



## MIL-SM2401MAF

**24-Port 10/100 BASE-TX POE  
Two combo ports  
10/100/1000BASE-T/1000Base-X SFP  
Advanced Managed Switch**

# User Guide

Regulatory Approval

- FCC Class A
- UL 1950
- EN60950
- CE
- EN55022 Class A
- EN55024

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- EN61000-X - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## **CE Mark Warning**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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# Introduction

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The 24 10/100TX plus 2 SFP/Copper managed POE switch is a multi-port Switch that can be used to build high-performance switched workgroup networks. This switch is a store-and-forward device that offers low latency for high-speed networking and allows the switch to auto-learn and store source address in an 8K-entry MAC address table. The switch is targeted at workgroup, department or backbone computing environment.

The 24 10/100TX plus 2 SFP/Copper managed POE switch has 24 auto-sensing 10/100Base-TX RJ-45 ports and all port support POE injector function. It has 2 auto detect Giga port for higher connection speed. Also, the switch provides one extra 48V DC power input for the power supply input connection.

## Features

- 24 10/100 plus 2 SFP /RJ-45 combo switch with 24 POE injector and build in 200W AC power
- Confirms to IEEE802.3 10BASE-T, 802.3u 100BASE-TX/FX, 802.3ab 1000BASE-T, 802.3z Gigabit fiber, 802.3af power over Ethernet
- Provides extra DC 48V input with redundant function and management power status through RS-232 port
- High back-plane bandwidth 8.8Gbps
- Rapid spanning tree IEEE802.1w (option)
- IGMP snooping and IGMP Query mode for Multi-media application
- Port mirror and bandwidth control
- Supports GVRP function
- End point insert mode remote power feeding
- IEEE802.3x Flow control
  - Flow control for full duplex
  - Backpressure for half duplex

- Support Port Based V LAN /802 .1Q Tag VLAN
- Support IEEE802.3ad Port trunk with LACP
- Support Spanning tree protocol IEEE 802.1d
- Supports IEEE 802.1p class of service
- Support IEEE 802.1x user authentication
- Support TACACS+ (option)
- Support Broadcast storm filter
- Support DHCP client
- Support SNTP
- Support System event log
- Support command line interface management
- Management by Web/SNMP/Telnet/Console
- On line extra power supply testing through RS-232 port

## Software Features

<b>Management</b>	SNMP management, Telnet management, web management, RS-232 terminal console for command line interface management
<b>SNMP MIB</b>	RFC 1157 SNMP, RFC 1213 MIB II, RFC 1643 Ethernet like, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB, private MIB, RFC 1628 UPS MIB, RFC3621 Power Ethernet MIB
<b>Type of Trap</b>	Cold start, warm start, link down, link up, authorization fail, Trap station up to 3.

<b>RFC Standard</b>	RFC 2030 SNMP, RFC 2821 SMTP (option), RFC 1492 TACACS+ (option), RFC 1215 Trap, RFC 1757 RMON 1
<b>Software Upgrade</b>	TFTP and console firmware upgradeable.
<b>Port Trunk</b>	Support IEEE802.3ad with LACP function. Up to 7 trunk groups and group member up to 4. The trunk port within 24-port 10/100TX and 2 auto SFP/Copper ports.
<b>Spanning Tree</b>	IEEE802.1d spanning tree, IEEE802.1w rapid spanning tree.
<b>VLAN</b>	Port based VLAN IEEE802.1Q Tag VLAN IEEE802.1v Protocol VLAN (IP, IPX,..) The static VLAN groups up to 256 and dynamic VLAN groups up to 2048, the VLAN ID can be assigned from 1 to 4094.
<b>Class of Service</b>	Per system supports high and low queues. The priority service rule: first come first service, all High before Low, WRR for High or low weight.
<b>Port Based Priority</b>	Support 3 settings: "Disable, Low or High priority". When set to "Disable", the income packet will follow QOS policy; Otherwise, the packet will follow port priority setting to "High/Low" queue.

<b>IGMP</b>	It supports IGMP snooping for multimedia application and supports 256 groups
<b>Port Security</b>	It supports ingress and egress MAC address filter and static source MAC address lock.
<b>Port Mirror</b>	Global system supports 3 mirroring types: "RX, TX and Both packet". The maximum of port mirror entries is up to 25.
<b>Bandwidth Control</b>	Per port supports bandwidth control. Per level 100Kbps.
<b>802.1x Authentication</b>	Support IEEE802.1x User-Authentication and can report to RADIUS server. <ul style="list-style-type: none"> <li>■ Reject</li> <li>■ Accept</li> <li>■ Authorize</li> <li>■ Disable</li> </ul>
<b>DHCP</b>	DHCP client
<b>Packet filter</b>	Broadcast storm filter
<b>System setup and control</b>	System calibrate, AC power line frequency rejection, IEEE 802.3af resistor range adjust

<b>Fault status detect</b>	<p>Null: no PD present</p> <p>Overload: current support over 475mA @ DC 48V and over 50 milliseconds</p> <p>DR fail: PD discovery resistor is not in the limited range</p>
<b>Parametric information</b>	<p>It will show current PD parameters, it include Discover-resistor detected value, current, voltage, power consumption, classification current and determined class</p>
<b>Port configuration control</b>	<p>Port Disable / Enable.</p> <p>PD detect control (enable/disable), Classification detect control (enable/disable), DC disconnect detect control</p>
<b>Mode status</b>	<p>System detects status, it will show I –sample, V-sample and R-detect.</p>
<b>NTP</b>	<p>Supports RFC 2030 Simple Network Time Protocol (option)</p>
<b>SMTP</b>	<p>Supports RFC2821 Simple Mail Transfer protocol (option)</p>
<b>System Log</b>	<p>System Log record up to 1000 entries</p>
<b>Power monitor</b>	<p>Support power supply monitoring function for AC power, DC power, fan status</p> <p>3 types of power supply can be installed with POE switch, POW-DPW, POE-SPW, and POE-UPW.</p>
<b>Power testing</b>	<p>Support test function to testing power supply</p>

## Package Contents

Unpack the contents of the 24 10/100TX plus 2 SFP/Copper managed POE switch and verifies them against the checklist below.

- 24 10/100TX plus 2 SFP/ Copper managed POE switch
- Power Cord
- Four Rubber Feet
- Rack-mounted kit
- RS-232 cable
- User Manual



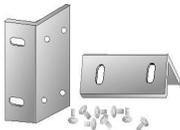
24 10/100TX plus 2 SFP/Copper managed POE switch



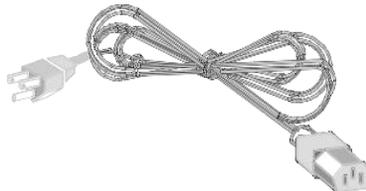
Four Rubber Feet



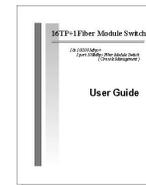
RS-232 Cable



Rack-mounted Kit



Power Cord



User Manual

Package Contents

Compare the contents of your 24 10/100TX plus 2 SFP/Copper managed POE switch package with the standard checklist above. If any item is missing or damaged, please contact your local dealer for service.

# Hardware Description

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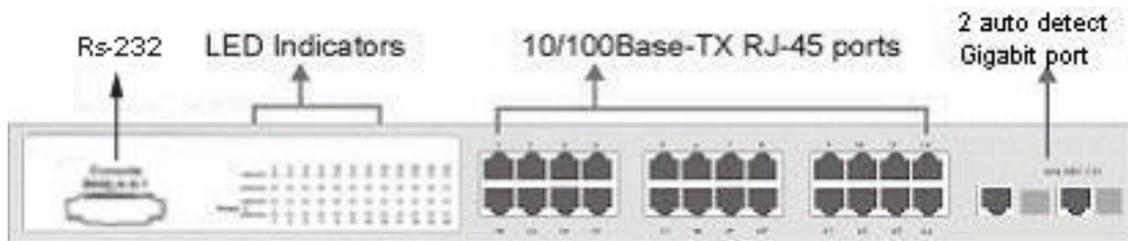
This chapter describes the hardware of the 24 10/100TX plus 2 SFP/Copper managed POE switch and gives a physical and functional overview of the Switch.

## Physical dimensions

The 24 10/100TX plus 2 SFP/Copper managed POE switch's physical dimensions are **440mmx 280mm x 44mm (Lx W x H)**

## Front Panel

The front panel of the 24 10/100TX plus 2 SFP/Copper managed POE switch consists of 24x 10/100Base-TX RJ-45 ports (Auto MDI/MDIX), 2 auto detect Giga ports, and one console port. The LED Indicators are also located on the front panel of the Switch.



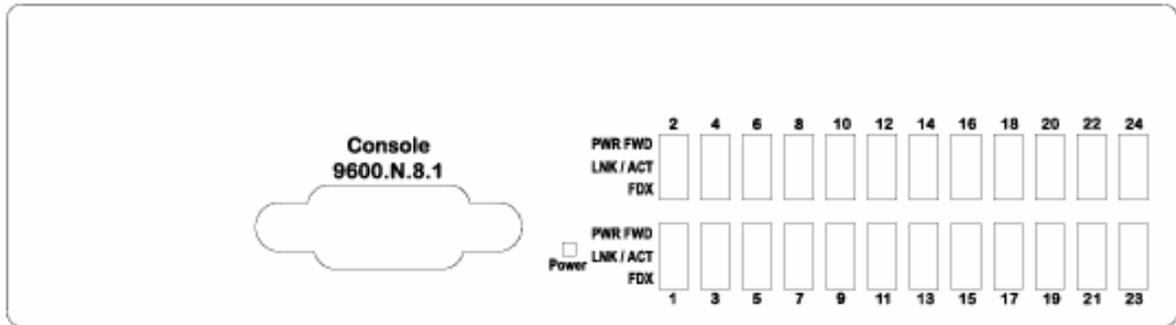
Front panel of 24 10/100TX plus 2 SFP/Copper managed POE switch

- **RJ-45 Ports (Auto MDI/MDIX):** 24x 10/100 N-way auto-sensing for 10Base-T or 100Base-TX connections.
- **2 Gigabit combo ports:** 2 auto detect 10/100/1000Base-TX UTP or 1000Base-X SFP

## LED Indicators

The LED indicators provide a real-time indication of systematic operation status. There are three LED-Indicators (Link/Activity, Full duplex, power forwarding) for each UTP port and one power LED for the system unit. The following table provides descriptions of the

LED statuses and meaning.



LED indicators

LED	Status	Description
Power	Green	Power On
	Off	Power is not connected
LNK/ACT	Green	The port is connecting with the device.
	Blinks	The port is receiving or transmitting data.
	Off	No device attached.
FDX	Orange	The port is operating in Full-duplex mode.
	Off	In half-duplex mode

<b>Power Forwarding</b>	Green	The POE Injector function is on and power is forwarding the attached PD device.
	Off	The POE injector function disables.
<b>1000(Giga port) 25 &amp; 26 port</b>	Green	In 1000Mbps connection speed
<b>100(Giga port) 25 &amp; 26 port</b>	Orange	In 100Mbps connection speed
<b>LNK/ACT (Giga port) 25 &amp; 26 port</b>	Green	The port is connecting with the device.
	Blink	The port is receiving or transmitting data.
	Off	No device attached
<b>FDX/COL (Giga port) 25 &amp; 26 port</b>	Orange	The port is operating in Full-duplex mode
	Blink	Collision of Packets occurs in the port
	Off	In half-duplex mode

## Rear Panel

The two fans, two console ports, and the 3-pronged power plugs are located at the rear panel of the 24 10/100TX plus 2 SFP/Copper managed POE switch as shown in figure. The switch also provides one DC 48V input for the extra power connection support and one DC 48V internal power supply for the power redundant function. The two-console ports use for connecting with UPS device to manage UPS device or connecting with the power supply device to manage it.



The rear panel of 24 10/100TX plus 2 SFP/Copper managed POE switch

## Desktop Installation

Set the switch on a sufficiently large flat space with a power outlet nearby. The surface where you put your switch should be clean, smooth, level and sturdy. Make sure there is enough clearance around the switch to allow attachment of cables, power cord and allow air circulation.

### Attaching Rubber Feet

- A. Make sure mounting surface on the bottom of the switch is grease and dust free.
- B. Remove adhesive backing from your rubber feet.
- C. Apply the rubber feet to each corner on the bottom of the switch. These footpads can prevent the switch from shock/vibration.

## Rack-mounted Installation

The switch come with a rack-mounted kid and can be mounted in an EIA standard size, 19-inch Rack. The Switch can be placed in a wiring closet with other equipment.

Perform the following steps to rack mount the switch:

- A. Position one bracket to align with the holes on one side of the switch and secure it

with the smaller bracket screws. Then attach the remaining bracket to the other side of the Switch.

- B. After attached both mounting brackets, position the 24 10/100TX plus 2 SFP/Copper managed POE switch in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure the switch to the rack with a screwdriver and the rack-mounting screws.

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**[Note]** For proper ventilation, allow about at least 4 inches (10 cm) of clearance on the front and 3.4 inches (8 cm) on the back of the Switch. This is especially important for enclosed rack installation.

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## Power On

Connect the power cord to the power socket on the rear panel of the Switch. The other side of power cord connects to the power outlet. The internal power supply of the Switch works with voltage range of AC in the 100-240VAC, frequency 50~60Hz. Check the power indicator on the front panel to see if power is properly supplied.

# Network Application

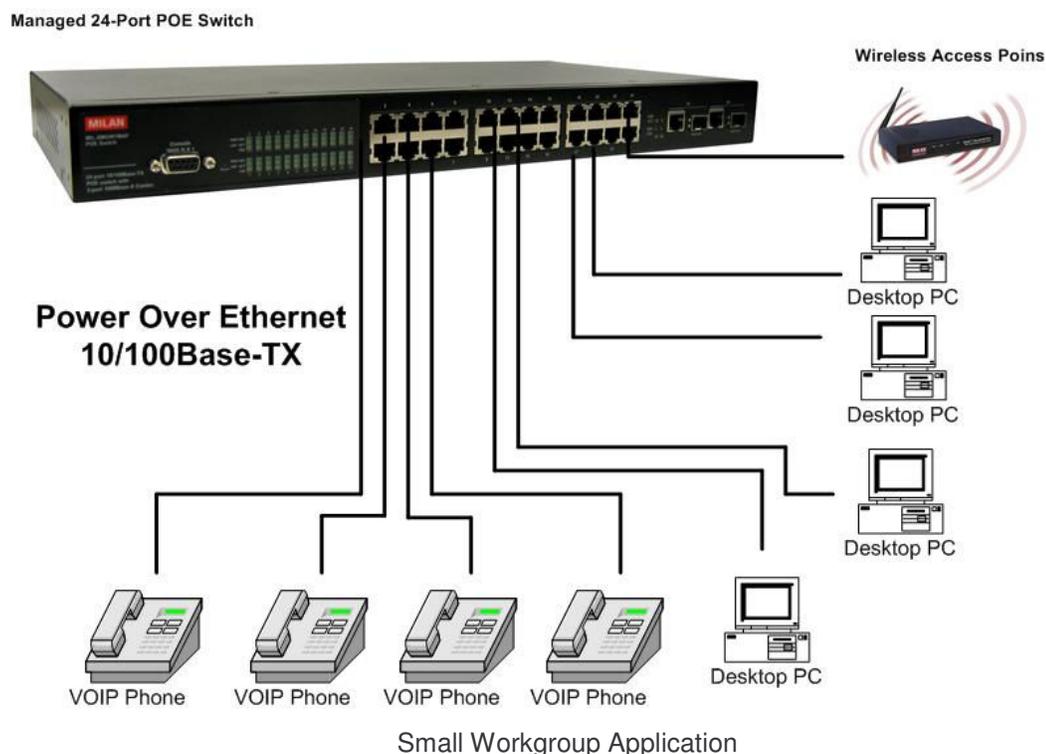
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PC, workstations, Wireless Access Points and Voice over IP Phones can communicate each other by directly connecting with 24 10/100TX plus 2 SFP/Copper managed POE switch.

By using Uplink port, the Switch can connect with another switch or hub to interconnect other small-switched workgroups to form a larger switched network. Meanwhile, you can also use fiber ports to connect switches. The distance between two switches via fiber cable can be up to 550 m (multi-mode fiber) or 10 kilometer (single-mode fiber).

## Small Workgroup

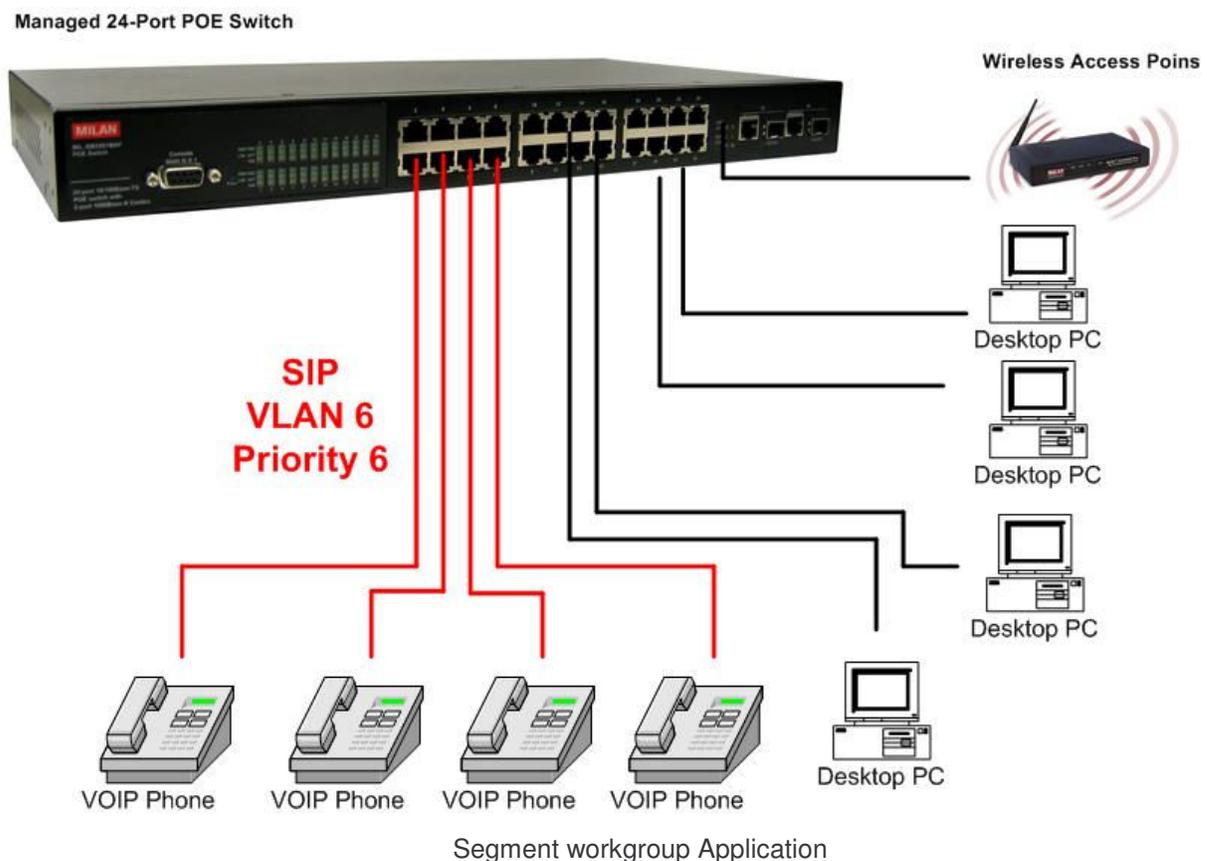
The 24 10/100TX plus 2 SFP/Copper managed POE switch can be used as a standalone switch to which personal computers, VOIP Phones and WAPs, are directly connected.



## Segment workgroup

For enterprise networks where large data broadcasts are constantly processed, this switch is an ideal solution for multiple IP services running over the same network.

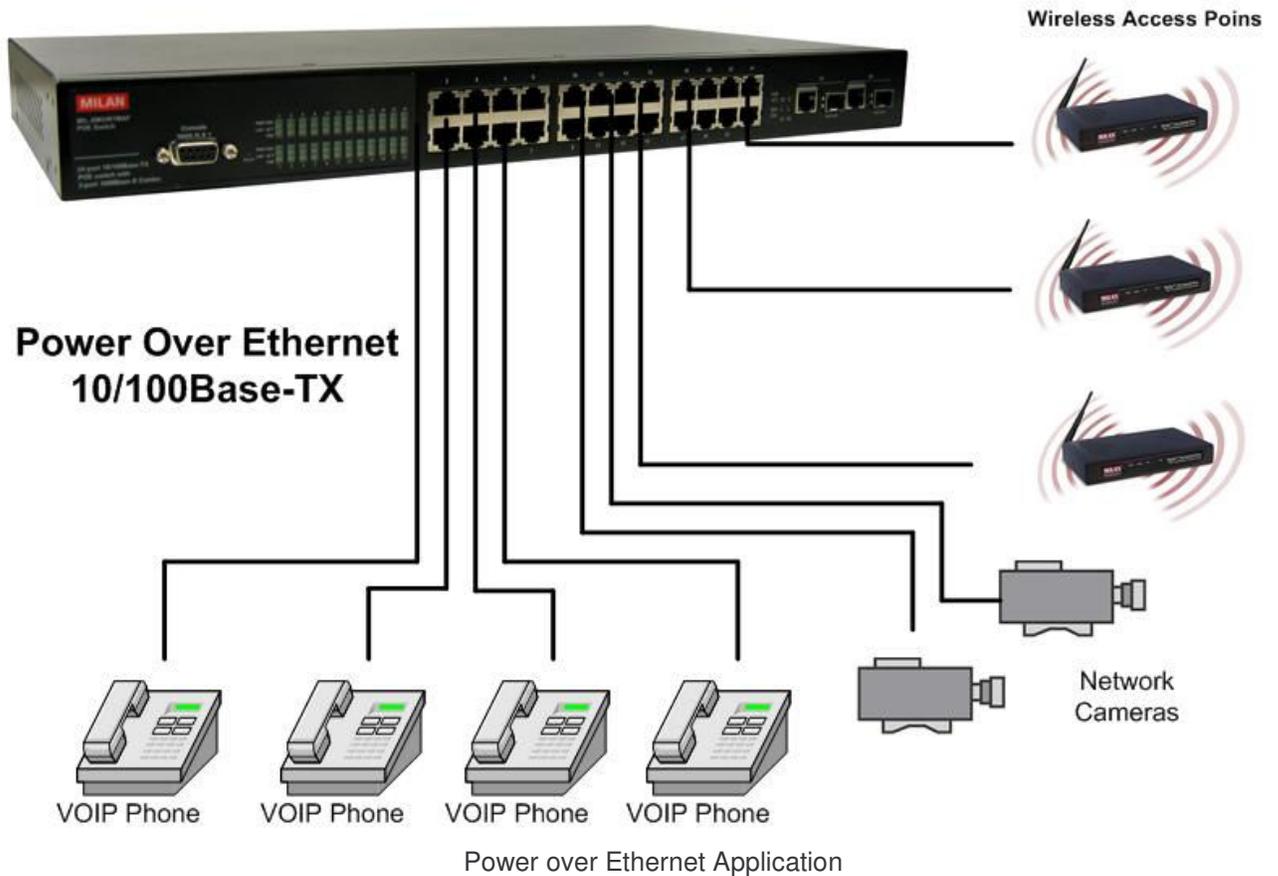
In the illustration below, you can now interconnect VOIP phones, PCs and WAPs, segment them and prioritize mission critical traffic.



## Power over Ethernet Application

The 24 10/100TX plus 2 SFP/Copper managed POE switch has POE injector function on each Ethernet port that can provide the power to the PD device, such as AP or switch. It can solve the problem of the PD device position limitation for power supply. The following figure is an example of network application for Power over Ethernet application.

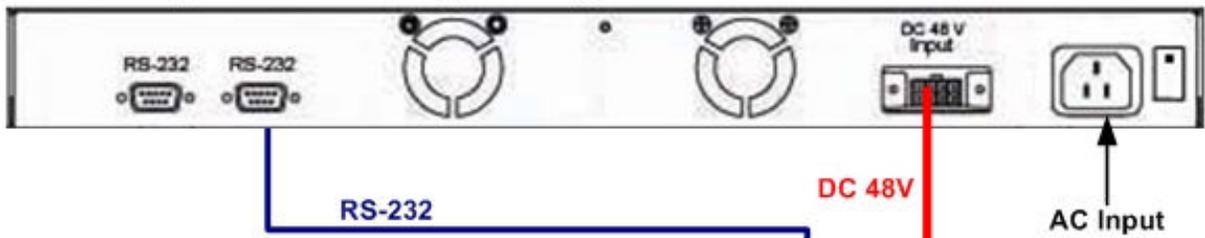
## Managed 24-Port POE Switch



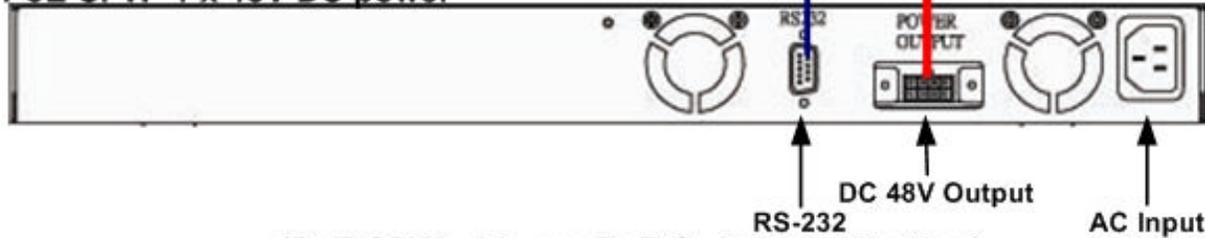
## DC Power Input

The 24 10/100TX plus 2 SFP/Copper managed POE switch provides a DC 48V power input for the extra power supply connection. The DC 48V power input can be used as a power backup when the AC power is down or no AC power provided in the network environment. The AC power and the DC 48V power can be connected at the same time, but the switch will use the DC 48V as the master power input and the AC power as the secondary or backup power input. The following figures are example of the application. In the figure, the DC 48V power input connects with the power supply device and through the RS-232 connection to manage the connected power supply device.

