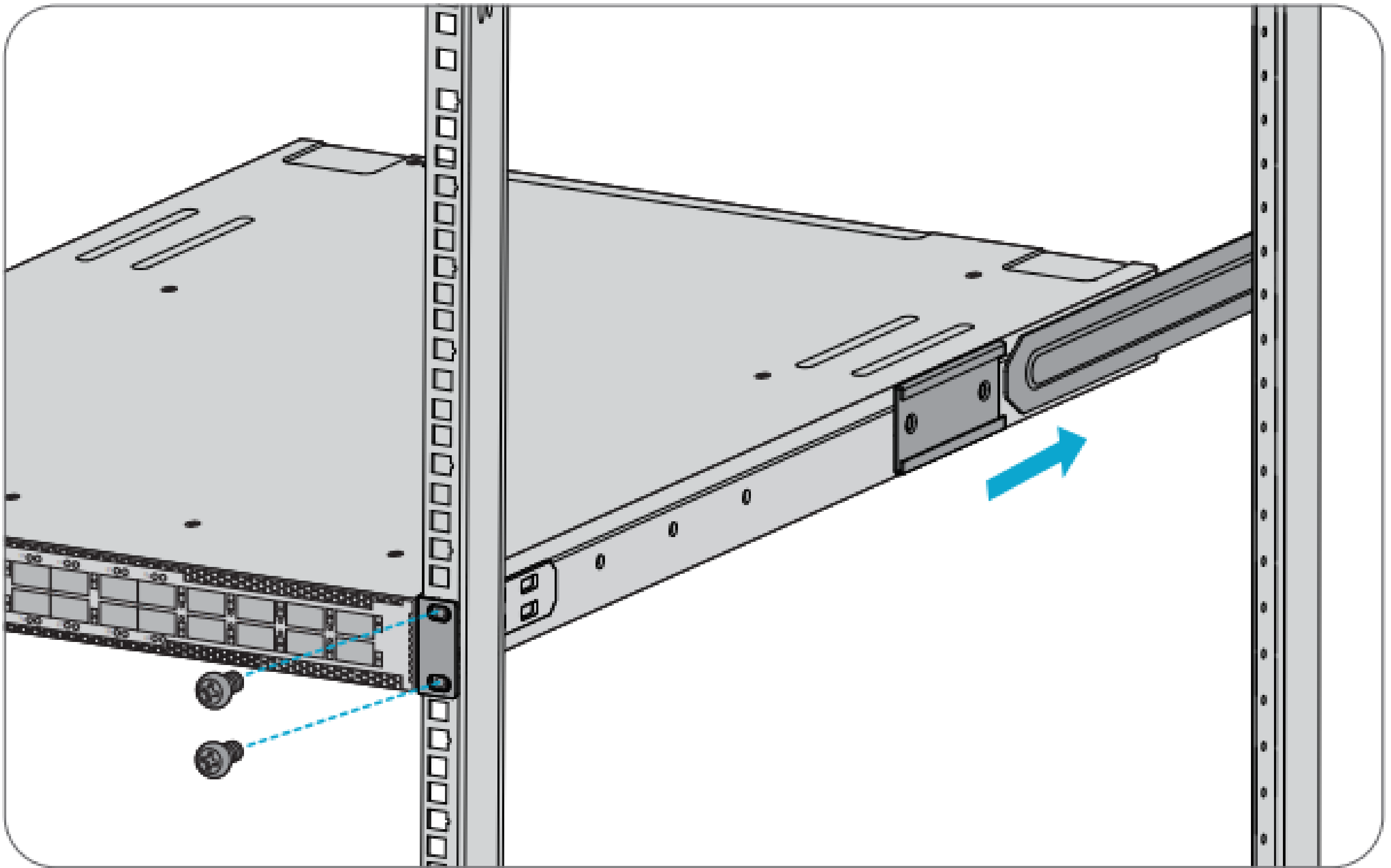
- Secure the rear mounting brackets to the rack with M6 screws and cage nuts.



3.1.2.4 Mount the Chassis on the Rack

The chassis can be installed on a standard 19-inch EIA rack. Mount the chassis on the rack with its front panel facing forward. You are advised to use a tray or guide rails to assist in installing the chassis on the rack.

