



**QNAP**

# **QSW-M2106**

**QSW-M2106PR**

**User Guide**

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# 1. Product Overview

This chapter provides basic information about the QNAP device.

## About the QSW-M2106PR

The QSW-M2106PR is a multi-gigabit Ethernet switch that provides Layer 2 network management. The switch is equipped with six 2.5 GbE RJ45 ports, two 10 GbE RJ45 ports, and two 10 GbE SFP+ combo ports for enhanced network scalability and operational productivity. The switch can be accessed using the RJ45 console port for efficient device management and switch operations.

The QSW-M2106PR features 2.5 GbE and 10 GbE ports with up to 90-watt Power over Ethernet (PoE) output.

## 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
QSW-M2106PR-2S2T	Marvell® Prestera® 98DX2528	1 GB

Component	QSW-M2106PR-2S2T
Processor	
CPU	Marvell ® Prestera® 98DX2528
Frequency	Dual-core
Architecture	ARM 32-bit
Chipset	Marvell ® Prestera® 98DX2528
Network interfaces	<ul style="list-style-type: none"> <li>• 6 x 100M/1G/2.5G RJ45 ports</li> <li>• 2 x 100M/1G/2.5G/5G/10G GbE RJ45 ports</li> <li>• 2 x 1G/10G SFP+ combo ports</li> </ul>
Management interfaces	1 x RJ45 console port
PoE support	
802.3bt (PoE++)	Ports 1 to 8  <b>Note</b> The ports support IEEE 802.3bt-2018 PoE standard and provide up to 90W of DC power.
PoE max power port	Ports 1 to 8: Up to 90W
Total PoE power budget	310W

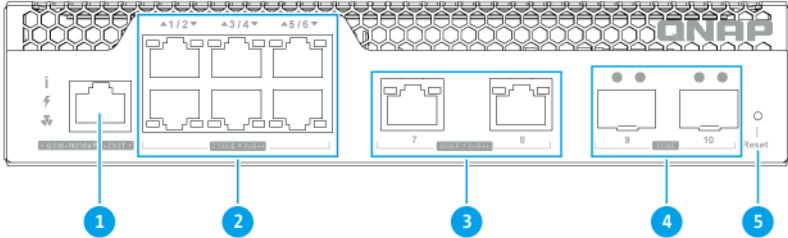
Component	QSW-M2106PR-2S2T
Total power consumption	350W
Interface	
Buttons	Switch reset
LEDs	
System	<ul style="list-style-type: none"> <li>• Status</li> <li>• PoE</li> <li>• Fan</li> </ul>
Ports	<ul style="list-style-type: none"> <li>• Speed</li> <li>• Activity</li> </ul>
Dimensions	
Form factor	Compact
Dimensions (H x W x D)	43.3 x 207 x 248.8 mm (1.70 x 8.14 x 9.79 in)
Net weight	1.73kg (3.81 lbs)
Others	
Power supply unit	100-240V, 50/60 Hz
Fans	System: 2 x VAPO bearing fan
Operating temperature	0°C to 40°C (32°F to 104°F)
Relative humidity	<ul style="list-style-type: none"> <li>• Non-condensing relative humidity: 5% to 95%</li> <li>• Wet-bulb temperature: 27°C (80.6°F)</li> </ul>

## Package Contents

Item	Quantity
QSW-M2106PR	1
Power cord	1
Rail brackets	2
Screws for rail brackets	6
Rubber feet	4
Quick Installation Guide (QIG)	1

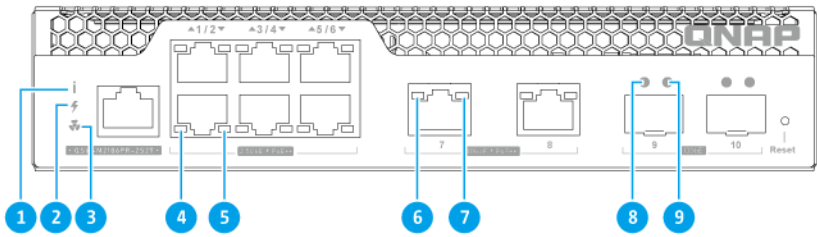
## Components

### Front Panel



No.	Component	No.	Component
1	RJ45 console port	4	10 GbE SFP+ ports
2	2.5 GbE RJ45 ports	5	Switch reset button
3	10 GbE RJ45 ports	-	-

### Front Panel LEDs



No.	Component	No.	Component
1	Switch status LED	6	10GbE RJ45 speed LED
2	PoE LED	7	10GbE RJ45 PoE LED

No.	Component	No.	Component
3	Fan LED	8	10GbE SFP+ (10G speed) LED
4	2.5 GbE RJ45 speed LED	9	10GbE SFP+ (1G speed) LED
5	2.5 GbE RJ45 PoE LED	-	-

## Safety Information

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

### 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.
- To avoid serious injuries, a trained service technician must disconnect all PSU cords from the device before installing or replacing system components.

### System Battery

- This product contains a button battery.
- If swallowed, a lithium button battery can cause severe or fatal injuries within 2 hours.
- Keep batteries out of reach of children.
- If you think batteries may have been swallowed or placed inside any part of the body, seek immediate medical attention.
- 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.

- The device is not suitable for use in locations where children are likely to be present.



## 2. Installation and Access

This chapter provides specific hardware installation and switch access steps.