24 10/100TX plus 2 MINIGBIC/Copper managed POE switch

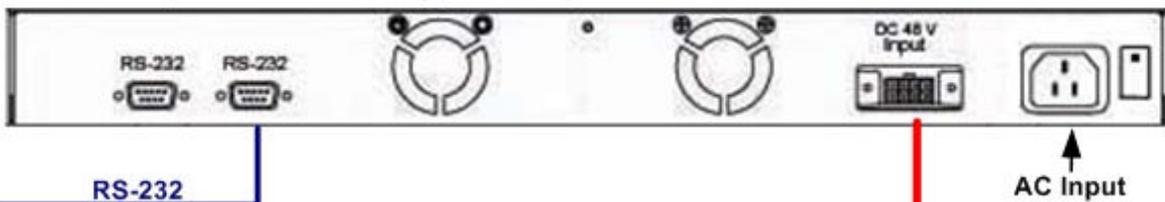


PoE-SPW 1 x 48V DC power

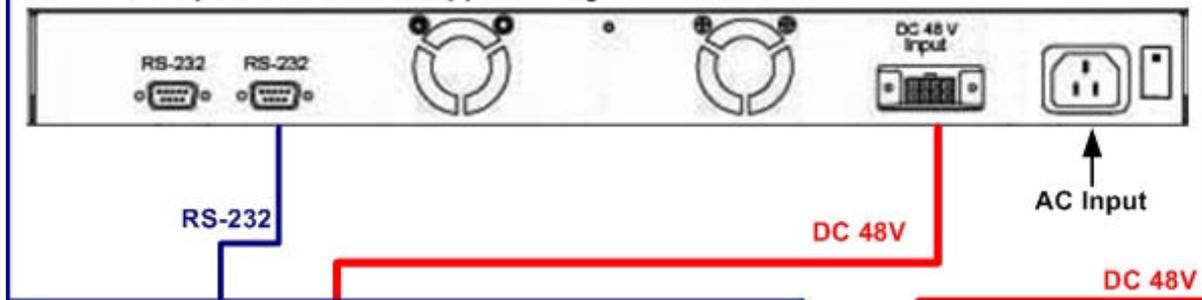


(PoE-SPW with one PoE-Switch application)

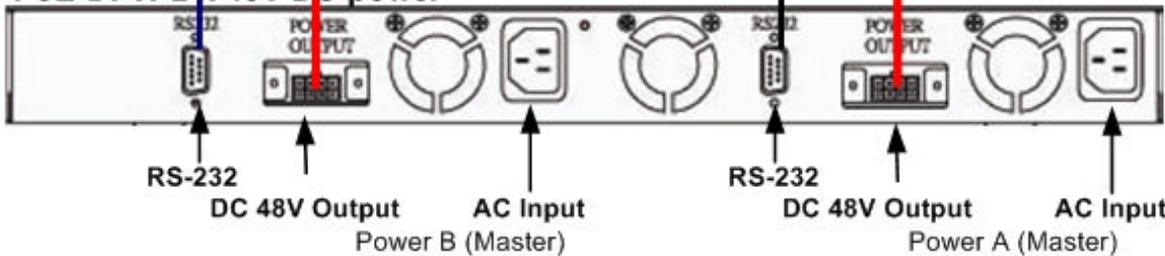
24 10/100TX plus 2 MINIGBIC/Copper managed POE switch



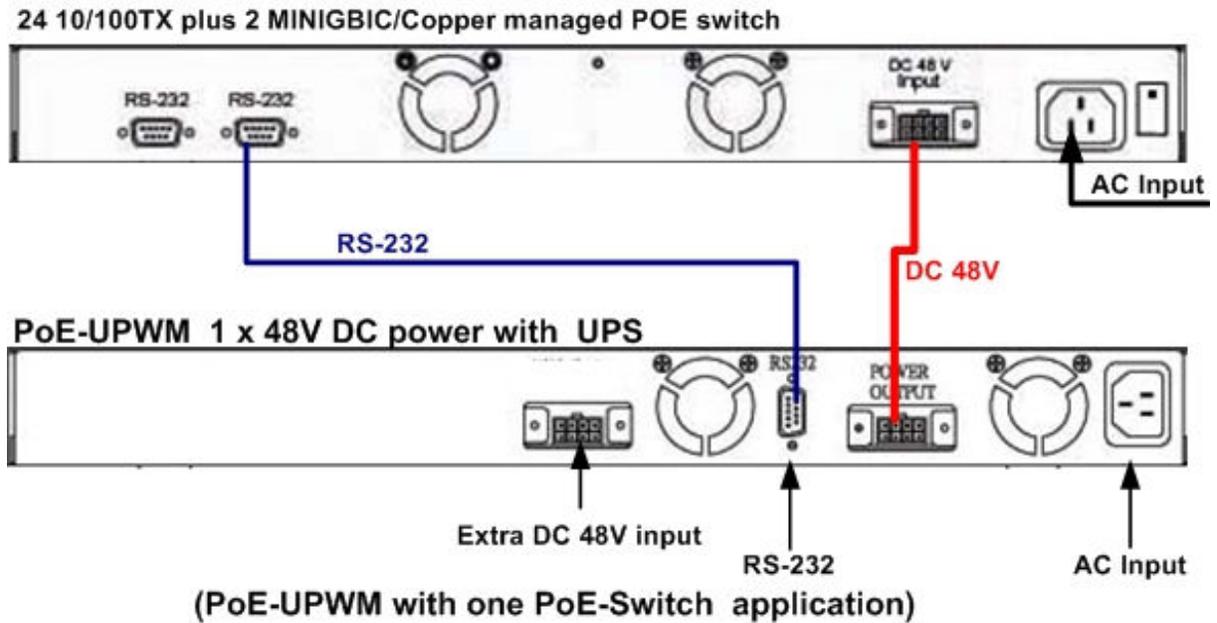
24 10/100TX plus 2 MINIGBIC/Copper managed POE switch



PoE-DPW 2 x 48V DC power

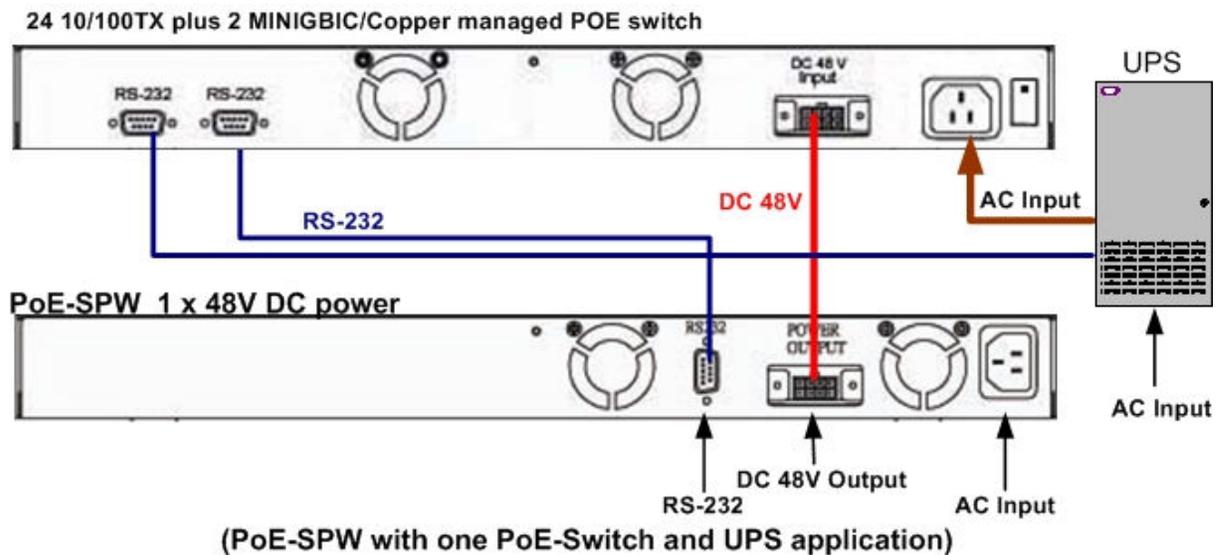


(PoE Switch with 2 DC 48 Power supply application)



## Power Redundant

The 24 10/100TX plus one Exp. slot managed POE Switch can connect with UPS to prevent the power failure.



## Power Redundant Application

# Console Management

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## Connecting to the Switch

The console port is a female DB-9 connector that enables a connection to a PC or terminal for monitoring and configuring the Switch. Use the supplied RS-232 cable with a male DB-9 connector to connect a terminal or PC to the Console port. The Console configuration (out of band) allows you to set switch for remote terminal as if the console terminal were directly connected to it.

## Login in the Console Interface

When the connection between Switch and PC is ready, turn on the PC and run a terminal emulation program or **Hyper Terminal** and configure its **communication parameters** to match the following default characteristics of the console port:

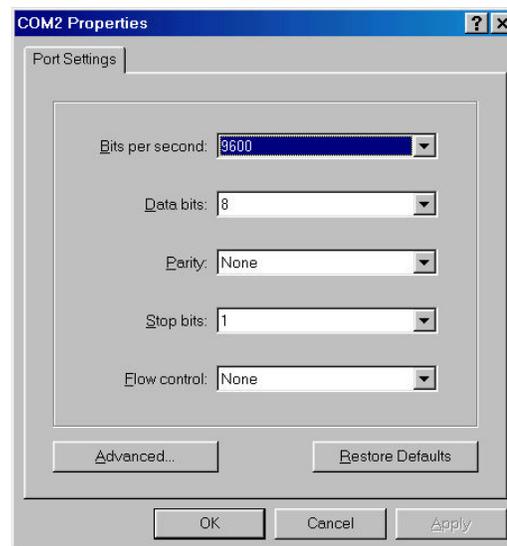
**Baud Rate: 9600 bps**

**Data Bits: 8**

**Parity: none**

**Stop Bit: 1**

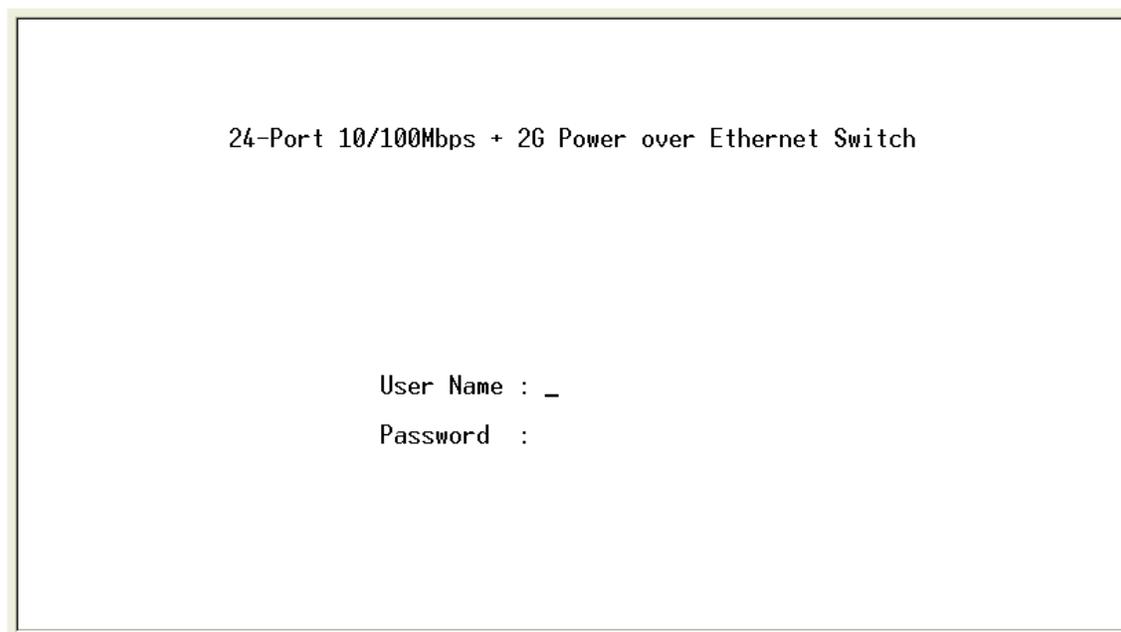
**Flow control: None**



The settings of communication parameters

After finished the parameter settings, click “**OK**”. When the blank screen shows up, press

**Enter** key to bring out the login prompt. Key in the “**root**“(default value) for the both User name and Password (use **Enter** key to switch), then press **Enter** key and the Main Menu of console management appears. Please see below figure for login screen.



Console login screen

## CLI Management

The system supports two types of console management – CLI command and Menu selection. After you login to the system, you will see a command prompt. To enter CLI management interface, enter “**enable**” command. The following tables list the CLI commands and description.

### Commands Level

Modes	Access Method	Prompt	Exit Method	About This Mode
User EXEC	Begin a session with	switch>	Enter logout or quit.	The user commands available at the user

	your switch.			level are a subset of those available at the privileged level. Use this mode to <ul style="list-style-type: none"> <li>• Perform basic tests.</li> <li>• Display system information.</li> </ul>
<b>Privileged EXEC</b>	Enter the enable command while in user EXEC mode.	switch#	Enter disable to exit.	The privileged command is advance mode Privileged this mode to <ul style="list-style-type: none"> <li>• Display advance function status</li> <li>• Save configures</li> </ul>
<b>Global Configuration</b>	Enter the configure command while in privileged EXEC mode.	switch (config)#	To exit to privileged EXEC mode, enter exit or end	Use this mode to configure parameters that apply to your switch as a whole.
<b>VLAN database</b>	Enter the vlan database command while in privileged EXEC mode.	switch (vlan)#	To exit to user EXEC mode, enter exit.	Use this mode to configure VLAN-specific parameters.

<b>Interface configuration</b>	Enter the interface command (with a specific interface) while in global configuration mode	switch (config-if)#	To exit to global configuration mode, enter exit. To exist to privileged EXEC mode, or end.	Use this mode to configure parameters for the switch and Ethernet ports.
<b>UPS</b>	Enter the <b>ups</b> command while in privileged EXEC mode.	switch(ups)#	To exit to privileged EXEC mode, enter <b>exit</b>	Use this mode to UPS parameters for the switch.
<b>POE</b>	Enter the <b>poe</b> command while in privileged EXEC mode.	switch(poe)#	To exit to privileged EXEC mode, enter <b>exit</b>	Use this mode to POE parameters for the switch.

## Commands Set List

### ■ System Commands Set

Commands	Command Level	Description	Defaults	Example
<b>system name [word]</b>	Global configuration mode	Set switch system name string		Switch (config)# <b>system name</b> xxx

<b>system location</b> [word]	Global configuration mode	Set switch system location string		Switch (config)# <b>system location</b> xxx
<b>system description</b> [word]	Global configuration mode	Set switch system description string		Switch (config)# <b>system description</b> xxx
<b>system contact</b> [word]	Global configuration mode	Set switch system contact window string		Switch (config)# <b>system contact</b> xxx
<b>ip address</b> [IP-address] [subnet-mask] ] [ gateway]	Global configuration mode	Use the ip address interface configuration command to set an IP address for a switch. Use the no form of this command to remove an IP address or to disable IP processing.		Switch (config)# <b>ip address</b> 192.168.1.1 255.255.255.0 192.168.1.254
<b>write</b> [memory terminal]	Privileged EXEC	The “write memory” is save configuration and the “write terminal” is show all configuration.		Switch# <b>write memeory</b> Update NVRAM to Flash Complete  Switch# <b>write terminal</b>
<b>reload</b>	Global configuration mode	Halt and perform a cold restart		Switch (config)# <b>reload</b>

<b>default</b>	Global configuration mode	Restore to default		Switch (config)# <b>default</b>
<b>username [word]</b>	Global configuration mode	Changes a login username. (maximum 10 words)		Switch (config)# <b>username</b> xxxxxx
<b>password [word]</b>	Global configuration mode	Specifies a password (maximum 10 words)		Switch (config)# <b>password</b> xxxxxx
<b>show accounting</b>	Privileged EXEC	Show username & password		Switch# <b>show accounting</b> Username: root Password: root
<b>show system-info</b>	User EXEC	Show system information		Switch> <b>show system-info</b> Name: switch1 location: lab Description: layer2 switch Contact: somewhere Serial NO: 1.00

<b>show ip</b>	Privileged EXEC	Show IP information	Switch# <b>show ip address</b> ip: 192.168.1.1 Address subnet: 255.255.255.0 Address gateway: 192.168.1.254
<b>show version</b>	User EXEC	Use the show version user EXEC command to display version information for the hardware and firmware.	Switch> <b>show version</b> Firmware version: 1.0 Hardware version: 3.0 Kernel version: 1.10

## ■ Port Commands Set

Commands	Command Level	Description	Defaults	Example
<b>interface [FastEthernet /module Ethernet] [slot id] [id]</b>	Interface configuration mode	Use the fast Ethernet interface configuration command		Switch (config)# <b>interface fastEthernet 0/1</b>
		Use the module Ethernet interface configuration command		Switch (config)# <b>interface moduleEthernet 1/1</b>

<b>duplex [full   half  auto]</b>	Interface configuration mode	Use the duplex configuration command to specify the duplex mode of operation for Fast Ethernet.	Auto	Switch (config)# <b>interface fastEthernet 0/1</b> Switch (config-if)# <b>duplex full</b>
		Use the duplex configuration command to specify the duplex mode of operation for module Ethernet.	Auto	Switch (config)# <b>interface moduleEthernet 1/1</b> Switch (config-if)# <b>duplex full</b>
<b>speed [10   100   auto]</b>	Interface configuration mode	Use the speed configuration command to specify the speed mode of operation for Fast Ethernet.	Auto	Switch (config)# <b>interface fastEthernet 0/1</b> Switch (config-if)# <b>speed 10</b>
<b>speed [10  100   1000   auto]</b>	Interface configuration mode	Use the speed configuration command to specify the speed mode of operation for module Ethernet. ■ The 100Base-FX module only supported for speed 100		Switch (config)# <b>interface fastEthernet 1/2</b> Switch (config-if)# <b>speed 1000</b>

		<ul style="list-style-type: none"> <li>■ The 1000Base-FX module only supported for speed 1000 &amp; auto</li> </ul>		
<b>flowcontrol on or no flowcontrol</b>	Interface configuration mode	<p>Use the flow control configuration command on Ethernet ports to control traffic rates during congestion.</p> <p>Use the no form of this command to disable security on the port.</p>	On	<pre>Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b> Switch (config-if)# <b>flowcontrol on</b></pre>
<b>security on or no security</b>	Interface configuration mode	<p>Use the security configuration command on Ethernet ports.</p> <p>Use the no form of this command to disable security on the port.</p>	Disable	<pre>Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b> Switch (config-if)# <b>security on</b></pre>
<b>priority on [high   low] or no priority</b>	Interface configuration mode	<p>Use the priority configuration command on Ethernet ports.</p> <p>Use the no form of this command to disable security on the port.</p>	Disable	<pre>Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b> Switch (config-if)# <b>priority on high</b></pre>

<p><b>Bandwidth [in   out] [value]</b></p>	<p>Interface configuration mode</p>	<p>Set bandwidth in or out rate. The value range is (0~999), and zero of the value is disable (The module can't be setting)</p>	<p>Disable</p>	<p>Switch (config)# <b>interface fastEthernet 0/1</b> Switch (config-if)# <b>bandwidth in 50</b></p>
<p><b>State [Enable   Disable]</b></p>	<p>Interface configuration mode</p>	<p>Use the state interface configuration command to specify the state mode of operation for Ethernet ports. Use the disable form of this command to disable the port.</p>	<p>Enable</p>	<p>Switch (config)# <b>interface fastEthernet 0/1</b> Switch (config-if)# <b>state disable</b></p>
<p><b>show interface configuration</b></p>	<p>Interface configuration mode</p>	<p>show interface configuration status</p>		<p>Switch (config)# <b>interface fastEthernet 0/1</b> Switch (config-if)# <b>show interface configuration</b></p>

<b>show interface status</b>	Interface configuration mode	show interface actual status		Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b> Switch (config-if)# <b>show interface status</b>
<b>show interface accounting</b>	Interface configuration mode	show interface statistic counter		Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b> Switch (config-if)# <b>show interface accounting</b>
<b>show bandwidth</b>	Interface configuration mode	Display the bandwidth of the values		Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b> Switch (config-if)# <b>show bandwidth</b>
<b>interface [FastEthernet /module Ethernet] [slot id] [id]</b>	Interface configuration mode	Use the fast Ethernet interface configuration command		Switch (config)# <b>interface</b> <b>fastEthernet 0/1</b>

## ■ Trunk Commands Set

Commands	Command Level	Description	Defaults	Example
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<p><b>show group</b> <b>[group-ID]</b></p>	<p>Privileged EXEC mode</p>	<p>Display trunk group information. If there is no group-number in put, display all trunk groups.</p>		<p>Switch # <b>show group 1</b> Group Trunk.1: Ports: 02 03 04 Priority: 0001 Lacp: Enable Work ports: 0</p>
<p><b>port group</b> <b>[group-ID]</b> <b>[port-list] lacp</b> <b>[on   off] workp</b> <b>[work ports]</b></p> <p><b>no port group</b> <b>[group-ID] lacp</b> <b>[on   off] workp</b> <b>[work ports]</b></p>	<p>Global configuration mode</p>	<p>Add trunking group. Use the no form of this command to delete trunking group.</p>	<p>Disable</p>	<p>LACP: Switch (config)# <b>port group 1 1-4 lacp on workp 2</b></p> <p>Trunk without LACP: Switch (config)# <b>port group 1 1-4 lacp off workp 4</b></p>
<p><b>port group</b> <b>[group-ID]</b> <b>activityport</b> <b>[port ID]</b></p>	<p>Global configuration mode</p>	<p>Set trunking group port active</p>		<p>Switch (config)# <b>port group 3 activityport 2-4</b></p> <p>Trunk.1 Lacp: Enable Check OK! NEW: 2 4 Update finished!!</p>

## ■ VLAN Commands Set

Commands	Command Level	Description	Defaults	Example
<b>Vlan database</b>	Privileged EXEC mode	To enter the VLAN configuration interface		Switch# <b>vlan database</b> Switch(vlan)#
<b>vlanmode</b> [disable] portbase  802.1q   gvrp]	VLAN database mode	To set switch VLAN mode .Use the no form of this command to restore to default.	Disable	Switch (vlan)# <b>vlanmode 802.1q</b>
Port Base VLAN				
<b>vlan [Group Name] grp-id</b> [Group ID] port [Port ID]	VLAN database mode	Add new Port Base VLAN		Switch (vlan)# <b>vlan v2 grp-id 2 port 1-4</b>
<b>no vlan [Group Name] [Group ID]</b>	VLAN database mode	Delete port base VLAN group		Switch (vlan)# <b>no vlan v2 2</b>
<b>show vlan</b> [Group Name] [Group ID] or show vlan	VLAN database mode	Show VLAN of Group Name or Group ID information		Switch (vlan)# <b>Show vlan v2 2</b>
<b>vlan [Group name] add</b> [port ID]	VLAN database mode	Set the port of some port group		Switch (vlan)# <b>vlan v2 add 5</b>

<b>vlan [Group name] delete [port ID]</b>	VLAN database mode	Remove the port from it's port group.		Switch (vlan)# <b>vlan v2 delete 5</b>
<b>802.1Q   802.1Q with GVRP VLAN mode</b>				
<b>vlan [Group name] vlanid [group ID] port [port ID] tag [port ID]</b>	VLAN database mode	Add new 802.1Q VLAN [group name]: VLAN name [group ID]: 2 ~ 4094 [port ID]: port members 1~9		Switch(vlan)# <b>vlan v2 vlanid 2 port 1-4 tag 2-4</b>
<b>vlan [group name] add [port ID] [tagged   untagged]</b>	VLAN database mode	Set the port of some port group tagged or untagged		Switch(vlan)# <b>vlan v2 add 5-8 tagged</b> or <b>vlan v2 add 5-8 untagged</b>
<b>vlan [group name] delete [port ID]</b>	VLAN database mode	Remove the port from its port group.		Switch(vlan)# <b>vlan v2 delete 5</b>
<b>no vlan [Group name] or [group ID]</b>	VLAN database mode	Delete 802.1Q VLAN group		Switch (vlan)# <b>no vlan v2</b> Switch (vlan)# <b>no vlan v2 2</b>
<b>vlan protocol [group name] [protocol value]</b>	VLAN database mode	Add protocol vlan [group name]: vlan group name		Switch(vlan)# <b>vlan protocol v3 ip vlanid 2 port 5-8 tag 6,8</b>

<b>vlanid [group ID] port [port ID] tag [port ID]</b>		IP-ip ARP-arp Appletalk-app Appletalk_AARP-arp p_arp Novell_IPX-ipx Banyan_vines-banyan_c4 Banyan_vines-banyan_c5 Banyan_vines-banyan_ad Decent_mop_01-decent_01 Decent_mop_02-decent_02 Decent_dpr-decent_dpr Decent_LAT-decent_lat Decent_LAVC-decent_lavc IBM SNA-ibm X.75 internet-x75 X.25 Layer3-x25  [VLAN ID]: 2 ~ 4094 [port ID]: port ID 1~10		Switch(vlan)# <b>vlan protocol v3 arp</b> <b>vlanid 2 port 5-8 tag 6,8</b>  Switch(vlan)# <b>vlan protocol v3 banyan</b> <b>vlanid 2 port 5-8 tag 6,8</b>
<b>vlanidrange [VLAN ID]</b>	VLAN database	Set VLAN ID range [1~255] range 0		Switch (vlan)# <b>vlanidrange 2</b>

<b>range]</b>	mode	[256~511] range 1 [512~767] range 2 [768~1023] range 3 [1024~1279] range 4 [1280~1535] range 5 [1536~1791] range 6 [1792~2047] range 7 [2048~2303] range 8 [2304~2559] range 9 [2560~2815] range 10 [2816~3071] range 11 [3072~3327] range 12 [3328~3583] range 13 [3584~3839] range 14 [3840~4094] range 15		OLD: 0 NEW: 2
<b>VLAN protocol</b> <b>[Group name]</b> <b>add [port ID]</b> <b>[tagged  </b>	VLAN database mode	Set the port of some port group tagged or untagged		Switch (vlan)# <b><i>vlan  protocol v2 add 5  tagged</i></b>

