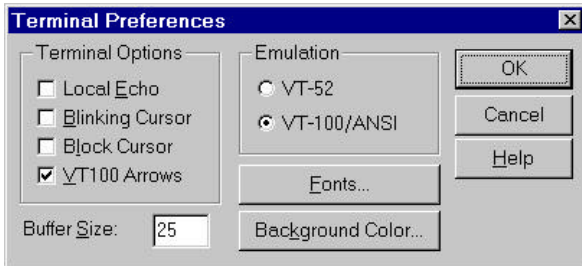


Chapter 4 Console Interface

The console, using VT100 terminal emulation, can be accessed from the RS232 serial port or a telnet connection. The switch offers password protection for this interface. All of the following examples of the Console's User Interface show a screen capture from a telnet session.



When attached to the User Interface via a Telnet Session, the following must be set in order to use the arrow keys: Under the terminal pull down menu choose Properties and make sure the VT100 Arrows option is turned on.

4.1 User Interface

The switch offers a menu-driven interface. The initial welcome screen requires a password entry in order to proceed. If there is no password set on the system, the Main Menu will be displayed and access is granted immediately. By default, password protection is disabled. If enabled, the default password is "switch".

To enable password protection

- Choose System Manager from the Main Menu
- Choose General
- Select Password Administration
- Enter and verify new password

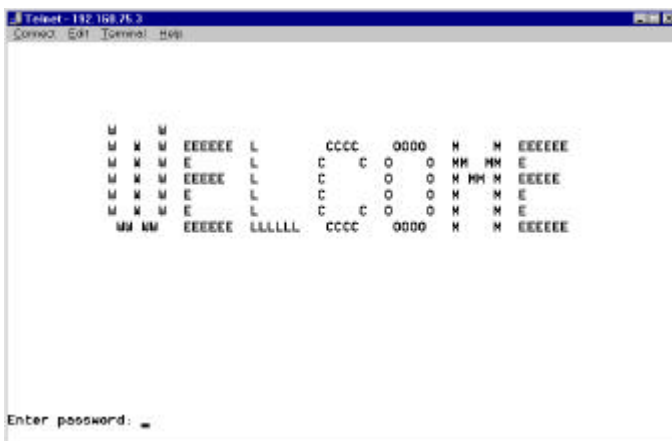


Figure 4-1 Initial Welcome screen of User Interface

4.2 Characteristics

There are several characteristics to the User Interface pages that are necessary to know before proceeding to use it. The arrow keys may be used to move within menus and sub-screens. At the bottom of every screen are some key commands available to the user for that particular screen, as well as some helpful information. The common key strokes and their definitions and intricacies are listed below:

ESC	Return to the previous menu or screen, or abort editing
Ctrl-L	Refresh the screen
Ctrl-D	Log off
Ctrl-W	Saves current configuration to NVRAM.
Spacebar	Toggles between possible settings for a field.
Enter	Select a menu item, edit a field, or accept a value after editing a field.
Ctrl-X	Delete a table entry

4.3 Main Menu

The main menu displays all the sub-menus that are available. Striking Enter, at a highlighted option, will confirm the choice of the specified sub-menu. There are three menu items to choose from:

- System Manager
- Port Manager
- Statistics

To logout of the user interface, hit Ctrl-D at anytime during your telnet session. You will be brought back to the login screen.

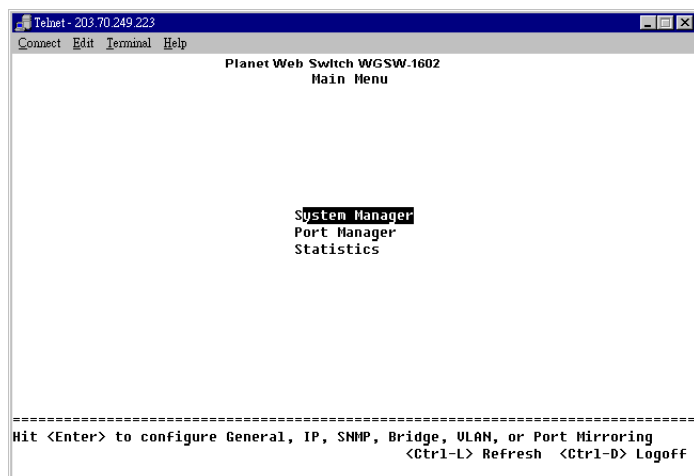


Figure 4-2: Main Menu

4.3.1 System Manager

This menu contains all the options needed to configure the switch to your network. Menu items are:

