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FS N9550-32D Switch Hardware



About This Guide

This guide provides step-by-step instructions for installing the hardware and performing the initial software configuration of the N9550-32D 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.

N9550-32D Overview

System Overview

The N9550-32D is a next-generation, fixed-configuration spine-and-leaf switch. It supports flexible, cost-effective, high-density 400GbE, 200GbE and 100GbE interfaces for server and intra-fabric connectivity.

The switch offers an advanced L2, L3 feature. For large public cloud providers, the switch supports very large, dense, and fast 400GbE IP fabrics. Delivering 25.6 Tbps (bidirectional) of bandwidth, it is optimally designed for spine-and-leaf deployments in enterprise, HPC, service provider, and cloud data centers.

Benefits of the N9550-32D

- Industry-leading wire speed — N9550-32D switch offers 400-Gbps wire speed.
- Include advanced PicOS® features — RoCEv2, PFC, ECN, DLB and MLAG.
- High-performance packet processing and local storage — Powered by Broadcom BCM56980 Tomahawk 3 with 64GB SSD.
- Support for channelization — Using breakout cables, the 400G port splits into 4x 100G, as well as splitting into 2x 200G, increasing the total number of 100GbE ports per switch to 128 and 200GbE ports per switch to 64.
- Reduces compute-intensive workloads for hyperscale cloud and high-performance computing (HPC) data centers. Examples of these compute-intensive workloads include AI, machine learning, deep learning applications, and storage disaggregation workloads such as Non-Volatile Express over Fabrics (NVMe over Fabrics).
- Enables data center re-architecture with flattened pods that slash switch hop latency.
- Enables a fast response by demanding applications, such as those encountered 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.
- Provides an extensive roadmap to new features and functions, such as:
 - Comprehensive Remote Direct Memory Access over Converged Ethernet version 2 (RoCEv2)
 - Advanced congestion control and flow-aware traffic scheduling
 - Support for container networking and segment routing

- Scale-out load balancing and multipathing
- Support for advanced network instrumentation adopted by cloud data centers

System Software and Hardware and Software Features

The N9550-32D switch runs the PicOS® operating system and delivers Layer 2 and Layer 3 switching, routing, and security services. Table 1 lists the hardware and software features supported on the model.

Table 1. Hardware and Software Features Supported on N9550-32D Switch Model

| Switch Model | Supported System | Hardware Features | Aggregate Throughput (Bidirectional) | Software Features |
|--------------|------------------|--|--------------------------------------|--|
| N9550-32D | PicOS® | <ul style="list-style-type: none"> • Broadcom BCM56980 Tomahawk 3 Chip • Intel® Xeon® Processor D-1518 4-Core CPU • 8GB x 2 SO-DIMM memory • 64-GB SSD storage | 25.6 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 RoCEv2, PFC, ECN, DLB and MLAG. |

Channelization in N9550-32D

N9550-32D switch supports channelization. You can channelize the 400GbE quad small form-factor pluggable double density (QSFP-DD) ports into interfaces by connecting breakout cables and by using CLI configuration. Table 2 lists the channelization supported on the model.

Table 2. Channelization in N9550-32D

| Switch Model | Ports | Port Speed | Supported Channelization |
|--|-------|------------|---|
| N9550-32D | 1-32 | 400GbE | 4x 100GbE Interfaces 2x 200GbE Interfaces |
| | 1-32 | 200GbE * | 4x 50GbE Interfaces * |
| | 1-32 | 100GbE | 4x 25GbE Interfaces * |
| | 33-34 | 10GbE * | — |
| Notice: *Expected to be available in Q3 2025 | | | |

Components on the Front and Rear Panels

Figure 1 shows the front view of the N9550-32D switch.



Figure 1: N9550-32D—Front View

Figure 2 shows the rear view of the N9550-32D switch.



Figure 2: N9550-32D—Rear View

Figure 3 shows the components on the front and rear of a N9550-32D switch.



Figure 3: Components on the Front and Rear Panel of N9550-32D

Chassis

Chassis Physical Specifications

The N9550-32D switch is a rigid sheet-metal structure that houses all components of the switch. Table 3 shows the physical specifications of the N9550-32D switch model.

Table 3. Physical Specifications of the N9550-32D Switch Model

| | | | | |
|-------|--------|-------|-------|--------|
| Model | Height | Width | Depth | Weight |
|-------|--------|-------|-------|--------|

| | | | | |
|-----------|---------------|-----------------|--|--|
| N9550-32D | 1.69" (4.3cm) | 17.25" (43.8cm) | 21.1" (53.6cm) excluding fan and power supply handles | 28.2 lbs (12.8kg) two power supplies and fans installed |
|-----------|---------------|-----------------|--|--|

Field-Replaceable Units

Field-replaceable units (FRUs) are components that you can replace at your site. The FRUs in N9550-32D switch are hot-removable and hot-insertable: You can remove and replace them without powering off the switch or disrupting switch functions. The N9550-32D 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.

Chassis Status LEDs

The front panel of the N9550-32D switch features four chassis status LEDs labeled Diagnosis, PS1, PS2 and FAN (see Figure 4). Table 4 describes the chassis LEDs on the N9550-32D switch, its color and states, and the states they indicate.

