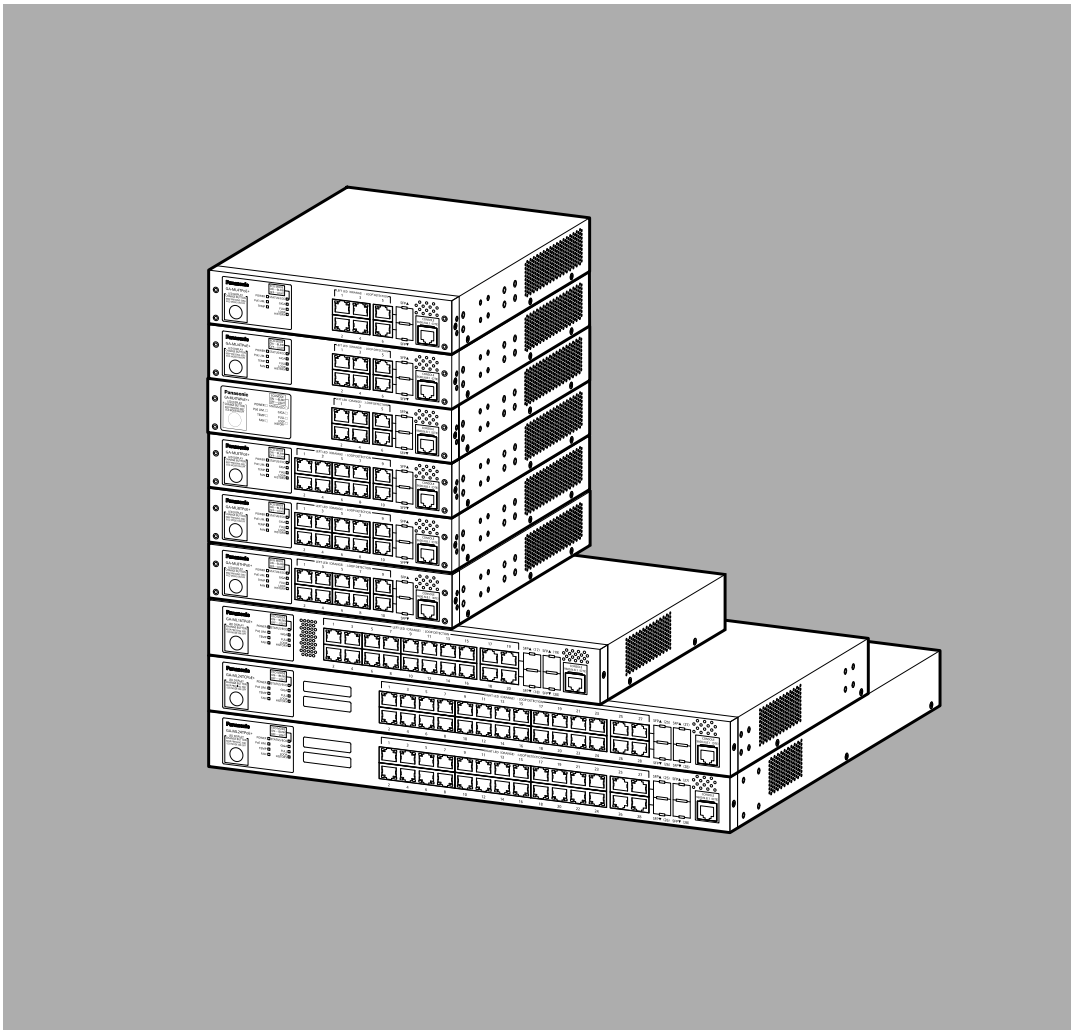
Panasonic

GA-ML Series

Menu Reference

Model Number PN260493N/PN260493H/
PN260496/PN260893/PN260893H/
PN260894/PN261693/PN262492/
PN262493



The target model for this Menu reference is as follows

Model Name	Model Number	Firmware Version
GA-ML4TPoE+	PN260493N	3.0.0.01 and above
GA-MLi4TPoE+	PN260493H	3.0.0.01 and above
GA-ML4TWPoE++	PN260496	3.0.0.01 and above
GA-ML8TPoE+	PN260893	3.0.0.01 and above
GA-MLi8TPoE+	PN260893H	3.0.0.01 and above
GA-ML8THPoE+	PN260894	3.0.0.01 and above
GA-ML16TPoE+	PN261693	3.0.0.01 and above
GA-ML24TCPoE+	PN262492	3.0.0.01 and above
GA-ML24TPoE+	PN262493	3.0.0.01 and above

Table of Contents

1. Introduction

After turning on the power of this device, it operates as a normal switching hub. To use a function of the SNMP management and specific function, the configurations such as a console port, Telnet, and SSH are needed. This part describes the configurations of the device.

Note: You cannot access a destination with Telnet and SSH if an IP address is not set. Configure the IP address (as minimum requirements) through a console port beforehand to access it. See section 3.1 for the IP address settings.

1.1. Connecting to a Console Port

Connect the terminal, where a terminal emulator operates, to a console port of the RJ 45 model of this device. The terminal includes the asynchronous terminal produced by DEC and the hyper terminal (which is included in the Windows XP or earlier version). Both the asynchronous terminal and the terminal emulator above are compatible with VT100. The communication condition of asynchronous terminal is configured, as follows.

- Communication system: RS-232C (Compatible with ITU-TS V.24)
- Emulation mode: VT100
- Communication speed: 9,600bps
- Data-length: 8 bits
- Stop bits: 1 bit
- Parity control: Nothing
- Flow control: Nothing
- Communication connector: RJ45

2. Configuration

2.1. Log-in

After connecting to a console port, the appearance of the command prompt becomes the log-in screen as **Figure 2-1.** Check the communication settings if the log-in screen is not displayed.

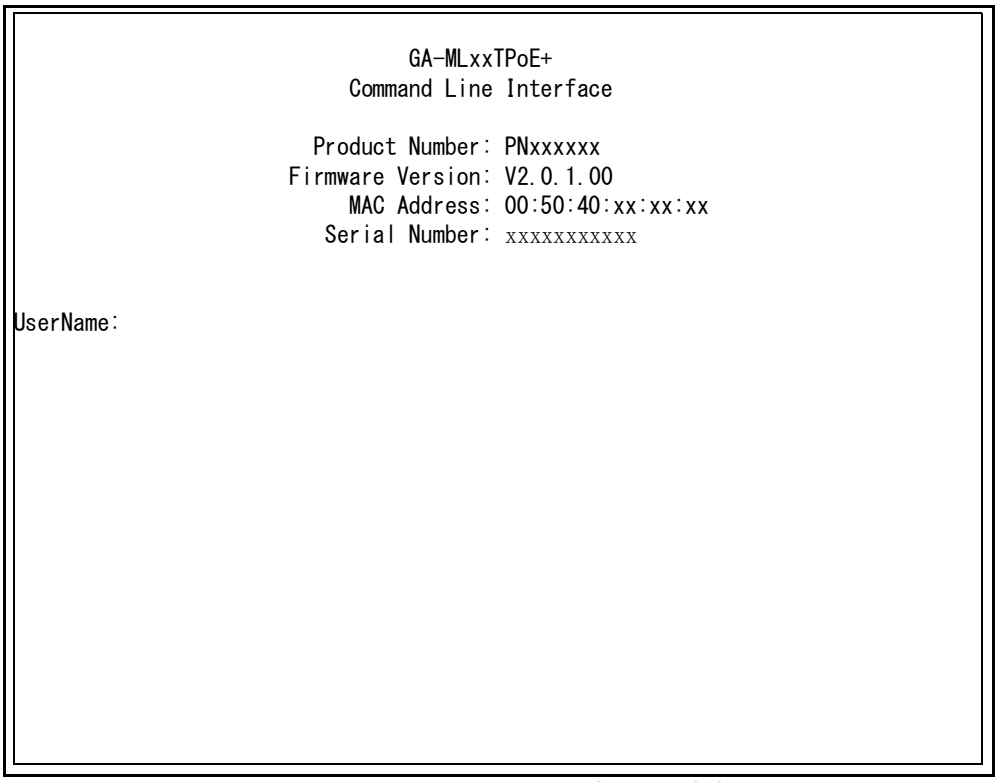


Figure 2-1: Log-in Screen (Console)

Do the following procedure on the screen.

① Type manager on a user-name column, and then press Enter.
Log-in name as Figure 2-1:
The log-in name is set to manager for the factory default settings.

② As Figure 2-1, type manager on a password column, and then press Enter.
Password:
The password is set to manager, which is the same with the log-in name for the factory default settings.

③ Enter the log-in name and the password accurately as Figure 2-1, and then FA-MLxxTPoE+> is displayed.
If the password or log-in name is incorrect, GA-MLxxTPoE+> is not displayed.

You can change the log-in name and password. See the configuration of access condition for details on the method of changing (System Security Configuration).

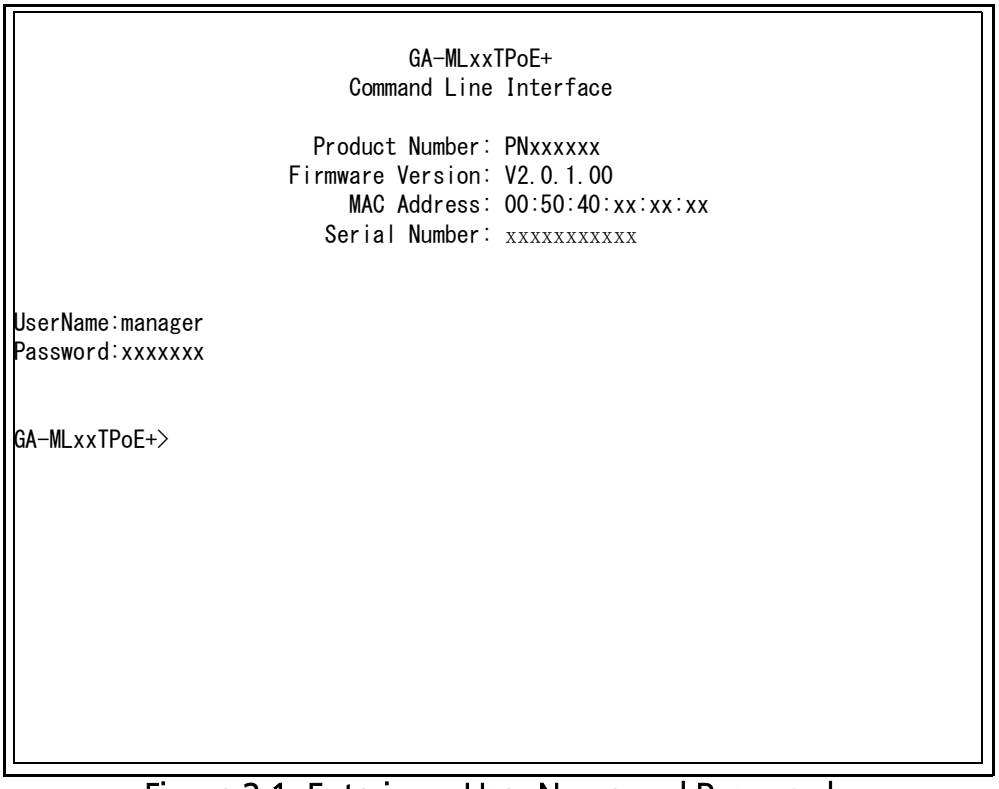


Figure 2-1: Entering a User Name and Password

Note: All of the passwords are displayed as "*".

Note: For Telnet, four users can access concurrently (and maximally).

2.2. Basic Operation on the Screen

Each screen of this device consists of the following configuration.

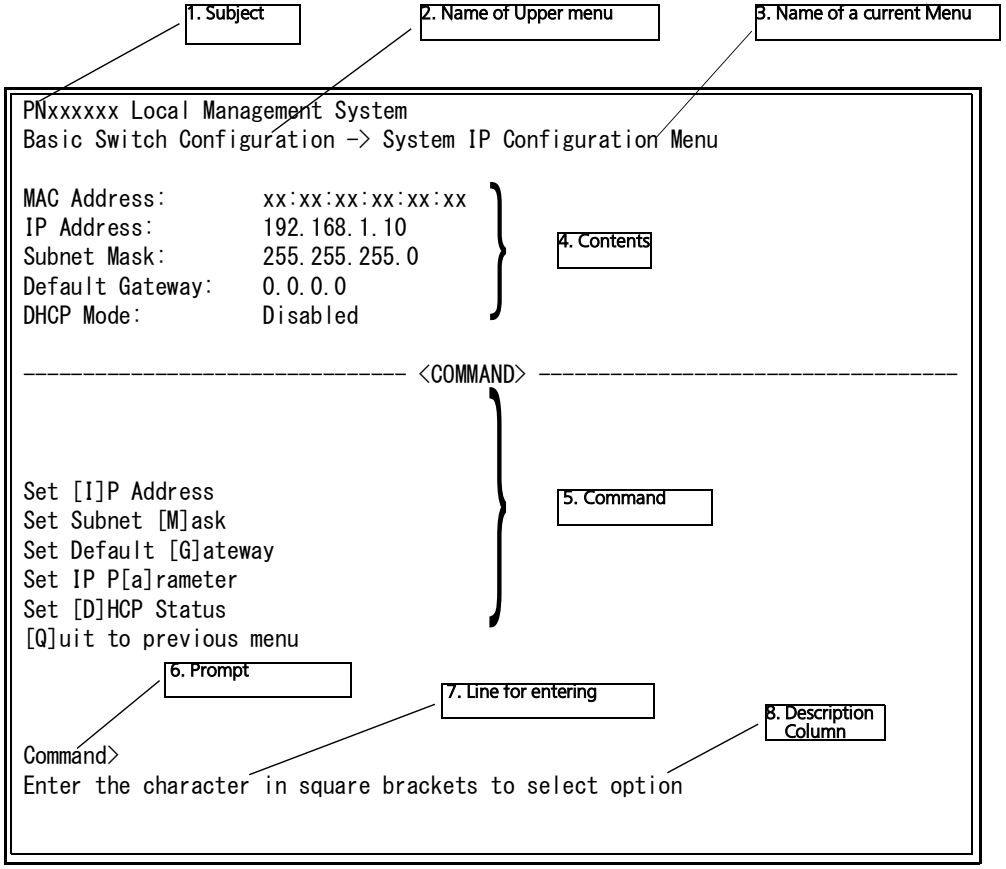


Figure 2-3: Screen Configuration

Screen Description

1.	Subject	This is the subject of this screen. “Local Management System” is displayed when you access from a console. Also, “Remote Management System” is displayed when accessing by using Telnet.
2.	Name of the Upper Menu	Displays the name of the upper menu. Press Q (command) of the following to move to the menu screen, which is displayed on this column.
3.	Name of a Current Menu	Displays the menu name of the current screen.
4.	Content	Displays the content, which is configured on the current screen.
5.	Command	Displays a usable command on a current screen. Usable commands depend on the screen. See this column when operating it.
6.	Prompt	Entering a command switches the display, and then the direction of what to do next is displayed. Enter that based on the display of this column.
7.	Line for Entering a Command	Enter a command or the configuration content.
8.	Description (Column)	The description or error of the current screen is displayed.

Activate the screen by entering characters on this device. You cannot operate the screen –- for example, a cursor key. For the enabled characters on each screen, they are displayed as the character, which is encircled by [ ] for the command part. Error messages are displayed on the description column if you enter the disabled command or configuration.

2.3. Switching to the Menu Screen

Log into section 2 to operate this section.

① Type enable as **Figure 2-4** (**Switching to the Menu Screen**), and then the appearance of GA-MLxxTPoE+> becomes GA-MLxxTPoE+#.
② Type Menu as **Figure 2-4** (**Switching to the Menu Screen**).
③ Then, you can see the menu screen as **Figure 2-4** (**Menu Screen**) below.

```
                              GA-MLxxTPoE+
                          Command Line Interface

                        Product Number: PNxxxxxx
                      Firmware Version: V2.0.1.00
                           MAC Address: 00:50:40:xx:xx:xx
                         Serial Number: xxxxxxxxxxx


UserName:manager
Password:*******


GA-MLxxTPoE+>enable
GA-MLxxTPoE+#menu
```

Figure 2-4: Switching to the Menu Screen

```
PNxxxxxx Local Management System

Main Menu


[G]eneral Information
[B]asic Switch Configuration...
[A]dvanced Switch Configuration...
[S]tatistics
Switch [T]ools Configuration...
Save Configuration to [F]lash
[Q]uit









Command>
Enter the character in square brackets to select option
```

Figure 2-4: Menu Screen

2.4. Main Menu

After you log-in, the appearance of the command prompt becomes **Main Menu** as **Figure 2-6**. **Main Menu** of this device, which consists of **Main Menu** and **Sub menu**, has a tree structure based on **Main Menu**. Enter the command characters to move to the sub menu, and then press Q (command) to return to the top menu. The second line of the screen provides you with menus available when using it.

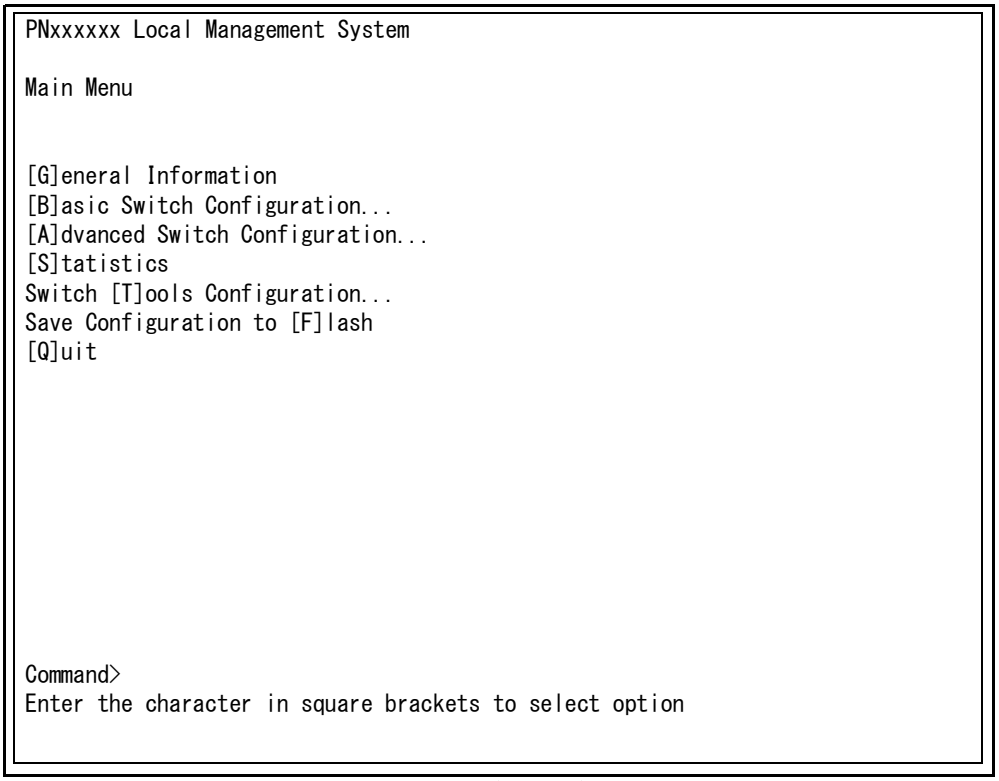


Figure 2-6: Main Menu

Screen Description

General Information	Displays the information on the hardware and firmware of this device, and the contents of the address configuration.
Basic Switch Configuration	Configures a basic function of this device (e.g. IP address, SNMP, and port configuration).
Advanced Switch Configuration	Configures the extension function of this device (e.g. the function of VLAN, link aggregation, a spanning tree, QoS, IGMP snooping, and PoE power supply).
Statistics	Displays the statistic information of this device.
Switch Tools Configuration	Configures the bells and whistles of this device (e.g. firmware version-up, saving and loading the configuration, Ping, and system-log).
Save Configuration to Flash	Writes in the built-in memory for the content configured on this device.
Quit	Ends **Main Menu** to return to the log-in screen.

2.5. General Information Menu

Press G at the command prompt on **Main Menu**, and then you can see **General Information Menu** as **Figure 2-7.** The screen allows you to browse the information on your device. In addition, this screen is used to display the content. There are no items to be configured.

```
PNxxxxxx Local Management System
Main Menu -> General Information

System up for:              000day(s), 01hr(s), 18min(s), 22sec(s)
Boot / Runtime Code Version: 1.0.0.01 / 2.0.1.00
Serial Number:              xxxxxxxxxxxx
Hardware Information
  Version:                  0
  CPU Utilization:          xx%
  DRAM / Flash Size:        484M / 128M
  DRAM User Area Size:      Free: xxxxxxxx bytes / Total: xxxxxxxx bytes
  System Fan Status:        Good
  System Temperature:       Thermal Sensor/0 xxC  Thermal Sensor/1 xxC
Administration Information
  Switch Name:              GA-MLxxTPoE+
  Switch Location:
  Switch Contact:
System Address Information
  MAC Address:              00:50:40:xx:xx:xx
  IP Address:               0.0.0.0
  Subnet Mask:              0.0.0.0
  Default Gateway:          0.0.0.0
  DHCP Mode:                Disabled

Press any key to continue...
```

Figure 2-7: General Information

Screen Description

System up for	Displays the total time, which is needed since the activation of your device.	
Boot / Runtime Code Version	Displays a firmware version of your device. This indicates the version; the left side is Boot Code, and the right side is Runtime Code. (The firmware upgrade described in section **6.1** becomes the upgrade of Runtime Code.)	
Serial Number	Displays the serial number of your device.	
Hardware Information	Displays hardware information.	
	Version	Displays the hardware version.
	CPU Utilization	Displays the CPU utilization.
	DRAM / Flash Size	Displays the DRAM implemented and the FLASH-capacity.
	DRAM User Area Size	Displays the capacity of a whole memory available and the empty-memory capacity.
	System Fan Status	Displays an operation condition (or status) of the fan implemented. "Good" is displayed during the normal operation, and "Fail" is displayed during the abnormality and stoppage.
	System Temperature	Displays the temperature of the internal equipment. The temperature sensor measures CPU and System.
Administration Information	Items displayed on this part are configured by CLI.	
	Switch Name	Displays the name of your device.
	Switch Location	Displays the installation site of your device configured. The factory default settings is nothing.
	Switch Contact	Displays the contact information configured. The factory default settings is nothing.
System Address Information	Items displayed on this part are set by "System IP Configuration" of section **3.1**.	
	MAC address	Displays a MAC address of your device. As this value is unique per individual device, it is not changeable.
	IP Address	Displays the IP address, which is set to your device. Nothing is configured on the factory default settings, and thus "0.0.0.0" is displayed. See section **3.1** for the configuration.
	Subnet Mask	Displays the subnet mask, which is configured to your device. Nothing is configured for the factory default settings, and thus "0.0.0.0" is displayed. See section **3.1** for the configuration.
	Default Gateway	Displays the IP address of a router, which can become a default gateway. Nothing is configured for the factory default settings, and thus "0.0.0.0" is displayed. See section **3.1** for the configuration.
	DHCP Mode	Displays the configuration if a DHCP is used to obtain an IP address. See section **3.1**.

2.6. Save Configuration to Flash

Press F on **Main Menu** to see Save Configuration to Flash, as **Figure 2-8** below. Select this command to save the content, which is configured on your device, into the built-in memory. The appearance of the command prompt becomes "Save current configuration?(Y/N)" on this screen. Press Y to save it, and N otherwise. If you do not save the configuration on this screen, the content configured is deleted when restarting or powering off.

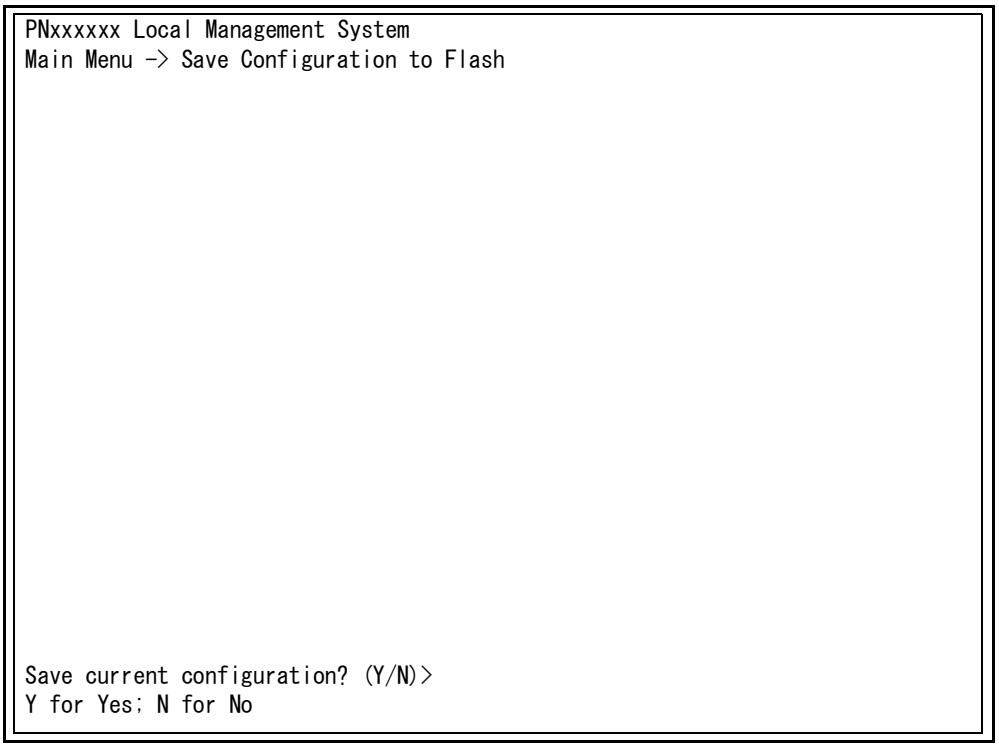


Figure 2-8 A: Save Configuration to Flash

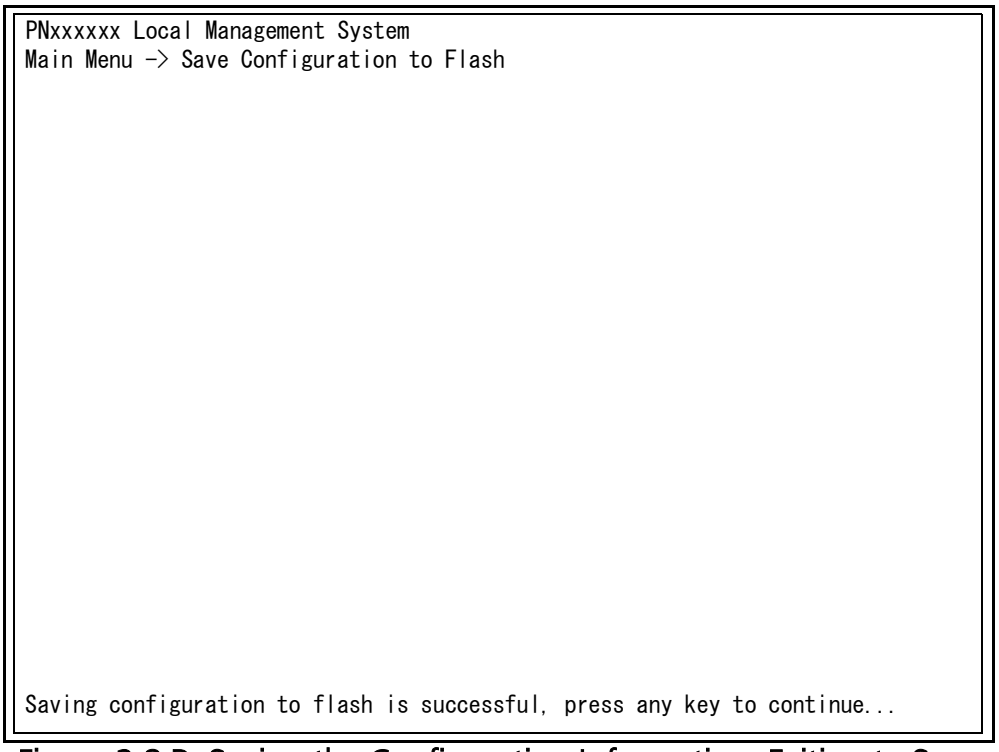


Figure 2-8 B: Saving the Configuration Information: Exiting to Save

2.7. Command-line Interface (CLI)

Press C (command) on **Main Menu**, and then the appearance of the screen becomes as **Figure 2-10**. You can configure on a command line instead of the menu format from this screen. See the configuration method as it is described on Operation manual (CLI). Type logout at the command prompt to move from CLI to Menu.

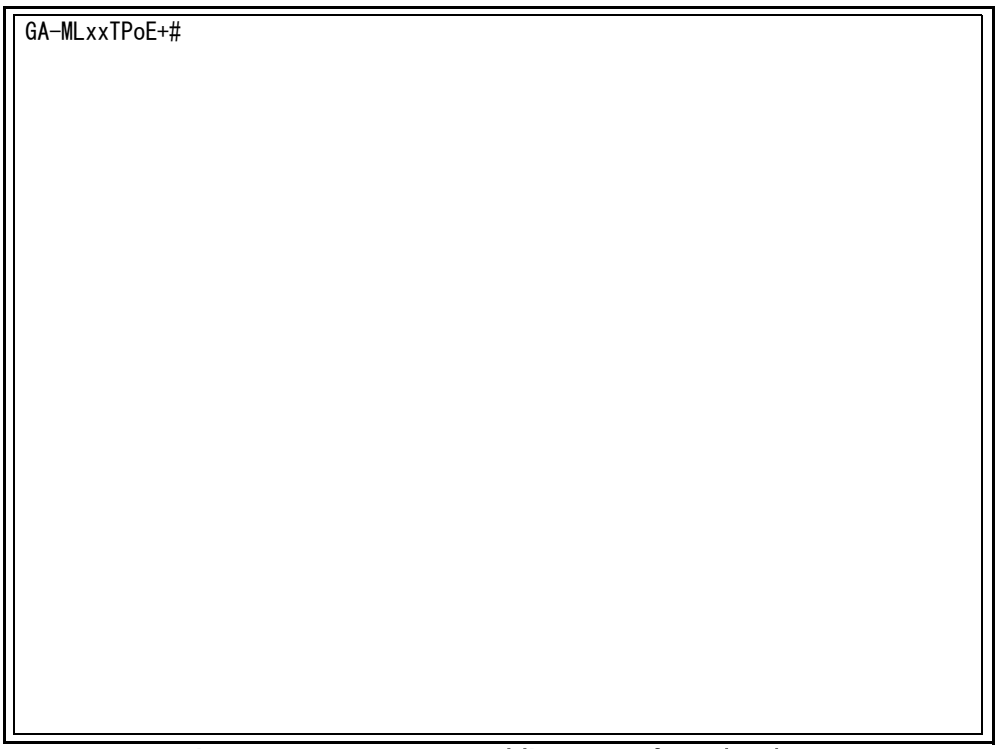


Figure 2-10: Command-line Interface (CLI)

2.8. Log Out

Press Q (command) on Main Menu, and then the screen returns to the log-in screen when accessing from a console. In addition, accessing through Telnet or SSH is disconnected. Do the procedure for logging in the 2nd section to operate again. In addition, after passing the time of time-out, which is configured as the access condition of section 3.5, the appearance of the system becomes log-out, automatically.

3. Basic Switch Configuration

Press B (command) on **Main Menu**, and then you can see the **Basic Switch Configuration** menu as **Figure 3-1**. This screen allows you to configure the IP address, SNMP, a port configuration, a spanning tree, and an access control.

You can configure the IP address, SNMP, and ports on this screen.

You can configure the IP address, SNMP, a port configuration, the power-saving mode, and access-control on this screen.

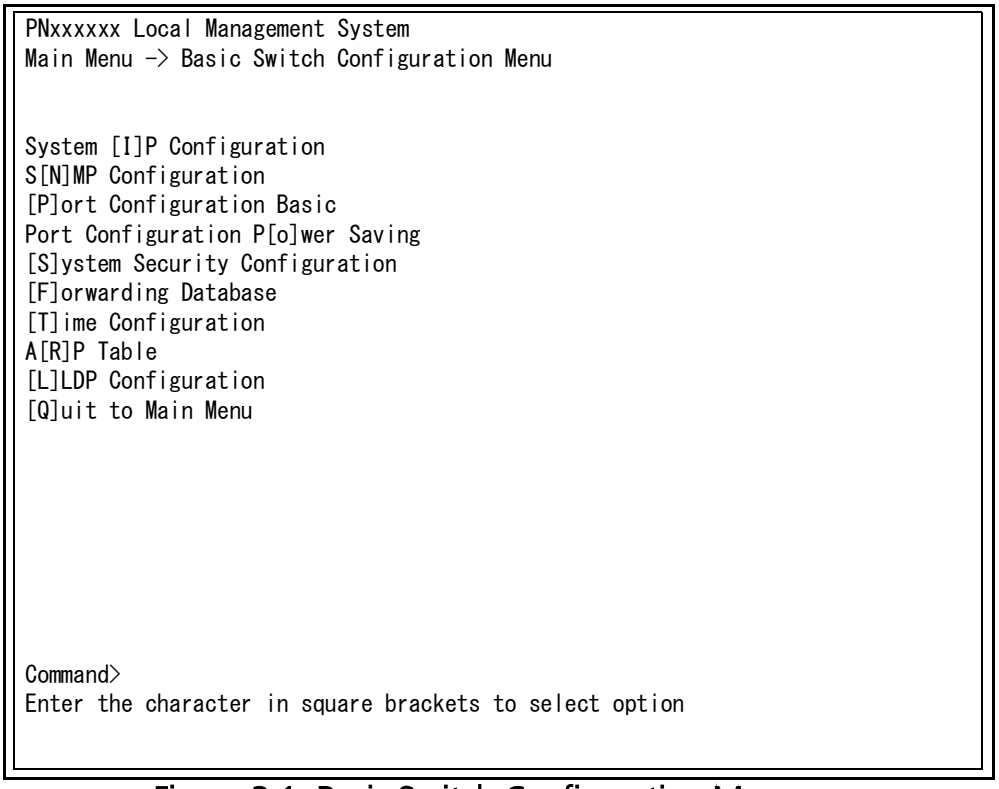


Figure 3-1: Basic Switch Configuration Menu

Screen Description

System IP Configuration	Configures the network information for the IP address.
SNMP Configuration	Implements the SNMP configuration.
Port Configuration Basic	Configures each port.
Port Configuration Power Saving	Implements the configuration of the power-saving mode.
System Security Configuration	Implements the configuration of the access-condition to your device.
Forwarding Database	Displays a table of a MAC address.
Time Configuration	Configures the function of time synchronization with SNTP, and implements the time configuration with a manual.
ARP Table	Displays an ARP table.
LLDP Configuration	Implements the LLDP configuration.
Quit to previous menu	Returns to **Main Menu**.

3.1. System IP Configuration

Press I (command) on the **Basic Switch Configuration** menu, and then you can see the **System IP Configuration Menu** as **Figure 3-2**. You can configure an IP address of your device on this screen.

```
PNxxxxxx Local Management System
Basic Switch Configuration -> System IP Configuration Menu

MAC Address:        00:50:40:xx:xx:xx
IP Address:         192.168.1.10
Subnet Mask:        255.255.255.0
Default Gateway:    0.0.0.0
DHCP Mode:          Disabled

-------------------------------- <COMMAND> ----------------------------------



Set [I]P Address
Set Subnet [M]ask
Set Default [G]ateway
Set IP P[a]rameter
Set [D]HCP Status
[Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure 3-2: System IP Configuration

Screen Description

MAC Address	Displays the MAC address of your device. This cannot be changed by the unique value on each device.	
IP Address	Displays the IP address, which is configured currently. As nothing is set to the factory default settings, 0.0.0.0 is displayed on the screen.	
Subnet Mask	Displays the subnet mask, which is configured currently. As nothing is set to the factory default settings, 0.0.0.0 is displayed on the screen.	
Default Gateway	Displays an IP address of the router as the default gateway, which is configured currently. As nothing is set to the factory default settings, 0.0.0.0 is displayed on the screen.	
DHCP Mode	Displays if the mode is configured to require the DHCP server and obtain the IP address during the startup. The factory default settings is Disabled.	
	Enabled	Requires the DHCP server to obtain the IP address during the start up.
	Disabled	Does not require to obtain the IP address on the DHCP server during the start up.

The following describes how to use several commands on this screen.

I	Configures and changes an IP address.	
		Press I (command), and then the appearance of the command prompt becomes "Enter IP address>". After that, enter the IP address of the switch.
M	Configures and changes the subnet-mask.	
		Press M, and then the appearance of the command prompt becomes "Enter subnet mask>". After that, enter the subnet-mask.
G	Configures and changes an IP address of a router as a default gateway.	
		Press G, and then the appearance of the command prompt becomes "Enter new gateway IP address>". After that, enter the IP address of a router as a default gateway.
A	Configures an IP address, the subnet mask, and the default gateway, collectively.	
		1. Press A, and then the appearance of the command prompt becomes "Enter IP address>" . After that, enter the IP address of the switch. 2. As the appearance of the command prompt becomes "Enter subnet mask>", enter the subnet mask. 3. As the appearance of the command prompt becomes "Enter new gateway IP address>, enter the IP address of a router as a default gateway.
D	4. Configures to enable or disable the auto acquisition mode of the IP address from the DHCP server.	
	E	Enables the automatic acquisition. (This is operating if the DHCP server is in operation on the network.)
	D	Disables the automatic acquisition.
Q	Returns to the top menu.	

Note: If this item is not configured, the remote connection cannot be used through Telnet, SSH, and Web. Be sure to configure it. If you do not know how to configure, contact the network administrator. Duplicating with the IP address of other device on the network is not allowed. In addition, configure the default gateway and the subnet mask, which are the same with other devices on the subnet using your device for this item. This is used to identify the unique device on the network by combining the IP address.

3.2. SNMP Configuration

Press N (command) on the **Basic Switch Configuration** menu, and then you can see the **SNMP Configuration** menu as **Figure 3-3**. You can configure as SNMP agent on this screen.

```
PNxxxxxx Local Management System
Basic Switch Configuration -> SNMP Configuration Menu


SNMP [M]anagement Configuration
SNMP [T]rap Receiver Configuration
[Q]uit to previous menu









Command>
Enter the character in square brackets to select option
```

Figure 3-3: SNMP Configuration

Screen Description

SNMP Management Configuration	Implements the configuration of an SNMP manager.
SNMP Trap Receiver Configuration	Implements the configuration of outgoing SNMP traps.
Quit to Previous Menu	Returns to the top menu.

The following describes how to use several commands on this screen.

M	Implements the configuration of SNMP manager.	
		Press M, and then the screen moves to the SNMP Management Configuration menu.
T	Implements the configuration of sending traps.	
		Press T, and then the screen moves to the SNMP Trap Receiver Configuration menu.
Q	Ends the **SNMP Configuration** menu to return to the top menu.	

3.2.1. SNMP Management Configuration

Press M (command) on the **SNMP Configuration** menu, and then you can see **SNMP Management Configuration Menu** as **Figure 3-4** below. You can configure the community name of an SNMP manager on this screen. See section **3.5**, and then change the configuration of an SNMP agent to enable it in advance when configuring the community name of the SNMP manager. See section **3.2.2** when designating a host IP address of the SNMP manager.