- General
- IP

- SNMP
- Bridge
- VLAN
- Mirroring

4.3.1.1 General

These parameters include the following:

System Information	Includes system uptime, description, name, contact, location and MAC address
Software Download	Manages the software version of the switch
Password Administration	Manages the login password of the switch (For both console and web)
System Administration	Saves the settings to NVRAM, resets the switch, and restores settings

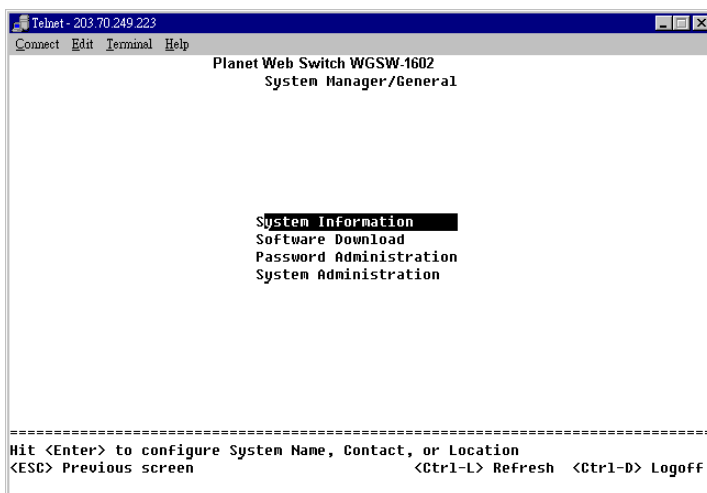


Figure 4-3: Main Menu: General

◆ System Information

This screen displays the following:

- System Description
- System Name- user definable
- System Contact-user definable
- System Location-user definable
- MAC Address

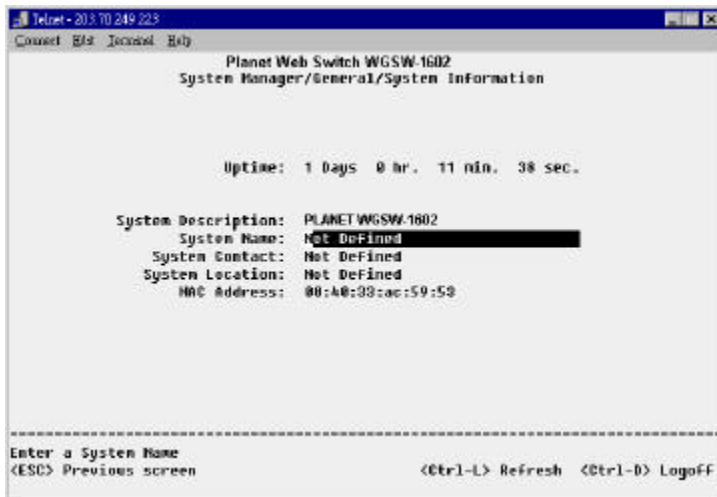


Figure 4-4 : System Information

◆ Software Download

This screen allows users to select an image file and the location from where it can be downloaded using TFTP. There are three 'Boot from:' options: Net, Net & Save, and Last Saved. (Please refer to Chapter 5 when updating software)

Net option:

This option allows the user to try out a new image before upgrading. It requires a TFTP filename and a server IP address to retrieve the specified image from the given IP address.

The new image will not overwrite the one in the flash.

Net + Copy option

This option requires the same setup as the Net option, i.e. TFTP server and a new image. However, it copies the image to the flash directly and the system boots from the flash afterwards.

Last Saved option

This option will automatically show up after the 'Net + Copy' option is selected and the unit is reset.

Warning: The previous image in the flash will be lost when the procedure completes.