Figure 4. Chassis status LEDs

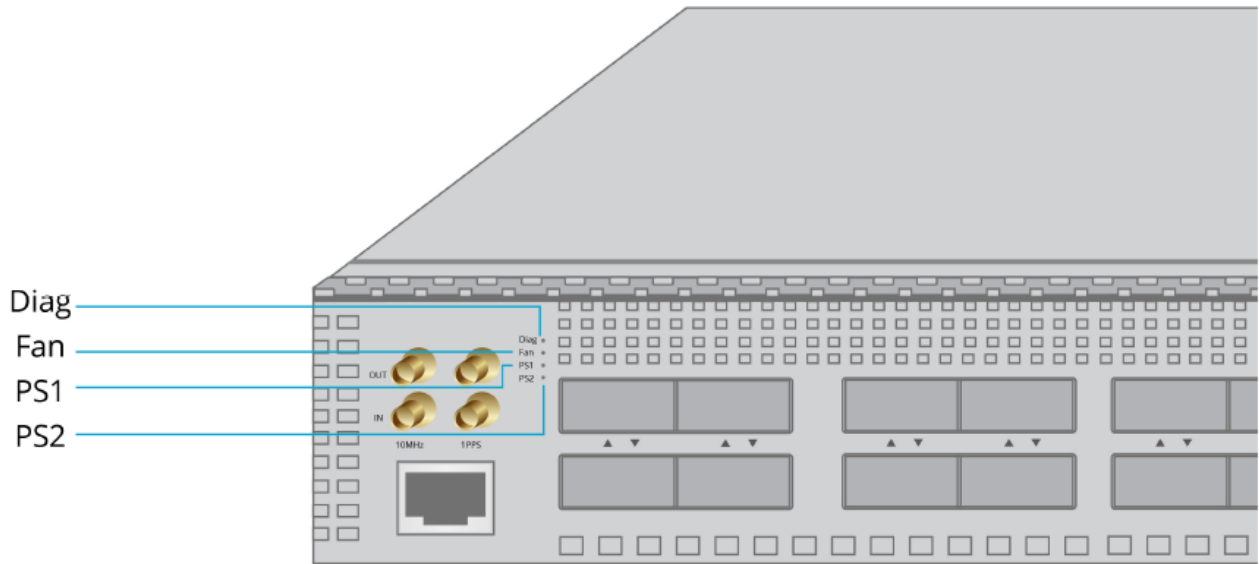


Table 4. Chassis ID LED on a N9550-32D Switch

| LED Label | Color | State and Description |
|-----------|----------------|---|
| Diag | Solid Green | All OK, CLI prompt available. |
| | Blinking Green | Boot-up in progress. |
| | Solid Amber | System self-diagnostic test has detected a fault (Fan, thermal or any interface fault.). |
| FAN | Solid Green | System FAN operates normally. |
| | Solid Amber | Fan tray present buy system FAN is fault. |
| | OFF | System OFF. |
| PS1 | Solid Green | This power is operating normally. |
| | Solid Amber | PWR present but not power on or this power is fa ult. |
| | OFF | Power supply is not present. |
| | Solid Green | This power is operating normally. |
| | | |

| | | |
|-----|-------------|--|
| PS2 | Solid Amber | PWR present but not power on or this power is fault. |
| | OFF | Power supply is not present. |

LEDs on the Management Port

The N9550-32D switch has a RJ-45 management port on the front panel.

The figure below shows the location of the management port on the N9550-32D and the LED on the port (see Figure 4). The LED indicates link activity of the port.

Table 5 describes the LED on the management port on N9550-32D switch.

Figure 5. LED on the Management port

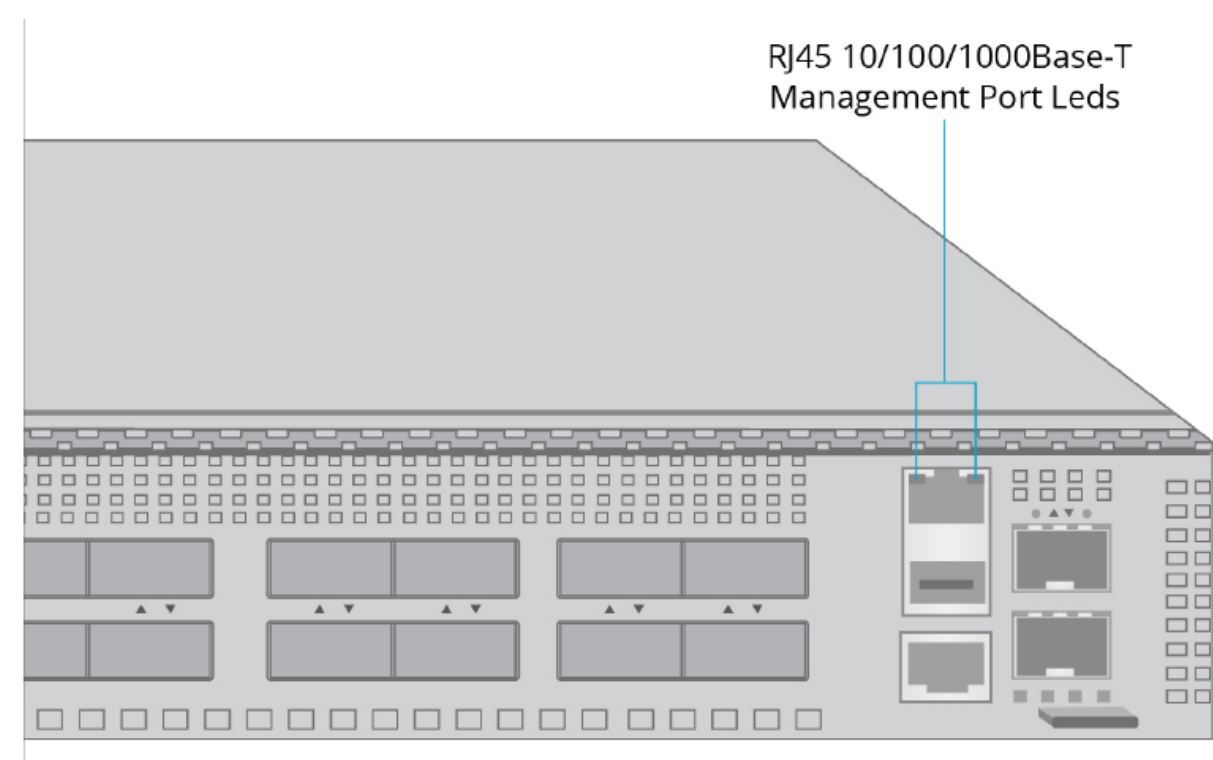


Table 5. LED on the Management Port on N9550-32D

| LED Label | Color | State and Description |
|----------------------------|-------|-----------------------|
| RJ45 10/100/ 1000Base-T | Off | No Link. |
| | | |

| | | |
|-----------------|-------------------|---|
| Management Port | On/Flashing Green | It has a valid link. Flashing indicates activity. |
|-----------------|-------------------|---|

Network Port LEDs

Each QSFP-DD port on N9550-32D switch has four LEDs that show the link activity of the port (see Figure 6). See Table 6 to learn more about those LEDs.

