

**NETGEAR®**

# Hardware Installation Guide

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## Fully Managed Switches M4350 Series

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**NETGEAR, Inc.**  
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# 1

## Introduction

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The NETGEAR Fully Managed Switches M4350 Series consists of high-performance, high-speed, IEEE-compliant switches for L3 IT, professional audio over IP and video over IP, IP surveillance, and general switching configurations.

Depending on the model, the switch supports 2.5 Gbps or 10 Gbps multispeed ports for Ethernet connections, including PoE+ and PoE++ connections, and SFP+ ports for 10G fiber connections or SFP28 ports for 25G fiber connections.

In this guide, the Fully Managed Switches M4350 Series is referred to as the switch.

This hardware installation guide complements the installation guide that came with the switch.

This chapter serves as an introduction to the switch and includes the following sections:

- [Overview](#)
- [Features](#)
- [Stacking concepts](#)
- [Safety instructions and warnings](#)

**Note:** For more information about the topics that are covered in this manual, visit the support website at [netgear.com/support](http://netgear.com/support).

**Note:** For switch documentation, including the main user manual, audio-video (AV) user manual, command-line interface manual, and data sheet, visit [netgear.com/support/download](http://netgear.com/support/download).

# Overview

This hardware installation guide is for the NETGEAR Fully Managed Switches M4350 Series models that are described in detail in the following sections:

- [Model M4350-8X8F \(SKU XSM4316\)](#) on page 14
- [Model M4350-12X12F \(SKU XSM4324\)](#) on page 16
- [Model M4350-24G4XF \(SKU GSM4328\)](#) on page 19
- [Model M4350-48G4XF \(SKU GSM4352\)](#) on page 22
- [Model M4350-24X4V \(SKU XSM4328CV\)](#) on page 25
- [Model M4350-24F4V \(SKU XSM4328FV\)](#) on page 29
- [Model M4350-44M4X4V \(SKU MSM4352\)](#) on page 32

The switch lets you create high-speed connections to a server or network backbone. For example, you can do the following:

- Connect switches to each other with high-speed links.
- Link to high-speed servers.
- Provide 10G/5G/2.5G/1G/100M copper and 25G/10G/1G fiber connectivity.
- Connect up to eight switches in a stack to create a high-port-capacity solution with a single point of administration.

The switch is IEEE compliant and offers low latency for high-speed networking. All ports can automatically negotiate to the highest speed, which makes the switch also suitable for environments with a mix of Gigabit and multispeed Ethernet devices and fiber connections.

You would typically rack-mount the switch.

# Features

The switch supports the following key hardware features:

- Switch ports in various configurations:
  - 2.5G or 10G multispeed PoE+ (802.3at) or PoE++ (802.3bt) ports, depending on the modelDefault PoE budget from 194W to 648W, depending on the model  
The PoE budget is expandable through optional auxiliary power supplies (APSS) that can be installed in power supply unit (PSU) bays, depending on the model

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- 10G multispeed ports (also supporting 5 Gbps, 2.5 Gbps, 1 Gbps, and 100M speeds), depending on the model
- 25G SFP28 or 10G SFP+ fiber uplink ports, depending on the model
- Support for switching fabric from 128 Gbps to 680 Gbps, depending on the model, with all ports at line-rate
- One out-of-band (OOB) 1G Ethernet RJ-45 port
- One USB Type-C console port
- Two USB 3.0 ports for connections to storage devices
- Full-width or half-width 1U chassis
- Full compatibility with IEEE standards:
  - IEEE 802.3 (Ethernet )
  - IEEE 802.3u (100BASE-TX)
  - IEEE 802.3ab (1000BASE-T)
  - IEEE 802.3bz (2.5GBASE-T)
  - IEEE 802.3z (1000BASE-SX/LX)
  - IEEE 802.3ae (10GBASE-SR, 10GBASE-LR)
  - IEEE 802.3bq (25GBASE-T)
  - IEEE 802.3x Full-duplex flow control
  - IEEE 802.3ad Link aggregation (LAG with LACP)
  - IEEE 802.3az Energy Efficient Ethernet (EEE)
  - IEEE 802.3af (PoE)
  - IEEE 802.3at (PoE+)
  - IEEE 802.3bt (PoE++)
  - IEEE 802.1AS-2011 Timing and Synchronization for Time-Sensitive Applications (generalized Precision Time Protocol [gPTP])
  - IEEE 802.1Qav-2009 Forwarding and Queuing Enhancements for Time-Sensitive Streams (FQTSS)
  - IEEE 802.1Qat-2010 Stream Reservation Protocol (SRP)
  - IEEE 802.1BA-2011 Audio Video Bridging (AVB) Systems
- AutoSensing and autonegotiating capabilities for all ports
- Auto Uplink™ technology support on all ports

- Automatic address learning function to build the packet-forwarding information table
- Store-and-forward transmission to remove bad packets from the network
- Active flow control to minimize packet loss and frame drop
- Per-port status LEDs and system status LED
- NETGEAR green power-saving features, including energy efficiency mode that fully conforms to the IEEE802.3az standard
- Nonstop Forwarding Failover (NSF) support for the master in a stack
- Support for an APS in full-width switches to provide a larger power budget

## Stacking concepts

A single switch can control and manage a stack. This switch is referred to as the stack management switch, or simply, the *management switch*. Any other switch in the stack is referred to as a *member switch*.

Member switches can download firmware from the management switch and the management switch can push firmware to the member switches.

The management switch runs the fully operational software of a switch. In addition, the management switch runs the management switch software of the distributed switching application that configures and manages all member switches. Generally, the management switch operates the remote member switch's low-level drivers through the distributed switching application part that is running in the context of the member switch.

During stacking setup, the switches autoselect one switch as the management switch. All other switches become member switches and are assigned unique stack IDs. One of the member switches is designated as the standby management switch. The standby management switch functions as a member switch but can become the management switch if the original management switch fails. In the default configuration, the management switch and standby management switch are assigned unit IDs of 1 and 2, respectively. You can use the device user interface (UI) to configure different ID assignments. The management switch provides a single point of control and management as well as a single interface through which to control and manage the stack.

Switch software is downloaded separately for each stack member. However, all stack members must be running the same software version.

A stack unit can operate in one of the following modes:

- A standalone switch runs as a general switch. The standalone unit does not run the stacking application until it is connected to a stack.

- A management switch manages the entire stack and is responsible for the entire stack configuration. All protocols run in the context of the management switch, which updates and synchronizes the standby management switch.
- A standby management switch runs as a member switch until it must take over from the management switch. In addition, the standby management switch continuously monitors the existence and operation of the management switch. If the management switch fails, the standby management switch assumes the role of management switch through a switchover.
- A member switch runs only a member switch version of the distributed switching software, which allows the applications running on the management switch to control and manage the resources of the member switch.

A stack can contain a mix of up to eight switches. All models support stacking. The management switch supports Nonstop Forwarding Failover (NSF).

**Note:** A stacking link works only on the highest speed supported by a stack port. For example, a 25G port that is also capable of operating at 10G speed operates only at 25G speed in stack mode. In Ethernet mode, this limitation does not apply, and the port can operate at 25G or a lower speed. When you set up a stacking link between two switches, ensure that both ports can operate at the same speed in stack mode. For example, set up a stacking link between two ports that each can support a maximum speed of 25G, or between two ports that each can support a maximum speed of 10G.

For information about how to configure stacking through the software, see the main user manual, which you can download by visiting [downloadcenter.netgear.com](http://downloadcenter.netgear.com).

## 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. Note the following:
  - For more information about the environment in which this product must operate, see the environmental specifications in the appendix or the data sheet.
  - If you want to connect the product to a device located outdoors, the outdoor device must be properly grounded and surge protected, and you must install an

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Ethernet surge protector inline between the indoor product and the outdoor device. Failure to do so can damage the product.

- Before connecting the product to outdoor cables or devices, see <https://kb.netgear.com/000057103> for additional safety and warranty information.

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 product documentation. Some devices should never be opened.
  - If applicable to your product, 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 power outlet, and then replace the part or contact your trained service provider:
  - Depending on your product, 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 the product away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your product components, and never operate the product in a wet environment. If the product 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 product. Doing so can cause fire or electric shock by shorting out interior components.
- Use the product only with approved equipment.
- If applicable to your product, allow the product to cool before removing covers or touching internal components.

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- 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 product 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 product, use only a supplied power adapter or approved power cable:  
If your product uses a power adapter:
  - 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 product uses a power cable:
  - 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 power outlets.
- If applicable to your product, 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.

## Fully Managed Switches M4350 Series

- 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.

# 2

## Hardware Overview

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This chapter describes the switch hardware features.

The chapter includes the following sections:

- [Model M4350-8X8F \(SKU XSM4316\)](#)
- [Model M4350-12X12F \(SKU XSM4324\)](#)
- [Model M4350-24G4XF \(SKU GSM4328\)](#)
- [Model M4350-48G4XF \(SKU GSM4352\)](#)
- [Model M4350-24X4V \(SKU XSM4328CV\)](#)
- [Model M4350-24F4V \(SKU XSM4328FV\)](#)
- [Model M4350-44M4X4V \(SKU MSM4352\)](#)
- [Common hardware interfaces](#)
- [PoE port capacities and budgets](#)
- [Auxiliary power supplies](#)
- [Fans](#)
- [Speed and cables](#)

# Model M4350-8X8F (SKU XSM4316)

This section describes the switch hardware features for model M4350-8X8F (SKU XSM4316). This half-width model provides a switching fabric of 320 Gbps and supports the following port configurations:

- Eight multispeed Ethernet RJ-45 ports that support 10 Gbps, 5 Gbps, 2.5 Gbps, 1 Gbps, and 100 Mbps
- Eight SFP+ fiber uplink ports that support 10 Gbps or 1 Gbps transceiver modules

## Front panel model M4350-8X8F

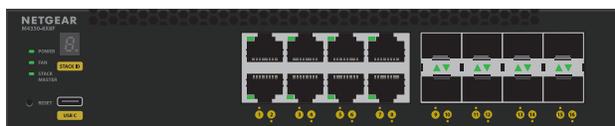


Figure 1. Front panel model M4350-8X8F

From left to right, the front panel of model M4350-8X8F provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-8X8F](#) on page 15)
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38)
- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39)
- **8 multispeed Ethernet ports, numbered 1 through 8:** Eight 10G/5G/2.5G/1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-8X8F](#) on page 15)
- **8 SFP+ ports, numbered 9 through 16:** Eight 10G/1G SFP+ fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-8X8F](#) on page 15) For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

## Back panel model M4350-8X8F



Figure 2. Back panel model M4350-8X8F

From left to right, the back panel of model M4350-8X8F provides the following common components, which are clearly named or numbered on the back panel:

- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-8X8F](#) on page 15)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Three fans (FAN 1, FAN 2, and FAN 3)
- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **AC power receptacle:** AC receptacle for the internal PSU. The PSU can accept 100-240V ~ 50-60 Hz, 3A.

## LEDs model M4350-8X8F

This section describes the LED designations of model M4350-8X8F. The LEDs are clearly named or numbered on the front and back panels.

