QSS

QSS User Guide

Document Version: 1
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Contents

1. Overview

About QSS

QSS is a centralized management tool for your managed QNAP switch devices.

Switch Access

Method	Description	Requirements
Web browser	You can access the switch using any computer on the same network if you have the following information: • Switch name (Example: http://example123/) or IP address • Logon credentials of a valid user account For details, see Accessing the Switch Using a Browser	• Computer that is connected to the same network as the switch • Web browser
Qfinder Pro	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 Accessing the Switch Using Qfinder Pro.	• Computer that is connected to the same network as the switch • Web browser • Qfinder Pro

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 logon credentials of a valid user account.

Note
If you do not know the IP address of the switch, can locate it using Qfinder Pro.

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

Default Username	Default Password
admin	The MAC address of the switch image omitting any colons (:) and capitalizing any letters. **Tip** 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".

5. Click **Login**.
   The QSS desktop appears.

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	The MAC address of the switch image omitting any colons (:) and capitalizing any letters. **Tip** 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".

5. Click **Login**.
   The QSS desktop appears.

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 IP settings.
   For details, see Configuring the Switch IP Information.
3. Configure port settings.
   For details, see Configuring Port Settings.
4. Add and configure VLANs.
   For details, see VLAN.

2. QSS Navigation

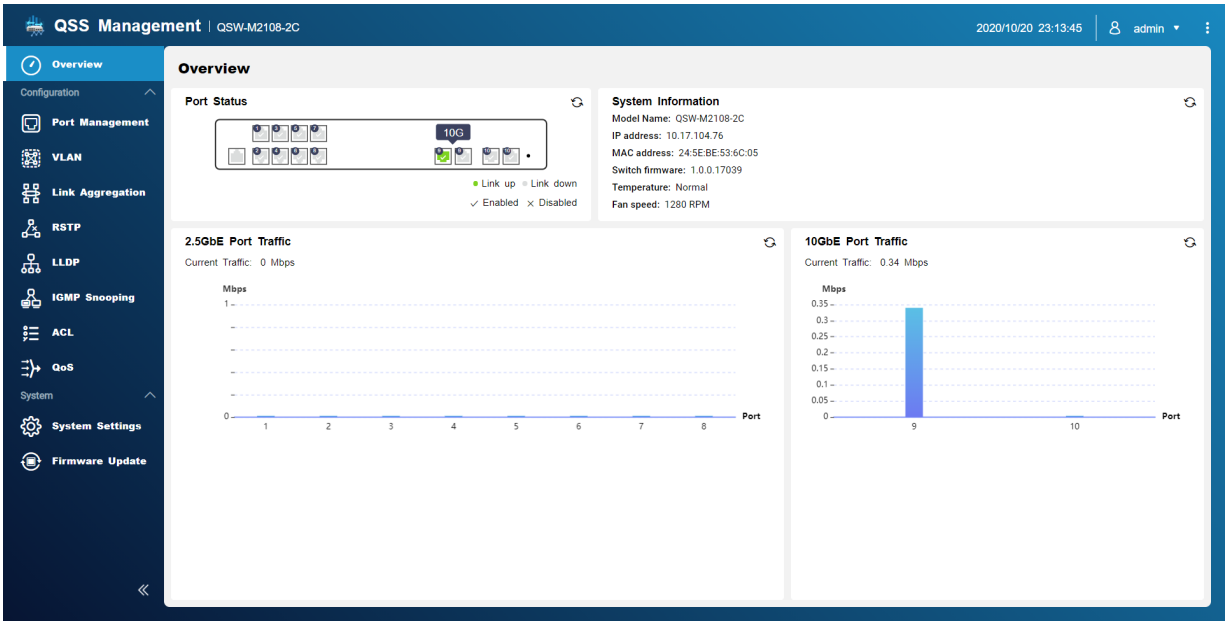
Task Bar

No.	Element	Possible User Actions
1	**[USER_NAME]**	**Logout**: Logs the user out of the current session

2	**More**	Click the button to view the following menu items:
		• **Restart Switch**
		For details, see Restarting the Switch.
		• **Language**: Opens a list of supported languages and allows you to change the language of the operating system
		• **About**: Displays the following information:
		  • Hardware model
		  • Operating system version

Overview

This screen displays switch information including the status of all ports, system information, and 2.5 GbE and 10 GbE port traffic.

