NETGEAR®

ProSAFE® Gigabit Web Managed (Plus) Switches

User Manual

GS105Ev2
GS105PE
GS108Ev3
GS108PEv3
GS116Ev2
JGS516PE
JGS524Ev2
JGS524PE

Support

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Conformity

For the current EU Declaration of Conformity, visit *http://kb.netgear.com/app/answers/detail/a_id/11621*.

Compliance

For regulatory compliance information, visit *http://www.netgear.com/about/regulatory*.

See the regulatory compliance document before connecting the power supply.

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Revision History

Publication Part Number	Publish Date	Comments
202-11700-02	March 2017	Made corrections to *Specify a Port PVID for an 802.1Q-Based VLAN*.
202-11700-01	August 2016	First publication.

Contents

Get Started

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This chapter covers the following topics:

- *Supported Switches*
- *Configure the Switch*
- *Access the Switch Using a Web Browser*
- *Access the Switch With the ProSAFE Plus Configuration Utility*
- *Change the Password*

Note: For hardware information, see the hardware installation guide (HIG) for your switch model. You can download the HIG by visiting *downloadcenter.netgear.com*.

Note: For more information about the topics covered in this manual, visit the support website at *netgear.com/support*.

Note: Firmware updates with new features and bug fixes are made available from time to time at *downloadcenter.netgear.com*. You can check for and download new firmware manually. If the features or behavior of your product does not match what is described in this guide, see the latest firmware release notes for your switch model.

Supported Switches

The ProSAFE Gigabit Web Managed (Plus) Switch Series User Manual supports the following switch models:

- GS105Ev2
- GS105PE
- GS108Ev3
- GS108PEv3
- GS116Ev2
- JGS516PE
- JGS524Ev2
- JGS524PE

Configure the Switch

ProSAFE Web Managed (Plus) Switches are Plug-and-Play, so they can be used without any configuration. Just connect power, connect to your network and to your other devices, and you're done. You can also configure and manage additional advanced features of the switch either by using your computer's web browser or by installing the ProSAFE Plus Utility on your Windows-based computer.

For easiest access, we recommend that you cable the switch to a network with a router or DHCP server that assigns IP addresses, power on the switch, and then use a computer that is connected to the same network as the switch (on-network). However, it is also possible to configure the switch connected directly only to the computer that you are using to configure it, and not connected to the network (off-network). See the following sections for details about the different options for configuring your switch.

Access the Switch Using a Web Browser

You can access and configure the switch directly through its web-based management interface by entering the switch's IP address in the address bar of a browser. When using web-browser setup, the simplest way to configure the switch is not connected to your network (off-network). You can also configure the switch with it connected to your network, router, or modem, (on-network) but you must be able to determine the IP address of the switch if your network uses DHCP.

Access a Switch That Is Off-Network

➢ **To use your web browser to configure a switch that is not connected to a network:**

1. Record your computer's TCP/IP configuration settings, and then configure the computer with a static IP address of 192.168.0.210 and 255.255.255.0 as the subnet mask.

   Note: If you are unsure how to do this, visit the support website at *netgear.com/support* and search for **Static IP address on computer**.

2. Plug the switch into a power outlet and then connect your computer to the switch using an Ethernet cable.

   You can connect the Ethernet cable to any port on the switch.

3. Open a web browser, and enter **http://192.168.0.239**.

   This is the default address of the switch.

4. When prompted, enter the password.

   The default password is **password**.

5. Click the **Login** button.

   You can now configure additional options for the switch in the web browser interface.

6. After you complete the configuration of the switch, reconfigure the computer that you used for this process to its original TCP/IP settings.

You can now connect your switch to your network using an Ethernet cable.

Access a Switch That Is Connected to a Network

➢ **To use your web browser to configure a switch that is connected to a network:**

1. Cable the switch to a network with a router or DHCP server that manages IP addresses.
2. Power on the switch.

   The DHCP server assigns the switch an IP address.

3. Connect your computer to the same network as the switch.
4. Determine the IP address of the switch.

   DHCP is enabled on the switch by default. Use the IP address that the DHCP server assigned to the switch. If you are unsure how to determine the IP address of the switch, you can use the ProSAFE Plus Configuration Utility or an IP scanner utility.

5. Open a web browser, and enter the IP address of the switch.
6. When prompted, enter the password.

   The default password is **password**.

7. Click the **Login** button.

   You can now configure additional options for the switch in the web browser interface.

Access the Switch With the ProSAFE Plus Configuration Utility

The ProSAFE Plus configuration utility runs on Windows-based computers. You can install the utility to select additional options to manage and customize the switch for your network. The utility is located on the resource CD that came with the switch. You can also visit *netgear.com/support/product/PCU* to download the utility.

Install the ProSAFE Plus Utility

> **Note:** The ProSAFE Plus Utility requires WinPcap and Adobe Air. If WinPcap and Adobe Air are not detected during ProSAFE Plus Utility installation, you are prompted to allow them be installed.

➢ **To install the utility from the resource CD:**

1. Insert the resource CD into a computer that is connected to the switch.

   The Resource CD page displays.

2. Click the **Install ProSAFE Plus Utility** link and follow the prompts to install the program.

   The utility is installed in the program directory of your computer and a **ProSAFE Plus Utility** icon is placed on your desktop.

3. If prompted, allow WinPcap and Adobe Air to be installed.

> **Note:** We recommend that you reboot your computer after installing the ProSAFE Plus Utility.

Access and Configure the Switch Using the ProSAFE Plus Utility

For easiest access, we recommend that you cable the switch to a network with a router or DHCP server that assigns IP addresses, power on the switch, and then use a computer that is connected to the same network as the switch.

> **Note:** You can also access and configure the switch directly using a web browser. See *Access the Switch Using a Web Browser* on page 7.

➢ **To access and configure the switch using the ProSAFE Plus Utility:**

1. Cable the switch to a network with a router or DHCP server that manages IP address.

2. Power on the switch.

   The DHCP server assigns the switch an IP address.

3. Connect your computer to the same network as the switch.

   You can use a WiFi or wired connection. The computer and the switch must be on the same Layer 2 network.

4. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

   Note: To use the ProSAFE Plus Utility, make sure that your computer's security software allows broadcast of UDP packets to go through UDP remote and source (local and destination) ports 63321 through 63324. To allow this traffic, you can create a rule in your computer's security software, or temporarily disable the firewall, Internet security, antivirus programs, or all on the computer that you use to configure the switch. If you temporarily disable any security services, be sure to reenable those services once configuration is complete.

5. Select the ProSAFE Web Managed (Plus) switch that you want to configure.

   If you do not see the switch, click the **REFRESH** button.

6. When prompted, enter the password.

   The default password is **password**.

   The Switch Information page displays.

7. Use the utility to configure the switch settings.

8. If you temporarily disabled the firewall, Internet security, antivirus programs, or all of these programs, return them to their usual settings when you are finished with the configuration.

For a description of Web Managed (Plus) features, see the *ProSAFE Plus Switch Utility User Guide*. You can access the user guide through links on the **Help** tab of the utility and from the resource CD.

Change the Password

The default password to access the switch is **password**. We recommend that you change this password to a more secure password. The ideal password contains no dictionary words from any language and contains uppercase and lowercase letters, numbers, and symbols. It can be up to 20 characters.

Use Browser–Based Access to Change the Password

➢ **To change the password:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **Maintenance > Change Password**.

   The Change Password page displays.

6. In the **Old Password** field, type the current password for the switch.

7. Type the new password in the **New Password** field and in the **Re-type New Password** field.

8. Click the **Apply** button.

   Your settings are saved. Keep the new password in a secure location so that you can access the switch in the future.

Use the ProSAFE Plus Utility to Change the Password

➢ **To change the password:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

The switch's default password is **password**.

The Switch Status page displays.

6. Select **System > Maintenance > Change Password**.

The Change Password page displays.

7. In the **Old Password** field, type the current password for the switch.

8. Type the new password in the **New Password** field and in the **Re-type New Password** field.

9. Click the **APPLY** button.

Your settings are saved. Keep the new password in a secure location so that you can access the switch in the future.

Manage Network Settings

2

This chapter covers the following topics:

- *Specify IP Address Settings for the Switch*
- *Manage Multicast Traffic With IGMP Snooping*
- *Set Up Static Link Aggregation Groups*

Specify IP Address Settings for the Switch

By default, the switch IP address works as follows:

- If you cable the switch to a network with a DHCP server before you power on the switch, the DHCP server assigns an IP address to the switch when the switch is powered on.
- If you power on the switch when it is not connected to a network with a DHCP server, the switch uses its default IP address, which is 192.168.0.239.

    You can disable the DHCP mode in the switch and enter static IP address and subnet mask values for the switch as well as the address of the gateway device used by the switch.

Use Browser-Based Access to Specify the Switch IP Address

➢ **To specify IP address settings for the switch:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

    If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

    The login window opens.

4. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Information page displays.

5. In the **DHCP Mode** menu, select **Disable**.

The **IP Address**, **Subnet Mask**, and **Gateway Address** fields are enabled.

6. Enter the IP address, subnet mask, and if available, the gateway address.

7. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Specify the Switch IP Address

➢ **To specify IP address settings for a switch:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **IP SETTING** button.

IP Setting	
Product Name:	
Switch Name:	
MAC Address:	DC:EF:09:E1:AE:D7
Firmware Version:	V1.0.0.2
DHCP Mode:	Enable ▼ ☐ Refresh
IP Address:	192.168.100.195
Subnet Mask:	255.255.255.0
Gateway Address:	192.168.100.1
✱Password:	

   Note: To navigate to this page, select **Network**, select the switch, and click the **IP SETTING** button.

5. In the **DHCP Mode** menu, select **Disable**.

   The **IP Address**, **Subnet Mask**, and **Gateway Address** fields are enabled.

6. Enter the IP address, subnet mask, and if available, the gateway address.

7. Enter the switch's password in the **Password** field.

   The switch's default password is **password**.

8. Click the **APPLY** button.

   Your settings are saved.

Manage Multicast Traffic With IGMP Snooping

Internet Group Management Protocol (IGMP) snooping allows a switch to forward multicast traffic intelligently on the switch. Multicast IP traffic is traffic that is destined to a host group. Host groups are identified by class D IP addresses, which range from 224.0.0.0 to 239.255.255.255. Based on the IGMP query and report messages, the switch forwards traffic only to the ports that request the multicast traffic. This feature prevents the switch from broadcasting the traffic to all ports and possibly affecting network performance.

The switch maintains a map that shows which links need which IP multicast streams. The switch forwards multicast traffic only to the links that requested them and cuts multicast traffic from links that do not contain a multicast listener. Essentially, IGMP snooping helps optimize multicast performance at Layer 2 and is especially useful for bandwidth-intensive IP multicast applications such as IPTV.

Use Browser-Based Access to Customize IGMP Snooping

By default, IGMP snooping is enabled. You can customize the settings for your network.

➢ **To customize IGMP snooping:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Multicast**.

6. Make sure that the IGMP Snooping Status **Enable** radio button is selected.

   By default, the **Enable** radio button is selected.

7. Make sure that a VLAN ID between 1 and 4094 is stated in the **VLAN ID Enabled for IGMP Snooping** field.

   IGMP snooping functions only on the VLAN that is specified in the **VLAN ID Enabled for IGMP Snooping** field.

8. (Optional) Select the Validate IGMPv3 IP header **Enable** radio button.

   Some network devices might not conform to the IGMPv3 standard. When the Validate IGMPv3 IP header option is enabled, IGMP messages are required to include TTL = 1, ToS Byte = 0xC0 (Internetwork Control), and the router alert IP option (9404) must be set. Otherwise, the packets are ignored.

9. (Optional) Select the Block Unknown MultiCast Address **Enable** radio button.

   When this feature is enabled, multicast packets are forwarded only to the ports that are in the multicast group learned from IGMP snooping. All unknown multicast packets are dropped.

10. (Optional, for some models only) Select an option from the **IGMP Snooping Static Router Port** menu.

    You can select a port to be the dedicated IGMP snooping static router port if no IGMP query exists in the network for the switch to discover the router port dynamically. After a port is selected as the static router port, all IGMP Join and Leave reports are forwarded to the port.

11. Click the **Apply** button.

    Your settings are saved.

Use the ProSAFE Plus Utility to Customize IGMP Snooping

By default, IGMP snooping is enabled. You can customize the settings for your network.

➢ **To customize IGMP snooping:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Multicast**.

7. Select the IGMP Snooping Status **Enable** radio button.

8. (Optional) Select the Validate IGMPv3 IP header **Enable** radio button.

   Some network devices might not conform to the IGMPv3 standard. When the Validate IGMPv3 IP header option is enabled, IGMP messages are required to include TTL = 1, ToS Byte = 0xC0 (Internetwork Control), and the router alert IP option (9404) must be set. Otherwise, the packets are ignored.

9. (Optional) Select the Block Unknown MultiCast Address **Enable** radio button.

   When this feature is enabled, multicast packets are forwarded only to the ports that are in the multicast group learned from IGMP snooping. All unknown multicast packets are dropped.

10. (Optional, for some models only) Select an option from the **IGMP Snooping Static Router Port** menu.

    You can select a port to be the dedicated IGMP snooping static router port if no IGMP query exists in the network for the switch to discover the router port dynamically. After a port is selected as the static router port, all IGMP Join and Leave reports are forwarded to the port.

11. Click the **APPLY** button.

    Your settings are saved.

Use Browser–Based Access to Specify a VLAN for IGMP Snooping

You can specify a VLAN for IGMP snooping only if you enabled port-based or 802.1Q-based VLANs (see *Chapter 4, Use VLANS for Traffic Segmentation*).

➢ **To specify a VLAN for IGMP snooping:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Multicast**.

6. Make sure that the IGMP Snooping Status **Enable** radio button is selected.

7. In the **VLAN ID Enabled for IGMP Snooping** field, enter the ID of the VLAN.

   By default, if you enable IGMP snooping, snooping occurs on VLAN 1. However, you can enable snooping on any VLAN:

   • For port-based VLANs, you can enter a VLAN ID from 1 to the maximum number that you switch supports (5, 8, 16, or 24).

   • For 802.1Q-based VLANs, you can enter a VLAN ID from 1 to 4094.

8. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Specify a VLAN for IGMP Snooping

You can specify a VLAN for IGMP snooping only if you enabled port-based or 802.1Q-based VLANs (see *Chapter 4, Use VLANS for Traffic Segmentation*).

➢ **To specify a VLAN for IGMP snooping:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Multicast**.

   The previous figure is an example. Your switch might support more or less VLANs for IGMP snooping.

7. Make sure that the IGMP Snooping Status **Enable** radio button is selected.

8. In the **VLAN ID Enabled for IGMP Snooping** field, enter the ID of the VLAN.

By default, if you enable IGMP snooping, snooping occurs on VLAN 1. However, you can enable snooping on any VLAN:

- For port-based VLANs, you can enter a VLAN ID from 1 to the maximum number that you switch supports (5, 8, 16, or 24).
- For 802.1Q-based VLANs, you can enter a VLAN ID from 1 to 4094.

9. Click the **APPLY** button.

   Your settings are saved.

Set Up Static Link Aggregation Groups

Note: Static link aggregation (port trunking) is supported on models GS116E, JGS516PE, JGS524E, and JGS524PE.

Link aggregation groups (LAGs) allow you to combine multiple Ethernet links into a single logical link. Network devices treat the aggregation as if it were a single link, which increases fault tolerance and load sharing. The number of LAGs that the switch supports depends on the model. Configure LAG membership before you enable the LAG.

Note: The switch does not support IEEE 802.3ad Link Aggregation or Link Aggregation Control Protocol (LACP) groups. The switch supports manual static LAGs only.

Use Browser-Based Access to Specify LAG Membership and Enable LAGs

You must set up LAG membership before you can enable LAGs.

➢ **To specify LAG membership and enable a LAG:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

The switch's default password is **password**.

The Switch Information page displays.

5. Select **System > LAG > LAG Membership**.

The previous figure is an example. Your switch might provide a larger number of ports.

6. In the **LAG ID** menu, select the LAG ID.

The number of LAGs that the switch supports depends on the model.

7. Select the ports for the LAG by selecting the associated check boxes under the port numbers.

A LAG consists of at least two ports.

8. Click the **Apply** button.

Your settings are saved.

9. Select **System > LAG > LAG Configuration**.
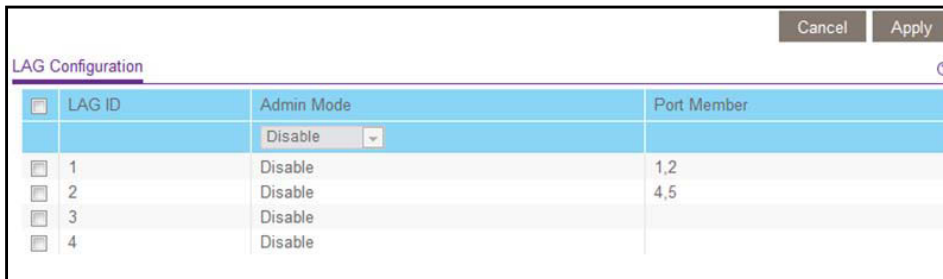
10. Select the ID of the LAG for which you just set up the port membership.

11. In the **Admin Mode** menu, select **Enable**.

12. Click the **Apply** button.

Your settings are saved.

Use the ProSAFE Plus Utility Specify LAG Membership and Enable LAGs

You must set up LAG membership before you can enable LAGs.

