EX17908 Web-Smart Switch

User's Guide

FastFind Links

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Products Supported by this Manual:

EX17908

Preface

Audience

This guide is designed for the person who installs, configures, deploys, and maintains the Ethernet network. This document assumes the reader has moderate hardware, computer, and Internet skills.

Document Revision Level

This section provides a history of the revision changes to this document.

Revision	Document Version	Date	Description
A	Version 2	10/11/2017	Removed mounting brackets

Document Conventions

This guide uses the following conventions to draw your attention to certain information.

Safety and Warnings

This guide uses the following symbols to draw your attention to certain information.

Symbol	Meaning	Description
	Note	Notes emphasize or supplement important points of the main text.
	Tip	Tips provide helpful information, guidelines, or suggestions for performing tasks more effectively.
	Warning	Warnings indicate that failure to take a specified action could result in damage to the device, or could result in serious bodily injury.
	Electric Shock Hazard	This symbol warns users of electric shock hazard. Failure to take appropriate precautions such as not opening or touching hazardous areas of the equipment could result in injury or death.

Typographic Conventions

This guide also uses the following typographic conventions.

Convention	Description
Bold	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels.
Italic	Indicates a variable, which is a placeholder for actual text provided by the user or system. Angled brackets (< >) are also used to indicate variables.
`screen/code`	Indicates text that is displayed on screen or entered by the user.
< > angled brackets	Indicates a variable, which is a placeholder for actual text provided by the user or system. Italic font is also used to indicate variables.
[ ] square brackets	Indicates optional values.
{ } braces	Indicates required or expected values.
| vertical bar	Indicates that you have a choice between two or more options or arguments.

Contents

1 Introduction

Topics:

Congratulations on your purchase of the EX17908 Web-Smart Switch from EtherWAN Systems, Inc. Your EtherWAN switch is a state-of-the-art IEEE-compliant network solution designed for users who require high-performance along with the power of management to eliminate bottlenecks and increase productivity.

Your switch is also a Power Sourcing Equipment (PSE) device. All 10/100/1000 Mbps ports support Power over Ethernet (PoE), which detects and supplies power with IEEE 802.3at-complaint powered devices automatically. To simplify installation, the switch is shipped ready for use.

Figure 1-1. EX17908 Series Switch

Key Features

This section summarizes the key features of the EX17908 switch.

- 8 10/100/1000BASE-TX ports supporting IEEE 802.3at Power over Ethernet (PoE) Power Sourcing Equipment (PSE)
- PoE power budget up to 30 W/port, with a total power budget of 240 Watts
- All 10/100/1000TX ports support full/half-duplex, auto-negotiation, and auto-MDI/MDIX
- Web management interface for configuring PoE (power status, link status), system, IP configuration, port-based VLAN, and QoS priority
- QoS support based on IEEE802.1p and DSCP
- Jumbo frame support up to 9.6 KB
- Port mirroring supported for network traffic monitoring
- PoE enable/disable power budget configuration
- Back pressure flow control for half-duplex and IEEE 802.3x for full-duplex
- 100 – 240 VAC, 50 – 60 Hz internal universal power supply
- 0°C to 40°C (32°F to 104°F) operating temperature range
- Supports rack mounting

Quick Start Guide

The following procedure enables advanced users to get their switch up and running in the shortest possible time. For detailed installation instructions, refer to the sections in the right column below.

Step	Description	For Reference, See...
1.	Find a Location for the Switch Set the switch on a flat surface or mount it in a standard rack (1 rack unit high) using the supplied rack-mounting hardware brackets.	"Preparing the Site" (page 15)
2.	Connect to the 10/100/1000 Mbps Switch Ports · Connect one end of a Category 5 or better Ethernet cable to the Ethernet port of a computer, printer, network storage, or other network device. · Connect the other end to a 10/100/1000 Mbps RJ-45 port on the switch designated 1 through 8. · Repeat this step for each additional device you want to connect to the 10/100/1000 Mbps ports.	"10/100/1000 Mbps RJ-45 Ports" (page 12) and "Connecting to the 10/100/1000 Mbps RJ-45 Ports" (page 16)
3.	Power On · Connect the female end of the supplied AC power adapter cable to the power receptacle on the back of the switch. · Connect the 3-pronged end of the AC power adapter cable to a grounded 3-pronged AC outlet. · Move the ON/OFF switch on the rear panel of the switch to the ON position. · Wait for the switch to complete its Power On Self Test. · Confirm that the LEDs for ports connected to a device are green. If not, replace the Ethernet cable, and then check the port LED again.	"Applying AC Power" (page 17)
4.	Configure the Switch · Configure a PC for subnet 192.168.2.*n*, where *n* is a number other than 1 in the range 0 to 255. · Connect the PC to a 10/100 Mbps RJ-45 port on the switch, launch a browser, and specify the switch's default IP address 192.168.2.1. · At the initial page, type admin in the Password field, and then click Apply. · Click Configuration > System. · If your switch will be used with a DHCP server that allocates IP addresses automatically, check DHCP Enabled. Otherwise, leave DHCP Enabled unchecked and complete the following fields: Fallback IP Address, Fallback Subnet Mask, and Fallback Gateway. · Next to Name, enter a new case-sensitive username. · Next to Password, enter a new case-sensitive password. · Change any other settings, as necessary. · Click Apply.	Chapters 3 and 4

2 Unpacking and Installation

Topics:

This chapter describes how to unpack and install the EX17908 switch.

Unpacking the Hardware

Unpack the items and confirm that no items are missing or damaged. Your package should include:

- One EX17908 switch
- One external power adapter
- Rack-mounting hardware brackets
- One CD containing this user's guide

If any item is damaged or missing, notify your authorized EtherWAN representative. Keep the carton, including the original packing material, in case you need to store the product or return it.

System Requirements

To complete your installation, you need the following items:

- **Computer with an Ethernet (RJ-45) Interface**

  Managing the switch requires a personal or notebook computer (PC) with a 10/100base-TX Ethernet interface and a physical RJ-45 connection. The preferred operating system for the computer is Microsoft Windows XP/Vista/7. You can use Apple OSX or Linux systems as well, but for brevity, all web configurations in this manual use Windows 7 as the underlying operating system.

- **Category 5+ Ethernet Cables**

  An Ethernet cable of at least Category 5 rating is required to connect your PC to the switch. The cable can be configured as "straight-through" or crossover.

- **Web Browser Software**

  Use any of the following web browsers when configuring the switch:

  – Internet Explorer

  – Mozilla Firefox

  – Google Chrome

  Internet Explorer is the preferred browser for EtherWAN switch configuration.

Hardware Features

The following sections describe the hardware features of the EX17908 switch.

Front Panel

Figure 2-1 shows the front panels of the EX17908 switch.

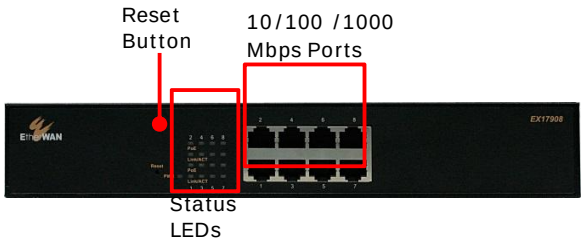


Figure 2-1. Front Panel of the EX17908 Switch

10/100/1000 Mbps RJ-45 Ports

The EX17008 switch has 8 10/100/1000 Mbps RJ-45 ports designated **1** through **8** (see Figure 2-1). These ports are auto-sensing, auto-MDIX 10/100/1000 Mbps ports.

When you insert a cable into an RJ-45 port, the switch:

- Determines whether the cable is a straight-through or crossover cable.
- Automatically ascertains the maximum speed (10, 100, or 1000 Mbps) and duplex mode (half- or full-duplex) of the attached device.

After determining this information, the switch configures the RJ-45 port automatically to enable communications with the attached device, without requiring user intervention.

Reset Button

The EX17908 front panel has a reset button to reset the switch to its factory default settings. This button is recessed to prevent accidental resets of the switch.

To reset the switch to its factory default settings and remove all customized overrides you made to the default settings:

1. Leave power cord connected to the switch.
2. Using a pin or paper clip, press and hold the reset button for about 10 seconds, then release the reset button.
3. Wait for the switch to reboot.

Note: You can perform a “warm” restart that reboots the switch and keeps all overrides made to the switch’s default settings using the Warm Restart page in the switch’s Web management interface (see “Warm Restart Page” on page 60). You can also return the switch to its factory default settings using the Factory Default page (see “Factory Default Page” on page 61).

LEDs

The EX17908 front panel LEDs show power, PoE, and link/activity status. Table 2-1 summarizes the LEDs on the switch.

Table 2-1. Front Panel LEDs

LED	Color	Status	Description
Power	Yellow	ON	Power is supplied to the switch.
PoE (the port number)	Yellow	ON	Power Device (PD) is connected.
		OFF	PD is disconnected.
Link/ACT (the port number)	Green	ON	A valid network connection has been established.
		OFF	Data transmission is not occurring on the port.
		Flashing	Data is being sent or received on the port.

Rear Panel

The EX17908 rear panel has a receptacle for connecting the supplied external power adapter. Use only the external power adapter supplied with the switch.

The rear panel also has one fan that allows air to pass through the switch enclosure and exit through the rear of the chassis. Be sure the fan is not blocked.

Figure 2-2. Rear Panel of the EX17908 Switch

Side and Bottom Panels

The EX17908 side panels have vents for cooling. Be sure these vents are not blocked.

The bottom panel has a product label that shows regulatory compliance, product serial number, and other information.

Installing the Switch

Switch installation involves the following steps:

1. Preparing the site. See page 15
2. Installing the switch. See page 15.
3. Connecting to the 10/100 Mbps RJ-45 ports. See page 16.
4. Checking the installation. See page 17.
5. Applying AC power. See page 17.

Preparing the Site

Before you install your switch, be sure your operating environment meets the operating environment requirements in Table 2-2.

Table 2-2. Site Requirements

Characteristics	Requirements
Mounting	
Desktop installations:	Provide a flat table or shelf surface.
Rack-mount installations:	Use a 19-inch (48.3-centimeter) EIA standard equipment rack that is grounded and physically secure.
Access	Locate the switch in a position that lets you access the front panel RJ-45 ports, view the front panel LEDs, and access the rear-panel power connector.
Power source	Provide a power source within 6 feet (1.8 meters) of the installation location. Power specifications for the switch are shown in Appendix A. Be sure the AC outlet is not controlled by a wall switch, which can accidentally turn off power to the outlet and the switch.
Environmental	
Temperature:	Install the switch in a dry area, with ambient temperature between 0 and 40ºC (32 and 104ºF). Keep the switch away from heat sources such as direct sunlight, warm air exhausts, hot-air vents, and heaters.
Operating humidity:	The installation location should have a maximum relative humidity of 90%, non-condensing.
Ventilation:	Do not restrict airflow by covering or obstructing the vents on the rear and side panels of the switch. Keep at least 2 inches (5.08 centimeters) free on all sides for cooling. Be sure there is adequate airflow in the room or wiring closet where you intend to install the switch.
Operating conditions:	Keep the switch at least 6 ft (1.83 m) away from nearest source of electromagnetic noise, such as a photocopy machine.
Stacking	If you intend to stack two or more switches, be sure: · The mounting surface can safely support the stack. · There is adequate space around the stack for ventilation and cooling.

Installing the Switch

You can install your switch on a flat surface or in a standard EIA 19-inch rack that can be placed in a wiring closet with other equipment.

- If installing the switch on a desktop or shelf, allow sufficient ventilation space between the device and the objects around it.
- If installing the switch in a rack, attach rack-mounting brackets to the switch's front panel (one on each side), and secure them with the screws provided with the equipment rack. For more information, refer to the documentation that came with the equipment rack.