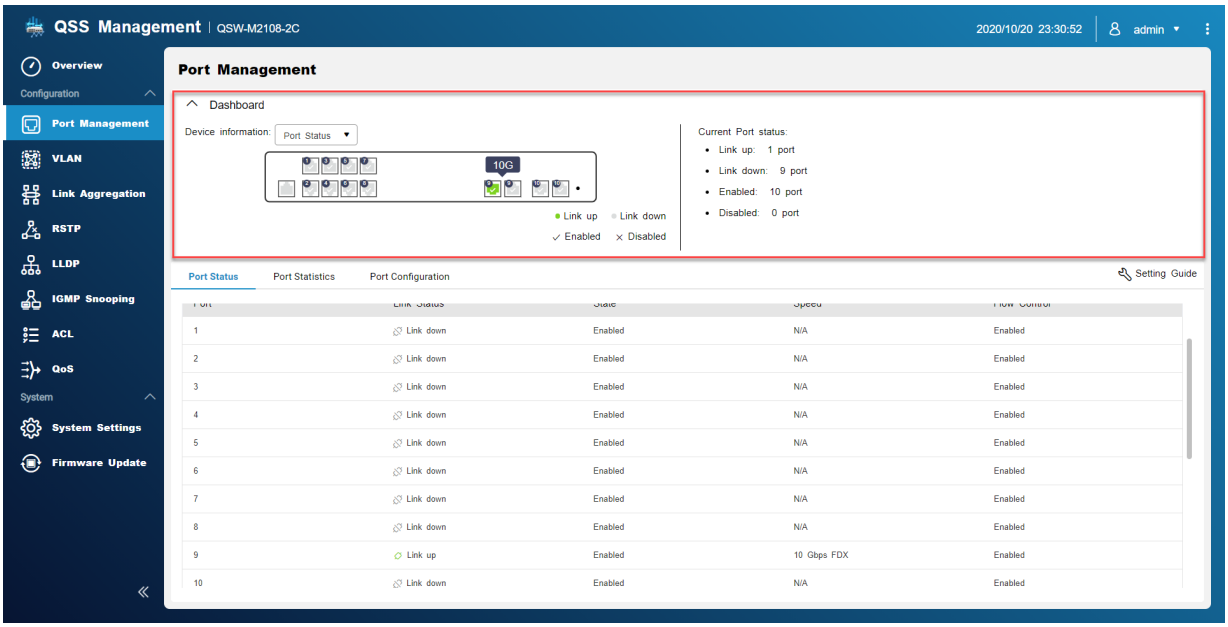

QSS Management | QSW-M2108-2C
2020/10/20 23:13:45
admin
Overview
Configuration
Port Management
VLAN
Link Aggregation
RSTP
LLDP
IGMP Snooping
ACL
QoS
System
System Settings
Firmware Update
Overview
Port Status
10G
Link up
Link down
Enabled
Disabled
System Information
Model Name: QSW-M2108-2C
IP address: 10.17.104.76
MAC address: 24:5E:BE:53:6C:05
Switch firmware: 1.0.0.17039
Temperature: Normal
Fan speed: 1280 RPM
2.5GbE Port Traffic
Current Traffic: 0 Mbps
Mbps
Port
10GbE Port Traffic
Current Traffic: 0.34 Mbps
Mbps
Port

3. Network Configuration

This section describes how to use the QSS network settings to set up the basic configuration of the switch. Basic 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).

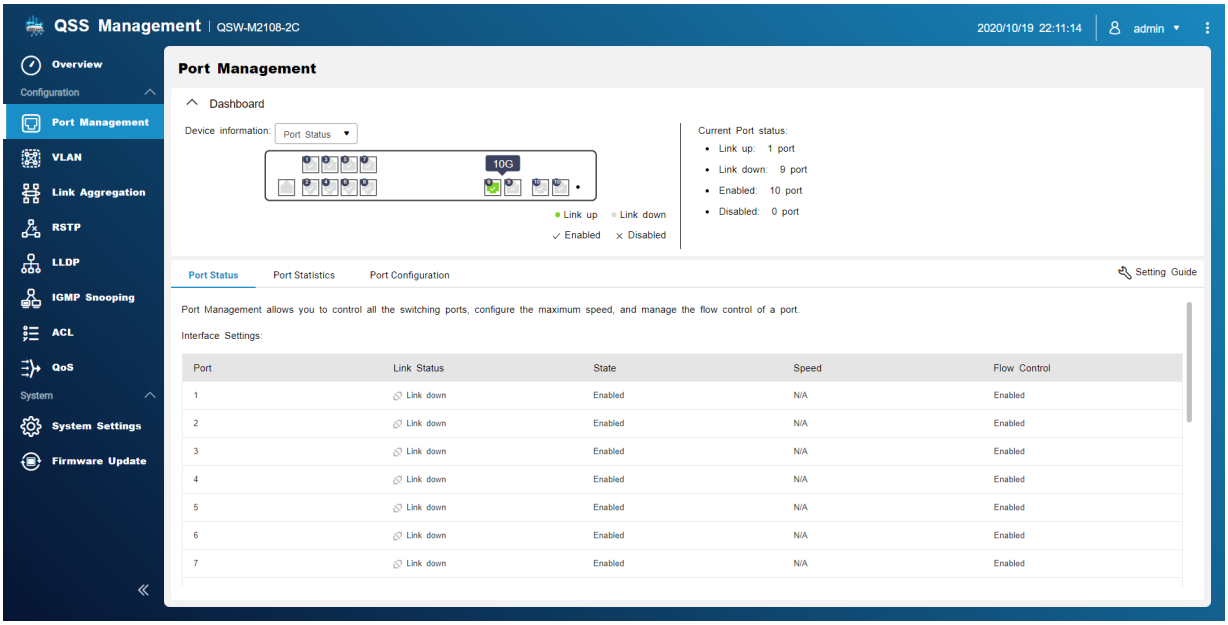
Dashboard

The dashboard opens in the configuration section of QSS. Click the drop-down menu in the dashboard to view port status, VLAN status, link aggregation status, and port traffic on 2.5 GbE and 10 GbE ports.



Port Management

This screen displays port and link aggregation group (LAG) status information and transmission statistics and provides access to port configuration options.

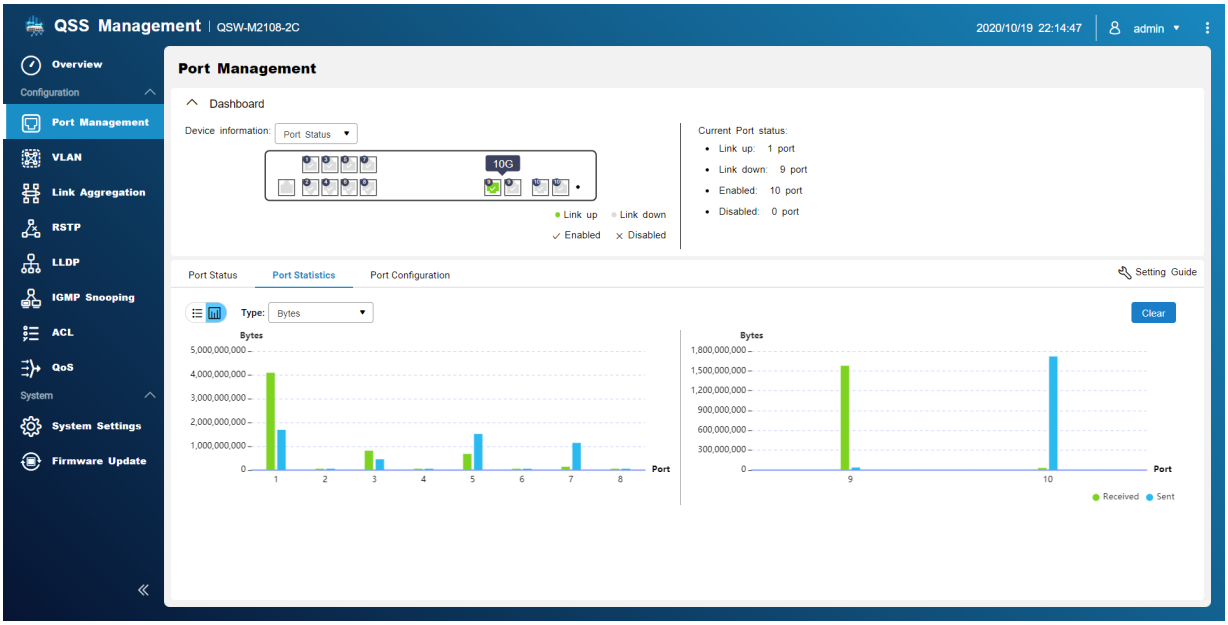


Port Status

This screen displays status information for each port on the switch.

