LevelOne

GSW-2472TGX

24Fast/2 Gigabit Ethernet combo

Web Smart Switch

User`s Manual

Contents

1. Introduction

Welcome to the World of Network Switching. In the modern business society, communication and information sharing are fundamental to our life. And computer networks have proven to be one of the fastest ways of communication.

LevelOne GSW-2472TGX, 24Fast/2 Gigabit combo Web Smart 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. The Switch is targeted at workgroup, department or backbone computing environment.

LevelOne GSW-2472TGX features a “store-and-forward “ switching scheme. This allows the switch to auto-learn and store source address in a 6K-entry MAC address table.

LevelOne GSW-2472TGX supports **Auto MDI/MDIX**. **MDI** (Medium Dependent Interface) Port is also called an "uplink port". The MDI port does not transmit cross and receive lines, which is done by the regular ports (MDI-X ports) that connect to end stations. In general, **MDI** means connecting to another Hub or Switch while **MDIX** means connecting to a workstation or PC. Therefore, **Auto MDI/MDIX** means that you can connect to another Switch or workstation without changing non-crossover or crossover cabling.

LevelOne GSW-2472TGX has 24 auto-sensing 10/100Base-TX RJ-45 ports and 2 auto detect Giga port for higher connection speed.

Features

- Conforms to IEEE 802.3 10Base-T, 802.3u 100Base-TX, IEEE 802.3ab 10/100/1000T, IEEE 802.3z Gigabit fiber, and IEEE 802.3x Flow control

- 24 10/100Base-TX RJ-45 Ethernet port and 2 Gigabit copper auto detect with Mini GBIC port
- Automatic MDI/MDIX for 10Base-T and 100Base-TX ports
- N-way Auto-negotiation supported
- Back-Pressure-Base flow control on Half-duplex link mode
- Pause-Frame-Base flow control on Full-duplex link mode
- Store-and-forward switching architecture
- 8.8G back-plane
- 6K MAC address table
- IEEE 802.1Q Tag VLAN supported
- IEEE802.3ad Port trunk supported
- Support per port bandwidth control (except gigabit copper/Mini GBIC port)
- Port-based VLAN supported
- Broadcast Strom control supported
- Web base management supported
- 19” Standard Rack-mounted size

Software Features

Management	Web Management and Console (RS-232)
Port Trunk	Support IEEE802.3ad provide 7 Trunk group of 4 member ports that without 2 auto detect giga port.
VLAN	Port Based VLAN IEEE802.1Q Tag VLAN, VLAN ID up to 255
QOS Policy	Supports 8 priority levels ID for High / Low priority queue

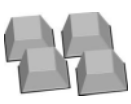
Class of Service	Support IEEE802.1p Priority. Supports First Come First service, All High before Low, WRR for High or low weight.
Port Based Priority	Support 3 setting--Disable, Low and High priority. When set to Disable, the income packet will follow QoS policy. Otherwise, the packet will follow port priority setting to High/Low queue.
Port Mirror	Global System support 3 mirroring type RX, TX and both packet. The maximum of mirror entries up to 25.
Bandwidth Control	Per port support bandwidth control (except Gigabit copper/ Mini GBIC port). Per level 1Mbits.
Broadcast Storm	Disable, 5%, 10%, 20%

Package Contents

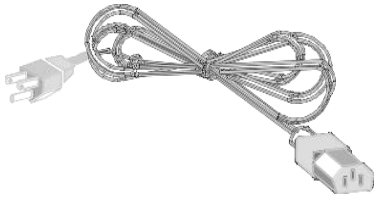
Unpack the contents of GSW-2472TGX and verify them against the checklist below.

- GSW-2472TGX
- Four Rubber Feet
- Power Cord
- Rack-mounted Kit
- RS-232 cable
- User Guide

LevelOne GSW-2472TGX



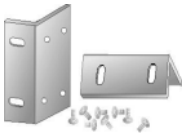
Four Rubber Feet



Power Cord

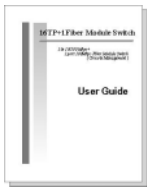
24Fast /2 Gigabit Ethernet combo Web Smart Switch

Web Smart Switch



Rack-mounted Kit

RS-232 Cable



User Guide

Figure 1-2. Package Contents

Compare the contents of your GSW-2472TGX package with the standard checklist above. IF any item is missing or damaged, please contact your local dealer for service.

2. Hardware Description

This Section describes the hardware of GSW-2472TGX, and give a physical and functional overview of this Switch.

The physical dimensions: 440mmx 161mm x 44mm (L x W x H)

Front Panel

The Front Panel of GSW-2472TGX consists of 24x 10/100Base-TX RJ-45 ports (Auto MDI/MDIX) and 2 auto detect Giga port which could be Copper Gigabit port or Mini Gigabit Fiber module (optional). The LED Indicators are also located on the front panel of the Switch.

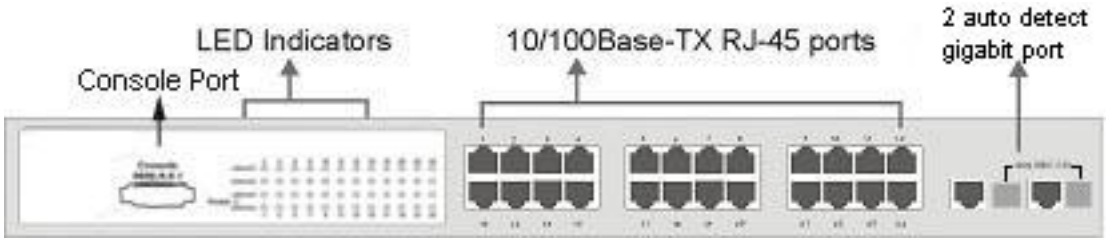


Figure 2-1. The Front panel of GSW-2472TGX

RJ-45 Ports (Auto MDI/MDIX): 24x 10/100 N-way auto-sensing for 10Base-T or 100Base-TX connections.

[In general, **MDI** means connecting to another Hub or Switch while **MDIX** means connecting to a workstation or PC. Therefore, **Auto MDI/MDIX** means that you can connect to another Switch or workstation without changing non-crossover or crossover cabling.]

2 Giga port: 2 auto detect Giga port—UTP or fiber. Giga fiber is the mini GBIC module that is optional.

[Note] When you install the Mini GBIC into the switch, you must disconnect the giga

copper connection if you have connected device with it. Otherwise, the switch will not detect the Mini GBIC that you have installed. While you using giga copper port or Mini GBIC port, only one of them will work, ex: when giga copper port is connecting, then Mini GBIC is disabling.

LED Indicators

The LED Indicators gives real-time information of systematic operation status. The following table provides descriptions of LED status and their meaning.

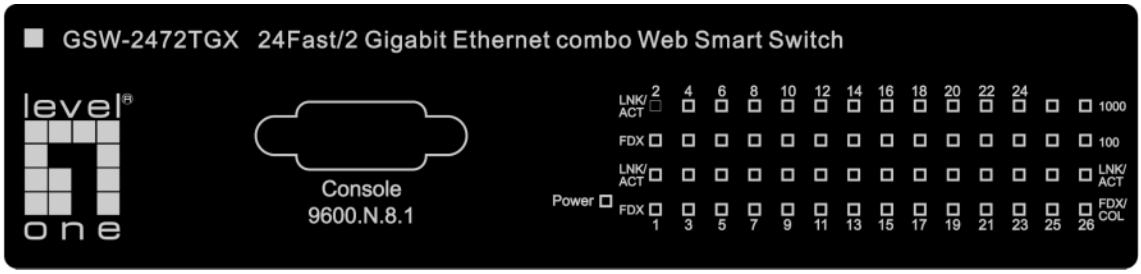


Figure 2-2. LED indicators

LED	Status	Description
Power	Green	Power On
	Off	Power is not connected
LNK/ACT	Green	The port is connecting with the device.
	Blink	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
1000(Giga port)	Green	In 1000Mbps connection speed
100(Giga port)	Orange	In 100Mbps connection speed

LNK/ACT (Giga port)	Green	The port is connecting with the device.
	Blink	The port is receiving or transmitting data.
	Off	No device attached
FDX/COL (Giga port)	Orange	The port is operating in Full-duplex mode
	Blink	Collision of Packets occurs in the port
	Off	In half-duplex mode

Table 2-1. The Description of LED Indicators

Rear Panel

The 3-pronged power plug is located at the rear Panel of GSW-2472TGX as shown in Figure 2-3. The Switch will work with AC in the range 100-240V AC, 50-60Hz.

Figure 2-3. The Rear Panel of GSW-2472TGX

Desktop Installation

Set the Switch on a sufficiently large flat space with a power outlet nearby. The surface where you put the 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.

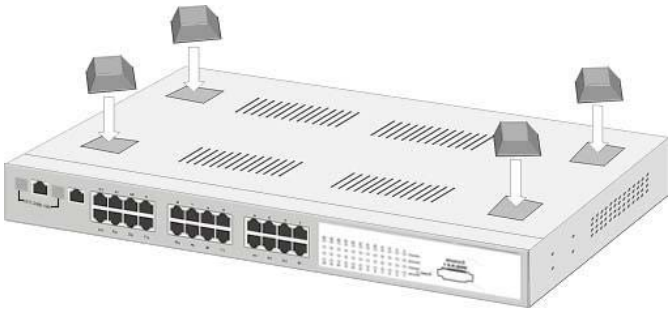


Figure 2-4. Attaching Rubber Feet to each corner on the bottom of the Switch

Rack-mounted Installation

GSW-2472TGX 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.

Figure 2-5. Attach mounting brackets with screws

B. After attached both mounting brackets, position GSW-2472TGX 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.

Figure 2-6. Mount the Switch in an EIA standard 19-inch Rack

[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.

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.

3. Console Management

Login in the Console Interface

Use RS-232 cable to connect the Switch and PC. Then, 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

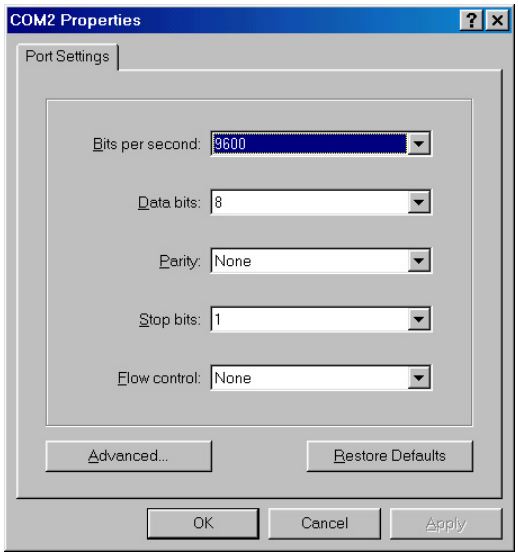
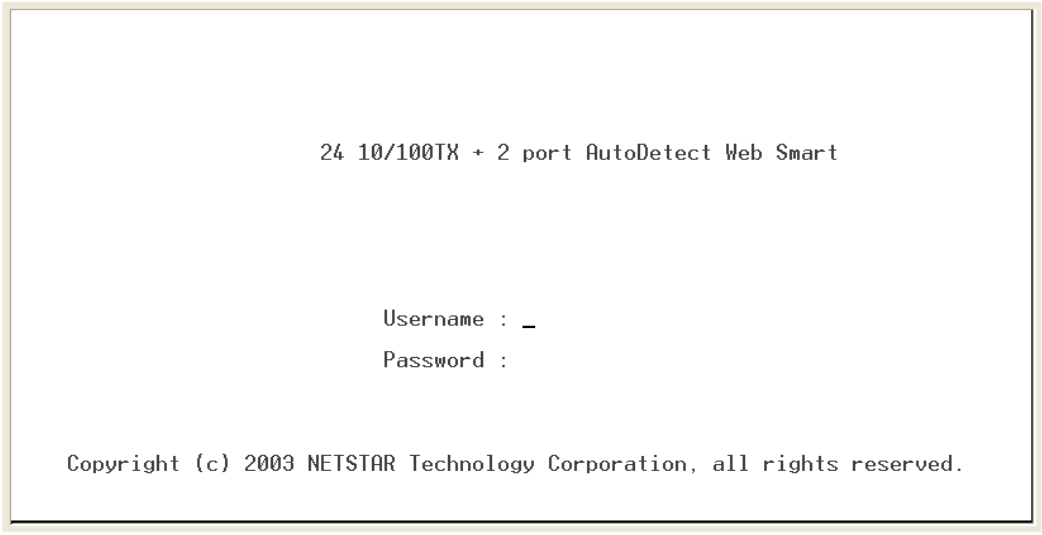


Figure 3-1. The settings of communication parameters

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 appear. Please see below figure for login screen.

- The default user name and password is "**root**".

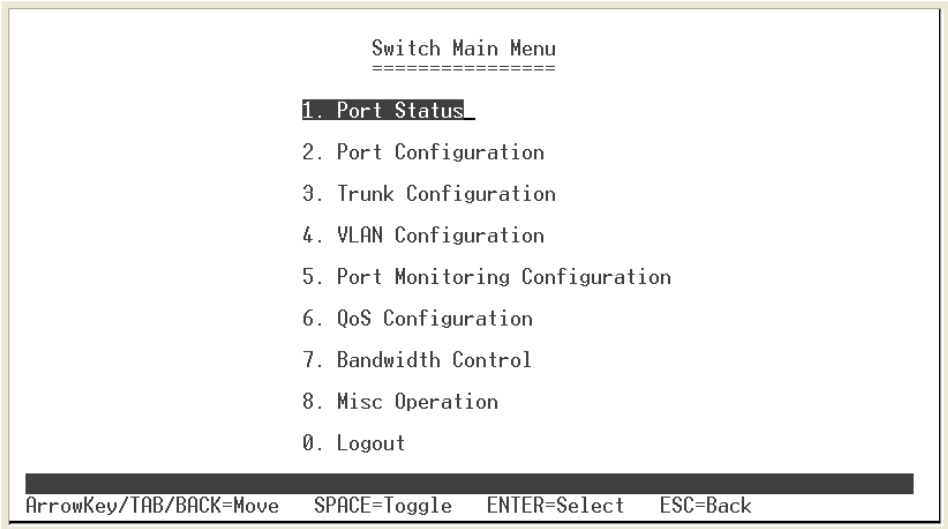


Console login screen

Main Menu

There are 8 functions selection as following. User can use the control key or enter the selection number to go to the function configure interface.

