

**NETGEAR®**

# Hardware Installation Guide

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## Insight Managed 8-Port Gigabit (Hi-Power) PoE+ Smart Cloud Switch with NETGEAR FlexPoE Power

### Models

GC108P

GC108PP

May 2019  
202-12007-01

**NETGEAR, Inc.**

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## **Compliance and Conformity**

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

See the regulatory compliance document before connecting the power supply.

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

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# 1

## Introduction

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This hardware installation guide is for the following NETGEAR Insight Managed switch models:

- 8-Port Gigabit Ethernet PoE+ Smart Cloud Switch (64W) with NETGEAR FlexPoE Power, Model GC108P
- 8-Port Gigabit Ethernet Hi-Power PoE+ Smart Cloud Switch (126W) with NETGEAR FlexPoE Power, Model GC108PP

The switch provides eight Gigabit Ethernet RJ-45 copper ports.

The switch supports Power over Ethernet plus (PoE+) on all eight RJ-45 copper ports so that you can let the switch provide power to PoE-capable devices such as WiFi access points, VoIP phones, and IP security cameras. The maximum PoE power budget across all active PoE ports is 64W for model GC108P and 126W for model GC108PP. However, you can upgrade the PoE power budget for model GC108P to 126W by purchasing and connecting the NETGEAR optional power adapter model EPS130W.

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

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

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

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

**Note:** For technical specifications on model GC108P or model GC108PP, visit [netgear.com/GC108P](http://netgear.com/GC108P) or [netgear.com/GC108PP](http://netgear.com/GC108PP). For switch documentation, visit [netgear.com/support/download](http://netgear.com/support/download).

## Overview

The switch provides eight Gigabit Ethernet copper ports. All copper ports use RJ-45 connectors. The switch integrates full-duplex, nonblocking switch fabric that provides full-wire speed for all packet sizes.

The switch supports PoE+ on all copper ports with a maximum PoE power budget across all active PoE ports of 64W for model GC108P and 126W for model GC108PP. You can upgrade the PoE power budget for model GC108P to 126W by purchasing and connecting the NETGEAR optional power adapter model EPS130W.

**Note:** For information about application examples, see [Applications](#) on page 17.

The switch provides management options that let you discover the switch on the network and configure, monitor, and control the switch:

- **NETGEAR Insight app.** Using the NETGEAR Insight app, you can discover the switch on the network and add the switch to the NETGEAR Insight app so that you can set up the switch in the network and manage and monitor the switch remotely from your mobile device. You can choose from four methods to add the switch to the NETGEAR Insight app: You can scan your network for the switch, scan the QR code or the barcode of the switch, or type in the serial number of the switch. For more information, see the NETGEAR knowledge base articles at [netgear.com/support](http://netgear.com/support).
- **Insight Cloud portal.** Using the NETGEAR Insight Cloud portal, you can set up the switch in the network, perform advanced remote management, monitor the switch, analyze the switch and network usage, and, if necessary, troubleshoot the switch and the network. The Insight Cloud portal is available to Insight Premium and Insight Pro subscribers. A free trial of Insight Premium is available for new customers.
- **Local browser-based management interface.** By default, the management mode of the switch is set to NETGEAR Insight. With this setting you can manage the switch using the Insight app or the Insight Cloud portal. For complex tasks such as integrating with an existing network of devices that are not managed through Insight, and for debugging purposes, you can use the local browser interface to change the management mode of the switch to Direct Connect Web-browser Interface (Local LAN Only). In this mode, you can change the settings of the specific switch, but we recommend that you do not use this mode to change settings that are Insight manageable because they will not be synchronized with Insight or to the network location and other devices to which you assigned the switch.

**Note:** Changes to Insight-manageable settings from the local browser interface might also create conflicts with the rest of the Insight-managed network to which the device is connected. While you manage the switch with the local browser interface, you cannot use the Insight app or Insight Cloud portal. To reenable management of the device remotely or through the cloud, you can return the management mode to NETGEAR Insight at any time so that you can manage the switch with the Insight app or Insight Cloud portal.

For more information about the local browser interface, see the user manual, which you can download from [netgear.com/support/download](https://netgear.com/support/download).

**Note:** The switch is designed for management by NETGEAR Insight: You can use the NETGEAR Insight app on your mobile device or the Insight Cloud portal from a web browser on your Windows-based computer, Mac, or tablet. By default, the local browser interface is disabled and you cannot use it while the switch is managed by NETGEAR Insight.

You can install the switch freestanding (on a desktop) or wall-mounted, using the VESA-standard mounting holes and supplied wall-mount kit. The switch is IEEE compliant and offers low latency. All ports can automatically negotiate to the highest speed, which makes the switch very suitable for a mixed environment with Gigabit Ethernet and Fast Ethernet.

For Gigabit Ethernet connections, use Category 5e (Cat 5e) or higher-rated Ethernet cables terminated with RJ-45 connectors.

## Features

The switch includes the following key hardware features:

- Eight Gigabit Ethernet ports.
- PoE+ (802.3at) on all copper ports:
  - Total PoE power budget of 64W (model GC108P) or 126W (model GC108PP).
  - You can upgrade the PoE power budget for model GC108P to 126W by purchasing and connecting the NETGEAR optional power adapter model EPS130W.
- MAC table size of 8K entries.
- Switch fabric full duplex nonblocking.