Port Statistics

This screen displays statistical information about each port on the switch. Port statistics include information about both transmitted and received packets. You can filter statistics for each port.



Configuring Port Settings

1. Open 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 status of the port
Speed	Controls the maximum speed that the port can use
Flow Control	Controls the status of flow control on the port **Important** Flow Control is not supported when the port speed is set to HDX.

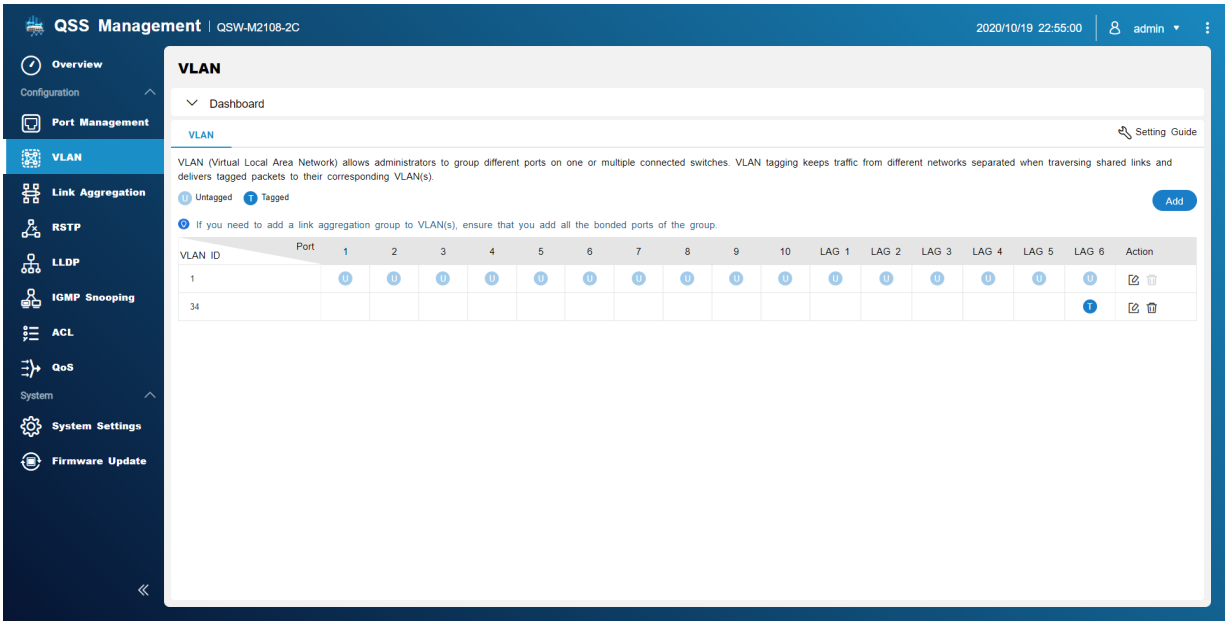
6. Click **Save**.

QSS saves the settings.

VLAN

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

This screen displays information about existing VLANs and provides access to VLAN configuration options.



Adding a VLAN

1. Open 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.

Editing a VLAN

1. Open QSS.
2. Go to **Configuration** > **VLAN** .
3. Identify a VLAN.
4. Click .
   The **Edit VLAN** window opens.
5. Select ports to include in the VLAN.
6. Click **Save**.

QSS updates the VLAN.

Deleting a VLAN

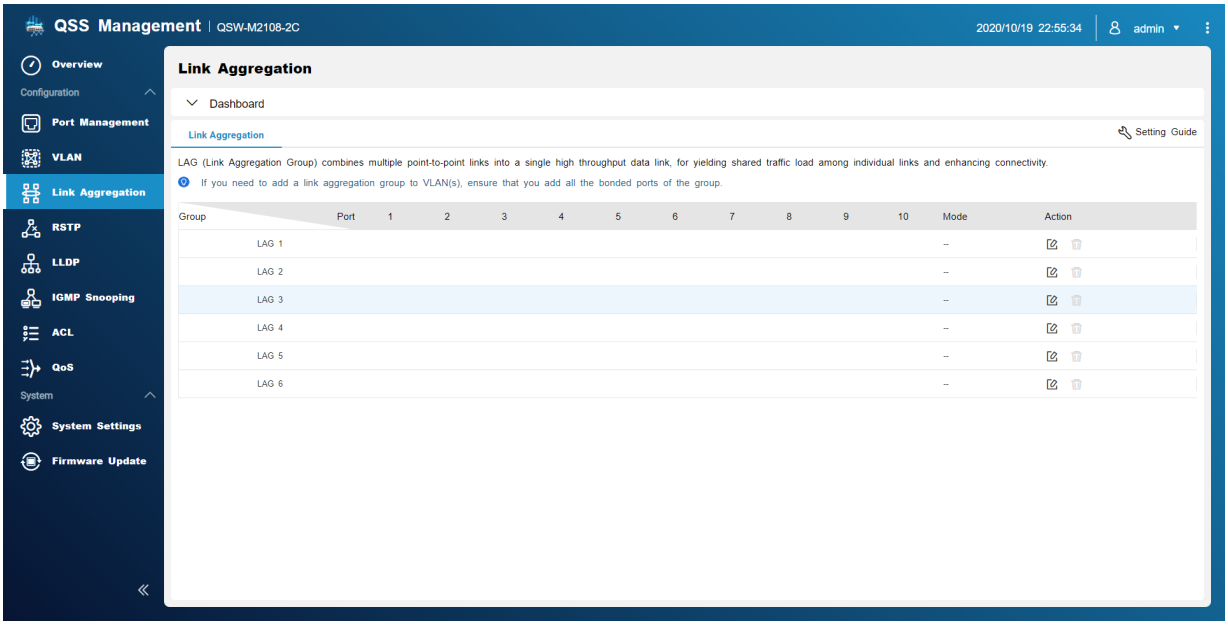
1. Open QSS.
2. Go to **Configuration** > **VLAN** .
3. Identify a VLAN.
4. Click .
   A dialog box opens.
5. Click **Delete**.

QSS deletes the VLAN.