- **Port Status:** display each port status of switch
- **Port Configuration:** configure the setting of each port that includes the module.
- **Trunk Configuration:** configure the trunk group.
- **VLAN Configuration:** create VLAN group, delete and edit VLAN group.
- **Port Monitoring Configuration:** configure port monitoring.
- **QoS Configuration:** configure Qos setting.
- **Bandwidth Control:** configure bandwidth of each port.
- **Misc Operation:** the switch system relate configuration
- **Logout:** Exit the menu line program.



Main menu line interface

- **Control Key description:**

The control keys provided in whole menu:

Arrow Key/Tab/Backspace: Move the vernier between item selections.

Enter: Select item.

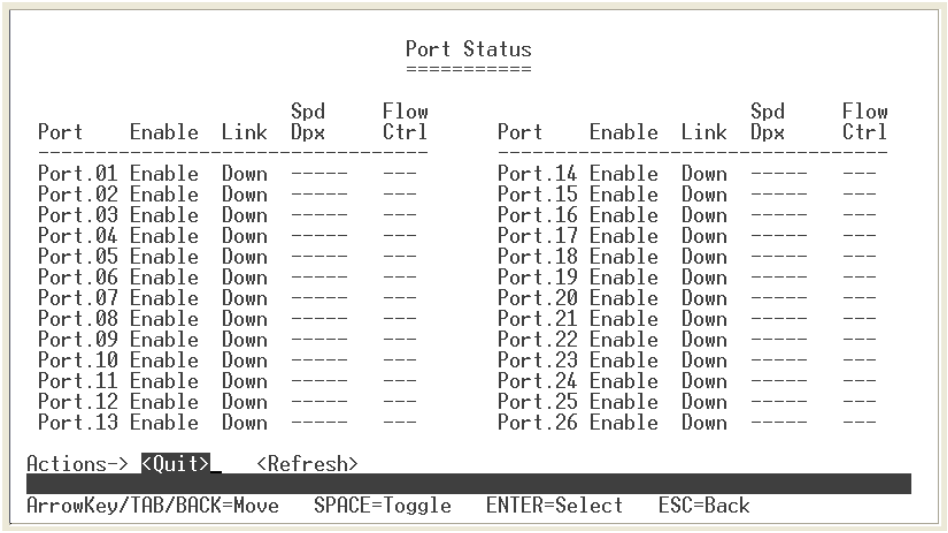
Space: Toggle selected item change the value.

Esc: to exit the current action mode.

Port Status

User can view each port status. Select **<Refresh>** action to get current port status information. The port 25 and 26 represent the auto detect gigabit port status. The port 25 and 26 port status display will depend on the connection detect to be different.

1. **Enable:** display port current availability – Enable or Disable.
2. **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**".
3. **Spd/Dpx:** display port connection speed.
4. **Flow Ctrl:** display the flow control status is "on" or "off" mode.



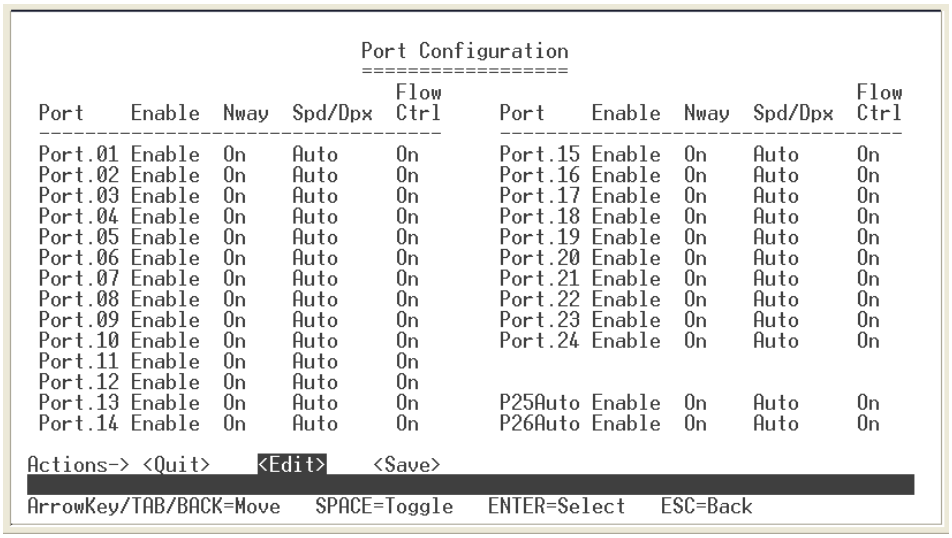
Status and Counters main configuration interface

Port Configuration

User can set up each port status.

1. Select **<Edit>**
2. Use **Arrow/Tab/Backspace** key to move between items.
3. **Enable:** The port can be set to disable or enable mode. If the port setting is disable then will not receive or transmit any packet.
4. **Nway:** set port Nway negotiation "on" or "off".

5. **Spd/Dpx:** set the port link speed (10/100) and link mode (duplex/half). When port 25 and 26 is UTP connection, then the spd/dpx only support “Auto” mode. When port 25 and 26 is Giga fiber connection, then the spd/dpx only support “Force” mode.
6. **Flow Ctrl:** set the Flow control function “on” or “off”.
7. Select the **<Save>** action to save the configuration.

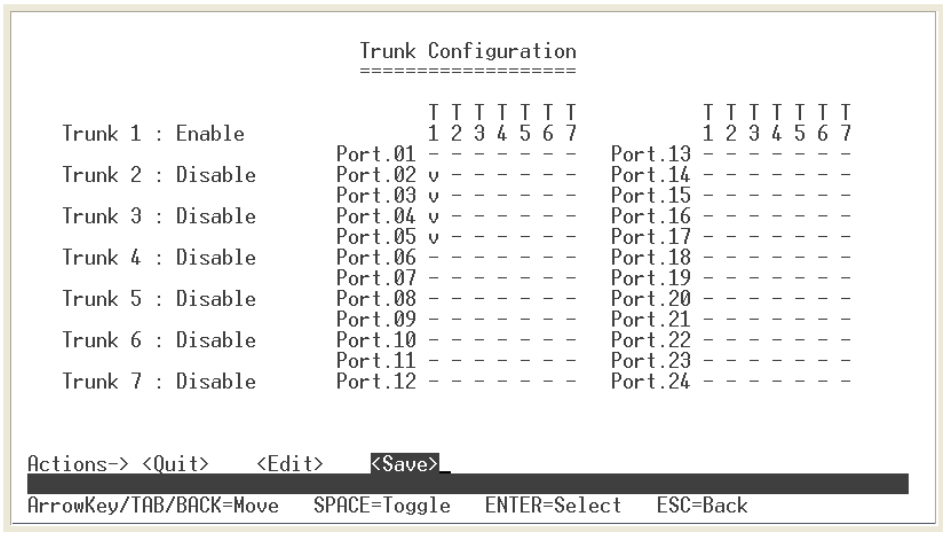


Port Configuration interface

Trunk Configuration

You can configure port trunk group. Trunk function doesn’t support the Gigabit port (port 25 and 26).

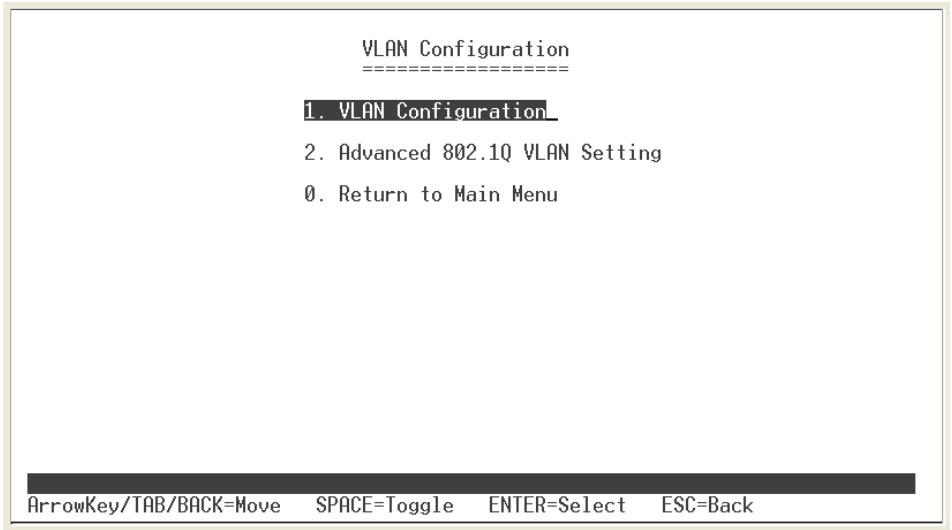
1. Select **<Edit>**
2. To enable the Trunk group, use “**Space**” key to change the Trunk group status to “**Enable**”.
3. Then, using “**Space**” key to mark the port.
4. Save the configuration by selecting **<Save>**.



Trunk Configuration interface

VLAN Configuration

You can create the VLAN group, modify existing VLAN group, and delete VLAN GROUP. In VLAN Configuration, it supports PortBase and 802.1Q VLAN mode. In VLAN function, it doesn't support "**per port PVID**" feature.

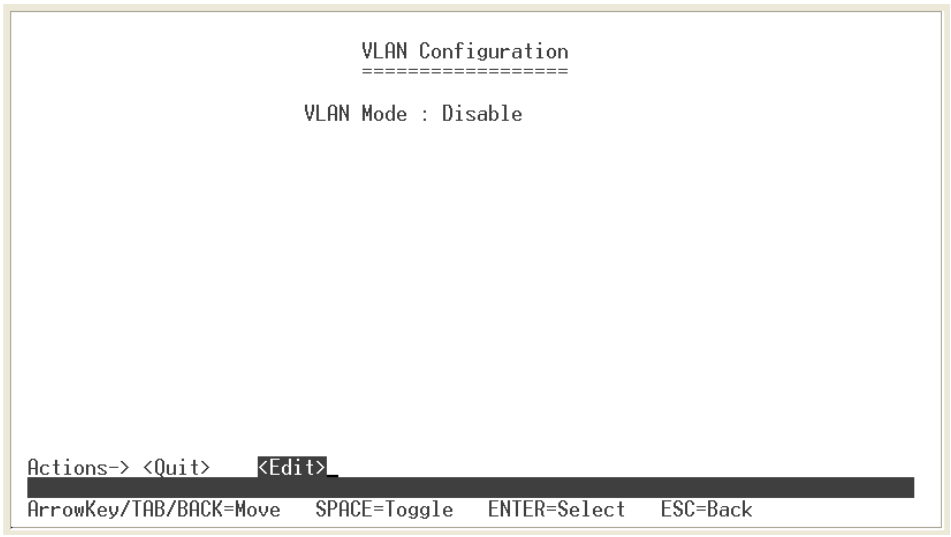


VLAN Configuration Main interface

Select VLAN Mode

The switch supports two VLAN modes – PortBase and 802.1Q. The default VLAN mode is “**Disable**”. Before to create VLAN group, you must select VLAN mode.

1. Select the **<Edit>**.
2. Select the VLAN mode by using “**Space**” key.
3. Select the **<Save>**.

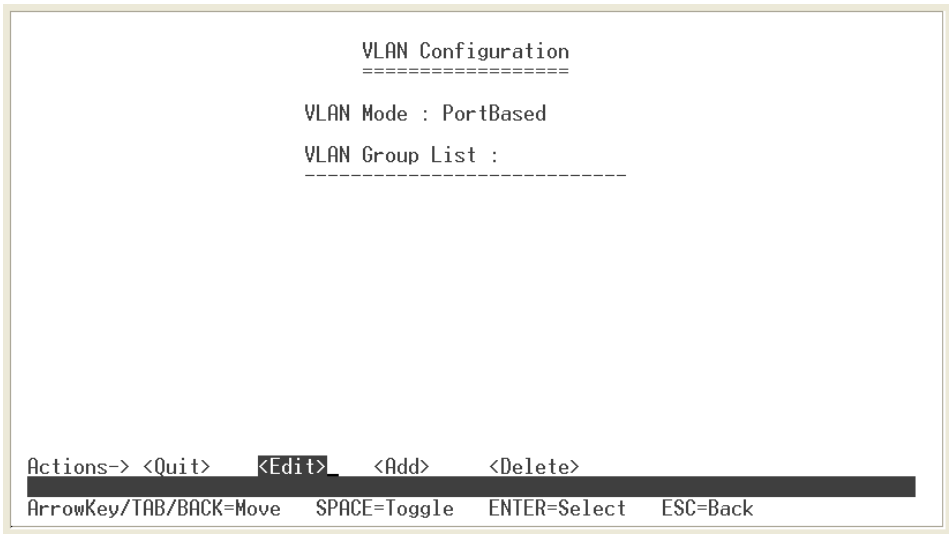


VLAN mode configuration interface

Add VLAN Group

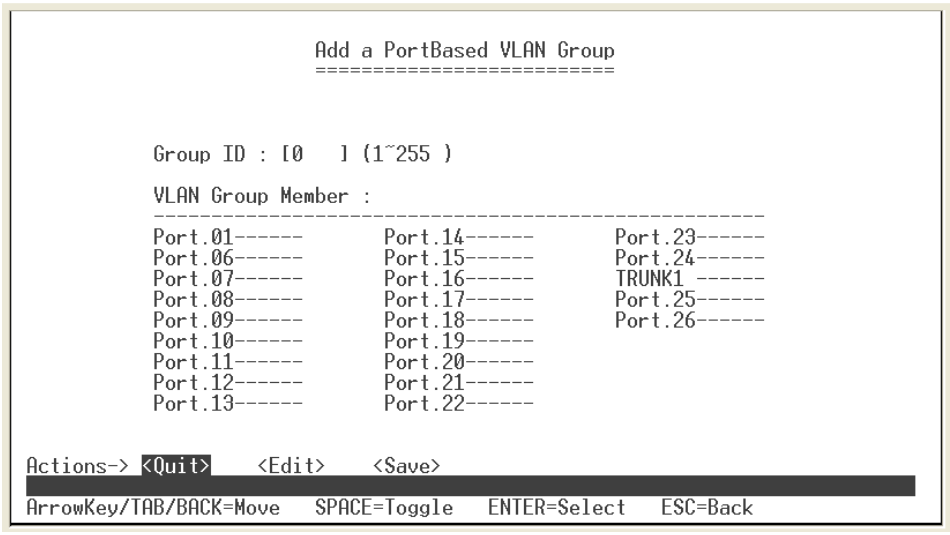
- **Add Port-Based VLAN Group**

1. Select **VLAN Configuration** interface.
2. Make sure the VLAN mode is “**PortBase**” mode. If the VLAN mode is not in “PortBase” mode. Select **<Edit>** to switch VLAN mode to “PortBase”. Then, select **<save>** or the system will ask you to save the change.
3. Then, select **<Add>** action to add a PortBase VLAN group.



