



QNAP

QGD-1600P

User Guide

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1. Preface





About This Guide

This guide provides information on the QNAP QGD-1600P network switch and step-by-step instructions on installing the hardware. It also provides instructions on basic operations and troubleshooting information.

Audience

This document is intended for consumers and network administrators. This guide assumes that the user has a basic understanding of network, storage, and backup concepts.

Document Conventions

Symbol	Description
	Notes provide default configuration settings and other supplementary information.
	Important notes provide information on required configuration settings and other critical information.
	Tips provide recommendations or alternative methods of performing tasks or configuring settings.
	Warnings provide information that, when ignored, may result in potential loss, injury, or even death.

2. Product Overview

This chapter provides basic information about the QNAP QGD-1600P switch.

About the QGD-1600P

The QGD-1600P is QNAP's first smart-edge network switch that comes with built-in storage capacity. The switch features software-defined networking (SDN) to support multiple SMB applications, including NAS, NVR, router, firewall, AP controller and surveillance. The QGD-1600P supports virtual machines (VMs) and features 4-port 60-watt and 12-port 30-watt Gigabit power over Ethernet (PoE). The switch's dual-CPU design offers Layer 2 management functions for VM and QTS applications.

Hardware Specifications



Warning

If your QNAP product has hardware defects, return the product to QNAP or a QNAP-authorized service center for maintenance or replacement. Any attempt to repair or perform maintenance procedures on the product by you or an unauthorized third-party invalidates the warranty.

QNAP is not responsible for any damage or data loss caused by unauthorized modifications and installation of unsupported third-party applications.


For details, see the [QNAP Warranty Terms and Conditions](#).









Tip

Model specifications are subject to change without prior notice. To see the latest specifications, go to <https://www.qnap.com>.

Ordering P/N	CPU	Memory	Power supply
QGD-1600P-4G	Intel® Celeron® J4115	4 GB	Single
QGD-1600P-8G	Intel® Celeron® J4115	8 GB	Single

Component	QGD-1600P-4G	QGD-1600P-8G
Processor		
CPU	Intel® Celeron® J4115	
Frequency	4-core/4-thread 1.8 GHz base/2.5 GHz burst	
Architecture	x86 64-bit	
Encryption engine	AES-NI	
Graphics	Intel® HD Graphics 600	
Memory		
Pre-installed memory	4 GB RAM: 1 x 4 GB SODIMM DDR4	8 GB RAM: 2 x 4 GB SODIMM DDR4
Memory slots	2 x 4 GB SODIMM DDR4	
	 Important Use only QNAP memory modules to maintain system performance and stability. For devices with more than one memory slot, use QNAP modules with identical specifications. Using unsupported modules may degrade performance, cause errors, or prevent the operating system from starting.	

Component	QGD-1600P-4G	QGD-1600P-8G
Maximum memory	8 GB RAM: 2 x 4 GB	
Flash memory	4 GB (dual-boot OS protection)	
Storage		
Drive bays	2 x 2.5-inch SATA 6 Gbps  Note The interface is backward compatible with SAS 3 Gbps drives.	
Drive compatibility	<ul style="list-style-type: none"> • 2.5-inch SATA hard disk drives • 2.5-inch SATA solid-state drives 	
SSD cache acceleration support	2.5-inch drive bays: 1 and 2	
Hot-swapping	Supported	
Ports		
Gigabit Ethernet ports	<ul style="list-style-type: none"> • 2 x 1 GbE SFP/RJ45 combo ports • 14 x 1 GbE RJ45 	
PoE support		
802.3af (PoE)	Ports 1 to 16  Note The ports support IEEE 802.3af-2003 PoE standard and provide up to 15.4W of DC power.	
802.3at (PoE+)	Ports 1 to 16  Note The ports support IEEE 802.3at-2009 PoE standard and provide up to 30W of DC power.	
802.3bt (PoE++)	Ports 1 to 4  Note The ports support IEEE 802.3bt-2018 PoE standard and provide up to 60W of DC power.	
PoE max power port	<ul style="list-style-type: none"> • Ports 1 to 4: Up to 60W • Ports 5 to 16: Up to 30W 	
Total PoE power budget	370W  Warning To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.	
Total power consumption	418W	
External I/O Ports & Expansion Slots		
PCIe slots	2 x PCIe 2.0 x2  Tip For the list of compatible expansion cards, go to https://www.qnap.com/compatibility .	

Component	QGD-1600P-4G	QGD-1600P-8G
USB ports	<ul style="list-style-type: none"> • 1 x USB 3.0 Type-A • 2 x USB 2.0 Type-A 	
HDMI ports	1 x HDMI 2.0 (up to 3840 x 2160 resolution at 30 Hz with HDR)	
Interface		
Display panel	Monochrome backlit LCD display	
Buttons	<ul style="list-style-type: none"> • Enter • Select • QTS reset • Switch reset • System power 	
Switches	Power	
Dimensions		
Form factor	1U Rackmount	
Dimensions (H x W x D)	160 × 528 × 403 mm (62.99 × 207.87 × 158.66 in)	
Net weight	4.41 kg (9.72 lbs)	
Other		
Rail compatibility	<ul style="list-style-type: none"> • RAIL-B02 • SP-EAR-BLK-01 <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin-top: 10px;"> <p>Note The RAIL-B02 rail kit and SP-EAR-BLK-01 rack mount ear require separate purchase. For details, see QNAP Accessories Store.</p> </div>	
System battery	CR2032 lithium battery (3V, 225 mAh)	
Fans	System: 2 x 40 mm 12V DC fans	
Operating temperature	0°C to 45°C (32°F to 113°F)	
Relative humidity	<ul style="list-style-type: none"> • Non-condensing relative humidity: 5% to 95% • Wet-bulb temperature: 27°C (80.6°F) 	

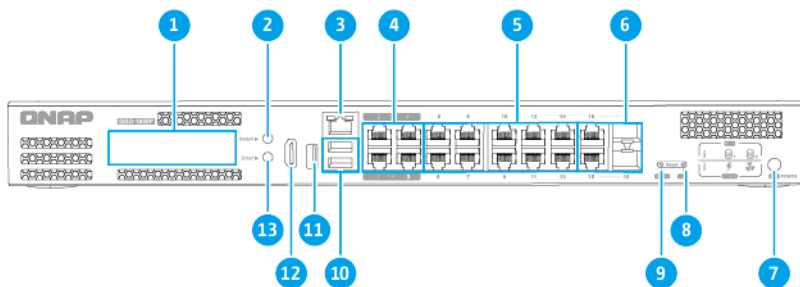
Package Contents

Item	Quantity
QGD-1600P	1
Power cord	1
Ethernet cables	1 x 1GbE (Cat5e)
Screws for 2.5-inch drives	6
Screws for rail brackets	4
Rail brackets	2
Rubber feet	4

Item	Quantity
Quick Installation Guide (QIG)	1

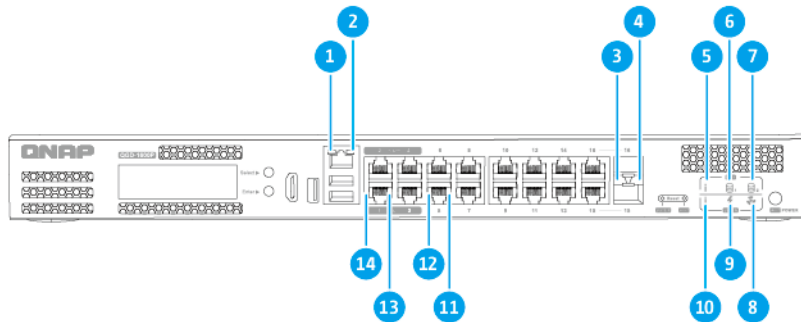
Components

Front Panel



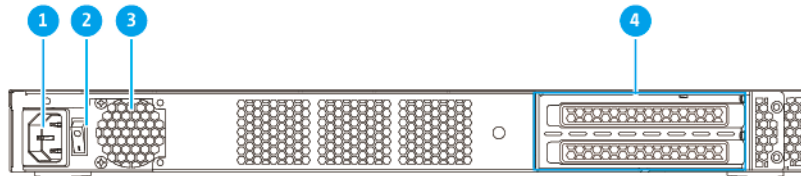
No.	Component	No.	Component
1	LCD panel	8	QTS reset button
2	Select button	9	Switch reset button
3	Host port	10	USB 2.0 Type-A ports
4	Gigabit 802.3at PoE++ ports	11	USB 3.0 Type-A port
5	Gigabit 802.3at PoE+ ports	12	HDMI 2.0 port
6	Gigabit 802.3at PoE+/SFP combo ports	13	Enter button
7	Host power button	-	-