Figure 6. LEDs on the QSFP-DD ports

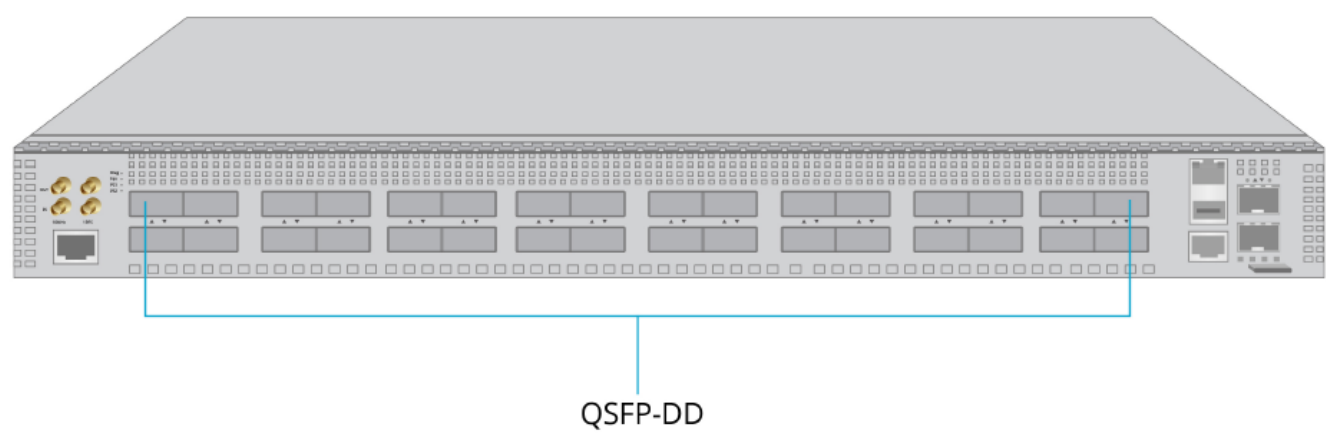


Table 6. LEDs on the QSFP-DD Ports on N9550-32D Switch

| Color | State and Description |
|---|---|
| Only the 1st LED is used when running at 400G without breakout. | |
| Solid Blue | Port linked operating at max port speed 400G. |
| Off | No link. |
| Flashing Blue | Transmit/Receive is activity. |
| Only the 1st LED is used when running at 100G without breakout. | |
| Solid Green | Port linked operating at max port speed 100G. |
| Off | No link. |

| | |
|---|---|
| Flashing Green | Transmit/Receive is activity. |
| All four LEDs are used when running at 4 x 100G in breakout mode. | |
| Solid Green | Port linked operating at max port speed 100G. |
| Off | No link. |

| | |
|--|---|
| Flashing Green | Transmit/Receive is activity. |
| Three LEDs are used when running at 2 x 200G in breakout mode. | |
| Solid Blue (one LED) Solid Green (two LEDs) | Port linked operating at max port speed 200G. |
| Off | No link. |
| Flashing Green | Transmit/Receive is activity. |

Cooling System

The cooling system in N9550-32D switches 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 N9550-32D 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.

Fan Modules

We ship N9550-32D switches 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).

Models and Airflow Direction

Table 7 shows the airflow direction in the N9550-32D switch model.

Table 7. Airflow Direction in N9550-32D Switch Model

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).

Direction of Airflow in the Fan Modules and Power Supplies

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.

N9550-32D Model with Front-to-Back Airflow

In the N9550-32D switch models that have 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).