```
PNxxxxxx Local Management System
SNMP Configuration -> SNMP Management Configuration Menu

SNMP Manager List:
 No.   Status    Privilege     Community
----  --------  -----------  ----------------------------
  1   Enabled   Read-Write   private
  2   Enabled   Read-Only    public
  3   Disabled  Read-Only
  4   Disabled  Read-Only
  5   Disabled  Read-Only
  6   Disabled  Read-Only
  7   Disabled  Read-Only
  8   Disabled  Read-Only
  9   Disabled  Read-Only
 10   Disabled  Read-Only
-------------------------------- <COMMAND> ----------------------------------

Set Manager [S]tatus      Set Manager P[r]ivilege
Set Manager [C]ommunity   [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-4: SNMP Management Configuration

Screen Description

SNMP Manager List	Displays the configuration of the SNMP manager, which is configured currently.		
	No.	Displays the entry number of a destination of sending traps.	
	Status	Displays the status of SNMP manager.	
		Enable	Indicates that SNMP manager is enabled.
		Disable	Indicates that SNMP manager is disabled.
	Privilege	Displays an access authorization of SNMP manager.	
		Read-Write	Allows you to read and write.
		Read-Only	Allows you to read, only.
	Community	Displays the community name, which is configured currently.	

The following describes how to use several commands on this screen.

S	Configures the status of an SNMP manager.
	1. Press S (command), and then the appearance of the command prompt becomes "Enter manager entry number>". After that, enter the entry number of SNMP manager to configure it. 2. The appearance of the command prompt becomes "Enable or Disable SNMP manager (E/D)>". After that, press E to enable the SNMP manager, and D to disable it.
R	Configures the access authorization of an SNMP manager.
	1. Press R, and then the appearance of the command prompt becomes "Enter manager entry number>". After that, enter the entry number of SNMP manager to configure. 2. The appearance of the command prompt becomes "Enter the selection>". 3. Press 1 if read-only works, and 2 if read-write works.
C	Configures the community name of an SNMP manager.
	1. Press C, and then the appearance of the command prompt becomes "Enter manager entry number>. After that, enter the entry number of SNMP manager to configure. 2. The appearance of the command prompt becomes "Enter community name for manager>. Then enter the name of a community.
Q	Returns to the top menu.

3.2.2. SNMP Trap Receiver Configuration Menu

Press T (command) on **SNMP Configuration Menu**, and then you can see **SNMP Trap Receiver Configuration Menu** as **Figure 3-5.** You can implement the configuration of sending SNMP traps on this screen. See section 3.2.1 when configuring the privilege (read-write/read-only) of the destination for sending SNMP traps.

```
PNxxxxxx Local Management System
SNMP Configuration -> SNMP Trap Receiver Configuration Menu

Trap Receiver List:
 No.   Status    Type    IP Address         Community
----  --------  -----  ---------------  ----------------------------
  1   Enabled    v1     172.16.222.1      public
  2   Disabled   v1     0.0.0.0
  3   Disabled   v1     0.0.0.0
  4   Disabled   v1     0.0.0.0
  5   Disabled   v1     0.0.0.0
  6   Disabled   v1     0.0.0.0
  7   Disabled   v1     0.0.0.0
  8   Disabled   v1     0.0.0.0
  9   Disabled   v1     0.0.0.0
 10   Disabled   v1     0.0.0.0

------------------------------ <COMMAND> ---------------------------------

Set Receiver [S]tatus     Set Receiver [I]P          In[d]ividual Trap Config
Set Trap [T]ype           Set Receiver [C]ommunity   [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-5: SNMP Trap Receiver Configuration Menu

Screen Description

Trap Receiver List	Displays the IP address and the community name of a trap-destination, which are currently configured.		
	No.	Displays the entry number of the trap destination.	
	Trap Status	Displays if traps need to be sent.	
		Enable	Sends traps.
		Disable	Does not send traps.
	Type	Displays the type of traps.	
		v1	Sends SNMP v1 traps.
		v2c	Sends SNMP v2c traps.
	IP Address	Displays a host IP address of an SNMP manager.	
	Community	Displays the community name, which is currently configured when sending traps.	

The following describes how to use several commands on this screen.

S	Configures to enable or disable a trap-destination.
	1. Press S (command), and then the appearance of the command prompt becomes "Enter manager entry number>. After that, enter the entry number of the trap-destination to be configured. 2. The appearance of the command prompt becomes "Enable or Disable Trap Receiver (E/D)>". Then press E to enable an SNMP manager, and D to disable it.
I	Configures a host IP address of an SNMP manager.
	1. Press I, and then the appearance of the command prompt becomes "Enter manager entry number>. After that, enter the entry number of the trap destination to be configured. 2. The appearance of the command prompt becomes "Enter IP Address for trap receiver>". Enter an IP address for that.
D	Implements the configuration of outgoing traps when changing the link-condition is needed.
	Press D, and then the appearance of the screen becomes **Enable/Disable Individual Trap Menu**. See section (3.2.2.) for the detailed settings.
T	Configures the type of traps.
	1. Press T, and then the appearance of the command prompt becomes "Enter manager entry number>". After that, enter the entry number of the trap destination to be configured. 2. The appearance of the command prompt becomes "Enter the selection>". Press 1 to set a trap to SNMP v1, and 2 to set it to SNMP v2c.
C	Configures the community name of the trap destination.
	1. Press C, and then the appearance of the command prompt becomes "Enter manager entry number>". After that, enter the entry number of the trap-destination to be configured. 2. The appearance of the command prompt becomes "Enter community name for trap receiver>". Enter the community name.
Q	Returns to the top menu.

3.2.3. Enable/Disable Individual Trap Menu

Press D (command) on the screen of **SNMP Trap Receiver Configuration**, and then you can see **Enable/Disable Individual Trap Menu** as the screen 2.7-7. You can implement the configuration of outgoing traps on this screen.

```
PNxxxxxx Local Management System
SNMP Trap Receiver Configuration -> Enable/Disable Individual Trap Menu

SNMP Authentication Failure :    Disabled
Enable Link Up/Down Port:        1-xx
Link Up Port Trap Contrl:        Disabled
Link Down Port Trap Control :    Disabled
PoE Trap Control:                Disabled
Coldstart Trap Control:          Disabled
Warmstart Trap Control:          Disabled

-------------------------------- <COMMAND> ----------------------------------

Enable/Disable [A]uth Fail Trap
Add Link Up/Down Trap [P]orts
Delete Link Up/Down Trap P[o]rts
Enable/Disable Link [U]p Trap
Enable/Disable Link [D]own Trap
Enable/Disable Po[E] Trap
Enable/Disable [C]oldstart Trap
Enable/Disable [W]armstart Trap
[Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 3-6: Enable/Disable Individual Trap Menu

Screen Description

SNMP Authentication Failure	Displays the configuration of enabling and disabling outgoing traps when the SNMP authentication becomes failed.	
	Enabled	Enables outgoing traps.
	Disabled	Disables outgoing traps (factory default settings).
EnabledLink Up/Down Port	Displays the target port-number where traps are outgone when the link condition becomes changed. All the ports are set as the target of outgoing traps during the factory default settings.	
Link Up Port Trap Control	Displays the configuration of enabling and disabling outgoing traps when a port becomes the link-up.	
	Enabled	Enables outgoing traps.
	Disabled	Disables outgoing traps (factory default settings).
Link Down Port Trap Control	Displays the configuration of enabling and disabling outgoing traps when a port becomes the link-down.	
	Enabled	Enables outgoing traps.
	Disabled	Disables outgoing traps (factory default settings).
PoE Trap Control	Displays the configuration of enabling and disabling traps during the PoE power supply.	
	Enabled	Enables outgoing traps.
	Disabled	Disables outgoing traps (factory default settings).

Coldstart Trap Control	Displays the configuration of enabling and disabling outgoing traps when the device executes Coldstart.	
	Enabled	Enables outgoing traps.
	Disabled	Disables outgoing traps (factory default settings).
Warmstart Trap Control	Displays the configuration of enabling and disabling outgoing traps when the device executes Warmstart.	
	Enabled	Enables outgoing traps.
	Disabled	Disables outgoing traps (factory default settings).

The following describes how to use several commands on this screen.

A	Configures to enable or disable outgoing traps when the SNMP authentication becomes failed.
	Press A (command), and then the appearance of the command prompt becomes "Enable or Disable SNMP Authentication trap(E/D)>". After that, press E to enable outgoing traps and D to disable it.
P	Adds the target port of outgoing traps when changing the link-condition is necessary.
	Press P, and then the appearance of the command prompt becomes "Enter port-numbers (up to xx ports)>". After that, enter the target port-number for outgoing traps. Press 0 when changing all the ports, simultaneously.
O	Deletes the target port of outgoing traps when changing the link-condition is necessary.
	Press O, and then the appearance of the command prompt becomes "Enter port-numbers (up to xx ports)>". After that, enter the port-number to be deleted from the target of outgoing traps. (Press 0 when changing all the ports, simultaneously.)
U	Configures to enable or disable outgoing traps when the port becomes link-up.
	Press U, and then the appearance of the command prompt becomes "Enable or Disable SNMP Authentication trap(E/D)>". After that, press E to enable outgoing traps and D to disable it.
D	Configures to enable or disable outgoing traps when the port becomes link-down.
	Press D, and then the appearance of the command prompt becomes "Enable or Disable SNMP Authentication trap(E/D)>". After that, press E to enable outgoing traps and D to disable that.
E	Configures to enable or disable outgoing traps during the PoE power-supply.
	Press E, and then the appearance of the command prompt becomes "Enable or Disable SNMP Authentication trap(E/D)>". After that, press E to enable outgoing traps and D to disable that.
C	Configures to enable or disable outgoing traps when the device executes Coldstart.
	Press C, and then the appearance of the command prompt becomes "Enable or Disable SNMP Authentication trap(E/D)>". After that, press E to enable outgoing traps and D to disable that.
W	Configures to enable or disable outgoing traps when the device executes coldstart.
	Press W, and then the appearance of the command prompt becomes "Enable or Disable SNMP Authentication trap(E/D)>". After that, press E to enable outgoing traps and D to disable that.
Q	Returns to the top menu.

3.3. Port Configuration (Basic Menu)

Press P (command) on the **Basic Switch Configuration** menu, and then you can see **Port Configuration Menu** as **Figure 3-7**. You can display the condition of each port, and configure the ports on this screen.

```
PNxxxxxx Local Management System
Port Configuration -> Port Configuration Basic Menu
Port   Trunk     Type      Admin    Link    Mode        Flow Ctrl   Auto-MDI
----   -----  ----------  --------  ----  ----------   ----------  ----------
  1    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  2    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  3    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  4    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  5    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  6    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  7    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  8    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
  9    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
 10    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
 11    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
 12    ---    1000T       Enabled   Down  Auto         Disabled    Disabled
------------------------------- <COMMAND> ---------------------------------

[N]ext Page                Set [M]ode          [Q]uit to previous menu
[P]revious Page            Set [F]low Control
Set [A]dmin Status         [S]et Auto-MDI
Command>
Enter the character in square brackets to select option
```

Figure 3-7: Port Configuration (Basic Menu)

Screen Description

Port	Displays the port-number.	
Trunk	Displays the configuration condition of trunking by the group number.	
Type	Indicates the type of ports.	
	100TX	Indicates 10/100BASE-TX.
	1000T	Indicates 10/100/1000BASE-T.
	10G-T	Indicates 100/1000/10GBASE-T.
	10G-R	Indicates SFP+ ports.
Admin	Displays the condition of a current port. All of the factory default settings are set to "Enabled".	
	Enabled	Ports can be used.
	Disabled	Ports cannot be used.
Link	Displays the condition of a current link.	
	Up	Indicates that a link is normally established.
	Down	Indicates that a link is not established.
Mode	Displays the communication speed, and the configuration condition of full/half-duplex. All of the factory default settings are set to “Auto”.	
	Auto	Auto-negotiation mode
	100-FDx(100F)	100Mbps full duplex
	100-HDx(100H)	100Mbps half duplex
	10-FDx(10F)	10Mbps full duplex
	10-HDx(10H)	10Mbps half duplex
Flow Ctrl	Displays the configuration condition (or requirement) of the flow control. All of the factory default settings are set to "Disabled".	
	Enabled	Indicates that a function of the flow control is enabled.
	Disabled	Indicates that the function of the flow control is disabled.
Auto-MDI	Displays the configuration condition of the function of Auto MDI/MDI-X. Up-link port (combo-port) is set to “Enabled”, and down-link port (non combo-port) is set to “Disabled”.	
	Enabled	Indicates that a function of Auto MDI/MDI-X is enabled.
	Disabled	Indicates that the function of Auto MDI/MDI-X is disabled.

The following describes how to use several commands on this screen.

<table>
<tr><td>N</td><td colspan="4">Displays the next page.</td></tr>
<tr><td></td><td colspan="4">Press N (command) to display the next page.</td></tr>
<tr><td>P</td><td colspan="4">Displays the previous page.</td></tr>
<tr><td></td><td colspan="4">Press P to display the previous page.</td></tr>
<tr><td>A</td><td colspan="4">Each port can be set to enabled or disabled.</td></tr>
<tr><td></td><td colspan="4">1. Press A, and then the appearance of the command prompt becomes “Select port number to be changed>” . After that, enter the port-number to change. (Press 0 to change all the ports, simultaneously).
2. The appearance of the command prompt becomes “Enable or Disable admin status for port # (E/D)>” . Press E to enable, and D to disable it. Enter the necessary contents. As the configuration is changed, the top part of the display is changed automatically.</td></tr>
<tr><td>M</td><td colspan="4">Configures full/half-duplex of each port.</td></tr>
<tr><td></td><td colspan="4">1. Press M, and then the appearance of the command prompt becomes “Enter port number >” . After that, enter the port-number to be changed. (Press 0 to change all the ports, simultaneously.)
2. The appearance of the command prompt becomes “Enter mode for port # (A/N)>” . Press A to use the auto negotiation mode, and N otherwise.
3. Press N, and then the appearance of the command prompt becomes “Enter speed for port # (10/100/1000)>” . After that, enter the communication speed to configure.
4. If you press 10 or 100, the appearance of the command prompt becomes “Enter duplex for port # (F/H)>” . Press F (Full duplex) for the full duplex, and H (Half duplex) for the half duplex. After that, the configuration is changed, and then the top part of the display becomes changed automatically.</td></tr>
<tr><td></td><td>Mode:</td><td>A:</td><td colspan="2">Sets to the auto-negotiation mode.</td></tr>
<tr><td></td><td></td><td>N:</td><td colspan="2">Sets the fixed configuration. (Support is not available for the fixed speed of 1000BASE-T.)</td></tr>
<tr><td></td><td>Speed:</td><td>10:</td><td colspan="2">Sets to 10Mbps.</td></tr>
<tr><td></td><td></td><td>100:</td><td colspan="2">Sets to100Mbps.</td></tr>
<tr><td></td><td></td><td>1000:</td><td colspan="2">Sets to 1000Mbps.</td></tr>
<tr><td></td><td>Duplex:</td><td>F:</td><td colspan="2">Configures full-duplex.</td></tr>
<tr><td></td><td></td><td>H:</td><td colspan="2">Configures half-duplex.</td></tr>
<tr><td>F</td><td colspan="4">Configures to enable or disable the flow control.</td></tr>
<tr><td></td><td colspan="4">1. Press F, and then the appearance of the command prompt becomes “Select port number to be changed>” . After that, enter the port-number to be changed. To change all the ports simultaneously, press 0 on that.
2. The appearance of the command prompt becomes “Enable or Disable flow control for port # (E/D)>” . Press E to enable, and D to disable it.
After that, the configuration is changed, and then the top part of the display becomes changed automatically.</td></tr>
<tr><td>S</td><td colspan="4">Configures to enable or disable Auto MDI/MDI-X.</td></tr>
<tr><td></td><td colspan="4">1. Press S, and then the appearance of the command prompt becomes “Enter port number >” . After that, enter the port-number to be changed in the range from 1 to 26. (Press 0 to change all the ports, simultaneously.)
2. The appearance of the command prompt becomes “Enable or Disable Auto-MDI for port # (E/D)>” . Then press E to enable, and D to disable it.
After completing the configuration, the top part of the display becomes updated.</td></tr>
<tr><td>Q</td><td colspan="4">Returns to the top menu.</td></tr>
</table>

Note: This screen displays the condition of the ports, which are not updated automatically. Enter a key randomly to display the latest condition.

3.4. Port Configuration Power Saving Menu

You can reduce the power consumption on your device by detecting the connection status of port(s) and by using the power-saving mode of our original function to adjust the power consumption to the necessary amount during the disconnection. The Energy Efficient Ethernet (EEE) of IEEE802.3az also works well to reduce the power consumption on the device.

In addition, the power saving mode supports two types: "Half mode" to prioritize the connectivity with other devices, and "Full mode" to control the power consumption more.

Press O (command) on the **Basic Switch Configuration** menu, and then you can see **Port Configuration Power Saving** as **Figure 3-8**. You can display the status of each port and configure each type of the power-saving mode, on this screen.

```
PNxxxxxx Local Management System
Port Configuration -> Port Configuration Power Saving Menu

Port   Link   Trunk   Type     Mode          Power-Saving   EEE(802.3az)
----   ------  -----  ------  ------------   -------------  ------------
 1     Down     ---   1000T   Auto           Half            Disabled
 2     Down     ---   1000T   Auto           Full            Disabled
 3     Down     ---   1000T   Auto           Disabled        Disabled
 4     Down     ---   1000T   Auto           Disabled        Disabled
 5     Down     ---   1000T   Auto           Disabled        Disabled
 6     Down     ---   1000T   Auto           Disabled        Disabled
 7     Down     ---   1000T   Auto           Disabled        Disabled
 8     Down     ---   1000T   Auto           Disabled        Disabled
 9     Down     ---   1000T   Auto           Disabled        Disabled
10     Down     ---   1000T   Auto           Disabled        Disabled
11     Down     ---   1000T   Auto           Disabled        Disabled
12     Down     ---   1000T   Auto           Disabled        Disabled
-------------------------------- <COMMAND> ----------------------------------

[N]ext Page                Set Power [S]aving Mode       Set [E]EE Status
[P]revious Page            [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-8: Port Configuration Power Saving Menu

Screen Description

Port	Indicates the port-number.	
Link	Displays the status (or condition) of a current link.	
	Up	Indicates that the link is established normally.
	Down	Indicates the status that the link is not established.
Trunk	Displays the configuration status of trunking as the group number.	
Type	Indicates types of ports.	
	100TX	Indicates 10/100BASE-TX.
	1000T	Indicates10/100/1000BASE-T.
	1000X	Indicates SFP port.

Mode	Displays the configuration status of full or half duplex, and the communication speed. Every mode is set to "Auto" for the factory default settings.	
	Auto	Auto negotiation mode
	100-FDx(100F)	100Mbps full duplex
	100-HDx(100H)	100MBps half duplex
	10-FDx(10F)	10Mbps full duplex
	10-HDx(10H)	10MBps half duplex
Power-Saving	Displays the status of the power-saving mode. Every power saving is configured to "Half" for the factory default settings.	
	Half	Displays that the status of the power-saving mode is enabled (half).
	Full	Displays that the status of the power-saving mode is enabled (Full).
	Disabled	Displays that the status of the power-saving mode is disabled.
EEE(802.3az)	Displays the status of EEE(Energy Efficient Ethernet). "Disabled" is configured to a factory default settings.	
	Enabled	Displays the status of EEE (Energy Efficient Ethernet).
	Disabled	Displays that the EEE status is disabled.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
S	Configures the power-saving mode of each port.
	1. Press S, and then the appearance of the command prompt becomes "Select port number to be changed>". After that, enter the port-number to be changed. 2. Press 0 when changing all the ports simultaneously. 3. The appearance of the command prompt becomes "Enter Power Saving mode for port (F/H/D)>". Press E to enable, and D to disable it. 4. Press H to configure the power saving mode that prioritizes the connectivity with other devices. After completing the configuration, the display on the upper side is updated.
E	Configures EEE of each port.
	1. Press E, and then the appearance of the command prompt becomes "Select port-number to be changed>". After that, enter the port-number to be changed. Press 0 to change all the ports, simultaneously. 2. The appearance of the command prompt becomes "Enable, Disable for Energy Efficient Ethernet (EEE 802.3az). Then press E to enable and D to disable it.
Q	Returns to the top menu.

3.5. System Security Configuration

Press S (command) on the **Basic Switch Configuration** menu, and then you can see "System Security Configuration" as **Figure 3-9**. You can perform configuration tasks when accessing your device for configuringand managing on this screen.

```
PNxxxxxx Local Management System
Basic Switch Configuration -> System Security Configuration

Console UI Idle Timeout:      3 Min.
Telnet UI Idle Timeout:       3 Min.
Telnet Server:                Disabled
SNMP Agent:                   Disabled
Web Server Status:            Disabled
IP Setup Interface:           Enabled
Local User Name:              manager
Syslog Transmission:          Disabled
Login Method 1:               Local
Login Method 2:               None
-------------------------------- <COMMAND> ----------------------------------
Set [C]onsole UI Time Out             Change Local [P]assword
Set [T]elnet UI Time Out              Enable/Disable [S]NMP Agent
Enable/Disable Te[l]net Server        [I]P Setup Interface
[W]eb Server Status                   Telnet [A]ccess Limitation
LED [B]ase Mode Configuration         Syslo[g] Transmission Configuration Page
[R]ADIUS Configuration                SS[H] Server Configuration
Enable/Disable S[y]slog Transmission  L[o]gin Method
Change Local User [N]ame              [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 3-9: System Security Configuration

Screen Description

Console UI Idle Time Out	Displays time as the minute unit until a session exits if nothing is entered and a console is connected. The factory default settings is three (3) minutes.	
Telnet UI Idle Time Out	If remote connection is operated with Telnet, the screen will display the time needed as a minute-unit until a session is disconnected if nothing is entered. The factory default settings is three (3) minutes.	
Telnet Server	Displays if the access with Telnet works. The factory default settings is set to Disabled.	
	Enabled:	Accessible
	Disabled:	Inaccessible
SNMP Agent	Displays if the access with SNMP works. The factory default settings is set to Disabled.	
	Enabled:	Accessible
	Disabled:	Inaccessible
Web Server Status	If a function of WEB authentication is enabled on CLI, it becomes changed to Enable automatically. If Web Server Status becomes disabled, be careful with that as the function of WEB authentication is not used. Use CLI when configuring the function of WEB authentication. The factory default settings is set to Disabled.	
	Enabled:	Accessible
	Disabled:	Inaccessible
IP Setup Interface	Displays if the access with the software of the IP address configuration, which is included in a network camera produced by Panasonic and "ZEQUO assist Plus" as a support tool of our switching hub, is possible. The factory default setting is "Enabled". **Note:** See section **3.5.3** for the caveats.	
	Enabled:	Accessible
	Disabled:	Inaccessible
Local User Name	Displays the user-name, which is configured currently to log in. Manager is set to the factory default settings. Use CLI when changing a user name.	
Syslog Transmission	Displays if the system log is transmitted to Syslog servers. The factory default settings is set to Disabled.	
	Enabled:	System log is transmitted to the Syslog server.
	Disabled:	System log is not transmitted to the Syslog server.
Login Method 1	Displays a user-name, which is currently configured to log in. The factory default settings is local.	
	Local	Log in to your device using a user name and a password configured.
	RADIUS	Use an authentication operated by the RADIUS server to log in.
Login Method 2	Displays how to check a user-name and a password that are used to log in. The factory default settings is None.	
	Local	Log in to your device using a user name and a password.
	None	The login method 2 is not used.

The following describes how to use several commands on this screen.

C	Configures time needed to disconnect automatically if nothing is entered when a console is connected.	
		Press C (command), and then the appearance of the command prompt becomes "Enter console idle timeout>" . Configure the (numerical) value between 0 and 60 (minutes). If 0 is configured, automatic disconnection is not operated.
T	When nothing is entered with becoming connected by Telnet, the time (needed) until a disconnection occurs automatically is configured.	
		Press T, and then the appearance of the command prompt becomes "Enter telnet idle timeout>" . After that, configure the (numerical) value in the range from 1 to 1,439 (minutes).
L	Configures if Telnet enables access.	
		Press L and then the appearance of the command prompt becomes "Enable or Disable telnet server(E/D)>" . After that, press E to enable the access, and D to disable (or disconnect) it.
W	Configures if the function of WEB authentication is enabled. Enable the function of WEB authentication from CLI to change it to Enable automatically.	
		Press W and then the appearance of the command prompt becomes "Enable or Disable web server (E/D)>" . After that, press E to enable the access, and D to disable it.
B	Configures LED base mode.	
		Press B to move to LED Basic Mode Configuration. See next section (3.5.5) for this configuration.
R	Perform the access configuration of RADIUS server to use for IEEE802.1X authentication.	
		Press R to move to **RADIUS Configuration Page**. See next section (**3.5.2**) for this configuration.
Y	Configures if the system log is transmitted to a Sys-log server.	
		Press Y and then the appearance of the command prompt becomes "Enable or Disable Syslog Transmission (E/D)>" . After that, press E to configure for transmitting a system log to Sys-log server, and D otherwise.
S	Configures if an access using SNMP needs to be possible.	
		Press S, and then the appearance of the command prompt becomes "Enable or Disable SNMP Agent(E/D)>". After that, press E to enable the access, and D to disable it.
I	Configures if the access to ZEQUO assist and software of IP address configuration needs to possible.	
		Press I, and then the appearance of the command prompt becomes "Enable or Disable IP setup interface (E/D)>" . After that, press E to enable the access, and D to disable it.
A	Configures the accessible terminal on Telnet.	
		Press A to move to **Telnet Access Limitation Menu.** See next section (**3.5.1**) for this configuration.
G	Configures the condition of transmitting the system log to Syslog server.	
		Press G to move to **Syslog Transmission Configuration Page**. See next section (**3.5.3**) for this configuration.
H	Configures an SSH server.	
		Press H to move to **SSH Server Configuration**. See next section (**3.5.4**) for this configuration.

O	Configures the location of checking a user name and a password when logging in.	
		1. Press O, and then the appearance of the command prompt becomes "Input Login Methd 1 >" . Enter the method of logging in of Login Method 1. Enter the user-name, which is configured with equipment, and L to use a password. Press R to authenticate by using RADIUS. 2. Press R, and then the appearance of the command prompt becomes "Input Login Method 2 >" . Enter the method of logging in to Login Method 2. Press L to use the user-name and password, which are configured with equipment, and L without using Log-in Method 2.
Q	Returns to the top menu.	

3.5.1. Telnet Access Limitation Configuration

Press A (command) on the screen of **System Security Configuration**, and then you can see **Telnet Access Limitation Menu** as **Figure 3-10**. You can perform the limitation configuration of equipment (or device) that accesses your device through Telnet, on this screen.

```
PNxxxxxx Local Management System
System Security Configuration -> Telnet Access Limitation Menu

Telnet Access Limitation :   Disabled

No.      IP Address         Subnet Mask
---   ---------------     ---------------
 1     <empty>              <empty>
 2     <empty>              <empty>
 3     <empty>              <empty>
 4     <empty>              <empty>
 5     <empty>              <empty>
-------------------------------- <COMMAND> ----------------------------------

[E]nable/Disable Telnet Access Limitation
[A]dd IP Address and Subnet Mask
[D]elete IP Address and Subnet Mask
[M]odify IP Address and Subnet Mask
[Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure 3-10: Telnet Access Limitation Configuration

The following describes how to use several commands on this screen.

E	Configures to enable or disable the access limitation (or restriction) from Telnet. The factory default settings is “Disabled”.	
	E	Enables the access limitation. More than one IP address, to allow, needs to be configured when enabling the access control (or limitation).
	D	Disables the access control.

A	Configures an IP address to be allowed. Five ranges can be configured.	
		1. Press A (command), and then the appearance of the command prompt becomes "Enter IP address entry number>". After that, enter the entry number in the range from 1 to 5. 2. The appearance of the command prompt becomes "Enter IP address>". Then enter the IP address, which is allowed to access. 3. If the IP address is correct, the appearance of the command prompt becomes "Enter subnetwork mask>". After that, enter a mask in the range of the IP address, which is allowed to access. Example: No. IP Address Subnet Mask IP address allowed to access --- ---------- ---------- ---------- 1 192.168.1.10 255.255.255.255 192.168.1.10 (Only one machine is accessible). 2 192.168.1.20 255.255.255.254 192.168.1.20, 192.168.1.21 (Two machines are accessible.) 3 192.168.2.1 255.255.255.128 From 192.168.2.1 to 192.168.2.127 (127 machines are accessible.) 4 192.168.3.1 255.255.255.0 From 192.168.3.1 to 192.168.3.254 (254 machines are accessible.)
D	Deletes the range of the IP address configured.	
		Press D, and then the appearance of the command prompt becomes "Enter IP address entry number>. After that, enter the entry number to be deleted.
M	Changes the range of the IP address configured.	
		1. Press M, and then the appearance of the command prompt becomes "Enter IP address entry number>". After that, enter the entry number in the range from 1 to 5. 2. The appearance of the command prompt becomes "Enter IP address>". Then enter the IP address configured. 3. The appearance of the command prompt becomes "Enter subnet mask>". Then enter the range of the IP address, which is allowed to access with a mask.
Q	Returns to the top menu.	

3.5.2. RADIUS Configuration

Press R (command) on the screen of **System Security Configuration**, and then you can see **RADIUS Configuration Menu** as **Figure 3-11**. You can configure the access to the RADIUS server, which is used for the IEEE802.1X authentication on this screen.

```
PNxxxxxx Local Management System
System Security Configuration -> RADIUS Configuration Menu

NAS ID: nas1

Index Server IP Address    Shared Secret     Response Time Max Retransmission
----- ----------------- -------------------- ------------- ------------------
  1   1.2.3.4                                    5 seconds          2
  2   0.0.0.0                                    5 seconds          2
  3   0.0.0.0                                    5 seconds          2
  4   0.0.0.0                                    5 seconds          2
  5   0.0.0.0                                    5 seconds          2
------------------------------- <COMMAND> ----------------------------------
[N]ext Page
[P]revious Page
Set N[A]S ID
Set Server [I]P
Set Shared Se[c]ret
Set [R]esponse Time
Set [M]ax Retransmission
[Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-11: RADIUS Configuration

Screen Description

NAS ID	Displays an authentication ID (NAS Identifier).
Index	Displays the entry number of the access configuration for the RADIUS sever.
Server IP Address	Displays an IP address of the RADIUS server. The address is not set to the factory default settings, and thus 0.0.0.0 is displayed.
Shared Secret	Displays the shared secret used during the authentication process. The same configuration needs to be set between the related server and the client-side. Normally, a system administrator configures it, so the configuration is not set during the factory default settings. If encrypted, you can see [encrypted] on the screen.
Response Time	Displays the maximum waiting time to the authentication requirement to the RASDIUS server. The factory default settings is five (5) seconds.
Maximum Retransmission	Displays the number of times for retransmitting the authentication requirement (or request) to the RADIUS server. The factory default settings is twice.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.

A	Configures a NAS ID.
	Press A, and then the appearance of the command prompt becomes “Enter NAS ID>” . After that, enter the NAS ID within 16 characters (half-size).
I	Configures an IP address of a RADIUS server.
	1. Press M, and then the appearance of the command prompt becomes “Enter RADIUS server index>” . After that, enter the target index. 2. The appearance of the command prompt becomes “Enter IP Address for radius server>” . Then enter the IP address.
C	Configures the Shared Secret of the RADIUS server.
	Press M, and then the appearance of the command prompt becomes “Enter RADIUS server index>” . After that, enter the target Index. Press C, and then the appearance of the command prompt becomes "Enter secret string for server>". After that, enter the Shared Secret within 32 characters (half size).
R	Set the waiting time needed until the RADIUS server responds to an authentication requirement.
	Press M, and then the appearance of the command prompt becomes “Enter RADIUS server index>” . After that, enter the target index. Press R, and then the appearance of the command prompt becomes "Enter response time>". After that, enter the value in the range from 1 to 255 (seconds).
M	Configures the maximum number of times for retransmitting an authentication requirement.
	1. Press M, and then the appearance of the command prompt becomes "Enter RADIUS server index>". After that, enter the target index. 2. The appearance of the command prompt becomes "Enter maximum retransmission>". Then enter the integer in the range from 1 to 20.
Q	Returns to the top menu.

3.5.3. Syslog Transmission Configuration

Press G (command) on the screen of **System Security Configuration**, and then you can see **Syslog Transmission Configuration Menu** as **Figure 3-12**. You can configure Syslog servers as the destination of transmitting system-log on this screen.

```
PNxxxxxx Local Management System
System Security Configuration -> Syslog Transmission Configuration Menu

Status: Disabled
Syslog Server List:
 No.     IP Address       Facility
----   -------------    ----------
  1     0.0.0.0          Facility0
  2     0.0.0.0          Facility0
  3     0.0.0.0          Facility0
  4     0.0.0.0          Facility0









--------------------------------- <COMMAND> -----------------------------------
Set Server [S]tatus    Set Server [I]P              [Q]uit to previous menu
Set Server [F]acility  [C]lear Server Information
Command>
Enter the character in square brackets to select option
```

Figure 3-12: Syslog Transmission Configuration

Screen Description

Status	Displays the status of the configuration of a Syslog server. The factory default settings is Disable.	
	Enabled	The configuration of the Syslog server is enabled.
	Disabled	The configuration of the Syslog server is disabled.
No.	Displays the management number of the Syslog server.	
IP Address	Displays an IP address of the Syslog server.	
Facillity	Displays the facility value.	

The following describes how to use several commands on this screen.

S	Configures the status of Syslog transmission.	
	1.	Press S (command), and then the appearance of the command prompt becomes "Enable or Disable Server (E/D)>" . After that, press E to enable and D to disable it.
F	Configures a facility. The information on a Syslog server with the IP address configured can change the facility.	
	1.	Press F, and then the appearance of the command prompt becomes "Enter manager entry number>" . After that, enter the number to be configured.
	2.	The appearance of the command prompt becomes "Enter Server Facility>" . Then enter the value in the range from 0 to 23.

I	Configures an IP address of the Syslog server.	
		Press I, and then the appearance of the command prompt becomes "Enter IP address for manager>. After that, enter the IP address of the Syslog server. The IP address is assigned automatically from No.1. The IP address of Syslog server can be configured up to four.
C	Deletes information regarding the configuration of Syslog Transmission.	
		1. Press C, and then the appearance of the command prompt becomes "Enter manager entry number>". After that, enter the number to be deleted. 2. The appearance of the command prompt becomes "Clear Syslog Server information>". Then press Y to delete it, and N otherwise.
Q	Returns to the top menu.	

3.5.4. SSH Server Configuration

Press H (command) on the screen of the **System Security Configuration**, and then you can see "SSH Server Configuration" as **Figure 3-13**. You can configure the SSH servers on this screen. This device supports SSHv2, only. Use a client that supports the SSHv2 to be connected.

```
PNxxxxxx Local Management System
Basic Switch Configuration -> SSH Server Configuration

SSH UI Idle Timeout:          3 Min.
SSH Auth. Idle Timeout:       120 Sec.
SSH Auth. Retries Time:       3
SSH Server:                   Disabled
SSH Server key:               Key exists









-------------------------------- <COMMAND> ----------------------------------
[G]enerate SSH Server key              Enable/Disable SS[H] Server
Set SSH UI Time [O]ut                  Set SSH [A]uthentication Time Out
Set SSH Authentication [R]etries Time  [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 3-13: SSH Server Configuration

Screen Description

SSH UI Idle Timeout	Displays the time needed as the unit of minute until a session is killed (or disconnected) if nothing is entered when connecting remotely using the SSH. The factory default settings is 3 minutes (180 seconds).	
SSH Auth. Idle Timeout	Displays the response time for the SSH authentication. The factory default settings is 2 minutes (120 seconds).	
SSH Auth. Retries Time	Displays the number of retransmitting the SSH authentications. The factory default settings is three (3) times.	
SSH Server	Displays if the SSH ensures access (or accessibility). The factory default settings is set to "Disabled".	
	Enabled (SSH)	Accessible
	Disabled	Inaccessible
SSH Server key	Displays the status of the SSH server key of RSA method. The status of the factory default settings is set to "Key exists".	
	Key exists.	A server key exists.
	Key does not exist.	A server key does not exist.

The following describes how to use several commands on this screen.

H	Configures to access SSH.
	Press H (command), and then the appearance of the command prompt becomes "Enable or Disable SSH server (E/D)>". Press E to be accessible, and D to be inaccessible.
O	Configures time needed until the connection is automatically disconnected; if nothing is entered when connecting with the SSH.
	Press O, and then the appearance of the command prompt becomes "Enter SSH UI idle timeout>". Configure the numerical value whose range is from 1 to 1,349 (minutes).
A	Configures response time to the SSH authentication.
	Press A, and then the appearance of the command prompt becomes "Enter SSH authentication idle timeout>". Configure the numerical value whose range is from 30 to 600 (seconds), and then "Enter SSH authentication" is displayed.
R	Configures the number of retransmissions regarding the SSH authentication.
	Press R, and then the appearance of the command prompt becomes "Enter SSH authentication retries time>". After that, configure the numerical value whose range is from 1 to 32 (times).
Q	Returns to the top menu.

3.5.5. LED Base Mode Configuration

Press B (command) on the screen of **System Security Configuration**, and then you can see **LED Base Mode Configuration** as **Figure 3-14.** You can configure the LED base mode on this screen.

```
PNxxxxxx Local Management System
System Security Configuration -> LED Base Mode Configuration

Exception Handler:          Status









-------------------------------- <COMMAND> ----------------------------------

Set LED [B]ase Mode
[Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-14: LED Base Mode Configuration

Screen Description

Exception Handler	Displays the current LED base mode. The status mode (Status) is configured to the factory default settings.	
	Status	Displays (or shows) that it is in operation as the status mode.
	Eco	Displays that it is in operation as the ECO mode.

The following describes how to use several commands on this screen.

B	Changes LED base mode.	
		Press B (command), and then the appearance of the command prompt becomes "Select LED Base Mode (S/E)>". After that, press E when changing to the ECO mode, and S when changing the LED base.
Q	Returns to the top menu.	

3.6. Forwarding Database

Press F (command) on the **Basic Switch Configuration** menu, and then you can see the **Forwarding Database Menu** as **Figure 3-15**. The list of a MAC address table learned and stored (which is necessary for transferring packets) is displayed on this screen.