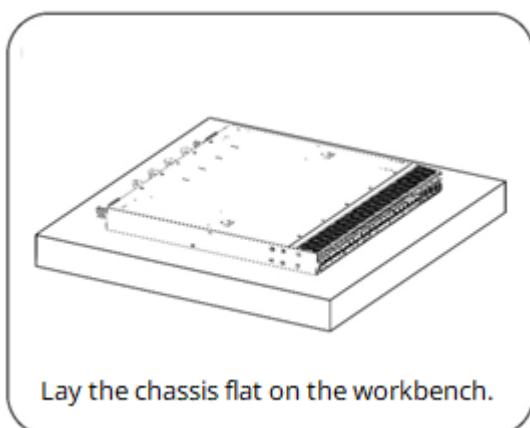
- Push the switch slightly into the rack along the rear mounting brackets. Then secure the front mounting brackets to the rack with M6 screws and cage nuts.



3.1.3 Mount the Chassis on the Workbench

If a standard 19-inch EIA rack is not available, mount the switch on a clean workbench.

- Lay the chassis flat on the workbench and ensure adequate airflow around the chassis.



3.2 Connect the N8550-24CD8D to Power

3.2.1 Connect the N8550-24CD8D Switch to Earth Ground

3.2.1.1 Installation Guidelines

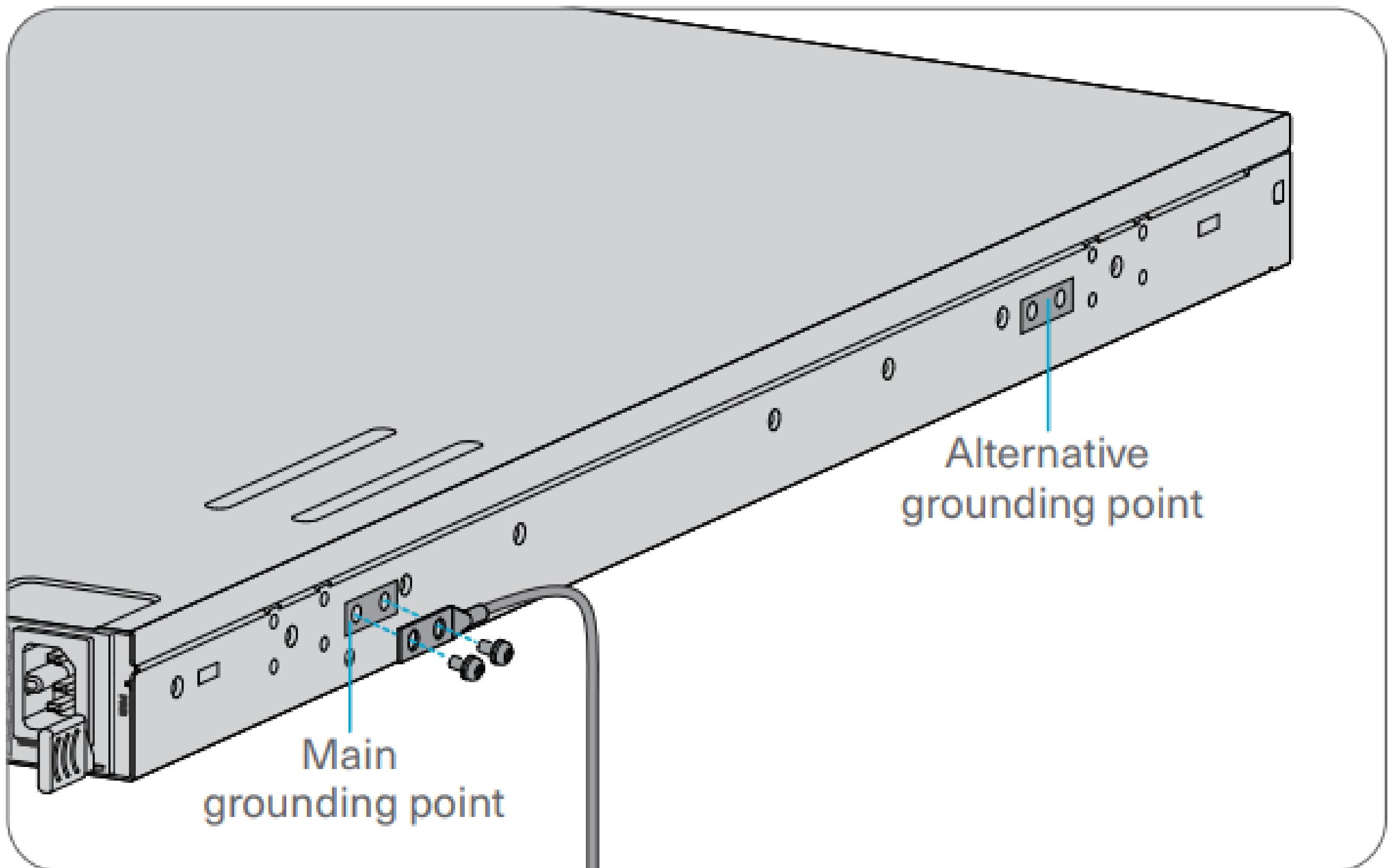
A reliable grounding system is the basis for stable and reliable operation, which is indispensable for preventing lightning strikes and interference. The chassis has two grounding studs on its left or right panel. Connect the grounding stud to the grounding terminal of the rack and then connect the grounding terminal to the grounding bar of the equipment room.

