

Quick Start Guide

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|--------------------------------|---|
| Series | NH-4000 Series Scale-Out Switches |
| Regulatory Model Number | NH25-40 |
| SKUs | NH-4010-F NH-4010-CHS |
| Manufacturer | Nexthop Systems Inc. |
| Website | https://nexthop.ai/platforms |
| Document Number | Q001-2511-2602 |

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Overview

This document describes the installation procedure for the NH-4010-F Scale-Out Switch from Nexthop AI. The NH-4010-F model is a 64-port, 800Gbps OSFP switch in a 2RU form factor. The switch has dual redundant power supplies and 3+1 redundant fan modules with front to back cooling. For more information, see the [NH-4010 Datasheet](#).

Precautions

WARNING: Before you perform any of the procedures in this guide, read and understand all safety warnings and instructions. Failure to follow these instructions may result in serious injury or death, and/or damage to the equipment. To view the safety instructions, see the [4000 Series Safety and Compliance Guide](#).

Package contents

The package weighs 71.5 lbs. (32.4 kg), and has a height of 10.5 inches (267 mm), width of 23.5 inches (597 mm), and depth of 31 inches (788 mm).

Remove the components from the packaging and verify that all of the following listed components are present and undamaged. If any items are missing or damaged, contact your support team immediately.

- One 2RU switch, with four fan modules and two power supply units (PSUs).
- One tool-less rail kit, consisting of two inner chassis rails and two outer rack rails
- Two 6-foot (1.83 meters) C19-C20 power cords

Required tools

Because of the tool-less rail kit, no additional tools are required for you to install the switch into the rack.

Prepare the site

Before you begin the installation, ensure the site meets the following requirements:

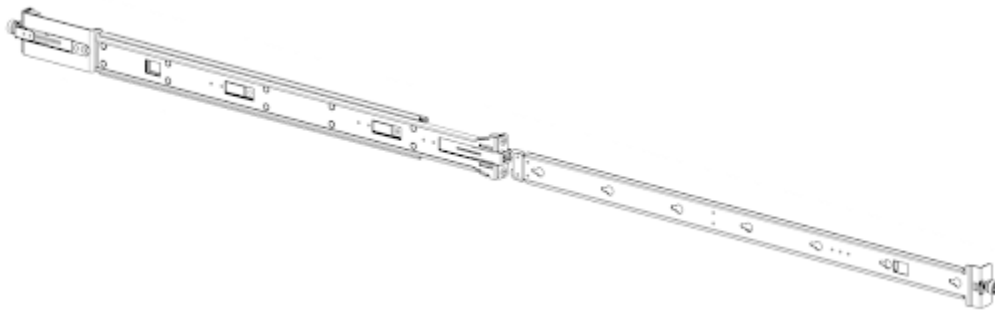
- **Rack compatibility:** You must install the switch in a standard, EIA 19-inch (483 mm) wide, four-post equipment rack.
- **Rack Units (RU):** The switch requires 2RU, or 3.48 inches (89 mm), of vertical rack space.
- **Rack depth:** Ensure that there is enough rack depth to accommodate the switch and the rail kit. The switch is 23.6 inches (600 mm) deep.
- **Power availability:**
 - Verify that adequate power receptacles are available and accessible.
 - Ensure that the power circuits can support the switch's power consumption.
 - For redundant power supplies, ensure that two independent power sources are available.
- **Airflow:** Maintain adequate clearance around the front and rear of the switch for proper front-to-back airflow. Ensure that the rack's cooling system can handle the heat dissipation from the switch.
- **Temperature and humidity:** Ensure that the rack environment meets the operating temperature and humidity specifications of the switch.

For more information on the switch specifications, see the [NH-4010 Datasheet](#).