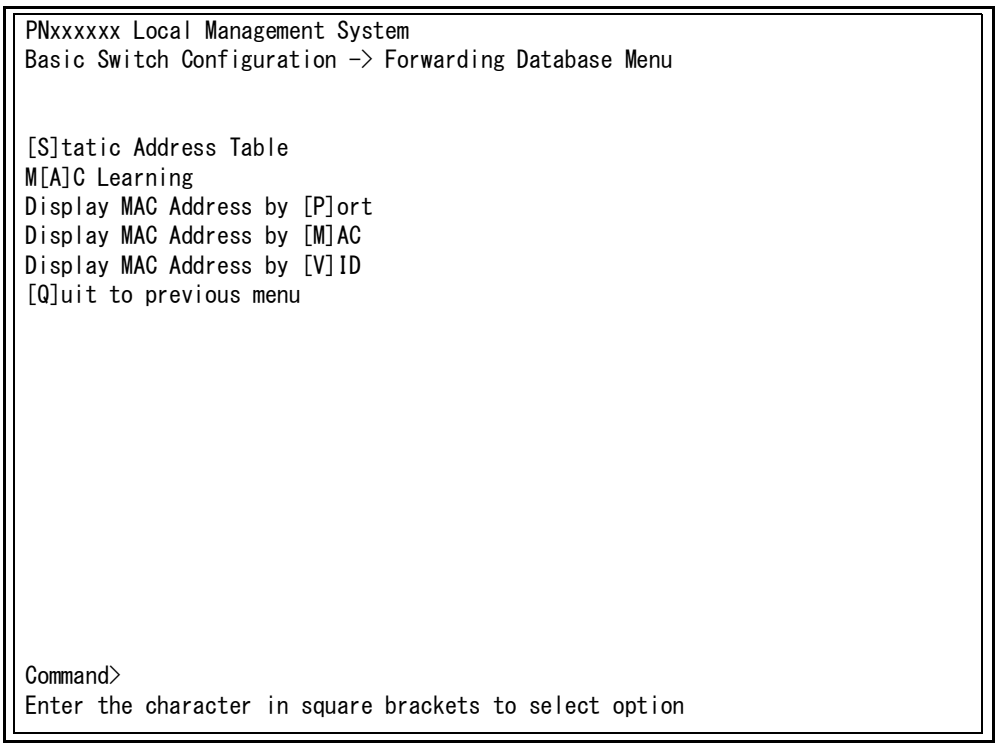


Figure 3-15: Forwarding Database

Screen Description

Static Address Table	Adds or deletes a MAC address. See next section (**3.6.1**) for details.
MAC Learning	Implement the configuration (task) to set a function of learning a MAC address per port to Auto/OFF. When you set the function to OFF, the MAC address registered on the Static Address Table can communicate. See next section (**3.6.2**) for details.
Display MAC Address by Port	Displays a MAC address table per port. See next section (**3.6.3**) for details.
Display MAC Address by MAC	Displays all of MAC addresses registered. See next section (**3.6.4**) for details.
Display MAC Address by VID	Displays a MAC address table per VLAN. See next section (**3.6.5**) for details.
Quit to previous menu	Returns to the top menu.

3.6.1. Static Address Table

Press S (command) on the **Forwarding Database** menu, and then you can see **Static Address Table Menu** as **Figure 3-16**. You can add or delete a MAC address statically on this screen.

```
PNxxxxxx Local Management System
Forwarding Database Menu -> Static Address Table Menu

   MAC Address       Port    VLAN ID
-----------------   ------   -------
DataBase is empty!









-------------------------------- <COMMAND> ----------------------------------


[N]ext Page                              [D]elete Entry
[P]revious Page                          [Q]uit to previous menu
[A]dd New Entry
Command>
Enter the character in square brackets to select option
```

Figure 3-16: Static Address Table

Screen Descriptiona

MAC Address	Displays a MAC address in a MAC address table.
Port	Displays the port where a MAC address belongs to.
VLAN ID	Displays the VLAN ID where a MAC address belongs to.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
A	Registers a MAC address, additionally.
	Enter A, and then the appearance of the command prompt becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx)". Enter the address to be added.
D	Deletes the MAC address registered.
	Enter D, and then the appearance of the command prompt becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx)". Enter the address to be deleted.
Q	Returns to the top menu.

3.6.2. MAC Learning Menu

Press A (command) on the **Forwarding Database Menu**, and then you can see the **MAC Learning Menu** as **Figure 3-17**. You can configure the learning mode for MAC address per Port, on this screen.

```
PNxxxxxx Local Management System
Forwarding Database Menu -> MAC Learning Menu

 Port   MAC Learning
------  ------------
   1      Auto
   2      Auto
   3      Auto
   4      Auto
   5      Auto
   6      Auto
   7      Auto
   8      Auto
   9      Auto
   10     Auto
   11     Auto
   12     Auto

-------------------------------- <COMMAND> ----------------------------------
[N]ext Page             [S]et MAC Learning Mode
[P]revious Page         [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-17: MAC Learning Menu

Screen Description

Port	Displays the port-number.	
MAC Learning	Displays the method for learning MAC address. The factory default settings is "Auto".	
	Auto	A MAC address is learned automatically, and then packets are transferred.
	Disabled	The auto-learning of MAC address is disabled, and packets are not transferred if the MAC address is not registered statically.
MAC Learning Limit	Displays the limit value of the number of auto-learnings for a MAC address per port.	
	Disabled	Does not limit the number of auto-learnings for a MAC address (factory default settings).
	From 1 to 256	Displays the limit value of the number of auto-learnings for a MAC address.

Note: If the auto learning for MAC address becomes disabled, the communication does not work unless the MAC address is registered statically.

Note: When receiving frames with a new source MAC address that does not learn on the condition that the MAC address of a limit value is learned already. To use the limit value, the auto learning for MAC address needs to be enabled. A static MAC address is not included in the target of the limit value.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
S	Switches the learning mode of a MAC address.
	1. Press S (command), and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the port-number to change the configuration. 2. As the appearance of the command prompt becomes "Change MAC Learning Mode for port # (the port-number designated)>", press A when making it to learn a MAC address automatically, and D to make it NOT to learn.
Q	Returns to the top menu.

Note: Using with the configuration (concurrently), which makes a port not to learn on the MAC Learning Menu, is not allowed when you use a function of IEEE802.1X port-based authentication and MAC based authentication.

3.6.3. Display MAC Address by Port

Press P (command) on the **Forwarding Database Menu**, and then the appearance of the command prompt becomes "Enter port number>". Specify the port-number, and then you can see "Display MAC Address by Port" as **Figure 3-18.** You can display a MAC address table per port on this screen.

```
PNxxxxxx Local Management System
Forwarding Database Menu -> Display MAC Address by Port

Age-Out Time:  300  Sec.              Selected Port: 1

   MAC Address      Port
-----------------   ----









-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                              [S]elected Port No
[P]revious Page                          [Q]uit to previous menu
Set [A]ge-Out Time
Command>
Enter the character in square brackets to select option
```

Figure 3-18: Display MAC Address per Port

Screen Description

Age-Out Time	Displays the time to save the MAC address table. Displays the time passed after receiving packets during the last time. The factory default settings is 300 seconds (5 minutes).
Select Port	Displays the port-number selected.
MAC Address	Displays the MAC address on a MAC address table.
Port	Displays a port belonging to a MAC address.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
A	Configures the storage time of a MAC address.
	Press A (command), and then the appearance of the command prompt becomes "Enter Age-Out time>". Next, configure the time in the range from 10 to 1,000,000 (seconds).
S	Switches the port to display.
	Press S (command), and then the appearance of the command prompt becomes "Enter port-number>". After that, enter the port-number to be displayed.
Q	Returns to the top menu.

3.6.4. Display MAC Address by MAC

Press M (command) on the **Forwarding Database Menu**, and then you can see "Display MAC Address by MAC" as **Figure 3-19.** This screen can provide you with all of the MAC address tables of your device.

```
PNxxxxxx Local Management System
Forwarding Database Menu -> Display MAC Address by MAC

Age-Out Time:  300  Sec.

 MAC Address        Port
-----------------   ----









-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                             Set [A]ge-Out Time
[P]revious Page                         [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-19: Display MAC Addresses by MAC

Screen Description

Age-Out Time	Displays the time to save a MAC address table. This indicates the time passed after receiving the last (or the latest) packets. The factory default settings is 300 seconds (5 minutes).
MAC Address	Displays a MAC address in a MAC address table.
Port	Displays the port that a MAC address belongs to.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
A	Configures the storage time of a MAC address.
	Press A (command), and then the appearance ofthe command prompt becomes "Enter Age-Out time>". Configure the time in the range from 10 to 1,000,000 (seconds).
Q	Returns to the top menu.

3.6.5. Display MAC Address by VLAN ID

Press V (command) on the **Forwarding Database Menu**, and then the appearance of the command prompt becomes "Enter VLAN ID>". Designate the port-number, and then you can see "Display MAC Address by VLAN ID" as **Figure 3-20**. This screen can also display a MAC address table per VLAN.

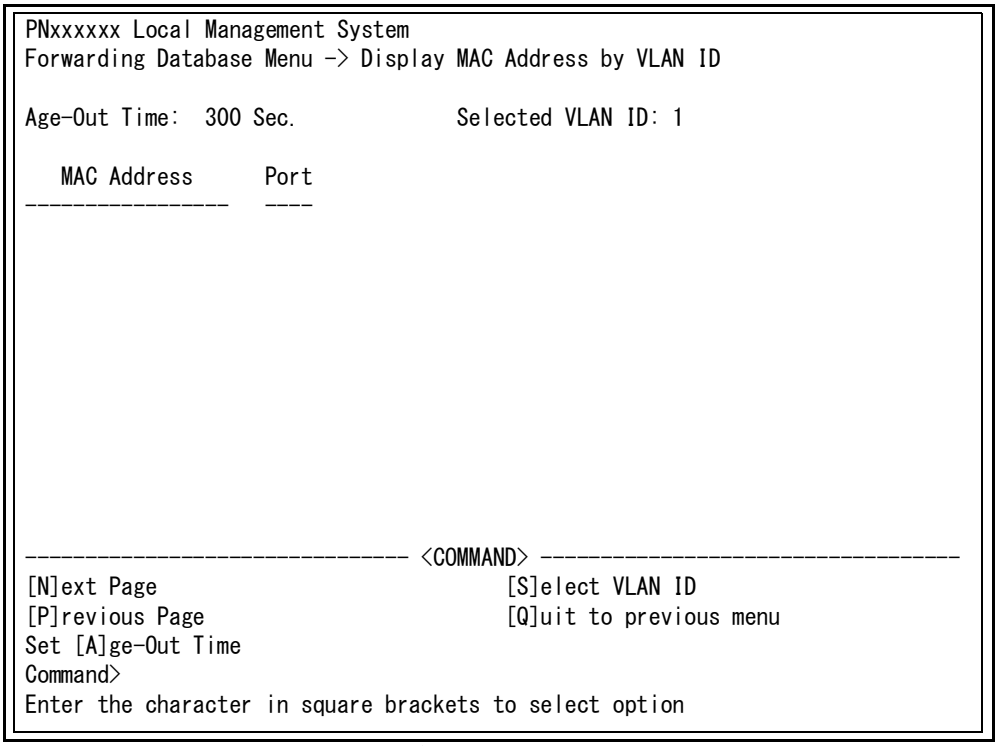


Figure 3-20: Display MAC Address by VLAN ID

Screen Description

Age-Out Time	Displays time to save (or store) a MAC address table. The time means the time after receiving packets during the previous time (or at the last time). The factory default settings is 300 seconds (5 minutes).
Select VLAN ID	Displays the VLAN ID selected.
MAC Address	Displays MAC address in a MAC address table.
Port	Displays a port that a MAC address belongs to.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
A	Configures the storage time (keeping time) of MAC address.	
		Press A (command), and then the appearance of the command prompt becomes "Enter Age-Out time>". After that, configure time needed in the range from 10 to 1,000,000 (seconds).
S	Switches VLAN to display.	
		Press S (command), and then the appearance of the command prompt becomes "Enter VLAN ID>". Enter the VLAN ID to be displayed.
Q	Returns to the top menu.	

3.7. Time Configuration

This device allows you to configure the time accurately by having the synchronization of an external SNTP server and the built-in clock and the support of the time configuration and SNTP (Simple Network Time Protocol).

Press T (command) on the **Basic Switch Configuration** menu, and then you can see **Time Configuration Menu** as **Figure 3-22**. This screen allows you to configure the time configuration and the time synchronization by using the SNTP.

```
PNxxxxxx Local Management System
Basic Switch Configuration -> Time Configuration Menu

Current Time Source   :

Time ( HH:MM:SS )     : 00:00:00
Date ( YYYY/MM/DD )   : 0000/00/00    Friday

Time Zone             : UTC +09 : 00

Daylight Saving Time  : Disabled
-------------------------------- <COMMAND> ---------------------------------
Set [C]lock Time
Set SNT[P] Server
Set Time [Z]one
Set [S]ummer-Time
[Q]uit to previous menu




Command>
Enter the character in square brackets to select option
```

Figure 3-22 : Time Configuration

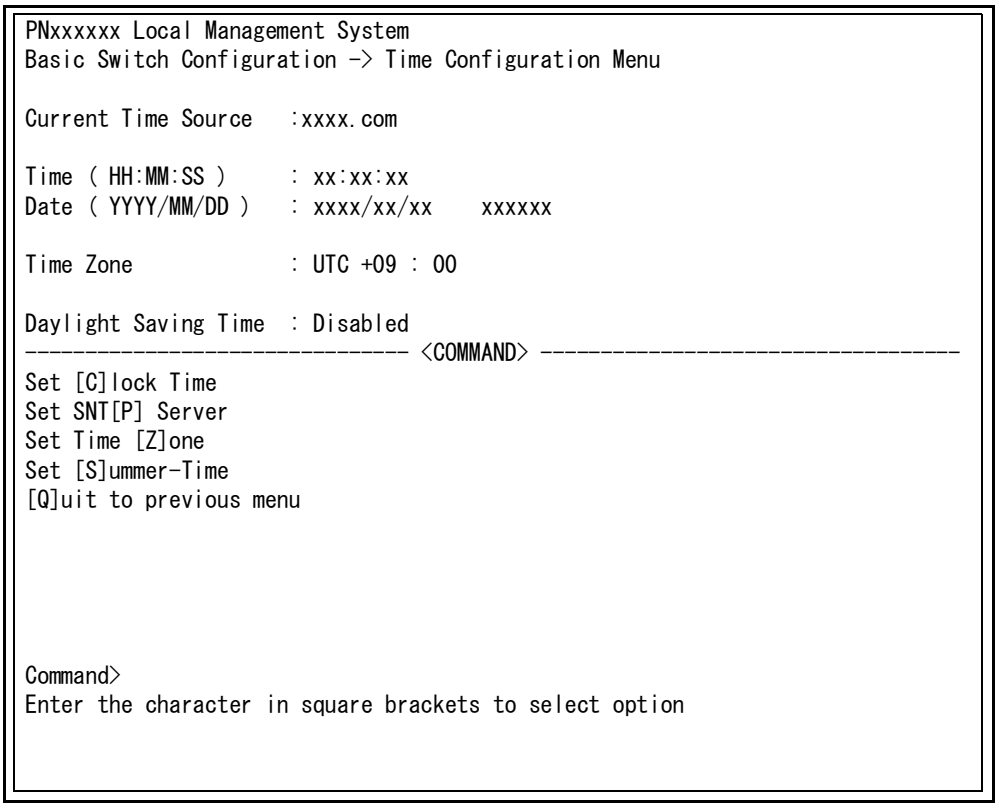


Figure 3-22: Time Configuration Menu

Screen Description

Current Time Source	Displays an IP address of the SNTP server, which implements the time synchronization.
Time(HH:MM:SS)	Displays the time of the built-in clock.
Date(YYYY/MM/DD)	Displays the time and date of the built-in clock.
Time Zone	Displays a timezone.
Daylight Saving	Displays the application condition for Daylight Saving (summer time).

The following describes how to use several commands on this screen.

C	Configures the time of the built-in clock of your device.	
		1. Press C (command), and then the appearance of the command prompt becomes "Enter Date(Year) >". Enter the year for that. 2. The appearance of the command prompt becomes "Enter Date(Month) >". Then enter month for that. 3. The appearance of the command prompt becomes "Enter Date(Day) >". Then enter the date. 4. The appearance of the command prompt becomes "Enter Time(Hour) >". Then enter the time for that. 5. The appearance of the command prompt becomes "Enter Time(Minute) >". Then enter minutes for that. 6. The appearance of the command prompt becomes "Enter Time(Sec) >". Then enter seconds for that.
P	Configures an IP address of an SNTP server.	
		Press P (command), and then the appearance of the command prompt becomes "Enter new IP address>". After that, enter the IP address of the SNTP server.
Z	Configures a timezone.	
		Press Z (command), and then a list of timezone is displayed. Specify a corresponding time-zone. If it is used in the domestic area normally, changing from "(GMT+09:00)Osaka,Sapporo,Tokyo" of the factory default settings is not needed.
S	Configures the IPv6 address of the SNTP server.	
		Press S (command), and then the appearance of the command prompt becomes "Enter new server IPv6 address>". After that, enter the IPv6 address of the SNTP server.
Q	Returns to the top menu.	

Note: If an SNTP server is outside of a firewall, connecting to the SNTP server is impossible, depending on the configuration done by a system administrator. Ask him or her for details. In addition, if a function of the time synchronization needs to be disabled, set the current time source to either "0.0.0.0" or "::".

3.7.1. SNTP Configuration Menu

Select P (command) on the **Time Configuration** menu, and then you can see the **SNTP server Menu** as screen 2.7-21. You can configure SNTP servers on this screen.

```
PNxxxxxx Local Management System
Time Configuration Menu -> SNTP Configuration Menu

SNTP State : Disabled
Interval   : 720 seconds

SNTP Server IP                          Version     Last Receive
--------------------------------------  --------    --------------
192.16.1.2                              4           00:02:02
192.16.2.1                              --------    --------------


-------------------------------- <COMMAND> ----------------------------------
Set SNTP [S]tate
Set SNTP [I]nterval
Add SNTP Server IPv[4]
Add SNTP Server IPv[6]
[D]elete SNTP Server IPv4
Delete SNTP Server I[P]v6
[Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 3-23: SNTP Configuration Menu

Screen Description

SNTP State	Displays the configuration to enable or disable SNTP. The factory default settings is "Enable".
Interval	Displays the interval of time synchronization with SNTP servers. The factory default settings is 720 seconds.
SNTP Server IP	Displays an IP address of SNTP servers that perform a time synchronization. The maximum number of registrations for IP address: up to two for IPv4 and IPv6, respectively.
Version	Displays SNTP version received.
Last Receive	Displays the time when SNTP is received at the end (or in the previous time).

The following describes how to use several commands on this screen.

S	Configures the SNTP status.
	Press S (command), and then the appearance of the command prompt becomes "Enable or Disable (E/D)>". After that, press E to enable and D to disable it.
I	Configures the interval of time synchronization with SNTP servers.
	Press I (command), and then the appearance of the command prompt becomes "Enter Interval Time>". After that, configure the time needed in the range from 30 to 99,999 (seconds).
4	Configures an IPv4 address of an SNTP server.
	Press 4 (command), and then the appearance of the command prompt becomes "Enter new IP address>". After that, enter the IPv4 address of the SNTP server.
6	Configures an IPv6 address of an SNTP server.
	Press 6 (command), and then the appearance of the command prompt becomes "Enter new IPv6 address>". After that, enter the IPv6 address of the SNTP server.
D	Deletes the IPv4 address registered.
	Press 4 (command), and then the appearance of the command prompt becomes "Enter IP address>". After that, enter the IPv4 address to be deleted.
P	Deletes the IPv6 address registered.
	Press 6 (command), and then the appearance of the command prompt becomes "Enter IPv6 address>". After that, enter the IPv6 address to be deleted.
Q	Returns to the top menu.

3.8. ARP Table

Press R (command) on the **Basic Switch Configuration** menu to display the ARP Table screen, as illustrated in the **Figure 3-24**. You can see and configure ARP table on this screen.

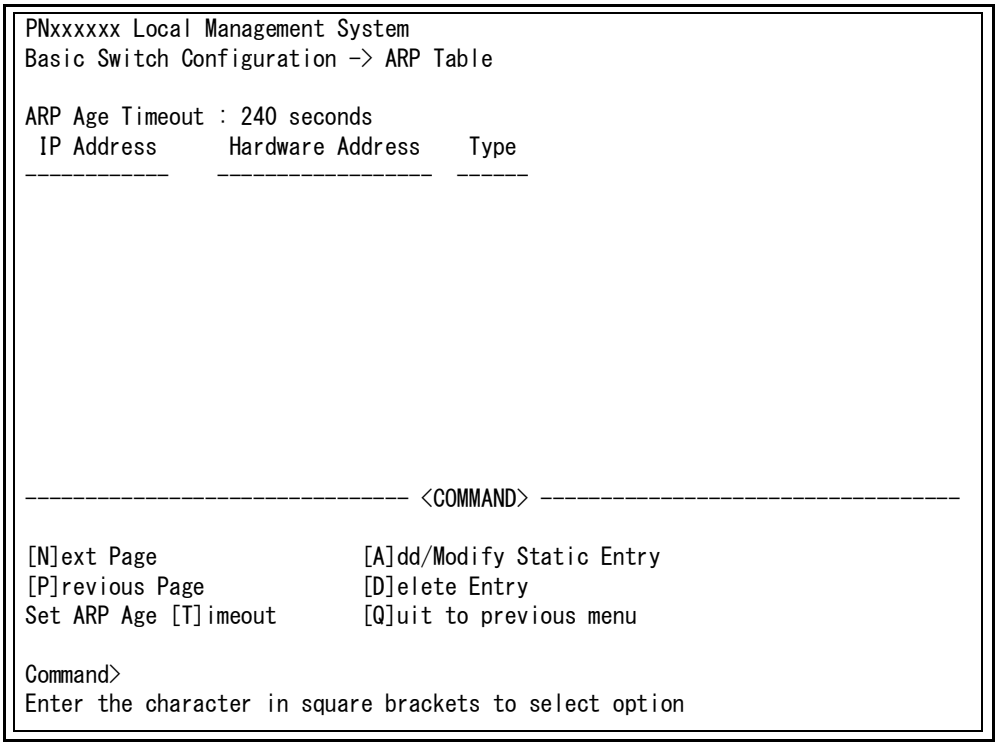


Figure 3-24: ARP Table

Screen Description

ARP Age Timeout	Displays an aging time out of ARP table.	
IP Address	Displays the IP address on the ARP table.	
Hardware Address	Displays the MAC address on a ARP table.	
Type	Displays types of ARP entries registered.	
	Static	Displays that a manual configuration is done.
	Dynamic	Displays that automatic learning is done.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
T	Configures the aging timeout on an ARP table.	
		Press T (command), and then the appearance of the command prompt becomes "Enter ARP age timeout value >" . Then configure it in the range from 30 to 65,535 (seconds) for the aging timeout of ARP table.
A	Adds and modifies (or revise) an entry of ARP table.	
		7. Press A (command). As the appearance of the command prompt becomes changed to "Enter IP address >" , enter an IP address. 8. Press **:**:**:**:**:**" for MAC address as the appearance of the command prompt becomes changed to "Enter Hardware address >".
D	Deletes an entry of ARP table.	
		Press D (command). Enter an IP address as the appearance of the command prompt becomes changed to "Enter IP address >".
Q	Returns to the top menu.	

3.9.1. Neighbor Table

Press E (command) on the screen of the **LLDP Configuration**, and then you can see "Neighbor Table" as **Figure 3-25**. You can display the Neighbor table on this screen.

```
PNxxxxxx Local Management System
LLDP Configuration -> Neighbor Table

Total Neighbors:   0
 No     Chassis ID           Port ID       Mgmt IP Address  Port
---  -----------------  -----------------  ---------------  ----
 1  xx:xx:xx:xx:xx:xx  xx:xx:xx:xx:xx:xx   0.0.0.0            1

 ---------------------------------- <COMMAND> -----------------------------------
[N]ext Page                              [D]etail
[P]revious Page                          [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-25: Neighbor Table

Screen Description

Total Neighbors	Displays the number of entries recorded on the Neighbor table.
No	Displays the entry number.
Chassis ID	Displays Chassis ID per entry.
Port ID	Displays the port ID per entry.
Mgmt IP Address	Displays the IP address per entry.
Port	Displays the port-number, which received the LLDP frames.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
D	Displays the details on each entry.
	Press D, and then the entry details are displayed. See next section (**3.9.3**) for this configuration.
Q	Returns to the top menu.

3.9.2. LLDP Configuration

Press L (command) on the **Basic Switch Configuration** menu, and then you can see "LLDP Configuration" as **Figure 3-26**. You can perform LLDP configuration on this screen.

```
PNxxxxxx Local Management System
Basic Switch Configuration -> LLDP Configuration

LLDP Status : Disabled

Port  Admin Status  Port Desc  Sys Name  Sys Desc  Sys Cap   Mgmt Addr
----  ------------  ---------  --------  --------  --------  ---------
  1   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  2   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  3   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  4   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  5   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  6   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  7   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  8   Both          Disabled   Disabled  Disabled  Disabled  Disabled
  9   Both          Disabled   Disabled  Disabled  Disabled  Disabled
 10   Both          Disabled   Disabled  Disabled  Disabled  Disabled
 -------------------------------- <COMMAND> ----------------------------------
[N]ext Page              [S]et LLDP Status          Enable/Disable TL[V]
[P]revious Page          [L]LDP Port Admin Status   N[e]ighbor Table
[Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 3-26: LLDP Configuration

Screen Description

LLDP Status	Displays the configuration to enable or disable LLDP.	
	Enabled	Enables LLDP (factory default settings).
	Disabled	Disables LLDP.
Port	Display the port-number.	
Admin Status	Displays the LLDP status.	
	TX Only	Transmits LLDP, only.
	RX Only	Receives LLDP, only.
	Both	Transmits and receives LLDP (factory default settings).
	Disabled	Does not transmit and receive LLDP.
Port Desc	Displays if the interface information is included in the LLDP frame.	
	Enabled	Includes in the LLDP.
	Disabled	Does not include in the LLDP (factory default settings).
Sys Name	Displays if the host name is included in the LLDP frame.	
	Enabled	Includes in the LLDP.
	Disabled	Does not include in the LLDP (factory default settings).
Sys Desc	Displays if the overview of system information is included in the LLDP frame.	
	Enabled	Includes in the LLDP.
	Disabled	Does not include in the LLDP (factory default settings).

Sys Cap	Displays if the system capability (or function) information is included in the LLDP frame.	
	Enabled	Includes in the LLDP.
	Disabled	Does not include in the LLDP (factory default settings).
Mgmt Addr	Displays if the IP address of system(s) is included in the LLDP frame.	
	Enabled	Includes in the LLDP.
	Disabled	Does not include in the LLDP (factory default settings).

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
S	Configures to enable or disable the LLDP.	
		Press S, and then the appearance of the command prompt becomes "Enable or Disable (E/D)>". After that, press E to enable and D to disable it.
L	Configures the LLDP status.	
		1. Press L, and then the appearance of the command prompt becomes "Select port number to be changed>". After that, enter the port-number to be changed. (Press 0 when changing all the ports , simultaneously.) 2. As the appearance of the command prompt becomes "Set Admin Status for port # (1-4)>", press 1 for TX, 2 for RX, 3 for both of them. Press 4 to disable it.
V	Configures the information to include in the LLDP frame sent from your device.	
		1. Press V, and then the appearance of the command prompt becomes "Select port number to be changed>". After that, enter the port-number to be changed. (Press 0 to change all the ports, simultaneously.) 2. As the appearance of the command prompt becomes "Enter transmit TLV", press 0 for nothing, 1 for Port Description, 2 for System Name, 3 for System Description, 4 for System Capability (or function), and 5 for Management IP based on the designation-range.
E	Displays a Neighbor Table.	
		Press E to move (or migrate) to the Neighbor Table. See next section (3.9.1) for this configuration.
Q	Returns to the top menu.	

3.9.3. Neighbor Detailed Information

Press D (command) on the screen of the **Neighbor table**, and then you can see "Neighbor Detail Information" as **Figure 3-27**. This screen displays the details of Neighbor Table. Use the UTP cable in that case.

```
PNxxxxxx Local Management System
Neighbor Table -> Neighbor Detail Information

Index              : 1
Local Port         : 1
Discovered Time    : 000day(s), 00hr(s), 00min(s), 00sec(s)
Last Update Time   : 000day(s), 00hr(s), 00min(s), 00sec(s)
ChassisId          : xx:xx:xx:xx:xx:xx (MAC Address)
PortId             : xx:xx:xx:xx:xx:xx (MAC Address)
System Name        :
System Capability  : x / x (Supported / Enabled)
(O:Other R:Repeater B:Bridge W:WLAN Access Point
r:Router T:Telephone D:DOCSIS cable device S:Station Only)
Port Description   :
System Description :




 -------------------------------- <COMMAND> ----------------------------------
[N]ext Page                            [Q]uit to previous menu
[P]revious Page

Command>
Enter the character in square brackets to select option
```

Figure 3-27: Neighbor Detailed Information

Screen Description

Index	Displays the entry number.
Local Port	Displays the port-number that received the LLDP frames.
Discovered Time	Displays time when the LLDP frame was received for the first time.
Last Update Time	Displays time when the latest LLDP frame was received.
ChassisId	Displays Chassis ID of the entry.
PortId	Displays the port ID of the entry.
System Name	Displays the system name of the entry.
System Capability	Displays the functional information on the entry.
Port Description	Displays the interface information on the entry.
System Description	Displays an overview of the entry.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
Q	Returns to the top menu.

4. Advanced Switch Configuration

Press A (command) on **Main Menu**, and then you can see **Advanced Switch Configuration Menu** as **Figure 4-1**. This screen configures the VLAN, link aggregation. port monitoring, QoS, a spanning tree, storm control, IGMP snooping, Power Over Ethernet, ring protocol, the function of detecting and blocking a loop, port grouping, DDM, and the PPS function that this device includes.

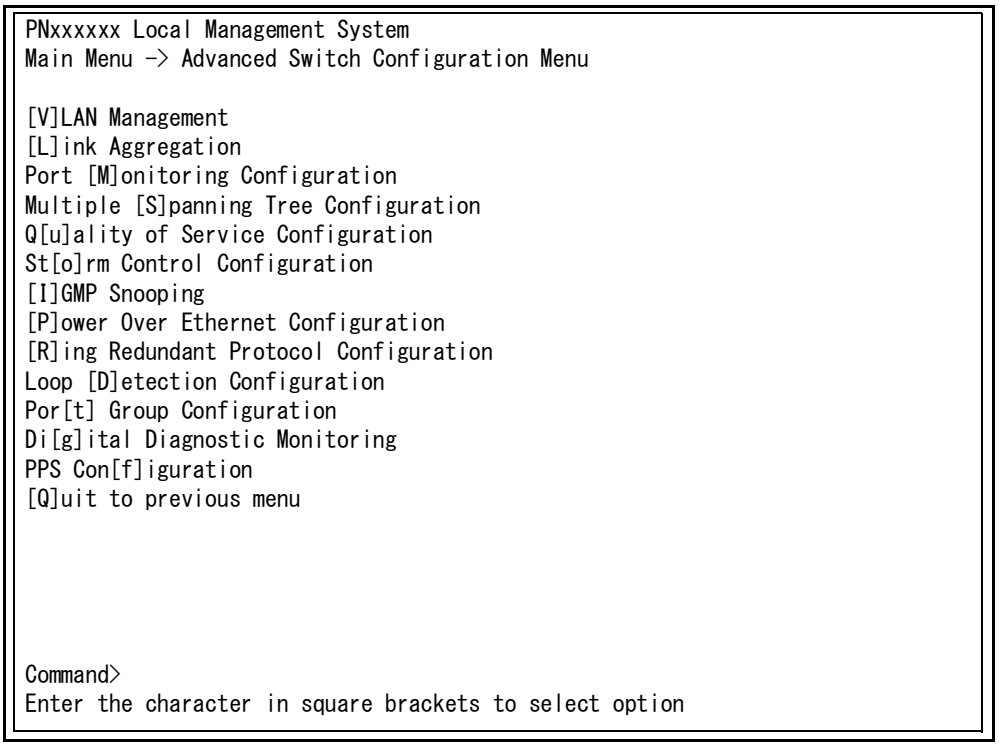


Figure 4-1: Advanced Switch Configuration

Screen Description

VLAN Management	Performs the VLAN configuration.
Link Aggregation	Configures a link aggregation.
Port Monitoring Configuration	Configures a port monitoring.
Multiple Spanning Tree Configuration	Configures a spanning tree.
Quality of Service Configuration	Performs the QoS configuration.
Storm Control Configuration	Configures the function of a storm control.
IGMP Snooping	Configures IGMP Snooping.
Power Over Ethernet Configuration	Configures the power supply with PoE.
Ring Redundant Protocol Configuration	Configures a ring protocol.
Loop Detection Configuration	Performs the configuration of the function of detecting and blocking a loop.
Port Group Configuration	Configures the function of a port grouping.
Digital Diagnostic Monitoring	Configures the function of checking the condition of SFP module. SFP module needs to be compatible with SFF-8472 (DMI: Diagnostic Monitoring Interface).
PPS Configuration	Configures the function of PPS (Power to Progress SDN).
Quit to previous menu	Exits the **Advanced Switch Configuration** menu to return to **Main Menu**.

4.1. VLAN Management (VLAN Configuration)

4.1.1. VLAN Management

Press V (command) on the **Advanced Switch Configuration** menu, and then you can see **VLAN Management Menu** as **Figure 4-2**. You can configure VLAN on this screen.

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> VLAN Management Menu

GVRP Status      : Disabled                Maximum VLANs : 4,094
Internet Mansion : Disabled                Uplink        :
VLAN ID  VLAN Name                         VLAN Type
-------  --------------------------------  --------------------
    1    default                            Permanent









-------------------------------- <COMMAND> ----------------------------------
[N]ext Page              [C]reate VLAN             [S]et Port Config
[P]revious Page          [D]elete VLAN             Set [G]VRP Status
Set [I]nternet Mansion   C[o]nfig VLAN             Config [A]ccess VLAN
Config [T]runk VLAN      Config [H]ybrid VLAN      [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-2: VLAN Management Menu

Screen Description

GVRP status	Displays the GVRP status.	
	Enabled	GVRP is enabled.
	Disabled	GVRP is disabled (factory default settings).
Internet Mansion	Displays the status (or condition) of the Internet mansion mode.	
	Enabled	The Internet mansion mode is enabled.
	Disabled	The Internet mansion mode is disabled (factory default settings).
Maximum VLANs	Displays the number of configurable VLANs. Creating 4,094 VLANs is possible, including the default VLAN.	
Uplink	Displays the up-link port when enabling the Internet mansion mode.	
VLAN ID	Displays a VLAN ID of VLAN.	
VLAN Name	Displays the VLAN name configured.	
VLAN Type	Displays the type of VLAN.	
	Permanent	Indicates the VLAN of the initial setting. Minimally, one VLAN is necessary, and this VLAN cannot be deleted.
	Static	Indicates the VLAN, which is newly configured.

Note: The factory default settings is VLAN ID=1. All the ports belong to this VLAN, and the management VLAN is configured on VLAN ID1 (default VLAN).

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
I	Configures the Internet mansion mode.	
		Press I (command), and then the appearance of the command prompt becomes "Enable or Disable Internet Mansion Function? (E/D)>". Press E to enable the Internet mansion mode, and D to disable it. If you select E, the appearance of the command prompt becomes "Uplink port? >" . Enter the port-number as an up-link port. Doing so configures the optimum environment as a switch to be used for the Internet mansion. Set the port (which is designated as an up-link port), and then other ports can communicate with a down-link port. As a result, down-link ports cannot communicate each other. Thus the security between households is ensured (or guaranteed). There is a restriction for the usage. Be sure to check "Caution (or warning)" when configuring that.
C	Moves to the screen of creating VLAN.	
		Press C, and then the appearance of the command prompt becomes **VLAN Create Menu**. See next section (**4.1.2**) for the contents.
D	Deletes the VLAN, which is configured.	
		Press D, and then the appearance of the command prompt becomes "Enter VLAN ID >". Enter the VLAN ID (from 2 to 4,094) to be deleted.
O	Moves to the screen of changing VLAN configuration.	
		Press O, and then the appearance of the command prompt becomes "Enter VLAN ID>". Enter the VLAN ID (from 1 to 4,094) to configure, and then **VLAN modification Menu** is displayed on the screen. See next section (**4.1.3**) for the contents.
S	Performs PVID configuration and checking per port.	
		Press S, and then the appearance of the command prompt becomes **VLAN Port Configuration Menu**. See next section (**4.1.4**) for the content.
G	Configures the GVRP condition (or status).	
		Press G, and then the appearance of the command prompt becomes "Enable or Disable GVRP status (E/D)>". Press E to enable GVRP, and D to disable it.
Q	Returns to the top menu.	

Note: If VLAN is newly created, the following PVID does not become changed. After registering this screen, be sure to implement the configuration operation on the configuration screen of Figure 4-4, or check the configuration content. If a VLAN ID to be deleted (as well as the configuration) still exists as the PVID when you delete VLAN, it is not deleted yet. Then change the PVID to other ID(s) before deleting.

Note: The following restriction condition is defined when enabling the Internet mansion mode.

Be sure to check the following contents.

(1)Using with a spanning tree function is not allowed.
(2)Using with a function of IGMP snooping is not allowed.
(3)Using with a function of a link-aggregation is not allowed.
(4)Using with a function of a link-protocol is not allowed.
(5)Static cannot be registered on a MAC address table.
(6)You cannot disable the learning mode of a MAC address in section 3.6.2.
(7) Only up-link port belongs to the management VLAN.

Note: VLAN one (1) is set to the factory default settings, and all the ports belong to the VLAN. In addition, the management VLAN is set to enable.

4.1.2. VLAN Creation Menu

Press C (command) on the **VLAN Management** menu, and then you can see **VLAN Creation Menu** as **Figure 4-3**. You can create VLAN on this screen.

```
PNxxxxxx Local Management System
VLAN Management -> VLAN Creation Menu

VLAN ID        :
VLAN Name      :


-------------------------------- <COMMAND> ----------------------------------

Set [V]LAN ID
Set VLAN [N]ame
[A]pply
[Q]uit to previous menu









Command>
Enter the character in square brackets to select option
```

Figure 4-3: VLAN Creation Menu

Screen Description

VLAN ID	Displays VLAN ID of VLAN to create.
VLAN Name	Displays the VLAN name of VLAN to create.

The following describes how to use several commands on this screen.

V	Configures a VLAN ID.	
		Press V (command), and then the appearance of the command prompt becomes "Enter VLAN ID >". After that, enter a new VLAN ID.
N	Configures VLAN name.	
		Press N (command), and then the appearance of the command prompt becomes "Enter VLAN name >" . After that, enter a new VLAN name using half-size characters: within 32 characters.
A	Configures VLAN.	
		Press A (command) to apply the VLAN created.
Q	Returns to the top menu.	

Note: Press A to apply for sure after entering the VLAN configuration. If you Press Q without applying, the configuration becomes discarded (or deleted) and no VLAN is created.

4.1.3. VLAN Modification Menu

Press O (command), and then the appearance of the command prompt becomes the **VLAN Management Menu**. Designate a target VLAN ID, and then you can see the **VLAN Modification Menu** as **Figure 4-4**. You can change the configuration information on VLAN on this screen.

```
PNxxxxxx Local Management System
VLAN Management -> VLAN Modification Menu

VLAN ID        : 1
VLAN Name      : default


-------------------------------- <COMMAND> ---------------------------------

Set VLAN [N]ame
[A]pply
[Q]uit to previous menu









Command>
Enter the character in square brackets to select option
```

Figure 4-4: VLAN Modification Menu

Screen Description

VLAN ID	Displays the VLAN ID to be changed.
VLAN Name	Displays the VLAN name to be changed.

The following describes how to use several commands on this screen.

N	Changes the name of VLAN.	
		Press N (command), and then the appearance of the command becomes "Enter VLAN name >" . Enter the VLAN name using characters: within the half-size of 32 characters.
A	Configures the VLAN.	
		Press A, and then the VLAN changed will be applied.
Q	Returns to the top menu.	

4.1.4. VLAN Port Configuration Menu

Press S (command) on the **VLAN Management** menu, and then you can see **VLAN Port Configuration Menu** as **Figure 4-5**. You can perform the configuration per VLAN port on this screen.