### Installation Requirements

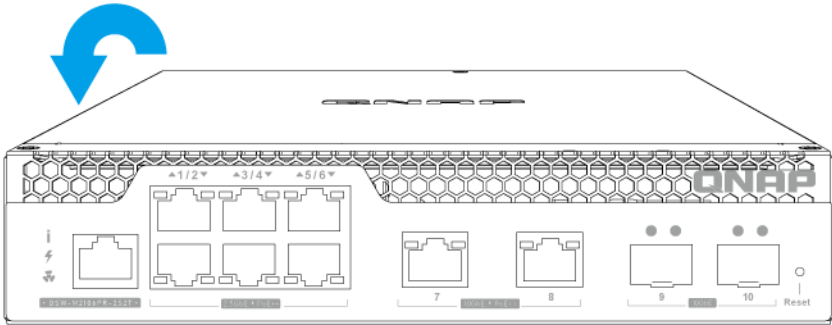
Category	Item
Environment	<ul style="list-style-type: none"> <li>• Room temperature: 0°C to 40°C (32°F to 104°F)</li> <li>• Non-condensing relative humidity: 5% to 95%</li> <li>• Wet-bulb temperature: 27°C (80.6°F)</li> <li>• Flat, anti-static surface without exposure to direct sunlight, liquids, or chemicals</li> <li>• Free from objects that may obstruct the switch ventilation or apply pressure to the switch or power cord.</li> </ul>
Hardware and peripherals	<ul style="list-style-type: none"> <li>• Computer or NAS</li> <li>• Network cable</li> </ul>
Tools	<ul style="list-style-type: none"> <li>• Phillips #1 or #2 screwdriver</li> <li>• Flat head screwdriver</li> <li>• Anti-static wrist strap</li> </ul>

### Setting Up the Switch

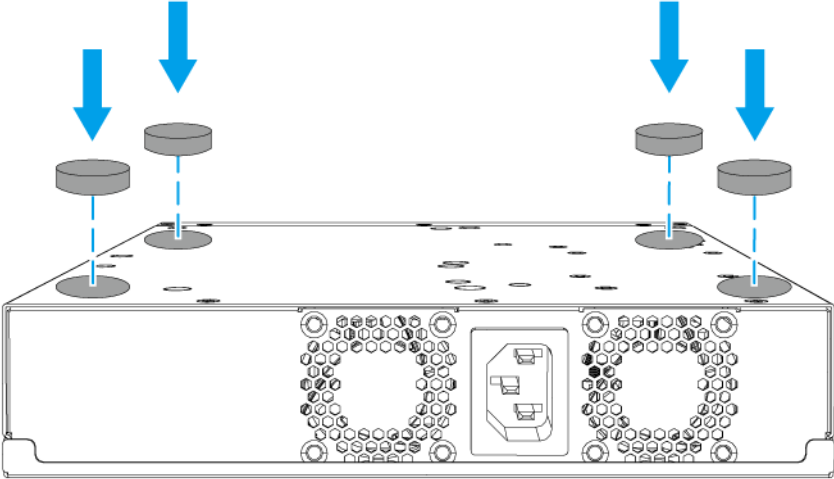
1. Place your switch in an environment that meets the requirements.  
For details, see [Installation Requirements](#).
2. Power on the switch.
3. Connect the switch to a computer or network.  
For details, see [Connecting the Switch to a Computer](#).
4. Log in to QSS.

### Attaching Rubber Feet

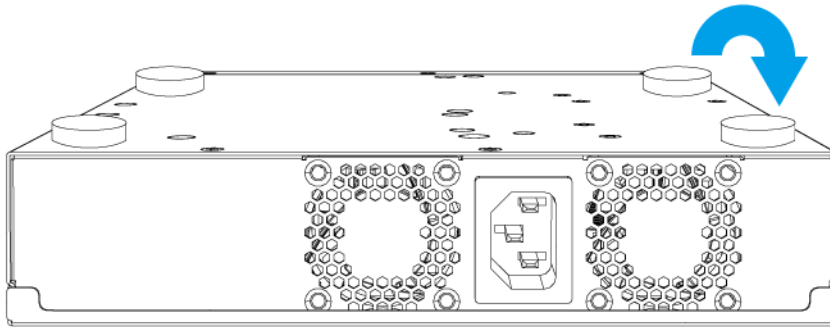
1. Power off the device.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Turn the device upside down.



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



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

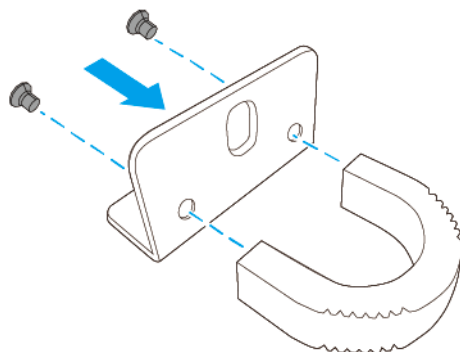


6. Connect all cables and external attachments.
7. Connect the power cord to the electrical outlet.
8. Power on the device.

## Installing Handles

Installing handles enables you to better grip and secure the device on a rack.

1. Power off the device.
2. Disconnect the power cord from the electrical outlet.
3. Disconnect all cables and external attachments.
4. Install a handle on an angle bracket.
  - a. Align the openings on the handle with the two round screw holes on the angle bracket.
  - b. Attach the screws to lock the handle to the angle bracket.