- Includes the following mounting hardware:
  - Four rubber footpads for tabletop installation.
  - Wall-mount screw kit for wall installation.
- Full compatibility with IEEE standards:
  - IEEE 802.3 Ethernet.
  - IEEE 802.3u 100BASE-T.
  - IEEE 802.3ab 1000BASE-T.
  - IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX.
  - IEEE 802.1Q VLAN tagging.
  - IEEE 802.3x Full-duplex flow control.
  - IEEE 802.3ad Link aggregation (LAG with LACP).
  - IEEE 802.1ab LLDP.
  - IEEE 802.1p Class of Service (QoS).
  - IEEE 802.1D Spanning Tree Protocol (STP).
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP).
  - IEEE 802.1x RADIUS network access control.
  - IEEE 802.3az Energy Efficient Ethernet (EEE).
  - IEEE 802.3af (PoE).
  - IEEE 802.3at (PoE+).
- AutoSensing and autonegotiating capabilities for all ports.
- Auto Uplink™ technology is supported on all ports.
- Automatic address learning function to build the packet-forwarding information table. The table contains up to 8K Media Access Control (MAC) addresses.
- Store-and-forward transmission to remove bad packets from the network.
- Active flow control to minimize packet loss and frame drops.
- Half-duplex backpressure control.
- Per-port status LEDs and system status LEDs:
  - Power/Cloud LED that provides status information on both the system power and the cloud connection.

- PoE Max or Fault LED.
- Per-port link, speed, and activity LED.
- Per-port PoE status LED.
- NETGEAR green power-saving features:
  - Energy efficiency mode that fully conforms to the IEEE 802.3az standard.
  - Per-port automatic change to a lower power mode when the port link is down.

## Safety instructions and warnings

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

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

- This product is designed for indoor use only in a temperature-controlled and humidity-controlled environment. For more information, see the environmental specifications in the appendix or the data sheet.  
Any device that is located outdoors and connected to this product must be properly grounded and surge protected.  
Failure to follow these guidelines can result in damage to your NETGEAR product, which might not be covered by NETGEAR's warranty, to the extent permissible by applicable law.
- Observe and follow service markings:
  - Do not service any product except as explained in your system documentation. Some devices should never be opened.
  - If applicable to your device, opening or removing covers that are marked with the triangular symbol with a lightning bolt can expose you to electrical shock. We recommend that only a trained technician services components inside these compartments.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
  - Depending on your device, the power adapter, power adapter cable, power cable, extension cable, or plug is damaged.
  - An object fell into the product.
  - The product was exposed to water.

- The product was dropped or damaged.
- The product does not operate correctly when you follow the operating instructions.
- Keep your system away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the system gets wet, see the appropriate section in your troubleshooting guide, or contact your trained service provider.
- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.
- Use the product only with approved equipment.
- If applicable to your device, allow the product to cool before removing covers or touching internal components.
- Operate the product only from the type of external power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.
- To avoid damaging your system, if your device uses a power supply with a voltage selector, be sure that the selector is set to match the power at your location:
  - 115V, 60 Hz in most of North and South America and some Far Eastern countries such as South Korea and Taiwan
  - 100V, 50 Hz in eastern Japan and 100V, 60 Hz in western Japan
  - 230V, 50 Hz in most of Europe, the Middle East, and the Far East
- Be sure that attached devices are electrically rated to operate with the power available in your location.
- Depending on your device, use only a supplied power adapter or approved power cable:
  - If your device uses a 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 device 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 electrical outlets.
- If applicable to your device, the peripheral power cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a three-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables, power adapter cables, or power cables carefully. Route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power adapters, power adapter cables, power cables or plugs. Consult a licensed electrician or your power company for site modifications.
- Always follow your local and national wiring rules.

# 2

## Hardware Overview

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This chapter describes the switch hardware features.

The chapter includes the following sections:

- [Hardware description](#)
- [Switch hardware interfaces](#)

# Hardware description

The following sections describe the switch hardware features.

## Front panel

Both model GC108P and model GC108PP provide eight 10/100/1000BASE-T RJ-45 PoE+ ports.

The following figures show the front panels, which are identical except for the model designation in the lower left corner.