```
PNxxxxxx Local Management System
VLAN Management -> VLAN Port Configuration Menu

Port  Administrative Mode  Operational Mode
----  -------------------  ----------------
   1  Hybrid               Down
   2  Hybrid               Down
   3  Hybrid               Down
   4  Hybrid               Down
   5  Hybrid               Down
   6  Hybrid               Down
   7  Hybrid               Down
   8  Hybrid               Down

-------------------------------- <COMMAND> ----------------------------------

[N]ext Page                              Set [A]dministrative Mode
[P]revious Page                          [Q]uit to previous menu




Command>
Enter the character in square brackets to select option
```

Figure 4-5: VLAN Port Configuration Menu

Screen Description

Port	Displays the port-number.	
Administrative Mode	Displays the condition of the the administrative mode.	
	Hybrid	Displays the condition of hybrid board.
	Trunk	Displays the condition of a trunk port.
	Access	Displays the condition of access port.
Operational Mode	Displays the condition of the operation mode.	
	Down	Displays that an interface is becoming the link-down condition.
	Up	Displays that an interface is becoming the link-up condition.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
A	Configures the type of the administrative mode.	
		Enter the port-number to be changed. Press 0 to configure all the ports. After that, the appearance of the command prompt becomes "Select administrative mode >. Press 1 for selecting Hybrid, 2 for Trunk, and 3 for Access.
Q	Returns to the top menu.	

4.1.5. Hybrid VLAN Configuration Menu

Press H (command) on the **VLAN Management** menu, and then you can see **Hybrid VLAN Configuration Menu** as **Figure 4-6**. You can configure the Hybrid VLAN per port on this screen.

```
PNxxxxxx Local Management System
VLAN Management -> Hybrid VLAN Configuration Menu

Port  PVID  VLANs                                        Frame Type    GVRP
----  ----  -------------------------------------------  ----------  --------
   1  1     1                                            Admit All   Disabled
   2  1     1                                            Admit All   Disabled
   3  1     1                                            Admit All   Disabled
   4  1     1                                            Admit All   Disabled
   5  1     1                                            Admit All   Disabled
   6  1     1                                            Admit All   Disabled
   7  1     1                                            Admit All   Disabled
   8  1     1                                            Admit All   Disabled

-------------------------------- <COMMAND> ----------------------------------

[N]ext Page               [A]dd Allowed VLAN         [R]emove Allowed VLAN
[P]revious Page           Set [G]VRP Status          Set port [V]ID
[Q]uit to previous menu   Set [F]rame Type



Command>
Enter the character in square brackets to select option
```

Figure 4-6: Hybrid VLAN Configuration Menu

Screen Description

Port	Displays the port-number.	
PVID	Displays the PVID (Port VLAN ID), which is currently configured on the port. The PVID indicates where (and what kind of VLAN IDs) to send untagged packets when receiving untag packets. PVID is set to one when shipping from a factory. Refer to a tag regardless of this value, and then determine the destination port when receiving packets with a tag.	
Acceptable Frame Type	Displays the frame type to be received.	
	Tagged Only	Ignores (or deletes) packets without tags and packets with a priority tag.
	Untagged	Ignores (or deletes) packets with VLAN tags (excluding packets with a priority tag).
	Admit All	Deletes packets without tags or packets with a priority tag.
GVRP	Displays the GVRP condition.	
	Disabled	GVRP is disabled during the factory default settings.
	Enabled	GVRP is enabled.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
V	Configures the PVID.	
		Press V, and then the appearance of the command prompt becomes “Enter port-number>” . Enter the port-number to be configured. Press 0 when configuring all the ports. After entering it, the appearance of the command prompt becomes “Enter Port VID for port #>” . Enter the VLAN ID to be configured in the range from 1 and 4,094.
A	Adds a VLAN ID to VLANs.	
		Press A, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be configured. Press 0 when configuring all the ports. After entering it, the appearance of the command prompt becomes “Seletct tagged or unagged to set (T/U)>” . Press T when configuring Tagged Only, and U when configuring Untagged**.** After entering it, the appearance of the command prompt becomes "Enter VLAN ID>". Enter a VLAN ID to add it to Hybrid VLANs.
R	Deletes a VLAN ID from VLANs.	
		Press R, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to delete the VLAN ID. Press 0 when configuring all the ports. After entering it, the appearance of the command prompt becomes "Enter VLAN ID>". Enter the VLAN ID to be deleted from Trunking VLANs.
F	Configures a frame type.	
		Press F, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be configured. Press 0 when configuring all the ports. After entering it, the appearance of the command prompt becomes "Select port acceptable frame type (A/T/U)>". Enter a VLAN ID to add it to Hybrid VLANs. Press A for configuring Admit All, T for Tagged Only, and U for Untagged.
G	Configures the GVRP condition.	
		Press G, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be configured. Press 0 when configuring all the ports. After that, the appearance of the command prompt becomes "Enable or Disable (E/D)>". Press E to enable, and D to disable that.
Q	Returns to the top menu.	

4.1.6. Trunk VLAN Configuration Menu

Press T (command) on the **VLAN Management** menu, and then you can see **Trunk VLAN Configuration Menu** as **Figure 4-7**. You can configure Trunk VLAN per port on this screen.

```
PNxxxxxx Local Management System
VLAN Management -> Trunk VLAN Configuration Menu

Port  Trunking Native VLAN  Trunking VLANs       (Inactive)            GVRP
----  --------------------  -------------------  -------------------  --------
   1  1                     1                    2-4094               Disabled









--------------------------------- <COMMAND> -----------------------------------

[N]ext Page               Native [V]LAN             [A]dd Allowed VLAN
[P]revious Page           [R]emove Allowed VLAN     [E]xcept Allowed VLAN
[Q]uit to previous menu   Set [G]VRP Status



Command>
Enter the character in square brackets to select option
```

Figure 4-7: Trunk VLAN Configuration Menu

Screen Description

Port	Displays the port-number.	
Trunking Native VLAN	Displays a native VLAN ID of a port.	
Trunking VLANs	Displays the VLAN ID, which is added to a port.	
(Inactive)	Displays the VLAN ID, which does not belong to a port.	
GVRP	Displays the status of GVRP.	
	Disabled	GVRP is disabled (factory default settings).
	Enabled	GVRP is enabled.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
V	Configures Trunking Native VLAN.	
		Press V, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be configured. Press 0 to configure all the ports. After that, the appearance of the command prompt becomes "Enter VLAN ID>". Then enter a VLAN ID to be configured for Trunking Native VLAN.
A	Adds VLAN ID for Trunking VLANs.	
		Press A, and then the appearance of the command prompt becomes "Enter port-number>". After that, enter the port-number to be configured. Press 0 to configure all the ports. After that, the appearance of the command prompt becomes "Enter VLAN ID>". Enter a VLAN ID to add it on trunking VLANs. Create a VLAN ID to add it in VLAN Management Menu in advance.
R	Deletes a VLAN ID from Trunking VLANs.	
		Press R, and then the appearance of the command prompt becomes "Enter port-number>". After that, enter the port-number to delete VLAN ID. Press 0 to configure all the ports. After that, the appearance of the command prompt becomes "Enter VLAN ID>". Enter the port-number to delete it from Trunking VLANs.
G	Configures the GVRP status.	
		Press G, and the appearance of the command prompt becomes "Enter port-number>". After that, enter the port-number to be configured. Press 0 to configure all the ports. After that, the appearance of the command prompt becomes "Enable or Disable (E/D)>". Then press E to enable and D to disable it.
Q	Returns to the top menu.	

Note: This device can provide (or assign) two or more VLANs with one port. If VLAN is newly configured, the device belongs to both VLAN (which used to belong before) and new VLAN. Be sure to delete it from the VLAN, which has been belonging to, when dividing domains is necessary.

4.1.7. Access VLAN Configuration Menu

Press A (command) on the **VLAN Management** menu, and then you can see **Access VLAN Configuration Menu** as **Figure 4-8**. This screen allows you to configure Access VLAN per port.

```
PNxxxxxx Local Management System
VLAN Management -> Access VLAN Configuration Menu

Port  Access Mode VLAN
----  --------------------









-------------------------------- <COMMAND> ----------------------------------

[N]ext Page                              [A]dd VLAN
[P]revious Page                          [R]emove any VLAN
[Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure 4-8: Access VLAN Configuration Menu

Screen Description

Port	Displays the port-number.
Access Mode VLAN	Displays the VLAN ID of the access mode.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
A	Configures a VLAN ID of the access mode.	
		Press A and then the appearance of the command prompt becomes "Enter port-number>" . After that, press 0 when configuring all the ports. Then the appearance of the command prompt becomes "Enter VLAN ID>. Enter the VLAN ID to be configured within the range from 1 to 4,094.
R	Deletes a VLAN ID of the access mode.	
		Press R, and appearance of the command prompt becomes "Enter port-number>. Enter the port-number to delete the VLAN ID. Press 0 to configure all the ports.
Q	Returns to the top menu.	

4.2. Link Aggregation

4.2.1. Link Aggregation:

A link aggregation groups two or more ports of the switch, and is a function of connecting the ports, which are grouped to increase the communication bandwidth between switches. Using the function of the link aggregation is called trunking. This device supports the LACP (Link Aggregation Control Protocol), which is stipulated in IEEE802.3ad. This can configure up to eight (8) ports for one group.

Note: This device cannot configure the trunking, which mixes up 100M ports and Giga ports. In addition, you cannot use a spanning tree and the Internet mansion mode as a combination.

Note: Traffics may not be allocated (or distributed) to all the ports uniformly, depending on the number of ports in a group and a traffic condition.

4.2.2. Trunk Configuration Menu

Press L (command) on the **Advanced Switch Configuration** menu, and then you can see **Trunk Configuration Menu** as **Figure 4-9**. You can configure trunking on this screen.

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Trunk Configuration Menu
System Priority        : 32768

 Key    Mode      Member Port List
----- -------- ------------------------------------------------------------
    1  Manual 3-4
    2  Active 5-6









-------------------------------- <COMMAND> ----------------------------------
Se[t] System Priority                 Set P[o]rt Priority
[A]dd Group Member                    LACP [G]roup Status
[R]emove Group Member                 [Q]uit to previous menu
[M]odify Group Mode

Command>
Enter the character in square brackets to select option
```

Figure 4-9: Trunk Configuration Menu

Screen Description

System Priority	This means the priority level of this device, which is necessary for configuring trunking on the network with LACP. The lower a numerical value is, the higher priority level will be. The factory default settings is set to one (1).	
ID	Displays the group number of trunking.	
Mode	Displays the operation mode of trunking.	
	Active	The active mode outgoes LACP packets from this device, and configures trunking by performing the negotiation with the opponent side. The mode of the opponent side needs to be either Active or Passive.
	Passive	The passive mode does not outgo LACP packets from this device, and configures trunking by performing the negotiation when receiving LACP packets from the opponent side. The mode of the opponent side must be Active.
	Manual	Manual does not use LACP packets, and configures trunking forcefully. The opponent-side needs to be configured, similarly.
Member Port List	Displays the port belonging to a trunking group.	

Note: If the trunking mode is Passive between switches, a loop occurs without performing the LACP negotiation. Be sure to configure Active for one side of the configurations when configuring trunking with the LACP.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
S	Sets the value of System Priority of this device on LACP.	
		Press T, and then the appearance of the command prompt becomes "Enter system priority for LACP>". Enter the priority value.
A	Configures trunking newly.	
		1. Press A, and then the appearance of the command prompt becomes "Enter trunk group admin key>". After that, enter the group number to be configured. 2. The appearance of the command prompt becomes "Enter port member for group key #>. Then enter the port-number to operate the trunking. Specify the hyphen for the consecutive numbers or delimit with a comma and no spaces when entering two or more port-numbers. 3. The appearance of the command prompt becomes "Lacp Active, Lacp Passive or Manual trunk setting(A/P/M)>". Select A to set the operation mode to Active, P to Passive, and M to Manual.
R	Deletes the configuration of trunking.	
		1. Press R, and then the appearance of the command prompt becomes "Enter trunk group admin key>". Enter the group number to be deleted. 2. The appearance of the command prompt becomes "Enter port member port for group key #>". Then enter the port-number to operate the trunking. Specify the hyphen for the consecutive numbers or delimit with a comma and no spaces when entering two or more port-numbers.
M	Changes the operation mode of trunking.	
		1. Press M, and then the appearance of the command prompt becomes "Enter trunk group admin key>". After that, enter the group number to be changed. 2. The appearance of the command prompt becomes "Lacp Active, Lacp Passive or Manual trunk setting(A/P/M)>". Then select A to set the operation mode to Active, P to Passive, and M to Manual.
O	Sets the priority value per port of this device on trunking.	
		Press O, and then the appearance of the screen becomes "Set port Priority". See next section (**4.2.3**) for the method of advanced settings.
G	Displays the condition of an LACP group.	
		1. Press G, and then the appearance of the command prompt becomes "Enter trunk group number >". Enter the key of a group to be displayed. (The content to enter here is limited to the mode, which is either Active or Passive group.) 2. The appearance of the screen becomes "LACP Status". See next section (**4.2.4**) for this content.
Q	Returns to the top menu.	

Note: Regarding members, this device can configure up to 24 ports for one group, but can operate trunking up to eight (8) ports. Members of the group, after the ninth port, become the backup mode. If a failure occurs in the link up to the eighth port, the members configure trunking instead of the port. In this case, the value of the port priority configured on next section (**4.2.3**) determines the priority, which can become members. If the priority value is the same for all, the trunking becomes configured from the lower port-number.

4.2.3. Set Port Priority

Press O (command) on the **Trunk Configuration** menu, and then you can see "Set Port Priority" as **Figure 4-10.** You can implement the priority configuration for trunking on this screen.

```
PN262492 Local Management System
 Trunk Configuration Menu -> Set Port Priority

 System Priority        : 32768
 System ID              : 00:00:00:00:00:01

 Port   Priority
 ----- ----------
   1   32768
   2   32768
   3   32768
   4   32768
   5   32768
   6   32768
   7   32768
   8   32768
   9   32768
  10   32768

-------------------------------- <COMMAND> ----------------------------------
[S]et Port Priority
[Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 4-10: Set Port Priority

Screen Description

System Priority	This is the priority level of the device, which is necessary for configuring the trunking on the network with LACP. The lower numeric value is, the higher priority level will be. The factory default settings is one (1).
System ID	This is an ID of the device, which is necessary for configuring trunking on the network with LACP. This becomes the ID of a MAC address of this device, and cannot be changed. A combination of the value of system priority and the system ID becomes the system ID on LACP.
Port	Indicates the port-number of the device.
Priority	This is the priority level per port of the device on trunking. The lower numeric value is, the higher the priority will be. This becomes enabled when the configuration of a trunking group, which is more than nine (9) ports. All of the factory default settings are set to one (1).

The following describes how to use several commands on this screen.

S	Configures the priority value (priority level) per port.	
		Press S (command), and then the appearance of the command prompt becomes "Enter port-number.>". Enter the port-number to be configured. After that, the appearance of the command prompt becomes "Enter port priority". Enter the priority value in the range from 0 to 255.
Q	Returns to the top menu.	

4.2.4. Set Port Priority

Press G (command) on **Trunk Configuration Menu**, and then you can see "LACP Status" as **Figure 4-11**. You can check the status of LACP group on this screen. (The status can be displayed for the key whose mode is either Active or Passive.)

```
PNxxxxxx Local Management System
Trunk Configuration Menu -> Set Port Priority

System Priority :   32768
System ID       :   xx:xx:xx:xx:xx:xx
Group ID        :   1

Aggregator        Attached Port List              Standby Port List
----------  --------------------------------  --------------------------------
    1                                         1









-------------------------------- <COMMAND> ----------------------------------
[Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 4-11: Set Port Priority

Screen Description

System Priority	This is the priority of this device, which is necessary for configuring the trunking on the network using the LACP. The lower a numeric value is, the higher the priority will be. The factory default settings is one.
System ID	This is an ID of this device, which is necessary for configuring the trunking on the network with the LACP. The MAC address of this device becomes the ID, and is not changeable. The combination of the system priority (value) and the system ID becomes the system ID on the LACP.
Key	Displays the group number for trunking.
Aggregator	This is the number for the logical interface of trunking. The aggregator becomes the same with the port-number with the highest value of port priority among ports configuring the trunking.
Attached Port List	This is the number for the physical interface (ports) connected to the logical interface (aggregator). If the trunking group, which exceeds nine ports, is configured, the port with the lower value of the port priority becomes the backup mode to display the standby.
Standby Port List	If the trunking group, which exceeds nine ports, is configured, the port with the lower value of the port priority becomes the back up mode. This field (or column) displays the appropriate ports.

The following describes how to use several commands on this screen.

Q	Returns to the top menu.

4.3. Port Monitoring Configuration

Press M (command) on the **Advanced Switch Configuration** menu, and then you can see **Mirror Consfiguration Menu** as **Figure 4-12.** On this device, filtering occurs when the communication is analyzed with a protocol analyzer. You can also monitor packets (among other ports), which cannot be normally obtained. You can implement the configuration of the port monitoring on this screen.

```
PNxxxxxx Local Management System
Mirror Configuration Menu -> Create Session Configuration Menu

 Remote VLAN                          Source Port(s)
------------- ------------------------------------------------------------
    ----       2

Direction                        Destination Port
------------- ------------------------------------------------------------
  Both        1

ACL List Name            CPU RX
-------------            ------
----                     No

-------------------------------- <COMMAND> ----------------------------------
Set Remote [V]LAN                    Set [S]ource Ports to be Monitored
Set [T]raffic Direction              Set [D]estination Ports
Set AC[L] List Name                  Set [C]PU RX
[A]pply                              [Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-12: Port Monitoring Configuration

Screen Description

Remote VLAN	Displays RSPAN VLAN of the destination session of RSPAN.	
Monitoring Port	Displays the port-number of the destination of transferring data whose port monitoring is conducted.	
Be Monitored Port(s)	Displays the target port-number that needs the port monitoring.	
Direction	Displays the communication direction of target packets that needs the port monitoring.	
	Tx	Monitors the packets for transmitting.
	Rx	Monitors the packets for receiving.
	Both	Monitors the packets for transmitting and receiving (factory default settings).
Status	Displays the monitoring condition.	
	Enabled	A port monitoring is enabled.
	Disabled	A port monitoring is disabled (factory default settings).

The following describes how to use several commands on this screen.

V	Configures an ID of remote VLAN.	
		1. Press V (command), and then the appearance of the command prompt becomes "Seletct source or destination remote vlan (S/D)>" . Press S to configure the remote VLAN of the source session, and D to configure remote VLAN of the destination session. 2. Press S or V, and then the appearance of the command prompt becomes "Enter Remote VLAN ID(2-4094)>" . Enter the ID of remote VLAN in the range from 2 to 4,094.
S	Configures a source port that will be monitored.	
		Press S, and then the appearance of the command prompt becomes "Seletct port or trunk to modify (P/T)>". Press P for a normal port, and T for a trunk port. Enter the port-number as the next target.
T	Configures the communication direction of target packets to be monitored.	
		Press T, and then the appearance of the command prompt becomes "Select traffic direction(R/T/B)>". Press R to set to RX, T to set to TX, and B to set to both.
D	Configures the port of the destination of transferring data (ports for connecting to an analyzer) monitored.	
		Press D, and then the appearance of the command prompt becomes "Seletct port or trunk to modify (P/T)>" . Press P for a normal port, and T for a trunk port. Enter the port-number as the next target.
C	Configures a port of the destination of transferring data that will be monitored (ports for connecting to analyzers).	
		Press C, and then the appearance of the command prompt becomes "Enter CPU RX Monitor Status (Y/N)>" . Press P for a normal port, and T for a trunk port.
A	Configures the condition of the CPU-receiving mirror.	
		Press S, and then the appearance of the command prompt becomes "Seletct port or trunk to modify (P/T)>" . Press P for a normal port, and T for a trunk port. Enter the port-number as the next target.
Q	Returns to the top menu.	

Note: The VLAN tag of VLAN ID received is added on the mirror packet whose direction is Tx.

Note: The management packets (e.g. Ping and ARP), which are transmitted from this device, cannot be captured.

4.4.1. Multiple Spanning Tree Configuration

Press S (command) on the **Advanced Switch Configuration** menu, and then you can see "Multiple Spanning Tree Configuration" as **Figure 4-13 A**. This device supports three versions: an IEEE 802.1s compliant multiple spanning tree protocol (MSTP: **Figure 4-13B**), a rapid spanning tree protocol (compatible with IEEE802.1w [RSTP: **Figure 4-13C**]), and a spanning tree protocol (compatible with IEEE802.1D [STP: **Figure 4-13 D**]).

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Multiple Spanning Tree Configuration
Global MSTP Status: Disabled
Global Protocol Version         : RSTP
Global MST Configuration Name   :
Global MST Revision Level       : 0
Global MST Config Digest        : 00000000000000000000000000000000









-------------------------------- <COMMAND> ----------------------------------
[E]nable/Disable Global MSTP              CIST [B]asic Port Configuration
Set MSTP Protocol [V]ersion               CIST [A]dvanced Port Configuration
Set MSTI Configuration [N]ame             MSTP Ins[t]ance Configuration
Set MSTI [R]evision Level                 Designated Topology [I]nformation
CIST [C]onfiguration                      Re[g]ional Topology Information
[Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-13 A: Multiple Spanning Tree Configuration

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Multiple Spanning Tree Configuration
Global MSTP Status: Enabled
Global Protocol Version         : MSTP
Global MST Configuration Name   :
Global MST Revision Level       : 0
Global MST Config Digest        : 00000000000000000000000000000000




-------------------------------- <COMMAND> ----------------------------------
[E]nable/Disable Global MSTP              CIST [B]asic Port Configuration
Set MSTP Protocol [V]ersion               CIST [A]dvanced Port Configuration
Set MSTI Configuration [N]ame             MSTP Ins[t]ance Configuration
Set MSTI [R]evision Level                 Designated Topology [I]nformation
CIST [C]onfiguration                      Re[g]ional Topology Information
[Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-13 B: MSTP Mode Time

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Multiple Spanning Tree Configuration
Global MSTP Status: Enabled
Global Protocol Version         : RSTP
Global MST Configuration Name   :
Global MST Revision Level       : 0
Global MST Config Digest        : 00000000000000000000000000000000




-------------------------------- <COMMAND> ----------------------------------
[E]nable/Disable Global MSTP              CIST [B]asic Port Configuration
Set MSTP Protocol [V]ersion               CIST [A]dvanced Port Configuration
Set MSTI Configuration [N]ame             MSTP Ins[t]ance Configuration
Set MSTI [R]evision Level                 Designated Topology [I]nformation
CIST [C]onfiguration                      Re[g]ional Topology Information
[Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-13 C: RSTP Mode Time

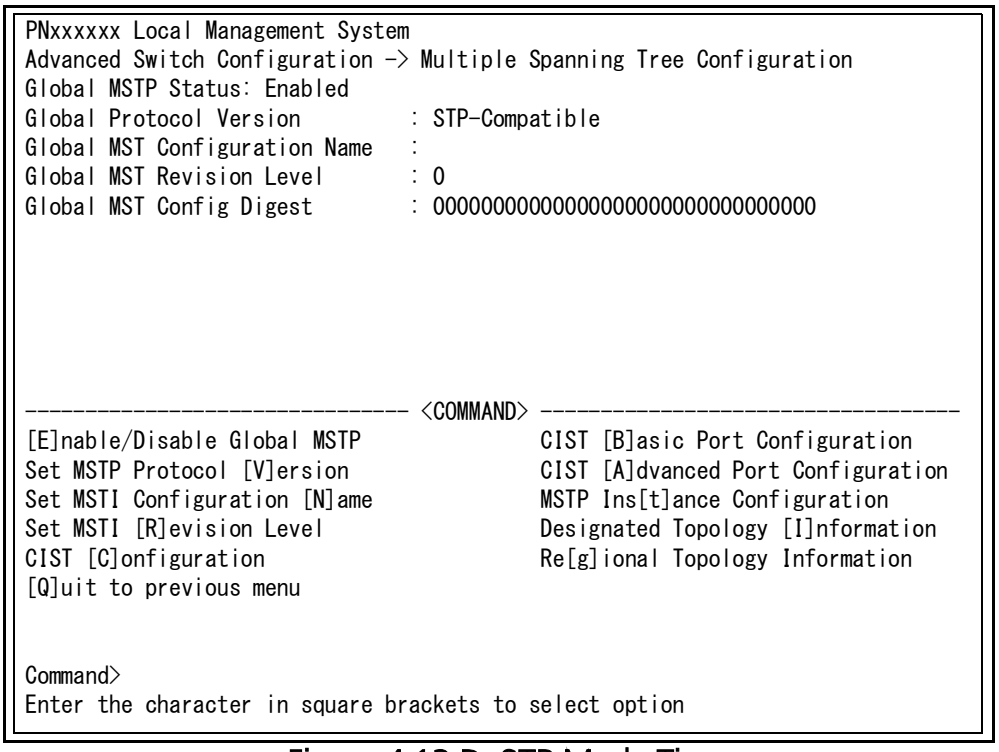


Figure 4-13 D: STP Mode Time

Screen Description

Global MSTP Status	Displays the operation condition of a spanning tree.	
	Enabled	A spanning tree is enabled.
	Disabled	A spanning tree is disabled (factory default settings).
Protocol Version	Displays a version of a spanning tree.	
	MSTP	Operates with a protocol of multiple spanning tree (compatible with IEEE802.1s).
	RSTP	Operates with a protocol of the rapid spanning tree, which is compatible with IEEE802.1w (factory default settings).
	STP-Compatible	Operates with a spanning tree protocol (compatible with IEEE802.1D).
MST Configuration Name	Displays the name of MST region. This is not set for the factory default settings.	
MST Revision Level	Displays a revision of a MST region configuration. The factory default settings is zero.	
MST Config Digest	Displays a message digest of a MST configuration. (Displays the list regarding the compatibility with the MST instance and the VLAN.)	

The following describes how to use several commands on this screen.

E	Configures ON/OFF of a spanning tree protocol.	
		Press E (command), and then the appearance of the command prompt becomes "Enable or Disable STP (E/D)>". After that, press E to use it, and D otherwise.
V	Configures the operation mode of a spanning tree protocol.	
		Press V, and then the appearance of the command prompt becomes "Set MSTP protocol version (S/R/M)>". After that, press S to operate with a spanning tree, R to operate with a rapid spanning tree, and M to operate with the multiple spanning tree.
N	Configures the name of MSTI.	
		Press N, and then the appearance of the command prompt becomes "Enter configuration name >". Enter the name to configure within 32 characters.
R	Configures a revision level.	
		Press R, and then the appearance of the command prompt becomes "Enter revision level>". Configure it in the range from 0 to 65,535.
C	Configures CIST.	
		Press C, and then the appearance of the screen becomes "CIST Configuration". You can configure the CIST. See next section (**4.4.2**) for this configuration method.
B	Implements the basic configuration per port.	
		Press B, and then the appearance of the screen becomes "CIST Basic Port Configuration". You can implement the basic configuration per port. See next section (**4.4.3**) for this configuration method.
A	Implements the expansion (or extension) configuration per port.	
		Press A, and then the appearance of the screen becomes "CIST Advanced Port Configuration". You can configure the expansion configuration per port. See next section (**4.4.4**) for this configuration method.
T	Configures an MSTP instance.	
		Press T, and then the appearance of the screen becomes "MSTP Instance Configuration". You can configure the MSTP instance. See next section (**4.4.5**) for this configuration method.
I	Displays topology information per port.	
		Press I, and then the appearance of the screen becomes "Designated Topology Information". See the topology information per port. See next section (**4.4.9**) for the screen content.
G	Displays regional topology information.	
		Press I, and then the appearance of the screen becomes "Regional Topology Information". You can refer to regional topology information per port. See next section (**4.4.10**) for the screen content.
Q	Returns to the top menu.	

Note: If the STP global status becomes changed to **Enabled**, the event causes responses to stop temporarily.

Note: Configure to disable a function of detecting and blocking a loop (in advance) regarding the port, which configures a spanning tree protocol.

4.4.2. CIST Configuration

Press C (command) on the **Multiple Spanning Tree Configuration** menu to display the screen of the CIST Configuration, as illustrated in the **Figure 4-17**. The following screen configures a basic configuration of CIST.

```
PNxxxxxx Local Management System
Multiple Spanning Tree Configuration -> CIST Configuration

CIST Root Port:          0            Time Since Topology Change: 0      Sec.
CIST Root Path Cost:     0            Topology Change Count:      0
CIST Root:          0    000000000000
CIST Regional Root Cost: 0            CIST Bridge ID:       0    000000000000
CIST Regional Root: 0    000000000000 CIST Bridge Hello Time:     2     Sec.
                                      CIST Bridge Maximum Age:   20     Sec.
CIST Hello Time:      2    Sec.       CIST Bridge Forward Delay: 15    Sec.
CIST Maximum Age:    20    Sec.       Max Hop Count:             20
CIST Forward Delay:  15    Sec.

-------------------------------- <COMMAND> ----------------------------------




Set CIST Bridge [P]riority                Set CIST Bridge [F]orward Delay
Set CIST Bridge [H]ello Time              Set MSTP Max H[o]p Count
Set CIST Bridge [M]aximum Age             [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-17: CIST Configuration

Screen Description

CIST Root Port	Displays the current route port.
CIST Root Path Cost	Displays costs covering from a route port to a root bridge.
CIST Root	Displays a bridge ID of a root bridge.
CIST Regional Root Cost	Displays the path cost, which is until a regional route bridge (a route bridge of CIST tree in the MST region).
CIST Regional Root	Displays a bridge ID (a route bridge of CIST tree in the MST region) of a regional route bridge.
Time Since Topology Change	Displays the time elapsed (seconds), which is calculated after changing the configuration of a spanning tree.
Topology Change Count	Displays the number of times that configuration of a spanning tree is changed.
CIST Hello Time	Displays the access interval with a route bridge to check a spanning tree configuration.
CIST Maximum Age	Displays the time for time-out of Hello Messages.
CIST Forward Delay	Displays the transition time of a spanning tree condition (e.g. from “Listening” to “Learning”, or from “Learning” to “Forwarding”).
CIST Bridge ID	Displays a bridge ID of this device, and it consists of a bridge priority and a MAC address. When shipping from a factory, the bridge priority is configured to “0000 000000000000”.
CIST Bridge Hello Time	Displays Hello Time when this device becomes a route bridge.
CIST Bridge Maximum Age	Displays Maximum Age when this device becomes a route bridge.

CIST Bridge Forward Delay	Displays Forward Delay when this device becomes a route bridge.
Max Hop Count	Displays the maximum number of Hop. (The value determined by a route bridge is displayed.)

Note: This device cannot be used in the combination of a spanning tree and link aggregation. In addition, a spanning tree and the Internet Mansion mode cannot be used together. For parameters of each timer, configure the value, which is unified in the whole system.

4.4.3. CIST Basic Port Configuration

Press B (command) on **Multiple Spanning Tree Configuration**, and then you can see "CIST Basic Port Configuration" as **Figure 4-18**. You can perform a CIST basic port configuration on this screen.

```
PNxxxxxx Local Management System
Multiple Spanning Tree Configuration -> CIST Basic Port Configuration
Port Trunk  Link    State        Role    Pri.  Path Cost STP Status  Guard
---- -----  ----  ----------  ---------- -----  --------- ---------- --------
  1   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  2   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  3   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  4   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  5   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  6   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  7   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  8   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
  9   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
 10   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
 11   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
 12   ---   Down  forwarding   nonStp     128   20000     Enabled    Disabled
-------------------------------- <COMMAND> ----------------------------------

[N]ext Page            Set Port Path [C]ost            Set Port STP [S]tatus
[P]revious Page        Set Port BPDU [G]uard Status    [Q]uit to previous menu
Set Port Pr[i]ority

Command>
Enter the character in square brackets to select option
```

Figure 4-18: CIST Basic Port Configuration

Screen Description

Port	Displays the port-number.	
Trunk	If trunking is configured, the group number (key) of trunking is displayed.	
Link	Displays a link condition.	
	UP	UP indicates that a link is established normally.
	DOWN	DOWN indicates that a link is not established.
State	Displays a current port condition.	
	Forwarding	Displays the condition, which is operating a normal communication, as a result of a calculation.
	Learning	Displays the condition, which is calculating based on information.
	Discarding	Displays the condition, which does not calculate.
Role	Displays a port role on a spanning tree.	
	Designated	In operation: as a port designated
	Root	In operation: as a route port
	Alternate	In operation: as an alternate port
	Backup	In operation: as a back up port
	Disabled	STP is not in operation.
Pri.	Displays the priority of each port in a switch. The higher the numeric value is, the higher priority will be. All the ports are configured to 128 when shipping from a factory. (A value is factor or multiple of 16.)	
Path Cost	Displays cost(s) of each port. 20,000(A) is configured when shipping from a factory.	

STP Status	Displays either disabled or enabled condition of a spanning tree on each port.	
	Enabled	A spanning tree is enabled.
	Disabled	A spanning tree is disabled.
Guard	Displays the enable or disable a condition of BPDU guard on each port. It is set to "Disabled" when shipping from a factory.	
	Enabled	BPDU guard is enabled.
	Disabled	BPDU guard is disabled.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
I	Configures the priority of the port(s) in a switch.	
		1. Press I, and then the appearance of the command prompt becomes "Select port-number to be changed>" . After that, enter the target port-number. 2. As the appearance of the command prompt becomes "Enter priority for port #>" , enter the factor (or multiple) of 16; the range is from 0 to 255.
C	Configures the cost of each port.	
		1. Press C, and then the appearance of the command prompt becomes "Select port-number to be changed>" . After that, enter the target port-number. 2. As the appearance of the command prompt becomes "Enter path cost for port #>" , enter the number; the range is from 1 to 200,000,000.
S	Configures to enable or disable a spanning tree of each port.	
		1. Press S, and then the appearance of the command prompt becomes "Select port-number to be changed>" . After that, enter the target port-number. 2. The appearance of the command prompt becomes "Enable or Disable STP >" . After that, press E when using a spanning tree, and D when using no spanning trees.
G	Configures to enable or disable the BPDU guard of each port.	
		1. Press G, and then the appearance of the command prompt becomes "Select port-number to be changed>" . After that, enter the target port-number. 2. The appearance of the command prompt becomes "Enable or Disable BPDU guard (E/D)>" . After that, press E when using the BPDU guard, and D when using no BPDU guards.
Q	Returns to the top menu.	

4.4.4. CIST Advanced Port Configuration

Press A (command) on the **Multiple Spanning Tree Configuration** menu to display the screen of "CIST Advanced Port Configuration" as **Figure 4-19**. You can perform the advanced configuration of CIST ports on this screen.

```
PNxxxxxx Local Management System
Multiple Spanning Tree Configuration -> CIST Advanced Port Configuration
Port Trunk  Link    State        Role     Admin/OperEdge Admin/OperPtoP
---- -----  ----  ----------  ---------- -------------- --------------
  1   ---   Down  forwarding  nonStp     auto/False       Auto/False
  2   ---   Down  forwarding  nonStp     auto/False       Auto/False
  3   ---   Down  forwarding  nonStp     auto/False       Auto/False
  4   ---   Down  forwarding  nonStp     auto/False       Auto/False
  5   ---   Down  forwarding  nonStp     auto/False       Auto/False
  6   ---   Down  forwarding  nonStp     auto/False       Auto/False
  7   ---   Down  forwarding  nonStp     auto/False       Auto/False
  8   ---   Down  forwarding  nonStp     auto/False       Auto/False
  9   ---   Down  forwarding  nonStp     auto/False       Auto/False
 10   ---   Down  forwarding  nonStp     auto/False       Auto/False
 11   ---   Down  forwarding  nonStp     auto/False       Auto/False
 12   ---   Down  forwarding  nonStp     auto/False       Auto/False
-------------------------------- <COMMAND> ----------------------------------

[N]ext Page                                Set Port P-[t]o-P Status
[P]revious Page                            [Q]uit to previous menu
Set Port [E]dge Status

Command>
Enter the character in square brackets to select option
```

Figure 4-19: CIST Advanced Port Configuration

Screen Description

Port	Displays the port-number.	
Trunk	If trunking is configured, the group number (key) of trunking is displayed.	
Link	Displays a link condition.	
	UP	UP indicates that a link is established normally.
	DOWN	DOWN indicates that a link is not established.
State	Displays a current port condition.	
	Forwarding	Displays the condition that is operating normal communication as a result of calculation(s).
	Learning	Displays the condition, which is calculating based on information.
	Discarding	Displays the condition that does not calculate.
Role	Displays a port role on a spanning tree.	
	Designated	In operation: as the port specified
	Root	In operation: as a route port
	Alternate	In operation: as an alternate port
	Backup	In operation: as back up port(s)
	Disabled	STP is not in operation.

Admin/ OperEdge	Displays the configuration condition on an edge port (immediately movable ports to Forwarding). The first half (Admin: Administration) displays (or shows) configured condition. The latter half (Oper: Operation) displays the actual condition.	
	True	Configurable with an edge port
	False	Not configurable with an edge port
Admin/ OperPtoP	Displays if this device is connected as Point-to-Point. The first half (Admin:Administration) displays (or shows) configured condition. The latter half (Oper:Operation) displays the actual condition.	
	Auto	Recognizes automatically depending on a port condition (Only Admin)
	True	P-to-P (network) is connected.
	False	P-to-P (network) is not connected.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
E	Configures the Edge Status on each port.	
		1. Press E, and then the appearance of the command prompt becomes "Select port-number to be changed>" . Enter the target port-number. 2. As the appearance of the command prompt becomes "Set point-to-point (E/D/A)> ", press E for an edge, D for disable, and A for Auto.
T	Configures the P-to-P Status on each port.	
		1. Press T, and then the appearance of the command prompt becomes "Select port-number to be changed>" . Enter the target port-number. 2. As the appearance of the command prompt becomes "Set point-to-point (A/T/F)> ", press A for Auto, T for True, and F for False.
Q	Returns to the top menu.	

4.4.5. MSTP Instance Configuration

Press T (command) on the **Multiple Spanning Tree Configuration** menu to see the MSTP Instance Configuration as **Figure 4-20** below. You can configure the instance of a spanning tree on this screen.

```
PNxxxxxx Local Management System
Multiple Spanning Tree Configuration -> MSTP Instance Configuration
Instance VLANs Mapped
-------- --------------------------------------------------------------------
0          1-4094











------------------------------- <COMMAND> ----------------------------------

[N]ext Page                               [M]ST Instance Configuration
[P]revious Page                           MST Instance Port [C]onfiguration
[A]dd VLAN to MST Instance                MST Instance Topology [I]nformation
Remove [V]LAN from MSTP Instance          [Q]uit to previous menu
[R]emove MST Instance
Command>
Enter the character in square brackets to select option
```

Figure 4-20: MSTP Instance Configuration

Screen Description

Instance	Displays an MST instance ID.
VLANs Mapped	Displays the VLAN ID associated with the MST instance.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
A	Add a VLAN ID to associate with the MST instance.	
		1. Press A, and then the appearance of the command prompt becomes "Enter MSTP instance ID>". Enter the instance ID of target MST. 2. As the appearance of the command prompt becomes "Enter VLAN ID>", enter the VLAN ID to be associated.
V	Deactivate (or deselect) the association between the MST instance and a VLAN ID.	
		1. Press V, and then the appearance of the command prompt becomes "Enter MSTP instance ID>", enter the target MST instance ID. 2. As the appearance of the command prompt becomes "Enter VLAN ID>", enter the VLAN ID to deactivate the association.

R	Deletes an MST instance ID.	
		Press R, and then the appearance of the command prompt becomes "Enter MSTP instance ID>". Enter the MST instance ID to be deleted.
M	Configures the MST instance.	
		1. Press M, and then the appearance of the command prompt becomes "Enter MSTP instance ID>", enter the instance ID of target MST. 2. The appearance of the screen becomes "MST Instance Configuration", you can implement the advanced settings on the MST instance. Regarding the configuration method, see next section (**4.4.6**).
C	Configures per port of the MST instance.	
		1. Press C, and then the appearance of the command prompt becomes "Enter MSTP instance ID>". Enter an instance ID of the target MST. 2. The appearance of the screen becomes "MST Instance Port Configuration", and then you can implement the configuration per port of MST instance. Regarding the configuration method, see next section (**4.4.7**).
I	Configures the configuration information on the MST instance.	
		1. Press I, and then the appearance of the command prompt becomes "Enter MSTP instance ID>". After that, enter the instance ID of target MST. 2. The appearance of the screen becomes "MST Instance Topology Information", and then the configuration information on MST-instance can be configured. 3. Regarding this configuration method, see next section (**4.4.8**).
Q	Returns to the top menu.	

4.4.6. MST Instance Configuration

Press M (command) and enter an MST instance ID on **MSTP Instance Configuration**. After that, you can see the MST Instance Configuration as **Figure 4-21** below. You can implement the advanced settings for the MST instance on this screen.