- The cross-sectional area of the grounding wire is determined by the maximum possible current. The grounding wire should be of a good conduction quality.
- Never use bare wires.
- The combined grounding should have a grounding resistance of less than 1-ohm.

3.2.1.2 Procedure

- Connect one end of the grounding cable to a proper earth ground.

- Secure the grounding lug to the grounding point on the left or right panel of the switch with the M5 screws and washers.



Danger Warnings:

- To ensure personal and equipment safety, it is necessary to ground the switch properly. The resistance between the chassis and the ground must be less than 0.1-ohm.
- The maintenance personnel should check whether the AC power socket is reliably connected to the building's protective ground. If not, the maintenance personnel should use a protective grounding wire to connect the protective ground terminal of the AC power socket to the building's protective ground.
- The power cord must be plugged into the power socket connected to the earth ground.
- The power socket must be installed near the equipment in an easily accessible location.
- When installing or replacing the unit, the ground connection must always be made first and disconnected last.

3.2.2 Connect Power to N8550-24CD8D Switch

Wear an ESD-preventive wrist strap before proceeding with the following operation.

3.2.2.1 Power Module Installation

- Remove the power module from its packing materials. Make sure the input indicators meet the requirements.
- Remove the filler panel from the slot by unscrewing the captive screw. Keep the panel with the nameplate facing upwards. Grasp the handle with one hand and place your other hand underneath the power module to support it. Slide the power module along the guide rails into the slot until the module plugs into the receptacle at the back of the slot.

Warning:

- Slide the power module all the way into the chassis gently. Align the power module in the right orientation to the open power slot.
- If you are not able to push the power module all the way into the slot, carefully slide the module out of the slot, align the module with guide rails, and reinstall the module.
- All fan and power modules must have the same airflow direction or else an error can occur.

