FCC Certifications

This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

CE Mark Warning

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class A for ITE, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information. No part of this document can be copied or reproduced in any form without written consent from the company.

Trademarks:
All trade names and trademarks are the properties of their respective companies.

Copyright © 2006, All Rights Reserved.

Table of Contents

UNPACKING INFORMATION 4

INTRODUCTION 4

GENERAL DESCRIPTION 4
KEY FEATURES 5
THE FRONT PANEL 5
LEDs Definition 5
THE REAR PANEL 7

INSTALLATION 8

DESKTOP INSTALLATION 8
RACK-MOUNT INSTALLATION 8
INSTALLING NETWORK CABLES 9

FUNCTIONAL DESCRIPTION 10

JUMBO FRAME 10
FLOW CONTROL AND BACK PRESSURE 10
MIRROR 10
VLAN 10
TRUNK (AGGREGATION) 10
QUALITY OF SERVICE (QOS) 10
SNMP 10

MANAGEMENT GUIDE 11

ACCESS THE MANAGEMENT INTERFACE OF THE SWITCH 11
Manage the device via command line interface 11
Manage the device via WEB browser 11
HOMEPAGE 13
SYSTEM 14
PORT 15
VLAN 17
PVID 19
AGGREGATION/ TRUNK CONFIGURATION 20
QUALITY OF SERVICE 21
MIRROR 24
RATE LIMIT 25
SNMP 26

DISCOVERY 27
STATISTICS OVERVIEW 28
DETAILED STATISTICS 28
RESTART 29
FACTORY DEFAULT 29
SMART BOOT 29
SOFTWARE UPLOAD 30

PRODUCT SPECIFICATIONS 31

**APPENDIX-
COMMAND LINE INTERFACE 32**

START-UP AND TERMINAL CONFIGURATION 32
LOGIN/LOGOUT PROCEDURES 32
COMMAND HIERARCHY 33
ENTERING COMMANDS 33
COMMAND DESCRIPTION 34
System Commands 34
Console Commands 35
Port Commands 36
VLAN Commands 38
Aggregation Commands 40
QoS Commands 41
Mirror Commands 42
IP Commands 43
SNMP Commands 43
Ratelimit Commands 44

Unpacking Information

Thank you for purchasing the 16/24-Port Gigabit Web Smart Switch with 4-Port mini-GBIC. Before you start, please verify that your package contains the following items:

1. One 16/24-Port Gigabit Web Smart Switch with 4-Port mini-GBIC.
2. One power cord.
3. Rack-mount brackets and screws (optional).
4. Manual CD.

Introduction

General Description

Easily boosting your networking throughput, the 16/24-Ports Gigabit Web Smart Switch provides you 16/24 10/100/1000Mbps gigabit ports that lead you to a real gigabit connection. Users are now able to transfer high bandwidth-demanded files faster and get a real efficiency improvement with the user-friendly Web-based management interface. This product also equips 4 mini GBIC slots for your flexible fiber connection. Use of the mini-GBIC port disables the connection of its corresponding copper port automatically.

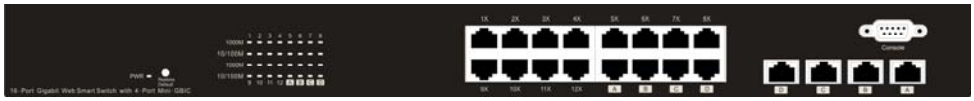
The management functionalities provide efficient network usage. VLAN reduces the collisions from widely broadcasting. Port Aggregation enlarges the bandwidth of backbone connection. QoS is supported to secure the bandwidth for some bandwidth-demanded applications including VoIP or videoconference. The 802.3x and backpressure flow control mechanisms are also supported to ensure the correctness of data transmitting.

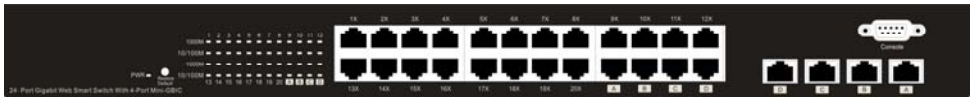
Key Features

- 16/24 fixed 10/100/1000Mbps Gigabit Ethernet ports for easy network connecting application.
- Equips 4 SFP ports for optional fiber connection.
- Supports auto-detection for mini-GBIC module inset.
- Provides Auto-discovery Function for easy Network management.
- Supports Port Mirror.
- Supports up to 8 ports and 8(16-port)/ 12(24-port) groups aggregation.
- Supports QoS function, port base, tag base, DSCP priority.
- Supports Rate Limit (ICMP Rate, Broadcast Rate, Multicast Rate, Ingress/Egress Rate).
- Supports full duplex flow control and half duplex back pressure.
- Non-blocking wire-speed switching performance.
- Provides 8K MAC address entries and 16/24 groups VLAN table.
- Supports firmware upgrade, SNMP.
- Supports Jumbo frame 9K bytes.
- Supports 340K(16-port)/500K(24-port) bytes buffer Memory.
- Supports Web-based management interface.
- FCC Class A, CE, VCCI. Meet RoHS.

The Front Panel

The front panel consists of the ports and LED indicators. Please refer to the following paragraph for information.





LEDs Definition

LED for the device:

The switch provides a power LED for the device.

LED	Status	Operation
Power	Steady Green	The switch is powered on
	Off	The switch is powered off

LED for each port:

The switch provides one "1000M" LED and one "10/100M" LED for each port.

1000M LED: Shows the current transmitting/receiving speed of the port.
10/100M LED: Shows the link status and the activities on the port.

LED	Status	Operation
1000M	Green	The port is connected at 1000 Mbps.
	Blinking Green	A valid link is established, and there is data transmitting/receiving.
	Off	No valid link on this port or the port is connected at 10/100 Mbps.
10/100M	Steady Green	A valid link is established, and there is no data transmitting/receiving.
	Blinking Green	A valid link is established, and there is data transmitting/receiving.
	Off	No valid link on this port or the port is connected at 1000 Mbps.

Attention : The Mini GBIC slot shares the same LED indicator with the last 4 RJ-45 (copper) port.

Port Operation

The auto-negotiation feature allows those ports running at one of the following operation modes:

Media	Speed	Duplex Mode
10/100/1000Mbps(copper)	10Mbps	Full Duplex
		Half Duplex
	100Mbps	Full Duplex
		Half Duplex
	1000Mbps	Full Duplex
1000Mbps(Fiber) (mini-GBIC required)	1000Mbps	Full Duplex

Note: For the last port, when both the fiber and cooper interfaces are connected, the system adapts the fiber interface and disables the relevant cooper port automatically.

Restore Default Button

You can use this button to reset the switch or restore factory default settings.
To reset the switch, press the button once.
To restore factory default settings, press and hold the button for three seconds.

The Rear Panel

The rear panel of the switch:

Power Receptacle

To be compatible with the electric service standards around the world, the switch is designed to afford the power supply in the range from 100 to 240VAC, 50/60Hz. Please make sure that your outlet standard to be within this range.
To power on the switch, please plug the female end of the power cord firmly into the receptacle of the switch and the other end into an electric service outlet. After the power cord installation, please check if the power LED is lit for a normal power status.

Installation

This switch can be placed on your desktop directly, or mounted in a rack. Please refer to the instructions for installation.

Before installing the switch, we recommend:

1. The switch is placed with appropriate ventilation environment. A minimum 25mm space around the unit is recommended.
2. The switch and the relevant components are away from sources of electrical noise such as radios, transmitters and broadband amplifiers
3. The switch is away from environments beyond recommend moisture

Desktop Installation

1. Install the switch on a level surface that can support the weight of the unit and the relevant components.
2. Plug the switch with the female end of the provided power cord and plug the male end to the power outlet.

Rack-mount Installation

The switch may be standalone, or mounted in a rack. Rack mounting facilitate to an orderly installation when you are going to install series of networking devices.