<b>untagged]</b>				
<b>VLAN protocol [Group name] delete [port ID]</b>	VLAN database mode	Remove the port from its port group.		Switch (vlan)# <b><i>vlan protocol v2 delete 5</i></b>
<b>show vlan [Group name] [Group ID] or show vlan</b>	VLAN database mode	Show VLAN of Group Name or VLAN ID information vlanid: 1 ~ 4094		Switch (vlan)# <b><i>show vlan v2 2</i></b>
<b>show vlan protocol</b>	VLAN database mode	show protocol vlan Protocol ip ipx netbios		Switch (vlan)# <b><i>show vlan protocol</i></b>
<b>port [port ID] pvid [port VID] ingressfilter1 [on   off] ingressfilter2 [on   off]</b>	VLAN database mode	Set Port PVID and Ingress Filter Rules1 & Ingress Filter Rules2		Switch (vlan)# <b><i>port 2 pvid 2 ingressfilter1 off ingressfilter2 on</i></b>

<b>show port [port ID]</b>	VLAN database mode	show Port PVID and Ingress Filter Rules1 & Ingress Filter Rules2	Switch (vlan)# <b>show port 2</b> Port ID: 2 Port Vid: 2 Ingress 1 Filter: Disable Ingress 2 Filter: Enable
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■ **Spanning Tree Commands Set**

Commands	Command Level	Description	Defaults	Example
<b>show spanning-tree</b>	User EXEC mode	Display a summary of the spanning-tree states.		Switch> <b>show spanning-tree</b> System: Priority: 32768 Max Age: 20 Hello Time: 2 Forward Delay: 15 Priority: 32768 Mac Address: 004063800030 Root_Path_Cost: 0 Root Port: we are root Max Age: 20 Hello Time: 2 Forward Delay: 15

<p><b>spanning-tree [on / off]</b></p> <p>or</p> <p><b>no spanning-tree</b></p>	<p>Global configuration mode</p>	<p>Use the spanning-tree global configuration command to enable Spanning Tree Protocol (STP). Use the no form of the command to restore to default</p>	<p>Disable</p>	<p>Switch (config)# <b>spanning-tree on</b></p> <p>or</p> <p>Switch (config)# <b>no spanning-tree</b></p>
<p><b>spanning-tree priority [number]</b></p>	<p>Global configuration mode</p>	<p>Use the spanning-tree max-age global configuration command to change the priority.</p> <p>Use the no form of this command to return to the default interval.</p>	<p>32768</p>	<p>Switch (config)# <b>spanning-tree priority 32767</b></p>
<p><b>spanning-tree max-age [seconds]</b></p>	<p>Global configuration mode</p>	<p>Use the spanning-tree max-age global configuration command to change the interval between messages the spanning tree receives from the root switch. If a</p>	<p>20 sec</p>	<p>Switch (config)# <b>spanning-tree max-age 15</b></p>

		switch does not receive a bridge protocol data unit (BPDU) message from the root switch within this interval, it recomputes the Spanning Tree Protocol (STP) topology. Use the no form of this command to return to the default interval.		
<b>spanning-tree hello-time [seconds]</b>	Global configuration mode	Use the spanning-tree hello-time global configuration command to specify the interval between hello bridge protocol data units (BPDUs). Use the no form of this command to return to the default interval.	2 sec.	Switch (config)# <b><i>spanning-tree hello-time 3</i></b>

<p><b>stp-path-cost</b> <b>[number]</b></p>	<p>Interface configuration mode</p>	<p>Use the spanning-tree cost interface configuration command to set the path cost for Spanning Tree Protocol (STP) calculations. In the event of a loop, spanning tree considers the path cost when selecting an interface to place into the forwarding state. Use the no form of this command to return to the default value.</p>	<p>10 Mbps – 100</p> <p>100 Mbps – 10</p>	<p>Switch (config)# <b>interface</b> <b>fastEthernet 0/2</b></p> <p>Switch (config-if)# <b>stp-path-cost 20</b></p>
<p><b>spanning-tree forward-time</b> <b>[seconds]</b></p>	<p>Global configuration mode</p>	<p>Use the spanning-tree forward-time global configuration command to set the forwarding-time for the specified spanning-tree instances. The forwarding time determines how</p>	<p>15 sec.</p>	<p>Switch (config)# <b>spanning-tree forward-time 20</b></p>

		long each of the listening and learning states last before the port begins forwarding. Use the no form of this command to return to the default value.		
<b>stp-path-priority [number]</b>	Interface configuration mode	Use the spanning-tree port-priority interface configuration command to configure a port priority that is used when two switches tie for position as the root switch. Use the no form of this command to return to the default value.	128	Switch (config)# <b>interface fastEthernet 0/2</b> Switch (config-if)# <b>stp-path-priority 127</b>

■ QOS Commands Set

Commands	Command Level	Description	Defaults	Example
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<b>qos storm-control [5 10 15 20 25 off (%)] or no storm-control</b>	Global configuration mode	Enable/Disable broadcast storm control. Use the no form of this command to restore to default.	OFF	Switch (config)# <b>qos storm-control 5</b>
<b>qos low-priority-delay-bound [on off] [sec.] or no qos low-priority-delay-bound</b>	Global configuration mode	Enable/Disable low priority delay board. Use the no form of this command to restore to default.	OFF	Switch (config)# <b>qos low-priority-delay-bound on 1</b>
<b>qos level [priority]</b>	Global configuration mode	[Priority] 0~7	0~3 LOW 4~7 HI	Switch (config)# <b>qos level 2,3</b>
<b>no qos level [priority]</b>	Global configuration mode	[Priority] 0~7	0~3 LOW 4~7 HI	Switch (config)# <b>no qos level 0-7</b>

<p><b>qos queuepolicy [Policy] hi [number] low [number]</b></p>	<p>Global configuration mode</p>	<p>[Policy]:fcfs: first in and first out wrr: weight round robin ahbl: all high before low. [Priority] Hi:1~7 Low:1</p>	<p>WRR Hi 2 Low 1</p>	<p>WRR: Switch (config)# <b>qos queuepolicy wrr hi 7 low 1</b></p> <p>First Come First Served: Switch (config)# <b>qos queuepolicy fcfs</b></p> <p>All High before Low: Switch (config)# <b>qos queuepolicy ahbl</b></p>
<p><b>qos bridge-delay-bound [sec.] no qos bridge-delay-bound</b></p>	<p>Global configuration mode</p>	<p>Set qos bridge delay bound Use the no form of this command to restore to default.</p>	<p>OFF</p>	<p>Switch (config)# <b>qos bridge-delay-bound 1</b></p>
<p><b>show qos storm-control</b></p>	<p>Global configuration mode</p>	<p>Show broadcast storm control.</p>		<p>Switch (config)# <b>show qos storm-control</b> QOS storm control mode: ENABLE</p>

<b>show qos policy</b>	Global configuration mode	Show qos policy		Switch (config)# <b>show qos policy</b> Qos Mode: WRR
<b>show qos low-priority-delay-bound</b>	Global configuration mode	Show low priority delay board.		Switch (config)# <b>show qos low-priority-delay-bound</b> Qos low priority delay bound: 1
<b>show qos bridge-delay-bound</b>	Global configuration mode	Show bridge delay bound		Switch (config)# <b>show qos bridge-delay-bound</b> bridge-delay-bound 5

## ■ IGMP Commands Set

Commands	Command Level	Description	Defaults	Example
<b>igmp [on   off]</b>	Global configuration mode	Enable /Disable IGMP snooping function	Off	Switch (config)# <b>igmp on</b>
<b>igmp-query [auto  enable   disable]</b>	Global configuration mode	Modify IGMP query mode	Disable	Switch (config)# <b>igmp-query enable</b>
<b>show ip igmp profile</b>	Privileged EXEC mode	Displays the details of an IGMP profile entry.		Switch# show ip <b>igmp profile</b>

				<b>IP</b> VID Port 224.1.1.1 10 1,2,6
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■ **Mac / Filter Table Commands Set**

Commands	Command Level	Description	Defaults	Example
<b>mac-address-table aging-time [on   off]</b>  <b>mac-address-table aging-time [sec.]</b> or no <b>mac-address-table aging-time</b>	Global configuration mode	Use the mac-address-table aging-time global configuration command to set the length of time that a dynamic entry remains in the MAC address table after the entry is used or updated.  Use the no form of this command to use the default aging-time interval.  The aging time applies to all VLANs.	300 secs	Switch (config)# <b>mac-address-table aging-time on</b>  Switch (config)# <b>mac-address-table aging-time 333</b>  (Disable) Switch (config)# <b>mac-address-table aging-time off</b> Or Switch(config)# <b>no mac-address-table aging-time</b>

<b>mac-address-table table [static   filter] hwaddr [MAC address] vlanid [VLAN-ID]</b>	Interface configuration mode	Use the mac-address-table static to add static   filter addresses to the MAC address table. Use the no form of this command to remove static entries from the MAC address table.	N/A	Switch (config)# <b>interface fastEthernet 0/2</b> Switch (config-if)# <b>mac-address-table static hwaddr 004063112233 vlanid 10</b>
<b>no mac-address-table [static   filter] hwaddr [MAC address] vlanid [VLAN-ID]</b>	Interface configuration mode	Use the no mac-address-table privileged EXEC command to delete entries from the MAC address table.		Switch (config)# <b>interface fastEthernet 0/2</b> Switch (config-if)# no <b>mac-address-table static hwaddr 004063112233 vlanid 10</b>
<b>show mac-address-table [static   filter]</b>	Privileged EXEC mode	Use the show mac-address-table user EXEC command to display the MAC address table.		Switch # <b>show mac-address-table static</b>
<b>show mac-address-table aging-time</b>	Privileged EXEC mode	Use the show mac-address-table user EXEC command to display		Switch# <b>show mac-address-table aging-time</b> MAC Address

		the MAC address table.		aging-time: 300
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## ■ SNMP Commands Set

Commands	Command Level	Description	Defaults	Example
<b>snmp system-name [word]</b>	Global configuration mode	Set SNMP agent system name	N/A	Switch (config)# <b>snmp system-name</b> l2switch
<b>snmp system-location [word]</b>	Global configuration mode	Set SNMP agent system location	N/A	Switch (config)# <b>snmp system-location lab</b>
<b>snmp system-contact [word]</b>	Global configuration mode	Set SNMP agent system contact	N/A	Switch (config)# <b>snmp system-contact</b> where
<b>snmp community-strings [word] right [RO   RW]</b> Or <b>no snmp community-strings [word]</b>	Global configuration mode	Add SNMP community string. Use the no form of this command to remove the specified community.	PUBLIC RO	Switch (config)# <b>snmp community-strings public right RW</b>  Switch(config)# <b>no snmp community-strings public right rw</b>
<b>snmp-server host [IP-address] community [word]</b>	Global configuration mode	Configure SNMP server host information and community string	N/A	Switch(config)# <b>snmp-server host 192.168.1.50 community public</b>

<b>No snmp-server host [IP address] community [word]</b>				Switch(config)# <b>no snmp-server host 192.168.1.50 community public</b>
<b>snmp system-name [word]</b>	Global configuration mode	Set SNMP agent system name	N/A	Switch (config)# <b>snmp system-name I2switch</b>

#### ■ Port Mirroring Commands Set

Commands	Command Level	Description	Defaults	Example
<b>port monitor [RX TX both] [port ID]</b> Or <b>no port monitor</b>	Interface configuration mode	Use the port monitor interface configuration command to enable Switch Port Analyzer (SPAN) port monitoring on a port. Use the no form of this command to return the port to its default value.	N/A	Switch (config)# <b>Interface fastEthernet 0/8</b> Switch (config-if)# <b>port monitor both 3</b>

<p><b>show port monitor</b></p>	<p>Privileged EXEC mode</p>	<p>Use the show port monitor privileged EXEC command to display the ports for which Switched Port Analyzer (SPAN) port monitoring is enabled.</p>	<p>Switch # <b>show port monitor</b></p> <p>State: Enable</p> <p>AnalysisPortId: 8</p> <p>Port 01 TxRx: Monitor</p> <p>Port 02 TxRx:</p> <p>Port 03 TxRx:</p> <p>Port 04 TxRx:</p> <p>Port 05 TxRx:</p> <p>Port 06 TxRx:</p> <p>Port 07 TxRx:</p> <p>Port 08 TxRx: Analysis</p> <p>Port 09 TxRx:</p> <p>Port 10 TxRx:</p> <p>OK.</p>
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■ **802.1x Commands Set**

Commands	Command Level	Description	Defaults	Example
<p><b>show 8021x</b></p>	<p>User EXEC mode</p>	<p>Display a summary of the 802.1x properties and also the port sates.</p>	<p>N/A</p>	<p>Switch&gt; <b>show 8021x</b></p>
<p><b>8021x [on   off]</b> or <b>No 8021x</b></p>	<p>Global configuration mode</p>	<p>Use the 802.1x global configuration command to enable 802.1x protocols. Use the no form of the command to restore to default</p>	<p>Disable</p>	<p>Switch (config)# <b>8021x on</b></p>

<b>8021x system radiusip</b> <b>[IP address]</b> Or <b>no 8021x system radiusip</b>	Global configuration mode	Use the 802.1x system radius IP global configuration command to change the radius server IP.  Use the no form of this command to return to the default interval.	192.168.1.1 8.16.3	Switch (config)# <b>8021x system radiusip</b> 192.168.1.1  (Default) Switch(config)# <b>no 8021x system radiusip</b>
<b>8021x system sharekey</b> <b>[number]</b> Or <b>no 8021x system sharekey</b>	Global configuration mode	Use the 802.1x system sharekey global configuration command to change the shared key value.  Use the no form of this command to return to the default interval.	12345678	Switch (config)# <b>8021x system sharekey</b> 123456  (Default) Switch (config)# <b>no 8021x system sharekey</b>
<b>8021x system serverport</b> <b>[Port Number]</b>	Global configuration mode	set radius server port	1812	Switch (config)# <b>8021x system serverport</b> 1815
<b>8021x system accountport</b> <b>[Port Number]</b>	Global configuration mode	set accounting port	1813	Switch (config)# <b>8021x system accountport</b> 1816
<b>8021x system nasid</b> [word]	Global configuration mode	set NAS ID	NAS_L2_SWITC H	Switch (config)# <b>8021x system nasid</b> test1

<p><b>8021x misc quietperiod [sec.]</b> Or <b>no 8021x misc quietperiod</b></p>	<p>Global configuration mode</p>	<p>Use the 802.1x misc quiet period global configuration command to specify the quiet period value of the switch.</p> <p>Use the no form of this command to return to the default interval.</p>	<p>60 sec.</p>	<p>Switch (config)# <b>8021x misc quietperiod 10</b></p> <p>(Default)</p> <p>Switch(config)# <b>no 8021x misc quietperiod</b></p>
<p><b>8021x misc txperiod [sec.]</b> Or <b>no 8021x txperiod</b></p>	<p>Global configuration mode</p>	<p>Use the 802.1x misc TX period global configuration command to set the TX period.</p> <p>Use the no form of this command to return to the default value.</p>	<p>30 sec.</p>	<p>Switch (config)# <b>8021x misc txperiod 5</b></p> <p>(Default)</p> <p>Switch(config)# <b>no 8021x misc txperiod</b></p>
<p><b>8021x misc supptimeout [sec.]</b></p>	<p>Global configuration mode</p>	<p>Set the period of time the switch wait for a supplicant response to an EAP request.</p>	<p>30 sec.</p>	<p>Switch (config)# <b>8021x misc supptimeout 30</b></p>
<p><b>8021x misc servertimeout [sec.]</b></p>	<p>Global configuration mode</p>	<p>Set the period of time the switch wait for a server response to an authentication request.</p>	<p>30 sec.</p>	<p>Switch (config)# <b>8021x misc servertimeout 50</b></p>
<p><b>8021x misc maxrequest [Number]</b></p>	<p>Global configuration mode</p>	<p>Set the number of authentication that must time-out before</p>	<p>2</p>	<p>Switch (config)# <b>8021x misc maxrequest 2</b></p>

		authentication fails and the authentication session ends.		
<b>8021x misc reauthperiod [sec.]</b>	Global configuration mode	Set the period of time after which clients connected must be re-authenticated.	3600	Switch(config)# <b>8021x misc reauthperiod 20</b>
<b>8021x prostate [reject   accept   authorize   disable]</b>	Interface configuration mode	<p>Use the 802.1x port state interface configuration command to set the state of the selected port.</p> <ul style="list-style-type: none"> <li>■ <b>Reject:</b> the specified port is required to be held in the unauthorized state.</li> <li>■ <b>Accept:</b> the specified port is required to be held in the Authorized state.</li> <li>■ <b>Authorized:</b> the specified port is set to the Authorized or Unauthorized state in accordance with the outcome of an authentication exchange between the Supplicant and the</li> </ul>	N/A	Switch (config)# <b>interface fastethernet 0/3</b> Switch (config-if)# <b>8021x portstate accept</b>

		<p>authentication server.</p> <ul style="list-style-type: none"> <li> <b>Disable:</b> The specified port is required to be held in the Authorized state. </li> </ul>		
--	--	--	--	--

■ **TFTP Commands Set**

Commands	Command Level	Description	Defaults	Example
<b>copy</b> <b>flash:config.txt tftp [TFTP IP address] [file name]</b>	Global configuration mode	Backup configure file command		Switch (config)# <b>copy</b> <b>flash:config.txt</b> tftp Server IP:192.168.1.1 Image Filename:backup.dat
<b>tftp:config.txt</b> <b>flash</b> <b>[TFTP IP address] [file name]</b>	Global configuration mode	Restore configure file command		Switch(config)# <b>Tftp:config.txt</b> <b>flash</b> Server IP:192.168.1.1 Image Filename:restore.dat
<b>tftp:firmware</b> <b>flash</b> <b>[TFTP IP</b>	Global configuration mode	Update firmware command		Switch (config)# <b>Tftp:firmware</b> <b>flash</b>

address] [file name]				Server IP:192.168.1.1 Image Filename:image.bin
-------------------------	--	--	--	---

■ **UPS Commands Set**

Commands	Command Level	Description	Defaults	Example
<b>status</b>	UPS mode	Display a summary of the UPS status.		Switch (ups)# <b>status</b> Input Output Voltage.....
<b>Info</b>	UPS mode	Show UPS information		Switch (ups)# <b>info</b> Company Name :xxx Model :xxx Version :xxx
<b>Test 10</b>	UPS mode	UPS will perform the self-test for 10 seconds.		Switch (ups)# <b>test10</b> test OK

■ **POE Commands Set**

Commands	Command Level	Description	Defaults	Example
----------	---------------	-------------	----------	---------

<b>status</b>	POE mode	Show POE information		Switch(poe)# <b>status</b>
<b>setpm [on   off]</b>	POE mode	Enabling or disabling the power management.		Switch(poe)# <b>setpm on</b> Set Power Management Enable
<b>setlimit [value]</b>	POE mode	Enabling or disabling total power output limit. When is enabling, the total power output limit will follow the value that set in power limit max.		Switch(poe)# <b>setlimit 100</b>
<b>porteb1 [enable   disable] [ports]</b>	POE mode	Enabling or disabling the port POE injected function.		Switch(poe)# <b>porteb1 disable</b> <b>1-3</b>
<b>portcls [enable   disable] [ports]</b>	POE mode	Enabling or disabling per port power limit by classification.		Switch(poe)# <b>portcls enable</b> <b>1-3</b>
<b>portmng [enable   disable] [ports]</b>	POE mode	Enabling or disabling per port power limit by management.		Switch(poe)# <b>portmng enable</b> <b>2-5</b>

<b>portleg</b> [enable   disable] [ports]	POE mode	Enabling or disabling per port legacy detection.		Switch(poe)# <b>portleg enable</b> <b>3-6</b>
<b>portpri</b> [critical   high   low] [ports]	POE mode	Set port priority for the power supply management.		Switch(poe)# <b>portpri critical 2</b>
<b>portplm</b> [value] [ports]	POE mode	Set per port power limit Max.		Switch(poe)# <b>portplm 12200</b> <b>5-7</b>

■ **System log Commands Set**

Commands	Command Level	Description	Defaults	Example
<b>show systemlog</b>	User EXEC	Display system log.		Switch> <b>show systemlog</b>
<b>show systemlog</b>	Privileged EXEC	Show system log client & server information		switch# <b>show systemlog</b> Syslog Client: Enable Syslog Server Ip: 192.168.16.2
<b>systemlog ip</b> [IP address]	Global configuration mode	Set System log server IP address.		Switch(config)# <b>systemlog ip 192.168.1.100</b>
<b>systemlog</b> [enable   disable]	Global configuration mode	Enable or disable system log mode		Switch(config)# <b>systemlog enable</b>

## ■ SNTP Commands Set

Commands	Command Level	Description	Defaults	Example
<b>sntp [enable   disable]</b>	Global configuration mode	Enable/Disable SNTP.	Disable	Switch(config)# <b>sntp enable</b>  Switch(config)# <b>sntp disable</b>
<b>sntp ip [IP address]</b>	Global configuration mode	Set SNTP server IP address.		switch# <b>sntp ip 192.168.16.123</b>
<b>sntp timezone [value]</b>	Global configuration mode	Set time zone.		Switch(config)# <b>sntp timezone 8</b>

## Menu Management

After you login to the system, you will see a command prompt. To enter Menu management interface, enter “**menu**” command. You will see the main menu interface. The following configure steps are based on the software kernel version v1.01.

1. Provide a menu line interface to manage and monitor the switch. User can use windows Hyper Terminal program through the console port to connect the switch for configuration.
2. The default user name and password is “**root**”.

There are 8 selections as follow.

- **Status and Counters:** Show the status of the switch.
- **Switch Configuration:** Configure the switch.
- **Protocol Related Configuration:** Configure the protocol function.
- **System Reset Configuration:** Restart the system or reset switch to default configuration.
- **Power menu:** configure the UPS function.
- **POE menu:** configure the POE function.
- **Save Configuration:** save the current configuration into the system memory.
- **Logout:** Exit the menu line program.

```

Main Menu
=====

Status and Counters
Switch Configuration
Protocol Related Configuration
System Reset Configuration
Power Menu
POE Menu
Save Configuration
Logout

Show the status of the switch...
[TAB/BKSPC] Move Item      [Enter] Select Item

```

Main menu line interface

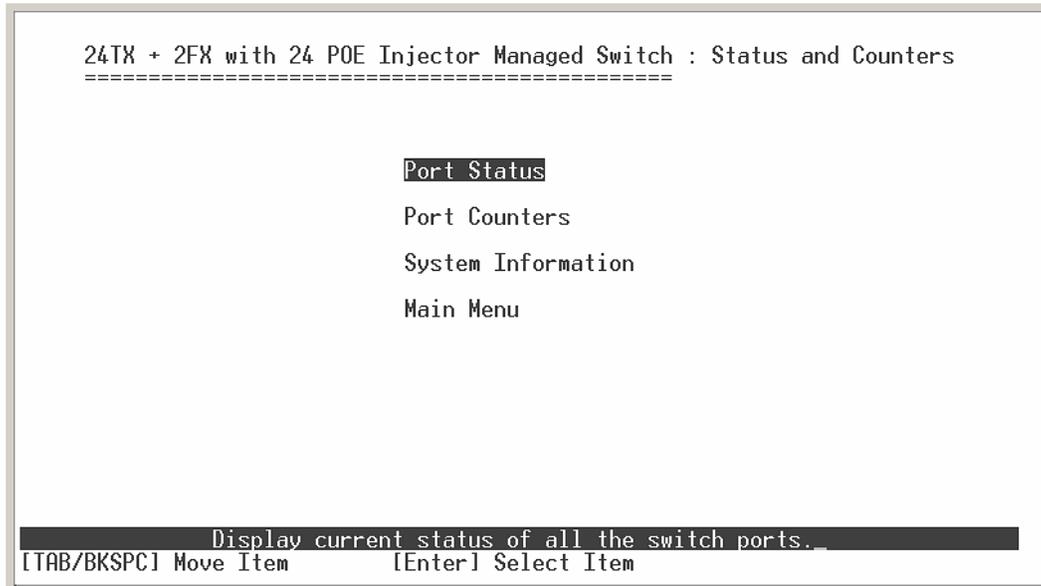
■ **Control Key description:**

The control keys provided in all menus:

- **Tab/Backspace:** Move the vernier to configure item.
- **Enter:** Select item.
- **Space:** Toggle selected item to next configure or change the value.
- **Esc:** to exit the current action mode.

## Status and Counters

In Status and Counters, you can view Port status, counters, and configure system parameter.



Status and Counters main configuration interface

### Port Status

It displays status of each port. Select the **<Previous Page>** action to display previous page. And, select the **<Next page>** action to display next page.

- **Type:** display port connection speed.
- **Link:** display port statuses link status. When the port is connecting with the device and work normally, the link status is “UP”. Opposite is “Down”.
- **State:** The port current status.
- **Negotiation:** display the auto negotiation status.
- **Speed Duplex:** display port duplex mode.
- **FC:** display the flow control status is “enable” or “disable”.

- **BP:** display backpressure status.
- **Bandwidth In/Out:** display bandwidth In/out control status.
- **Priority:** display the port priority status.
- **Security:** display the port security status.

```

24TX + 2FX with 24 POE Injector Managed Switch : Port Status
=====

```

Port	Type	Link	State	Negotiation	Speed	Duplex	FC	BP	Band	Width	Security	Priority
Port.01	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.02	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.03	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.04	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.05	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.06	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.07	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF
Port.08	100TX	Down	Enable	Auto	100	Full	ON	OFF	OFF	OFF	Disable	OFF

```

Actions->  <Previous Page>  <Next Page>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu  _

```

Port status interface

## Port Counters

It displays the current port counter information. Select the **<Refresh>** to get newest counter information. Select **<Clear>** to set all ports counter to 0. Select **<Next Page>** to go to next page. Select **<Previous Page>** to back to last page.