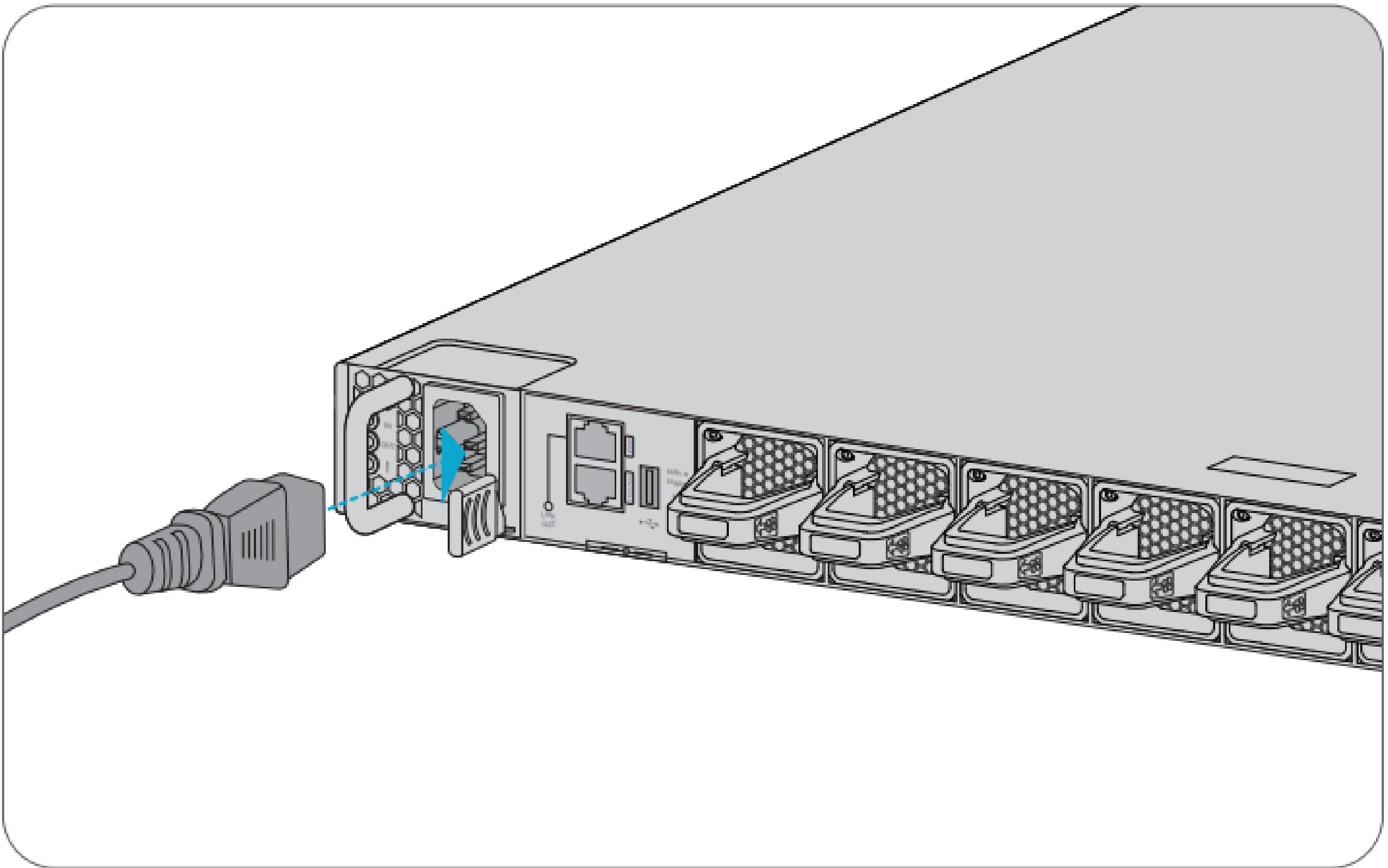
3.2.3 Post-installation Check

- Note:**
- Before checking the installation, ensure that all power is turned off and disconnected to prevent personal injury and damage to the switch components.

- The external power supply matches the power distribution system.
- The front and rear doors of the rack can close properly after installation has been completed.
- The rack has been completely fastened, which will not move or tilt.
- The chassis has been mounted on the rack and all cables have been fastened to the rack.
- Select the proper fan module and tighten captive screws.
- Select the proper power module.
- The power module is completely seated in the slot.
- At least two personnel are required to power on the chassis. Do not service the chassis before it is powered off.
- Carefully check your work area for possible hazards, such as ungrounded power extension cables, missing safety grounds, and moist floors.
- Do not subject the equipment to dampness and avoid liquid inside the equipment.
- Locate the emergency power-off switch in the room. In the case of an electrical accident, you will be able to quickly turn off the power.
- Never assume that power is disconnected from a circuit. Instead, always check.
- The power cord is plugged into the power module and retained there.
- The power cord is long enough to avoid over-extension.
- The power socket is connected to the earth ground as required with a rated current of at least 10 A.
- Each power module receives power from a power socket.
- If a slot is to remain empty, install a filler panel to allow for adequate airflow and to keep dust out of the chassis.

3.2.4 Connect the Power Cable

- Plug the AC power cord into the power port on the back panel of the switch.
- Connect the other end of the power cord to an AC power source.



- ⓘ Cautions:**
- Make sure the power socket is OFF before connecting the power cord.
 - Use a 3-core power cord, with a minimum cross-sectional area of 1.5 mm² or 14 AWG per pin.
 - Use a 10 A power cord for the AC power supply. Adopt the proper power socket and make sure that the AC power system in the equipment room is capable enough.

3.3 Connect the N8550-24CD8D to the Network

3.3.1 Install a QSFP56 or QSFP-DD Transceiver

Before you install a transceiver in a device, ensure that you have taken the necessary precautions for safe handling of lasers.

Ensure that you have a rubber safety cap available to cover the transceiver.

The transceivers for FS devices are hot-removable and hot-insertable field-replaceable units (FRUs). You can remove and replace the transceivers without powering off the device or disrupting the device functions.

- ⓘ Note:**
- After you insert a transceiver or after you change the media-type configuration, wait for 6 seconds for the interface to display operational commands.

To install a QSFP56 or QSFP-DD transceiver:

- Wrap and fasten one end of an ESD wrist strap around your bare wrist, and connect the other end of the strap to the ESD point on the switch.
- Verify that a rubber safety cap covers the QSFP56 or QSFP-DD transceiver.
- Position the transceiver in front of the port on the device so that the QSFP56 or QSFP-DD connector faces the port.
- Slide the transceiver into the port until the locking pins lock in place. If there is resistance, remove the transceiver and flip it so that the connector faces the other direction.