Procedures to Rack-mount the Switch:

1. Disconnect all the cables from the switch before continuing.
2. Place the unit the right way up on a hard, flat surface with the front facing you.
3. Locate a mounting bracket over the mounting holes on one side of the unit.
4. Insert the screws and fully tighten with a suitable screwdriver.
5. Repeat the two previous steps for the other side of the unit.
6. Insert the unit into the rack and secure with suitable screws (optional).
7. Reconnect all the cables.

Installing Network Cables

1. **Crossover or straight-through cable**: All the ports on the switch support Auto-MDI/MDI-X functionality. Both straight-through or crossover cables can be used as the media to connect the switch with PCs as well as other devices like switches, hubs or router.

2. **Category 3,4,5 or 5eUTP/STP cable**: To make a valid connection and obtain the optimal performance. An appropriate cable that corresponds to different transmitting/receiving speed is required. To choose a suitable cable, please refer to the following table.

Media	Speed	Wiring
10/100/1000Mbps copper	10Mbps	Category 3,4,5 UTP/STP
	100Mbps	Category 5 UTP/STP
	1000Mbps	Category 5,5e UTP/STP
1000Mbps Fiber (mini-GBIC required)	1000Mbps	The cable type differs from the mini-GBIC you choose. Please refer to the instruction came with your mini-GBIC.

Functional Description

Jumbo Frame

With Jumbo Frame supported, it is allowed for the switch to transport identical data in fewer frames. Hence helps to ensure fewer overheads, shorten processing time, and reduce interruptions.
Note: To enable Jumbo Frame, Flow Control should be enabled in advance.

Flow Control and Back Pressure

Flow Control and Back Pressure both contributes for lower and higher speed devices to communicate to each other hence ensures the correctness of data transmitting. The 802.3x flow control and Back Pressure mechanisms work respectively for full and half duplex modes. Flow Control can be enabled or disabled on a per-port basis.

Mirror

The Mirror function provides network administrator to monitor the traffic. By forwarding a copy of the packets that transferred by the monitored port, the sniffer port received all the packets and hence is able to monitor the traffic of the specified port.

VLAN

With VLAN supported, the network can be segmented in groups to reduce the collisions from widely broadcasting. The device supports both port-based VLAN and 802.1Q tag based VLAN. Port-based VLAN classifies incoming packets to VLANs according to their ingress port. The 802.1Q based VLAN add a tag to the header of the packet to classify their VLANs.

Trunk (Aggregation)

The Trunk functionality integrates several ports to enlarge the bandwidth that helps to boost the backbone connectivity. The switch allows the Maximum 8(16-port)/ 12(24-port) groups and 8 members for each group.

Quality of Service (QoS)

The QoS service classifies packets into different precedence. The packets are transmitted and received by their classified priorities. This mechanism helps high bandwidth demanded applications such as VoIP to get an unobstructed connection.

SNMP

This device is SNMP (Simple Network Management Protocol)-management supported. This allows this product to be monitored or inspected by a SNMP management station.

Management guide

Access the management interface of the Switch

This section instructs you how to enter and proceed with the advanced management capability, which can be accessed through console port or Internet Browser over the network (in-band).

Manage the device via command line interface

To start-up the command line interface, please connect a PC COM port to the RS-232 connector and activate a terminal emulation software (e.g. HyperTerminal of Windows.)

The terminal emulation software should be started as the following configuration:

1. Data rate: 115200 baud.
2. Data format: 8 data bits, 1 stop bit and no parity.
3. Flow control: none.
4. Click the property icon, select settings, make sure that:
   "The Function, arrow, and ctrl keys act as": Terminal keys.
   "Emulation": VT100.

Note: To manage via command line interface, please find the "Appendix" for more information.

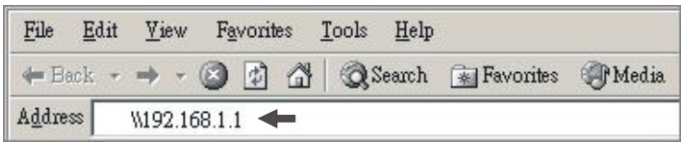
Manage the device via WEB browser

To access the Web-based management interface, you should configure the management station with an IP address and subnet mask that compatible to your switch.

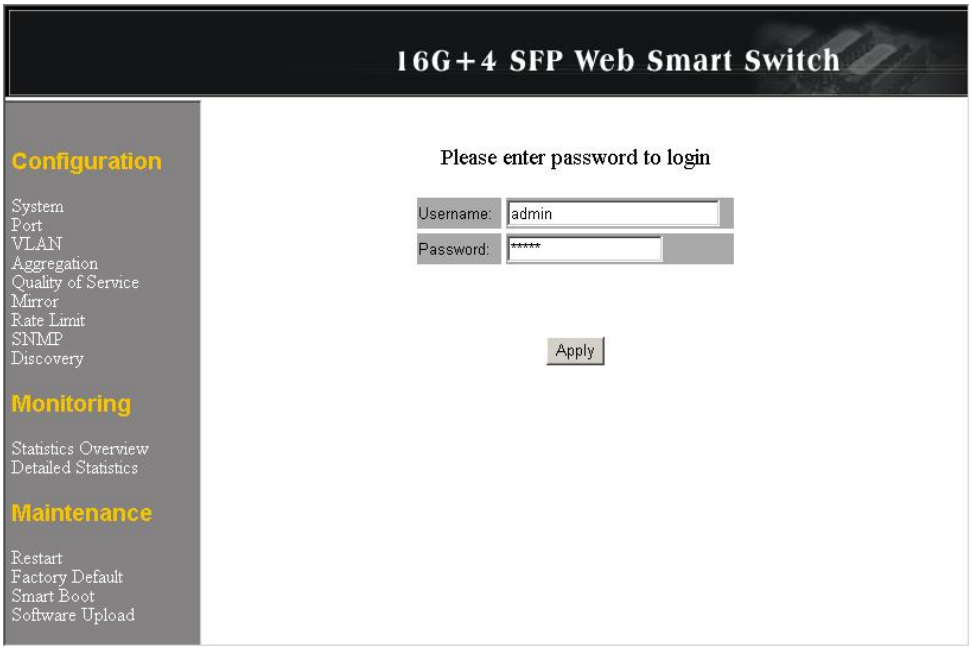
The factory default value of the switch:

IP：	**192.168.1.1**
Subnet Mask：	**255.255.255.0**
Default Gateway：	**192.168.1.254**

1. Running your Web Browser and enter the IP address “192.168.1.1” in the Address field.

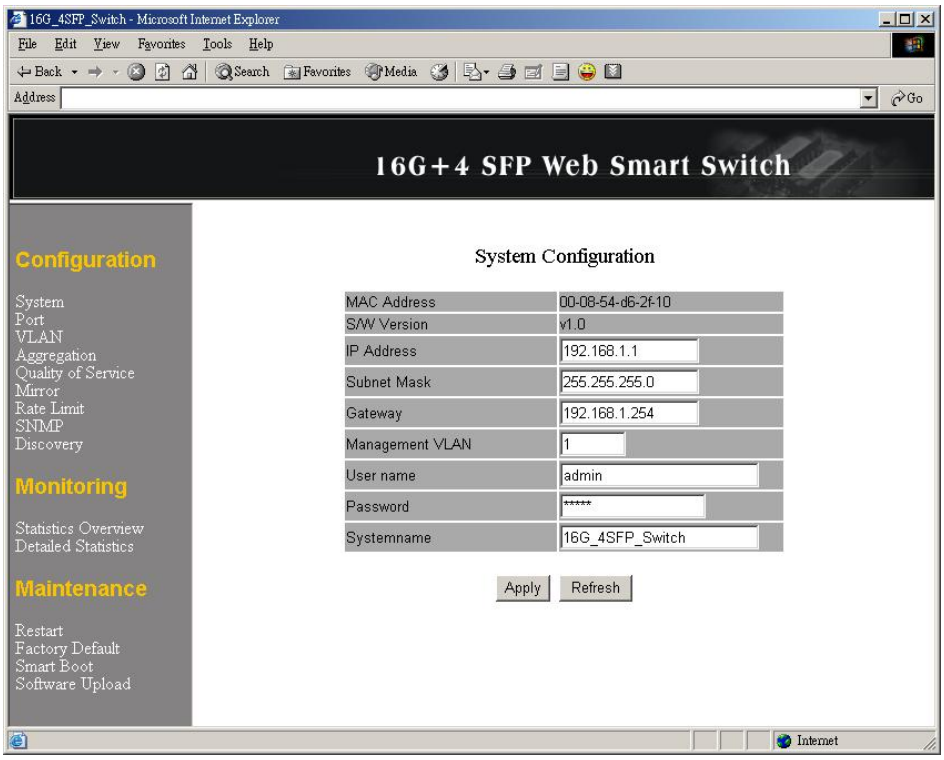


2. Key in the user name and password to pass the authentication. The factory default value of User Name and Password is “**admin**”.



