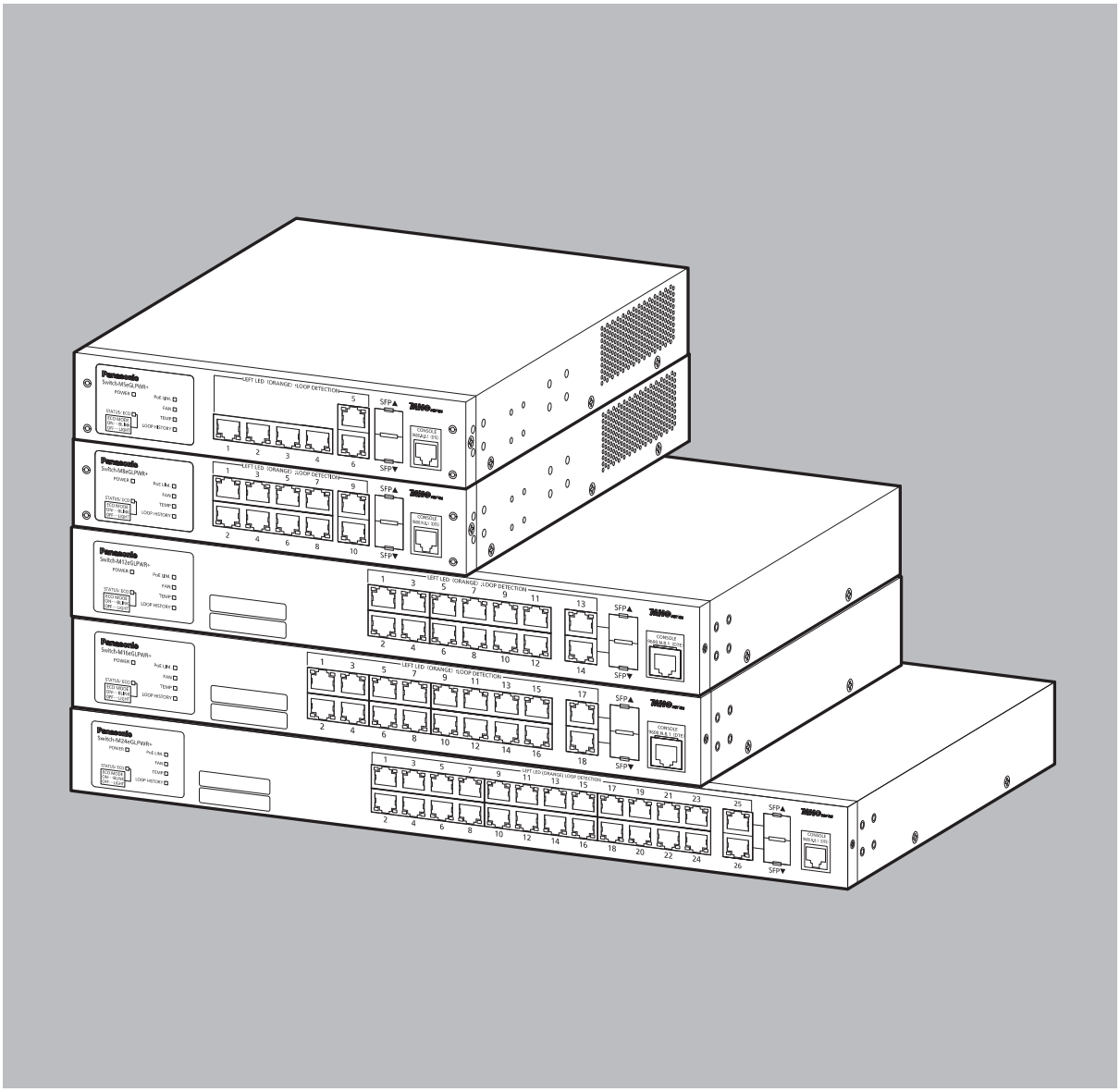
Panasonic

Operation Manual
for Web Interface

Layer 2 Switching Hub

Model No. PN28058/PN28088
/PN28128/PN28168/PN28248

- Thank you for purchasing our product.
- This manual provides important information about safe and proper operations of this switch.
- **Please read "Important Safety Instructions" on pages 4 to 5 before use.**
- For target model names and numbers, refer to the next page.



The target model for this Operation Manual is as follows.

Model name	Model number
Switch-M5eGLPWR+	PN28058-ID PN28058-TH PN28058-MY PN28058-SG
Switch-M8eGLPWR+	PN28088-ID PN28088-TH PN28088-MY PN28088-SG
Switch-M12eGLPWR+	PN28128-ID PN28128-TH PN28128-MY PN28128-SG
Switch-M16eGLPWR+	PN28168-ID PN28168-TH PN28168-MY N28168-SG
Switch-M24eGLPWR+	PN28248-ID PN28248-TH PN28248-MY PN28248-SG

Important Safety Instructions

Please Follow the Instructions

This chapter contains important safety instructions for preventing bodily injury and/or property damage. You are required to follow them.

■Severity of bodily injury and/or property damage, which could result from incorrect use of the switch, are explained below.

⚠WARNING	This symbol indicates a potential hazard that could result in serious injury or death.
⚠ CAUTION	This symbol indicates safety instructions.Deviation from these instructions could lead to bodily injury and/or property damage.

■The following symbols are used to classify and describe the type of instructions to be observed.

⃠ This symbol is used to alert users to what they must not do.	❗ This symbol is used to alert users to what they must do.

⚠WARNING	
⃠	●Do not use power other than AC 100-240 V. Deviation could lead to fire, electric shock, and/or equipment failure. ●Do not handle the power cord with wet hand. Deviation could lead to electric shock and/or equipment failure. ●Do not handle this switch and connection cables during a thunderstorm. Deviation could lead to electric shock. ●Do not disassemble and/or modify this Switching Hub. Deviation could lead to fire, electric shock, and/or equipment failure. ●Do not damage the power cord. Do not bend too tightly, stretch, twist, bundle with other cord, pinch, put under a heavy object, and/or heat it. Damaged the cord could lead to fire, short, and/or electric shock. ●Do not put foreign objects (such as metal or combustibles) into the opening (such as twisted pair port, console port, SFP expansion slot), and do not drop them inside the Switching Hub. Deviation could lead to fire, electric shock, and/or equipment failure. ●Do not connect equipment other than 10BASE-T/100BASE-TX/ 1000BASE-T to a twisted pair port. Deviation could lead to fire, electric shock, and/or equipment failure.

⚠ WARNING	
⃠	●Do not please this Switching Hub in harsh environment(such as near water, high humid, and/or high dust). Deviation could lead to fire, electric shock, and/or equipment failure. ●Do not place this Switching Hub under direct sunlight and/or high temperature. Deviation could lead to high internal temperature and fire. ●Do not install this Switching Hub at a location with continuous vibration or strong shock, or at an unstable location. The switch may fall off, leading to injury and/or equipment failure. ●Do not connect any cable other than our optional console cable. Deviation could lead to fire, electric shock, and/or equipment failure. ●Do not put this switch into fire. Deviation could lead to explosion and/or fire. ●Do not use the supplied power cord for anything other than this product. Deviation could lead to fire, electric shock, and/or equipment failure. ●Do not insert any modules other than the optional SFP modules (PN54021K/PN54023K) into the SFP extension slot. Deviation could lead to fire, electric shock, and/or equipment failure. For the latest information about compatible SFP extension modules, check our website.

⚠ WARNING

●Use the bundled power cord (AC 100 - 240V specifications).
Deviation could lead to electric shock, malfunction, and/or equipment failure.The warranty does not cover any problems resulting from the use of any power cord other than the one supplied.

●Unplug the power cord in case of equipment failure.
Deviation such as keeping connected for a long time could lead to fire.

●Connect this Switching Hub to ground.
Deviation could lead to electric shock, malfunction, and/or equipment failure.

●Connect the power cord firmly to the power port.
Deviation could lead to electric fire, shock, and/or malfunction.

●Unplug the power cord if the Status/ECO LED (Status/ECO mode), TEMP LED (temperature sensor), blinks in orange (system fault).
Deviation, such as keeping connected for a long time, could lead to fire.

●When this Switching Hub is installed on wall surface, mount it firmly so as not to drop dwon because of weight of the main body andconnection cable.
Deviation could lead to injury and/or equipment failure.

●Up to two Switching Hubs can be connected by using the connection brackets and connection bracket screws included with the optional PN71052 19-inchrack mount brackets (for two units). Attach the connection brackets to the connection bracket screw holes on the front and back panels to securely fix the Switching Hubs before installation
If the Switching Hubs are not fixed securely, they may fall, leading to injury and/or equipment failure.

●To connect a power receiving equipment supporting IEEE802.3at to this Switching Hub, use a cable rated Cat5e or higher.
Using other cables may result in heat generation, ignition, and/or equipment failure.

Basic Instructions for the Use of This Product

- For inspection and/or repair, consult the retailer.
- Use commercial power supply from a wall socket, which is close and easily accessible to this Switching Hub.
- Unplug the power cord when installing or moving this Switching Hub.
- Unplug the power cord when cleaning this Switching Hub.
- Use this Switching Hub within the specifications. Deviation could lead to malfunction.
- When installing this Switching Hub using rubber feet (with built-in magnets), confirm that it does not move or fall down due to weight of cables.
- When connecting a cable, hold the Switching Hub firmly.
- If you install this Switching Hub at a high place, securely fix it on the wall with screws.
- If you install this Switching Hub at a high place with magnets alone, it may fall, leading to injury or failure of this Switching Hub.
- Do not put a floppy disk or a magnetic card near the rubber feet (with built-in magnets). Otherwise, recorded content may be lost.
- After installing this Switching Hub on an OA desk, do not move either without dismounting it. Otherwise, the desk surface may be damaged.
- Do not touch the metal terminal of the RJ45 connector, the modular plug of connected twisted pair cable. Do not place charged objects in the proximity of them. Static electricity could lead to equipment failure.
- Do not put the modular plug of the connected twisted pair cable on objects that can carry static charge, such as carpet. Do not place it in the proximity. Static electricity could lead to equipment failure.
- Do not put a strong shock, including dropping, to this Switching Hub. Deviation could lead to equipment failure.
- Before connecting a console cable to the console port, discharge static electricity, for example by touching metal appliance (do not discharge by touching this Switching Hub).

●Do not store and/or use this Switching Hub in the environment with the characteristics listed below.(Store and/or use this Switching Hub in the environment in accordance with the specification.)
- High humidity. Possible spilled liquid (water).
- Dusty. Possible static charge (such as carpet).
- Under direct sunlight.
- Possible condensation. High/low temperature exceeding the specifications environment.
- Strong vibration and/or strong shock.

●Please use this Switching Hub in places where the ambient temperature is in the range from 0 to 50 degrees C.

●Failure to satisfy the conditions above may result in a fire, electric shock, equipment failure, and/or malfunction. Such events are not covered by the warranty. Do not block the ventilator of the Switching Hub. Blocked ventilator induces the heat accumulation inside, causing equipment failure and/or malfunction. If used at a temperature out of the operating temperature range, the protection equipment becomes activated and PoE power supply stops.

●When using two Switching Hubs, do not stack them. When you place them side by side, allow for a space of 20 mm or more between them. This space is not necessary if you use PN71052 connection brackets.

●Operation is not guaranteed if a module other than the optional SFP extension modules (PN54021K/PN54023K) is inserted into the SFP extension slot. For the latest information about compatible SFP extension modules, check our website.

●When stacking Switching Hubs, leave a minimum of 20 mm space between them.

1. Panasonic will not be liable for any damage resulting from the operation not in accordance with this operation manual, or loss of communications, which may or may not be caused by failure and/or malfunction of this device.
2. The contents described in this document may be changed without prior notice.
3. For any questions, please contact your dealer.

* Brands and product names in this document are trademarks or registered trademarks of their respective holders.

Table of Contents

1. Product Outline

Thank you for purchasing the Switching Hub(hereinafter called "this switch"). This manual provides information required to use the Web control function of this switch.

2. Web Browser-based Control

The web-browser-based administration function (hereinafter called the Web control function) allows you to easily perform administration task, such as configuration and monitoring, from a web browser, Microsoft Internet Explorer.
The Web control function allows you to configure and monitor this switch over the network via the user interface of your Web browser. You can also control this switch from a remote location as if it is at your fingertips because statuses can be displayed.

2.1. System Requirements

You need to configure the network settings before using the Web control function of this switch.

1. Configuring the System IP Address
   Using the console, configure the IP address of this switch.
   Select "Basic Switch Configuration..." > "System IP Configuration" > "Set IP Address" to configure the IP address. Then, select "Set Subnet Mask" to configure the subnet mask. If required, select "Set Default Gateway" to configure the default gateway address.
2. Enabling the Web Control Function
   Enable the Web control function of this switch.
   From the main menu, select "Basic Switch Configuration..." > "System Security Configuration" > "Web Server Status" and the command prompt changes to "Enable or Disable web server(E/D)." Enter "e" to enable the Web control function. "Disable" is the factory default setting.

The terminal must be connected over a network or directly to this switch.
The terminal to access the Switching Hub must have a web browser (Microsoft Internet Explorer 11 (recommend)) and Java RE (Ver. 1.4 or above) installed.
Further, the terminal must be connected to the Switching Hub directly or via network.

Note: The active window may not be correctly displayed if you use a proxy. Direct access without a proxy is recommended.

2.2. Access to Web Control Function

To use the Web control function, enter the IP address of this switch in the URL (such as "Location:" and "Address:") field of your Web browser and press the Enter key. Then, a login screen, similar to **Figure 2-1**, is displayed. Enter your user name and password.
The factory default user name is "manager" and password is "manager."

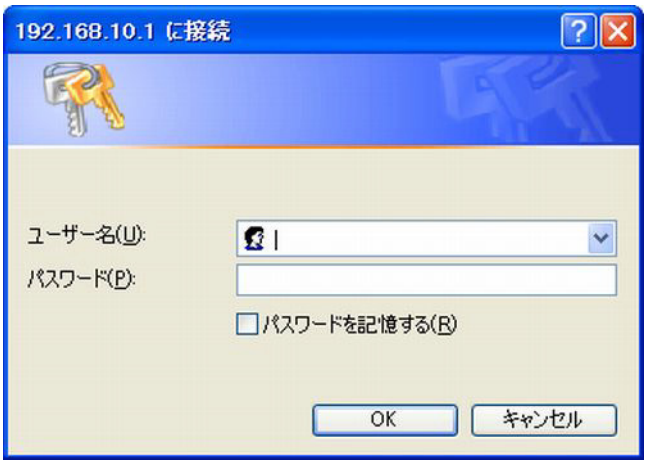


Figure 2-1 Login Screen

Note: If the login screen is not displayed, check the following:
(1) Are the IP address, subnet mask and default gateway of this switch properly configured?
(2) Is the IP address of this switch entered on the Web browser?
(3) Is the Web control function enabled?

If you are successfully authenticated, a main screen, similar to **Figure 2-2**, is displayed.

Figure 2-2 Main Screen

The left side of the screen shows a list of actions available to you on this screen.

(1) General Info
Displays a list of basic information of this switch.

(2) Basic Config
Configure the basic settings such as IP address and port settings.

(3) Advanced Config
Configure the advanced settings such as VLAN, QoS, and IGMP snooping.

(4) System Tools
Use these management tools to update the firmware and browse system logs.

To conduct operation management, it is recommended to conduct the "Basic Config" first, before configuring other advanced settings.

2.3. Display of Switch Information

Selecting "General Info" opens the screen shown in **Figure 2-3**. This screen shows a list of basic information of this switch.

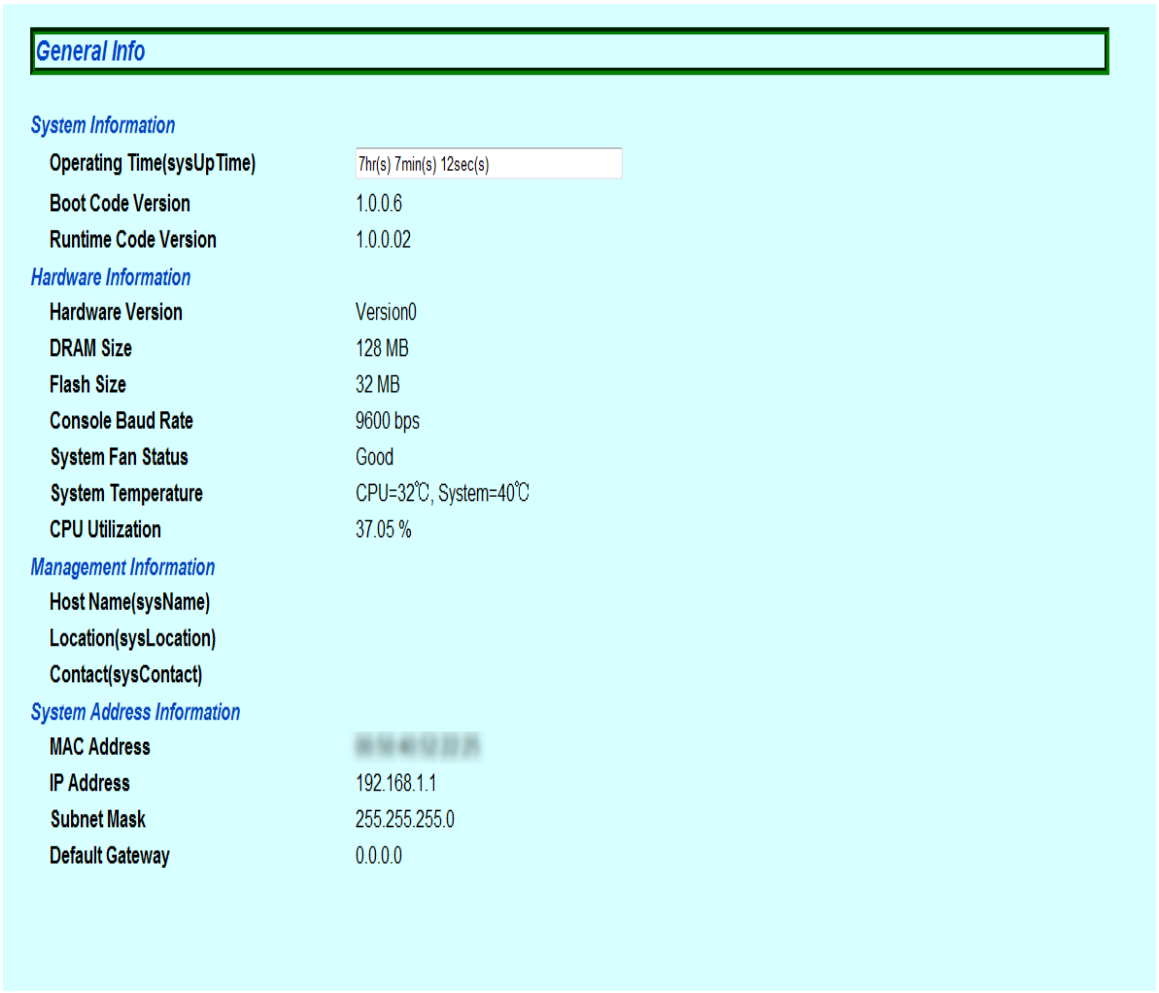


Figure 2-3 General Info

Screen Description

Operating Time	Displays the cumulative time since the power-on of this switch.	
Boot Code Version Runtime Code Version	Displays this switch's firmware version. * The firmware update described in Section 3.3.1 is available only for runtime codes.	
Hardware Information	Displays the hardware information.	
	Hardware Version	Displays the hardware version.
	DRAM Size	Displays the size of the installed DRAM.
	Flash Size	Displays the size of the installed Flash memory.
	Console Baud Rate	Displays the baud rate of the console.
	System Fan Status	Displays the operation status of the installed fan. Displays "Good" when the fan is operating normally and "Fail" when it fails or stops.
	System Temperature	Displays the internal temperate of the switch. The temperature sensors measure the temperatures of the CPU and system.
Management Information	Configure the items shown here in accordance with "Administration Configration" in Section 3.1.1.	
	Host Name	Displays the switch name. The factory default setting is blank. For configuration details, refer to Section 3.1.1.
	Location	Displays the switch's location. The factory default setting is blank. For configuration details, refer to Section 3.1.1.
	Contact	Displays the contact information. The factory default setting is blank. For configuration details, refer to Section 3.1.1.
System Address Information	Configure the items shown here in accordance with "IP Config" in Section 3.1.2.	
	MAC Address	Displays the MAC address of this switch. This value is uniquely assigned to each device and cannot be changed.
	IP Address	Displays the switch's current IP address. "0.0.0.0" is the factory default setting. For configuration details, refer to Section 3.1.2.
	Subnet Mask	Displays the switch's current subnet mask. "0.0.0.0" is the factory default setting. For configuration details, refer to Section 3.1.2.
	Default Gateway	Displays the IP address of the router for the default gateway. "0.0.0.0" is the factory default setting. For configuration details, refer to Section 3.1.2.

3. Switch Configuration

After completing configuration, you must save the configuration information in accordance with Section 3.3.3. Unless the configuration information is saved, the settings configured so far will not be reflected after restart.

3.1. Basic Config

3.1.1. Administration Configration

Select "Basic Config" and "Administration Config" to open the screen shown in **Figure 3-1**. Select this screen to display this switch's information. On this screen, you can configure the administrative information, such as device name.

Figure 3-1 Administration Configration

Screen Description

Products Name	Displays the system information. This item is not editable.
Host Name	Displays the system name. The factory default setting is blank.
Location	Displays the device installation location. The default setting is empty.
Contact	Displays the contact information. The default setting is empty.

3.1.2. IP Config

Select "Basic Config" and "IP Config" to open the screen shown in **Figure 3-2**. On this screen, you can configure the IP address of this switch.

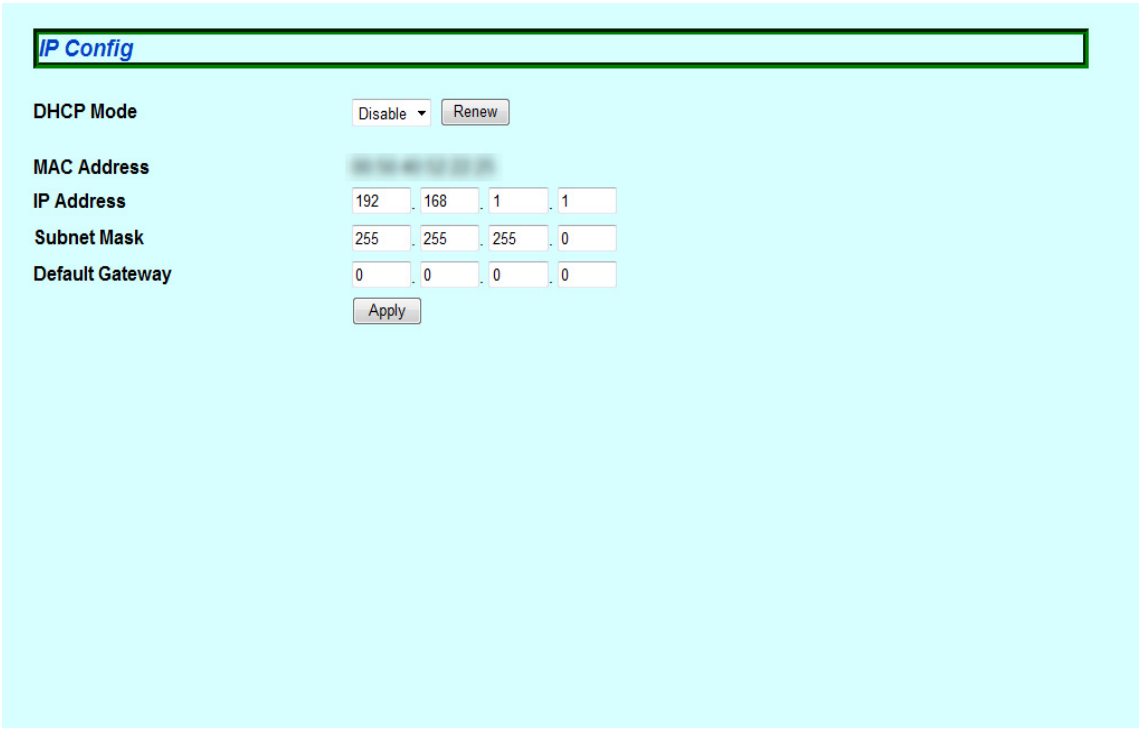


Figure 3-2 IP Config

Screen Description

DHCP Mode	Displays whether the DHCP client is enabled or disabled.	
	Enable	Enables the DHCP client.
	Disable	Disables the DHCP client. (Factory default setting)
MAC Address	Displays the MAC address of this switch. This item is uniquely assigned to each device and cannot be changed.	
IP Address	Displays the current IP address. "0.0.0.0" is the factory default setting.	
Subnet Mask	Displays the current subnet mask. "0.0.0.0" is the factory default setting.	
Default Gateway	Displays the IP address of the router, set as a current default gateway. "0.0.0.0" is the factory default setting.	

Note: Unless you configure these settings, you cannot use the SNMP management functions and remotely connect to the switch via Telnet or SSH. Be sure to configure them. If you are unsure, consult the network administrator. All IP addresses on the local network must be unique, and no duplications are allowed. In addition, you need to set the subnet mask and the default gateway, which are the same for other devices on the same subnet using this switch.

3.1.3. SNMP Config

Select "Basic Config" and "SNMP" and then "SNMPConfig" to open the screen shown in **Figure 3-3**. On this screen, you can configure the SNMP manager settings.

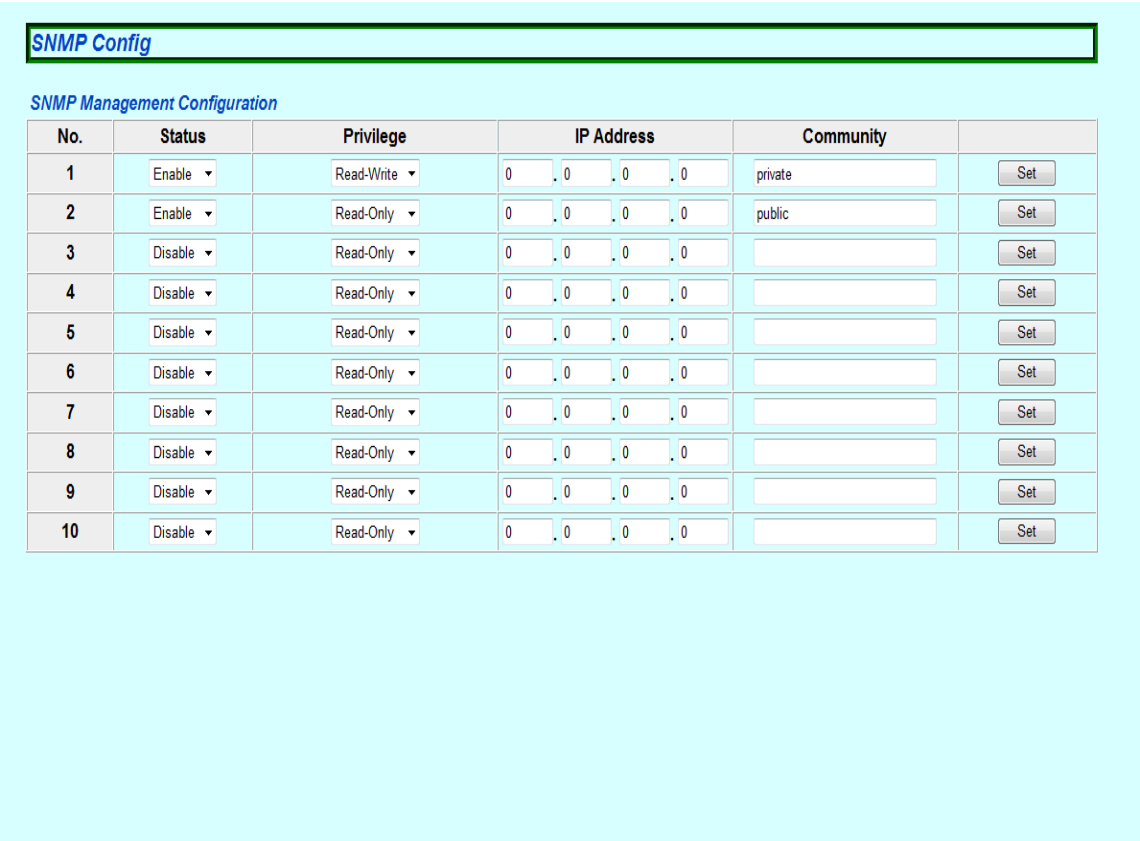


Figure 3-3 snMP Config

Screen Description

No.	Displays the entry number on the SNMP manager List.	
Status	Displays the SNMP manager status.	
	Enable	The SNMP manager is enabled.
	Disable	The SNMP manager is disabled.
Access privilege	Displays the access privileges for an SNMP manager.	
	Read-Write	Both the read and write operations are allowed.
	Read-Only	Only the read operation is allowed.
IP address	This is the IP address for an SNMP manager.	
Community	This is the community name used for SNMP access.	

3.1.4. Basic Trap Configuration

Select "Basic Config" and "SNMP 設定 " and then "Basic Trap Configuration" to open the screen shown in **Figure 3-4**. On this screen, you can configure the SNMP Trap settings.