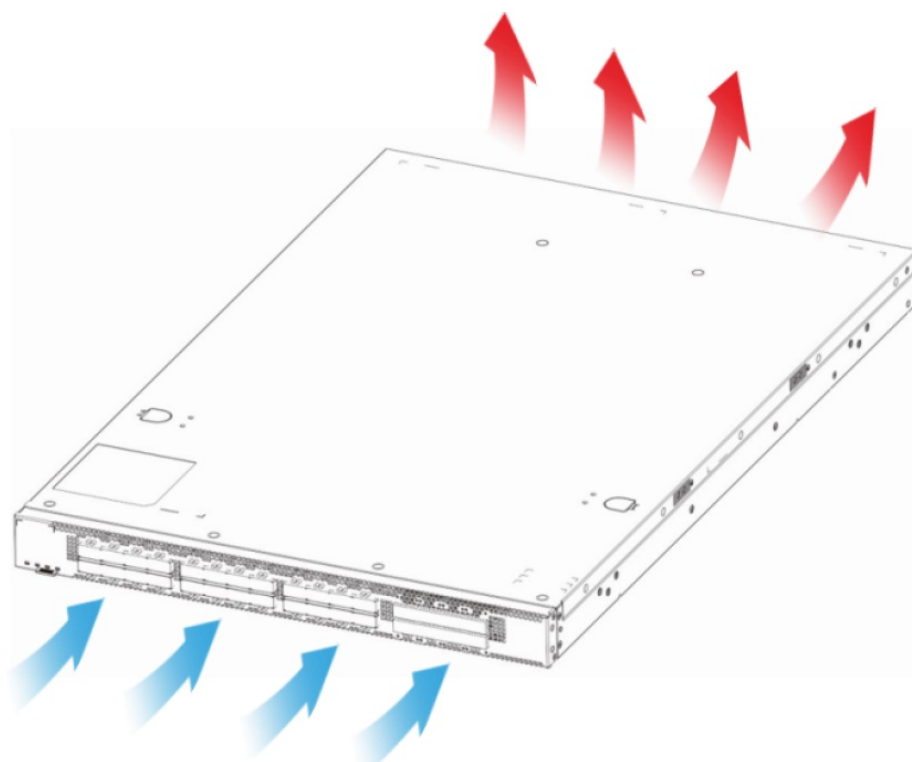


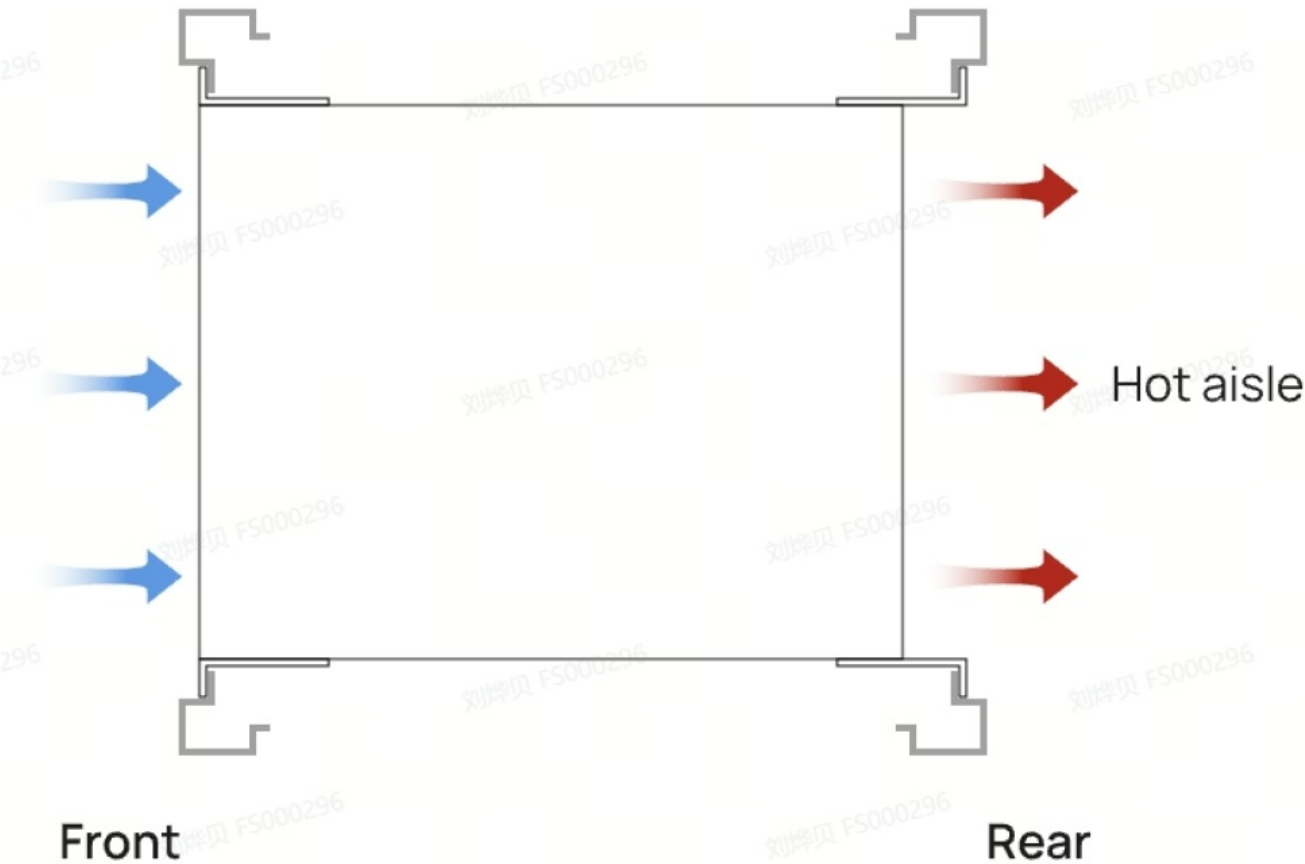
Figure 7: Model with front-to-back airflow

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.



N9550-32D Fan Module Status

There is a status LED for each fan module on N9550-32D switch, next to the fan module slot on the rear panel of the chassis, indicating the status of the fan module. Table 8 describes the fan module LED.

Table 8. Fan Module Status LED

| LED | Color | Description |
|----------------|-------|---|
| Fan status LED | Green | The fan module is operating normally. |
| | Red | The fan module is operating abnormally. |

Power System

The smart power module for the N9550-32D 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.

AC Power Supply in N9550-32D Switch

You can install up to two power supplies in the power supply slots in the rear panel of the N9550-32D switch chassis. On the N9550-32D switch, the slots are labeled PSU1 and PSU2.

Figure 9 shows the AC power supply for a N9550-32D switch.

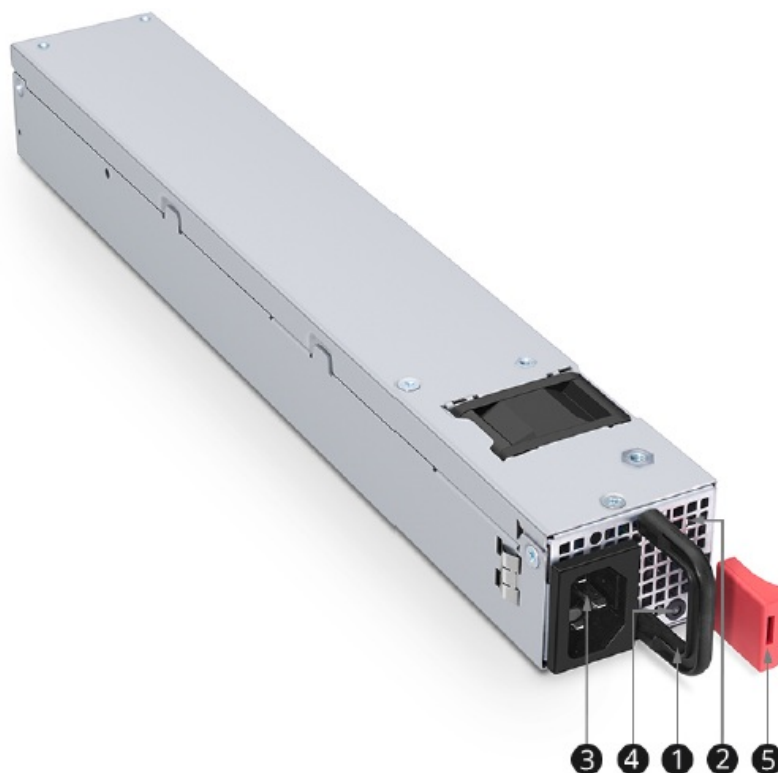


Figure 9: AC Power Supply for N9550-32D switch

Table 9. Components of AC Power Supply

| No. | Component | Description |
|-----|-----------------|----------------------------|
| 1 | Handle | Handle of the power module |
| 2 | Fan | Forward fan |
| 3 | Power connector | Three-pin connector |
| 4 | LED | Power status LED |
| 5 | Latch | Latch of the power module |

AC Power Supply Specifications

N9550-32D switch supports 1300W AC power supplies. We ship the N9550-32D 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 10 shows the power supply specifications for AC power supplies for N9550-32D switch.

Table 10. Technical Specifications for AC Power Supplies

| Item | Specification |
|------------------------|---|
| Dimensions (W x D x H) | 50.5mm x 321mm x 40mm (1.99 in. x 12.64 in. x 1.57 in.) |
| Input voltage | 100-240VAC @1000W 110-240VAC @1100W 200-240VAC @1300W |
| Input frequency | 47-63Hz |
| Input current | 12A/90-240VAC 7.5A/200-240VAC |
| Inrush current | 60A max. at 240VAC |

| | |
|-----------------------------|---|
| Power factor | 0.95 at 115VAC/60Hz 0.95 at 230VAC/50Hz |
| Earth leakage current | 1.75mA max. at 240VAC |
| Hot swapping | Supported |
| Cooling | Front-to-rear airflow (air exhaust on power module panel) |
| Overvoltage protection | Supported |
| Overcurrent protection | Supported |
| Over-temperature protection | Supported |

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 11 shows the specifications of the AC power cord.