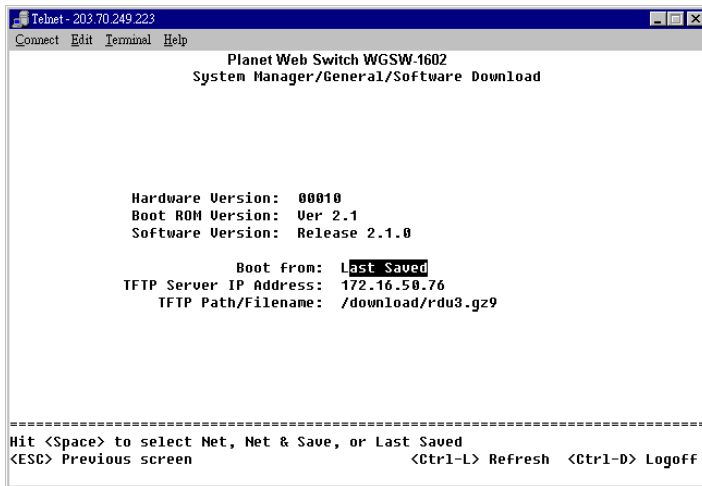


Figure 4-5: General: Software Download

◆ Password Administration

This screen allows the user to change the password for both the Console and Web sessions. To use password protection, you must enable Password Protection.

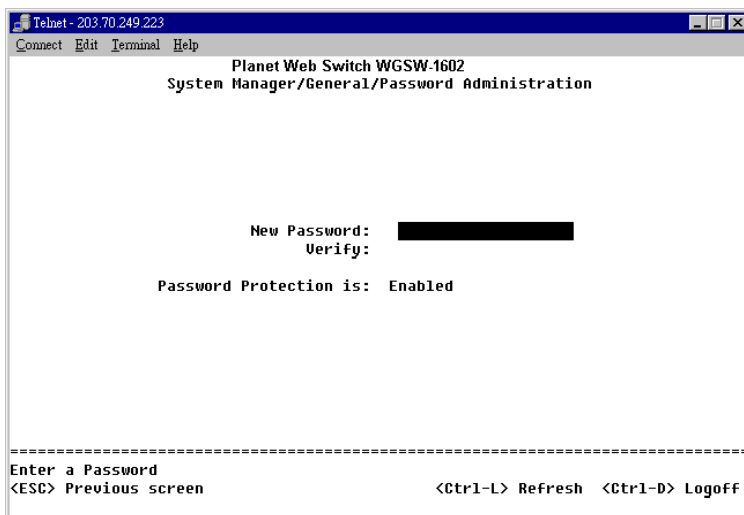


Figure 4-6: General: Password Administration

◆ System Administration

- **Save Configuration to NVRAM** Save all changed made in your session to NVRAM
- **Restore Defaults** Restore original settings
- **Reset Switch** Restart the switch

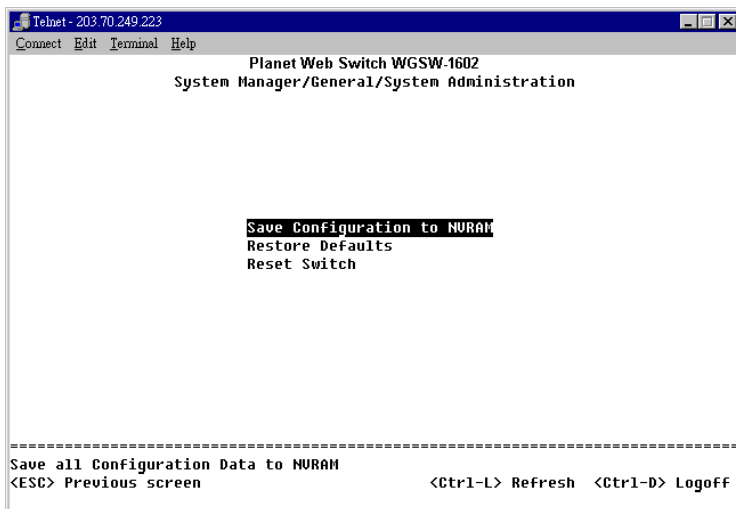


Figure 4-7: General: System Administration

4.3.1.2 IP

This menu manages the IP related information of the system.