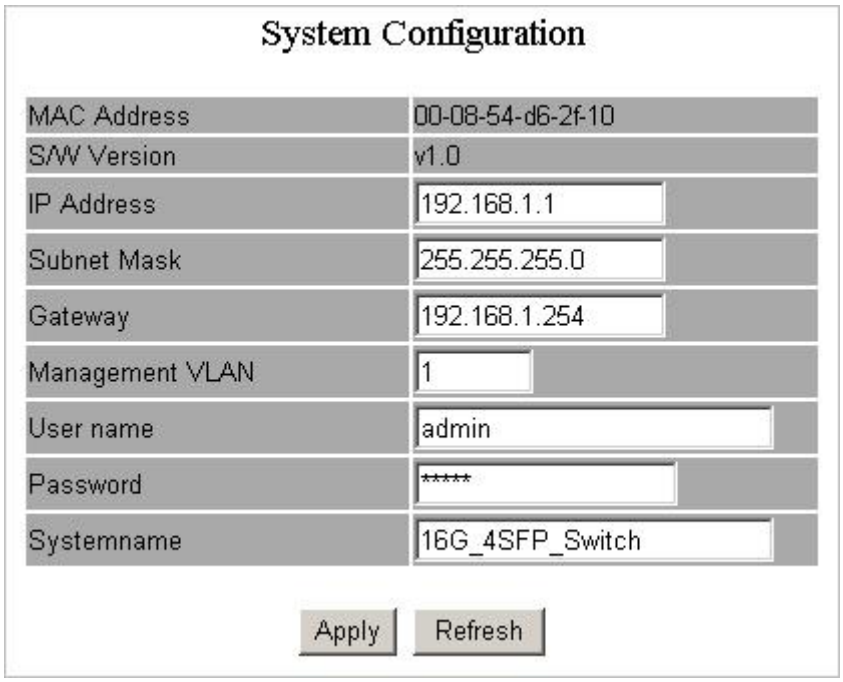
Homepage

After authentication procedure, the **"SYSTEM Configuration"** page shows up as the Homepage. You may click the hyperlinks on the left side of each page to get access to each management functions.



System

The System window provides the switch information and allows users to configure the switch properties.



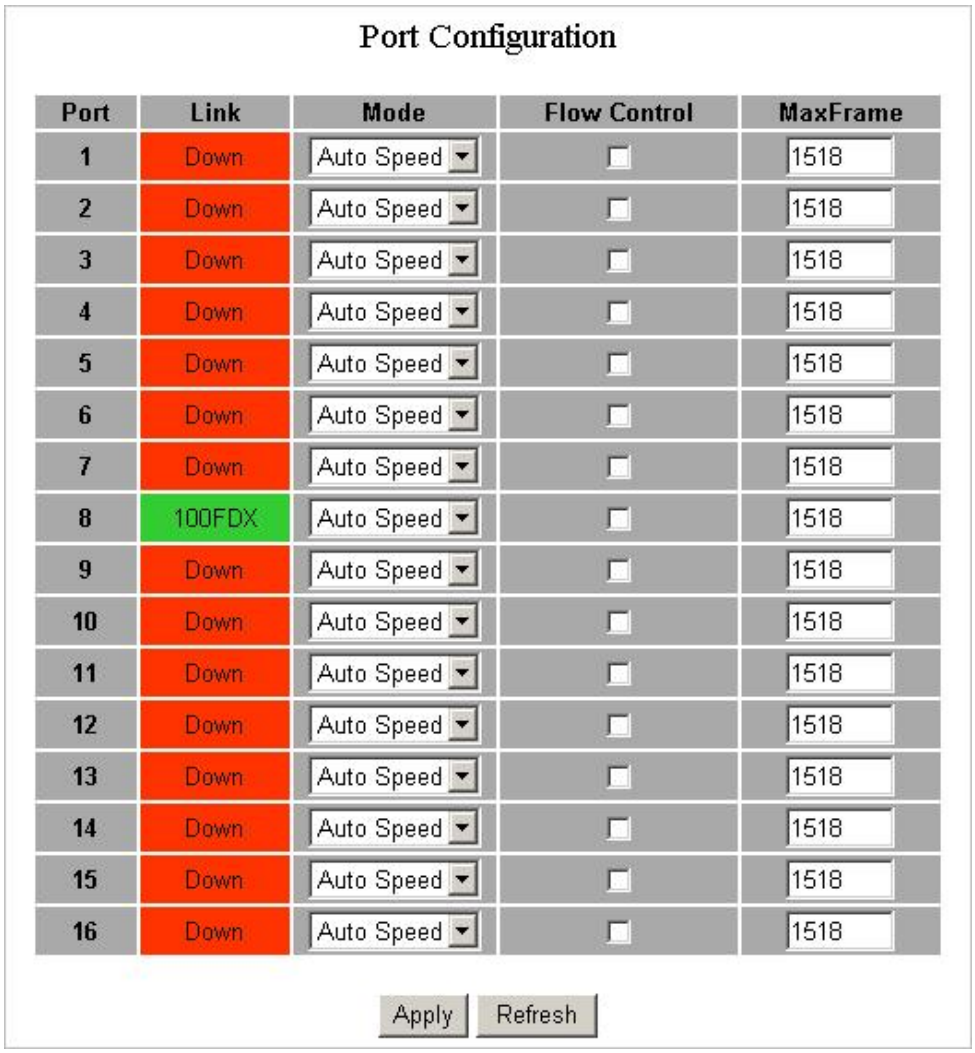
Items	Functions
MAC Address	The MAC address of this device.
S/W Version	The software version of this device.
IP Address	Setup the IP address of the switch.
Subnet Mask	Setup the Subnet Mask of the switch.
Gateway	Setup the Gateway of the switch.
Management VLAN	The VLAN group that is allowed to access the WEB-based management interface.
User Name	The Login name (Default: admin).
Password	The Login password (Default: admin).
System Name	The name of the device.

To save the configuration of the system, click "**Apply**" to save

Note:
After applying a new IP address, a new login page will be started automatically. Please login again to proceed to other configurations.

Port

This **Port Configuration** page shows the link status of each port and allows users to configure speed, flow control and Max frame size for each port.



Items	Functions
Link	Shows the link status of each port. The column lights green with the link speed while there is valid connection on this port.
Mode	Select a speed for this port. **"Auto Speed"** enables auto-negotiation. **"Disable"** stop the port from

	functioning.
Flow Control	Mark the checkbox to enable the FDX Flow control, or unmark to disable.
Max Frame length	To adjust the size of Jumbo Frame. The length is 1518 bytes. The Maximum value can be up to 9216 bytes.