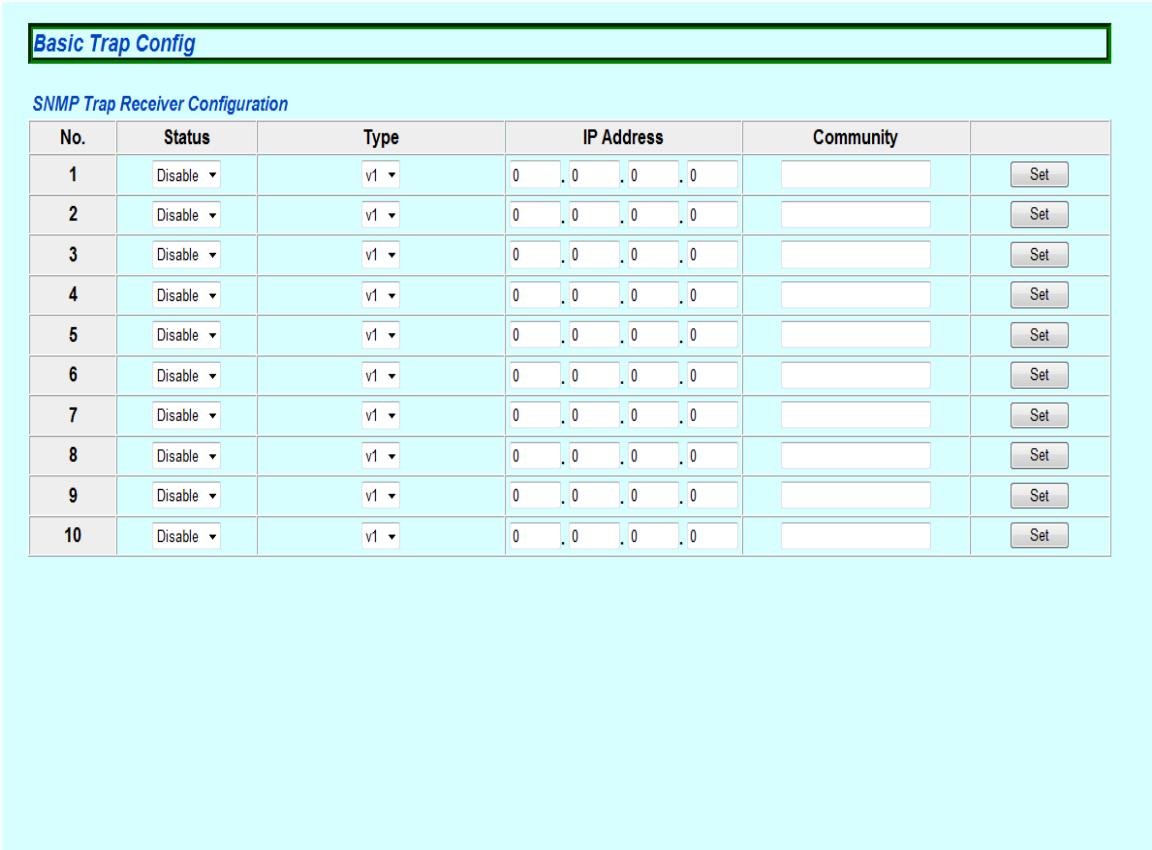


Figure 3-4 Basic Trap Configuration

Screen Description

No.	Displays the entry number for the trap receiver.	
Status	Displays the trap sending setting.	
	Enable	Sends traps.
	Disable	Does not send traps. (Factory default setting)
Type	Displays the type of traps.	
	v1	Sends traps of SNMP v1. (Factory default setting)
	v2	Sends traps of SNMP v2.
IP address	This is the IP address for the trap receiver.	
Community	This is the community name used for trap sending.	

3.1.5. Advanced Trap Configuration

Select "Basic Config" and "SNMP" and then "Advanced Trap Configuration" to open the screen shown in Figure 3-5. On this screen, you can configure the operations for sending traps.

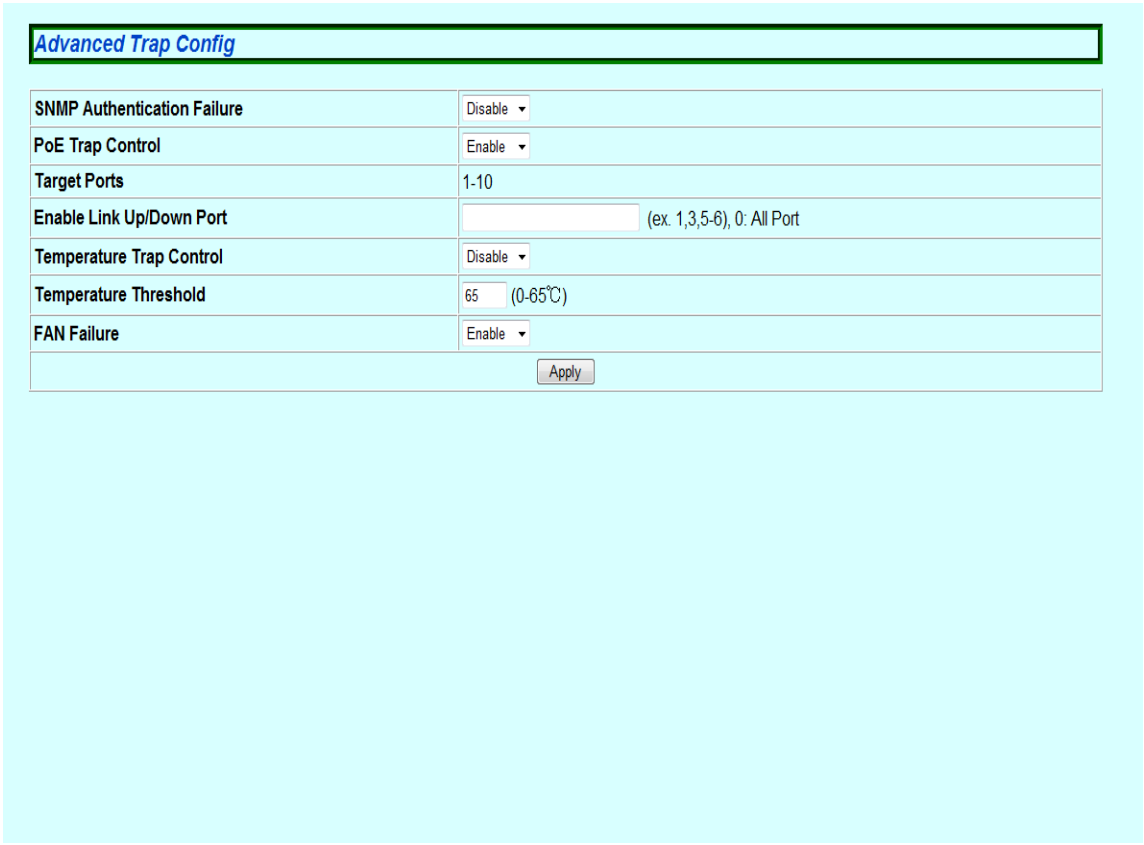


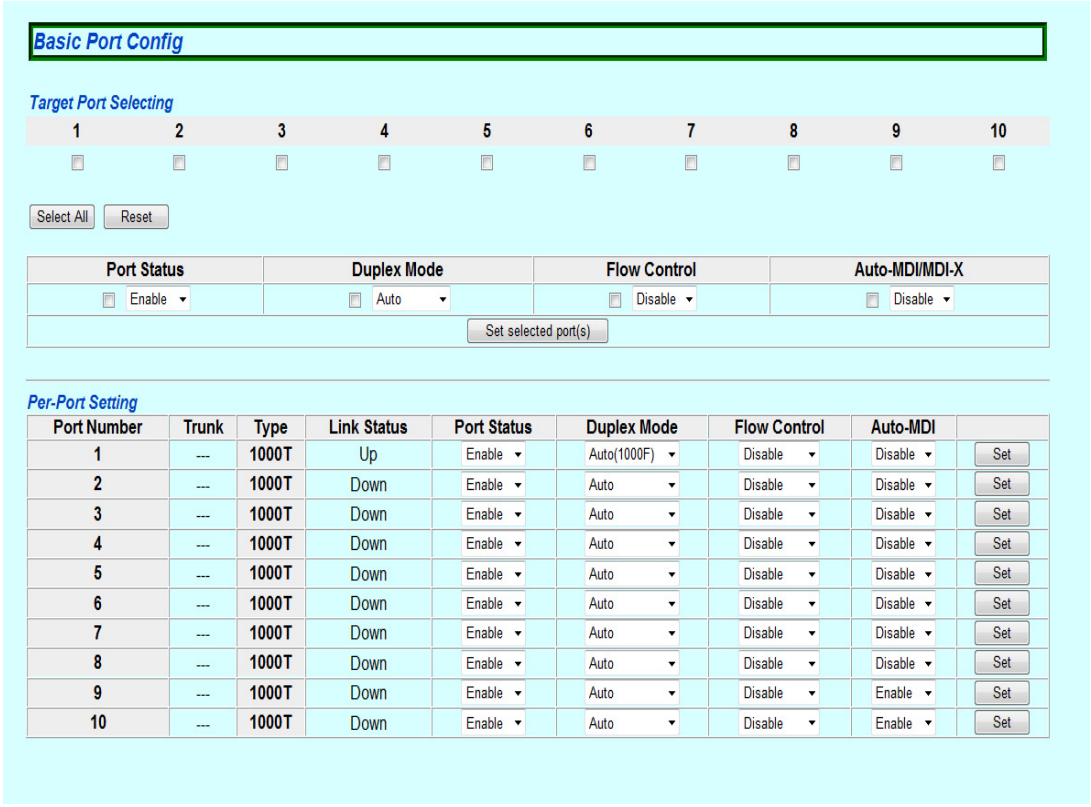
Figure 3-5 Advanced Trap Configuration

Screen Description

SNMPAuthentica-tion Failuer	Displays the trap sending setting for an SNMP authentication failure.	
	Enable	Enables the trap sending.
	Disable	Disables the trap sending. (Factory default setting)
PoE Trap Control	Displays the PoE trap control settings.	
	Enable	Enables the trap sending.
	Disable	Disables the trap sending. (Factory default setting)
Target Port	Displays a target port that has been configured.	
Enable Link UP/ Down Port	Configure a port to which the trap is sent when its link status changes.	
Temperature Trap Control	Displays the temperature trap control settings.	
	Enable	Enables the trap sending.
	Disable	Disables the trap sending. (Factory default setting)
Temperature Threshold	Displays the threshold temperature value to send the trap.	
Fan Failure	Displays the fan trap control settings.	
	Enabled	Enables the trap sending. (Factory default setting)
	Disabled	Disables the trap sending.

3.1.6. Basic port Configration

Select "Basic Config" and "Port Config" and then "Basic Port Configuration" to open the screen shown in **Figure 3-6**. On this screen, you can configure port status display settings and mode and other settings.



Basic Port Config

Target Port Selecting

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Select All | Reset

Port Status	Duplex Mode	Flow Control	Auto-MDI/MDI-X
☐ Enable	☐ Auto	☐ Disable	☐ Disable

Set selected port(s)

Per-Port Setting

Port Number	Trunk	Type	Link Status	Port Status	Duplex Mode	Flow Control	Auto-MDI	
1	---	1000T	Up	Enable	Auto(1000F)	Disable	Disable	Set
2	---	1000T	Down	Enable	Auto	Disable	Disable	Set
3	---	1000T	Down	Enable	Auto	Disable	Disable	Set
4	---	1000T	Down	Enable	Auto	Disable	Disable	Set
5	---	1000T	Down	Enable	Auto	Disable	Disable	Set
6	---	1000T	Down	Enable	Auto	Disable	Disable	Set
7	---	1000T	Down	Enable	Auto	Disable	Disable	Set
8	---	1000T	Down	Enable	Auto	Disable	Disable	Set
9	---	1000T	Down	Enable	Auto	Disable	Enable	Set
10	---	1000T	Down	Enable	Auto	Disable	Enable	Set

Figure 3-6 Basic Port Configration

Screen Description

Port Number	Displays the port number.	
\Trunk	Displays the group number for a trunked port.	
Type	Displays the port type.	
	100TX	The port type is 10/100BASE-TX.
	1000T	The port type is 1000BASE-T.
	1000X	The port type is SFP port.
Port Status	Displays the current port status. For all ports, "Enable" is the factory default setting.	
	Enable	The port is available.
	Disable	The port is not available.
Link Status	Displays the current link status.	
	Up	A link has been established successfully.
	Down	A link has not been established.
Duplex Mode	Displays the communication speed and full-duplex/half-duplex settings. For all ports, "Auto" is the factory default setting.	
	Auto	Auto negotiation mode
	100M/Full	100 Mbps full-duplex
	100M/Half	100 Mbps half-duplex
	10M/Full	10 Mbps full-duplex
	10M/Half	10 Mbps half-duplex
Flow Control	Displays the flow control settings. For all ports, "Disable" is the factory default setting.	
	Enable	The flow control is enabled.
	Disable	The flow control is disabled.
Auto-MDI	Displays the Auto MDI/MDI-X function settings. Ports 1 to -20 are set to "Disable," and Ports 21 to -24 are set to "Enable" at factory default setting.	
	Enable	The Auto-MDI/MDI-X function is enabled.
	Disable	The Auto-MDI/MDI-X function is disabled.

3.1.7. Extend Port Configration

Select "Basic Config" and "Port Config" and then "Extend Port Config" to open the screen shown in **Figure 3-7**. On this screen, you can configure port status display settings and mode and other settings.

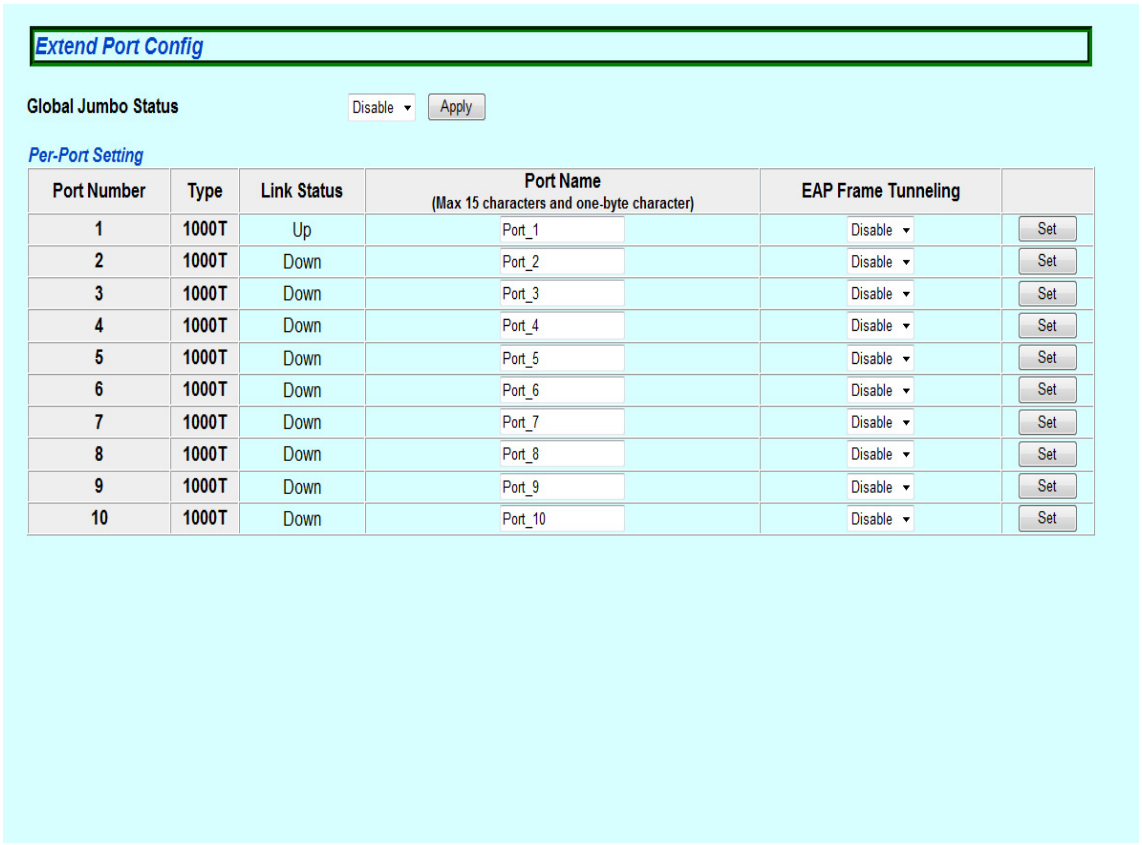


Figure 3-7 Extend Port Configuration

Screen Description

Port Number	Displays the port number.	
Type	Displays the port type.	
	100TX	The port type is 10/100BASE-TX.
	1000T	The port type is 1000BASE-T.
	1000X	The port type is SFP expansion port.
Link Ststus	Displays the current link status.	
	Up	A link has been established successfully.
	Down	A link has not been established.
Port Name	Displays the port name.	
Eap Frame Fowerd-ing	Shows the EAP frame forwarding function settings.The factory default setting is"Disable" for all ports.Setting this item to "Enable" forwards EAP frames, used inIEEE802.1X authentication. Setting this item to "Disable" destroys the pack-ets.	
	Enable	The EAP Packet Forwarding function is enabled.
	Disable	The EAP Packet Forwarding function is disabled.

3.1.8. Power Saving Port Configration

Select "Basic Config" and "Port Config" and then "Power Saving Port Config" to open the screen shown in **Figure 3-8**. On this screen, you can configure the power saving settings of ports.

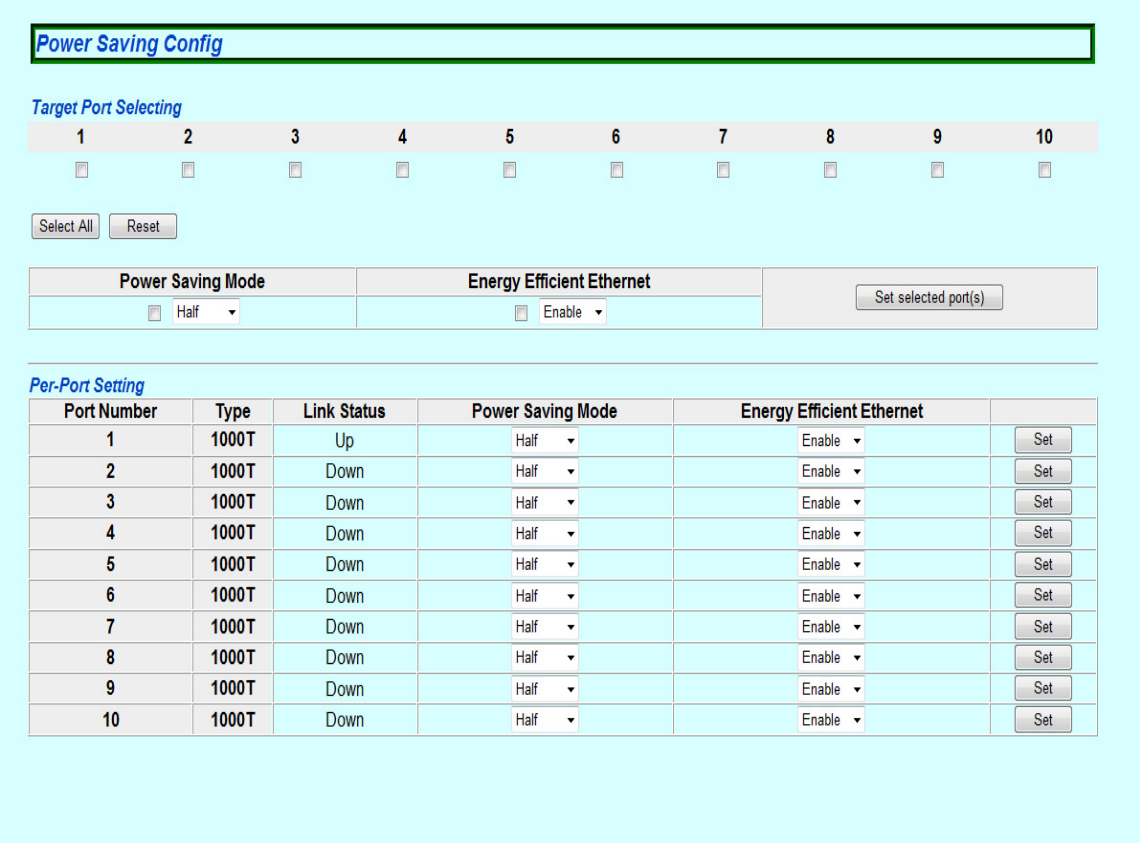


Figure 3-8 Power Saving Port Configration

Screen Description

Port Number	Displays the port number.	
Type	Displays the port type.	
	100TX	The port type is 10/100BASE-TX.
	1000T	The port type is 1000BASE-T.
	1000X	The port type is SFP expansion port.
Link Status	Displays the current link status.	
	Up	A link has been established successfully.
	Down	A link has not been established.
Power Saving Mode	Displays the power saving mode settings. For all ports, "Half" is the factory default setting.	
	Full	The MNO series power saving mode status is enabled (Full).
	Half	The MNO series power saving mode status is enabled (Half).
	Disable	The MNO series power saving mode status is disabled.
Energy Efficient Ethernet	Displays the EEE (Energy Efficient Ethernet) status. For all ports, "Enabled" is the factory default setting.	
	Enabled	The EEE is enabled.
	Disabled	The EEE is disabled.

3.1.9. System Security

Select "Basic Config" and System Security" and then "System Security" to open the screen shown in Figure 3-9. On this screen, you can configure the various settings for accessing this switch for configuration and management.

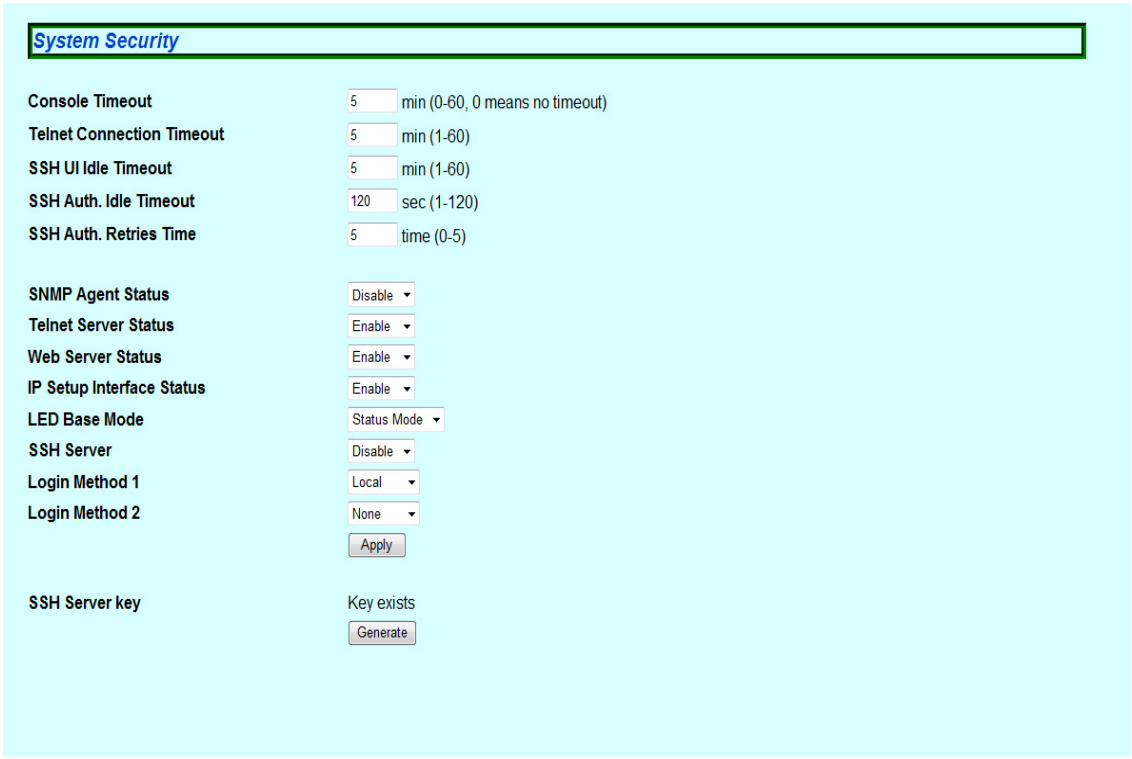


Figure 3-9 System Security

Screen Description

Console Timeout	Displays the idle timeout settings (in minutes) for terminating a console-connected session if no input is made. The factory default setting is 5 minutes.	
Telnet Connection Timeout	Displays the idle timeout settings (in minutes) for terminating a Telnet-connected session if no input is made. The factory default setting is 5 minutes.	
SSH UI Idle Timeout	Displays the timeout settings (in seconds) terminating a SSH-connected session if no input is made. The factory default setting is 5 minutes.	
SSH Auth. Idle Timeout	Displays the time to want for response to SSH authentication. The factory default setting is 120 seconds.	
SSH Auth. Retries Time	Displays the number of times of SSH authentication. The factory default setting is 5.	
SNMP Agent Status	Displays the SNMP access settings. The factory default setting is "Disabled."	
	Enable	Access is enabled.
	Disable	Access is disabled.
Telnet Server Status	Displays the Telnet access settings."Enable" is the factory default setting.	
	Enable	Access is enabled.
	Disable	Access is disabled.
Web Server Status	Displays the Web access settings."Disable" is the factory default setting.	
	Enable	Access is enabled.
	Disable	Access is disabled.

IP Setup Interface Status	Displays the access settings for the IP address configuration software, bundled with the Panasonic network cameras. "Enable" is the factory default setting.* For instructions, refer to Appendix C.	
	Enable	Access is enabled.
	Disable	Access is disabled.
LED Base Mode Configuration	Displays the LED Base Mode settings. "Status Mode" is the factory default setting.	
	Status Mode	Status Mode is enabled.
	Eco Mode	Eco Mode is enabled.
SSH Server	Displays the SSH access settings.'Disabled' is the factory default setting.	
	Enable	Access is enabled.
	Disable	Access is disabled.
Login Method	Displays how to check the username and password for login. The factory default setting is 'Local' for 1 and 'None' for 2	
	Local	Login with the username and password set for this Switching Hub.
	RADIUS	Login with authentication from the RADIUS server.
	None	Not used. (Only Login Method2 can be configured.)
SSH Server key	Displays the SSH server key status.	
	key exists	The server key exists.
	key does not exist	The server key does not exists.

3.1.10. Syslog Transmission Configration

Select "Basic Config" and "System Security" and then "Syslog Transmission Configration" to open the screen shown in **Figure 3-10**. On this screen, you can configure the settings of the Syslog server to which a system log is sent.

Figure 3-10 Syslog Transmission Configration

Screen Description

Index	Displays the entry number for the Syslog transfer.	
Status	Displays the status of Syslog Transmission. "Disable" is the factory default setting.	
	Enable	Transmission to the Syslog server is enabled.
	Disable	Transmission to the Syslog server is disabled.
Syslog Server IP	Displays the IP address of the Syslog server.	
Facility	Displays the Facility value.	
Included data	Displays the information to be added.	
	SysName	Adds the SysName of this switch to the system log to be transmitted.
	IP address	Adds the IP address of this switch to the system log to be transmitted.

3.1.11. RADIUS Configuration

Select "Basic Config" and "System Security" and then "RADIUS Configuration" to open the screen shown in **Figure 3-11**. On this screen, you can configure the RADIUS server settings.

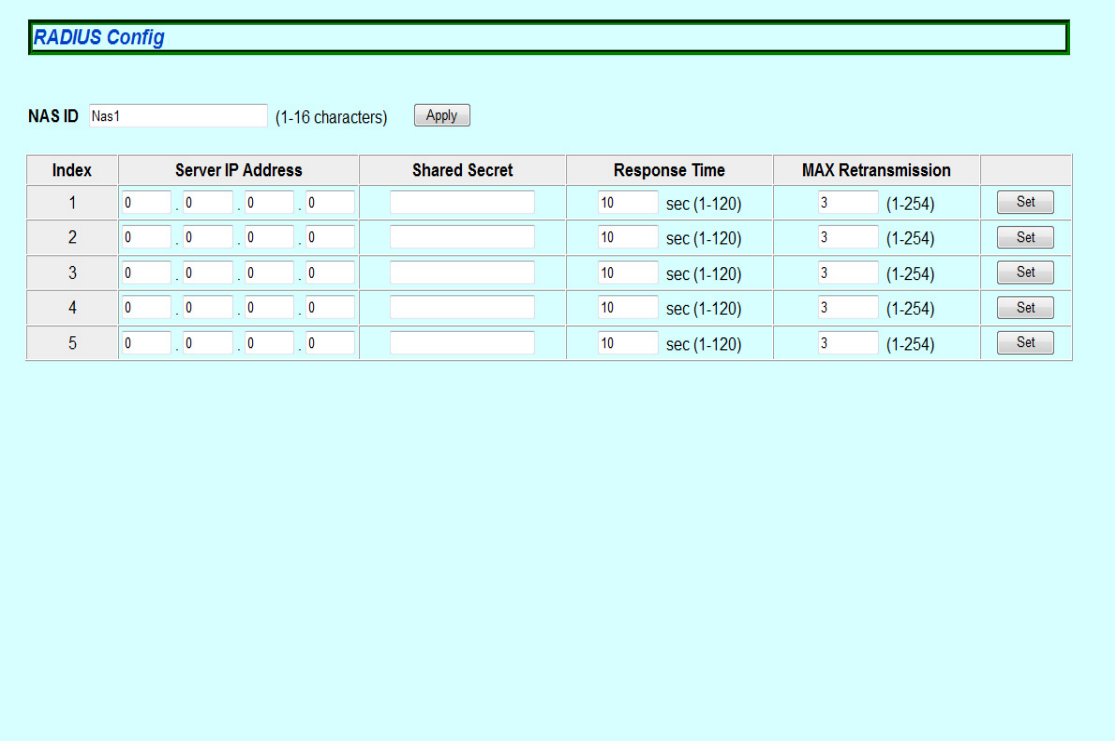


Figure 3-11 RADIUS Configuration

Screen Description

NAS ID	Displays the authentication ID (NAS Identifier).
Server IP Address	Displays the IP address of the RADIUS server. "0.0.0.0" is the factory default setting.
Shared Secret	Displays the common key (Shared Secret) that is used in authentication. The same key must be set in the server and the RADIUS client. In general, the system manager sets this secret key. The factory default setting has no secret key.
Response Time	Displays the maximum response time for the authentication request to the RADIUS server. 10 sec. is the factory default setting.
Maximum Retransmission	Displays the number of times of retransmission for the authentication request to the RADIUS server. The factory default setting is 3.

3.1.12. Telnet Access Limit

Select "Basic Config" and "System Security" and then "Telnet Access Limit" to open the screen shown in **Figure 3-12**. On this screen, you can configure the Telnet access limitation.

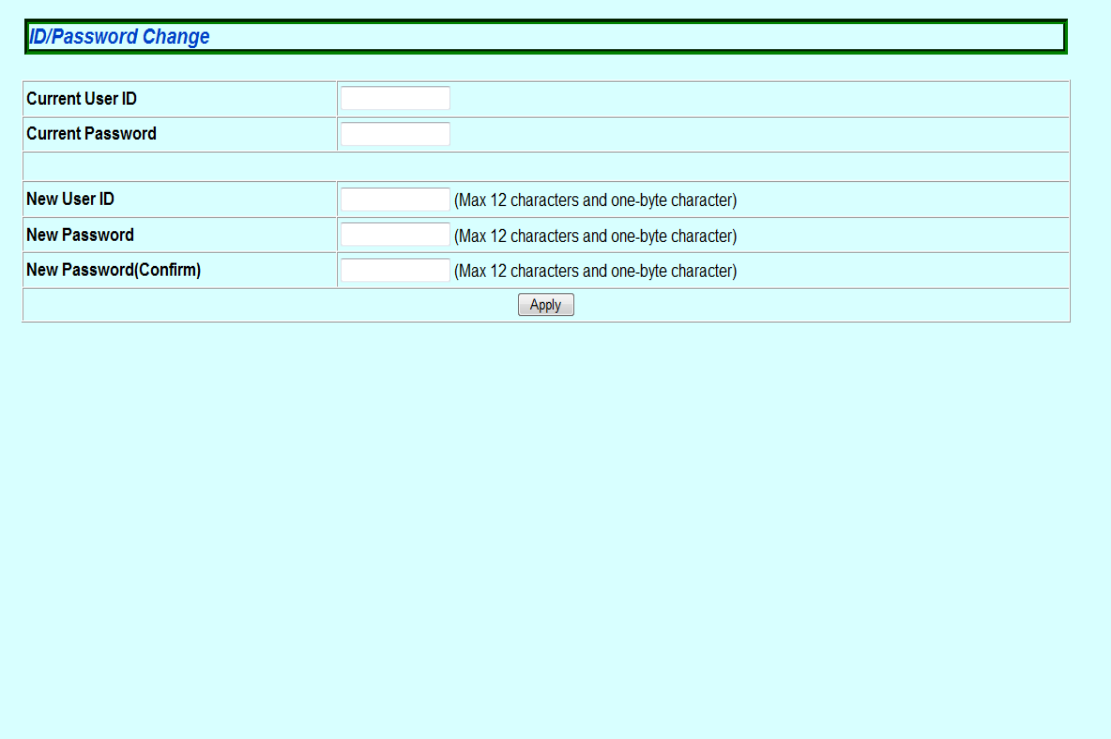


Figure 3-12 Telnet Access Limit

Screen Description

Global Telnet Access Limitation	Displays the Telnet access limitation setting. "Disable" is the factory default setting.	
	Enable	Enables the Telnet access limitation.
	Disable	Disables the Telnet access limitation.
IP Address/Sub-net Mask	Displays the information of accessible networks to be added. There is no factory default setting. 0 is displayed for all of IP Addresses and Sub-net Masks.	