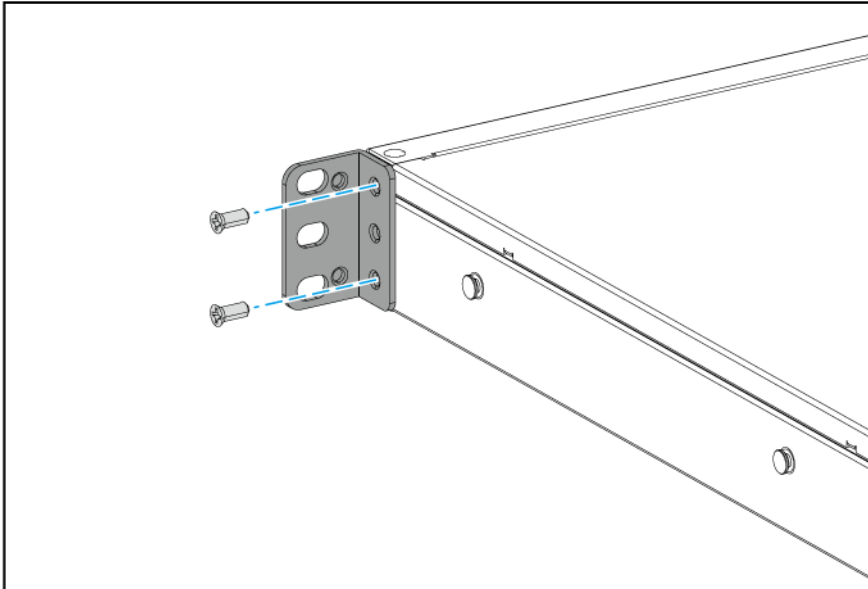


5. Install the angle bracket on the device.
  - a. Align the holes on the angle bracket with the holes on the chassis.


**Note**

Ensure that the handle faces the same direction as the front panel.

- b. Attach the screws.



6. Install a second handle on the other side of the chassis.
7. Connect all cables and external attachments.
8. Connect the power cord to the electrical outlet.
9. Power on the device.

## Connecting the Switch to a Computer or Network

You can connect the switch to a computer or local area network. For details, see the following topics:

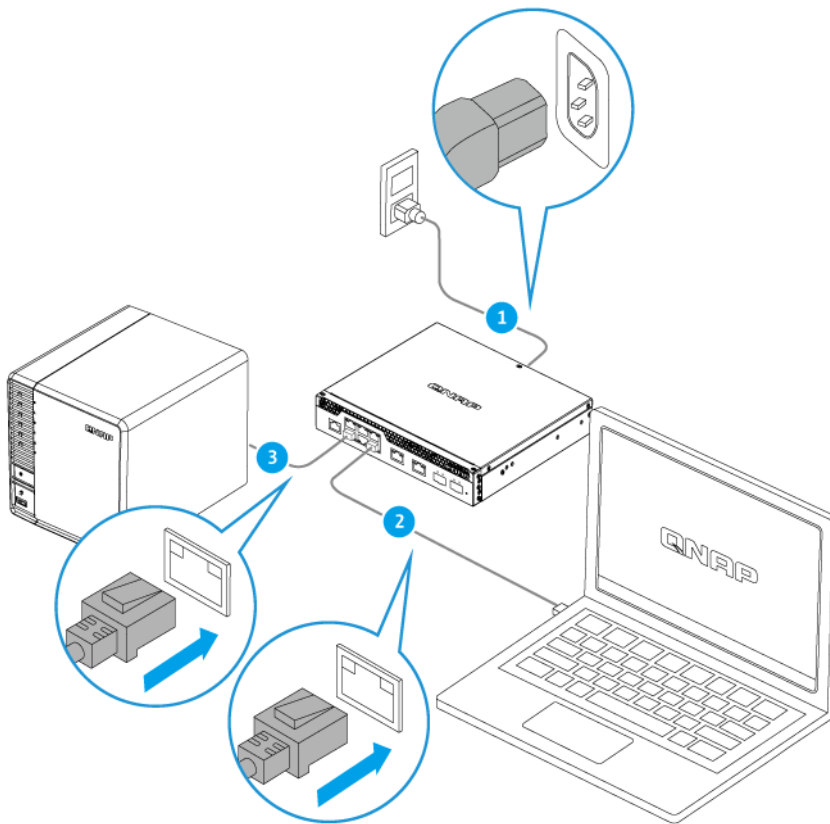
- [Connecting the Switch to a Computer](#)
- [Connecting the Switch to a Network](#)

## Connecting the Switch to a Computer

Connecting the switch to a QNAP NAS allows you to expand storage capacity and back up data to another NAS through network cable connections to a PoE or host port on the switch. However, you must connect the switch to a computer to configure the settings.

1. Power on the switch.
2. Connect the switch to a computer.
  - a. Connect a network cable to the host port on the switch.

- b. Connect the network cable to a Gigabit network port on the computer.
- c. Optional: Connect the switch to the NAS.



3. Verify that the computer recognizes the switch.
  - 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

You can connect the switch 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 using the host 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 QSS login screen appears.

5. Enter your QSS login information.
6. Click **Log In**.

## Switch Access

Method	Description	Requirements
Web browser	<p>You can access the switch using any computer on the same network if you have the following information:</p> <ul style="list-style-type: none"> <li>• Switch name (Example: http://example123/) or IP address</li> <li>• Login credentials of a valid user account</li> </ul> <p>For details, see <a href="#">Accessing the Switch Using a Browser</a></p>	<ul style="list-style-type: none"> <li>• Computer that is connected to the same network as the switch</li> <li>• Web browser</li> </ul>
Qfinder Pro	<p>Qfinder Pro is a desktop utility that enables you to locate and access QNAP devices on a specific network. The utility supports Windows, macOS, Linux, and Chrome OS. For details, see <a href="#">Accessing the Switch Using Qfinder Pro</a>.</p>	<ul style="list-style-type: none"> <li>• Computer that is connected to the same network as the switch</li> <li>• Web browser</li> <li>• Qfinder Pro</li> </ul>

## Accessing the Switch Using a Browser



You can access the switch using any computer on the network if you know its IP address and the login credentials of a valid user account. QNAP switches support DHCP client configuration by default for IP assignment. When connected to a network, the switch automatically obtains an IP address from a DHCP server.



### Note

- If you do not know the IP address of the switch, can locate it using Qfinder Pro.
- If the switch is not connected to a DHCP supported network, you can access the switch web interface by changing the IP address of the computer to 169.254.100.102.
- The default IP address of the switch is 169.254.100.101.

1. Verify that your computer is connected to the same network as the switch.
2. Open a web browser on your computer.
3. Type the IP address of the switch in the address bar.  
The QSS login page appears.
4. Specify the default username and password.