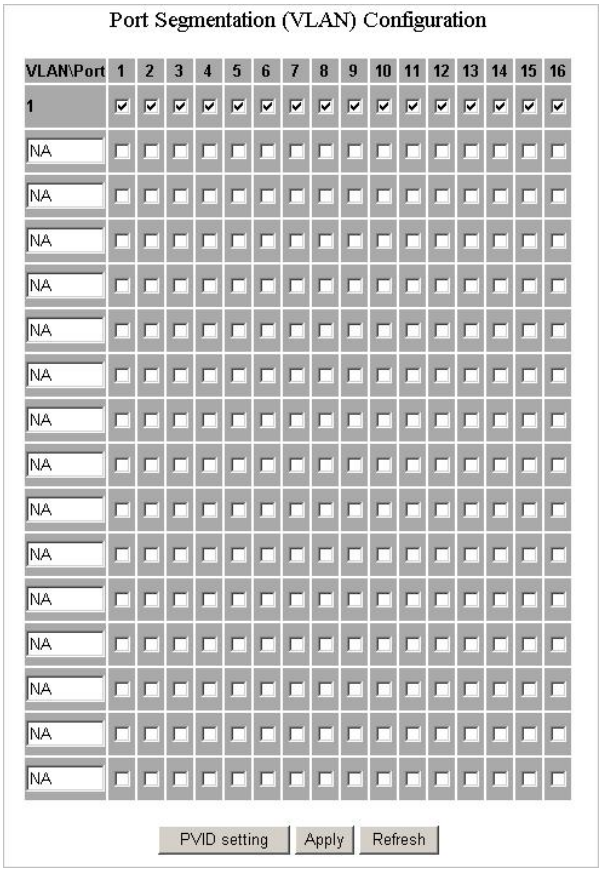
To save the configuration of the system, click **"Apply"** to save. You can also click the **"Refresh"** button to see the latest status of each port.

VLAN

VLAN divides the network members into groups to reduce packets collisions and improve the network efficiency. The switch supports 802.1Q tag-based VLAN. Please follow the instructions to configure.

- To add new VLAN groups,
  1. Fill in a VLAN id from 2 to 4094 in the **"VLAN\Port"** column.
  2. Select the ports for each VLAN groups.
  3. Click the **"Apply"** button to execute.

- To delete a VLAN group
  1. Clear the members of this VLAN group by clicking those marked checkboxes.
  2. Clear the VLAN id of the VLAN you want to remove in the **"VLAN\Port"** column. (Don't type N/A. Just leave it blank)
  3. Click the **"Apply"** button to execute.

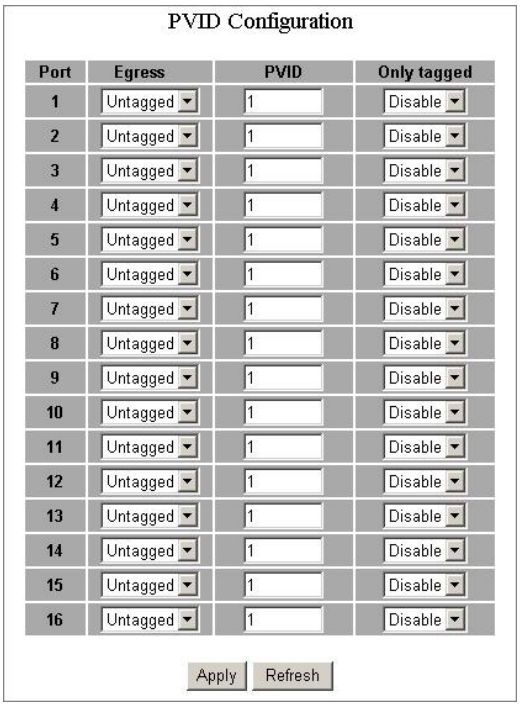


Note:
Settings in VLAN, Port aggregation, and Mirror are correlative. Please make sure that the settings won't influence each other.

PVID

When the VLAN-enabled switch receives a tagged packet, the packet will be sent to the port's default VLAN according to the PVID (port VLAN ID) of the receiving port.

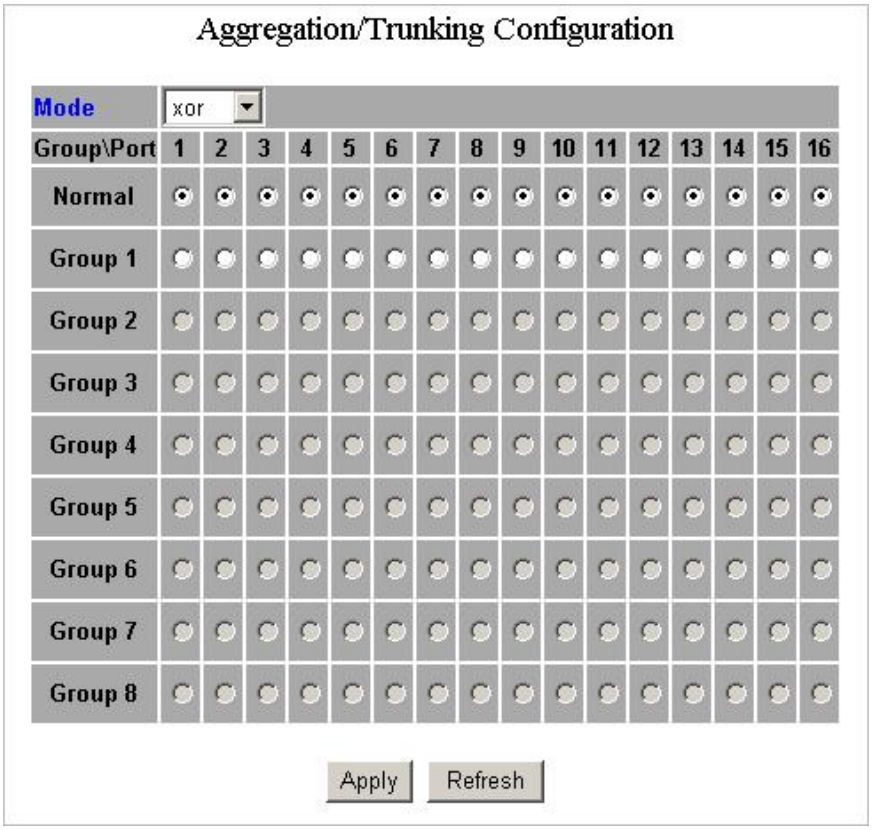
<table>
<tr><th>Items</th><th>Functions</th></tr>
<tr><td>Port</td><td>Port Number 1~16/24.</td></tr>
<tr><td>Egress</td><td>Select "tagged" in the drop list to enable the PVID checking and tag inserting of one port, and select "untagged" to cancel.
For example, if an Egress-tagged port receives an untagged frame, it will be transmitted as a PVID tagged frame. For the detail tagging status, please refer to the following table.
<table>
<tr><th colspan="2">Untagged</th><th colspan="2">Tagged</th></tr>
<tr><td>Packet Frames In</td><td>Packet Frames Out</td><td>Packet Frames In</td><td>Packet Frames Out</td></tr>
<tr><td>Untagged</td><td>Untagged</td><td>Untagged</td><td>Tagged (PVID)</td></tr>
<tr><td>Tagged</td><td>Untagged</td><td>Tagged (VID)</td><td>Tagged (VID)</td></tr>
<tr><td>Pri-tagged</td><td>Untagged</td><td>Pri-tagged</td><td>Tagged (PVID)</td></tr>
</table>
</td></tr>
<tr><td>PVID</td><td>Port VLAN ID (1~4094).</td></tr>
<tr><td>Only tagged</td><td>Enable: block all un-tagged packets from accessing this port.
Disable: All packets are allowed to access this port.</td></tr>
</table>



Aggregation / Trunk Configuration

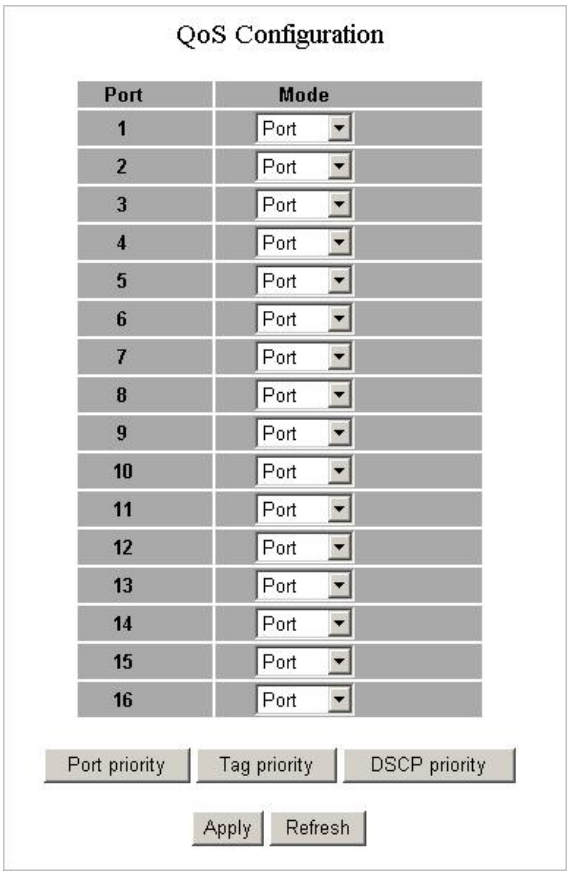
To set up the Port trunk groups, put the ports number into the same Aggregation group. There are eight groups to choose. Don't forget to click "Apply" to save the setting.