➢ **To specify LAG membership and enable a LAG:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

    The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

    If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

    You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Status page displays.

6. Select **System > LAG > LAG Membership**.

    The previous figure is an example. Your switch might provide a larger number of ports.

7. In the **LAG ID** menu, select the LAG ID.

    The number of LAGs that the switch supports depends on the model.

8. Select the ports for the LAG by selecting the associated check boxes under the port numbers.

    A LAG consists of at least two ports.

9. Click the **APPLY** button.

    Your settings are saved.

10. Select **System > LAG**.

LAG Configuration

	LAG ID	Admin Mode	Port Members
☐	1	Disable	1,2
☐	2	Disable	4,5
☐	3	Disable	
☐	4	Disable	

Admin Mode Disable

11. Select the ID of the LAG for which you just set up the port membership.

12. In the **Admin Mode** menu, select **Enable**.

13. Click the **APPLY** button.

Your settings are saved.

Optimize Performance With Quality of Service

3

This chapter covers the following topics:

- *Enable 802.1p/DSCP-Based Quality of Service*
- *Configure Port-Based Quality of Service*
- *Set Up Rate Limiting*
- *Set Up Broadcast Filtering*

Enable 802.1p/DSCP–Based Quality of Service

> **Note:** 802.1p-based QoS is available on all models. DSCP-based QoS is available on models GS105Ev2, GS105PEv2, GS108Ev3, and GS108PEv3 only.

802.1p/DSCP-based priority uses a field in the data packet header that identifies the class of data in the packet (for example, voice or video). When 802.1p/DSCP-based priority is used, the switch reads information in the packet header to determine the priority to assign to the packet. The switch reads both 802.1p tag information and DSCP/ToS tag information. If an ingress packet contains both an 802.1p tag and a DSCP/ToS tag, the switch gives precedence to the 802.1p tag.

All ports on the switch check the packet header and transmit the packet with a priority determined by the packet content.

Use Browser–Based Access to Enable 802.1p/DSCP–Based QoS

This feature is enabled by default.

➢ **To enable 802.1p/DSCP-based QoS:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **QoS**.

   The Quality of Service page displays.

6. Select the **802.1p/DSCP-based** radio button.

   A pop-up window opens, informing you that the current QoS settings will be lost.

7. Click the **OK** button.

The pop-up window closes.

8. Click the **Apply** button.

Your settings are saved.

Use the ProSAFE Plus Utility to Enable 802.1p/DSCP–Based QoS

➢ **To enable 802.1p/DSCP-based QoS:**

1. Connect your computer to the same network as the switch.

You can use a WiFi or wired connection.

2. Double-click the **ProSAFE Plus Utility** icon.

The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

The switch's default password is **password**.

The Switch Status page displays.

6. Select **QoS**.

The Quality of Service page displays.

7. Select the **802.1p/DSCP Based** radio button.

A pop-up window opens, informing you that the current QoS settings will be lost.

8. Click the **Yes** button.

The pop-up window closes.

9. Click the **APPLY** button.

Your settings are saved. Data is now processed based on 802.1p priority tags in the data.

Configure Port–Based Quality of Service

You can assign a priority to all data passing through a particular port. Data with a higher priority is transmitted faster. If packets arrive at several ports at the same time, the ports configured as higher priority transmit their packets first. You must determine which ports will carry delay-sensitive data.

Use Browser-Based Access to Configure Port-Based QoS

➢ **To configure port-based QoS:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **QoS**.

   The Quality of Service page displays.

6. If this is the first time that you are setting up port-based QoS, select the **Port-based** radio button and continue with *Step 7*.

   Otherwise, see *Step 9*.

   A pop-up window opens, informing you that the current QoS settings will be lost.

7. Click the **OK** button.

   The pop-up window closes.

8. Click the **Apply** button.

   Your settings are saved and the Port Priority table displays.

The previous figure is an example. Your switch might provide more or less ports. The **802.1p/DSCP-based** radio button is not supported on all models and therefore might not show on the page.

9. To set the port priority for one or more ports, do the following:

    a. Select one or more ports.

    b. In the **Priority** menu, select the priority.

    c. Click the **Apply** button.

        Your settings are saved. The same priority is applied to all ports that you selected.

10. To set a different port priority for one or more other ports, repeat *Step 9*.

Use the ProSAFE Plus Utility to Configure Port-Based QoS

➢ **To configure port-based QoS:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

    The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

    If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

    You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Status page displays.

6. Select **QoS**.

    The Quality of Service page displays.

7. If this is the first time that you are setting up port-based QoS, select the **Port Based** radio button and continue with *Step 8*.

    Otherwise, see *Step 9*.

    A pop-up window opens, informing you that the current QoS settings will be lost.

8. Click the **Yes** button.

    The pop-up window closes and the port priority options display.

The previous figure is an example. Your switch might provide more or less ports. The **802.1p/DSCP-based** radio button is not supported on all models and therefore might not show on the page.

9. To set the port priority for one or more ports, do the following:

   a. Select one or more ports.

   b. In the Priority section, select the priority by moving the slider.

   c. Click the **APPLY** button.

      Your settings are saved. The same priority is applied to all ports that you selected.

10. To set a different port priority for one or more other ports, repeat *Step 9*.

Set Up Rate Limiting

You can limit the rate at which the switch accepts incoming data and the rate that it retransmits outgoing data. The rate choices vary depending on the switch model.

Rate limiting can be set for a port in addition to other QoS settings. If the port rate limit is set, the switch restricts the acceptance or retransmission of data to the values configured.

Use Browser-Based Access to Set Up Rate Limiting

➢ **To set up rate limiting:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **QoS > Rate Limit**.

   The previous figure is an example. Your switch might provide more or less ports.

6. Set the ingress (incoming) and egress (outgoing) traffic rates by doing the following:

   a. Select one or more ports.

   b. In the **Ingress Rate** menu, select the maximum rate.

      You can set a rate from 512 Kbit/s to 512 Mbit/s. By default, no limit is set.

   c. In the **Egress Rate** menu, select the maximum rate.

      You can set a rate from 512 Kbit/s to 512 Mbit/s. By default, no limit is set.

   d. Click the **Apply** button.

      Your settings are saved.

7. To set different rates for one or more other ports, repeat *Step 6*.

Use the ProSAFE Plus Utility to Set Up Rate Limiting

➢ **To set up rate limiting:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

    The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

    If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

    You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Status page displays.

6. Select **QoS > Rate Limit**.

	Port	Ingress Rate	Egress Rate
☐	01	No Limit	No Limit
☐	02	No Limit	No Limit
☐	03	No Limit	No Limit
☐	04	No Limit	No Limit
☐	05	No Limit	No Limit
☐	06	No Limit	No Limit
☐	07	No Limit	No Limit
☐	08	No Limit	No Limit

    Rate Limit

    Rate Control Setting

    Ingress Rate | No Limit ▾
    Egress Rate | No Limit ▾

    The previous figure is an example. Your switch might provide more or less ports.

7. Select one or more ports.

8. Set the ingress (incoming) and egress (outgoing) traffic rates by doing the following:

    a. Select one or more ports.

    b. In the **Ingress Rate** menu, select the maximum rate.

You can set a rate from 512 Kbit/s to 512 Mbit/s. By default, no limit is set.

    c. In the **Egress Rate** menu, select the maximum rate.

    You can set a rate from 512 Kbit/s to 512 Mbit/s. By default, no limit is set.

    d. Click the **APPLY** button.

    Your settings are saved.

9. To set different rates for one or more other ports, repeat *Step 8*.

Set Up Broadcast Filtering

You can configure the switch to block broadcast storms (massive transmission of broadcast packets forwarded to every port on the same VLAN). If they are not blocked, broadcast storm packets can delay or halt the transmission of other data. Some switches allow you to select a storm control rate for each port. Others assign a predetermined storm control rate for all ports on the switch.

If broadcast traffic on any port exceeds the threshold that you set, the switch temporarily blocks (discards) the broadcast traffic.

Use Browser–Based Access to Set Up Broadcast Filtering

➢ **To set up broadcast filtering:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

    If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

    The login window opens.

4. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Information page displays.

5. Select **QoS > Broadcast Filtering**.

    The Broadcast Filtering page displays.

6. If this is the first time that you are setting up broadcast filtering, select the **Enable** radio button and continue with *Step 7*.

    Otherwise, see *Step 8*.

7. Click the **Apply** button.

   Your settings are saved and the Storm Control Rate table displays.

   The previous figure is an example. Your switch might provide more or less ports.

8. Set the storm control rate by doing the following:

   a. Select one or more ports.

   b. In the **Storm Control Rate** menu, select the maximum rate.

      You can set a rate from 512 Kbps to 512 Mbps. By default, no limit is set.

   c. Click the **Apply** button.

      Your settings are saved.

9. To set a different rate for one or more other ports, repeat *Step 8*.

Use the ProSAFE Plus Utility to Set Up Broadcast Filtering

➢ **To set up broadcast filtering:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **QoS > Broadcast Filtering**.