Front Panel LEDs



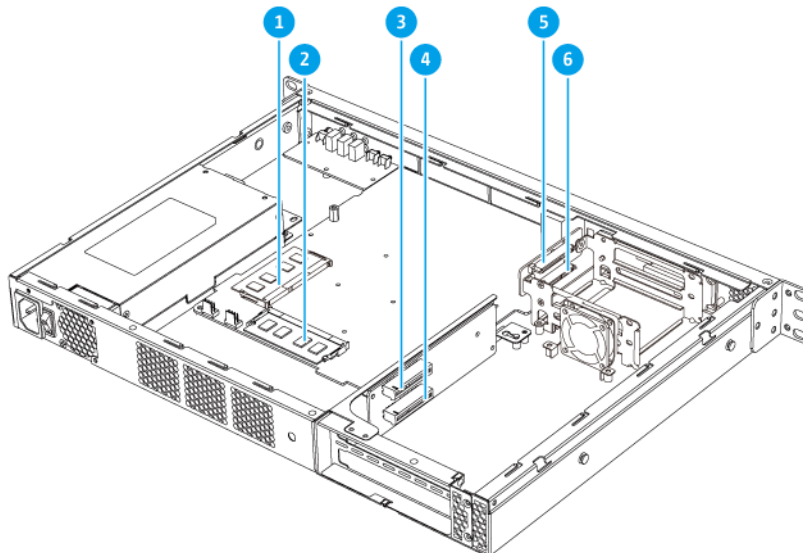
No.	Component	No.	Component
1	Host port speed LED	8	Fan LED
2	Host port activity LED	9	Power LED
3	Combo port speed LED	10	Switch status LED
4	Combo port activity LED	11	Gigabit 802.3at PoE+ port speed LED
5	QTS status LED	12	Gigabit 802.3at PoE+ power activity LED
6	Drive 1 LED	13	Gigabit 802.3bt PoE++ port activity LED
7	Drive 2 LED	14	Gigabit 802.3bt PoE++ power speed LED

Rear Panel



No.	Component	No.	Component
1	Power input	3	System fan
2	System power switch	4	PCIe full-height covers

System Board



No.	Component	No.	Component
1	Memory slot 2	4	PCIe 2.0 x2 slot 2
2	Memory slot 1	5	Drive connector 1
3	PCIe 2.0 x2 slot 1	6	Drive connector 2

Safety Information

The following instructions help ensure personal safety and environmental safety. Read these instructions carefully before performing any operations.

General Instructions

- The device should be stored in a secure location with restricted access, controlled through the use of a tool, lock and key, or any means of security.
- Only qualified, skilled, and authorized persons with knowledge of all restrictions, safety precautions, and installation and maintenance procedures should have physical access to the device.
- To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.
- Observe electrostatic discharge (ESD) procedures to avoid potential injury or damage to components.

Power

- To reduce the risk of fire or electric shock, ensure that you only connect the power cord to a properly grounded electrical outlet.



Devices with redundant power supply may have one or more power supply unit (PSU) cords. To avoid serious injuries, a trained service technician must disconnect all PSU cords from the device before installing or replacing system components.

System Battery

- To avoid potential battery explosion, causing injury or damage to components, ensure that you replace the existing battery with a battery of the same type.
- Dispose of used batteries properly according to local regulations or the instructions of the battery manufacturer.

Moving Parts



Moving fan blades: Keep your body parts away from moving fan blades while the device is connected to a power source.



Moving components: Keep your body parts away from other moving components.

Installation Requirements

Category	Item
Environment	<ul style="list-style-type: none"> • Room temperature: 0°C to 45°C (32°F to 113°F) • Non-condensing relative humidity: 5% to 95% • Flat, anti-static surface without exposure to direct sunlight, liquids, or chemicals • Free from objects that may obstruct the device ventilation or apply pressure to the device or power cord.
Hardware and peripherals	<ul style="list-style-type: none"> • Storage drives For the list of compatible drive models, go to https://www.qnap.com/compatibility. • Network cable • RAIL-B02 • SP-EAR-BLK-01
Tools	<ul style="list-style-type: none"> • Phillips #1 or #2 screwdriver • Flat head screwdriver • Anti-static wrist strap

Setting Up the Switch

1. Place your switch in an environment that meets the requirements.
For details, see [Installation Requirements](#).
2. Install the drives.
For details, see [Installing 2.5-inch Hard Drives or Solid-State Drives on 2.5-inch Trays](#).
For a list of compatible drives, go to <http://www.qnap.com/compatibility>
3. Optional: Replace memory modules.
For details, see [Replacing Memory Modules](#).
4. Optional: Install expansion cards.
For details, see [Installing Expansion Cards](#).
5. Install the switch on a rack.
You can find installation information in the rail kit package.
6. Power on the switch.
For details, see [Rear Panel](#).
7. Connect the switch to a computer or network.
For details, see [Connecting the Switch to a Computer or Network](#).
8. Install QTS.
For details, see [QTS Installation](#).
9. Log on to QTS.
10. Manage devices on the switch.

For details, see [Switch Management Application Access](#).

3. Installation and Configuration

This chapter provides specific hardware and firmware installation and configuration steps.

Hardware Installation

This section provides information on various hardware installation procedures.

Removing the Case Cover



Warning

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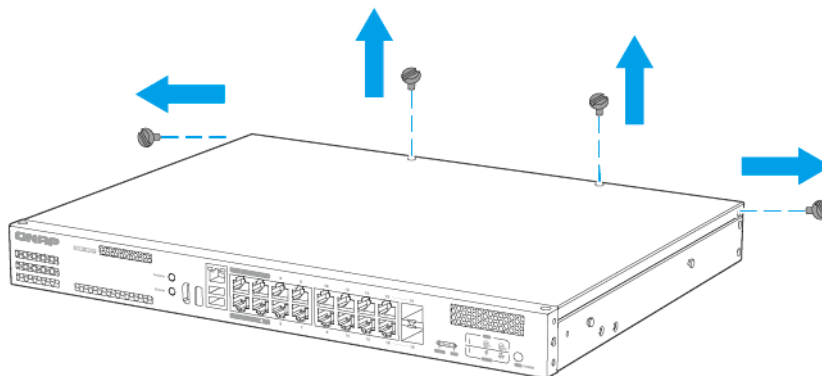
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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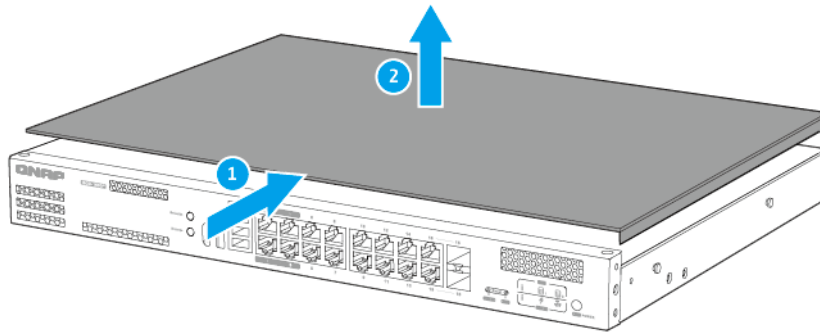


Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the switch.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the top cover.
 - a. Remove the screws.



- b. Slide the cover back.
- c. Lift the cover up.



Attaching the Case Cover



Warning

-



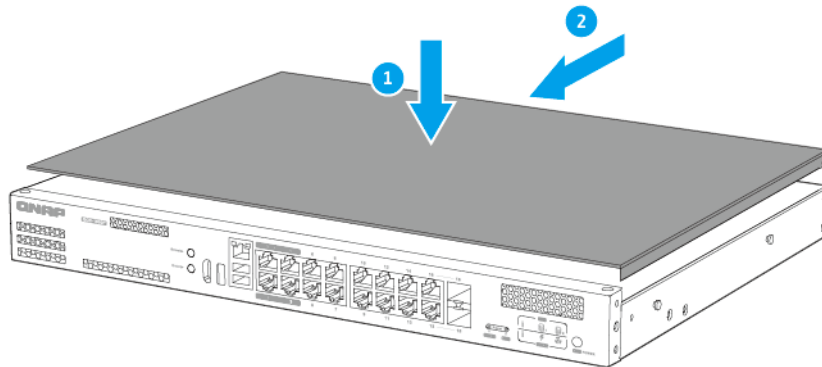
Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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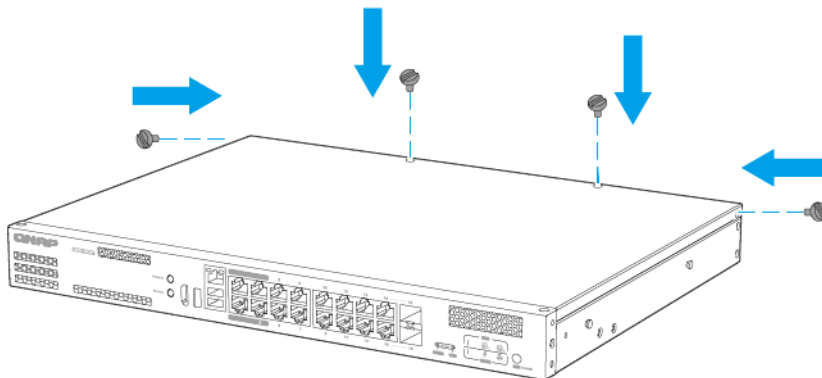


Other moving components: Keep your hands and other body parts away from other moving components.