24TX + 2FX with 24 POE Injector Managed Switch : Port Counters							
Port	Type	Tx Good Packet	Tx Bad Packet	Rx Good Packet	Rx Bad Packet	Tx Abort Packet	Packet Collision
Port.01	100TX	0	0	0	0	0	0
Port.02	100TX	0	0	0	0	0	0
Port.03	100TX	0	0	0	0	0	0
Port.04	100TX	0	0	0	0	0	0
Port.05	100TX	0	0	0	0	0	0
Port.06	100TX	0	0	0	0	0	0
Port.07	100TX	0	0	0	0	0	0
Port.08	100TX	0	0	0	0	0	0

Actions-> <Refresh> <Clear> <Previous Page> <Next Page> <Quit>  
 Configure the action menu.  
 [TAB/BKSPC] Move Item [Enter] Select Item [Esc] Previous Menu

Port counter information interface

## System Information

- It displays the system parameter.
- **System Name:** the name of device.
- **System Location:** where the device is located.
- **System Description:** the name of device type.
- **Firmware Version:** the switch's firmware version.
- **Hardware Version:** the switch's Hardware version.
- **Kernel Version:** the system kernel software version.
- **MAC Address:** The unique hardware address assigned by manufacturer.
- **Module Information:** display information of installed module.

24TX + 2FX with 24 POE Injector Managed Switch : System Information  
=====

System Name :  
System Location :  
System Description : 24-Port 10/100Mbps + 2G PoE Switch

Firmware Version : v1.00  
Kernel Version : v17.03  
Hardware Version : A7.00  
MAC Address : 000024F20011

Module	Type	Description
Port 25	Auto	1000TX Copper/1000FX MiniGBIC
Port 26	Auto	1000TX Copper/1000FX MiniGBIC

Actions-> <Quit>

Display the switch system information.

[TAB/BKSPC] Move Item

[Enter] Select Item

[Esc] Previous Menu

System Information interface

## Switch Configuration

In Switch Configuration, it has 8 main functions – Administration, Port, Trunk, Port Mirroring, VLAN, Priority, MAC Address, and Misc Configuration. Under each function, there are more sub-functions. We will describe in following paragraph.

```
24TX + 2FX with 24 POE Injector Managed Switch : Switch Configuration
=====
Administration Configuration
Port Configuration
Trunk Configuration
Port Mirroring Configuration
VLAN Configuration
Priority Configuration
MAC Address Configuration
Misc Configuration
Main Menu
Configure the system, IP, and password.
[Tab/BKSPC] Move Item      [Enter] Select Item
```

Switch Configuration interface

## Administration Configuration

In Administration Configuration, you can configuration system parameter, IP, login username, password, and SNTP configuration.

```
24TX + 2FX with 24 POE Injector Managed Switch : Administration Configurati
on
=====
Device Information
IP Configuration
User Name Configuration
Password Configuration
SNTP Configuration
System Log Client Configuration
Previous Menu

Configure the device information.
[TAB/BKSPC] Move Item      [Enter] Select Item
```

Administration Configuration main interface

## Device Information

You can configure the device information.

1. Select **<Edit>** action to configure.
2. **Name:** assign the name for the switch.
3. **Description:** a short description for the switch.
4. **Location:** the switch location, ex: Taipei.
5. **Contact:** the contact person or information.
6. Select **<Apply>** action to apply the configuration.

```

24TX + 2FX with 24 POE Injector Managed Switch : Device Information
=====

Name      :
Description : 24-Port 10/100Mbps + 2G PoE Switch
Location  :
Contact   :

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item  [Enter] Select Item  [Esc] Previous Menu

```

Device Information interface

## IP Configuration

You can configure the IP for this switch. The system has the default IP address. You can re-configure or use the default value.

1. Select the **<Edit>**
2. **DHCP Client:** “**Enable**” is to get IP from DHCP server. “**Disable**” is opposite. The DHCP client function only works if you haven't assigned a static IP address that different than the switch default IP. Once the default IP has been changed the DHCP will not effective and the switch will continue using the manually entered static IP. If you have changed the switch to a static IP address, you can set the IP address back to its default IP address or you can reset the switch back to factory default. And then you can enable the DHCP client function to work.
3. **IP Address:** assign the switch IP address. The default IP is 192.168.1.77
4. **Subnet Mask:** assign the switch IP subnet mask.
5. **Gateway:** assign the switch gateway. The default value is 192.168.1.254
6. Select **<Apply>** action to apply the configuration.

---

[Note] Always restart the switch after finished the setup to apply the new IP setting.

```
24TX + 2FX with 24 POE Injector Managed Switch : IP Configuration
=====
DHCP Client : Disable
IP Address  : 192.168.16.1
Subnet Mask : 255.255.255.0
Gateway     : 192.168.16.254

Actions->  <Edit>  <Apply>  <Quit>
          Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

IP Configuration interface

## User Name Configuration

You can change the console and web management login user name.

1. Select the **<Edit>**
2. Enter the new user name
3. Select the **<Apply>**

```
24TX + 2FX with 24 POE Injector Managed Switch : User Name Configuration
=====

User Name : root

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

User Name Configuration interface

## Password Configuration

You can change the console and web management login password.

1. Select the **<Edit>**
2. **Old Password:** enter the old password.
3. **New Password:** enter the new password.
4. **Enter Again:** reenter the new password for confirmation.
5. Select the **<Apply>**

```
24TX + 2FX with 24 POE Injector Managed Switch : Password Configuration
=====

Old Password :
New Password :
Enter Again  :

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Password Configuration interface

## SNTP Configuration

You can configure the SNTP (Simple Network Time Protocol) settings. The SNTP allows you to synchronize switch clocks in the Internet.

- **SNTP Client:** enable or disable SNTP function to get the time from the SNTP server.
- **UTC Timezone:** set the switch location time zone.
- **Server IP:** set the SNTP server IP address.

```
24TX + 2FX with 24 POE Injector Managed Switch : SNTP Configuration
=====

SNTP Client : Disable
UTC Timezone: 0
Server IP   : 192.168.16.2

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

SNTP Configuration Interface

## System log Client Configuration

You can configure the switch as the system log client that can view the system log information that from the system log server that you have assigned.

1. Select **<Edit>**
2. **Client Mode:** enabling or disabling the system log client function. “**Enable**” can view the system log information from the assigned system log server.
3. **Server IP:** assigned the system log server IP.
4. Select **<Apply>** to apply the configuration.

```

24TX + 2FX with 24 POE Injector Managed Switch : System Log Client Configur
ation=====
Client Mode : Disable
Server IP   : 192.168.16.2

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

System log Client Configuration Interface

## Port Configuration

You can set up every port status.

1. Select **<Edit>**
2. Use “**Tab/Backspace**” key to move between items.
3. **Type:** display port connection speed.
4. **State:** Current port status. The port can be set to disable or enable mode. If the port setting is disable then will not receive or transmit any packet.
5. **Negotiation:** set auto negotiation function of port.
6. **Speed/Duplex:** set the port link speed and duplex mode.
7. **FC:** enable or disable **Flow control** function (Flow control for full duplex link mode).
8. **BP:** enable or disable **Back Pressure** function (Backpressure for half duplex mode).
9. **Bandwidth In/ Out:** per port packet transmission rate control. Per level is 100Kbps. It supports individual control method of TX and RX.
10. **Priority:** set packet of port to high or low priority queue.
11. **Security:** enable or disable port security function.
12. Select the **<Apply>**.

24TX + 2FX with 24 POE Injector Managed Switch : Port Configuration											
Port	Type	Negotiation		Speed		FC	BP	Band Width		Security	
		State	Auto	Duplex				In	Out	Priority	
Port.01	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.02	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.03	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.04	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.05	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.06	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.07	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF
Port.08	100TX	Enable	Auto	100	Full	ON	OFF	0	0	Disable	OFF

Actions->	<Edit>	<Apply>	<Previous Page>	<Next Page>	<Quit>
Select the Action menu.					
[TAB/BKSPC]	Move Item	[Enter]	Select Item	[Esc]	Previous Menu

Port Configuration interface

## Trunk Configuration

You can configure port trunk group.

1. Select **<Edit>**
2. Using “**Tab**” key move to the port that want to be added as trunk group.
3. Using “**Space**” key to mark the port.
4. Using **Tab** key move to **Trunk #** (ex. Trunk1, Trunk2...) to change the Trunk # value to **Static, LACP, or Disable**.
5. Apply the configuration by selecting **<Apply>**.



```

24TX + 2FX with 24 POE Injector Managed Switch : Port Mirroring
=====

Mirroring State : Disable

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

Port Mirroring interface

3. **Analysis port:** Set the destination port of mirroring packet. All of the packets of mirroring port will be duplicated and sent to Analysis port.
4. **Port State:** Select the ports that want to be mirrored.
5. Use “**Space**” key to mark the mirroring port can.
6. Select the **<Apply>**.

```

24TX + 2FX with 24 POE Injector Managed Switch : Port Mirroring
=====

Mirroring State : Both
Analysis Port : Port.04

Port State      Port State      Port State      Port State
-----
Port.04 -      Port.12 -      Port.20 -
Port.05 -      Port.13 -      Port.21 -
Port.06 -      Port.14 -      Port.22 -
Port.07 -      Port.15 -      Port.23 -
Port.08 -      Port.16 -      Port.24 -
Port.09 -      Port.17 -      Port.25 -
Port.10 -      Port.18 -      Port.26 -
Port.11 -      Port.19 -      Trunk.1 -

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Space] Toggle      [Esc] Previous Menu

```

Port Mirroring interface

## VLAN Configuration

You can configure VLAN group in VLAN Configuration. There are four functions in VLAN Configuration mode: VLAN Configuration, Create a VLAN Group, Edit/Delete VLAN Group and Group Sorted Mode. Follow the below description to configure VLAN.

```
24TX + 2FX with 24 POE Injector Managed Switch : VLAN Configuration
=====
                VLAN Configure
                Create VLAN Group
                Edit/Delete VLAN Group
                Group Sorted Mode
                Previous Menu

                Configure VLAN mode and ingress, egress rule.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

VLAN Configuration Main interface

## VLAN Configure

Before starting to configure VLAN, you must select the VLAN mode in VLAN Configure function. Otherwise, user cannot create any new VLAN.

1. Select the **<Edit>**.
2. Select the VLAN mode by using “**Tab**” key. There are two VLAN modes: PortBase mode and 802.1Q mode. When select the 802.1Q VLAN mode, you need to configuration the following settings.
  - **802.1Q VLAN mode:** configuration VLAN ID, Ingress Filter, and Acceptable Frame Type.
    - ◇ **VLAN ID Range:** Type the PVID. The PVID will only assign to the Ingress packets, not for all packets.

- ✧ **Ingress Filter:** It matches that Ingress Filtering Rule 2 on web. Drop untagged frame. Press “**Space**” key to select drop or forward the untagged frame.
- ✧ **Acceptable Frame type:** It matches that Ingress Filtering Rule 1 on web. Only forward packets with VID matching this port’s configured VID. Press “**Space**” key to choose “forward” or “drop” the frame that VID not matching this port’s configured VID.

3. Select <**Apply**> to apply the configuration.

---

**[Note]** when the VLAN mode changed that user has to restart the switch for valid value.

---

```

24TX + 2FX with 24 POE Injector Managed Switch : VLAN Configure
=====
VLAN Mode : 802.1Q
VLAN ID Range : 1~255

Port      VLAN ID      Ingress      Acceptable
          VLAN ID      Filter       Frame Type
-----
Port.04   1             Enable       All
Port.05   1             Enable       All
Port.06   1             Enable       All
Port.07   1             Enable       All
Port.08   1             Enable       All
Port.09   1             Enable       All
Port.10   1             Enable       All
Port.11   1             Enable       All

Actions->  <Edit>  <Apply>  <Previous Page>  <Next Page>  <Quit>
          Select the Action menu.
[Tab/BKSPC] Move Item      [Space] Toggle      [Esc] Previous Menu

```

VLAN Configure interface

## Create VLAN Group

### ■ Create Port-Based VLAN

1. Select <**Edit**>.
2. **VLAN Name:** Type a name for the new VLAN, ex: VLAN01.
3. **Group ID:** Type the VLAN group ID.

4. **Member:** Press "Space" key to change the member value. There are two types to selected:
  - a. **Member:** the port is a member port.
  - b. **NO:** it means that port is NOT a member port.
5. Press "ESC" key to go back action menu line.
6. Select <Apply> to apply the configuration.

---

**[Note]** If you have configured the trunk groups, you can see it (ex: Trunk1, Trunk2...) in the port list. You also can configure the trunk group as the VLAN member.

---

```

24TX + 2FX with 24 POE Injector Managed Switch : Create VLAN Group
=====

VLAN Name :                               Group ID :

Port      Member
-----
Port.04   No
Port.05   No
Port.06   No
Port.07   No
Port.08   No
Port.09   No
Port.10   No
Port.11   No

Actions->  <Edit>  <Apply>  <Previous Page>  <Next Page>  <Quit>
Select the Action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
  
```

Create VLAN Group: PortBase interface

■ **Create 802.1Q VLAN**

1. **Enable security VLAN setting:** select to enable or disable security VLAN group. When you select to enable security VLAN group, only the members in this VLAN group can access to the switch. The steps of setting security VLAN refer to the following step 2~ 8. After you configured the security VLAN group, you can continue to create other VLAN groups. When you didn't select to configure security VLAN group, then just create VLAN group refer to following step 2 ~ 8.

---

**[Note]** There is only one security VLAN group.

---

```
24TX + 2FX with 24 POE Injector Managed Switch : Create VLAN Group
=====
```

```
VLAN Name :                VLAN ID :
Do you want to enable security VLAN setting (y/N)
```

2. Select **<Edit>**.
3. **VLAN Name:** Type a name for the new VLAN, ex: VLAN01.
4. **VLAN ID:** Type a VID. The default is 1. There are 256 VLAN groups to provided configure.
5. **Protocol VLAN:** Press “**Space**” key to choose protocols type.
6. **Member:** Press “**Space**” key to change the member value.
  - **Untagged:** this port is the member port of this VLAN group and outgoing frames are NO VLAN-Tagged frames.
  - **Tagged:** this port is the member port of this VLAN group and outgoing frames are VLAN-Tagged frames.
  - **NO:** it means that the port is NOT member of this VLAN group.
7. Press “**ESC**” key to go back action menu line.
8. Select **<Apply>** to apply the configuration.

---

**[Note]** If the trunk groups exist, you can see it (ex: Trunk1, Trunk2...) on the port list, and you can configure it is the member of the VLAN or not.

---

```

24TX + 2FX with 24 POE Injector Managed Switch : Create VLAN Group
=====

VLAN Name : Security_VLAN      VLAN ID : 255
Protocol VLAN : None

Port      Member
-----
Port.04   UnTagged
Port.05   UnTagged
Port.06   UnTagged
Port.07   UnTagged
Port.08   UnTagged
Port.09   UnTagged
Port.10   UnTagged
Port.11   UnTagged

Actions->  <Edit>  <Apply>  <Previous Page>  <Next Page>  <Quit>
Select the Action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

Create VLAN Group: 802.1Q interface

## Edit / Delete VLAN Group

User can edit or delete a VLAN group.

1. Select **<Edit>** or **<Delete>** action.
2. Select the VLAN group that you want to edit or delete, then press enter.
3. In **<Edit>** action, user can modify the member port and remove some member ports from this VLAN group.

---

### [Note]

1. The VLAN Name and VLAN ID cannot modify.
  2. In 802.1Q VLAN mode, the default VLAN can't be deleting.
  3. In Port Base VLAN mode, there is no default VLAN.
-

Name	VLAN ID	Name	VLAN ID
VLAN001	1		

Actions-> <Edit> <Delete> <Previous Page> <Next Page> <Quit>  
 Edit/Delete a VLAN Group.  
 [TAB/BKSPC] Move Item [Enter] Select Item [Esc] Previous Menu

Edit/Delete a VLAN Group interface

### Group Sorted Mode

You can select VLAN groups sorted mode: (1) **Name** (2) **VLAN ID**.

In the Edit/Delete a VLAN group page will display the result.

1. Select <Edit>
2. Use “**Space**” key to select the sort mode.
3. Select <Apply>

24TX + 2FX with 24 POE Injector Managed Switch : Group Sorted Mode  
=====

VLAN Group Sorted by : Name

Actions-> **<Edit>** **<Apply>** **<Quit>**  
Select the action menu.  
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

Group Sorted Mode interface

## Priority Configuration

You can configure port priority level. There are 0~7-priority level can map to high or low queue.

1. Select **<Edit>**.
2. Press “**Space**” key to select the priority level mapping to high or low queue.
3. **Qos Mode:** User can select the ratio of high priority packets and low priority packets.
  - **First Come First Service:** the switch will process the packet that is coming first.
  - **All High Before low:** the packet priority is high will be process before the packet priority is low.
  - **Weight Round Ration 2:1:** the switch will process 2 high priority packet first, the process 1 low priority packet.
  - **Weight Round Ration 3:1:** the switch will process 3 high priority packet first, the process 1 low priority packet.
  - **Weight Round Ration 4:1:** the switch will process 4 high priority packet first, the process 1 low priority packet.
  - **Weight Round Ration 5:1:** the switch will process 5 high priority packet first, the process 1 low priority packet.
  - **Weight Round Ration 6:1:** the switch will process 6 high priority packet first, the process 1 low priority packet.
  - **Weight Round Ration 7:1:** the switch will process 7 high priority packet first, the process 1 low priority packet.
4. Press “**ESC**” goes back action menu line.
5. Select **<Apply>** to apply all configure value.

```
24TX + 2FX with 24 POE Injector Managed Switch : Priority Configuration
=====

Level 0 : Low
Level 1 : Low
Level 2 : Low
Level 3 : Low
Level 4 : High
Level 5 : High
Level 6 : High
Level 7 : High

QoS Mode : All High Before Low

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Priority Configuration interface

## MAC Address Configuration

When you add a static MAC address, it remains in the switch's address table, regardless of whether the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the disconnected or powered-off device is active on the network again. You can add / modify / delete a static MAC address.

24TX + 2FX with 24 POE Injector Managed Switch : MAC Address Configuration  
=====

Static MAC Address

Filtering MAC Address

Previous Menu

Configure the MAC address.  
[TAB/BKSPC] Move Item      [Enter] Select Item

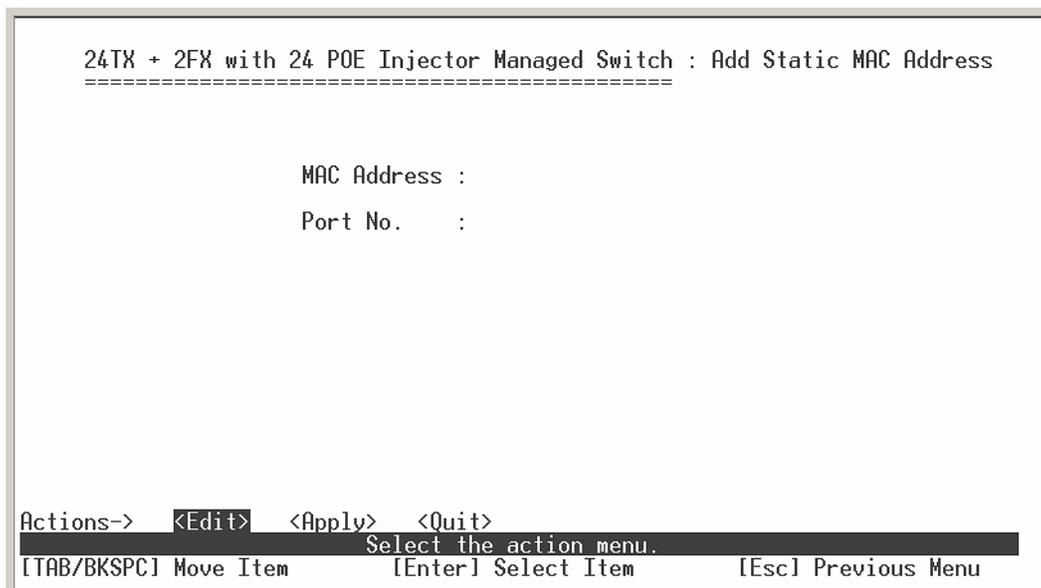
MAC Address Configuration interface

## Static MAC Address

### ■ Add the Static MAC Address

You can add static MAC address in switch MAC table.

1. Select **<Add>** → **<Edit>** key to add the static MAC address.
2. **MAC Address:** Enter the MAC address of the port that should permanently forward traffic, regardless of the device network activity.
3. **Port No.:** press **"Space"** key to select the port number.
4. Press **"ESC"** to go back action menu line.
5. Select **<Apply>** to apply all configure value.



Add Static MAC Address interface

### ■ Edit static MAC address

1. Press **<Edit>**.
2. Choose the MAC address that you want to modify and then press **"Enter"**.
3. Press **<Edit>** key to modify.
4. Press **"ESC"** to go back action menu line.
5. Select **<Apply>** to apply all configure value.

### ■ Delete static MAC address

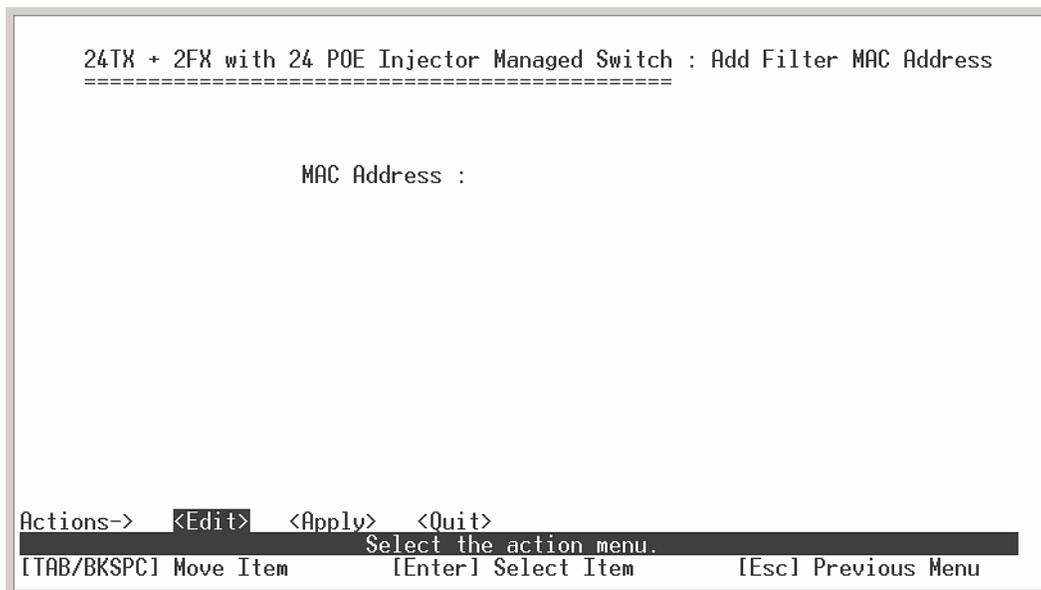
1. Press **<Delete>** key.
2. Choose the MAC address that you want to delete and then press **“Enter”**.
3. When pressing **“Enter”** will complete deletion.

## Filtering MAC Address

You can add, delete, and edit filtering MAC address.

### ■ Add the Filtering MAC Address

1. Select **<Add>** → **<Edit>** key to add the static MAC address.
2. **MAC Address:** Enter the MAC address that you want to filter.
3. Press **“ESC”** to go back action menu line.
4. Select **<Apply>** to apply all configure value.



Add Filtering MAC Address interface

### ■ Edit Filtering MAC address

1. Press **<Edit>** key to modify a static Filtering address.
2. Choose the MAC address that you want to modify and then press **“Enter”**.
3. Select **<Edit>** key to modify.

4. Press “**ESC**” to go back action menu line
5. Select <**Apply**> to apply all configure value.

#### ■ **Delete Filtering MAC address**

1. Press <**Delete**> to delete a Filtering MAC address.
2. Choose the MAC address that you want to delete and then press “**Enter**”.

## Misc Configuration

You can configure the switch parameters.

- **MAC Address Ageing Time:** MAC address table refresh time setting. Type the number of seconds that an inactive MAC address remains in the switch’s address table. The valid range is 0, 300~765 seconds. Default is 300 seconds.
- **Broadcast Storm Filter mode:** configure the broadcast storm filter mode. The valid threshold values are 5%, 10%, 15%, 20%, 25%, and N/A. The port will be block cause of broadcast packet is over the percentage of traffic.
- **Max Bridge Transmit Delay Bound:** Limit the packets queuing time in switch. If enable, the packets queued exceed will be drop. Press **Space** key to set the time. This valid value are 1sec, 2sec, 4sec and off. Default is off.
- **Low Queue Delay Bound:** Limit the low priority packets queuing time in switch. If enable, the low priority packet stays in switch exceed Low Queue Max Delay Time, it will be sent. Press **Space** key to enable or disable this function.
- **Low Queue Max Delay Time:** To set the time that low priority packets queuing in switch. Default Max Delay Time is 255ms. The valid range is 1~255 ms.

---

**[Note]:** Make sure of “Max bridge transit delay bound control” is enabled before enable Low Queue Delay Bound, because Low Queue Delay Bound must be work under “Max bridge transit delay bound control” is enabled situation.

---

- **Collisions Retry Forever:** Disable In half duplex, if happen collision will retry 48 times and then drop frame. Enable – In half duplex, if happen collision will retry forever
- **Hash Algorithm:** This Hash Algorithm is for hardware maintain on MAC table calculation. Provide CRC or Direct Map
- **IFG compensation:** Disable or Enable

```

24TX + 2FX with 24 POE Injector Managed Switch : Misc Configuration
=====
MAC Address Ageing Time (0, 300..765) : 300
Broadcast Storm Filter Mode           : 5%
Max Bridge Transmit Delay Bound       : OFF
Low Queue Delay Bound                  : Disable
Low Queue Max Delay Time (1..255)    : 255
Collisions Retry Forever               : Enable
Hash Algorithm                         : CRC Hash
IFG Compensation                      : Enable

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

Misc Configuration interface

## Protocol Related Configuration

You can configure Spanning Tree Protocol, SNMP, LACP, IGMP/GVRP, and 802.1x in Protocol Related Configuration section.

```
24TX + 2FX with 24 POE Injector Managed Switch : Protocol Related Configura
tion =====
                                     STP Configuration
                                     SNMP Configuration
                                     LACP Configuration
                                     IGMP/GVRP Configuration
                                     802.1x Configuration
                                     Previous Menu

                                     Configure the Spanning Tree Protocol.
[TAB/BKSPC] Move Item      [Enter] Select Item
```

Protocol Related Configuration interface

## STP Configuration

Spanning tree is a link management protocol that provides path redundancy while preventing undesirable loops in the network.

```

24TX + 2FX with 24 POE Injector Managed Switch : STP Configuration
=====

          STP Setup

          System Configuration

          Per Port Setting

          Previous Menu

          Enable or disable Spanning Tree function.
[TAB/BKSPC] Move Item      [Enter] Select Item

```

STP Configuration interface

## STP Setup

You must enable Spanning Tree function before configuration.