   The Broadcast Filtering page displays.

7. If this is the first time that you are setting up broadcast filtering, select the **Enable** radio button and continue with *Step 8*.

   Otherwise, see *Step 9*.

8. Click the **Apply** button.

   Your settings are saved and the Storm control rate table displays.

   The previous figure is an example. Your switch might provide more or less ports.

9. Set the storm control rate by doing the following:

   a. Select one or more ports.

   b. In the **Storm control rate** menu, select the maximum rate.

      You can set a rate from 512 Kbps to 512 Mbps. By default, no limit is set.

   c. Click the **APPLY** button.

      Your settings are saved.

10. To set a different rate for one or more other ports, repeat *Step 9*.

Use VLANS for Traffic Segmentation

4

This chapter covers the following topics:

- *VLAN Overview*
- *Create Basic Port-Based VLANs*
- *Assign Ports to Multiple Port-Based VLANs*
- *Create 802.1Q-Based VLANs in a Basic Configuration*
- *Create 802.1Q-Based VLANs in an Advanced Configuration*
- *Add Tagged or Untagged Ports to an 802.1Q-Based VLAN*
- *Specify a Port PVID for an 802.1Q-Based VLAN*

VLAN Overview

Virtual LANs (VLANs) are made up of networked devices that are grouped logically into separate networks. You can group ports on a switch to create a virtual network made up of the devices connected to the ports.

Ports can be grouped in VLANs using port-based or 802.1Q criteria:

- **Port-based VLANs**. Assign ports to virtual networks. Ports with the same VLAN ID are placed in the same VLAN. This feature provides an easy way to partition a network into private subnetworks.

- **802.1Q VLANs**. Create virtual networks using the IEEE 802.1Q standard. 802.1Q uses a VLAN tagging system to determine which VLAN an Ethernet frame belongs to. You can configure ports to be a part of a VLAN. When a port receives data tagged for a VLAN, the data is discarded unless the port is a member of that VLAN. This technique is useful for communicating with devices outside of your local network as well as receiving data from other ports that are not in the VLAN. However, for you to be able to use an 802.1Q VLAN, you must know the VLAN ID.

Create Basic Port–Based VLANs

A port-based VLAN configuration lets you assign ports on the switch to a VLAN. The number of VLANs is limited to the number of ports on the switch. In a basic port-based VLAN configuration, ports with the same VLAN ID are placed into the same VLAN.

You can also assign ports to multiple VLANs (see *Assign Ports to Multiple Port-Based VLANs* on page 40).

By default, all ports are members of VLAN 1.

Use Browser–Based Access to Create Basic Port–Based VLANs

➢ **To create basic port-based VLANs:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **VLAN**.

    The Basic Port-based VLAN Status page displays.

6. If this is the first time that you are accessing the Basic Port-based VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 7*.

    Otherwise, see *Step 9*.

    A pop-up window opens, informing you that the current VLAN settings will be lost.

7. Click the **OK** button.

    The pop-up window closes.

8. Click the **Apply** button.

    Your settings are saved.

    The Basic Port-based VLAN Group table displays.

						Cancel	Apply
Basic Port-based VLAN Status							⑦
Basic Port-based VLAN Status				⊙ Disable		⦿ Enable	
Basic Port-based VLAN Group(1-8 or all)							⑦
port	1	2	3	4	5	6	7	8
VLAN ID	1	1	1	1	1	1	1	1

    The previous figure is an example. Your switch might provide more or less ports.

9. Under each port to be added to a VLAN, enter the VLAN ID of the VLAN.

    You can enter a VLAN ID from 1 to the maximum number of ports that your switch supports. If all the VLANs share an uplink to the Internet or servers, enter **all** in the **VLAN ID** field for the port that you want to use for the uplink.

    Note: If ports are members of the same LAG, you must assign them to the same VLAN.

10. Click the **Apply** button.

    Your settings are saved.

Use the ProSAFE Plus Utility to Create Basic Port–Based VLANs

➢ **To create basic port-based VLANs:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

    The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

    If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

    You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Status page displays.

6. Select **VLAN**.

    The Basic Port-Based VLAN page displays.

7. If this is the first time that you are accessing the Basic Port-based VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 8*.

    Otherwise, see *Step 9*.

    A pop-up window opens, informing you that the current VLAN settings will be lost.

8. Click the **Yes** button.

    The pop-up window closes and the Basic Port-based VLAN Group table displays.

Basic Port-based VLAN Configuration								
Basic Port-based VLAN Status								
Basic Port-based VLAN		○ Disable			● Enable			
Basic Port-based VLAN Group (1-8 or all)								
port	01	02	03	04	05	06	07	08
VLAN Group	1	1	1	1	1	1	1	1

    The previous figure is an example. Your switch might provide more or less ports.

9. Under each port to be added to a VLAN, enter the VLAN ID of the VLAN.

    You can enter a VLAN ID from 1 to the maximum number of ports that your switch supports. If all the VLANs share an uplink to the Internet or servers, enter **all** in the **VLAN ID** field for the port that you want to use for the uplink.

    Note: If ports are members of the same LAG, you must assign them to the same VLAN.

10. Click the **APPLY** button.

    Your settings are saved.

Assign Ports to Multiple Port-Based VLANs

A port-based VLAN configuration lets you assign ports on the switch to a VLAN. The number of VLANs is limited to the number of ports on the switch. In an advanced port-based VLAN configuration, you can assign a single port to multiple VLANs.

By default, all ports are members of VLAN 1.

Use Browser-Based Access to Assign Ports to Multiple Port-Based VLANs

➢ **To assign ports to multiple port-based VLANs:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **VLAN > Port Based > Advanced**.

   The Advanced Port-based VLAN Status page displays.

6. If this is the first time that you are accessing the Advanced Port-based VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 7*.

   Otherwise, see *Step 9*.

   A pop-up window opens, informing you that the current VLAN settings will be lost.

7. Click the **OK** button.

   The pop-up window closes.

8. Click the **Apply** button.

   Your settings are saved.

   The VLAN Configuration and VLAN Membership sections display.

The previous figure is an example. Your switch might provide more or less ports.

9. In the **VLAN identifier** menu, select the VLAN.

10. Select the ports that you want to add to the VLAN by doing the following:

a. (Optional) In the **Group Operation** menu, select either **Select All** or **Remove All**.

All ports are either added to the VLAN or removed from the VLAN.

b. Select or remove individual ports by selecting the check box under the port numbers.

Note: If ports are members of the same LAG, you must assign them to the same VLAN.

c. Click the **Apply** button.

Your settings are saved. In the VLAN Membership table, the ports display as members of the VLAN.

11. To select ports for another VLAN, repeat *Step 9* and *Step 10*.

Use the ProSAFE Plus Utility to Assign Ports to Multiple Port-Based VLANs

➢ **To assign ports to multiple port-based VLANs:**

1. Connect your computer to the same network as the switch.

You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **VLAN > Port Based > Advanced**.

   The Advanced Port-Based VLAN page displays.

7. If this is the first time that you are accessing the Advanced Port-based VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 8*.

   Otherwise, see *Step 9*.

   A pop-up window opens, informing you that the current VLAN settings will be lost.

8. Click the **Yes** button.

   The pop-up window closes and the VLAN Configuration and VLAN Membership sections display.

Advanced Port-based VLAN Configuration							
Advanced Port-based VLAN Status							
Advanced Port-based VLAN		○ Disable		● Enable			
VLAN Configuration							
VLAN Configuration							
VLAN Identifier	01 ▾		Group Operation	Select All ▾			
Port	01	02	03	04	05	06	07	08
	X	X	X	X	X	X	X	X
VLAN Membership							
VLAN ID	Port Members						
01	01 02 03 04 05 06 07 08						

   The previous figure is an example. Your switch might provide more or less ports.

9. In the **VLAN identifier** menu, select the VLAN.

10. Select the ports that you want to add to the VLAN by doing the following:

   a. (Optional) In the **Group Operation** menu, select either **Select All** or **Remove All**.
   All ports are either added to the VLAN or removed from the VLAN.

   b. Select or remove individual ports by selecting the check box under the port numbers.

   Note: If ports are members of the same LAG, you must assign them to the same VLAN.

   c. Click the **APPLY** button.
   Your settings are saved. In the VLAN Membership table, the ports display as members of the VLAN.

11. To select ports for another VLAN, repeat *Step 9* and *Step 10*.

Create 802.1Q–Based VLANs in a Basic Configuration

A 802.1Q-based VLAN configuration lets you assign ports on the switch to a VLAN with an ID number in the range of 1–4093. By default, all ports are members of VLAN 1.

In an advanced 802.1Q-based VLAN configuration, you can set up VLANs to which you can add tagged or untagged ports and you can use port VLAN ID (PVID). For more information, *Create 802.1Q-Based VLANs in an Advanced Configuration* on page 46.