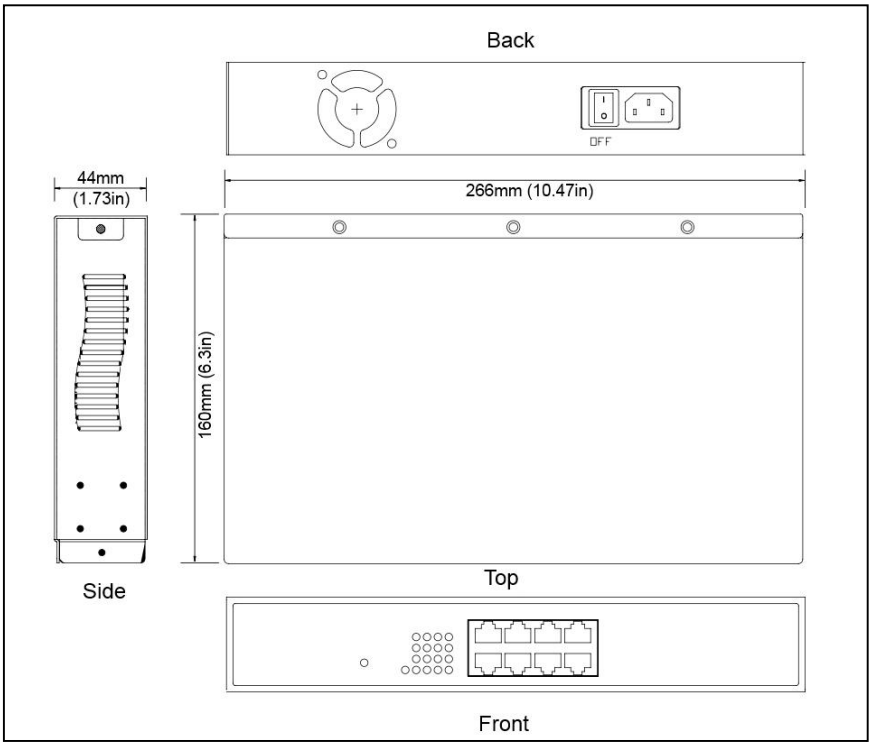


Figure 2-3. EX17908 Switch Dimensions

Connecting to the 10/100/1000 Mbps RJ-45 Ports

The front panel of the switch provides 8 10/100/1000 Mbps RJ-45 ports (see “10/100/1000 Mbps RJ-45 Ports” on page 12). To prevent ESD damage, follow normal board and component handling procedures.

Note: PoE faults are caused when noncompliant cabling or powered devices are connected to a PoE port. Use only standard-compliant cabling to connect IEEE 802.3at-compliant devices to PoE ports. A cable or device that causes a PoE fault must be removed from the network.

To connect devices to the switch’s 10/100/1000 Mbps RJ-45 ports:

1. Insert one end of a Category 5 or better Ethernet cable into a switch port.
2. Insert the other cable end into the Ethernet port of a computer, printer, network storage, or other network device.
3. Repeat steps 1 and 2 for each additional device you want to connect to the switch.

Checking the Installation

Before you apply power:

- Inspect the equipment thoroughly.
- Verify that all cables are installed correctly.
- Check cable routing to make sure cables are not damaged or create a safety hazard.
- Be sure all equipment is mounted properly and securely.

Applying AC Power

The EX17908 switch has an ON/OFF switch that controls power to the switch. Before you connect the power cord, select an AC outlet that is not controlled by a wall switch, which can turn off power to the switch. After you select an appropriate outlet, use the following procedure to apply AC power.

1. Connect the female end of the supplied AC power adapter cable to the power receptacle on the back of the switch.
2. Connect the 3-pronged end of the AC power adapter cable to a grounded 3-pronged AC outlet.
3. On the rear panel, move the ON/OFF switch to the ON position (▮).

When you apply power:

- All green **PoE** and **Link/ACT** LEDs blink momentarily.
- The fan starts.
- The yellow **Power LED** goes ON.
- The **Link/ACT** LEDs for every port connected to a device flash, as the switch conducts a brief Power On Self-Test (POST).

After the switch passes the POST, the **Link/ACT** LEDs for every port connected to a device go ON. The **PoE** LEDs also go ON if Power Devices are connected. The switch is now functional and ready to pass data.

If you do not hear the fan, or if the **Power** LED is not ON, check that the power cable is plugged in correctly, the ON/OFF switch is set to the ON position, and that the power source is good and not controlled by a wall switch. If this does not resolve the problem, see Chapter 5, Troubleshooting.

Where to Go from Here

After you power-up the switch for the first time, you configure it using the switch's built-in management software. For more information, see Chapters 3 and 4.

3 Preparing to Configure the Switch

Topics:

After you install the switch, configure it using the switch's built-in Web management interface and a Web browser on a PC.

For the Web browser to access the switch's Web management interface, the PC and switch must be on the same subnet. This means the first time you configure the switch, you must change your PC's TCP/IP settings to match the switch's default subnet of 192.168.2.1.

The procedure for changing your PC's TCP/IP settings depends on the PC's operating system. This chapter describes how to configure TCP/IP settings for PCs that have a Microsoft Windows 7 operating system.

If your PC is running an operating system other than Windows 7, refer to the documentation for your operating system to find out how to change the PC's TCP/IP settings.

Connecting the PC

To connect a PC to the switch:

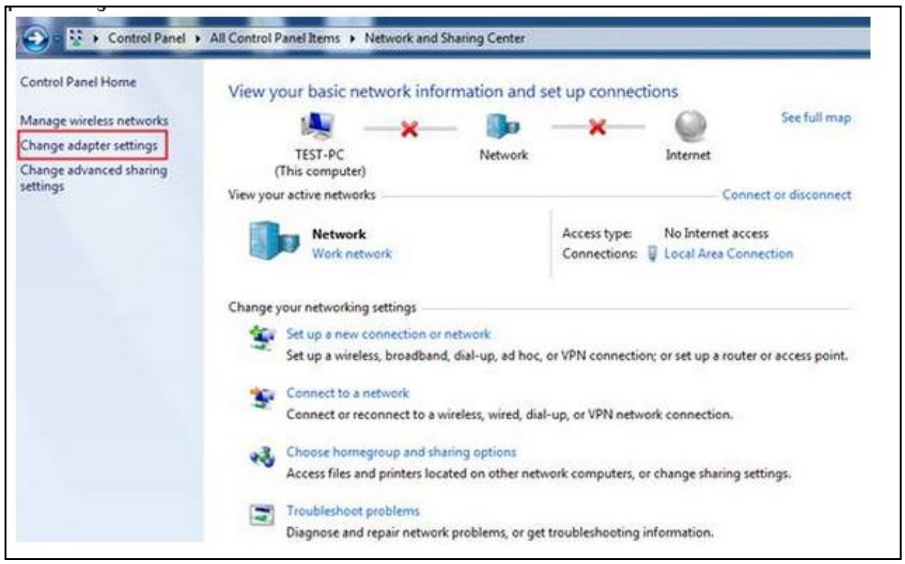
1. Insert one end of a Category 5 or better Ethernet cable into an available 10/100 Mbps RJ-45 port on the front panel of the switch.
2. Connect the other end of the cable to the Ethernet port on the PC you will use to configure the switch.
3. Confirm that the **Link/ACT** LED for the port to which the PC is connected is ON. If the LED is OFF, replace the Ethernet cable connecting your computer and switch.

Configuring TCP/IP Settings for Microsoft Windows 7

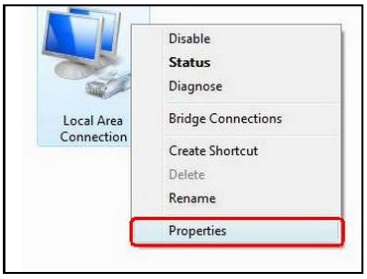
After connecting the PC to the switch, change the PC's TCP/IP settings to the switch's default subnet.

The following procedure describes how to change the TCP/IP settings for a PC running Windows 7.

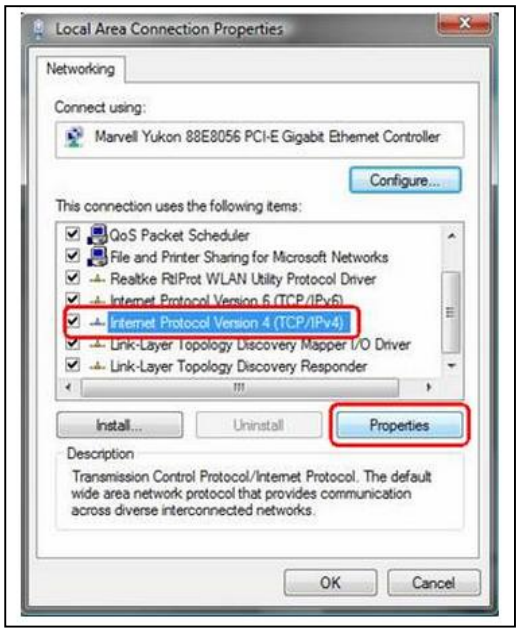
1. Click **Start >Control Panel > Network and Internet >View network status and tasks**.
2. In the left pane, click **Change adapter settings**.



3. On the right side of the page, select the connection, right click it, and then select **Properties**.



4. Click Internet Protocol Version 4 (TCP/IPv4), and then click Properties.



5. In the General tab, click Use the following IP address.
6. In the **IP address** field, type 192.168.2.10.

Tip: Although the last digit in the previous step is 10, in reality, this digit can be any number between 0 and 255, except the number 1 because the address 192.168.2.1 is already being used by the switch.

7. Press the Tab key to populate the **Subnet mask** field automatically. You can leave the **Default gateway** field blank.

8. Click **OK** to exit the current dialog box, and then click **OK** again to exit the initial dialog box.

Disabling Proxy Settings

Before using the switch's Web management interface, disable proxy settings in your Web browser. Otherwise, you might not be able to view the switch's Web-based configuration pages.

Disabling Proxy Settings in Internet Explorer

The following procedure describes how to disable proxy settings in Internet Explorer 5 and later.

1. Start Internet Explorer.
2. On your browser's **Tool** menu, click **Options**. The Internet Options dialog box appears.
3. In the Internet Options dialog box, click the **Connections** tab.
4. In the **Connections** tab, click the **LAN settings** button. The Local Area Network (LAN) Settings dialog box appears.
5. In the Local Area Network (LAN) Settings dialog box, uncheck all check boxes.
6. Click **OK** until the Internet Options window appears.
7. In the Internet Options window, under **Temporary Internet Files**, click **Settings**.

8. For the option Check for newer versions of stored pages, select **Every time I visit the webpage**.
9. Click **OK** until you close all open browser dialog boxes.

Disabling Proxy Settings in Firefox

The following procedure describes how to disable proxy settings in Firefox.

1. Start Firefox.
2. On your browser's **Tools** menu, click **Options**. The Options dialog box appears.
3. Click the **Advanced** tab.
4. In the Advanced tab, click the **Network** tab.
5. Click the **Settings** button.
6. Click Direct connection to the Internet.
7. Click the **OK** button to confirm this change.

Disabling Proxy Settings in Safari

The following procedure describes how to disable proxy settings in Safari.

1. Start Safari.
2. Click the Safari menu and select **Preferences**.
3. Click the **Advanced** tab.
4. In the **Advanced** tab, click the **Change Settings** button.
5. Choose your location from the **Location** list (this is generally **Automatic**).
6. Select your connection method. If using a wired connection, select **Built-in Ethernet**. For wireless, select **Airport**.
7. Click the **Proxies** tab.
8. Be sure each proxy in the list is unchecked.
9. Click **Apply Now** to finish.

Disabling Firewall and Security Software

If you encounter problems connecting to the switch, disable any firewall or security software that may be running on your PC before configuring the switch. For more information, refer to the documentation for your firewall.

4 Configuring the Switch

Topics:

After you attach a PC to the switch and configure the PC to the same subnet as the switch, use the information in this chapter to configure the switch.

Logging in to the Web Management Interface

To access the switch's configuration settings, launch a Web browser on the PC you configured in Chapter 3 and log in to the switch's Web management interface.

1. Launch a Web browser.

Note: Your computer does not have to be online to configure your switch.