- Enter a site specific IP address, Gateway Address, and Network Mask (or subnet mask). Consult your network administrator for the information.
- Press Ctrl-W to save any changes made.

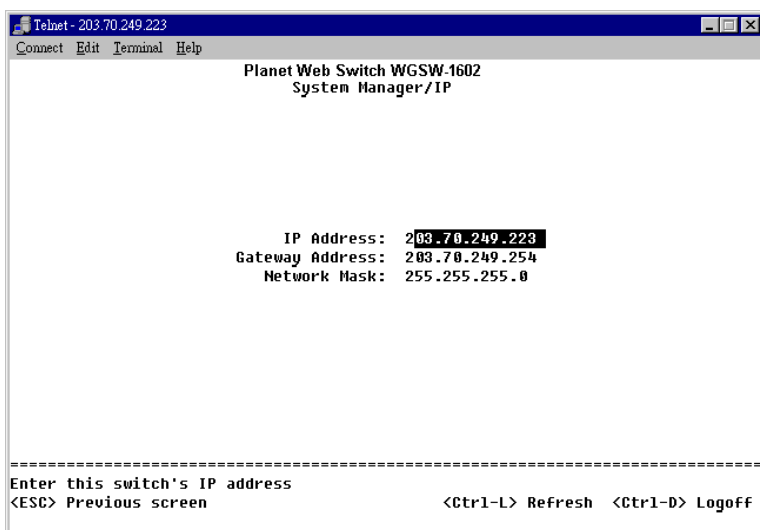


Figure 4-8: General: IP

4.3.1.3 SNMP

This sub-menu allows users to setup three sections as shown (Figure 4-9):

- Trap Configuration
- Community Table
- Host Authorization

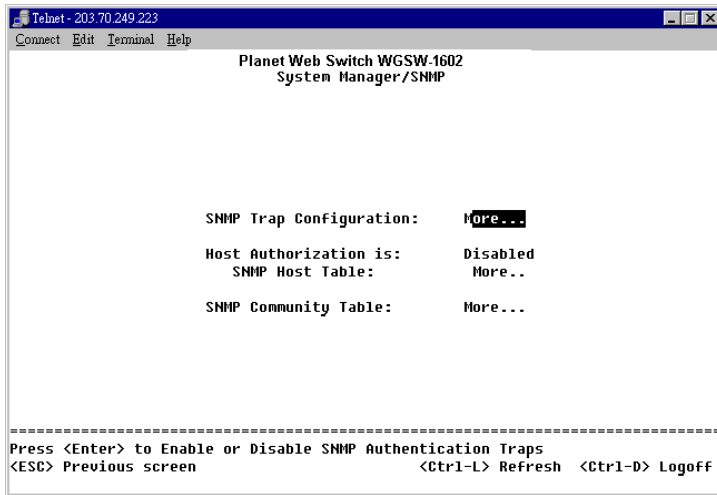


Figure 4-9: SNMP

◆ SNMP Trap Configuration

Authentication Traps

When on, the system will generate an SNMP trap upon a host authorization failure. This failure occurs when a host tries to gain access to the system but the host's IP is not in the SNMP host table.

◆ SNMP Host Table

The screen, shown in Figure 4-9, grants a host the access rights to the box.

Host Authorization must be enabled to use the host table. Host Authorization is used as a security feature to limit people who are not listed in the host table from accessing the switch.

If Host Authorization is enabled, the host must be added to this table, through the Console port connection in order for an end station to be access the switch via SNMP or the Web Interface.

Add host

- Enter the host name, IP address, and the community string. Press Enter after each entry to move to the next field.
- In the Status field, press the Spacebar until the desired Status is displayed.
- Press Ctrl-W to save all changes.

Host Name	IP Address	Community String	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
13			Disabled
14			Disabled
15			Disabled
16			Disabled

Enter a SNMP Host Name
 <ESC> Previous screen <Ctrl-x> Delete row <Ctrl-L> Refresh <Ctrl-D> Logoff

Figure 4-10: Main Menu: Configuration: SNMP Menu: Host Table

◆ SNMP Community Table

The administrator can create up to eight different community strings with combinations of GET, SET and TRAP privileges. These community strings need to be set prior to setting host access, as the host table depends on the existence of community strings. The public string has all the privileges by default.