1. Attach the cover to the switch.
 - a. Place the cover on top of the chassis.
 - b. Slide the cover forward.



2. Attach the screws.



3. Connect all cables and external attachments.
4. Connect the power cord to the electrical outlet.
5. Power on the switch.

Installing 2.5-inch Hard Drives or Solid-State Drives on 2.5-inch Trays

The QGD-1600P is compatible with 2.5-inch hard disk drives and 2.5-inch solid-state drives.



Warning

- Installing a drive deletes all data on the drive.

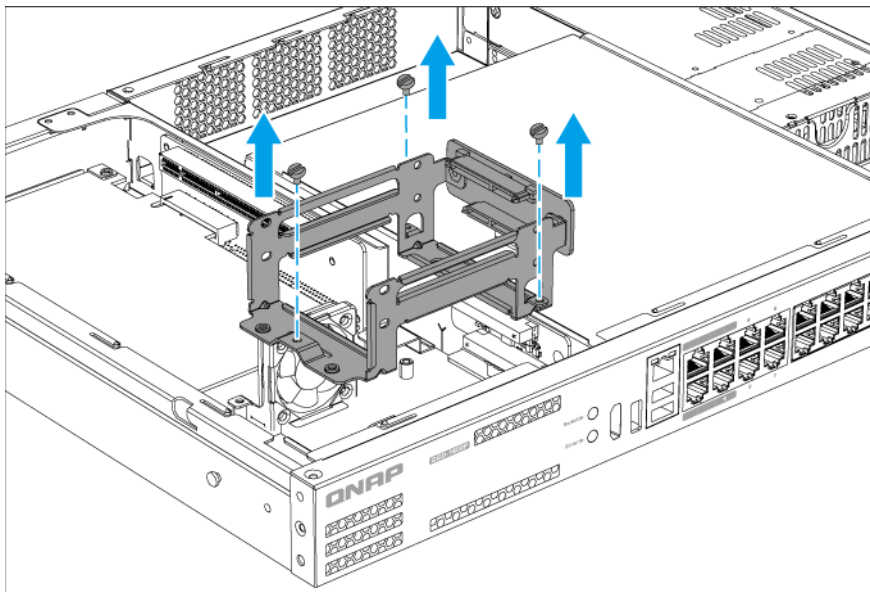


Moving fan blades: Keep your hands and other body parts away from moving fan blades.

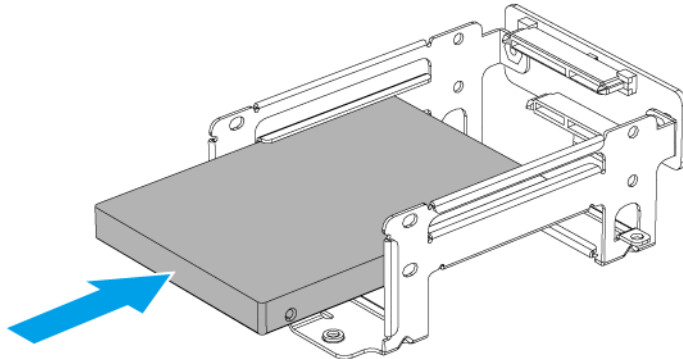


Other moving components: Keep your hands and other body parts away from other moving components.

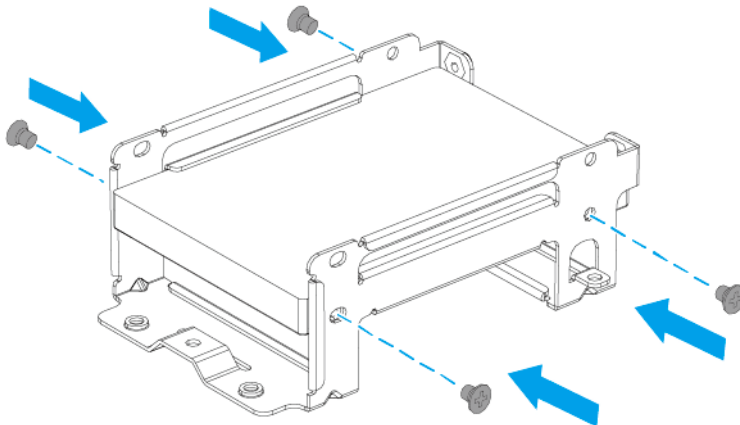
1. Power off the switch.
2. Remove the cover.
For details, see [Removing the Case Cover](#).
3. Remove the drive module.
 - a. Remove the screws.
 - b. Lift the drive module out of the switch.



4. Install the drive onto the drive module.
 - a. Insert the drive into the slot.

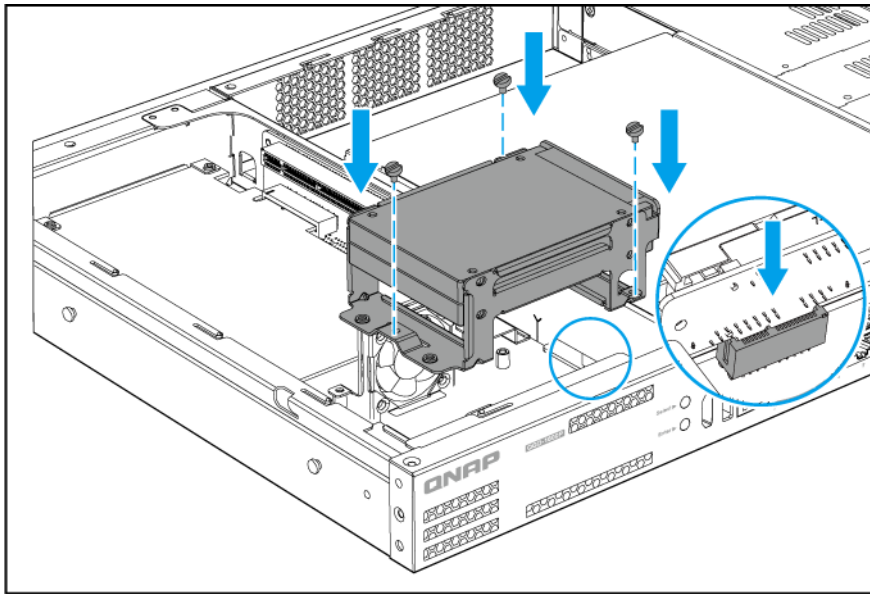


b. Attach the screws.



5. Insert the drive module.

- a.** Align the drive module connector with the motherboard.
- b.** Place the drive module in the switch and connect it to the motherboard.
- c.** Attach the screws.



6. Attach the case cover.
For details, see [Attaching the Case Cover](#).
7. Power on the switch.

Replacing Memory Modules

The QGD-1600P has two memory slots. The QGD-1600P-4G comes pre-installed with one memory module, while the QGD-1600P-8G has two pre-installed memory modules. You can increase the memory capacity of the switch by upgrading the memory modules. When using two modules, use only QNAP modules of the same type and capacity to maintain system performance and stability. You can purchase QNAP memory modules from authorized resellers.



Warning

- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

-



Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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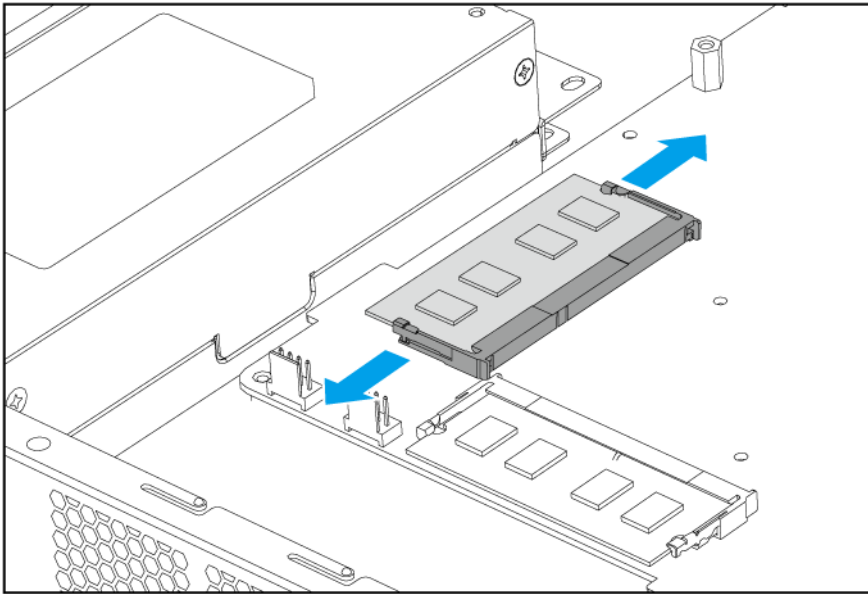
Other moving components: Keep your hands and other body parts away from other moving components.

1. Power off the switch.
2. Disconnect the power cord from the electrical outlet.

3. Disconnect all cables and external attachments.
4. Remove the case cover.
For details, see [Removing the Case Cover](#).
5. Remove an existing module.
 - a. Push the retention clips outward simultaneously to release the module.