Install the tool-less rail kit

The tool-less rail kit enables you to install the switch quickly and easily, without the need for screws. Do the following:

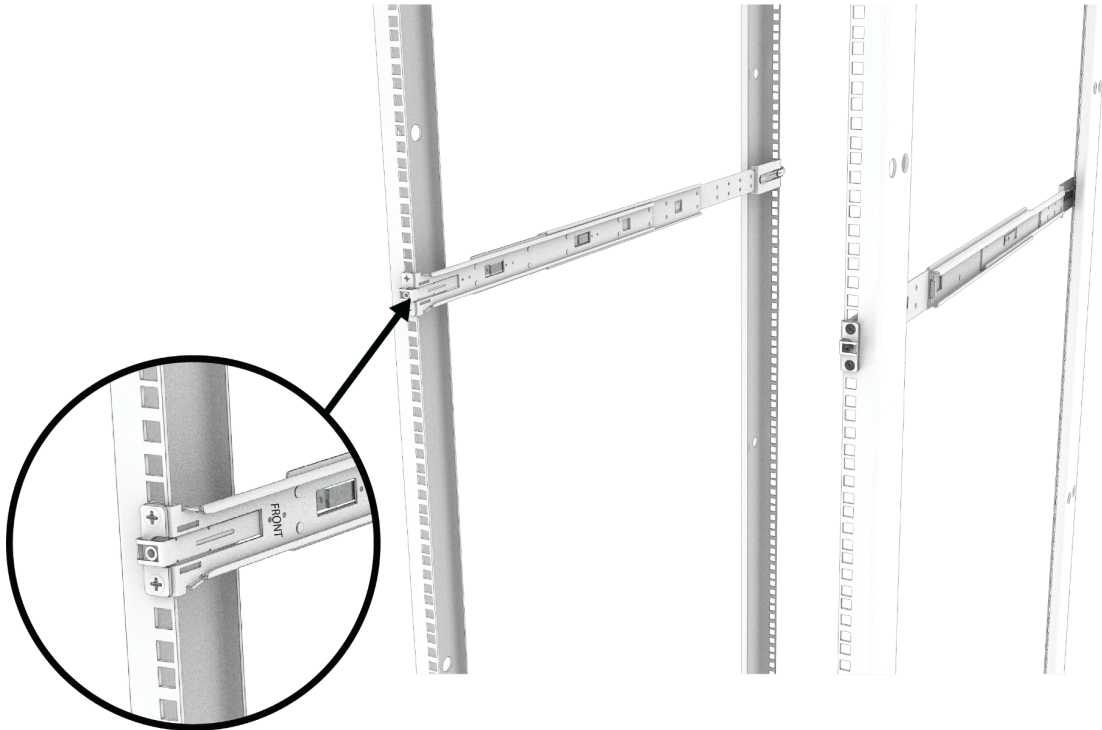
- 1. Identify your installation location:** Determine the exact 2RU space in your 19-inch rack where you plan to install the switch. If you plan to install multiple devices, we recommend that you install the switch at the bottom of the rack first to maintain stability.
- 2. Separate the rail components:** The rail kit has two inner chassis rails that attach to the switch, and two outer rails that attach to the rack. To separate them, detach the chassis rails from the rack rails by pressing the latch and sliding them out carefully.