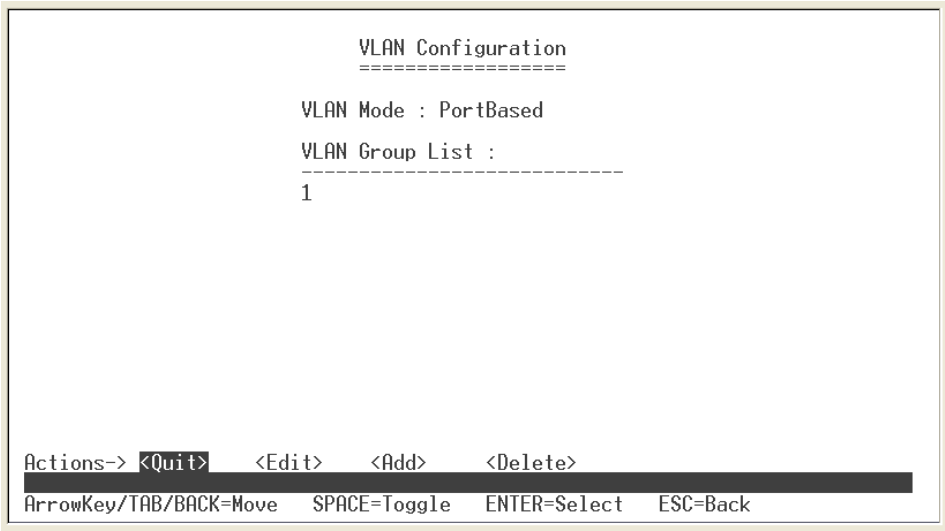
PortBase VLAN configuration interface

4. **Group ID:** Type the VLAN group ID. The group ID rang is from 1 to 255.
5. **VLAN Group Member:** Press ”**Space**” key to select the VLAN group member. If you have created Trunk group, then the Trunk group will be as an available VLAN member selection. VLAN configuration also supports on 2 auto detect gigabit port.
6. Press **“ESC”** key to go back action menu line.
7. Select **<Save>** to save the configuration.



Add VLAN Group: PortBase interface

8. You will see the added VLAN group display it in VLAN Configuration main interface.



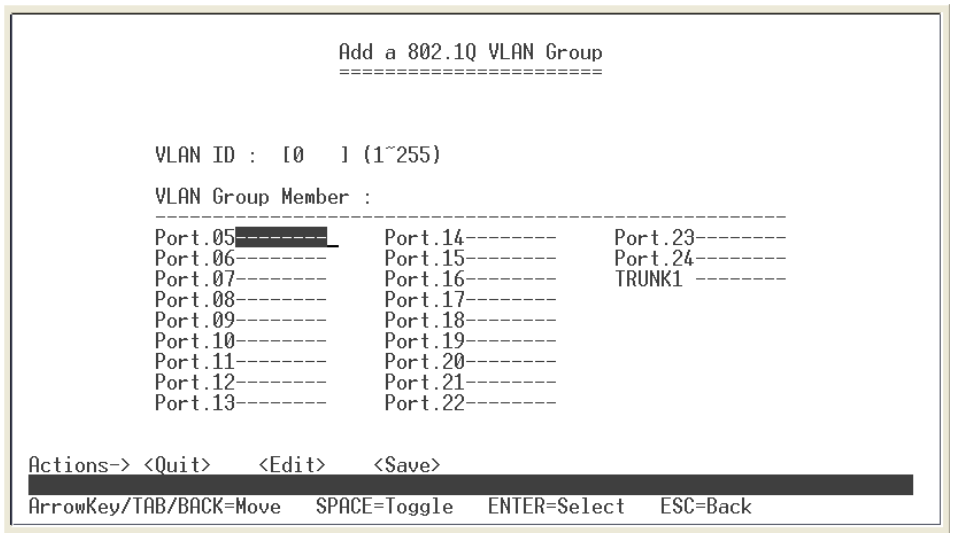
Added PortBase VLAN group display interface

- **Add 802.1Q VLAN Group**

1. Select **VLAN Configuration** interface.
2. Make sure the VLAN mode is “802.1Q” mode. Select **<Edit>** to switch VLAN mode to “802.1Q”. Then, select **<save>** or the system will ask you to save the change.
3. Select **<Add>**.
4. **VLAN ID:** Type the VLAN group ID. The group ID rang is from1 to 255. There is a default VLAN group and group ID is 1.
5. **VLAN Group Member:** Press ”**Space**” key to select the VLAN group member.
   - **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.
6. Press **“ESC”** key to go back action menu line.
7. Select **<Save>** to save the configuration.

[Note]

1. Before add new VLAN group, please go to default VLAN group to remove the port member that you want to add into new VLAN group. Otherwise, without remove the port members from default VLAN group; the new VLAN group can’t be active.
2. In 802.1Q VLAN mode, it has a default VLAN group that its group ID is 1. The default VLAN group cannot be deleting.

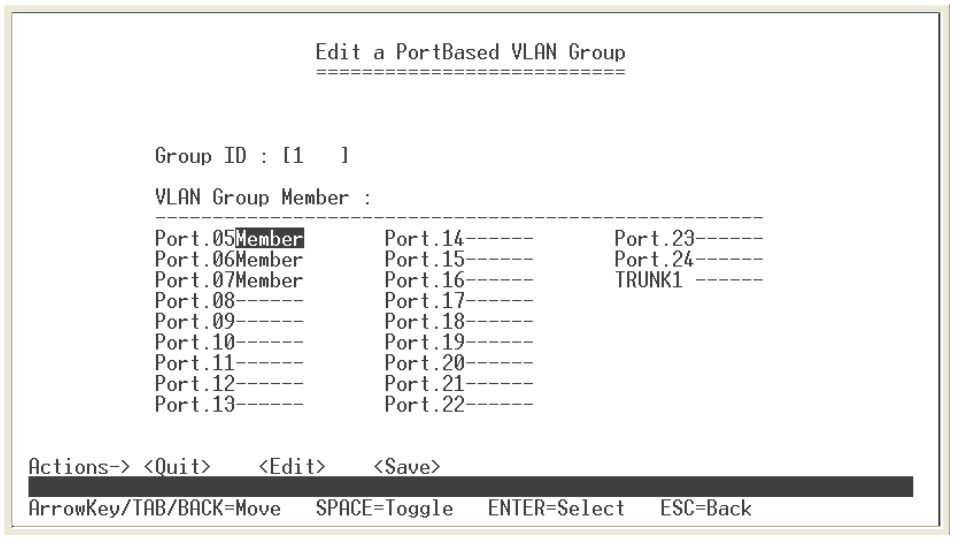


Add VLAN Group: 802.1Q interface

Edit VLAN Group

User can edit VLAN group. Edit VLAN group is same for PortBase and 802.1Q VLAN modes.

1. Select **<Edit>** in VLAN Configuration interface.
2. Select the VLAN group that you want to edit, and then press enter.
3. Select **<Edit>**.
4. User can remove or add the member for this VLAN group.
5. Select **<Save>** action to save all configures value.

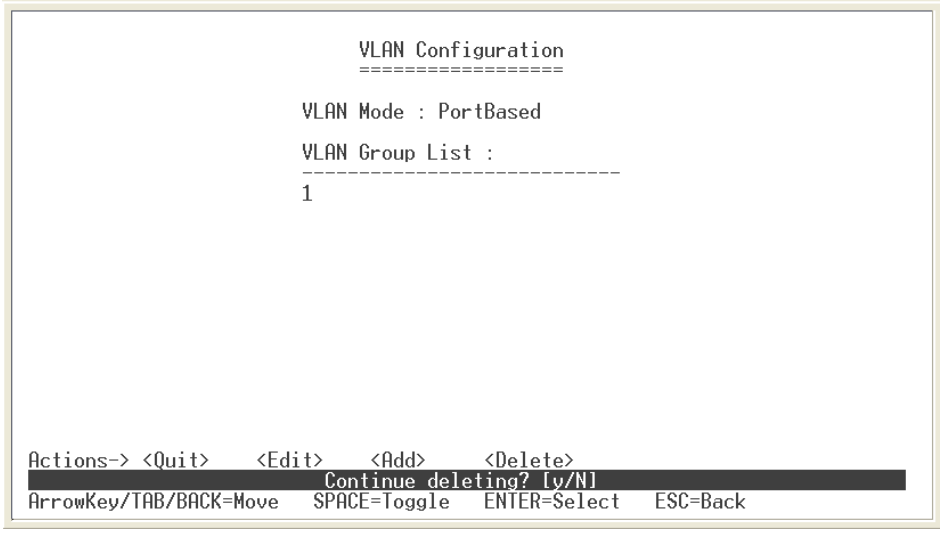


Edit PortBase VLAN Group interface

Delete VLAN Group

Delete unwanted VLAN group. Deletion is same for PortBase and 802.1Q VLAN mode.

1. In VLAN Configuration interface, select **<Delete>**.
2. Select the VLAN group to delete and press enter
3. The system will ask you to confirm the deletion, enter ”**y**” to complete the deletion.

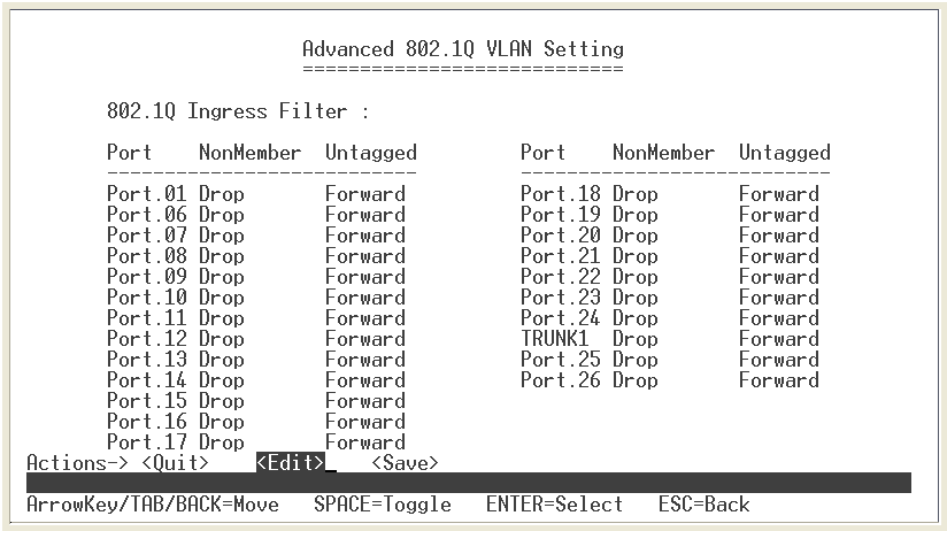


Delete VLAN group interface – PortBase

Advance 802.1Q VLAN Setting

Configure 802.1Q VLAN ingress filter.

1. In VLAN Configuration interface, select “**Advance 802.1Q VLAN Setting**” or enter “**2**”.
2. Select **<Edit>**.
3. Use “**Space**” key to change the **Nonmember** and **Untagged** value.
4. Select **<Save>**.

