NETGEAR®

Hardware Installation Guide

M4500 Intelligent Fully Managed Switches

Model M4500-32C

Model M4500-48XF8C

Support

Thank you for purchasing this NETGEAR product. You can visit
https://www.netgear.com/support/ to register your product, get help, access the latest
downloads and user manuals, and join our community. We recommend that you use only
official NETGEAR support resources.

Compliance and Conformity

For regulatory compliance information including the EU Declaration of Conformity, visit
https://www.netgear.com/about/regulatory/.

See the regulatory compliance document before connecting the power supply.

Do not use this device outdoors. If you connect cables or devices that are outdoors to this
device, see http://kb.netgear.com/000057103 for safety and warranty information.

Trademarks

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Revision History

Publication Part Number	Publish Date	Comments
202-12040-02	September 2019	We made minor changes to the information about the console cables.
202-12040-01	September 2019	First publication.

SAFETY INSTRUCTIONS AND WARNINGS

SAFETY INSTRUCTIONS AND WARNINGS

Use the following safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

To reduce the risk of bodily injury, electrical shock, fire, and damage to the equipment, observe the following precautions:

- This product is designed for indoor use only in a temperature-controlled and humidity-controlled environment. For more information, see the environmental specifications in the appendix or the data sheet.

  Any device that is located outdoors and connected to this product must be properly grounded and surge protected.

  Failure to follow these guidelines can result in damage to your NETGEAR product, which might not be covered by NETGEAR's warranty, to the extent permissible by applicable law.

- Observe and follow service markings:

  - Do not service any product except as explained in your system documentation. Some devices should never be opened.

  - If applicable to your device, opening or removing covers that are marked with the triangular symbol with a lightning bolt can expose you to electrical shock. We recommend that only a trained technician services components inside these compartments.

- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:

  - Depending on your device, the power adapter, power adapter cable, power cable, extension cable, or plug is damaged.

  - An object fell into the product.

  - The product was exposed to water.

  - The product was dropped or damaged.

  - The product does not operate correctly when you follow the operating instructions.

- Keep your system away from radiators and heat sources. Also, do not block cooling vents.

- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the system gets wet, see the appropriate section in your troubleshooting guide, or contact your trained service provider.

- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.

- Use the product only with approved equipment.

- If applicable to your device, allow the product to cool before removing covers or touching internal components.

- Operate the product only from the type of external power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.

- To avoid damaging your system, if your device uses a power supply with a voltage selector, be sure that the selector is set to match the power at your location:

  - 115V, 60 Hz in most of North and South America and some Far Eastern countries such as South Korea and Taiwan

  - 100V, 50 Hz in eastern Japan and 100V, 60 Hz in western Japan

  - 230V, 50 Hz in most of Europe, the Middle East, and the Far East

- Be sure that attached devices are electrically rated to operate with the power available in your location.
- Depending on your device, use only a supplied power adapter or approved power cable:

  If your device uses a <u>power adapter</u>:
    - If you were not provided with a power adapter, contact your local NETGEAR reseller.
    - The power adapter must be rated for the product and for the voltage and current marked on the product electrical ratings label.

  If your device uses a <u>power cable</u>:
    - If you were not provided with a power cable for your system or for any AC-powered option intended for your system, purchase a power cable approved for your country.
    - The power cable must be rated for the product and for the voltage and current marked on the product electrical ratings label. The voltage and current rating of the cable must be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets.
- If applicable to your device, the peripheral power cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a three-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables, power adapter cables, or power cables carefully. Route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power adapters, power adapter cables, power cables or plugs. Consult a licensed electrician or your power company for site modifications.
- Always follow your local and national wiring rules.
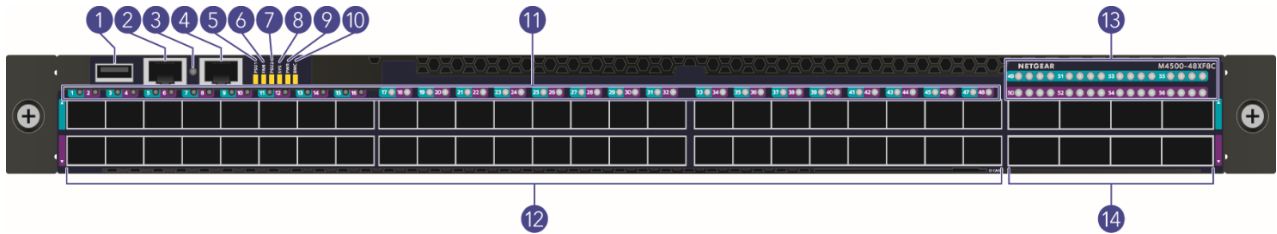
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Model M4500-48XF8C

Models M4500-48XF8C supports forty-eight 25G SFP28 ports and eight 100G QSFP28 ports.

Chassis for model M4500-48XF8C
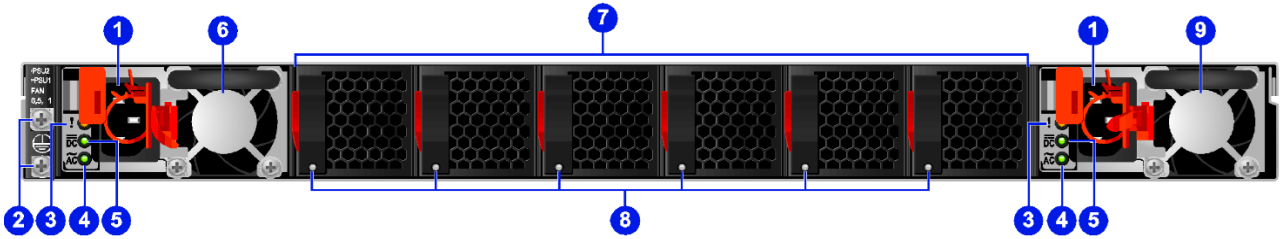
Front view of the switch

📓 **NOTE:**

The port LEDs for the odd-numbered ports (that is, for the upper ports) are shown against a cyan background color.
The port LEDs for even-numbered ports (that is, for the lower ports) are shown against a purple background color.

No.	Item	No.	Item
1	USB Port	8	System Info. LED
2	Console Port	9	Power LED
3	Link/Activity LED	10	BMC LED
4	Management Port	11	SFP28 Port LEDs
5	PSU1 LED	12	SFP28 Ports
6	Fan LED	13	QSFP28 Port LEDs
7	PSU2 LED	14	QSFP28 Ports

Model M4500-48XF8C

Rear view of the switch

No.	Item	No.	Item
1	AC Power Connector (with Plug Retainer)	6	PSU2
2	Earth Grounding (M4 screw)	7	Hot-swappable Fan Modules (6)
3	PSU Warning LED	8	Fan LEDs
4	PSU DC LED	9	PSU1
5	PSU AC LED		

On the rear panel, the left power supply is PSU2 and the right power supply is PSU1. The fan modules from the left to the right are FAN6, FAN5, FAN4, FAN3, FAN2, and FAN1.