Use Browser–Based Access to Create 802.1Q–Based VLANs in a Basic Configuration

➢ **To create 802.1Q-based VLANs in a basic configuration:**

1. Connect your computer to the same network as the switch.
   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.
   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.
   The login window opens.

4. Enter the switch's password in the **password** field.
   The switch's default password is **password**.
   The Switch Information page displays.

5. Select **VLAN > 802.1Q**.
   The Basic 802.1Q VLAN Status page displays.

6. If this is the first time that you are accessing the Basic 802.1Q VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 7*.

   Otherwise, see *Step 9*.

   A pop-up window opens, informing you that the current VLAN settings will be lost.

7. Click the **OK** button.

   The pop-up window closes.

8. Click the **Apply** button.

   Your settings are saved.

   The Basic 802.1Q VLAN Identifier table displays.

   The previous figure is an example. Your switch might provide more or less ports.

9. Under each port to be added to a VLAN, enter the VLAN ID of the VLAN.

   You can enter a VLAN ID from 1 to 4093. If all the VLANs share an uplink to the Internet or servers, enter **all** in the **VLAN ID** field for the port that you want to use for the uplink.

   Note: If ports are members of the same LAG, you must assign them to the same VLAN.

10. Click the **Apply** button.

    Your settings are saved.

Use the ProSAFE Plus Utility to Create 802.1Q–Based VLANs in a Basic Configuration

➢ **To create 802.1Q-based VLANs in a basic configuration:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

The switch's default password is **password**.

The Switch Status page displays.

6. Select **VLAN > 802.1Q**.

The Basic 802.1Q VLAN page displays.

7. If this is the first time that you are accessing the Basic 802.1Q VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 8*.

Otherwise, see *Step 9*.

A pop-up window opens, informing you that the current VLAN settings will be lost.

8. Click the **Yes** button.

The pop-up window closes and the Basic 802.1Q VLAN Identifier table displays.

The previous figure is an example. Your switch might provide more or less ports.

9. Under each port to be added to a VLAN, enter the VLAN ID of the VLAN.

You can enter a VLAN ID from 1 to 4093. If all the VLANs share an uplink to the Internet or servers, enter **all** in the **VLAN ID** field for the port that you want to use for the uplink.

Note: If ports are members of the same LAG, you must assign them to the same VLAN.

10. Click the **APPLY** button.

Your settings are saved.

Create 802.1Q–Based VLANs in an Advanced Configuration

In an advanced 802.1Q-based VLAN configuration, you can assign ports on the switch to a VLAN with an ID number in the range of 1–4093 and you can add tagged or untagged ports to a VLAN. In addition, you can use port VLAN IDs (PVIDs). By default, all ports are untagged members of VLAN 1.

Use Browser–Based Access to Create 802.1Q–Based VLANs in an Advanced Configuration

➢ **To create 802.1Q-based VLANs in an advanced configuration:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **VLAN > 802.1Q > Advanced > VLAN Configuration**.

   The Advanced 802.1Q VLAN Status page displays.

6. If this is the first time that you are accessing the Advanced 802.1Q VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 7*.

   Otherwise, see *Step 9*.

   A pop-up window opens, informing you that the current VLAN settings will be lost.

7. Click the **OK** button.

   The pop-up window closes.

8. Click the **Apply** button.

   Your settings are saved.

   The VLAN Identifier Setting table displays.

The previous figure is an example. Your switch might provide more or less ports, all of which are members of VLAN 1 by default.

9. In the **VLAN ID** field, enter a VLAN ID.

You can enter a VLAN ID from 1 to 4093.

10. Click the **Add** button.

The new VLAN is added to the VLAN Identifier Setting table.

After you create a new VLAN ID, use the VLAN membership option to add ports to the VLAN. (Select **VLAN > 802.1Q > Advanced > VLAN Membership**. See also *Add Tagged or Untagged Ports to an 802.1Q-Based VLAN*.)

Note: To delete a VLAN, select the check box for the VLAN and click the **Delete** button.

Use the ProSAFE Plus Utility to Create 802.1Q–Based VLANs in an Advanced Configuration

➢ **To create 802.1Q-based VLANs in an advanced configuration:**

1. Connect your computer to the same network as the switch.

You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **VLAN > 802.1Q > Advanced**.

   The Advanced 802.1Q VLAN Status page displays.

7. If this is the first time that you are accessing the Advanced 802.1Q VLAN Status page or if you are changing the VLAN assignment method, select the **Enable** radio button and continue with *Step 8*.

   Otherwise, see *Step 9*.

   A pop-up window opens, informing you that the current VLAN settings will be lost.

8. Click the **Yes** button.

   The pop-up window closes and the VLAN Identifier Setting table displays.

   The previous figure is an example. Your switch might provide more or less ports, all of which are members of VLAN 1 by default.

9. In the **VLAN ID** field, enter a VLAN ID.

   You can enter a VLAN ID from 1 to 4093.

10. Click the **ADD** button.

    The new VLAN is added to the VLAN Identifier Setting table.

    After you create a new VLAN ID, use the VLAN membership option to add ports to the VLAN. (Select **VLAN > 802.1Q > Advanced > VLAN Membership**. See also *Add Tagged or Untagged Ports to an 802.1Q-Based VLAN* on page 49.)

   Note: To delete a VLAN, select the check box for the VLAN and click the **Delete** button.

Add Tagged or Untagged Ports to an 802.1Q–Based VLAN

After you define a VLAN ID using the advanced 802.1Q VLAN option (see *Create 802.1Q-Based VLANs in an Advanced Configuration* on page 46), you must add ports to the VLAN.

While you add ports to a VLAN, you can specify whether the ports must be tagged or untagged. Port tagging allows a port to be associated with a particular VLAN and allows the VLAN ID tag to be added to data packets that are sent through the port. The tag identifies the VLAN that must receive the data.

By default, all ports are untagged.

Use Browser–Based Access to Add Tagged or Untagged Ports to an 802.1Q–Based VLAN

➢ **To add tagged or untagged ports to an 802.1Q-based VLAN:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **VLAN > 802.1Q > Advanced > VLAN Configuration.**

   The Advanced 802.1Q VLAN Status page displays. The menu on the left displays more options.

6. Select **VLAN Membership**.

   You can select **VLAN Membership** only if you already enabled the advanced 802.1Q VLAN option (see *Create 802.1Q-Based VLANs in an Advanced Configuration* on page 46).

The previous figure is an example. Your switch might provide more or less ports.

7. In the **VLAN ID** menu, select the VLAN.

8. Select the ports that you want to add to the VLAN by doing the following:

   a. (Optional) In the **Group Operation** menu, select **Untag All**, **Tag all**, or **Remove all**.

      All ports are either added to the VLAN (tagged or untagged) or removed from the VLAN.

   b. Select individual ports and assign them as tagged (T) or untagged (U) ports or remove individual ports by selecting the check box under the port numbers.

      By default, all ports are untagged.

   c. Click the **Apply** button.

      Your settings are saved. In the VLAN Membership table, the ports display as members of the VLAN.

9. To select ports for another VLAN, repeat *Step 7* and *Step 8*.

10. To verify your selections, select **VLAN > 802.1Q > Advanced > VLAN Configuration**.

    The Advanced 802.1Q VLAN Status page displays. In the VLAN Identifier Setting table, the ports display next to the VLAN or VLANS to which they were added.

Use the ProSAFE Plus Utility to Add Tagged or Untagged Ports to an 802.1Q–Based VLAN

➢ **To add tagged or untagged ports to an 802.1Q-based VLAN:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

The switch's default password is **password**.

The Switch Status page displays.

6. Select **VLAN > 802.1Q > Advanced > VLAN Membership**.

You can select **VLAN Membership** only if you already enabled the advanced 802.1Q VLAN option (see *Create 802.1Q-Based VLANs in an Advanced Configuration* on page 46).

The previous figure is an example. Your switch might provide more or less ports.

7. In the **VLAN Identifier** menu, select the VLAN.

8. Select the ports that you want to add to the VLAN by doing the following:

a. (Optional) In the **Group Operation** menu, select **Untag All**, **Tag all**, or **Remove all**.

All ports are either added to the VLAN (tagged or untagged) or removed from the VLAN.

b. Select individual ports and assign them as tagged (T) or untagged (U) ports or remove individual ports by selecting the check box under the port numbers.

By default, all ports are untagged.

c. Click the **APPLY** button.

Your settings are saved. In the VLAN Membership table, the ports display as members of the VLAN.

9. To select ports for another VLAN, repeat *Step 7* and *Step 8*.

10. To verify your selections, select **VLAN > 802.1Q > Advanced > VLAN Configuration**.

The Advanced 802.1Q VLAN Status page displays. In the VLAN Identifier Setting table, the ports display next to the VLAN or VLANS to which they were added.