2. In the browser address bar, type the switch's default TCP/IP address of **http://192.168.2.1**:

3. Press the **Enter** key. The password screen appears (see Figure 4-1).

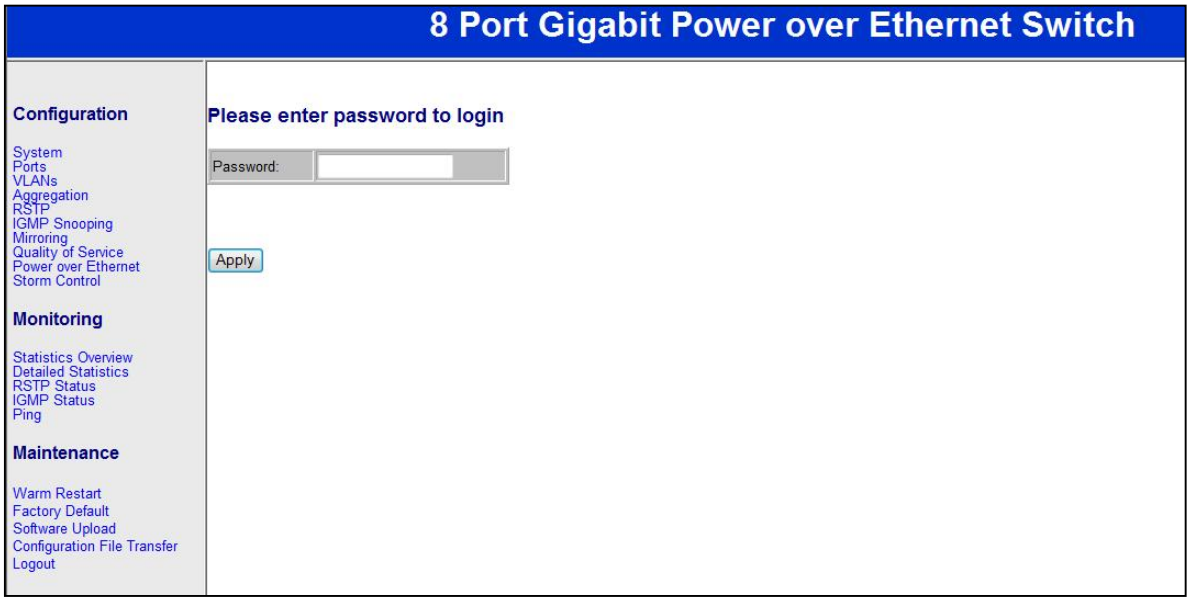


Figure 4-1. Password Screen

4. In the **Password** field, type **admin** as the default password. The password is case sensitive.
5. Click **Apply**. The message **Password Successfully Entered** appears and the Web management interface starts.

Note: First-time logins must set the switch's DHCP setting (see page 33), default username, and default password (see page 30).

Inactivity Timeout

For security, the switch has an inactivity timeout feature that closes the current Web management session automatically if the interface is not used for 60 seconds. This feature prevents a session from remaining open to unauthorized users if the operator should walk away from the management PC. You can change this default value using the **Inactivity Timeout** setting on the **Configuration > System** page (see "System Configuration Page" on page 30).

Understanding the Web Management Interface

The left side of the Web management interface contains the menus and submenus you use to configure the switch. When you click a submenu, the configuration settings associated with the menu appear in the workspace (see Figure 4-2).

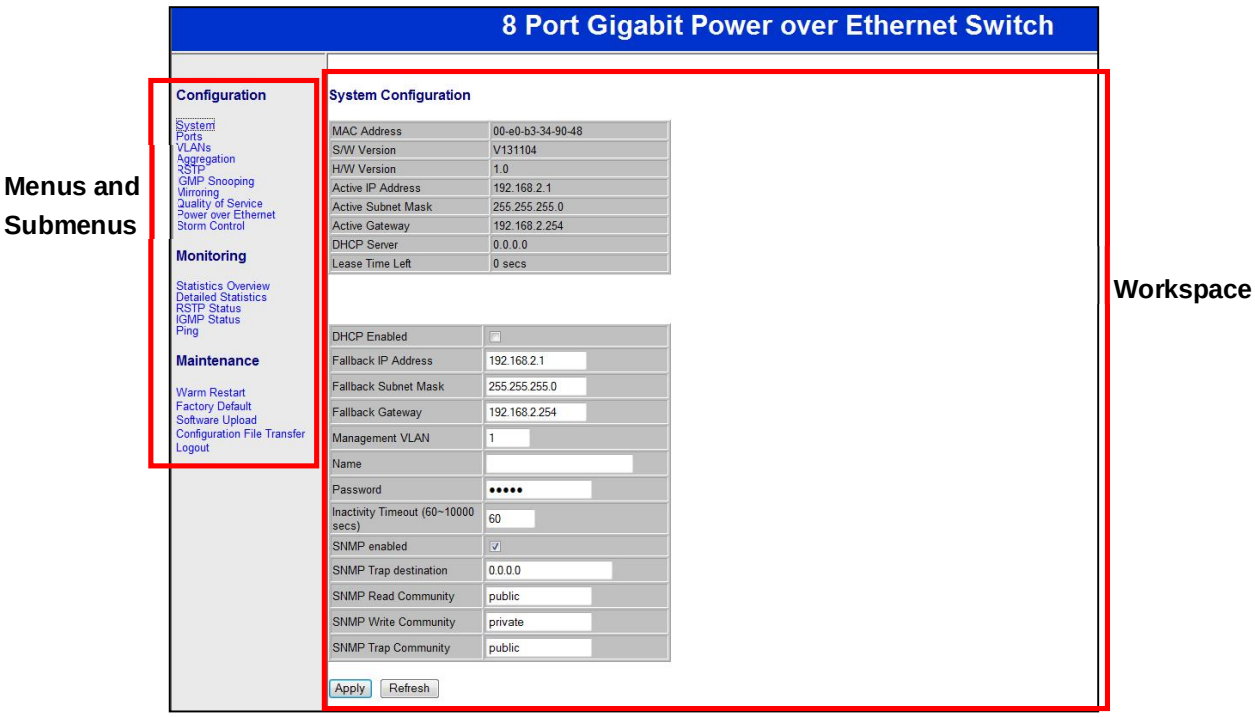


Figure 4-2. Main Areas on the Web Management Interface

Web Management Interface Menus

Table 4-1 describes the pages in the Web management interface. The first time you configure the switch, you must configure the following settings on the **Configuration > System** page:

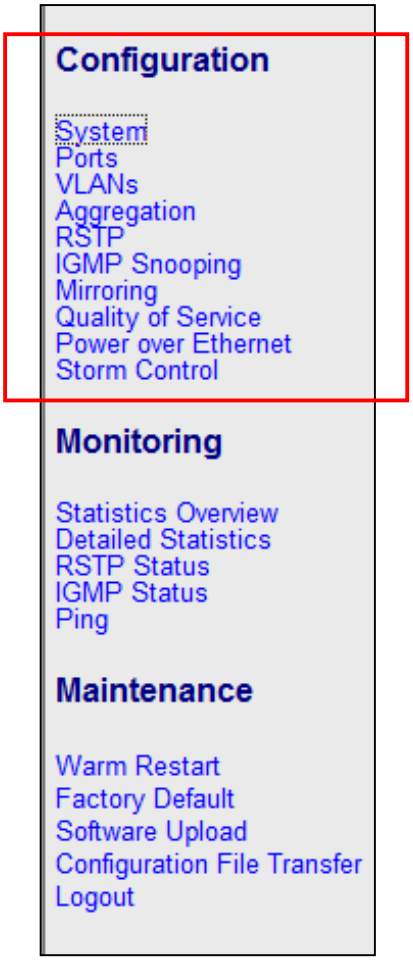
- **DHCP Enabled** to specify whether the switch will receive an IP address allocated dynamically by a DHCP server located on the network.
- **Name** to change the default username.
- **Password** to change the default password used to log in to the Web management interface.

Table 4-1. Web Management Interface Menus and Submenus

Menus and Submenus	Description	See Page
Configuration > System	Sets the switch's system configuration parameters.	30
Configuration > Ports	Enables jumbo frames, shows the link status of the switch ports, and configures the switch port mode and flow control settings.	33
Configuration > VLANs	Adds, modifies, deletes virtual LANs (VLANs), and configures VLAN port settings.	37
Configuration > Aggregation	Configures trunk ports.	42
Configuration > RSTP	Configures Rapid Spanning Tree Protocol (RSTP) settings.	43
Configuration > IGMP Snooping	Configures Internet Group Management Protocol ((IGMP) snooping settings.	45
Configuration > Mirroring	Configures port mirroring settings.	47
Configuration > Quality of Service	Configures Quality of Service (QoS) settings.	48
Configuration > Power over Ethernet	Configures Power over Ethernet settings.	50
Configuration > Storm Control	Configures settings for avoiding broadcast storms on the network.	51
Monitoring > Statistics Overview	Shows port, along with transmit and receive frames, bytes, and errors.	54
Monitoring > Detailed Statistics	Shows detailed statistics for each switch port.	55
Monitoring > RSTP Status	Shows RSTP VLAN bridge and RSTP port status information.	56
Monitoring > IGMP Status	Shows IGMP status information.	57
Monitoring > Ping	Checks connectivity between the switch and another device.	58
Maintenance > Warm Restart	Restarts the switch.	60
Maintenance > Factory Default	Returns the switch to factory default settings.	61
Maintenance > Software Upload	Updates the switch firmware.	62
Maintenance > Configuration File Transfer	Uploads or downloads configuration files.	63
Maintenance > Logout	Logs you out of the current Web management interface session.	¾

Configuration Menu

The **Configuration** menu lets you perform the following tasks:



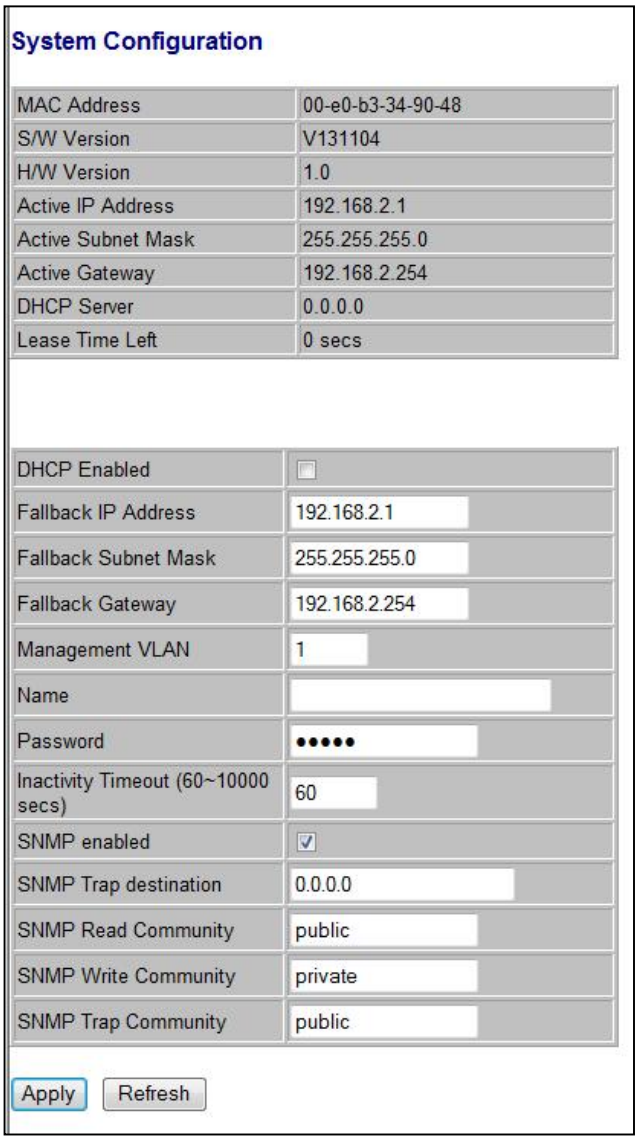
- **System** ¾ changes the system configuration settings, including the DHCP setting, and the default username and password used to log in to the Web management interface. See page 30.
- **Ports** ¾ enables jumbo frames, power saving mode, and port settings. See page 33.
- **VLANs** ¾ adds, modifies, and deletes virtual Local Area Network (VLAN) settings. See page 37.
- **Aggregation** ¾ bundles switch port. See page 42.
- **RSTP** ¾ configures RSTP system and port configuration settings. See page 43.
- **IGMP Snooping** ¾ configures IGMP settings. See page 45.
- **Mirroring** ¾ configures mirroring and mirror port settings. See page 47.
- **Quality of Service** ¾ enables or disables QoS settings. See page 48.
- **Power over Ethernet** ¾ configures PoE settings. See page 50.
- **Storm Control** ¾ configures the number of frames transmitted per second . See page 51.