LED indicators of model M4500-48XF8C

System LEDs

LED	State	Description
PSU1 LED **PSU2 LED** **(Power Supply Unit LEDs, bicolor: green and red)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational
	Red (Solid)	One of the PSUs is operating abnormally
	Green (Solid)	Both PSUs are operating normally
FAN LED **(bicolor: green and red)**	LED number	One per switch on the front panel
	Red (Solid)	One of the fans is operating abnormally
	Green (Solid)	All fans are operating normally
SYS LED **(System LED, bicolor: green and amber)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational
	Amber (Solid)	The switch is booting
	Amber (Blinking)	An equipment even occurred
	Green (Solid)	The switch has loaded the agent software code and is operating normally
	Green (Blinking)	The switch is loading the agent software code
PWR LED **(Power LED, single color: green)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational or a power failure occurred
	Green (Solid)	Power is provided to the switch
BMC LED **(Baseboard Management Controller LED, bicolor: blue and amber)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational
	Blue (Slow Blinking)	The BMC is operating normally
	Blue (Fast Blinking)	A "show switch location" occurred via the BMC
	Green (Solid)	The switch has loaded the agent software code and is operating normally
	Green (Blinking)	The switch is loading the agent software code

Model M4500-48XF8C

LED	State	Description
Management Port Link/Activity LED (single color: green)	LED number	One per switch on the front panel
	Off	No link
	Green (Solid)	The port is linked
	Green (Blinking)	The port is linked and there is data activity
LED on each fan tray on the rear panel (bicolor: green and red)	LED number	One per fan tray
	Off	The fan is not powered on
	Green (Solid)	The fan is working normally
	Red (Solid)	The fan is working abnormally or failed
LED on each PSU on the rear panel (bicolor: green and amber)	LED number	One per PSU
	Off	There is no AC input to the PSU or the AC input power failed
	Green (Solid)	The PSU is working normally
	Amber (Solid)	The PSU power or PSU fan is operating abnormally or the thermal condition is abornomal

Data Port LEDs

LED	State	Description
25G SFP28 Port Speed LED (bicolor: amber and green)	LED number	One per SFP28 port
	Off	No link
	Amber (Solid)	The port is linked at 25G speed
	Amber (Blinking)	The port is linked at 25G speed and there is data activity at 25G speed
	Green (Solid)	The port is linked at 10G speed
	Green (Blinking)	The port is linked at 10G speed and there is data activity at 10G speed
100G QSFP28 Port Speed LED (bicolor: white and blue)	LED number	One per QSFP28 port
	Off	No link
	White (Solid)	The port is linked at 100G speed
	White (Blinking)	The port is linked, and there is data activity at 100G speed
	Blue (Solid)	The port is linked at 40G speed
	Blue (Blinking)	The port is linked at 40G speed and there is data activity at 40G speed

There are 4 LEDs for each 100G QSFP28 port to show the fan-out port status. Here are LED definitions for 100G QSFP28 fan-out use cases.

QSFP28 Mode	LED	Description
10G Mode	Each LED is green	The 100G QSFP28 is fan-out to four ports and operating at 10G port speed
25G Mode	Each LED is amber	The 100G QSFP28 is fan-out to four 25G ports and operating at 25G port speed
50G Mode	The 2nd and 4th LEDs are yellow	The 100G QSFP28 is fan-out and operating to two 50G ports

Ports of model M4500-48XF8C

The switch chassis is equipped with the following ports:

- 48 SFP28 ports (10/25GbE)
- 8 QSFP28 ports (10/25/40/50/100GbE speed)
- 1 Management port
- 1 Console port
- 1 USB port

The chassis has 48 SFP28 and 8 QSFP28 ports. Each of these ports uses an optical transceiver, active optical cable, or direct-attached cable to connect the SFP28 or QSFP28 port to servers and other Ethernet switches. For more information on obtaining the appropriate SFP28 or QSFP28 modules, refer to "Supported Transceivers and Cables".

By default, the port speeds are as follows:

- The SFP28 ports are set to 10G.
- The QSFP28 ports are set to 100G.

If you want to use a higher or lower port speed than the default port speed, manually change the port speed before you insert the module. For more information see the CLI manual.

The chassis also provides the following system ports:

- One management port enables you to manage the switch operation using an RJ-45 Ethernet cable.
- One console port enables you to perform the initial configuration by connecting to a PC with the RJ-45 to DB-9 serial adapter cable.
- One USB port provides the option to install a switch runtime image or configuration file into storage memory.

Data Port Connection

Supported Transceivers and Cables

See the following table for the list of supported transceivers and direct-attach cables (DACs).

Speed	Model	Description	Supported Distance
100G	ACM761	QSFP-100G-SR4 100GBASE-SR4 MMF 100m QSFP28 Transceiver	100m
	ACM762	QSFP-100G-LR4 100GBASE-LR4 SMF 10km QSFP28 Transceiver	10km
	ACC761	QSFP-100G-CU1M 100G QSFP28 to 100G QSFP28 1m DAC	1m
	ACC763	QSFP-100G-CU3M 100G QSFP28 to 100G QSFP28 3m DAC	3m
40G	AXLM761	40Gb/s 100m QSFP+, Bi-Di, Duplex LC 850/900nm, VCSEL Transceiver	100m
	AXLM762	40Gb/s LR4 QSFP+ Fiber Optical Transceiver	10km
	AXLC761	40Gb/s QSFP+ 1m DAC	1m
	AXLC763	40Gb/s QSFP+ 3m DAC	3m
10G	AXM761	SFP+ Transceiver 10GBASE-SR Multimode LC	33~300m
	AXM762	SFP+ Transceiver 10GBASE-LR Single Mode LC	10km
	AXM764	SFP+ Transceiver 10GBASE-SR Single Mode LC	2km
	AXC761	SFP+ Passive DAC 1m	1m
	AXC763	SFP+ Passive DAC 3m	3m
	AXC765	SFP+ Active DAC 5m	5m
	AXC767	SFP+ Active DAC 7m	7m
	AXC7610	SFP+ Active DAC 10m	10m
	AXC7615	SFP+ Active Optical DAC 15m	15m
	AXC7620	SFP+ Active Optical DAC 20m	20m

📓 **NOTE:**

For more information about NETGEAR transceiver modules and cables, visit
https://www.netgear.com/business/products/switches/modules-accessories/.

SFP28 Port Connection

The switch is equipped with 48 SFP28 ports. The SFP28 ports comply with the IEEE 802.3by-2016 standard for Ethernet and support 10/25GbE using fiber transceiver modules.

The SFP28 ports are numbered and have corresponding SFP28 port LEDs.
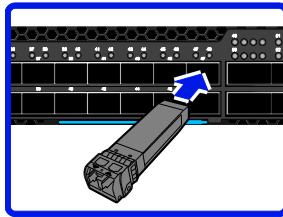
To install an SFP28 module:

1 Slide the SFP28 module into an SFP28 port.

📝 **NOTE:**

Ensure the SFP28 module is positioned correctly before installing it into the port.