Note: Do not forget your username and password.These settings are required to log in to the console, SSH, Telnet, and Web.

3.1.13. ID/Password Change

Select "Basic Config" and "System Security" and then "ID/Password Change" to open the screen shown in **Figure 3-13**. On this screen, you can configure the user-name/password.

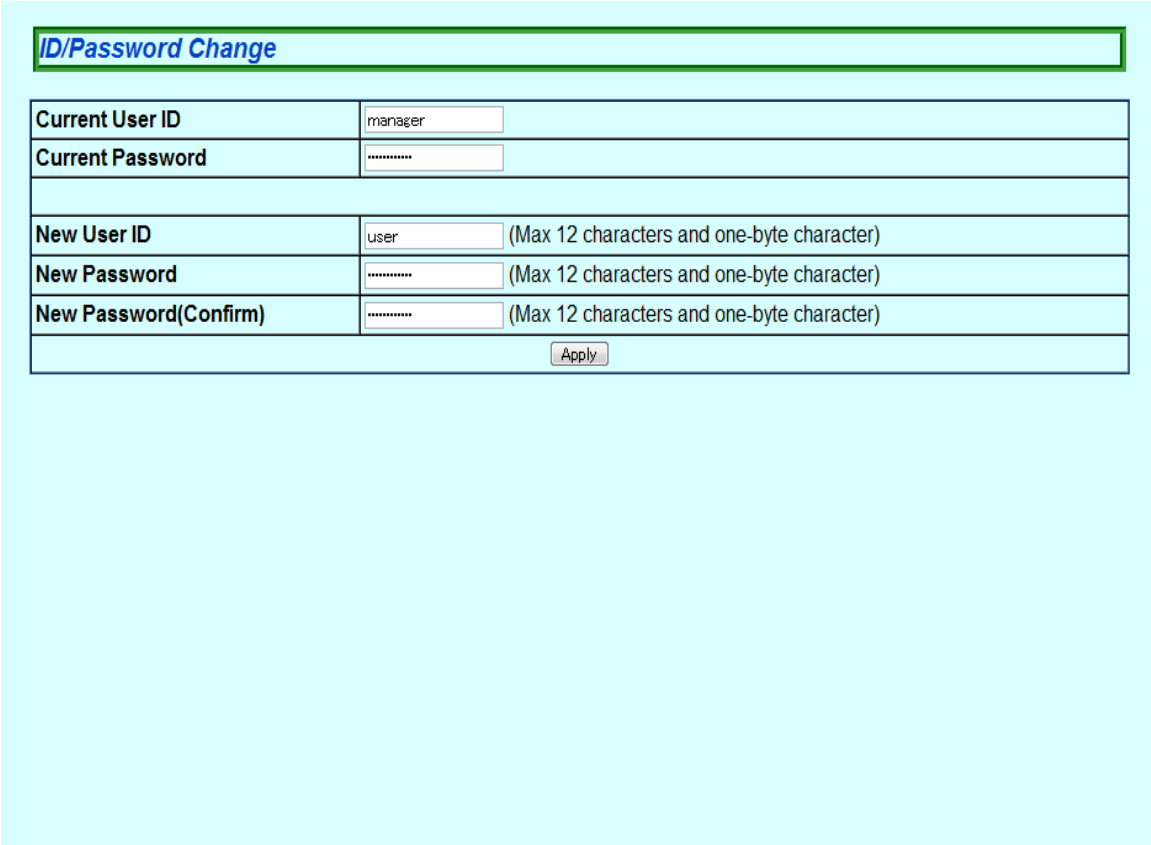


Figure 3-13 ID/Password Change

Screen Description

Current User ID	Enter the current username. This setting is used to log in to this switch. "manager" is the factory default setting.
Current Password	Enter the current password. This setting is used to log in to this switch. "manager" is the factory default setting.
New User ID	Enter a new username.
New Password	Enter a new password.
New Password (Confirm)	Enter a password again to prevent erroneous password input.

Note: Do not forget your username and password.
These settings are required to log in to the console, SSH, Telnet, and Web.

3.1.14. MAC Learning

Select "Basic Config" and "Forwarding Database" and then "MAC Learning" to open the screen shown in **Figure 3-14**. On this screen, you can configure the MAC Learning settings of ports.

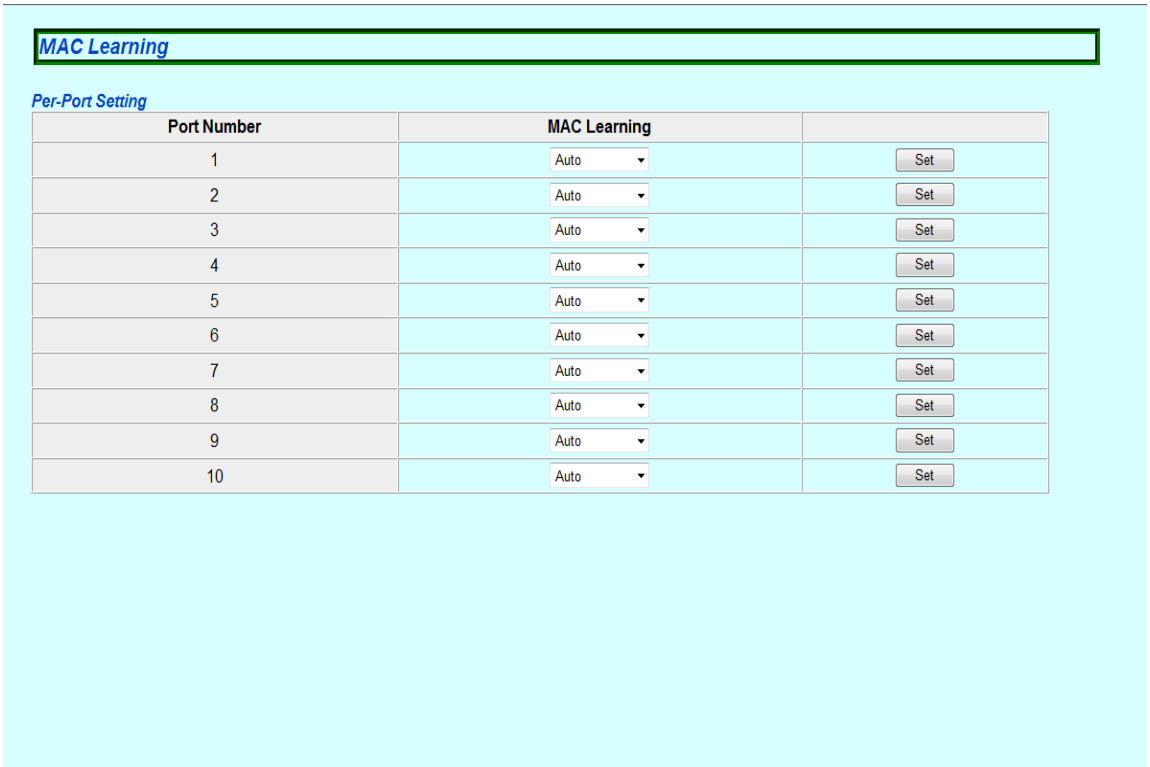


Figure 3-14 Telnet Access Limit

Screen Description

Port Number	Displays the port number.	
MAC Learning	Displays the MAC Learning statuses of ports. "Auto" is the factory default setting.	
	Auto	Enables MAC Learning.
	Disable	Disables MAC Learning.

3.1.15. FDB Manual Setting

Select "Basic Config" and "FDB" and then "FDB Manual Setting" to open the screen shown in Figure 3-15. On this screen, you can register the MAC address statistically in the FDB table.

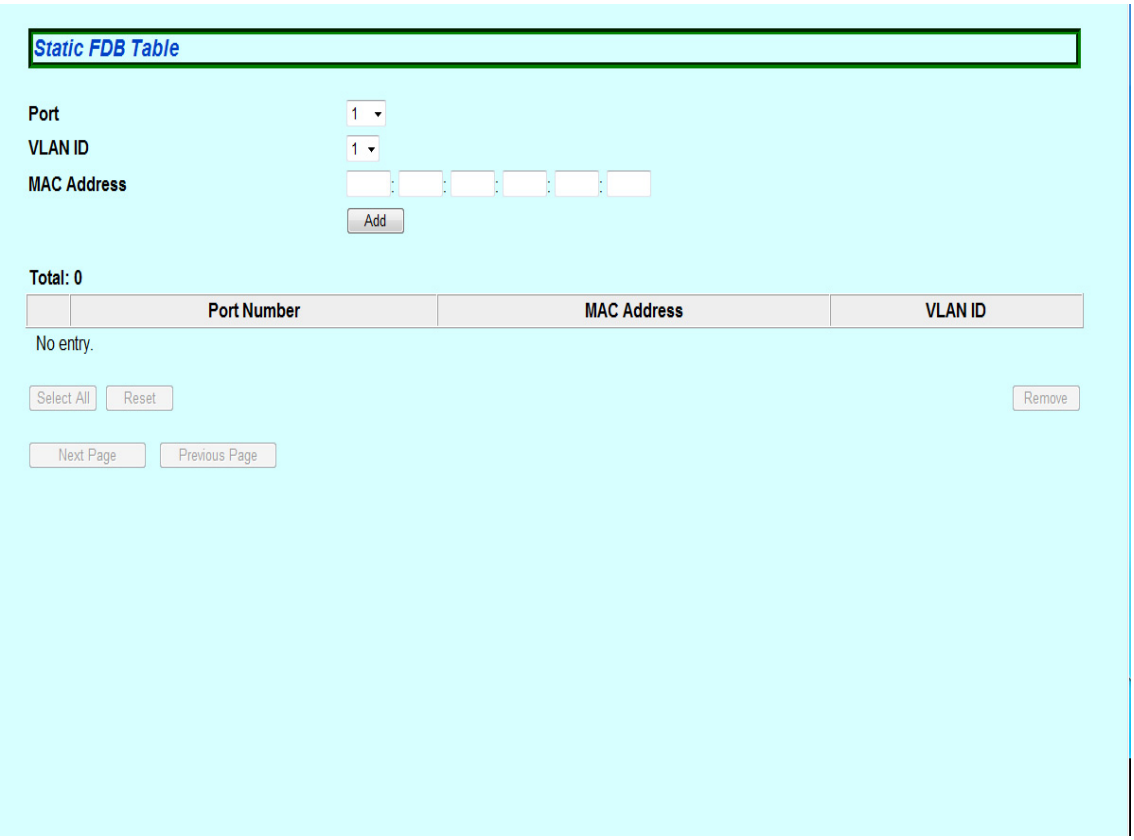


Figure 3-15 FDB Manual Setting

Screen Description

Port (Add)	Select a port to which a MAC address is to be added.
VLAN ID (Add)	Select the VLAN ID of a MAC address to be added.
MAC address (Add)	Enter a MAC address to be added and click the setting button.
VLAN ID (remove)	Select the VLAN ID of a MAC address to be deleted.
MAC address (remove)	Enter a MAC address to be deleted and click the setting button.

3.1.16. FDB Table

Select "Basic Config" and "FDB" and then "FDB Table" to open the screen shown in Figure 3-16. This screen shows the MAC addresses learned in the FDB table by port.

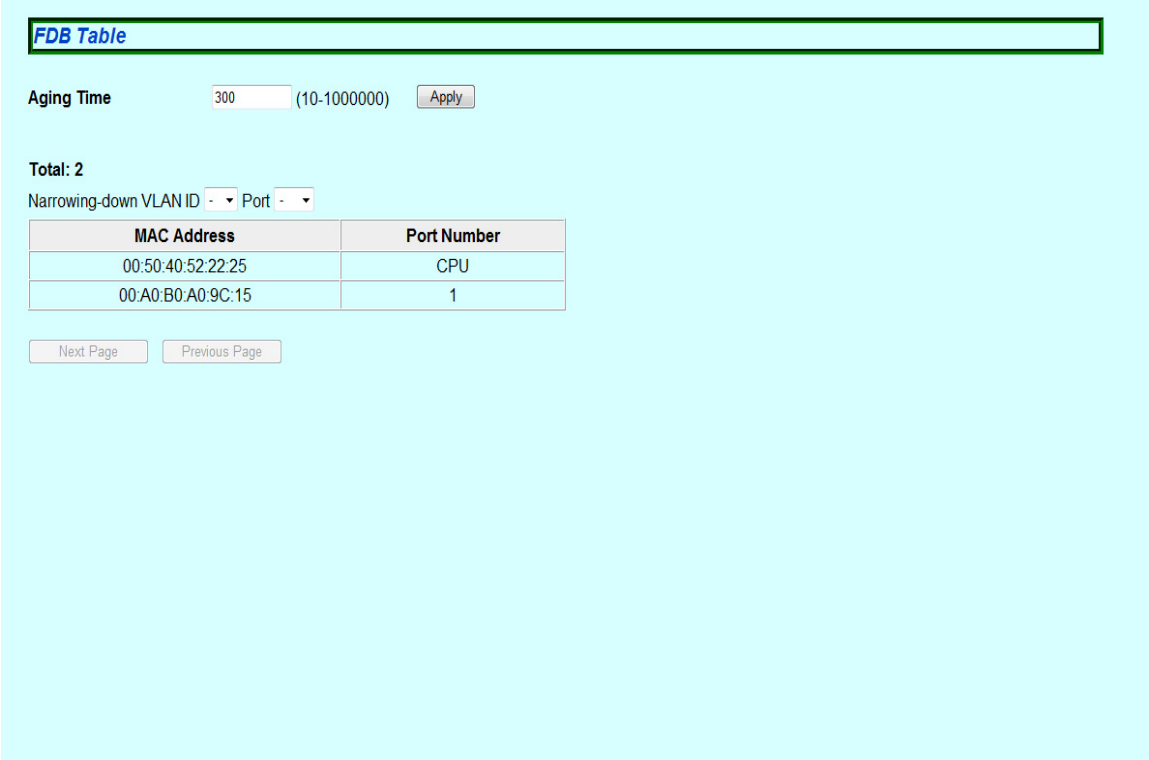


Figure 3-16 FDB Table (by Port)

Screen Description

Aging Time	Displays the time for which an FDB table is retained. It is equal to the time after receiving the last packet. The factory default setting is 300 seconds (5 minutes).
Narrowing-down VLAN ID	Narrows down records in the list by the specified VLAN ID.
Narrowing-down Port number	Narrows down records in the list by the specified port.
Target Port num-ber	Displays the selected port number.
MAC Address	Displays the MAC address in the FDB table.

3.1.17. Time Configration

Select "Basic Config" and "Time Config" to open the screen shown in **Figure 3-17**. On this screen, you can configure the time settings and the SNTP-based time synchronization settings.

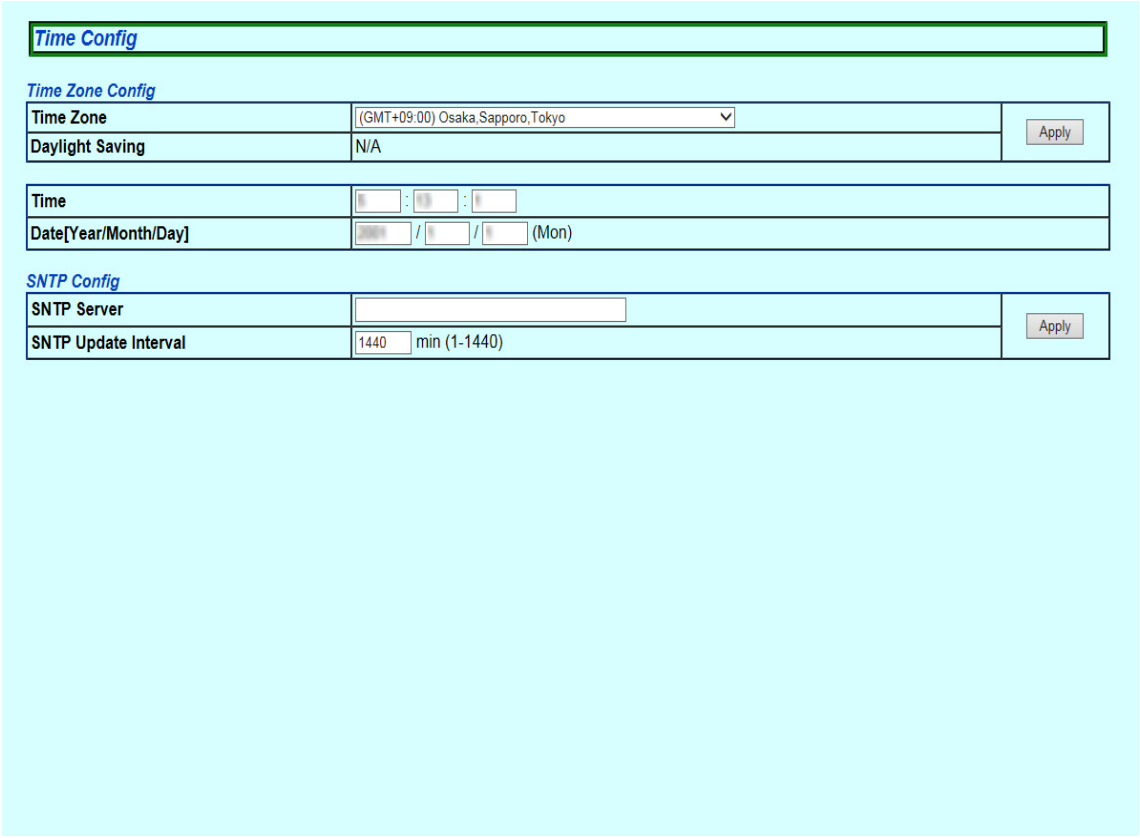


Figure 3-17 Time Configration of This Switch

Screen Description

Time Zone	Displays the time zone.
Daylight Saving	Displays the application status of Daylight Saving (Summer time).
Time	Displays the time.
Date	Displays the date.
SNTP Server	Displays the IP address of the SNTP server that executes time synchronization.
SNTP Update Interval	Displays the interval time for SNTP synchronization.

Note: In case the SNTP server is located outside of the firewall, connection with the SNTP server may not be possible depending on settings by the network administrator. For details, ask your network administrator.

3.1.18. Static ARP Table

Select "Basic Config" and "ARP Table" and then "Static ARP Table" to open the screen shown in Figure 3-18. On this screen, you can register an ARP table while statistically associating the IP address and MAC address to it.

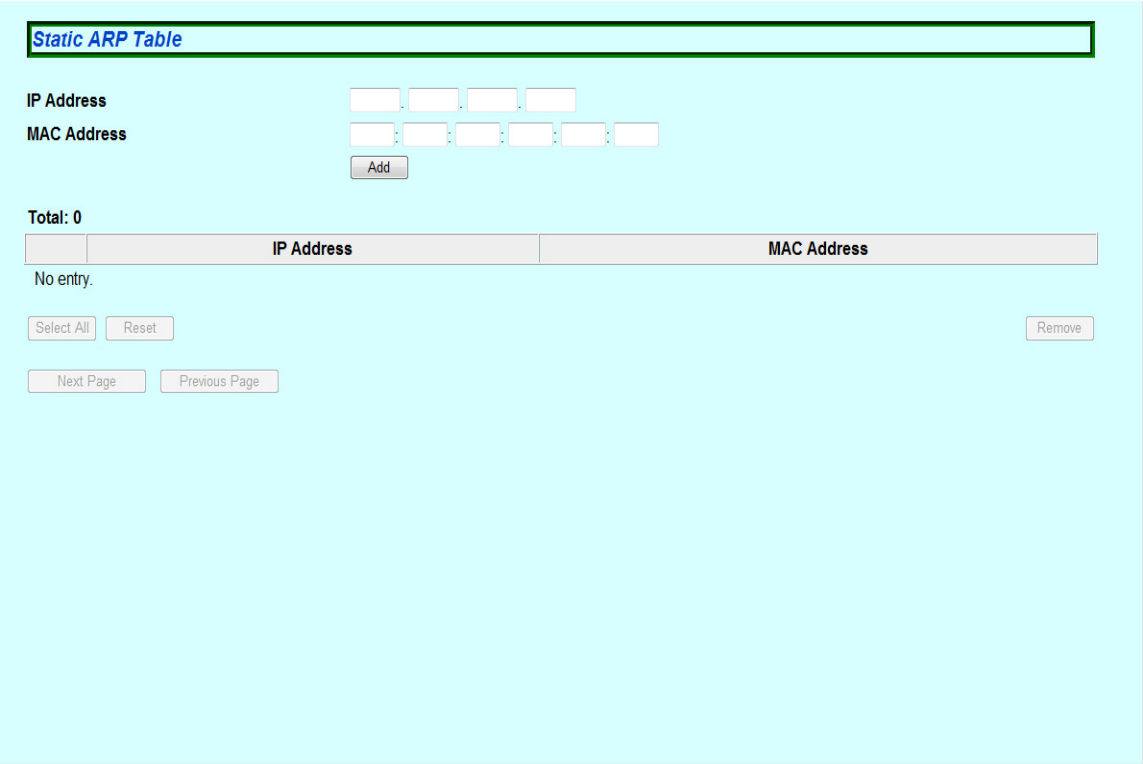


Figure 3-18 Static ARP Table

Screen Description

IP Address	Enter the IP address of the ARP table to be added.
MAC Address	Enter the MAC address of the ARP table to be added.
Checkbox for removal	Put a checkmark on an ARP table to be removed. Click the Remove button to remove it.

3.1.19. ARP Table

Select "Basic Config" and "ARP Table" and then "ARP Table" to open the screen shown in **Figure 3-19**. This screen shows the ARP Table.

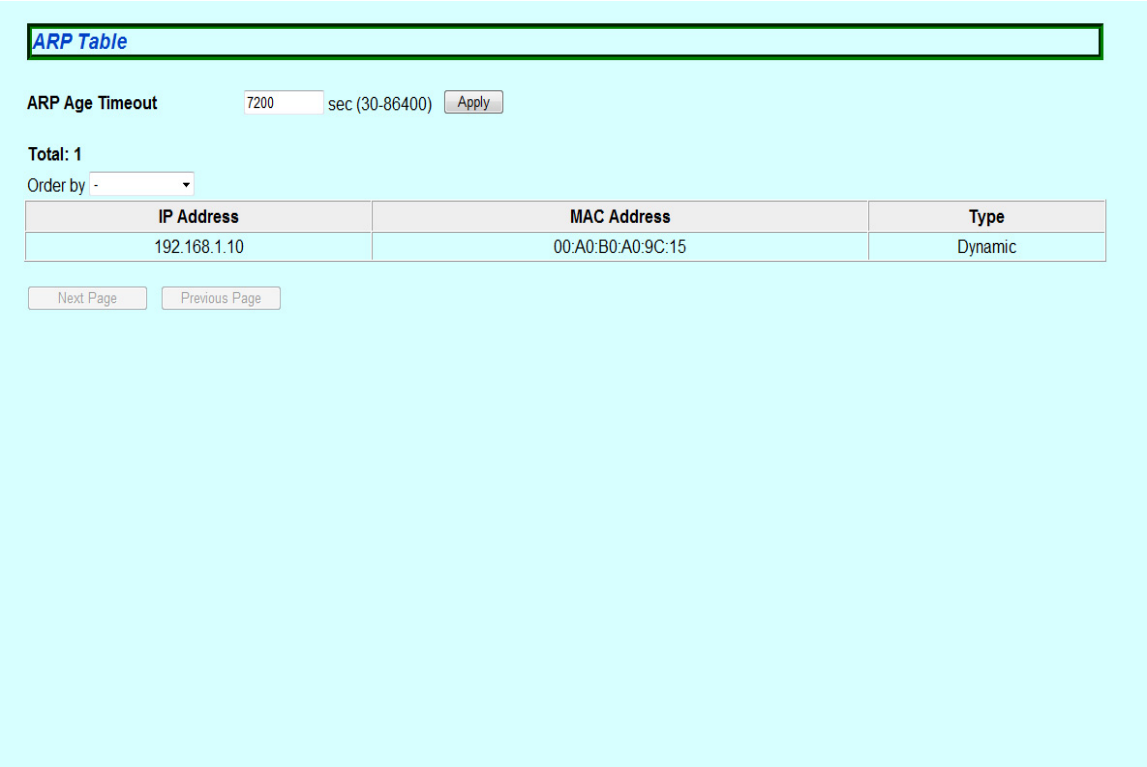


Figure 3-19 ARP Table

Screen Description

ARP Age Timeout	Displays the time for which an ARP table is retained. It is equal to the time after receiving the last packet. The factory default setting is 300 seconds (5 minutes).	
Order by	Sorts the list in a specified order.	
	IP Address	Sorts the list by IP address.
	MAC Address	Sorts the list by MAC address.
	Type	Sorts the list by Type.

3.1.20. LLDP Port Config

Select "Basic Config" and "LLDP Config" and then "LLDP Port Config" to open the screen shown in **Figure 3-20**. This screen shows the LLDP Port Config.

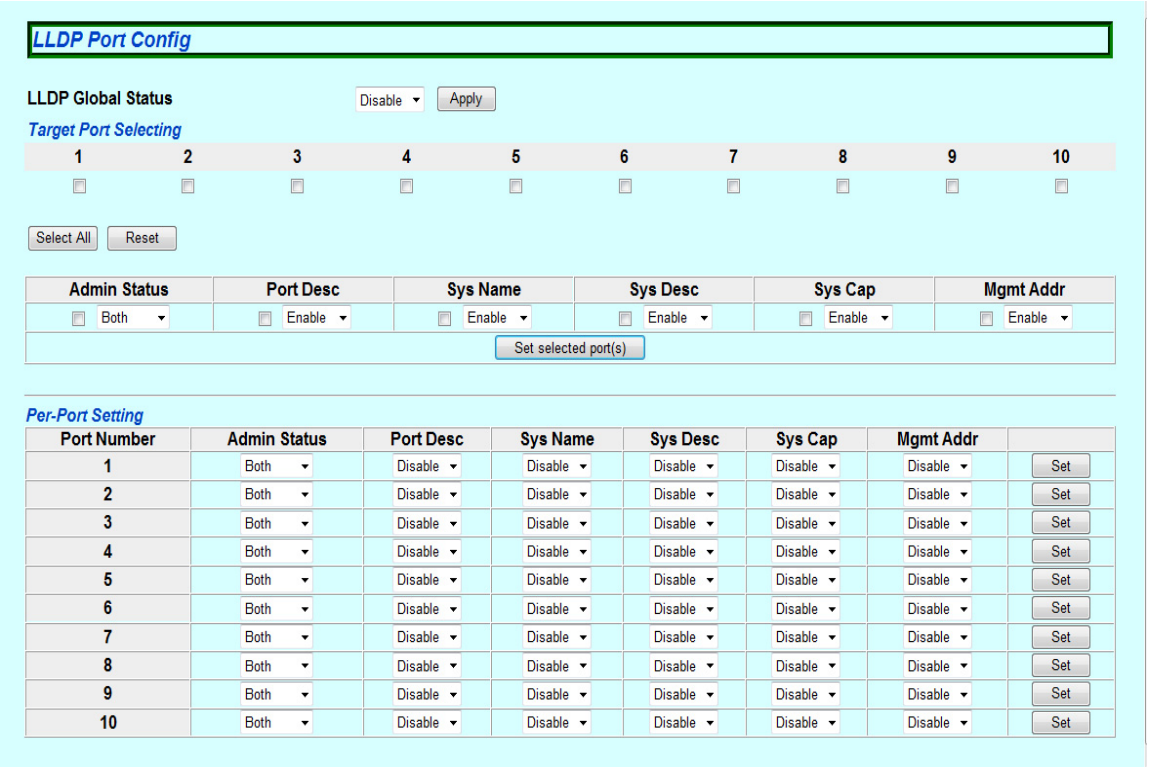


Figure 3-20 LLDP Port Config

Screen Description

LLDP Status	Displays the LLDP settings.	
	Enabled	Enables the LLDP. (Factory default setting)
	Disabled	Disables the LLDP.
Port	Displays the port number.	
Admin Status	Displays the LLDP status.	
	TX Only	Executes only LLDP transmission.
	RX Only	Executes only LLDP receiving.
	Both	Executes LLDP transmission and receiving. (Factory default setting)
	Disabled	Does not execute LLDP transmission and receiving.
Port Desc	Displays whether or not interface information is included in the frame of the LLDP.	
	Enabled	Included in the LLDP.
	Disabled	Not included in the LLDP. (Factory default setting)
Sys Name	Displays whether or not the host name is included in the frame of the LLDP.	
	Enabled	Included in the LLDP.
	Disabled	Not included in the LLDP. (Factory default setting)

Sys Desc	Displays whether or not system overview information is included in the frame of the LLDP.	
	Enabled	Included in the LLDP.
	Disabled	Not included in the LLDP. (Factory default setting)
Sys Cap	Displays whether or not system capability information is included in the frame of the LLDP.	
	Enabled	Included in the LLDP.
	Disabled	Not included in the LLDP. (Factory default setting)
Mgmt Addr	Displays whether or not the system IP address is included in the frame of the LLDP.	
	Enabled	Included in the LLDP.
	Disabled	Not included in the LLDP. (Factory default setting)

3.1.21. LLDP Neighbor Table

Select "Basic Config" and "LLDP Config" and then "LLDP Neighbor Table" to open the screen shown in Figure 3-21. This screen shows the LLDP Neighbor Table.