- Laser Warning:**
- Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cable connected to a transceiver emits laser light that can damage your eyes.

- CAUTION:**
- Do not leave a fiber-optic transceiver uncovered except when inserting or removing cable. The safety cap keeps the port clean and protects your eyes from accidental exposure to laser light.

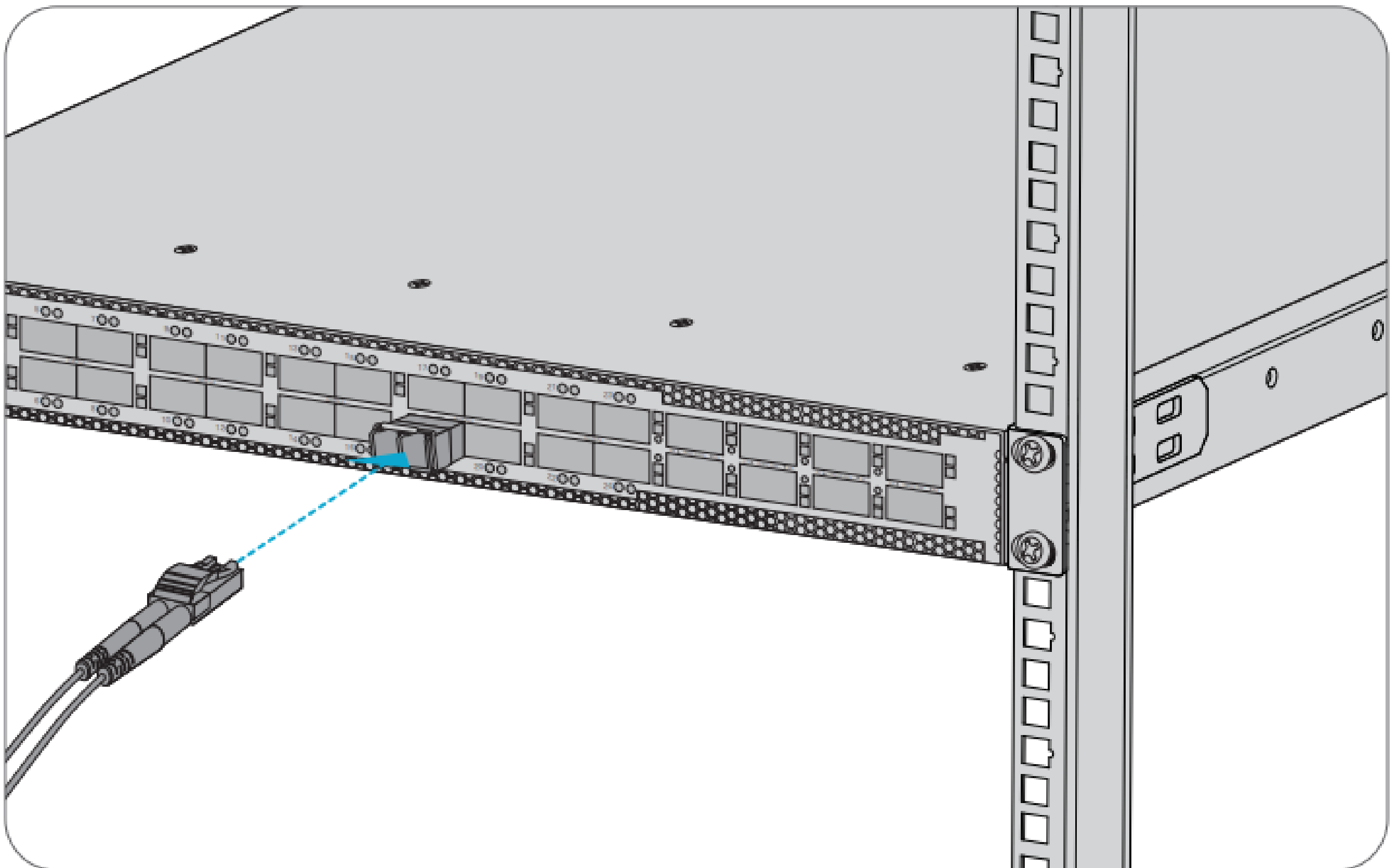
3.3.2 Connect a Fiber-Optic Cable

Before you connect a fiber-optic cable to an optical transceiver installed in a device, ensure that you have taken the necessary precautions for safe handling of lasers.