Table 1. LEDs of model M4350-8X8FV

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<p><b>Solid green:</b> The switch is powered on and operating normally.</p> <p><b>Solid yellow:</b> The switch is starting.</p> <p><b>Off:</b> Power is not supplied to the switch.</p>
FAN LED	<p><b>Solid green:</b> The fans are functioning normally.</p> <p><b>Solid yellow:</b> One or more fans are malfunctioning.</p>
STACK MASTER LED	<p><b>Solid green:</b> The switch is functioning as the stack management switch.</p> <p><b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.</p>

Table 1. LEDs of model M4350-8X8FV (Continued)

LED	Description
STACK ID LED	<p>The Stack LED contains segments that can indicate the stack unit number of the switch:</p> <p><b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number.</p> <p><b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off.</p> <p><b>Off:</b> The switch is not a member of a stack.</p>
<b>Port LEDs, Front Panel</b>	
Port LEDs for multispeed Ethernet ports numbered 1 through 8	<p>Left LED, speed, activity, and link status:</p> <p><b>Off:</b> No link is established on the port.</p> <p><b>Solid green:</b> The port established a 10G link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The port established a 5G, 2.5G, 1G, or 100M link.</p> <p><b>Blinking yellow:</b> The port is transmitting or receiving packets at 5G, 2.5G, 1G, or 100M.</p>
Port LEDs for SFP+ ports numbered 9 through 16	<p><b>Off:</b> No SFP module link is established on the fiber port.</p> <p><b>Solid green:</b> The fiber port established a 10G link.</p> <p><b>Blinking green:</b> The fiber port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The fiber port established a 1G link.</p> <p><b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 1G.</p>
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:</p> <p><b>Solid green:</b> The port established a 1G link.</p> <p><b>Solid yellow:</b> The port established a 100 M link.</p> <p><b>Off:</b> No link is established on the port.</p> <hr/> <p>Right LED, activity and link status:</p> <p><b>Solid green:</b> The port established a link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets.</p> <p><b>Off:</b> No link is established on the port.</p>

## Model M4350-12X12F (SKU XSM4324)

This section describes the switch hardware features for model M4350-12X12F (SKU XSM4324). This half-width model provides a switching fabric of 480 Gbps and supports the following port configurations:

- Twelve multispeed Ethernet RJ-45 ports that support 10 Gbps, 5 Gbps, 2.5 Gbps, 1 Gbps, and 100 Mbps
- Twelve SFP+ fiber uplink ports that support 10 Gbps or 1 Gbps transceiver modules

## Front panel model M4350-12X12F

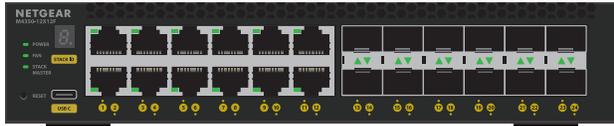


Figure 3. Front panel model M4350-12X12F

From left to right, the front panel of model M4350-12X12F provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-12X12F](#) on page 18)
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38)
- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39)
- **12 multispeed Ethernet ports, numbered 1 through 12:** Twelve 10G/5G/2.5G/1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-12X12F](#) on page 18)
- **12 SFP+ ports, numbered 13 through 24:** Twelve 10G/1G SFP+ fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-12X12F](#) on page 18)  
For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

## Back panel model M4350-12X12F



Figure 4. Back panel model M4350-12X12F

From left to right, the back panel of model M4350-12X12F provides the following common components, which are clearly named or numbered on the back panel:

- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-12X12F](#) on page 18)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Three fans (FAN 1, FAN 2, and FAN 3)

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- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **AC power receptacle:** AC receptacle for the internal PSU. The PSU can accept 100-240V ~ 50-60 Hz, 3A.

## LEDs model M4350-12X12F

This section describes the LED designations of model M4350-12X12F. The LEDs are clearly named or numbered on the front and back panels.

Table 2. LEDs of model M4350-12X12F

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<b>Solid green:</b> The switch is powered on and operating normally. <b>Solid yellow:</b> The switch is starting. <b>Off:</b> Power is not supplied to the switch.
FAN LED	<b>Solid green:</b> The fans are functioning normally. <b>Solid yellow:</b> One or more fans are malfunctioning.
STACK MASTER LED	<b>Solid green:</b> The switch is functioning as the stack management switch. <b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.
STACK ID LED	The Stack LED contains segments that can indicate the stack unit number of the switch: <b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number. <b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off. <b>Off:</b> The switch is not a member of a stack.
<b>Port LEDs, Front Panel</b>	
Port LEDs for multispeed Ethernet ports numbered 1 through 12	Left LED, speed, activity, and link status: <b>Off:</b> No link is established on the port. <b>Solid green:</b> The port established a 10G link. <b>Blinking green:</b> The port is transmitting or receiving packets at 10G. <b>Solid yellow:</b> The port established a 5G, 2.5G, 1G, or 100M link. <b>Blinking yellow:</b> The port is transmitting or receiving packets at 5G, 2.5G, 1G, or 100M.
Port LEDs for SFP+ ports numbered 13 through 24	<b>Off:</b> No SFP module link is established on the fiber port. <b>Solid green:</b> The fiber port established a 10G link. <b>Blinking green:</b> The fiber port is transmitting or receiving packets at 10G. <b>Solid yellow:</b> The fiber port established a 1G link. <b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 1G.

Table 2. LEDs of model M4350-12X12F (Continued)

LED	Description
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:</p> <p><b>Solid green:</b> The port established a 1G link.  <b>Solid yellow:</b> The port established a 100 M link.  <b>Off:</b> No link is established on the port.</p> <hr/> <p>Right LED, activity and link status:</p> <p><b>Solid green:</b> The port established a link.  <b>Blinking green:</b> The port is transmitting or receiving packets.  <b>Off:</b> No link is established on the port.</p>

## Model M4350-24G4XF (SKU GSM4328)

This section describes the switch hardware features for model M4350-24G4XF (SKU GSM4328).

This full-width model provides a switching fabric of 128 Gbps and supports the following port configurations:

- Twenty-four PoE+ (802.3at) Gigabit Ethernet RJ-45 ports that support 1 Gbps and 100 Mbps
- Four SFP+ fiber uplink ports that support 10 Gbps or 1 Gbps transceiver modules

The total PoE budget for this model is 648W, optionally expandable to 720W.

## Front panel model M4350-24G4XF

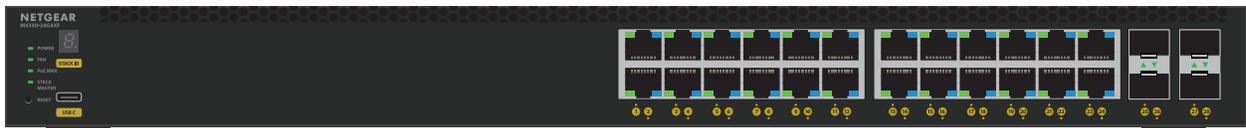


Figure 5. Front panel model M4350-24G4XF

From left to right, the front panel of model M4350-24G4XF provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, PoE MAX, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-24G4XF](#) on page 21).
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38).

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- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39).
- **24 PoE+ Gigabit Ethernet ports, numbered 1 through 24:** 24 PoE+ (802.3at) 1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-24G4XF](#) on page 21), with a total PoE budget of 648W for the switch. This PoE budget is optionally expandable to up to 720W.
- **4 SFP+ ports, numbered 25 through 28:** Four 10G/1G SFP+ fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-24G4XF](#) on page 21)  
For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

## Back panel model M4350-24G4XF



Figure 6. Back panel model M4350-24G4XF

**Note:** Although the previous figure shows an optional auxiliary power supply (APS) installed in the power supply unit (PSU) bay, this models ships *without* an APS, and the PSU bay is closed with a PSU cover.

From left to right, the back panel of model M4350-24G4XF provides the following common components, which are clearly named or numbered on the back panel:

- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-24G4XF](#) on page 21)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Four fans placed in two groups of two fans (FAN 1 + FAN 2 and FAN 3 + FAN 4)
- **AC power receptacle:** AC receptacle for the internal PSU. The PSU can accept 100-240V ~ 50-60 Hz, 10A.
- **PSU bay:** One PSU bay (PSU 1) that is closed with a PSU cover. For information about ordering an optional APS that you can install in the PSU bay, contact NETGEAR.

## LEDs model M4350-24G4XF

This section describes the LED designations of model M4350-24G4XF. The LEDs are clearly named or numbered on the front and back panels.

Table 3. LEDs of model M4350-24G4XF

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<p><b>Solid green:</b> The switch is powered on and operating normally.</p> <p><b>Solid yellow:</b> The switch is starting.</p> <p><b>Off:</b> Power is not supplied to the switch.</p>
FAN LED	<p><b>Solid green:</b> The fans are functioning normally.</p> <p><b>Solid yellow:</b> One or more fans are malfunctioning.</p>
PoE MAX LED	<p><b>Off:</b> Sufficient (more than 7W of) PoE power is available.</p> <p><b>Solid yellow:</b> Less than 7W of PoE power is available.</p> <p><b>Blinking yellow:</b> At least once during the previous two minutes, less than 7W of PoE power was available.</p>
STACK MASTER LED	<p><b>Solid green:</b> The switch is functioning as the stack management switch.</p> <p><b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.</p>
STACK ID LED	<p>The Stack LED contains segments that can indicate the stack unit number of the switch:</p> <p><b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number.</p> <p><b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off.</p> <p><b>Off:</b> The switch is not a member of a stack.</p>
<b>Port LEDs, Front Panel</b>	
Port LEDs for PoE+ Gigabit Ethernet ports numbered 1 through 24	<p>Left LED, speed, activity, and link status:</p> <p><b>Off:</b> No link is established on the port.</p> <p><b>Solid green:</b> The port established a 1G link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets at 1G.</p> <p><b>Solid yellow:</b> The port established a 100M link.</p> <p><b>Blinking yellow:</b> The port is transmitting or receiving packets at 100M.</p> <hr/> <p>Right LED, PoE status:</p> <p><b>Off:</b> No PoE-powered device (PD) is connected to the port.</p> <p><b>Solid blue:</b> A PD is connected and the port is supplying power successfully.</p> <p><b>Solid yellow:</b> Indicates one of the following failures, which prevents the port from supplying power:</p> <ul style="list-style-type: none"> <li>• A short circuit occurred on the PoE power circuit.</li> <li>• The PoE power demand exceeds the available power.</li> <li>• The PoE current exceeds the PD's classification.</li> <li>• An out-of-proper-voltage band condition occurred.</li> </ul>

Table 3. LEDs of model M4350-24G4XF (Continued)

LED	Description
Port LEDs for SFP+ ports numbered 25 through 28	<p><b>Off:</b> No SFP module link is established on the fiber port.</p> <p><b>Solid green:</b> The fiber port established a 10G link.</p> <p><b>Blinking green:</b> The fiber port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The fiber port established a 1G link.</p> <p><b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 1G.</p>
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:</p> <p><b>Solid green:</b> The port established a 1G link.</p> <p><b>Solid yellow:</b> The port established a 100M link.</p> <p><b>Off:</b> No link is established on the port.</p>
	<p>Right LED, activity and link status:</p> <p><b>Solid green:</b> The port established a link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets.</p> <p><b>Off:</b> No link is established on the port.</p>

## Model M4350-48G4XF (SKU GSM4352)

This section describes the switch hardware features for model M4350-48G4XF (SKU GSM4328).

This full-width model provides a switching fabric of 176 Gbps and supports the following port configurations:

- Forty-eight PoE+ (802.3at) Gigabit Ethernet RJ-45 ports that support 1 Gbps and 100 Mbps
- Four SFP+ fiber uplink ports that support 10 Gbps or 1 Gbps transceiver modules

The total PoE budget for this model is 236W, optionally expandable to up to 1440W.

### Front panel model M4350-48G4XF



Figure 7. Front panel model M4350-48G4XF

## Fully Managed Switches M4350 Series

From left to right, the front panel of model M4350-48G4XF provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, PoE MAX, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-48G4XF](#) on page 24).
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38).
- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39).
- **48 PoE+ Gigabit Ethernet ports, numbered 1 through 48:** 48 PoE+ (802.3at) 1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-48G4XF](#) on page 24), with a total PoE budget of 236W for the switch. This PoE budget is optionally expandable to up to 1440W.
- **4 SFP+ ports, numbered 49 through 52:** Four 10G/1G SFP+ fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-48G4XF](#) on page 24)  
For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

## Back panel model M4350-48G4XF



Figure 8. Back panel model M4350-48G4XF

**Note:** Although the previous figure shows optional auxiliary power supplies (APSS) installed in the power supply unit (PSU) bays, this models ships *without* APSS, and the PSUs bay are closed with PSU covers.

From left to right, the back panel of model M4350-48G4XF provides the following common components, which are clearly named or numbered on the back panel:

- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-48G4XF](#) on page 24)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Four fans placed together in one group (FAN 1 + FAN 2 + FAN 3 + FAN 4)

- **AC power receptacle:** AC receptacle for the internal PSU. The PSU can accept 100–240V ~ 50–60 Hz, 10A.
- **PSU bays:** Two PSU bays (PSU 1 and PSU 2) that are closed with PSU covers. For information about ordering optional APSs that you can install in the PSU bays, contact NETGEAR.

## LEDs model M4350-48G4XF

This section describes the LED designations of model M4350-48G4XF. The LEDs are clearly named or numbered on the front and back panels.