Table 11. 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 | 100-250V AC | 10A |

| | | | | | |
|--|----|--------|--------------|-------------|-----|
| United Kingdom, Hong Kong, Singapore, Malaysia, Maldives, Qatar, India | UK | BS1363 | IEC60320 C13 | 100-250V AC | 10A |
| Continental Europe, South Africa, Switzerland, Italy, Indonesia | EU | CEE 7 | IEC60320 C13 | 100-250V AC | 10A |
| China, Australia, New Zealand, Argentina | CN | GB16A | IEC60320 C13 | 100-250V AC | 10A |

LEDs on the AC Power Supplies

Table 12 describes the LED on the AC power supply for the N9550-32D switch.

Table 12. LED on the AC Power Supply for N9550-32D

| LED | Color | Description |
|------------------|-------|---|
| Power status LED | Green | The power module is operating normally. |
| | Red | The power module is operating abnormally. |

Site Planning, Preparation, and Specifications

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.

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.

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.

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 0.4m (1.31 ft.) before the equipment with no protective plates in front or at the back of the equipment.

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

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.

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 13. Dust and Particle Requirement

| Minimum Dust and Particle Diameter | Unit | Maximum Quantity |
|------------------------------------|--------------------------|-----------------------|
| 0.5 μm | particles/m ³ | 3.5 × 10 ⁵ |
| 5 μm | particles/m ³ | 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 14. Gas Requirement

| | Average | Maximum (mg/m ³) |
|--|---------|------------------------------|
| | | |

| Gas | mg/m ³ | cm ³ /m ³ | mg/m ³ | cm ³ /m ³ |
|-------------------------------------|-------------------|---------------------------------|-------------------|---------------------------------|
| Sulfur Dioxide (SO ₂) | 0.3 | 0.11 | 1.0 | 0.37 |
| Hydrogen Sulfide (H ₂ S) | 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.

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.

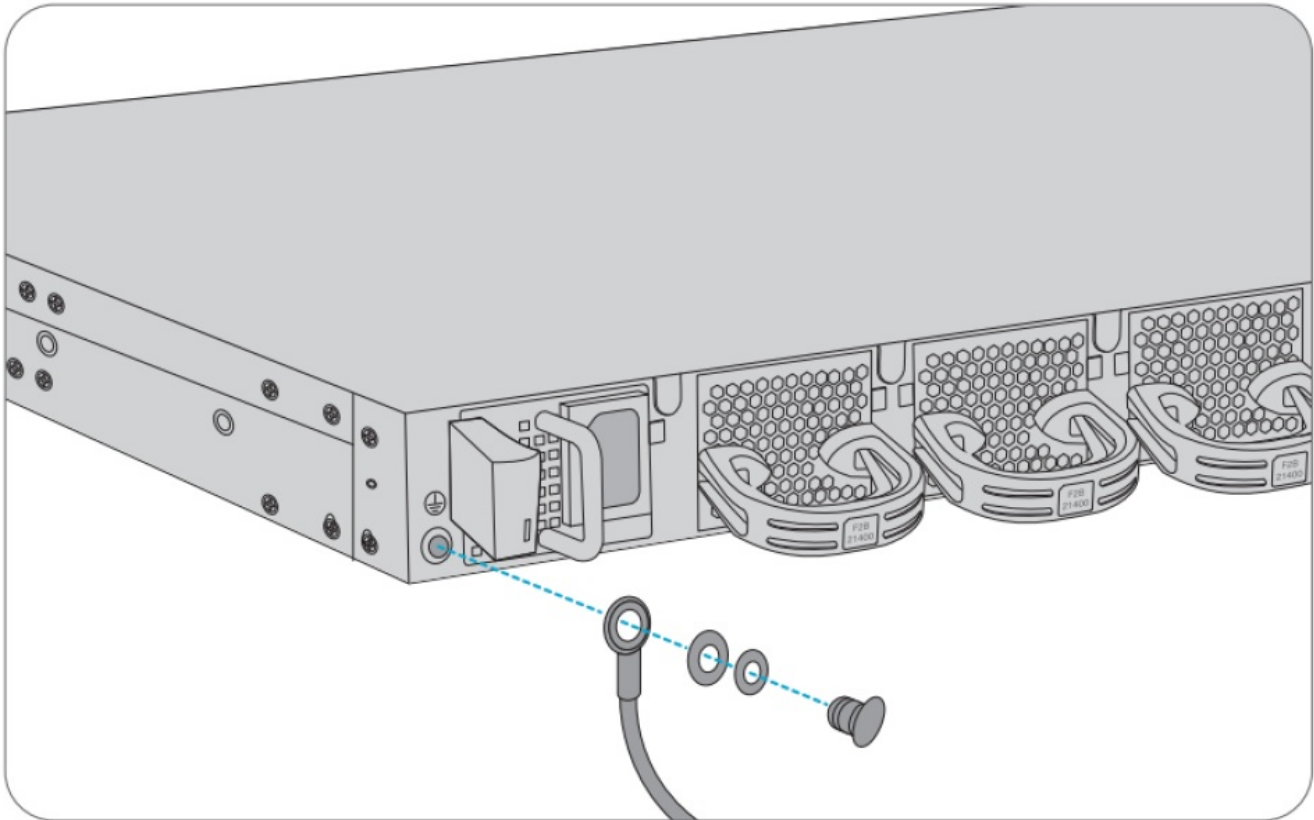
Note:

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 is a grounding stud in the lower left corner of the rear panel. They are pasted with a conspicuous label.



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.

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.

Management Cable Specifications and Pinouts

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.

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 15. 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- |
|---|------------------------------|------------------------------|

Initial Installation and Configuration

Unpack and Mount the N9550-32D Switch

Below is an optimized guide for unpacking and preparing the N9550-32D switch for installation, including key precautions and potential risk alerts.

Parts Inventory (Packing List) for a N9550-32D Switch

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

Table 16. Inventory of Components Provided with a N9550-32D Switch

| Component | Quantity |
|-----------------------|----------|
| AC Power Cord | 4 |
| Front-Post Bracket | 2 |
| Rear-Post Bracket | 2 |
| Screw | 20 |
| Holder Bracket | 2 |
| Bracket-Locking Screw | 2 |
| Console Cable | 1 |

Mount the N9550-32D 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.

Installation Requirements

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

- Phillips screwdriver.
- Screws and cage nuts for rack mounting.
- Standard-sized, 19" wide rack with a minimum of 1U height available.
- Category 5e or higher RJ-45 Ethernet cables and fiber optical cables for connecting network devices.