There are three aggregation modes for you to setup, SMAC, DMAC, and XOR. SMAC mode selects the path of packets according to source MAC while DMAC mode selects path according to destination MAC. XOR mode calculates the result of DMAC and SMAC mode to decide the path of packets.



Quality of Service

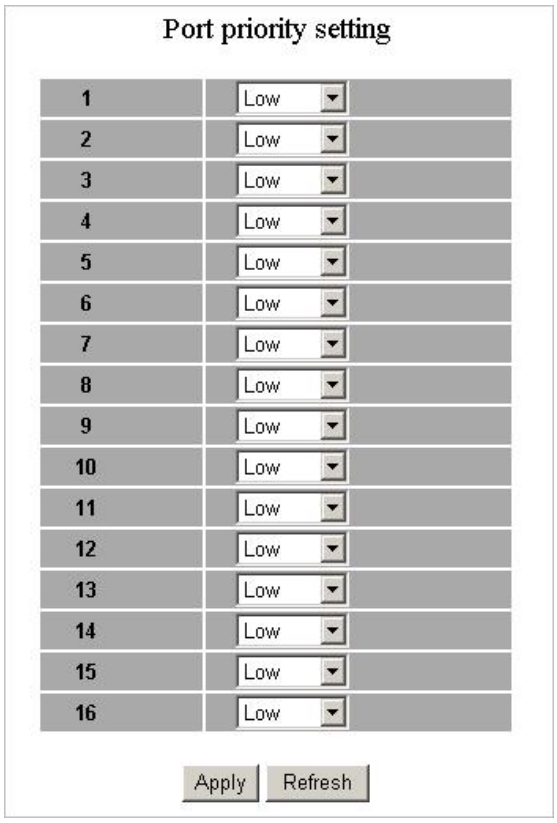
QoS enhances the communication quality by giving different precedence to classified packets. This switch provides port-based, tag-based and DSCP QoS modes:



Port-based mode QoS:

The port-based QoS allows users to configure certain ports as high or low priority. To give priority level for each port:

1. Select **"Port"** in the **"Mode"** column for those ports that are going to perform port-based QoS. Click the **"Apply"** button.
2. Click the **"Port priority"** button. The **"Port Priority Setting"** page shows up.
3. Click on the drop list to specify priority levels.
4. Click **"Apply"** to execute.

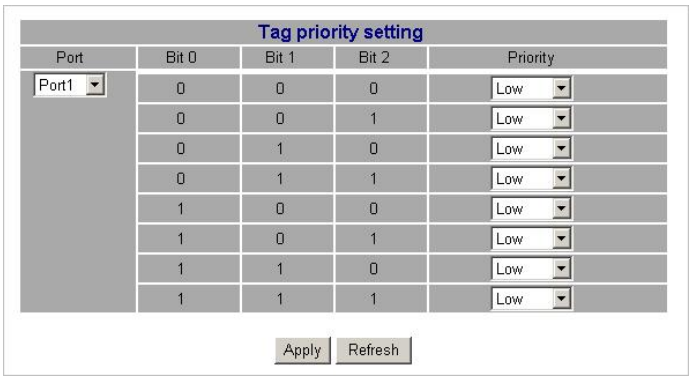


Tag based QoS:

The Tag based QoS decides packet priority according to the tags that adding on the packets.

To configure Tag Based QoS configuration:

1. Select **"Tagged"** in the **"Mode"** column for those ports that are going to perform tag-based QoS. Click the **"Apply"** button.
2. Click the **"Tag priority"** button. The **"Tag Priority Setting"** page shows up.
3. Select the port that you are going to configure from the drop list.
4. Give the priorities as high or low for each Priority Tag types.
5. Click the **"Apply"** button again to execute your configuration.



DSCP mode QoS:

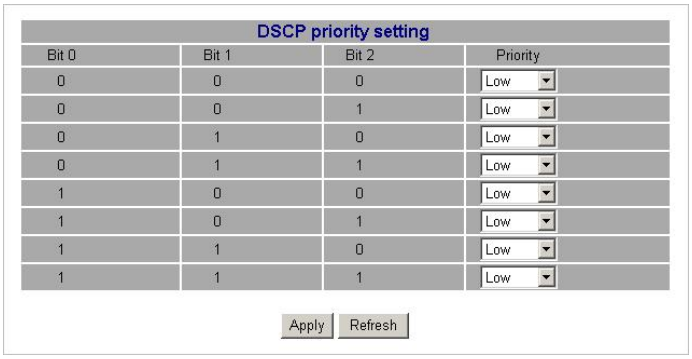
The DSCP mode QoS gives packet priority by the types of the incoming packets. We distinguish those packets according to the “Delay”, “Throughput” and “Reliability” information attaching on the packet. The types are listed as the following table:

Bit 0 (Delay)	Bit 1 (Throughput)	Bit 3 (Reliability)
0 (Normal)	0 (Normal)	0 (Normal)
1 (Low)	1 (High)	1 (High)

Note: The device distinguishes packets with DSCP precedence “000(routine)” only.

To configure DSCP Based QoS configuration:

1. Select **“DSCP”** in the **“Mode”** column for those ports that are going to perform DSCP-based QoS. Click the **“Apply”** button.
2. Click the **“DSCP priority”** button. The **“DSCP Priority Setting”** page shows up.
3. Give the priorities as high or low for each precedence types.
4. Click the **“Apply”** button again to execute your configuration.

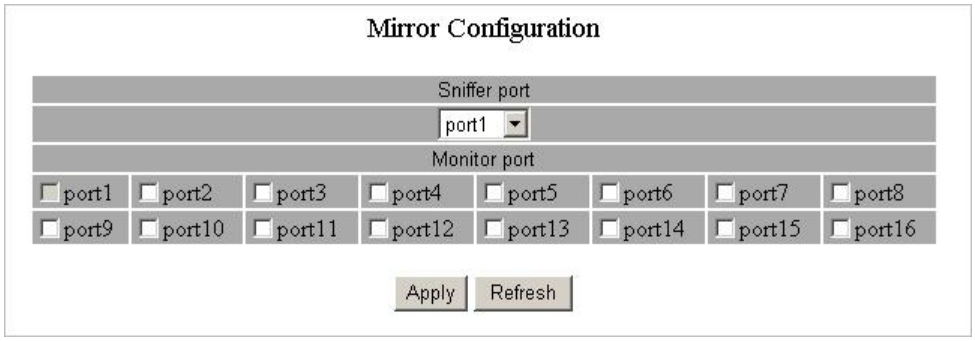


Mirror

The **Mirror** function copies all the packets that are transmitted by the source port to the destination port. It allows administrators to analyze and monitor the traffic of the monitored ports.

Mirror Configuration:

1. Select those ports that are going to be monitored by marking the checkboxes in **"Monitor Port"** column.
2. Click the drop list in **"Sniffer Port"** column. Select a port as the administration port for monitoring those source ports.
3. Click **"Apply"** to activate.