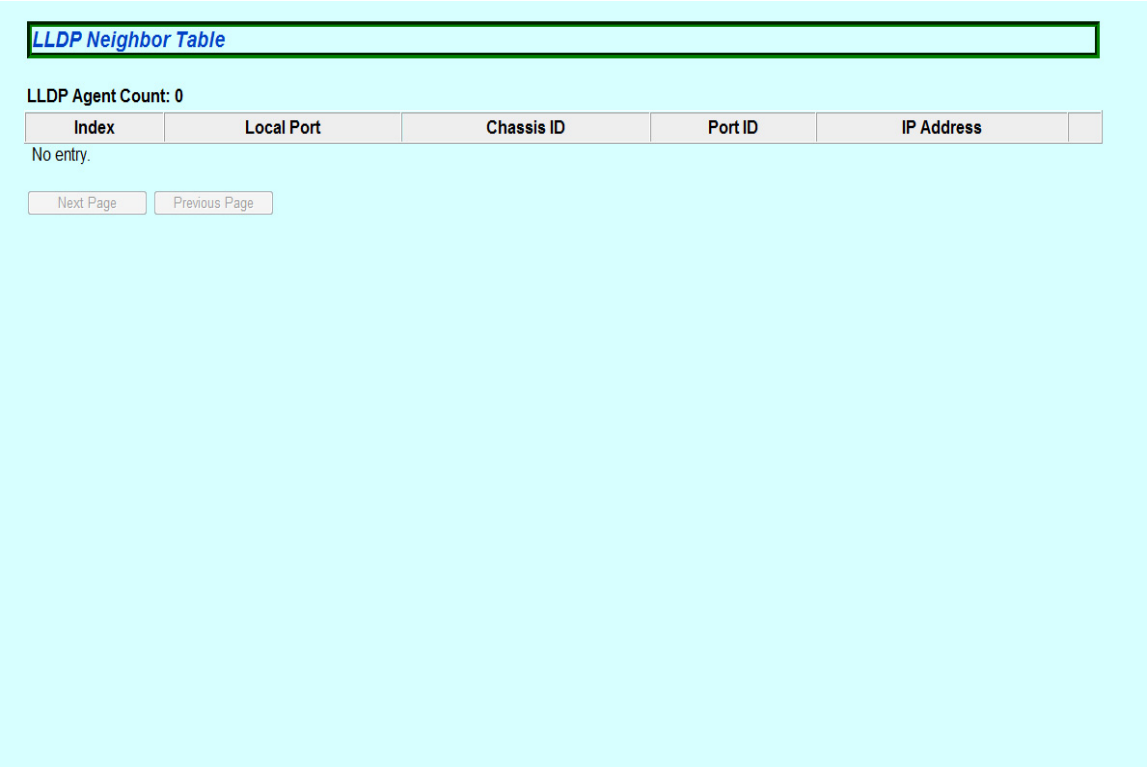


Figure 3-21 LLDP Neighbor Table

Screen Description

Total Neighbors	Displays the number of entries recorded in the Neighbor Table.
No	Displays the entry number.
Chassis ID	Displays the Chassis ID for each entry.
Port ID	Displays the port ID for each entry.
Mgmt IP Address	Displays the IP address for each entry.
Port	Displays the port number that received LLDP frames.

3.2. Advanced Switch Configuration

3.2.1. VLAN Management

Select "Advanced Config" and "VLAN" and then "VLAN Management" to open the screen shown in Figure 3-22. On this screen, you can configure the specified VLAN settings.

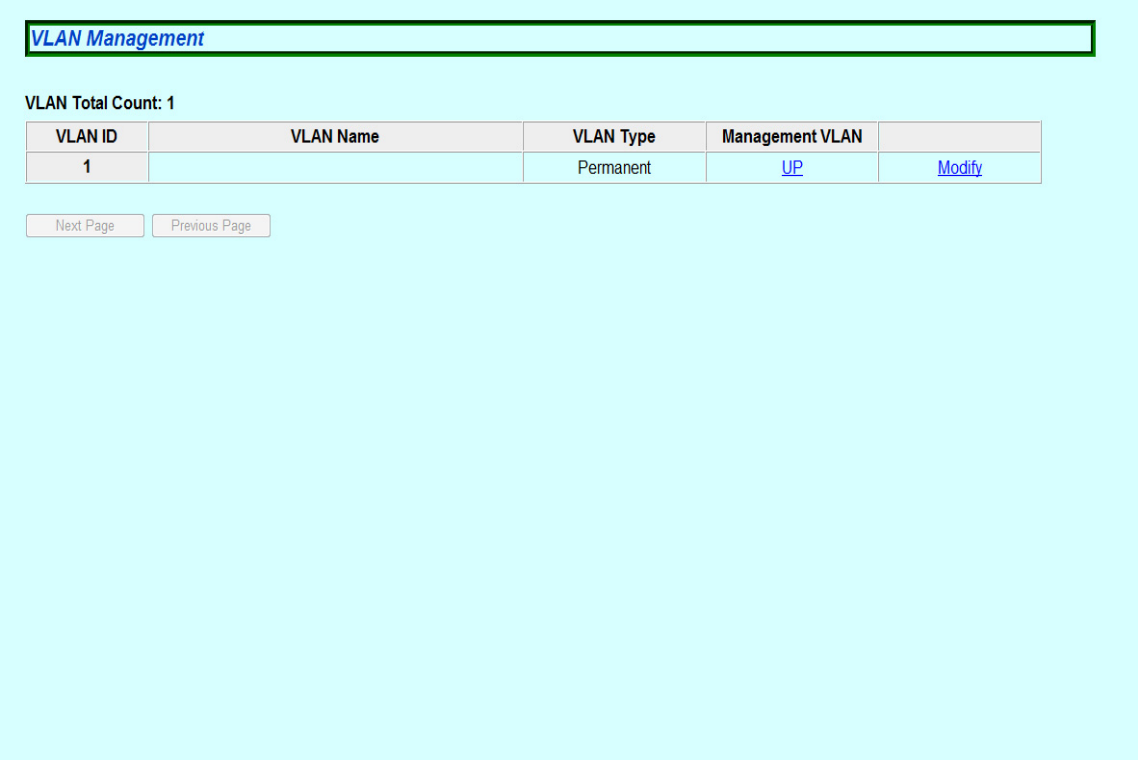


Figure 3-22 VLAN Management

Screen Description

VLAN Total Count	Displays the switch's current number of VLANs.	
VLAN ID	Displays the VLAN ID of a VLAN.	
VLAN Name	Displays the VLAN name.	
VLAN Type	Displays the VLAN type.	
	Permanent	This is the initial setting VLAN. This VLAN cannot be removed.
	Static	This is a new VLAN.
Management VLAN	Displays whether or not the VLAN is the management VLAN.	
	UP	This VLAN is the management LAN (VLAN that can communicate with CPU).
	DOWN	This VLAN is not the management VLAN.

3.2.1.a. VLAN Modification

On the "VLAN Management" screen, select "Modify" to open the screen shown in Figure 3-23. On this screen, you can modify the VLAN configuration information.

Figure 3-23 VLAN Modification

Screen Description

VLAN ID	Displays the VLAN ID.
VLAN Name	Displays the VLAN name.
Tagged Port	Displays ports that do not use a tag.
Member Port	Displays the ports assigned to the VLAN.
Not Member Port	Displays the ports not assigned to the VLAN.

3.2.2. VLAN Creation

Select "Advanced Config" and "VLAN" and then "VLAN Creation" to open the screen shown in Figure 3-24. On this screen, you can create a new VLAN.

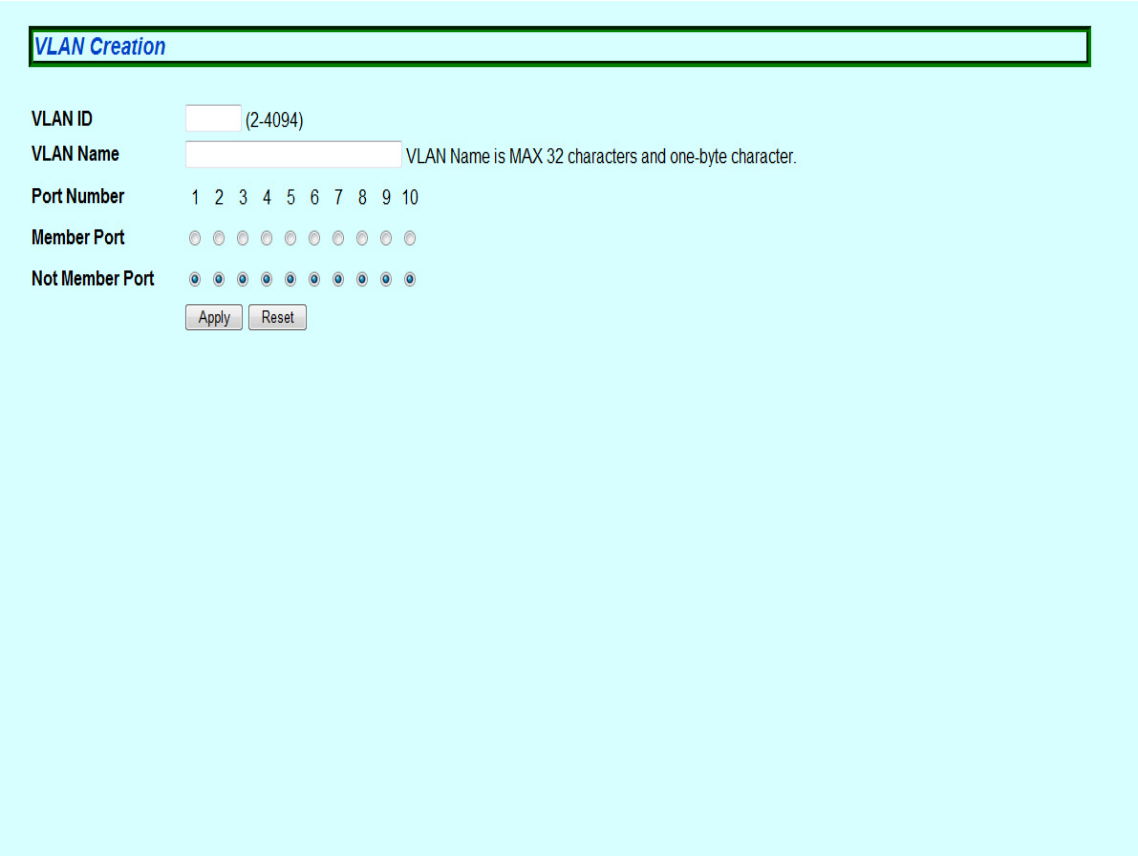


Figure 3-24 VLAN Creation

Screen Description

VLAN ID	Set the VLAN ID.
VLAN Name	Set the VLAN name.
Member Port	Select ports that you want to assign to the VLAN.
Not Member Port	Select ports that you do not want to assign to the VLAN.

3.2.3. VLAN Port Config

Select "Advanced Config" and "VLAN" and then "VLAN Port Config" to open the screen shown in **Figure 3-25**. On this screen, you can configure the specified VLAN port settings.

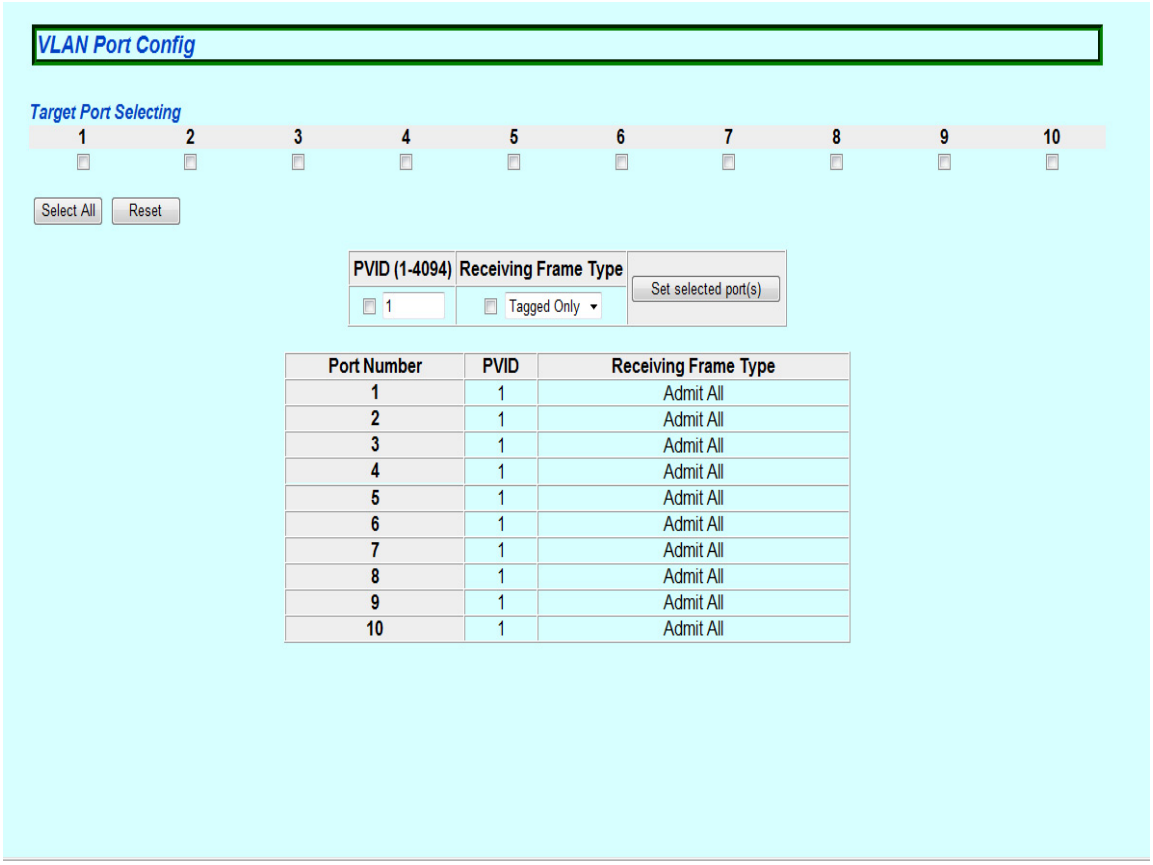


Figure 3-25 VLAN Port Config

Screen Description

Port Number	Displays the port number.	
PVID	Displays the port's current PVID (Port VLAN ID). PVID represents a VLAN ID to which an untagged packet should be sent when it is received. The factory default setting is 1. If a tagged packet is received, the tag is referenced regardless of this value to determine the destination port.	
Receiving Frame Type	Displays the type of frames to be received. For all ports, "Admit All" is the factory default setting.	
	Admit All	All frames are received.
	Tagged Only	Only tagged frames are received.

3.2.4. QoS Config

Select "Advanced Config" and "QoS Config" and then "Traffic Class Config" to open the screen shown in **Figure 3-26**. On this screen, you can configure the QoS settings.

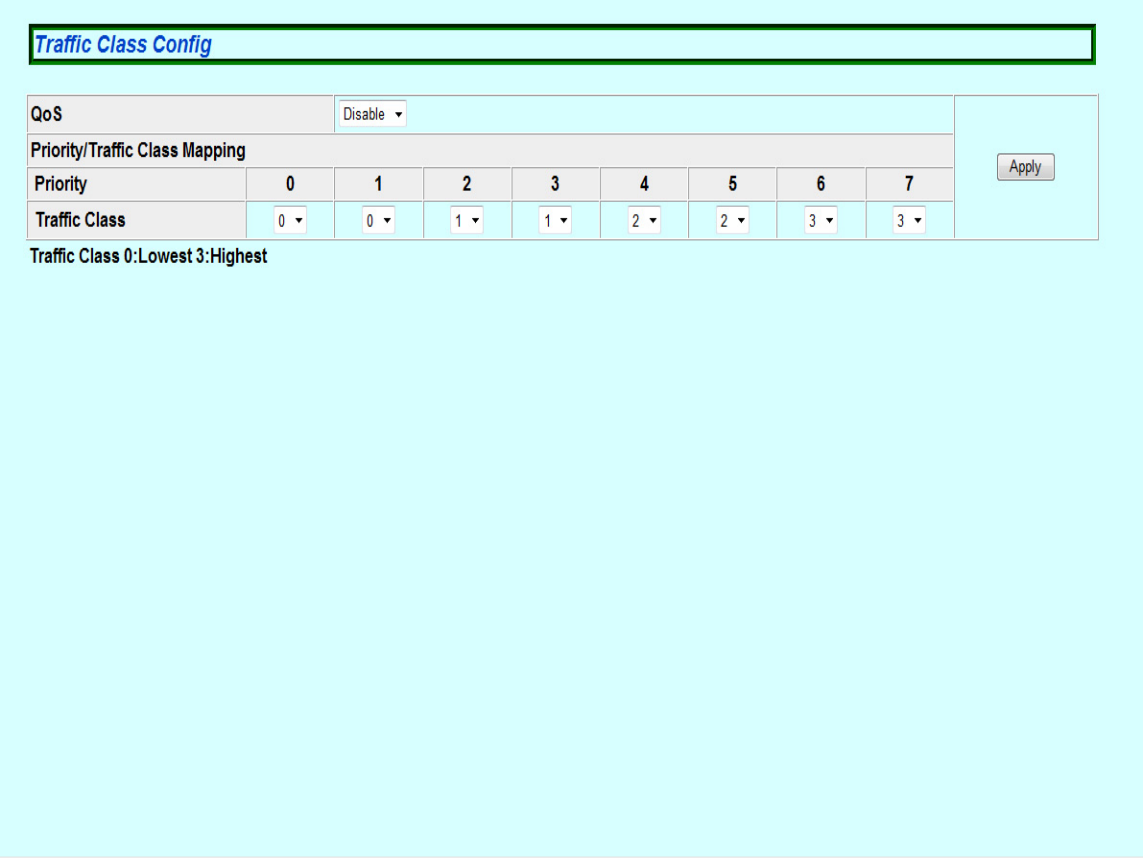


Figure 3-26 QoS Config

Screen Description

QoS	Displays the setting of the QoS function using IEEE802.1p. "Disable" is the factory default setting.	
	Enable	QoS is enabled.
	Disable	QoS is disabled.
Priority	Displays the packet priority value.	
Traffic Class	Displays the priority with which a packet is transferred.	

3.2.5. Egress Rate Limiting Config

Select "Advanced Config" and "QoS Config" and then "Egress Rate Limiting Config" to open the screen shown in **Figure 3-27**. On this screen, you can configure the Egress Rate settings.

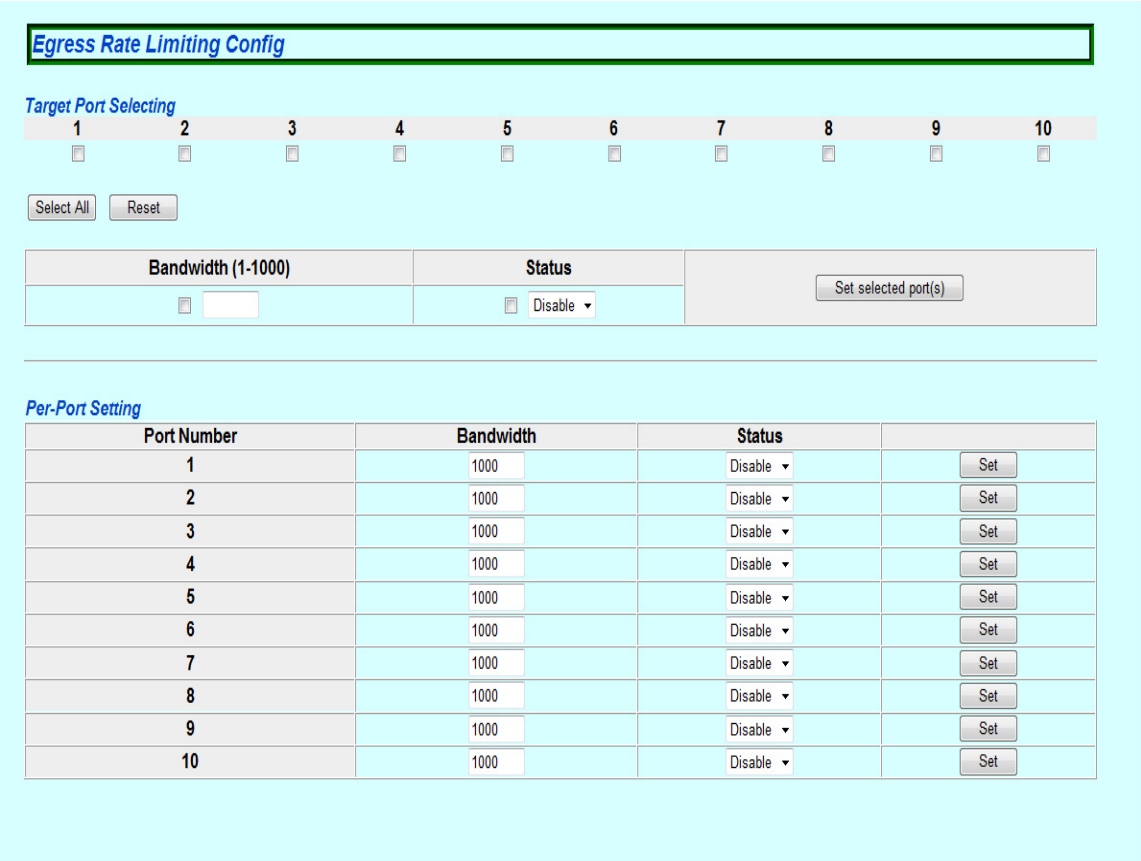


Figure 3-27 Egress Rate Limiting Config

Screen Description

Port	Displays the port number.	
Bandwidth	Displays the bandwidth. The factory default setting is 1000. (The unit is Mbps)	
Status	Displays whether the bandwidth control settings are enabled or disabled.	
	Enabled	The bandwidth control settings are enabled.
	Disabled	The bandwidth control settings are disabled.

3.2.6. Diffserv Config

Select "Advanced Config" and "QoS Config" and then "Dffserv Config" to open the screen shown in **Figure 3-28**. On this screen, you can configure the Diffserv settings.

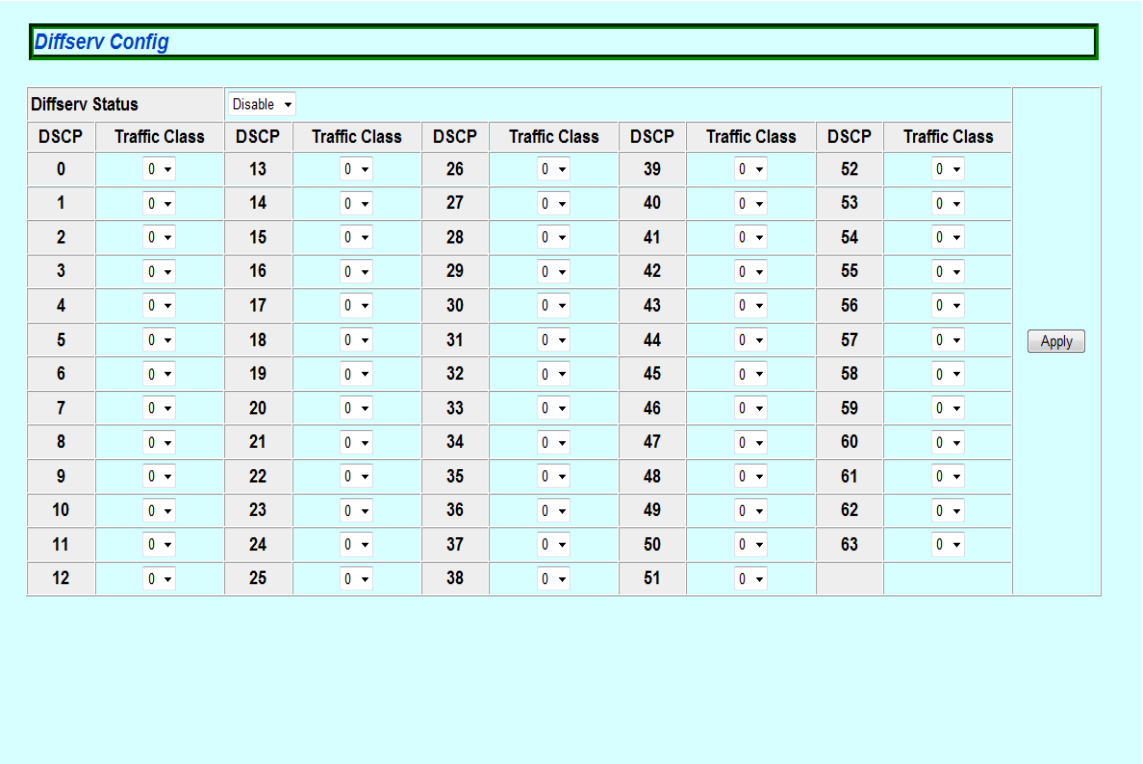


Figure 3-28 Diffserv Config

Screen Description

Diffserv Status	Displays the Diffserve function setting. "Disable" is the factory default setting.	
	Enable	Diffserv is enabled.
	Disable	Diffserv is disabled.
Priority	Displays the priority with which a packet is transferred.	

3.2.7. Link Aggregation Config

Select "Advanced Config" and "Link Aggregation Config" to open the screen shown in Figure 3-29. On this screen, you can configure the group settings of link aggregation.

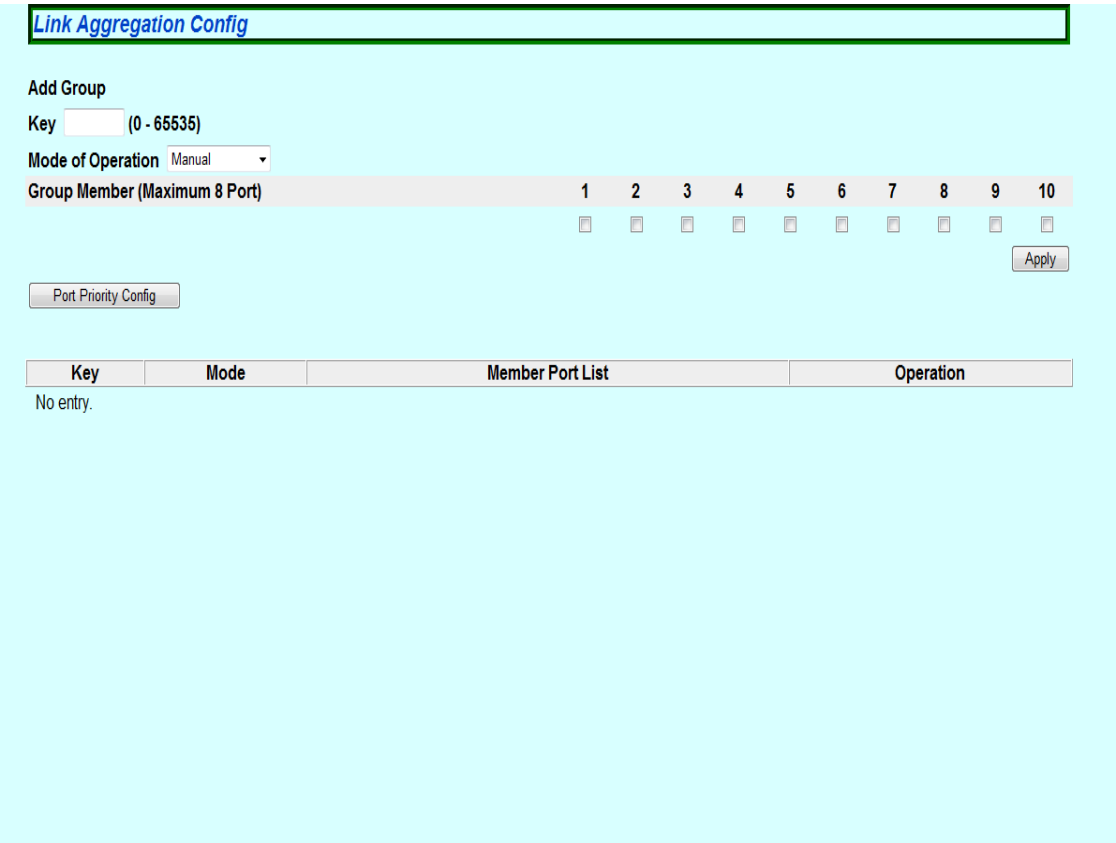


Figure 3-29 Link Aggregation Config

Screen Description

Key	Displays the group number of link aggregation.	
Mode of Operation	Displays the operation mode of link aggregation.	
	Manual	Constructs link aggregation in a fixed way without using LACP. The setting of the other side must be the same.
Group Member	Displays the ports included in the group of link aggregation.	

3.2.7.a. Link Aggregation Modification

Select "Advanced Config" and "Link Aggregation Config" and then click the "Modify" button of a group to open the screen shown in Figure 3-30. On this screen, you can modify the link aggregation.

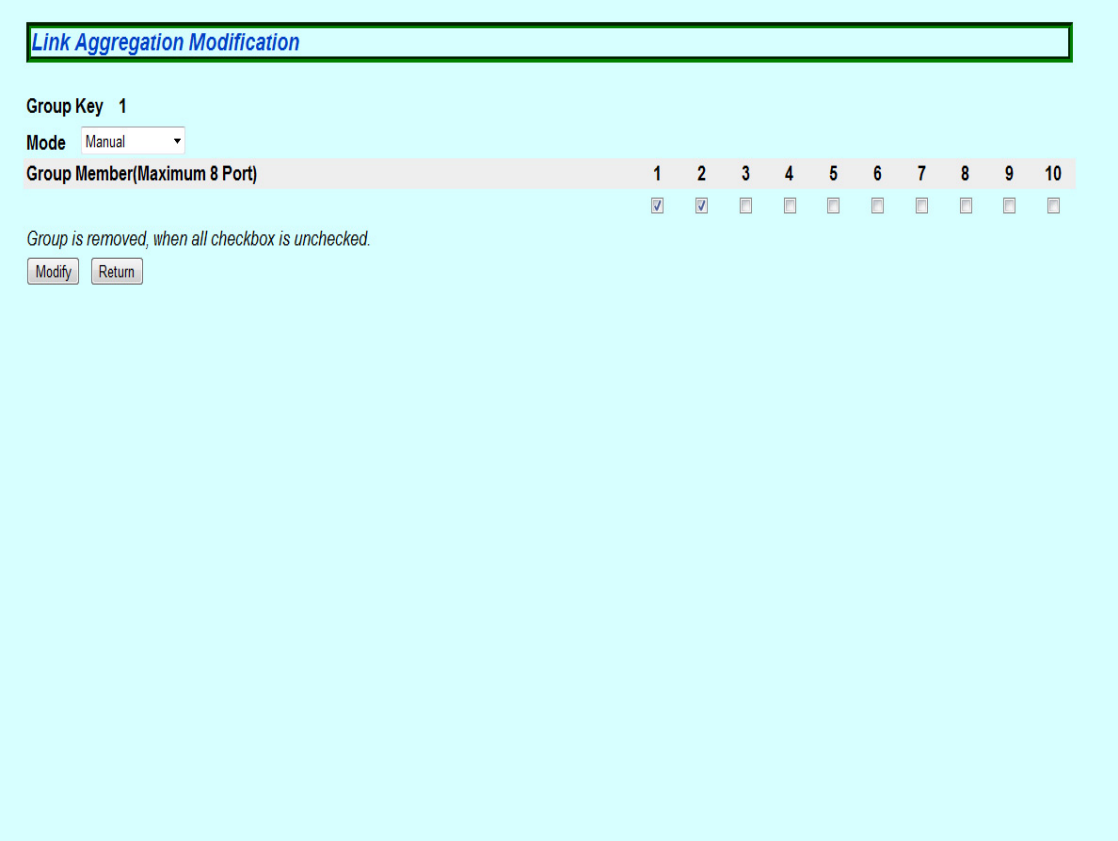


Figure 3-30 Link Aggregation Modification

Screen Description

Mode	Displays the operation mode of link aggregation.	
	Manual	Constructs link aggregation forcibly without using LACP. The setting of the other side must be the same.
Group Member	Displays the ports included in the group of link aggregation.	