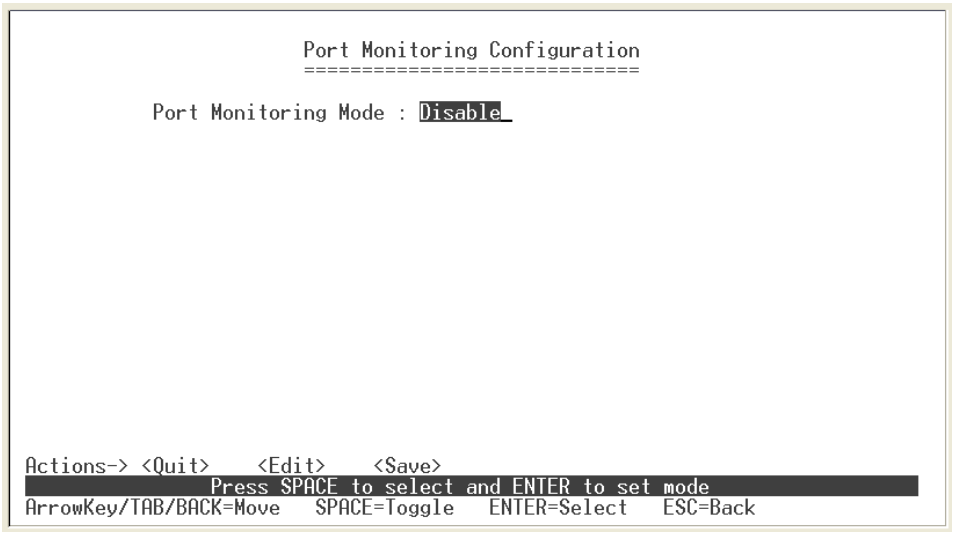


Advance 802.1Q VLAN Setting

Port Mirroring Configuration

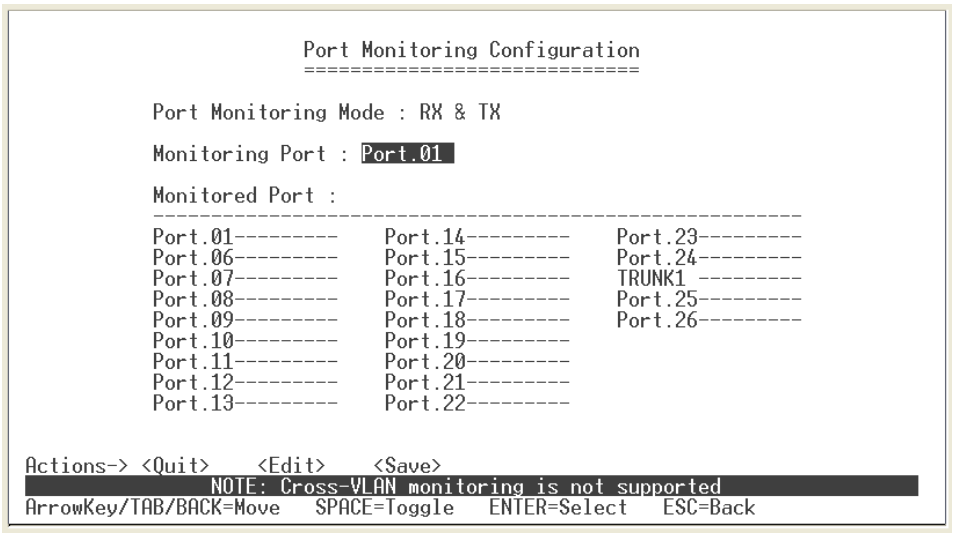
The port mirroring is a method for monitor traffic of switched networks. The specific port can monitor traffic through the mirror ports. The monitored ports in or out traffic will be duplicated into monitoring port. Port mirroring doesn't support the ports on the module.

1. Select the **<Edit>**
2. **Port Monitoring Mode:** select the port-monitoring mode. The default value is "**Disable**". To start port mirroring, you must select one of port monitoring mode.
   - **RX:** RX packet only
   - **TX:** TX packet only
   - **Both:** RX and TX packet



Port Mirroring interface

3. **Monitoring port:** Set the destination port of mirroring packet. All of the packets of mirroring port will be duplicated and sent to Monitoring port.
4. **Monitored Port:** use "**Space**" key to mark the mirrored port. If you have created Trunk group, and then every port in Trunk group will be monitored when you mark the Trunk group as the monitored port. Also, cross-VLAN monitoring doesn't support in here.
5. Select the **<Save>**.

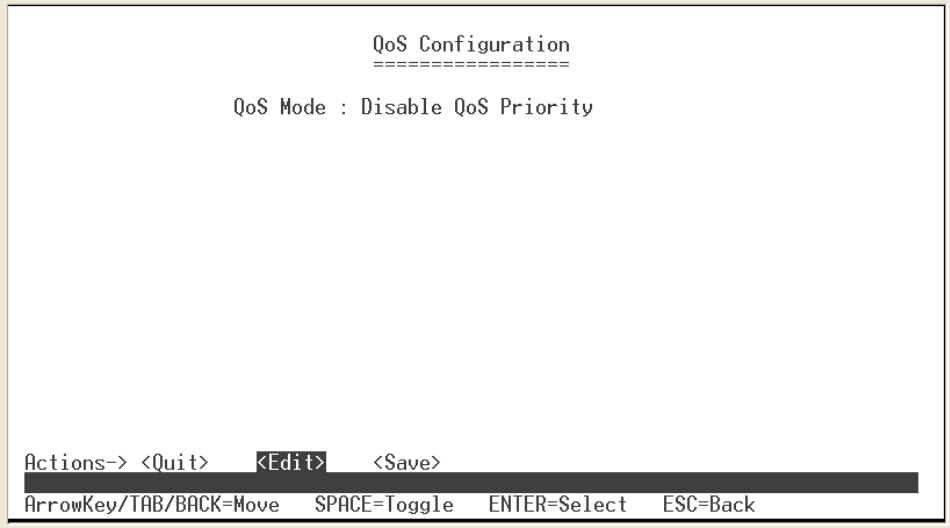


Port Mirroring configuration interface

QoS Configuration

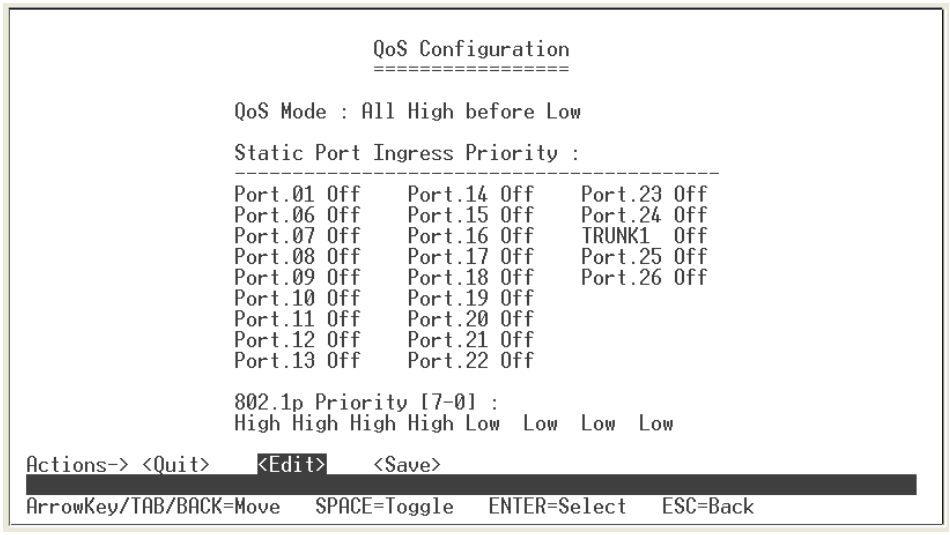
You can configure port priority level to high or low queue.

1. Select **<Edit>**.



Select QoS Mode interface

2. **Qos Mode:** select the Qos mode for process incoming packets. The default QoS mode is “Disable QoS Priority”.
   - **High: Low = 3: 1:** the system will process 3 high priority packet, and then 1 low priority packet.
   - **High: Low = 5: 1:** the system will process 5 high priority packet, and then 1 low priority packet.
   - **High: Low = 7: 1:** the system will process 7 high priority packet, and then 1 low priority packet.
   - **All High before Low:** the system will process all high priority packet, and then low priority packet.
   - **Disable QoS Priority:** no QoS priority function.
3. **Static Port Ingress Priority:** after selected the QoS mode, configure each port of ingress priority – **Low** or **High**.
4. **802.1p Priority [7-0]:** use “**Space**” key to select the priority level mapping to high or low queue.
5. Press “**ESC**” goes back action menu line.
6. Select **<Save>** to save all configure value.

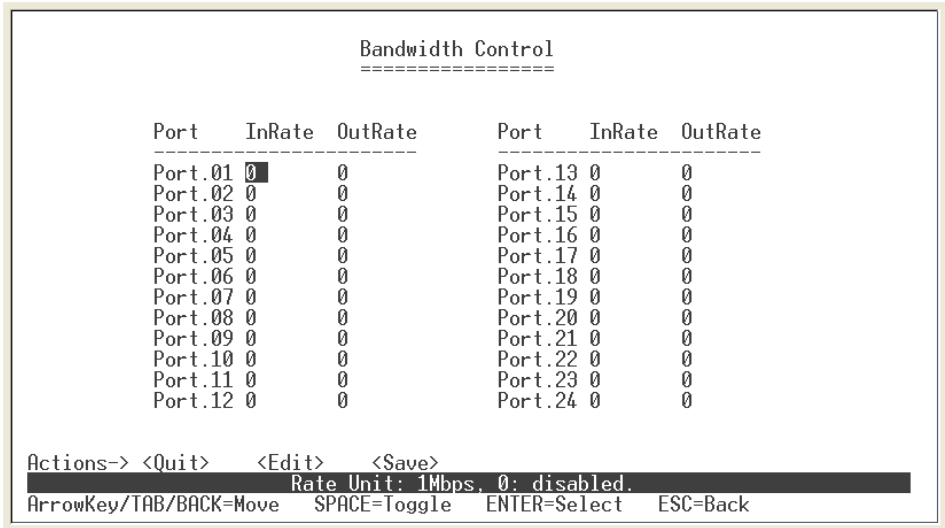


QoS Configuration interface

Bandwidth Control

Configure each port in and out bandwidth rate. Before configure the Bandwidth Control, please make sure the Flow Control status is "**On**". If the Flow Control status is off, please refer to "**Port Configuration**" section for active Flow Control.

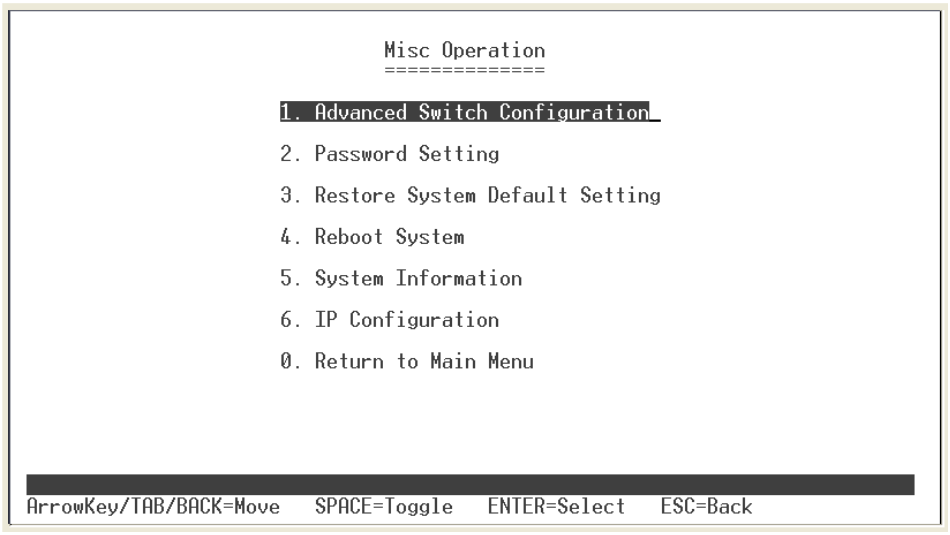
1. Select **<Edit>**.
2. The InRate and OutRate configure range is 0~ 99. The InRate and OutRate maxima unit is "**1Mbits per second**". 0 is disabling.
3. Select **<Save>**.



Bandwidth Control interface

Misc Operation

In Misc Operation, user can configure system relate configuration – Advance Switch Configuration, Password Setting, Restore System Default Setting, Reboot System, System Information, and IP Configuration. We will describe each function as following.



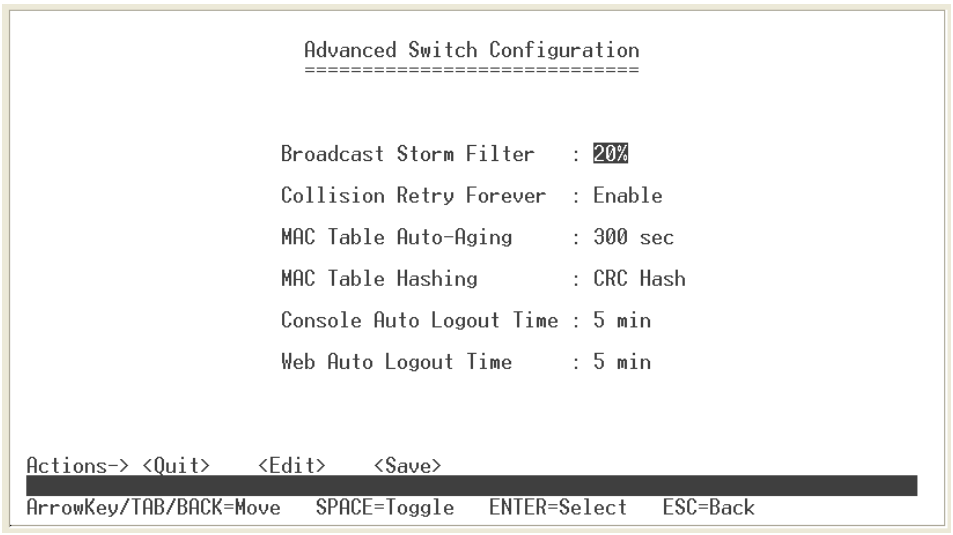
Misc Operation interface

Advance Switch Configuration

User can configuration the switch system parameters.

- **Broadcast Storm Filter:** configure the broadcast storm filter mode. The valid threshold values are 5%, 10%,, 20%, and off. The port will be block cause of broadcast packet is over the percentage of traffic. The default value is 20%.
- **Collision 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. The default value is “Enable”.
- **MAC Table Auto-Aging**: 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 Disable, 150, 300, and 600 seconds. Default is 300 seconds.
- **MAC Table Hashing:** Provide CRC or Direct Map. This Hash Algorithm is for hardware maintain on MAC table calculation. The default value is CRC Hash.

- **Console Auto Logout Time:** When user doesn't configure the switch through the console connection in a certain time, the switch will auto logout. The default value is 5 minutes.
- **Web Auto Logout Time:** When user doesn't configure the switch through the Web connection in a certain time, the switch will auto logout. The default value is 5 minutes.