Table 4. LEDs of model M4350-48G4XF

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<p><b>Solid green:</b> The switch is powered on and operating normally.</p> <p><b>Solid yellow:</b> The switch is starting.</p> <p><b>Off:</b> Power is not supplied to the switch.</p>
FAN LED	<p><b>Solid green:</b> The fans are functioning normally.</p> <p><b>Solid yellow:</b> One or more fans are malfunctioning.</p>
PoE MAX LED	<p><b>Off:</b> Sufficient (more than 7W of) PoE power is available.</p> <p><b>Solid yellow:</b> Less than 7W of PoE power is available.</p> <p><b>Blinking yellow:</b> At least once during the previous two minutes, less than 7W of PoE power was available.</p>
STACK MASTER LED	<p><b>Solid green:</b> The switch is functioning as the stack management switch.</p> <p><b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.</p>
STACK ID LED	<p>The Stack LED contains segments that can indicate the stack unit number of the switch:</p> <p><b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number.</p> <p><b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off.</p> <p><b>Off:</b> The switch is not a member of a stack.</p>

Table 4. LEDs of model M4350-48G4XF (Continued)

LED	Description
<b>Port LEDs, Front Panel</b>	
Port LEDs for PoE+ Gigabit Ethernet ports numbered 1 through 48	<p>Left LED, speed, activity, and link status:</p> <p><b>Off:</b> No link is established on the port.</p> <p><b>Solid green:</b> The port established a 1G link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets at 1G.</p> <p><b>Solid yellow:</b> The port established a 100M link.</p> <p><b>Blinking yellow:</b> The port is transmitting or receiving packets at 100M.</p> <hr/> <p>Right LED, PoE status:</p> <p><b>Off:</b> No PoE-powered device (PD) is connected to the port.</p> <p><b>Solid blue:</b> A PD is connected and the port is supplying power successfully.</p> <p><b>Solid yellow:</b> Indicates one of the following failures, which prevents the port from supplying power:</p> <ul style="list-style-type: none"> <li>• A short circuit occurred on the PoE power circuit.</li> <li>• The PoE power demand exceeds the available power.</li> <li>• The PoE current exceeds the PD's classification.</li> <li>• An out-of-proper-voltage band condition occurred.</li> </ul>
Port LEDs for SFP+ ports numbered 49 through 52	<p><b>Off:</b> No SFP module link is established on the fiber port.</p> <p><b>Solid green:</b> The fiber port established a 10G link.</p> <p><b>Blinking green:</b> The fiber port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The fiber port established a 1G link.</p> <p><b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 1G.</p>
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:</p> <p><b>Solid green:</b> The port established a 1G link.</p> <p><b>Solid yellow:</b> The port established a 100M link.</p> <p><b>Off:</b> No link is established on the port.</p> <hr/> <p>Right LED, activity and link status:</p> <p><b>Solid green:</b> The port established a link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets.</p> <p><b>Off:</b> No link is established on the port.</p>

## Model M4350-24X4V (SKU XSM4328CV)

This section describes the switch hardware features for model M4350-24X4V (SKU XSM4328CV).

## Fully Managed Switches M4350 Series

This full-width model provides a switching fabric of 680 Gbps and supports the following port configurations:

- Twenty-four PoE+ (802.3at) multispeed Ethernet RJ-45 ports that support 10 Gbps, 5 Gbps, 2.5 Gbps, 1 Gbps, and 100 Mbps  
The total PoE budget for this model is 576W, optionally expandable to up to 720W.
- Four SFP28 fiber uplink ports that support 25 Gbps, 10 Gbps, or 1 Gbps transceiver modules

### Front panel model M4350-24X4V



Figure 9. Front panel model M4350-24X4V

From left to right, the front panel of model M4350-24X4V provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, PoE MAX, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-24X4V](#) on page 28)
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38)
- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39)
- **24 multispeed PoE+ Ethernet ports, numbered 1 through 24:** 24 PoE+ (802.3at) 10G/5G/2.5G/1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-24X4V](#) on page 28), with a total PoE budget of 576W for the switch. This PoE budget is optionally expandable to up to 720W.
- **4 SFP28 ports, numbered 25 through 28:** Four 25G/10G/1G SFP28 fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-24X4V](#) on page 28)  
For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

### Back panel model M4350-24X4V



Figure 10. Back panel model M4350-24X4V

**Note:** Although the previous figure shows an optional auxiliary power supply (APS) installed in the power supply unit (PSU) bay, this models ships *without* an APS, and the PSU bay is closed with a PSU cover.

From left to right, the back panel of model M4350-24X4V provides the following common components, which are clearly named or numbered on the back panel:

- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-24X4V](#) on page 28)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Four fans placed in two groups of two fans (FAN 1 + FAN 2 and FAN 3 + FAN 4)
- **AC power receptacle:** AC receptacle for the internal PSU. The PSU can accept 100-240V ~ 50-60 Hz, 10A.
- **PSU bay:** One PSU bay (PSU 1) that is closed with a PSU cover. For information about ordering an optional APS that you can install in the PSU bay, contact NETGEAR.

## LEDs model M4350-24X4V

This section describes the LED designations of the model M4350-24X4V. The LEDs are clearly named or numbered on the front panel and the back panel.

Table 5. LEDs of model M4350-24X4V

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<p><b>Solid green:</b> The switch is powered on and operating normally.</p> <p><b>Solid yellow:</b> The switch is starting.</p> <p><b>Off:</b> Power is not supplied to the switch.</p>
FAN LED	<p><b>Solid green:</b> The fans are functioning normally.</p> <p><b>Solid yellow:</b> One or more fans are malfunctioning.</p>
PoE MAX LED	<p><b>Off:</b> Sufficient (more than 7W of) PoE power is available.</p> <p><b>Solid yellow:</b> Less than 7W of PoE power is available.</p> <p><b>Blinking yellow:</b> At least once during the previous two minutes, less than 7W of PoE power was available.</p>
STACK MASTER LED	<p><b>Solid green:</b> The switch is functioning as the stack management switch.</p> <p><b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.</p>
STACK ID LED	<p>The Stack LED contains segments that can indicate the stack unit number of the switch:</p> <p><b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number.</p> <p><b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off.</p> <p><b>Off:</b> The switch is not a member of a stack.</p>
<b>Port LEDs, Front Panel</b>	
Port LEDs for PoE+ multispeed Ethernet ports numbered 1 through 24	<p>Left LED, speed, activity, and link status:</p> <p><b>Off:</b> No link is established on the port.</p> <p><b>Solid green:</b> The port established a 10G link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The port established a 5G, 2.5G, 1G, or 100M link.</p> <p><b>Blinking yellow:</b> The port is transmitting or receiving packets at 5G, 2.5G, 1G, or 100M.</p> <hr/> <p>Right LED, PoE status:</p> <p><b>Off:</b> No PoE-powered device (PD) is connected to the port.</p> <p><b>Solid blue:</b> A PD is connected and the port is supplying power successfully.</p> <p><b>Solid yellow:</b> Indicates one of the following failures, which prevents the port from supplying power:</p> <ul style="list-style-type: none"> <li>• A short circuit occurred on the PoE power circuit.</li> <li>• The PoE power demand exceeds the available power.</li> <li>• The PoE current exceeds the PD's classification.</li> <li>• An out-of-proper-voltage band condition occurred.</li> </ul>

Table 5. LEDs of model M4350-24X4V (Continued)

LED	Description
Port LEDs for SFP28 ports numbered 25 through 28	<p><b>Off:</b> No SFP module link is established on the fiber port.</p> <p><b>Solid green:</b> The fiber port established a 25G link.</p> <p><b>Blinking green:</b> The fiber port is transmitting or receiving packets at 25G.</p> <p><b>Solid yellow:</b> The fiber port established a 10G or 1G link.</p> <p><b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 10G or 1G.</p>
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:</p> <p><b>Solid green:</b> The port established a 1G link.</p> <p><b>Solid yellow:</b> The port established a 100 M link.</p> <p><b>Off:</b> No link is established on the port.</p> <hr/> <p>Right LED, activity and link status:</p> <p><b>Solid green:</b> The port established a link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets.</p> <p><b>Off:</b> No link is established on the port.</p>

## Model M4350-24F4V (SKU XSM4328FV)

This section describes the switch hardware features for model M4350-24F4V (SKU XSM4328FV).

This full-width model provides a switching fabric of 680 Gbps and supports the following port configurations:

- Twenty-four SFP+ fiber uplink ports that support 10 Gbps or 1 Gbps transceiver modules
- Four SFP28 fiber uplink ports that support 25 Gbps, 10 Gbps, or 1 Gbps transceiver modules

### Front panel model M4350-24F4V



Figure 11. Front panel model M4350-24F4V

## Fully Managed Switches M4350 Series

From left to right, the front panel of model M4350-24F4V provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-24F4V](#) on page 31)
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38)
- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39)
- **24 SFP+ ports, numbered 1 through 24:** Twenty-four 10G/1G SFP+ ports, each with a combined speed and activity LED (see [LEDs model M4350-24F4V](#) on page 31)
- **4 SFP28 ports, numbered 25 through 28:** Four 25G/10G/1G SFP28 fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-24F4V](#) on page 31)

For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

## Back panel model M4350-24F4V



Figure 12. Back panel model M4350-24F4V

From left to right, the back panel of model M4350-24F4V provides the following common components, which are clearly named or numbered on the back panel:

- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-24F4V](#) on page 31)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Four fans placed in two groups: one group of three fans (FAN 1+ FAN 2, and FAN 3) and one single fan (FAN 4)
- **AC power receptacle:** AC receptacle for the internal PSU. The PSU can accept 100-240V ~ 50-60 Hz, 3A.
- **PSU bay:** One PSU bay (PSU 1) that is closed with a PSU cover. For information about ordering an optional APS that you can install in the PSU bay, contact NETGEAR.

## LEDs model M4350-24F4V

This section describes the LED designations of model M4350-24F4V. The LEDs are clearly named or numbered on the front and back panels.

Table 6. LEDs of model M4350-24F4V

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<p><b>Solid green:</b> The switch is powered on and operating normally.</p> <p><b>Solid yellow:</b> The switch is starting.</p> <p><b>Off:</b> Power is not supplied to the switch.</p>
FAN LED	<p><b>Solid green:</b> The fans are functioning normally.</p> <p><b>Solid yellow:</b> One or more fans are malfunctioning.</p>
STACK MASTER LED	<p><b>Solid green:</b> The switch is functioning as the stack management switch.</p> <p><b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.</p>
STACK ID LED	<p>The Stack LED contains segments that can indicate the stack unit number of the switch:</p> <p><b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number.</p> <p><b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off.</p> <p><b>Off:</b> The switch is not a member of a stack.</p>
<b>Port LEDs, Front Panel</b>	
Port LEDs for SFP+ ports numbered 1 through 24	<p><b>Off:</b> No SFP module link is established on the fiber port.</p> <p><b>Solid green:</b> The fiber port established a 10G link.</p> <p><b>Blinking green:</b> The fiber port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The fiber port established a 1G link.</p> <p><b>Blinking yellow:</b> The fiber port is transmitting or receiving packets 1G.</p>
Port LEDs for SFP28 ports numbered 25 through 28	<p><b>Off:</b> No SFP module link is established on the fiber port.</p> <p><b>Solid green:</b> The fiber port established a 25G link.</p> <p><b>Blinking green:</b> The fiber port is transmitting or receiving packets at 25G.</p> <p><b>Solid yellow:</b> The fiber port established a 10G or 1G link.</p> <p><b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 10G or 1G.</p>

Table 6. LEDs of model M4350-24F4V (Continued)

LED	Description
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:</p> <p><b>Solid green:</b> The port established a 1G link.  <b>Solid yellow:</b> The port established a 100 M link.  <b>Off:</b> No link is established on the port.</p> <hr/> <p>Right LED, activity and link status:</p> <p><b>Solid green:</b> The port established a link.  <b>Blinking green:</b> The port is transmitting or receiving packets.  <b>Off:</b> No link is established on the port.</p>

## Model M4350-44M4X4V (SKU MSM4352)

This section describes the switch hardware features for model M4350-44M4X4V (SKU MSM4352).

This full-width model provides a switching fabric of 500 Gbps and supports the following port configurations:

- Forty-four PoE++ (802.3bt) multispeed Ethernet RJ-45 ports that support 2.5 Gbps, 1 Gbps, and 100 Mbps
- Four PoE++ (802.3bt) multispeed Ethernet RJ-45 ports that support 10 Gbps, 5 Gbps, 2.5 Gbps, 1 Gbps, and 100 Mbps
- Four SFP28 fiber uplink ports that support 25 Gbps, 10 Gbps, or 1 Gbps transceiver modules

The total PoE budget for this model is 194W, optionally expandable to up to 1714W (at 110V) or 3314W (at 220V).