1. Select <Edit>
2. Use “Space” key to select the option.
3. Select <Apply>.

```

24TX + 2FX with 24 POE Injector Managed Switch : STP Setup
=====

          STP : Disable

          Actions->  <Edit>  <Apply>  <Quit>
                    Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

STP Setup interface

## System Configuration

You can configure the STP system parameter after enable the STP function. You can view spanning tree information about the Root Bridge on the left.

1. Select **<Edit>**
2. **Priority (0~65535)**: assign path priority number.
3. **Max Age (6~40)**: the maximum path age
4. **Hello Time (1~10)**: the time that controls switch sends out the BPDU packet to check STP current status.
5. **Forward Delay Time (4~30)**: forward delay time.
6. Select **<Apply>**.

```
24TX + 2FX with 24 POE Injector Managed Switch : STP System Configuration
=====

Root Bridge Information          Configure Spanning Tree Parameters
-----
Priority       : 32768           Priority (0-65535)       : 32768
Mac Address   : 000F3899971C    Max Age (6-40)         : 20
Root Path Cost : 0              Hello Time (1-10)      : 2
Root Port     : Root           Forward Delay Time (4-30) : 15
Max Age       : 20
Hello Time    : 2
Forward Delay : 15

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item  [Enter] Select Item    [Esc] Previous Menu
```

STP System Configuration interface

## Per Port Setting

1. Select **<Edit>**.
2. **Path Cost**: specifies the path cost of the port that switch uses to determine which port are the forwarding ports.
3. **Priority**: This is mean port priority; you can make it more or less likely to become the

root port.

4. Press “**ESC**” goes back action menu line.
5. Select **<Apply>** to apply all configure value.
6. On the action menu line you can press **<Next Page>** to configure rest of ports, press **<Previous Page>** return to previous page.

```
24TX + 2FX with 24 POE Injector Managed Switch : STP Per Port Setting
=====
```

Port	State	Path Cost	Priority
Port.01	Disconnect	10	128
Port.02	Disconnect	10	128
Port.03	Disconnect	10	128
Port.04	Disconnect	10	128
Port.05	Disconnect	10	128
Port.06	Disconnect	10	128
Port.07	Disconnect	10	128
Port.08	Disconnect	10	128

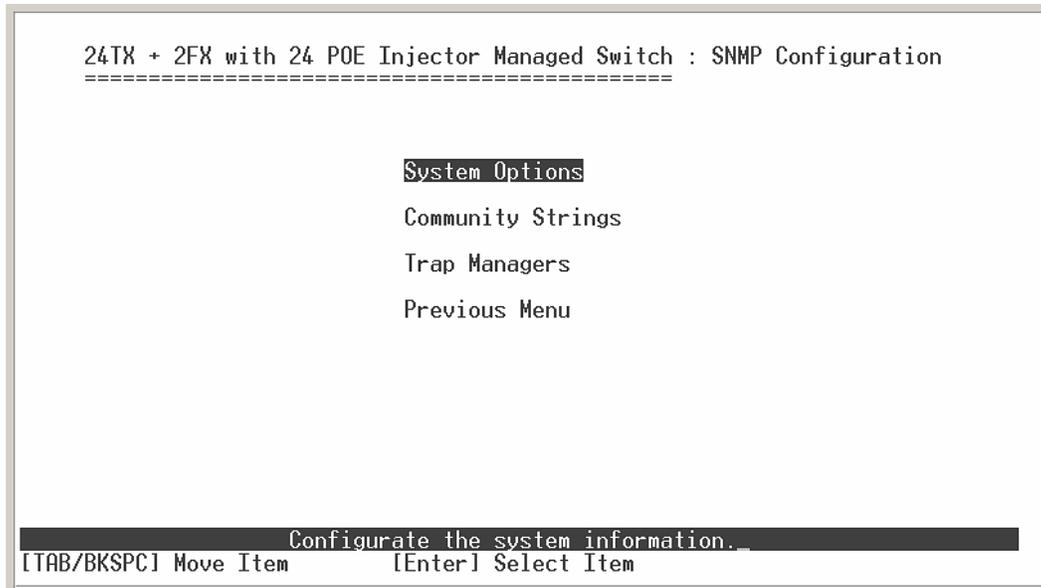
```
Actions-> <Edit> <Apply> <Previous Page> <Next Page> <Quit>
Select the Action menu.
[Tab/BKSPC] Move Item [Enter] Select Item [Esc] Previous Menu
```

Per Port Setting interface

## SNMP

To define management stations as trap managers and to enter SNMP community strings.

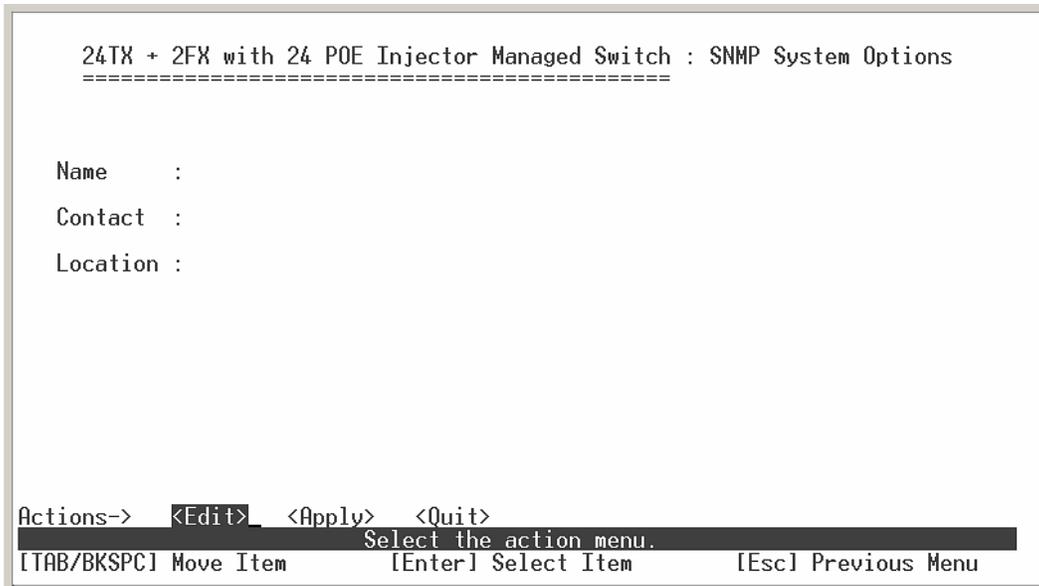
You can also define a name, location, and contact person for the switch.



SNMP Configuration interface

## SNMP System Options

1. Press <**Edit**>.
2. **Name:** assign a name for the switch.
3. **Contact:** Type the name of contact person or organization.
4. **Location:** Type the location of the switch.
5. Press "**ESC**" goes back action menu line.
6. Press <**Apply**> to apply configuration value.



SNMP System Options interface

## Community Strings

### ■ Add Community Strings

1. Select **<Add>** → **<Edit>**.
2. **Community Name:** type the name of community strings.
3. **Write Access:** enable the rights is read only or read/write.
  - **Read only:** Read only, enables requests accompanied by this string to display MIB-object information.
  - **Read/Write:** Read write, enables requests accompanied by this string to display MIB-object information and to set MIB objects.

```
24TX + 2FX with 24 POE Injector Managed Switch : Add SNMP Community
=====

Community Name :
Write Access   : Read Only

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item  [Enter] Select Item  [Esc] Previous Menu
```

Add Community Strings interface

■ **Edit SNMP Community**

1. Select <Edit>
2. Choose the item that you want to modify and then press “Enter”.
3. **Community Name:** type the new name.
4. **Write Access:** Press “Space” key to change the right.
5. Select <Apply>.

■ **Delete SNMP Community string**

1. Select <Delete>.
2. Choose the community string that you want to delete and then press “Enter”.
3. When pressing “Enter” will complete deletion.

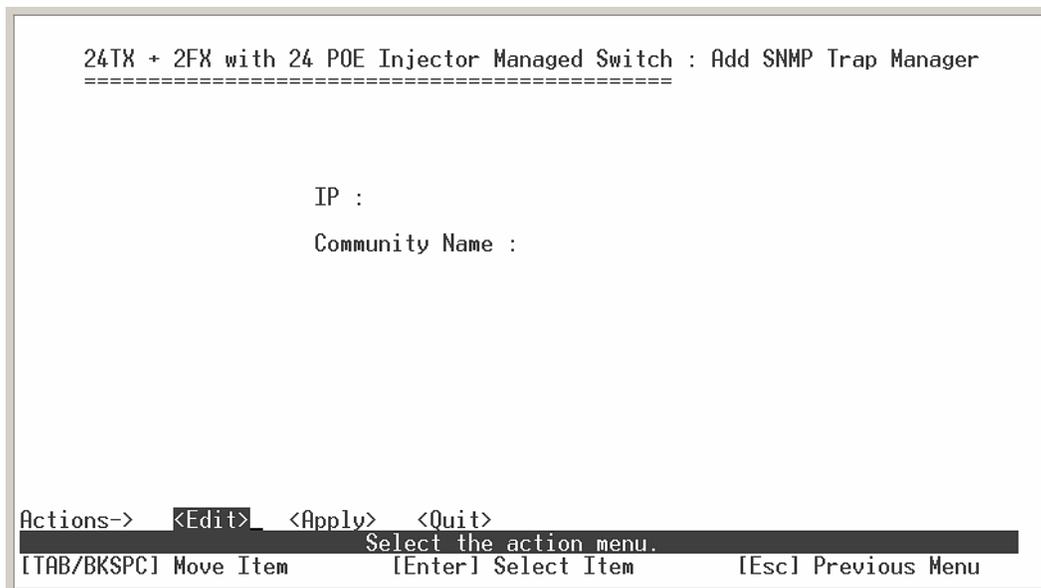
**Trap Managers**

A trap manager is a management station that receives traps, the system alerts generated

by the switch. If no trap manager is defined, no traps will issue. Create a trap manager by entering the IP address of the station and a community string.

### ■ Add the trap manager

1. Select **<Add>** → **<Edit>** to add the trap manager.
2. **IP:** type the IP address.
3. **Community Name:** type the community name.
4. Press “**ESC**” go back to actions menu line
5. Select **<Apply>** to apply all configure.



Add Trap Manager interface

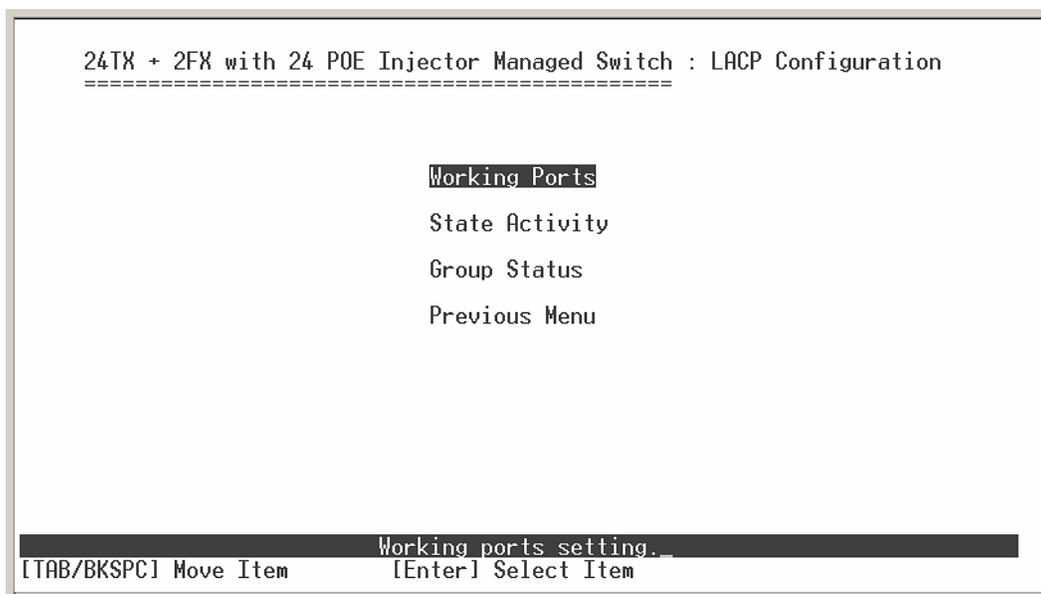
### ■ Delete Trap Manager

1. Select **<Delete>**
2. Choose the trap manager that you want to delete and then press “**Enter**”.
3. When pressing “**Enter**” will complete deletion.

## LACP

The Link Aggregation Control Protocol (LACP) provides a standardized means for

exchanging information between Partner Systems on a link to allow their Link Aggregation Control instances to reach agreement on the identity of the Link Aggregation Group to which the link belongs, move the link to that Link Aggregation Group, and enable its transmission and reception functions in an orderly manner. Link aggregation lets you group up to eight consecutive ports into a single dedicated connection. This feature can expand bandwidth to a device on the network. **LACP operation requires full-duplex mode**, more detail information refers to IEEE 802.3ad. You can configure and view all the LACP status.



LACP Configuration interface

### Working Ports Setting

1. Select **<Edit>**
2. **Group:** Display the trunk group ID.
3. **Working Port Num:** The max number of ports can be aggregated at the same time. If LACP static trunk group, the exceed ports is standby and able to aggregate if work ports fail. If it is local static trunk group, the number must be the same as group ports.
4. Select **<Apply>**

**[Note]** Before set LACP support, you have to set trunk group on the Trunk Configuration.

---

```
24TX + 2FX with 24 POE Injector Managed Switch : LACP Working Ports
=====

Group      Work Ports
-----

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

LACP Working Ports configuration interface

### LACP State Activity

1. Select **<Edit>**
2. Use “**Space**” key to select the Port State Activity.
  - **Active:** The port automatically sends LACP protocol packets.
  - **Passive:** The port does not automatically send LACP protocol packets, and responds only if it receives LACP protocol packets from the opposite device.
3. Select **<Apply>**.

```

24TX + 2FX with 24 POE Injector Managed Switch : LACP State Activity
=====

Port          State Activity          Port          State Activity
-----

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

LACP State Activity configuration interface

## LACP Group Status

When you setting trunk group, you can see the relation information in here.

```

24TX + 2FX with 24 POE Injector Managed Switch : LACP Group Status
=====

                Static Trunking Group

Group Key   : 1
Port Member : 1 2 3 4

Actions->  <Previous Page>  <Next Page>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

LACP Group State interface

## IGMP/GVRP Configuration

You can enable or disable the IGMP/GVRP (GARP VLAN Registration Protocol).

1. Select **<Edit>**
2. Use “**Space**” key to change the value
3. Select **<Apply>**

```
24TX + 2FX with 24 POE Injector Managed Switch : IGMP/GVRP Configuration
=====

IGMP      : Disable
Query Mode : Disable
GVRP      : Disable

Actions->  <Edit>  <Apply>  <Quit>
           Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

IGMP/GVRP Configuration interface

## 802.1x Configuration

You can configure 802.1x relate settings.

```
24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Configuration
=====

      802.1x Setup

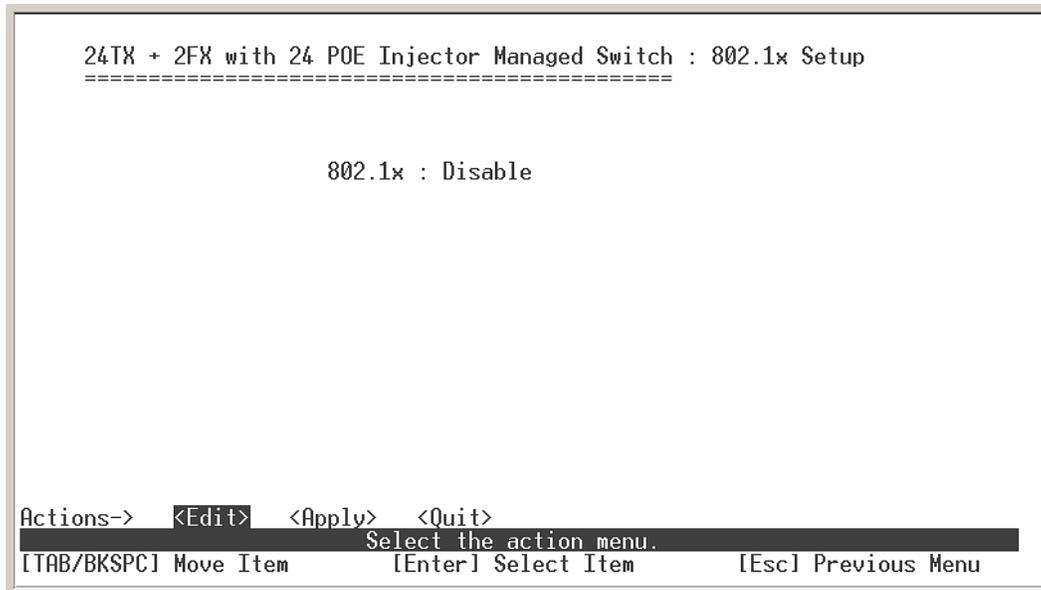
      System Configuration
      Per Port Setting
      Misc Configuration
      Previous Menu

      Enable or disable 802.1x Protocol function.
[TAB/BKSPC] Move Item      [Enter] Select Item
```

802.1x Configuration interface

## 802.1x Setup

1. Select **<Edit>**
2. Use “**Space**” key to Enable or Disable the 802.1x.
3. Select **<Apply>**



802.1x Setup interface

## System Configuration

After enabling the IEEE 802.1X function, you can configure the parameters of this function.

1. Select **<Edit>**
2. **Radius Server IP:** set the Radius Server IP address.
3. **Shared Key:** set an encryption key for using during authentication sessions with the specified radius server. This key must match the encryption key used on the Radius Server.
4. **NAS, Identifier:** set the identifier for the radius client.
5. **Server Port:** set the UDP destination port for authentication requests to the specified Radius Server.
6. **Accounting Port:** set the UDP destination port for accounting requests to the specified Radius Server.
7. Select **<Apply>**

```

n  24TX + 2FX with 24 POE Injector Managed Switch : 802.1x System Configuratio
=====

Radius Server IP : 192.168.16.3
Shared Key       : 12345678
NAS, Identifier  : NAS_L2_SWITCH
Server Port      : 1812
Accounting Port  : 1813

Actions->  <Edit>  <Apply>  <Quit>
Select the action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

802.1x System Configuration interface

## Per Port Setting

The State provides Disable, Accept, Reject and Authorize. Use “**Space**” key change the state value.

- **Reject:** the specified port is required to be held in the unauthorized state.
- **Accept:** the specified port is required to be held in the Authorized state.
- **Authorized:** the specified port is set to the Authorized or Unauthorized state in accordance with the outcome of an authentication exchange between the Supplicant and the authentication server.
- **Disable:** The specified port is required to be held in the Authorized state.

```

24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Per Port Setting
=====

Port          State
-----
Port.05      Disable
Port.06      Disable
Port.07      Disable
Port.08      Disable
Port.09      Disable
Port.10      Disable
Port.11      Disable
Port.12      Disable

Actions->  <Edit>  <Apply>  <Previous Page>  <Next Page>  <Quit>
Select the Action menu.
[Tab/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu

```

802.1x Per Port Setting interface

## Misc Configuration

1. Select **<Edit>**
2. **Quiet period:** set the period during which the port doesn't try to acquire a supplicant.
3. **TX period:** set the period the port wait for retransmit next EAPOL PDU during an authentication session.
4. **Supplicant timeout:** set the period of time the switch wait for a supplicant response to an EAP request.
5. **Server timeout:** set the period of time the switch wait for a server response to an authentication request.
6. **Reauthorize Maximum:** set the number of authentication that must time-out before authentication fails and the authentication session ends.
7. **Reauthorize period:** set the period of time after which clients connected must be re-authenticated.
8. Select **<Apply>**

24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Misc Configuration  
=====

Quiet Period (0..65535, Default=60) : 60  
Tx Period (0..65535, Default=30) : 30  
Supplicant Timeout (1..300, Default=30) : 30  
Server Timeout (1..300, Default=30) : 30  
Reauthorize Maximum (1..10, Default=2) : 2  
Reauth Period (1..999999, Default=3600) : 3600

Actions-> **<Edit>** <Apply> <Quit>  
Select the action menu.  
[TAB/BKSPC] Move Item [Enter] Select Item [Esc] Previous Menu

802.1x Misc Configuration interface

## System Reset Configuration

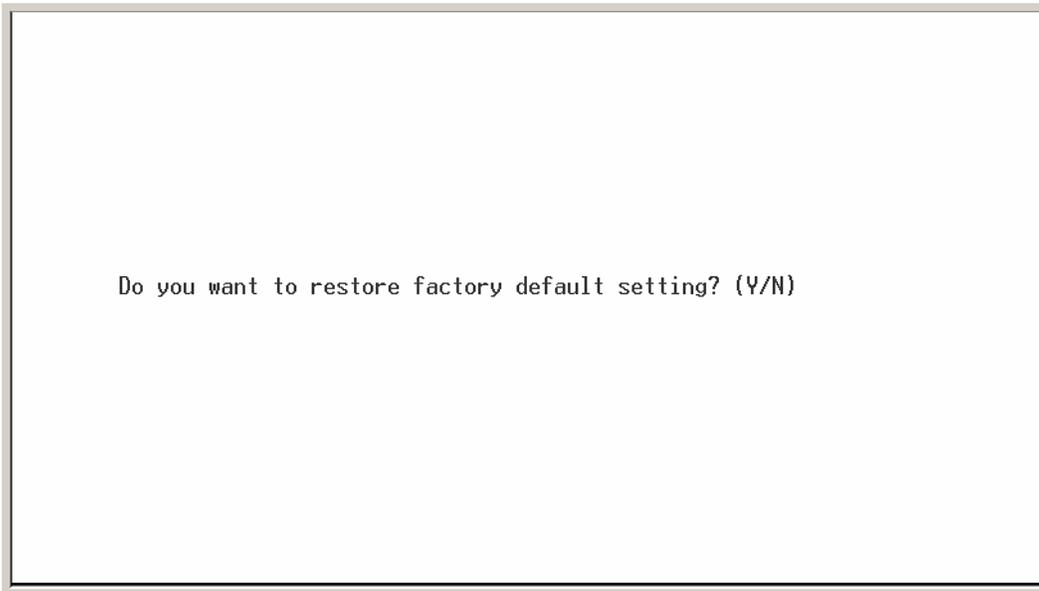
```
24TX + 2FX with 24 POE Injector Managed Switch : System Reset Configuration
=====
Factory Default
System Reboot
TFTP Configuration
Previous Menu

Restore to factory default setting.
[Tab/BKSPC] Move Item      [Enter] Select Item
```

System Reset Configuration interface

### Factory Default

Reset switch to default configuration. Press “Y”, switch will load default setting. After finished load default setting, switch will reboot automatically.



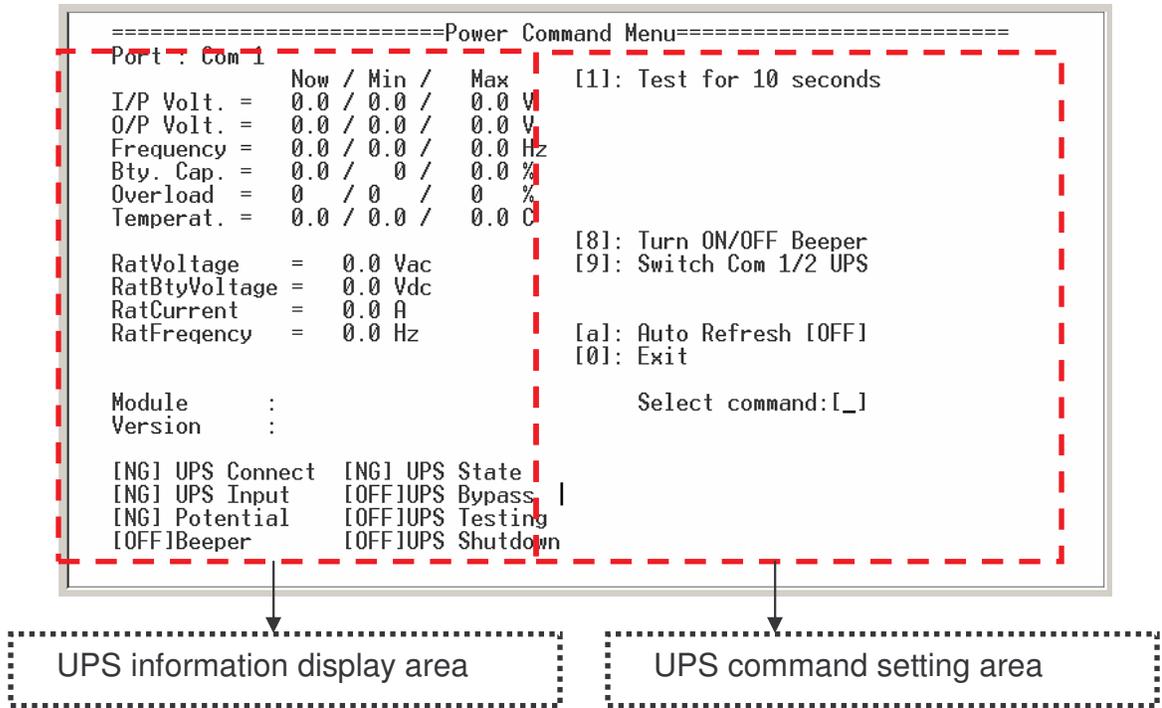
Factory Default interface

### **System Reboot**

Reboot the switch in software reset. All configuration will not change.

### **Power Menu**

You can view connected UPS information and set command to UPS.