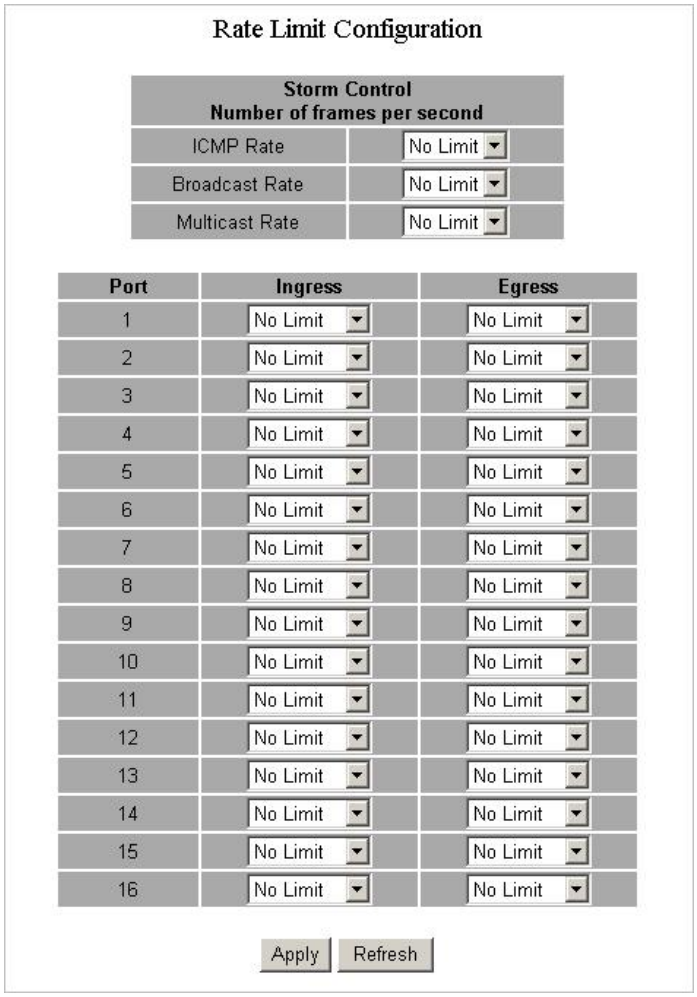


Rate Limit

This **"Rate Limit"** page allows users to limit the bandwidth for each port and configure the rules for Storm Control, which limits the flow of broadcast and multicast

To perform Storm Control:

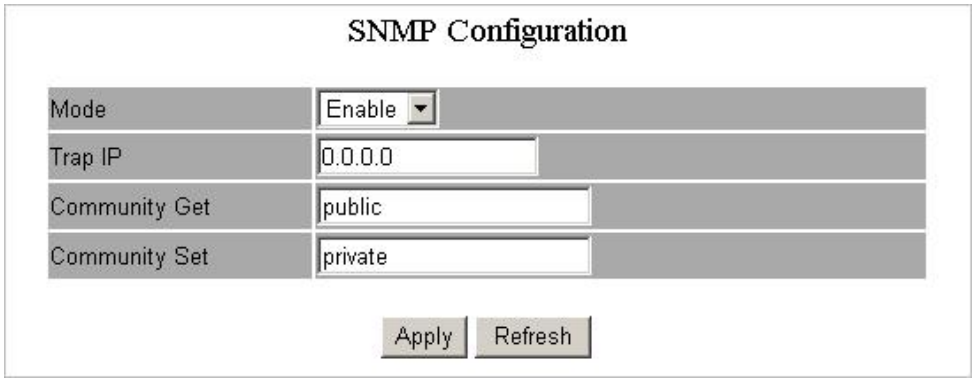
1. Click on each drop list to specify a speed for each frame type.
2. Click the **"Apply"** button to execute your configuration.



SNMP

This device supports SNMP-management, which allows network administrators to monitor and configure this device with SNMP software. To allow this device to be managed via SNMP:

1. Select **"Enable"** in the drop list.
2. Specify a trap IP. A trap IP is the destination port for sending trap information, which is usually the IP address of network administrators.
3. Fill in a name in the **"Community Get"** column, which is the password for accessing MIB with read-only authority.
4. Fill in a name in the **"Community Set"** column, which is the password for accessing MIB with read and write authority.



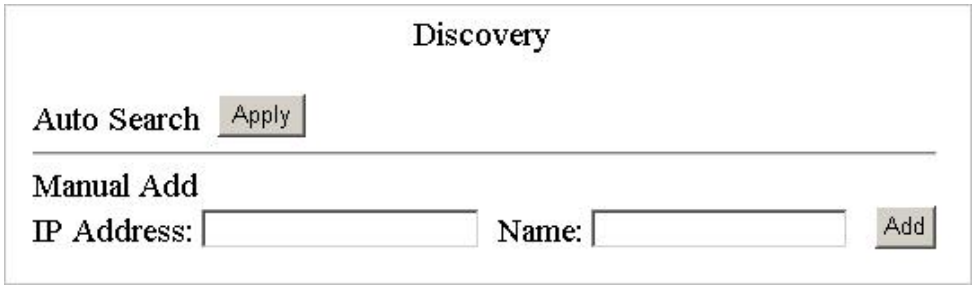
Discovery

After installing series of our switches, the discovery management tool helps users to search and get access to those switches within the LAN.

Note: The discovery tool lists the Maximum 16 devices respectively for auto and manual modes.

Auto Search

1. Click the “Apply” button to start.
2. The devices being found are listed below.
3. Click the IP address hyperlink to get access to the device.



Manual Add

Add

1. Enter the IP address & name in the text box.
2. Click “**Add**” to add the new IP address on the table.

Delete

1. Click the check box of the one you want to remove.
2. Click “**Delete**” to remove.

Statistics Overview

The Statistics Overview is provided for users to see the general transmitting and receiving status of each port. You may click the **"Clear"** button to clean all statistics or click the **"Refresh"** button to renew the statistics.

Statistics Overview for all ports

Clear Refresh

Port	Tx Bytes	Tx Frames	Rx Bytes	Rx Frames	Tx Errors	Rx Errors
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	311209	1265	26734096	212962	0	19
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0

Detailed Statistics

The Detailed Statistics is provided for users to see the detailed transmitting and receiving status of each port. Please click the hyperlinks above to select a port.
You may also click the **"Clear"** button to clean all statistics or click the **"Refresh"** button to renew the statistics.

Statistics for Port 1

Clear Refresh

Port 1 Port 2 Port 3 Port 4 Port 5 Port 6 Port 7 Port 8
Port 9 Port 10 Port 11 Port 12 Port 13 Port 14 Port 15 Port 16

Receive Total		Transmit Total	
Rx Packets	0	Tx Packets	0
Rx Octets	0	Tx Octets	0
Rx Broad- and Multicast	0	Tx Broad- and Multicast	0
Rx Error Packets	0	Tx Error Packets	0

Restart

Restart:
To restart the system, click the "**Yes"** button. The system restarts and shows the authentication window. Please fill in the username and password to continue.

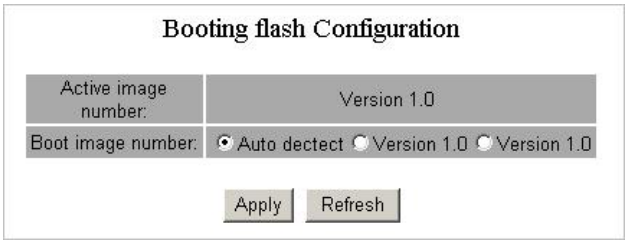
Factory Default

Restore Factory Default:
To restore the factory default value, click the "**Yes"** button.

Note: The IP address of the device will also be configured as factory-default setting, which is 192.168.1.1.

Smart Boot

This Smart Boot page allows users to select the booting flash of the device. **"Active image number"** shows the current flash for booting the device. To change the booting flash, click on your demanding flash in the **"Boot image number"** column and click the **"Apply"** button to execute.



Software Upload

This “Software Upload” page allows users to upgrade firmware for this switch.

To perform firmware upgrade:
1. Click the **“Browse”** button.
2. Locate the firmware file.
3. Click the **“Upload”** button to execute.