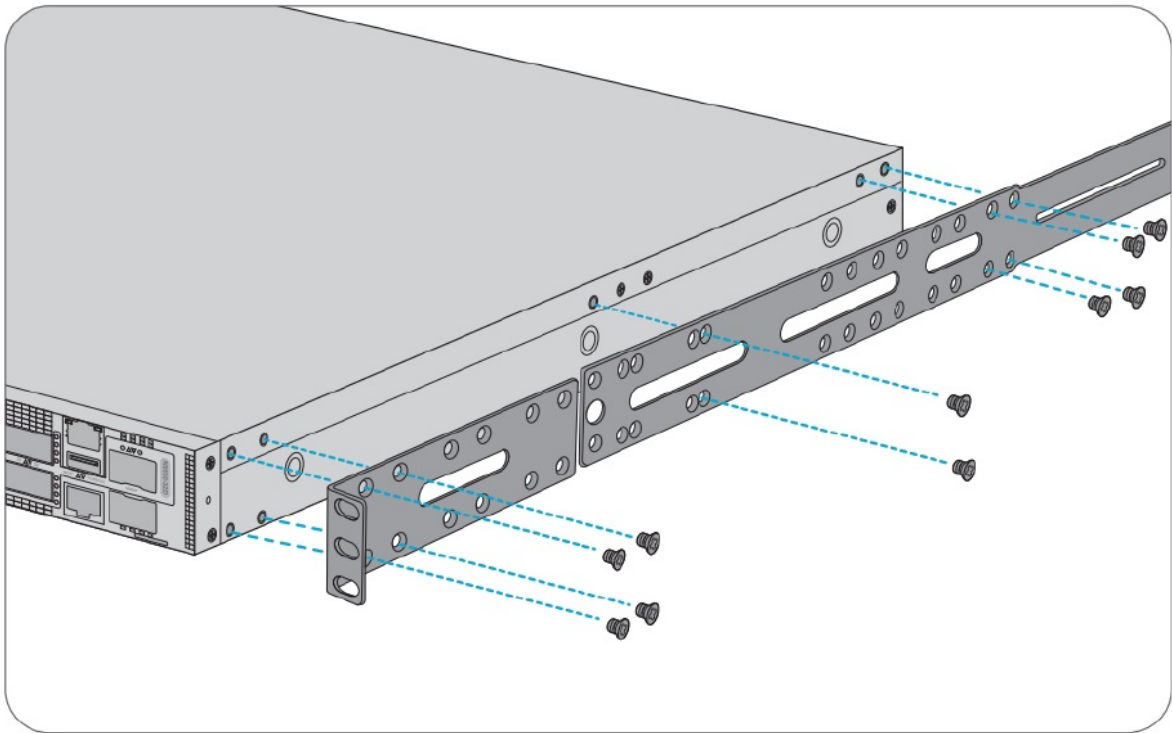
Installation Guidelines

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 10mm (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.

Mount the Brackets

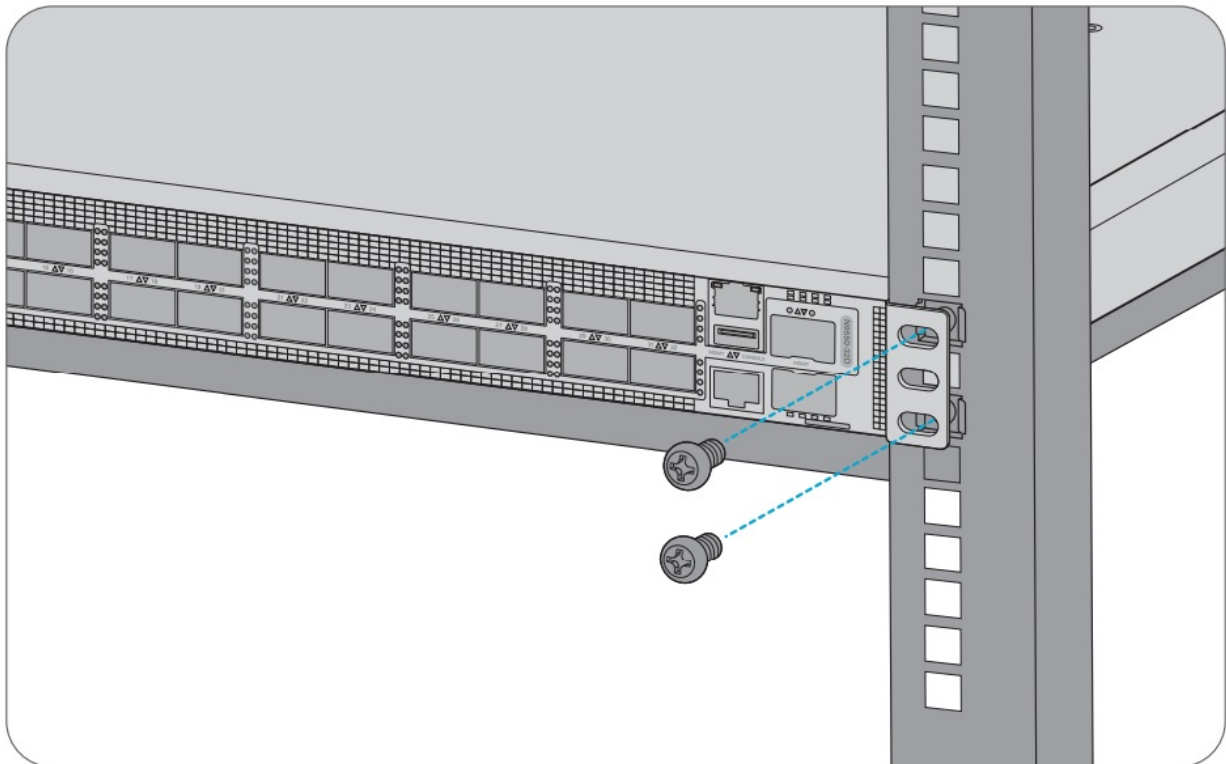
Secure the front- and rear-post brackets to the two sides of the switch with the supplied screws.