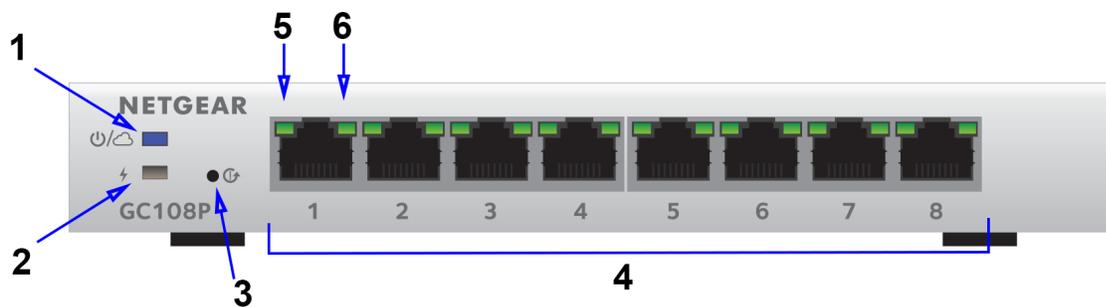


Figure 1. Front panel model GC108P

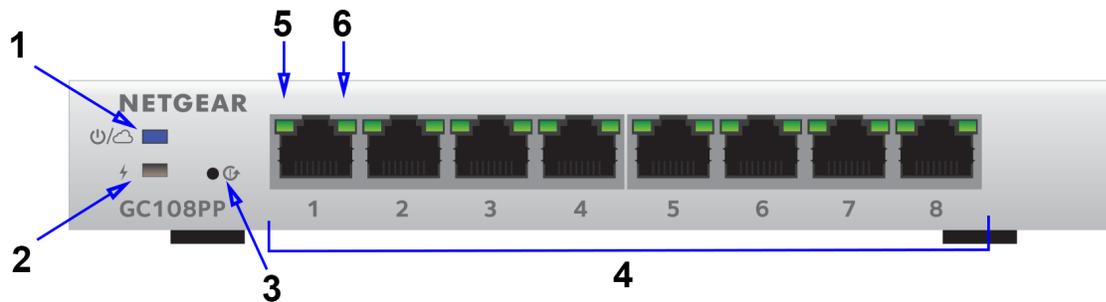


Figure 2. Front panel model GC108PP

Table 1. Front panel components

Number	Description
1	Power/Cloud LED (see <a href="#">Status LEDs</a> on page 14).
2	PoE Max or Fault LED (see <a href="#">Status LEDs</a> on page 14).
3	Recessed multi-function <b>Reset</b> button (see <a href="#">Multi-function Reset button</a> on page 16).

Table 1. Front panel components (Continued)

Number	Description
4	Eight independent 10/100/1000BASE-T RJ-45 PoE+ ports (see <a href="#">RJ-45 ports for 10/100/1000M BASE-T Ethernet connectivity</a> on page 15).
5	For each port, a left port LED that functions as the combined speed and activity LED for the port (see <a href="#">Status LEDs</a> on page 14).
6	For each port, a right port LED that indicates the PoE status for the port (see <a href="#">Status LEDs</a> on page 14).

## Status LEDs

This section describes the status LEDs of the switch.

Table 2. LEDs on the back panel

LED	Description
Power/Cloud LED	<p><b>Off.</b> Power is not supplied to the switch.</p> <p><b>Blinking green.</b> The switch is starting.</p> <p><b>Solid green.</b> If the Power/Cloud LED lights solid green, one of the following conditions applies:</p> <ul style="list-style-type: none"> <li>The management mode of the switch is NETGEAR Insight (the default mode) but the switch is not yet added to an Insight managed network.</li> <li>The management mode of the switch is NETGEAR Insight but the switch is not yet connected to the Insight cloud management server.</li> <li>You used the local browser interface to change the management mode to Direct Connect Web-browser Interface, and, therefore, the switch does not connect to the Insight cloud management server.</li> </ul> <p><b>Solid blue.</b> The management mode of the switch is NETGEAR Insight, the switch is added to an Insight managed network, and the switch is connected to the Insight cloud management server. You can manage and monitor the switch using the NETGEAR Insight app or Insight Cloud portal.</p>
PoE Max/Fault LED	<p><b>Off.</b> Sufficient (more than 7W of) PoE power is available.</p> <p><b>Solid amber.</b> Less than 7W of PoE power is available.</p> <p><b>Blinking amber.</b> At least once during the previous two minutes, less than 7W of PoE power was available.</p>
RJ-45 left LED Link, speed, and activity for Ethernet ports 1 to 8	<p><b>Off.</b> No link is established.</p> <p><b>Solid green.</b> A valid 1 Gbps link is established.</p> <p><b>Blinking green.</b> The port is transmitting or receiving packets at 1 Gbps.</p> <p><b>Solid amber.</b> A valid 10 Mbps or 100 Mbps link is established.</p> <p><b>Blinking amber.</b> The port is transmitting or receiving packets at 10 Mbps or 100 Mbps.</p>
RJ-45 right LED PoE status for Ethernet ports 1 to 8	<p><b>Off.</b> The port is not delivering PoE power.</p> <p><b>Solid green.</b> The port is delivering PoE power.</p> <p><b>Solid amber.</b> A PoE fault occurred.</p>

## Back panel

The back panel contains a Kensington lock for an optional security cable and the DC power receptacle.

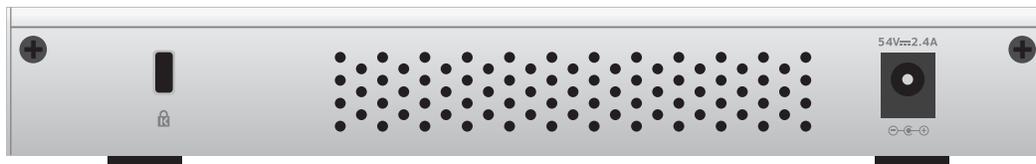


Figure 3. Back panel

## Switch hardware interfaces

The following sections describe the hardware interfaces on the switch.

### RJ-45 ports for 10/100/1000M BASE-T Ethernet connectivity

All RJ-45 copper ports support autosensing. When you insert a cable into an RJ-45 port, the switch automatically ascertains the maximum speed (10 Mbps, 100 Mbps, or 1 Gbps) and duplex mode (half-duplex or full-duplex) of the attached device. All ports support a Category 5e (Cat 5e) cable (or higher-rated Ethernet cable) terminated with an 8-pin RJ-45 connector.

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.

All copper ports also support Power over Ethernet (PoE+).

## Multi-function Reset button

The switch provides a recessed multi-function **Reset** button on the front panel so that you can either restart (power-cycle) the switch, reset the switch to the most recently saved cloud-managed configuration, or return the switch to its factory default settings, causing all custom settings to be erased. The factory default settings function of the **Reset** button is available only after you use the NETGEAR Insight app to remove the switch from your network.