To connect a fiber-optic cable to an optical transceiver installed in a device:

- Laser Warning:**
- Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes.

- If the fiber-optic cable connector is covered with a rubber safety cap, remove the cap. Save the cap.
- Remove the rubber safety cap from the optical transceiver. Save the cap.
- Insert the cable connector into the optical transceiver.



- Secure the cables so that they do not support their own weight. Place excess cable out of the way in a neatly coiled loop. Placing fasteners on a loop helps cables maintain their shape.

- CAUTION:**
- Do not bend fiber-optic cables beyond their minimum bend radius. An arc smaller than a few inches in diameter can damage the cables and cause problems that are difficult to diagnose.
 - Do not let fiber-optic cables hang free from the connector. Do not allow fastened loops of cables to dangle, which stresses the cables at the fastening point.

3.4 Connect the N8550-24CD8D to External Devices

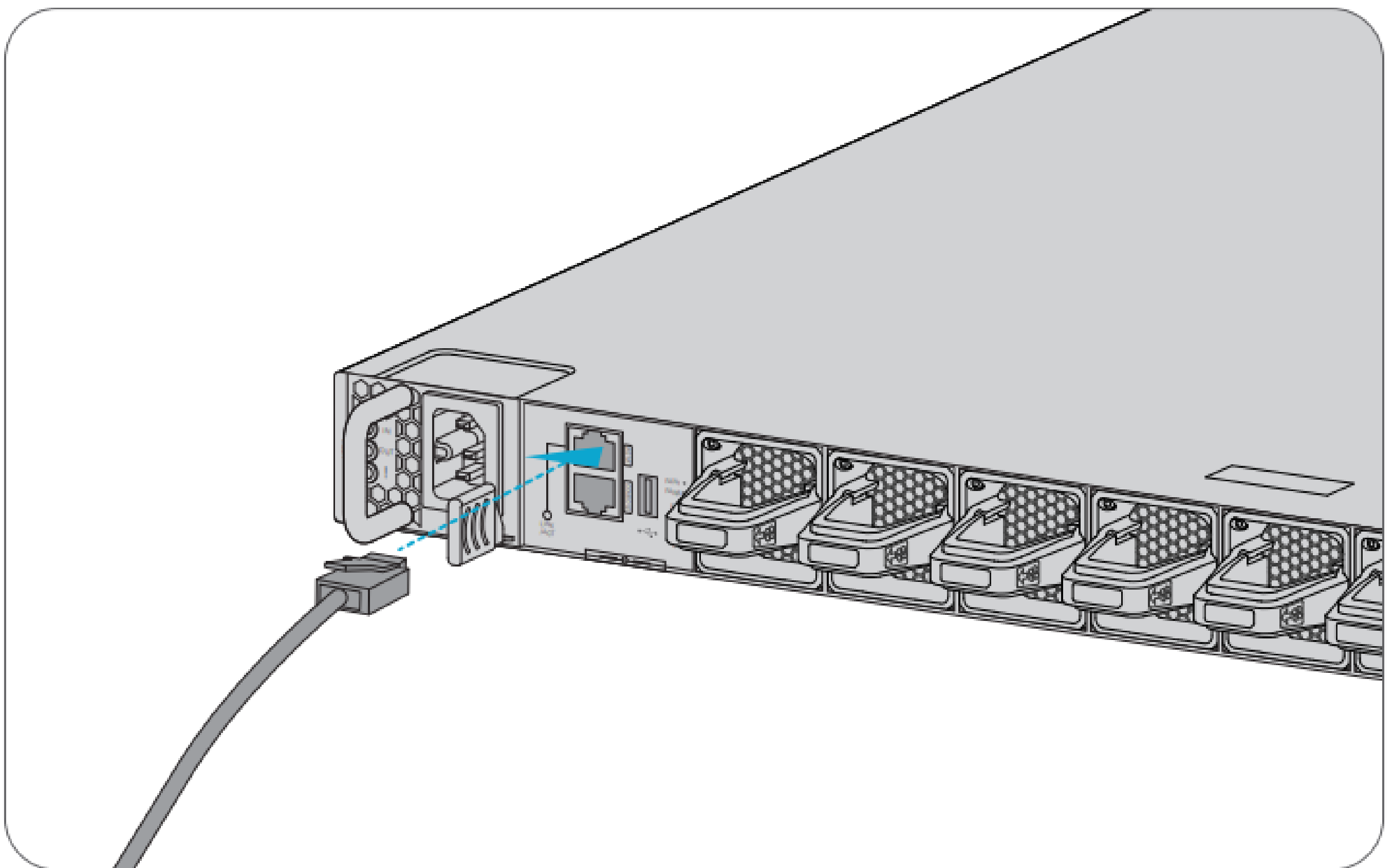
3.4.1 Connect a Device to a Network for Out-of-Band Management

Ensure that you have an Ethernet cable that has an RJ-45 connector at either end.