3.2.8. Storm Control Config

Select "Advanced Config" and "Storm Control Config" to open the screen shown in **Figure 3-31**. On this screen, you can configure the storm control settings.

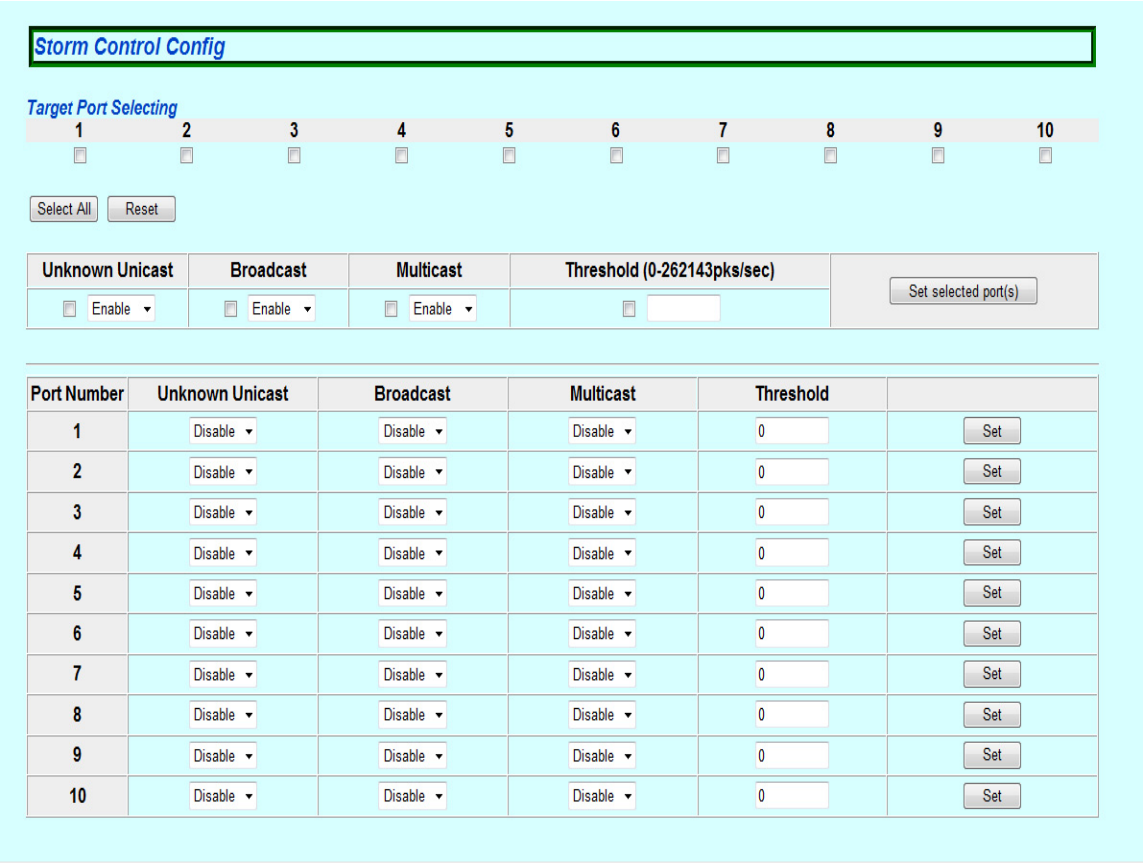


Figure 3-31 Storm Control Config

Screen Description

Port	Displays the port number.	
Unknown Unicast	Enables or disables the Unknown unicast storm control.	
	Enable	The Unknown unicast storm control is enabled.
	Disable	The Unknown unicast storm control is disabled. (Factory default setting)
Broadcast	Enables or disables the broadcast storm control.	
	Enable	The broadcast storm control is enabled.
	Disable	The broadcast storm control is disabled. (Factory default setting)
Multicast	Enables or disables the multicast storm control.	
	Enable	The multicast storm control is enabled.
	Disable	The multicast storm control is disabled. (Factory default setting)
Threshold	Displays the threshold value for the number of packets.	

3.2.9. 802.1X Port Based Access Control Configuration

Select "Advanced Config" and "802.1X Access Control" to open the screen shown in **Figure 3-32**. On this screen, you can configure the 802.1X settings.

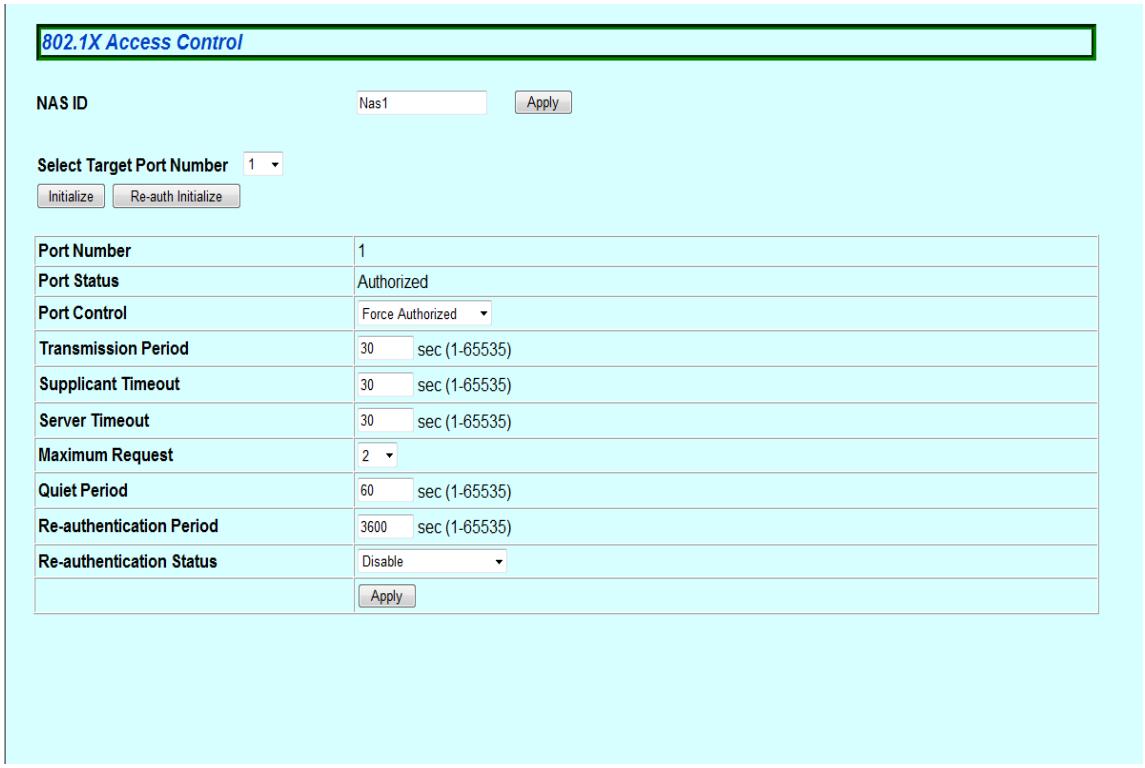


Figure 3-32 802.1X Port Based Access Control Configuration

Screen Description

NAS ID	Displays the authentication ID (NAS Identifier).	
Port Number	Displays the port number.	
Initialize	Initializes the authentication status.	
Re-auth Initialize	Initializes the re-authentication status.	
Port Status	Displays the authentication status. This status reflects the Port Control setting listed below.	
	Unauthorized	The authentication is denied.
	Authorized	The authentication is approved.
Port Control	Displays the operation for authentication request.	
	Auto	Enables the authentication function and relays the authentication process between a client and an authentication server.
	Force Unauthorized	Disables the authentication function and ignores all the authentication requests from a client.
	Force Authorized	Disables the authentication function and enables communications via the port without authentication. (Factory default setting)
Transmission Period	This is the time interval until a retransmission request is sent in authentication for the RADIUS server. The factory default setting is 30 seconds.	
Supplicant Timeout	Displays the timeout time for a client. The factory default setting is 30 seconds.	

Server Timeout	Displays the timeout time for an authentication server. The factory default setting is 30 seconds.	
Maximum Request	This is the maximum number of retries for retransmission in authentication. The factory default setting is 2.	
Quiet Period	This is the time to the next authentication request after authentication fails. The factory default setting is 60 seconds.	
Re-authentication Period	This is the interval between retries for periodical re-authentication. The factory default setting is 3600 seconds.	
Re-authentication Status	Displays the periodical re-authentication setting.	
	Enable	Periodical re-authentication is enabled.
	Disable	Periodical re-authentication is disabled. (Factory default setting)

3.2.10. Port Monitoring Configration

Select "Advanced Config" and "Port Monitoring Config" to open the screen shown in **Figure 3-33**. On this screen, you can configure the port monitoring settings.

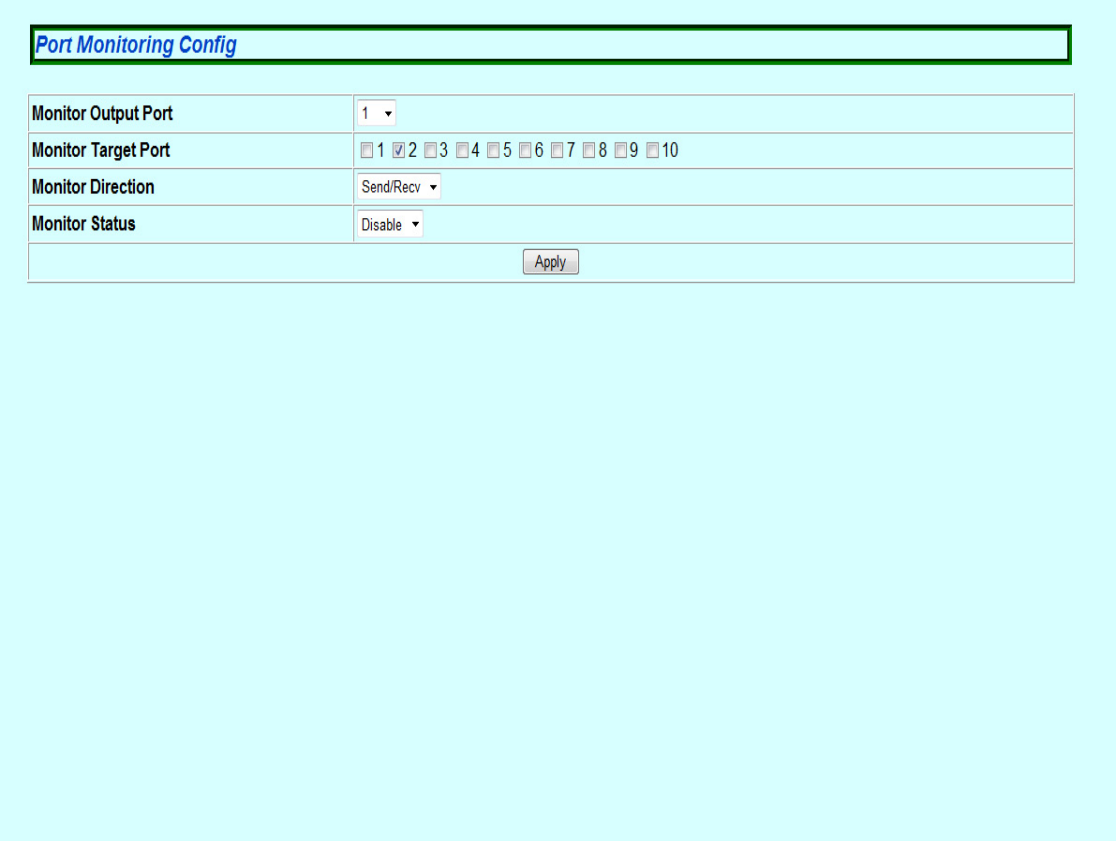


Figure 3-33 Port Monitoring Configration

Screen Description

Monitor Output Port	Displays the port number of a port at which packets from other ports can be monitored.	
Monitor Target Port	Displays the port number of a port to be monitored.	
Monitor Direction	Displays which of transmit and receive packets are monitored at the port to be monitored. "Send/Recv" is the factory default setting.	
	Send	Monitors transmit packets.
	Recv	Monitors receive packets.
	Send/Recv	Monitors both transmit and receive packets.
Monitor Status	Displays whether monitoring is enabled. "Disable" is the factory default setting.	
	Enable	Monitors packets.
	Disable	Does not monitor packets.

Note: Mirror packets in transmission direction will include the VLAN tag of the received VLAN ID.

Note: Administrative packets such as Ping and ARP transmitted by this switch cannot be captured.

3.2.11. STP Global Config

Select "Advanced Config" and "Spanning Tree Config," and then "STP Global Config" to open the screen shown in Figure 3-34. On this screen, you can configure the basic spanning tree settings.

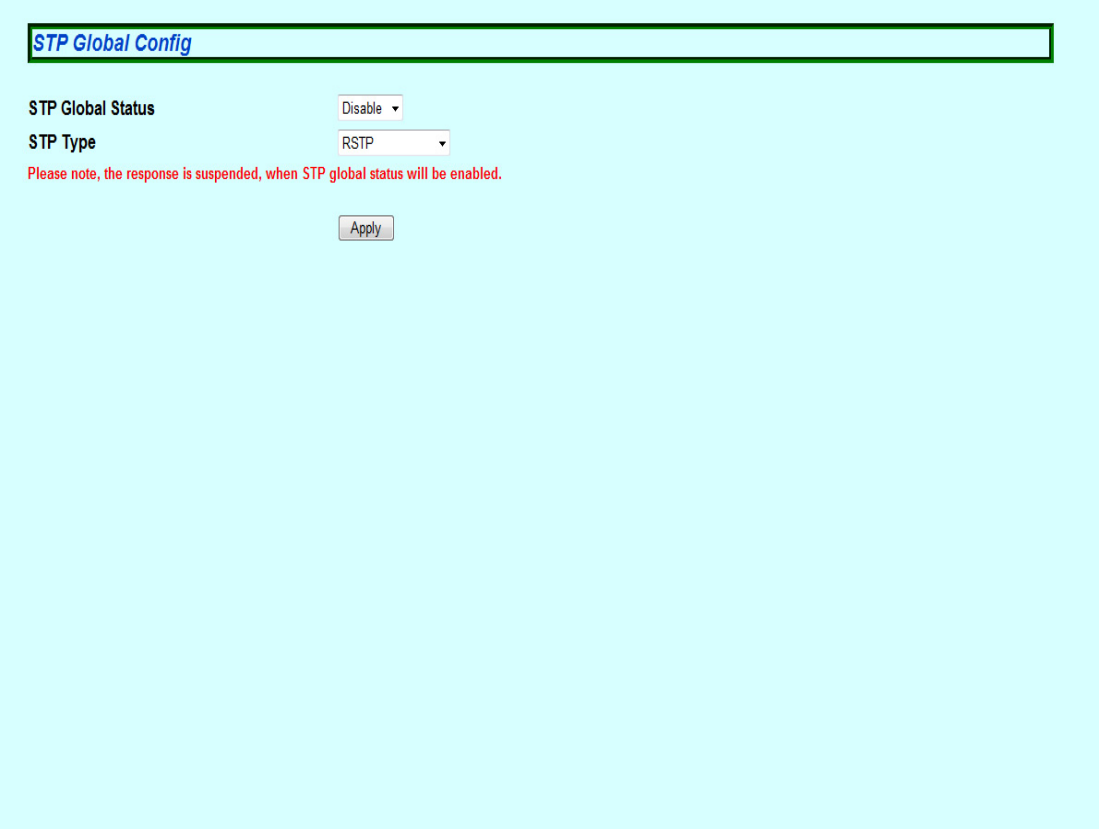


Figure 3-34 STP Global Config

Screen Description

STPGlobal Status	Displays the operation status of the spanning tree.	
	Enable	The spanning tree is enabled.
	Disable	The spanning tree is disabled. (Factory default setting)
STP Type	Displays the version of the spanning tree.	
	STP-Compatible	Runs the IEEE802.1D-compatible spanning tree.
	RSTP	Runs the IEEE802.1w-compatible rapid spanning tree.

Note: Change the STP global status to Enable to stop responses temporarily.

3.2.12. Parameter Config

Select "Advanced Config" and "Spanning Tree Config," and then "Parameter Config" button of a group to open the screen shown in Figure 3-35. On this screen, you can configure the detailed STP Parameter Config settings.

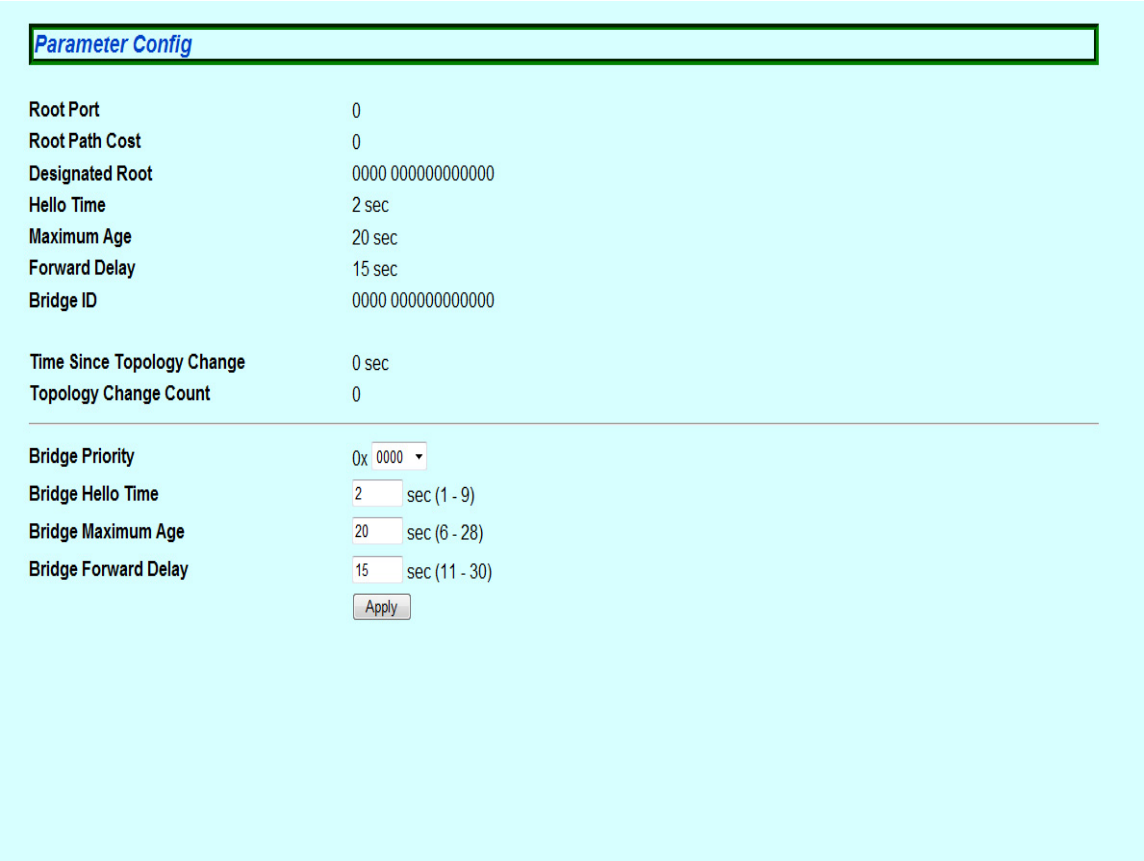


Figure 3-35 Parameter Config

Screen Description

Root Port:	Displays the current root port.
Root Path Cost:	Displays the cost from the root port to the root bridge.
Designated Root:	Displays the bridge ID of the root bridge.
Hello Time:	Displays the access interval with the root bridge to confirm the Spanning Tree topology.
Maximum Age:	Displays the timeout period of the hello message.
Forward Delay:	Displays the transition time of the Spanning Tree status, such as from Listening to Learning or from Learning to Forwarding.
Bridge ID:	Displays the bridge ID of the switch. The bridge ID is configured with the bridge priority and the MAC address. The factory default setting of the bridge priority is 8000.
Time Since Topology Change:	Displays the elapsed time (seconds) from the change of topology of Spanning Tree.
Topology Change Count:	Displays the number of changes of topology of Spanning Tree.
Bridge Priority	Displays the bridge ID of the switch. The bridge ID is configured with the bridge priority and the MAC address. The factory default setting of the bridge priority is 8000.

Bridge Hello Time:	Displays the hello time when the switch becomes the root bridge.
Bridge Maximum Age:	Displays the maximum age when the switch becomes the root bridge.
Bridge Forward Delay	Displays the forward delay when the switch becomes the root bridge.

3.2.13. Basic Port Config

Select "Advanced Config" and "Spanning Tree Config," and then "Basic Port Config" button of a group to open the screen shown in Figure 3-36. On this screen, you can configure the detailed STP Port Config settings.

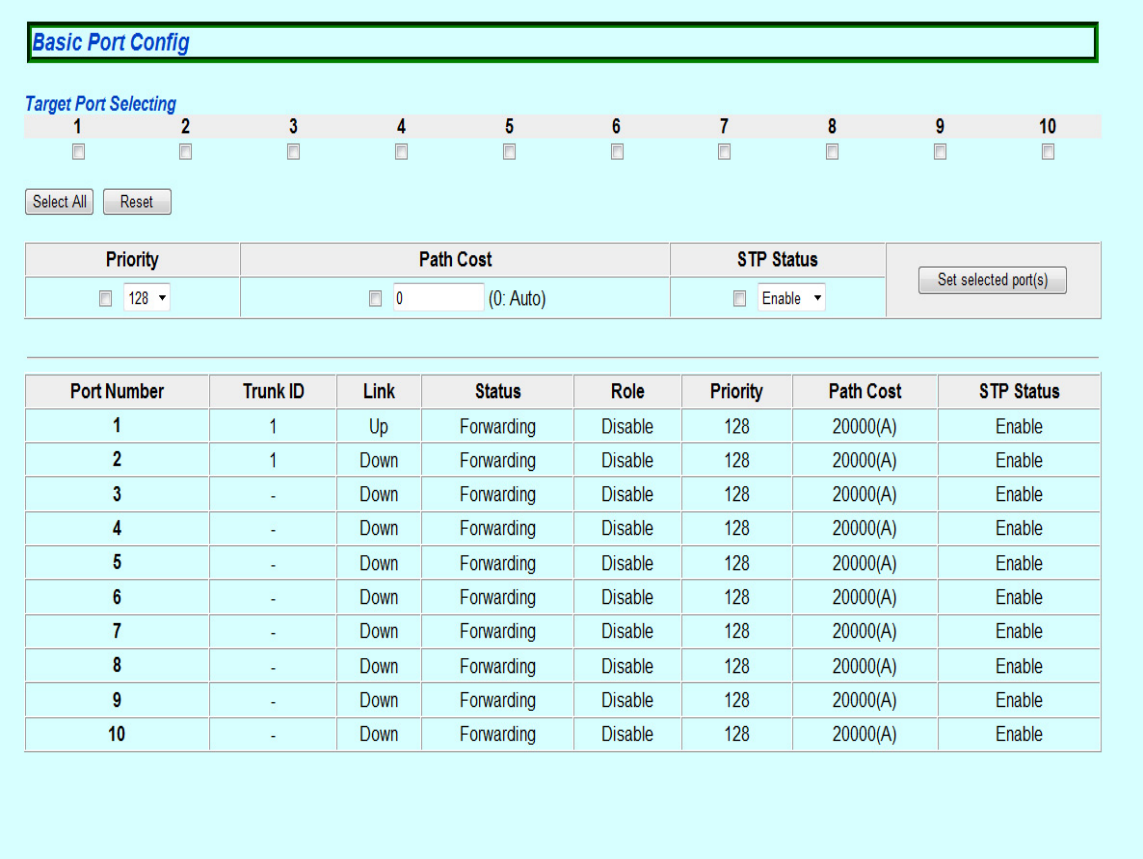


Figure 3-36 Basic Port Config

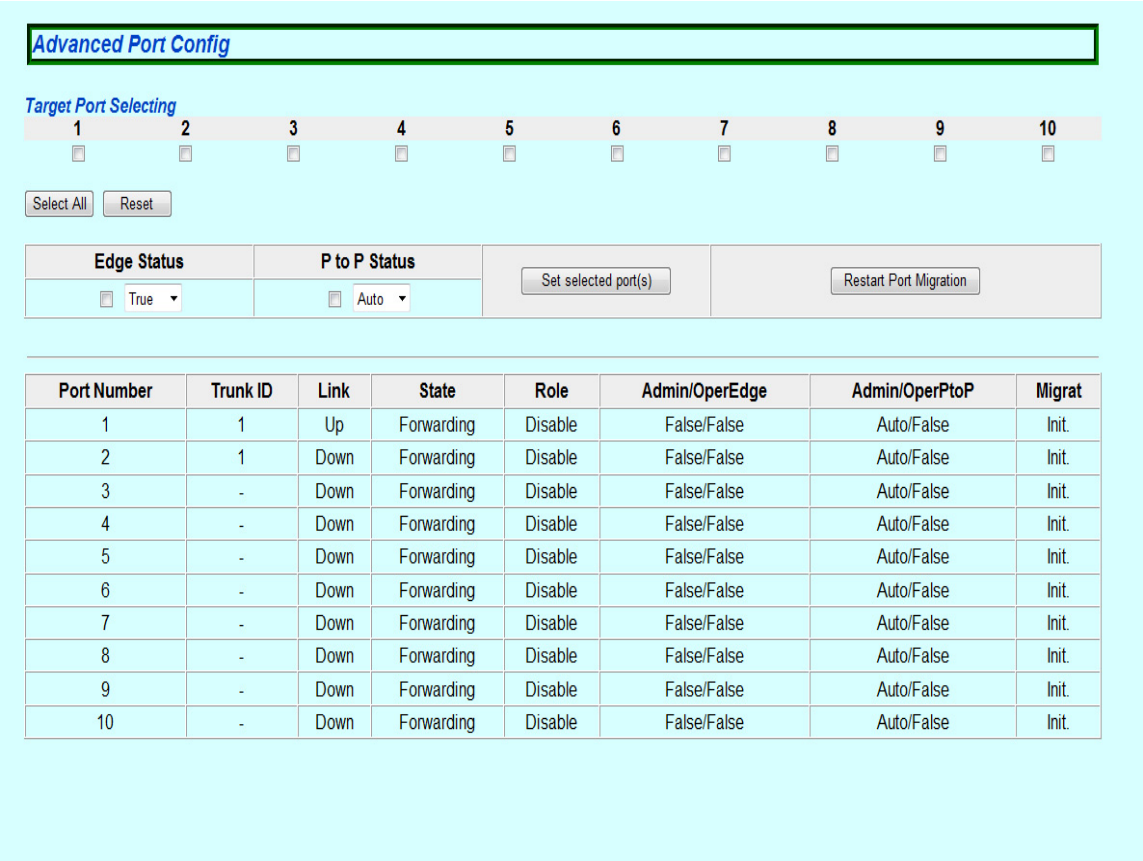
Screen Description

Port Number	Displays the port number.	
Link	Displays the link status.	
	UP	The link has been established successfully.
	DOWN	The link has not been established.
State	Displays the current port status.	
	Forwarding	Normal communication is executed based on the calculation result.
	Learning	Calculation is executed based on information.
	Discarding	Calculation is not executed.
Role	Displays the role of the port in Spanning Tree.	
	Designated	Operating as a designated port.
	Root	Operating as a root port.
	Alternate	Operating as an alternate port.
	Backup	Operating as a backup port.
	Disabled	STP is not working.
Priority	Displays the priority of each port in the switch. The larger number has higher priority. For all ports, "128" is the factory default setting. (The value is a multiple of 16.)	

Path Cost	Displays the cost of each port. For all ports, "Auto" is the factory default setting. In case of Auto, the cost is set automatically according to the link speed of the port.	
STP Status	Displays whether Spanning Tree of each port is enabled or disabled.	
	Enabled	Spanning Tree is enabled.
	Disabled	Spanning Tree is disabled.

3.2.14. Advanced Port Config

Select "Advanced Config" and "Spanning Tree Config," and then "Advanced Port Config" button of a group to open the screen shown in Figure 3-37. On this screen, you can configure the detailed STP Port Config settings.



Port Number	Trunk ID	Link	State	Role	Admin/OperEdge	Admin/OperPtoP	Migrat
1	1	Up	Forwarding	Disable	False/False	Auto/False	Init.
2	1	Down	Forwarding	Disable	False/False	Auto/False	Init.
3	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
4	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
5	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
6	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
7	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
8	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
9	-	Down	Forwarding	Disable	False/False	Auto/False	Init.
10	-	Down	Forwarding	Disable	False/False	Auto/False	Init.

Figure 3-37 Advanced Port Config

Screen Description

Port Number	Displays the port number.	
Link	Displays the link status.	
	UP	The link has been established successfully.
	DOWN	The link has not been established.
State	Displays the current port status.	
	Forwarding	Normal communication is executed based on the calculation result.
	Learning	Calculation is executed based on information.
	Discarding	Calculation is not executed.
Role	Displays the role of the port in Spanning Tree.	
	Designated	Operating as a designated port.
	Root	Operating as a root port.
	Alternate	Operating as an alternate port.
	Backup	Operating as a backup port.
	Disabled	STP is not working.

Admin/ OperEdge	Displays the setting of the edge port (a port that can be immediately forwarded). Admin: Administration displays the setting status, and Oper: Operation displays the actual status.	
	True	Can be set to the edge port.
	False	Cannot be set to the edge port.
Admin/ OperPtoP	Displays point-to-point connection of the Switching Hub. Admin: Administration displays the setting status, and Oper: Operation displays the actual status.	
	Auto	Automatically recognizes according to the port status. (Only Admin)
	True	P-to-P connected.
	False	Not P-to-P connected.
Migrat	Displays the current operation status of Spanning Tree.	
	STP	STP is working.
	RSTP	RSTP is working.
	Init.	STP is not working.

3.2.15. Designated Topology Info

Select "Advanced Config" and "Spanning Tree Config," and then "Designated Topology Info" button of a group to open the screen shown in Figure 3-38. On this screen, you can configure the detailed STP Topology settings.