### To restart or reset the switch or return the switch to its factory default settings:

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 about two seconds. (Do not press the button for more than five seconds!)  
The switch restarts but retains its custom settings. During this process, the Power/Cloud LED lights amber.
  - **Reset the switch to the most recently saved cloud-managed configuration.** Press the **Reset** button for at least five seconds.  
The switch restarts and returns to the most recently saved cloud-managed configuration. During this process, the Power/Cloud LED lights amber.
  - **Return the switch to its factory default settings.** After you use the NETGEAR Insight app to remove the switch from your network, press the **Reset** button for at least five seconds.  
The switch restarts and returns to its factory default settings. During this process, the Power/Cloud LED lights amber.

# 3

## Applications

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The switch is designed to provide flexibility in configuring network connections. The switch can be used as your only network traffic-distribution device for PoE+, PoE, and non-PoE devices or with 10 Mbps, 100 Mbps, and 1 Gbps Ethernet hubs, routers, and switches.

For model GC108P, as your network grows or your needs change, you can increase the 64W PoE power budget to 126W by swapping out the included power adapter to the NETGEAR optional power adapter model EPS130W.

This chapter includes the following sections:

- [PoE applications](#)
- [Desktop switching](#)

# PoE applications

This section covers the following topics:

- [PoE overview](#)
- [Connect PoE equipment in a business environment](#)
- [Connect PoE equipment for surveillance and security](#)

## PoE overview

The switch supports eight Power over Ethernet Plus (PoE+) ports and can supply up to 30W PoE+ (IEEE 802.3at) to each port up to its total maximum PoE power budget of 64W (model GC108P) or 126W (model GC108PP) across all active PoE+ ports. You can increase the power budget of model GC108P to 126W by purchasing and connecting the NETGEAR optional power adapter model EPS130W.

The switch is backward compatible with PoE (IEEE 802.3af).

Supplied power is prioritized according to the port order, up to the total power budget of the device. Port 1 receives the highest PoE priority, while port 8 is relegated to the lowest PoE priority.

If the power requirements for attached devices 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 is listed as an 802.3at PoE+-powered or 802.3af 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 eight PoE+ ports to be active simultaneously when the devices correctly report their PoE class to the switch.

Using the local browser interface, you can control how PoE power is allocated across active PoE+ ports by overriding the default or autodetected PoE power limits for individual PoE+ ports.

## Connect PoE equipment in a business environment

The following figure shows an example of how you can connect PoE+ WiFi access points, PoE VoIP phones, and PoE surveillance equipment to the switch in a business environment.

In a small office or home office network, the blue network icon represents a router that is connected to an Internet modem. In such a setup, you must connect one port on the switch to a LAN port on the router.

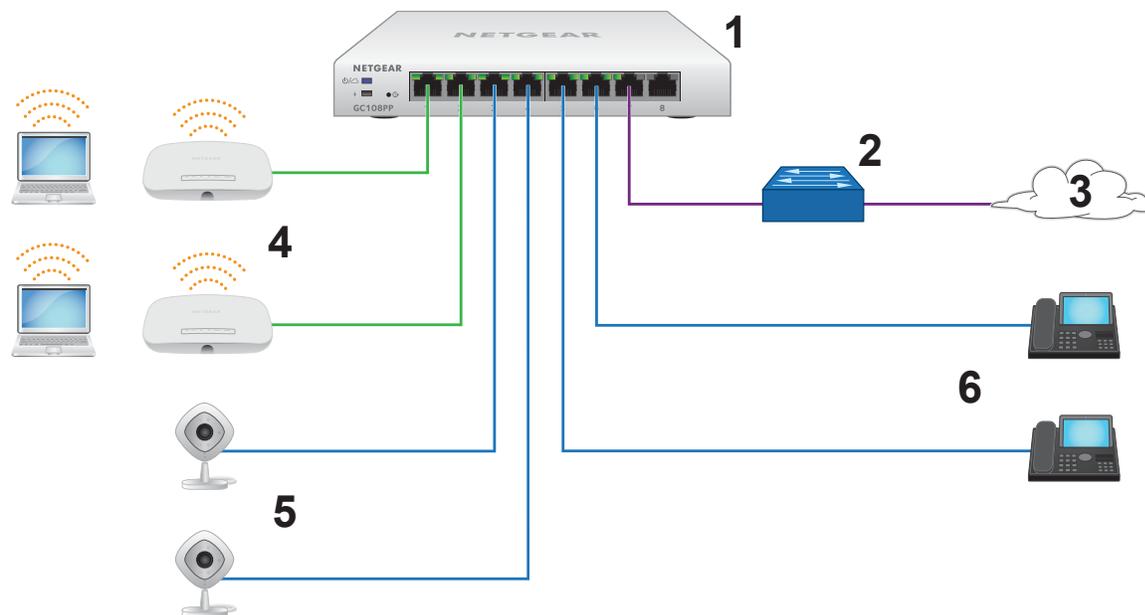


Figure 4. Sample PoE business use case

Number	Device	Number	Device
1	Switch model GC108P	4	PoE+ WiFi access points
2	Internet router or gateway	5	PoE security cameras
3	Internet	6	PoE VoIP phones
Line Color	Connection		
Purple	1G connection to an Internet router or gateway.		
Green	1G PoE+ connections to devices such as Insight managed (or other) WiFi access points.		
Blue	1G PoE connections to devices such as security cameras and VoIP phones.		