```
PNxxxxxx Local Management System
MST Instance Configuration -> MST Instance Configuration

MSTI Root Port:          0            Time Since Topology Change: 0      Sec.
MSTI Root Cost:          0            Topology Change Count:      0

MSTI Regional Root:0    000000000000  MSTI Bridge ID:       8000 000000000000

-------------------------------- <COMMAND> ----------------------------------




Set MSTI Bridge Pr[i]ority
[Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure 4-21: MST Instance Configuration

Screen Description

MSTI Root Port	Displays the route port-number of the MST instance.
MSTI Root Cost	Displays the value of route path cost of the MST instance.
Time Since Topology Change	Displays the elapsed time (seconds) after changing the configuration of a spanning tree.
Topology Change Count	Displays the number of that configuration of a spanning tree is changed.
MSTI Regional Root	Displays an ID of a regional route bridge of the MST instance.
MSTI Bridge ID	Displays a bridge ID of the MST instance.

The following describes how to use several commands on this screen.

I	Configures a bridge priority of the MST instance.	
		Press I (command), and then the appearance of the command prompt becomes "Enter MSTI Priority>". Enter the value of the bridge priority.
Q	Returns to the top menu.	

4.4.7. MST Instance Port Configuration

Press C (command) and MSTP Instance ID on the screen of the **MSTP Instance Configuration**, and then you can see "MST Instance Port Configuration" as **Figure 4-22**. You can configure the port regarding MST instance, on this screen.

```
PNxxxxxx Local Management System
MSTP Instance Configuration -> MST Instance Port Configuration
MST Instance: 0
Port Trunk  Link    State        Role    Priority. Path Cost  STP Status
---- -----  ----  ----------  ---------- --------- ---------- ----------
  1   ---   Down  forwarding   nonStp     128       20000      Enabled
  2   ---   Down  forwarding   nonStp     128       20000      Enabled
  3   ---   Down  forwarding   nonStp     128       20000      Enabled
  4   ---   Down  forwarding   nonStp     128       20000      Enabled
  5   ---   Down  forwarding   nonStp     128       20000      Enabled
  6   ---   Down  forwarding   nonStp     128       20000      Enabled
  7   ---   Down  forwarding   nonStp     128       20000      Enabled
  8   ---   Down  forwarding   nonStp     128       20000      Enabled
  9   ---   Down  forwarding   nonStp     128       20000      Enabled
 10   ---   Down  forwarding   nonStp     128       20000      Enabled
 11   ---   Down  forwarding   nonStp     128       20000      Enabled
 12   ---   Down  forwarding   nonStp     128       20000      Enabled
------------------------------ <COMMAND> ----------------------------------
Set Port Pr[i]ority                  [N]ext Page
Set Port Path [C]ost                 [P]revious Page
Set Port STP [S]tatus                [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-22: MST Instance Port Configuration

Screen Description

MST Instance	Displays the MST instance ID selected.	
Port	Displays the port-number.	
Trunk	If you configure trunking, the group number of the trunking (key) is displayed.	
Link	Displays a link condition (or status).	
	UP	UP indicates that a link is normally established.
	DOWN	DOWN indicates that a link is not established.
State	Displays a current port condition (or status).	
	Forwarding	This displays the status, which performs a normal communication as a result of calculations.
	Learning	Displays the status, which performs calculations based on information.
	Discarding	Displays the status, which does not perform calculations.
	N/A	Indicates the status that a port is not associated with a selected MST instance.

Role	Displays the port role on a spanning tree.	
	Designated	In operation as a designated port.
	Root	In operation as a route port.
	Alternate	In operation as an alternate port.
	Backup	In operation as a backup port.
	Disabled	STP is not in operation.
	N/A	Indicates the status that a port is not associated with MST instance selected.
Pri.	Displays the priority of each port in the Switch. The higher a numerical value is, the higher a priority is.	
Path Cost	Displays the cost of each port.	
STP Status	Displays the status to enable or disable a spanning tree of each port.	
	Enabled	A spanning tree is enabled.
	Disabled	A spanning tree is disabled.
	N/A	Indicates a status where no ports are associated with the MST instance selected.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
I	Configures the priority of ports in your switch.	
		1. Press I, and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the target port-number. 2. As the appearance of the command prompt becomes "Enter priority >", enter the multiple of 16 in the range from 0 to 240.
C	Configures the cost of each port.	
		1. Press C, and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the target port-number. 2. As the appearance of the command prompt becomes "Enter path cost >", enter the number in the range from 1 to 200,000,000.
S	Configures to enable or disable a spanning tree of each port.	
		1. Press S, and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the target port-number. 2. As the appearance of the command prompt becomes "Enable or Disable STP >", press E to use the spanning tree, and D otherwise.
Q	Returns to the top menu.	

4.4.8. MST Instance Topology Information

Press I (command) and MSTP instance ID on the screen of the **MSTP Instance Configuration**, and then you can see "MST Instance Topology Information" as **Figure 4-23**. This screen displays the configuration information on MST instance.

```
PNxxxxxx Local Management System
MST Instance Configuration -> MST Instance Topology Information

MST Instance: 0
Port Trunk  Link    Desig. Root      Desig. Cost   Desig. Bridge   Desig. Port
---- -----  ----  ----------------- ----------- ----------------- -----------
  1   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 01
  2   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 02
  3   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 03
  4   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 04
  5   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 05
  6   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 06
  7   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 07
  8   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 08
  9   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 09
 10   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 0a
 11   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 0b
 12   ---   Down  8000 0050405C266E   0           8000 0050405C266E  80 0c
-------------------------------- <COMMAND> ---------------------------------
[N]ext Page            [P]revious Page     [Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-23: MST Instance Topology Information

Screen Description

MST Instance	Displays the MST instance ID selected.	
Port	Displays the port-number.	
Trunk	If trunking is configured, the group number (key) of trunking is displayed.	
Link	Displays the link status (or condition).	
	UP	UP indicates that a link is established normally.
	DOWN	DOWN indicates that a link is not established.
Desig.Root	Displays the root bridge ID.	
Desig.Cost	Displays the costs sent.	
Desig.Bridge	Displays the bridge ID of the designated bridge.	
Desig.Port	Displays the port ID of the designated port. (The port ID is the combination of the port-priority value and the port-number.)	

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
Q	Returns to the top menu.

4.4.9. Designated Topology Information (1-3-5-c)

Press I (command) on the **Multiple Spanning Tree Configuration** menu, and then you can see "Designated Topology Information" as **Figure 4-24**. This screen displays the configuration information on a spanning tree per port.

```
PNxxxxxx Local Management System
Multiple Spanning Tree Configuration -> Designated Topology Information

                          Cist            Cist          Cist            Cist
Port Trunk  Link     Desig. Root     Desig. Cost   Desig. Bridge   Desig. Port
---- -----  ----  ----------------  ----------- ----------------- -----------
  1   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 01
  2   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 02
  3   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 03
  4   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 04
  5   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 05
  6   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 06
  7   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 07
  8   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 08
  9   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 09
 10   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 0A
 11   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 0B
 12   ---   Down  8000 xxxxxxxxxxxx   0          8000 xxxxxxxxxxxx    00 0C
-------------------------------- <COMMAND> ----------------------------------

[N]ext Page              [P]revious Page          [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-24: Designated Topology Information (1-3-5-c)

Screen Description

Port	Displays the port-number.	
Trunk	If trunking is configured, the group number of trunking (key) is displayed.	
Link	Displays the link condition.	
	UP	Indicates the condition that a link is normally established.
	DOWN	Indicates the condition that a link is not established.
Cist Desig.Root	Displays an ID of a root bridge.	
Cist Desig.Cost	Displays the cost, which is in the progress of being transmitted.	
Cist Desig.Bridge	Displays the bridge ID of a bridge specified.	
Cist Desig.Port	Displays a port ID of the port specified. (The port ID is the combination of the value of a port priority and the port-number.)	

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
Q	Returns to the top menu.

4.4.10. Regional Topology Information

Press G on the **Multiple Spanning Tree Configuration** menu, and then you can see "Regional Topology Information" as **Figure 4-25**. This screen displays the configuration information on a spanning tree per port.

```
PNxxxxxx Local Management System
Multiple Spanning Tree Configuration -> Regional Topology Information

Port Trunk  Link  Cist Port Regional Root   Cist Port Regional Path Cost
---- -----  ----  ----------------------   ----------------------------
  1   ---   Down  8000   0050405C266E       20000
  2   ---   Down  8000   0050405C266E       20000
  3   ---   Down  8000   0050405C266E       20000
  4   ---   Down  8000   0050405C266E       20000
  5   ---   Down  8000   0050405C266E       20000
  6   ---   Down  8000   0050405C266E       20000
  7   ---   Down  8000   0050405C266E       20000
  8   ---   Down  8000   0050405C266E       20000
  9   ---   Down  8000   0050405C266E       20000
 10   ---   Down  8000   0050405C266E       20000
 11   ---   Down  8000   0050405C266E       20000
 12   ---   Down  8000   0050405C266E       20000
------------------------------- <COMMAND> ----------------------------------

[N]ext Page            [P]revious Page     [Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-25: Regional Topology Information

Screen Description

Port	Displays the port-number.	
Trunk	If trunking is configured, the group number (key) of trunking is displayed.	
Link	Displays a link-condition.	
	UP	Indicates the condition that the link is normally established.
	DOWN	Indicates the condition that the link is not established.
Cist Port Regional Root	Displays the ID of a root bridge.	
Cist Port Regional Path Cost	Indicates the cost, which is being transmitted.	

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
Q	Returns to the top menu.	

4.5.1. Quality of Service Configuration

Press U (command) on the **Advanced Switch Configuration Menu**, and then you can see **Quality of Service Configuration Menu** as **Figure 4-26**. You can configure the QoS (Quality of Service) of this device, on this screen.

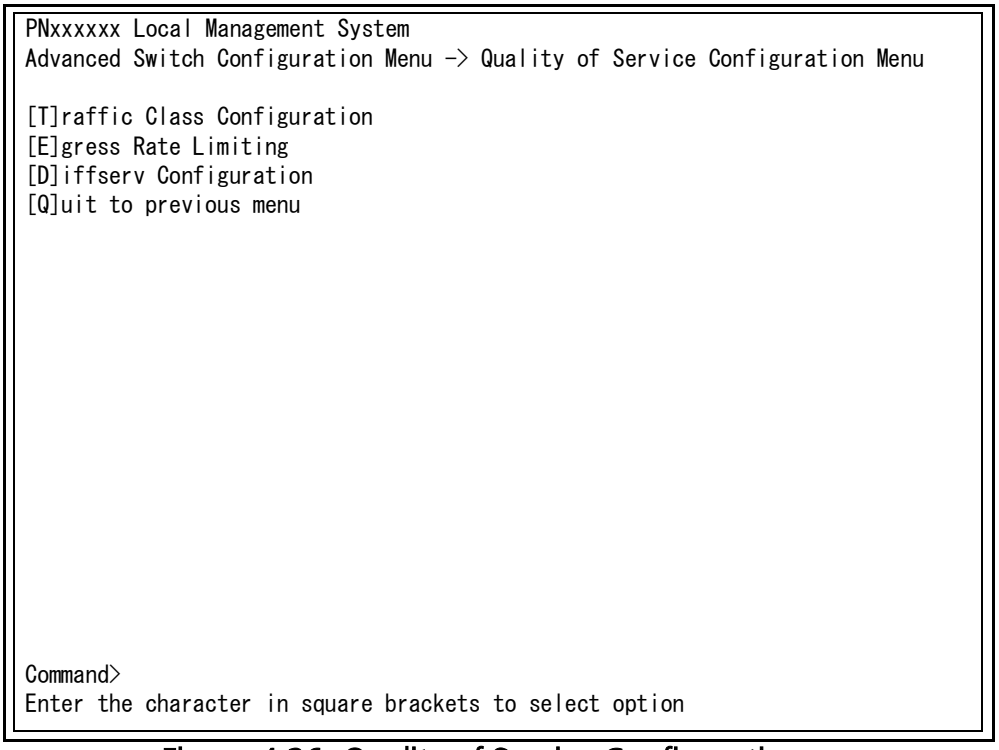


Figure 4-26: Quality of Service Configuration

The following describes how to use several commands on this screen.

T	Moves to the configuration screen of Traffic Class.	
		Press T (command), and then the appearance of the screen becomes **Traffic Class Configuration Menu**. See next section (**4.5.2**) for this configuration contents.
E	Moves to the configuration screen of the bandwidth control.	
		Press E (command), and then the appearance of the screen becomes "Egress Rate Limiting". See next section (**4.5.4**) for this configuration contents.
Q	Returns to the top menu.	

4.5.2. Traffic Class Configuration

Press T (command) on the **Quality of Service Configuration** menu, and then you can see "Traffic Class Configuration" as **Figure 4-27.** You can configure QoS and a traffic class on this screen.

```
PNxxxxxx Local Management System
Quality of Service Configuration -> Traffic Class Configuration Menu

CoS-queue map:

  CoS   QID
  ---   ---
   0     2
   1     0
   2     1
   3     3
   4     4
   5     5
   6     6                              0: Lowest
   7     7                              7: Highest

-------------------------------- <COMMAND> ----------------------------------

Scheduling Method [C]onfig.            [Q]uit to previous menu
Set Priority-Traffic Class [M]apping


Command>
Enter the character in square brackets to select option
```

Figure 4-27: Traffic Class Configuration

Screen Description

CoS-queue map	Displays the condition of the QoS function that uses IEEE802.1p.	
	Enabled	QoS is enabled.
	Disabled	QoS is disabled (factory default settings).
CoS	Displays the Priority value in the VLAN tag.	
QID	Displays the priority of a traffic class.	

The following describes how to use several commands on this screen.

M	Assign (or allocate) the priority level (Traffic Class) to the Priority value of IEEE802.1p.	
		1. Press M (command), and then the appearance of the command prompt becomes "Enter Cos>". Enter the Cos value to assign (or allocate). 2. The appearance of the command prompt becomes "Enter queue ID ofr Cos #>". Then enter the number for Cos-map in the range from 0 to 7.
C	Moves to the configuration screen of a scheduling method.	
		1. Press C (command), and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number as the target. 2. The appearance of the screen becomes "Scheduling Method". See next section (**4.5.3**) for this configuration content.
Q	Returns to the top menu.	

4.5.3. Scheduling Method

Press C (command) on the **Traffic Class Configuration** menu, and then you can see "Scheduling Method" as **Figure 4-28**. You can configure the scheduling method on this screen.

```
PNxxxxxx Local Management System
Quality of Service Configuration -> Scheduling Method

Selected port-number : 1
Scheduling Method: Weighted Round Robin

   QID  Weights
   ---  -------
    0     1
    1     1
    2     1
    3     1
    4     1
    5     1
    6     1
    7     0

-------------------------------- <COMMAND> ----------------------------------
[S]et Scheduling Method
Set Traffic Class-Weight [M]apping
[Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-28: Scheduling Method

Screen Description

Selected port-number	Enter a selected port-number.	
Scheduling Method	Displays a scheduling method of the QoS function.	
	Strict	PQ: Strict priority scheduling (factory default settings).
	Weighted Round Robin	WRR : Weighted round robin scheduling
QID	Displays the priority of packets.	
Wights	Displays the specific weight for distributing (or sorting) packets.	

The following describes how to use several commands on this screen.

S	Selects QOS scheduling method.	
		Press S (command), and then the appearance of the command prompt becomes "Select scheduling method >" . Press 1 for using Strict Priority Queueing, 2 for Weighted Round Robin, 3 for Weighted Deficit Round Robin, and 4 for Round Robin.
M	Configures the specific gravity on a priority (Traffic Class).	
		1. Press M, and then the appearance of the command becomes "Enter queue ID >" . Enter the number of strict priority queue (strict priority) in the range from 1 to 7. 2. The appearance of the command prompt becomes "Enter weight for queue ID #>" . Then enter weight using the value between 0 and 127.

Q	Returns to the top menu.

4.5.4. Egress Rate Limiting Configuration

Press E (command) on the **Quality of Service Configuration** menu, and then you can see **Egress Rate Limiting Configuration Menu** as **Figure 4-29**. This screen allows you to configure the bandwidth control.

```
PNxxxxxx Local Management System
Quality of Service Configuration -> Egress Rate Limiting Configuration Menu
Port   Bandwidth    Status
----  -----------  --------
 1      -          Disabled
 2      -          Disabled
 3      -          Disabled
 4      -          Disabled
 5      -          Disabled
 6      -          Disabled
 7      -          Disabled
 8      -          Disabled
 9      -          Disabled
 10     -          Disabled
 11     -          Disabled
 12     -          Disabled
Note: Bandwidth - 1Mbps/unit
------------------------------- <COMMAND> ----------------------------------
[N]ext Page            Set [S]tatus
[P]revious Page        [Q]uit to previous menu
Set [B]andwidth

Command>
Enter the character in square brackets to select option
```

Figure 4-29: Egress Rate Limiting Configuration

Screen Description

Port	Displays the port-number.	
Bandwidth	Displays the bandwidth. The factory default settings is set to 1,000 (Unit: Mbps).	
Status	Displays if the status of a bandwidth control is enabled or disabled.	
	Enabled	The status of a bandwidth control is enabled.
	Disabled	The status of a bandwidth control is disabled.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
B	Configures a bandwidth.	
		1. Press B, and then the appearance of the command prompt becomes "Enter port-number>B". Then enter the port-number to be specified. 2. The appearance of the command prompt becomes "Enter bandwidth >". Then enter the value in the range from 1 to 1,000.
S	Configures a bandwidth control.	
		1. Press S, and then the appearance of the command prompt becomes "Enter port-number>". Then enter the port-number to be specified. 2. The appearance of the command prompt becomes "Enable or Disable status (E/D)>". Then press E to enable the configuration of a bandwidth control, and D to disable it.
Q	Returns to the top menu.	

4.6. Storm Control Configuration Menu

Press O (command) on the **Advanced Switch Configuration** menu, and then you can see **Storm Control Configuration Menu** as **Figure 4-30**. You can configure each storm control of Unknown unicast and Broadcast Multicast on this screen.

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Storm Control Configuration Menu

Port Storm Control Setting:
 No.    Unicast    Threshold   Broadcast   Threshold   Multicast   Threshold
----   ---------  -----------  ---------  -----------  ---------  -----------
  1     Drop       -            Drop       -            Drop       -
  2     Drop       -            Drop       -            Drop       -
  3     Drop       -            Drop       -            Drop       -
  4     Drop       -            Drop       -            Drop       -
  5     Drop       -            Drop       -            Drop       -
  6     Drop       -            Drop       -            Drop       -
  7     Drop       -            Drop       -            Drop       -
  8     Drop       -            Drop       -            Drop       -
  9     Drop       -            Drop       -            Drop       -
 10     Drop       -            Drop       -            Drop       -

-------------------------------- <COMMAND> -----------------------------------
[N]ext Page               Set [B]roadcast Threshold   [Q]uit to previous menu
[P]revious Page           Set [M]ulticast Threshold
Set [U]nicast Threshold   Set [S]torm Control Action

Command>
Enter the character in square bracketqs to select option
```

Figure 4-30: Storm Control Configuration Menu

Screen Description

Unicast	Enables and disables a storm control of Unknown unicast.	
	Enabled	A storm control of Unknown unicast is enabled.
	Disabled	A storm control of Unknown unicast is disabled (factory default settings).
	Threshold	Displays the threshold (value) of the number of packets (Packet Per Second).
Broadcast	Enables and disables a storm control of Broadcast.	
	Enabled	Enables a storm control of Broadcast.
	Disabled	Disables a storm control of Broadcast (factory default settings).
	Threshold	Displays the threshold (value) of the number of packets (Packet Per Second).
Multicast	Enables or disables a storm control of Multicast.	
	Enabled	Enables a storm control of Multicast.
	Disabled	Disables a storm control of Multicast (factory default settings).
Threshold	Displays the threshold (value) of the number of packets (Packet Per Second).	

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
U	Set the threshold of Unicast.	
		1. Press D, and then the appearance of the command prompt becomes "Enter port-number>" . Enter the port-number to be specified. 2. The appearance of the command prompt becomes "Select threshold value mode >" . Press 1 to select pps, 2 to select kbps, and 3 to select ratio. 3. The appearance of the command prompt becomes "Enter threshold value>" . In the case of designating pps, enter that in the range from 0 to 1,488,100. In the case of designating kbps, enter in the range from 0 to 1,000,000. In the case of designating ratio, enter in the range from 1 to 100.
B	Set the threshold of Broadcast.	
		1. Press B, and then the appearance of the command prompt becomes "Enter port-number>" . Enter the port-number to be specified. 2. The appearance of the command prompt becomes "Select threshold value mode >" . Press 1 to select pps, 2 to select kbps, and 3 to select ratio. 3. The appearance of the command prompt becomes "Enter threshold value>" . In the case of designating pps, enter that in the range 0 and 1488100. In the case of designating kbps, enter in the range from 0 to 1,000,000. In the case of designating ratio, enter in the range from 1 to 100.
M	Set the threshold of Multicast.	
		1. Press M, and then the appearance of the command prompt becomes "Enter port-number>" . Enter the port-number to be specified. 2. The appearance of the command prompt becomes "Select threshold value mode >" . Press 1 for selecting pps, 2 for kbps, and 3 for ratio. 3. The appearance of the command prompt becomes "Enter threshold value>" . In the case of designating pps, enter that in the range from 0 to 1,488,100. In the case of designating kbps, enter in the range from 0 to 1,000,000 . In the case of designating ratio, enter it in the range from 1 to 100.
S	Set the Storm Control Action.	
		1. Press S, and then the appearance of the command prompt becomes "Enter port-number>" . Enter the port-number to be specified (or designated). 2. The appearance of the command prompt becomes "Select port action type (D/N/S)>" . Press D to delete the packets, which exceed the upper threshold, N if filtering is not performed, and S to shut down a port.
Q	Returns to the top menu.	

4.7. IGMP Snooping Configuration

Press I (command) on the **Advanced Switch Configuration** menu, and then you can see "IGMP Snooping Configuration" as **Figure 4-31**. You can prevent that multi-cast packets are transmitted to all the ports and the bandwidth is occupied when using the application with an IP multi-cast (e.g. TV conference system, the system of a video delivery and an audio distribution). If you use a function of multi-cast filtering, you can prevent from transmitting multi-cast packets to the destination, except for the configured port and router-port. This is the case when the multi-cast group is not created.

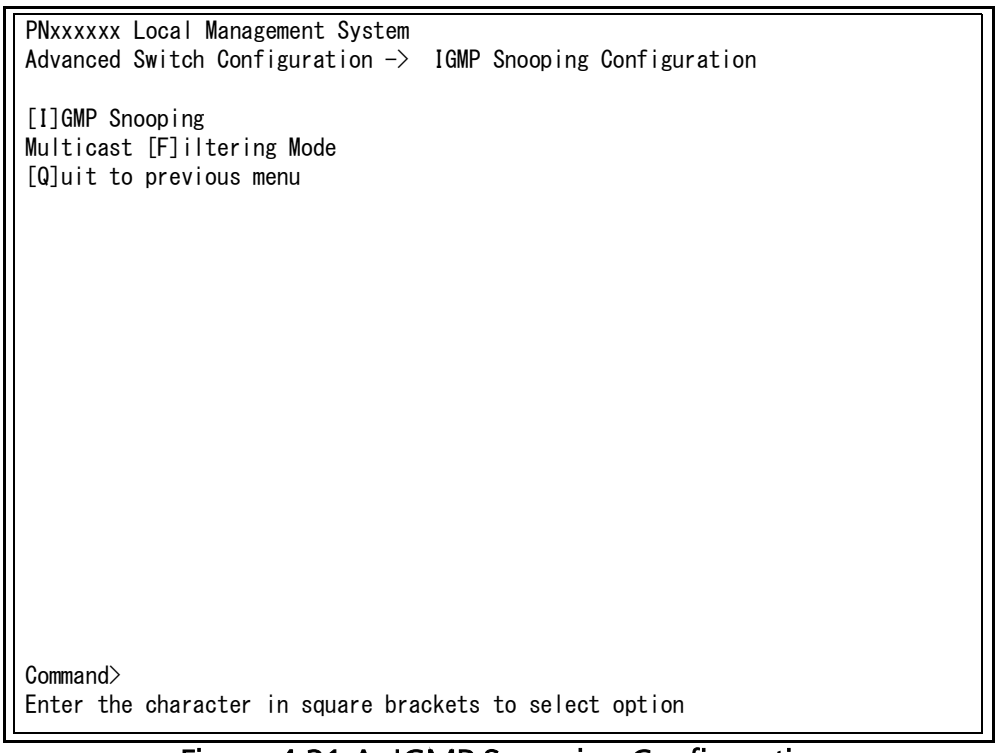


Figure 4-31 A: IGMP Snooping Configuration

Press I (command) on the screen of the IGMP Snooping Configuration, and then you can see "IGMP Snooping Configuration" as Figure 4-31.

```
PN262492 Local Management System
IGMP Snooping Configuration-> IGMP Snooping Configuration

IGMP Snooping Status      : Disabled
Unknown data limit        : 128
IGMP Enabled VID          :

VLAN ID Group IP Address Group Members
------- --------------- ------------------------------------------------


speed




-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                 Set IGMP [E]nabled VID    Show [F]ilter Table
[P]revious Page             Set IGMP [S]nooping VLAN  Show Multicast [R]outer
Set [I]GMP Snooping Status  Set Static [M]ember Port  Show Statistics [T]able
[C]lear unknown-data        Set [U]nknown Data Limit  [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 4-31 B: IGMP Snooping Configuration

Screen Description

IGMP Snooping Status	Displays the operation status of the IGMP snooping function.	
	Enabled	The function of IGMP snooping becomes enabled.
	Disabled	The function of IGMP snooping becomes disabled (factory default settings).
Unknown Data limit	Designates the maximum number of group entries to learn from unknown multi-cast data. The initial value is 128, and the range of settings is from 1 to 1,024.	
IGMP Enabled VID	Displays the status of IGMP snooping per VLAN.	
VLAN ID	Displays a VLAN ID of a multi-cast group.	
Group IP Address	Displays an IP address of a multi-cast group.	
Group Members	Displays the port that belongs to the multi-cast group.	

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
I	Changes the operation status of IGMP snooping.	
		Press I, and then the appearance of the command prompt becomes "Enable or Disable IGMP Snooping (E/D)>". Then Press E when enabling the function, and D when the function is not used.
C	Deletes the unknown data group learned from IGMP snooping.	
		Press C, and then the appearance of the command prompt becomes "Choose ALL, VID or Group (A/V/G) >". Press A to delete all groups, V to delete per VLAN group, and G to delete per group address.
E	Configures the status of IGMP snooping per VLAN.	
		Press C, and then the appearance of the command prompt becomes "Choose VID(1-4094)>". Enter the VLAN ID, and then the appearance of the command prompt becomes "Enable or Disable IGMP Snooping VLAN (E/D) >" . Then press E to enable, and D to disable it.
S	Configures IGMP snooping and querier per VLAN.	
		Press S, and then the screen moves to IGMP Snooping VLAN. See 4.7.1.
M	Configures the statistic multi-cast group.	
		Press M, and then the appearance of the command prompt becomes "Add or Delete static group member(A/D) >". Press A to add, and D to delete it. After that, the appearance of the command prompt becomes "Enter VLAN ID >" . Enter the VLAN ID, and then the appearance becomes "Enter IP address for multicast entry >" . Enter the IP address of a multi-cast group. The range of the configuration is from 224.0.0.0 to 239.255.255.255. The appearance of the command prompt becomes "Select port-number to be changed>" . Enter the port-number on that.
U	Configures the maximum number of group entries learned from unknown multi-cast data.	
		Press U, and then the appearance of the command prompt becomes "Enter unknown data limit>" . Configure the value in the range from 1 to 1,024.
R	Moves to the screen of the multi-cast router port information.	
		Press R, and then the appearance of the screen becomes "IGMP Snooping Multicast Router Information". See 4.7.2.
T	Moves to the screen of the statistics information for IGMP snooping.	
		Press T to move to the IGMP Snooping Statistics Table. See 4.7.3.
Q	Returns to the top menu.	

Note: You cannot use the IGMP snooping function and Internet mansion mode, simultaneously.

4.7.1. IGMP Snooping VLAN

Press S (command) on the screen of **IGMP Snooping Configuration**, and then you can see "IGMP Snooping VLAN" as **Figure 4-33**.

```
PNxxxxxx Local Management System
IGMP Snooping Configuration -> IGMP Snooping VLAN

VID                                 : 1
Fast Leave                          : Disabled (host-based)
Querier Status                      : Disabled
Query Version                       : Version 3
Query Interval                      : 125
Max Response Time                   : 10
Robustness Value                    : 2
Last Member Query Interval          : 1
Proxy Reporting                     : Disabled  Source Address (0.0.0.0)
Rate Limit                          : 0
Unknown Data Learning               : Enabled
Unknown Data Expiry Time            : Infinity

------------------------------ <COMMAND> ---------------------------------
[C]hoose VID          Set [M]ax Response Time Set [U]nknown Data Learning
Set Querier [S]tatus  Set [R]obustness Value  Set Unknown [D]ata Expiry Time
Set Query [V]ersion   Set [P]roxy Reporting   Set L[A]st Member Query Interval
Set Query [I]nterval  Set Rate [L]imit        [Q]uit to previous menu
Set [F]ast Leave
Command>
Enter the character in square brackets to select option
```

Figure 4-33: IGMP Snooping VLAN

Screen Description

VID	Displays a VLAN ID.
Fast Leave	Displays if Fast Leave is enabled or disabled.
Querier Status	Displays if IGMP snooping querier is enabled or disabled.
Query Version	Displays the version of IGMP query to be transmitted.
Query Interval	Displays the interval for transmitting query. The factory default settings is 125 seconds.
Max Response Time	Displays the waiting time of response to query. The factory default settings is 10 seconds.
Robustness Value	Displays the robustness variable to use on IGMP snooping. The factory default settings is 2.
Last Member Query Interval	Displays the transmission interval of query messages for transmitting when receiving the withdrawal request. The factory default settings is 1 second.
Proxy Reporting	Displays the source IP of the proxy reporting. The factory default settings is disabled.
Rate Limit	Displays the upper value per 1 second of the IGMP control packet for receiving. The factory default settings is disabled.
Unknown Data Learning	Displays the learning status (or condition) of a group information when receiving the multi-cast data packets without listeners.
Unknown Data Expiry Time	Displays the expiration date of unknown data group learned from IGMP snooping.

The following describes how to use several commands on this screen.

C	Designates a VLAN ID.	
		Press C (command), and then the appearance of the command prompt becomes "Choose VID (1-4,094)> ". Enter a VLAN ID.
S	Configures the Querier status (or condition).	
		Press S, and then the appearance of the command prompt becomes "Enable or Disable querier status (E/D)>". Press E to enable and D to disable it.
V	Configures the query version for transmitting with Querier.	
		Press V, and then the appearance of the command prompt becomes "Enter IGMP version (1/2/3)>". Enter the version of queries for sending with the IGMP snooping querier.
I	Configures the transmission interval of queries.	
		Press I, and then the appearance of the command prompt becomes "Enter query interval >". Enter the interval for sending queries in the range from 1 to 31,744 seconds.
F	Configures the status of high-speed secession of IGMP snooping.	
		Press F, and then the appearance of the command prompt becomes "Enable or Disable fast leave(E/D)>". Press E to enable and D to disable it.
M	Configures the waiting time of the response to Query.	
		Press M, and then the appearance of the command prompt becomes "Enter max response time >". Enter it in the range from 1 to 7.
R	Configures the robustness variable (or value) to use on IGMP snooping.	
		Press R, and then the appearance of the command prompt becomes "Enter Robustness Value >", enter it in the range from 1 to 25 seconds.
P	Configures the proxy report.	
		Press P, and then the appearance of the command prompt becomes "Enable or Disable Proxy Reporting (E/D) >", press E when enabling and D when disabling. If you press E, the appearance of the command prompt becomes "Enter Source Address >". Then enter a source IP of the proxy reporting.
L	Configures the upper value per 1 second of the IGMP control packets for receiving.	
		Press L, and then the appearance of the command prompt becomes "Enter Rate Limit (1-1,000)". Enter it in the range from 1 to 1,000.
U	Configures the status of group learning when receiving the unknown multi cast data packets.	
		Press U, and then the appearance of the command prompt becomes "Enable or Disable Unknown Data Learning(E/D)>". After that, press E when enabling and D when disabling.
D	Configures the expiration date of the unknown multi-cast data group learned.	
		Press D, and then the appearance of the command prompt becomes "Enter unknown data expiry time (1-65,535)>". Enter it within the range from 1 to 65,535 seconds.
A	Configures the transmission interval of the query message(s) for transmitting when receiving a withdrawal request.	
		Press A, and then the appearance of the command prompt becomes "Enter last member query interval >". Enter it in the range from 1 to 25 seconds.
Q	Returns to the top menu.	

4.7.2. IGMP Snooping Multicast Router Information

Press R (command) on the screen of **IGMP Snooping Configuration**, and then you can see "IGMP Snooping Multicast Router Information" as **Figure 4-4**.

```
PNxxxxxx Local Management System
IGMP Snooping Configuration -> IGMP Snooping Multicast Router Information

VLAN ID  Port List
-------  ------------------------------------------------------------------
      1  6s









-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                                Add/Delete [M]ulticast Router Port
[P]revious Page                            [Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure- 4-34: IGMP Snooping Multicast Router Information

Screen Description

VLAN ID	Displays the VLAN ID of the multi-cast group.
Port List	Displays the port list.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
M	Configures the static multi-cast group.	
		1. Press M (command), and then the appearance of the command prompt becomes "Add/Delete Multicast Router Port settings(A/D) >". After that, the appearance of the command prompt becomes "Set VLAN ID(1-4094)>". Enter the VLAN ID, and then the appearance of the command prompt becomes "Set Port configuration(S/F) >". Press S to set to Static port, and F to set to forbidden port. the appearance of the command prompt becomes "Select port-number to be changed>". Enter the port-number on that.
Q	Returns to the top menu.	

4.7.3. IGMP Snooping Statistics Table

Press T (command) on the screen of the **IGMP Snooping Configuration**, and then you can see **IGMP Snooping Statistics Table** as **Figure 4-35**.

```
PNxxxxxx Local Management System
IGMP Snooping Configuration -> IGMP Snooping Statistics Table

Port : 1
Ver Tx/Rx R             Q             L
--- ----- ----------------------------------------
v1  Rx    0             0
    Tx    0             0

v2  Rx    0             0             0
    Tx    0             0             0

v3  Rx    0             0
    Tx    0             0

-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                                 [C]lear Statistics Settings
[P]revious Page                             Por[T] Statistics Page
[V]lan Statistics Page                      [Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure 4-35: IGMP Snooping Statistics Table

Screen Description

Port	Displays the port-number.
Ver	Displays the IGMP version.
Tx/Rx	Displays the number of transmission: Tx. The number of reception is Rx.
R	Displays the number of Report packets.
Q	Displays the number of Query packets.
L	Displays the number of Leave packets.

The following describes how to use several commands on this screen.

N	Displays the next page.
	Press N (command) to display the next page.
P	Displays the previous page.
	Press P to display the previous page.
V	Displays the multi-cast statistical information per VLAN.
	Press V to display the statistics information per VLAN.
T	Displays the multi-cast statistical information per port.
	Press T to move to the statistical information per port.
C	Delete the multi-cast statistical information.
	Press C, and then the appearance of the command prompt becomes "Choose ALL, VLAN or port mode(A/V/P) >" . Press A to delete all, V to delete per VLAN, and P to delete per port. Press V, and then the appearance of the command prompt becomes "Select VID number to be clear > ". Enter the VLAN ID to be deleted. Press P, and then the appearance of the command prompt becomes "Select port-number to be clear >" . Enter the port-number to be deleted.
Q	Returns to the top menu.

4.7.4. Multicast Filtering Mode

Press F (command) on the **IGMP Snooping Configuration** menu, and then you can see **Multicast Filtering Mode** as **Figure 4-36.** You can configure a multi-cast filtering on this screen.