Note: This new firmware is going to be applied on the other flash that you select in **“Smart Boot”**, that is, the new firmware is going to be applied on the flash that is **NOT** chosen as the booting flash. Please ensure that you boot this device with correct flash before performing firmware upgrade.

Product Specifications

Standard	IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX IEEE802.3x full-duplex operation and flow control IEEE802.3ab/z 1000BASE-T IEEE802.1Q VLAN interoperability IEEE802.1p Priority Operation
Interface	16/24* 10/100/1000Mbps auto MDI/MDI-X RJ-45 switching ports 4* SFP (mini-GBIC) port 1 * Restore Default Button
Cable Connections	RJ-45 (10BASE-T): Category 3,4,5 UTP/STP RJ-45 (100BASE-TX): Category 5 UTP/STP RJ-45 (1000BASE-T): Category 5,5e or enhanced UTP/STP Fiber: depend on mini-GBIC types
Network Data Rate	10/100/1000Mbps Auto-negotiation
Transmission Mode	10/100Mbps Full-duplex, Half-duplex 1000Mbps Full-duplex
LED Indications	System Power RJ-45 Port 1000M, 10/100M
Memory	8K MAC entries 340K(16-port)/500K(24-port) bytes Buffer Memory 9K Byte Jumbo Frame
Emission	FCC Class A, CE, VCCI, RoHS
Operating Temperature	0° ~ 40°C (32° ~ 104°F)
Operating Humidity	10% - 90% (non-condensing)
Power Supply	Internal power supply 100-240V/ 50-60Hz universal input

Appendix- Command Line Interface

Start-up and Terminal configuration

To start-up the command line interface, please connect a PC COM port to the RS-232 connector and activate a terminal emulation software (e.g. HyperTerminal of Windows).

The terminal emulation software should be started as the following configuration:

1. Data rate: 115200 baud.
2. Data format: 8 data bits, 1 stop bit and no parity.
3. Flow control: none.
4. Click the property icon, select settings, make sure that:
   "The Function, arrow, and ctrl keys act as": Terminal keys.
   "Emulation": VT100.

Login/Logout Procedures

To get access to the CLI, you will have to get the username and password for login. The default username and password are admin/admin.

Note: We recommend users to configure a new username/password to prevent unauthorized users from accessing to the device.

```
Username: admin

Password: *****
```

Command Hierarchy

After logging in, press ? + <enter> to show the 9 command groups.

System	- System commands
Console	- Console commands
Port	- Port commands
VLAN	- VLAN commands
Aggr	- Aggregation commands
QoS	- QoS commands
Mirror	- Mirror commands
IP	- IP commands
SNMP	- SNMP commands
Ratelimit	- Rate setup commands
Exit	- Logout commands

Press ? or help to get help. The help depends on the context:

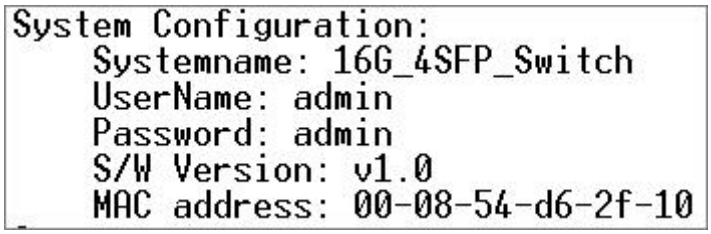
- At top level, a list of command groups will be shown.
- At group level, a list of the command syntaxes will be shown.
- If given after a command, the syntax and a description of the command will be shown.

Entering Commands

To give any command, please key in your command and press enter.

EX,

1. Type “System” and press <enter> to get access to the system command group.
2. Type “Configuration” and press <enter> to perform “configuration”



You can type “up” and press <enter> to go back to upper level.

Command Description

The following session introduces the command structure of the command line interface.

Command groups:

System	**- System commands**
Console	**- Console commands**
Port	**- Port commands**
VLAN	**- VLAN commands**
Aggr	**- Aggregation commands**
QoS	**- QoS commands**
Mirror	**- Mirror commands**
IP	**- IP commands**
SNMP	**- SNMP commands**
Ratelimit	**- Rate setup commands**
Exit	**- Logout commands**

System Commands

Commands at System level:

System Configuration [all]
System Restore Default [keepIP]
System UserName [<name>]
System Password [<password>]
System Systemname [<name>]
System Reboot

System Configuration [all]

Syntax:
System Configuration [all]

Description:
Show system name, username, password, software version and management MAC address. Optionally show the full configuration.

[all]: Show the total switch configuration (default: System configuration only).

System Restore Default [keepIP]

Description:
Restore factory default configuration.

[keepIP]: Preserve IP configuration (default: Not preserved).

UserName [<name>]

Description:
Set or show the user name.

[<name>]: String of up to 16 characters (default: Show user name).

System Password [<password>]

Description:
Set or show the console password. The empty string ("") disables the password check.

[<password>]: Password string of up to 16 characters.

System Systemname [<name>]

Description:
Set or show the system name.

[<name>]: String of up to 16 characters (default: Show system name).

System Reboot

Description:
Reboot the switch.

Console Commands

Commands at Console level:
Console Configuration
Console Timeout [<timeout>]
Console Prompt [<prompt string>]

Console Configuration

Description:
Show configured console prompt and timeout.

Console Timeout [<timeout>]

Description:
Set or show the console inactivity timeout in seconds. The value zero disables timeout.

[<timeout>]: Timeout value in seconds, 0,60-10000.

Console Prompt [<prompt_string>]

Description:
Set or show the console prompt string.

[<prompt_string>]: Command prompt string of up to 10 characters.

Port Commands

Commands at Port level:
Port Configuration [<portlist>]
Port Mode [<portlist>] [<mode>]
Port Flow Control [<portlist>] [enable|disable]
Port Admin [<portlist>] [enable|disable]
Port MaxFrame [<portlist>] [<framesize>|reset]
Port Statistics [<portlist>] [clear]

#Note: If you want to change maxframe bigger than 1518,
the [Flow Control] should be enabled!

Port Configuration [<portlist>]

Description:
Show the configured and current speed, duplex mode, flow control mode and admin state for the port.
[<portlist>]: Port list (Default: All ports).

Port Mode [<portlist>] [<mode>]

Description:
Set or show the speed and duplex mode for the port.

[<portlist>]: Port list (Default: All ports).
[<mode>]: Port speed and duplex mode
(Default: Show configured and current mode).
10hdx : 10 Mbit/s, half duplex.
10fdx : 10 Mbit/s, full duplex.
100hdx : 100 Mbit/s, half duplex.
100fdx : 100 Mbit/s, full duplex.
1000fdx: 1 Gbit/s, full duplex.
auto : Auto negotiation of speed and duplex.

Port Flow Control [<portlist>] [enable|disable]

Description:
Set or show flow control mode for the port.

[<portlist>]: Port list (default: All ports).
[enable|disable]: Enable/disable flow control (default: Show flow control mode).

Port Admin [<portlist>] [enable|disable]

Description:
Set or show the admin state for the port.

[<portlist>]: Port list (default: All ports).
[enable|disable]: Enable or disable admin state (default: Show admin state).

Port MaxFrame [<portlist>] [<framesize>|reset]

Description:
Set or show the maximum frame size in bytes (including FCS) for frames received on the port. Tagged frames are allowed to be 4 bytes longer than the maximum frame size. Use the reset option to return to default setting.

[<portlist>]: Port list (default: All ports).
[<framesize>|reset]: Maximum frame size [1518-9216] or reset to 1518 bytes (default: Show maximum frame size).

Port Statistics [<portlist>] [clear]

Description:
Show or clear statistics for the port.

[<portlist>]: Port list (default: All ports).
[clear]: Clear port statistics (default: Show statistics).