Default Username	Default Password
admin	<p>The MAC address of the switch image omitting any punctuation and capitalizing any letters.</p> <p> <b>Tip</b> For example, if the MAC address is 00:0a:0b:0c:00:01, the default password is 000A0B0C0001. You can find the MAC address using Qfinder Pro. It is also printed on a sticker on the device as "MAC".</p> <p> <b>Note</b> You are prompted to change the password after logging in for the first time. QNAP strongly recommends changing the password after first time login for security reasons.</p>

5. Click **Login**.

The QSS desktop appears.



**Important**

After setting up the switch, ensure that you change the IP address of the computer to the original configuration.

## Accessing the Switch Using Qfinder Pro


1. Install Qfinder Pro on a computer that is connected to the same network as the switch.



**Tip**

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

2. Open Qfinder Pro.  
Qfinder Pro automatically searches for all QNAP devices on the network.
3. Locate the switch in the list, and then double-click the name or IP address.  
The QSS login screen opens in the default web browser.
4. Specify the default username and password.

Default Username	Default Password
admin	<p>The MAC address of the switch image omitting any punctuation and capitalizing any letters.</p> <p> <b>Tip</b> For example, if the MAC address is 00:0a:0b:0c:00:01, the default password is 000A0B0C0001. You can find the MAC address using Qfinder Pro. It is also printed on a sticker on the device as "MAC".</p>

5. Click **Login**.

The QSS desktop appears.


### 3. Basic Operations

This chapter describes basic switch operations.

#### LEDs

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


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

LED	Status	Description
System Status	Green	The device is ready.
	Flashes green	<ul style="list-style-type: none"> <li>The device is being initialized.</li> <li>The firmware is being updated.</li> </ul> <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin-top: 10px;">  <b>Note</b> When updating the firmware, do not remove the power cord or USB cable, and do not force-exit the application.         </div> <ul style="list-style-type: none"> <li>The device is being reset.</li> </ul>
	Flashes red	A fatal device error occurred.
	Off	The device is powered off.
PoE Status	Green	The PoE function is normal.
	Flashes red	A fatal PoE error occurred.
	Off	There is no PoE connection.
Fan Status	Green	The fan function is normal.
	Flashes red	A fatal fan error occurred.
2.5 GbE RJ45 (Left)	Green	The link speed is operating at 2.5 Gbps.
	Flashes green	Data is being transmitted.
	Orange	The link speed is operating at 1 Gbps or 100 Mbps.
	Flashes orange	Data is being transmitted.
	Off	There is no network connection.
2.5 GbE RJ45 (Right)	Green	The PoE status is normal.
	Flashes orange	A fatal PoE error occurred.
	Off	There is no PoE connection.
10 GbE RJ45 (Left)	Green	The link speed is operating at 10 Gbps.
	Flashes green	Data is being transmitted.
	Orange	The link speed is operating at 5 Gbps, 2.5 Gbps, 1 Gbps, or 100 Mbps.
	Flashes orange	Data is being transmitted.
	Off	There is no network connection.
10 GbE RJ45 (Right)	Green	The PoE status is normal.
	Flashes orange	A fatal PoE error occurred.
	Off	There is no PoE connection.



LED	Status	Description
10GbE SFP+ (10 Gbps speed)	Green	The link speed is operating at 10 Gbps.
	Flashes green	Data is being transmitted.
	Off	There is no network connection.
10GbE SFP+ (1 Gbps speed)	Orange	The link speed is operating at 1 Gbps.
	Flashes orange	Data is being transmitted.
	Off	There is no network connection.

## Reset Button

Operation	User Action	Result
Basic system reset	Press and hold the button for 5 seconds.	<p>The following settings are reset to default:</p> <ul style="list-style-type: none"> <li>System administrator password: The default password is the first MAC address in uppercase letters without special characters. For example, if the first MAC address is 00-08-9B-F6-15-75, then the admin password would be 00089BF61575.</li> </ul> <p> <b>Note</b> You can find the first MAC address with Qfinder Pro or attached to a label on the device listed as MAC1.</p> <ul style="list-style-type: none"> <li>The admin account is automatically enabled.</li> </ul>
Advanced system reset	Press and hold the button for 10 seconds.	The default factory settings are restored.

## 4. QSS

### About QSS

The QNAP Switch System (QSS) is a network management operating system for QNAP switch devices. QSS allows for Layer 2 network administration and system management of the switch.

### Getting Started

1. Log in to the switch as an administrator.  
The default administrator account is `admin`.  
For details, see [Switch Access](#).
2. Configure the system settings.  
For details, see [System Settings](#).
3. Configure port settings and other network settings.  
For details, see [Network Management](#).

### Network Management

Basic network configuration of the switch includes port management, VLAN configuration, configuration of various protocols, and traffic management via Quality of Service (QoS) and Access Control Lists (ACLs).


#### Dashboard

The dashboard opens to the configuration section of the interface. Click the drop-down menu in the dashboard to view the port status, VLAN status, link aggregation status, and port traffic for all ports.

You can also delete user-configured network settings and monitor the network settings of the switch.

### Configuring Port Settings

1. Log in to QSS.
2. Go to **Configuration > Port Management** .
3. Go to **Port Configuration**.
4. Identify a port.
5. Configure the settings.

Setting	Description
State	Controls the operation status for a port
Speed	Specifies the maximum speed at which a port can operate
Flow Control	Controls the flow control status for a port   <b>Important</b> Flow Control is not supported when the port speed is set to HDX.

6. Click **Save**.

QSS saves the settings.

## Managing PoE Settings

Power over Ethernet (PoE) systems pass electric power along Ethernet cables, and allow a single cable to provide both a data connection and electric power to devices such as wireless access points, cameras, or VoIP phones.

The **PoE** screen displays information about PoE power consumption and provides access to PoE scheduling and configuration options.

### Configuring PoE Settings



1. Log in to QSS.
2. Go to **Configuration > PoE**.
3. Go to **Power Configuration**.
4. Identify a port.
5. Configure the settings.