```
PNxxxxxx Local Management System
IGMP Snooping Configuration-> Multicast Filtering Mode

VLAN          Multicast Filtering Mode
--------      ------------------------
1             Forward Unregistered









---------------------------------- <COMMAND> -----------------------------------
[N]ext Page                                [S]et Multicast Filtering Mode
[P]revious Page                            [Q]uit to previous menu



Command>
Enter the character in square brackets to select option
```

Figure 4-36: Multicast Filtering Mode

Screen Description

VLAN	Displays the waiting time: after receiving Leave packets. The factory default settings is 5 seconds.	
Multicast Filtering Mode	Displays the operation after receiving Leave packets.	
	Forward Unregistered	All of unregistered multi-cast packets cause flooding based on the VLAN domain. Registered multi-cast packets are transferred based on a forwarding table. If IGMP snooping becomes enabled, the multi-cast filtering-mode constantly operates filter-unregistered (factory default settings).
	Forward All	Causes a flooding on all the multi-cast packets based on the VLAN domain.
	Filter Unregistered	All of unregistered multi-cast packets are filtered. Registered packets are transferred based on the forwarding table.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
S	Configures the method of processing multi-cast packets of the interface.	
		Press S (command), and then the appearance of the command prompt becomes "Enter VLAN ID > Enter the VLAN ID to configure. After that, the appearance of the command prompt becomes "Choose mode(F/A/U) >". Press F to set to "Forward Unregistered", A to set to "Forward All", and U to set to "Filter Unregistered".
Q	Returns to the top menu.	

4.8.1. Power Over Ethernet Configuration

Press P (command) on the **Advanced Switch Configuration** menu, and then you can see "**Power Over Ethernet Configuration Menu** as **Figure 4-37**. You can configure the power-supply in compliance with IEEE 802.3at.

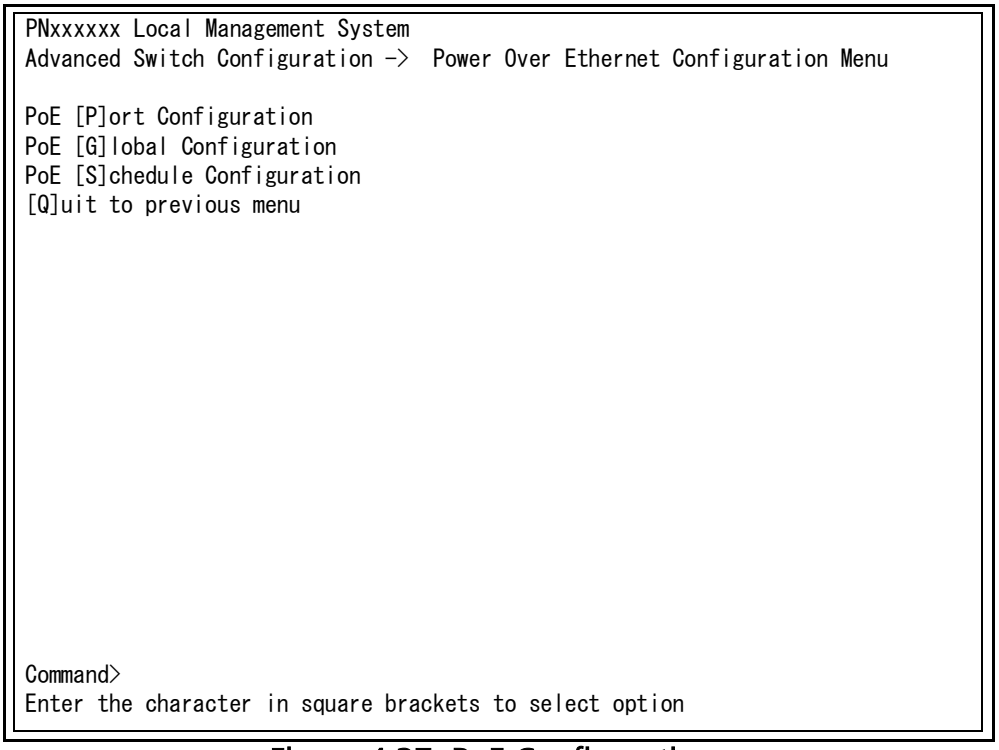


Figure 4-37: PoE Configuration

The following describes how to use several commands on this screen.

P	Perform the PoE-port configuration.	
		Press P (command) to move to **PoE Port Configuration Menu**. See 4.8.2.
G	Users can perform the PoE configuration.	
		Press G (command) to move to **PoE Global Configuration Menu**. See 4.8.3.
S	Configures PoE scheduler.	
		Press S (command) to move to **PoE Schedule Configuration Menu**. See 4.9.1.
Q	Returns to the top menu.	

Note: This device can provide the power-supply with the terminal equipment, which is compliant with IEEE802.3af or IEEE802.3af, up to 370W. 15.4W can be supplied to each port maximally for the device (compatible with IEEE802.3af), and 30.0W to each port maximally for the device (compatible with IEEE802.3at). Connect the equipment needed so as the necessary power of the terminal equipment (for connecting each other) does not exceed 370W. If the power exceeds it, then overload is indicated during the status of section 4.8.2, and the power-supply cannot be operated, normally.

4.8.2. PoE Port Configuration

Press P (command) on the **Power Over Ethernet Configuration** menu, and then you can see **PoE Port Configuration Menu** as **Figure 4-38**. You can implement the PoE configuration per port, on this screen.

```
PNxxxxxx Local Management System
Power Over Ethernet Configuration -> PoE Port Configuration Menu

No. Admin  Status      Layer Class Prio.   Limit(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
 9   Up    Not Powered -     -   Low          Auto       0       0       0
10   Up    Not Powered -     -   Low          Auto       0       0       0
11   Up    Not Powered -     -   Low          Auto       0       0       0
12   Up    Not Powered -     -   Low          Auto       0       0       0

-------------------------------- <COMMAND> ------------------------------------
[N]ext Page                           Set PoE Port Pr[i]ority
[P]revious Page                       Set PoE Port Power [L]imit
Set PoE Port Admin [S]tatus           [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 4-38: PoE Port Configuration

Screen Description

No.	Displays the port-number.	
Admin	Displays if the power supply can be operated. The factory default settings is “Up”.	
	Up	Indicates that power supply is possible.
	Down	Indicates that power supply is impossible.
Status	Displays the status of power supply.	
	Pwr	Indicates that PoE power-supply is operated.
	NotPwr	Indicates that PoE power-supply is not operated.
	Over	Indicates that operating the power supply stops because of the requirement for the power supply exceeding the upper-limit of the power supply (amount).
Layer	Displays the classification-method compatible with the terminal equipment.	
	1	Indicates that the power supply is operated in accordance with the Physical Layer Classification.
	2	Indicates that the power supply is operated in accordance with the Data Link Lalyer Classification.
Class	Displays Class detected by the classification.	
Prio.	Displays the priority of the power supply.	
	Crit.	Indicates that this task is to be performed as the highest priority.
	High	Indicates that this task is performed as the lower priority than Crit.
	Low	Indicates that low is not a priority.
Limit	Displays the upper-limit of the power supply (200mW: unit). The factory default settings is “Auto”.	
Pow.	Displays the power supply (100mw: unit).	
Vol.	Displays the voltage value (1V: unit).	
Cur.	Displays the current value (1mA: unit).	

The following describes how to use several commands on this screen.

<table>
<tr><td>N</td><td colspan="2">Displays the next page.</td></tr>
<tr><td></td><td></td><td>Press N (command) to display the next page.</td></tr>
<tr><td>P</td><td colspan="2">Displays the previous page.</td></tr>
<tr><td></td><td></td><td>Press P to display the previous page.</td></tr>
<tr><td>S</td><td colspan="2">Configures if the power supply can operate (or is possible to work).</td></tr>
<tr><td></td><td></td><td>1. Press S (command) and then the appearance of the command prompt becomes "Enter port-number>" Enter the port-number to change. (Enter 0 when changing all the ports, simultaneously.)
2. As the appearance of the command prompt becomes “Up or Down PoE port admin status (U/D)>”, press U to configure Up, and D for Down.</td></tr>
<tr><td>I</td><td colspan="2">Configures the priority of the power supply.</td></tr>
<tr><td></td><td></td><td>1. Press I (command) and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be changed. (Enter 0 when changing all the ports, simultaneously.)
2. As the appearance of the command prompt becomes “Enter the selection>”, press 1 to set the priority to Critical, 2 to High, and 3 to Low.</td></tr>
<tr><td>L</td><td colspan="2">Configures the upper-limit of power supply.</td></tr>
<tr><td></td><td></td><td>1. Press L (command) and then the appearance of the command prompt becomes "Enter port-number>".
2. Enter the port-number to be changed. (Enter 0 when changing all the ports, simultaneously.)
3. The appearance of the command prompt becomes "Enter limit mode for port # (A/M)>". Then press A to configure the upper-limit automatically, and M to configure manually.
4. Press M, and then the appearance of the command prompt becomes "Enter the power limit>".
5. Enter the upper-limit to configure in the range from 3,000 to 30,000mW (200mW: unit)
After entering is complete, the configuration becomes changed, and then the top part of the display becomes changed automatically. The case is that the upper configuration of the power-supply amount is set to Auto. After detecting the terminal equipment, the combination of Layer and Class configures the following values as the limit-value of ports, automatically. If the upper configuration of the power supply is set to Auto, the class-value shown (after detecting the power-supply terminal) configures the port-limit value, automatically.
<table>
<tr><td rowspan="2">Class</td><td colspan="2">Layer</td></tr>
<tr><td>1</td><td>2</td></tr>
<tr><td>0</td><td>15400</td><td>14000</td></tr>
<tr><td>1</td><td>4000</td><td>4000</td></tr>
<tr><td>2</td><td>7000</td><td>6800</td></tr>
<tr><td>3</td><td>15400</td><td>14000</td></tr>
<tr><td>4</td><td>15400</td><td>30000</td></tr>
</table>
</td></tr>
<tr><td>Q</td><td colspan="2">Returns to the top menu.</td></tr>
</table>

Note: The manual settings for the upper-limit value of power supply is needed to perform in the range from 15,600 to 30,000mW if more than 15.4W is required, and the power is supplied to 2-Event Physical Layer Classification or the PoE power receiver, which is non-compliant with IEEE802.3at that does not support Data Link Layer Classification.

Note: If the power supply required exceeds the power supply of a whole device, that will block the power supply for the port with the higher (port) number.

4.8.3. PoE Global Configuration

Press G (command) on the **Power Over Ethernet Configuration** menu, and then you can see **PoE Global Configuration Menu** as **Figure 4-39**. You can perform the PoE configuration on this screen.

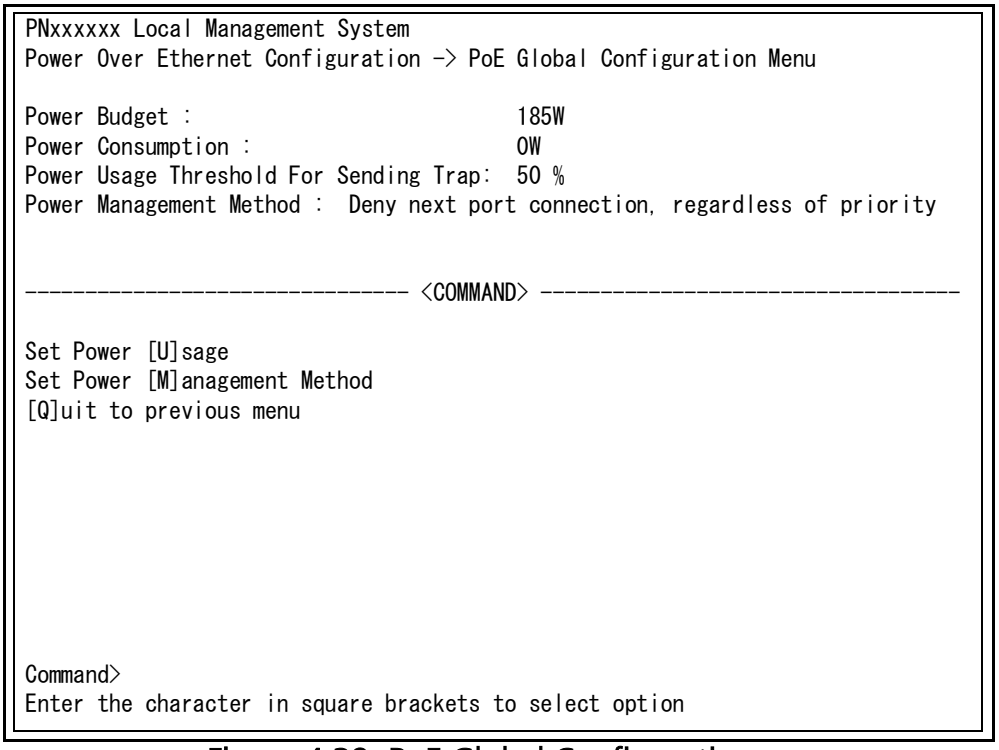


Figure 4-39: PoE Global Configuration

Screen Description

Power Budget	Displays the power-supply, which can be supplied by this device.	
Power Consumption	Displays the value of power-supply that this device supplies.	
Power Usage Threshold for Sending Trap	Displays the threshold value of power-supply to send traps. Displays that the factory default settings is 50%.	
Power Management Method	Displays the method of power-supply when the supply exceeds the Power Budget. The factory default settings is “Deny next port connection, regardless of priority”.	
	Deny next port connection, regardless of priority	Stops supplying (or feeding) power for the port connected right before that power budget exceeds.
	Low priority port will be shut down	Stops supplying power for the port of the lowerst priority. If the priority is the same, the power-supply for the port with the higher port-number becomes stopped.

The following describes how to use several commands on this screen.

U	Sets the threshold value to send traps.	
		Press U (command), and then the appearance of the command prompt becomes "Enter power usage threshold>". Enter the threshold value to send traps.
M	Configures the method of managing the power-supply.	
		Press M, and then the appearance of the command prompt becomes "Enter the power management method>". Select the method of managing, and then enter it. Shut down those with a low priority, and then enter zero (0) to supply for the newly connected ones. Press 1 if you do not supply for the physical object (or hardware), which is connected to the next hardware, regardless of the priority value. The power-supply for the port with the higher port-number becomes stopped, in the case of the same priority.
Q	Returns to the top menu.	

Note: Connect the power receiver of PoE (compatible with IEEE802.3at), which consumes more than 15.4W, on the condition that the amount of power-supply is lower than 354.5W. If the amount exceeds 370W, the power-supply always becomes stopped for the lower-priority port regardless of the configuration of the power management method. The power-supply for the port with the higher port-number becomes stopped in the case of the same priority.

4.9.1. PoE Schedule Configuration

Press S (command) on the **Power Over Ethernet Configuration** menu, and then you can see **PoE Schedule Configuration Menu** as **Figure 4-40**. You can configure the PoE scheduler on this screen.

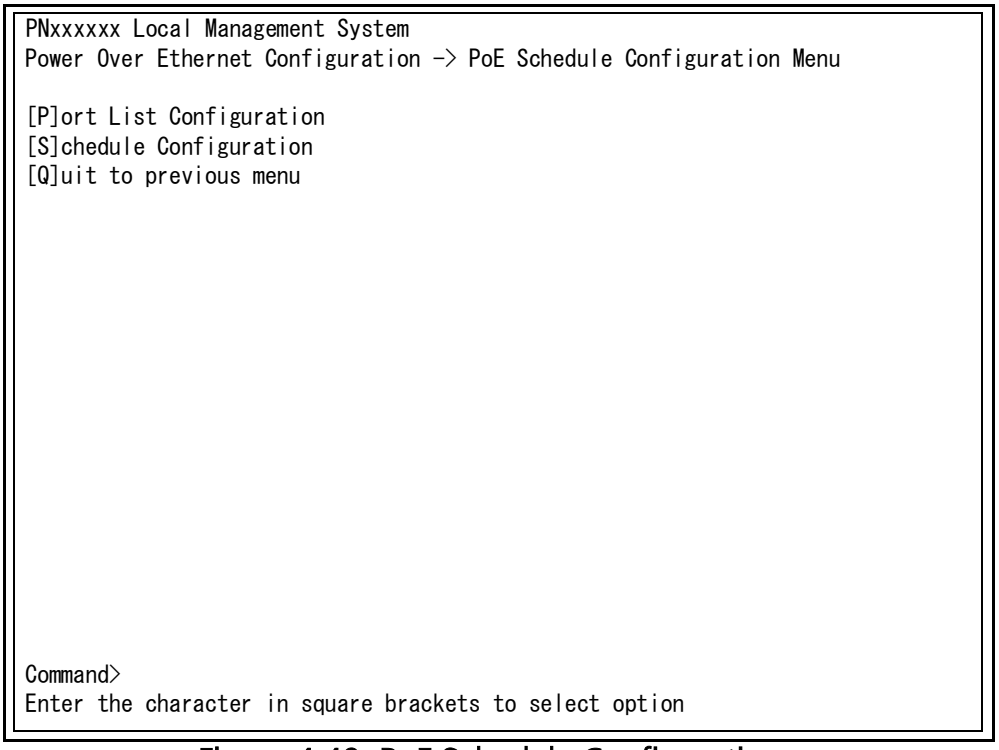


Figure 4-40: PoE Schedule Configuration

The following describes how to use several commands on this screen.

P	Configures the port list.	
		Press P (command) to move to **Port List Configuration Menu**. See 4.9.2.
S	Configures the schedule.	
		Press S to move to **Schedule Configuration Menu**. See 4.9.4.
Q	Returns to the top menu.	

4.9.2. Port List Configuration Menu

Press P (command) on the **PoE Schedule Configuration** menu, and then you can see **Port List Configuration Menu** as **Figure 4-41.** This screen allows you to configure and delete the port-number, which is operated by using a PoE scheduler.

```
PNxxxxxx Local Management System
PoE Schedule Configuration -> Port List Configuration Menu
Port List :       Total Entries : 0
Index      Port List
-----     -------------------------------------------------------------------










-------------------------------- <COMMAND> -----------------------------------
[N]ext Page                           [D]elete Port List
[P]revious Page                       [M]odify Port List
[C]reate Port List                    [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-41: Port List Configuration Menu

Screen Description

Total Entries	Displays the number of port-lists (the number of indexes), which are in the progress of being created.
Index	Displays the ID number of a port-list.
Port List	Displays the port-number created on the port-list.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
C	Creates a port-list.	
		Press C to move to **Port List Creation Menu**. See section 4.9.3.
D	Deletes a port-list.	
		Press D, and then the appearance of the command prompt becomes "Enter port list index >". Enter the index-number of a port-list to be deleted.
M	Modifies a port list.	
		Press M, and then the appearance of the command prompt becomes "Enter port list index>". Enter the index-number of a port-list to modify, and then modify the parts needed with the similar operation for creating a port-list.
Q	Returns to the top menu.	

4.9.3. Port List Creation Menu

Press C (command) on the **Port List Configuration** menu, and then you can see **Port List Creation Menu** as **Figure 4-42**. You can configure and delete the port-number to operate a PoE scheduler on this screen.

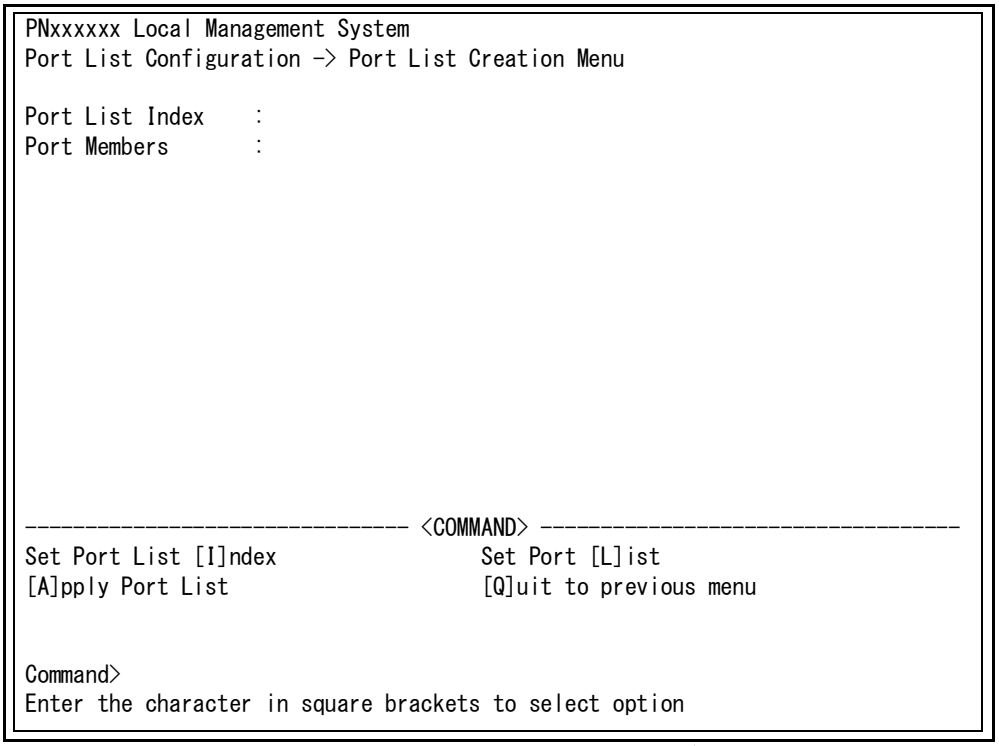


Figure 4-42: Port List Creation Menu

Screen Description

Port List Index	Delete the Index number of the port list.
Port Members	Delete the port-number belonging to the port list.

The following describes how to use several commands on this screen.

I	Configures the Index number of a port list.	
		Press I (command), and then the appearance of the command prompt becomes "Enter Port List index >". Enter the Index number of the port-number.
L	Configures the port-number belonging to the port list.	
		Press L (command), and then the appearance of the command prompt becomes “Enter port-number >” . Enter the port-number belonging to the port list.
A	Applies the content configured. Press Q” without applying, and then the configuration is deleted.	
Q	Returns to the top menu.	

4.9.4. Schedule Configuration

Press S (command) on the **PoE Schedule Configuration** menu, and then you can see **Schedule Configuration Menu** as **Figure 4-43.** You can configure the content of controlling power-supply and the time to operate with the PoE scheduler (e.g. month, week, day, and a specific date) on this screen.

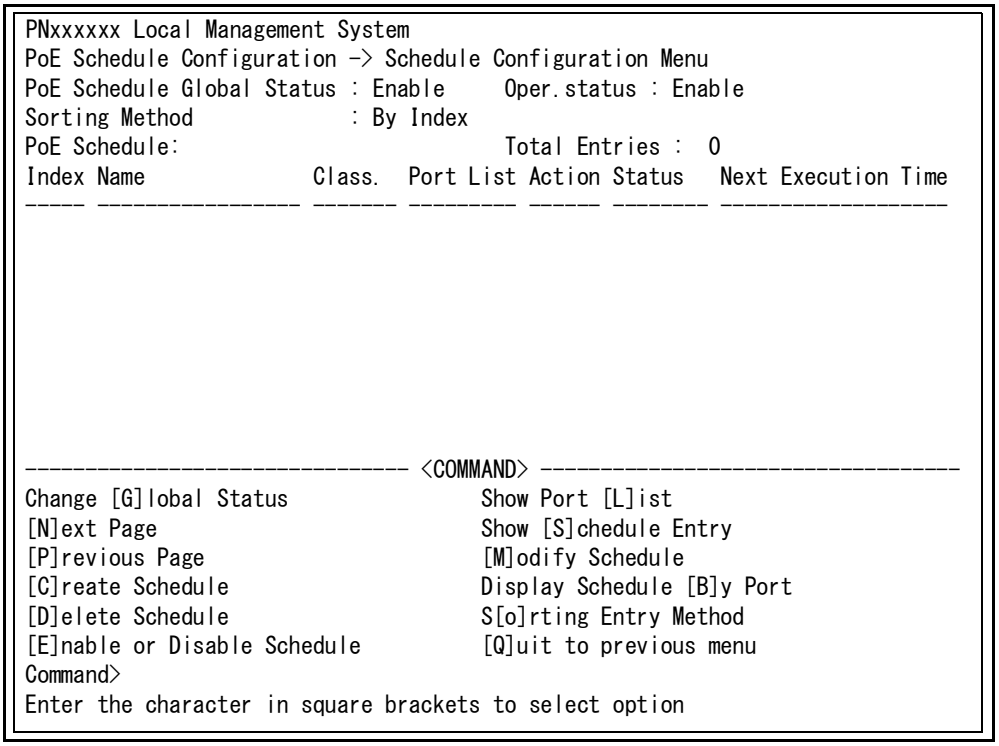


Figure 4-43: Schedule Configuration

Screen Description

PoE Schedule Global Status	Displays the configuration condition of PoE scheduler.	
Oper.status	Displays the operation condition of PoE scheduler.	
Sorting Method	Displays the configuration in the order of display.	
	By Index	Displays in the order of the Index number.
	By Next Execution Time	Displays in the order of an execution time for the next time.
Total Entries	Displays the number of schedules, which are in the progress of being created.	
Index	Displays the index-number of a schedule.	
Name	Displays a schedule name.	
Class.	Displays a class of PoE schedule.	
	Daily	Schedule runs (or operates) on the time, which is configured, everyday.
	Weekly	A schedule runs on the time of the date, which is configured weekly.
	Montly	A schedule runs on the time of the date, which is configured monthly.
	DateList	A schedule runs on the time of the date, which is configured by users.
Port List	Displays the port-number, which is created on a port list.	

Action	Displays the number of port-lists, which are (in the progress of) being created.	
	ON	Set PoE to ON.
	OFF	Set PoE to OFF.
	OFF/ON	Set PoE to OFF before setting it to ON.
Status	Displays the condition of the function of PoE schedule per port.	
	Enable	Enables the function of PoE schedule per port.
	Disable	Disables the function of PoE schedule per port.
Next Execution Time	Displays the time and date when the next schedule is executed.	

Note: If the schedule configuration is the same time and date depending on a class, a class schedule with the highest priority becomes executed.
[Priority: High] Date list > Monthly > Weekly > Daily [Priority: Low]

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
G	Configures to enable or disable the PoE scheduler.	
		Press G, and then the appearance of the command prompt becomes "Enable or Disable Global Status (E/D) >". Press E to enable and D to disable it.
C	Creates a schedule.	
		Press C to move to **Create Schedule Configuration Menu**.
D	Deletes a schedule.	
		Press D, and then the appearance of the command prompt becomes "Enter PoE Schedule index >". Enter the index-number to be deleted.
E	Configures to enable or disable per schedule.	
		Press E, and then the appearance of the command prompt becomes "Enter PoE Schedule index >". Enter the index-number. After that, the appearance of the command prompt becomes "Enable or Disable PoE Schedule index (E/D) >". Press E to enable and D to disable it.
L	Displays the port list, which is (in the progress of) being configured.	
		Press L to display **Show Port List Information Menu**.
S	Displays the schedule, which is configured.	
		Press S, and then the appearance of the command prompt becomes "Enter PoE Schedule index >". Enter the index-number. After that, **Show Detailed Schedule Information Menu** is displayed on the screen.
M	Edits a schedule.	
		Press M, and then the appearance of the command prompt becomes "Enter PoE Schedule index >". Enter the index-number to display **Modify Schedule Configuration Menu**.
B	Displays a schedule, which is configured per port.	
		Press B, and then the appearance of the command prompt becomes "Enter Port >". Enter the port-number. After that, you can see **Display Schedule By Port Menu** on the screen.
O	Configures in the order of displaying a schedule, which is configured.	
		Press O, and then the appearance of the command prompt becomes "Enter Sort method >". Press 0 to display in the order of the index-number, and 1 to display in the order of the execution time, for the next time.

Q	Returns to the top menu.

4.9.5. Create Schedule Configuration Menu

Press C (command) on the **Schedule Configuration** menu, and then you can see **Create Schedule Configuration Menu** as **Figure 4-44**. You can configure the content of controlling power-supply and the time to operate with the PoE scheduler (month, week, day, and a specific date) on this screen.

```
PNxxxxxx Local Management System
PoE Schedule Configuration -> Create Schedule Configuration Menu
Schedule Index              :
Schedule Name               :
Schedule Classifier         :
Year                        :
Date                        :
Date List Index             :
Time                        :
Port List Index             :
PoE Action                  :



-------------------------------- <COMMAND> ----------------------------------
Set [S]chedule Index                 Set [T]ime
Set Schedule [N]ame                  Show Port [L]ist
Select [C]lassifier                  Set Port List Inde[x]
Set [D]ate                           Select [P]oE action
C[o]nfig Date List                   [A]pply Schedule
Set Date L[i]st                      [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-44: Create Schedule Configuration Menu

Screen Description

Schedule Index	Displays the index-number of PoE schedule information.	
Schedule Name	Displays the name of PoE schedule.	
Schedule Classifier	Displays the class of PoE schedule.	
	Daily	Schedule runs on the time, which is configured everyday.
	Weekly	A schedule runs on the time of date, which is configured weekly.
	Monthly	A schedule runs on the time of the date, which is configured monthly.
	Date-List	A schedule runs on the time of the date, which is configured by users.
Year	Displays a year of the date list when a schedule is executed (or implemented).	
Date	Displays a day of the date list when a schedule is executed.	
Date List Index	Displays the index-number of the date list that a schedule is executed.	
Time	Displays the time that PoE schedule is executed.	
Port List Index	Displays the index of a port list where PoE schedule is executed.	
PoE Action	Displays an action of PoE schedule.	
	ON	Set PoE to ON.
	OFF	Set PoE to OFF.
	OFF/ON	Set PoE to OFF before setting it to ON.

The following describes how to use several commands on this screen.

S	Configures the index-number of a schedule.	
		Press S (command), and then the appearance of the command prompt becomes "Enter PoE Schedule index >". Enter the index-number in the range from 1 to 65,535. (The maximum number of configurations is 32.)
N	Configures a schedule name.	
		Press N (command), and then the appearance of the command prompt becomes "Enter Schedule name >". Enter the name of the schedule. (The maximum number of characters is 17.)
C	Configures a class of a schedule.	
		Press C (command), and then the appearance of the command prompt becomes "Enter Classifier type >". Press 1 to set it to monthly, 2 to weekly, 3 to daily, and 4 to date-list.
D	Configures the date to execute.	
		Press D (command), and then the appearance of the command prompt becomes " Enter Date >". Enter the date in the range from 1 to 31.
O	Configures the date list.	
		Press O (command) to move to **Date list Configuration Menu**.
I	Displays a port list.	
		Press I (command), and then you can see **Show Port List Information Menu** is displayed.
T	Configures time to execute.	
		Press T (command), and then the appearance of the command prompt becomes "Enter Hour >". Enter the time in the range from 0 to 23. After that, the appearance of the command prompt becomes "Enter Minute >". Enter the minute in the range from 0 to 59.
L	Displays a port list.	
		Press L (command) to display the **Show Port List Information** menu.
X	Configures the index-number of a port list to be executed.	
		Press X (command), and then the appearance of the command prompt becomes "Enter Port List index >". Enter the index-number of a port list.
P	Configures the content of controlling power-supply for PoE schedule.	
		Press P (command), and then the appearance of the command prompt becomes "Enter Action >". After that, press 1 to set the power-supply of a port to ON, 2 to OFF, and 3 to OFF/ON.
A	Configures a schedule.	
		Press A (command), and then a schedule created is (to be) applied.
Q	Returns to the top menu.	

4.9.6. Date list Configuration Menu

Press O (command) on the **Create Schedule Configuration** menu, and then you can see the **Date list Configuration Menu** as **Figure 4-45**. This screen allows you to configure the date list of a PoE scheduler.

```
PNxxxxxx Local Management System
Create Schedule Configuration -> Date List Configuration Menu
Total Entries : 0
Date List Index   Name
---------------   ------------------------------------------------------------









--------------------------------- <COMMAND> -----------------------------------
[N]ext Page                           [M]odify Date List
[P]revious Page                       [S]how Date List
C[r]eate Date List                    [Q]uit to previous menu
D[e]lete Date List
Command>
Enter the character in square brackets to select option
```

Figure 4-45: Date list Configuration Menu

Screen Description

Total Entries	Displays the number of schedules, which are in the progress of being created.
Date List Index	Displays the index-number of the date list.
Name	Displays the name of the date list.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
R	Creates a date list.	
		Press R to move to **Create Date List Menu**.
E	Deletes a date list.	
		Press E, and then the appearance of the command prompt becomes "Enter Date List index >". Enter the index-number of the date list to be deleted.
M	Modifies a date list.	
		Press M, and then the appearance of the command prompt becomes "Enter Date List index >". Enter the index-number of the date list to modify it.
S	See a date list.	
		Press S, and then the appearance of the command prompt becomes "Enter Date List index >". Enter the index-number of the date list to see. After that, **Show Date List Menu** is displayed on the screen.
Q	Returns to the top menu.	

4.9.7. Create Date List Menu

Press R (command) on the **Date List Configuration Menu**, and then you can see **Create Date List Menu** as **Figure 4-46.** This screen allows you to configure the date list to execute a schedule. The date list can configure a year, month, and date.

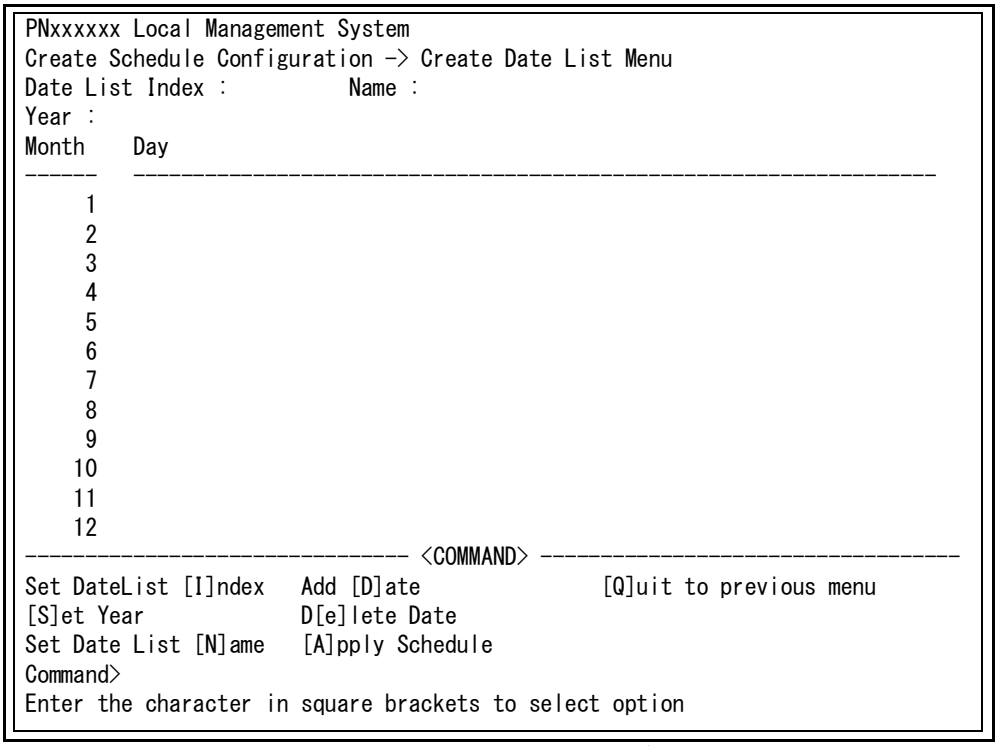


Figure 4-46: Create Date List Menu

Screen Description

Date List Index	Displays the index-number of a date list.
Name	Displays the name of the date list.
Year	Displays a year when the date list is executed.
Day	Displays a date when the date list is executed.

The following describes how to use several commands on this screen.

I	Configures the index-number of a date list.	
		Press I (command), and then the appearance of the command prompt becomes "Enter Date List index >". Enter it using the integer in the range from 1 to 65,535.
S	Configures a year to execute the date list.	
		Press S (command), and then the appearance of the command prompt becomes "Enter Date List year >". Enter a year for that.
N	Configures the name of the date list.	
		Press N (command), and then the appearance of the command prompt becomes "Enter Date List name >". Enter the name of the date list (The maximum number of characters: 30).
D	Configures the date to execute the date list.	
		Press D (command), and then the appearance of the command prompt becomes "Enter Date List month >". Enter the month in the range from 1 to 12. After entering it, the appearance of the command prompt becomes "Enter Date List days >. Configure the date in the range from 1 to 31.
E	Deletes the date from the date list.	
		Press E (command), and then the appearance of the command prompt becomes "Enter Date List month >". Enter the month in the range from 1 to 12. After entering it, the appearance of the command prompt becomes "Enter Date List days >" . Enter the date to delete.
A	Configures the date list.	
		Press A (command), and then the date list created is applied.
Q	Returns to the top menu.	

4.10.1. Ring Redundant Protocol Configuration

Press R (command) on the **Advanced Switch Configuration** menu, and then you can see "Ring Redundant Protocol Configuration" as **Figure 4-47**. You can configure a ring protocol on this screen.

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Ring Redundant Protocol Configuration

RRP Status : Disabled          Total Domain Number : 0
Domain Name                Ctrl VLAN  Data VLAN(s) Ring Status Node Type
------------------------- ----------- ------------ ----------- ---------









--------------------------------- <COMMAND> -----------------------------------
Set RRP [S]tatus                        [M]odify RRP Domain
[C]reate RRP Domain                     [D]elete RRP Domain
S[h]ow RRP Domain information           [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-47: Ring Redundant Protocol Configuration

Screen Description

RRP Status	Displays the condition of the function of a ring protocol.	
	Enabled	The function of a ring protocol is enabled.
	Disabled	The function of a ring protocol is disabled (factory default settings).
Total Domain Number	Displays the number of domains registered. (Registering up to 8 groups is possible.)	
Domain Name	Displays a domain name.	
Ctrl VLAN	Displays the VLAN ID for controlling.	
Data VLAN(s)	Displays the VLAN ID for data.	
Ring Status	Displays the ring condition (or status).	
	IDLE	Indicates that the function of a ring protocol is disabled.
	Complete	Indicates that a ring topology is accurately configured. Only Master node is displayed for this status.
	Failed	Indicates that a ring topology is not configured. Only master node is displayed for this status.
	Link-Up	Indicates that a ring topology is accurately configured. Only transit node is displayed for this status.
	Link-Down	Indicates that a ring protocol is not configured. This status displays a transit node, only.
	Pre-Forwarding	Indicates that a ring topology is in the progress of being configured. This status displays transit node, only.

Node Type	Displays a node role.	
	Master	Indicates a switch to control a ring operation. Set one master node on a domain.
	Transit	Indicates a switch other than a master node.

The following describes how to use several commands on this screen.

S	Configures to enable or disable the function of a ring protocol.	
		Press S (command), and then the appearance of the command prompt becomes "Enable or Disable RRP status (E/D)>". After that, press E to enable and D to disable it.
C	Creates a new domain.	
		Press C, and then the appearance of the screen becomes **RRP Domain Creation Menu**. See next section (**4.10.2**) for the content.
D	Deletes a domain configured.	
		Press D, and then the appearance of the command prompt becomes "Enter RRP Domain Name >". After that, enter the name of a domain to be deleted.
M	Modifies a domain configured.	
		Press M, and then the appearance of the command prompt becomes "Enter RRP Domain Name >". Enter a domain name to be configured. After that, the appearance of the screen becomes **RRP Domain Modification Menu**. See next section (**4.10.3**) for the content.
H	Displays the domain information.	
		Press H, and then the appearance of the command prompt becomes "Enter RRP Domain Name >". After that, enter a domain name to display the information. The appearance of the screen becomes **RRP Domain information Menu**. See next section (**4.10.4**) for the content.
Q	Returns to the top menu.	

Note: In addition, you cannot use a function of a ring protocol and the Internet Mansion mode, as a combination.

Note: For the ports configuring a ring protocol, configure to disable a function of detecting and blocking a loop in advance. See section (**4.11.1**) for the detailed configuration method for the function of detecting and blocking a loop.

4.10.2. RRP Domain Creation Menu

Press C (command) on the screen of the **Ring Redundant Protocol Configuration**, and then you can see **RRP Domain Creation Menu** as **Figure 4-48.** You can create a RRP domain on this screen.