**UPS information display**

- **I/P Volt.:** display the current value, minimum, and maximum value of UPS input voltage.
- **O/P Volt.:** display the current value, minimum, and maximum value of UPS output voltage.
- **Frequency:** display the frequency value of UPS.
- **Bty. Cap.:** display the battery capacity of UPS.
- **Overload:** display the overload capacity of UPS.
- **Temperat.:** display the current temperature of UPS.

⦿ **UPS commands**

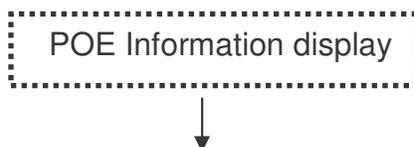
Command	Description
<b>[1] Test for 10 seconds</b>	UPS will perform the self test for 10 seconds

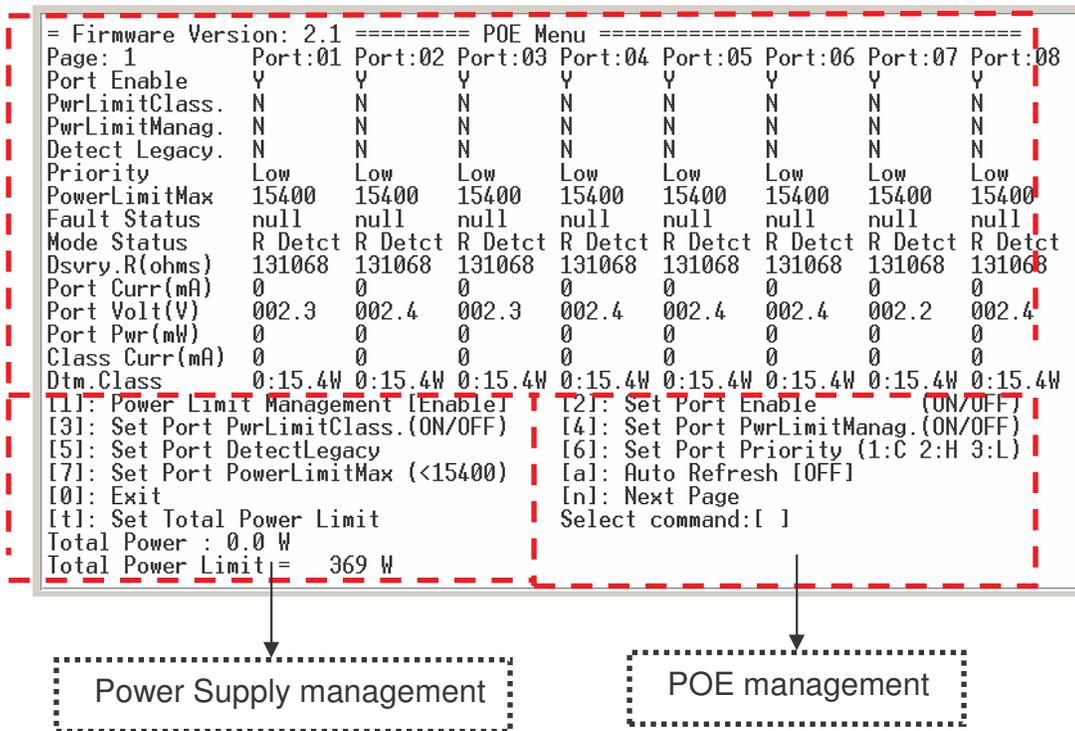
<b>[8] Turn ON/OFF Beeper</b>	Turn on the UPS beeper or turn off the UPS beeper
<b>[9] Switch Com 1/2 UPS</b>	Switch to com1 or com 2 connected UPS
<b>[a] Auto Refresh</b>	Enabling the screen auto refresh
<b>[0] Exit</b>	Exit the UPS menu mode

- **Select command:** enter the power command number in this prompt and press enter.

## POE Menu

You can view POE port information and set command to POE port.





- **Port Enable:** displays the POE port status. **Y** means the port is enabling. **N** means the port is disabling and will not have any power providing but the port still can transmit the data packet.
- **PwrLimitClass.:** displays the power class limit status. **N** means the power class limit is disabling. **Y** means the power class limit is enabling. The power limit class will follow the value that set in the power limit max when is enabling.
- **PwrLimitManag.:** displays the POE management that will follow or will not following the **priority** rules.
- **Detect Legacy:** The legacy detection is to identify the PD devices with unique electrical signatures, that did not follow the IEEE 802.3af standard.
- **Priority:** the port priority for power supply's priority. 1 = C (critical), 2 = H (High), 3 = L (Low).
- **PowerLimitMax:** per port power output to PD's power limit.
- **Fault Status:** display the PD error status message. There are three error status and explain as following.
  - **Null:** It means there is no PD connected or the connected PD device status is normal.

- **Overload:** It means the current is over the PD current classification limited (475mA @ 48V DC) that the situation happens over 50msec.
- **Mode Status:** display the PD current operation mode status.
  - **V sample or I sample:** It means " Current sample or Voltage sample". When PD is detected and current is supplied, the POE switch will keep detecting and sampling some current or voltage to ensure whether the PD still present on this port. It is an IEEE 802.3af operating procedure.
  - **R detect:** When the port doesn't connect with any PD, the POE switch will poll each port and detects the resistor.
- **Dsvry R (ohms):** display resistance value.
- **Port Curr (mA):** display current value.
- **Port Volt (V):** display voltage value.
- **Port Pwr (W):** display watt value.
- **Class Curr(mA):** display power class. When you enable the "Bypass classification" function, the class value will not show in here.
- **Firmware Version:** display the system firmware version.
- **Total Port Power (W):** total of all the port power that provided to PD.
- **Power Management:** status of the power management function.
- **Total Power Limit:** total power of the total ports' output power.

## Commands

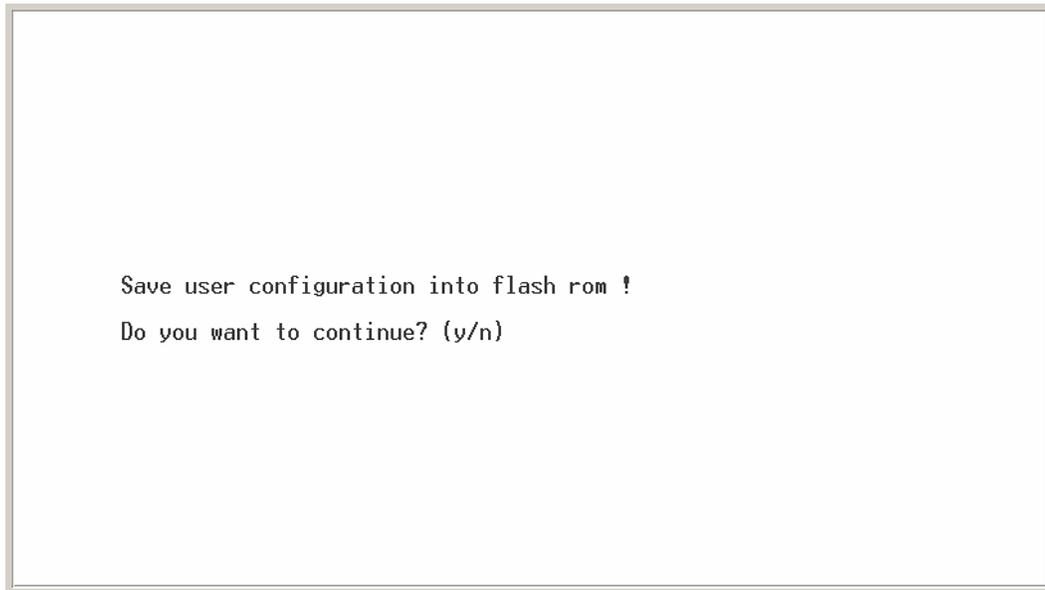
- **Select command:** enter the POE command number or Power supply management command integer in the prompt and press enter. The Power supply management command will show up when the **Port PwrLimit Mangag.** is enabling.

Command	Description
[1] Power Management (Enable)	Enabling or disabling the POE power management function.
[2] Set Port Enable (ON/OFF)	Enabling or disabling the port POE inject function

<b>[3]. Set Port PwrLimitClass. (ON/OFF)</b>	Enabling or disabling per port power output limit. When is enabling, per port power output limit will follow the value that set in power limit max.
<b>[4] Set Port PwrLimitManag. (ON/OFF)</b>	Enabling or disabling the port power limit management for power supply management.
<b>[5] Set Port DetectLegacy</b>	Enabling the port power legacy detect.
<b>[6] Set Port Priority (1:C 2:H 3:L)</b>	Set port priority for the power supply management.
<b>[7] Set Power Limit Max (&lt;15400)</b>	Set the port power output limit value. The maximum value must less than 15400.
<b>[a] Auto Refresh [OFF]</b>	Enabling or disabling auto refresh system parameters.
<b>[t] Set Total Power Limit</b>	Set the total port power limit. When the Power Management is enabling, this function will show up.
<b>[n] Next Page</b>	Switch to next page
<b>[0] Exit</b>	Exit POE Menu mode

## Save Configuration

You must save the configuration to the flash memory when you have changed the configuration. Otherwise, the new configuration will be lost when the switch restart or power off.



Save Configuration Interface

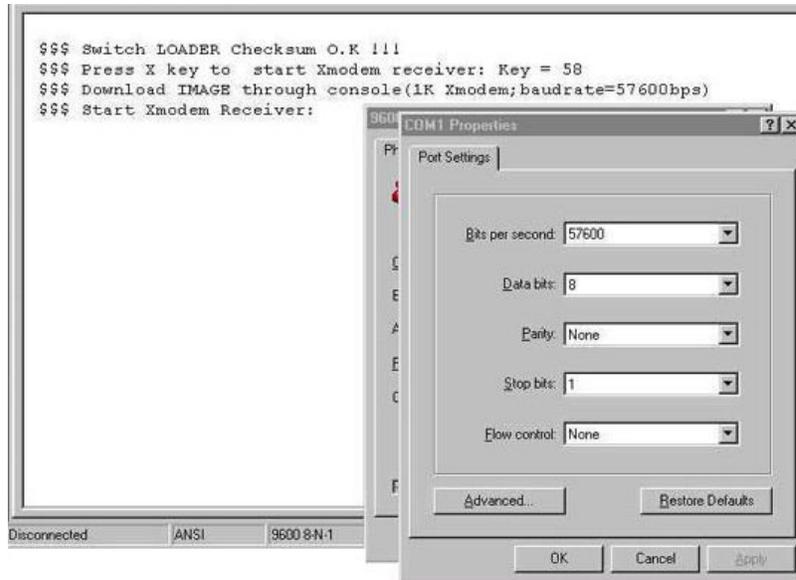
## Xmodem Upgrade

Before using Xmodem upgrade, disconnect terminal and modify baud rate to 57600bps, then connect again.

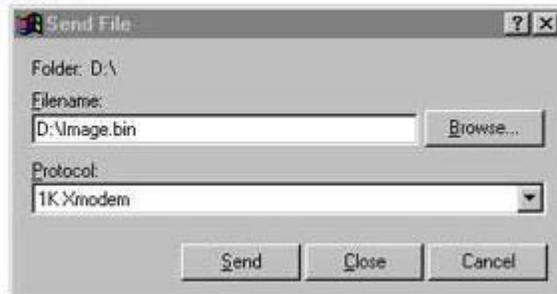
1. Press "X" key to start upgrading from Xmodem.
2. You will see the following screen displays.

```
$$$ Switch LOADER Checksum O.K !!!  
$$$ Press X key to start Xmodem receiver:  
$$$ Download IMAGE through console(1K Xmodem;baudrate=57600bps)  
$$$ Start Xmodem Receiver:
```

3. Select "send file" under **Transfer** menu from menu bar.
4. Select "**browse**" button to select the path.
5. Select "**1K Xmodem**" of protocol and click "**Send**" button.



```
$$$ Switch LOADER Checksum O.K !!!  
$$$ Press X key to start Xmodem receiver: Key = 58  
$$$ Download IMAGE through console(1K Xmodem;baudrate=57600bps)  
$$$ Start Xmodem Receiver:
```



6. After successfully upgraded the new firmware, please modify baud rate to 9600bps.

# Web-Based Management

---

The Web-Based Management offers advanced management features and allow users to manage the switch from anywhere on the network through a standard browser such as Microsoft Internet Explorer.

The Web-Based Management supports Internet Explorer 5.0. It is based on Java Applets with an aim to reduce network bandwidth consumption, enhance access speed and present an easy viewing screen.

---

**[Note]** By default, IE5.0 or later version does not allow Java Applets to open sockets. The user has to explicitly modify the browser setting to enable Java Applets to use network ports.

---

## Preparing for Web Management

Before to use web management, you can use console to login the Switch checking the default IP of the Switch. Please refer to **Console Management** Chapter for console login. If you need change IP address in first time, you can use console mode to modify it. The default value is as below:

IP Address: **192.168.1.77**

Subnet Mask: **255.255.255.0**

Default Gateway: **192.168.1.254**

User Name: **root**

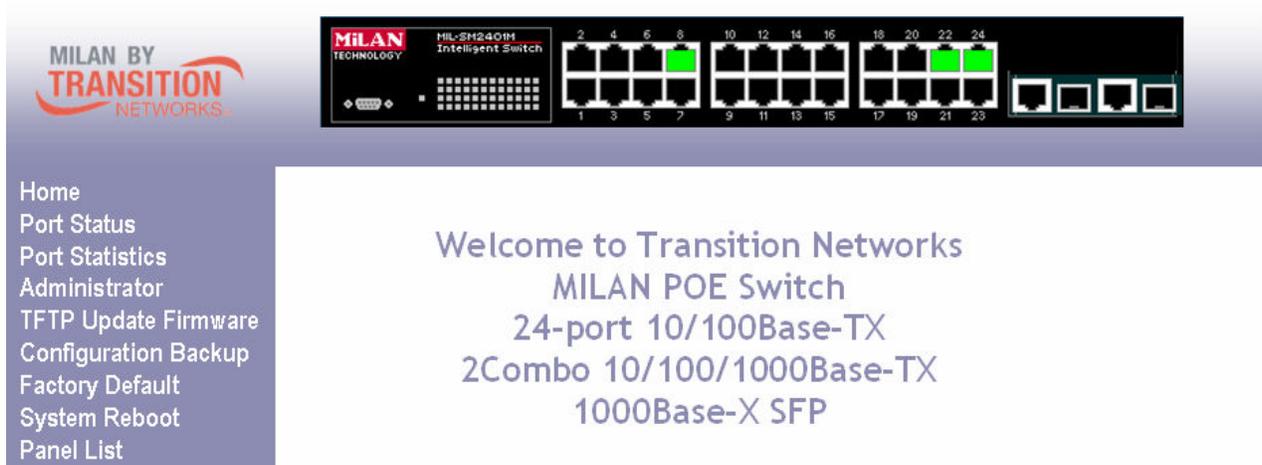
Password: **root**

## Online Help

You can click  button when you have any configuration question during the configuration.

## System Login

1. Launch the Internet Explorer.
2. Type “http://” and the IP address of the 8 10/100TX plus 100FX Exp. Slot managed POE switch. Press “**Enter**”.
3. The login screen appears.
4. Key in the user name and password. The default user name and password is “ **root** ”.
5. Click “**Enter**” or “**OK**”, then the home screen of the Web-based management appears.



24 10/100TX plus 100FX Exp. Slot managed POE switch Web Management Interface

## Port status

In Port status, you can view every port status that depended on user setting and the negotiation result.

1. **Link:** Down is “No Link”. UP is “Link”.
2. **State:** display port statuses “disable” or “enable”. “Unlink” will be treated as “off ”.
3. **Negotiation:** display the auto negotiation mode: auto/force/Nway-force. “Config” means the value that user configured. “Actual” means the current value of the port.
4. **Speed Duplex:** display port connection speed. “Config” means the value that user

configured. “Actual” means the current value of the port.

5. **Flow Control:** Full: display the flow control status is “enable” or “disable” in full mode. “Config” means the value that user configured. “Actual” means the current value of the port.
6. **Back Pressure:** Display the Back Pressure status setting. “Config” means the value that user configured. “Actual” means the current value of the port.
7. **Bandwidth:** display the in and out bandwidth of each port.
8. **Priority:** display the port static priority status is “High” or “Low” or “Disable”.
9. **Security:** display the port security is “enable” or “disable”.

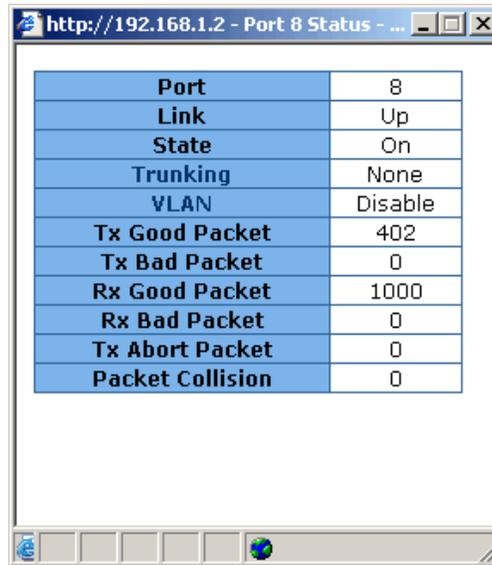
### Port Status

Port	Type	Link	State	Negotiation		Speed Duplex		Flow Control		Back Pressure		Band Width		Priority	Security
				Config	Actual	Config	Actual	Config	Actual	Config	Actual	In	Out		
Port.01	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.02	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.03	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.04	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.05	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.06	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.07	100TX	Up	Enable	Auto	Auto	100 Full	100 Full	ON	ON	ON	OFF	OFF	OFF	Disable	OFF
Port.08	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.09	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.10	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.11	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.12	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.13	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.14	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.15	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.16	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.17	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.18	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.19	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.20	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.21	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.22	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.23	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.24	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.25	Auto	Up	Enable	Force	Auto	1G Full	1G Full	ON	ON	ON	OFF	OFF	OFF	Disable	OFF
Port.26	Auto	Up	Enable	Force	Auto	1G Full	1G Full	ON	ON	ON	OFF	OFF	OFF	Disable	OFF

Port Status interface

## View the Port Information

You can direct click the port on the Switch figure on the top of web page. Then, you will see the port information.



The screenshot shows a web browser window with the address bar containing "http://192.168.1.2 - Port 8 Status - ...". The main content area displays a table with port configuration and statistics. The table has two columns: the first column lists the metric or configuration item, and the second column shows the corresponding value.

<b>Port</b>	8
<b>Link</b>	Up
<b>State</b>	On
<b>Trunking</b>	None
<b>VLAN</b>	Disable
<b>Tx Good Packet</b>	402
<b>Tx Bad Packet</b>	0
<b>Rx Good Packet</b>	1000
<b>Rx Bad Packet</b>	0
<b>Tx Abort Packet</b>	0
<b>Packet Collision</b>	0

Port information interface

## Port Statistics

The following information provides a view of the current port statistic information. Scroll down for more ports statistics. Click  button to clean all counts.

## Port Statistics

Port	Type	Link	State	Tx Good Packet	Tx Bad Packet	Rx Good Packet	Rx Bad Packet	Tx Abort Packet	Packet Collision
Port.01	100TX	Down	Enable	0	0	0	0	0	0
Port.02	100TX	Down	Enable	0	0	0	0	0	0
Port.03	100TX	Down	Enable	0	0	0	0	0	0
Port.04	100TX	Down	Enable	0	0	0	0	0	0
Port.05	100TX	Down	Enable	0	0	0	0	0	0
Port.06	100TX	Down	Enable	0	0	0	0	0	0
Port.07	100TX	Up	Enable	1535	0	11318	0	0	0
Port.08	100TX	Down	Enable	0	0	0	0	0	0
Port.09	100TX	Down	Enable	0	0	0	0	0	0
Port.10	100TX	Down	Enable	0	0	0	0	0	0
Port.11	100TX	Down	Enable	0	0	0	0	0	0
Port.12	100TX	Down	Enable	0	0	0	0	0	0
Port.13	100TX	Down	Enable	0	0	0	0	0	0
Port.14	100TX	Down	Enable	0	0	0	0	0	0
Port.15	100TX	Down	Enable	0	0	0	0	0	0
Port.16	100TX	Down	Enable	0	0	0	0	0	0
Port.17	100TX	Down	Enable	0	0	0	0	0	0
Port.18	100TX	Down	Enable	0	0	0	0	0	0
Port.19	100TX	Down	Enable	0	0	0	0	0	0
Port.20	100TX	Down	Enable	0	0	0	0	0	0
Port.21	100TX	Down	Enable	0	0	0	0	0	0
Port.22	100TX	Down	Enable	0	0	0	0	0	0
Port.23	100TX	Down	Enable	0	0	0	0	0	0
Port.24	100TX	Down	Enable	0	0	0	0	0	0
Port.25	Auto	Up	Enable	9833	0	0	0	0	0
Port.26	Auto	Up	Enable	9833	0	0	0	0	0

Clear

Port Statistics interface

## Administrator

In Administrator function, it provides the following functions -- **IP Configuration, Switch Settings, Console Port Information, Port Controls, Trunking, Forwarding and Filtering, VLAN Configuration, Spanning Tree, Port Mirroring, SNMP Management, Security Manager, and 802.1x Configuration.**

## IP Address

User can configure the IP Settings and DHCP client function, then clicks  button.

After reset the IP address, you must reboot the switch.

1. **DHCP Client:** “**Enable**” is to get IP from DHCP server. “**Disable**” is opposite. The DHCP client function only works if you haven't assigned a static IP address that different than the switch default IP. Once the default IP has been changed the DHCP will not effective and the switch will continue using the manually entered static IP. If you have changed the switch to a static IP address, you can set the IP address back to its default IP address or you can reset the switch back to factory default. And then you can enable the DHCP client function to work.
2. **IP Address:** assign the switch IP address. The default IP is 192.168.1.77
3. **Subnet Mask:** assign the switch IP subnet mask.
4. **Gateway:** assign the switch gateway. The default value is 192.168.1.254

The screenshot shows a web-based configuration interface titled "IP Configuration". At the top, there is a dropdown menu for "DHCP Client" currently set to "Disable". Below this is a table with three rows: "IP Address" with the value "192.168.1.77", "Subnet Mask" with "255.255.255.0", and "Gateway" with "192.168.1.254". At the bottom of the form are two buttons: "Apply" and "Help".

IP Configuration	
DHCP Client :	Disable
IP Address	192.168.1.77
Subnet Mask	255.255.255.0
Gateway	192.168.1.254
<input type="button" value="Apply"/> <input type="button" value="Help"/>	

IP configuration interface

## Switch Setting

In Switch setting, it has three parts of setting – Basic, Advance, and Misc Config. We will describe the configure detail in following.

## Basic

In Basic switch setting, it displays the switch basic information.

- **System Name:** the name of switch.
- **System Location:** the switch physical location.
- **System Description:** the description of switch.
- **Firmware Version:** the switch’s firmware version.
- **Kernel Version:** the kernel software version.
- **Hardware version:** the switch hardware version.
- **MAC Address:** the unique hardware address assigned by manufacturer (default)
- **Module:** the module information, if the switch doesn’t install the module, then this column will be no any information.

### Switch Settings

Basic	Advanced	Misc Config
-------	----------	-------------

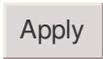
<b>System Name</b>	
<b>System Location</b>	
<b>System Description</b>	24-Port 10/100Mbps + 2G PoE Switch
<b>Firmware Version</b>	v1.00
<b>Kernel Version</b>	v17.03
<b>Hardware Version</b>	A7.00
<b>MAC Address</b>	000024F20011

Module	Type	Description
Port 25	Auto	1000TX Copper/1000FX MiniGBIC
Port 26	Auto	1000TX Copper/1000FX MiniGBIC

Switch basic setting interface

## Advanced

In Advanced setting, it has two sections – MAC Table Address Entry and Priority Queue Service. After the configuration, click  button to complete the configuration.

⊙ **MAC Address Table Entry**

- **Age-out Time:** fill in the number of seconds that an inactive MAC address remains in the switch's address table. The valid range is 300~765 seconds. Default is 300 seconds.
- **Max Bridge Transmit Delay Bound Control:** limit the packets queuing time in switch. If enable, the packets queued exceed will be drop. This valid value are 1sec, 2 sec, 4 sec and off.
- **Enable Low Queue Delay Bound:** limit the low priority packets queuing time in switch. If the low priority packet stays in switch exceed Max Delay Time, it will be sent. The valid range is 1~255 ms.

---

**[Note]** Make sure of “Max bridge transit delay bound control” is enabled before enable Delay Bound, because Enable Delay Bound must be work under “Max bridge transit delay bound control is enabled” situation.

---

- **Broadcast Storm Filter Mode:** configure broadcast storm control. Enable it and set the upper threshold for individual ports. The threshold is the percentage of the port's total bandwidth used by broadcast traffic. When broadcast traffic for a port rises above the threshold you set, broadcast storm control becomes active. The valid threshold value are 5%, 10%, 15%, 20%, 25% and off.

## Switch Settings

**Basic**      **Advanced**      **Misc Config**

Enable MAC Address Aging Out  
Age-Out Time :  seconds (300..765, must multiple of 3)

Max Bridge Transmit Delay Bound :

Enable Low Queue Delay Bound ----- Max Delay Time :  (1..255, 2ms/unit)

Broadcast Storm Filter Mode :

Priority Queue Service

**802.1p Priority**

First Come First Service

All High Before Low

Weight Round Ratio

---

**Qos Policy (Checked for High Priority) :**

Level0    Level1    Level2    Level3    Level4    Level5    Level6    Level7

Switch Advanced setting interface

- ⊙ **Priority Queue Service settings:** select the priority queue service type.
  - **First Come First Service:** the sequence of packets sent is depend on arrive order.
  - **All High before Low:** the high priority packets sent before low priority packets.
  - **Weighted Round Ratio:** select the preference given to packets in the switch's high-priority queue. These options represent the number of high priority packets sent before one low priority packet is sent. For example, 5 High: 1 Low means that the switch sends 5 high priority packets before sending 1 low priority packet.
  - **Qos Policy (checked for High Priority):** 0~7 priority level can map to high or low queue.