VLAN Commands

Commands at VLAN level:
VLAN Configuration [<portlist>]
VLAN Add <vidlist> [<portlist>]
VLAN Delete <vidlist>
VLAN Lookup <vidlist>
VLAN Egress [<portlist>] [untagged|tagged]
VLAN PVID [<portlist>] [<vid>|none]
VLAN OnlyTag [<portlist>] [enable|disable]

VLAN Configuration [<portlist>]

Description:
Show the VLAN egress mode, port VLAN ID and accepted frame type for the port and the permanently stored VLAN table.

[<portlist>]: Port list (default: All ports).

VLAN Add <vidlist> [<portlist>]

Description:
Add VLAN entry and include ports in member set.

<vidlist>: VLAN ID list.
[<portlist>]: Port list (default: All ports).

VLAN Delete <vidlist>

Description:
Delete VLAN entry (all ports excluded from member set).

<vidlist>: VLAN ID list.

VLAN Lookup <vidlist>

Description:
Lookup VLAN entry and show port list.

<vidlist>: VLAN ID list.

VLAN Egress [<portlist>] [tagged|untagged]

Description:
Set or show the VLAN egress mode setting for the port. Egress untagged ports will strip the VLAN tag from received frames.
Egress tagged ports will not strip the tag from received frames.

[<portlist>]: Port list (default: All ports).
[tagged|untagged]: Port tagged|untagged list (default: Show egress tag setting).

VLAN PVID [<portlist>] [<vid>|none]

Description:
Set or show the port VLAN ID. Untagged frames received on the port will be classified to this VLAN ID. Frames classified to this VLAN ID will be sent untagged on the port.

[<portlist>]: Port list (default: All ports).
[<vid>|none]: Port VLAN ID, 1-4094 (default: Show PVID). The 'none' option can be used for trunk links.

VLAN OnlyTag [<portlist>] [enable|disable]

Description:
Set or show the onlytag setting of this port.

[<portlist>]: Port list (default: All ports).
[enable|disable]: Only accept tagged frame or not (default: Show disable).

Aggregation Commands

Commands at Aggr level:
Aggr Configuration
Aggr Add <portlist>
Aggr Delete <portlist>
Aggr Lookup <portlist>
Aggr Mode [smac|dmac|xor]

Aggr Configuration
Description:
Shows the aggregation groups and the aggregation mode.

Aggr Delete <portlist>

Description:
Delete link aggregation group.
<portlist>: Port list. Aggregations including any of the ports will be deleted.

Aggr Lookup <portlist>

Description:
Lookup and display link aggregation group.
<portlist>: Port list. Aggregations including any of the ports will be shown.

Aggr Mode [smac|dmac|xor]

Description:
Set or show link aggregation traffic distribution mode.
[smac|dmac|xor]: Aggregation mode, SMAC, DMAC or XOR (default: Show mode).

QoS Commands

Commands at QoS level:
QoS Configuration [<portlist>]
QoS Mode [<portlist>] [tag|port|diffserv]
QoS Port [<portlist>] [<class>]
QoS Tagprio [<portlist>] [<tagpriolist>] [<class>]
QoS DiffServ [<dscpno>] [<class>]

<class> range: low|normal|medium|high

QoS Configuration [<portlist>]

Description:
Show the configured QoS mode and the priority setting of all ports.

[<portlist>]: Port list (default: All ports).

QoS Mode [<portlist>] [tag|port|diffserv]

Description:
Set or show the QoS mode for the port.

[<portlist>]: Port list (default: All ports).
[tag|port|diffserv]: Enable tag, port or IP differentiated services class of service for the port (default: Show mode).

QoS Port [<portlist>] [<class>]

Description:
Set or show the port class. In tag mode, the default class is used for untagged frames. In port mode, the default class is used as the port priority. In diffserv mode, the default class is used for non-IP frames.

[<portlist>]: Port list (default: All ports).
[<class>]: Internal class of service (default: Show default class).

QoS Tagprio [<portlist>] [<tagpriolist>] [<class>]

Description:
Set or show the VLAN user priority mapping.

[<portlist>]: Port list (default: All ports).
[<tagpriolist>]: VLAN user priority list, 0-7 (default: All user priorities).
[<class>]: Internal class of service (default: Show class).

QoS DiffServ [<dscpno>] [<class>]

Description:
Set or show the IP Differentiated Services mapping.

[<dscpno>]: IP DSCP number, 0-7.
[<class>]: range: low|normal|medium|high

Mirror Commands

Commands at Mirror level:
Mirror Configuration
Mirror Port [<port>]
Mirror Source [<portlist>] [enable|disable]

Mirror Configuration

Description:
Show the mirror destination port and mirror mode for source ports.

Mirror Port [<port>]

Description:
Set or show the mirror destination port.

[<port>]: Mirror destination port (default: Show mirror port).

Mirror Source [<portlist>] [enable|disable]

Description:
Set or show the source port mirror mode.

[<portlist>]: Source port list (default: All ports).
[enable|disable]: Enable/disable mirroring of frames received on port (default: Show mirror mode).

IP Commands

Commands at IP level:
IP Configuration
IP Setup [<ipaddress> [<ipmask> [<ipgateway>]]] [<vid>]
IP Web management [enable|disable]

IP Configuration

Description:
Show IP configured IP address, mask, gateway, VLAN ID and mode.

IP Setup`

Description:
Setup or show IP configuration.

[<ipaddress>]: IP address (default: Show IP configuration).
[<ipmask>]: IP subnet mask (default: Subnet mask for address class).
[<ipgateway>]: Default IP gateway (default: 0.0.0.0).
[<vid>]: VLAN ID, 1-4094 (default: 1).

IP Web management

Description:
Activate or deactivate the Web management.

[enable|disable]: Enable/disable Web management (default: Show Web management).

SNMP Commands

Commands at SNMP level:
SNMP Configuration
SNMP Community [<get>|<set>] [<community>]
SNMP Setup [enable|disable]
SNMP Trap [<IP Address>]

SNMP Configuration
Description:
Show the SNMP configuration.

SNMP Community [<get>|<set>] [<community>]
Description:
Set or show community setting for SNMP.

[<get>|<set>]: Community for get or set.
[community]: community string.

SNMP Setup [enable|disable]
Description:
Activate or deactivate the SNMP.

[enable|disable]: Enable/disable SNMP (default: Show SNMP mode).

SNMP Trap [<IP Address>]

Description:
Set or show SNMP traps destination.

<IP Address>: IP address to send traps to (default: Show trap configuration).

Ratelimit Commands

Commands at Ratelimit level:
Ratelimit Configuration
Ratelimit Setup <traffic type > <option>
Ratelimit Egress [<portlist>] [enable|disable] [<rate>]
Ratelimit Ingress[<portlist>] [enable|disable] [<rate>]

[<portlist>]: Port list (default: All ports).
[enable|disable]: Enable or disable.
[<rate>]: Set leaky bucket rate in Kbit/s[128/256/512/1024/2048/3072K] (default: Show rate).

Ratelimit Configuration

Description:
Show the Ratelimit setting.

Ratelimit Setup <traffic type > <option>

Description:
Set or show the ratelimit configuration. The allowed frame rates for ICMP frames, learn frames, multicasts, broadcasts and flooded unicasts are controlled using a central ratelimit.

[<traffic type>]: Ratelimit to set. Can be one of:
[ICMP|Broadcast|Multicast] (default: Show all).
[enable|disable]: Enable or disable specified ratelimit.
[<rate>]: Frame rate in kiloframes.
Allowed values are 1k, 2k, 4k, 8k, 16k, 32k, 64k.

Ratelimit Egress [<portlist>] [enable|disable] [<rate>]

Description:
Set or show the egress configuration.

[<portlist>]: Port list (default: All ports).
[enable|disable]: Enable or disable egress.
[<rate>]: Disable or set leaky bucket rate in Kbit/s
[128/256/512/1024/2048/3072k] (default: Show egress rate).

Ratelimit Ingress[<portlist>] [enable|disable] [<rate>]

Description:
Set or show the ingress configuration.

[<portlist>]: Port list (default: All ports).
[enable|disable]: Enable or disable ingress.
[<rate>]: Disable or set leaky bucket rate in Kbit/s
[128/256/512/1024/2048/3072k] (default: Show ingress rate).