Specify a Port PVID for an 802.1Q-Based VLAN

A default port VLAN ID (PVID) is a VLAN ID tag that the switch assigns to data packets it receives that are not already addressed (tagged) for a particular VLAN. If you connected a computer on port 6 and you want it to be a part of VLAN 2, configure port 6 to automatically add a PVID of 2 to all data received from the computer. This step ensures that the data from the computer on port 6 can be seen only by other members of VLAN 2. You can assign only one PVID to a port.

Use Browser-Based Access to Assign a PVID to Ports

➢ **To assign a PVID to one or more ports:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **VLAN > 802.1Q > Advanced > VLAN Configuration.**

   The Advanced 802.1Q VLAN Status page displays. The menu on the left displays more options.

6. Select **Port PVID**.

   You can select **Port PVID** only if you already enabled the advanced 802.1Q VLAN option (see *Create 802.1Q-Based VLANs in an Advanced Configuration* on page 46).

   The previous figure is an example. Your switch might provide more or less ports.

7. Select one or more ports.

8. Enter the PVID.

   You can enter a PVID only for a VLAN that already exists.

9. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Assign a PVID to Ports

➢ **To assign a PVID to one or more ports:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

    The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

    If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

    You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Status page displays.

6. Select **VLAN > 802.1Q > Advanced > PVID**.

    You can select **Port PVID** only if you already enabled the advanced 802.1Q VLAN option (see *Create 802.1Q-Based VLANs in an Advanced Configuration* on page 46).

    The previous figure is an example. Your switch might provide more or less ports.

7. Select one or more ports.

8. Enter the PVID.

    You can enter a PVID only for a VLAN that already exists.

9. Click the **APPLY** button.

    Your settings are saved.

Manage and Monitor the Switch

5

This chapter covers the following topics:

- *Manage Flow Control*
- *Manage the Port Speed*
- *Enable Loop Detection*
- *Manage Power Saving Options*
- *Upgrade the Firmware*
- *Reboot the Switch*
- *Save the Switch Configuration*
- *Restore a Saved Switch Configuration*
- *Restore Factory Default Settings*
- *Enable Port Mirroring*
- *View Switch Information*
- *View the Port Statistics*

Manage Flow Control

Flow control works by pausing a port if the port becomes oversubscribed and dropping all traffic for small bursts of time during the congestion condition. You can enable or disable IEEE 802.3x flow control. By default, flow control is disabled.

Use Browser-Based Access to Manage Flow Control

➢ **To manage flow control:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.
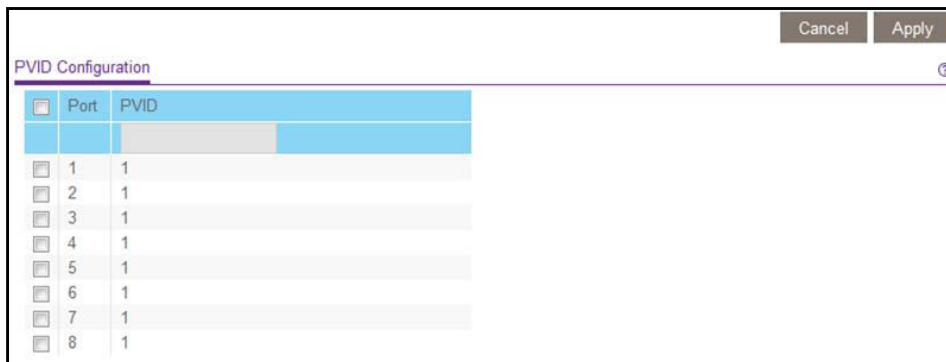
   The Switch Information page displays.

5. Select **System > Management > Port Status**.

   The previous figure is an example. Your switch might provide more or less ports.

6. Select one or more ports.

7. In the **Flow Control** menu, select **Enable** or **Disable**.

8. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Manage Flow Control

➢ **To manage flow control:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.
   The switch's default password is **password**.

Selected Switch				
Product	Switch Name	MAC Address	IP Address	Located on IP Network
⊙ XS708Ev2		dc:ef:09:e1:ae:d7	192.168.100.195	192.168.100.122

Port Status				
Port	Port Status	Speed	Linked Speed	Flow Control
01	Up	Auto ▾	100M	Disable ▾
02	Down	Auto ▾	No Speed	Disable ▾
03	Down	Auto ▾	No Speed	Disable ▾
04	Down	Auto ▾	No Speed	Disable ▾
05	Down	Auto ▾	No Speed	Disable ▾
06	Down	Auto ▾	No Speed	Disable ▾
07	Down	Auto ▾	No Speed	Disable ▾
08	Down	Auto ▾	No Speed	Disable ▾

The previous figure is an example. Your switch might provide more or less ports.

Note: To navigate to this page, select **System > Status > Switch Status**.

6. For each port that you want to configure, in the **Flow Control** menu, select **Enable** or **Disable**.

   By default, flow control is disabled.

7. Click the **APPLY** button.

   Your settings are saved.

Manage the Port Speed

By default, the port speed on all ports is set automatically after the switch determines the speed using auto-negotiation with the link partner. You can select a specific port speed setting for each port, or disable a port by shutting it down manually.

Use Browser–Based Access to Specify the Port Speed or Shut Down a Port

➢ **To specify the port speed or shut down ports:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Management > Port Status**.

	Port	Port Status	Speed	Linked Speed	Flow Control
☐					
☐	1	Up	Auto	1000M Full	Disable
☐	2	Down	Auto	No Speed	Disable
☐	3	Down	Auto	No Speed	Disable
☐	4	Down	Auto	No Speed	Disable
☐	5	Down	Auto	No Speed	Disable
☐	6	Down	Auto	No Speed	Disable
☐	7	Down	Auto	No Speed	Disable
☐	8	Down	Auto	No Speed	Disable

   The previous figure is an example. Your switch might provide more or less ports.

6. Select one or more ports.

7. In the **Speed** menu, select one of the following options:
   - **Auto**. The port speed is set automatically after the switch determines the speed using auto-negotiation with the link partner. This is the default setting.
   - **Disable**. The port is shut down.

- **10M Half**. The port is forced to function at 10 Mbps with half duplex.
- **10M Full**. The port is forced to function at 10 Mbps with full duplex.
- **100M Half**. The port is forced to function at 100 Mbps with half duplex.
- **100M Full**. The port is forced to function at 100 Mbps with full duplex.

8. To configure more ports, repeat *Step 6* and *Step 7*.

9. Click the **Apply** button.

    Your settings are saved.

Use the ProSAFE Plus Utility to Specify the Port Speed or Shut Down a Port

➢ **To specify the port speed or shut down a port:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

    The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

    If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

    You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.
    The switch's default password is **password**.

Selected Switch

	Product	Switch Name	MAC Address	IP Address	Located on IP Network
⊙	XS708Ev2		dc:ef:09:e1:ae:d7	192.168.100.195	192.168.100.122

Port Status

Port	Port Status	Speed		Linked Speed	Flow Control	
01	Up	Auto	▼	100M	Disable	▼
02	Down	Auto	▼	No Speed	Disable	▼
03	Down	Auto	▼	No Speed	Disable	▼
04	Down	Auto	▼	No Speed	Disable	▼
05	Down	Auto	▼	No Speed	Disable	▼
06	Down	Auto	▼	No Speed	Disable	▼
07	Down	Auto	▼	No Speed	Disable	▼
08	Down	Auto	▼	No Speed	Disable	▼

The previous figure is an example. Your switch might provide more or less ports.

Note: To navigate to this page, select **System > Status > Switch Status**.

6. For each port that you want to configure, in the **Speed** menu, select one of the following options:
   - **Auto**. The port speed is set automatically after the switch determines the speed using auto-negotiation with the link partner. This is the default setting.
   - **Disable**. The port is shut down.
   - **10M Half**. The port is forced to function at 10 Mbps with half duplex.
   - **10M Full**. The port is forced to function at 10 Mbps with full duplex.
   - **100M Half**. The port is forced to function at 100 Mbps with half duplex.
   - **100M Full**. The port is forced to function at 100 Mbps with full duplex.
7. Click the **APPLY** button.

   Your settings are saved.

Enable Loop Detection

If loop detection is enabled and the switch detects a loop, both LEDs of a port blink at a constant speed.

Use Browser-Based Access to Enable Loop Detection

➢ **To enable loop detection:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.
2. Launch a web browser.
3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.
4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.
5. Select **System > Management > Loop Detection**.

   The Loop Detection page displays.
6. Select the **Enable** radio button.

7. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Enable Loop Detection

➢ **To enable loop detection:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Management > Loop Detection**.

   The Loop Detection page displays.

7. Select the **Enable** radio button.

8. Click the **APPLY** button.

   Your settings are saved.

Manage Power Saving Options

Note: Power saving options are available on models GS105Ev2, GS105PE, GS116Ev2, JGS516PE, JGS524Ev2, and JGS524PE.