System Configuration Page

Path: **Configuration > System**

The System Configuration page is organized into two areas:

- The top area contains read-only fields that show the switch's current configuration settings.
- The bottom area lets you change the switch's configuration settings.



The first time you log in, we recommend you:

- Confirm the DHCP setting
- Change the default username and password used to log in to the switch's Web management interface to prevent unauthorized individuals from gaining access to the switch.

System Configuration Read-Only Fields

The following read-only fields appear under **System Configuration**.

Field	Description
MAC Address	Switch's unique Media Access Channel (MAC) address assigned by the manufacturer.
S/W Version	Version of the firmware running on the switch.
H/W Version	Version of switch hardware.
Active IP Address	Current static IP address assigned to the switch.
Active Subnet Mask	Current subnet mask assigned to the switch.
Active Gateway	Current gateway setting assigned to the switch.
DHCP Server	Current IP address assigned to the switch by a DHCP server.
Lease Time Left	Amount of time that a network device is allowed connection to the switch using its current dynamic IP address. When this lease time expires, the device is assigned a new dynamic IP address automatically.

System Configuration

Use the following fields under **System Configuration** to configure the switch.

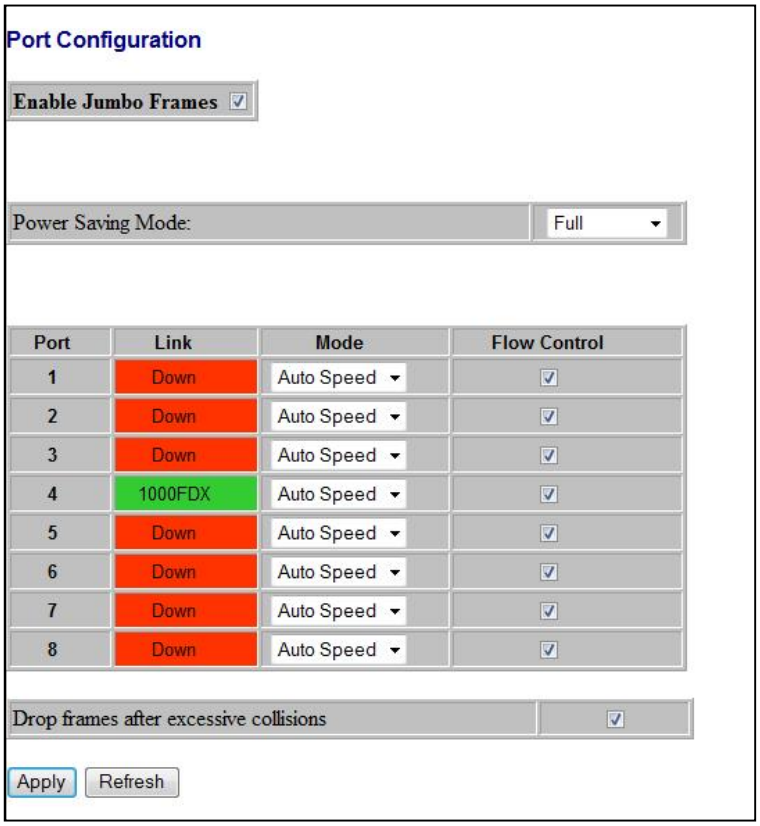
Field	Description	Default
DHCP Enabled	If your network has a DHCP server to allocate IP addresses dynamically, check this check box. Otherwise, leave this check box unchecked to configure the switch for a static IP address, and then complete the Fallback IP Address, Fallback Subnet Mask, and Fallback Gateway settings.	Not Checked
Fallback IP Address	If DHCP Enabled is unchecked, enter a static IP address for the switch using the format 00.00.00.00.	192.168.2.1
Fallback Subnet Mask	If DHCP Enabled is unchecked, enter a subnet mask using the format 00.00.00.00..	255.255.255.0
Fallback Gateway	If DHCP Enabled is unchecked, enter a gateway for the switch using the format 00.00.00.00..	192.168.2.254
Management VLAN	ID of a configured VLAN (1-4096) through which you can manage the switch. By default, all ports on the switch are members of VLAN 1. However, if the management VLAN is changed, the management station must be attached to a port belonging to this VLAN.	1
Name	Case-sensitive username.	admin

Field	Description	Default
Password	Case-sensitive password used to log in to the Web management interface	admin
Inactivity Timeout	Number of minutes a Web management session can be idle before the switch ends the session. Range: 60 – 10000 seconds.	60
SNMP enabled	Enables or disables the switch's Simple Network Management Protocol (SNMP) capabilities. The switch supports SNMP version 1 and 2c management clients. · Checked = enable SNMP. Complete the fields below. · Unchecked = disable SNMP.	Checked
SNMP Trap destination	IP address of the destination for receiving SNMP traps.	0.0.0.0
SNMP Read Community	Read-only community string. Enables requests accompanied by this string to display MIB-object information.	public
SNMP Write Community	Read/Write. Enables requests accompanied by this string to display MIB-object information and set MIB objects.	private
SNMP Trap Community	Enables requests accompanied by this string to receive SNMP traps.	public

Port Configuration Page

Path: **Configuration > Ports**

The Port Configuration page lets you enable jumbo frames, configure power saving mode, and view the switch port status and configure port modes.



Jumbo Frames

The switch provides efficient large sequential data transfers by supporting jumbo frames up to 9000 bytes. Compared to standard Ethernet frames that run up to 1500 bytes, using jumbo frames significantly reduces the per-packet overhead required to process protocol encapsulation fields, reduce processing time, and increase transfer performance.

By default, jumbo frames are enabled on the switch. To use jumbo frames, both the source and destination end nodes (such as a computer or server) must support jumbo frames. In addition, when the connection operates at full-duplex, all switches in the network between the two end nodes must be able to accept the extended frame size. For half-duplex connections, all devices in the collision domain must support jumbo frames.

To disable jumbo frames, uncheck **Enable Jumbo Frames**.

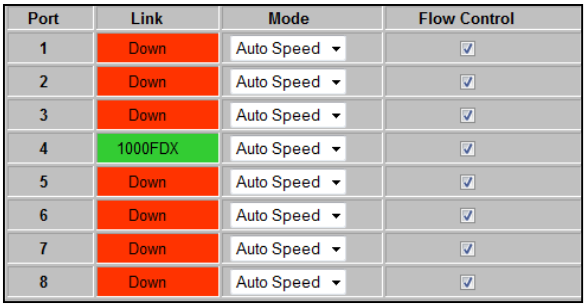
Power Saving Mode

By default, the switch is configured for full power saving mode. This mode automatically adjusts the power provided to ports. The following power saving mode selections are available:

Choices are:

- Full = activate maximum power saving mode. This is the default setting.
- Link-up = save power when the switch port link is up (operational).
- Link-down = save power when the switch port link is down (non-operational).
- Disable = deactivate power saving mode.

Port Settings



Port	Link	Mode	Flow Control
1	Down	Auto Speed	☑
2	Down	Auto Speed	☑
3	Down	Auto Speed	☑
4	1000FDX	Auto Speed	☑
5	Down	Auto Speed	☑
6	Down	Auto Speed	☑
7	Down	Auto Speed	☑
8	Down	Auto Speed	☑

The port settings appear in the center of the Port Configuration page. Each row of the page corresponds to one port. The following table describes the port settings.

Field	Description
Port	Number corresponding to each port on the switch.
Link	Read-only fields that show whether the switch ports are up or down. · Up ports are color-coded green and show the speed of the connection. In the example above, port 4 is operating at 1000 Mbps full-duplex. · Down ports are color-coded red.
Mode	Configures the negotiation mode for the switch port. Choices are: · Auto Speed = port adjusts automatically to the speed and duplex setting of the device connecting to this port. (*default*) · 10 Half = port is configured for 10 Mbps half-duplex transmission only. · 10 Full = port is configured for 10 Mbps full-duplex transmission only. · 100 Half = port is configured for 100 Mbps half-duplex transmission only. · 100 Full = port is configured for 100 Mbps full-duplex transmission only. · 1000 Half = port is configured for 1000 Mbps half-duplex transmission only. · 1000 Full = port is configured for 1000 Mbps full-duplex transmission only. · Disabled = port is out of action and not operational.
Flow Control	Enables or disables flow control for each port. · Check = enable flow control. Flow control handles situations where a transmitting computer is sending data faster than a receiving machine can handle it. The IEEE 802.3x standard specifies a PAUSE flow control mechanism communicated via MAC Control frames in full duplex Ethernet link segments. Like jumbo frames, the PAUSE mechanism requires all device in the data flow path to support it. By default, flow control is enabled on all switch ports. In small networks, however, you may want to disable flow control if you experience throughput loss or low performance. · Uncheck = disable flow control.

Drop Frames After Excessive Collisions

When the **Drop frames after excessive collisions** check box is checked, the switch drops frames after an excessive number of collisions. By default, this check box is checked.

Apply and Refresh Buttons

If you change any settings on the Port Configuration page, click **Apply** to apply the changes. Clicking the **Refresh** button updates the screen with the latest status.

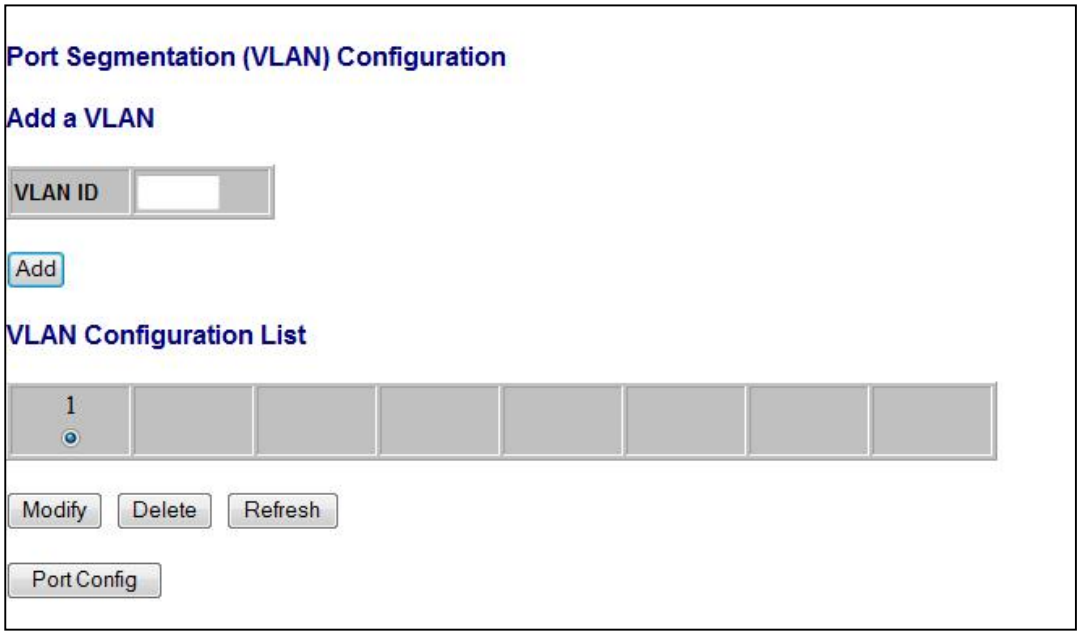
Port Segmentation (VLAN) Configuration

Path: **Configuration > VLANs**

The switch supports up to 16 VLANs based on the 802.1Q standard. From the Port Segmentation (VLAN) Configuration page, you can create and delete VLANs, and change the VLAN port membership.

The **Add a VLAN** area lets you add a VLAN. The **VLAN Configuration List** shows the VLANs that have been configured. Buttons below the list let you modify, delete, or refresh the VLAN information shown.

A **Port Config** button lets you configure the VLAN ports.