Mount the Chassis on the Rack

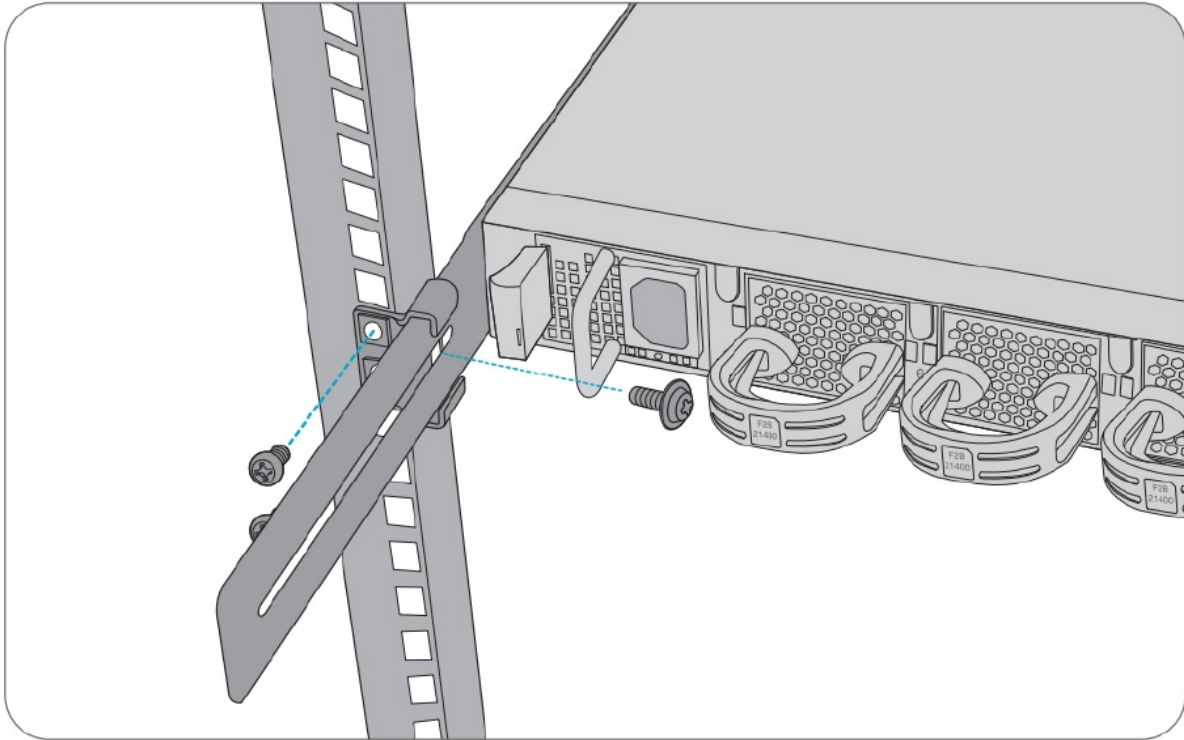
The chassis can be installed on a standard 19-inch EIA rack. Mount the chassis on the rack with its front panel facing forward. You are advised to use a tray or guide rails to assist in installing the chassis on the rack.

Attach the switch to the rack with the rack screws.



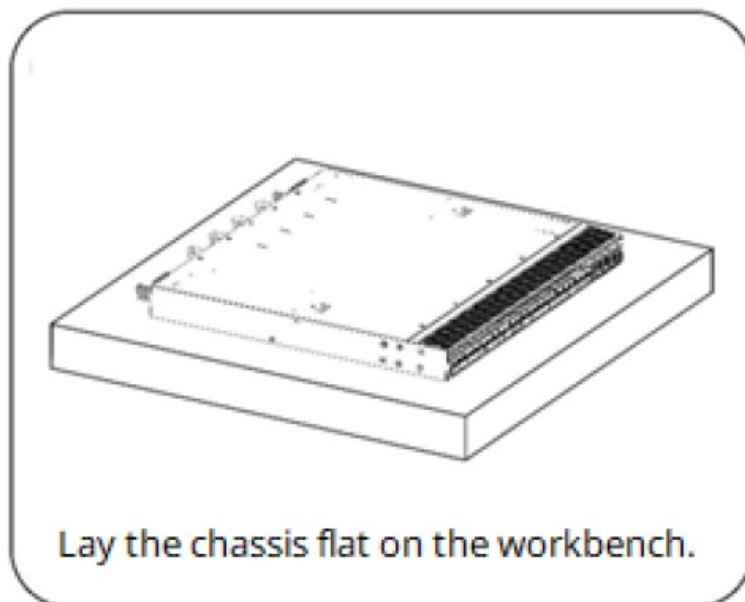
- Adjust the position of rear-post brackets and lock them with the bracket-locking

screws.



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.



Connect the N9550-32D to Power

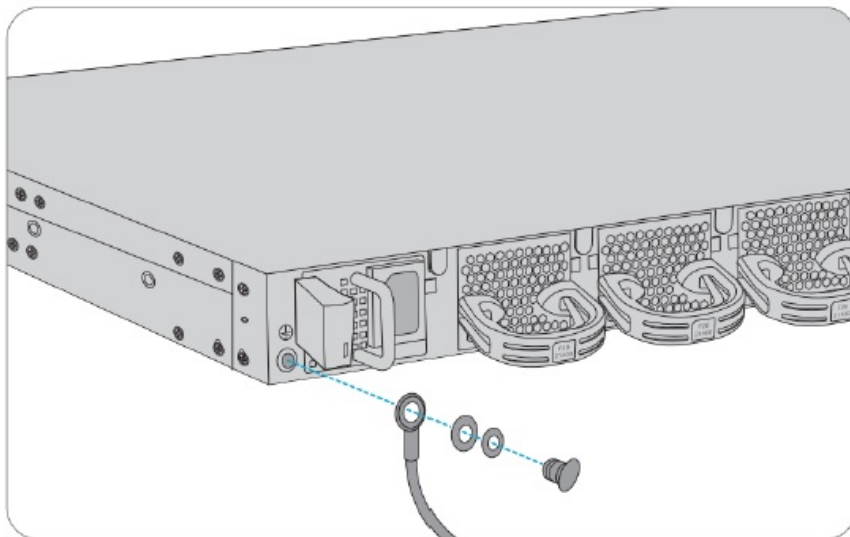
- Connect the N9550-32D Switch to Earth Ground
- Installation Guidelines

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 rear 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.

Procedure

- Connect one end of the grounding cable to a proper earth ground, such as the rack in which the switch is mounted.
- Secure the grounding lug to the grounding point on the switch back panel with the washers and screws.



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's 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.

Connect Power to N9550-32D Switch

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

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.