Setting	Description
PoE Mode	Controls the PoE operating mode for the port
PoE Legacy Mode	When enabled, the device checks the PoE compatibility of the connected PDs and provides power to devices that do not fully comply with the IEEE 802.3af/at/bt standard
Priority	Controls the priority of each port If multiple ports share the same priority, the port with the lower number is given priority.
Power Consumption	Displays the amount of power currently consumed by the powered device

6. Click **Apply**.

QSS saves the PoE settings.

### Configuring a PoE Schedule

1. Log in to QSS.
2. Go to **Configuration > PoE**.
3. Go to **PoE Schedule**.
4. Identify a port.
5. Click .  
Scheduling is enabled for the port.
6. Click .  
The **PoE Schedule Configuration** window opens.
7. Configure the schedule.
  - a. Optional: Select additional ports.  
Selected ports will also be included in the schedule.

- b. Select port operating hours.
  - c. Optional: Select **Activate schedule now**.
8. Click **Save**.  
The **PoE Schedule Configuration** window closes.
  9. Click **Apply**.

QSS saves the schedule.

## Adding a VLAN

A virtual LAN (VLAN) groups multiple network devices together and limits their broadcast domain. Members of a VLAN are isolated and network traffic is only sent between group members.

Each VLAN is assigned a specific VLAN identification number. The **VLAN** screen displays information about existing VLANs and provides access to VLAN configuration options.

1. Log in to QSS.
2. Go to **Configuration > VLAN** .
3. Click **Add**.  
The **Add VLAN** window opens.
4. Specify a VLAN ID.
5. Select ports to include in the VLAN.  
Only tagged ports can belong to multiple VLANs.
6. Click **Save**.

QSS adds the VLAN.

## Adding a Link Aggregation Group (LAG)


Link Aggregation Control Protocol (LACP) allows you to combine multiple network adapters into a single logical network interface. This ensures increased throughput and provides redundancy. In case of port failure, traffic continues on the remaining ports.

The **Link Aggregation** page displays information about existing link aggregation groups and provides access to configuration options.





### Warning

To prevent network loop errors during the LAG configuration process, do not connect the switch to other devices using more than one network cable until after you have configured LAGs on all the devices. You can enable loop protection to avoid network loops in the connected network.

1. Log in to QSS.
2. Go to **Configuration > Link Aggregation** .
3. Identify a group.
4. Click .  
The **Edit Group** window opens.

## 5. Configure the group settings.

Setting	Description
Mode	<p>Controls the link aggregation mode for the group</p> <ul style="list-style-type: none"> <li>• <b>LACP:</b> Provides automatic failover and dynamic configuration</li> <li>• <b>Static:</b> Aggregates all configurations at once on the selected link aggregation ports</li> </ul> <p> <b>Important</b> Enable Link Aggregation before connecting cables to the switch to avoid creating a data loop.</p>
Port Configuration	<p>Specifies which ports are included in the group</p> <p> <b>Note</b> Ensure that you configure the same settings for all the member ports in a LAG.</p>

## 6. Click **Save**.

QSS updates the group settings.



### Note

When assigning a LAG to a VLAN, QNAP recommends removing individual LAG port members from the VLAN, and then adding the entire group to the VLAN as required. If individual port members are not removed, the VLAN is reset to its default settings.

## Managing Rapid Spanning Tree Protocol (RSTP) Settings

RSTP provides rapid convergence of the spanning tree and builds a loop-free topology for the switch network. RSTP allows you to enable backup links in case an active link fails.





### Note

- RSTP is disabled by default.
- The default bridge priority for the switch is 32768.

## Configuring the RSTP Settings

1. Log in to QSS.
2. Go to **Configuration > RSTP**.
3. Change the RSTP control status.

Toggle Setting	Description
	Click to enable the RSTP function.
	Click to disable the RSTP function.

## 4. Click **Save**.

QSS saves the setting.

## Setting Bridge Priority

You can configure the RSTP bridge priority of the switch in the RSTP configuration field.

1. Log in to QSS.
2. Go to **Configuration > RSTP > RSTP Configuration** .
3. Enable RSTP.



### Note

For details, see [Configuring the RSTP Settings](#).

4. Select the RSTP bridge priority from the drop-down list.



### Note

The default priority is 32768 and it is recommended that you set the bridge priority to zero for root bridge priority.

5. Click **Save**.

QSS updates the RSTP bridge priority.

## Configuring the LLDP Settings

The Link Layer Discovery Protocol (LLDP) uses periodic broadcasts to advertise device information over the network and discover neighboring devices. This protocol operates by establishing a distributed database and gathering information from neighboring ports connected by a network link.

The **LLDP** page displays information about detected devices and allows you to enable or disable LLDP.

1. Log in to QSS.
2. Go to **Configuration > LLDP** .
3. Change the LLDP control status.

Toggle Setting	User Action
	Click to enable the LLDP function.
	Click to disable the LLDP function.

4. Click **Save**.

QSS saves the setting.

## Adding a Static MAC Address

The MAC address table tracks MAC addresses and forwards associated unicast traffic through specific ports.

1. Log in to QSS.
2. Go to **Configuration > LLDP > MAC Address Table** .
3. Specify the aging time for the MAC table.

**Note**

You can configure the amount of time that an entry remains in the MAC table.


4. Click **Add**.  
The **Add Static MAC Address** window opens.
5. Configure the MAC address settings.
  - a. Specify a VLAN ID.
  - b. Specify a MAC address.
  - c. Select at least one port.
6. Click **Save**.  
The **Add Static MAC Address** window closes.

QSS adds the MAC address.

## Configuring IGMP Snooping

The Internet Group Management Protocol (IGMP) manages membership to IP multicast groups. IP hosts and adjacent multicast routers use IGMP to establish multicast group memberships.