**Warning**

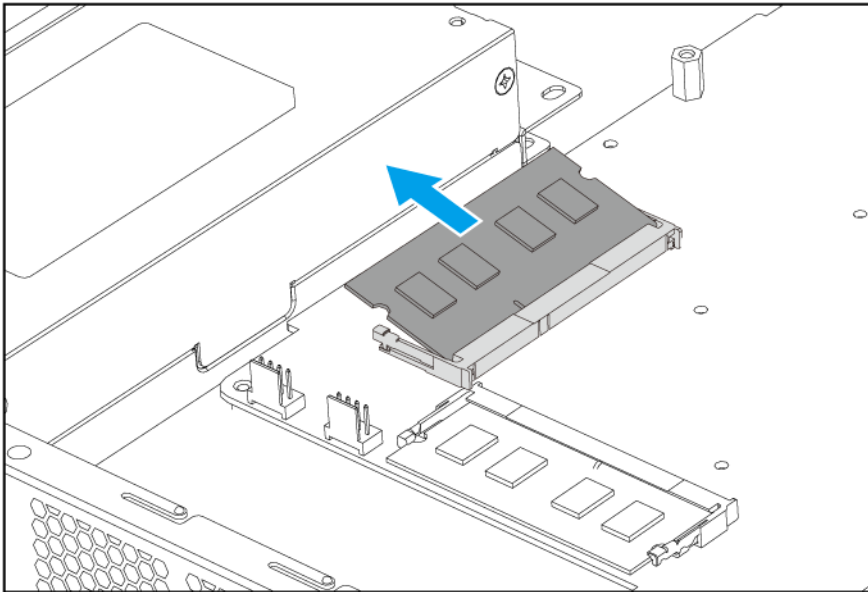
Attempting to remove a module that is not completely released may damage the module and the motherboard.



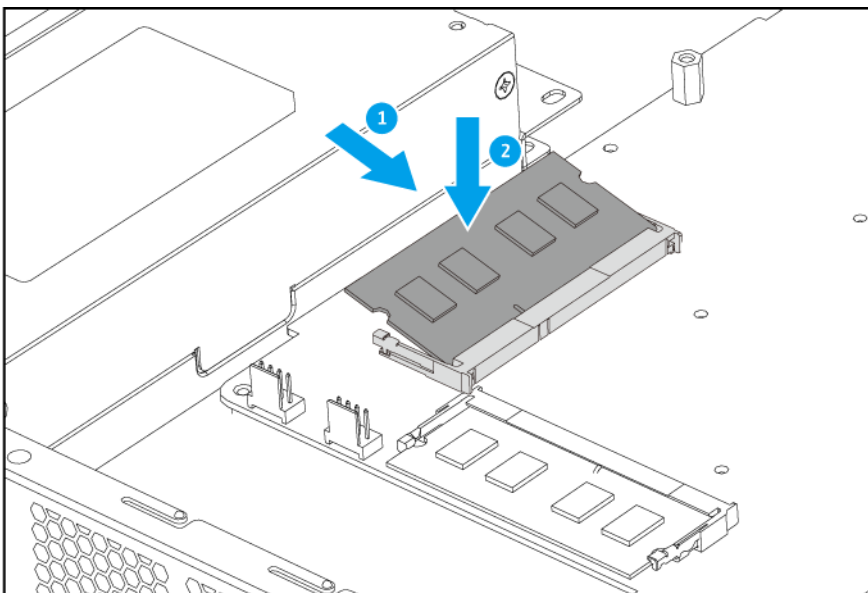
- b. Verify that the module has tilted upward and is completely released from the slot.
- c. Hold the module by the edges.
- d. Carefully slide the module out of the slot.

**Warning**

Attempting to remove a module that is not completely released may damage the module and the motherboard.



6. Install a new module.
 - a. Align the notch with the ridge in the slot.
 - b. Insert the module into the slot.
 - c. Verify that the metal connectors are completely inserted into the slot.
 - d. Carefully press down on the module until the retention clips lock the module into place.



7. Attach the case cover.
For details, see [Attaching the Case Cover](#).
8. Connect all cables and external attachments.
9. Connect the power cord to the electrical outlet.

10. Power on the switch.

Installing Expansion Cards

The QGD-1600P supports selected expansion cards, some of which require QNAP PCIe brackets. QNAP expansion cards purchased from the company website are shipped with the brackets necessary to fit all QNAP devices.

For details on supported expansion cards and brackets, go to <http://www.qnap.com/compatibility>.



Warning

- Observe electrostatic discharge (ESD) procedures to avoid damage to components.

-



Moving fan blades: Keep your hands and other body parts away from moving fan blades.

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Other moving components: Keep your hands and other body parts away from other moving components.

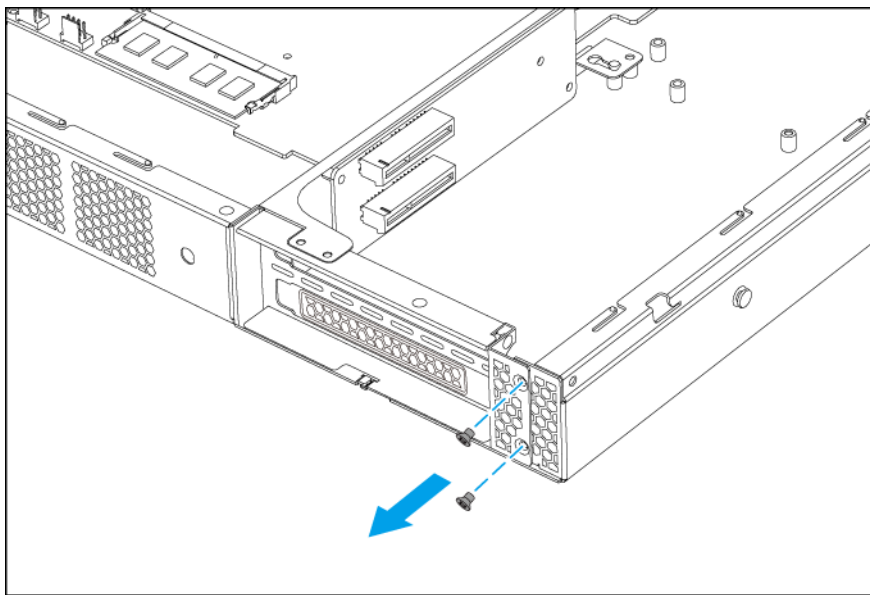
1. Power off the switch.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Remove the case cover.
For more information, see [Removing the Case Cover](#).



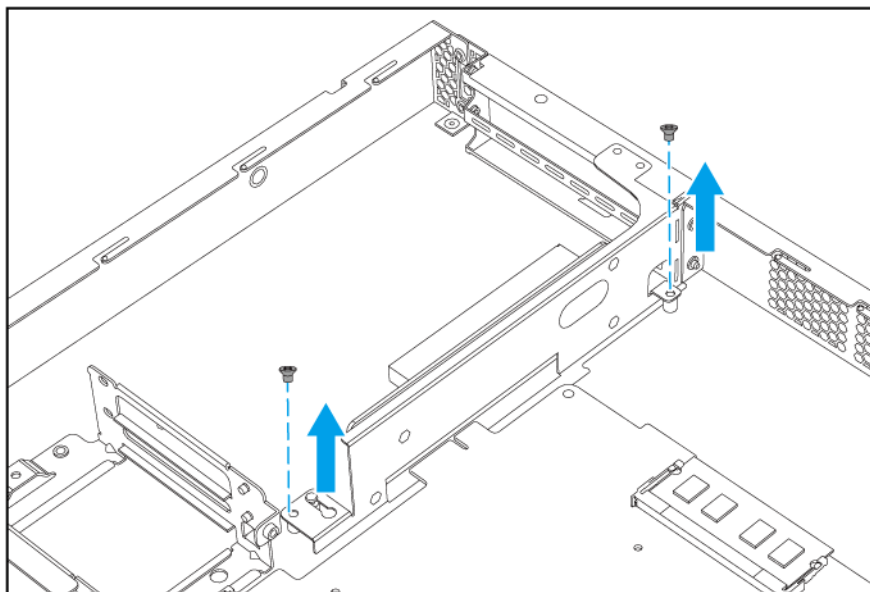
Warning

To avoid potential injury or damage to components, ensure that the drives and other internal system components have cooled before touching them.