Depending on the power saving options that your switch model provides, you can manage the IEEE 802.3az Energy Efficient Ethernet (EEE) function, cable length power saving, or link-up and link-down power saving, or a combination of these features:

- **Short Cable Power Saving**. Dynamically detects and adjusts power that is required for the detected cable length.
- **Link-Down Power Saving**. Reduces the power consumption considerably when the network cable is disconnected. When the network cable is reconnected, the switch detects an incoming signal and restores normal power.
- **EEE**. Combines the Energy Efficient Ethernet (EEE) 802.3 MAC sublayer with the 100BASE-TX and 1000BASE-T physical layers to support operation in Low Power Idle (LPI) mode. When LPI mode is enabled, systems on both sides of the link can disable portions of their functionality and save power during periods of low link utilization.

Use Browser-Based Access to Enable Power Saving Mode

➢ **To enable the power saving options:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Management > Power Saving Mode**.

6. Select the **Enable** button to enable the power saving mode.

   By default, the **Disable** radio button is selected.

7. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Enable Power Saving Mode

➢ **To enable the power saving options:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Management > Power Saving Mode**.

   The previous figure is an example. Your switch might provide other options.

7. Select the **Enable** radio button.

   By default, the **Disable** radio button is selected.

8. Click the **APPLY** button.

   Your settings are saved.

Upgrade the Firmware

You can check for the latest firmware version for your switch by visiting *downloadcenter.netgear.com*, entering your product model number in the **Enter a Product Name/Model Number** field, and clicking the magnifying glass to search.

Read the new firmware release notes to find out if you must reconfigure the switch after upgrading. The firmware upgrade method depends on the current firmware and boot loader versions on your switch.

Use Browser-Based Access to Upgrade the Firmware

➢ **To upgrade the firmware:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Maintenance > Firmware Upgrade**.

   The Firmware Upgrade page displays.

6. If the page displays the **Enter Loader Mode** button, click the **Enter Loader Mode** button.

   The switch reboots and enters into the loader mode. The Firmware Upgrade page that displays varies, depending on the firmware boot loader version that is already on your switch.

   Follow either *Step 7* or *Step 8*, depending on which prompts you are presented with.

7. If you are prompted to upgrade the firmware from a file, click the **Browse** button and locate and select the new firmware image file.

8. If you are prompted to provide both the TFTP server IP address and the image file name, do the following:

   a. Complete the **TFTP Server IP** address field.

Note: This method requires that TFTP server software is installed on your computer to use the assigned TFTP server address from the TFTP server software application. If TFTP server software is not installed on your computer or if you are unsure how to do this, we recommend that you use the ProSAFE Plus Utility to upgrade the firmware.

b. Complete the **Image File Name** field.

c. Make sure that the TFTP server launches the TFTP server application.

9. Click the **Apply** button.

⚠️ **WARNING:**

To avoid the risk of corrupting the firmware, do not interrupt the upgrade. For example, do not turn off the switch or disconnect it.

When the upgrade is complete, your switch restarts. The upgrade process typically takes about three minutes.

Use the ProSAFE Plus Utility to Upgrade the Firmware

➢ **To upgrade the firmware:**

1. Download the new firmware from the NETGEAR website.

   You can check for the latest firmware version for your switch by visiting *downloadcenter.netgear.com*, entering your product model number in the **Enter a Product Name/Model Number** field, and clicking the magnifying glass to search.

2. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

3. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

4. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

5. Click the **APPLY** button.

   You are asked to enter the password for the switch.

6. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

7. If the firmware release notice specifies that you must reconfigure the switch, save the switch configuration settings.

    For more information about how to save the switch configuration, see *Save the Switch Configuration* on page 67.

8. Select **System > Maintenance > Firmware Upgrade**.

    The Firmware Upgrade page displays.

9. Click the **BROWSE** button and locate and select the firmware file.

10. Click the **APPLY** button.

> ⚠️ **WARNING:**
>
> **To avoid the risk of corrupting the firmware, do not interrupt the upgrade. For example, do not turn off the switch or disconnect it.**

When the upgrade is complete, your switch restarts. The upgrade process typically takes about three minutes.

Reboot the Switch

You can reboot the switch remotely.

Use Browser-Based Access to Reboot the Switch

➢ **To reboot the switch:**

1. Connect your computer to the same network as the switch.

    You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

    If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

    The login window opens.

4. Enter the switch's password in the **password** field.

    The switch's default password is **password**.

    The Switch Information page displays.

5. Select **System > Maintenance > Device Reboot**.

    The Device Reboot page displays.

6. Select the check box.

7. Click the **Apply** button.

The switch reboots.

Use the ProSAFE Plus Utility to Reboot the Switch

➢ **To reboot the switch:**

1. Connect your computer to the same network as the switch.

You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

The switch's default password is **password**.

The Switch Status page displays.

6. Select **System > Maintenance > Device Reboot**.

The Device Reboot page displays.

7. Select the check box.

8. Click the **APPLY** button.

The switch reboots.

Save the Switch Configuration

You can save the switch configuration as a file. We recommend that you save the configuration. Then you can quickly restore the switch configuration if you change the settings and then decide to return the switch to its previous settings.

Use Browser–Based Access to Save the Switch Configuration

➢ **To save the switch configuration:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Maintenance > Save Configuration**.

   The Save Configuration page displays.

6. Click the **Save** button.

   A pop-up window opens. Depending on the settings of your browser, you can select a location to save the switch configuration file (a `.cfg` file).

7. Follow the directions of your browser to save the switch configuration.

Use the ProSAFE Plus Utility to Save the Switch Configuration

➢ **To save the switch configuration:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Maintenance > Save Configuration**.

   The Save Configuration page displays.

7. Click the **BROWSE** button.

8. Select the location to save the configuration file (a `.cfg` file).

9. Click the **APPLY** button.

   The switch configuration is saved.

Restore a Saved Switch Configuration

You can restore switch configuration that you saved.

Use Browser–Based Access to Restore a Saved Switch Configuration

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Maintenance > Restore Configuration**.

   The Restore Configuration page displays.

6. Click the **Browse** button and locate and select the saved configuration file (a `.cfg` file).

7. Click the **Apply** button.

   The saved configuration is restored to the switch.

Use the ProSAFE Plus Utility to Restore a Saved Switch Configuration

➢ **To restore the switch configuration that you saved:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Maintenance > Restore Configuration**.

   The Restore Configuration page displays.

7. Click the **BROWSE** button.

8. Find and select the configuration file (a `.cfg` file).

9. Click the **APPLY** button.

   The saved configuration is restored to the switch. The switch reboots to load the restored configuration.

Restore Factory Default Settings

You can return the switch to its factory settings.

Use Browser-Based Access to Restore Factory Settings

➢ **To restore factory settings:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Maintenance > Factory Default**.

   The Factory Default page displays.

6. Select the check box.

7. Click the **Apply** button.

   The switch returns to its factory settings. The switch reboots to load the restored configuration.

Use the ProSAFE Plus Utility to Restore Factory Settings

➢ **To restore factory settings:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Maintenance > Factory Default**.

   The Factory Default page displays.

7. Select the check box.

8. Click the **APPLY** button.

   The switch returns to its factory settings.

Enable Port Mirroring

Port mirroring lets you mirror the incoming (ingress) and outgoing (egress) traffic of one or more ports (the source ports) to a predefined destination port.

Use Browser–Based Access to Enable Port Mirroring

➢ **To enable port mirroring:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.
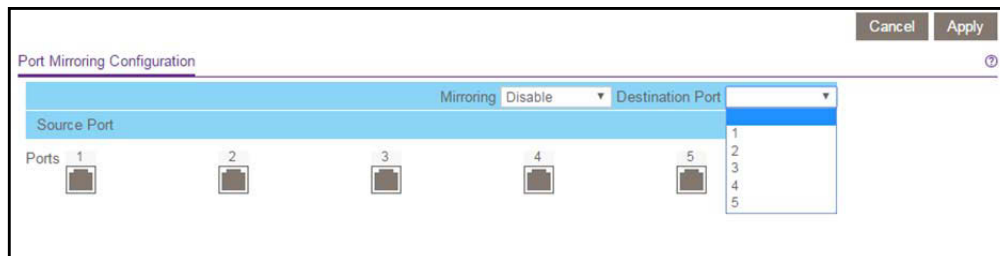
   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Monitoring > Mirroring**.

   The previous figure is an example. Your switch might provide more or less ports.

6. In the **Destination Port** menu, select the destination port.

   You can select a single destination port only. You cannot select a destination port that is a member of a LAG.

7. In the Source Port section, select one or more source ports by selecting the check boxes under the port numbers.

   You can select more than one source port. You cannot select a source port that is a member of a LAG.

8. In the Mirroring menu, select **Enable**.

   By default, mirroring is disabled.

9. Click the **Apply** button.

   Your settings are saved.