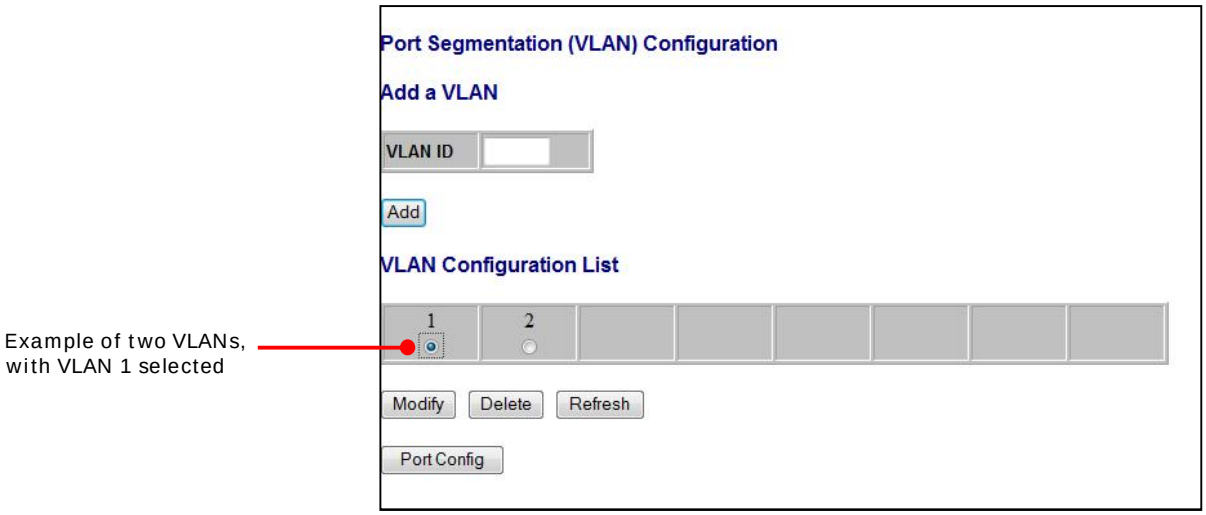
Adding a VLAN

To add a VLAN:

1. Under **Add a VLAN**, click in the **VLAN ID** field and enter an ID for the new VLAN.
2. Click **Add**. The VLAN Setup page appears, listing the switch's eight ports.

3. By default, all switch ports are members of the VLAN. To exclude a port from this VLAN, uncheck the **Member** check box for the port.
4. Click **Apply**. The Port Segmentation (VLAN) Configuration page reappears, with the VLAN you configured shows below **VLAN Configuration List**.
5. To configure additional VLANs, repeat steps 1 through 4.

The following example shows a switch that has two VLANs.



Modifying a VLAN

There may be times when you need to modify the port membership in a VLAN.

To modify a VLAN:

1. Under **VLAN Configuration List**, click the ID of the VLAN you want to edit.
2. Click **Modify**. The VLAN Setup page appears, with the settings for the VLAN you selected.
3. Change the VLAN settings as desired, and then click **Apply**.

Deleting a VLAN

If you no longer need a VLAN, you can delete it.

To delete a VLAN:

1. Under **VLAN Configuration List**, click the ID of the VLAN you want to delete.
2. Click **Delete** to delete the VLAN

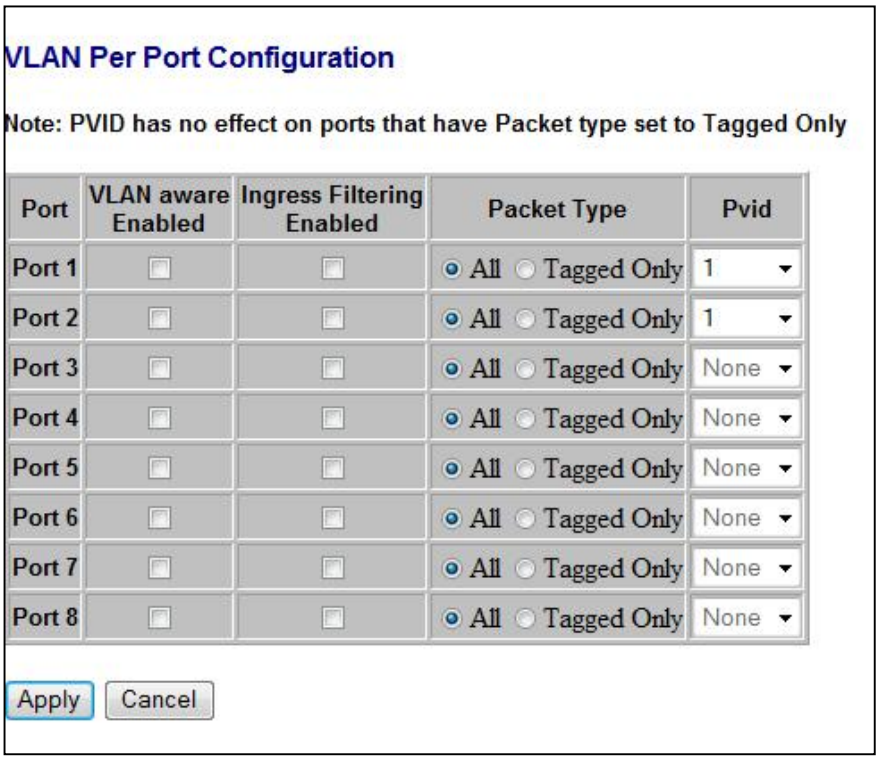
Note: A warning message does not appear when you click **Delete**. Therefore, be sure you want to delete the VLAN before clicking **Delete**.

Configuring VLAN Ports

The **Port Config** button on the Port Segmentation (VLAN) Configuration page lets you change the VLAN parameters for individual ports or trunks. You can configure VLAN behavior for specific interfaces, including the accepted frame types and default VLAN identifier (PVID). Each row of the page corresponds to one port.

To configure VLAN ports:

1. Click the **Port Config** button. The VLAN Per Port Configuration page appears.



2. Complete the settings in the page, and then click **Apply**.

Field	Description
Port	Number corresponding to each port on the switch.
VLAN aware Enabled	Enables or disables VLAN awareness for each port. · Checked = makes the port VLAN-aware. VLAN aware ports use VLAN-tagged frames to determine the destination VLAN of a frame. VLAN-aware ports strip the VLAN tag from received frames and insert the tag into transmitted frames (except for the PVID). · Unchecked = makes the port VLAN-unaware. VLAN unaware ports do not strip the tag from received frames or insert the tag into transmitted frames.
Ingress Filtering Enabled	Enables or disables ingress filtering for each port. · Checked = enable ingress filtering. The switch discards incoming frames for VLANs that do not include this ingress port in their member set. · Unchecked = disables ingress filtering.
Packet Type	Sets the interface to accept all frame types, including tagged or untagged frames, or only tagged frames. Choices are: · All = port can accept incoming tagged and untagged packets. Any received packets that are untagged are assigned to the default VLAN. Any tagged packets are dropped, unless the port is a member of the VLAN identified by the VLAN tag in the packet. · Tagged Only = port drops untagged packets and receives tagged packets only. Tagged packets are dropped, unless the port is a member of the VLAN identified by the VLAN tag in the packet. Switches should be connected to each other with the Packet Type set to Tagged Only.

Field	Description
Pvid	The PVID (Port VLAN ID) is associated with untagged, ingress packets and assigned to untagged frames received on the specified interface. The PVID has no effect on ports whose Packet Type is set to “Tagged Only.” You cannot remove a port from VLAN 1, unless its PVID is changed to a value other than 1. Outgoing packets are tagged unless the packet’s VLAN ID is the same as the PVID. If the PVID is set to “None”, all outgoing packets are tagged. If you select “Tagged Only” mode for a port, we recommend setting the PVID to “None” as the standard configuration.

Aggregation/Trunking Page

Path: **Configuration > Aggregation**

The Aggregation/Trunking Configuration page lets you bundle (or aggregate") multiple links together to act as a single physical link for increased throughput. Bundling links provides load balancing and redundancy of links in a switched inter-network.

In reality, the link does not have an inherent total bandwidth equal to the sum of its component physical links. Traffic in a trunk is distributed across an individual link within the trunk in a deterministic method using a hash algorithm. The hash algorithm applies load balancing to the ports in the trunk automatically. A port failure within the trunk group redirects network traffic to the remaining ports. Load balancing is maintained whenever a link in a trunk is lost or returned to service.

You can configure up to four trunks. To assign ports to a trunk:

1. On the **Group 1** row, click the trunk numbers you want to aggregate.
2. Click **Apply**.
3. To configure up to three additional trunks, repeat steps 1 and 2 on the next **Group** row.

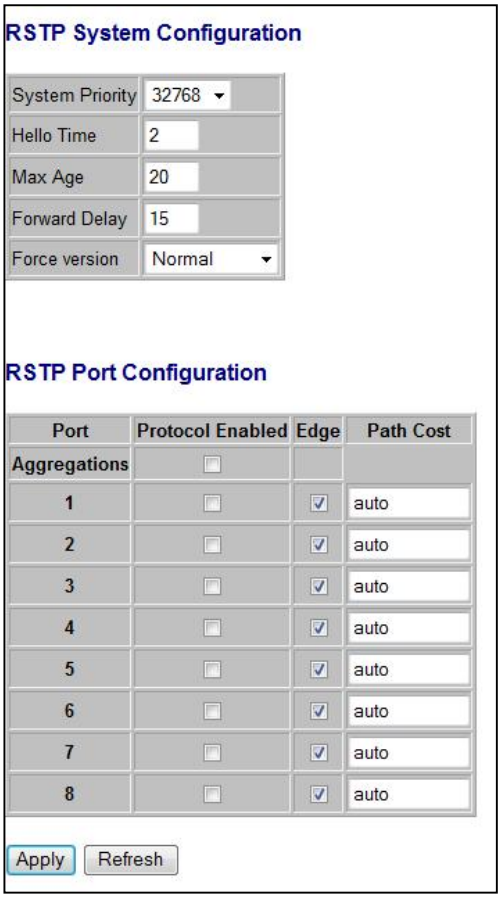
RSTP System Configuration Page

Path: **Configuration > RSTP**

For optimal performance, there should be a single active path between two networking devices in an Ethernet network. Rapid Spanning Tree Protocol (RSTP) provides redundant paths and prevents network loops that can create excessive traffic and slow down performance. RSTP calculates the best path for network traffic; if the best path fails, RSTP recalculates and finds the next best path

The RSTP Configuration page lets you configure the switch's RSTP settings.

- The top area lets you specify the switch's RSTP system configuration settings.
- The bottom area lets you specify the switch's RSTP port configuration settings.



RSTP System Configuration

Field	Description	Default
System Priority	Identifies the root bridge. The bridge with the lowest value has the highest priority and is selected as the root. If the value has been changed, user has to reboot the switch. The value must be multiple of 4096 according to the protocol standard rule	32768
Hello Time	Interval, in seconds, that determines how often the switch broadcasts hello messages to other switches. Range: 1 – 10 seconds.	2
Max Age	Amount of time, in seconds, that protocol information received on a port is stored by the switch. Range: 6 – 40 seconds.	20
Forward Delay	Number of seconds that determines how long each of the listening and learning states lasts before the port begins forwarding. Range: 4 – 30 seconds.	15
Force version	Select the RSTP default protocol. Choices are: · Normal = RSTP protocol. · Compatible = compatible with STP protocol	Normal

RSTP Port Configuration

Field	Description	Default
Protocol Enabled	Enables or disables the RSTP protocol for the port.	Unchecked
Edge	Check to set the port as an edge port. An edge port prevents directly connected to end stations from creating a bridging loop in the network.	Checked
Path Cost	Used by the STP to determine the best path between devices. Assign low values to ports attached to fast media, and assign high values assigned to ports with slow media. Range: 1 - 200,000,000. 0 = auto generated path cost.	auto

IGMP Configuration Page

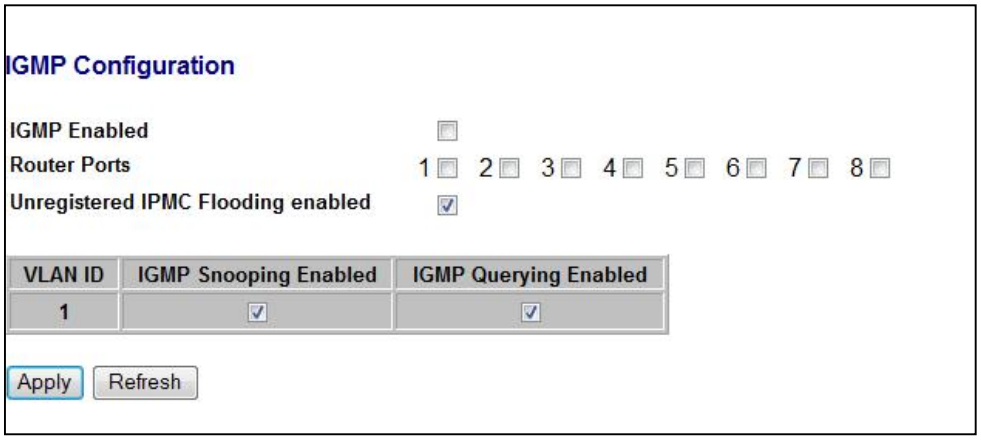
Path: **Configuration > IGMP**

The IGMP Configuration page lets you configure the switch's Internet Group Management Protocol (IGMP) settings. IGMP allows the switch to "listen in" on IGMP conversations between hosts and routers by processing Layer 3 IGMP packets sent in a multicast network.