## Misc Configuration

- **Collisions Retry Forever:** disable is in half duplex. If happen collision will retry 48 times and then drop frame. Enable is in half duplex. If happen collision will retry forever.
- **Hash Algorithm:** CRC Hash or Direct Map for MAC address learning algorithm
- **IFG Compensation:** Internal Packet Gap time compensation configure. Select to “Enable” or “Disable”.
- **802.1x Protocol:** enable or disable 802.1x protocol.
- **IGMP Query Mode:** recognizes different queries from clients or servers to decide which Query will be the first priority. The modes are:
  - a. **Auto Mode:** chooses the switch that has the smallest IP address to be set for the IGMP Query mode.
  - b. **Enable Mode:** enables the switch to be the IGMP Querier.
  - c. **Disable Mode:** disables all other switches from being the IGMP Querier.

**Switch Settings**

Basic    Advanced    Misc Config

Collisions Retry Forever : Enable

Hash Algorithm : CRC Hash

IFG Compensation : Enable

802.1x Protocol : Disable

IGMP Query Mode : Disable

Apply    Default    Help

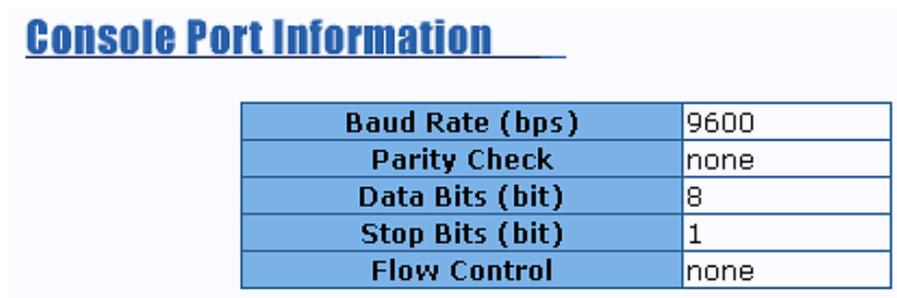
Switch Misc Config setting interface

## Console Port Information

Console is a standard UART interface to communicate with Serial Port. User can use windows HyperTerminal program to link the switch. Please refer to **Console Management → Console login** for detail steps.

Console port information shows as follow:

- **Bits per seconds:** 9600
- **Data bits:** 8
- **Parity:** none
- **Stop Bits:** 1
- **Flow control:** none



<b>Console Port Information</b>	
<b>Baud Rate (bps)</b>	9600
<b>Parity Check</b>	none
<b>Data Bits (bit)</b>	8
<b>Stop Bits (bit)</b>	1
<b>Flow Control</b>	none

Console Port Information interface

## Port Controls

You can change the port status.

1. Select the port by scroll the list in **Port** column.
2. **State:** User can disable or enable this port control.
3. **Negotiation:** User can set auto negotiation mode is Auto, N-way (specify the speed/duplex on this port and enable auto-negotiation), Force of the port.
4. **Speed:** set the speed of each port.
5. **Duplex:** set full-duplex or half-duplex mode of the port.
6. **Flows Control:** set flow control function is **ON** or **OFF** in Full Duplex mode.
7. **Back Pressure:** set Back Pressure is **ON** or **OFF** in Half Duplex mode.

8. **Band Width:** The port1 ~ port 26, supports port ingress and egress rate control. For example, assume port 1 is 10Mbps, users can set it's effective egress rate is 1Mbps, ingress rate is 500Kbps. The switch will perform flow control or Back Pressure to confine the ingress rate to meet the specified rate.
  - **In:** fill in the port effective ingress rate. The valid range is 0 ~ 999. The unit is 100K. 0: disable rate control. 1 ~ 999: valid rate value.
  - **Out:** fill in the port effective egress rate. The valid range is 0~999. The unit is 100K. 0: disable rate control. 1 ~ 999: valid rate value.
9. **Priority:** this static priority based on port, if you set the port is high priority, income frame from this port always high priority frame.
10. **Security:** when the port is in security mode, the port will be "locked" without permission of address learning. Only the incoming packets with SMAC already existing in the address table can be forwarded normally. User can disable the port from learning any new MAC addresses, and then use the static MAC addresses screen to define a list of MAC addresses that can use the secure port.
11. Click Apply button to apply all configuration.
12. When you select the port, you can see port current configure shows in below.

### Port Controls

Port	State	Negotiation	Speed	Duplex	Flow Control	Back Pressure	Band Width		Priority	Security
							In	Out		
Port.01	Enable	Auto	100	Full	ON	OFF	0	0	Disable	<input type="checkbox"/>
Port.02										
Port.03										
Port.04										

Apply

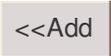
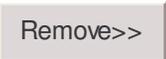
Port	Type	Link	State	Negotiation		Speed Duplex		Flow Control		Back Pressure		Band Width		Priority	Security	
				Config	Actual	Config	Actual	Config	Actual	Config	Actual	In	Out			
Port.01	100TX	Down	Enable	Auto	N/A	100	Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF

Port Control interface

## Trunking

The Link Aggregation Control Protocol (LACP) provides a standardized means for exchanging information between Partner Systems on a link to allow their Link Aggregation Control instances to reach agreement on the identity of the Link Aggregation Group to which the link belongs, move the link to that Link Aggregation Group, and enable its transmission and reception functions in an orderly manner. Link aggregation lets you group up to eight consecutive ports into a single dedicated connection. This feature can expand bandwidth to a device on the network. **LACP operation requires full-duplex mode**, more detail information refers to IEEE 802.3ad.

### Aggregator setting

1. **System Priority:** a value used to identify the active LACP. The switch with the lowest value has the highest priority and is selected as the active LACP.
2. **Group ID:** There are seven trunk groups to provided configure. Choose the "**Group ID**" and click .
3. **LACP:** If enable, the group is LACP static trunk group. If disable, the group is local static trunk group. All ports support LACP dynamic trunking group. If connecting to the device that also supports LACP, the LACP dynamic trunking group will be created automatically.
4. **Work ports:** allow max four ports can be aggregated at the same time. If LACP static trunk group, the exceed ports are standby and able to aggregate if work ports fail. If it is local static trunk group, the number must be as same as the group member ports.
5. Select the ports to join the trunk group. Allow max four ports can be aggregated at the same time. Click  button to add the port. To remove unwanted ports, select the port and click  button.
6. If LACP enable, you can configure LACP Active/Passive status in each ports on State Activity page.

7. Click **Apply**.
8. Use **Delete** button to delete Trunk Group. Select the Group ID and click **Delete** button.

**Trunking**

Aggregator Setting | Aggregator information | State Activity

**System Priority**

1

<b>Group ID</b>	Trunk.1	Select
<b>Lacp</b>	Disable	
<b>Work Ports</b>	3	
Port.01 Port.02 Port.03	<<Add Remove>>	Port.07 Port.08 Port.09 Port.10 Port.11 Port.12 Port.13 Port.14 Port.15

Apply | Delete | Help

Trunking—Aggregator Setting interface

## Aggregator Information

When you had setup the LACP aggregator, you will see relation information in here.

**Trunking**

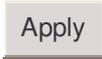
Aggregator Setting | Aggregator information | State Activity

**Static Trunking Group**

<b>Group Key</b>	2
<b>Port Member</b>	1-4 1-5 1-6

Trunking – Aggregator Information interface

## Aggregator State Activity

When you had setup the LACP aggregator, you can configure port state activity. You can mark or un-mark the port. When you mark the port and click  button the port state activity will change to **Active**. Opposite is **Passive**.

1. **Active:** The port automatically sends LACP protocol packets.
2. **Passive:** The port does not automatically send LACP protocol packets, and responds only if it receives LACP protocol packets from the opposite device.

---

### [Note]

1. A link having either two active LACP ports or one active port can perform dynamic LACP trunking.
  2. A link has two passive LACP ports will not perform dynamic LACP trunking because both ports are waiting for and LACP protocol packet from the opposite device.
  3. If you are active LACP's actor, when you are select trunking port, the active status will be created automatically.
-

**Trunking**

Aggregator Setting      Aggregator information      State Activity

Port	LACP State Activity	Port	LACP State Activity
1	N/A	2	N/A
3	N/A	4	<input checked="" type="checkbox"/> Active
5	<input checked="" type="checkbox"/> Active	6	<input checked="" type="checkbox"/> Active
7	N/A	8	N/A
9	N/A	10	N/A
11	N/A	12	N/A
13	N/A	14	N/A
15	N/A	16	N/A
17	N/A	18	N/A
19	N/A	20	N/A
21	N/A	22	N/A
23	N/A	24	N/A
25	N/A	26	N/A

Apply   Help

Trunking – State Activity interface

## Forwarding and Filtering

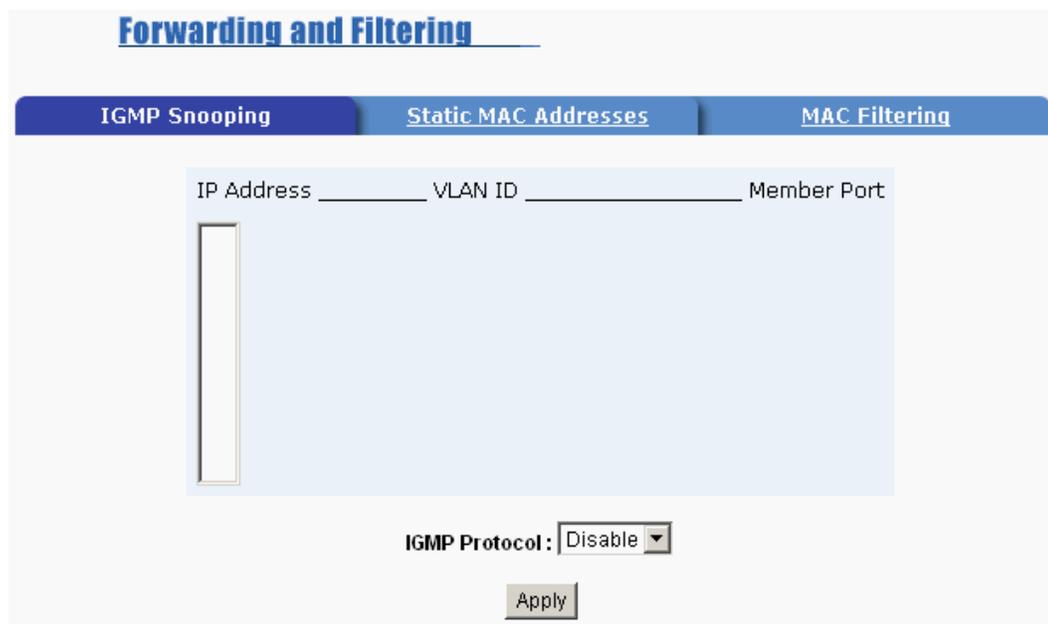
### IGMP Snooping

The switch support IP multicast, you can enable IGMP protocol on web management's switch setting advanced page, then display the IGMP snooping information in this page, you can view difference multicast group VID and member port in here, IP multicast addresses range from 224.0.0.0 through 239.255.255.255.

The Internet Group Management Protocol (IGMP) is an internal protocol of the Internet Protocol (IP) suite. IP manages multicast traffic by using switches, routers, and hosts that support IGMP. Enabling IGMP allows the ports to detect IGMP queries and report packets and manage IP multicast traffic through the switch. IGMP have three fundamental types of message as follows:

Message	Description
<b>Query</b>	A message sent from the querier (IGMP router or switch) asking for a response from each host belonging to the multicast group.
<b>Report</b>	A message sent by a host to the querier to indicate that the host wants to be or is a member of a given group indicated in the report message.
<b>Leave Group</b>	A message sent by a host to the querier to indicate that the host has quit to be a member of a specific multicast group.

When you enable the IGMP Snooping, you will see the relate information show as following figure.



IGMP Snooping interface

## Static MAC Address

When you add a static MAC address, it remains in the switch's address table, regardless of whether the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the disconnected or powered-off device is active on the network again.

1. **MAC Address:** enter the MAC address to and from which the port should permanently forward traffic, regardless of the device network activity.
2. **Port Number:** select a port number.
3. **VLAN ID:** If tag-based (IEEE 802.1Q) VLANs are set up on the switch, static addresses are associated with individual VLANs. Type the VID (tag-based VLANs) to associate with the MAC address.
4. Click  button.
5. Use  button to delete unwanted MAC address.

The screenshot shows a web-based configuration interface for a switch. At the top, there is a navigation bar with three tabs: "IGMP Snooping", "Static MAC Addresses" (which is currently selected), and "MAC Filtering". Below the navigation bar, the main content area is titled "Forwarding and Filtering". Under this title, there are three input fields: "MAC Address", "Port", and "VLAN ID". Below these fields is a large, empty table with a vertical scrollbar, intended for displaying the configured static MAC addresses. At the bottom of the interface, there are three buttons: "Add", "Delete", and "Help".

Static MAC Address interface

## MAC filtering

MAC address filtering allows the switch to drop unwanted traffic. Traffic is filtered based on the destination addresses.

1. In **MAC Address** box, enter the MAC address that wants to filter.
2. **VLAN ID:** If tag-based (802.1Q) VLAN are set up on the switch, in the VLAN ID box, type the VID to associate with the MAC address.
3. Click **Add** button.
4. Use **Delete** button to delete unwanted MAC address.

The screenshot shows a web-based configuration interface for a switch. The main heading is "Forwarding and Filtering". There are three tabs: "IGMP Snooping", "Static MAC Addresses", and "MAC Filtering". The "MAC Filtering" tab is selected. The interface contains a table with two columns: "MAC Address" and "VLAN ID". Below the table, there are two input fields: "MAC Address" and "VLAN ID" (with "N/A" as a placeholder). At the bottom of the interface, there are three buttons: "Add", "Delete", and "Help".

MAC Filtering interface

## VLAN configuration

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain. It allows you to isolate network traffic so only members of the VLAN receive traffic from the

same VLAN members. Basically, creating a VLAN from a switch is logically equivalent of reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plug into the same switch physically.

The switch supports port-based, 802.1Q (tagged-based) and protocol-base VLAN in web management page. In the default configuration, VLAN support is “disable”.

---

**[Note]** In order to make an effective change to a VLAN mode, you have to reboot the switch to apply new settings.

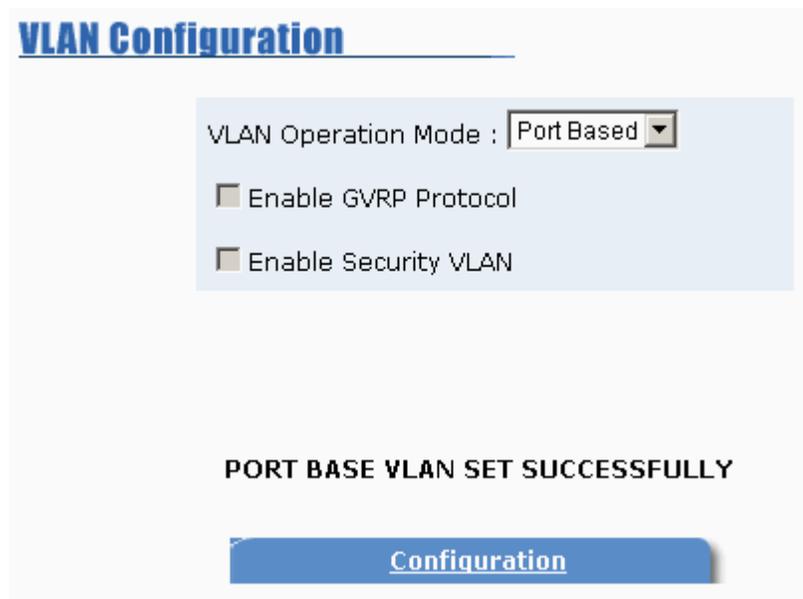
---

## Port-based VLAN

Packets can go among only members of the same VLAN group. Note all unselected ports are treated as belonging to another single VLAN. If the port-based VLAN enabled, the VLAN-tagging is ignored.

In order for an end station to send packets to different VLANs, it itself has to be either capable of tagging packets it sends with VLAN tags or attached to a VLAN-aware bridge that is capable of classifying and tagging the packet with different VLAN ID based on not only default PVID but also other information about the packet, such as the protocol.

1. Click the hyperlink **“Configuration”** to enter the VLAN configuration interface.



VLAN – PortBase interface

2. Click **Add** to create a new VLAN group.

## VLAN Configuration

VLAN Operation Mode :

Enable GVRP Protocol

Enable Security VLAN

A vertical rectangular box representing an empty table or list area for VLAN configuration.

VLAN—PortBase Add interface

3. Enter the VLAN name, VLAN ID and select the members for the VLAN group.
4. Click  .

## VLAN Configuration

VLAN Operation Mode :

Enable GVRP Protocol

Enable Security VLAN

Group Name

VLAN ID

Port.01  
Port.02  
Port.03  
Port.07  
Port.08  
Port.09  
Port.10  
Port.11  
Port.12  
Port.13  
Port.14  
Port.15

Add>>

<<Remove

Apply Help

5. You will see the VLAN displays.
6. If there are many groups that over the limit of one page, you can click  to view other VLAN groups.
7. Use  button to delete unwanted VLAN.
8. Use  button to modify existing VLAN group.

---

**[Note]** If the trunk groups exist, you you can configure them as members of the VLAN.

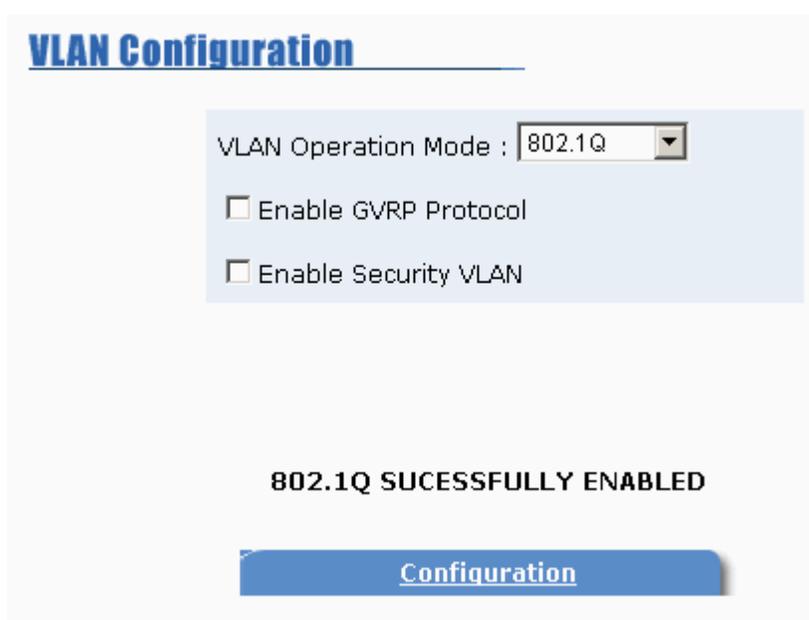
---

### 802.1Q VLAN

Tagged-based VLAN is an IEEE 802.1Q specification standard. Therefore, it is possible to create a VLAN across devices from different switch vendors. IEEE 802.1Q VLAN uses a technique to insert a “tag” into the Ethernet frames. Tag contains a VLAN Identifier (VID) that indicates the VLAN numbers.

You can create Tag-based VLAN, and enable or disable GVRP protocol. There are 256 VLAN groups to provide configure. Enable 802.1Q VLAN, the all ports on the switch belong to default VLAN, VID is 1. The default VLAN can't be deleting.

GVRP allows automatic VLAN configuration between the switch and nodes. If the switch is connected to a device with GVRP enabled, you can send a GVRP request using the VID of a VLAN defined on the switch; the switch will automatically add that device to the existing VLAN.



802.1q VLAN interface

- Click the hyperlink "**Configuration**" to enter the VLAN configuration interface.
- **Enable GVRP Protocol:** checked the box to enable GVRP protocol.
- **Enable security VLAN setting:** checked the box to enable security VLAN group. When you select to enable security VLAN group, only the members in this VLAN group can access to the switch. The steps of setting security VLAN refer to the following below steps in **Basic** section. After you have configured the security VLAN group, you can continue to create other VLAN groups.

---

**[Note]** There is only one security VLAN group.

---

■ **Basic**

1. Click **Add** button.

The screenshot displays the 'VLAN Configuration' web interface. At the top, the title 'VLAN Configuration' is underlined. Below it, a light blue box contains the 'VLAN Operation Mode' dropdown menu set to '802.1Q', and two unchecked checkboxes: 'Enable GVRP Protocol' and 'Enable Security VLAN'. A dark blue navigation bar below this box has two tabs: 'Basic' (which is active) and 'Port VLAN ID'. In the center, a large text input field contains the text 'DEFAULT\_\_1'. At the bottom of the interface, there is a row of buttons: 'Add', 'Edit', 'Delete', 'Previous Page', 'Next Page', and 'Help'.

802.1q VLAN –Add interface

2. **Group Name:** assign a name for the new VLAN.
3. **VLAN ID:** fill in a VLAN ID (between 2-4094). The default is 1.
4. **Protocol VLAN:** choose the protocol type. Default is NONE.
5. From the Available ports box, select ports to add to the switch and click **Add** button.  
If the trunk groups exist, you can see it in here (ex: TRK1, TRK2...), and you can configure it is the member of the VLAN or not.

## VLAN Configuration

VLAN Operation Mode : 802.1Q

Enable GVRP Protocol

Enable Security VLAN

Basic

Port VID

Group Name

VLAN ID

Protocol VLAN

Port.01  
Port.02  
Port.03  
Port.07  
Port.08  
Port.09  
Port.10  
Port.11  
Port.12  
Port.13  
Port.14  
Port.15

Add>>

<<Remove

Next Help

6. Click **Next**. Then you will see the page as follow.

## VLAN Configuration

VLAN Operation Mode : 802.1Q

Enable GVRP Protocol

Enable Security VLAN

VLAN Name	Vlan001		
VLAN ID	2		
UnTag Member			
Port.01	Untag	Port.02	Untag
Port.03	Untag		

Apply

7. To set the outgoing frames are VLAN-Tagged frames or untagged. Then click

Apply

- Tag: outgoing frames with VLAN-Tagged.
- Untag: outgoing frames without VLAN-Tagged.

### ■ Port VID: Configure port VID settings

1. **VLAN ID:** set the port VLAN ID that will be assigned to untagged traffic on a given port. This feature is useful for accommodating devices that you want to participate in the VLAN but that don't support tagging. The switch each port allows user to set one VLAN ID, the range is 1~255, default VLAN ID is 1. The VLAN ID must as same as the VLAN ID that the port belong to VLAN group, or the untagged traffic will be dropped.
2. **Ingress Filtering:** Ingress filtering lets frames belonging to a specific VLAN to be forwarded if the port belongs to that VLAN.
  - **Enable:** Forward only packets with VID matching this port's configured VID.
  - **Disable:** Disable Ingress filter function

3. **Acceptable Frame type:**
  - **ALL:** Acceptable all Packet
  - **Tag Only:** Only packet with match VLAN ID can be permission to go through the port.
4. Click .

**VLAN Configuration**

VLAN Operation Mode : 802.1Q

Enable GVRP Protocol

Enable Security VLAN

**Basic** | **Port VLAN ID**

Port	Port VLAN ID	Ingress Filter	Acceptable Frame Type	VLAN ID Range
Port.01	1	Enable	All	1~255
Port.02				
Port.03				
Port.04				

Port	VLAN ID	Ingress Filter	Acceptable Frame Type
Port.01	1	Enable	All

802.1q VLAN – Port VLAN ID interface

## Spanning Tree

The Spanning-Tree Protocol (STP) is a standardized method (IEEE 802.1d) for avoiding loops in switched networks. When STP enabled, to ensure that only one path at a time is active between any two nodes on the network. We are recommended that you enable STP on all switches ensures a single active path on the network.

## System Configuration

1. You can view spanning tree information about the Root Bridge.
2. You can view spanning tree status about the switch.
3. You can modify STP state. After modification, click  button.
  - **Priority:** assign path priority number.
  - **Max Age:** the maximum path age
  - **Hello Time:** the time that controls switch sends out the BPDU packet to check STP current status.
  - **Forward Delay Time:** forward delay time.

### Spanning Tree

System Configuration Per Port Configuration

STP State	<input type="checkbox"/>
Priority (0-65535)	<input type="text" value="32768"/>
Max Age (6-40)	<input type="text" value="20"/>
Hello Time (1-10)	<input type="text" value="2"/>
Forward Delay Time (4-30)	<input type="text" value="15"/>

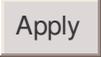
#### Root Bridge Information

Priority	32768
Mac Address	000F3899971C
Root Path Cost	0
Root Port	Root
Max Age	20
Hello Time	2
Forward Delay	15

Spanning Tree – System Configuration interface

## Per Port Configuration

You can configure path cost and priority of every port.

1. Select the port in Port column.
2. Assign the **Path Cost**. The value range is from 1 to 65535.
3. Assign the **port priority** value. The value range is from 0 to 255. The lowest value has higher priority.
4. Click  button.

## Spanning Tree

System Configuration

Per Port Configuration

Port	Path Cost (1-65535)	Priority (0-255)
Port.01 ▲ Port.02 ▾ Port.03 Port.04 Port.05 ▼	<input type="text" value="10"/>	<input type="text" value="128"/>

Apply Help

### STP Port Status

Port	Path Cost	Priority	State
Port.01	10	128	Disconnect
Port.02	10	128	Forwarding
Port.03	10	128	Disconnect
Port.04	10	128	Disconnect
Port.05	10	128	Disconnect
Port.06	10	128	Disconnect
Port.07	10	128	Disconnect
Port.08	10	128	Disconnect
Port.09	10	128	Disconnect
Port.10	10	128	Disconnect
Port.11	10	128	Disconnect
Port.12	10	128	Disconnect
Port.13	10	128	Disconnect
Port.14	10	128	Disconnect
Port.15	10	128	Disconnect
Port.16	10	128	Disconnect
Port.17	10	128	Disconnect
Port.18	10	128	Disconnect
Port.19	10	128	Disconnect
Port.20	10	128	Disconnect
Port.21	10	128	Disconnect
Port.22	10	128	Disconnect
Port.23	10	128	Disconnect
Port.24	10	128	Disconnect
Port.25	4	128	Disconnect
Port.26	4	128	Disconnect

SPT – Per Port Configuration interface

## Port Mirroring

The Port mirroring is a method for monitor traffic in switched networks. Traffic through ports can be monitored by one specific port. That is, traffic goes in or out monitored ports

will be duplicated into mirror port.