**2** Push completely until the module locks into place.

3 Repeat the above procedures to install additional SFP28 modules.

For more information about the SFP28 port LED behavior when the network link is established, refer to "LED indicators of model M4500-48XF8C".

QSFP28 Port Connection

The switch is equipped with 8 QSFP28 ports. Each single port supports 40G or 100G by using 40G or 100G cables or optical transceivers. The switch can support fan-out cable for 40G to 4 x 10G or 100G to 4 x 25G or 2 x 50G.

The QSFP28 ports are numbered and have corresponding QSFP28 port LEDs.

To install a QSFP28 module:

1 Slide the QSFP28 module into a QSFP28 port.

2 Push completely until the module locks into place.
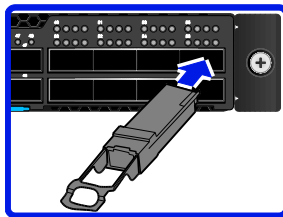
3 Repeat the above procedures to install additional QSFP28 modules.

For more information about the QSFP28 port LED behavior when the network link is established, refer to "LED indicators of model M4500-48XF8C".

Fan tray of model M4500-48XF8C

The switch chassis is equipped with six fan trays. Each fan module provides front-to-back airflow and is hot-swappable. The NETGEAR model number for a fan module is AFT402.
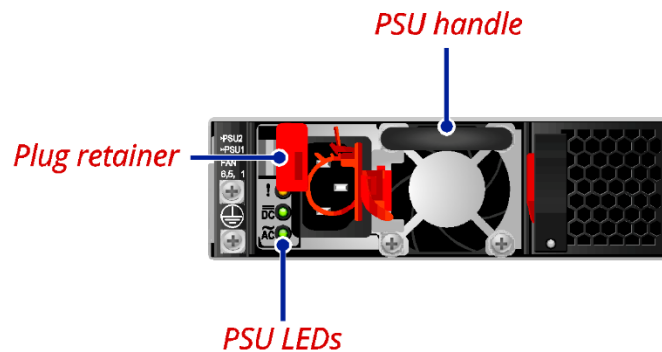

Fan module handles
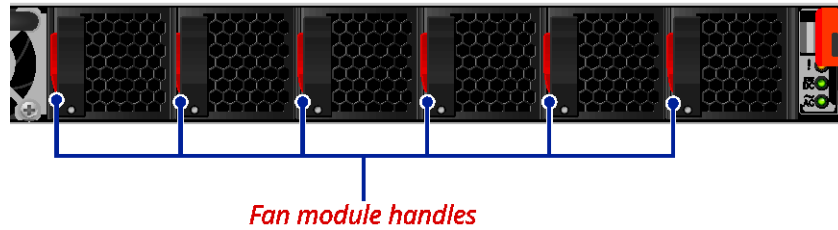
📓 **NOTE:**

To hot-swap the fan during operation, make sure to replace it within 30 seconds.

Power supply of model M4500-48XF8C

Equipped with two power supply modules (PSUs), the switch can operate with either one or two PSUs. If the switch uses two PSUs, you can hot-swap one of the PSUs during operation.

The airflow on the PSU from the front to the back.

PSU handle

Plug retainer

PSU LEDs

The AC power connector is a standard three-pronged connector. The switch automatically adjusts its power setting to any supply voltage in the range from 100~240 VAC at 50~60 Hz.

The NETGEAR model number for a PSU is APS750W.

📓 **NOTE:**

Verify that each module has the same airflow direction. Make sure the switch runs with all of its power supply and fan tray modules taking in air from a cold aisle and exhausting air to the hot aisle.
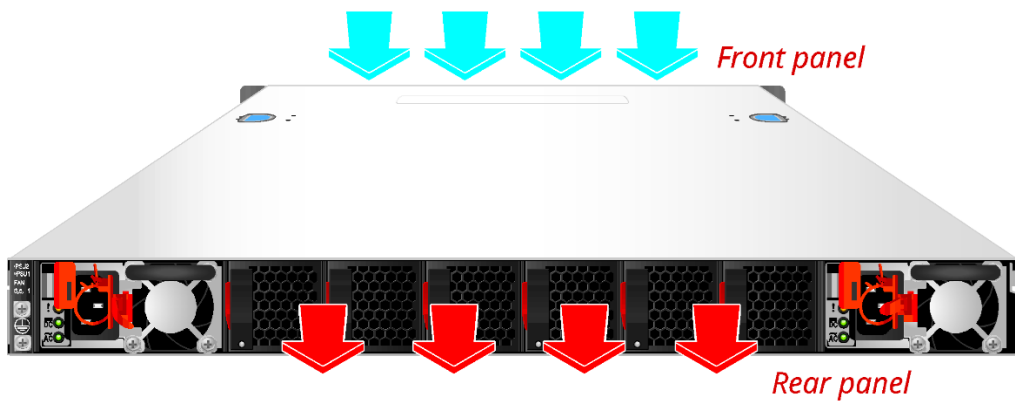
PSU LEDs

LED Type	LED Color	Function
Warning	Amber	PSU power / Thermal / Fan is not functioning properly.
AC	Green	The AC power (AC IN 220 / 110V) is operating normally.
	Off	The AC power (AC IN 220 / 110V) has failed.
DC	Green	The DC power (DC OUT +12V) is operating normally.
	Off	The DC power (DC OUT +12V) has failed.

Airflow Direction

The switch ships with four fan modules and two AC power supplies.

The air intake is located on the front panel of the switch. The cool air is sucked in from outside the chassis and pushed toward the rear of the chassis. The hot air exhausts through the vents on the rear panel of the switch.

Model M4500-32C

Model M4500-32C supports thirty-two 100G QSFP28 ports.