When IGMP is enabled, the switch analyzes all IGMP packets between hosts connected to the switch and multicast routers in the network.

- When the switch hears an IGMP report from a host for a given multicast group, the switch adds the host's port number to the multicast list for that group.
- When the switch hears an IGMP Leave, it removes the host's port from the table entry.

If you change the settings on this page, click **Apply** to apply your settings. A **Refresh** button lets you update the information on the screen.



Field	Description	Default
IGMP Enabled	Enables or disables IGMP functions. · Checked = enable IGMP functions. Configure the settings below. · Unchecked = disable IGMP functions.	Unchecked
Router Ports	Check the check boxes beside the port number.	Unchecked
Unregistered IPMC Flooding enabled	Set the forwarding mode for unregistered (not-joined) IP multicast traffic. The traffic will flood when enabled, and forward to router-ports only when disabled.	Checked
IGMP Snooping Enabled	Enables or disables IGMP snooping. · Checked = port monitors network traffic to determine which hosts want to receive the multicast traffic. · Unchecked = port does not monitor network traffic.	Checked

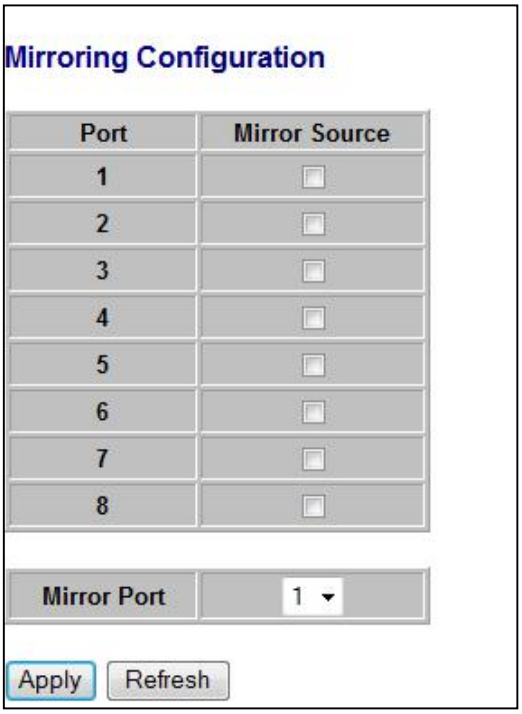
Field	Description	Default
IGMP Querying Enabled	Enables or disables IGMP querying. · Checked = port can serve as the Querier, which is responsible for asking hosts if they want to receive multicast traffic. · Unchecked = port cannot serve as the Querier.	Checked

Mirroring Configuration Page

Path: **Configuration > Mirroring**

The Mirroring Configuration page lets you configure the switch's port mirroring settings. Port mirroring is used on a network switch to send a copy of network packets seen on one switch port (or an entire VLAN) to a network monitoring connection on another switch port. This feature is commonly used for network appliances that require monitoring of network traffic, such as an intrusion-detection system.

If you change the settings on this page, click **Apply** to apply your settings. A **Refresh** button lets you update the information on the screen.



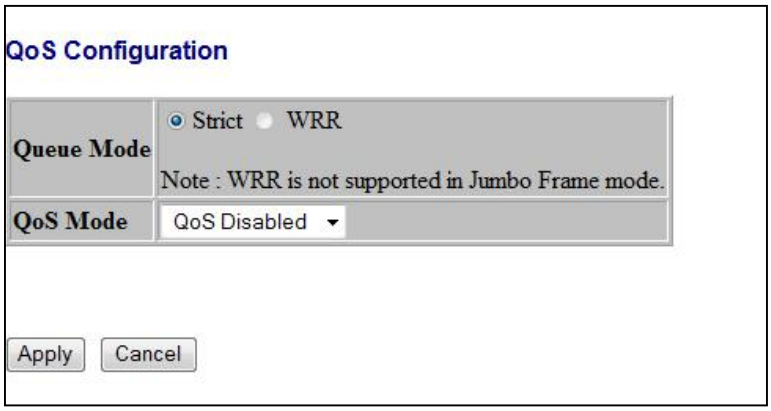
Field	Description	Default
Port	Number corresponding to each port on the switch.	¾
Mirror Source	Check the ports that you want to mirror.	Unchecked
Mirror Port	Port that will duplicate (or "mirror") the traffic on the source port. Only incoming packets can be mirrored. Packets are dropped when the available egress bandwidth is less than ingress bandwidth.	1

QoS Configuration Page

Path: **Configuration > Quality of Service**

The QoS Configuration page lets you configure the switch to deliver better resource reservation control.

If you change the settings on this page, click **Apply** to apply your settings. A **Refresh** button lets you update the information on the screen.



Field	Description	Default
Queue Mode	Selects the QoS configuration. Choices are: · Strict = services the egress queues in sequential order, transmitting all traffic in the higher priority queues before servicing lower priority queues. · WRR = Weighted Round-Robin shares bandwidth at the egress ports by using scheduling weights with default values of 1, 2, 4, 8 for queues 0 through 7, respectively. WRR can be selected only if Enable Jumbo Frame is unchecked on the Port Configuration page (see page 33).	Strict
QoS Mode	Selects the QoS mode. Choices are: · QoS Disabled = disable QoS. · 802.1p = prioritizes packets using the 802.1p field in the VLAN tag. This field is three bits long, representing the values 0 - 7. If you click this option, the 802.1p configuration table in Figure 4-3 lets you map each of the eight 802.1p values to a local priority queue (low, normal, medium or high). · DSCP = prioritizes packets using the Differentiated Services Code Point (DSCP) value. The DSCP is a 6-bit field contained in an IP (TCP or UDP) header. The six bits allow the DSCP field to take any value in the range 0 - 63. When QoS Mode is set to DSCP, the DSCP configuration table in Figure 4-4 lets you map each of the DSCP values to a hardware output queue (low, normal, medium or high). The default settings map all DSCP values to the high priority egress queue.	QoS Disabled

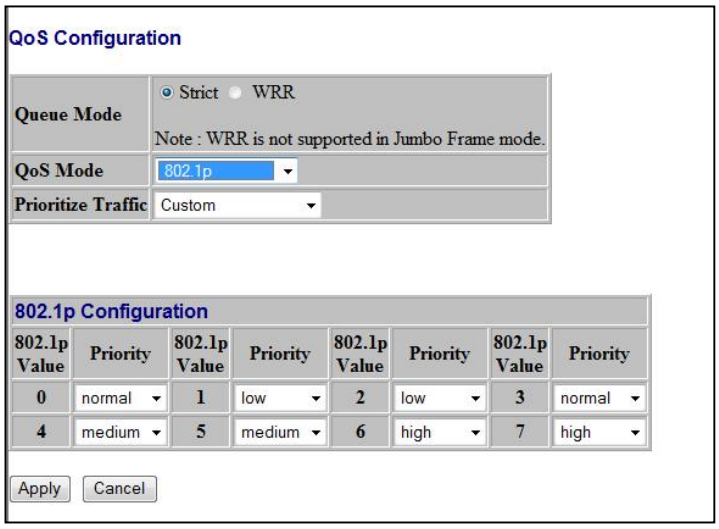


Figure 4-3. QoS Configuration Page when QoS Mode is Set to 802.1p

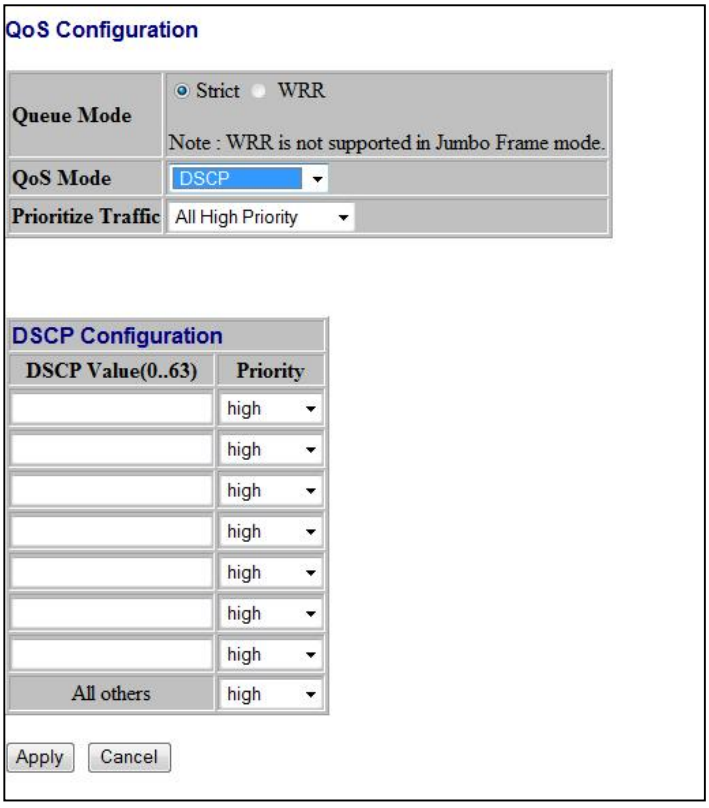


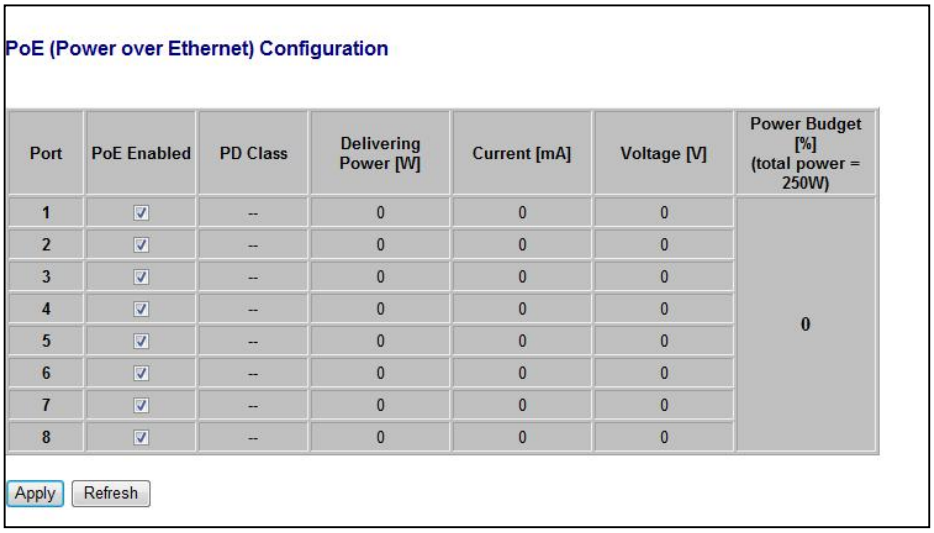
Figure 4-4. QoS Configuration Page when QoS Mode is Set to DSCP

PoE (Power over Ethernet) Configuration Page

Path: **Configuration > Power over Ethernet**

Power over Ethernet (PoE) is a mechanism for supplying power to network devices over the same cabling used to carry network traffic. PoE allows devices that require power, called Powered Devices (PDs), to receive power and data over existing infrastructure without having to upgrade the infrastructure.