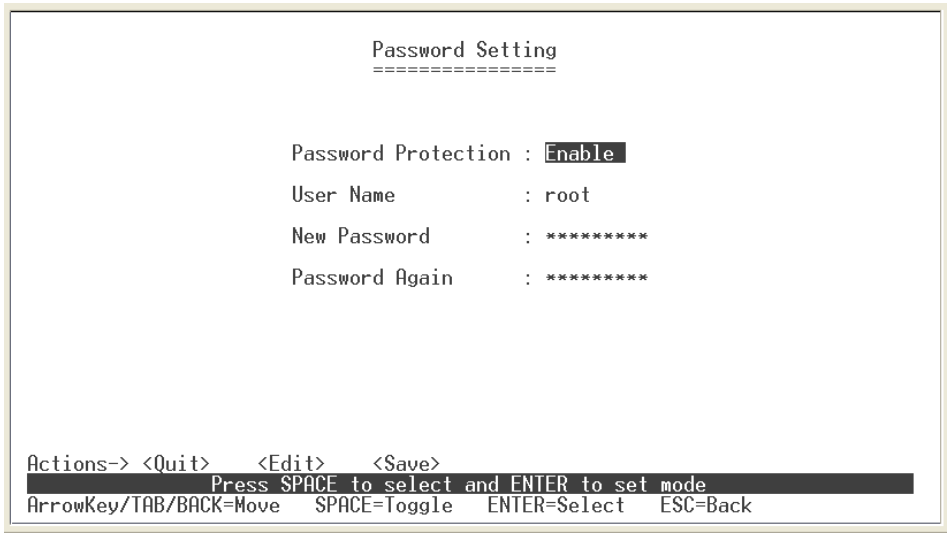


Advance Switch Configuration interface

Password Setting

User can change the console and web management login username and password.

1. Select the **<Edit>**
2. **Password Protection:** Enable – to enable login password checking. Disable – there is no password checking when login console or web configuration interface. The default value is "Enable".
3. **User Name:** the default user name is "root". You can assign another user name.
4. **New Password:** enter the new password.
5. **Password Again:** reenter the new password for confirmation.
6. Select the **<Save>**

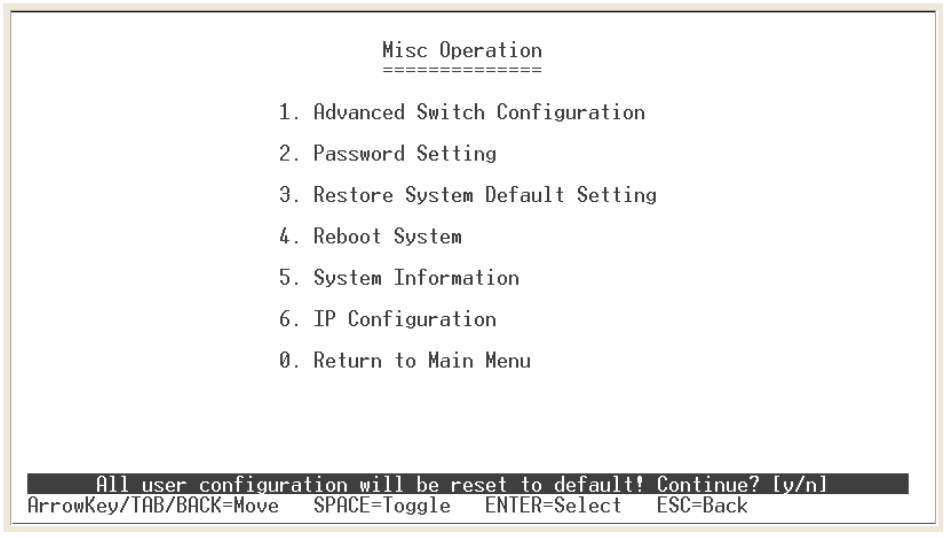


Password Configuration interface

Restore System Default Setting

Reset switch to default configuration.

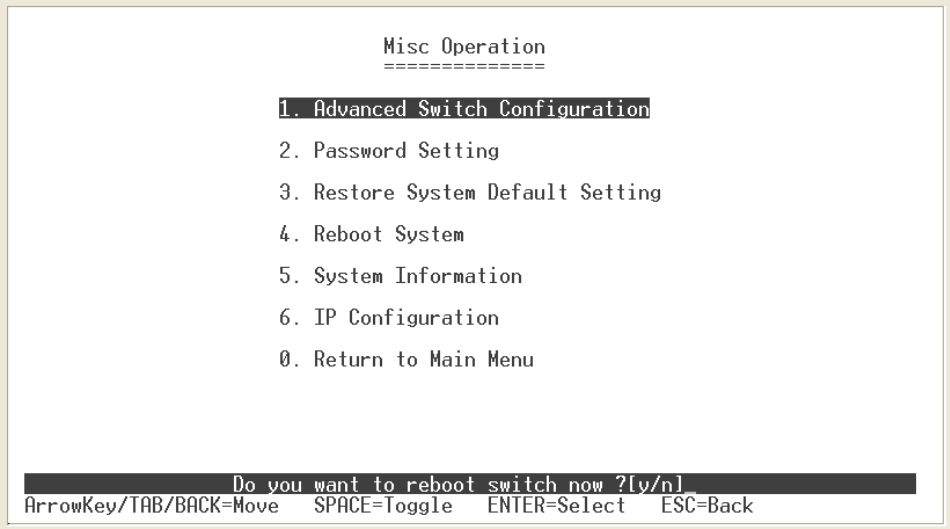
Select the "**Restore System Default Setting**" from Misc Operation interface or enter "**3**". The system will ask you to confirm the restore action. Press "**y**", switch will load default setting. After finished load default setting, press any key to reboot the switch.



Factory Default interface

System Reboot

Reboot the switch in software reset. Select the "**Reboot System**" from Misc Operation interface or enter "**4**". Then, enter "**y**" to reboot the system.

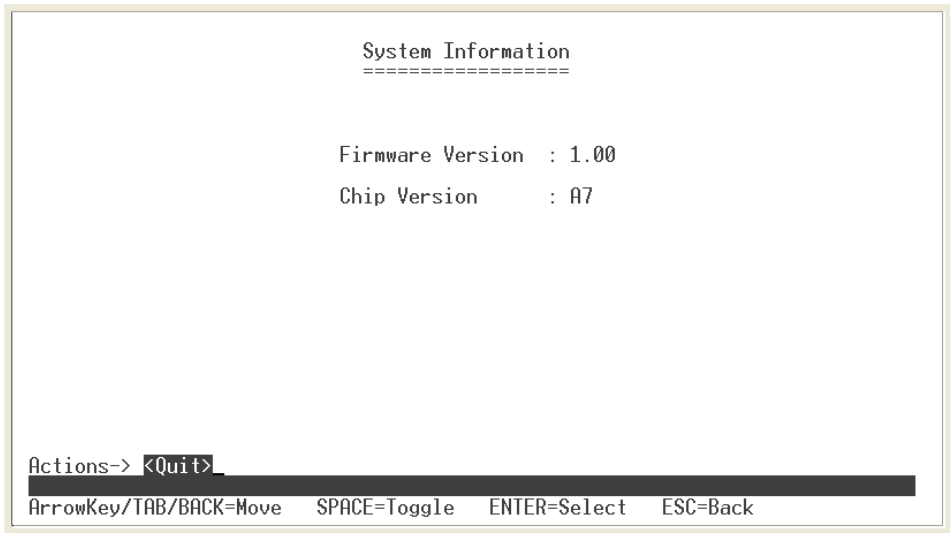


Reboot System interface

System Information

It displays the system parameter.

1. **Firmware Version:** the switch's firmware version. The firmware version may vary by new version releasing. You can check with your dealer for firmware version updating.
2. **Chip Version:** the switch's Hardware chipset version.

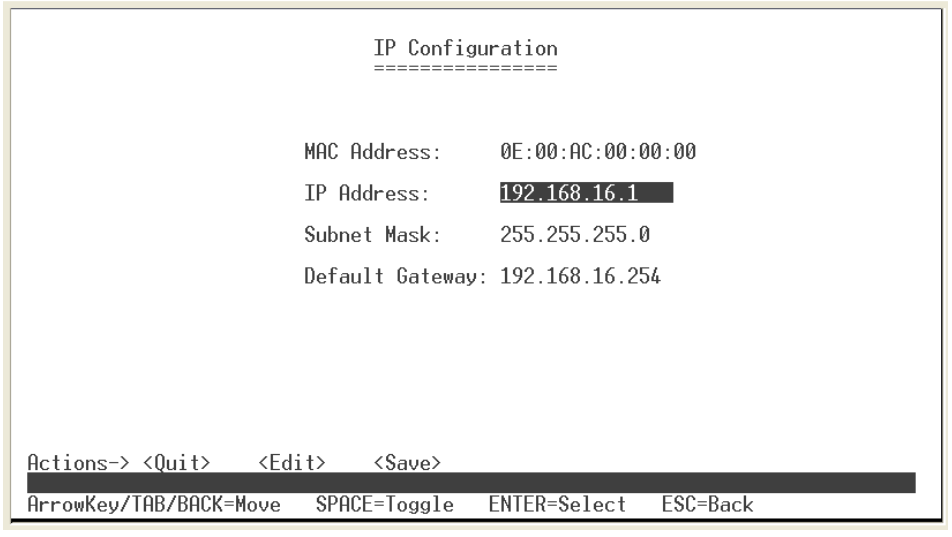


System Information interface

IP Configuration

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

1. Select the **<Edit>**
2. **MAC Address:** manufacture unique hardware address. It is set at factory and unchangeable.
3. **IP Address:** assign the switch IP address. The default IP is 192.168.16.1.
4. **Subnet Mask:** assign the switch IP subnet mask.
5. **Gateway:** assign the switch gateway. The default value is 192.168.16.254.
6. Select **<Save>** action to save the configuration.



IP Configuration interface

4. Web-Based Management

This section introduces the configuration and functions of the Web-Based management.

About Web-based Management

Inside the CPU board of the switch exists an embedded HTML web site residing in flash memory. It 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

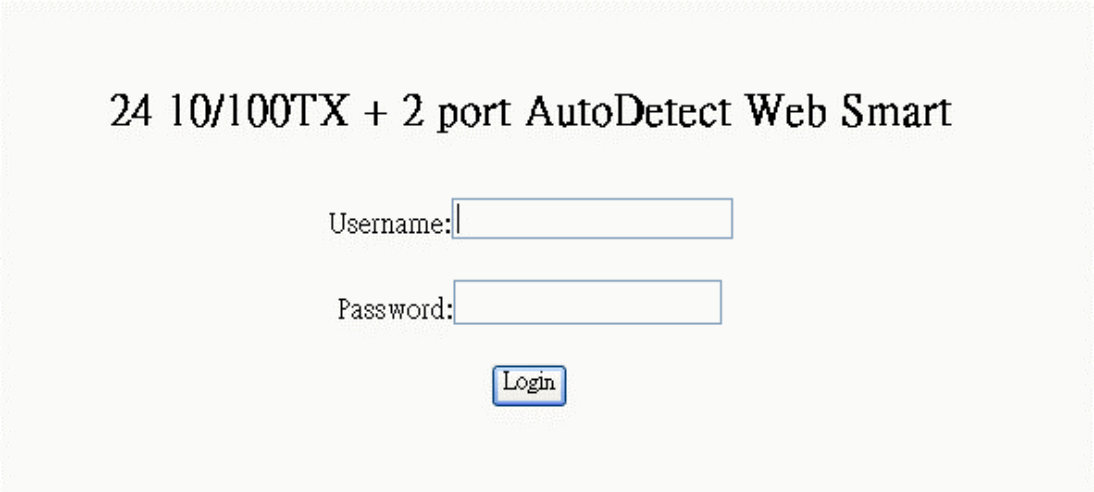
Before to use web management, you can use console to login the Switch checking the default IP of the Switch. Please refer to **Console Management** Chapter for console login. If you need change IP address in first time, you can use console mode to modify it. The default value is as below:

IP Address: **192.168.16.1**
Subnet Mask: **255.255.255.0**
Default Gateway: **192.168.16.254**
User Name: **root**
Password: **root**

The Web management only allows **one person** to login in same time. Only when the first person has logout the web management, the second person can login. If the first login person forgot to logout and direct close web management window, the next person must wait until the web auto logout time out. Then, the next person can login web management to configure the switch.

System Login

1. Launch the Internet Explorer.
2. Type http:// and the IP address of GSW-2472TGX. Then, 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 "**login**"", then the home screen of the Web-based management appears.



GSW-2472TGX

Port status

In Port status, you can view each port status that depended on user setting and the negotiation result. The port 25 and 26 represent the auto detect gigabit port status. The port 25 and 26 port status display will depend on the connection detect to be different.

5. **Type:** display port current type.
6. **Enable:** display port current availability – Enable or Disable.
7. **Link Status:** display port statuses link status. When the port is connecting with the device and work normally, the link status is "**UP**". Opposite is "**Down**".
8. **Spd/Dpx:** display port connection speed.
9. **Flow Control:** display the flow control status is "on" or "off" mode.