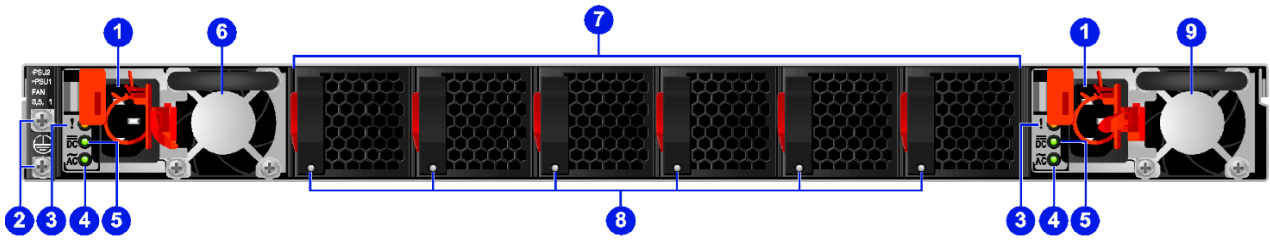# Chassis for model M4500-32C

Front view of the switch
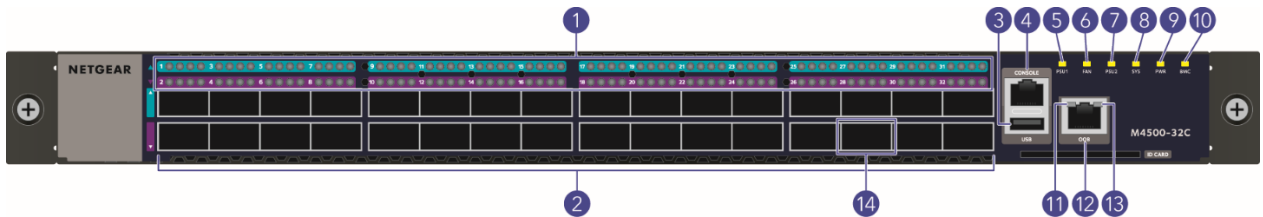
📖 **NOTE:**

The port LEDs for the odd-numbered ports (that is, for the upper ports) are shown against a cyan background color.
The port LEDs for even-numbered ports (that is, for the lower ports) are shown against a purple background color.

No.	Item	No.	Item
1	QSFP28 Port LEDs	8	System Info. LED
2	QSFP28 Ports	9	Power LED
3	USB Port	10	BMC LED
4	Console Port	11	Speed LED
5	PSU1 LED	12	Management Port
6	Fan LED	13	Link/Activity LED
7	PSU2 LED	14	None Fan-out Port

Rear view of the switch

No.	Item	No.	Item
1	AC Power Connector (with Plug Retainer)	6	PSU2
2	Earth Grounding (M4 screw)	7	Hot-swappable Fan Modules (6)
3	PSU Warning LED	8	Fan LEDs
4	PSU DC LED	9	PSU1
5	PSU AC LED		

On the rear panel, the left power supply is PSU2 and the right power supply is PSU1. The fan modules from the left to the right are FAN6, FAN5, FAN4, FAN3, FAN2, and FAN1.

LED indicators of model M4500-32C

System LEDs

LED	State	Description
PSU1 LED **PSU2 LED** **(Power Supply Unit LEDs, bicolor: green and red)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational
	Red (Solid)	One of the PSUs is operating abnormally
	Green (Solid)	Both PSUs are operating normally
FAN LED **(bicolor: green & red)**	LED number	One per switch on the front panel
	Red (Solid)	One of the fans is operating abnormally
	Green (Solid)	All fans are operating normally
SYS LED **(System LED, bicolor: green and amber)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational
	Amber (Solid)	The switch is booting
	Amber (Blinking)	An equipment even occurred
	Green (Solid)	The switch has loaded the agent software code and is operating normally
	Green (Blinking)	The switch is loading the agent software code
PWR LED **(Power LED, single color: green)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational or a power failure occurred
	Green (Solid)	Power is provided to the switch
BMC LED **(Baseboard Management Controller LED, bicolor: blue and amber)**	LED number	One per switch on the front panel
	Off	The switch is nonoperational
	Blue (Slow Blinking)	The BMC is operating normally
	Blue (Fast Blinking)	A "show switch location" occurred via the BMC
	Green (Solid)	The switch has loaded the agent software code and is operating normally
	Green (Blinking)	The switch is loading the agent software code

Model M4500-32C

There are 4 LEDs for each 100G QSFP28 port to show the fan-out port status. Here are LED definitions for 100G QSFP28 fan-out use cases.

QSFP28 Mode	LED	Description
10G Mode	Each LED is green	The 100G QSFP28 is fan-out to four ports and operating at 10G port speed
25G Mode	Each LED is amber	The 100G QSFP28 is fan-out to four 25G ports and operating at 25G port speed
50G Mode	The 2nd and 4th LEDs are in yellow	The 100G QSFP28 is fan-out and operating to two 50G ports

Ports of model M4500-32C

The switch chassis is equipped with the following ports:

- 32 QSFP28 ports (10/25/40/50/100GbE speed)
- 1 Management port
- 1 Console port
- 1 USB port

The chassis has 32 QSFP28 ports. Each of these ports uses an optical transceiver, active optical cables, or direct-attached cable to connect the QSFP28 port to servers and other Ethernet switches. For more information on obtaining the appropriate QSFP+ or QSFP28 modules, refer to "Supported Transceivers and Cables".

By default, the port speed for the QSFP28 ports is set to 100G. If you want to use a lower port speed than the default port speed, manually change the port speed before you insert the module. For more information see the CLI manual.

The chassis also provides the following system ports:

- One management port enables you to manage the switch operation using an RJ-45 Ethernet cable.
- One console port enables you to perform the initial configuration by connecting to a PC with the RJ-45 to DB-9 serial adapter cable.
- One USB port provides the option to install a switch runtime image or configuration file into storage memory.

Data Port Connection

Supported Transceivers and Cables

See the following table for the list of supported transceivers and direct-attach cables (DACs).

Speed	Model	Description	Supported Distance
100G	ACM761	QSFP-100G-SR4 100GBASE-SR4 MMF 100m QSFP28 Transceiver	100m
	ACM762	QSFP-100G-LR4 100GBASE-LR4 SMF 10km QSFP28 Transceiver	10km
	ACC761	QSFP-100G-CU1M 100G QSFP28 to 100G QSFP28 1m DAC	1m
	ACC763	QSFP-100G-CU3M 100G QSFP28 to 100G QSFP28 3m DAC	3m
40G	AXLM761	40Gb/s 100m QSFP+, Bi-Di, Duplex LC 850/900nm, VCSEL Transceiver	100m
	AXLM762	40Gb/s LR4 QSFP+ Fiber Optical Transceiver	10km
	AXLC761	40Gb/s QSFP+ 1m DAC	1m
	AXLC763	40Gb/s QSFP+ 3m DAC	3m
10G	AXM761	SFP+ Transceiver 10GBASE-SR Multimode LC	33~300m
	AXM762	SFP+ Transceiver 10GBASE-LR Single Mode LC	10km
	AXM764	SFP+ Transceiver 10GBASE-SR Single Mode LC	2km
	AXC761	SFP+ Passive DAC 1m	1m
	AXC763	SFP+ Passive DAC 3m	3m
	AXC765	SFP+ Active DAC 5m	5m
	AXC767	SFP+ Active DAC 7m	7m
	AXC7610	SFP+ Active DAC 10m	10m
	AXC7615	SFP+ Active Optical DAC 15m	15m
	AXC7620	SFP+ Active Optical DAC 20m	20m

📓 **NOTE:**

For more information about NETGEAR transceiver modules and cables, visit
https://www.netgear.com/business/products/switches/modules-accessories/.

QSFP28 Port Connection

The switch is equipped with 32 QSFP28 ports. Each single port supports 40G or 100G by using 40G or 100G cables or optical transceivers. The switch can support fan-out cable for 40G to 4 x 10G or 100G to 4 x 25G or 2 x 50G.