Configuring a Link Aggregation Group (LAG)

Link aggregation combines multiple network adapters to increase port flexibility and link redundancy.

This screen displays information about existing link aggregation groups and provides access to configuration options.



1. Open QSS.
2. Go to **Configuration** > **Link Aggregation** .
3. Identify a group.
4. Click .
   The **Edit Group** window opens.
5. Configure the group settings.
6. Click **Save**.

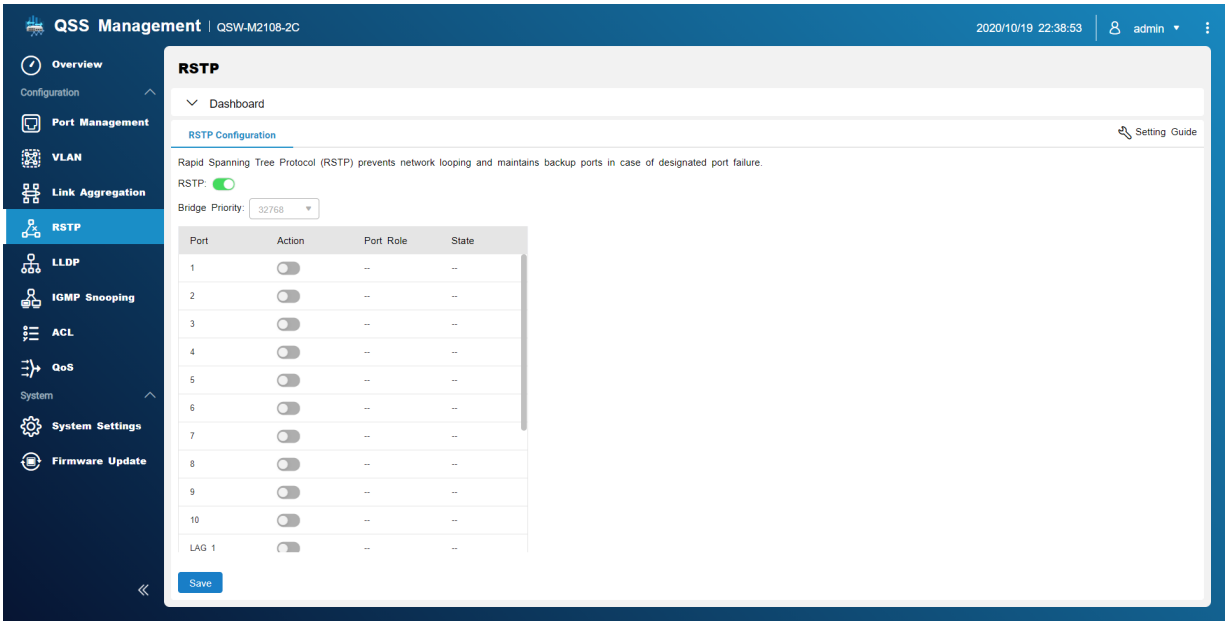
QSS updates the group settings.

Rapid Spanning Tree Protocol (RSTP)

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.



Enabling RSTP

1. Go to **Configuration** > **RSTP** > **RSTP Configuration** .
2. Click  .
3. Click **Save**.
   QSS enables RSTP on all ports.

Tip
Individual ports can be configured to disable RSTP.

Setting Bridge Priority

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

1. Go to **Configuration** > **RSTP** > **RSTP Configuration** .
2. Enable RSTP.

Note
For details, see Enabling RSTP.

3. 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 0 for root bridge priority.

4. Click **Save**.

QSS updates the RSTP bridge priority

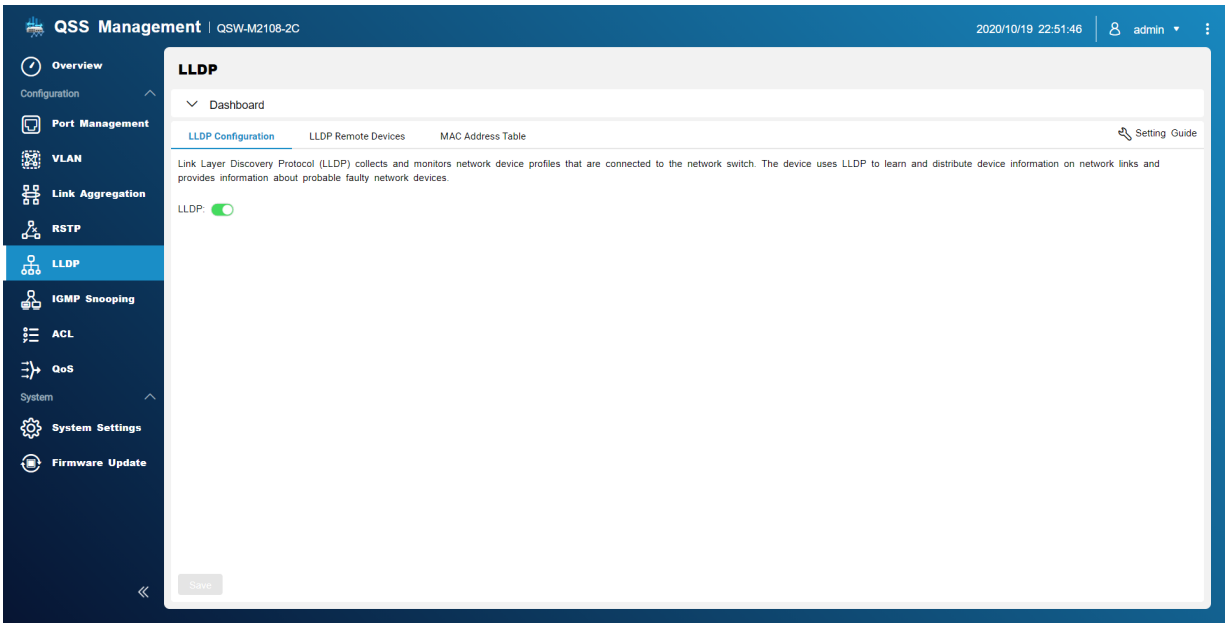
Disabling RSTP

1. Go to **Configuration** > **RSTP** > **RSTP Configuration** .
2. Click  to disable RSTP.
3. Click **Save**.
   QSS disables RSTP.

LLDP

The Link Layer Discovery Protocol (LLDP) uses periodic broadcasts to advertise device information over the network and discover neighboring devices. LLDP is a layer 2 protocol that allows systems using different network layer protocols to exchange information about each other.