## Connect PoE equipment for surveillance and security

The following figure shows an example of how you can connect PoE and non-PoE equipment to the switch for surveillance and security purposes.

In a small office or home office network, the blue network icon represents a router that is connected to an Internet modem. In such a setup, you must connect one port on the switch to a LAN port on the router.

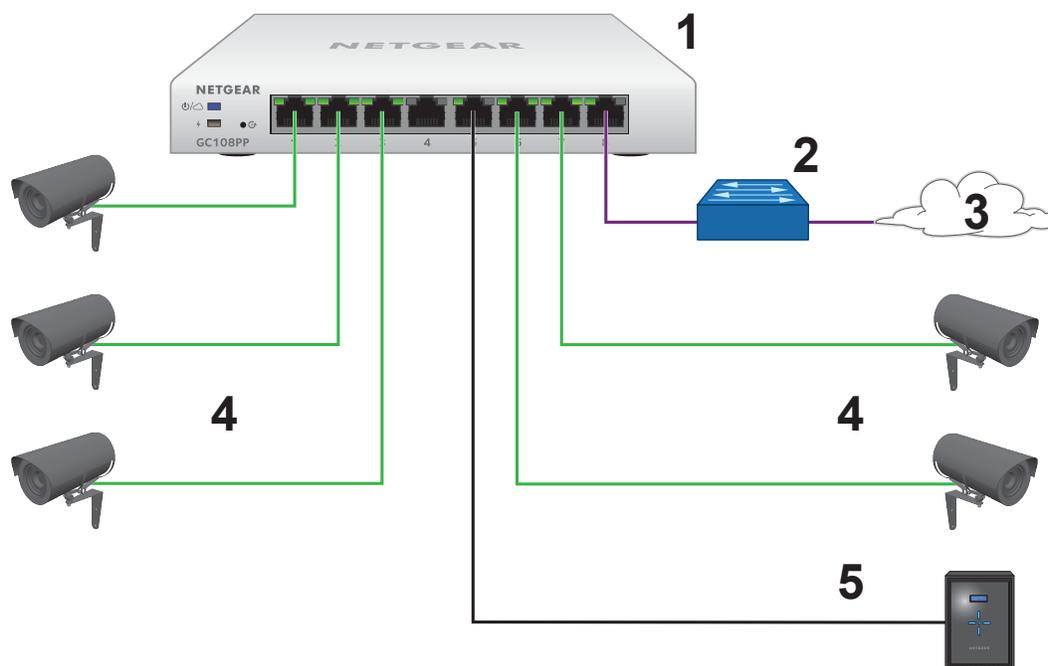


Figure 5. Sample switch surveillance and security application

Number	Device	Number	Device
1	Switch model GC108PP	4	PoE+ pan-tilt-zoom (PTZ) or FlexPower security cameras
2	Internet router or gateway	5	ReadyNAS storage system with NETGEAR Milestone Arcus
3	Internet		
Line Color	Connection		
Purple	1G connection to an Internet router or gateway.		
Green	1G PoE+ connections to devices such as PTZ or FlexPower security cameras.		
Black	1G PoE connection to a ReadyNAS storage system.		

# Desktop switching

You can use the switch as a desktop switch to build a small network that provides up to 1 Gbps access to servers such as a file server. In a small network such as a small office or home office network, connect the switch to a router that, in turn, is connected to an Internet modem.

With 1 Gbps connections, the switch always functions in full-duplex mode. Any switch port that is connected to a computer or file server can provide up to 2 Gbps bidirectional throughput.

In a small office or home office network, the blue network icon represents a router that is connected to an Internet modem. In such a setup, you must connect one port on the switch to a LAN port on the router.

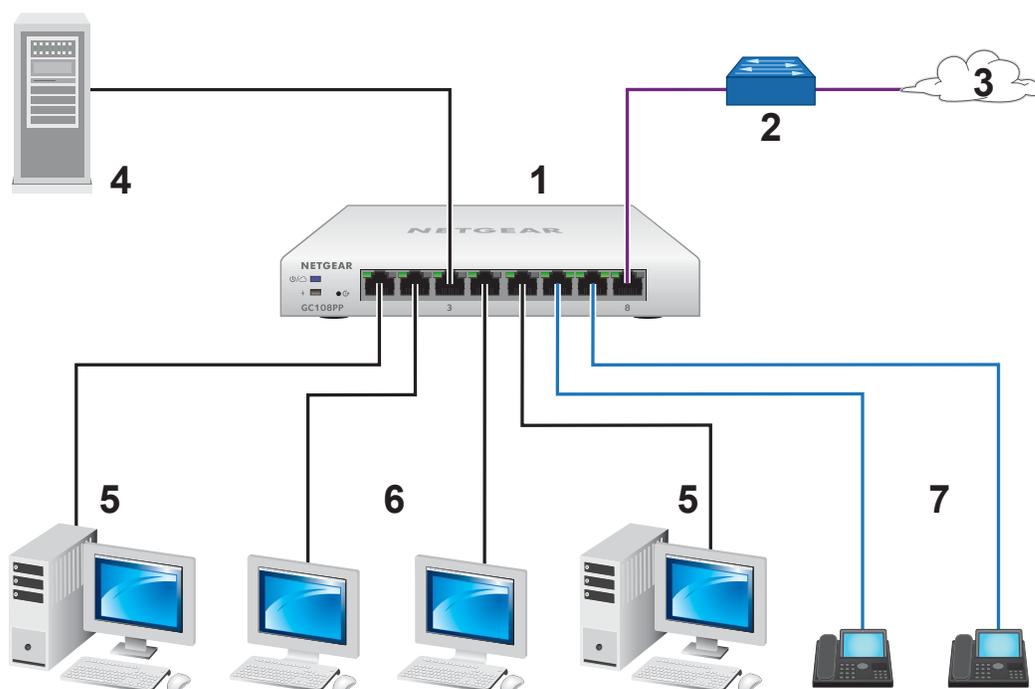


Figure 6. Sample desktop switching

Number	Device	Number	Device
1	Switch model GC108P	5	Computers
2	Internet router or gateway	6	Workstations
3	Internet	7	PoE VoIP phones
4	Network server		