The QSFP28 ports are numbered and have corresponding QSFP28 port LEDs.

To install a QSFP28 module, do the following:

1 Slide the QSFP28 module into a QSFP28 port.
2 Push completely until the module locks into place.
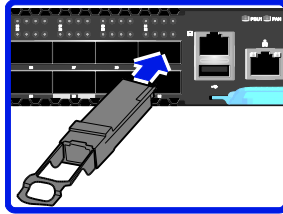
3 Repeat the above procedures to install additional QSFP28 modules.

For more information about the QSFP28 port LED behavior when the network link is established, refer to "LED indicators of model M4500-32C".
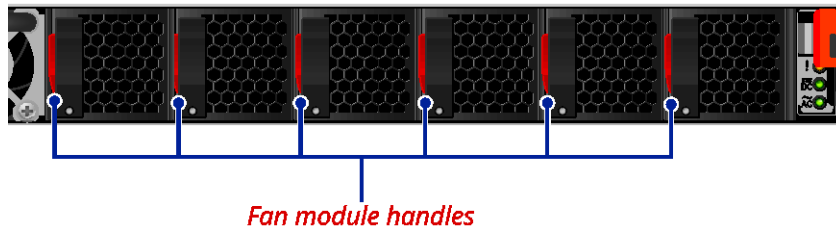
NOTE:

Port 28 is not supported with fan-out function.

Fan tray of model M4500-32C

The switch chassis is equipped with six fan trays. Each fan module provides front-to-back airflow and is hot-swappable. The NETGEAR model number for a fan module is AFT402.
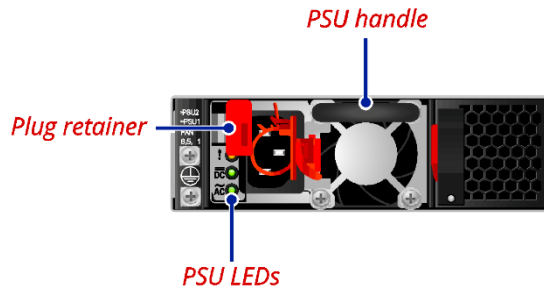

Fan module handles

NOTE:

To hot-swap the fan during operation, make sure to replace it within 30 seconds.

Power supply of model M4500-32C

Equipped with two power supply modules (PSUs), the switch can operate with either one or two PSUs. If the switch uses two PSUs, you can hot-swap one of the PSUs during operation.

The airflow on the PSU from the front to the back.

The AC power connector is a standard three-pronged connector. The switch automatically adjusts its power setting to any supply voltage in the range from 100~240 VAC at 50~60 Hz.

The NETGEAR model number for a PSU is APS750W.

📓 **NOTE:**

Verify that each module has the same airflow direction. Make sure the switch runs with all of its power supply and fan tray modules taking in air from a cold aisle and exhausting air to the hot aisle.
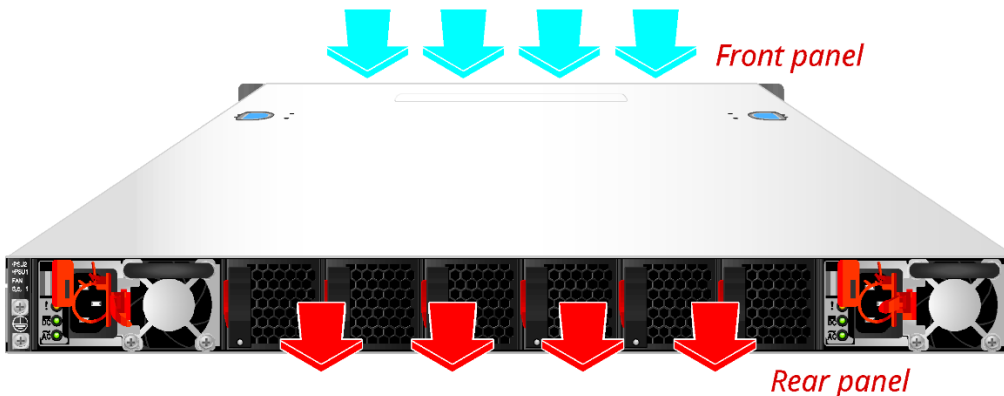
PSU LEDs

LED Type	LED Color	Function
Warning	Amber	PSU power / Thermal / Fan is not functioning properly.
AC	Green	The AC power (AC IN 220 / 110V) is operating normally.
	Off	The AC power (AC IN 220 / 110V) has failed.
DC	Green	The DC power (DC OUT +12V) is operating normally.
	Off	The DC power (DC OUT +12V) has failed.

Airflow Direction

The switch ships with four fan modules and two AC power supplies.

The air intake is located on the front panel of the switch. The cool air is sucked in from outside the chassis and pushed toward the rear of the chassis. The hot air exhausts through the vents on the rear panel of the switch.

Unpacking the Hardware

Upon receiving the switch, inspect the packing box. If the packing box was not damaged in transit, unpack it carefully.

📔 **NOTE:**

Retain the packing box in case you need to transport the switch.

Because the packing box is heavy, we recommend that you carry the box and perform the installation together with someone else.

Package Contents

The following items are included with a standard package. When you open the box, check if all items are included and free of damage.

- One Netgear M4500 Intelligent Fully Managed Switch
- Depending on the product ordered, two or four AC power cords
- Console cables
- One set of rail kits
- Two mounting ears
- Four screws for two mounting ears
- Installation Guide

Ensure that all items are included in the package before starting the installation.

1 Place the box on a flat and stable surface and cut the straps securing the box.

2 Carefully remove the switch. Then place it on a flat and clean surface.

3 Remove all other items from the box and inspect each item.

Installing the Switch

Site Survey

Consider the following when choosing a location to install the switch:

Installation Location

- Ensure that there is adequate space to allow you to access the front and rear panel ports for easy cable management and maintenance.
- Ensure that the site is located within a proper distance to the power source. The power source must be properly grounded and readily accessible.
- Ensure that the site is free from strong electromagnetic field sources, such as radiators, motors, and heat sources.
- Ensure that the site is not exposed to direct sunlight, rain or moisture.

Ventilation

- The installation surroundings must have adequate ventilation. Proper clearance between the switch and the wall or other equipment must be observed.

Rack Mounting

If installing on a rack, verify the following:

- Ensure the cabinet is stable and secure to withstand any unexpected movement, such as an earthquake.
- Ensure the rack or cabinet can support the weight of the switch and other additional weight.

Positioning the Switch

The switch is equipped with Power Supply Units (PSUs) and hot-swappable fan modules. Before you install the switch, consider the airflow direction of the power supply and fan modules. The air inlets are at the front of the switch. The air outlets are at the back of the switch.

To ensure proper airflow, make sure that when you install the switch its air intake is positioned in a cold aisle and the air exhaust is positioned in a hot aisle.