## Front panel model M4350-44M4X4V



Figure 13. Front panel model M4350-44M4X4V

## Fully Managed Switches M4350 Series

From left to right, the front panel of model M4350-44M4X4V provides the following common components, which are clearly named or numbered on the front panel:

- **POWER, FAN, PoE MAX, STACK MASTER, and STACK ID:** System LEDs (see [LEDs model M4350-44M4X4V](#) on page 34).
- **RESET:** Recessed dual-function **Reset** button (see [Dual-function Reset button](#) on page 38).
- **USB C:** One USB Type-C console port (see [USB Type-C console port](#) on page 39).
- **44 multispeed PoE++ Ethernet ports, numbered 1 through 44:** 44 PoE++ (802.3bt) 2.5G/1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-44M4X4V](#) on page 34)
- **4 multispeed PoE++ Ethernet ports, numbered 45 through 48:** 4 PoE++ (802.3bt) 10G/5G/2.5G/1G/100M autosensing RJ-45 ports, each with a left LED and a right LED (see [LEDs model M4350-44M4X4V](#) on page 34)
- **4 SFP28 ports, numbered 49 through 52:** Four 25G/10G/1G SFP28 fiber uplink ports, each with a combined speed and activity LED (see [LEDs model M4350-44M4X4V](#) on page 34)  
For information about optional devices for the fiber uplink ports, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

The total PoE budget for the switch is 194W. This PoE budget is optionally expandable to up to 1714W (at 110V) or 3314W (at 220V).

## Back panel model M4350-44M4X4V



Figure 14. Back panel model M4350-44M4X4V

**Note:** Although the previous figure shows optional auxiliary power supplies (APSS) installed in the power supply unit (PSU) bays, this model ships *without* APSS, and the PSU bays are closed with PSU covers.

## Fully Managed Switches M4350 Series

From left to right, the back panel of model M4350-44M4X4V provides the following common components, which are clearly named or numbered on the back panel:

- **On/Off power switch:** One **On/Off power switch** that lets you turn on or turn off power to the switch
- **OOB:** One out-of-band (OOB) 1G Ethernet port (see [Out-of-band 1G Ethernet port](#) on page 39) with a left LED that indicates the speed and a right LED that indicates the activity (see [LEDs model M4350-24F4V](#) on page 31)
- **USB:** Two USB 3.0 ports (see [USB 3.0 ports](#) on page 39)
- **Fans:** Four fans placed together in one group (FAN 1 + FAN 2 + FAN 3 + FAN 4)
- **AC power receptacle.** AC receptacle for the internal PSU. The PSU can accept 100-240V ~ 50-60 Hz, 10A.
- **PSU bays:** Two PSU bays (PSU 1 and PSU 2) that are closed with PSU covers. For information about ordering optional APSs that you can install in the PSU bays, contact NETGEAR.

## LEDs model M4350-44M4X4V

This section describes the LED designations of model M4350-44M4X4V. The LEDs are clearly named or numbered on the front and back panels.

Table 7. LEDs of model M4350-44M4X4V

LED	Description
<b>System LEDs, Front Panel</b>	
POWER LED	<b>Solid green:</b> The switch is powered on and operating normally. <b>Solid yellow:</b> The switch is starting. <b>Off:</b> Power is not supplied to the switch.
FAN LED	<b>Solid green:</b> The fans are functioning normally. <b>Solid yellow:</b> One or more fans are malfunctioning.
PoE MAX LED	<b>Off:</b> Sufficient (more than 7W of) PoE power is available. <b>Solid yellow:</b> Less than 7W of PoE power is available. <b>Blinking yellow:</b> At least once during the previous two minutes, less than 7W of PoE power was available.
STACK MASTER LED	<b>Solid green:</b> The switch is functioning as the stack management switch. <b>Off:</b> The switch is functioning as a stack member switch or is not a member of a stack.

## Fully Managed Switches M4350 Series

Table 7. LEDs of model M4350-44M4X4V (Continued)

LED	Description
STACK ID LED	<p>The Stack LED contains segments that can indicate the stack unit number of the switch:</p> <p><b>Solid green indicating a number:</b> The switch is a member of a stack. The LED displays the stack unit number.</p> <p><b>Solid green indicating E:</b> The switch functions in ECO mode with all port LEDs turned off.</p> <p><b>Off:</b> The switch is not a member of a stack.</p>
<b>Port LEDs, Front Panel</b>	
Port LEDs for PoE++ multispeed Ethernet ports numbered 1 through 44	<p>Left LED, speed, activity, and link status:</p> <p><b>Off:</b> No link is established on the port.</p> <p><b>Solid green:</b> The port established a 2.5G link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets at 2.5G.</p> <p><b>Solid yellow:</b> The port established a 1G or 100M link.</p> <p><b>Blinking yellow:</b> The port is transmitting or receiving packets at 1G or 100M.</p> <hr/> <p>Right LED, PoE status:</p> <p><b>Off:</b> No PoE-powered device (PD) is connected to the port.</p> <p><b>Solid blue:</b> A PD is connected and the port is supplying power successfully.</p> <p><b>Solid yellow:</b> Indicates one of the following failures, which prevents the port from supplying power:</p> <ul style="list-style-type: none"> <li>• A short circuit occurred on the PoE power circuit.</li> <li>• The PoE power demand exceeds the available power.</li> <li>• The PoE current exceeds the PD's classification.</li> <li>• An out-of-proper-voltage band condition occurred.</li> </ul>
Port LEDs for PoE++ multispeed Ethernet ports numbered 45 through 48	<p>Left LED, speed, activity, and link status:</p> <p><b>Off:</b> No link is established on the port.</p> <p><b>Solid green:</b> The port established a 10G link.</p> <p><b>Blinking green:</b> The port is transmitting or receiving packets at 10G.</p> <p><b>Solid yellow:</b> The port established a 5G, 2.5G, 1G, or 100M link.</p> <p><b>Blinking yellow:</b> The port is transmitting or receiving packets at 5G, 2.5G, 1G, or 100M.</p> <hr/> <p>Right LED, PoE status:</p> <p><b>Off:</b> No PoE-powered device (PD) is connected to the port.</p> <p><b>Solid blue:</b> A PD is connected and the port is supplying power successfully.</p> <p><b>Solid yellow:</b> Indicates one of the following failures, which prevents the port from supplying power:</p> <ul style="list-style-type: none"> <li>• A short circuit occurred on the PoE power circuit.</li> <li>• The PoE power demand exceeds the available power.</li> <li>• The PoE current exceeds the PD's classification.</li> <li>• An out-of-proper-voltage band condition occurred.</li> </ul>

Table 7. LEDs of model M4350-44M4X4V (Continued)

LED	Description
Port LEDs for SFP28 ports numbered 49 through 52	<p><b>Off:</b> No SFP module link is established on the fiber port.  <b>Solid green:</b> The fiber port established a 25G link.  <b>Blinking green:</b> The fiber port is transmitting or receiving packets at 25G.  <b>Solid yellow:</b> The fiber port established a 10G or 1G link.  <b>Blinking yellow:</b> The fiber port is transmitting or receiving packets at 10G or 1G.</p>
<b>Port LEDs, Back Panel</b>	
OOB Ethernet port LEDs	<p>Left LED, speed status:  <b>Solid green:</b> The port established a 1 Gbps link.  <b>Solid yellow:</b> The port established a 100 Mbps link.  <b>Off:</b> No link is established on the port.</p> <hr/> <p>Right LED, activity and link status:  <b>Solid green:</b> The port established a link.  <b>Blinking green:</b> The port is transmitting or receiving packets.  <b>Off:</b> No link is established on the port.</p>

## Common hardware interfaces

This section describes the hardware interfaces that are common to the M4350 series switch models.

### Gigabit and Multispeed Gigabit RJ-45 copper ports

All 1 Gbps and multispeed Gigabit RJ-45 copper ports support autosensing. When you insert a cable into an RJ-45 port, the switch automatically detects the attached device's maximum speed: 100 Mbps, 1 Gbps, and, depending on the model, 2.5 Gbps, 5 Gbps, or 10 Gbps. For devices that support 100 Mbps, the switch automatically detects the duplex mode (half-duplex or full-duplex).

We recommend using the following cables:

- Category 5e (Cat 5e) or higher-rated cable for a copper port at 1 Gbps or 2.5 Gbps.
- Category 6a (Cat 6a) or higher-rated cable for a copper port at 10 Gbps.

For more information about Ethernet cables, see [Speed and cables](#) on page 46.

To simplify the procedure for attaching devices, all RJ-45 ports support Auto Uplink technology. This technology allows attaching devices to the RJ-45 ports with either straight-through or crossover cables.

When you insert a cable into the switch's RJ-45 port, the switch automatically performs the following actions:

- Senses whether the cable is a straight-through or crossover cable.
- Determines whether the link to the attached device requires a normal connection (such as when you are connecting the port to a computer) or an uplink connection (such as when you are connecting the port to a router, switch, or hub).
- Automatically configures the RJ-45 port to enable communications with the attached device. The Auto Uplink technology compensates for setting uplink connections while eliminating concern about whether to use crossover or straight-through cables when you attach devices.

## Fiber transceiver modules and cables for SFP+ and SFP28 ports

To enable high-speed fiber and Gigabit Ethernet, short- and long-distance connections on the switch, SFP+ and SFP28 fiber ports can accommodate standard 1G SFP and 10G SFP+ transceiver modules and direct attach cables (DACs), all of which are sold separately. The switch also supports third-party, high-speed fiber transceiver modules and DACs.

The switch supports the following NETGEAR SFP and SFP+ transceiver modules and cables:

- Short-reach fiber transceiver modules:
  - **AGM731F**: SFP transceiver 1000BASE-SX, SFP multimode LC GBIC
  - **AXM761**: SFP+ transceiver 10GBASE-SR, SFP+ multimode LC GBIC
- Long-reach fiber transceiver modules:
  - **AGM732F**: SFP transceiver 1000BASE-LX, SFP single mode LC GBIC
  - **AXM762**: SFP+ transceiver 10GBASE-LR, SFP+ single mode LC GBIC
  - **AXM763**: SFP+ transceiver 10GBASE-LRM, SFP+ multimode LC GBIC
  - **AXM764**: SFP+ transceiver 10GBASE-LR Lite, SFP+ single mode LC GBIC
- Gigabit transceiver modules:
  - **AGM734**: SFP transceiver 1000BASE-T, SFP copper RJ-45 GBIC
  - **AXM765**: SFP+ transceiver 10GBASE-T, SFP+ copper RJ-45 GBIC

- Direct attach cables:
  - **AXC761**: SFP+ 1 m (about 3.3 ft) direct attach cable
  - **AXC763**: SFP+ 3 m (about 10 ft) direct attach cable

For more information about NETGEAR SFP and SFP+ transceiver modules and cables, visit [netgear.com/business/wired/switches/accessories](http://netgear.com/business/wired/switches/accessories). If purchased, transceiver modules and cables are shipped separately from the switch.

The following table shows the models and the ports that can support fiber transceiver modules. SFP+ and SFP28 ports are backward compatible with SFP modules.

Table 8. SFP+ and SFP28 ports

Model Number	Type of Port	Port Numbers
M4350-8X8F	SFP+	9 through 16
M4350-12X12F	SFP+	13 through 24
M4350-24G4XF	SFP+	25 through 28
M4350-48G4XF	SFP+	49 through 52
M4350-24X4V	SFP28	25 through 28
M4350-24F4V	SFP+	1 through 24
	SFP28	25 through 28
M4350-44M4X4V	SFP28	49 through 52

## Dual-function Reset button

The switch provides a recessed, dual-function **Reset** button on the front panel. Depending on how long you press the button (for details, see the following procedure), this button lets you perform the following tasks:

- **Restart (power-cycle) the switch:** The switch restarts. All saved settings are retained. We recommend that you save the settings before you press the **Reset** button to restart the switch.
- **Reset the switch to factory default settings:** All settings are erased and the switch restarts with factory default settings.

### To restart or reset the switch using the Reset button:

1. Insert a device such as a straightened paper clip into the opening.
2. Do one of the following:
  - **Restart the switch:** Press the **Reset** button for 2 seconds. (Do not press the button for 5 seconds!)
  - **Reset the switch to factory default settings:** Press the **Reset** button for at least 5 seconds.

During the restart or reset process, the Power LED lights yellow.

## USB 3.0 ports

The switch provides two USB 3.0 ports that let you connect the switch to storage devices, upgrade firmware from a disk, back up the configuration, and allow for the collection of a memory dump for debugging purposes.

A device that you attach to the USB port must comply with the following requirements:

- The USB device must support USB 3.0.
- The USB device must support the FAT32 or VFAT file type. The NTFS file type is not supported.

## Out-of-band 1G Ethernet port

The back panel of the switch provides one out-of-band (OOB) 1000BASE-T RJ-45 Ethernet port that lets you access the switch over its main UI or over a Telnet or SSH session.