(Continued)

<b>Line Color</b>	<b>Connection</b>
Purple	1G connection to an Internet router or gateway.
Blue	1G PoE connections to devices such as VoIP phones.
Black	1G connections to devices such as a network server, workstations, and computers.

# 4

## Installation

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This chapter describes the installation procedures for the switch. Switch installation involves the steps described in the following sections:

- [Step 1: Prepare the site](#)
- [Step 2: Protect against electrostatic discharge](#)
- [Step 3: Unpack the switch](#)
- [Step 4: Install the switch](#)
- [Step 5: Connect devices to the switch](#)
- [Step 6: Check the installation](#)
- [Step 7: Apply power and check the LEDs](#)
- [Step 8: Manage 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 3. Site requirements

Characteristics	Requirements
Mounting	<p><b>Desktop installations.</b> Provide a flat table or shelf surface.</p> <p><b>Wall installations.</b> Use the wall-mount screws that are supplied with the switch to attach the switch to a wall.</p> <p><b>Pole (or other surface) installations.</b> Use an off-the-shelf 75 mm VESA standard mount to secure the switch to a pole or another surface. The bottom panel of the switch provides four mount holes that are VESA-compliant.</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 on the back panel.
Power source	Use the power adapter that is supplied with the switch. Make sure that the AC outlet that you use for the power adapter 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 between 32°F and 104°F (0°C and 40°C). 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 95 percent, 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 switch. To prevent static damage, discharge static electricity from your body before you touch any of the electronic components. 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 following figure shows the package contents.

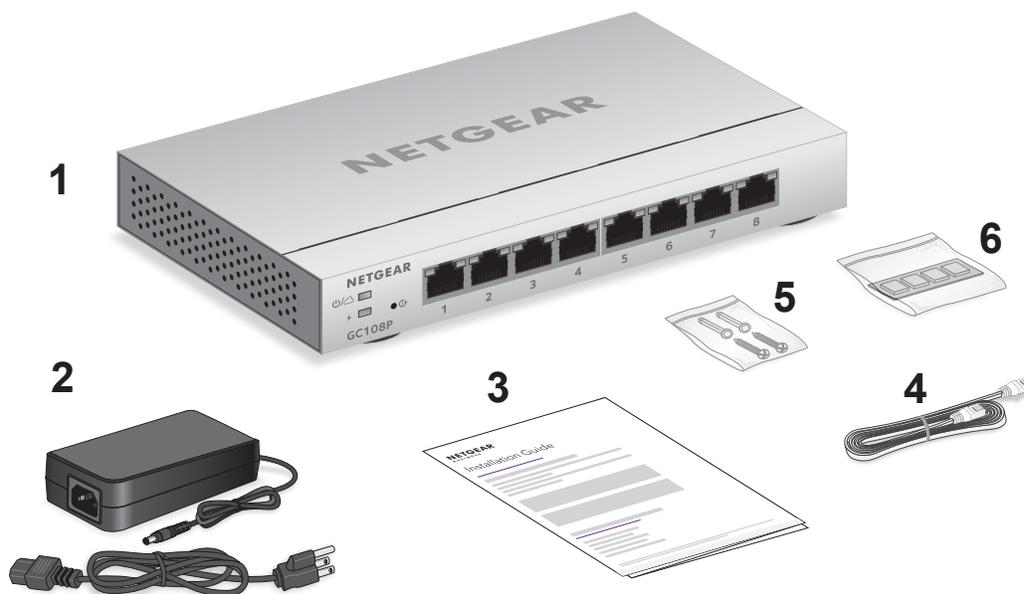


Figure 7. Switch package contents

Number	Description	Number	Description
1	Switch	4	Category 5e (Cat 5e) flat Ethernet cable
2	Power cord with adapter (varies by region)	5	Mounting screws (2) and washers (2)
3	Installation guide	6	Footpads (4)

Check the contents of the boxes to make sure that all items are present before installing the switch.

**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 items that are shown in the previous figure and listed in the previous table.
5. If any item is missing or damaged, contact your local NETGEAR reseller for replacement.

## Step 4: Install the switch

You can install the switch on a flat surface or attach it to a wall.

You can also use any off-the-shelf 2.95 in. (75 mm) VESA standard mount to secure the switch to a wall, a pole, or another surface.

### Install the switch on a flat surface

The switch ships with four self-adhesive rubber footpads.

**To install 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.

### Wall-mount the switch horizontally

The bottom panel of the switch provides two VESA mount holes at an exact distance of 2.95 in. (75 mm), center-to-center, so that you can mount the switch horizontally to a wall. The switch ships with wall-mount screws and anchors that you can secure to a wall and attach the switch to.