The PoE (Power over Ethernet) Configuration page lets you enable PoE on a per-port basis. If you change the settings on this page, click **Apply** to apply your settings. A **Refresh** button lets you update the information on the screen.



Field	Description	Default
Port	Number corresponding to each port on the switch.	¾
PoE Enabled	Enables or disables PoE on the port. · Checked = enable PoE on the port. · Unchecked = disable PoE on the port.	Checked
PD Class	Read-only field that shows the class of PD detected.	¾
Delivering Power	Read-only field that shows the amount of power being delivered to the device, in Watts.	¾
Current	Read-only field that shows the amount of current being delivered to the device, in Milliamperes.	¾
Voltage	Read-only field that shows the amount of voltage being delivered to the device, in Volts.	¾
Power Budget	Read-only field that shows the total PoE power per port.	¾

Storm Control Configuration Page

Path: **Configuration > Storm Control**

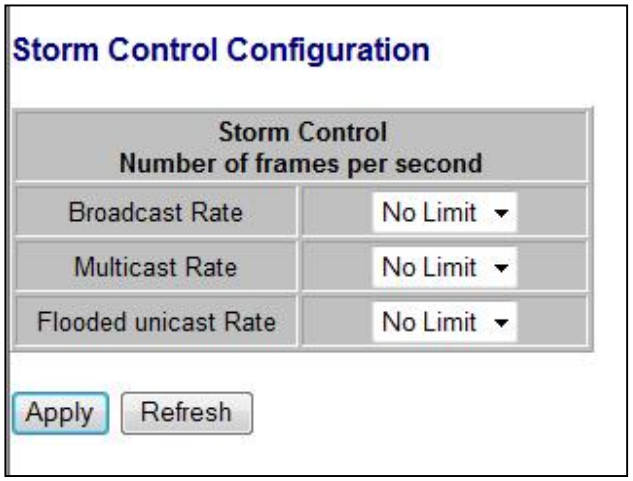
Broadcast storms can occur when a device on your network malfunctions, or if application programs are not well designed or properly configured. If there is too much broadcast traffic on your network, performance can be degraded severely or all traffic can come to complete halt.

To protect your network from broadcast storms, use the Storm Control Configuration page to set a threshold for broadcast traffic for all ports. This page lets you limit the rate on three types of traffic:

- Broadcast frames
- Multicast frames
- Flooded unicast rate frames

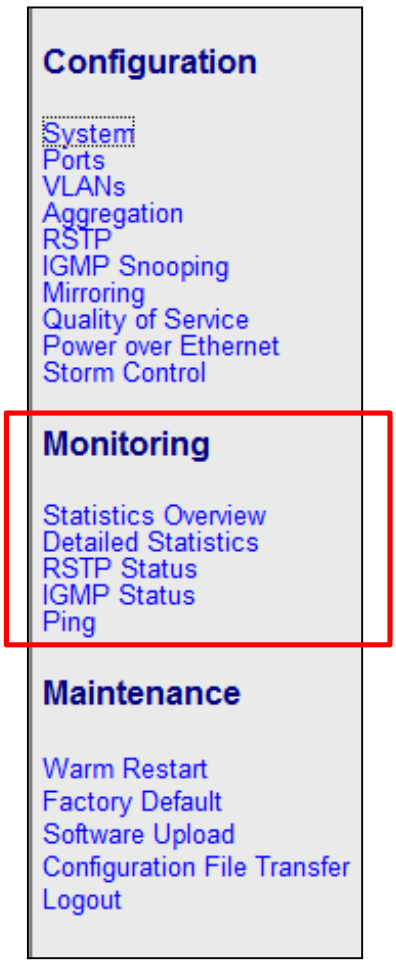
Each frame type has a drop-down list that lets you select a threshold. Any broadcast packets that exceed the specified threshold are dropped. The default setting of **No Limit** does not enforce storm control.

If you change the settings on this page, click **Apply** to apply your settings. A **Refresh** button lets you update the information on the screen.



Monitoring Menu

The **Monitoring** menu lets you perform the following tasks:



- **Statistics Overview** ¾ provides a statistical overview of each switch port. See page 54.
- **Detailed Statistics** ¾ copies network traffic from one port to another port. See page 55.
- **RSTP Status** ¾ limits the rates at which the switch accepts incoming data and retransmits outgoing data. See page 56.
- **IGMP Status** ¾ prevents LAN traffic from being disrupted by a broadcast, multicast, or unicast storm on a port. See page 57.
- **Ping** ¾ enables or disables PoE on switch ports. See page 58.

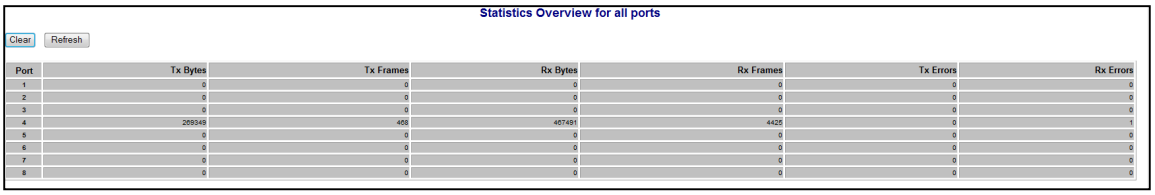
Statistics Overview Page

Path: **Monitoring > Statistics Overview**

The Statistics Overview page is a read-only page that shows the following information for each switch port:

- Transmitted bytes
- Transmitted frames
- Received bytes
- Received frames
- Transmit errors
- Receive errors

A **Clear** button lets you clear the information shown and a **Refresh** button lets you update the information shown.



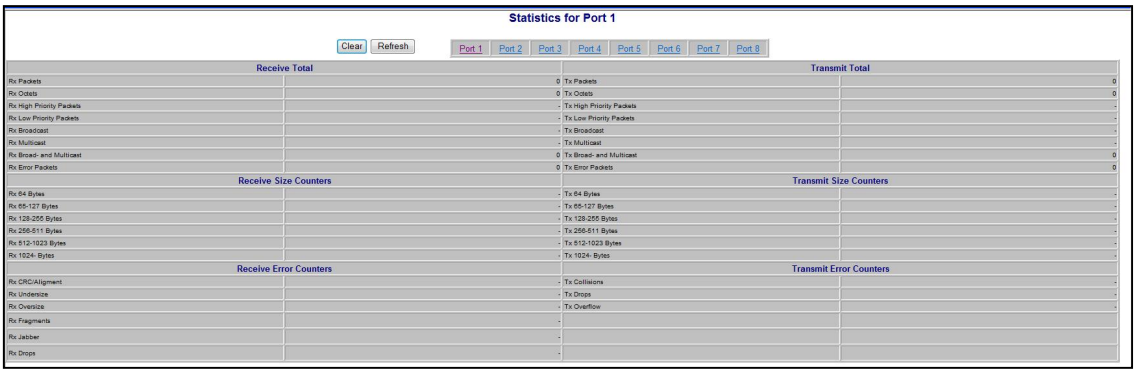
Detailed Statistics Page

Path: **Monitoring > Detailed Statistics**

The Detailed Statistics page is a read-only page that shows detailed port information arranged in the following categories:

- Receive total
- Receive size counters
- Receive error counters
- Transmit total
- Transmit size counters
- Transmit error counters

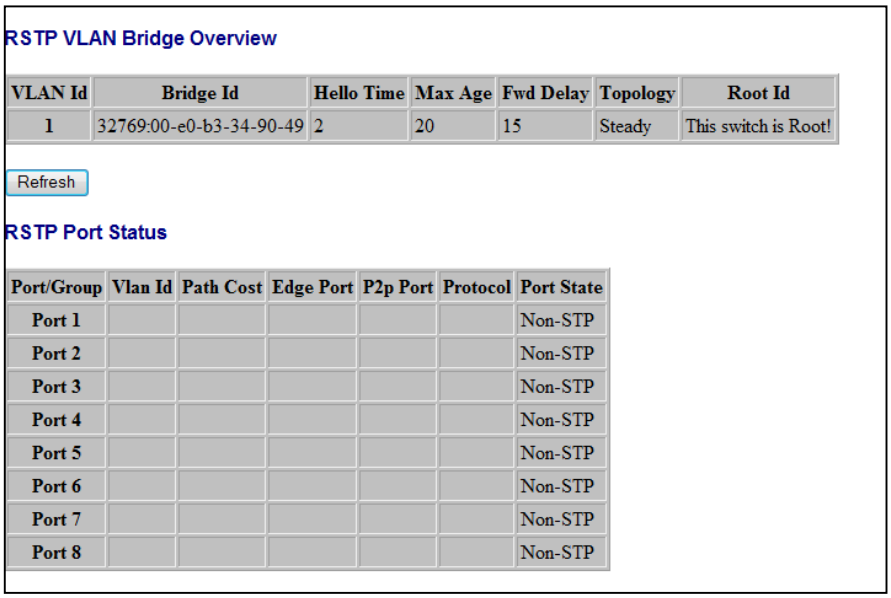
Buttons are provided for selecting the port whose detailed statistics you want to view. A **Clear** button lets you clear the information shown and a **Refresh** button lets you update the information shown.



RSTP VLAN Bridge Overview Page

Path: **Monitoring > RSTP Status**

The RSTP VLAN Bridge Overview page is a read-only page that shows the switch's Rapid Spanning Tree Protocol information.

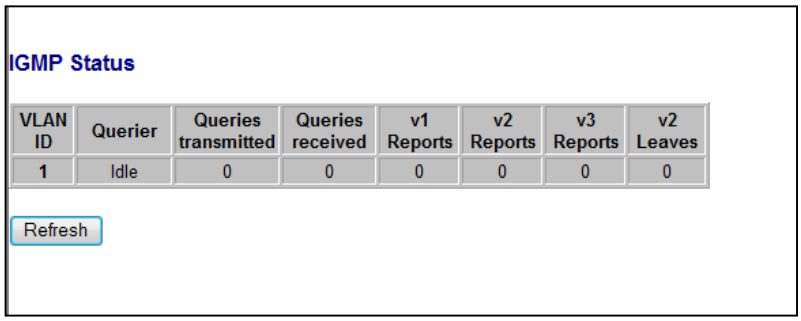


Field	Description
VLAN Id	VLAN identifier.
Bridge Id	Unique identifier for the switch in the Spanning Tree.
Hello Time	Time interval, in seconds, at which the root device transmits a configuration message.
Max Age	Maximum time, in seconds, that the switch waits before attempting to reconfigure if it has not received a configuration message.
Fwd Delay	Maximum time, in seconds, the root device waits before changing states from listening to learning to forwarding.
Topology	Indicates whether spanning tree topology is steady or undergoing reconfiguration. (The time required for reconfiguration is extremely short, so no values other that "steady" state are likely to be seen in this field.)
Root Id	Priority and MAC address of the device in the Spanning Tree that this switch has accepted as the root device, and the port connected to the root device.

IGMP Status Page

Path: **Monitoring > IGMP Status**

The IGMP Status page is a read-only page that shows the switch's IGMP snooping statistics.



Field	Description
VLAN ID	VLAN identifier.
Querier	Shows whether Querying is enabled.
Queries transmitted	Number of transmitted Query packets.
Queries received	Number of received Query packets.
v1 reports	Number of received v1 Report packets.
v2 reports	Number of received v2 Report packets.
v3 reports	Number of received v3 Report packets.
v2 Leaves	Number of v2 leave packets received.

Ping Parameters Page

Path: **Monitoring > Ping**

The Ping Parameters page lets you check connectivity between the switch and devices on the network.