This screen displays information about detected devices and allows you to enable and disable LLDP.



Enabling LLDP

1. Open QSS.
2. Go to **Configuration** > **LLDP** .
3. Click  .
4. Click **Save**.

QSS enables LLDP.

Disabling LLDP

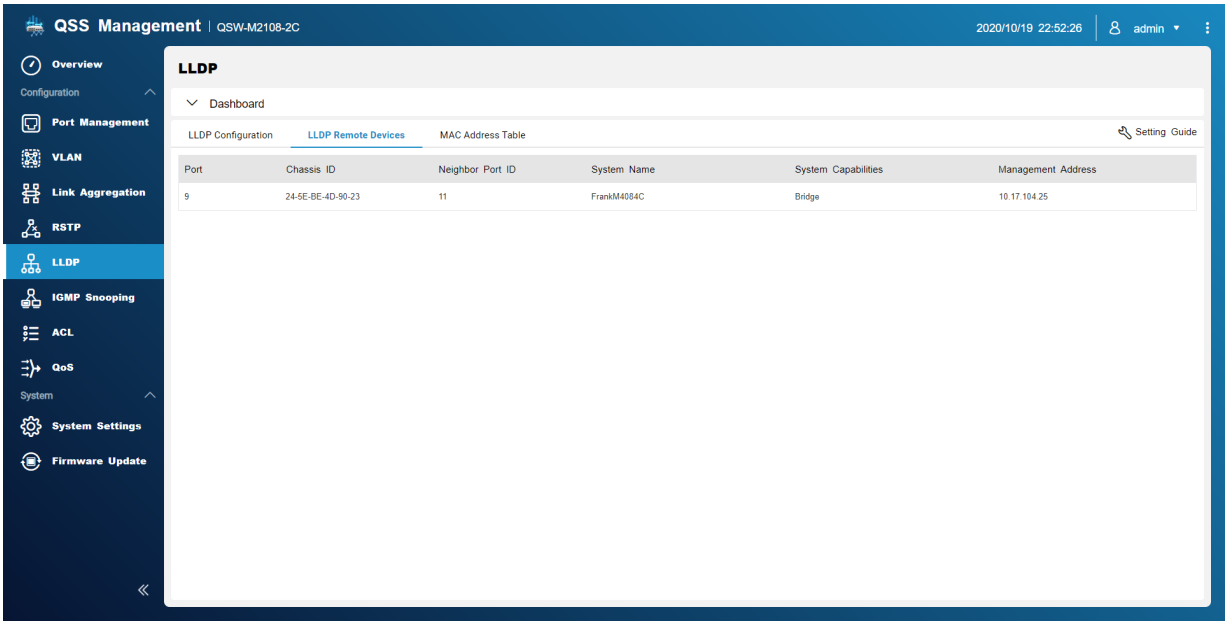
1. Open QSS.
2. Go to **Configuration** > **LLDP** .

3. Click  .
4. Click **Save**.

QSS disables LLDP.

LLDP Remote Devices

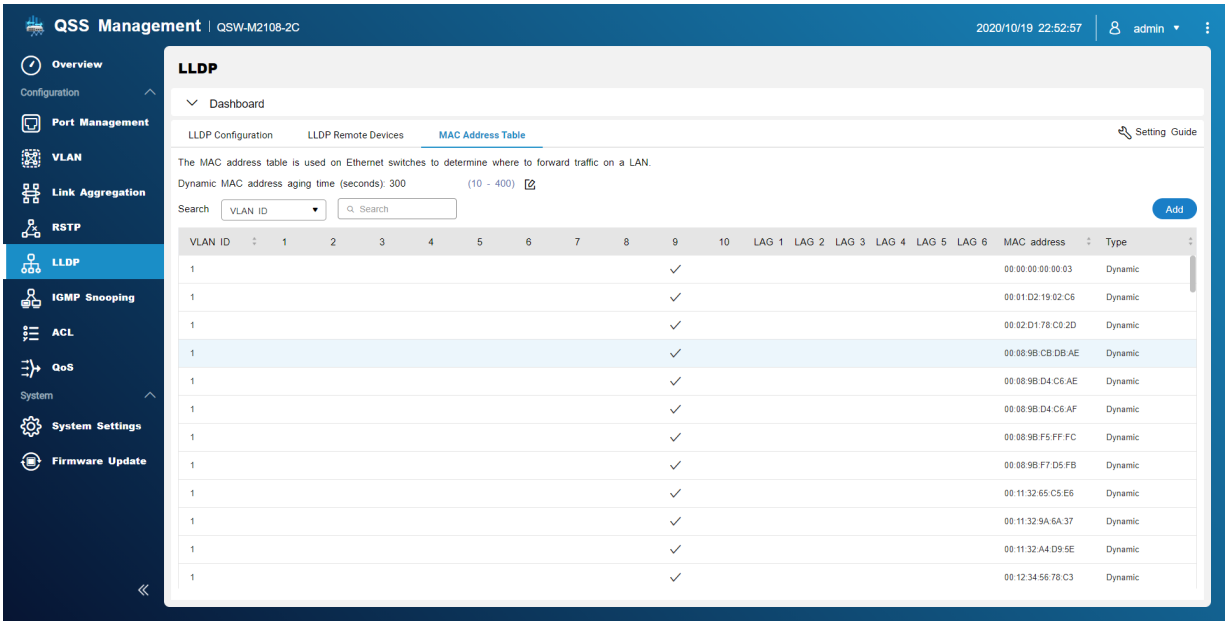
This screen displays information about remote devices that have been detected.



MAC Address Table

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

This screen displays information about existing MAC addresses and provides access to MAC address configuration options.



Adding a Static MAC Address

1. Open QSS.
2. Go to **Configuration** > **LLDP** > **MAC Address Table** .
3. Click **Add**.
   The **Add Static MAC Address** window opens.
4. Configure the MAC address settings.
   a. Specify a VLAN ID.
   b. Specify a MAC address.
   c. Select a port.
5. Click **Save**.
   The **Add Static MAC Address** window closes.

QSS adds the MAC address.