3. Install the rack rails (left and right):

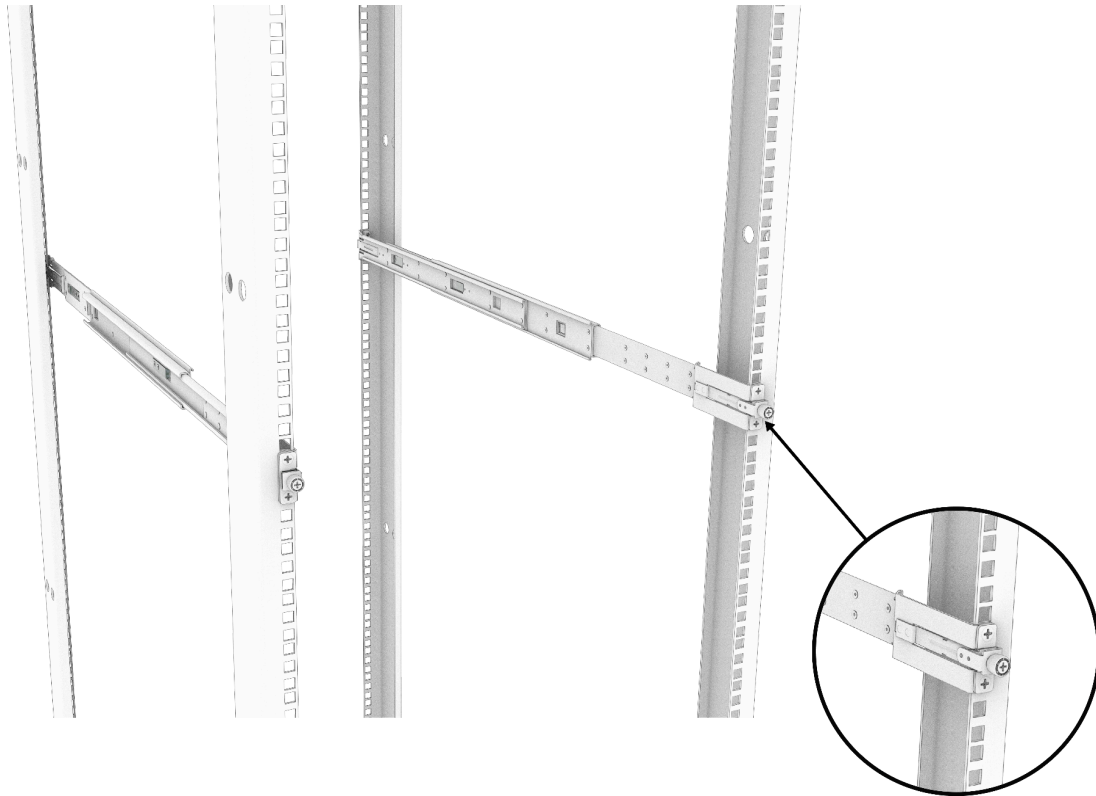
- **Orientation:** Identify the **FRONT** marking on each rack rail. Ensure that you align the rails correctly.
- **Loosen the thumb screws:** Locate the thumb screws in the rear of each rack rail. Loosen the screws by turning them counter clockwise to the left.

- **Front attachment:** At the desired height in the rack for the front of your switch, align the front end of the outer rack rail with the square or round holes on the front rack post.



- **Secure the front latch:** Push the front latch mechanism on the rail into the rack post hole until it clicks securely into place.
- **Extend the rail:** Extend the rail towards the rear of the rack.

- **Rear attachment:** Align the rear end of the outer rack rail with the corresponding holes on the rear rack post.