5. Remove the PCIe module.
 - a. Remove the screws on the rear panel.

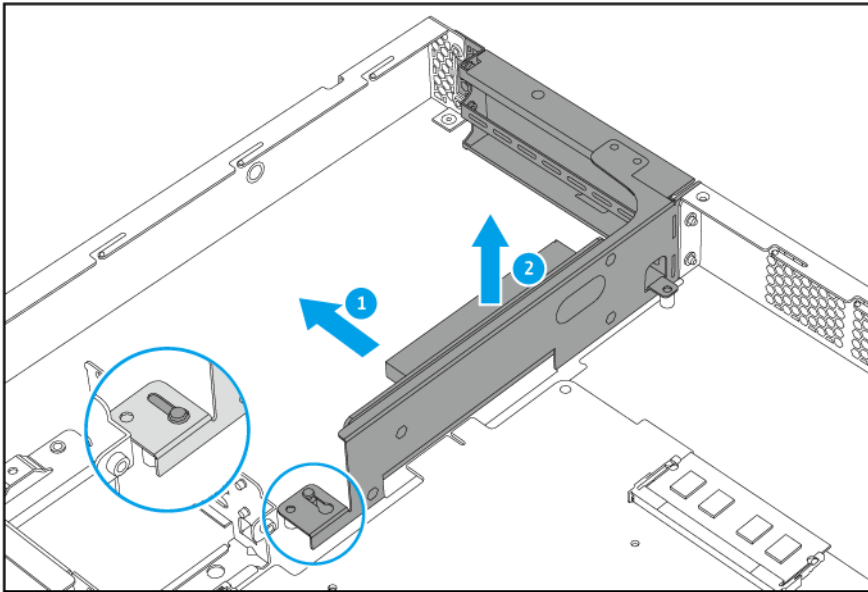


b. Remove the PCIe module screws.

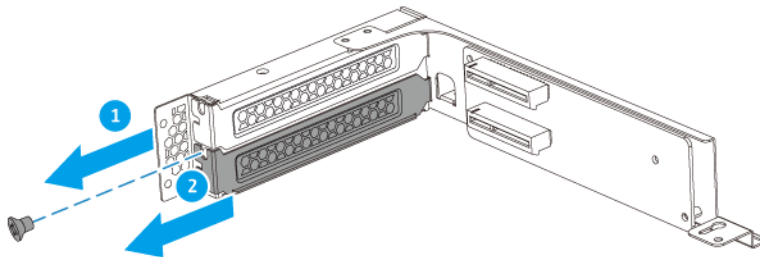


c. Slide the PCIe module to the right until it is completely detached from the system board.

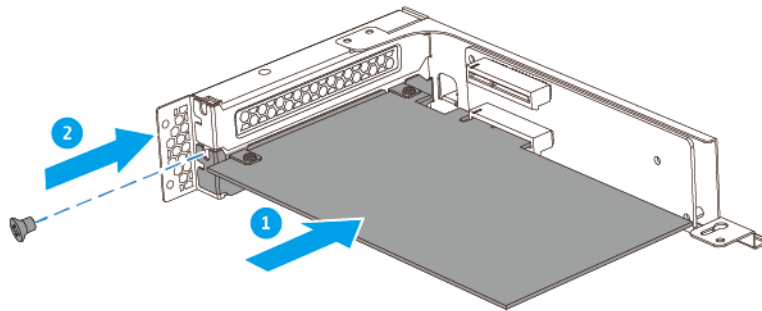
d. Remove the PCIe module.



6. Remove the PCIe slot cover.
 - a. Remove the screw that secures the cover to the chassis.
 - b. Slide the cover to the left.

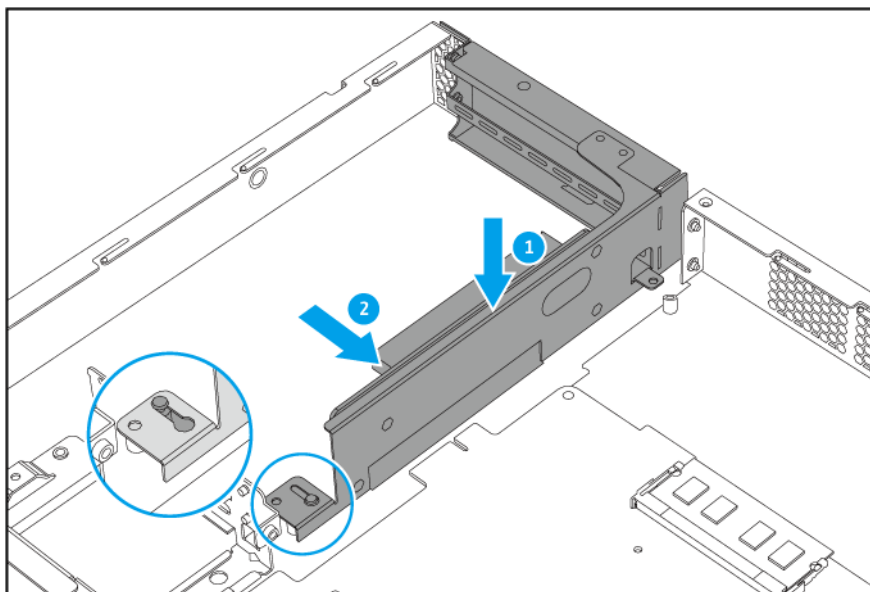


7. Install the expansion card.
 - a. Hold the card by the edges.
 - b. Insert the card into the slot.
 - c. Attach the screw.

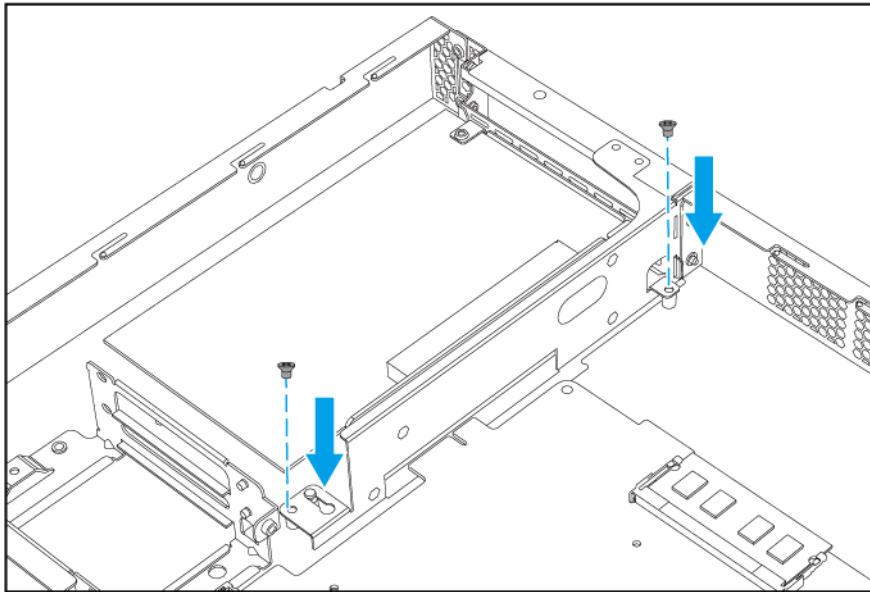


8. Install the PCIe module.

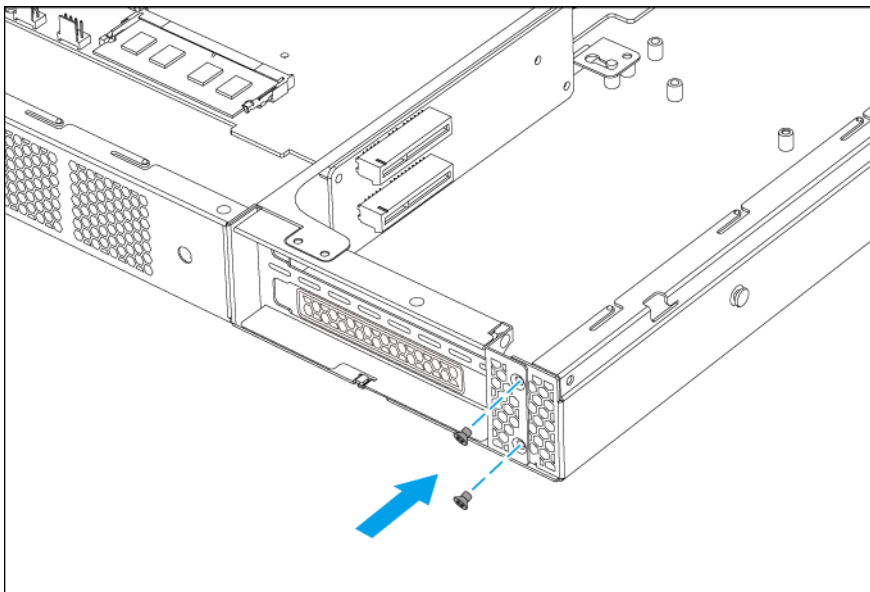
- a. Align the PCIe module connector with the system board.
- b. Slide the PCIe module to the left until it is completely connected with the system board.



- c. Attach the PCIe module screws.



d. Attach the rear panel screws.

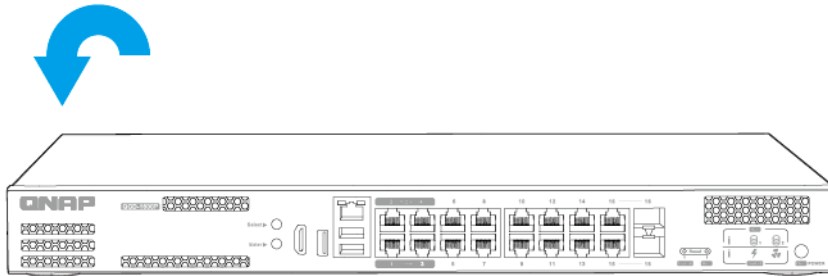


9. Attach the case cover.
For details, see [Attaching the Case Cover](#).
10. Connect all cables and external attachments.
11. Connect the power cord to the electrical outlet.
12. Power on the switch.