The **IGMP Snooping** page displays information about detected IGMP groups and provides access to IGMP snooping configuration options.

1. Log in to QSS.
2. Go to **Configuration > IGMP Snooping**.
3. Click .  
QSS enables IGMP snooping.
4. Configure the IGMP snooping settings.

Setting	Description
Multicast flood blocking	Blocks multicast flooding from unknown sources
Router Port	Specifies which ports to use as the router port for the VLAN After receiving an IGMP packet, QSS forwards the traffic through the selected router ports.
Fast Leave	Specifies the ports that support the IGMP v2 Fast Leave feature After receiving an IGMP leave message, QSS stops forwarding multicast traffic to the selected Fast Leave ports.

5. Click **Save**.

QSS saves the IGMP snooping settings.

## Configuring QoS Settings

Quality of service (QoS) improves network traffic shaping by classifying and prioritizing different network devices and packets. QoS allows you to configure traffic policies and enabling these policies on the switch ports.

To change the QoS priority of a port, go to **Configuration > QoS**, assign a priority value between 0 and 7, and then click **Save**.




### Note

- QSS supports eight priority queue settings from 0 to 7, where 0 is the lowest priority and 7 is the highest priority. The port assigned the highest priority is always allowed to send data first.
- You can disable the CoS and DSCP inspection settings at the same time, but these settings cannot be enabled simultaneously.
- By default, Weighted Round Robin (WRR) is applied as the default QoS scheduling mechanism. The weight of the queue is directly proportional to the number of packets sent from the queue. WRR prevents packets in low-priority queues from not being serviced, and ensures that the switch preferentially transmits delay-sensitive packets.

## Configuring CoS Priority for QoS


CoS (Class of Service) is a 3-bit field in a frame Ethernet header. The CoS value determines which queue the traffic is forwarded to, based on CoS value (0-7).

1. Log in to QSS.
2. Go to **Configuration > QoS**.
3. Identify a port.
4. Click  under CoS Inspection.  
QSS enables CoS inspection on the port.
5. Click **Edit CoS Inspection**.
6. Assign a priority value between 1 and 8 to the CoS value.
7. Click **Save**.  
QSS updates the priority queue of the CoS value.
8. Click **Save**.

QSS updates the QoS information.

## Configuring DSCP Priority for QoS

DSCP (Differentiated Services Code Point) is a 6-bit field in a packet IP header that is used to classify a packet. The DSCP value determines which queue the packet is forwarded to, based on the priority assigned to the DSCP value (0-63).

1. Log in to QSS.
2. Go to **Configuration > QoS**.
3. Identify a port.
4. Click  under DSCP Inspection.  
QSS enables DSCP inspection on the port.
5. Click **Edit DSCP Inspection**.
6. Assign a priority value between 1 and 8 to the DSCP value.



7. Click **Save**.  
QSS updates the priority queue of the DSCP value.
8. Click **Save**.

QSS updates the QoS information.

## Managing Access Control List (ACL) Entries

Access control lists allow you to handle network traffic in a switch by using controlled rule sets. Each ACL rule is specific to a user-created set of conditions that a data packet must meet to match the rule. In the instance that a data packet has no ACL rule match, the switch applies the default rule. Otherwise, the switch matches the data packet to the rule and permits or denies the packet.

You can use ACLs to control host access to different parts of a network or to control traffic forwarding or blocking at the switch level.

### Adding an IP Address-based ACL Rule

1. Log in to QSS.
2. Go to **Configuration > ACL > By IP Address** .
3. Click **Add**.  
The **Add ACL - IP Address** window opens.
4. Configure the ACL settings.

Setting	User Action
ACL No.	Specify a number between 1 and 255.
Source	
IP Address	Specify the source IP address.
Subnet Mask	Specify the source subnet mask.
Destination	
IP address	Specify the destination IP address.
Subnet Mask	Specify the destination subnet mask.
Port	Select specific ports to apply the ACL rule, or select <b>All</b> to apply the rule to all ports.
Permission	Select one of the following: <ul style="list-style-type: none"> <li>• <b>Allow</b></li> <li>• <b>Deny</b></li> </ul>

5. Click **Save**.

QSS adds the IP address-based ACL rule.

### Adding a MAC Address-based ACL Rule

1. Log in to QSS.
2. Go to **Configuration > ACL > By MAC Address** .
3. Click **Add**.

The **Add ACL - MAC Address** window opens.

4. Configure the ACL settings.

Setting	User Action
ACL No.	Specify a number between 1 and 255.
Source	
MAC address	Specify the source MAC address.
Destination	
MAC address	Specify the destination MAC address.
Port	Select specific ports to apply the ACL rule, or select <b>All</b> to apply the rule to all ports.
Permission	Select one of the following: <ul style="list-style-type: none"> <li>• <b>Allow</b></li> <li>• <b>Deny</b></li> </ul>

5. Click **Save**.

QSS adds the MAC address-based ACL rule.


## Deleting a Network Setting

1. Log in to QSS.
2. Go to **Configuration**.
3. Select a network setting.



### Note

Deleting network settings is applicable only to ACL rules, link aggregation groups, static MAC addresses, and VLANs.

4. Click . A confirmation message appears.
5. Click **Delete**.



QSS deletes the network setting.

## Monitoring Network Settings

You can monitor the following network settings in the **Configuration** section. These settings can be used to monitor and diagnose switch operations.

1. Log in to QSS.
2. Go to **Configuration**.
3. Select a network setting.

Setting	Description
<b>IGMP Snooping Statistics</b>	Go to <b>IGMP Snooping &gt; IGMP Snooping Statistics</b> . Displays statistical information about detected IGMP groups.