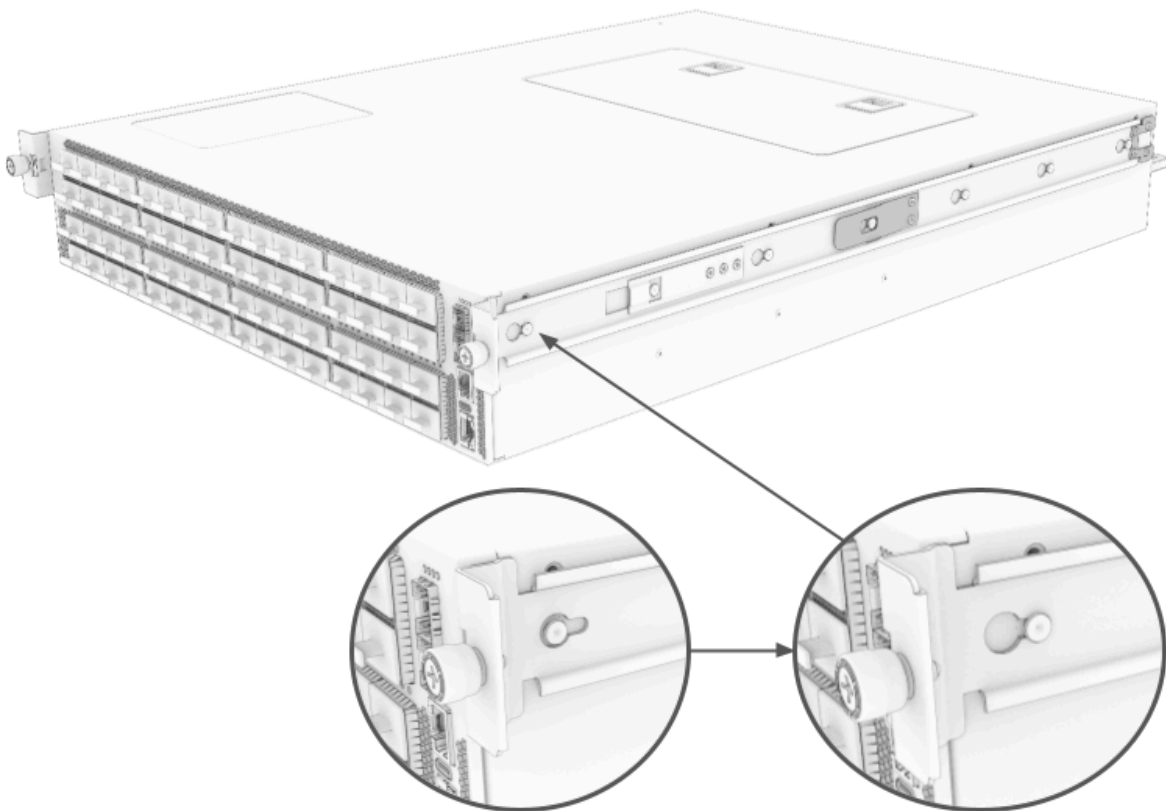
- **Secure the rear latch and screws:** Push the rear latch mechanism on the rail into the rack post hole until it clicks securely into place. Tighten the thumb screw to lock it in place.
- **Repeat:** Repeat these steps for the other outer rack rail on the opposite side of the rack, ensuring that both rails are at the same height and level.
- **Verify stability:** Gently pull on both of the installed outer rack rails to ensure that they are firmly seated and do not wobble.

NOTE: The rail kit is provided as a means of mounting the switch to a rack. Do not apply additional load to the switch while it is partially or fully inserted into the rail kit.

Mount the switch into the rack

1. Attach the inner rails to the switch.

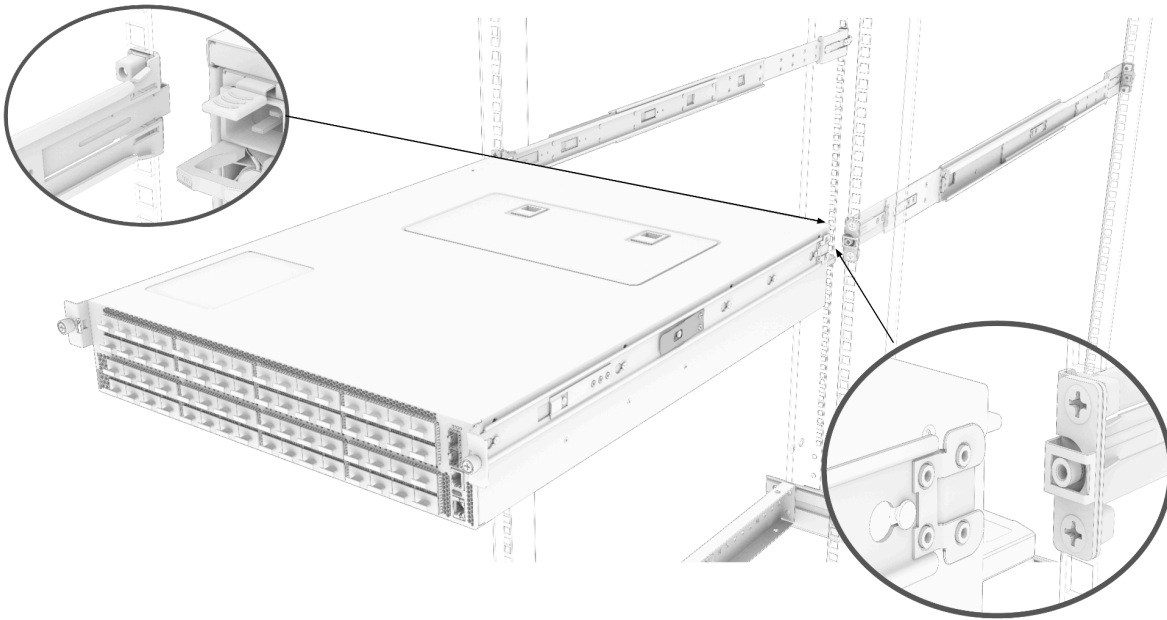
- Align the chassis rails with the mounting points on the sides of the switch chassis.
- Slide the chassis rails toward the front of the switch until the mounting points lock into place.