You can monitor and manage a network device, such as a router or a switch, by using a dedicated management channel. Each device has a management port to which you can connect an Ethernet cable with an RJ-45 connector. Use the management port to connect the device to the management device.

To connect a device to a network for out-of-band management:

- Connect one end of a standard RJ45 Ethernet cable to a computer.
- Connect the other end of the cable to the MGMT port on the switch.



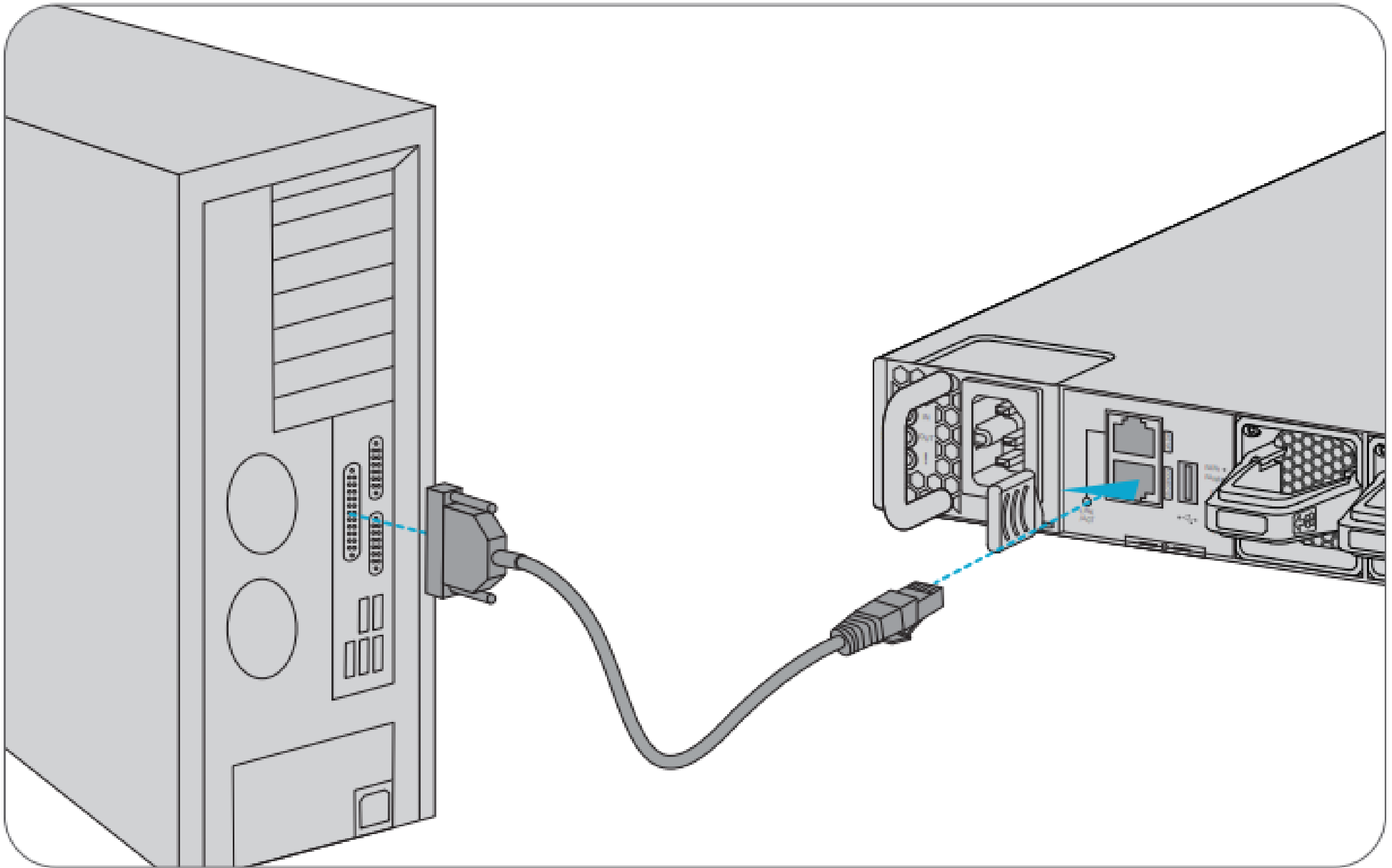
3.4.2 Connect a Device to a Management Console Using an RJ-45 Connector

You can configure and manage your network devices through a dedicated management channel, using the console port available on each device.