Port Status interface

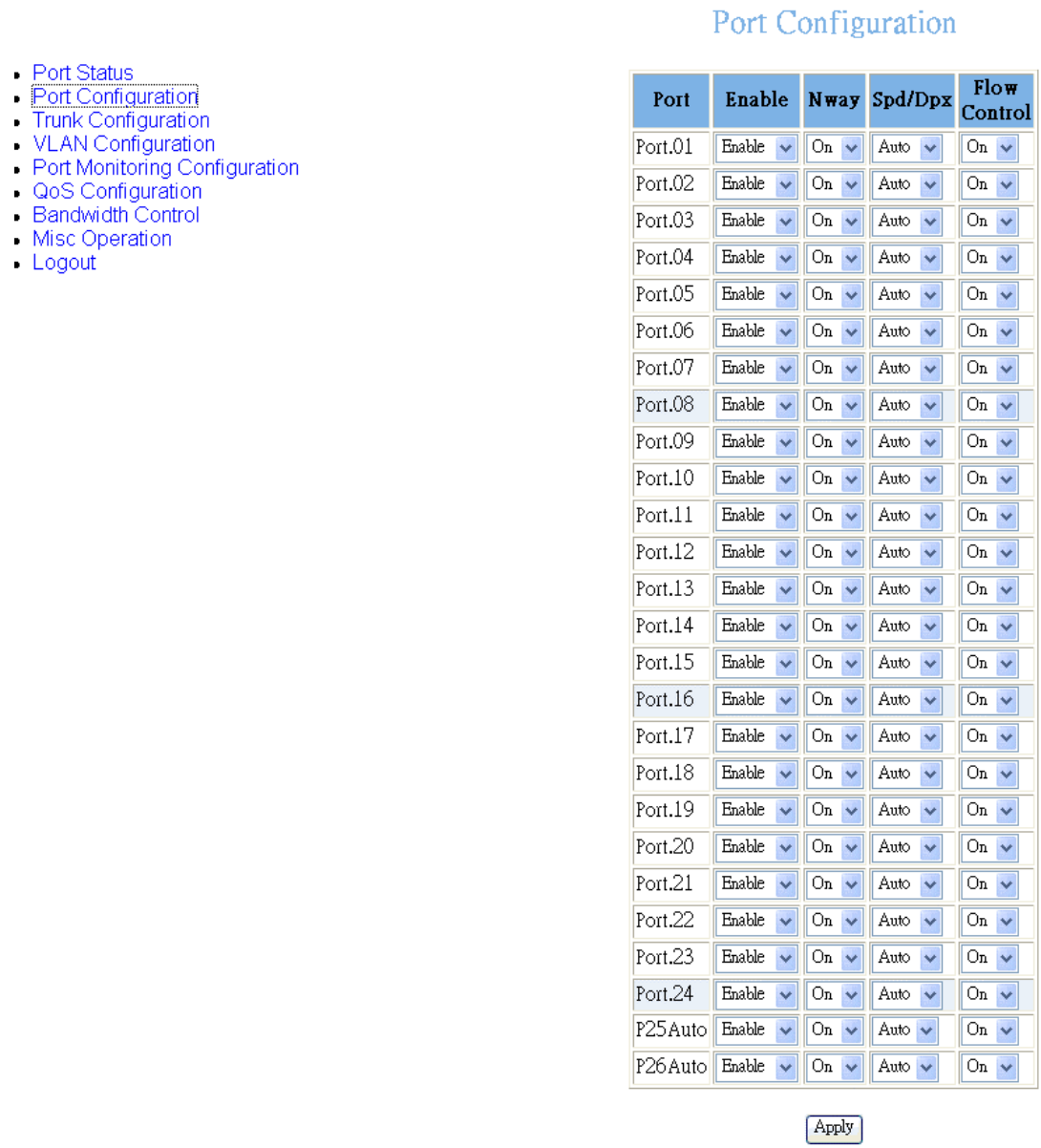
Port Configuration

You can change the each port parameters that include the trunk groups.

1. **Enable:** User can disable or enable this port.
2. **Nway:** User can set Nway negotiation mode is "On" or "Off".
3. **Spd/Dpx:** set the port link speed (10/100) and mode (duplex/half). When port 25

and 26 is UTP connection, then the spd/dpx only support “Auto”. When port 25 and 26 is Giga fiber connection, then the spd/dpx only support “Force”.

4. **Flows control:** set flow control function is **ON** or **OFF** in Full Duplex mode.
5. Click Apply button to apply all configuration.
6. You can go to “**Port Status**” to view the change.

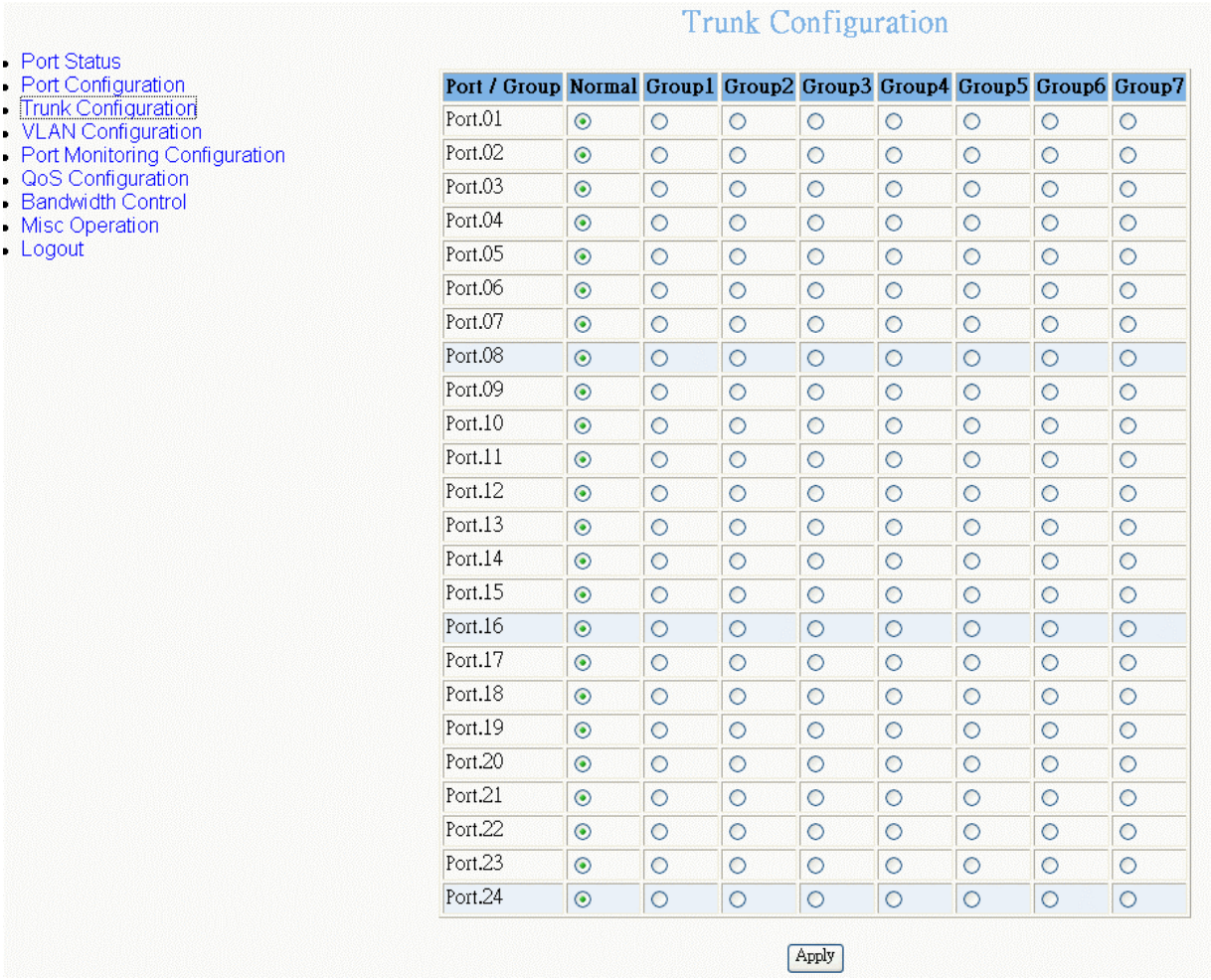


Port Configuration interface

Trunk Configuration

You can configure port trunk group. Trunk function doesn't support the Gigabit port (port 25 and 26).

Clicking the radio button to mark the port will be in trunk group. There are 7 trunk groups. The "Normal" means the port is not in any trunk group. To apply the setting, click Apply button. To remove the port from the trunk group, just select the "Normal" radio button of the port and click Apply button.



Trunk Configuration interface

VLAN Configuration

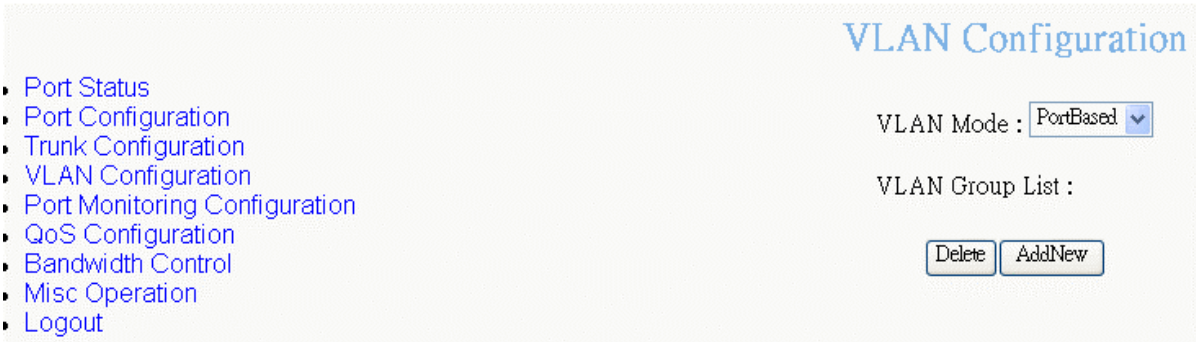
You can create the VLAN group, modify existing VLAN group, delete VLAN group and configure advance 802.1Q VLAN in VLAN Configuration. VLAN configuration function doesn't support "**per port PVID**" feature.

VLAN Configuration Main interface

The switch supports two VLAN modes – PortBase and 802.1Q. Before starting to configure VLAN, select the VLAN mode first. The default VLAN mode is "**Disable**". Drag down the list and select the VLAN mode – PortBase or 802.1Q. Then, click Apply button.

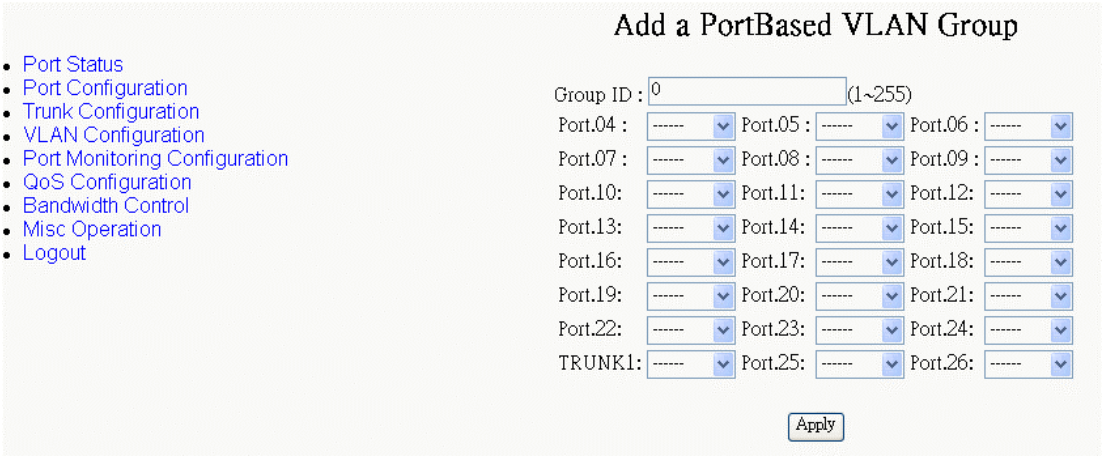
Add Port-Based VLAN Group

1. Click Add New button.



PortBase VLAN — Add new interface

2. **Group ID:** Type the VLAN group ID. The group ID rang is from 1 to 255.
3. Drop down the list and select the "**Member**" to add the port into this VLAN group.
4. Click Apply button.



PortBase VLAN – Add New VLAN Group interface

5. Click "VLAN Configuration" function, you will see the VLAN group # list on the screen.

PortBase VLAN – Complete Add a VLAN interface

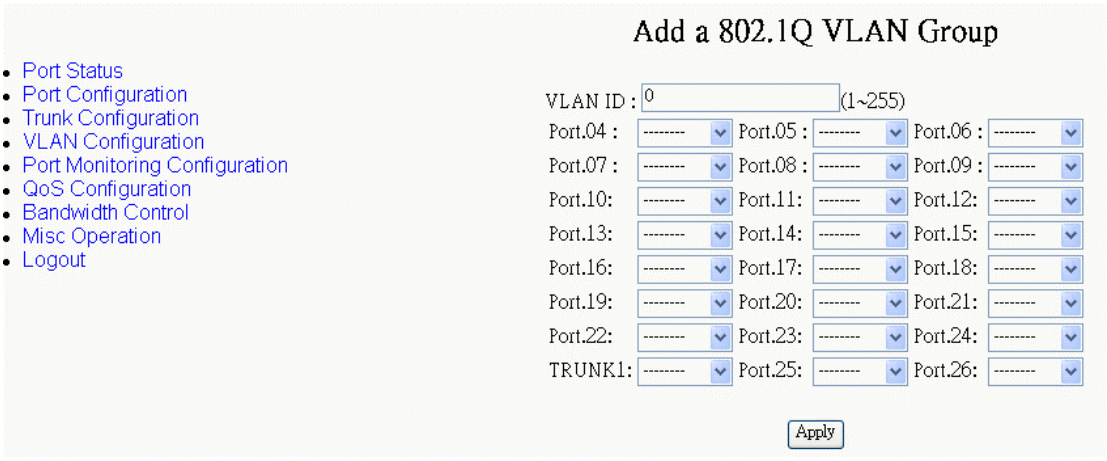
Add 802.1Q VLAN Group

1. Click Add New button.

802.1Q VLAN Group – Add New VLAN interface

2. **VLAN ID:** Type the VLAN group ID. The group ID rang is from1 to 255. There is a default VLAN group, the ID is 1. So, you must start VLAN group ID from 2.
3. Drop down the list and select the "**Member**" to add the port into this VLAN group.
4. Click Apply button.