- ### 2. Raise the switch to the desired height:
- Use a mechanical lift or have at least two people hold the switch in place.

3. Align the switch with the rack rails.

- With the chassis rails attached to the switch, carefully align them with the rack rails installed in the rack.
- Ensure the front of the switch is facing out from the front of the rack.



4. Slide the switch into the rack.

- Gently push the switch into the rack. When installed correctly, the chassis rails slide smoothly into the rack rails.
- Continue pushing until the switch is fully seated and the front ears of the switch are flush with the front rack posts.
- Do NOT push on the switch port dust plugs.

5. Secure the switch: The switch has front-facing thumb screws that secure it to the rack posts. Turn the screws to lock the switch into place.

Manage the Field Replaceable Units (FRUs)

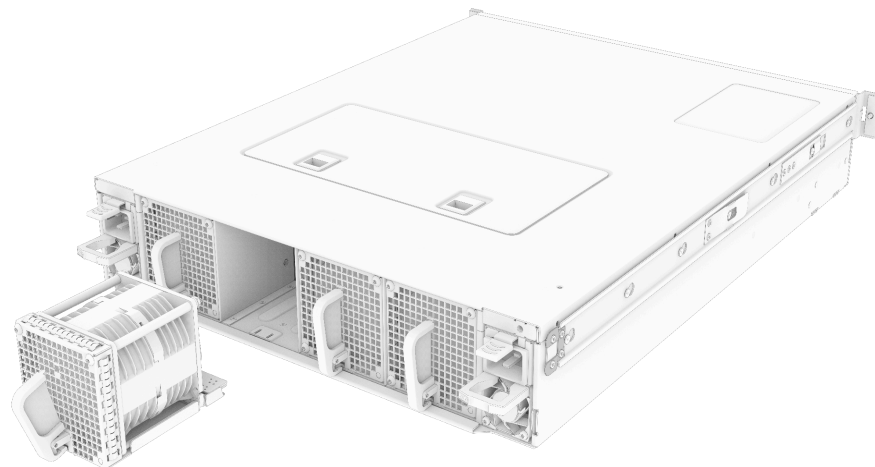
Nexthop AI delivers switches to you with the fan and power supply modules preinstalled. This section details the installation procedure when you replace a module or install components in a bare chassis.

| | Fan | | PSU | |
|-------------|------------|----------|---------------------|----------|
| Switch | SKU | Quantity | SKU | Quantity |
| NH-4010-F | FAN-8121-F | 4 | PSU-AC-2K411B-C20-F | 2 |
| NH-4010-CHS | | | | |

Install the fan modules

The switch supports hot-swappable fan modules, allowing replacement without powering down the device.

1. **Locate the fan module slots:** Identify the four fan module slots, located at the rear of the switch chassis.
2. **Align the fan module:** Hold the fan module to align it to the guide rails in the chassis.