Deleting a Static MAC Address

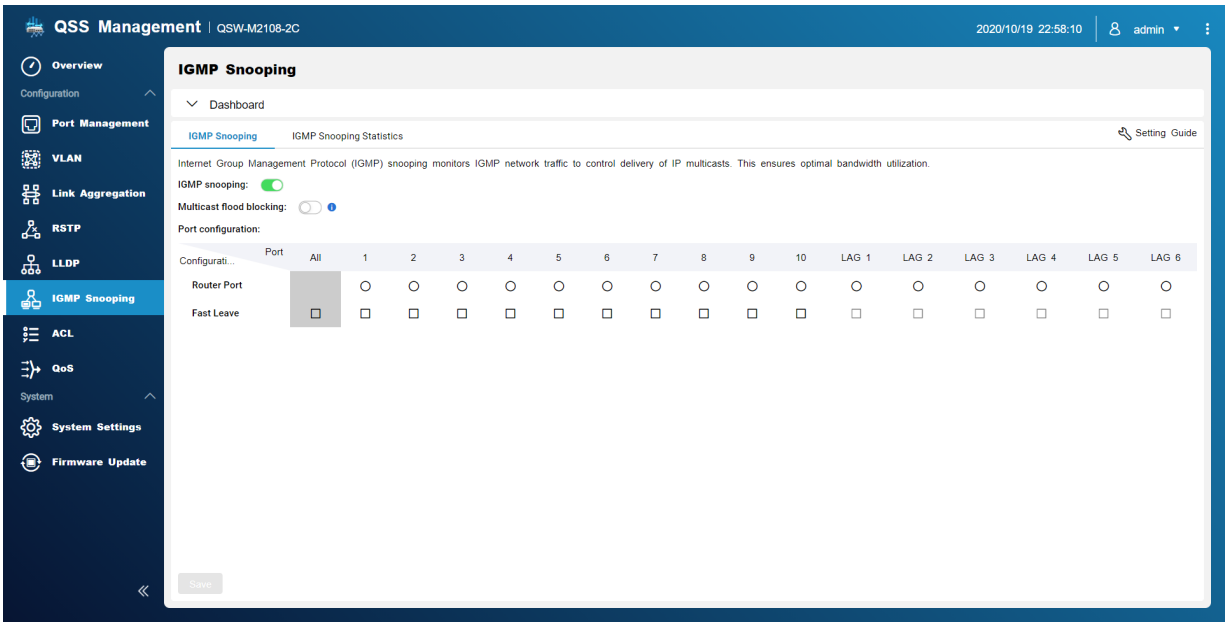
1. Open QSS.
2. Go to **Configuration** > **LLDP** > **MAC Address Table** .
3. Identify a static MAC address.
4. Click .
   A dialog box opens.
5. Click **Delete**.

QSS deletes the MAC address.

IGMP Snooping

Internet Group Management Protocol (IGMP) Snooping manages membership to IP multicast groups. IGMP is used by IP hosts and adjacent multicast switches to establish multicast group memberships.

This screen displays information about detected IGMP groups and provides access to configuration options.



Enabling IGMP Snooping

1. Open QSS.
2. Go to **Configuration** > **IGMP Snooping** .
3. Click  .
4. Click **Save**.

QSS enables IGMP Snooping.

Configuring IGMP Snooping

1. Open QSS.
2. Go to **Configuration** > **IGMP Snooping** .
3. Configure the IGMP 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.

Setting	Description
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.

4. Click **Save**.

QSS saves the settings.

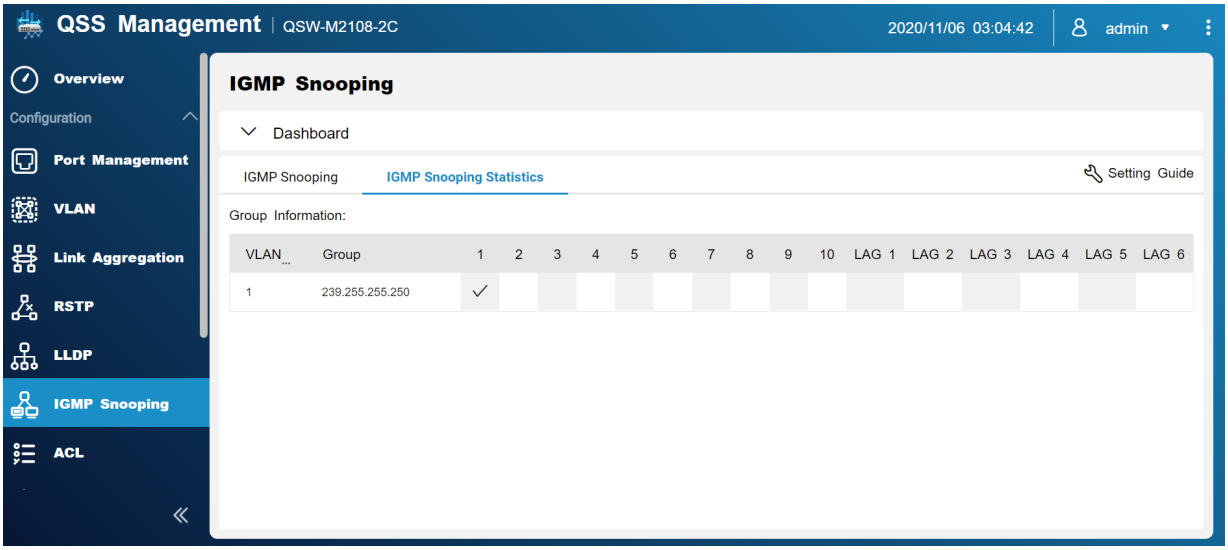
Disabling IGMP Snooping

1. Open QSS.
2. Go to **Configuration** > **IGMP Snooping** .
3. Click  .
4. Click **Save**.

QSS disables IGMP Snooping.