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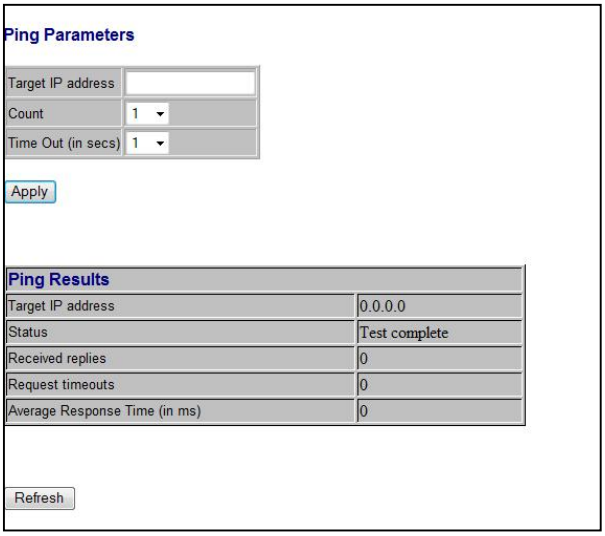


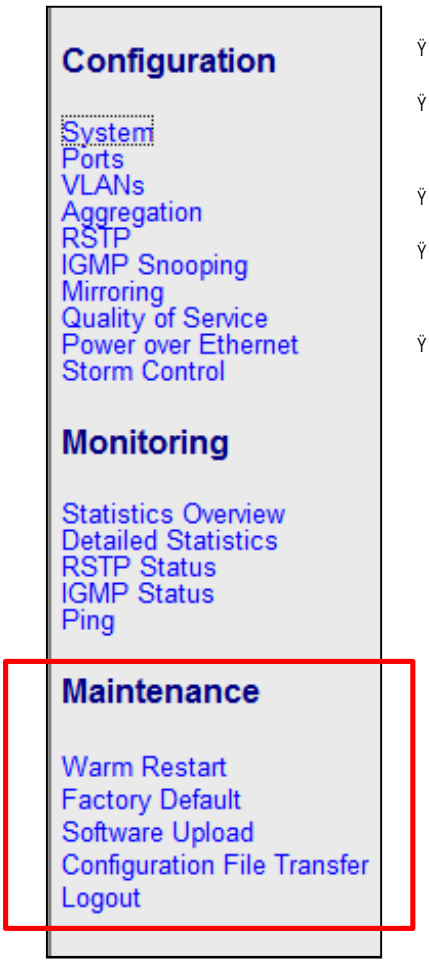
To perform a ping:

1. In the **Target IP address** field, enter the IP address you want the switch to contact.
2. In the **Count** field, enter the number of packets you want the switch to send. Range: 1 – 20.
3. In the **Time Out** field, enter the number of seconds that the switch should ping the target IP address.
4. Click **Apply**. The results of the ping appear under **Ping Results**.

Field	Description
Target IP address	IP address you entered for the switch to contact.
Status	Status of the ping operation.
Received replies	Number of replies received from the ping.
Request timeouts	Number of request timeouts experienced during the ping.
Average Response Time	Average response time, in milliseconds, when the target device replied to the switch pings.

Maintenance Menu

The **Maintenance** menu lets you perform the following tasks:

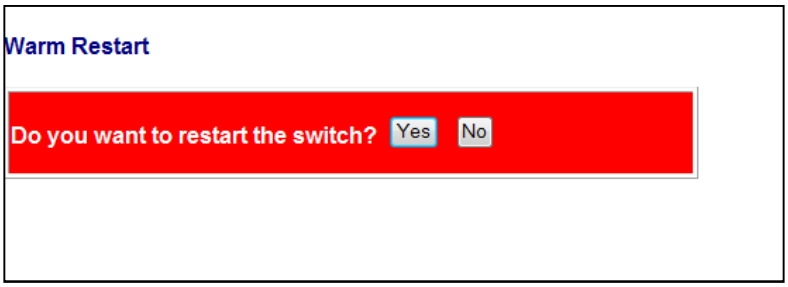


- **Warm Restart** ¾ restarts the switch. See page 60.
- **Factory Default** ¾ returns the switch to factory default settings. See page 61.
- **Software Upload** ¾ updates switch firmware. See page 62.
- **Configuration File Transfer** ¾ uploads and downloads configuration files. See page 63.
- **Logout** ¾ ends the current Web management interface session.

Warm Restart Page

Path: **Maintenance > Warm Restart**

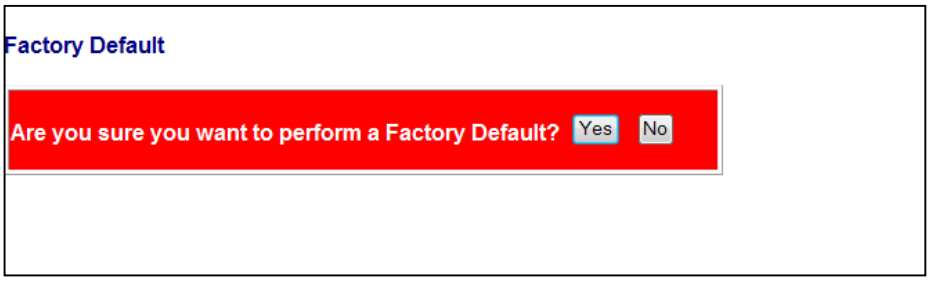
The Warm Restart page lets you restart the switch. Any changes you made to the switch's factory default configuration are maintained after the warm start.



Factory Default Page

Path: **Maintenance > Factory Default**

The Factory Default page lets you restart the switch and return it to its factory default settings. Any changes you made to the switch's factory default configuration will be discarded after the reboot.



Software Upload Page

Path: **Maintenance > Software Upload**

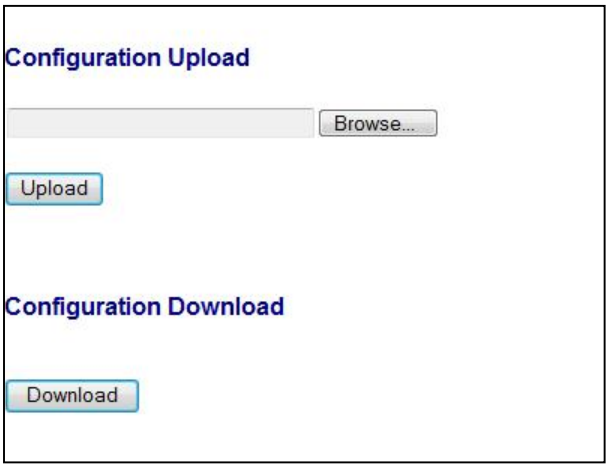
The Software Upload page lets you upgrade the switch firmware.

1. Download the switch firmware.
2. At the Software Upload page, click the **Browse** button.
3. In the Choose File to Upload dialog box, go to the location where the firmware file is located, and then click the file and click **Open**.
4. Click **Upload** to load the new firmware.

Configuration Upload Page

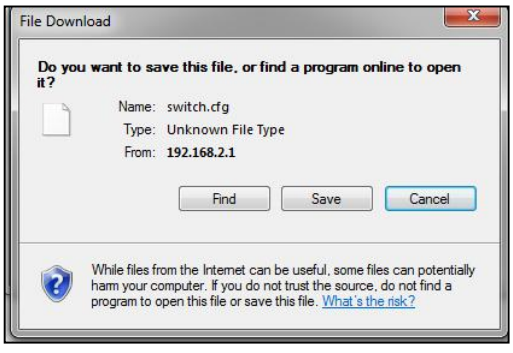
Path: **Maintenance > Configuration File Transfer**

The Configuration Upload page lets you lets you save the switch configuration on your computer or restore the switch configuration by uploading a configuration file that you saved previously on your computer.



To save the switch configuration:

1. Under **Configuration Download**, click **Download**.
2. When the File Download dialog box appears, click **Save**.



3. In the Save As dialog box, go to the location where you want to save the file, and then click **Save**.

To recover switch settings using a configuration file you saved using the procedure above:

1. Under **Configuration Upload**, click **Browse**.
2. When the Choose File to Upload dialog box appears, use the dialog box to go to the location where the bin file resides, and then click the file and click **Open**.
3. Click **Upload**.

5 Troubleshooting

Topics:

This chapter provides information about troubleshooting the switch.

Troubleshooting Chart

Table 5-1 symptoms, causes, and solutions of possible problems.

Table 5-1. Troubleshooting Chart

Symptom	Cause	Solution
Power LED is OFF.	The switch is not receiving power.	Check the power cord connections for the switch at the switch and the connected device. Be sure all cables used are correct and comply with Ethernet specifications.
Link/ACT LED is OFF or intermittent.	Port connection is not working.	Check the crimp on the connectors and be sure the plug is inserted properly and locked into the port at both the switch and the connecting device. Be sure all cables used are correct and comply with Ethernet specifications. Check for a defective adapter card, cable, or port by testing them in an alternate environment where all products are functioning.
File transfer is slow or performance degradation is a problem.	Half- or full-duplex setting on the switch and the connected device are not the same.	Configure the switch and the attached device to auto-negotiate.
A segment or device is not recognized as part of the network.	One or more devices are not connected properly or cabling does not meet Ethernet guidelines.	Verify that the cabling is correct. Be sure all connectors are securely positioned in the required ports. Equipment may have been disconnected accidentally.
Collisions are occurring on the connected segment.	Some collisions are normal when the connection is operating in half-duplex mode.	Recheck the settings of the device attached to the switch port. Be sure the switch and the attached device are using the same duplex setting. Be sure the switch and the attached device are set to auto-negotiate. Check and, if necessary, change the settings on the Configuration > Storm Control page (see page 51).
Link/ACT LED is flashing continuously on all connected ports and the network is disabled.	A network loop (redundant path) has been created.	Use the RSTP System Configuration to use the Rapid Spanning Tree Protocol to eliminate loops (see page 43). Break the loop by ensuring that there is only one path from any networked device to any other networked device.

Additional Troubleshooting Suggestions

If the suggestions in Table 5-1 do not resolve your problem, refer to the troubleshooting suggestions in this section.

Network Adapter Cards

Be sure the network adapter cards installed in the PC used to configure the switch are in working condition and the latest software driver has been installed.

Configuration

If problems occur after altering the switch's network configuration, restore the original connections and determine the problem by implementing the new changes one step at a time. Be sure cable distances, repeater limits, and other physical aspects of the installation do not exceed the Ethernet limitations.

Switch Integrity

If required, verify the integrity of the switch by resetting it. To reset the switch, use the reset button on the front panel (see "Reset Button" on page 12) or use the **Maintenance > Warm Restart** page on the switch's Web management interface (see "Warm Restart Page" on page 60). If the problem continues, contact EtherWAN Systems technical support.

Auto-Negotiation

The 10/100 Mbps ports negotiate the correct duplex mode and speed if the switch is configured for auto-negotiation (this is the switch's default setting) and the device at the other end of the link supports auto-negotiation. If the device does not support auto-negotiation, the switch determines only the speed correctly and the duplex mode defaults to half-duplex.

Appendix A - Specifications

Technology

Specification	Description
Standards:	· IEEE802.3, 10BASE-T · IEEE802.3u, 100BASE-TX · IEEE802.3ab, 1000BASE-T · IEEE802.3x,full-duplex and flow control · IEEE802.3at, Power over Ethernet (PoE)
Forward and Filtering Rate:	· 10 Mbps: 14,880 pps · 100 Mbps: 148,810 pps · 1000 Mbps: 1,488,100 pps
Packet Buffer Memory:	2 M bits
Processing Type:	· Store-and-Forward · Half-duplex back-pressure and IEEE802.3x full-duplex flow control
Jumbo Frame:	9.6 K bytes
Address Table Size:	8 K MAC addresses

Power

Specification	Description
Power Input:	100 – 240 VAC, 50 / 60 Hz
Power Consumption:	· Device: Max. 8.8 W (without PoE) · PoE power budget: 240 W Max.
PoE Power Output:	IEEE802.3at: up to 30 W/port, 55 VDC, 545 mA Max.

Mechanical

Specification	Description
Casing:	Metal case
Dimensions:	266 mm (W) x 160 mm (D) x 44 mm (H) (10.47" (W) x 6.30" (D) x 1.73" (H))
Weight:	1.52 Kg (3.35 lbs)
Installation:	· Desktop · Rack Mounting

Interface

Specification	Description
Ethernet Ports:	10/100/1000BASE-T: 8 ports (PoE)
LED Indicators:	· Per unit: Power Status · Per port: Link/Activity, PoE Act/status

Environment

Specification	Description
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Storage Temperature:	-10°C to 70°C (14°F to 158°F)
Ambient Relative Humidity:	10% to 95% (non-condensing)

Regulatory Approvals

Specification	Description
ISO:	Manufactured in an ISO9001 facility
Emission Compliance:	FCC Part 15, Class A, CE mark Class A

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