📓 **NOTE:**

Verify that each module has the same airflow direction. Make sure the switch runs with all of its power supply and fan tray modules taking in air from a cold aisle and exhausting air to the hot aisle.

Rack Mounting the Switch

You can install the switch in most standard 19-inch (48.3-cm) racks.

⚡ **CAUTION**
   Due to the switch's weight, it should be installed by at least two people.

Items Required for Installation

The following items are required to install the switch onto the rack:

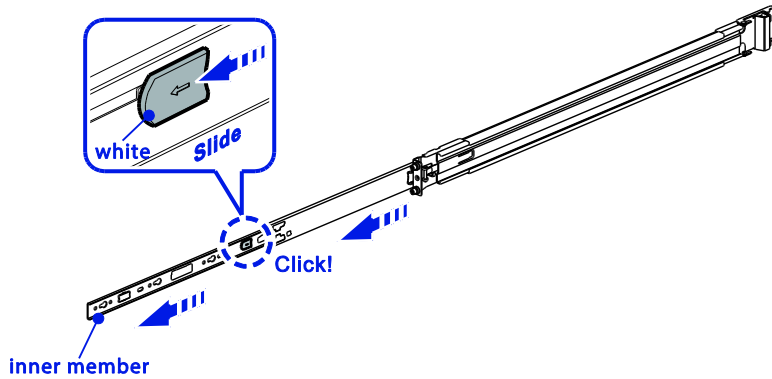- Phillips screwdriver
- Screws that fit the equipment rack

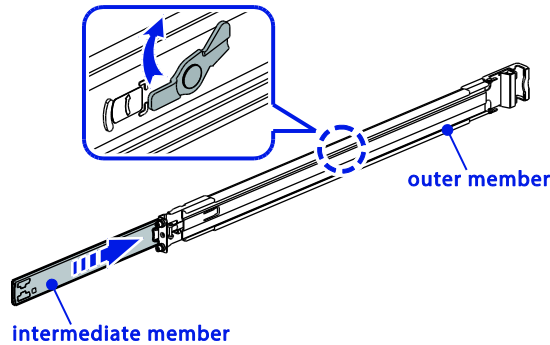# Hardware Installation

Mounting the Switch into the Rack

To mount the switch to a rack:

1 Remove the inner rails.

For each inner rail, pull the inner rail out until it is fully extended, and then push the tab forward to release the inner rail from the middle rail. Remove the inner rail.

2 For each inner rail, pull the tab upward to unlock the latch, and then push the middle rail back into the outer rail.
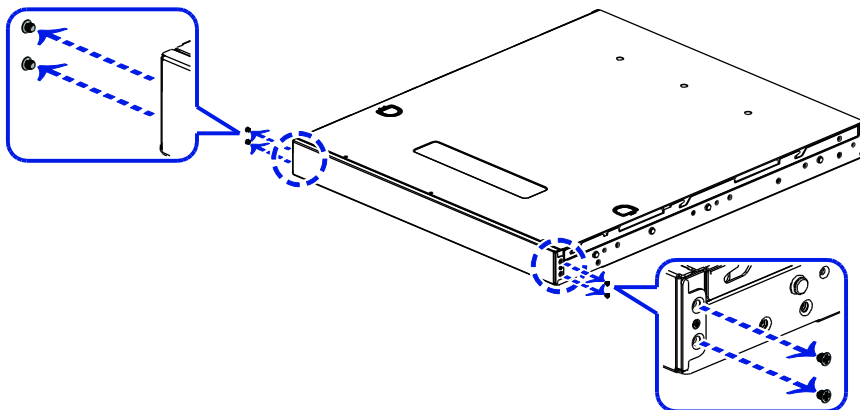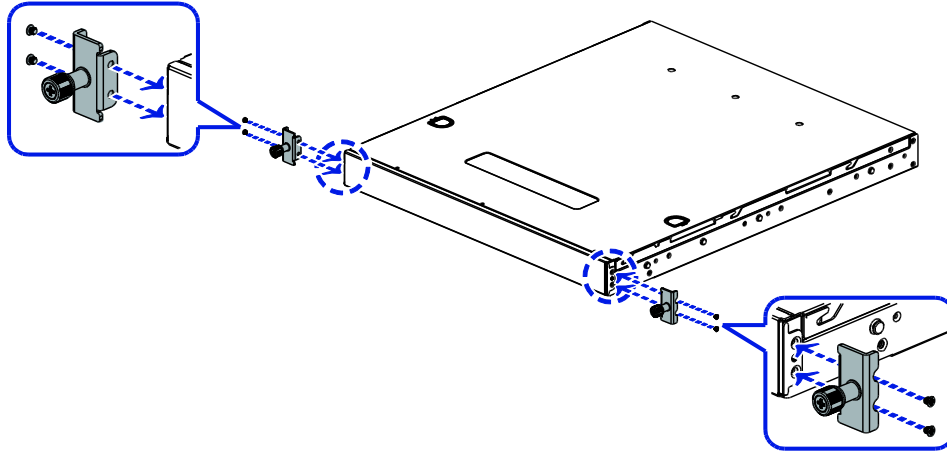

3 Remove the screws on the switch.

📓 **NOTE:**

*Place the screws in a bag to prevent losing them.*

4 Remove the rail mounting brackets and screws from the accessory bag.

5 Align the holes on the rail mounting brackets with the switch.

6 Secure the rail mounting brackets with screws.

7 For each inner rail, align the hooks on the switch with the holes in the inner rail, and then slide the inner rail backward until it is locked in place.
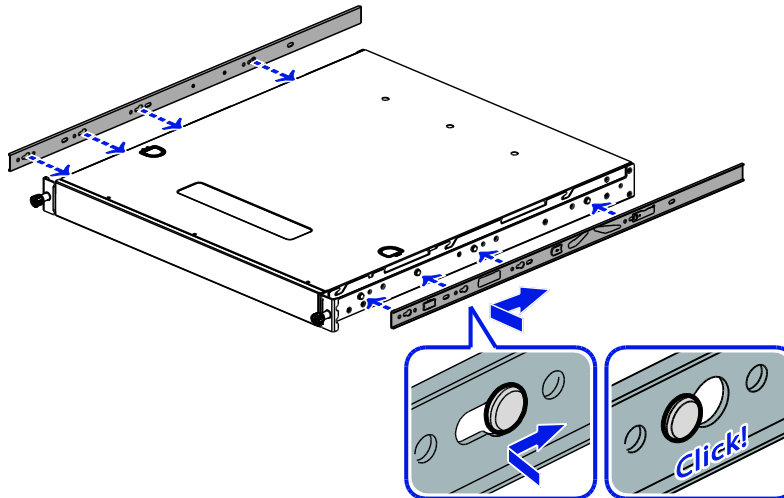