Community String	Get	Set	Trap	Status
WebInterface	On	On	On	Active
public	On	Off	Off	Active
	Off	Off	Off	Disabled
	Off	Off	Off	Disabled
	Off	Off	Off	Disabled
	Off	Off	Off	Disabled
	Off	Off	Off	Disabled
	Off	Off	Off	Disabled

Enter a Community String Name
 <ESC> Previous screen <Ctrl-x> Delete row <Ctrl-L> Refresh <Ctrl-D> Logoff

Figure 4-11: SNMP: SNMP Community Table

4.3.1.4 Bridge

There are several parameters to be set in the Bridge Configuration screen (see Figure 4-12):

- Spanning Tree Configuration
- Static Bridge Table
- Bridge Aging

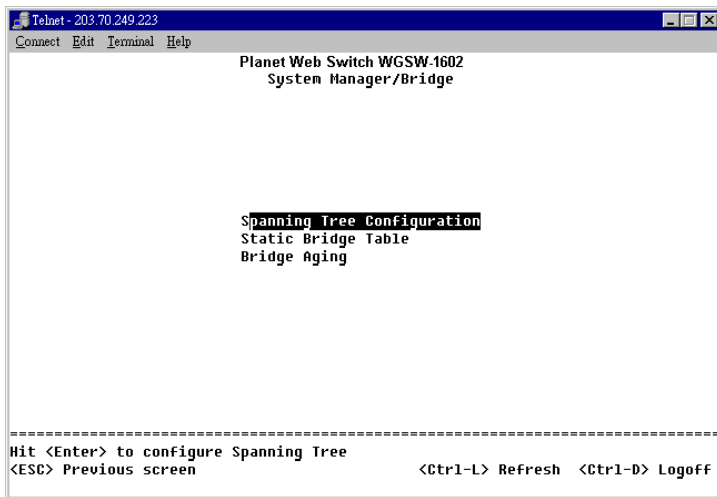


Figure 4-12: Bridge

◆ Spanning Tree Configuration

If Spanning Tree is disabled the next four values are ignored. When enabled they do need to be set.

- **Hello Time** Interval between configuration messages sent by the spanning tree algorithm
- **Max Age** Amount of time before a configuration message is discarded by the system
- **Forward Delay** Amount of time system spends in “learning” and “listening” states
- **Bridge Priority** Priority setting among other switches in the spanning tree

◆ Static Bridge Table

The Static Bridge Table, Figure 4-13, allows the administrator to specify Media Access Control (MAC) addresses for specific ports that will not be purged from the bridge table by the aging function.

Add an entry

- Type the MAC address under the first column, and hit Enter.
- Enter the port number, which is associated with the MAC address.

If all the information is correct, the new entry will appear in the list below, which is in order by port ID. Otherwise, an error message will be displayed and the cursor will return to the MAC Address field.

Remove an entry

- Tab down to the entry and press Ctrl-X. ESC will return to the previous menu.

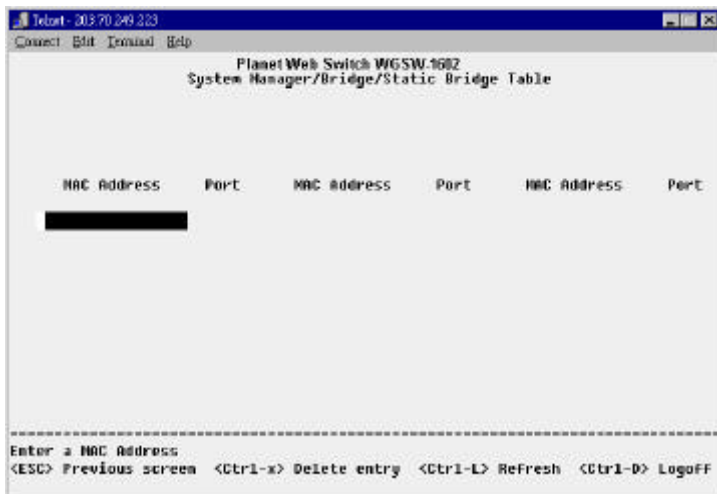


Figure 4-13: Bridge: Static Bridge Table

◆ Bridge Aging

The aging time is the amount of time that an entry is kept in the bridge tables prior to being purged (or aged). The range (in parentheses) represents the minimum and the maximum values that the timer can be set.