IGMP Snooping Statistics

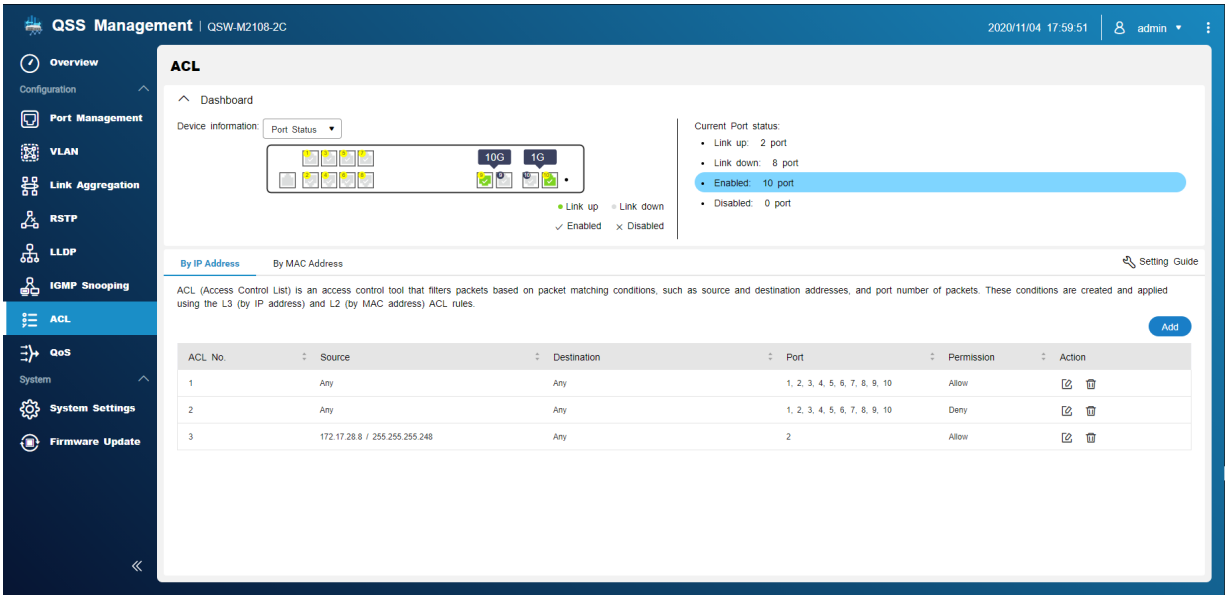
This screen displays statistical information regarding all the detected IGMP snooping multicast group information in the specified VLAN.



Access Control Lists (ACLs)

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.



IP Address-based ACL

A MAC address ACL allows you to filter traffic using IP addresses by using Layer 3 information to permit or deny network traffic.

Adding an IP Address-based ACL Rule

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

Setting	User Action
ACL No.	Specify a number between 1 and 255
Source	
Source IP Address	Specify the source IP address
Source Subnet Mask	Specify the source subnet mask
Destination	
Destination MAC address	Specify the destination IP address
Destination Subnet Mask	Specify the destination subnet mask
Port	Select **All** to select all ports or you can configure the IP address-based ACL rule on specific ports by clicking the port checkbox.
Permission	Select one of the following: • **Allow** • **Deny**

4. Click **Save**.
   QSS adds the IP address-based ACL rule.

Configuring an IP Address-based ACL Rule

1. Go to **Configuration** > **ACL** > **By IP Address** .
2. Identify a rule.
3. Click .
   The **Edit ACL - IP Address** window appears.
4. Configure the rule settings.
   For details, see Adding an IP Address-based ACL Rule.
5. Click **Save**.
   QSS updates the IP address-based ACL rule.

Deleting an IP Address-based ACL Rule

1. Go to **Configuration** > **ACL** > **By IP Address** .
2. Identify a rule.
3. Click .
   A confirmation message appears.
4. Click **Delete**.
   QSS deletes the IP address-based ACL rule.

MAC Address-based ACL

A MAC address ACL allows you to filter traffic using MAC addresses by using Layer 2 header information of each packet.

Adding a MAC Address-based ACL Rule

1. Go to **Configuration** > **ACL** > **By MAC Address** .
2. Click **Add**.
   The **Add ACL - MAC Address** window opens.
3. 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 **All** to select all ports or you can configure the MAC-based ACL rule on specific ports by clicking the port checkbox.
Permission	Select one of the following: • **Allow** • **Deny**

4. Click **Save**.

QSS adds the MAC address-based ACL rule.

Configuring a MAC Address-based ACL Rule

1. Go to **Configuration** > **ACL** > **By MAC Address** .
2. Identify a rule.
3. Click .
   The **Edit ACL - MAC Address** window appears.
4. Configure the rule settings.
   For details, see Adding a MAC Address-based ACL Rule.
5. Click **Save**.
   QSS updates the MAC address-based ACL rule.

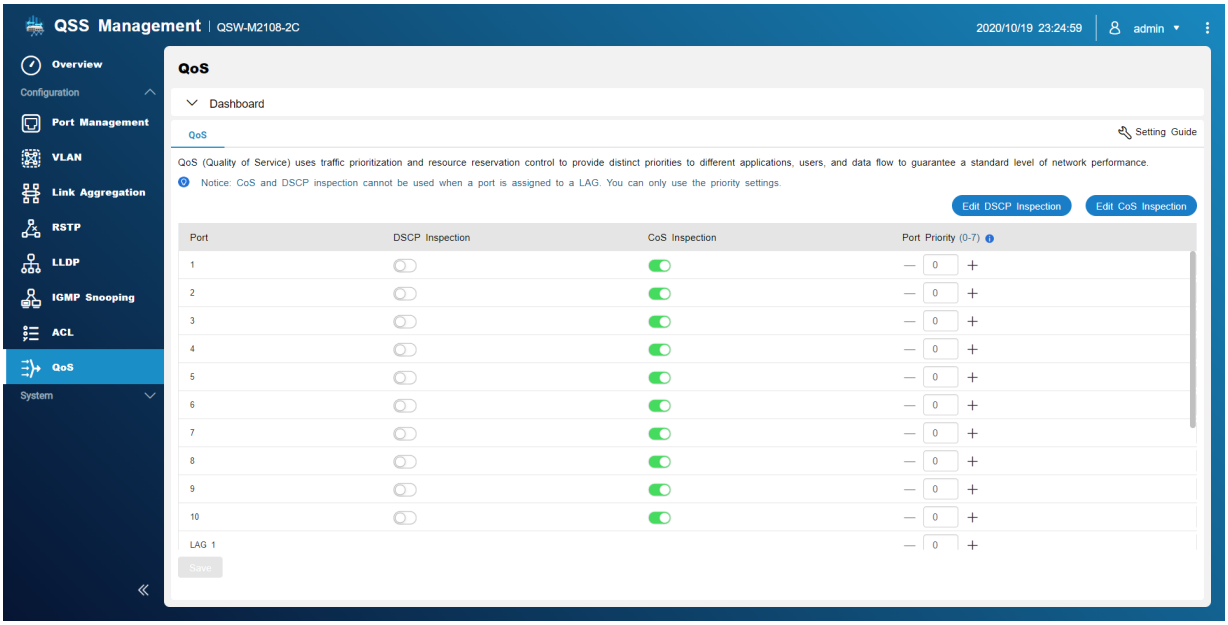
Deleting a MAC Address-based ACL Rule

1. Go to **Configuration** > **ACL** > **By MAC Address** .
2. Identify a rule.
3. Click .
   A confirmation message appears.
4. Click **Delete**.
   QSS deletes the MAC address-based ACL rule.