8 For each inner rail, use the screws to secure the inner rail to the switch.
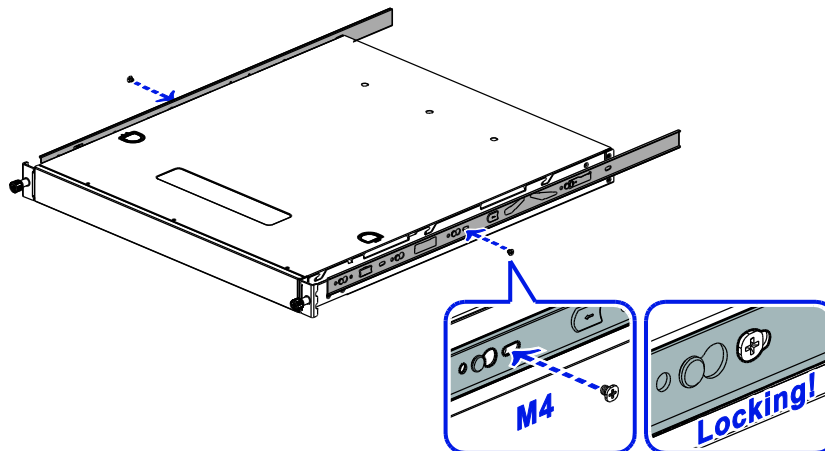
Hardware Installation

9 Install the outer rails to the rack.

▪ To install the front bracket: Pull the latch and install the rail by aligning the hooks with the front rack holes, and then release the latch to lock the hooks into place.

▪ To install the rear bracket: Align and push the rail firmly into the rear rack until it clicks into place. Make sure that the L-shaped bracket is facing inward.
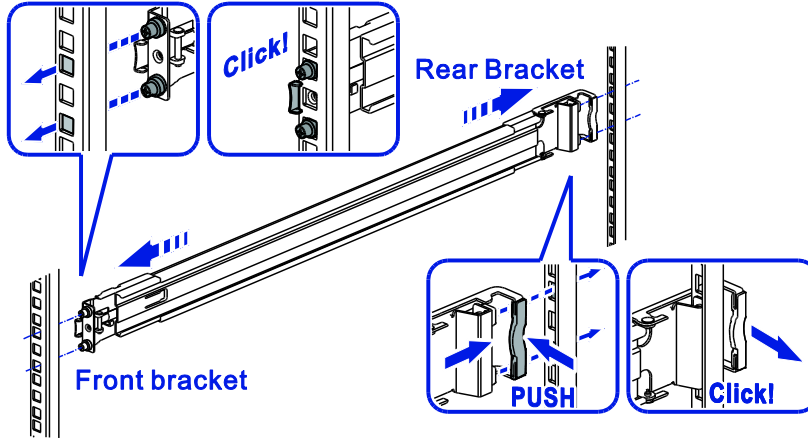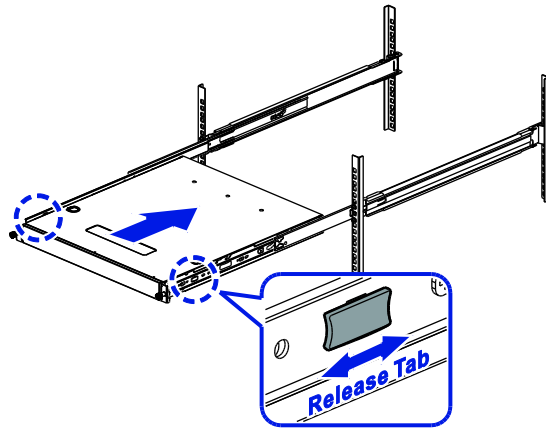

10 Pull the middle rails out until they are fully extended, ensuring that the ball bearing retainers are locked at the front of the middle rails.
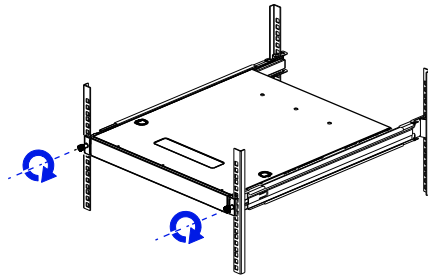
11 Slide the inner rails on the switch into the middle rails until the movement stops.
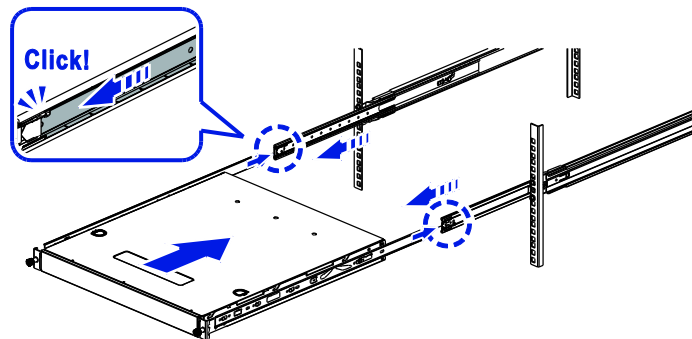
12 Slide the blue release tabs on the inner rails and push the switch all the way to the rear of the rack.

13 Secure the switch to the rack using the screws.

Connecting to the Console Port

The console port is used for setting up and managing the switch via a connection to a console terminal or PC using a terminal emulation program. You can connect the switch to a terminal or PC using one of the supplied console cables for serial communication. (USB 2.0 male-to-RS-232 male cable; RJ-45 male-to-RS-232 female cable.)

Below is the console cable wiring specification table for the RJ-45 male-to-RS-232 female cable:

| RJ-45 Port of Switch	DB9 Female Port of PC	Abbreviation	Description
3	2	RD	Received Data
6	3	TD	Transmit Data
5	5	GND	Ground

Using the console port, you can perform the following:

- Configure the switch by using the Command Line Interface (CLI)
- Manage and monitor network activity by using the CLI
- Manage and monitor network activity by using Simple Network Management Protocol (SNMP)
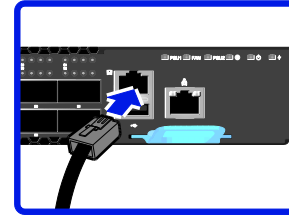- Upgrade the firmware

To connect to the console using the RJ-45 male-to-RS-232 female cable:

1 Connect the RJ-45 connector to the console port (⌨) of the switch.
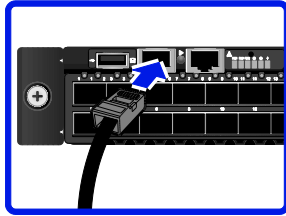
Model M4500-48XF8C   *Model M4500-32C*

2 Connect the DB9 to a terminal or PC.

3 Manage the switch using the CLI commands (for more information, see the CLI manual).

   The switch uses the following default settings:

   - Baud rate: 115200
   - Data width: 8 bits
   - Parity: None
   - Stop bits: 1
   - Flow control: None

Connecting to the Management Port

The management port is a dedicated port interface which is segregated from data traffic crossing other downlink or uplink ports. The port supports auto-negotiation. If the attached device also supports auto-negation, the transmission can operate in either half or full duplex, and data rate can be in 10Mbps, 100Mbps, or 1Gbps. Telnet, SNMP, and Web browser utility can all go through this port for local or remote management after the IP address, subnet mask, and default gateway are properly configured.