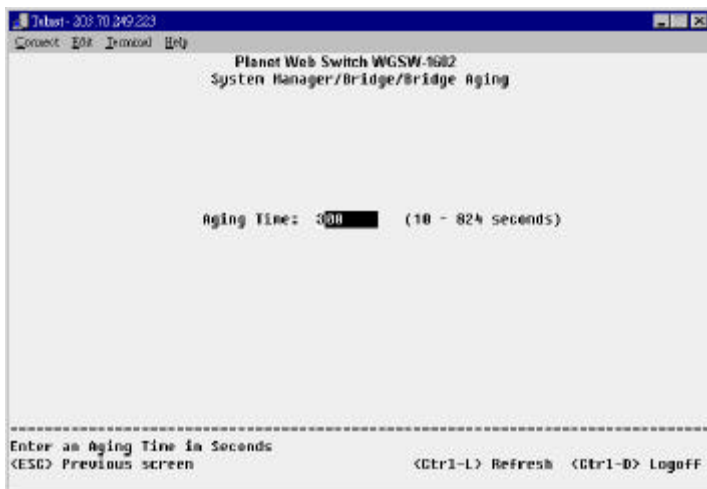


Figure 4-14: Bridge: Bridge Aging

4.3.1.5 VLAN

The VLAN settings are as follows:

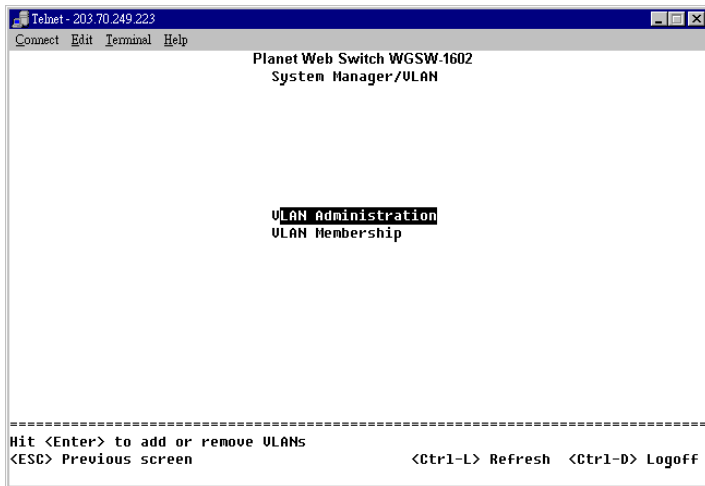


Figure 4-15: VLAN

◆ VLAN Administration

Up to 16 VLANs with unique ID numbers and names can be added. VLAN ID numbers must be in the range of 1-4094.

Add a VLAN

- Type a unique numeric VLAN ID and hit Enter
- Type a unique VLAN name and hit Enter

Remove a port or an entire VLAN

- To remove an entire VLAN, just press Ctrl-X anywhere on that line

◆ VLAN Membership

This matrix allows for real time management of up to 16 VLANs. To add a port to a VLAN, position the cursor in the desired matrix location and toggle the options with the SPACE bar.

A 'U' or 'T' will be displayed for each port assigned to the VLAN (see Figure 4-16), where 'U' stands for untagged and 'T' for tagged. A ' ' space indicates that the port is not a member of the particular VLAN. VLAN tagging is a standard set by the IEEE to facilitate the spanning of VLANs across multiple switches. (Reference: Appendix A and IEEE Std 802.1Q-1998 Virtual Bridged Local Area Networks)