[Note] Before adding new VLAN group, you must go to default VLAN group to remove the port members.

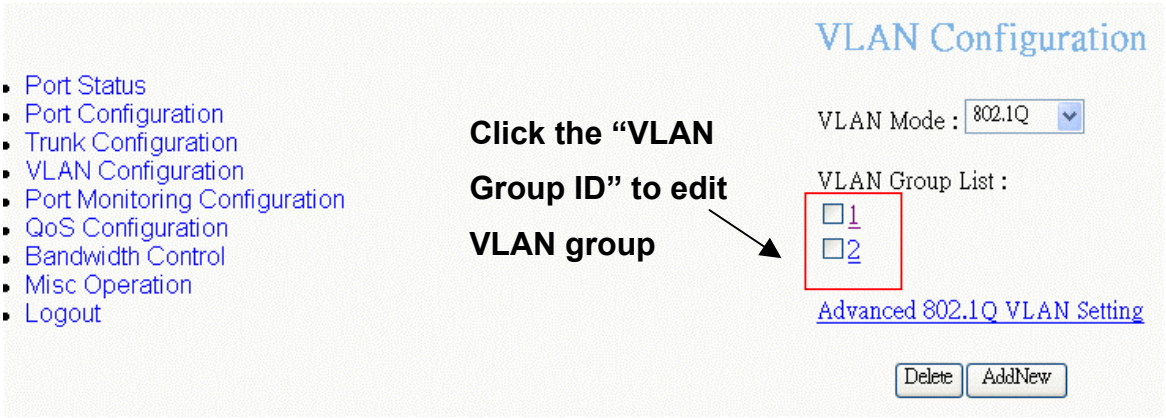


802.1Q VLAN Group – Add New VLAN interface

Edit VLAN Group

User can edit VLAN group. Edit VLAN group is same for two VLAN modes.

1. Click the hyper link of VLAN group ID, ex: 1.
2. You can modify the VLAN group members.
3. Click Apply button.

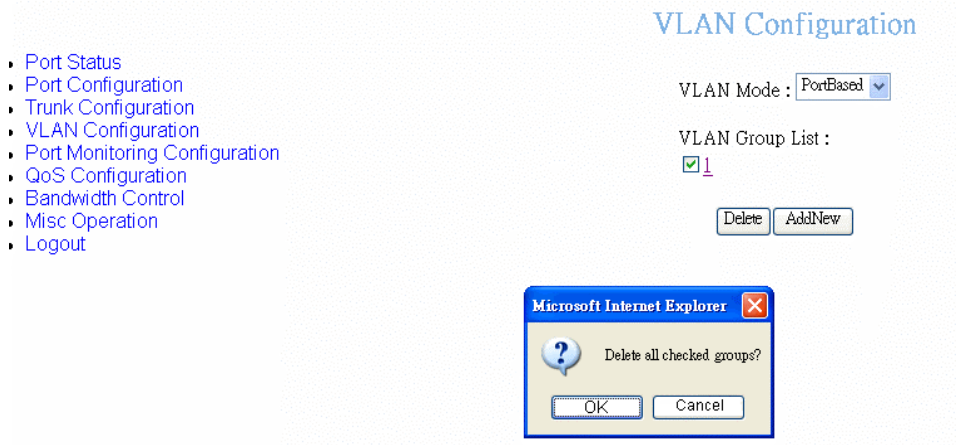


Edit PortBase VLAN Group interface

Delete VLAN Group

Delete unwanted VLAN group. Deletion steps are same for PortBase and 802.1Q VLAN mode.

1. Select the VLAN group that want to delete it by checking the check box of VLAN group ID.
2. Click Delete button.

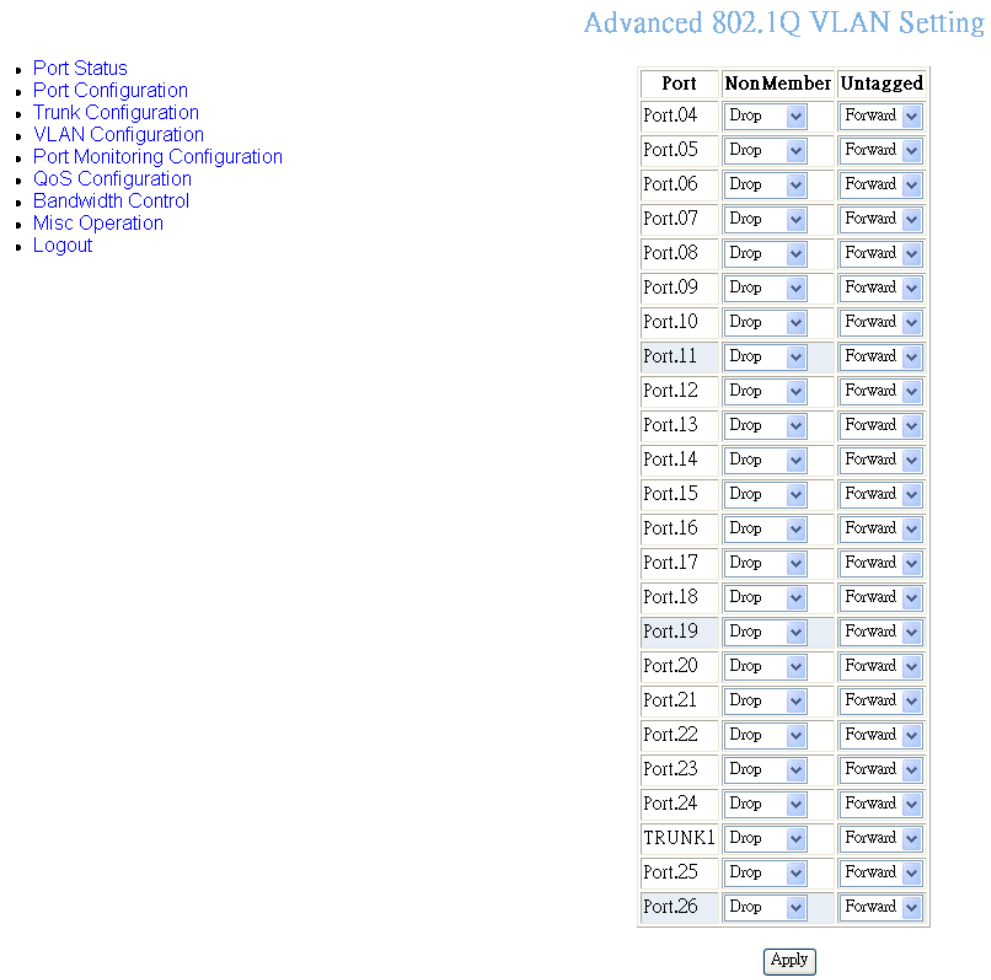


Delete VLAN group – PortBase

Advance 802.1Q VLAN Setting

Configure 802.1Q VLAN ingress filter.

1. Drag down the list to select the action – **Drop** or **Forward** for Non Member and Untagged port.
2. Click Apply button.



Advance 802.1Q VLAN Setting

Port Monitoring Configuration

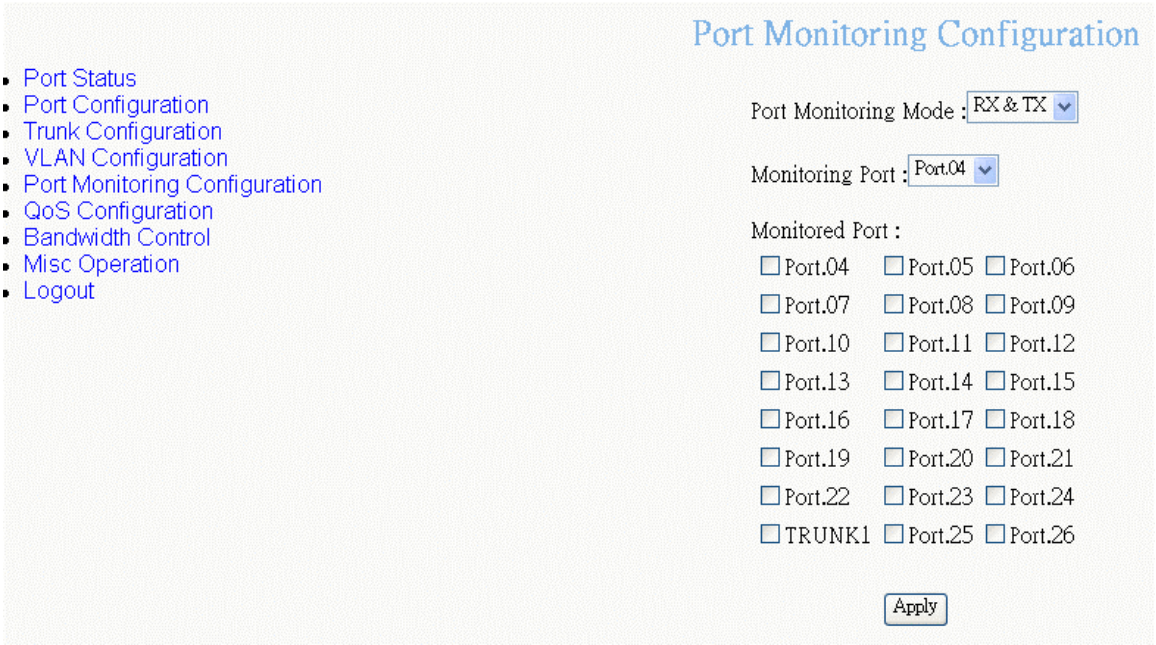
The port monitoring is a method for monitor traffic of switched networks. The specific port can monitor traffic through the mirror ports. The monitored ports in or out traffic will be duplicated into monitoring port. Port Monitoring function doesn't support the ports on the module.

1. **Port Monitoring Mode:** To start port monitoring, you must select one of port monitoring mode. The default value is "**Disable**".

- **RX:** RX packet only
- **TX:** TX packet only
- **Both:** RX and TX packet

Port Mirroring interface

2. **Monitoring port:** Set the destination port of monitoring packet. All of the packets of monitored port will be duplicated and sent to Monitoring port.
3. **Monitored Port:** check the check box of port to select the monitored port. If you have created the Trunk group, and then every port in Trunk group will be monitored when you mark the Trunk group as the monitored port. Also, cross-VLAN monitoring doesn't support in here.
4. Click Apply button.

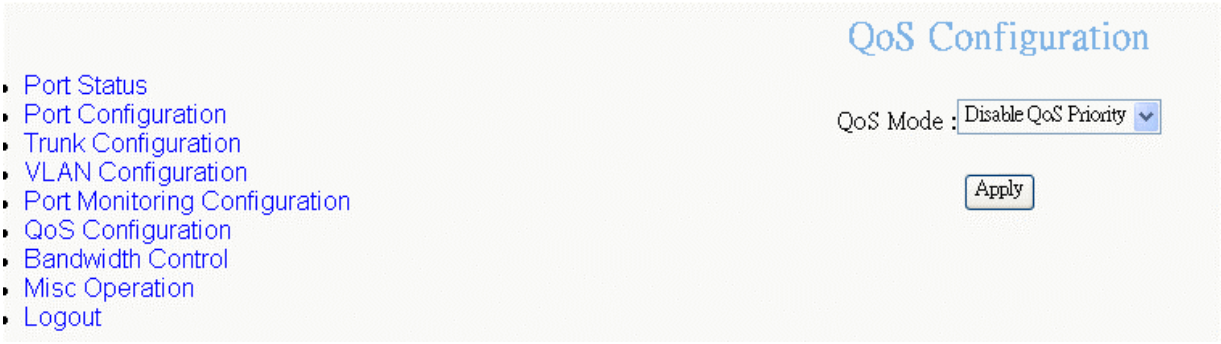


Port Monitoring interface

QoS Configuration

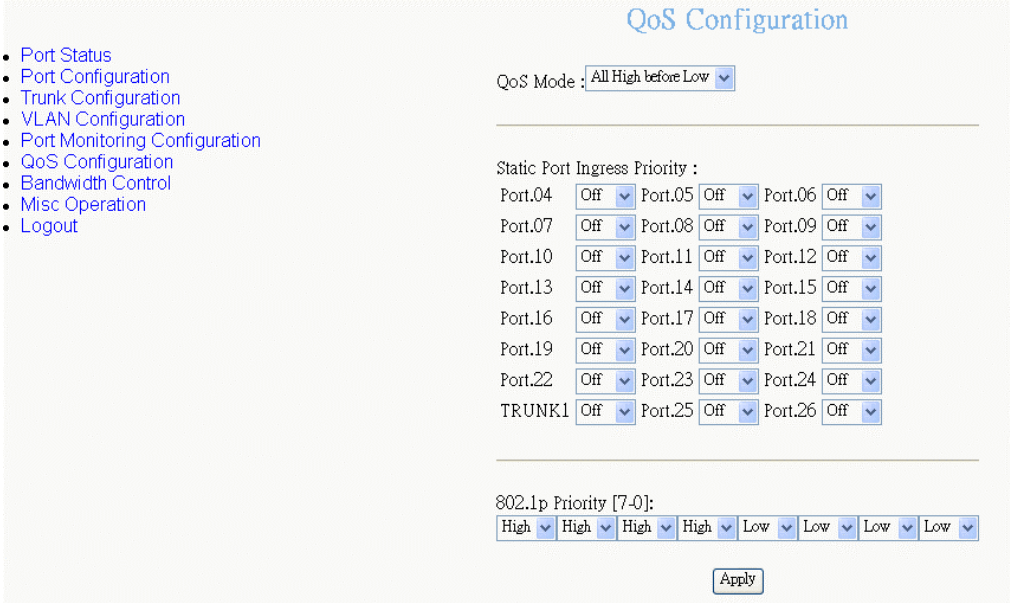
You can configure port priority level to high or low queue.