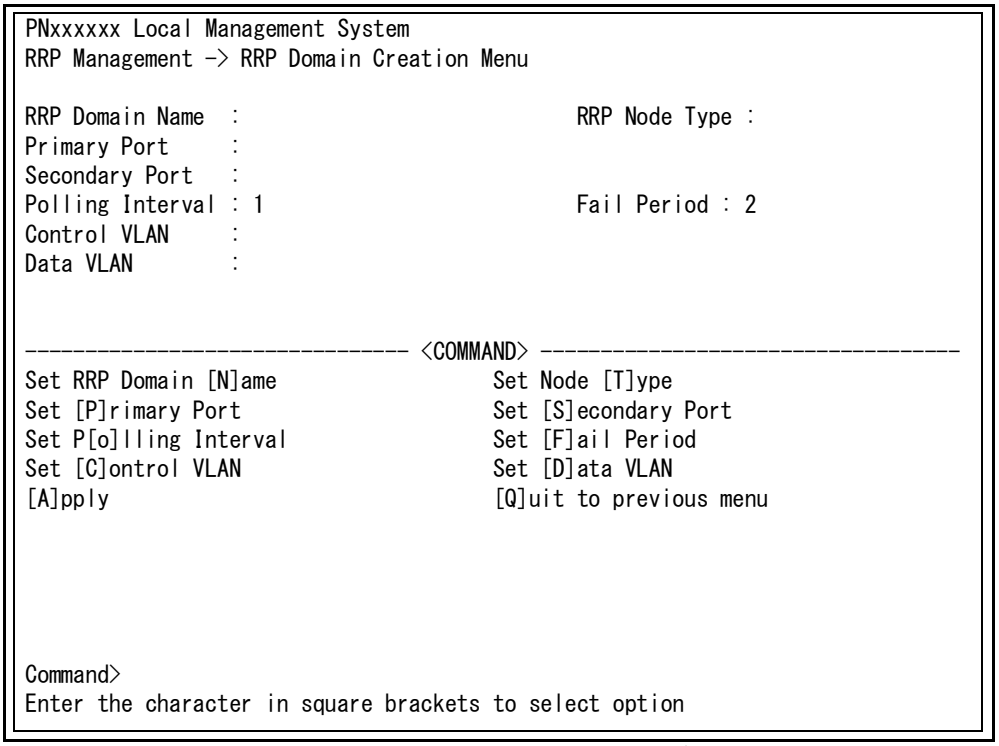


Figure 4-48: RRP Domain Creation Menu

Screen Description

RRP Domain Name	Displays a domain name.	
RRP Node Type	Displays a node role.	
	Master	Indicates a switch to control a ring operation. Set a machine only in the domain for a master node.
	Transit	Indicates a switch other than the master node.
Primary Port	Displays a primary port.	
Secondary Port	Displays a secondary report.	
Polling Interval	Displays the polling interval.	
Fail Period	Displays the time-out time for the polling.	
Control VLAN	Displays a VLAN ID to be controlled.	
Data VLAN	Displays a VLAN ID for data.	

The following describes how to use several commands on this screen.

N	Sets a domain name.	
		Press N (command), and then the appearance of the command prompt becomes "Enter RRP Domain Name". Enter the domain name to set in the range of half-size 25 characters.
T	Sets a node role.	
		Press T, and then the appearance of the command prompt becomes "Enter RRP Node Type (M/T) >". Press M to set it to a master node, and T to set the type to a Transit node.
P	Sets a primary port.	
		Press P, and then the appearance of the command prompt becomes "Seletct port or trunk to set (P/T)>". Select the type of a port to specify (or designate). Then the appearance of the command prompt becomes "Enter RRP Primary Port >". Enter the port-number (from 1 to 28) to set to a primary port.
S	Sets a secondary port.	
		Press S, and then the appearance of the command prompt becomes "Seletct port or trunk to set (P/T)>". Select the port type to specify. Then the appearance of the command prompt becomes "Enter RRP Primary Port >". Enter the port-number (from 1 to 28) to set it to the secondary port.
O	Sets the polling interval.	
		Press O, and then the appearance of the command prompt becomes "Enter RRP Polling Interval>". Enter the polling-interval in the range from 1 to 2 (seconds).
F	Sets the time of time-out for polling.	
		Press F, and then the appearance of the command prompt becomes "Enter RRP Fail Period>". Enter the time of time-out for the polling in the range from 2 and 5 (seconds).
C	Sets the VLAN for controlling.	
		Press S, and then the appearance of the command prompt becomes "Enter Control VLAN ID >". Enter a VLAN ID (from 2 to 4,094) to set it to the VLAN for controlling. Specify the ID with a hyphen in the case of the consecutive numbers by delimiting it with a comma and no spaces for entering two or more port-numbers.
D	Sets the VLAN for data.	
		Press D, and then the appearance of the command prompt becomes "Enter Data VLAN ID >". Enter a VLAN ID (from 1 to 4,094) to set it to the VLAN for data. Specify with a hyphen in the case of the consecutive numbers by delimiting with a comma and no spaces for entering two or more VLAN IDs.
A	Sets a domain.	
		Press A, and then the settings becomes applied.
Q	Returns to the top menu.	

Note: If you directly press Q (Quit) after setting a domain, the settings is not reflected. Be sure to press A (Apply) to reflect the domain settings created.

4.10.3. RRP Domain Modification Menu

Press M (command) on the screen of the **Ring Redundant Protocol Configuration**, and then you can see **RRP Domain Modification Menu** as **Figure 4-49**. You can modify a RRP domain on this screen.

```
PNxxxxxx Local Management System
RRP Management -> RRP Domain Modification Menu

RRP Domain Name  : RRP1                        RRP Node Type : Transit
Primary Port     : 28
Secondary Port   : 27
Polling Interval : 1                          Fail Period : 2
Control VLAN     : 2
Data VLAN        : 1


------------------------------ <COMMAND> ----------------------------------
Set RRP Domain [N]ame                  Set Node [T]ype
Set [P]rimary Port                     Set [S]econdary Port
Set P[o]lling Interval                 Set [F]ail Period
Set [C]ontrol VLAN                     Set [D]ata VLAN
[A]pply                                [Q]uit to previous menu




Command>
Enter the character in square brackets to select option
```

Figure 4-49: RRP Domain Modification Menu

Screen Description

RRP Domain Name	Displays a domain name.	
RRP Node Type	Displays a node role.	
	Master	Indicates a switch to control a ring operation. Set one machine only in the domain for a master node.
	Transit	Indicates a switch other than a master node.
Primary Port	Displays a primary port.	
Secondary Port	Displays a secondary port.	
Polling Interval	Displays the polling interval.	
Fail Period	Displays the time-out time for the polling.	
Control VLAN	Displays a VLAN ID to control it.	
Data VLAN	Displays a VLAN ID for data.	

The following describes how to use several commands on this screen.

N	Sets a domain name.	
		Press N (command), and then the appearance of the command prompt becomes "Enter RRP Domain Name". After that, enter the domain name to set in the range of half-size 25 characters.
T	Sets a node role.	
		Press T, and then the appearance of the command prompt becomes "Enter RRP Node Type (M/T) >". After that, press M to set it to a master node, and T to set the type to a Transit node.
P	Sets a primary report.	
		Press P, and then the appearance of the command prompt becomes "Enter RRP Primary Port >". After that, enter the port-number (from 1 to 28) to set to the primary port.
S	Sets a secondary port.	
		Enter the port-number (from 1 to 28) to set it to the secondary port. Press S, and then the appearance of the command prompt becomes "Enter RRP Secondary Port >".
O	Sets the polling interval.	
		Press O, and then the appearance of the command prompt becomes "Enter RRP Polling Interval>". After that, enter the polling interval in the range from 1 to 2 (seconds).
F	Sets the time of time-out for polling.	
		Press F, and then the appearance of the command prompt becomes "Enter RRP Fail Period>". Enter the time of time-out for the polling in the range from 2 to 5 (seconds).
C	Sets the VLAN for controlling.	
		Press S, and then the appearance of the command prompt becomes "Enter Control VLAN ID >". Enter the VLAN ID (from 2 to 4,094) to set to the VLAN for controlling. Specify with a hyphen in the case of the consecutive numbers by delimiting it with a comma and no spaces when entering two or more port-numbers.
D	Sets the VLAN for data.	
		Press D, and then the appearance of the command prompt becomes "Enter Data VLAN ID >". Enter the VLAN ID (from 1 to 4,094) to set to the VLAN for data. Specify with a hyphen in the case of the consecutive numbers by delimiting with a comma and no spaces when entering two or more VLAN IDs.
A	Sets a domain.	
		Press A, and then the setting is applied.
Q	Returns to the top menu.	

Note: If you press Q directly after setting a domain, the settings is not reflected. Be sure to press A (Apply) to reflect the domain settings modified.

4.10.4. RRP Domain Information

Press H (command) on the screen of the **Ring Redundant Protocol Configuration**, and then you can see **RRP Domain Information Menu** as **Figure 4-50**. You can check the RRP domain information on this screen.

```
PNxxxxxx Local Management System
RRP Management -> RRP Domain information Menu

RRP Domain Name      : RRP1
RRP Node Type        : Transit
RRP Ring Status      : Idle

Primary Port         : 28
Primary Port Status  : Down
Primary Port Role    : Upstream

Secondary Port       : 27
Secondary Port Status: Down
Secondary Port Role  : Downstream

Polling Interval     : 1
Fail Period          : 2

Control VLAN         : 2
Data VLAN            : 1



Press any key to continue...
```

Figure 4-50: RRP Domain Information

Screen Description

RRP Domain Name	Displays a domain name.	
Node Type	Displays a node role.	
	Master	Indicates a switch to control a ring operation. Configures only one master node in the domain.
	Transit	Indicates a switch other than the master node.
Ring Status	Displays a ring condition.	
	IDLE	Indicates that the function of a ring protocol is disabled.
	Complete	Indicates that a ring topology is accurately configured. This status is displayed for the master node, only.
	Failed	Indicates that a ring topology is not configured. This status is displayed for the master node, only.
	Link-Up	Indicates that a ring topology is accurately configured. This status is displayed for transit node, only.
	Link-Down	Indicates that a ring topology is not configured. This status is displayed for a transit node, only.
	Pre-Forwarding	Indicates that a ring topology is (in the progress of) being configured. This status is displayed for a transit node, only.
Primary Port	Displays a primary port.	

Primary Port Status	Displays a condition of a primary port.	
	Unknown	Indicates that a domain is disabled.
	Fowarding	Indicates the condition that a normal communication is operated.
	Down	Indicates the condition that a port is not linked up.
	Blocking	Indicates the condition that nothing is received except for frames for controlling.
Primary Port Role	Displays a role of a primary port.	
	Upstream	In operation as an upstream port.
	Downstream	In operation as a downstream port.
Secondary Port	Displays the secondary port.	
Secondary Port Status	Indicates the condition of the secondary port.	
	Unknown	Indicates that a domain is disabled.
	Fowarding	Indicates the condition that a normal communication is operated.
	Down	Indicates the condition that a port is not linked up.
	Blocking	Indicates the condition that nothing is received except for frames for controlling.
Secondary Port Role	Displays a role of the secondary port.	
	Upstream	In operation as an upstream port
	Downstream	In operation as a downstream port
Polling Interval	Displays the polling interval.	
Fail Period	Displays the time-out time for the polling.	
Control VLAN	Displays the VLAN ID configured for controlling.	
Data VLAN(s)	Displays the VLAN ID configured for data.	

4.11.1. Loop Detection Configuration Menu

Press D (command) on the **Advanced Switch Configuration** menu, and then you can see **Loop Detection Configuration Menu** as **Figure 4-51**. You can configure a function of detecting and blocking a loop on this screen. For the network configuration, see section **5.4** for "Example of network configuration with the function of detecting and blocking a loop and caveats".

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Loop Detection Configuration Menu
Global Loop Detection Status: Enabled
Port Trunk Link    State      Loop Detect    Mode     Recovery   Recovery Time
---- ----- ---- ---------- ------------- -------- ---------- --------------
  1   ---  Up   Forwarding   Enabled      Block    Enabled          60
  2   ---  Down Forwarding   Enabled      Block    Enabled          60
  3   ---  Down Forwarding   Enabled      Block    Enabled          60
  4   ---  Down Forwarding   Enabled      Block    Enabled          60
  5   ---  Down Forwarding   Enabled      Block    Enabled          60
  6   ---  Down Forwarding   Enabled      Block    Enabled          60
  7   ---  Down Forwarding   Enabled      Block    Enabled          60
  8   ---  Down Forwarding   Enabled      Block    Enabled          60
  9   ---  Down Forwarding   Enabled      Block    Enabled          60
 10   ---  Down Forwarding   Enabled      Block    Enabled          60
 11   ---  Down Forwarding   Disabled     Block    Enabled          60
 12   ---  Down Forwarding   Disabled     Block    Enabled          60
-------------------------------- <COMMAND> ---------------------------------
[N]ext Page                              Set Port [L]oop Detect Status
[P]revious Page                          Set Port Recovery [S]tatus
[E]nable/Disable Loop Detection          Set Port Recovery [T]imer
Loop History [I]nformation               [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 4-51: Loop Detection Configuration Menu

Screen Description

Global Loop Detection Status	Displays the condition of the function of detecting and blocking a loop.	
	Enabled	The function of detecting and blocking a loop is enabled (factory default settings).
	Disabled	The function of detecting and blocking a loop is disabled.
Port	Displays the port-number.	
Trunk	Displays the group ID of a link aggregation.	
Link	Display the condition of a link-up.	
	Up	In the progress of becoming a link-up
	Down	In the progress of becoming a link-down
State	Displays the operation of the function of detecting and blocking a loop.	
	Forwarding	Packets are transferred normally.
	Loop Detect	A loop is detected, and a port is blocked.
Loop Detect	Displays the condition of the function of detecting and blocking a loop per port.	
	Enabled	The function of detecting and blocking a loop is enabled (factory default settings: Ports from 1 to 24).
	Disabled	The function of detecting and blocking a loop is disabled (factory default settings: Ports from 25 to 28).

Mode	Displays the operation mode when detecting a loop.	
	Block	Blocks a port when detecting a loop (factory default settings).
	Shutdown	Shuts down a port when detecting a loop.
Recovery	Displays the condition of a recovery mode, which operates an automatic recovery of ports blocked.	
	Enabled	Operates an automatic recovery for blocking ports after Recovery Time passes (factory default settings).
	Disabled	Does not recover for blocking ports until configuring manually.
Recovery Time	Displays the number of seconds for the recovery time as the waiting time until an automatic recovery is operated after blocking a port (factory default settings: 60).	

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
E	Configures the condition for the function of detecting and blocking a loop.	
		Press E, and then the appearance of the command prompt becomes "Enable or Disable Loop Detection (E/D)>". Press E to enable the function of detecting and blocking a loop, and D to disable it.
I	Press I to move to the screen of displaying a loop history.	
L	Configures the condition of the function of detecting and blocking a loop per port. See next section (**4.11.2**) for the content.	
		1. Press L, and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the target port-number. 2. The command prompt becomes "Enable or Disable Loop Detection (E/D)>". Press E to enable the function of detecting and blocking a loop per port, and D to disable it. 3. The command prompt becomes "Select Loop Detection mode (B/S)>". Press B" to set to a Block mode, and S to Shutdown mode. Delimit with a comma when entering two or more port-number, or specify with a hyphen for the consecutive numbers. Press 0 when making (or setting) all the ports as a target.
S	Configures the condition (or status) of a recovery mode to operate the automatic recovery for the ports blocked.	
		1. Press S, and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the target port-number. 2. The command prompt becomes "Enable or Disable Recovery for port x (E/D)>". Press E to enable the automatic recovery of ports, D to disable it. Delimit with a comma when entering two or more port-number, or specify with a hyphen for the consecutive numbers. Press 0 when making (or setting) all the ports as a target.
T	Indicates the number of seconds for the recovery time as the waiting time until an automatic recovery is operated after blocking a port.	
		1. Press T, and then the appearance of the command prompt becomes "Select port-number to be changed>". Enter the target port-number. 2. The command prompt becomes "Enter Recovery Timer >". Enter the number of seconds for the recovery time in the range from 60 to 86,400.
Q	Returns to the top menu.	

Note: If the condition of the function of detecting and blocking a loop (Global Loop Detection Status) is changed, saving the configuration information becomes completed. All of the configuration contents are saved on the built-in memory.

Note: Regarding the ports configuring a spanning tree protocol and a ring protocol, configure to disable the function of detecting and blocking a loop, in advance.

4.11.2. Loop History Information

Press I (command) on the **Loop Detection Configuration** menu, and then you can see "Loop History Information" as **Figure 4-52.** This screen displays the date and time when a loop is detected, and the list of event information.

```
PNxxxxxx Local Management System
Loop Detection Configuration Menu -> Loop History Information

Entry  Time(YYYY/MM/DD HH:MM:SS)                    Event
-----  ------------------------ ---------------------------------------------
   1   2001/01/01 00:00:33      The loop detected between port 1 and 4
   2   2001/01/01 00:01:33      Port 1 auto recovery









-------------------------------- <COMMAND> ----------------------------------
[N]ext Page
[P]revious Page
[C]lear Loop Detection History
[Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-52: Loop History Information

Screen Description

Entry	Displays the event number.	
Time	Displays the time when an event occurs. Displays the total time from activating if the time configuration is not prepared (or set).	
Event	Displays the event content, which occurs in a switch.	
	The loop detected on portX.	Indicates that the loop (in a switch under a port X) is detected, and the connection is blocked.
	The loop detected between portX and portY.	Indicates that the loop is detected between a port X and a port Y, and the connection is blocked.
	PortX auto recovery.	Indicates that a blocked port X is recovered, automatically.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
C	Displays the history information regarding the function of the loop history.	
Q	Returns to the top menu.	

4.12.1. PPS Configuration

PPS (Power to Progress SDN) is a function of managing two or more devices, which configure the network with one software, and facilitates the operation and configuration. Using this function enables to control this device from the PPS application, which is sold separately. See the instruction manual of the PPS application regarding the content, which can be managed from the PPS application (sold separately).

Press F (command) on the **Advanced Switch Configuration** menu, and then you can see "PPS Configuration" as **Figure 4-53** below. You can configure the PPS on this screen.

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> PPS Configuration

PPS Global Status : Enabled
PPS Status        : Controlled
PPS Start Status  : CPNL
Retry Count : 3     Timeout : 3

Controller ID          : xxxxxx
Controller Uptime      : 000 day(s) 05 hour(s) 41 min(s) 23 sec(s)
Controller MAC Address : xx-xx-xx-xx-xx-xx
PPS Gateway            : xx-xx-xx-xx-xx-xx
Controller Port        : 10
Expired                : 68
------------------------------- <COMMAND> ----------------------------------
[E]nable/Disable Global PPS            PPS [P]ort Configuration
Set Controller [I]D                    PPS Nei[g]hbor Table
Set [S]tart Status                     PPS [C]onnection Table
PPS [N]otification Configuration       [R]estart PPS
PPS Retry C[o]unt                      PPS [T]imeout
[Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-53: PPS Configuration

Screen Description

PPS Global Status	Displays the status PPS configuration.	
	Enable	PPS is enabled (factory default settings).
	Disable	PPS is disabled.
PPS Status	Displays the operation status (or condition) of the current PPS.	
	Stand Alone	This status means that it is not managed by the PPS controller.
	CPNL	CPNL is the abbreviation of Controller Port Neighbor Lost. This is the condition, which cannot communicate with the controller although the switching hub recognizes the controller.
	Controlled	The switching hub recognizes the controller, and is the condition is communicable with the controller.
PPS Start Status	Displays the status of the initial operation when activating the PPS function.	
	Stand Alone	This status means that it is not managed by the PPS controller.
	CPNL	CPNL is the abbreviation of Controller Port Neighbor Lost. This is the condition, which cannot communicate with the controller although the switching hub recognizes the controller.
Retry Count	Displays the number of times to retransmit (or resend) packets, which are confirmed to exist. The factory default settings is three times.	
Timeout	Displays the waiting time for the response to packets which are confirmed to exist. The factory default settings is 5 seconds.	
Controller ID	Displays an ID of the PPS controller.	
Controller Uptime	Displays the time elapsed after activating the PPS controller.	
Controller MAC Address	Displays the MAC address of the PPS controller.	
PPS Gateway	Displays the MAC address of the PPS gateway.	
Controller Port	Displays the port-number used for the communication with the PPS controller.	
Expired	This means the time needed to delete the registration information on the controller. The factory default settings is 120 seconds.	

The following describes how to use several commands on this screen.

E	Configures to enable or disable PPS.	
		Press E (command), and then the appearance of the command prompt becomes "Enable or Disable PPS global status (E/D) >". Press E to enable and D to disable it.
I	Specify (or designate) the ID of the PPS controller.	
		Press I (command), and then the appearance of the command prompt becomes "Enter Controller ID>". Enter the ID of PPS controller. After that, the screen becomes "Set Controller MAC address (Y/N) >". Press Y to configure the MAC address, and N otherwise. After pressing Y, the screen becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx) >". Enter the MAC address of the PPS controller.
S	Configures the status of the initial operation for PPS.	
		Press S (command), and then the appearance of the command prompt becomes "Select start status (C/S) >". Press S to set it to Stand Alone or C to CPNL.
N	Performs the notification settings for PPS.	
		Press N (command), and then the appearance of the screen becomes "PPS Notification Configuration". The notification setting of PPS is possible. See **4.12.2** for the configuration method in this situation.

O	Configures the number of retransmitting (or resending) packets for confirming the existence of PPS.	
		Press O (command), and then the appearance of the command prompt becomes "Enter maximum PPS retry count>". Enter the number of retransmitting packets which are confirmed to exist.
P	Performs the port configuration of the PPS.	
		Press P (command), and then the appearance of the screen becomes "PPS Port Configuration". This allows you to configure the port of the PPS. See **4.12.3** for the configuration method in this situation.
G	See the PPS neighbor table.	
		Press G (command), and then the appearance of the screen becomes "PPS Neighbor Table". This allows you to refer to and configure the Neighbor table of the PPS. See **4.12.4** for the configuration method in this situation.
C	See the PPS connection table.	
		Press C (command), and then the appearance of the screen becomes "Show PPS Connection Table". This allows to refer to and configure the PPS connection-table. See **4.12.5** for the configuration method in this situation.
R	Set the status of the device to Stand Alone to restart the PPSP function.	
Q	Returns to the top menu.	

Note: Automatically stop the PPSP function after one hour of the activation on the Stand-alone status (or condition), and restart the PPSP function of the device (or equipment) to make the PPS controller recognize.

Note: The contents, which can be managed from the PPS controller, are limited when disabling this function is needed.

Note: You need to set the IP address of the transfer-destination of a virtual-link on the layer-three (L3) switching hub, which is compatible with PPSP, when changing the configuration to devices at multiple locations (devices exceeding the IP segment).

4.12.2. PPS Notification Configuration

Press N (command) on the screen of the PPS Configuration, and then you can see "PPS Notification Configuration" as **Figure 4-54**. You can perform the notification configuration of the PPS.

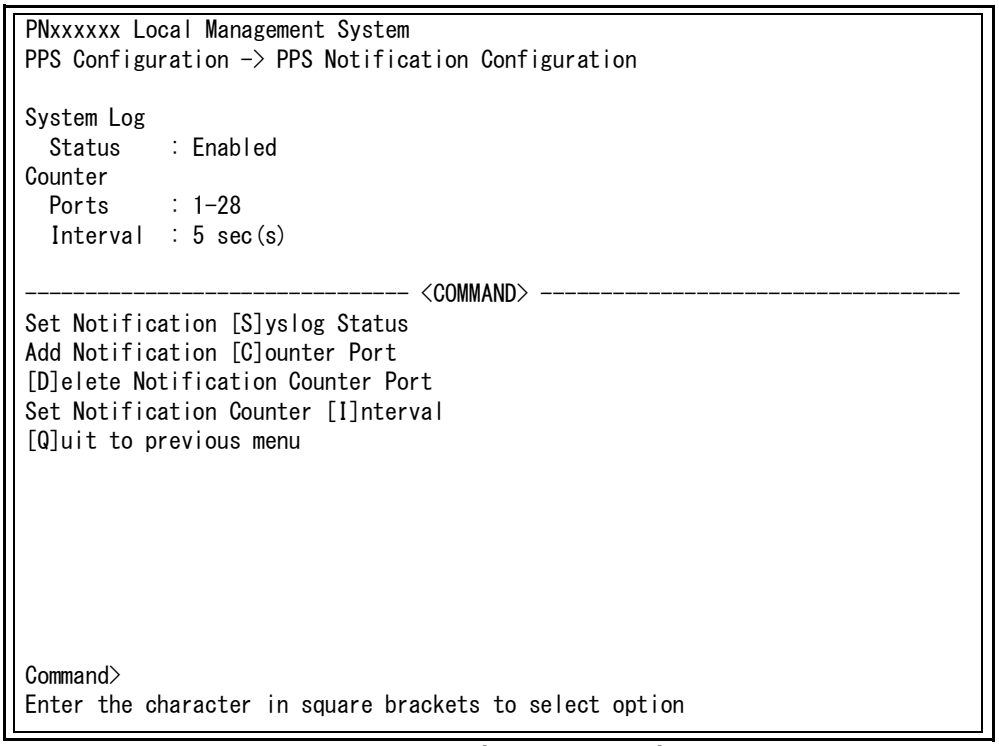


Figure 4-54: PPS Notification Configuration

Screen Description

Status	Displays the notification condition (or status) of the system log regarding the PPS.	
	Enable	Enables the notification of system log (factory default settings).
	Disable	Disables the notification of system log.
Ports	Displays the target port, which obtains the statistic information on packets. All the ports are specified to the factory default settings.	
Interval	Displays the interval of notifying packet statistic information with the unit of seconds. The factory default settings is 5 seconds.	

The following describes how to use several commands on this screen.

S	Configures to enable or disable the notification of the system log regarding the PPS.	
		Press S (command), and then the appearance of the command prompt becomes "Enable or Disable Notification Status (E/D)>". Press E to enable and D to disable it.
C	Specify the target port to obtain the statistical information on packets in the PPS viewer.	
		Press C, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be specified.
D	Deletes from the target port, which obtains the statistical information on packets in the PPS.	
		Press D, and then the appearance of the command prompt becomes "Enter port-number>". Enter the port-number to be deleted.
I	Specify the interval of notifying the statistical information on packets in the PPS viewer.	
		Press I, and then the appearance of the command prompt becomes "Enter counter interval>". Enter the notification interval in the range from 1 to 120.
Q	Returns to the top menu.	

4.12.3. PPS Port Configuration

Press P (command) on the screen of the PPS Configuration, and then you can see the "PPS Port Configuration" as **Figure 4-55**. You can perform the PPS port-configuration on this screen.

```
PNxxxxxx Local Management System
PPS Configuration -> PPS Port Configuration

Port Trunk Link State      AdminPri. OperPri.
---- ----- ---- ---------- --------- --------
1     ---  Down Forwarding 128       128
2     ---  Down Forwarding 128       128
3     ---  Down Forwarding 128       128
4     ---  Down Forwarding 128       128
5     ---  Down Forwarding 128       128
6     ---  Down Forwarding 128       128
7     ---  Down Forwarding 128       128
8     ---  Down Forwarding 128       128
9     ---  Down Forwarding 128       128
10    ---  Down Forwarding 128       128
11    ---  Down Forwarding 128       128
12    ---  Down Forwarding 128       128
-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                              Set PPS [A]dmin Priority
[P]revious Page                          [Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-55: PPS Port Configuration

Screen Description

The following describes how to use several commands on this screen.

Port	Displays the port-number.	
Trunk	Displays the condition (or status) of the trunking configuration with a group number.	
Link	Displays a current link condition (or status).	
	Up	UP indicates that a link is normally established.
	Down	DOWN indicates that a link is not established.
State	Displays a current port condition (or status).	
	Forwarding	Indicates the condition that the normal communication runs (or works) as a result of calculations.
	Learning	Indicates the condition that computations are performed (or operated) based on information.
	Discarding	Indicates the condition that computations are not performed.
AdminPri.	Displays the priority to use for automatically determining the communication path of the PPS configured per port. The factory default settings is 128.	
OperPri.	Displays the priority to automatically determine the communication path of the PPS, which is assigned per port.	

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
A	Configures the PPS priority on the port specified (or designated).	
		Press A, and the appearance of the command prompt becomes “Enter port-number>”. Enter the port-number to be specified. After that, the appearance becomes “Enter PPS Priority #>”. Enter the priority to be set in the range from 0 to 255. The higher the value is, the higher the priority will be. The factory default settings is 128.
Q	Returns to the top menu.	

4.12.4. PPS Neighbor Table

Press G (command) on the PPS Configuration screen to see PPS Neighbor Table as Figure 4-56 below. You can refer to and configure the PPS neighbor table on this screen.

```
PNxxxxxx Local Management System
PPS Configuration -> PPS Neighbor Table

Neighbor Age-Out Time: 60 seconds
Total Entries: 2
MAC Address       Port Expired
----------------- ---- -------
xx:xx:xx:xx:xx:xx  10   52
xx:xx:xx:xx:xx:xx  2    57









-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                                [D]elete PPS Neighbor Entry
[P]revious Page                            [S]how Neighbor Info Detail
Set Neighbor Age-Out [T]ime                [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-56 A: PPS Neighbor Table

Screen Description

Neighbor Age-Out Time	Displays the holding (or retention) time for PPS Neighbor entry. Entries without the communication, which exceeds the storing time configured, are deleted from the table. The factory default settings is 60 seconds.
Total Entries	Displays the number of entries regarding the PPS Neighbor.
MAC Address	Displays the MAC address of the PPS Neighbor.
Port	Displays the port-number to be used for the communication with the PPS Neighbor.
Expired	Describes the time needed to delete the entry registered in the Neighbor table.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
T	Specify (or designate) the entry holding-time of PPS Neighbor as the second unit.	
		Press T, and then the appearance of the command prompt becomes "Enter neighbor age-out time>". Enter the number of seconds, to keep (or store) the PPS Neighbor entry, in the range from 60 to 86,400.
D	Deletes the entry of the PPS Neighbor registered.	
		Press D, and then the appearance of the command prompt becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx)>". Enter a MAC address of the PPS Neighbor entry to be deleted.
S	Displays the details on the PPS Neighbor entry.	
		Press S, and then the appearance of the command prompt becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx)>". Enter a MAC address of the PPS Neighbor entry to display information. See **Figure 4-56** for details.
Q	Returns to the top menu.	

```
PN262492 Local Management System
 PPS Neighbor Table -> Show Neighbor Info Detail

Product Name   : PPS
Product Model  : PPSController
Serial Number  : Not support
MAC Address    : xx:xx:xx:xx:xx:xx
Sender Port    : 1
IP address     : xxx.xxx.xxx.xxx
Hostname       : PPSController









 Press any key to continue...
```

Figure 4-56 B: Screen of PPS Neighbor Details

Screen Description

Product Name	Displays the product name of PPS Neighbor entry.
Product Model	Displays the product number of PPS Neighbor entry.
Serial Number	Displays the serial number of the PPS Neighbor entry. The PPS Neighbor entry needs to be compatible with (or correspond with) the display of the serial number.
MAC Address	Displays a MAC address of the PPS Neighbor entry.
Sender Port	Displays the port-number where the PPS Neighbor entry is used for the communication.
IP address	Displays an IP address of the PPS Neighbor entry.
Host-name	Displays the host name of the PPS Neighbor entry.

4.12.5. PPS Connection Table

Press C (command) on the screen of **PPS Configuration** to see Show PPS Connection Table as **Figure 4-58** below. You can view and configure the PPS connection table on this screen.

```
PNxxxxxx Local Management System
PPS Configuration -> Show PPS Connection Table

Total Entries: 0
PPS Destination   PPS Gateway       Port VID  Tag
----------------- ----------------- ---- ---- ----
xx:xx:xx:xx:xx:xx  xx:xx:xx:xx:xx:xx 9    1    No
xx:xx:xx:xx:xx:xx  xx:xx:xx:xx:xx:xx 10   1    No









---------------------------------- <COMMAND> -------------------------------------
[N]ext Page                                  [A]dd PPS Connection Entry
[P]revious Page                              [D]elete PPS Connection Entry
[R]estart PPS Connection                     [Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 4-58: PPS Connection Table

Screen Description

Total Entries	Displays the number of entries for the PPS connection.
PPS Destination	Displays the connection-destination for the PPS connection.
PPS Gateway	Displays the gateway of the PPS connection.
Port	Displays the port-number of the PPS connection.
VID	Displays a VLAN ID of the VLAN where a port belongs to.
Tag	Displays the existence of tag-VLAN.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
R	Redisplays the PPS-connection table.	
		Press R, and then the appearance of the command prompt becomes "Would you restart PPS connection? (Y/N)>". Press Y to execute and N to stop that.
A	Adds the PPS connection.	
		Press A, and then the appearance of the command prompt becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx) >". Enter an address to add it.
D	Deletes the PPS connection.	
		Press D, and then the appearance of the command prompt becomes "Enter MAC Address(xx:xx:xx:xx:xx:xx) >". Enter an address to be deleted.
Q	Returns to the top menu.	

4.13.Digital Diagnostic Monitoring

Press G (command) on the screen of **Advanced Switch Configuration**, and then you can see **Digital Diagnostic Monitoring Menu** as **Figure 4-59**. You can configure a function of checking the SFP module status on this screen.

```
PNxxxxxx Local Management System
Advanced Switch Configuration -> Digital Diagnostic Monitoring Menu

Limit Trap Status    : Disabled

SPF port-number      : 25              Transceiver Type      :
Vender Name          :                 Vender Product Number :

Vender Serial Number :
              RX Power    TX Power    Temp        Voltage   Bias Current
              (dBm)       (dBm)       (deg.C)     (V)       (mA)
              ----------  ----------  ----------  --------  ------------
Status        0.000       0.000       0.000       0.000       0.000
High Alarm    0.000       0.000       0.000       0.000       0.000
High Warning  0.000       0.000       0.000       0.000       0.000
Low Alarm     0.000       0.000       0.000       0.000       0.000
Low Warning   0.000       0.000       0.000       0.000       0.000
-------------------------------- <COMMAND> ----------------------------------
[N]ext SFP Port             Set [R]x Power Limit     Set T[e]mp Limit
[P]revious SFP Port         Set [T]x Power Limit     Set [B]ias Current Limit
Set Limit Trap [S]tatus     Set [V]oltage Limit      [Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 4-59: Digital Diagnostic Monitoring

Screen Description

Limit Trap Status	Displays the configuration to enable or disable to outgo SNMP traps during the status change.
SFP port-number	Displays the port where the SFP is plugged.
Tranceiver Type	Displays the SFP type.
Vender Name	Displays the name of an SFP maker.
Vender Product Number	Displays the SFP part number.
Vender Serial Number	Displays the SFP serial number.
Rx Power (dBm)	Displays the received optical power of the SFP.
Tx Power (dBm)	Displays the transmitted optical power of the SFP.
Temp (deg. C)	Displays an SFP temperature.
Voltage (V)	Displays the operating voltage of the SFP.
Bias Current (mA)	Displays the operating current of the SFP.
Status	Displays the SFP status.
High Alarm	Displays the upper threshold of the alarm.
High Warning	Displays the upper threshold of warning.
Low Alarm	Displays the lower threshold of alarm(s).
Low Warning	Displays the lower threshold of warning.

The following describes how to use several commands on this screen.

N	Displays the value of the next port.	
		Press N (command), and then the SFP status of the next port is displayed.
P	Displays the value of the previous port.	
		Press P, and then the SFP status of the previous port is displayed.
S	Configures to enable or disable to outgo SNMP traps during the status change.	
		Press S, and then the appearance of the command prompt becomes "Enable or Disable Limit trap(E/D)>". Press E to enable and send traps, and D to disable that.
R	Set the threshold of the receiving-light power.	
		Press R, and then the appearance of the command prompt becomes "Auto or Manual (A/M)>". Press A to use the content, including the configuration of how the SFP is set, and M to configure manually. After that, the appearance becomes "High or Low(H/L)>". Press H to set the upper-limit, and L to set the lower limit. After that, the appearance becomes "Alarm or Warning(A/W)>". Press A to configure an alarm, and W to configure a warning. After that, the appearance becomes "Enter value>". Then enter the value.
T	Sets the threshold of the transmitting-light power.	
		Press T, and then the appearance of the command prompt becomes "Auto or Manual (A/M)> ". Press A to use the content, including the configuration of how the SFP is set and M to configure manually. After that, the appearance becomes "High or Low(H/L)>". Press H to set the upper-limit and L to set the lower limit. After that, the appearance becomes "Alarm or Warning(A/W)>". Press A to configure an alarm, and W to configure a warning. After that, the appearance becomes "Enter value>". Then enter the value.
V	Applies the voltage threshold.	
		Press V, and then the appearance of the command prompt becomes "Auto or Manual (A/M)>". Press A to use the content, including the configuration of how the SFP is set, and M to configure manually. After that, the appearance becomes "High or Low(H/L)>". Press H to set the upper-limit and L to set the lower-limit. After that, the appearance becomes "Alarm or Warning(A/W)>", press A to configure an alarm, and W to configure a warning. After that, the appearance becomes "Enter value>". Then enter the value.
E	Sets the threshold of a temperature.	
		Press E, and then the appearance of the command prompt becomes "Auto or Manual (A/M)>". Press A to use the content, including the configuration of how the SFP is set, and M to configure manually. After that, the screen shows "High or Low(H/L)>". Press H to set the upper-limit and L to set the lower-limit. After that, the appearance becomes "Alarm or Warning(A/W)>", press A to configure an alarm, and W to configure a warning. After that, the screen shows "Enter value>". Then enter the value.
B	Sets the threshold of a current.	
		Press B, and then the appearance of the command prompt becomes "Auto or Manual (A/M)>". Press A to use the content, including the configuration of how the SFP is set, and M to configure manually. After that, the appearance becomes "High or Low(H/L)>". Press H to set the upper-limit and L to set the lower limit. After that, the screen shows "Alarm or Warning(A/W)>", press A to configure an alarm, and W to configure a warning. After that, the screen shows "Enter value>". Then enter the value.
Q	Returns to the top menu.	

5. Statistics Menu

Press S on **Main Menu** to see **Statistics Menu** as **Figure 5-1** below. This screen allows you to monitor the number of packets as the statistical information on your switch. Doing so allows you to figure out the network condition. In addition, monitoring error packets enables to isolate the failure.

```
PNxxxxxx Local Management System
Main Menu -> Statistics Menu
Port:   1   Refresh: 300 Sec.      Elapsed Time Since System Up: 000:00:18:16
<Counter Name>          <Total>                 <Avg./s>
Total RX Bytes          0                       0
Total RX Pkts           0                       0
Good Broadcast          0                       0
Good Multicast          0                       0
CRC/Align Errors        0                       0
Undersize Pkts          0                       0
Oversize Pkts           0                       0
Fragments               0                       0
Jabbers                 0                       0
Collisions              0                       0
64-Byte Pkts            0                       0
65-127 Pkts             0                       0
128-255 Pkts            0                       0
256-511 Pkts            0                       0
512-1023 Pkts           0                       0
Over 1024 Pkts          0                       0
------------------------------- <COMMAND> ----------------------------------
[N]ext  [P]revious  [S]elect Port  Re[f]resh Mode  Since [R]eset  [Q]uit
Command>
Enter the character in square brackets to select option
```

Figure 5-1 A: Statistics Menu

Screen Description

Port	Displays the port-number.
Refresh	Displays the update interval of the screen (the factory default settings is 300 seconds).
Elapsed Time Since System Up	Displays the time of starting this device.
Counter Name	Displays the name of each counter.
Total	Displays the value of each counter.
Avg./s	Displays the mean value for one second of each counter.

The following describes how to use several commands on this screen.

S	Switches the target port.	
		Press S (command), and then the appearance of the command prompt becomes "Select port-number>". Enter the port-number to be displayed.
N	Displays the value of the next port.	
		Press N, and then a counter of the next port is displayed.
P	Displays the value of the previous port.	
		Press P, and then a counter of the previous port is displayed.

R	Resets the value of a counter.	
		Press R, and then the value of the counter is reset. The appearance is switched to the display from a counter reset.
F	Configures the update mode of the screen.	
		Press F, and then the appearance of the command prompt becomes "Select refresh mode >". Press 1 to stop the automatic update, and 2 to change the update interval. If you enter 2, the appearance of the command prompt becomes "Input refresh time>". Enter the integer in the range from 5 to 600 (seconds).
Q	Returns to the top menu.	

In addition, this screen shows two kinds of cumulative (Figure 5-1) from a counter reset and the cumulative (Figure 5-1), which is set after starting this device. After reseting a counter, the cumulative (which is set after starting) is saved.