Setting	Description
<b>LLP Remote Devices</b>	<p>Go to <b>LLDP &gt; LLP Remote Devices</b> .</p> <p>Displays information about the LLDP-enabled port including system capabilities and remote management IP address.</p> <p>Possible system capabilities include:</p> <ul style="list-style-type: none"> <li>• Bridge</li> <li>• DOCSIS cable device</li> <li>• Repeater</li> <li>• Reserved</li> <li>• Router</li> <li>• Station only</li> <li>• Telephone</li> <li>• WLAN access point</li> <li>• Other</li> </ul>
<b>Port Status</b>	<p>Go to <b>Port Management &gt; Port Status</b> to view the following port status information:</p> <ul style="list-style-type: none"> <li>• Port number</li> <li>• Port link status</li> <li>• Port state</li> <li>• Port speed</li> <li>• Flow control</li> </ul>
<b>Port Statistics</b>	<p><b>a.</b> Go to <b>Port Management &gt; Port Statistics</b> to view the statistics of the network ports.</p> <p><b>b.</b>  Click  to change the viewing option to List View.</p>


## System Management



The **System** section provides access to device configuration options.

## System Settings

The **System Settings** menu contains system configuration options such as system information, IP information, password settings, secure connection settings, and time settings for the switch.

## Changing the Switch Name


1. Log in to QSS.
2. Go to **System > System Settings > System Information** .
3. Click .

4. Specify the switch name.  
Requirements:
  - Length: 1–14 characters
  - Valid characters: A–Z, a–z, 0–9
  - Valid special characters: Hyphen (-)
5.  Click  to confirm the switch name.

QSS updates the switch name.


### Configuring the Switch IP Information

1. Log in to QSS.
2. Go to **System > System Settings > IP**.
3. Select a network configuration setting.

Setting	Description
<b>Automatically obtain IP &amp; DNS</b>	If the network supports DHCP, the adapter automatically obtains the IP address and network settings.
<b>Manually set the IP &amp; DNS</b>	<p>Manually assign a static IP address. You must specify the following information:</p> <ul style="list-style-type: none"> <li>• Fixed IP Address</li> <li>• Subnet Mask</li> <li>• Default Gateway</li> </ul> <p> <b>Note</b> The default gateway IP address for the switch is optional.</p>

4. Click **Save**.  
A confirmation message appears.
5. Click **Yes**.


QSS updates the IP information.

 **Note**  
Use Qfinder Pro to locate the switch and log in to QSS.

### Updating the Switch Password

1. Log in to QSS.
2. Go to **System > System Settings > Password**.
3. Specify a new password.

**Tip**

Click  to make the password visible.

Setting	User Action
<b>Current password</b>	Specify the current password of the device.
<b>New password</b>	Specify a password that contains 8 to 20 ASCII characters.
<b>Confirm new password</b>	Reenter the new password.

4. Click **Save**.

QSS logs you out of the switch interface. You can access the switch with the new password.

## Configuring Time Settings

**Note**

You must configure the system time correctly to ensure the following:

- When using a web browser to connect to the device or save a file, the displayed time of the action is correct.
- Event logs reflect the exact time that events occur.
- Scheduled tasks run at the correct time.

1. Log in to QSS.
2. Go to **System > System Settings > Time** .
3. Specify the time zone.
4. Specify the time configuration.

Setting	Description
<b>Manual configuration</b>	Specify the date and time.
<b>Synchronize with internet time server</b>	Ensure that your device is connected to the internet, and then specify the following information: <b>Server:</b> Specify the Network Time Protocol (NTP) server. Examples: time.nist.gov, time.windows.com

5. Click **Save**.

QSS updates the time settings.

## Backing Up System Settings

1. Log in to QSS.
2. Go to **System > System Settings > Backup & Restore** .
3. Click **Backup**.

The device exports the system settings as a BIN file and downloads the file to your computer.

## Restoring System Settings



### Warning

If the selected backup file contains user or user group information that already exists on the device, the system will overwrite the existing information.


1. Log in to QSS.
2. Go to **System > System Settings > Backup & Restore** .  
A file explorer window opens.
3. Click **Browse**.
4. Select a valid BIN file that contains the device system settings.
5. Click **Restore**.

QSS restores the switch settings.

## Resetting the Switch Password

1. Log in to QSS.
2. Go to **System > System Settings > Factory Reset** .
3. Click **Password Reset**.

QSS resets the switch password.

Default Username	Default Password
admin	<p>The MAC address of the switch image omitting any punctuation and capitalizing any letters.</p> <p> <b>Tip</b> For example, if the MAC address is 00:0a:0b:0c:00:01, the default password is 000A0B0C0001. You can find the MAC address using Qfinder Pro. It is also printed on a sticker on the device as "MAC".</p>

## Resetting the Switch to Factory Settings

Resetting the switch deletes the data stored on the device and restores the switch to the default factory settings.



### Tip

You can also reset the switch to factory defaults by pressing and holding the physical reset button for 10 seconds.

1. Log in to QSS.
2. Go to **System > System Settings > Factory Reset** .
3. Click **Factory Reset**.  
A confirmation message appears.
4. Click **Yes**.

QSS resets the switch to the factory default settings.



**Note**

To log in to the interface again, you must locate the device using Qfinder Pro. For details, see [Switch Access](#).

## Enabling Secure Connection (HTTPS)

1. Log in to QSS.
2. Go to **System > System Settings > HTTPS**.
3. Select **Enable Secure Connection (HTTPS)**.
4. Select a TLS version.



**Note**

Select the latest version of TLS to maximize system security. Ensure that your system meets the TLS requirements to avoid compatibility issues.

5. Optional: Select **Force secure connections (HTTPS) only**.




**Note**

After enabling this setting, you can only access the web administration page via HTTPS.

6. Click **Save**.

QSS saves the secure connection settings.

## Restarting the Switch

1. Log in to QSS.
2. Click  located on the upper-right corner of the page.
3. Click **Restart Switch**.  
A confirmation message appears.
4. Click **Yes**.

QSS restarts the switch.

## Viewing the Switch Information

To view the hardware and system information of the switch, go to **System > System Information**.