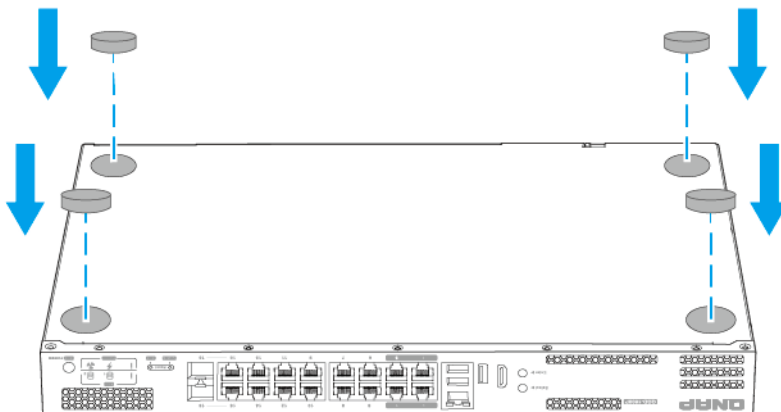
Attaching Rubber Feet to the Switch

1. Power off the switch.

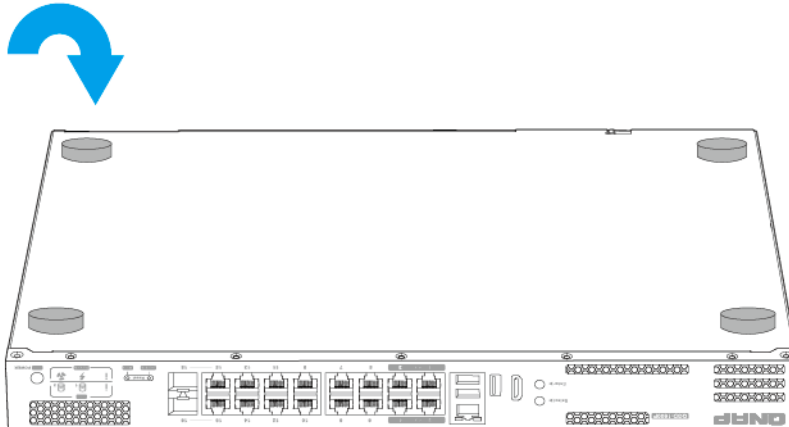
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Turn the switch upside down.



5. Attach the rubber feet.
 - a. Remove the protective film from the rubber feet.
 - b. Attach the rubber feet.



- c. Place the switch in its normal upright position.



6. Connect all cables and external attachments.
7. Connect the power cord to the electrical outlet.
8. Power on the switch.

Installing the Switch Brackets

The QGD-1600P package contains front-mount brackets for installing the switch on a rack. The switch is compatible with the following rail kit models and accessories:

- RAIL-B02
- SP-EAR-BLK-01

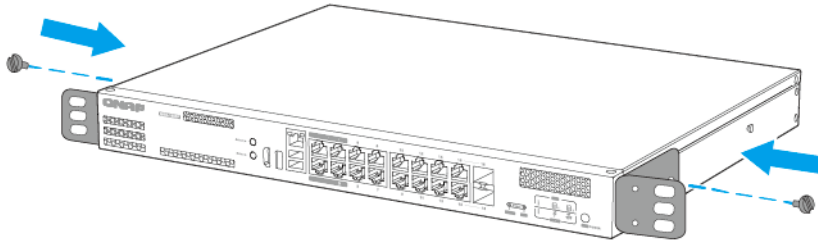
Rail kits and accessories are not included with the switch and must be purchased separately. For details, contact an authorized reseller or go to <http://shop.qnap.com>.



Tip

- QNAP recommends completing all other hardware installations before mounting the switch onto a rack.
- QNAP recommends installing the switch onto a rack with good ventilation and air flow.

1. Power off the switch.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Install the angle bracket on the switch.
 - a. Align the holes on the angle bracket with the holes on the chassis.
 - b. Attach the screws to secure the brackets to the switch.



Connecting the Switch to a Computer or Network

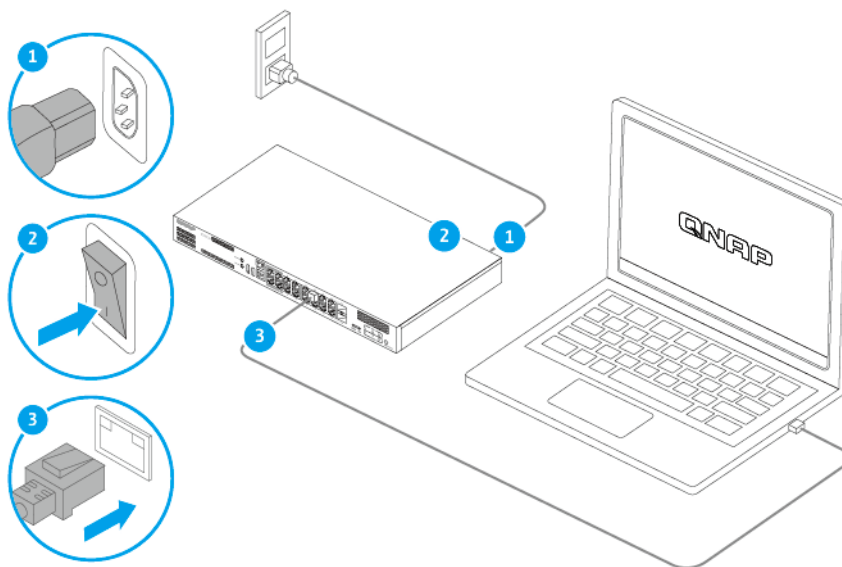
The QGD-1600P can be connected to a computer or local area network. For details, see the following topics:

- [Connecting the Switch to a Computer](#)
- [Connecting the Switch to a Network](#)

Connecting the Switch to a Computer

Connecting the QGD-1600P to a QNAP NAS allows you to expand storage capacity and backup data to another NAS through Ethernet cable connections to a PoE port on the switch. However, you must connect the QGD-1600P to a computer to configure switch settings.

1. Power on the switch.
2. Connect the switch to a computer.
 - a. Connect an Ethernet cable to a PoE port on the switch.
 - b. Connect the Ethernet cable to a Gigabit Ethernet port on the computer.



3. Verify that the switch is recognized by the computer.
 - a. Open Qfinder Pro on the host computer.

**Note**

To download Qfinder Pro, go to <https://www.qnap.com/utilities>.

- b. Locate the switch on the list.

Connecting the Switch to a Network

The QGD-1600P can connect to the local area network through the host port or a PoE port.

1. Power on the switch.
2. Connect the switch to your local area network through one of the following port types:

Type	Method
Host Port	Select the switch IP address obtained from Adapter 1 on the LCD panel.
PoE Port	Select switch IP addresses obtained from Adapter 2 or Adapter 3 on the LCD panel.

3. Run Qfinder Pro on a computer that is connected to the same local area network.

**Note**

To download Qfinder Pro, go to <https://www.qnap.com/utilities>.

4. Enter the IP address in the Qfinder Pro search bar.
5. Locate the switch in the list and then double-click the name or IP address. The QTS login screen appears.
6. Enter your QTS login information.

7. Click **Log In**.

Connecting USB Expansion Units

The QGD-1600P supports USB expansion units. Refer to the following table for details.

For the list of compatible expansion units and the maximum number of applicable expansion units, go to <http://www.qnap.com/go/compatibility-expansion>.

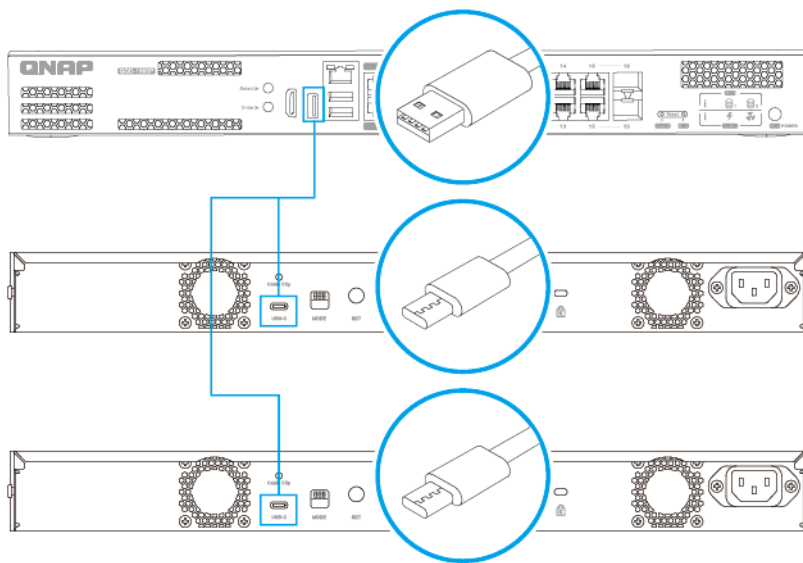
You can purchase storage expansion accessories from QNAP or an authorized reseller.