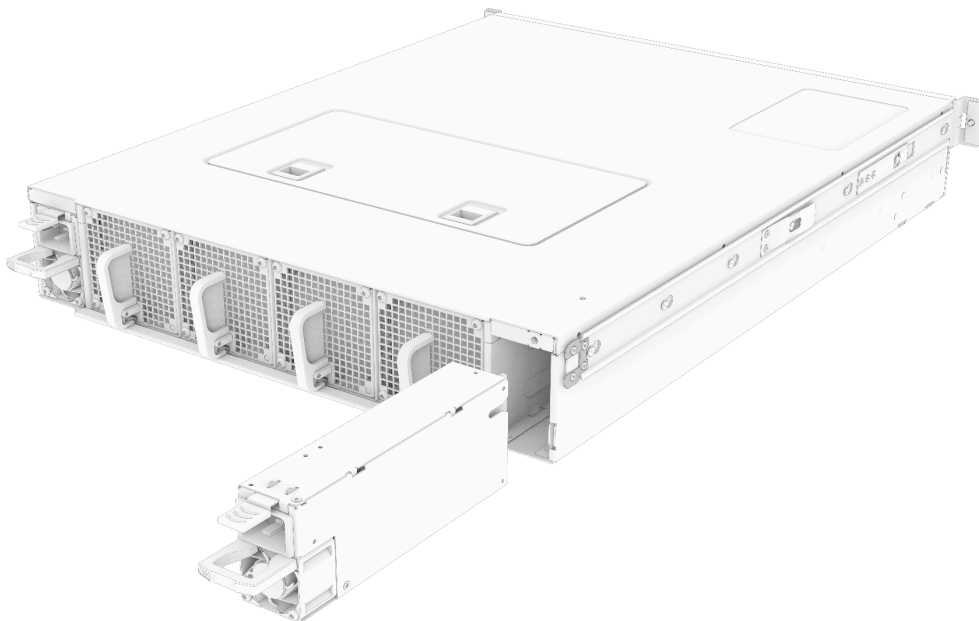


3. **Insert the fan module:** Gently slide the fan module into an empty fan slot until it is fully seated and the latch clicks into place.
4. **Repeat:** Repeat this procedure to install the remaining fan modules in the empty fan slots.

Install the Power Supply Unit (PSU) modules

The switch supports hot-swappable power supply units for redundancy and ease of replacement.

1. **Locate the PSU slots:** Two PSU slots are located at the rear of the switch chassis, one on each side of the fan module slots.
2. **Align the PSU module:** Hold the PSU module with the handle facing outwards with the green latch positioned above the handle and aligned with the slot.



3. **Insert the PSU module:** Gently slide the PSU module into an empty PSU slot until it is fully seated and clicks into place. Apply firm, even pressure.
4. **Repeat:** Repeat the procedure to install the second PSU module in the other empty PSU slot to provide redundancy.

Connect your switch

This section details how to connect your switch to power, network, and management connections..

Power connections

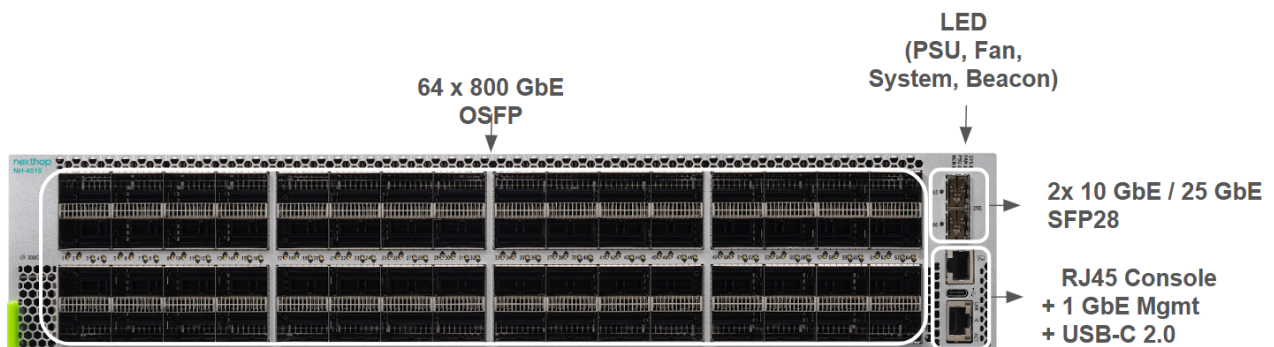
- The 4000 Series Scale-Out Switches ship with two 6-foot (1.83 meters) C19-C20 power cords that are rated for 16A.
- Connect the provided AC power cords to the PSU inlets on the rear of the switch.