Use the ProSAFE Plus Utility to Enable Port Mirroring

➢ **To enable port mirroring:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Monitoring > Mirroring**.

   The previous figure is an example. Your switch might provide more or less ports.

7. In the Source Port section, select one or more source ports by selecting the check boxes under the port numbers.

   You can select more than one source port. You cannot select a source port that is a member of a LAG.

8. In the **Destination Port** menu, select the destination port.

   You can select a single destination port only. You cannot select a destination port that is a member of a LAG.

9. In the **Mirroring** menu, select **Enable**.

By default, mirroring is disabled.

10. Click the **APPLY** button.

Your settings are saved.

View Switch Information

You can view the switch product name (model), MAC address, firmware level, DHCP mode, and other network information.

Use Browser-Based Access to View Switch Information

➢ **To view information about the switch:**

1. Connect your computer to the same network as the switch.

You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

The login window opens.

4. Enter the switch's password in the **password** field.

The switch's default password is **password**.

		Cancel Apply
Switch Information		⑦
Product Name		
Switch Name		
MAC Address	DC:EF:09:DF:28:21	
Firmware Version	V1.0.0.3	
DHCP Mode	Disable ▾ ☐ Refresh	
IP Address	60.248.155.52	
Subnet Mask	255.255.255.0	
Gateway Address	60.248.155.254	

Note: To navigate to this page, select **System > Management > Switch Information**.

Use the ProSAFE Plus Utility to View Switch Information

➢ **To view information about the switch:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired connection.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **Switch Information**.

Note: To navigate to this page, select **System > Status > Switch Information**.

View the Port Statistics

For each switch port, you can view the bytes received, bytes sent, and cyclic redundancy check (CRC) error packets.

Use Browser–Based Access to View and Clear the Port Statistics

➢ **To view and clear the port statistics:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.
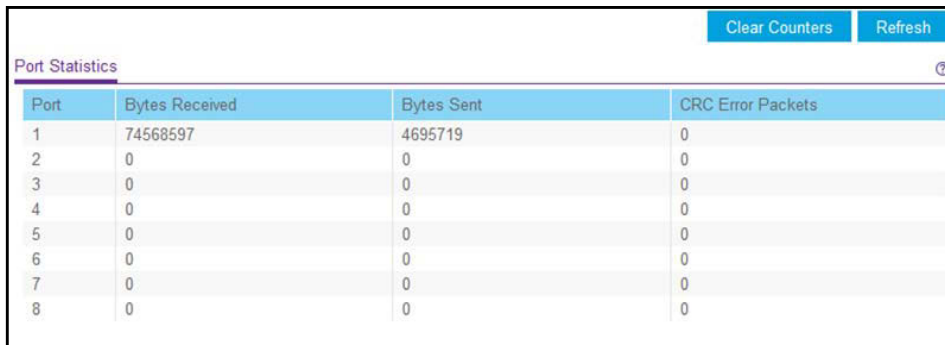
   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Monitoring > Port Statistics**.

Port	Bytes Received	Bytes Sent	CRC Error Packets
1	74568597	4695719	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0

   The previous figure is an example. Your switch might provide more or less ports.

6. To clear the port statistics, click the **Clear Counters** button.

   All statistics counters change to 0.

Use the ProSAFE Plus Utility to View and Clear the Port Statistics

➢ **To view and clear the port statistics:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

   The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Monitoring > Port Statistics**.

Port Statistics			
Port Statistics			
Port	**Bytes Received**	**Bytes Sent**	**CRC Error Packets**
01	24661	5374	0
02	0	0	0
03	0	0	0
04	0	0	0
05	0	0	0
06	0	0	0
07	0	0	0
08	0	0	0

   The previous figure is an example. Your switch might provide more or less ports.

7. To clear the port statistics, click the **CLEAR COUNTERS** button.

   All statistics counters change to 0.

Diagnostics and Troubleshooting 6

This chapter covers the following topics:

- *Use Browser-Based Access to Register Your Product*
- *Test Cable Connections*
- *Resolve a Subnet Conflict to Access the Switch*

Use Browser-Based Access to Register Your Product

Registering your product allows you to receive email alerts and streamlines the technical support process.

➢ **To register your product:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired connection.

   > **Note:** You must access the switch while connected to the network (on-network) to register the switch.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.

   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **Help > Registration**.

   The Product Registration page displays.

6. Click the **Register** button.

7. Follow the onscreen process to register your product.

Test Cable Connections

You can use the cable diagnostic feature to easily find out the health status of network cables. If any problems exist, this feature helps quickly locate the point where the cabling fails, allowing connectivity issues to be fixed much faster, potentially saving technicians hours of troubleshooting.

If an error is detected, the distance at which the fault is detected is stated in meters. (This is the distance from the port.)

Use Browser-Based Access to Test a Cable Connection

➢ **To test a cable connection:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Launch a web browser.

3. In the address field of your web browser, enter the IP address of the switch.

   If you do not know the IP address of the switch, see *Access the Switch Using a Web Browser* on page 7.
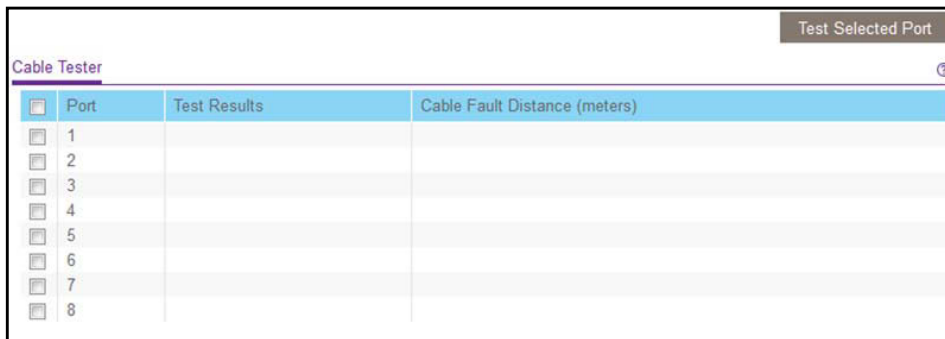
   The login window opens.

4. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Information page displays.

5. Select **System > Monitoring > Cable Tester**.

   The previous figure is an example. Your switch might provide more or less ports.

6. Select one or more check boxes.

7. Click the **Test Selected Port** button.

   The switch tests the cable connection for the selected ports and displays the results. This process might take up to a few minutes.

Use the ProSAFE Plus Utility to Test a Cable Connection

➢ **To test a cable connection:**

1. Connect your computer to the same network as the switch.

   You can use a WiFi or wired network connection, or connect directly to a switch that is off-network using an Ethernet cable.

2. Double-click the **ProSAFE Plus Utility** icon.

The Switch Selection page displays a list of Web Managed (Plus) switches that it discovers on the local network.

3. Select the switch.

   If you do not see the switch, click the **REFRESH** button.

4. Click the **APPLY** button.

   You are asked to enter the password for the switch.

5. Enter the switch's password in the **password** field.

   The switch's default password is **password**.

   The Switch Status page displays.

6. Select **System > Monitoring > Cable Tester**.

The previous figure is an example. Your switch might provide more or less ports.

7. Select one or more check boxes.

8. Click the **TEST SELECTED PORT** button.

   The switch tests the cable connection for the selected ports and displays the results. This process might take up to a few minutes.

Resolve a Subnet Conflict to Access the Switch

If you power on the switch before you connect it to a network that includes a DHCP server, the switch uses its own default IP address of 192.168.0.239. This subnet might be different from the subnet used in your network. You might see the following message if you try to use the ProSAFE Plus Utility to access the switch:

```
The switch and manager IP address are not in the same subnet.
```

➢ **To fix this subnet conflict:**

1. Disconnect the Ethernet cable between the switch and your network.

2. Unplug the switch's power cord.

3. Reconnect the Ethernet cable between the switch and your network.

4. Plug the switch's power cord into an electrical outlet.

   The switch powers on. The network DCHP server discovers the switch and assigns it an IP address that is in the correct subnet for the network.

Factory Default Settings

A

You can return the switch to its factory settings. Use the end of a paper clip or some other similar object to press and hold the **Factory Defaults** button on the front panel of the switch for at least two seconds. The switch resets and returns to the factory settings that are shown in the following table.

Table 1. Factory default settings

Feature	Setting
Switch password	password
IP address	192.168.0.239 (if the switch is not connected to a network with a DHCP server)
Subnet mask	255.255.255.0
DHCP mode	Enabled
IGMP snooping	Enabled
LAGs	None configured
VLANs	Disabled. If enabled, by default, all ports are members of VLAN 1.
802.1p/DSCP-based QoS	Enabled
Port-based QoS	Disabled
Rate limiting	Disabled
Broadcast filtering	Disabled
Loop detection	Disabled
Port speed	Auto-negotiation
Flow control	Disabled
Port mirroring	Disabled