QoS

Quality of service (QoS) improves network traffic shaping by classifying and prioritizing different network devices and packets.

This screen provides access to QoS configuration options.



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. Open QSS.
2. Go to **Configuration** > **QoS** .
3. Identify a port.
4. Click  under DSCP Inspection.
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.

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. Open QSS.
2. Go to **Configuration** > **QoS** .
3. Identify a port.

4. Click  under CoS Inspection.
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.

4. System

System Settings

This screen contains system configuration options such as system information, IP information, password settings, time settings, and backup and restore settings for the switch.

Configuring the Switch Name

1. Go to **System** > **System Settings** > **System Information** .
2. Click .
3. Specify the device name.
   Requirements:
   - Length: 1–14characters
   - Valid characters: A–Z, a–z, 0–9
   - Valid special characters: Hyphen (-), Underscore (_), Period (.)
4. Click to confirm the device name.
   QSS updates the switch name.

Configuring the Switch IP Information

1. Go to **System** > **System Settings** > **IP** .
2. Select a network configuration setting.

Setting	Description
Automatically obtain IP & DNS	If the network supports DHCP, the adapter automatically obtains the IP address and network settings.
Manually set the IP & DNS	Manually assign a static IP address. You must specify the following information: • Fixed IP Address • Subnet Mask • Default Gateway

3. Click **Save**.

Configuring Password Settings

1. Go to **System** > **System Settings** > **Password** .
2. Configure the password settings.

Tip

Click to make the password visible.

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

3. Click **Save**.
   QSS logs you out of the switch interface. You can log on to QSS with the username and new password.

Configuring Time Settings

Note
You must configure the system time correctly to avoid the following issues.

- When using a web browser to connect to the device or save a file, the displayed time of the action is incorrect.
- Event logs do not reflect the exact time that events occurred.
- Scheduled tasks run at the wrong time.

1. Go to **System** > **System Settings** > **Time** .
2. Select a time zone.
3. Specify the date and time format.
4. Select the time setting.

Option	User Action
Manual configuration	Specify the date and time.
Synchronize with internet time server	Ensure that your device is connected to the Internet and specify the time server name. **Server**: Name of the Network Time Protocol (NTP) server Examples: time.nist.gov, time.windows.com **Tip** Click to refresh the time server.

5. Click **Save**.

Backup/Restore

QSS provides system backup and restore features to help protect your switch data in the event of system failure.

Backing Up System Settings

1. Go to **System** > **System Settings** > **Backup & Restore** .
2. Click **Backup**.

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

QSS restores the switch settings.

Restarting the Switch

1. Open QSS.
2. Click  located on the upper-right corner of the page.
3. Click **Restart Switch**.
   QSS restarts the switch.

Resetting the Switch Password

1. Go to **System** > **System Settings** > **Backup & Restore** .
2. Click **Password Reset**.

QSS resets the password to the MAC address of the switch.

Resetting the Switch

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

1. Go to **System** > **System Settings** > **Backup & Restore** .
2. Click **Factory Reset**.

QSS resets 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 firmware using one of the following methods:

Update Method	Description
Using **Live Update**	Firmware updates are automatically detected by QSS and installed onto your device. For details, see Checking for Live Updates.
Using **Firmware Update**	You can check for latest device firmware updates on the QNAP website, download the firmware update to a computer, and manually install the firmware update onto your device. For details, see Updating the Firmware Manually.
Using **QFinder Pro**	If your device is connected to the local area network, you can use QFinder Pro to check and install the latest firmware updates. For details, see Updating the Firmware Using Qfinder Pro.

Firmware Requirements

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

Settings	Requirements
Hardware settings	• A computer **Note** A computer is required for updating the firmware manually or through Qfinder Pro. Ethernet cables **Note** QNAP recommends updating the firmware using wired Ethernet connections to ensure your network connection is reliable during firmware updates.
Backup system settings	QNAP recommends backing up the system settings to your computer before updating the firmware. For details, see Backing Up System Settings.
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: • Locate the model name on a sticker on the bottom or rear of your device. • Log on to your device to find the model name.

Settings	Requirements
Firmware version	If you are updating the firmware using **Firmware Update** 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 Backup/Restore.
- 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. Go to **System** > **Firmware Update** > **Live Update** .
2. Click **Check for Update**.
   QSS checks for available firmware updates. You can choose to update QSS if there is an available update.
3. Click **Update System**.
   A confirmation message appears.
4. 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 Backup/Restore.
- 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. Go to **System** > **Firmware Update** > **Firmware Update** .
10. Click **Browse** and then select the extracted firmware image file.
11. Click **Update System**.
A confirmation message window appears.
12. Click **Update**.

The device is immediately restarted.

Updating the Firmware Using Qfinder Pro

Warning

- To prevent data loss, QNAP recommends backing up all data on your device before updating the firmware. For details about data backup, see Backup/Restore.
- 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 NAS 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. Open Qfinder Pro.
   Qfinder Pro displays a list of QNAP devices on your network.
10. Select the switch from the device list.
11. Go to **Tools** > **Update Firmware** .

Tip
You can also right-click the NAS model on the list and then select **Update Firmware**.

The **Firmware Update** window appears.

12. Specify your QSS username and password.
    Qfinder Pro displays the **Update Firmware** screen.
13. Select one of the following firmware update methods:

Methods	Steps
Update firmware manually	a. Click **Path of system firmware image file**. b. Click **Browse**. c. Locate the downloaded firmware update image file. d. Click **OK**.
Update firmware automatically	a. Click **Automatically update the firmware to the latest version**. b. Qfinder Pro searches for the latest firmware update. c. Click **Update**.

The firmware update image file is listed in the table below.

14. Perform one of the following actions:

Action	Steps
Update a single NAS device	Select the device that you want to update.

Action	Steps
Update multiple NAS devices of the same model	**a.** Select a device model from the list. **b.** Select **Update all the devices with the same model number within the network**. **c.** Select the devices that you want to update.

15. Click **Start**.

QSS updates the firmware.