⚠ **CAUTION**

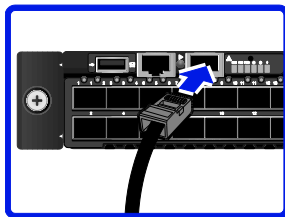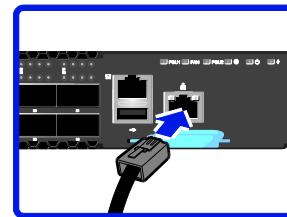*To avoid an IP address conflict, make sure to complete the initial configuration (see "Connecting to the Console Port") before connecting the management port to the network. For more information on how to configure the switch, see the CLI manual.*

To connect to the management port:

1 Connect one end of an Ethernet cable to the management port (🖧) of the switch.

Model M4500-48XF8C   *Model M4500-32C*

2 Connect the other end of the Ethernet cable to a network.

The Management port LED (Link/Activity LED) lights green when the network link is established.

Connecting the Power

⚠ **CAUTION**

- *Ensure that the socket outlet is installed near the equipment and be easily accessible.*
- *The power cord must have safety ground pin or contact that is suitable for the electrical outlet.*
- *The power supply cord(s) must be plugged into socket outlet(s) that is/are provided with a suitable earth ground.*

AC Power Supply

The switch is equipped with two slots for power supplies. Depending on your needs, you may opt to use one or both PSUs at a time. Two circuits provide redundancy protection.
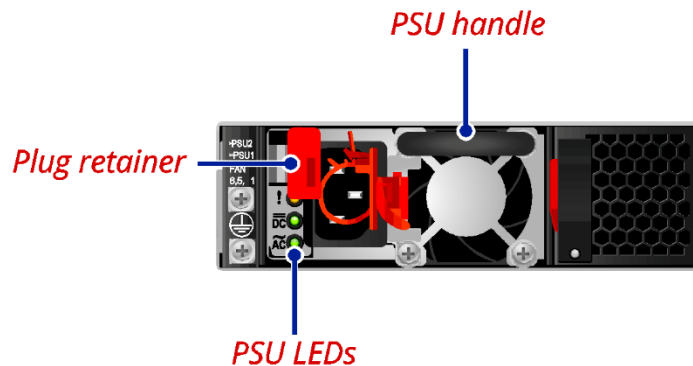
📖 **NOTE:**

Each PSU has an AC power connector.

At least one power supply must connect to a power source.

To connect the switch to a power source:

1 Connect one end of the AC power cord to an AC power connector.

PSU handle

Plug retainer

PSU LEDs

2 If you want to use two PSUs, connect another strip of AC power cord to the other AC power connector. Otherwise, skip this step.

3 Connect the other end(s) of the AC power cord(s) to the grounded power outlet(s).

The switch has no power button. Once an AC power cord is connected to a power outlet, the switch power is turned on. The Power LED lights green. For details, refer to "PSU LEDs".

Components Replacement

Troubleshooting

Below is a list of the common problems that you may encounter when using the switch. Try to solve these problems with the suggested solutions before calling for service. If problems persist, contact customer support.

Diagnostic Switch Indicator

Problem	Solution
Power LED is off.	The switch does not receive any power. • Check if the AC power cords are connected properly. • Check if the power supply units are completely seated in the chassis. • The power supply unit may be damaged and needs replacement.
A Port LED is off.	• Check if the switch and the connected device are powered on. • Check if the connection in both ends are properly connected. • Check if the cable matches the required length and specification. • Check for a defective cable/port module.
PSU 1 & PSU 2 LED is in Red state.	Possible issues: • Fan Lock (15 sec.) • OTP: Over Temperature Process • OCP: Over Current Process • OVP: Over Voltage Process • UVP: Under Voltage Process
Fan LED is in Red state.	One or more fans have failed.

Power and Cooling Problems

If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet, and verify that the fans on the unit are unobstructed and running prior to shutdown. If you still cannot isolate the problem, then the internal power supply may be defective.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (such as the power cord or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

In-Band Access

You can access the management agent in the switch from anywhere within the attached network using Telnet, a Web browser, or other network management software tools. However, you must first configure the switch with a valid IP address, subnet mask, and default gateway. If you have trouble establishing a link to the management agent, check to see if you have a valid network connection. Then verify that you entered the correct IP address. Also, be sure the port through which you are connecting to the switch has not been disabled. If it has not been disabled, then check the network cabling that runs between your remote location and the switch.

Replacing the Power Supply

⚡ **CAUTION**

- *When installing a new PSU, make sure it has the same airflow direction as the fan modules and the other power supply.*
- *For switches that only using a single power supply, removing the power supply will cause the switch to automatically shut down.*

The PSUs can be replaced without the use of special tools. Before replacing any of the PSUs, verify the status of the PSU to determine if there is a need for replacement.

📓 **NOTE:**

In the event of a power supply failure, you can replace the defective unit without powering down the system, provided the other power supply is operational.

To replace the power supply unit:

1 Disconnect the AC power cord of the PSU that you want to remove.
2 Press the plug retainer and then pull the handle to slide the PSU away from the chassis.

📓 **NOTE:**

Take note of the part number of the removed PSU. When you order a replacement PSU, make sure that the part number of the new PSU is the same as the part number of the removed PSU.

3 Ensure the power supply unit is correctly oriented, then install the new PSU into the chassis until it is firmly seated.
4 Connect the AC power cord to power on the switch.

Replacing the Fan Tray

> ⚠️ **CAUTION**
>
> *When installing a new fan module, make sure it has the same airflow direction as the fan modules and the power supply.*

The fan modules can be replaced without the use of special tools. Before replacing any of the fan modules, verify the status of the fan modules to determine if there is a need for replacement.
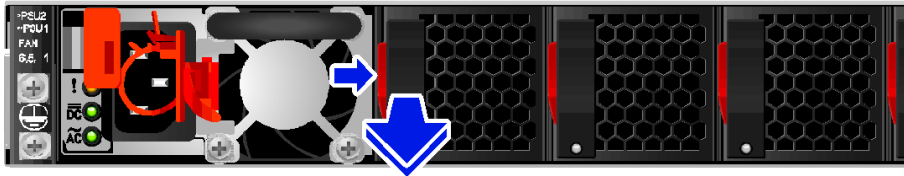
📖 **NOTE:**

In the event of a fan failure, make sure to replace it within two minutes.

To replace the fan module:

1 Press the handle retainer and pull by the handle to slide the fan module away from the chassis.

📖 **NOTE:**

Take note of the part number of the removed fan module. When you order a replacement fan module, make sure that the part number of the new fan module is the same as the part number of the removed fan module.

2 Ensure the fan module is correctly oriented, then install the new fan module into the chassis until it is firmly seated.