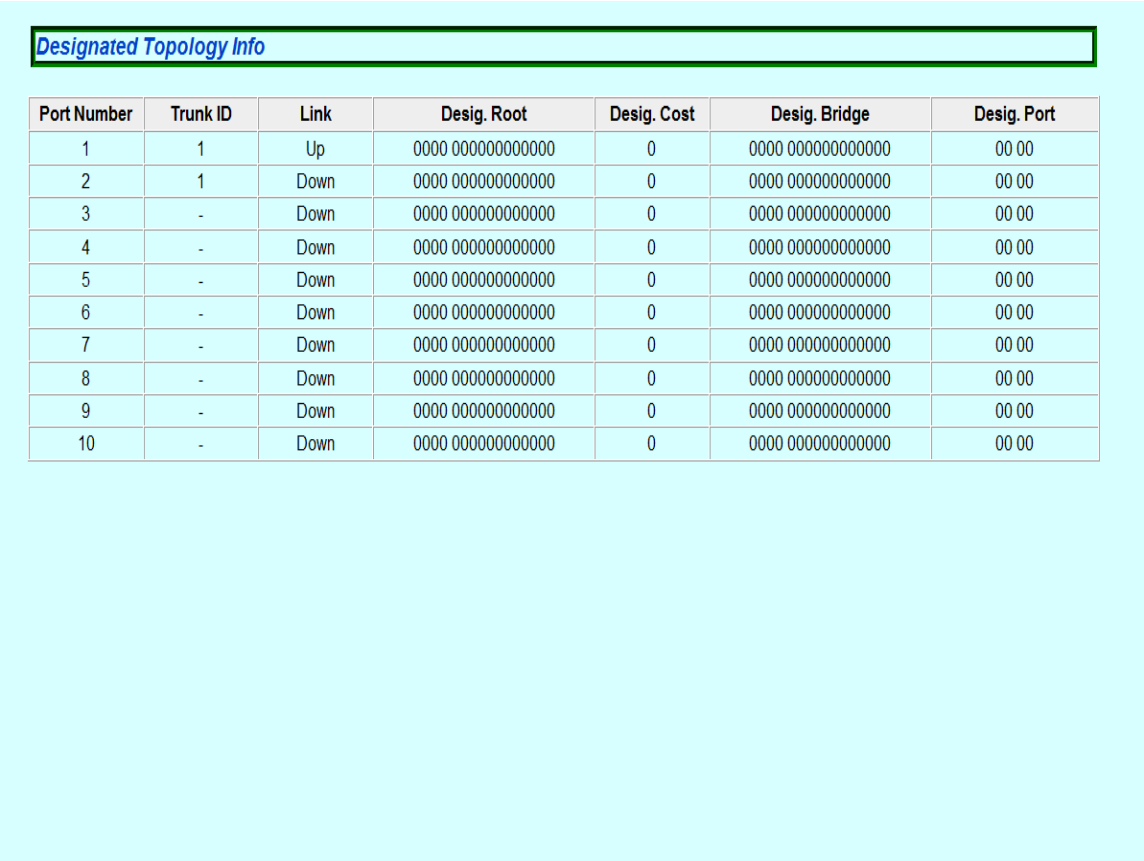


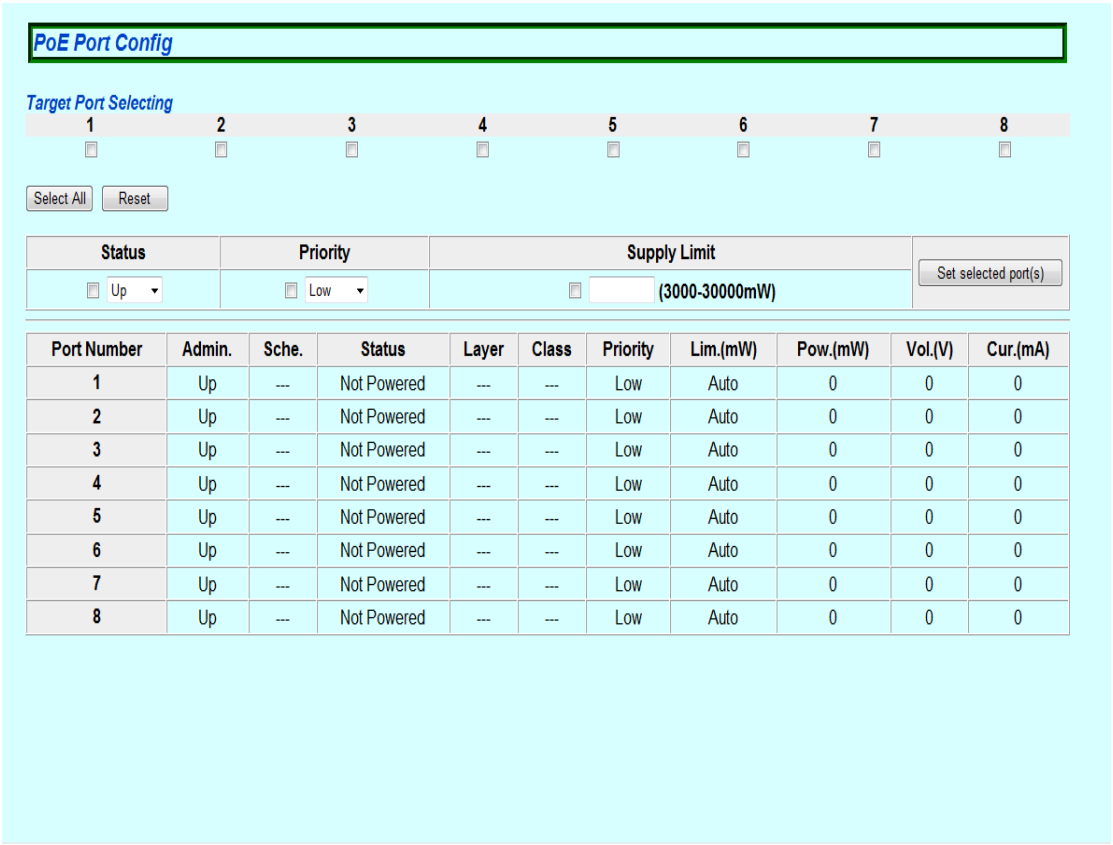
Figure 3-38 Designated Topology Info

Screen Description

Port Numner	Displays the port number.	
Link	Displays the link status.	
	UP	The link has been established successfully.
	DOWN	The link has not been established.
Desig.Root	Displays the route bridge ID.	
Desig.Cost	Displays the cost in transmission.	
Desig.Bridge	Displays the bridge ID of the designated bridge.	
Desig.Port	Displays the port ID of the designated port. (The port ID is a combination of the port priority value and port number.)	

3.2.16. PoE Port Config

Select "Advanced Config" and "PoE" and then "PoE Port Config" to open the screen shown in **Figure 3-39**. On this screen, you can configure the power supply settings by port.



Port Number	Admin.	Sche.	Status	Layer	Class	Priority	Lim.(mW)	Pow.(mW)	Vol.(V)	Cur.(mA)
1	Up	---	Not Powered	---	---	Low	Auto	0	0	0
2	Up	---	Not Powered	---	---	Low	Auto	0	0	0
3	Up	---	Not Powered	---	---	Low	Auto	0	0	0
4	Up	---	Not Powered	---	---	Low	Auto	0	0	0
5	Up	---	Not Powered	---	---	Low	Auto	0	0	0
6	Up	---	Not Powered	---	---	Low	Auto	0	0	0
7	Up	---	Not Powered	---	---	Low	Auto	0	0	0
8	Up	---	Not Powered	---	---	Low	Auto	0	0	0

Figure 3-39 PoE ポート設定

Screen Description

Port Number	Displays the port number.	
Admin.	Displays whether or not power can be supplied.	
	Up	Power can be supplied.
	Down	Power cannot be supplied.
Sche.	Displays the PoE scheduler function status.	
	ON	Indicates that the power supply to the PoE is turned on by the PoE scheduler.
	OFF	Indicates that the power supply to the PoE is turned off by the PoE scheduler.
	-	Indicates that the PoE scheduler is not operating.
Status	Displays the power supply status.	
	Powered	Power is supplied.
	Not Powered	Power is not supplied.
	Overload	Power supply is stopped because the power request exceeds the limit.
Class	Displays the Class value detected by the classification function.	
Priority	Displays the priority of power supply.	
	Critical	Represents the highest priority.
	High	Represents the next priority to Critical.
	Low	Represents no priority.
Lim.(mW)	Displays the upper limit of supplied power. (in units of 200 mW) "Auto" means that the value is calculated according to the layer and class.	
Pow.(mW)	Displays the supplied power. (in units of 100 mW)	
Vlo.(V)	Displays the voltage. (in units of 1 V)	
Cur.(mA)	Displays the current. (in units of 1 mA)	

3.2.17. PoE Global Configration

Select "Advanced Config" and "PoE Config" and then "PoE Grobal Config" to open the screen shown in Figure 3-40. On this screen, you can configure the general PoE settings.

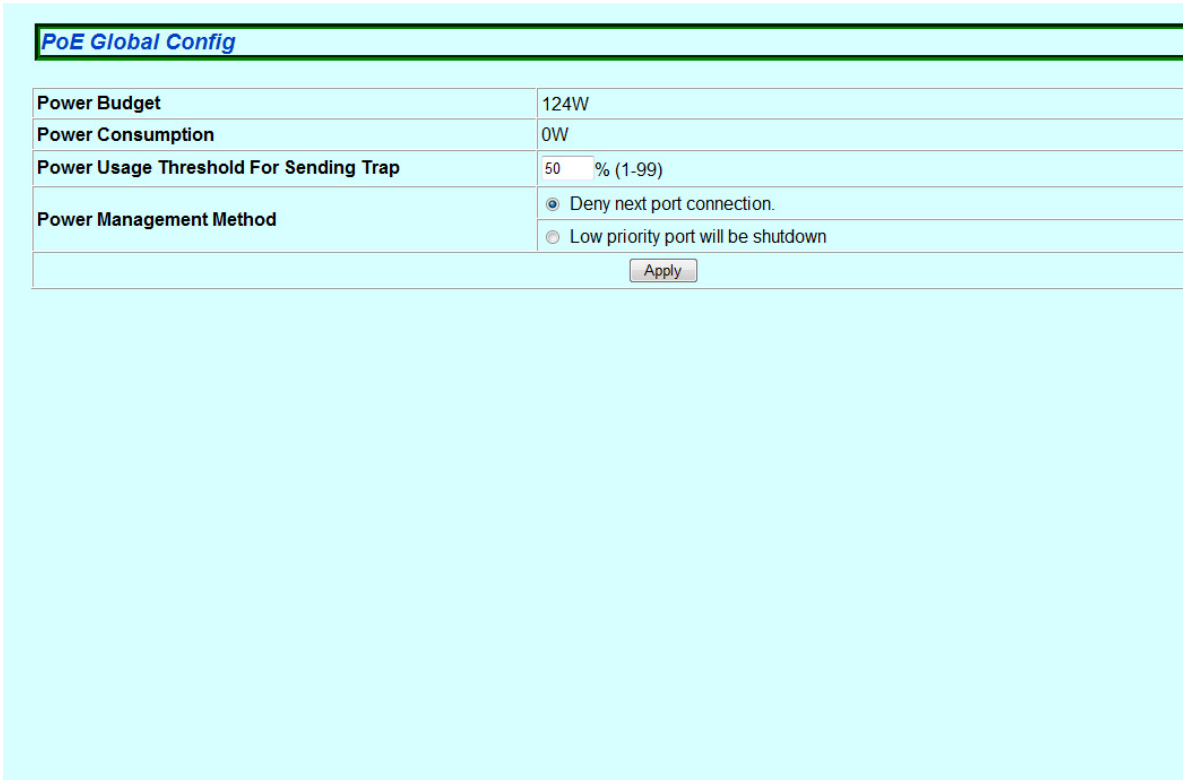


Figure 3-40 PoE Grobal Configration

Screen Description

Power Budget	Displays the maximum amount of power this switch can supply.
Power Consumption	Displays the amount of power currently supplied by this switch.
Power usage threshold for sending trap	Displays the power supply threshold for sending a trap.
Power management method	Displays the power supply management method. The factory default setting is "Deny next port connection."

3.2.18. PoE Schedule Port List Info

Select "Advanced Config" and "PoE" and then "PoE Schedule Port List Info" to open the screen shown in Figure 3-41. This screen displays the port list for PoE schedule.

Figure 3-41 PoE Schedule Port List Info

Screen Description

Index	Displays the index number of the PoE port list.
Port List	Displays the port list.

3.2.19. PoE Schedule Port List Config

Select "Advanced Config" and "PoE" and then "PoE Schedule Port List Config" or, on the "PoE Schedule Port List Info" screen, select "Modify" to open the screen shown in Figure 3-42. This screen displays the port list for PoE schedule.

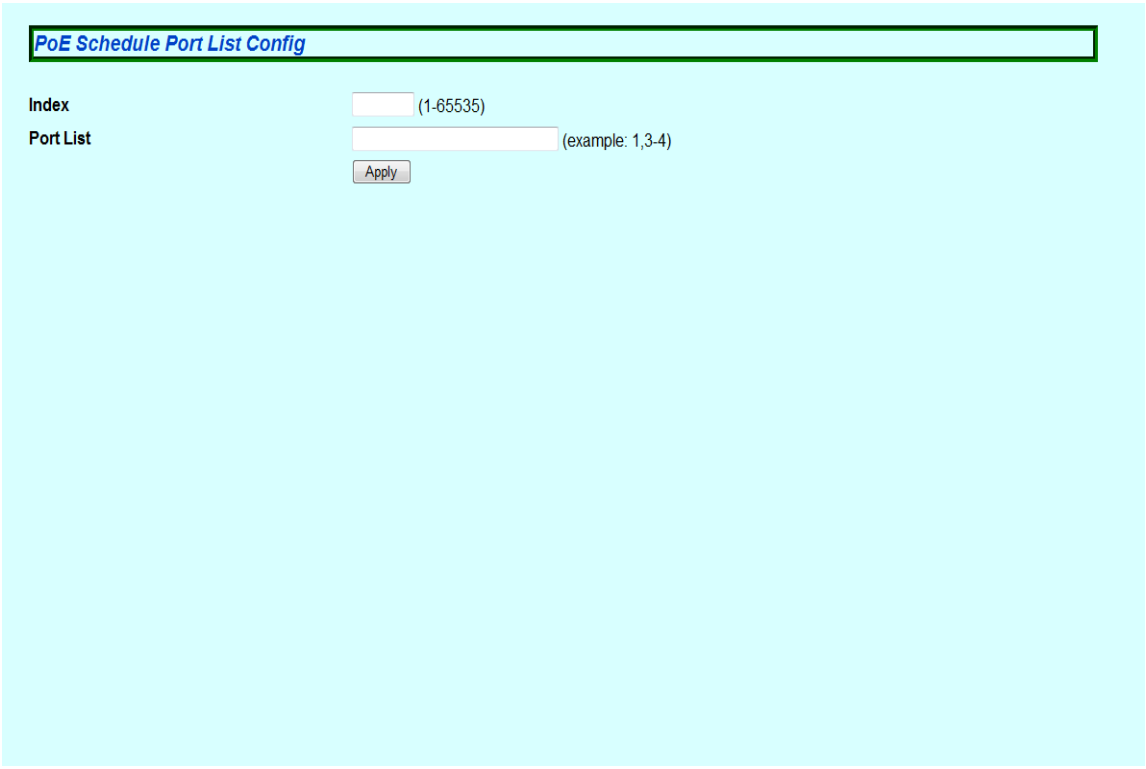


Figure 3-42 PoE Schedule Port List Config

Screen Description

Index	Displays the index number of the PoE port list.
Port List	Displays the port number created in the port list.

3.2.20. PoE Schedule Info

Select "Advanced Config" and "PoE" and then "PoE Schedule Info" to open the screen shown in **Figure 3-43**. This screen displays the PoE schedule that has been configured.

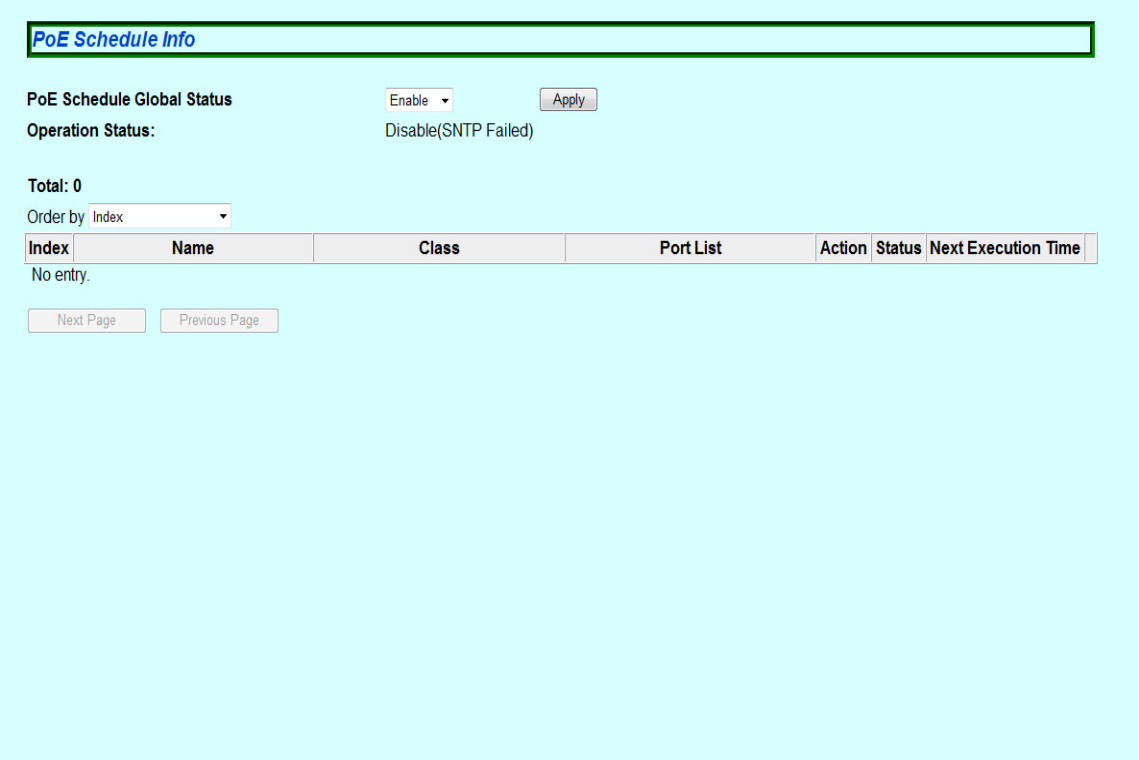


Figure 3-43 PoE Schedule Info

Screen Description

PoE Schedule Global Status	Displays the status of the PoE schedule function.	
	Enable	Enables the PoE schedule function.
	Disable	Disables the PoE schedule function.
Order by	Displays the display order setting.	
	Index	Displays PoE schedules in the order of Index numbers.
	Next Execution Time	Displays PoE schedules in the order of next execution time.
Index	Displays the index number of PoE schedule information.	
Name	Displays the name of the PoE schedule.	
Class	Displays the class of the PoE schedule.	
	Daily	Executes the schedule at the specified time every day.
	Weekly	Executes the schedule on the specified day of week and time every week.
	Monthly	Executes the schedule at the specified date and time every month.
	DateList	Executes the schedule at the user-specified date and time.
Port List	Displays the port list.	

Active	Displays the action of the PoE schedule.	
	ON	Turns on PoE.
	OFF	Turns off PoE.
	OFF/ON	Turns off and on PoE (RESTART).
Status	Displays the status of the PoE schedule function of the port.	
	Enable	Enables the PoE schedule function of the port.
	Disable	Disables the PoE schedule function of the port.
Next Execution Time	Displays the date and time when the next schedule is executed.	

3.2.21. PoE Schedule Config

Select "Advanced Config" and "PoE" and then "PoE Schedule Config" or, on the "PoE Schedule Info" screen, select "Modify" to open the screen shown in Figure 3-44. On this screen, you can create or modify a PoE schedule.

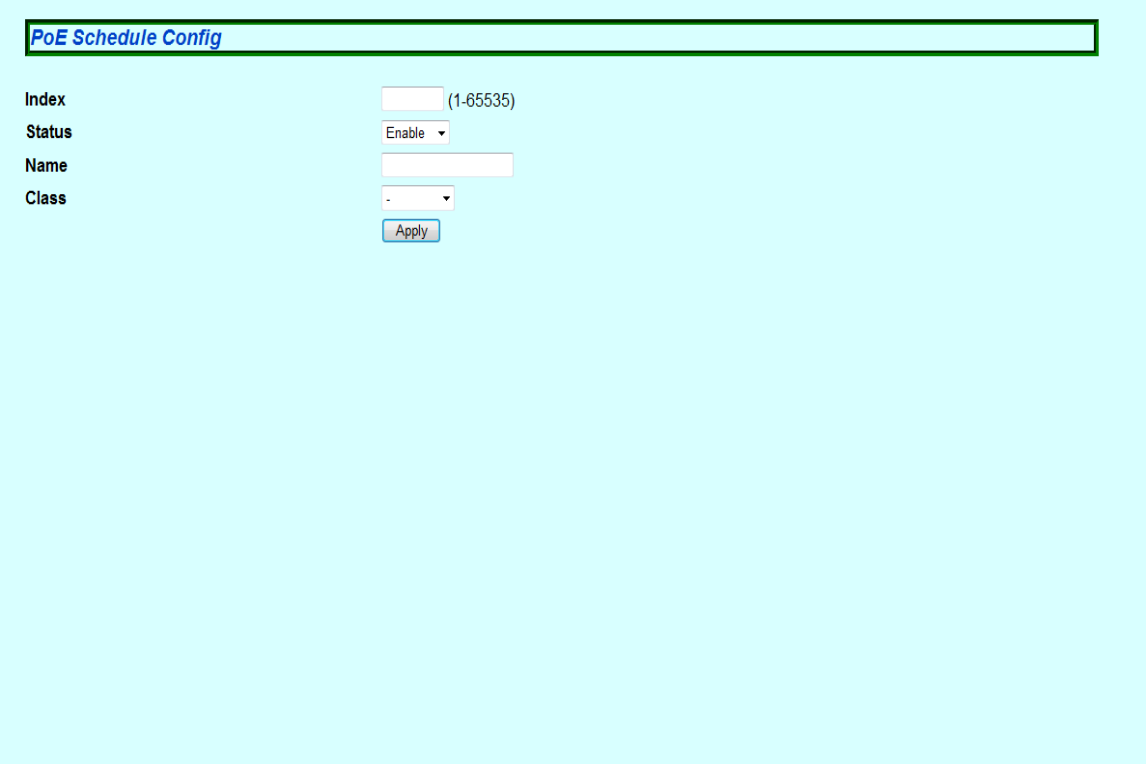


Figure 3-44 PoE Schedule Config

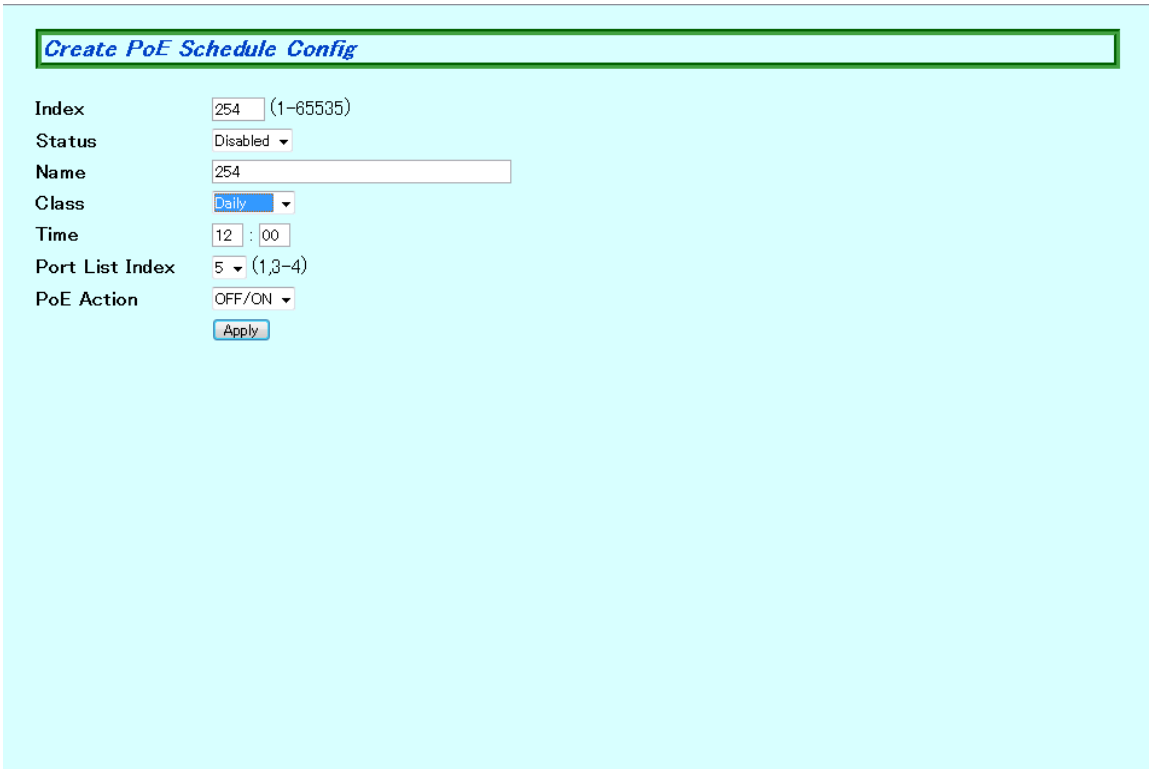


Figure 3-45 PoE Schedule Config (Daily)

Figure 3-46 PoE Schedule Config (Weekly)

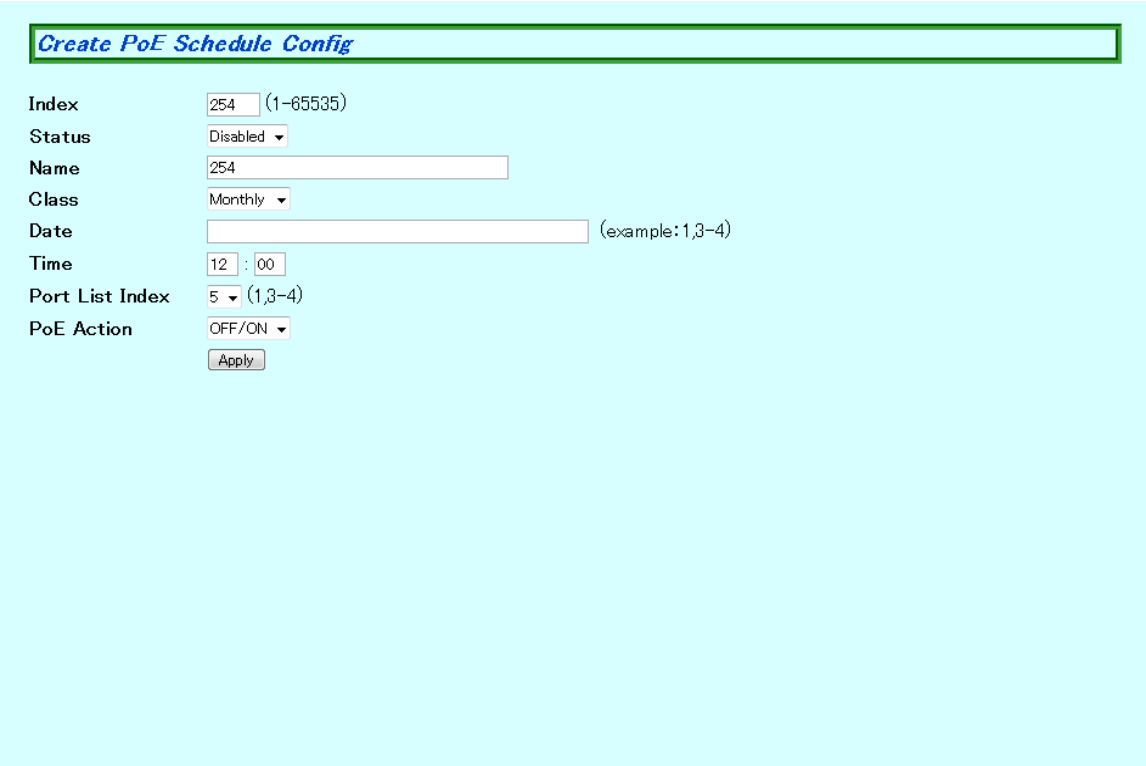


Figure 3-47 PoE Schedule Config (Monthly)

Figure 3-48 PoE Schedule Config (DateList)

Screen Description

Index	Displays the index number of PoE schedule information.	
Status	Displays the status of the PoE schedule function of the port.	
	Enable	Enables the PoE schedule function of the port.
	Disable	Disables the PoE schedule function of the port.
Name	Displays the name of the PoE schedule.	
Class	Displays the class of the PoE schedule.	
	Daily	Executes the schedule at the specified time every day.
	Weekly	Executes the schedule on the specified day of week and time every week.
	Monthly	Executes the schedule on the specified date and time every month.
	DateList	Executes the schedule at the user-specified date and time.
Time	Displays the time when the PoE schedule is executed.	
Port List Index	Displays the index of the port list for which the PoE schedule is executed.	
PoE Action	Displays the action of the PoE schedule.	
	ON	Turns on PoE.
	OFF	Turns off PoE.
	OFF/ON	Turns off and on PoE (RESTART).
Date	Displays the day of week (Weekly) or date (Monthly) when the PoE schedule is executed.	
Date List Index	Displays the index of the date list for which the PoE schedule is executed.	

3.2.22. Date List Info

Select "Advanced Config" and "PoE" and then "Date List Info" to open the screen shown in **Figure 3-49**. This screen displays the date list that has been configured.

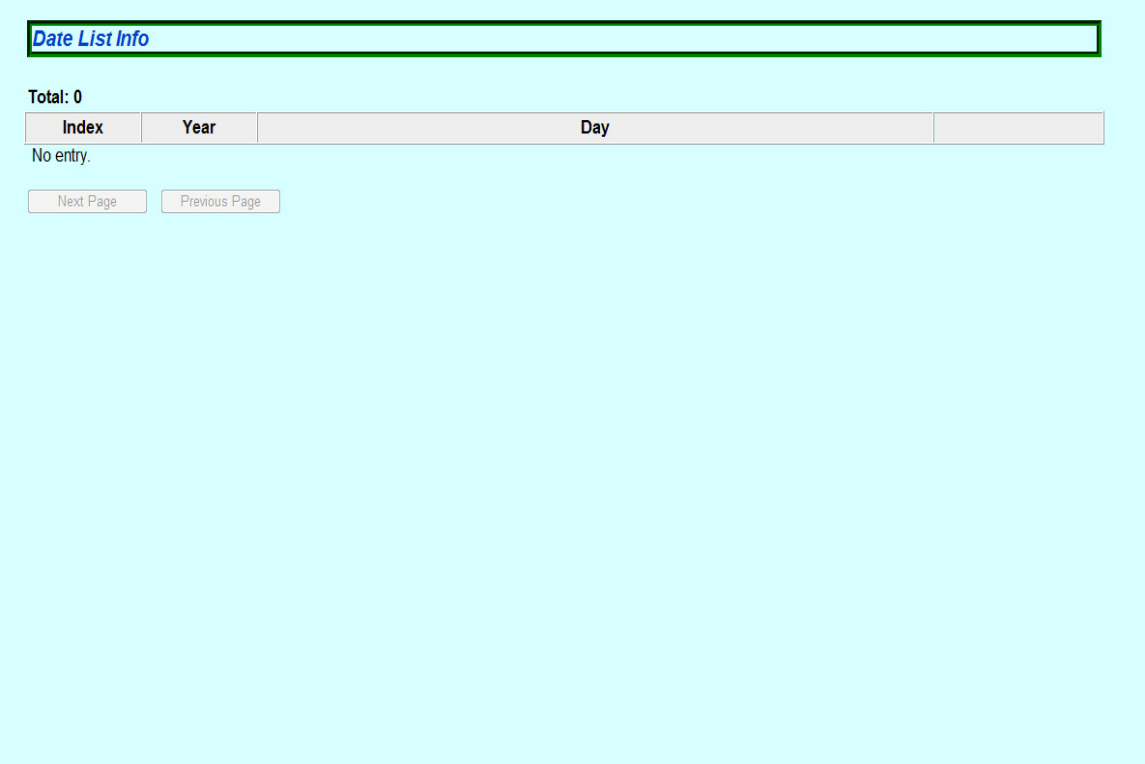


Figure 3-49 Date List Info

Screen Description

Index	Displays the index number of the date list.
Year	Displays the year when the date list is executed.
Day	Displays the day when the date list is executed.