1. **Port Mirroring State:** set mirror mode: Disable, RX, TX, and Both.
2. **Analysis Port:** It's mean mirror port can be used to see all monitor port traffic. You can connect mirror port to LAN analyzer or netxray.
3. **Monitor Port:** the ports you want to monitor. All monitor port traffic will be copied to mirror port. You can select max 25 monitor ports in the switch. User can choose which port want to monitor in only one mirror mode.

---

**[Note]** If you want to disable the function, you must select monitor port to none.

---

## Port Mirroring

Port Mirroring State : <input type="text" value="Disable"/>	
Analysis Port : <input type="text" value="None"/>	
Monitor Port	State
Port.01	<input type="checkbox"/>
Port.02	<input type="checkbox"/>
Port.03	<input type="checkbox"/>
Port.04	<input type="checkbox"/>
Port.05	<input type="checkbox"/>
Port.06	<input type="checkbox"/>
Port.07	<input type="checkbox"/>
Port.08	<input type="checkbox"/>
Port.09	<input type="checkbox"/>
Port.10	<input type="checkbox"/>
Port.11	<input type="checkbox"/>
Port.12	<input type="checkbox"/>
Port.13	<input type="checkbox"/>
Port.14	<input type="checkbox"/>
Port.15	<input type="checkbox"/>
Port.16	<input type="checkbox"/>
Port.17	<input type="checkbox"/>
Port.18	<input type="checkbox"/>
Port.19	<input type="checkbox"/>
Port.20	<input type="checkbox"/>
Port.21	<input type="checkbox"/>
Port.22	<input type="checkbox"/>
Port.23	<input type="checkbox"/>
Port.24	<input type="checkbox"/>
Port.25	<input type="checkbox"/>
Port.26	<input type="checkbox"/>

Prot Mirroring interface

## SNMP Management

The SNMP is a Protocol that governs the transfer of information between management and agent. The switch supports SNMP V1.

You can define management stations as trap managers and to enter SNMP community strings. You also can define a name, location, and contact person for the switch. Fill in the system options data, and then click Apply to update the changes.

■ **System Options**

1. **Name:** enter a name for the switch.
2. **Location:** enter the switch physical location.
3. **Contact:** enter the name of contact person or organization.

## SNMP Management

The screenshot displays the SNMP Management interface with three main sections:

- System Options:** A form with three input fields labeled "Name:", "Location:", and "Contact:". Below the fields are "Apply" and "Help" buttons.
- Community Strings:** A section with a list box on the left labeled "Current Strings:" containing "public\_\_RO" and "private\_\_RW". To the right of the list box are "Add" and "Remove" buttons. On the right side, there is a "New Community String:" section with a "String:" input field and two radio buttons labeled "RO" (selected) and "RW".
- Trap Managers:** A section with a list box on the left labeled "Current Managers:" containing "(none)". To the right of the list box are "Add" and "Remove" buttons. On the right side, there is a "New Manager:" section with an "IP Address:" input field and a "Community:" input field.

SNMP Management interface

■ **Community strings:** serve as password

1. **Strings:** fill the name of string.
2. **RO:** Read only. Enables requests accompanied by this string to display MIB-object

information.

3. **RW:** Read write. Enables requests accompanied by this string to display MIB-object information and to set MIB objects.
4. Click .

### ■ Trap Manager

A trap manager is a management station that receives traps, the system alerts generated by the switch. If no trap manager is defined, no traps will issue. Create a trap manager by entering the IP address of the station and a community string.

1. **IP Address:** fill in the trap device IP.
2. **Community Strings:** the trap device community strings.
3. Click .

## Security Manager

You can change web management login user name and password.

1. **User name:** type the new user name. The default is “root”
2. **New Password:** type the new password. The default is “root”
3. **Confirm password:** retype the new password.
4. Click .

### Security Manager

<b>User Name :</b>	<input type="text" value="root"/>
<b>New Password :</b>	<input type="password" value="****"/>
<b>Confirm Password :</b>	<input type="password" value="****"/>
	<input type="button" value="Apply"/>

Security Manager interface

## SNTP Configuration

You can configure the SNTP (Simple Network Time Protocol) settings. The SNTP allows you to synchronize switch clocks in the Internet.

- **SNTP Client:** enable or disable SNTP function to get the time from the SNTP server.
- **UTC Timezone:** set the switch location time zone.
- **Server IP:** set the SNTP server IP address.

### SNTP Configuration

SNTP Client :

UTC Timezone	<input type="text" value="0"/>
SNTP Server IP	<input type="text" value="192.168.16.2"/>
Switch Timer	<input type="text"/>

SNTP Configuration Interface

## 802.1X Configuration

When enabling the IEEE 802.1X function, you can configure the parameters of this function. To enable the IEEE 802.1X function, go to **Administrator** → **Switch Setting** → **Misc Config**.

## System Configuration

1. **Radius Server IP:** set the Radius Server IP address.

2. **Server Port:** set the UDP destination port for authentication requests to the specified Radius Server.
3. **Accounting Port:** set the UDP destination port for accounting requests to the specified Radius Server.
4. **Shared Key:** set an encryption key for use during authentication sessions with the specified radius server. This key must match the encryption key used on the Radius Server.
5. **NAS, Identifier:** set the identifier for the radius client.
6. Click  .

802.1x Configuration	
System Configuration	
Radius Server IP	192.168.16.3
Server Port	1812
Accounting Port	1813
Shared Key	12345678
NAS, Identifier	NAS_L2_SWITCH

802.1x Configuration – System Configuration interface

## Per port Configuration

1. Select the port in Port column.
2. Select the state of port. There are four states:
  - **Reject:** the specified port is required to be held in the Unauthorized state.
  - **Accept:** the specified port is required to be held in the Authorized state.
  - **Authorized:** the specified port is set to the Authorized or Unauthorized state in accordance with the outcome of an authentication exchange between the

Supplicant and the authentication server.

- **Disable:** The specified port is required to be held in the Authorized state.

3. Click .

4. You can see the every port Authorization information list in table.

## 802.1x Configuration

**System Configuration** | **Per Port Configuration** | **Misc Configuration**

Port	State
Port.01 Port.02 Port.03 Port.04 Port.05	Authorize

### Port Authorization

Port	State
Port.01	Disable
Port.02	Disable
Port.03	Disable
Port.04	Disable
Port.05	Disable
Port.06	Disable
Port.07	Disable
Port.08	Disable
Port.09	Disable
Port.10	Disable
Port.11	Disable
Port.12	Disable
Port.13	Disable
Port.14	Disable
Port.15	Disable
Port.16	Disable
Port.17	Disable
Port.18	Disable
Port.19	Disable
Port.20	Disable
Port.21	Disable
Port.22	Disable
Port.23	Disable
Port.24	Disable
Port.25	Disable
Port.26	Disable

802.1x Configuration – Per Port Configuration

## Misc Configuration

1. **Quiet period:** Set the period during which the port doesn't try to acquire a supplicant.
2. **TX period:** Set the period the port waits to retransmit next EAPOL PDU during an

authentication session.

3. **Supplicant timeout:** Set the period of time the switch waits for a supplicant response to an EAP request.
4. **Server timeout:** Set the period of time the switch waits for a server response to an authentication request.
5. **Max requests:** Set the number of authentication that must time-out before authentication fails and the authentication session ends.
6. **Reauth period:** Set the period of time after which clients connected must be re-authenticated.
7. Click  .

802.1x Configuration		
System Configuration	Per Port Configuration	Misc Configuration
Quiet Period	<input type="text" value="60"/>	
Tx Period	<input type="text" value="30"/>	
Supplicant Timeout	<input type="text" value="30"/>	
Server Timeout	<input type="text" value="30"/>	
Max Requests	<input type="text" value="2"/>	
Reauth Period	<input type="text" value="3600"/>	

802.1x Configuration – Misc Configuration interface

## System Log

You can view the system log events in here. Click  button to get newest system log event.

## System Log

<b>System Log Client Mode</b>	Disable ▾	Apply
<b>System Log Server IP Address</b>	192.168.16.2	

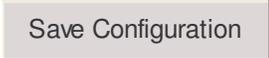
```
1: Jan 1 00:00:05 : Clear System Log Table!  
2: Jan 1 00:00:07 : Port.02 ---LINKUP---  
3: Jan 1 00:20:27 : Set Spanning Tree Protocol Enable!  
4: Jan 1 01:00:06 : Set Collision Retry Forever : Enable  
5: Jan 1 01:00:06 : Set Hash Algorithm : CRC Hash  
6: Jan 1 01:00:06 : Set IFG Compensation : Enable  
7: Jan 1 01:00:06 : Set 802.1x Protocol : Enable  
8: Jan 1 01:00:06 : Set IGMP Query Mode : Enable  
9: Jan 1 01:00:20 : Set IGMP Protocol: Enable!
```

Page.1 ▾

Reload Clear

System Log Interface

## Save Configuration

You must save the configuration to the flash memory when you have changed the configuration. Otherwise, the new configuration will be lost when the switch restart or power off. Click the  button to save the configuration to the flash memory.

## Save Configuration

Save Configuration

Help

Save Configuration Interface

## TFTP Update Firmware

It provides the functions to allow a user to update the switch firmware. Before updating, make sure you have your TFTP server ready and the firmware image is on the TFTP server.

1. **TFTP Server IP Address:** fill in your TFTP server IP.
2. **Firmware File Name:** the name of firmware image.
3. Click .

## TFTP Update Firmware

<b>TFTP Server IP Address</b>	<input type="text" value="192.168.16.2"/>
<b>Firmware File Name</b>	<input type="text" value="image.bin"/>

Apply

Help

TFTP Update Firmware interface

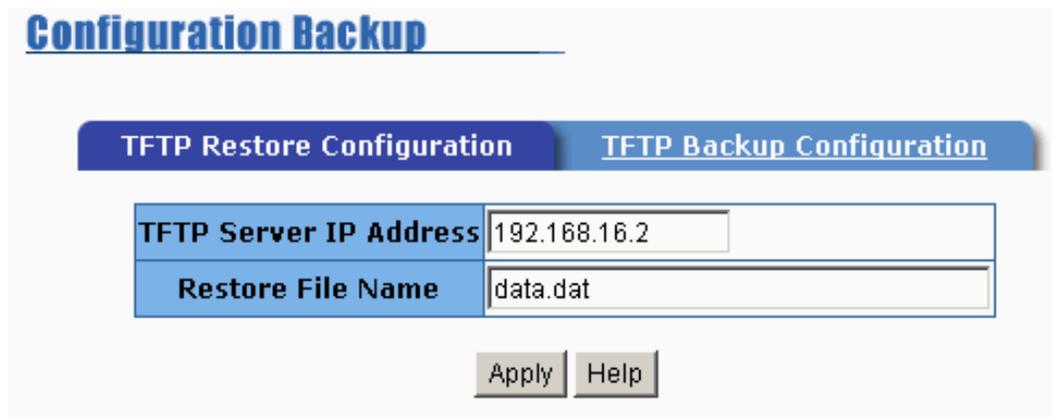
## Configuration Backup

In Configuration Backup, you can restore the backup configuration into the switch. Also, you can backup the configuration to TFTP server.

## TFTP Restore Configuration

You can restore EEPROM value from TFTP server, but you must put back image in TFTP server, switch will download back flash image.

1. **TFTP Server IP Address:** fill in the TFTP server IP.
2. **Restore File Name:** fill in the correct restore file name.
3. Click .



**Configuration Backup**

**TFTP Restore Configuration** | **TFTP Backup Configuration**

**TFTP Server IP Address** 192.168.16.2

**Restore File Name** data.dat

TFTP Restore Configuration interface

## TFTP Backup Configuration

You can save current EEPROM value from the switch to TFTP server, then go to the TFTP restore configuration page to restore the EEPROM value.

1. **TFTP Server IP Address:** fill in the TFTP server IP.
2. **Backup File Name:** fill the file name.
3. Click .

## Configuration Backup

**TFTP Restore Configuration** | **TFTP Backup Configuration**

<b>TFTP Server IP Address</b>	192.168.16.2
<b>Backup File Name</b>	data.dat

TFTP Backup Configuration interface

## Factory Default

Reset Switch to default configuration, default value to as following configuration:

- fi Default IP address: 192.168.1.77
- fi Default Gateway: 192.168.1.254
- fi Subnet mask: 255.255.255.0
- fi The other setting value is back to disable or none.
- fi Click  button to reset switch to default setting.

## Factory Default

Please click **[Default]** button to restore factory default setting.

Factory Default interface

## System Reboot

Reboot the Switch in software reset. Click  button to reboot the switch.

## System Reboot

Please click **[Reboot]** button to restart switch device.

Reboot

System Reboot interface

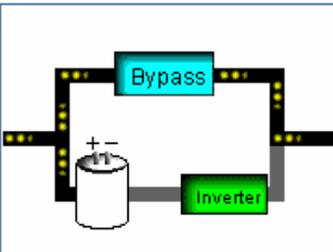
## Power Status

You can view connected UPS information and set command to UPS.

**Power Status**

com 1 Refresh

	Input Voltage	Ouput Voltage	Frequency
Now	0.0 Volt.	0.0 Volt.	0.0 Hz
Min	0 Volt.	0 Volt.	0 Hz
Max	0.0 Volt.	0.0 Volt.	0.0 Hz
	Battery Capacity	UPS Overload	Temperature
Now	0 %	0 %	0.0 C
Min	0 %	0 %	0 C
Max	0 %	0 %	0.0 C

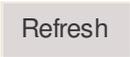


RatVoltage 0.0 Vac RatBtyVoltage 0.0 Vdc RatCurrent 0 A RatFrequency 0.0 Hz

Model Version

 UPS Disconnect	 UPS Input	 Potential Status	 Beeper Status
 UPS State	 UPS Bypass	 UPS Test	 UPS Shutdown

Power Status Interface

- **UPS information:** the information will be available when the UPS is connected with switch and the connection is normal and UPS is power on status. Click  button to get the newest information.
  - **Input Voltage:** display the current value, minimum, and maximum value of UPS input voltage.

- **Output Voltage:** display the current value, minimum, and maximum value of UPS output voltage.
- **Frequency:** display the frequency value of UPS.
- **Battery Capacity:** display the battery capacity of UPS.
- **UPS Overload:** display the overload capacity of UPS.
- **Temperature:** display the current temperature of UPS.
- **RatVoltage:** range of the UPS voltage.
- **RatBtyVoltage:** range of the UPS battery voltage.
- **RatCurrent:** range of the UPS current.
- **RatFrequency:** range of the UPS frequency.
- **Company Name:** Name of UPS Company.
- **Model:** model name of the UPS.
- **Version:** UPS internal software version.



The figure represents the UPS status, when the status has been detected, the figure color change from yellow to red and the status description will changed.

## POE Status

You can view POE port information and set configuration to each port. Select the port and set configuration and click the  button to apply new value. Click the  button to get current POE status.

### POE STATUS

Power Management:	Enable	Total Power Limit (W)	369
Firmware	2.1	Total Power (W)	0.0

Port	Enable	Power Limit By Classification	Power Limit By Management	Detect Legacy Signature	Priority	Power Limit Max (mW) (<15400)	Fault Status	Mode Status	Discovery R (ohms)	Port Current (mA)	Port Voltage (V)	Port Power (mW)	Class Current (mA)	Determined Class
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.2	0	0.0	0:15.4W
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	V Sample	131068	0	0.1	0	0.0	0:15.4W
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.4	0	0.0	0:15.4W
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.3	0	0.0	0:15.4W
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.3	0	0.0	0:15.4W
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.3	0	0.0	0:15.4W
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.2	0	0.0	0:15.4W
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low	15400	null	R Detect	131068	0	2.2	0	0.0	0:15.4W

POE Status Interface

- **Power Management:** Enabling or disabling the POE power management function.
  - **Firmware:** display the system firmware version.
  - **Total Power Limit:** Set limit value of the total POE port provided power to the PDs.
  - **Total Power (W):** total of all the port power that provided to PD.
- ⊙ **Port:** select the port that you want to configure from the drag down menu in the bottom of the interface.
- **Enable:** enable or disable the port status.
  - **Power Limit by Classification:** Enabling or disabling power classification function.
  - **Power Limit by Management:** Enabling or disabling the port power limit management for POE power management.
  - **Detect Legacy Signature:** The legacy detection is to identify the PD devices that did not follow the IEEE 802.3af standard their unique electrical signatures in order for the PoE switch can provide the power to those PD devices.
  - **Priority:** Set port priority for the POE power management. 1 = C (critical), 2 = H

(High), 3 = L (Low).

- **Power Limit Max (mW) (<15400):** Set the power limit value. The maximum value must be less than 15400.
- **Fault Status:** the PD error status message. There are three error status and explain as following.
  - **Null:** It means there is no PD connected or the connected PD device status is normal.
  - **Overload:** It means the current is over the PD current classification limited (475mA @ 48V DC) that the situation happens over 50msec.
- **Mode Status:** the PD current operation mode status.
  - **V sample or I sample:** It means "Current sample or Voltage sample". When PD is detected and current is supplied, the POE switch will keep detecting and sampling some current or voltage to ensure whether the PD is still present on this port. It is an IEEE 802.3af operating procedure.
  - **R detect:** When the port doesn't connect with any PD, the POE switch will poll each port and detect the resistor.
- **Discovery R (ohms):** display resistance value.
- **Port Current (mA):** display current value.
- **Port Voltage (V):** display voltage value.
- **Port Power (W):** display watt value.
- **Class Current (mA):** display power class. When you enable the "Bypass classification" function, the class value will not show in here.
- **Determined Class:** display power class. When you enable the "Bypass classification" function, the class value will not show in here.

# Troubleshooting

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This section is intended to help you solve the most common problems on the 24 10/100TX plus 2 SFP/Copper managed POE switch.

## Incorrect connections

The switch port can auto detect straight or crossover cable when you link switch with other Ethernet device. For the RJ-45 connector should use correct UTP or STP cable, 10/100Mbps port use 2 pairs twisted cable. If the RJ-45 connector is not correct pin on right position then the link will fail. For fiber connection, please notice that fiber cable mode and fiber module should be match.

### ■ Faulty or loose cables

Look for loose or obviously faulty connections. If they appear to be OK, make sure the connections are snug. IF that does not correct the problem, try a different cable.

### ■ Non-standard cables

Non-standard and miss-wired cables may cause numerous network collisions and other network problem, and can seriously impair network performance. A category 5-cable tester is a recommended tool for every 100Base-T network installation.

**RJ-45 ports:** use unshielded twisted-pair (UTP) or shield twisted-pair ( STP ) cable for RJ-45 connections: 100Ω Category 3, 4 or 5 cable for 10Mbps connections or 100Ω Category 5 cable for 100Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

## ■ Improper Network Topologies

It is important to make sure that you have a valid network topology. Common topology faults include excessive cable length and too many repeaters (hubs) between end nodes. In addition, you should make sure that your network topology contains no data path loops. Between any two ends nodes, there should be only one active cabling path at any time. Data path loops will cause broadcast storms that will severely impact your network performance.

## Diagnosing LED Indicators

The Switch can be easily monitored through panel indicators to assist in identifying problems, which describes common problems you may encounter and where you can find possible solutions.

IF the power indicator does turn on when the power cord is plugged in, you may have a problem with power outlet, or power cord. However, if the Switch powers off after running for a while check for loose power connections, power losses or surges at power outlet. IF you still cannot resolve the problem, contact your local dealer for assistance.

## Diagnosing POE problems

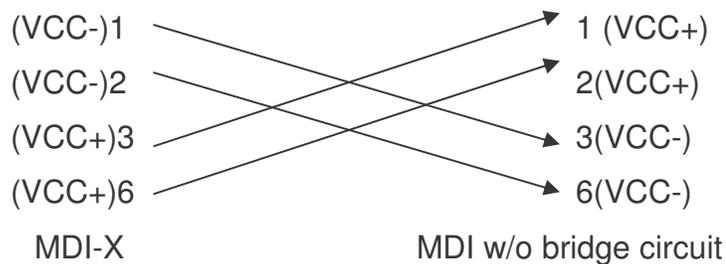
### ■ No Power Forward

- Make sure your PD device comply with IEEE 802.3af standard, the 8 10/100TX plus One Exp. slot unmanaged POE switch only support the IEEE 802.3af compliant PD.
- The POE switch uses the signal power pair to forward power, the data and the power is traverse the pin. Please, check the documentation for your PD device to

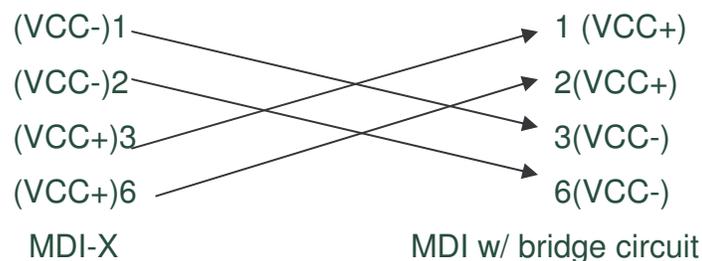
make sure the power pair it uses. The following table is the signal power pair RJ-45 port pinout.

Pin	Signal / Name
1	RX+ / VCC -
2	RX- / VCC -
3	TX+ / VCC +
4	NC
5	NC
6	TX- / VCC +
7	NC
8	NC

- When the PD device pin out is in MDI mode without bridge circuit function, please use the crossover cable for power and data transmit. Please refer to the above table for the pin out transform.



- When the PD device is in MDI mode with bridge circuit function, the straight forward and crossover cable both workable for power and data transmit. Please refer to the above table for the pin out antithesis.



**OR**



# Technical Specification

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This section provides the specifications of 24 10/100TX plus 2 SFP/Copper managed POE switch, and the following table lists these specifications.

<p><b>Standard</b></p>	<p>IEEE802.3 10BASE-T          IEEE802.3u 100BASE-TX/100BASE-FX          IEEE802.3z Gigabit SX/LX          IEEE802.3ab Gigabit 1000T          IEEE802.3x Flow Control and Back pressure          IEEE802.3ad Port trunk with LACP          IEEE802.1d Spanning tree protocol          IEEE802.1w Rapid spanning tree protocol          IEEE802.1p Class of service          IEEE802.1Q VLAN Tagging          IEEE 802.1x user authentication          IEEE802.3af Power over Ethernet</p>
<p><b>LED Indicators</b></p>	<p>System Power          10/100TX RJ-45 Port: Link/Active (Green: 1000Mbps/          Yellow: 10/100Mbps), Full-duplex/collision          SFP/ Copper: Link/Activity, Full duplex/collision,          1000Mbps, 100Mbps</p>
<p><b>Connector</b></p>	<p>10/100TX: 24 x RJ-45          Gigabit Copper: 2 x RJ-45          2 SFP for SFP transceiver</p>

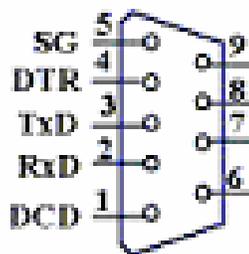
<b>RS-232 connector</b>	One RS-232 DB-9 female connector for switch management and 2 RS-232 DB-9 male connectors on rear side for DC power supply and UPS management.
<b>Switch architecture</b>	Store and forward switch architecture.
<b>Back-plane</b>	Up to 8.8Gbps
<b>MAC address</b>	8K MAC address table with Auto learning function
<b>Memory</b>	3Mbits for packet buffer
<b>Flash ROM</b>	512Kbytes x 2
<b>System memory</b>	8Mbytes x 1
<b>Dimensions</b>	440mm(W) x 280mm(D) x 44mm(H)
<b>Operating environment</b>	0°C~40°C, 10%~95%RH
<b>Storage Temp.</b>	-40°C to 70°C (-40°F to 158°F)
<b>Remote power feeding</b>	End-point insert type and compatible with IEEE802.3af Per port feeding power: 15.4Watts (maximum)
<b>Power</b>	Embedded AC power supply: AC 90~240V, 50/60Hz, 200W; Extra power input: DC48V
<b>Power consumption</b>	20 W (maximum) with additional DC power input.

<b>Ventilation</b>	2 DC Fans with detect function
<b>Operating environment</b>	0°C~40°C, 10%~95%RH
<b>Storage environment</b>	-40°C~70°C, 95% RH
<b>EMI</b>	FCC Class A, CE
<b>Safety</b>	UL, cUL, CE/EN60950

# Appendix

## Console Port Pin Assignments

The DB-9 serial port on the front panel is used to connect to the switch for out-of-band console configuration. The console menu-driven configuration program can be accessed from a terminal or a PC running a terminal emulation program. The pin assignments used to connect to the serial port are provided in the following tables.



DB-9

DB-9 Console Port Pin Numbers

### ■ DB-9 Port Pin Assignments

EIA Circuit	CCITT Signal	Description	Switch's DB9 DTE Pin #	PC DB9 DTE Pin #
BB	104	RxD (Received Data)	2	2
BA	103	TxD (Transmitted Data)	3	3
AB	102	SGND (Signal Ground)	5	5

### ■ Console Port to 9-Pin DTE Port on PC

Switch's 9-Pin Serial Port	CCITT Signal PC's 9-Pin	DTE Port
2 RXD	<-----RXD ----->	3 TxD

3 TXD	-----TXD ----->	2 RxD
5 SGND	-----SGND -----	5 SGND

## Cables

The RJ-45 ports on the switch support automatic MDI/MDI-X operation, so you can use standard straight-through twisted-pair cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

### ■ Cable Types and Specifications

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45
1000BASE-SX	50/125 or 62.5/125 micron core multimode fiber (MMF)	300/550m	LC
1000Base-LX	8.3/125 micron single mode (SMF)	10Km	LC

Cable specification table

## 100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 for receiving data.

### ■ RJ-45 Pin Assignments

Pin Number	Assignment
1	Tx+
2	Tx-
3	Rx+
6	Rx-

**Note:** “+” and “-” signs represent the polarity of the wires that make up each wire pair.

All ports on this switch support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3 and 6 at the other end of the cable. The table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

Pin MDI-X	Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)



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