Network connections

- Remove the switch port dust plugs and connect cables or optical modules, as per your configuration.

Management connections

- Connect the switch to your management network, as per your configuration.



Perform initial power-on and verification

- 1. Power on the switch:** After you securely connect all the cables, turn on power to the switch and ensure the power outlets are active.
- 2. View the LEDs to confirm status.**
 - System Status LED: Green
 - Power Supply LEDs: Green
 - Fan LEDs: Green
 - Beacon LED: Off
 - Network Port LEDs:
 - Solid yellow, then off: Booting
 - Green: Administratively-enabled interfaces on the port are up.
 - Yellow: At least one administratively-enabled interface on the port is down.
 - Off: All interfaces are administratively disabled.

OR

The transceiver is missing AND all interfaces on the port are down.
- 3. Verify the console access:** Connect a terminal to the management port, set the terminal baud rate to 9600 bps, and check for the Nexthop NOS prompt on the console.

Decommission the switch

1. Erase the SSD drive.

To delete sensitive data from your switch, perform the [secure sanitization](#) procedure.

2. Shut down the switch and disconnect from all power sources.

- To turn off the switch in Nexthop NOS, enter the **poweroff -p -f** command:

```
admin@device:/home/admin# poweroff -f -p
Powering off.
```

- Turn off the power to the Power Distribution Unit (PDU) outlet connected to the switch.
- Remove the power cords from the PSUs in the switch.

3. Disconnect and remove all the cables.

- Use the pull tabs to remove all transceivers and Direct Attach Copper (DAC) cables.
- Unplug and remove all management and console cables.

4. Prepare to remove the switch from the rack.

- Release the locked, sliding rails.
- Slide the chassis out until you feel the rail stop and latch.
- Press the rail release lever and slide out the switch.

5. Remove the switch.

- With two people, or a single person using a properly aligned mechanical lift, slide the switch off the rails and remove the switch from the rack.
- Place the switch on an ESD mat or padded surface. Do not place the switch on a carpet.

Remove the SSD drive before returning a system

NOTE: Unless you have a prior agreement with Nexthop AI, do NOT perform this procedure. In most cases, opening the CPU access hatch cover, tampering with the warranty label, or removing internal system components invalidates the system warranty.

However, if you have a prior agreement with Nexthop AI, and the security policies of your organization require you to remove an SSD drive before returning a switch, do the following:

1. Contact Nexthop AI Support (support@nexthop.ai) or your Nexthop AI Customer Engineering team to formally communicate your intent to remove the SSD drive from the system.
2. After you obtain permission to remove the SSD drive, slide the latches forward and lift the CPU access hatch cover.
3. The SSD drive is held down by a green, spring-loaded tab. Press down on the tab to release the SSD drive.
4. Carefully release the SSD drive from its connector and remove the drive from the system.
5. Replace the CPU access hatch cover.
6. Install the switch port dust plugs before you place the switch in a shipping box.
7. Return the packaged switch back to Nexthop AI.

Brief specifications

- Dimensions: 3.48 inches height (89 mm) x 17.3 inches width (440 mm) x 23.6 inches depth (600 mm)
- Weight
 - Chassis with fans, PSUs, and dust cover: 47.0 lbs. (21.3 kg)
- Network ports:
 - 64 x OSFP ports
 - 2 x 25G SFP Ports **
- Management ports:
 - 1 x RJ-45 for out-of-band management
 - 1 x RJ-45 serial console port
- Power input: AC, 200–240 VAC
- Operating temperature: 0°C to 40°C
- Operating humidity: 5% to 90% RH, non-condensing

** To find the software releases that support the 25G SFP ports, see the Software Release Notes.

Regulatory compliance notice

For more information on regulatory compliance, see the [Safety and Compliance Guide](#) for this product family.

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