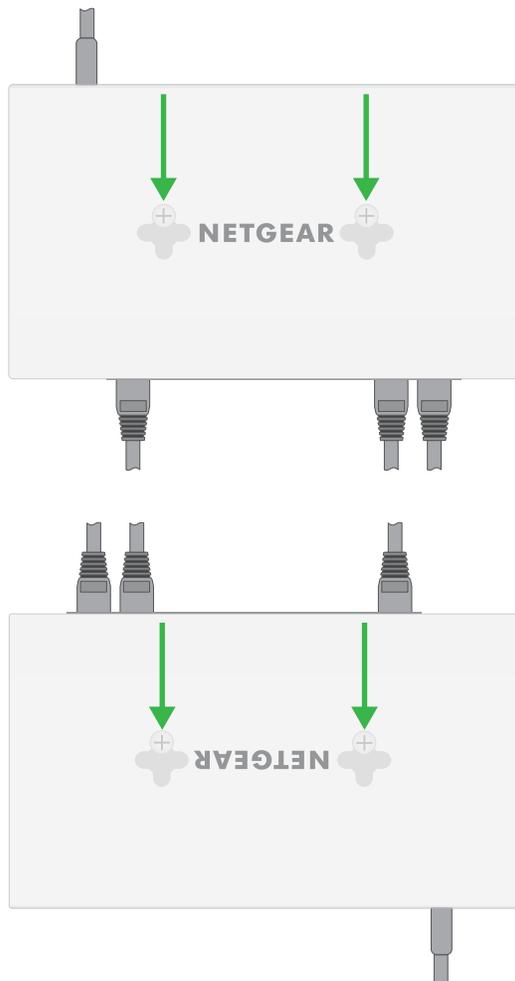
**To mount the switch horizontally to a wall:**

1. Locate the two VESA mount holes on the bottom panel of the switch.
2. Mark the holes on the wall where you want to mount the switch.  
The holes must be 2.95 in. (75 mm) apart, center-to-center.
3. Drill holes into the wall for four anchors in which you will insert M4 x L25 mm screws.

The screws and anchors are in the switch package.

4. Insert the anchors into the wall and tighten the screws with a No. 2 Phillips screwdriver. Leave about ¼ inch (6 mm) of each screw protruding from the wall so that you can insert the screws into the holes on the bottom of the switch.
5. Line up the holes on the bottom panel of the switch with the screws in the wall and mount the switch to the wall.

You can mount the switch with the front panel facing down (the Ethernet cables will be at the bottom, see the upper figure) or facing up (the Ethernet cables will be at the top, see the lower figure).



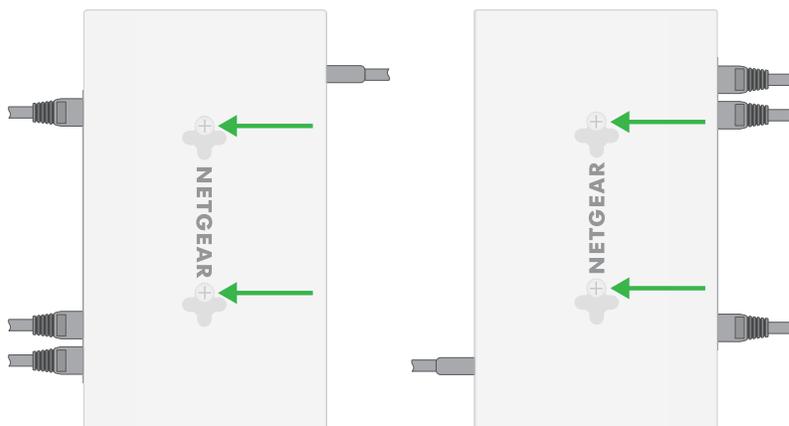
## Wall-mount the switch vertically

The bottom panel of the switch provides two VESA mount holes at an exact distance of 2.95 in. (75 mm), center-to-center, so that you can mount the switch vertically to a wall. The switch ships with wall-mount screws and anchors that you can secure to a wall and attach the switch to.

### To mount the switch vertically to a wall:

1. Locate the two VESA mount holes on the bottom panel of the switch.
2. Mark the holes on the wall where you want to mount the switch.  
The holes must be 2.95 in. (75 mm) apart, center-to-center.
3. Drill holes into the wall for four anchors in which you will insert M4 x L25 mm screws. The screws and anchors are in the switch package.
4. Insert the anchors into the wall and tighten the screws with a No. 2 Phillips screwdriver. Leave about ¼ inch (6 mm) of each screw protruding from the wall so that you can insert the screws into the holes on the bottom of the switch.
5. Line up the holes on the bottom panel of the switch with the screws in the wall and mount the switch to the wall.

You can mount the switch with the front panel facing left (the Ethernet cables will be on the left, see the left figure) or facing right (the Ethernet cables will be on the right, see the right figure).



## Mount the switch to a pole or another surface

You can use an off-the-shelf 75 mm VESA standard mount to secure the switch to a pole or another surface.

## Step 5: Connect devices to the switch

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 5e (Cat 5e) or Category 6 (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 ports:**

1. Connect a PoE or non-PoE device to an RJ-45 network port on the switch.
2. Verify that all cables are installed correctly.

## Step 6: Check the installation

Before you apply power to the switch, perform the following steps.

### **To check the installation:**

1. Inspect the equipment thoroughly.
2. Verify 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 7: Apply power and check the LEDs

The switch does not provide an on/off power switch. The power cord connection controls the power.