For details, go to <https://shop.qnap.com/>.

Expansion Unit Model	Description	Required Accessories
TR-002	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 2 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004	<ul style="list-style-type: none"> • Uses a USB 3.2 Gen 1 Type-C interface • Supports SATA drives 	<ul style="list-style-type: none"> • USB 3.2 Gen 2 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable
TR-004U		<ul style="list-style-type: none"> • USB 3.2 Gen 1 Type-A to Type-C cable • USB 3.2 Gen 2 Type-C to Type-C cable • RAIL-B02

1. Connect the expansion unit to the switch.

- a. Connect the USB cable to the USB Type-C port on the expansion unit.
- b. Connect the USB cable to a USB Type-A port on the switch.



2. Power on the expansion units.
3. Verify that the expansion units are recognized by the switch.
 - a. Log on to QTS as administrator.
 - b. Go to **Main Menu > Storage & Snapshots > Overview > System**.
 - c. Verify that the expansion units are listed.

QTS Installation

Installation Method	Description	Requirements
Qfinder Pro (Recommended)	<p>If the switch is connected to your local area network, you can do the following:</p> <ul style="list-style-type: none"> • Locate the switch using Qfinder Pro. • Complete the steps in the Smart Installation Guide wizard. 	<ul style="list-style-type: none"> • Computer • Network cable • Qfinder Pro installer
Cloud	<p>If the switch is connected to the internet, you can do the following:</p> <ul style="list-style-type: none"> • Scan the QR code on the switch. • Specify the Cloud Key. • Log into your myQNAPcloud account. • Use myQNAPcloud Link to remotely access your switch. • Complete the steps in the Smart Installation Guide wizard. 	<ul style="list-style-type: none"> • Computer or mobile device • myQNAPcloud account • Cloud Key

Installation Method	Description	Requirements
Local	<p>If the switch supports HDMI output, you can do the following:</p> <ul style="list-style-type: none"> • Connect the switch to the required hardware. • Complete the steps in the Smart Installation Guide wizard. 	<ul style="list-style-type: none"> • Monitor • HDMI cable • USB keyboard or Remote control (not available on all models)

Installing QTS Using Qfinder Pro



Warning

Installing QTS deletes all data on the drives. Back up your data before proceeding.

1. Power on the switch.
2. Connect the switch to your local area network.



Tip

You can connect to the local area network through the host port or through any PoE port.

3. Run Qfinder Pro on a computer that is connected to the same local area network.



Note

To download Qfinder Pro, go to <https://www.qnap.com/utilities>.

4. Locate the switch in the list and then double-click the name or IP address. The **Smart Installation Guide** opens in the default web browser.
5. Click **Start Smart Installation Guide**.
6. Specify the following information.
 - **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
 - **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
7. Click **Next**.
8. Specify the time zone, date, and time.



Tip

QNAP recommends connecting to an NTP server to ensure that the switch follows the Coordinated Universal Time (UTC) standard.

9. Click **Next**.
10. Select **Obtain an IP address automatically (DHCP)**.
11. Click **Next**.
12. Select the types of devices that you will use to access shared folders on the switch.

13. Click **Next**.
14. Review the settings.
15. Click **Apply**.
A confirmation message appears.

**Warning**

Clicking **Confirm** deletes all data on the drive before installing QTS.

16. Click **Confirm**.
QTS is installed.

Installing QTS Using the Cloud Key

**Warning**

Installing QTS deletes all data on the drives. Back up your data before proceeding.

1. Power on the switch.
2. Connect the switch to the internet.
3. Go to the QNAP Cloud Installation page using one of the following methods:
 - On your computer, go to <http://install.qnap.com/>.
 - Scan the QR code on the switch using a mobile device.

The web page lists all the uninitialized QNAP devices on the local network.

4. Find your switch from the list and then click **Initialize**.

**Note**

If your switch is not listed, follow the instructions on the web page to specify the Cloud Key on the switch.

The installation wizard opens in the default web browser.

5. Create an account or sign in to myQNAPcloud.

**Note**

You must return to this page to complete the installation after creating an account.

6. Specify the myQNAPcloud device name for the switch.

**Note**

- The myQNAPcloud device name is used when remotely accessing the switch.
- For security purposes, the myQNAPcloud Link remote connection service will be disabled on your switch after initialization. You can enable it by connecting to QTS through LAN and then installing myQNAPcloud Link.

7. Click **Next**.
The **Smart Installation Guide** opens in the default web browser.
8. Click **Start Smart Installation Guide**.

9. Specify the following information.

- **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
- **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.

10. Click **Next**.

11. Specify the time zone, date, and time.



Tip

QNAP recommends connecting to an NTP server to ensure that the switch follows the Coordinated Universal Time (UTC) standard.

12. Click **Next**.

13. Select **Obtain an IP address automatically (DHCP)**.

14. Click **Next**.

15. Select the types of devices that you will use to access shared folders on the switch.

16. Click **Next**.

17. Review the settings.

18. Click **Apply**.

A confirmation message appears.



Warning

Clicking **Confirm** deletes all data on the drive before installing QTS.

19. Click **Confirm**.

QTS is installed.

Installing QTS Using an HDMI Connection



Warning

Installing QTS deletes all data on the drives. Back up your data before proceeding.

1. Connect an HDMI display to the switch.

2. Connect a USB keyboard to the switch or prepare the QNAP IR remote control (not available on all models).

3. Power on the switch.

The **Welcome** screen of the Smart Installation Guide appears.

4. Select **Start Smart Installation Guide**.

5. Select **No, skip this process**.

Enabling the multimedia functions allows you to install multimedia applications after configuring the disks in Storage & Snapshots.

For details on enabling multimedia functions on QTS, see the System Administration section of the QTS User Guide.

6. Select **Configure later**.

For details on configuring disks, see the Storage & Snapshots section of the QTS User Guide.

7. Review the settings.
8. Click **Next**.
9. Review the settings.
10. Click **Next**.
The **Confirm** screen appears.



Warning

Clicking **Next** deletes all data on the drive before installing QTS.

11. Click **Next**.
QTS is installed.

Switch Management Application Access

You can manage the QGD-1600P switch using the following applications:

Application	Description
QuNetSwitch	Switch management application for QTS. QuNetSwitch comes preinstalled in QTS.
QSS	Switch management system for QNAP switches. QSS comes preinstalled on the switch.

For details, see the following topics:

- [Accessing QuNetSwitch in QTS](#)
- [Accessing QSS with Qfinder Pro](#)

Accessing QuNetSwitch in QTS



Note

You must create a default system volume before using QuNetSwitch. For more details, see the QTS User Guide.

1. Power on the switch.
2. Log in to QTS.



Note

For details, see [Connecting the Switch to a Network](#).

3. Go to **Main Menu > QuNetSwitch** .
4. Continue with switch management.



Note

For details on switch management, see the QuNetSwitch User Guide.

Accessing QSS with Qfinder Pro



Note

You must create a default system volume before using QuNetSwitch.

1. Power on the switch.
2. Connect the switch to your local area network.
For details, see [Connecting the Switch to a Network](#).
3. Run Qfinder Pro on a computer that is connected to the same local area network.



Note

To download Qfinder Pro, go to <https://www.qnap.com/utilities>.

4. Enter the switch IP address.
The switch IP address will be displayed as %yourNAS name%- switch.
5. Locate the switch in the list and then double-click the name or IP address.
The QSS login screen appears.
6. Log in to QSS.
The QSS default login details are as follows:
 - Account name: admin
 - Password: admin
 The **Welcome** window appears.
7. Specify the following information.
 - **NAS name:** Specify a name with 1 to 14 characters. The name supports letters (A to Z, a to z), numbers (0 to 9), and hyphens (-), but cannot end with a hyphen.
 - **Password:** Specify an administrator password with 1 to 64 characters. The password supports all ASCII characters.
8. Continue with switch management.



Note


For details on switch management, see the QuNetSwitch User Guide.

4. Basic Operations

This chapter describes basic switch operations.

Buttons

Host Power Button


Operation	User Action	Result
Power on	Press the button once.	The switch powers on and logs on to QTS.
Power off	Press and hold the button for 1.5 seconds.	The switch powers off and logs out of QTS.
Force power off	Press and hold the button for 5 seconds.	The switch shuts down.  Important Use this method only when the switch is unresponsive.

Switch Reset Button

Operation	User Action	Result
Reset	Press and hold the button for 3 seconds.	The switch resets and all default settings are restored.