## USB Type-C console port

The switch provides one USB Type-C console port for console access only. The product package includes one USB console cable with a USB-A connector and a USB-C connector. You can use this cable to connect the USB Type-C console port on the switch to a USB port on a VT100-compatible terminal or a Windows-based computer that runs VT100 terminal emulation software.

**Note:** For you to be able to use the USB Type-C port and access the switch from a Windows-based computer that runs VT100 terminal emulation software, you must install the USB driver on the computer. To download the VT100 terminal emulation software and Windows USB driver, visit [netgear.com/support](http://netgear.com/support).

# PoE port capacities and budgets

The PoE models support PoE+ or PoE++ ports with the port capacities that are described in the following table.

Table 9. PoE port capacities

Model	PoE ports	Port Capacity
M4350-24X4V	24 PoE+ (802.3at)	30W
M4350-24G4XF	24 PoE+ (802.3at)	30W
M4350-48G4XF	48 PoE+ (802.3at)	30W
M4350-44M4X4V	48 PoE++ (802.3bt)	90W

The PoE models support the PoE budgets that are described in the following table.

Table 10. PoE switch budgets

Model	Switch PoE Budget	
M4350-24X4V (1 PSU bay for optional APS)	Internal PSU only	576W
	Add 1 x APS350W	700W
	Add 1 x APS600Wv2 <sup>2</sup>	720W
M4350-24G4XF (1 PSU bay for optional APS)	Internal PSU only	648W
	Add 1 x APS350W <sup>1</sup>	720W

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Table 10. PoE switch budgets (Continued)

Model	Switch PoE Budget	
M4350-48G4XF (2 PSU bays for optional APSs)	Internal PSU only	236W
	Add 1 x APS350W	436W
	Add 1 x APS600Wv2	636W
	Add 1x APS920W	892W
	Add 1x APS2000W at 110V	956W
	Add 1x APS2000W at 220V	1440W
	Add 2 x APS350W	716W
	Add 2 x APS600Wv2	1116W
	Add 2x APS920W	1440W
	Add 2x APS2000W at 110V	1440W
	Add 2x APS2000W at 220V	1440W
	M4350-44M4X4V (2 PSU bays for optional APSs)	Internal PSU only
Add 1 x APS350W		394W
Add 1 x APS600Wv2		594W
Add 1x APS920W		850W
Add 1x APS2000W at 110V		914W
Add 1x APS2000W at 220V		1714W
Add 2 x APS350W		674W
Add 2 x APS600Wv2		1074W
Add 2x APS920W		1586W
Add 2x APS2000W at 110V		1714W
Add 2x APS2000W at 220V		3314W

1. If you install a more powerful APS such as an APS600Wv2, APS920W, or APS2000W, the PoE budget does not increase.

2. If you install a more powerful APS such as an APS920W or APS2000W, the PoE budget does not increase.

Supplied power is prioritized according to the port order, up to the total power budget of the device. The lowest-numbered PoE port (for example, port 1) receives the highest PoE priority, while the highest-numbered PoE port (for example, port 24) is relegated to the lowest PoE priority.

If the power requirements for attached powered devices (PDs) exceed the total power budget of the switch, the PoE power to the device on the highest-numbered active PoE port is disabled to make sure that the devices connected to the higher-priority, lower-numbered PoE ports are supported first.

Although a device might be listed as an 802.3bt PoE+-powered or 802.3at PoE+-powered device, it might not require the maximum power limit that is specified by its IEEE standard. Many devices require less power, allowing all PoE ports to be active simultaneously when the devices correctly report their PoE class to the switch.

The following table shows the standard power ranges, calculated with the maximum cable length of 328 feet (100 meters). If a device receives insufficient PoE power from the switch, consider using a shorter cable.

Table 11. PoE classes and PoE power allocations

Device Class	Compatible PoE Standard	Class Description	Maximum Power Reserved for the PD	Power Delivered to the PD
0	PoE, PoE+, and PoE++	Default power (full)	15.4W	0.44W-15.8W
1	PoE, PoE+, and PoE++	Very low power	4.0W	0.44W-3.84W
2	PoE, PoE+, and PoE++	Low power	7.0W	3.84W-7.2W
3	PoE, PoE+, and PoE++	Mid power	15.4W	6.49W-15.9W
4	PoE+ and PoE++	High power	30.0W	12.95W-30.8W
5	PoE++	Ultra high power	45.0W	25.5W-47.0W
6	PoE++	Ultra high power	60.0W	51.0W-64.4W
7	PoE++	Ultra high power	75.0W	62.0W-81.1W
8	PoE++	Ultra high power	90.0W	71.0W-96.5W

For more information about PoE, see the installation guide and user manuals, which you can download by visiting [netgear.com/support/download](http://netgear.com/support/download).

## Auxiliary power supplies

An internal power supply is preinstalled in all models. Some models provide one or more power supply unit (PSU) bays in which you can install optional auxiliary power supplies (APSS).

The switch supports the following APSS:

- **APS350W**: +54.5VDC, 6.4A DC output

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- **APS600Wv2**: +56 VDC, 11A DC output
- **APS920W**: +54.5VDC, 16.88A DC output
- **APS2000W**: +54.5 VDC, 18.35A @ 90-136 VAC DC output; +54.5 VDC, 29.36A @ 180-220 VAC DC output; +54.5 VDC, 36.7A @ 220-264 VAC DC output

For information about purchasing an optional APS, contact NETGEAR or your local NETGEAR reseller.

The following table describes the available APSs and the possible configurations

Table 12. Supported APSs

Switch Model	PoE Supported	Internal PSU	PSU Bays	Possible APS Configurations	N+1 Power Redundancy Supported
M4350-8X8F	No	240W	None	--	No
M4350-12X12F	No	240W	None	--	No
M4350-24G4XF	Yes	780W	1	1x APS350W or 1x APS600Wv2 or 1x APS920W	Yes
M4350-48G4XF	Yes	400W	2	1x or 2x APS350W 1x or 2x APS600Wv2 1x or 2x APS920W 1x or 2x APS2000W or any combination of these APSs.	Yes
M4350-24X4V	Yes	780W	1	1x APS350W or 1x APS600Wv2 <sup>2</sup>	Yes
M4350-24F4V	No	240W	1	1x APS350W <sup>3</sup>	Yes
M4350-44M4X4V	Yes	400W	2	1x or 2x APS350W 1x or 2x APS600Wv2 1x or 2x APS920W 1x or 2x APS2000W or any combination of these APSs.	Yes

1. If you install a more powerful APS (an APS2000W), the PoE budget does not increase.
2. If you install a more powerful APS such as an APS920W or APS2000W, the PoE budget does not increase.
3. Although you can install a more powerful APS, you can use the APS only for redundancy.

# Fans

Each model integrates multiple temperature sensors that automatically regulate the fan speed. A half-width model integrates three internal fans. A full-width model integrates four internal fans.

The switch includes internal fans that support intelligent operation, which enables the switch to automatically start the operation of the fans, gradually increase the speed of the fans, and either halt PoE or block traffic if the internal switch temperature exceeds a critical level.

The fans function with variable speeds, depending on the internal switch temperature, use of the PoE budget, and traffic load. The fan speed can temporarily reach 100 percent.

In Quiet mode, the switch might automatically change back and forth between Cool mode and Quiet mode until the detected internal switch temperature or use of the PoE budget returns within safe operational thresholds. A full traffic load can also cause the internal switch temperature to increase and the fans to function in Cool mode.

The fans support the following modes:

- **Quiet:** Quiet mode is the default mode. At approximate 30 percent speed, the fans produce minimal sound. At higher speeds, the sound of the fans becomes more noticeable. At 100 percent speed, the fans produce significant noise.

Table 13. Quiet mode fan settings

Model number	PoE Power Load	Fan Duty Range	Room Temp. Range	Internal Switch Temp. (Top)	Acoustic Noise Range
M4350-24G4XF	720W	28 to	25°C to	33.1°C to	33dBA to
	720W	60	45°C	48.2°C	52dBA
M4350-48G4XF	1440W	28 to	25°C to	33.4°C to	33dBA to
	1440W	60	45°C	48.5°C	52dBA
M4350-44M4X4V	3314W	28 to	25°C to	43.3°C to	34dBA to
	3314W	60	45°C	50.1°C	52dBA
M4350-8X8F	N/A	27 to	25°C to	34.4°C to	34dBA to
	N/A	70	50°C	51.7°C	56dBA
M4350-12X12F	N/A	27 to	25°C to	31.9°C to	34dBA to
	N/A	100	50°C	51.5°C	64dBA

## Fully Managed Switches M4350 Series

Table 13. Quiet mode fan settings (Continued)

Model number	PoE Power Load	Fan Duty Range	Room Temp. Range	Internal Switch Temp. (Top)	Acoustic Noise Range
M4350-24X4V	720W	30 to	25°C to	32.3°C to	35dBA to
	720W	70	45°C	46.6°C	57dBA
M4350-24F4V	N/A	30 to	25°C to	34.2°C to	34dBA to
	N/A	85	50°C	52.4°C	62dBA

- **Cool:** The fans function between 60 and 100 percent speed to provide maximum cooling, and produce significant noise.

Table 14. Cool mode fan settings

Model number	PoE Power Load	Fan Duty	Room Temp.	Internal Switch Temp. (Top)	Acoustic Noise
M4350-24G4XF	720W	60	25°C	33.9°C	52dBA
M4350-48G4XF	1440W	60	25°C	31.3°C	52dBA
M4350-44M4X4V	3314W	60	25°C	38.3°C	52dBA
M4350-8X8F	N/A	70	25°C	30.3°C	56dBA
M4350-12X12F	N/A	100	25°C	29.5°C	64dBA
M4350-24X4V	720W	70	25°C	29.6°C	57dBA
M4350-24F4V	N/A	85	25°C	30.3°C	62dBA

You can manually control the fans through either the audio-video (AV) user interface (UI) or the command-line interface (CLI). For more information about manually controlling the fans, see the following manuals, which you can download by visiting [netgear.com/support/download](http://netgear.com/support/download):

- Audio-video user manual
- CLI reference manual

If the fans are functioning in Quiet mode, the switch automatically manages the fans and turns on the fans or gradually increases the speed of the fans under the following conditions:

- **PoE+ and PoE++ models:** *Either* the internal switch temperature detected by the temperature sensor or sensors exceeds its threshold *or* a PoE budget is exceeded.
- **Other models:** *Either* the internal switch temperature detected by the temperature sensor exceeds its threshold *or* the switch processes a full traffic load.

If the internal switch temperature detected by a sensor exceeds a threshold, the switch records a fan operation message in its log, and might change from Quiet mode to Cool mode. If the internal switch temperature exceeds a critical threshold and an alarm is generated, the operation of the switch might be limited, and for PoE models, PoE might be disabled. To return the switch to normal operation, you must restart the switch.

## Speed and cables

The following table describes the network cables that you can use for the switch connections and the speeds that these cables can support, up to 100 meters (328 feet).

Table 15. Speed and cables

Speed	Cable Type
100 Mbps	Category 5 (Cat 5) or higher rated <b>Note:</b> In most business networks, Cat 5e cables superseded Cat 5 cables.
1 Gbps or 2.5 Gbps	Category 5e (Cat 5e) or higher rated
5 Gbps or 10 Gbps	Category 6a (Cat 6a) or higher rated

# 3

## Installation

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This chapter describes the installation procedures for the switch.

Switch installation involves the steps that are described in the following sections:

- [Step 1: Prepare the site](#)
- [Step 2: Protect against electrostatic discharge](#)
- [Step 3: Unpack the switch](#)
- [Step 4: Mount or place the switch](#)
- [Optional Step 5: Install fiber transceiver modules](#)
- [Optional Step 6: Install an auxiliary power supply](#)
- [Step 7: Connect devices to the switch](#)
- [Step 8: Check the installation](#)
- [Step 9: Apply AC power and check the LEDs](#)
- [Optional Step 10: Connect a console to the switch](#)

# Step 1: Prepare the site

Before you install the switch, make sure that the operating environment meets the site requirements that are listed in the following table.