1. **Qos Mode:** select the Qos mode for process incoming packets.
   - **Disable QoS Priority:** no QoS priority function.
   - **All High before Low:** the system will process all high priority packet, and then low priority packet.
   - **High: Low = 3: 1:** the system will process 3 high priority packet, and then 1 low priority packet.
   - **High: Low = 5: 1:** the system will process 5 high priority packet, and then 1 low priority packet.
   - **High: Low = 7: 1:** the system will process 7 high priority packet, and then 1 low priority packet.



QoS Configuration—select QoS mode interface

2. **Static Port Ingress Priority:** select each port of ingress priority – **Low** or **High**.
3. **802.1p Priority [7-0]:** Drag down the list to select the priority level mapping to high or low queue.
4. Click Apply button.

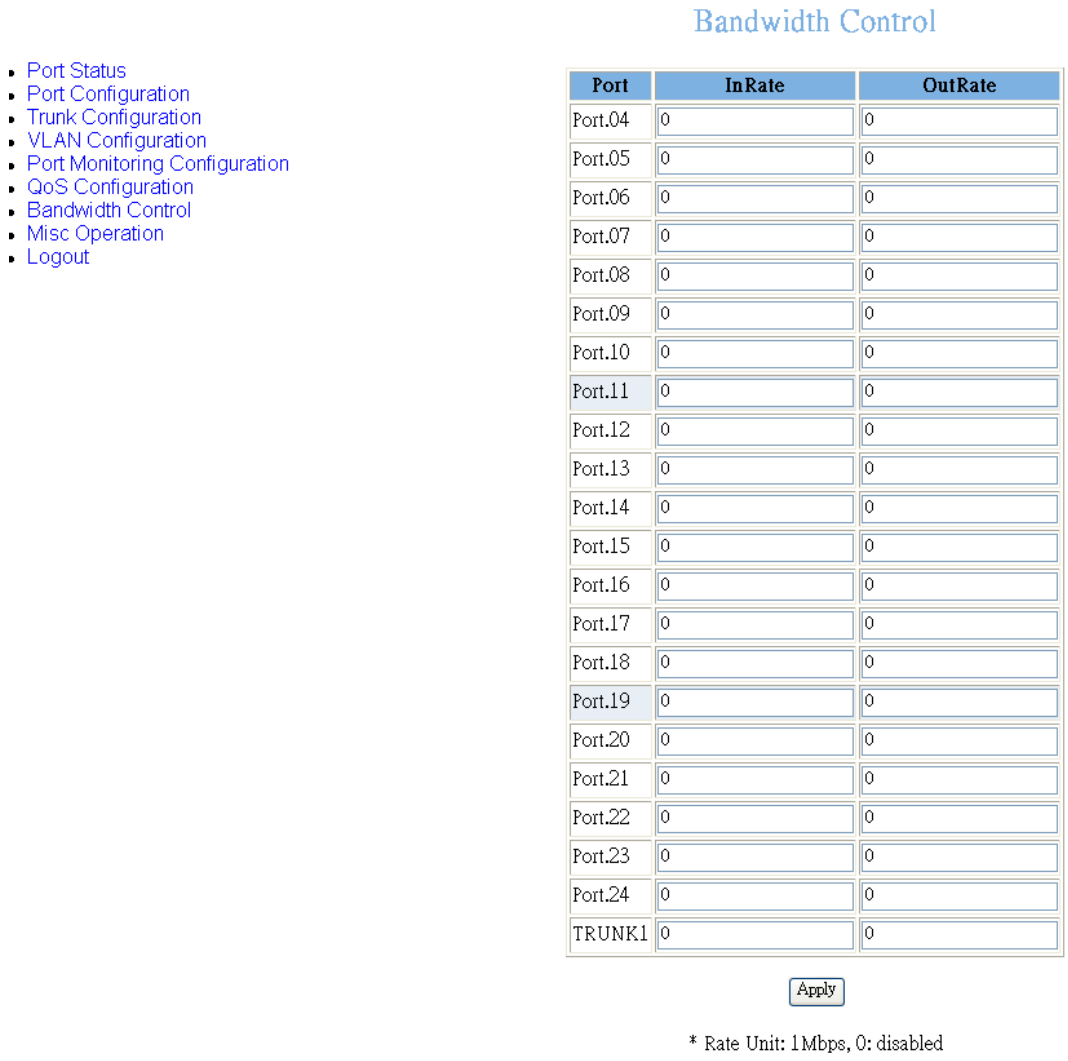


QoS Configuration interface

Bandwidth Control

Configure each port in and out bandwidth rate. Before configure the Bandwidth Control, please make sure the Flow Control status is "**On**". If the Flow Control status is off, please refer to "**Port Configuration**" section for active Flow Control.

1. The InRate and OutRate configure range is 0~ 99. The InRate and OutRate maxima unit is "**1Mbps**". 0 is disabling.
2. Click Apply button



Bandwidth Control interface

Misc Operation

In Misc Operation, user can configure system relate configuration – Advance Switch Configuration, Password Setting, Restore System Default Setting, Reboot System, System Information, and IP Configuration. We describe every function as following.

Advance Switch Configuration

User can configuration the switch system parameters. Drag down the list and select the value. Click Apply button to apply the change.

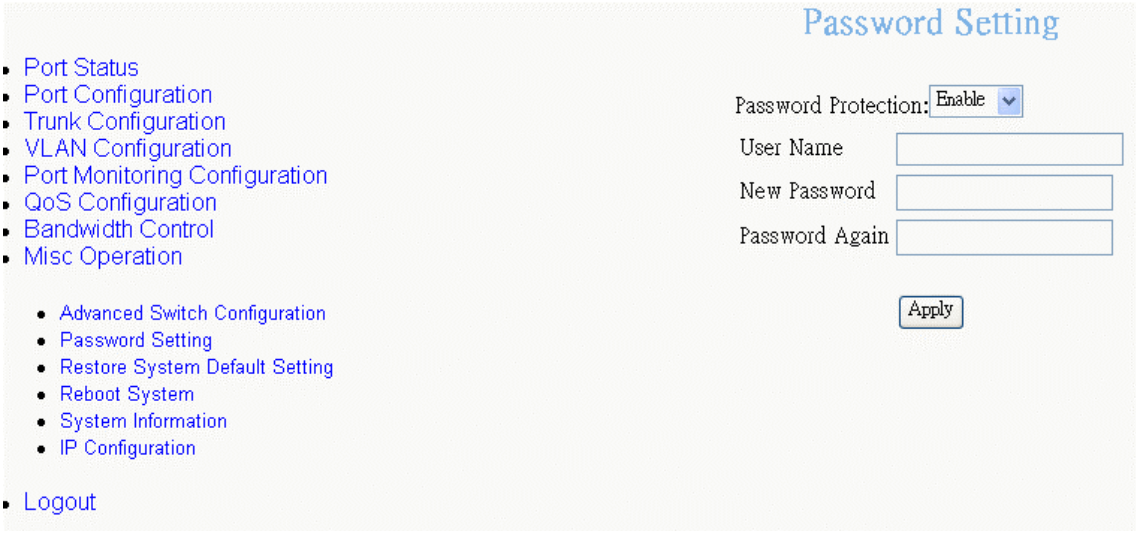
- **Broadcast Storm Filter:** configure the broadcast storm filter mode. The valid threshold values are 5%, 10%, 20%, and off. The port will be block cause of broadcast packet is over the percentage of traffic. The default value is 20%.
- **Collision Retry Forever: Disable** – In half duplex, if happen collision will retry 48 times and then drop frame. **Enable** – In half duplex, if happen collision will retry forever. The default value is “Enable”.
- **MAC Table Auto-Aging**: 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 Disable, 150, 300, and 600 seconds. Default is 300 seconds.
- **MAC Table Hashing:** Provide CRC or Direct Map. This Hash Algorithm is for hardware maintain on MAC table calculation. The default value is CRC Hash.
- **Console Auto Logout Time:** When user doesn’t configure the switch through the console connection in certain time, the switch will auto logout. The default value is 5 minutes.
- **Web Auto Logout Time:** When user doesn’t configure the switch through the Web connection in certain time, the switch will auto logout. The default value is 5 minutes.

Advance Switch Configuration interface

Password Setting

User can change the console and web management login username and password.

1. **Password Protection:** Enable – to enable login password checking function. Disable – there is no password checking when login console or web configuration interface. The default value is “Enable”.
2. **User Name:** the default user name is “root”. You can assign another user name, as you like.
3. **New Password:** enter the new password.
4. **Password Again:** reenter the new password for confirmation.
5. Click Apply button.



Password Configuration interface

Restore System Default Setting

Reset switch to default configuration.

Click the “**Restore System Default Setting**”. The system will ask you to confirm the restore action. Click OK button, switch will load default setting.

System Reboot

Reboot the switch in software reset. Click the "**Reboot System**". Then, Click OK button to reboot the system.

System Information

It displays the system parameter.

- **Firmware Version:** the switch's firmware version. The firmware version may vary by new version releasing. You can check with your dealer for firmware version updating.
- **Chip Version:** the switch's Hardware chipset version.

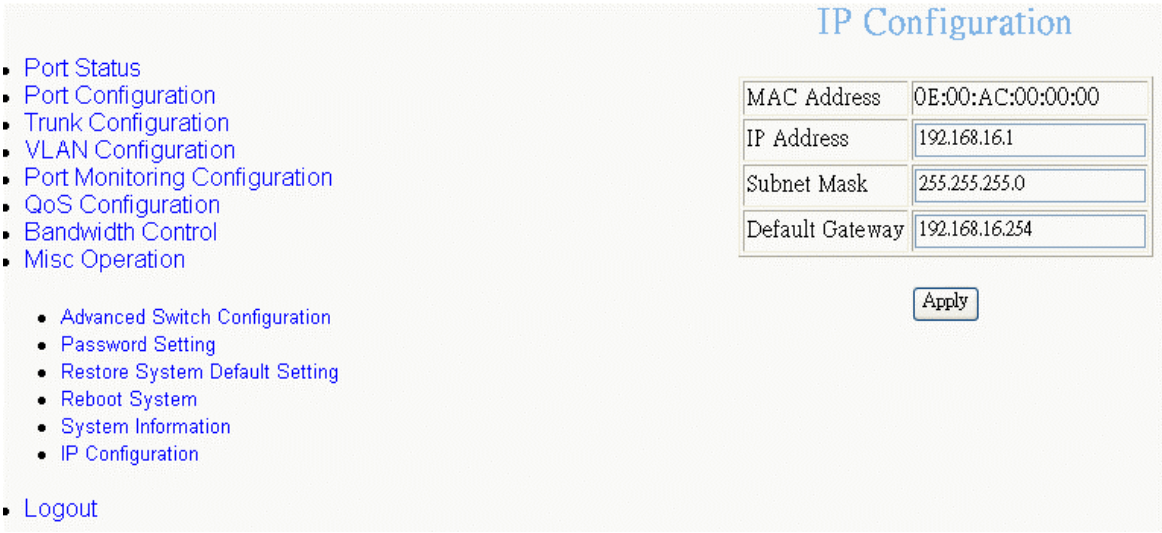
System Information interface

IP Configuration

User can configure the IP setting for this switch. The system has the default IP setting. You can re-configure IP address that it must in the same IP segment of your network.

1. **IP Address:** assign the switch IP address. The default IP is 192.168.16.1.
2. **Subnet Mask:** assign the switch IP subnet mask.

3. **Gateway:** assign the switch gateway. The default value is 192.168.16.254.
4. Click Apply button



IP Configuration interface

5. Troubleshooting

This section is intended to help you solve the most common problems on GSW-2472TGX.

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 and Gigabit 1000T port use 4 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 network installation.

■ 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.

■ Cabling

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). Gigabit port should use Cat-5 or cat-5e cable for 1000Mbps connections. The length does not exceed 100 meters.

Mini GBIC not function

When you have installed the Mini GBIC module into the switch, but the switch didn't detect the Mini GBIC module. Following the below steps to solve the problem.

- Power off the switch.
- Disconnect the Giga copper connection.
- Remove the Mini GBIC module from the switch.
- Reinstall the Mini GBIC module into the switch.
- Power on the switch
- Plug in the cable into Mini GBIC port
- Check the LED status is normal or not

- Through the console or web management interface to check the port status

The giga copper port and Mini GBIC port can't be use in the same time. Therefore, while the giga copper is connected, you install the Mini GBIC module will not be detected. Before, you install the Mini GBIC module; you have to disconnect the giga copper connection.

If the mini GBIC still not working after you have followed the above steps, pleases contact your dealer for more advance checking.

6. Technical Specification

This section provides the specifications of GSW-2472TGX and the following table lists these specifications.

Specifications

Standard	IEEE 802.3 10Base-T Ethernet, IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T IEEE 802.3z Gigabit fiber IEEE 802.3 N-way Auto-negotiation
Protocol	CSMA/CD
Technology	Store-and-forward switching architecture
Back plane	8.8 Gbps
Transfer Rate	14,880 pps Ethernet port, 148,800 pps per Fast Ethernet port 1488000 pps per Gigabit port
MAC Address	6K MAC address table
Packet Buffer	3Mbits
Network Cable	10BASE-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100BASE-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568

	100-ohm (100m)
LED	System power 10/100Base-TX: Link/Activity, Full Duplex 1000Base-T(FX): 100(1000 Base-T only), 1000, Link/Activity, Full Duplex/collision
Operating Temperature	0ºC to 45ºC (32ºF to 113ºF)
Operating Humidity	10% to 90% (Non-condensing)
Power Supply	100~240V AC, 50~60Hz DC 3.3V/5A
Power Consumption	34 Watt (maximum)
Dimension	440mm x 161mm x 44mm (L x W x H)
EMI & safety	FCC Class A, CE & UL, cUL,