Post-installation Check

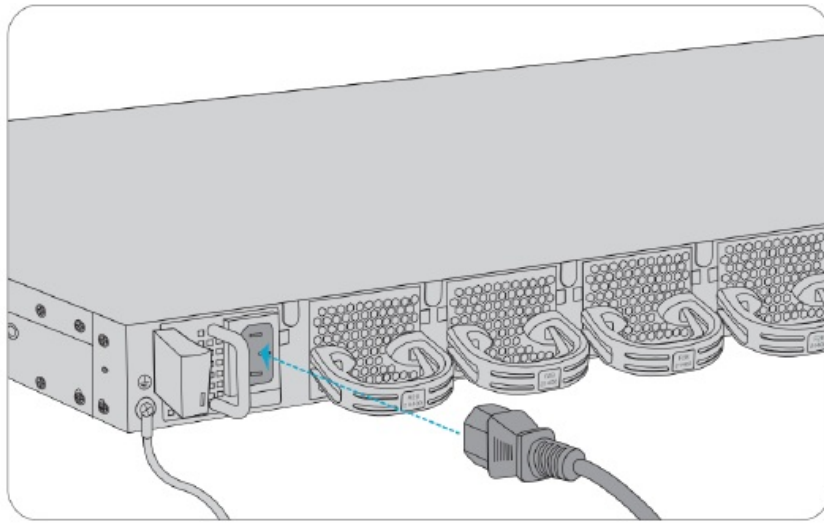
Note:

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.

Connect the Power Cable

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

**Caution:**

- 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 1.5mm² or 14 AWG per pin.
- Use a 10A 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.

Connect the N9550-32D to the Network**Install a 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 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 QSFP-DD transceiver.
- Position the transceiver in front of the port on the device so that the 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.

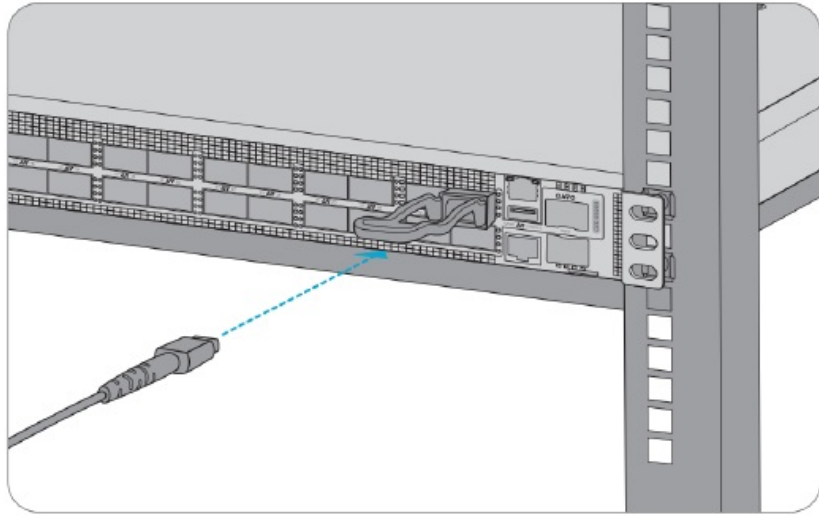
Connect a Fiber-Optic Cable

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.

Connect the N9550-32D to External Devices

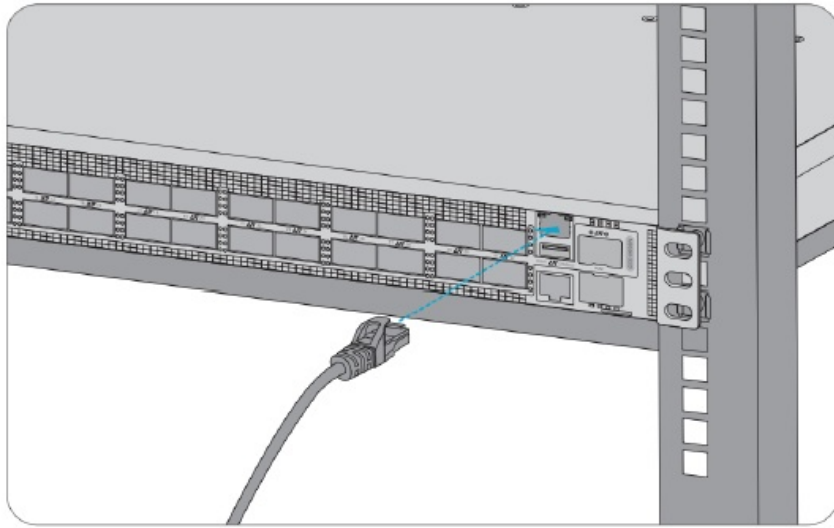
Connect a Device to a Network for Out-of-Band Management

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 the Ethernet cable to the management port on the device.
- Connect the other end of the Ethernet cable to the management device.



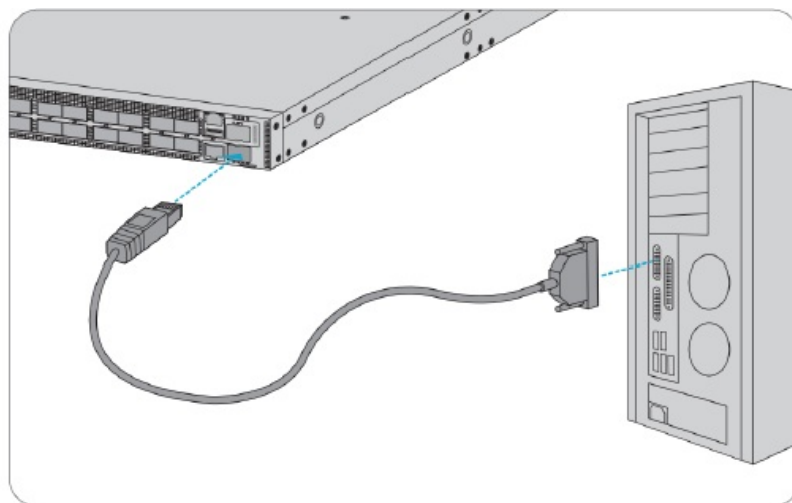
Connect a Device to a Management Console Using an RJ-45 Connector

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

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 of the console cable into the RJ45 console port on the switch.
- Connect the other end of the console cable to the RS-232 serial port on the computer.



Configure PicOS® on the N9550-32D

Default Configuration

We ship each N9550-32D 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 N9550-32D 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" }
```

Connect and Configure N9550-32D

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.

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.

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.

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>
```

- 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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FAQ

Can I replace components in the N9550-32D switch?

Yes, the N9550-32D switch supports field-replaceable units (FRUs) that are hot-removable and hot-insertable, allowing you to replace components without disrupting switch functions.

What are the chassis status LEDs on the front panel for?

The chassis status LEDs indicate various states such as Diagnosis, Power Supply 1 (PS1), Power Supply 2 (PS2), and Fan status on the N9550-32D switch.

Documents / Resources

| | |
|---|---|
|  | <p>FS N9550-32D Switch Hardware [pdf] User Guide</p> <p>N9550-32D Switch Hardware, N9550-32D, Switch Hardware, Hardware</p> |
|---|---|

References

- [User Manual](#)

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