Table 16. Site requirements

Characteristics	Requirements
Mounting	<p><b>Desktop installations:</b> Provide a flat table or shelf surface.</p> <p><b>Rack-mount installations:</b> Use a 19-inch (48.3-centimeter) EIA standard equipment rack that is grounded and physically secure. You also need the rack-mount kit that is supplied with the switch.</p>
Access	Locate the switch in a position that allows you to access the front panel ports, view the front panel LEDs, and access the power connector and, if applicable, PSU power connectors on the back panel.
Power source	Use the AC power cable or cables that are supplied with the switch. Make sure that the AC outlet is not controlled by a wall switch, which can accidentally turn off power to the outlet and the switch.
Cabling	Route cables to avoid sources of electrical noise such as radio transmitters, broadcast amplifiers, power lines, and fluorescent lighting fixtures.
Environmental	<p><b>Temperature:</b> Install the switch in a dry area with an ambient temperature that is as follows:</p> <ul style="list-style-type: none"> <li>• <b>PoE models:</b> Between 32°F and 104°F (0°C and 40°C).</li> <li>• <b>Non-PoE models:</b> Between 32°F and 113°F (0°C and 45°C).</li> </ul> <p>Keep the switch away from heat sources such as direct sunlight, warm-air exhausts, hot-air vents, and heaters.</p> <p><b>Operating humidity:</b> The maximum relative humidity of the installation location must not exceed 90%, noncondensing.</p> <p><b>Ventilation:</b> Do not restrict airflow by covering or obstructing air inlets on the sides of the switch. Keep at least 2 inches (5.08 centimeters) free on all sides for cooling. The room or wiring closet in which you install the switch must provide adequate airflow.</p> <p><b>Operating conditions:</b> Keep the switch at least 6 feet (1.83 meters) away from the nearest source of electromagnetic noise, such as a photocopy machine.</p>

## Step 2: Protect against electrostatic discharge

**WARNING:** Static electricity can harm delicate components inside your system. To prevent static damage, discharge static electricity from your body before you touch any of the electronic components, such as the microprocessor. You can do so by periodically touching an unpainted metal surface on the switch.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, leave it in the antistatic package until you are ready to install it. Just before unwrapping the antistatic package, discharge static electricity from your body.
- Before moving a sensitive component, place it in an antistatic container or package.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads, workbench pads, and an antistatic grounding strap.

## Step 3: Unpack the switch

The package contents for the full-width and half-width models differ.

### Unpack a full-width model

This section applies to the following full-width models:

- M4350-24G4XF
- M4350-48G4XF
- M4350-24X4V
- M4350-24F4V
- M4350-44M4X4V

The following figure shows the package contents for model M4350-44M4X4V, but the contents for all full-width models are very similar, other than the switch model.

## Fully Managed Switches M4350 Series

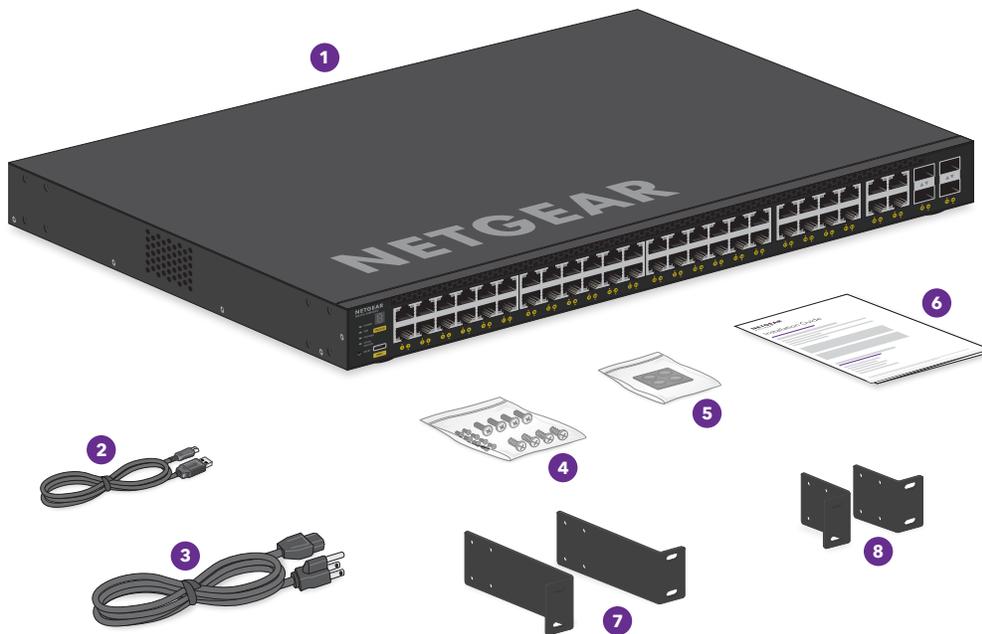


Figure 15. Package contents for an M4350 series full-width model

### To check the package contents:

1. Place the container on a clean flat surface, and cut all straps securing the container.
2. Unpack the hardware from the boxes by carefully removing the hardware and placing it on a secure and clean surface.
3. Remove all packing material.
4. Verify that the package contains the following items:

Number	Item
1	Switch of the model that you ordered <b>Note:</b> Rubber protection caps are installed in the SFP sockets. If you install an SFP transceiver module, you must remove the cap from the SFP socket.
2	Type-C USB console cable
3	AC power cable or cables (varies by region)

(Continued)

Number	Item
4	<p>A bag with the following screws for rack-mounting:</p> <ul style="list-style-type: none"><li>• Eight small screws to attach the brackets to the switch (four small screws for each side).</li><li>• Four medium-sized screws to attach the brackets to the rack (two screws for each side).</li><li>• Four large screws to attach the brackets to the rack (two screws for each side).</li></ul> <p><b>Note:</b> Depending on the type of rack, use either the medium-sized screws or the large screws to attach the brackets to the rack.</p>
5	Rubber feet for desktop or table installation
6	Installation guide
7	Two medium-sized brackets with a depth of 4.75 inches (12 cm). Use both of these brackets to mount the switch set back in a rack.
8	Two medium-sized brackets with a depth of 2.75 inches (7 cm). Use both of these brackets to mount the switch flush in a rack.

5. If any item is missing or damaged, contact your local NETGEAR reseller for replacement.

## Unpack a half-width model

This section applies to the following half-width models:

- M4350-8X8F
- M4350-12X12F

The following figure shows the package contents for model M4350-12X12F, but the contents for all half-width models are very similar, other than the switch model.

## Fully Managed Switches M4350 Series

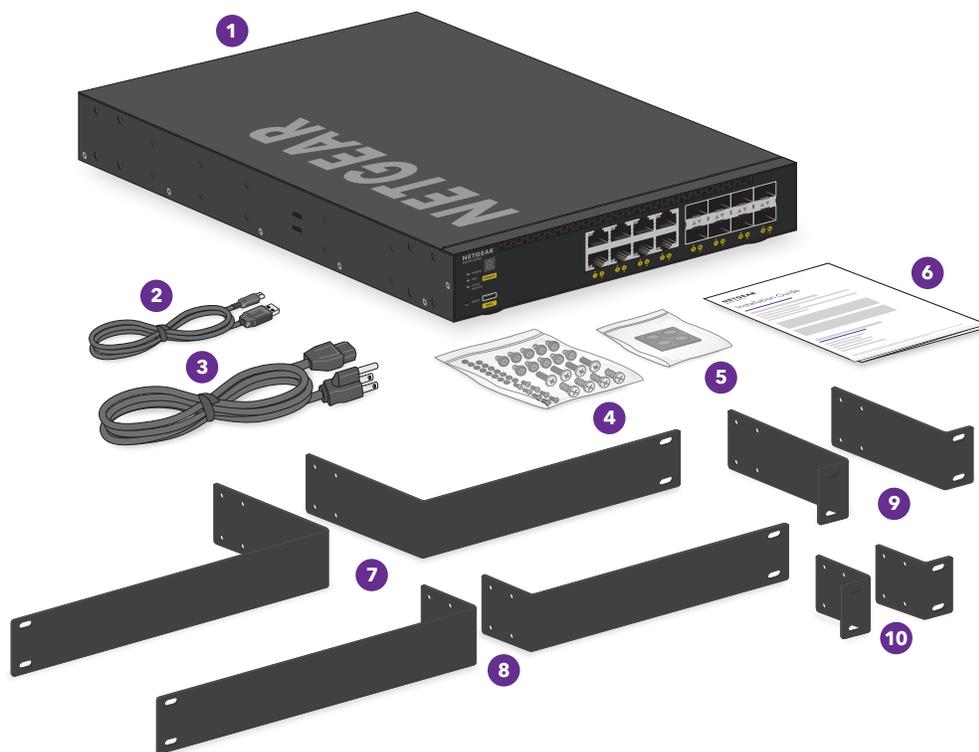


Figure 16. Package contents for an M4350 series half-width model

### To check the package contents:

1. Place the container on a clean flat surface, and cut all straps securing the container.
2. Unpack the hardware from the boxes by carefully removing the hardware and placing it on a secure and clean surface.
3. Remove all packing material.
4. Verify that the package contains the following items:

Number	Item
1	Switch of the model that you ordered <b>Note:</b> Rubber protection caps are installed in the SFP sockets. If you install an SFP transceiver module, you must remove the cap from the SFP socket.
2	AC power cable or cables (varies by region)
3	Type-C USB console cable

## Fully Managed Switches M4350 Series

(Continued)

Number	Item
4	<p>A bag with the following screws and washers for rack-mounting:</p> <ul style="list-style-type: none"><li>• Eight small screws to attach the brackets to the switch (four small screws for each side).</li><li>• Four medium-sized screws to attach the brackets to the rack (two screws for each side).</li><li>• Four large screws to attach the brackets to the rack (two screws for each side).</li></ul> <p><b>Note:</b> Depending on the type of rack, use either the medium-sized screws or the large screws to attach the brackets to the rack.</p> <ul style="list-style-type: none"><li>• 10 screws with a short thread to allow the switch to be attached to another half-width switch</li><li>• 10 or more washers for use with the 10 screws with a short thread.</li></ul>
5	Rubber feet for desktop or table installation
6	Installation guide
7	Two large brackets with a depth of 4.75 inches (12 cm) for mounting a single half-width in a rack. These bracket are for set-back mounting. Use one of these brackets to mount the switch at the left or right side of the rack.
8	Two large brackets with a depth of 2.75 inches (7 cm) for mounting a single half-width in a rack. These bracket are for flush mounting. Use one of these brackets to mount the switch at the left or right side of the rack.
9	<p>Two medium-sized brackets with a depth of 4.75 inches. Use these brackets as follows:</p> <ul style="list-style-type: none"><li>• Use one bracket in combination with a large bracket with a depth of 4.75 inches to mount a single half-width switch at the left or right side of the rack. The combination of these brackets is for set-back mounting.</li><li>• Use both of these brackets to mount two connected half-width switches in a rack. These brackets are for set-back mounting.</li></ul>
10	<p>Two small brackets with a depth of 2.75 inches. Use these brackets as follows:</p> <ul style="list-style-type: none"><li>• Use one bracket in combination with a large bracket with a depth of 2.75 inches to mount a single half-width switch at the left or right side of the rack. The combination of these brackets is for flush mounting.</li><li>• Use both of these brackets to mount two connected half-width switches in a rack. These brackets are for flush mounting.</li></ul>

5. If any item is missing or damaged, contact your local NETGEAR reseller for replacement.

## Step 4: Mount or place the switch

You can mount the switch in a standard 19-inch (48.26-centimeter) network equipment rack with a 19-inch depth or 24-inch depth.

You can place any model on a flat surface.

### Install a full-width model in a rack

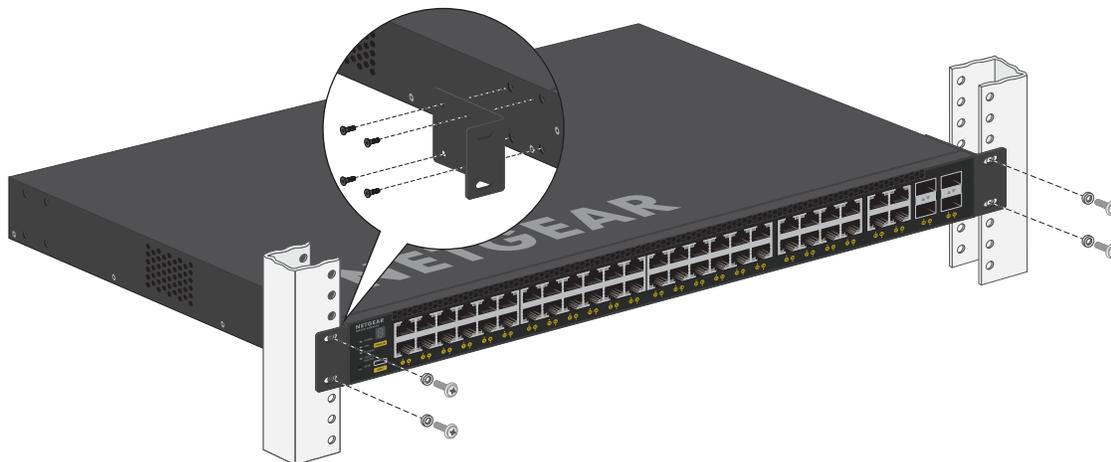
To install a full-width switch in a single rack space, you need the rack-mount kit supplied with the switch. Depending on the depth of the rack, you can install the switch with flush-mounting or set-back mounting in a standard 19-inch wide rack.