3.2.23. Date List Config

Select "Advanced Config" and "PoE" and then "Date List Config" or, on the "Date List Info" screen, select "Modify" to open the screen shown in Figure 3-50. On this screen, you can create or modify a date list.

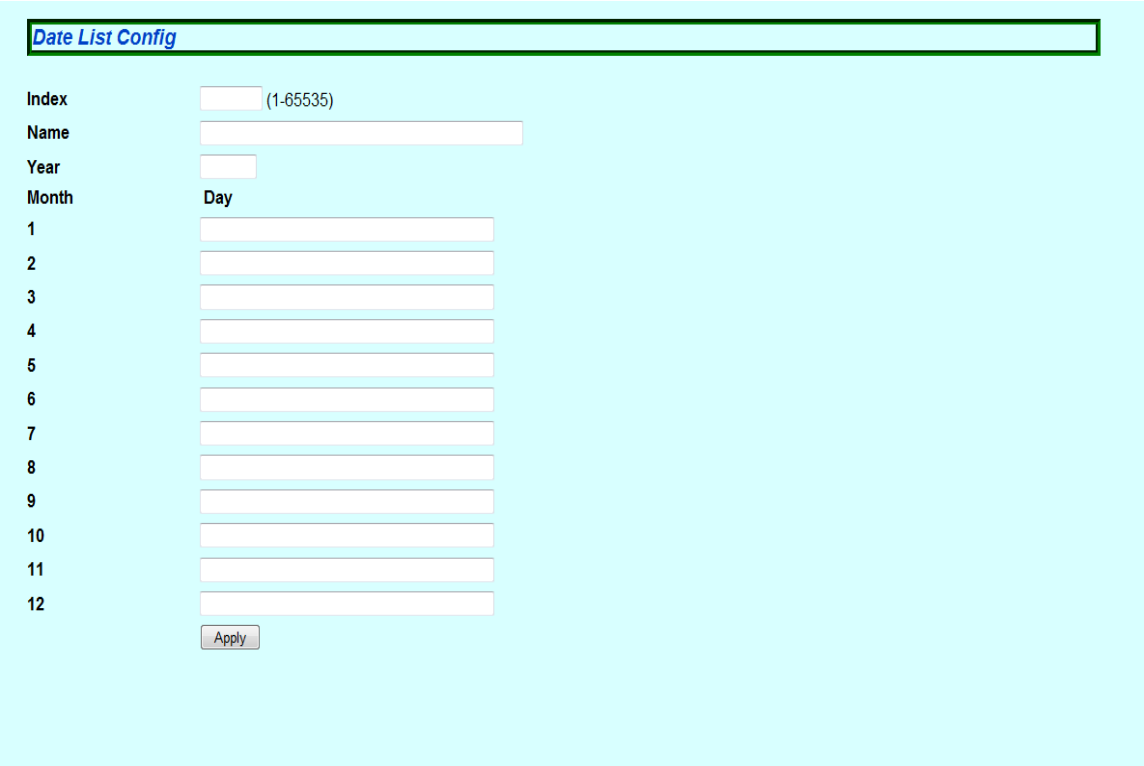


Figure 3-50 Date List Config

Screen Description

Index	Displays the index number of the date list.
Name	Displays the name of the date list.
Year	Displays the year when the date list is executed.
Month	Displays the month of the date list.
Day	Displays the day when the date list is executed.

3.2.24. PoE Display Schedule By Port

Select "Advanced Config" and "PoE" and then "PoE Display Schedule By Port" to open the screen shown in **Figure 3-51**. This screen displays the PoE schedule by port that has been configured.

Figure 3-51 PoE Display Schedule By Port

Screen Description

Port Number	Specify a port number.	
Index	Displays the index number of PoE schedule information.	
Class	Displays the class of the PoE schedule.	
	Daily	Executes the schedule at the specified time every day.
	Weekly	Executes the schedule on the specified day of week and time every week.
	Monthly	Executes the schedule at the specified date and time every month.
	DateList	Executes the schedule at the user-specified date and time.
Date	Displays the day of week (Weekly) or date (Monthly) when the PoE schedule is executed.	
Time	Displays the time when the PoE schedule is executed.	
Active	Displays the action of the PoE schedule.	
	ON	Turns on PoE.
	OFF	Turns off PoE.
	OFF/ON	Turns off and on PoE (RESTART).
Status	Displays the status of the PoE schedule function of the port.	
	Enable	Enables the PoE schedule function of the port.
	Disable	Disables the PoE schedule function of the port.

3.2.25. Loop Detection Config

Select "Advanced Config" and "Loop Detection" and then "Loop Detection Config" to open the screen shown in **Figure 3-52**. On this screen, you can configure additional settings.

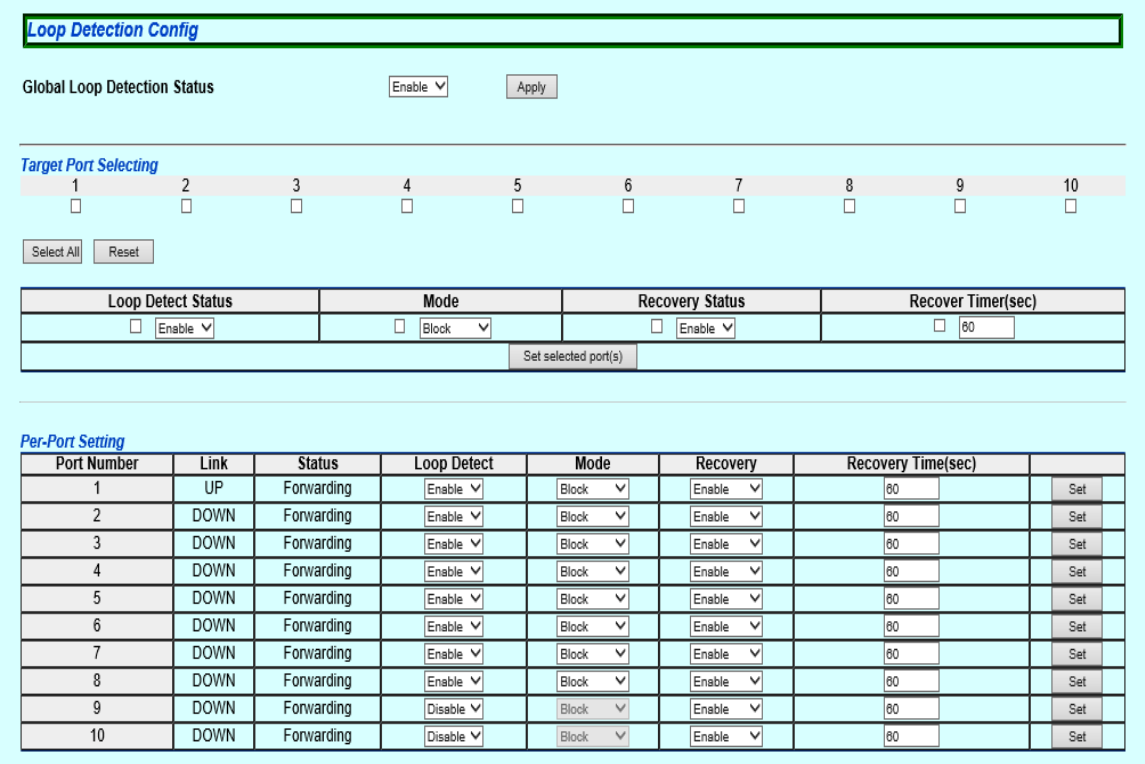


Figure 3-52 Loop Detection Config

Screen Description

Global Loop Detection Status	Displays the status of the Global Loop Detection function.	
	Enable	Enables Global Loop Detection.
	Disable	Disables Global Loop Detection.
Mode	Displays the setting status of the Loop detection mode for that port.	
	Block	When the Switching Hub detects loop, the ports are blocked. (Factory default setting)
	Shutdown	When the Switching Hub detects loop, the ports are shut down.
Loop Detect Status	Enables/disables the loop detection function for ports.	
Recovery Status	Enables/disables recovery when a loop is detected in a port.	
Recover Timer	Enters the time until recovery when a loop is detected in a port. The factory default setting is 60 seconds.	

3.2.26. Loop History Info

Select "Advanced Config" and "Loop Detection" and then "Loop History Info" to open the screen shown in Figure 3-53. On this screen, you can configure additional settings.

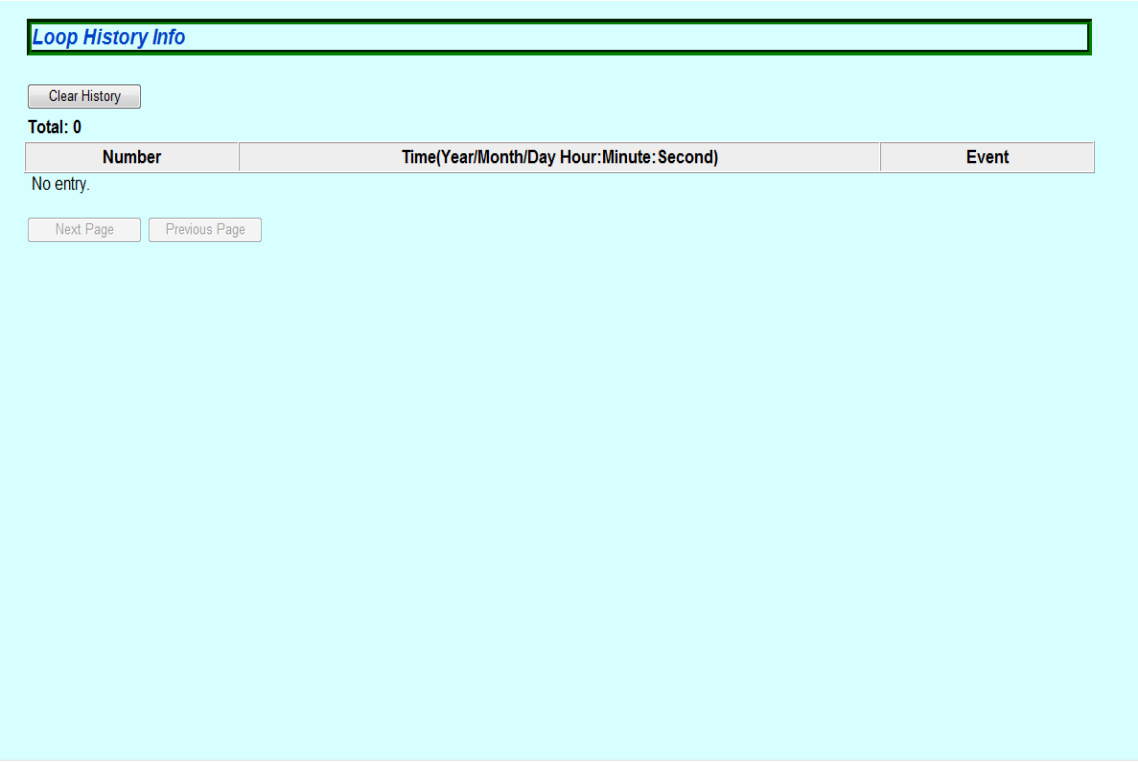


Figure 3-53 Loop History Info

Screen Description

Number	Displays the loop detection event number.	
Time	Displays the time when the loop detection event occurred.	
Event	Displays the description of the loop detection event that occurred on this switch.	
	Port xxx auto recovery	Auto-recovery was conducted after loop detection.
	The loop detected between xxx and yyy	A loop occurred between the displayed ports.

3.2.27. RRP Domain Management

Select "Advanced Config" and "RRP Domain Management" to open the screen shown in Figure 3-54. On this screen, you can configure the RRP that has been configured.

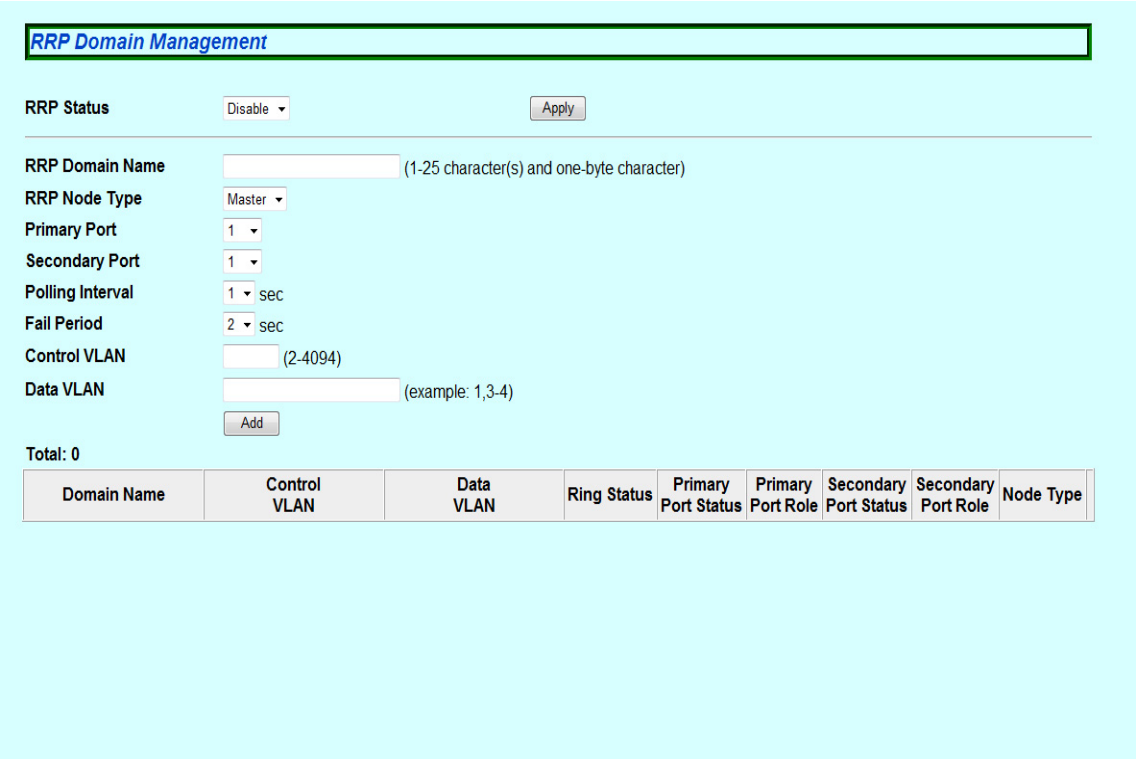


Figure 3-54 RRP Domain Management

Screen Description

RRP Status	Displays the status of the Ring Redundant Protocol function.	
	Enable	The Ring Redundant Protocol function is enabled.
	Disable	The Ring Redundant Protocol function is disabled. (Factory default setting)
RRP Domain Name	Displays the domain name.	
RRP Node Type	Displays the node role.	
	Master	This switch controls the ring operation. Only one Master node can be set in a domain.
	Transit	This switch is other than the Master node.
Primary Port	Displays the primary port.	
Secondary Port	Displays the secondary port.	
Polling Interval	Displays the polling interval.	
Fail Period	Displays the timeout time for polling.	
Control VLAN	Displays the ID of a control VLAN.	
Data VLAN	Displays the ID of a data VLAN.	

Ring Status	Displays the ring status.	
	IDLE	The Ring Redundant Protocol function is disabled.
	Complete	A ring topology has been correctly constructed. This status is displayed only for the Master node.
	Failed	No ring topology has been constructed. This status is displayed only for the Master node.
	Link-Up	A ring topology has been correctly constructed. This status is displayed only for a transit node.
	Link-Down	No ring topology has been constructed. This status is displayed only for a transit node.
	Pre-Forward-ing	A ring topology is being constructed. This status is displayed only for a transit node.
	IDLE	The Ring Redundant Protocol function is disabled.
Primary Port Status	Displays the primary port status.	
	Unknown	The domain is disabled.
	Forwarding	Normal communications are in progress.
	Down	The port has not linked up.
	Blocking	Frames other than control frames are blocked.
Primary Port Role	Displays the primary port role.	
	Upstream	Running as an upstream port.
	Downstream	Running as a downstream port.
Secondary Port Sta-tus	Displays the secondary port status.	
	Unknown	The domain is disabled.
	Forwarding	Normal communications are in progress.
	Down	The port has not linked up.
	Blocking	Frames other than control frames are blocked.
Secondary Port Sta-tus	Displays the secondary port status.	
	Upstream	Running as an upstream port.
	Downstream	Running as a downstream port.

3.2.28. DMI (DDM) Config

Select "Advanced Config" and "DMI (DDM) Config" to open the screen shown in Figure 3-55. On this screen, you can configure the DMI (Digital Diagnostic Monitoring Interface) settings.

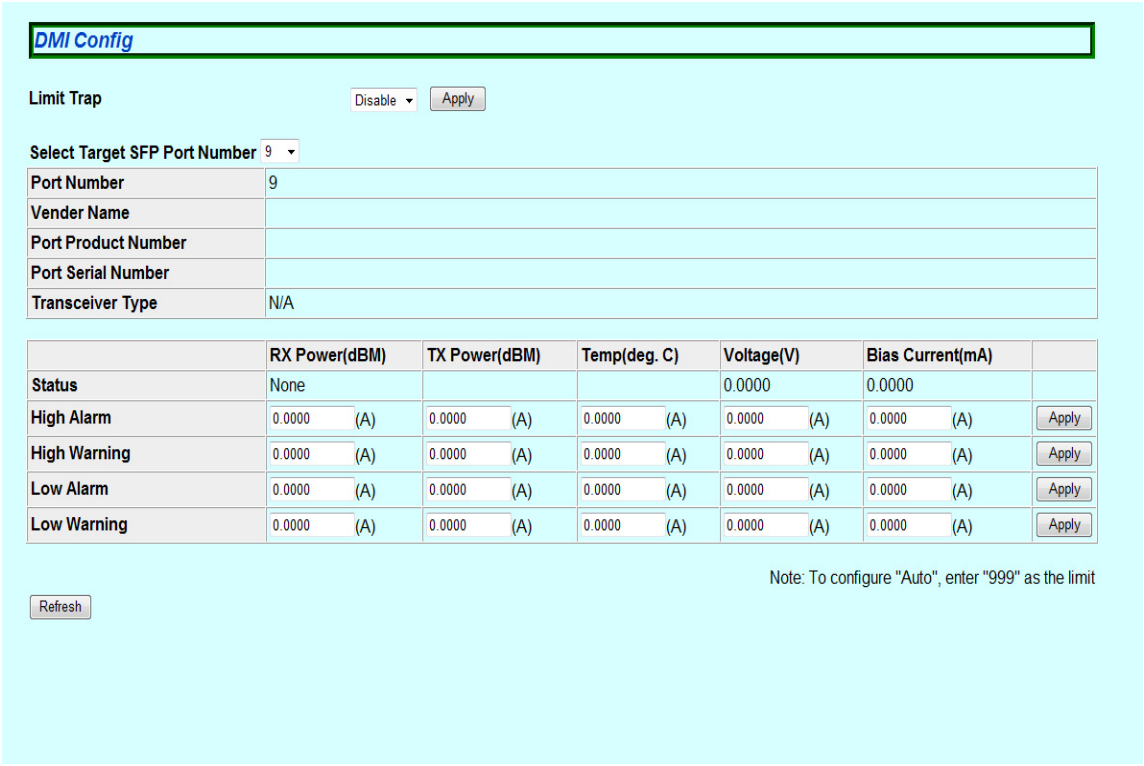


Figure 3-55 DMI (DDM) Config

Screen Description

Limit Trap	Displays the status of the Limit Trap function.	
	Enable	Enables Limit Trap.
	Disable	Disables Limit Trap.
Target SFP Port Number	Displays the SFP port number to be displayed and configured.	
Vendor Name	Displays the vendor name.	
Port Product Number	Displays the product number.	
Port Serial Number	Displays the serial number.	
Transceiver Type	Displays the Transceiver Type.	
RX Power(dBm)	Displays the current, maximum, and minimum values of RX Power(dBm). The maximum and minimum values can be configured.	
TX Power(dBm)	Displays the current, maximum, and minimum values of TX Power(dBm). The maximum and minimum values can be configured.	
Temp(deg.C)	Displays the current, maximum, and minimum values of Temp(deg.C). The maximum and minimum values can be configured.	
Voltage(V)	Displays the current, maximum, and minimum values of Voltage(V). The maximum and minimum values can be configured.	
Bias Current(mA)	Displays the current, maximum, and minimum values of Bias Current(mA). The maximum and minimum values can be configured.	

3.2.29. IGMP Snooping Configuration

Select "Advanced Config" and "IGMP Snooping Configuration" and then "IGMP Snooping Configuration" to open the screen shown in Figure 3-56. On this screen, you can configure the IGMP Snooping settings.

Figure 3-56 IGMP Snooping Configuration

Screen Description

IGMP Snooping Status	Displays the operation status of the IGMP Snooping function.	
	Enable	IGMP Snooping function is enabled.
	Disable	IGMP Snooping function is disabled.
Multicast Filtering Status	Displays the operation status of the multicast filtering function.	
	Enable	The multicast filtering function is enabled.
	Disable	The multicast filtering function is disabled.
Host Port Age-Out Time	Displays the time until a multicast member is released from a multicast group. The factory default setting is 260 seconds.	
Router Port Age-Out Time	Displays the time until the router port is released. The factory default setting is 5 seconds.	
Report Forward Interval	Displays the response time for Proxy Report.	
VLAN ID	Displays the VLAN ID of a multicast group.	
Group Multicast MAC Address	Displays the MAC address of a multicast group.	
Group Members	Displays the ports included in a multicast group.	

3.2.30. VLAN Filter Config

Select "Advanced Config" and "IGMP Snooping Configuration" and then "VLAN Filter Config" to open the screen shown in Figure 3-57. On this screen, you can configure the IGMP Snooping settings.

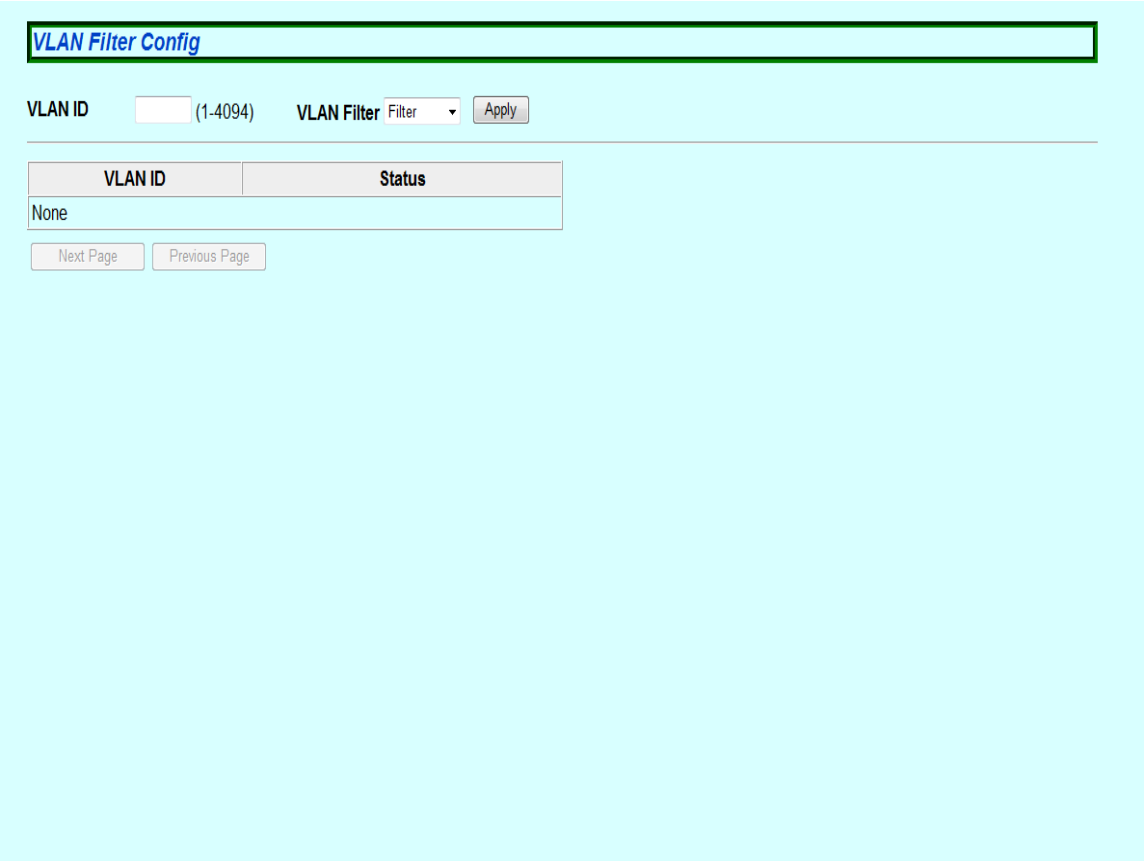


Figure 3-57 VLAN Filter Config

Screen Description

VLAN ID	Displays VLAN ID.
Status	Displays the filter status.

3.2.31. Router Port List

Select "Advanced Config" and "IGMP Snooping Configuration" and then "Router Port List" to open the screen shown in Figure 3-58. On this screen, you can configure the IGMP Snooping settings.

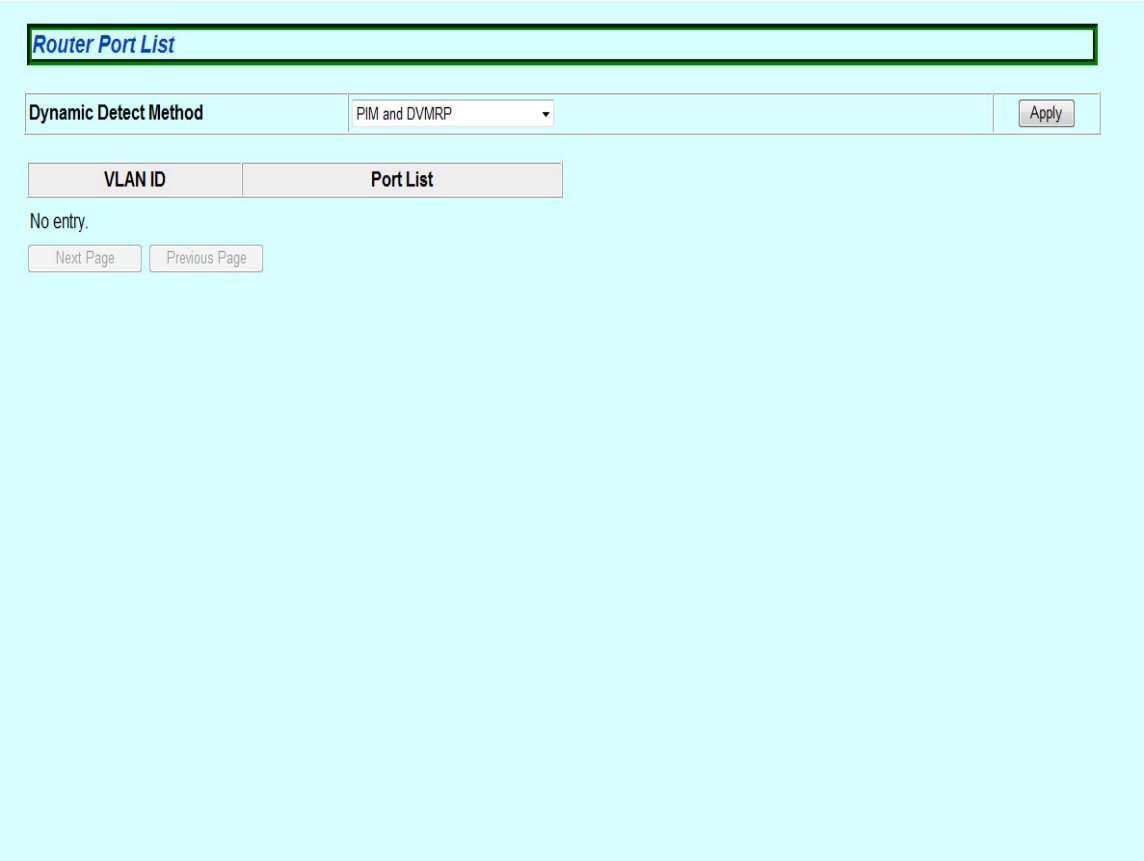


Figure 3-58 Router Port List

Screen Description

VLAN ID	Displays VLAN ID.
Port List	Displays the port list.

3.3. System Tools

3.3.1. Software Update

Select "System Tools" and "Software Update" to open the screen shown in **Figure 3-59**. On this screen, you can update the firmware.