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

**Note:** If you are using model GC108P with an optional power adapter model EPS130W (or if you are using model GC108PP with a 67.5W power adapter instead of the default 130W power adapter), after the switch starts for the first time with the new power adapter, log in to the local browser interface, and select the new power adapter. For more information, see the user manual, which you can download from [netgear.com/support/download](http://netgear.com/support/download).

### To apply power:

1. Connect the DC plug of the power adapter to the DC power receptacle on the back of the switch.
2. Connect the AC power cord receptacle to the power adapter.
3. Connect the AC power cord plug to a power source such as a wall socket or power strip.
4. Check to see that the LEDs on the switch light correctly.

When you apply power, the Power/Cloud LED blinks green while the switch starts. After about one minute, the switch completes its startup process, the Power/Cloud LED turns solid green or solid blue, and the port LEDs for attached devices light:

- **Power/Cloud LED turns solid green.** One of the following conditions applies:
  - The management mode of the switch is NETGEAR Insight (the default mode) but the switch is not yet added to an Insight managed network.
  - The management mode of the switch is NETGEAR Insight but the switch is not yet connected to the Insight cloud management server.
  - You used the local browser interface to change the management mode to Direct Connect Web-browser Interface, and, therefore, the switch does not connect to the Insight cloud management server.
- **Power/Cloud LED turns solid blue.** The management mode of the switch is NETGEAR Insight, the switch is added to an Insight managed network, and the switch is connected to the Insight cloud management server. You can manage and monitor the switch using the NETGEAR Insight app or Insight Cloud portal.

If the Power/Cloud LED does not light, check to see that the power cord is plugged in correctly and that the power source is good.

## Step 8: Manage the switch

Using the NETGEAR Insight app and Insight Cloud portal, you can discover the switch on the network and add the switch to the Insight app and Insight Cloud portal so that you can perform setup, remote management, and monitoring tasks from your smartphone, tablet, or computer.

The switch is a plug-and-play device that starts switching as soon as you plug it into power and your network. You can use the switch without creating an Insight-managed topology (using the Insight app or Insight Cloud portal), but in that situation you cannot remotely monitor, manage, and troubleshoot the switch, nor receive push notifications from the switch, and the switch operates in standalone mode only, like a traditional NETGEAR Smart Managed Pro Switch.

Using the Insight app and Insight Cloud portal, as well as network-based policies and zero-touch deployment and configuration, you can configure and manage the switch, along with Insight-managed WiFi access points and NAS devices, at the network level. Also, using the Insight app or Insight Cloud portal, you can set up features such as VLANs and trunking and improve the efficiency of the switch, which results in the improvement of its overall performance as well as the performance of the network.

After you power on the switch for the first time, you can configure the switch using the Insight app or Insight Cloud portal.

For more information about Insight, visit [netgear.com/insight](https://netgear.com/insight) and see the NETGEAR knowledge base articles at [netgear.com/support](https://netgear.com/support).

For information about managing the switch without the benefits of the Insight app and Insight Cloud portal, see the user manual, which you can download from [netgear.com/support/download](https://netgear.com/support/download).

**Note:** The switch's default IP address is 192.168.0.239 and its default subnet mask is 255.255.255.0.

# 5

## 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, possible causes, and possible solutions for problems that might occur.

Table 4. Troubleshooting chart

Symptom	Possible Cause	Possible Solution
The Power/Cloud LED is off.	Power is not supplied to the switch.	<ul style="list-style-type: none"> <li>• Check the power cable connections at the switch and the power source.</li> <li>• Make sure that all cables are used correctly and comply with the Ethernet specifications.</li> </ul>
The Power/Cloud LED does not turn blue. <b>Note:</b> If the switch is a standalone switch that you manage through the local browser interface, the LED remains green.	The switch is an Insight managed switch that is not yet connected to the cloud server.	<ul style="list-style-type: none"> <li>• Make sure that the switch is connected to the Internet.</li> <li>• Make sure that you discover and add the switch to your network by using the NETGEAR Insight app or the NETGEAR Cloud portal.</li> </ul>
The left port LED is off when the port is connected to a powered-up device.	The port connection is not working.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Make sure that all cables are used correctly and comply with the Ethernet specifications.</li> <li>• Check for a defective port, cable, or module by testing them in an alternate environment where all products are functioning.</li> </ul>
A file transfer is slow or 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 switch local browser interface, you can configure the Spanning Tree Protocol (STP) to prevent network loops.

Table 4. Troubleshooting chart (Continued)

Symptom	Possible Cause	Possible Solution
A segment or device is not recognized as part of the network.	One or more devices are not properly connected, or the cabling does not meet Ethernet guidelines.	<ul style="list-style-type: none"> <li>• Verify that the cabling is correct.</li> <li>• Make sure that all connectors are securely positioned in the required ports. It is possible that equipment was accidentally disconnected.</li> </ul>
The left LEDs are blinking continuously on all connected ports 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 switch local browser interface, you can configure the 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 PoE Max LED is off. If the PoE Max LED is solid amber, 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 associated right port LED on the switch lights solid green. If the right port LED lights solid amber, a PoE fault occurred and PoE halted because of one of the conditions that are listed in the following table.

Table 5. 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 or 30W 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 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 resetting it. To reset the switch, disconnect the power from the switch and then reconnect the power. 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, and the duplex mode defaults to half-duplex. The Gigabit Ethernet ports negotiate speed, duplex mode, and flow control if the attached device supports autonegotiation.