#### **To install a full-width model in a rack:**

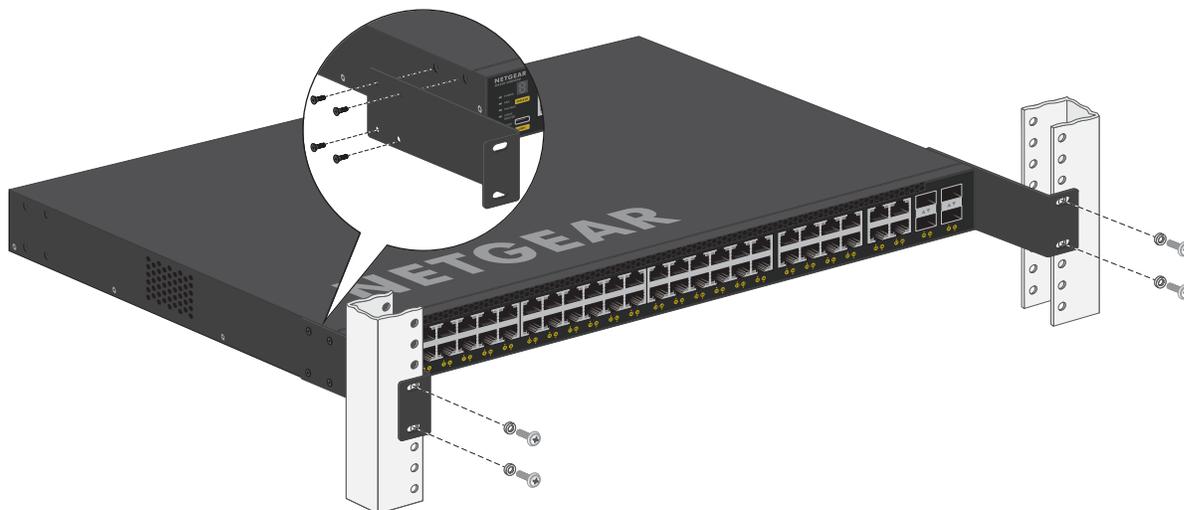
1. Attach the brackets supplied in the mounting kit to the left and right sides of the switch by inserting the small screws through each bracket and into the mounting holes in the switch.
  - **Flush-mounting example:** Use the small brackets with a depth of 2.75 inches (7 cm) and the small screws.
  - **Set-back mounting example:** Use the medium-sized brackets with a depth of 4.75 inches (12 cm) and the small screws.
2. Tighten the screws with a No. 2 Phillips screwdriver to secure each bracket to the switch.
3. Align the mounting holes in the brackets with the holes in the rack, and depending on the rack, insert the medium-sized or large screws through each bracket and into the rack.

4. Tighten the screws with a No. 2 Phillips screwdriver to secure the brackets to the rack.

- **Flush-mounting example**



- **Set-back mounting example**



## Install a single half-width switch in a rack

To install a single half-width switch in a single rack space, you need the rack-mount kit supplied with the switch. Depending on the depth of the rack, you can install the switch with flush-mounting or set-back mounting in a standard 19-inch wide rack.

You can install the single switch at the left or right side of the rack. The following procedure shows how to install the switch at the right side.

### To install a single half-width switch in a single rack space:

1. Attach the supplied small or medium-sized brackets and large brackets to the switch, using the supplied small screws:

- **Flush-mounting example:** On one side, use a small bracket with a depth of 2.75 inches (7 cm), on the other side use a large bracket with a depth of 2.75 inches, and use the small screws.



- **Set-back mounting example:** On one side, use a medium-sized bracket with a depth of 4.75 inches (12 cm), on the other side use a large bracket with a depth of 4.75 inches, and use the small screws.



2. Tighten the screws with a No. 1 Phillips screwdriver to secure each bracket to the switch.

- Align the mounting holes in the brackets with the holes in the rack, and depending on the rack, insert the medium-sized or large screws through each bracket and into the rack.

- **Flush-mounting example**



- **Set-back mounting example**



- Tighten the screws with a No. 2 Phillips screwdriver to secure the brackets to the rack.

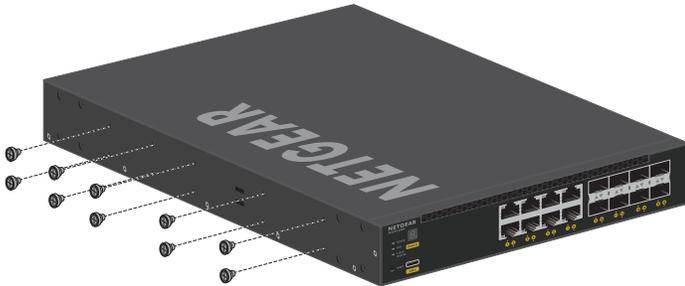
## Install two half-width switches in a rack

To install two half-width switches in a single rack space, you need the rack-mount kit supplied with one of the switches. Depending on the depth of the rack, you can install the switch with flush-mounting or set-back mounting in a standard 19-inch wide rack.

The figures in the following procedure show two M4350-8X8F switches. However, you can install any two half-width models in the same manner. For example, you can also install one M4300-8X8F switch and one M4350-12X12F switch in a single rack space.

### To install two single half-width switches in a single rack space:

1. On the switch that will be at the right side of the rack space, do the following:
  - a. On the left side of the switch, insert the washers and ten screws with a short thread provided in the rack-mount kit of one of the switches.



- b. Tighten the screws with a No. 2 Phillips screwdriver to secure them to the switch. When secured, the screw heads stick out.

2. On the switch that will be at the left side of the rack space, align the holes on the right side of the switch with the screw heads on left side of the switch that will be at the right side of the rack.



3. Insert the screw heads into the holes and slide the left switch back until the two switches are locked and aligned.

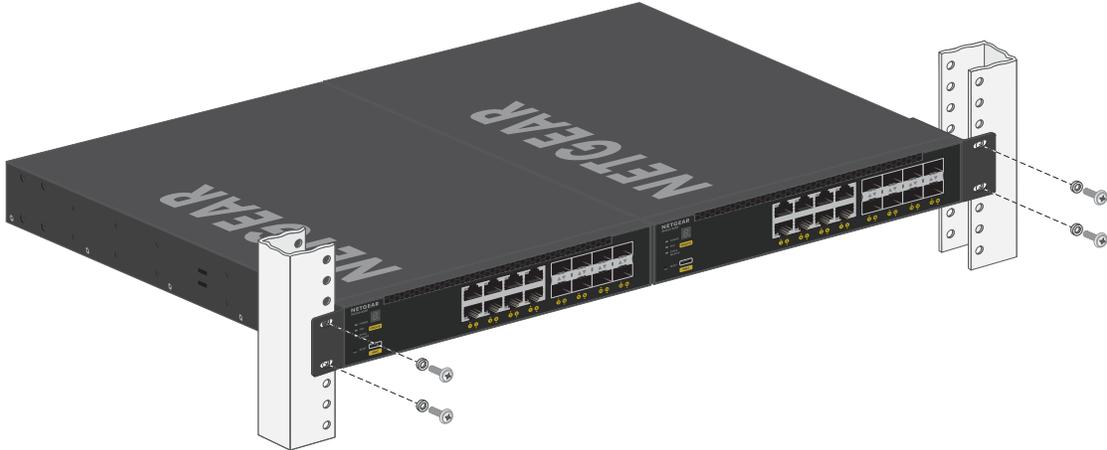
## Fully Managed Switches M4350 Series



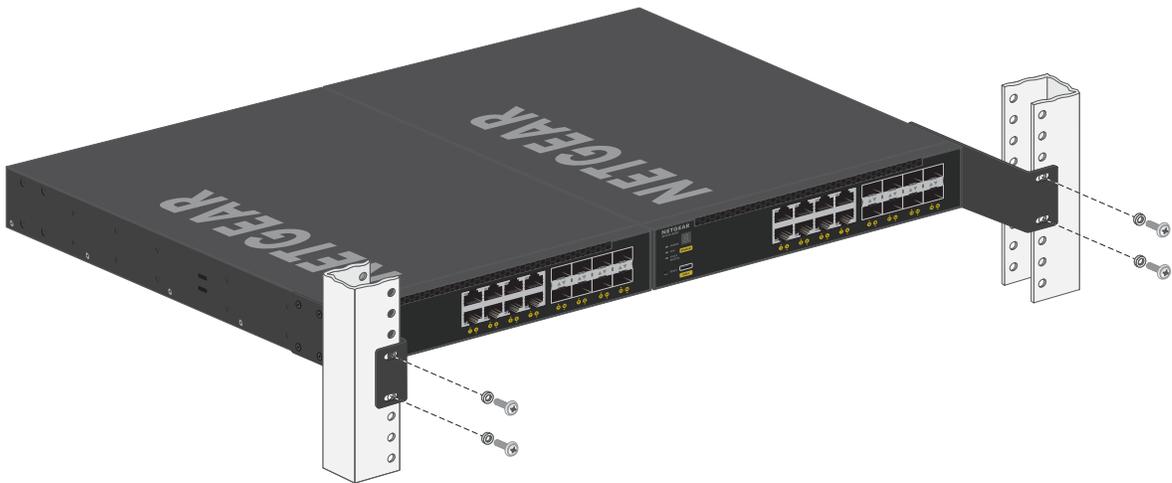
4. Attach the brackets supplied in the mounting kit to the left side of the left switch and to the right side of the right switch by inserting the small screws through each bracket and into the mounting holes in the switches.
  - **Flush-mounting example:** Use the small brackets with a depth of 2.75 inches (7 cm) and the small screws.
  - **Set-back mounting example:** Use the medium-sized brackets with a depth of 4.75 inches (12 cm) and the small screws.
5. Tighten the screws with a No. 1 Phillips screwdriver to secure each bracket to the switch.

- Align the mounting holes in the brackets (on the left of the left switch and on the right of the right switch) with the holes in the rack, and depending on the rack, insert the medium-sized or large screws through each bracket and into the rack.

- Flush-mounting example**



- Set-back mounting example**



- Tighten the screws with a No. 2 Phillips screwdriver to secure the brackets to the rack.

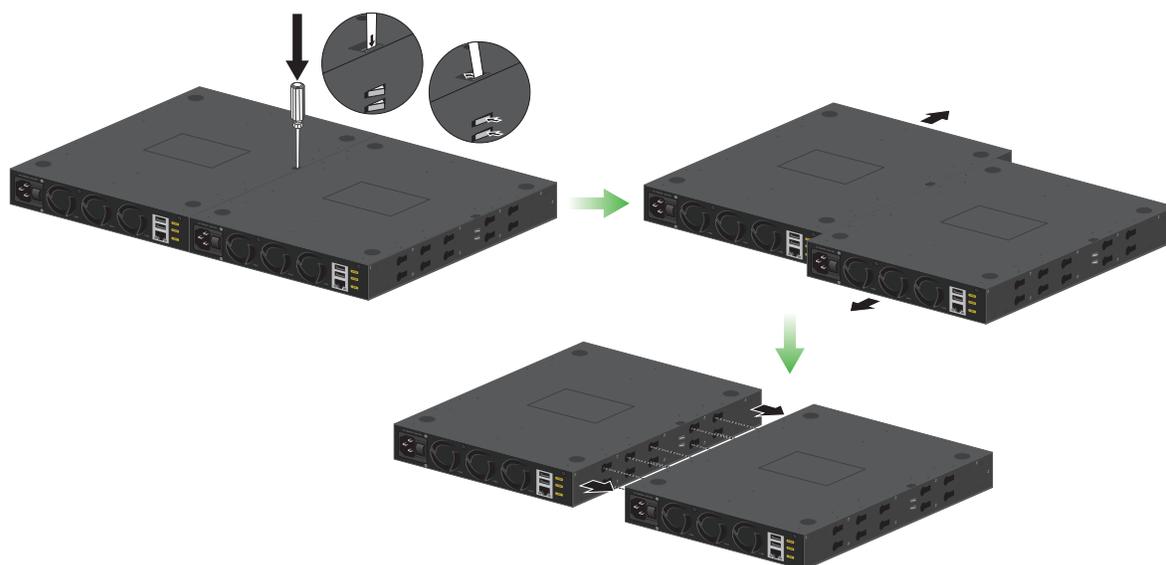
## Detach two connected half-width switches

After you detach and remove two connected half-width switches from a rack, follow the steps in this procedure to detach the switches from each other.