3.4.2.1 Console Port Management

Connect the PC to the device's Console port using a console cable, as shown in the image below.

- Insert the RJ45 connector into the RJ45 console port on the switch.
- Connect the DB9 female connector of the console cable to the serial port on the computer.



3.5 Configure PicOS® on the N8550-24CD8D

3.5.1 Default Configuration

We ship each N8550-24CD8D switch programmed with a factory-default configuration that contains the values set for each configuration parameter. The default configuration file sets values for system parameters such as the system log and file messages.

When you commit changes to the configuration, a new configuration file is created that becomes the active configuration. You can always revert to the factory-default configuration.

This topic shows the factory-default configuration file of a N8550-24CD8D switch:

```
system {
  login {
    announcement: ""
    user operator {
      class: "read-only"
    }
  }
  services {
    ssh {
      port: 22
      root-login: "deny"
      protocol-version: "v2"
      connection-limit: 20
      rate-limit: 20
      disable: false
      idle-timeout: 0
    }
  }
}
```

```
inband {
  enable: false
}
syslog {
  local-file: "ram"
}
log-level: "warning"
log-facility: 0
timezone: "UTC"
}
```

3.5.2 Connect and Configure N8550-24CD8D

The initial configuration of the switch requires the user to connect the terminal or computer to the switch’s console port. Once the user accesses the switch and establishes the CLI (Command Line Interface) through a serial console connection, an IP address is assigned to the management port, and an IP route to the gateway is created. Keep in mind the following points:

- The console port provides local serial access to the switch.
- The Ethernet management port is used for out-of-band network management tasks. Before using the management port for the first time, you must assign an IP address to the port.


3.5.2.1 Connect Console Port

Before configuring the device for the first time, you need to access it via the console port. The console port is located at the front of the switch. You can connect a terminal or a computer to the console port using a serial or RS-232 cable.

Port Settings

Use the following port settings to connect the terminal or computer to the switch console port:


```
Baud rate: 115200
Data bits: 8
Stop bits: 1
```

 The default width for terminal sessions through the console port is 80 characters. This means that the terminal client’s width should be at least 80 characters for proper use of the console port. Most terminal clients have a default width of 80 characters.

3.5.2.2 Assign an IP Address to the Management Interface

Once initial access to the switch is obtained, the user needs to configure the management IP address and default gateway in either L2/L3 mode or OVS mode. This section explains the configuration in L2/L3 mode.


The management IP address is used for maintaining and managing the device. You can configure a static IP address for the management interface eth0, or you can dynamically assign the address via DHCP. If a static IP address is not assigned, the system will default to attempting to obtain the management port IP address dynamically from the DHCP server.

 **Note:** • When switching from OVS mode to L2/L3 mode, the static IP address of the management port configured before will still be used if there is no user configuration for it in the new mode.

3.5.2.2.1 Configure Management Interface

Step1 Set static IP addresses for management interface eth0.

```
set system management-ethernet eth0 ip-address {IPv4 | IPv6} <ip_address>
```


 **NOTE:** • If the static IP address is not assigned, the system will try to dynamically obtain the management port IP address from the DHCP server which is also the factory setting.

Step2 Set the gateway address for management interface eth0.

```
set system management-ethernet eth0 ip-gateway {IPv4 | IPv6} <ip_address>
```

3.5.2.2.2 Configuration Example

Step1 Set static IP addresses for management interface eth0.

```
admin@Xorplus# set system management-ethernet eth0 ip-address IPv4 192.168.10.5/24
```

Step2 Set the gateway address for management interface eth0.

```
admin@Xorplus# set system management-ethernet eth0 ip-gateway IPv4 192.168.10.1
```

Step3 Commit the configuration.

```
admin@XorPlus# commit
```

Step4 Verify the configuration.

- Run **run show system management-ethernet** command to view the configuration information, status and traffic statistics information of the management interface.

```
admin@XorPlus# run show system management-ethernet
eth0 Hwaddr: 00:18:23:30:e5:72 State: UP
Gateway : 192.168.10.1
Inet addr:
192.168.10.5/24
Traffic statistics
Input Packets.....3620
Input Bytes.....462971
Output Packets.....597
Output Bytes.....75459
```



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