QTS Reset Button

Operation	User Action	Result
Basic system reset	Press and hold the button for 3 seconds.	The following QTS settings are returned to default settings: <ul style="list-style-type: none"> • System administrator password: admin • TCP/IP configuration: Obtain IP address settings automatically via DHCP. • Disable jumbo frames. • If port trunking is enabled (multi-LAN models only), the port trunking mode is reset to "Active Backup (Failover)". • System port: 8080 (system service port) • Security level: Low (Allow all connections) • LCD panel password: (blank) • VLAN: Disabled

Operation	User Action	Result
Advanced system reset	Press and hold the button for 15 seconds.	<p>The default QTS settings are restored.</p> <p> Tip To retrieve old data after an advanced system reset, recreate the previous folder structure on the switch.</p>

LCD Panel

Viewing TCP/IP Settings

You can view the following settings for each network adapter on the switch:

- IP address
 - Subnet mask
 - Default gateway
 - Primary DNS
 - Secondary DNS
1. Press **Enter** or **Select**.
The panel displays the switch name and QTS version.
 2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP.`
 3. Press and hold **Enter**.
The panel displays the IP address of the first network adapter.
 4. Press and hold **Select** to view the next TCP/IP screen.
 5. Optional: Repeat step 4 as necessary.

Configuring TCP/IP Settings

You can configure the following settings for each network adapter on the switch:

- IP address
 - Subnet mask
 - Default gateway
 - Primary DNS
 - Secondary DNS
1. Press **Enter** or **Select**.
The panel displays the NAS name and QTS version.
 2. Press and hold **Enter** for two seconds
The panel displays `Main Menu 1. TCP/IP.`

3. Press and hold **Enter**.
The panel displays the IP address of the first network adapter.
4. Press **Select** repeatedly until the panel displays `Enter Network Settings`.
5. Press and hold **Enter**.
The panel displays the configurable network settings.
6. Press **Select** and **Enter** to configure the settings.

Button	Usage
Enter	<ul style="list-style-type: none"> • Display a configuration screen. • Move to the next item on a configuration screen.
Select	<ul style="list-style-type: none"> • Move to the next item on a menu. • Modify a value on a configuration screen.

Viewing Drive Information

The LCD panel can display the temperature and capacity of each drive installed in the switch.

1. Press **Enter** or **Select**.
The panel displays the switch name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 2. Physical disk`.
4. Press and hold **Enter**.
The panel displays the temperature and capacity of the drive in slot 1.
5. Press and hold **Select**.
The panel displays the temperature and capacity of the next drive.
6. Optional: Repeat step 5 as necessary.

Viewing System Information

The LCD panel can display the CPU temperature, system temperature, and system fan speed.

1. Press **Enter** or **Select**.
The panel displays the switch name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 4. System`.
4. Press and hold **Enter**.
The panel displays the CPU and system temperature.
5. Press and hold **Select**.
The panel displays the system fan speed.

Powering Off the Switch

1. Press **Enter** or **Select**.
The panel displays the switch name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 5. Shut down`.
4. Press and hold **Enter**.
The switch powers off.

Restarting the Switch

1. Press **Enter** or **Select**.
The panel displays the switch name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 6. Reboot`.
4. Press and hold **Enter**.
The switch restarts.

Changing the LCD Password

Specifying a password for the LCD panel prevents unauthorized access.

1. Press **Enter** or **Select**.
The panel displays the switch name and QTS version.
2. Press and hold **Enter** for two seconds.
The panel displays `Main Menu 1. TCP/IP`.
3. Press **Enter** repeatedly until the panel displays `Main Menu 7. Password`.
4. Press and hold **Enter**.
The `Change Password` screen appears.
5. Select **Yes** by pressing and holding **Enter**.
The `New Password` screen appears.
6. Press **Select** and **Enter** to specify a new password.
 - Specify a password.
 - Specify a password with 1 to 8 characters. The password can only contain numbers (0 to 9).
 - To remove the password, leave the password field blank.

Button	Usage
Enter	Move to the next item in the <code>New Password</code> screen.
Select	Change a number in the <code>New Password</code> and <code>Verify Password</code> screens.

7. Press Enter.

The switch saves the password.

LCD Error Messages

System Message	Description
Sys. Fan Failed	System fan has failed.
Sys. Overheat	System has overheated.
HDD Overheat	Drive has overheated.
CPU Overheat	CPU has overheated.
Network Lost	LAN1, LAN2, LAN3, and LAN4 disconnected in failover or load-balancing mode.
LAN1 Lost	LAN1 has disconnected.
LAN2 Lost	LAN2 has disconnected.
LAN3 Lost	LAN3 has disconnected.
LAN4 Lost	LAN4 has disconnected.
HDD Failure	Drive has failed.
Vol1 Full	Volume is full.
HDD Ejected	Drive has ejected.
Vol1 Degraded	Volume1 is in degrade mode.
Vol1 Unmounted	Volume1 has unmounted.
Vol1 Nonactive	Volume1 is inactive.

LEDs

LEDs indicate system status and related information when the switch is powered on. The following LED information applies only when the drive is correctly installed and when the switch is connected to the network.

For details on the location of the LEDs, see [Front Panel](#).

LED	Status	Description
Host Power	Green	The host system is ready.
	Flashes green every 1.0 sec	The host system is starting up.
	Red	A fatal host system error occurred.
	Off	The host system is powered off.
Drive 1	Green	Drive operations are normal.
	Red	An error occurred.
	Off	No drive was detected.
Drive 2	Green	Drive operations are normal.
	Red	An error occurred.
	Off	No drive was detected.
Switch power	Green	The switch is ready.
	Flashes green every 1.0 sec	The switch is starting up.
	Red	A fatal switch system error occurred.
	Off	The switch system is powered off.

LED	Status	Description
PoE	Green	The PoE status is normal.
	Red	A fatal PoE error occurred.
Fan	Green	The fan status is normal.
	Red	A fatal fan error occurred.
PoE port speed	Flashes green every 1.0 sec	The link speed is operating at 1 Gbps.
	Flashes amber every 1.0 sec	The link speed is operating at 10/100 Mbps.
	Off	No link was detected.
PoE port activity/link	Green	The switch is connected to a power device.
	Amber	A power device error occurred.
	Off	No power device was detected.
Combo port speed	Flashes green every 1.0 sec	The link speed is operating at 1 Gbps.
	Flashes amber every 1.0 sec	The link speed is operating at 10/100 Mbps.
	Off	No link was detected.
Combo Port activity/link	Flashes amber every 1.0 sec	Data is being transferred.

Audio Alert

Duration	Frequency	Description	
Short beep (0.5 seconds)	1	<ul style="list-style-type: none"> The device is starting up. The device is shutting down (software shutdown). The user pressed the Switch Reset button. The operating system was updated. 	
		3 (every 5 minutes)	The system fan is not functioning.
			<ul style="list-style-type: none"> The disk volume is about to reach its full capacity. The disk volume has reached its full capacity. The drives are in degraded mode. The user started the drive rebuilding process. A drive is disconnected or connected.
Long beep (1.5 seconds)	2	<ul style="list-style-type: none"> The device was powered off by force shutdown (hardware shutdown). The device was powered on successfully and is ready. 	
	1	<ul style="list-style-type: none"> The device was powered off by force shutdown (hardware shutdown). The device was powered on successfully and is ready. 	
Long beep (5 seconds)	1	QTS is restarting.	

5. Troubleshooting

This chapter describes basic troubleshooting information.

Hot-Swapping Failed Drives

The switch supports hot-swapping of drives in the following situations:

- RAID 1: One member drive fails
- RAID 5: One member drive fails
- RAID 6: One or two member drives fail

1. Log on to QTS.
2. Go to **Main Menu > Storage & Snapshots > Storage > Disks/VJBOD** .
3. Locate the failed drive.
4. Prepare a new hard drive with a capacity that is the same as or larger than the failed hard drive.
5. Remove the failed drive from the switch.
6. Wait for 20 seconds or until the switch beeps twice.
7. Remove the failed drive from the drive tray.
8. Insert the new drive into the drive tray.
9. Install the new drive.
The switch beeps twice.
10. Go to **Main Menu > Storage & Snapshots > Storage Space** .
11. Locate the volume that contains the new drive and then verify that the status is *Rebuilding*.

Forcing Qfinder Pro and myQNAPCloud to Locate the Switch

If Qfinder Pro or myQNAPCloud is unable to locate the switch during QTS installation, the drives or data may be faulty.

1. Power off the switch.
2. Remove all drives.
3. Power on the switch.
4. Locate the switch using Qfinder Pro.
5. Reinsert the drives.
6. Continue with the QTS installation.

Support and Other Resources

QNAP provides the following resources:

Resource	URL
Documentation	https://docs.qnap.com
Service Portal	https://service.qnap.com
Downloads	https://download.qnap.com
Community Forum	https://forum.qnap.com

6. Glossary

myQNAPcloud

Provides various remote access services such as DDNS and myQNAPcloud Link

myQNAPcloud Link

Enables you to access the NAS over the internet without configuring complex port forwarding settings

Qfinder Pro

QNAP utility that lets you locate and access QNAP NAS devices in your local area network

QuNetSwitch

QNAP switch management app that runs on the QTS operating system

QTS

QNAP NAS operating system

QSS

QNAP switch management application

7. Notices

This chapter provides information about warranty, disclaimers, licensing, and federal regulations.

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Version 3, 29 June 2007

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tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

2. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it.

“Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

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FCC Class A Notice



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