### To detach two connected half-width switches:

1. Place the connected switches upside down on a flat surface.
2. At the bottom of one of the switches, locate the small rectangular hole that is closest to the other switch.  
The hole provides a small metal blade that is pressed against one side of the hole.
3. Insert the tip of a slotted screwdriver between the metal blade and the side of the hole.
4. Force the metal blade away from the side, unlocking the two switches.
5. With the switches unlocked, push them apart until the screws at the side of one switch are aligned with the holes on the side of the other switch.
6. Pull the screws from the holes, thereby detaching the switches.

**CAUTION:** After unlocking the switches, be careful with the metal hooks that extend from the side of one of the switches. Although the hooks are not sharp, they stand out from the side.



## Place the switch on a flat surface

The switch ships with four self-adhesive rubber footpads.

### To place the switch on a flat surface:

Stick one rubber footpad on each of the four concave spaces on the bottom of the switch.

The rubber footpads cushion the switch against shock and vibrations. They also provide ventilation space between stacked switches.

## Optional Step 5: Install fiber transceiver modules

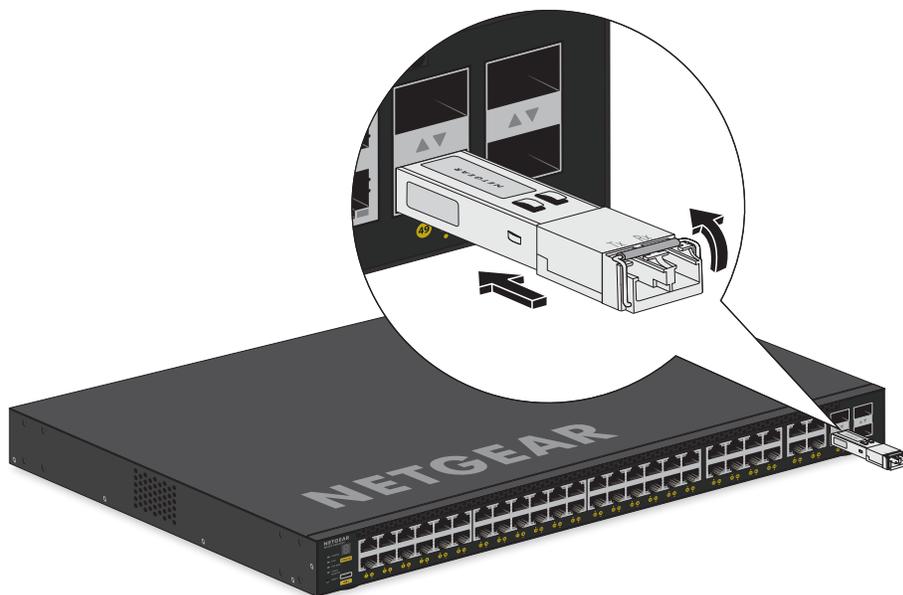
This procedure is optional.

For information about the fiber transceiver modules, see [Fiber transceiver modules and cables for SFP+ and SFP28 ports](#) on page 37.

The following procedure describes how to install an optional fiber transceiver module into one of the SFP+ or SFP28 ports of the switch.

### To install an SFP+ or SFP28 transceiver module:

1. Insert the transceiver module in an SFP+ or SFP28 port.
2. Press firmly on the flange of the transceiver module to seat it securely into the connector.



## Optional Step 6: Install an auxiliary power supply

This procedure is optional.

An internal power supply is preinstalled in all models. The full-width models provide one or more power supply unit (PSU) bays in which you can install one or more optional auxiliary power supplies (APSS). For more information, see [Auxiliary power supplies](#) on page 42.

The switch can continue to operate while you install an optional APS.

### To install an APS:

1. Pull out the cover plate from the PSU bay.
2. Insert the APS into the PSU bay, and gently push the APS into the bay until the latch locks.



**WARNING:** When inserting the APS, do not use unnecessary force. Doing so can damage the connectors on the rear of the APS and on the midplane.

3. Connect the end of the power cord to the power receptacle on the APS.
4. Plug the AC power cord into a power source such as a wall socket or power strip. After you supply power to the APS, the AC OK LED on the APS light solid green, and the DC OK LED on the APS lights solid or blinking green. If one of the LEDs light red, check that the power cord is plugged in correctly and that the power source is good.

## Step 7: Connect devices to the switch

**WARNING:** This switch is designed for indoor use only. If you want to connect it to a device located outdoors, the outdoor device must be properly grounded and surge protected, and you must install an Ethernet surge protector inline between the switch and the outdoor device. Failure to do so can damage the switch.

**Note:** Before connecting this switch to outdoor cables or devices, see <https://kb.netgear.com/000057103> for safety and warranty information.

The following procedure describes how to connect devices to the switch's RJ-45 ports. The switch supports Auto Uplink technology, which allows you to attach devices using either straight-through or crossover cables. Use a Category 5 (Cat 5), Cat 5e, or Cat 6 cable that is terminated with an RJ-45 connector.

**Note:** Ethernet specifications limit the cable length between the switch and the attached device to 328 feet (100 meters).

### To connect devices to the switch's RJ-45 Ethernet ports:

1. Connect one RJ-45 Ethernet port with an Ethernet cable to your network.  
The network connection can be to a hub, another switch, a router, or an Internet gateway.

**Note:** Instead of using an RJ-45 Ethernet port, you can connect an SFP+ or SFP28 port with a fiber transceiver module and cable to your network. For more information, see [Optional Step 5: Install fiber transceiver modules](#) on page 62.

2. Connect devices to the RJ-45 Ethernet ports on the switch.
3. Verify that all cables are installed correctly.

## Step 8: Check the installation

Before you apply power to the switch, perform the steps that are described in this section.

### To check the installation:

1. Inspect the equipment thoroughly.
2. Verify again that all cables are installed correctly.

3. Check cable routing to make sure that cables are not damaged or creating a safety hazard.
4. Make sure that all equipment is mounted properly and securely.

## Step 9: Apply AC power and check the LEDs

The switch provides an **On/Off power switch** that controls the power.

Before connecting the power cable or cables, select an AC outlet that is not controlled by a wall switch, which can turn off power to the switch.

In the following procedure, the steps that apply to a single power cable apply to each power cable for the models that use more than one power cable.

### To apply AC power:

1. Connect the end of the power cable to the AC power receptacle on the back of the switch.
2. Plug the AC power cable into a power source such as a wall socket or power strip.
3. Turn the **On/Off power switch** to the **On** position.
4. Check to see that the LEDs light correctly.

When you apply power, the Power LED lights and the ports LEDs for attached devices light. For more information, see the section with LED information for your model in the chapter [Hardware Overview](#) on page 13.

If the Power LED does not light, check to see that the **On/Off power switch** is in the **On** position, the power cable is plugged in correctly, and the power source is good.

## Optional Step 10: Connect a console to the switch

This procedure is optional. You can configure and manage the switch through the main local browser interface or the audio-video user interface. If you want to use the command-line interface (CLI), you can use a Telnet or secure shell (SSH) connection, or you can connect a console to the switch. To be able to use a console, you need the following items:

- A computer with a Windows, Mac, or Linux operating system, a UNIX workstation, or a VT100/ANSI terminal.
- The USB Type C cable for use with the USB Type-C console port. The cable is included in the product package.

### To connect a console to the switch:

1. Connect the USB Type C cable to the USB Type-C console port on the front panel of the switch.
2. Connect the other end of the cable to your computer, workstation, or terminal.
  - On a Windows-based computer, you can use HyperTerminal or install another terminal emulator such as Tera Term.
  - On a Mac operating system, you can use ZTerm.
  - On a UNIX workstation, you can use a terminal emulator such as Minicom.
3. If you attach a computer or workstation, start a terminal emulation program.
4. If you attach a computer or workstation, configure the terminal emulation program to use the following settings:
  - **Baud rate:** 115,200 bps
  - **Data bits:** 8
  - **Parity:** None
  - **Stop bit:** 1
  - **Flow control:** None

After you connect a console to the switch, you can configure the switch. For information about configuring the switch using the command-line interface (CLI), see the CLI manual, which you can download by visiting [netgear.com/support/download](http://netgear.com/support/download).

For information about configuring the switch through the main local browser user interface (main UI) or the audio-video (AV) local browser user interface (UI), see the users manuals, which you can also download by visiting [netgear.com/support/download](http://netgear.com/support/download).

# 4

## Troubleshooting

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This chapter provides information about troubleshooting the switch.

The chapter includes the following sections:

- [Troubleshooting chart](#)
- [PoE troubleshooting suggestions](#)
- [Additional troubleshooting suggestions](#)

# Troubleshooting chart

The following table lists symptoms, causes, and solutions for possible problems.

Table 17. Troubleshooting chart

Symptom	Cause	Solution
A Power LED is off.	The switch is not receiving power.	Check the power cable connections at the switch and the power source. Make sure that all cables are used correctly and comply with the Ethernet specifications.
The speed, activity, and link status LED is off when the port is connected to a device.	The port connection is not working.	Check the crimp on the connectors and make sure that the plug is properly inserted and locked into the port at both the switch and the connecting device. Make sure that all cables are used correctly and comply with the Ethernet specifications. Check for a defective port, cable, or module by testing them in an alternate environment where all products are functioning.
A file transfer is slow or the performance is degraded.	One possible cause is that a broadcast storm occurred and that a network loop (redundant path) was created.	Break the loop by making sure that only one path exists from any networked device to any other networked device. After you connect to the main local browser UI, you can configure Spanning Tree Protocol (STP) to prevent network loops.
A segment or device is not recognized as part of the network.	One or more devices are not properly connected, or cabling does not meet Ethernet guidelines.	Verify that the cabling is correct. Make sure that all connectors are securely positioned in the required ports. It is possible that equipment was accidentally disconnected.
The speed, activity, and link status LED is blinking continuously for each connected port and the network is disabled.	A network loop (redundant path) was created.	Break the loop by making sure that only one path exists from any networked device to any other networked device. After you connect to the main local browser UI, you can configure Spanning Tree Protocol (STP) to prevent network loops.

# PoE troubleshooting suggestions

Here are some tips for correcting PoE problems that might occur:

- Make sure that the system PoE MAX LED is off. If the system PoE MAX LED is solid yellow, disconnect one or more PoE devices to prevent PoE oversubscription. Start by disconnecting the device from the highest-numbered port.
- Make sure that the Ethernet cables are plugged in correctly. For each powered device (PD) that is connected to the switch, the right port LED on the switch lights solid blue. If the right port LED lights solid yellow, a PoE fault occurred and PoE halted because of one of the conditions that are listed in the following table.

Table 18. PoE fault conditions and possible solutions

PoE Fault Condition	Possible Solution
A PoE-related short circuit occurred on the port.	The problem is most likely with the attached PD. Check the condition of the PD or restart the PD by disconnecting and reconnecting the PD.
The PoE power demand of the PD exceeded the maximum level that the switch permits. The maximum level is 15.4W for a PoE connection, 30W for a PoE+ connection, and 90W for a PoE++ connection.	
The PoE current on the port exceeded the classification limit of the PD.	
The PoE voltage of the port is outside the range that the switch permits.	Restart the switch to see if the condition resolves itself.

# Additional troubleshooting suggestions

If the suggestions in the troubleshooting chart do not resolve the problem, see the following troubleshooting suggestions:

- **Network adapter cards:** Make sure that the network adapters that are installed in the computers are in working condition and the software driver was installed.
- **Configuration:** If problems occur after you alter the network configuration, restore the original connections and determine the problem by implementing the new changes one step at a time. Make sure that cable distances, repeater limits, and other physical aspects of the installation do not exceed the Ethernet limitations.
- **Switch integrity:** If necessary, verify the integrity of the switch by restarting it. To restart the switch, turn the **On/Off power switch** to the **Off** position, disconnect the AC cable, reconnect the AC cable, and then turn the **On/Off power switch** to the **On** position. If the problem continues, contact NETGEAR Technical Support. For more information, visit the support website at [netgear.com/support](http://netgear.com/support).
- **Autonegotiation:** The RJ-45 ports negotiate the correct duplex mode, speed, and flow control if the device at the other end of the link supports autonegotiation. If the device does not support autonegotiation, the switch determines only the speed correctly. For devices that are connected at 100 Mbps, the duplex mode defaults to half-duplex.