```
PN262492 Local Management System
 Main Menu -> Statistics Menu
 Port:   1   Refresh: 300 Sec.      Elapsed Time Since System Up: 000:00:00:00
 <Counter Name>          <Total>                  <Avg./s>
 Total RX Bytes          0                        0
 Total RX Pkts           0                        0
 Good Broadcast          0                        0
 Good Multicast          0                        0
 CRC/Align Errors        0                        0
 Undersize Pkts          0                        0
 Oversize Pkts           0                        0
 Fragments               0                        0
 Jabbers                 0                        0
 Collisions              0                        0
 64-Byte Pkts            0                        0
 65-127 Pkts             0                        0
 128-255 Pkts            0                        0
 256-511 Pkts            0                        0
 512-1023 Pkts           0                        0
 Over 1024 Pkts          0                        0
 ------------------------------ <COMMAND> ----------------------------------
 [N]ext  [P]revious  [S]elect Port  Re[f]resh Mode  Since [R]eset  [Q]uit
 Command>
 Enter the character in square brackets to select option
```

Figure 5-1 B: Displaying the Cumulative from a Counter Clear

Screen Description

Port	Displays the port-number.
Refresh	Displays the update interval of the screen. The factory default settings is 300 seconds.
Elapsed Time Since System Reset	Displays the time passed after a counter is reset.
Counter Name	Displays the name of each counter.
Total	Displays the value of each counter.
Avg./s	Displays the average value for one second of each counter.

The following describes how to use several commands on this screen.

S	Switches the port to display the value.	
		Press S (command), and then the appearance of the command prompt becomes "Select port-number>". Enter the port-number to be displayed.
N	Displays the value of the next port.	
		Press N to display the counter of the next port. It is disabled on the port 28 (or 28th port).
P	Displays the value of the previous port.	
		Press P, and then a counter of the previous port is displayed. Regarding the port 1, it is disabled.
U	Changes the counter display.	
		Press U, and then the display is switched to the counter display from starting.
R	Resets the value of a counter.	
		Press R, and then the value of the counter is reset. The appearance becomes switched to the display from the counter reset.
F	Configures the update mode of the screen.	
		Press F, and then the appearance of the command prompt becomes "Select refresh mode >". Press 1 to stop the automatic update, and 2 to change the update interval. If 2 is entered, the appearance of the command prompt becomes “Input refresh time>” . Enter the integer in the range from 5 to 600 (seconds).
Q	Returns to the top menu.	

The following describes the counter content.

Total RX Bytes	Displays the number of bytes for all the packets received.
Total RX Pkts	Displays the number of all the packets received.
Good Broadcast	Displays the number of broadcast packets received.
Good Multicast	Displays the number of multi-casts packets received.
CRC/Align Errors	Although this indicates an error packet and the length of normal packets (from 64 to 1,518 bytes), the number of packets where errors are found with FCS (frame check sequence) is displayed. Among them, CRC (FCS) error indicates that the packet length is 1 byte multiplied by an integer, and an alignment error means otherwise.
Undersize Pkts	Although this indicates an error packet and the packet length is shorter than 64 bytes, the number of packets without abnormalities is displayed for other contents.
Oversize Pkts	<During Jumbo status Disabled> Displays the number of packets; the length is longer than 1,518 bytes. <During Jumbo status Enabled> Displays the number of packets; the length is longer than 9,216 bytes.
Fragments	This indicates an error packet, and its length is shorter than 64 bytes. The number of packets, which cause CRC errors or an alignment error, is displayed.
Jabbers	This indicates an error packet, and its length is longer than 1,518 bytes. The number of packets, which cause CRC errors or an alignment error, is displayed.
Collisions	Displays the number of packet collisions, which occur.
64-Byte Pkts	Displays the total number of packets whose packet length is 64 bytes.
65-127 Pkts	Displays the total number of packets whose length is between 65 and 127 bytes.
128-255 Pkts	Displays the total number of packets whose length is between 128 and 255 bytes.
256-511 Pkts	Displays the total number of packets whose length is between 256 and 511 bytes.
512-1,023 Pkts	Displays the total number of packets whose length is between 512 and 1,023 bytes.

Over 1,024 Pkts	Displays the total number of packets whose length is more than 1,024 bytes. Note: This item is displayed when the jumbo status is disabled.
1,024-1,518 Pkts	Displays the total number of packets whose length is between 1,024 and 1,518. Note: This Item is displayed when the Jumbo Status is enabled.

Note: This screen is updated per update-interval time. If the time-out time for a console, SSH and Telnet is set to the value, which is more than the update-interval time, the time-out does NOT occur.

---

6. Switch Tools Configuration

Press T from **Main Menu**, and then you can see "Switch Tools Configuration" as **Figure 6-1.** This screen allows you to upgrade firmware, and to save, load, restart the configuration. You can also refer to logs, use the bells and whistles of the switch, and configure the related actions.

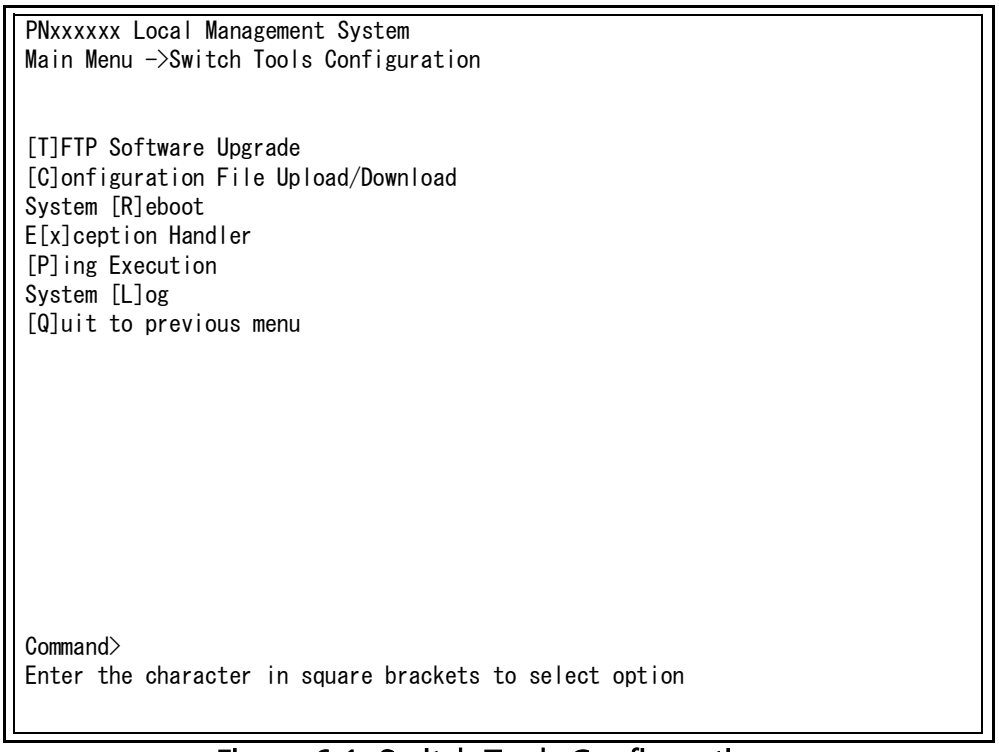


Figure 6-1: Switch Tools Configuration

Screen Description

TFTP Software Upgrade	Configures and executes the firmware upgrade of your device.
Configuration File Upload/Download	Configures and executes to save and load the configuration information on this device.
System Reboot	Configures and executes for restarting this device.
Exception Handler	Configures the operation if an exception processing occurs on this device.
Ping Execution	Executes PING from this device.
System Log	Displays a system-log of this device.
Quit to previous menu	Exits **Switch Tools Configuration Menu** to return to **Main Menu**.

6.1. TFTP Software Upgrade

Press T on the **Switch Tools Configuration** menu, and then you can see "TFTP Software Upgrade" as **Figure 6-2**. You can upgrade firmware and implement the configuration on this screen.

```
PNxxxxxx Local Management System
Switch Tools Configuration -> TFTP Software Upgrade

Image Version:          1.0.0.00
TFTP Server IP:         0.0.0.0
Image File Name:




-------------------------------- <COMMAND> ----------------------------------

Set TFTP [S]erver IP Address
Set Image [F]ile Name
[U]pgrade Image
[Q]uit to previous menu









Command>
Enter the character in square brackets to select option
```

Figure 6-2: TFTP Software Upgrade

Screen Description

Image Version	Displays a version of current firmware.
TFTP Server IP	Displays an IP address of a TFTP server existing in firmware to be upgraded.
Image File Name	Displays the file name of firmware to be upgraded.

The following describes how to use several commands on this screen.

S	Configures an IP address of a TFTP server existing in firmware to be upgraded.	
		Press S (command), and then the appearance of the command prompt becomes "Enter IP address of TFTP server>". Enter the IP address of TFTP servers.
F	Configures the file name of firmware to be upgraded.	
		Press F, and then the appearance of the command prompt becomes "Enter file name>". Designate the file name within 39 half-size characters.
U	Starts upgrading.	
		Press U, and then the appearance of the command prompt becomes "Download file(Y/N)>" to check if starting is needed. Check if all the configurations are accurate (or correct). Press Y to start upgrading. If the configuration is inaccurate, press N to return to the original condition.
Q	Returns to the top menu.	

If downloading starts, the appearance of the screen becomes **Figure 6-2** below to display the progress. If you press the Ctrl+C during the transmission (or transferring), processing TFTP transmission may be interrupted. After completing to down-

load, the reboot automatically begins to return to the login screen. Then rewriting firmware is successful. Next, the reboot automatically begins.

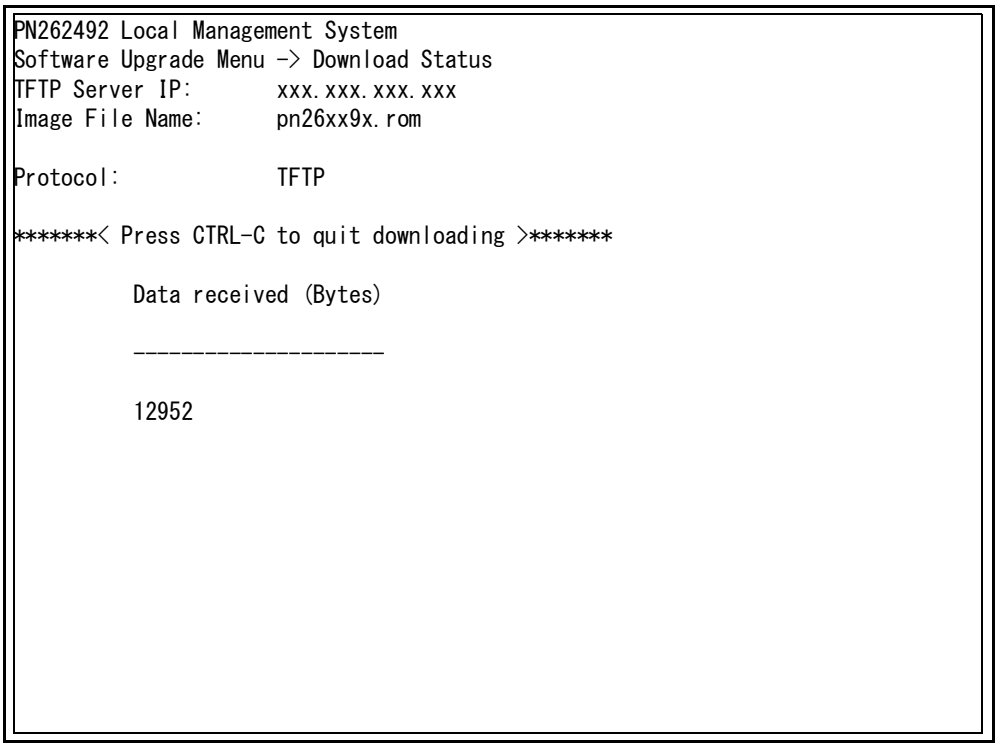


Figure 6-2: Download Status

Note: Do not turn off the power of this device when upgrading the firmware.

6.2. Configuration File Upload/Download

Press C on the **Switch Tools Configuration** menu to see Configuration File Upload/Download, as **Figure 6-4** below. This screen allows you to save the configuration information on this device (as a file) and to load the information from a personal computer.

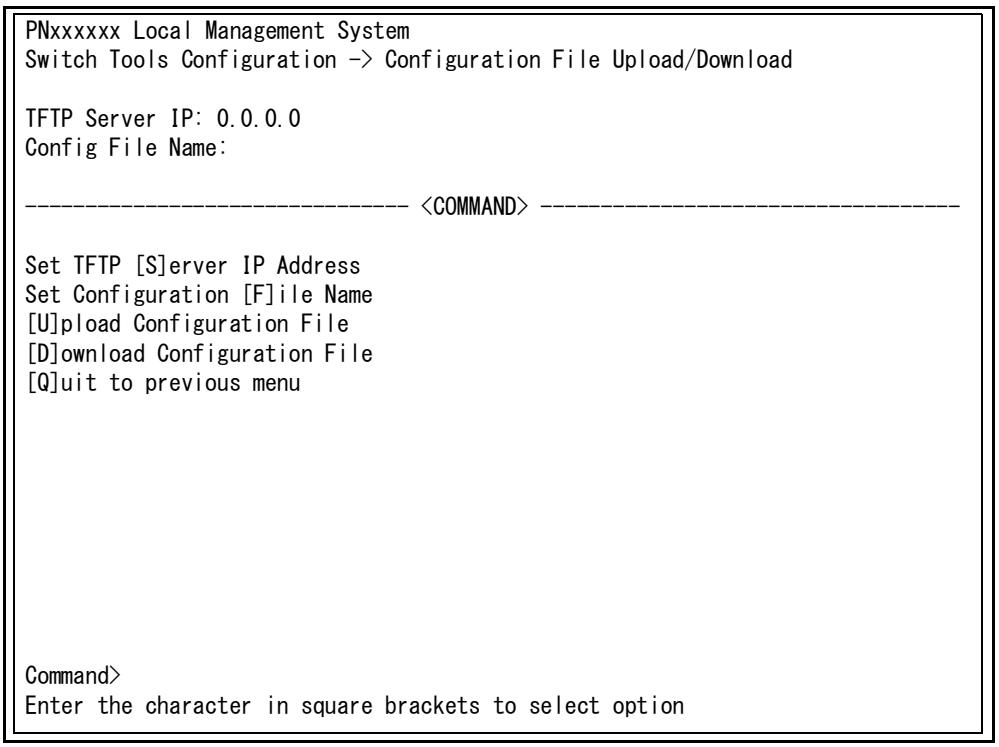


Figure 6-4: Configuration File Upload/Download

Screen Description

TFTP Server IP	Displays an IP address of a TFTP server to save and load the configuration.
Config File Name	Displays the file name of the configuration information.

The following describes how to use several commands on this screen.

S	Configures an IP address of a TFTP server to save or load the configuration information.	
		Press S (command), and then the appearance of the command prompt becomes "Enter IP address of TFTP server>". Enter the IP address of the TFTP server.
F	Configures the file name of the configuration information to save or load it.	
		Press F, and then the appearance of the command prompt becomes "Enter file name>". Specify the file name of a program downloaded within half size of 30 characters.
U	Starts to save (or upload) the configuration information.	
		Press U, and then the appearance of the command prompt becomes "Upload file(Y/N)>U". Doing so allows you to check if starting is ready. Check if all of the configurations are correct. Press Y to start uploading a file. If the configuration is incorrect, press N to return to the original (or first) condition.
D	Starts to load (or download) the configuration information.	
		Press D, and then the appearance of the command prompt becomes "Download file(Y/N)>". Check if starting is necessary. Check if all the configurations are correct. Press Y to start downloading. If the configuration is incorrect, press N to return to the original (or first) condition.
Q	Returns to the top menu.	

6.3. System Reboot

Press R on the **Switch Tools Configuration** menu to see **System Reboot Menu**, as **Figure 6-5** below. This screen allows you to restart this device.

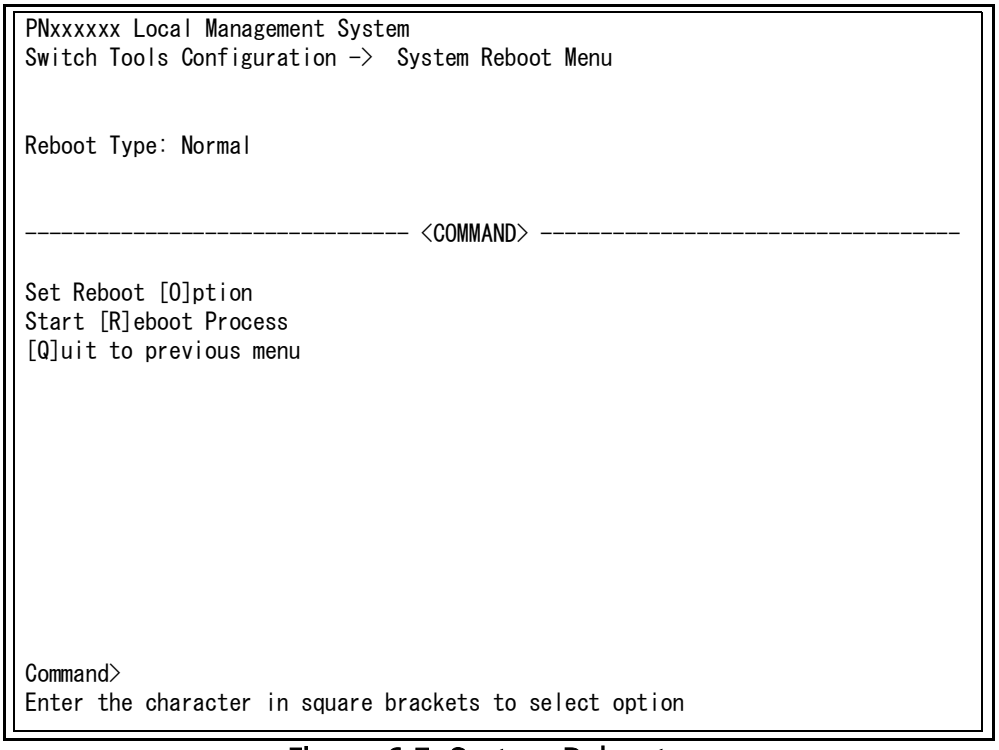


Figure 6-5: System Reboot

Screen Description

Reboot Type	Displays the reboot method. The factory default settings is Normal.	
	Normal	Executes the normal reboot.
	Factory Default	All of the configurations return to the factory default settings.

The following describes how to use several commands on this screen.

O	Set the reboot method to a mere reboot, or return the method to the factory default settings.	
		Press O (command), and then the appearance of the command prompt becomes "Select reboot option (N/F)>". Press N to reboot normally, and F to return all to the factory default settings.
R	Execute the reboot (process).	
		Press R, and then the appearance of the command prompt becomes "Are you sure to reboot the system (Y/N)". Press Y to execute, and N to stop that.
Q	Returns to the top menu.	

6.4. Exception Handler

Press X on the **Switch Tools Configuration** menu to see Exception Handler as **Figure 6-6** below. This screen allows you to configure the operation during the exception handling.

```
PNxxxxxx Local Management System
Switch Tools Configuration ->  Exeption Handler Menu

Exception Handler:            Disabled
Exception Handler Mode:       Debug Message & System Reboot









-------------------------------- <COMMAND> ----------------------------------

Enable/Disable E[x]ception Handler
Set Exception Handler [M]ode
[Q]uit to previous menu

Command>
Enter the character in square brackets to select option
```

Figure 6-6: Exception Handler

Screen Description

Exception Handler	Displays the status (or condition) of the exception handling function. The factory default settings is Disabled.	
	Enabled	Indicates that the exception handling is enabled.
	Disabled	Indicates that the exception handling is disabled.
Exception Handler Mode	Displays the method of the exception handling. The factory default settings is Debug Message.	
	Debug Message	Output a debug message on a console when detecting the exception handling.
	System Reboot	Automatically reboot the system when detecting the exception handling.
	Debug Message and System Reboot	If the exception handling is detected, output a debug message on a console before the automatic reboot.

The following describes how to use several commands on this screen.

X	Configures to enable or disable the exception handling function.	
		Press X (command), and then the appearance of the command prompt becomes "Enable or Disable Exception Handler (E/D)>". After that, press E to enable the function and D otherwise.
M	Configures the method of the exception handling.	
		Press M, and then the appearance of the command prompt becomes "Select Exception Handler Mode (M/R/B)>". After that, press M to display a debug message, R to reboot, and B to implement both of them.
Q	Returns to the top menu.	

6.5.1. Ping Execution

Press P on the **Switch Tools Configuration** menu, and then you can see "Ping Execution" as **Figure 6-7.** This screen allows you to select the Ping execution command with IPv4 or IPv6 on this device.

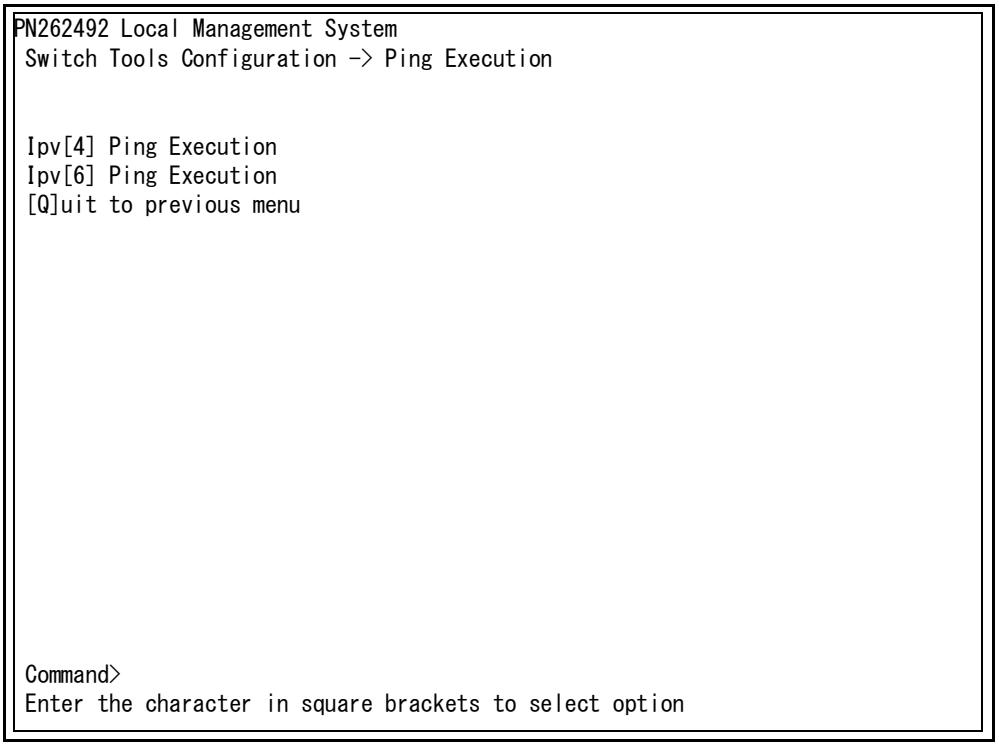


Figure 6-7: Ping Execution

The following describes how to use several commands on this screen.

4	Moves to the screen of the IPv4 Ping execution.	
		Press 4 (command), and then the appearance of the screen becomes "IPv4 Ping Execution". See the next section (**6.5.1**) for the content.
6	Moves to the screen of the IPv6 Ping execution.	
		Press 6, and then the appearance of the screen becomes "IPv6 Ping Execution". See the next section (**6.5.1**) for the content.
Q	Returns to the top menu.	

6.5.1. IPv4 Ping Execution

Press 4 on **Ping Execution** to see the IPv4 Ping Execution, as **Figure 6-8** below. This screen allows you to confirm the communication flowing to a terminal and other devices connected, by executing the IPv4 Ping command on your switch.

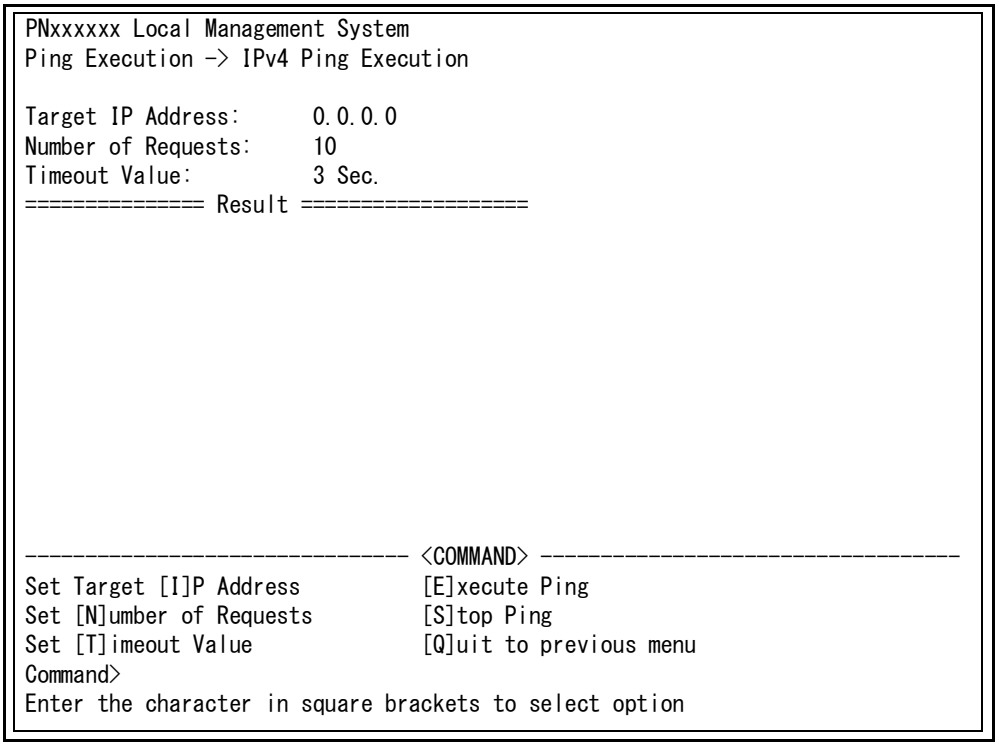


Figure 6-8 A: IPv4 Ping Execution

Screen Description

Target IP Address	The IP address of the opponent-destination, which executes Ping, is displayed. The factory default settings is 0.0.0.0.
Number of Requests	The number of Ping executions is displayed. The factory default settings is 10 times.
Timeout Value	Displays the necessary time until a time-out occurs. The factory default settings is three (3) seconds.
Result	Displays the Ping result.

The following describes how to use several commands on this screen.

I	Configures an IP address of an opponent destination to execute the Ping.	
		Press I (command), and then the appearance of the command prompt becomes “Enter IP address>”. After that, enter the IP address on that.
N	Configures the number of Pings executions.	
		Press N, and then the appearance of the command prompt becomes “Enter new number of requests>”. Enter the number of executions. Enter the numeric value in the range from 1 to 10.
T	Configures the time until the time-out occurs.	
		Press T, and then the appearance of the command prompt becomes “Enter new Timeout Value >”. After that, enter the time with the unit of seconds. Five seconds is the maximum time. Configure it in the range from 1 to 5 seconds.
E	Executes the Ping command. In addition, you can clear the display.	
		Press E, and then the appearance of the command prompt becomes “Execute Ping or Clean Ping Data (E/C)>”. Press E to execute it, and C to clear the display.
S	Stops the Ping command execution.	
		Press S during the Ping execution, or press Ctrl+C to stop that.
Q	Returns to the top menu.	

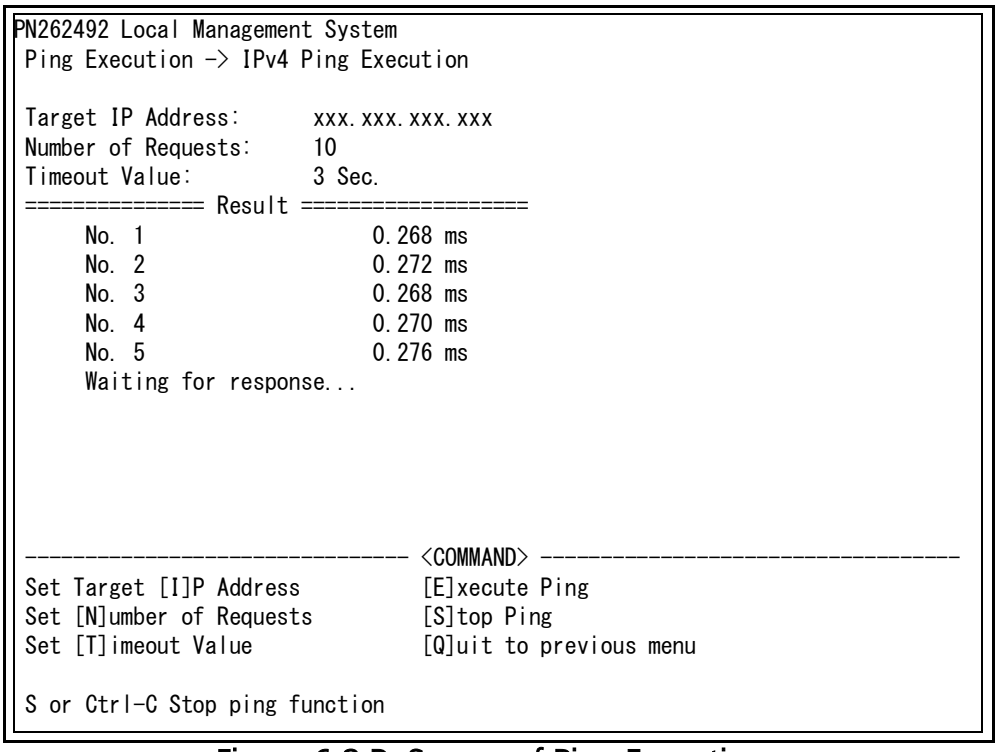


Figure 6-8 B: Screen of Ping Execution

6.5.1. IPv6 Ping Execution

Press 6 at **Ping Execution** to see the IPv6 Ping Execution as follows. On this screen, you can confirm the communication to the terminal and other devices (which are connected) by executing the IPv6 Ping command on your switch.

```
PNxxxxxx Local Management System
Ping Execution -> IPv6 Ping Execution

Target IP Address:      ::
Number of Requests:     10
Timeout Value:          3 Sec.
============== Result ==================









-------------------------------- <COMMAND> ----------------------------------
Set Target [I]P Address          [E]xecute Ping
Set [N]umber of Requests         [S]top Ping
Set [T]imeout Value              [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Figure 6-10 A: IPv6 Ping Execution

Screen Description

Target IP Address	Displays an IPv6 address of the (opponent) destination to execute Ping. "::" is displayed during the factory default settings.
Number of Request	Displays the number of Pings to be executed. The number is set to 10 during the factory default settings.
Timeout Value	Displays the time needed until the screen becomes time-out. The factory default settings is three (3) seconds. The content of Result Ping is displayed.

The following describes how to use several commands on this screen.

I	Configures an IP address of the (opponent) destination to execute the Ping.	
		Press I (command), and then the appearance of the command prompt becomes "Enter new Target IPv6 Address>". After that, enter the IP address.
N	Configures the number of Pings.	
		Press N, and then the appearance of the command prompt becomes "Enter new number of requests>>". After that, enter the number of times in the range from one (1) to 10; the maximum number of times is 10.
T	Configures the time until the appearance of the screen becomes time-out.	
		Press T, and then the appearance of the command prompt becomes "Enter new Timeout Value>". Enter the time by using seconds as the unit. Configure the time in the range from one (1) to five (5) as five seconds is set as the maximum time.

E	Executes the Ping command. You can also clear the display.
	Press E, and then the appearance of the command prompt becomes “Execute Ping or Clean Ping Data(E/C)>”. Press E to execute, and C to clear the display.
S	Stops the Ping command.
	Press S to execute the Ping, or Ctrl+C to stop that.
Q	Returns to the top menu.

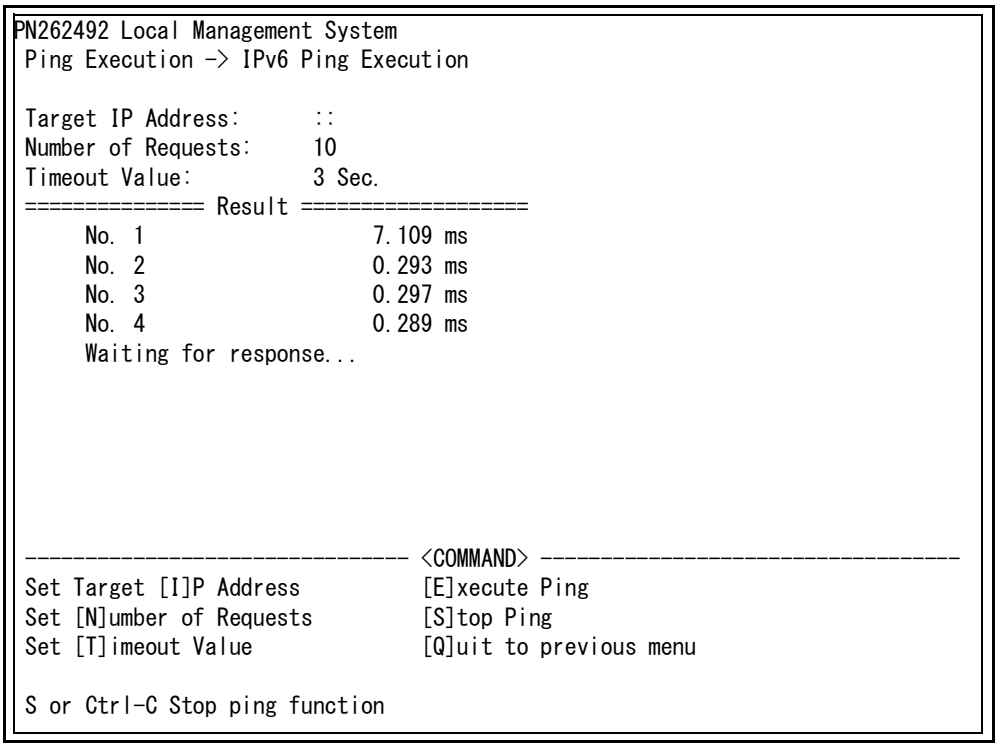


Figure 6-10 B: IPv6 Ping Execution

6.6. System Log

Press L on the **Switch Tools Configuration** menu to see **System Log Menu**, as **Figure 6-12** below. The event occurring on your switch is displayed on this screen. The history of events, which has occurred on the switch, is displayed. See the event to figure out the phenomenon occurring on your switch. This is helpful to manage the network.

```
PNxxxxxx Local Management System
Switch Tools Configuration -> System Log Menu
Entry  Time(YYYY/MM/DD HH:MM:SS)                    Event
-----  ------------------  ------------------------------------------------
    1  2001/01/24 05:08:53  Port-1 link-up
    2  2001/01/24 05:08:54  Port-1 link-down
    3  2001/01/24 05:08:58  Port-1 link-up
    4  2001/01/24 05:11:47  Login from console
    5  2001/01/24 05:13:31  Port-1 link-down
    6  2000/12/31 00:01:15  Login from console
    7  2000/12/31 00:02:28  Port-1 link-up
    8  2000/12/31 00:13:20  Set IP address <172.16.222.1>
    9  2000/12/31 00:23:01  Reboot: Normal
   10  2000/12/31 00:23:55  Port-1 link-up
------------------------------ <COMMAND> ----------------------------------
[P]revious Page
[N]ext Page
[C]lear System Log
[S]elect Entry Log number
[Q]uit to previous menu


Command>
Enter the character in square brackets to select option
```

Figure 6-12: System Log

Screen Description

Entry	Displays the event number.
Time	Displays the time when an event occurs. If the time-settings is not implemented, the total time needed after your activation is displayed.
Event	Displays the event, which occurs on your switch.

Note: An event is deleted from an older date, sequentially.

The following describes how to use several commands on this screen.

N	Displays the next page.	
		Press N (command) to display the next page.
P	Displays the previous page.	
		Press P to display the previous page.
C	Deletes all of the log contents.	
		Press C to delete all the logs.

S	Displays the log of entry specified (or designated).	
		Press S, and then the appearance of the command prompt becomes "Select entry log number>" . After that, enter the entry-number to be displayed.
Q	Returns to the top menu.	

See the CLI reference for the description of the system log.

6.7. Watch Dog Timer

Press W on the **Switch Tools Configuration** menu, and then you can see **Watch Dog Timer Menu** as **Figure 4-23**. You can implement the operation (or motion) configuration of the **Watch Dog Timer** function on this screen.

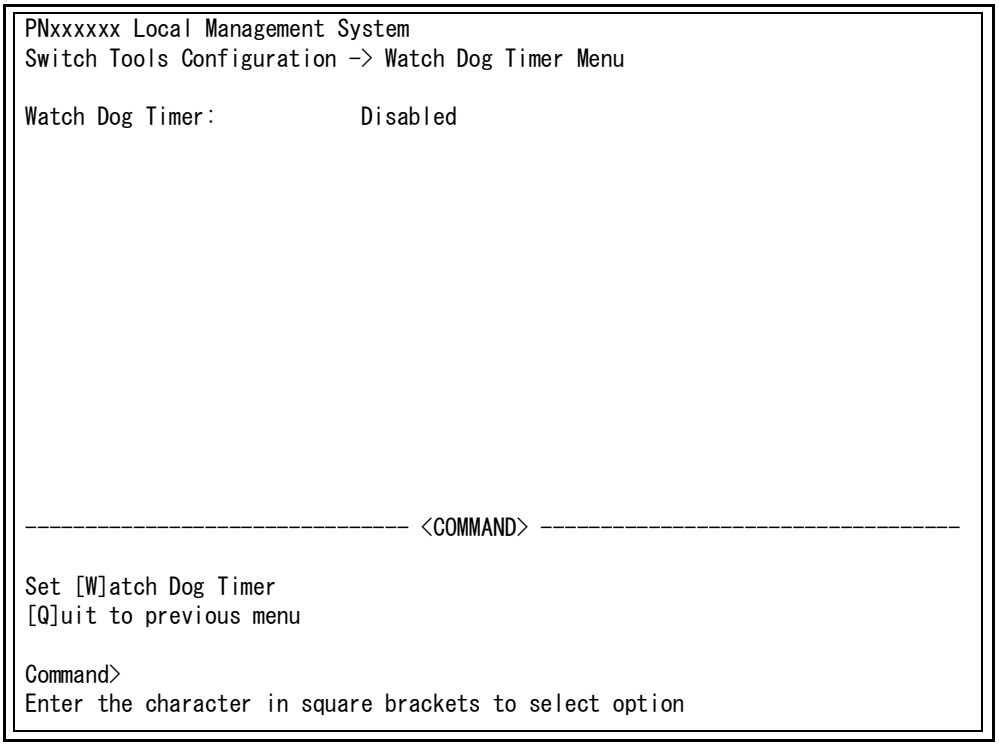


Figure 4-23: Watch Dog Timer

Screen Description

Watch Dog Timer	Displays the status for the Watch Dog Timer function. The factory default settings is Disabled.	
	Enabled	The function is enabled.
	Disabled	The function is disabled.

The following describes how to use several commands on this screen.

W	Switches the operation condition of the Watch Dog Timer.	
	Press W (command), and then the appearance of the command prompt becomes “Enabled or Disabled Watch Dog Timer(E/D)>”. After that, press E to enable the function and D to disable it.	
Q	Returns to the top menu.	

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