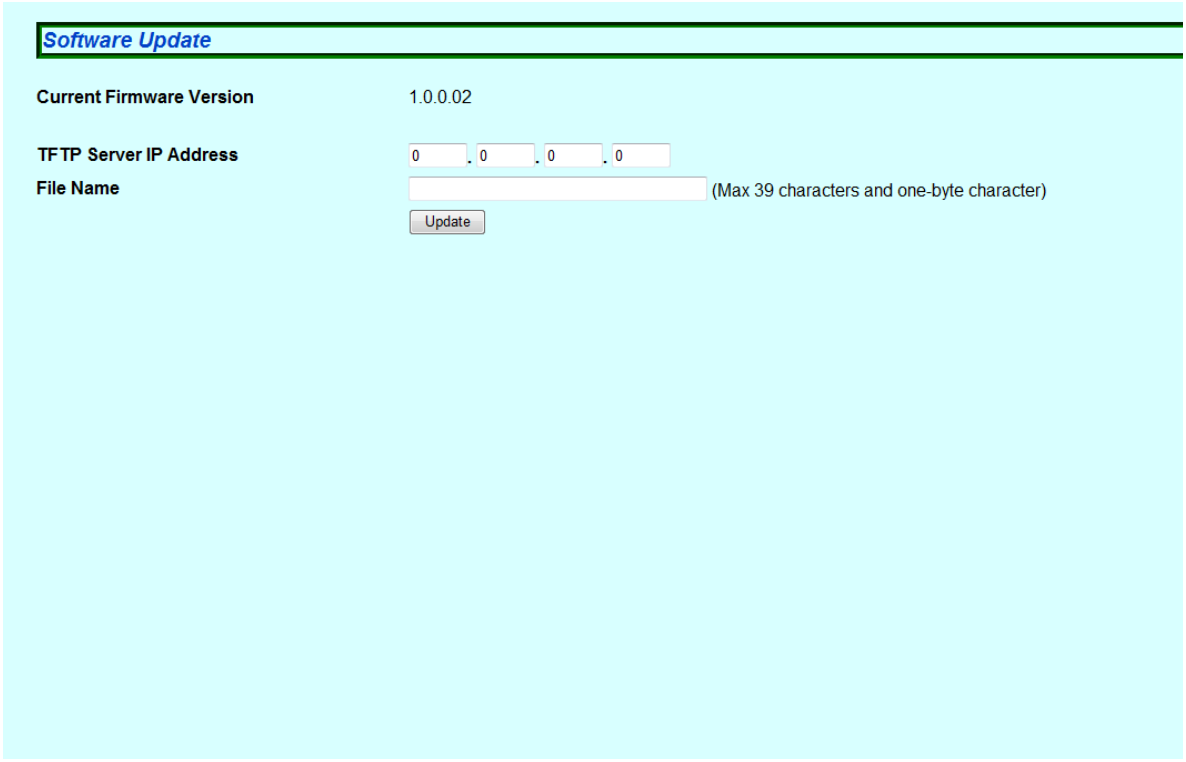


Figure 3-59 Software Update

Screen Description

Current Firmaware Version	Displays the current firmware version.
TFTP Server IP Address	Displays the IP address of the TFTP server on which the firmware for update has been saved.
File Name	Displays the file name of the firmware for update.

Note: Before updating the firmware, you must save the configuration information in accordance with Section 3.3.3. Unless you save the configuration information, the settings configured so far will be deleted upon restart.

3.3.2. Reboot

Select "System Tools" and "Reboot" to open the screen shown in Figure 3-60. On this screen, you can reboot this switch.

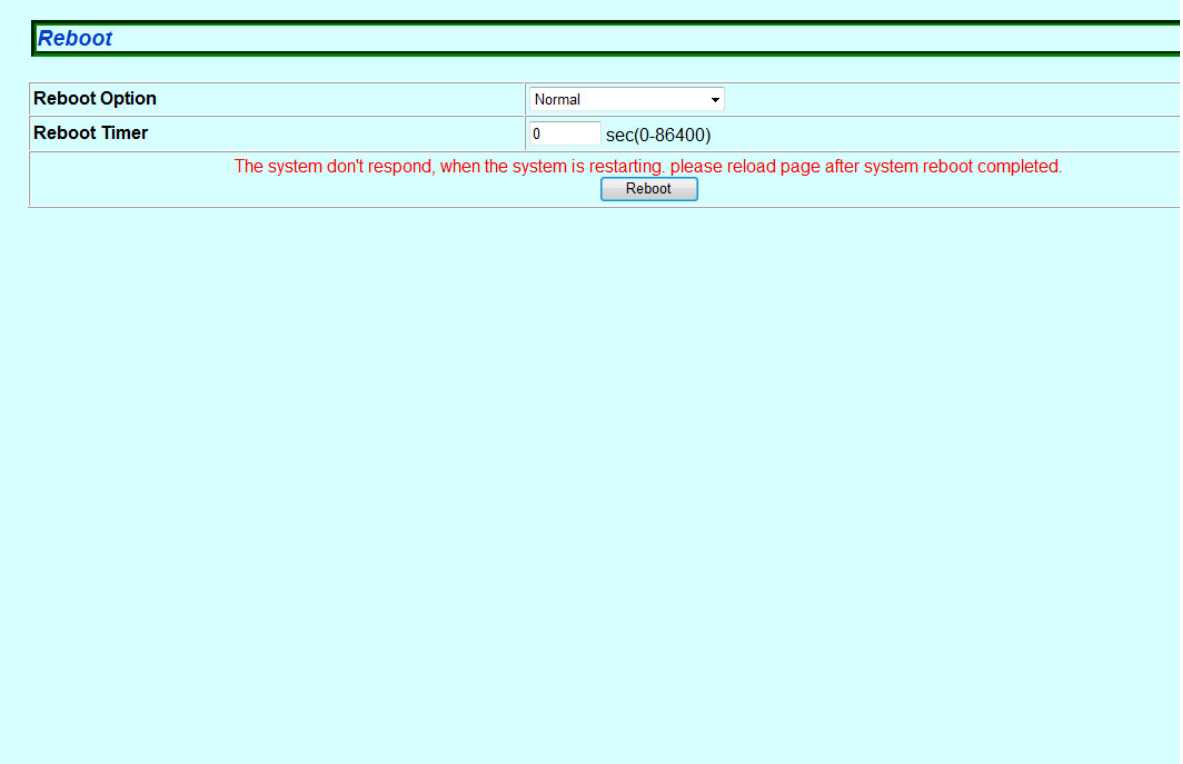


Figure 3-60 Reboot

Screen Description

Reboot Option	Displays the reboot method. "Normal" is the factory default setting.	
	Normal	Normal reboot is conducted.
	Factory Default	All the settings are reset to the factory default settings.
	Factory Defauly Except IP	All the settings except the IP address are reset to the factory default settings.

Note: There is no response while reboot is in progress. Reload the settings after reboot is completed.

3.3.3. Save Current Config

Select "System Tools" and "Save Current Config" to open the screen shown in **Figure 3-61**. On this screen, you can save configuration information.

Figure 3-61 Save Current Config

Click Save to save this switch's settings to its internal RAM. Unless the configuration information is saved, the settings configured so far will not be reflected after restart.

After saving is completed, a message "**Save Completed"** is displayed.

3.3.4. Statistics

Select "System Tools" and "Ststistics" to open the screen shown in Figure 3-62. On this screen, you can check the statistic information.

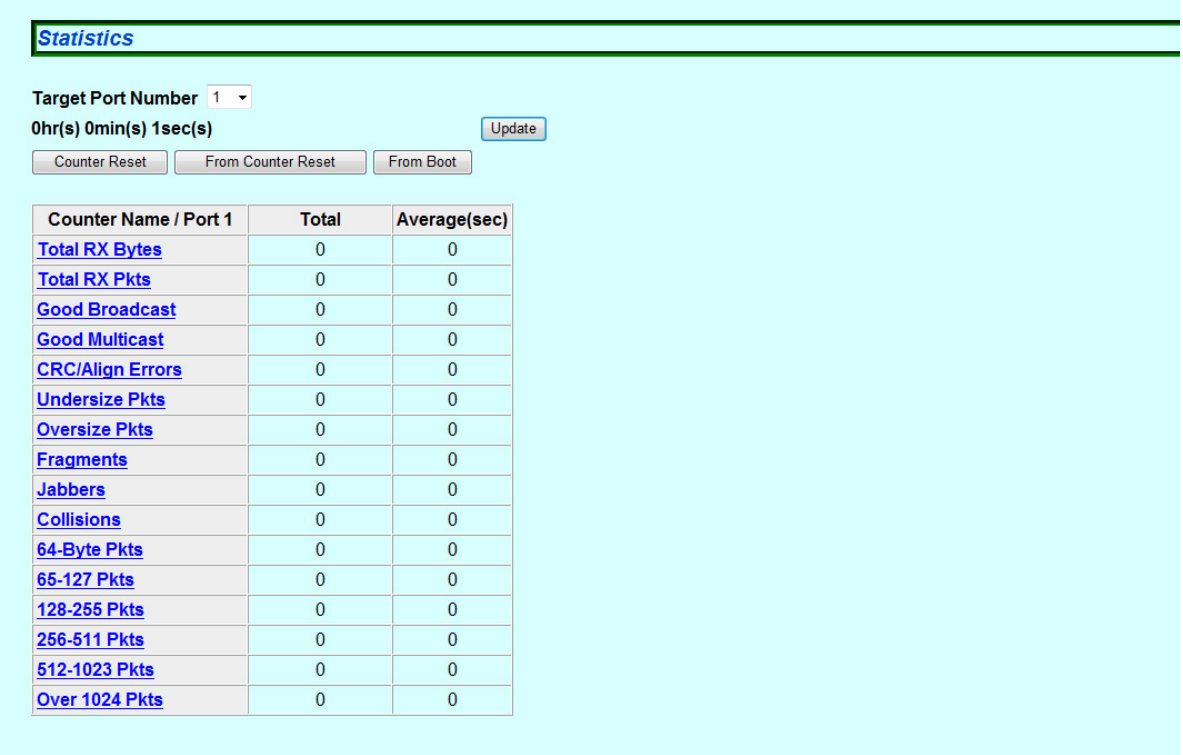


Figure 3-62 統計情報

Screen Description

Target Port Number	Displays the port number.
Time	Displays the time elapsed since power-on or counter reset.
Counter Name	Displays the counter name.
Total	Displays the counter value.
Average(sec)	Displays the average counter value per second.

The counter values are listed below.

Total RX Bytes	Displays the number of bytes of all packets received.
Total RX Pkts	Displays the number of all packets received.
Good Broadcast	Displays the number of broadcast packets received.
Good Multicast	Displays the number of multicast packets received.
CRC/Align Errors	Displays the number of error packets that have a normal packet length (64 to 1518 bytes); however, have an error found by an error detection code (FCS). If the packet length is an integral multiple of one byte, the error is a CRC (FCS) error. If not, it is an alignment error.
Undersize Pkts	Displays the number of error packets that have a packet length less than 64 bytes; however, have no other errors.
Oversize Pkts	<When the Jumbo status is Disabled> Displays the number of packets having a packet length greater than 1518 bytes. <When the Jumbo status is Enabled> Displays the number of packets having a packet length greater than 9216 bytes.
Fragments	Displays the number of error packets that have a packet length less than 64 bytes and have a CRC or alignment error.
Jabbers	Displays the number of error packets that have a packet length less than 1518 bytes and have a CRC or alignment error.
Collisions	Displays the number of packet collisions.
64-Byte Pkts	Displays the total number of packets having a packet length of 64 bytes.
65-127 Pkts	Displays the total number of packets having a packet length of 65 to 127 bytes.
128-255 Pkts	Displays the total number of packets having a packet length of 128 to 255 bytes.
256-511 Pkts	Displays the total number of packets having a packet length of 256 to 511 bytes.
512-1023 Pkts	Displays the total number of packets having a packet length of 512 to 1023 bytes.
Over 1024 Pkts	Displays the total number of packets having a packet length of 1024 bytes. * This item is displayed when the Jumbo Status is Disable.

Click a counter name to open the screen shown in Figure 3-63. This screen displays the totals and per-second averages of the counter by port.

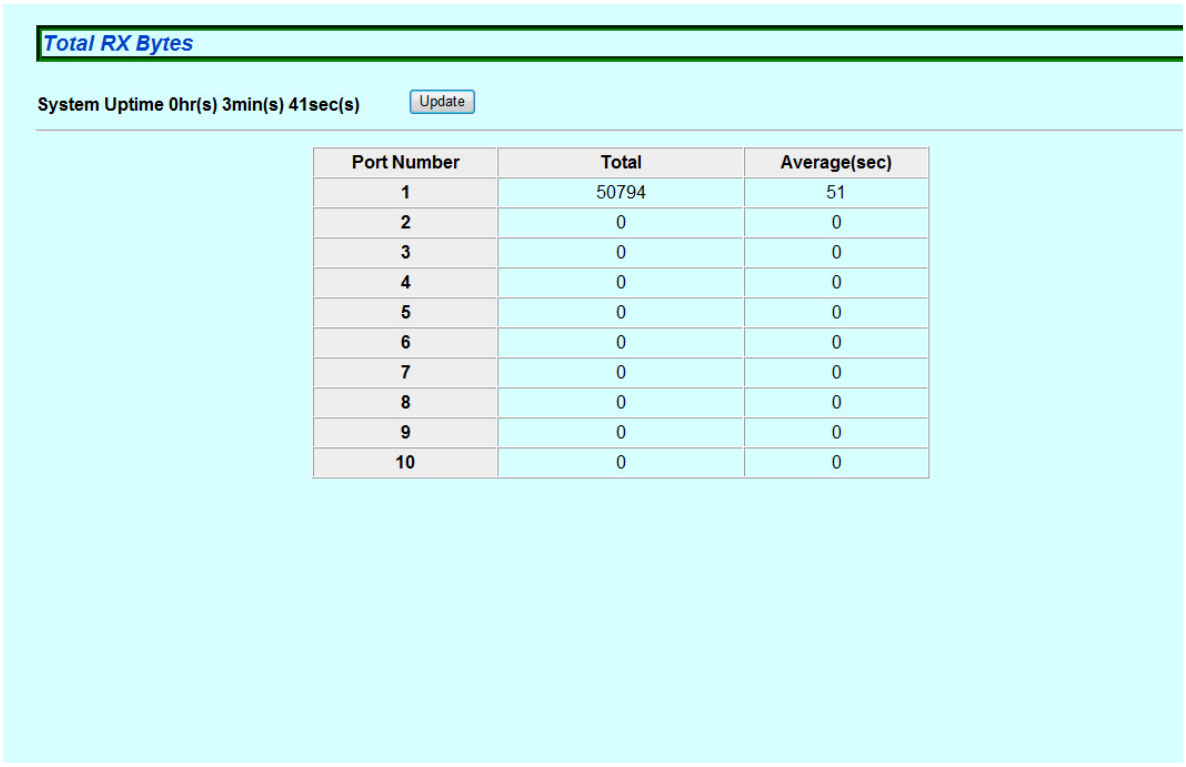


Figure 3-63 Statistic Information of a Counter by Port

Screen Description

Port Number	Displays the port number.
Total	Displays the counter value.
Average(sec)	Displays the average counter value per second.

3.3.5. System log

Select "System Tools" and "System log" to open the screen shown in Figure 3-64. This screen displays the logs of events that occurred on this switch. By viewing events, you can keep track of phenomena that occurred on this switch, which are useful for network management.

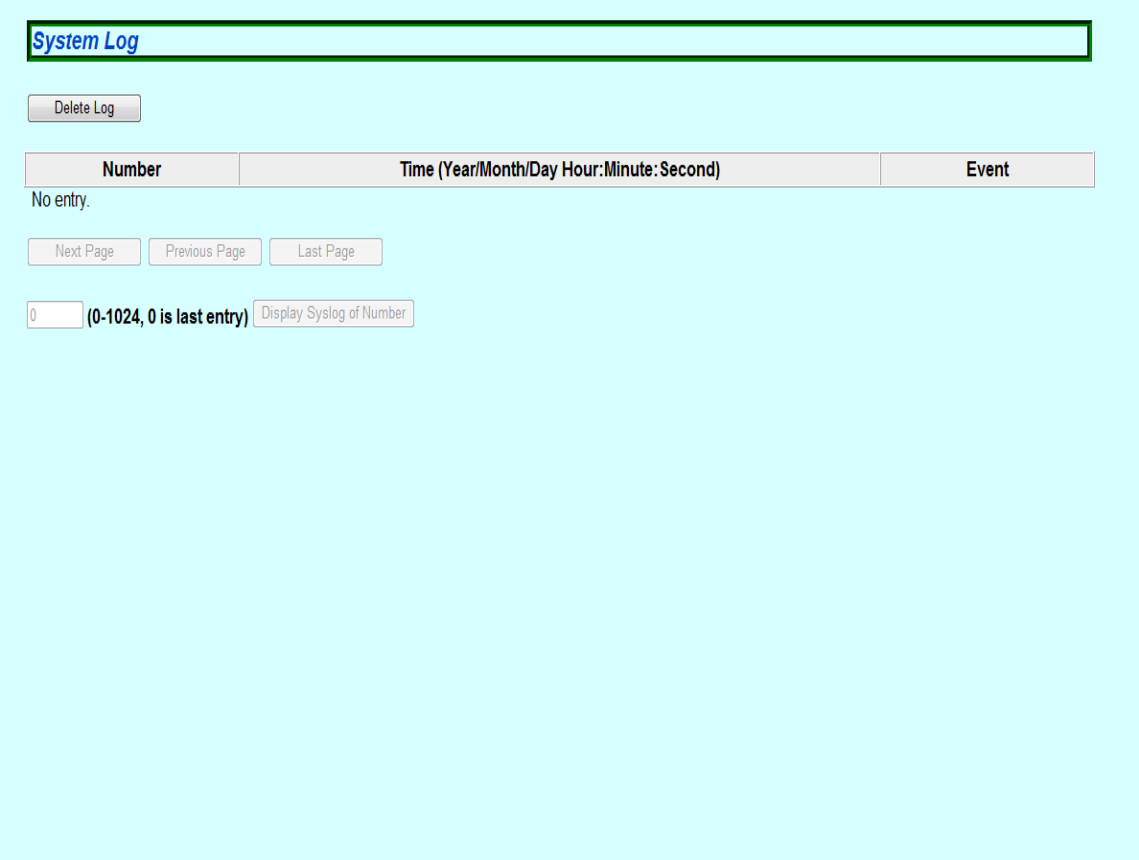


Figure 3-64 System log

Some of the events displayed on this screen are linked to SNMP traps. Events for which trap occurrence has been configured are displayed. The relationship with traps are shown below.

Screen Description

Entry	Displays the event number.	
Time	Displays the time when the event occurred. The cumulative time since power-on is displayed if 時刻設定 is not configured.	
Event	Displays the description of the event that occurred on this switch.	
	Login from console	There was login from the console port .
	Login from telnet, xxx.xxx.xxx.xxx	There was login from Telnet.
	Configuration changed	The configuration was changed.
	Runtime code changes	The firmware was changed.
	Configuration file upload	The configuration file was transferred to the TFTP server.
	Configuration file download	The configuration file was transferred from the TFTP server.
	Reboot: Normal	This switch rebooted.
	Reboot: Factory Default	This switch rebooted and reset the settings to factory default.
	Reboot: Factory Default Except IP	This switch rebooted and reset the settings except the IP address to factory default.
	SNTP first update to yyyy/ mm/dd hh:mm:ss	This switch accessed SNTP server to retrieve time information.
	! Stus: xxxxxxxx IP: x Code: x Add: xxxxxxxx ! Tsk: "xxxx" P:xxxxxxxxx Pri: xx	Displays the system information when an exception occurs.
	Port-*xx* Link-up	The port link is up.
	Port-*xx* Link-down	The port link is down.
	Port-*xx* Power ON notification	The power supply to the target port is turned ON.
	Port-*xx* Power OFF notification	The power supply to the target port is turned OFF.
	System Cold Start	This switch powered on.

Note: Up to 1024 system logs are saved. If 1025 or more system logs are created, the oldest system log will be deleted and overwritten with a new log.

3.3.6. Config File Transfer

Select "System Tools" and "Config File Transfer" to open the screen shown in **Figure 3-65**. On this screen, you can upload and download configuration files.

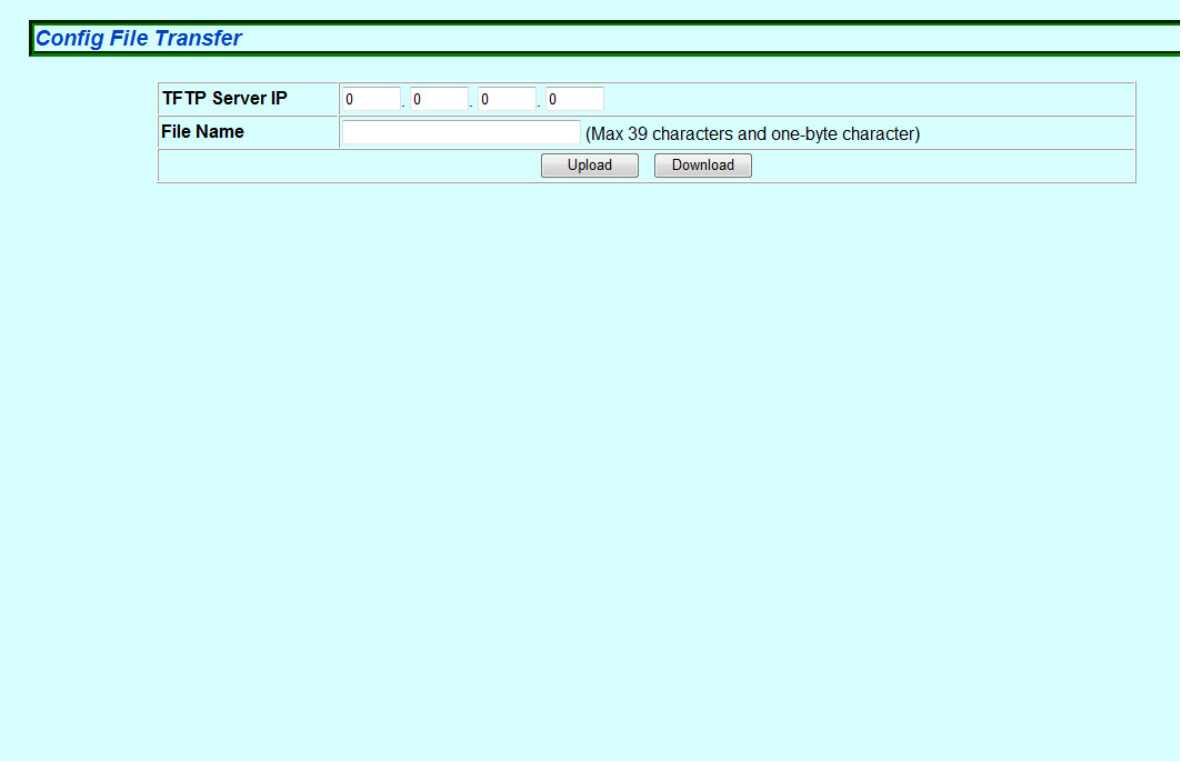


Figure 3-65 Config File Transfer

Screen Description

TFTP Server IP	Displays the IP address of the TFTP server that saves and reads configuration information.
File Name	Displays the file name of the configuration information.

Select "Upload" to save the configuration information to the TFTP server or "Download" to load the configuration information to this switch.

3.3.7. Ping Execution

Select "System Tools" and "Ping Execution" to open the screen shown in **Figure 3-66**. On this screen, you can send a ping.

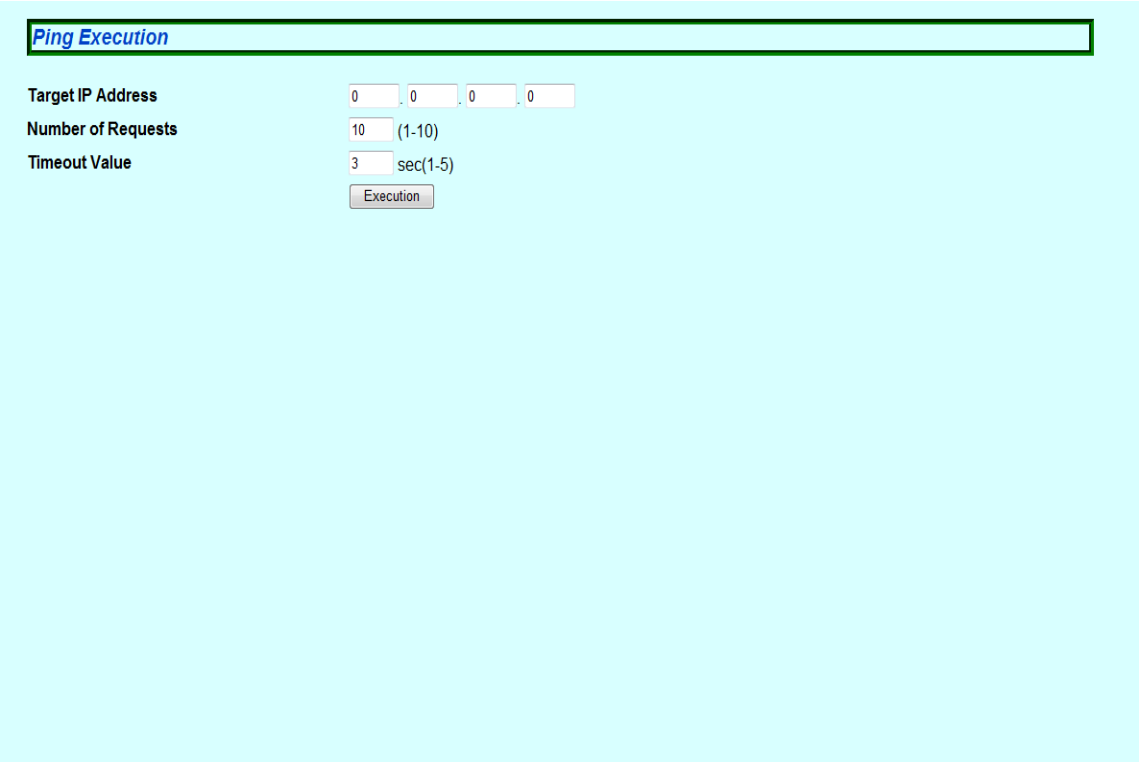


Figure 3-66 Ping Execution

Screen Description

Target IP Address	Displays the IP address of the target to which a ping is sent. "0.0.0.0" is the factory default setting.
Number of Request	Displays the number of times a ping is to be sent. "10" is the factory default setting.
Timeout Value	Displays the timeout time. "3" is the factory default setting.
Result	Displays the ping execution result.

3.3.8. Watchdog Timer

Select "System Tools" and "Watchdog Timer" to open the screen shown in Figure 3-67. On this screen, you can set the Watchdog Timer settings.

Figure 3-67 Watchdog Timer

Screen Description

Watch Dog Timer	Displays the status of the Watchdog Timer function.	
	Enable	Enables the Watchdog Timer.
	Disable	Disables the Watchdog Timer.

4. Specifications

Refer to "Operation Manual for Menu Interface" for your switching hub to read the specifications.

5. Easy IP Address Setup Function

The following are points to note when using the easy IP address setup function.

[Known compatible software]
Panasonic Corporation "Easy IP Setup" V3.01/V4.00/V4.24R00
Panasonic System Networks Co., Ltd. "Easy Config" Ver3.10R00
Panasonic Eco Solutions Networks Co., Ltd. "ZEQUOASSIST" Ver. 2.0.3.0

[User-settable items]
* IP address, subnet mask, and default gateway
* System name
  * This item can be configured only with the software "Easy Config."
    In the software, the item is displayed as "Camera name."

[Restrictions]
* The time for accepting setting changes is limited to 20 minutes after power-on to ensure security.
  However, you can change settings regardless of the time limit if the IP address, subnet mask, default gateway, user name, and password values are set to factory defaults.
  * Even after the time limit is reached, you can check the current settings displayed in a list.
* The following function of the software "Easy Config" cannot be used.
  - "Auto setup function"

*Please contact your manufacturer for information about network cameras.

6. Troubleshooting

If you find any problems, please take the following steps to check.

◆ LED

■ The POWER LED (Power) is not lit.

- ● Check if the power cord is disconnected. Please confirm that the power cord is securely connected to the power port
- ● Is the Switching Hub being used at a temperature between 0 and 50 ℃ ?Use the Switching Hub in its operating temperature range.

Note: If used at a temperature out of the operating temperature range, the protection equipment becomes activated and PoE power supply stops.The default operating temperature range is 0 to 50 ℃ .

■ The Port LED is not lit in Status mode.

- ● Is the cable correctly connected to the target port?
- ● Is the cable appropriate to use?
- ● Is the terminal connected to the relevant port conforming with 10BASE-T,100BASE-TX, or 1000BASE-T standerd?
- ● Auto-negotiation may have feiled.Check the port settings of this Switching Hub or the terminal settings.

■ The Port LED (Left) lights in failed.

Check the port settings of this Switching Hub or the terminal settings.

■ LOOP HISTORY LED Blinks in orange.

- ● This is no notify that there is a port in which a loop is occurring, or has been removedwithin 3days.

◆ Communications are slow.

- ● Are the communication speed and mode settings correct? If the proper communication mode signal cannot be obtained, apply half-duplex mode. Please reconfirm autonegotiation setting.
- ● Is not the utillization ratio of the network to which this Switching Hub is connected too high? Try separating this Switching Hub from the network.

◆ Communications fail.

- ● Is the link-up correct? If embedded saving mode is set to Full, change the setting to Half or Disabled.
- ● Is the Port LED (right) lit in orange? If the Port LED (right) lit in orange, the port is shut down by the loop detection function. Eliminate the loop connection of the device connected to the port first, and then wait longer than the time required for automatic recovery from the shutdown by the loop detection function, or release the port shutdown from the setting screen.

7. After-sales Service

1. Warranty card
   A warranty card is included in the operating instructions (paper) provided with this switch. Be sure to confirm that the date of purchase, dealer (company) name, etc., have been entered in the warranty card and then receive it from the shop. Read it carefully, and then keep it in a safe place. The warranty period is one year from the date of purchase.

2. Repair request
   If a problem is not solved even after taking the steps shown in the "Trouble-shooting" section in this manual, please use the Memo shown on the next page and make a repair request with the following information to your dealer.
   - ◆ Product name ◆ Model number
   - ◆ Product serial number (an 11-digit number attached on the back of the product.)
   - ◆ Firmware version (The number after "Ver." labeled on the unit package)
   - ◆ Problem status (Please give as concrete information as possible.)
   - ● Within the warranty period:
     Repair service will be provided in accordance with the conditions stipulated in the warranty card.
     Please bring your product and warranty card in your dealer.
   - ● After the warranty period expires:
     If our check determines that your product is repairable, a chargeable repair service is available upon your request.
     Please contact your dealer.

3. Inquiries about after-sales service and the product
   Contact contact your dealer, or call/fax the following number.

Memo (Fill in for future reference)

<table>
<tr><td rowspan="2">Date of purchase</td><td colspan="5" rowspan="2"></td><td>Product name</td><td colspan="4">Switch-M</td></tr>
<tr><td>Model No.</td><td colspan="4">PN28</td></tr>
<tr><td rowspan="2">Firmware version (*)</td><td colspan="3">Boot Code</td><td colspan="7"></td></tr>
<tr><td colspan="3">Runtime Code</td><td colspan="7"></td></tr>
<tr><td rowspan="2">Serial No.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="11">(11 alphanumeric characters labeled on the product)</td></tr>
<tr><td>Shop/
Sales company</td><td colspan="11">Tel</td></tr>
<tr><td>Customer service contact</td><td colspan="11">Tel</td></tr>
</table>

(* You can check the version on the screen described in section 4.4 of the Operation Manual - Menu Interface.)

Panasonic Eco Solutions Networks Co., Ltd.
2-12-7, Higashi-Shimbashi, Minato-ku, Tokyo Japan, 105-0021
URL: http://panasonic.co.jp/es/pesnw/english/

P0115-5019