The screen provides the following information.

Information	Description
Switch name	Displays the default or modified name of the device
Model name	Displays the model name of the switch
MAC address	Displays the MAC address of the switch image
IP address	Displays the DHCP or static IP address of the switch
System uptime	Displays how long the system has been operational

Information	Description
Current firmware version	Displays the firmware image version of the switch

## Firmware Update



QNAP recommends keeping your device firmware up to date. This ensures that your device can benefit from new QSS software features, security updates, enhancements, and bug fixes.

You can update the switch firmware using one of the following methods:

Update Method	Description
Using <b>Check for update</b> .	Firmware updates are automatically detected by QSS and installed onto your device. For details, see <a href="#">Checking for Live Updates</a> .
Using <b>Firmware Update</b>	You can check for firmware updates on the <a href="#">QNAP website</a> , download updates to a computer, and manually install updates onto your device. For details, see <a href="#">Updating the Firmware Manually</a> .

## Firmware Requirements

Your device must meet the following requirements to perform a firmware update:

Settings	Requirements
Hardware settings	<ul style="list-style-type: none"> <li>A computer</li> </ul> <p> <b>Note</b> A computer is required when updating the firmware manually or using Qfinder Pro.</p> <p>Ethernet cables</p> <p> <b>Note</b> QNAP recommends updating the firmware using wired Ethernet connections to ensure your network connection remains stable during the firmware update process.</p>
Backup system settings	QNAP recommends backing up the system settings to your computer before updating the firmware. For details, see <a href="#">Backing Up System Settings</a> .
Administrator privileges	You must be a switch administrator or have admin privileges to update the firmware.
Stop switch operations	QNAP recommends stopping all other switch operations before the firmware update. The switch must be restarted for the firmware update to take effect and may disrupt ongoing switch services or operations.
Device model name	Ensure you have the correct switch model name. You can find the switch model name using the following methods: <ul style="list-style-type: none"> <li>Locate the model name on a sticker on the bottom or rear of your device.</li> <li>Go to <b>Control Panel &gt; System Status &gt; System Information &gt; Model name</b></li> </ul>



Settings	Requirements
Firmware version	If you are updating the firmware using <b>Firmware Update</b> or Qfinder Pro, ensure the selected firmware version is correct for your device model.

## Checking for Live Updates



### Warning

- To prevent data loss, QNAP recommends backing up all data on your device before updating the firmware. For details about data backup, see [Backing Up System Settings](#).
- Do not power off your device during the firmware update process.



### Important

- Make sure you review through the [Firmware Requirements](#) before updating the firmware.
- The update may require several minutes or longer, depending on your hardware configuration and network connection.

1. Log in to QSS.
2. Go to **System > Firmware Update > Live Update**.
3. Click **Check for update**.  
QSS checks for available firmware updates. You can choose to update QSS if there is an available update.
4. Click **Update System**.  
A confirmation message appears.
5. Click **Update**.

QSS updates the firmware.

## Updating the Firmware Manually



### Warning

- To prevent data loss, QNAP recommends backing up all data on your device before updating the firmware. For details about data backup, see [Backing Up System Settings](#).
- Do not power off your device during the firmware update process.



### Important

- Make sure you review through the [Firmware Requirements](#) before updating the firmware.
- The update may require several minutes or longer, depending on your hardware configuration and network connection.

1. Download the device firmware.

- a. Go to <http://www.qnap.com/download>.
  - b. Select the product type.
  - c. Select your device model.
  - d. Read the release notes and confirm the following:
    - The device model matches the firmware version.
    - Updating the firmware is necessary.
    - Check for any additional firmware update setup instructions.
2. Ensure that the product model and firmware are correct.
  3. Select the download server based on your location.
  4. Download the firmware package.
  5. Click **Browse**.
  6. Select a folder.
  7. Save the downloaded firmware package.
  8. Extract the firmware image file.
  9. Log in to QSS.
  10. Go to **System > Firmware Update > Firmware Update** .
  11. Click **Browse** and then select the extracted firmware image file.
  12. Click **Update System**.  
A confirmation message window appears.
  13. Click **Update**.

The device is restarted immediately.

## 5. Support and Other Resources

QNAP provides the following resources:

Resource	URL
Documentation	<a href="https://docs.qnap.com">https://docs.qnap.com</a>
Service Portal	<a href="https://service.qnap.com">https://service.qnap.com</a>
Downloads	<a href="https://download.qnap.com">https://download.qnap.com</a>
Community Forum	<a href="https://forum.qnap.com">https://forum.qnap.com</a>

## 6. Glossary

### **myQNAPcloud**

Provides various remote access services such as DDNS and myQNAPcloud Link

### **Qfinder Pro**

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

### **QSS**

QNAP switch management application

### **QuNetSwitch**

QNAP switch management app that runs on the QTS operating system

## 7. Notices

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at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

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Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

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END OF TERMS AND CONDITIONS

## CE Notice



This device complies with CE Compliance Class A.

## FCC Notice

### FCC Class A Notice



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.



#### Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.



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VCCI-A

## BSMI Notice



D33B77  
RoHS

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## SJ/T 11364-2006



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壳体	0	0	0	0	0	0
显示	0	0	0	0	0	0
印刷电路板	0	0	0	0	0	0
金属螺帽	0	0	0	0	0	0
电缆组装	0	0	0	0	0	0
风扇组装	0	0	0	0	0	0
电力供应组装	0	0	0	0	0	0

部件名称	有毒有害物质或元素					
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电池	0	0	0	0	0	0
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## Laser Compliance Notice

Make sure the fiber-optic Small Form-factor Pluggable (SFP) module complies with CNS 15016-2 or IEC 60852-1 certifications and Class 1 Laser specifications.

使用光纖可插拔 (SFP) 模組時，請確保它通過了 CNS 15016-2 或 IEC 60825-1 認證和 1 類激光產品。

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