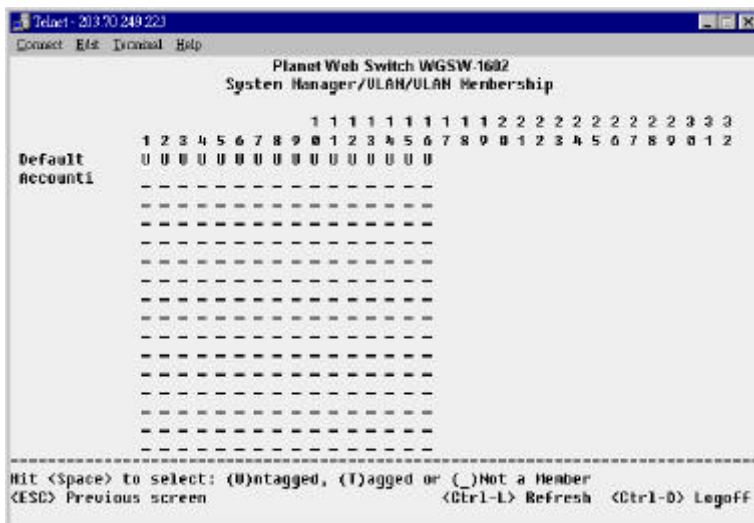


Figure 4-16: VLAN Membership

4.3.1.6 Mirroring

This menu option allows users to enable the Port Mirroring capability (see Figure 4-17 and Section 3.11). Users need to specify both the Source and Monitor port. The Monitor port will show a copy of every packet that arrives and departs at the Source port.

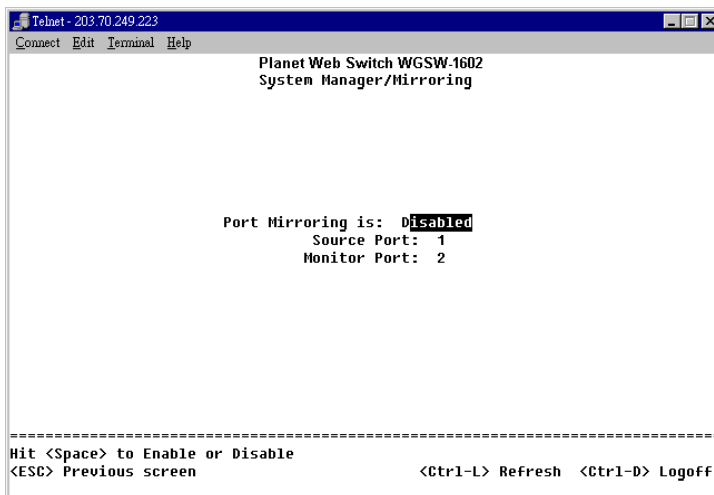


Figure 4-17: Port Mirroring

4.3.2 Port Manager

The Port Manager settings are as follows:

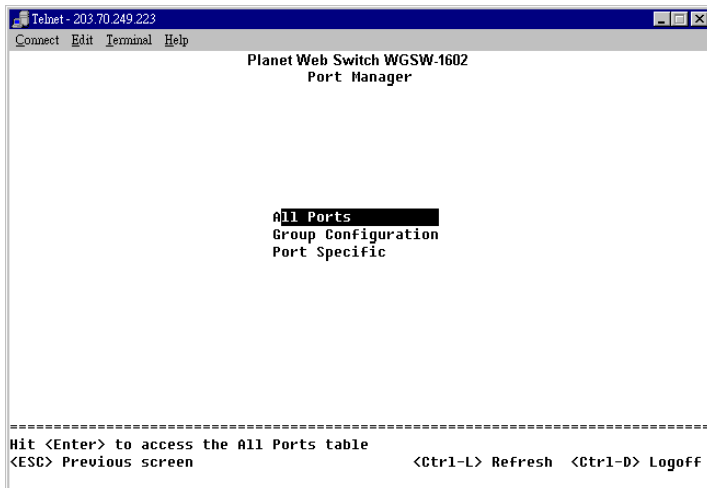


Figure 4-18: Port Manager

4.3.2.1 All Ports

Port Configuration, users can arrange the port characteristics related to link operations (see Figure 4-19). All of the parameters on this page are toggle settings. To switch or toggle between selections simply strike the space bar.

Admin Status field

Allows Administrator to Enable or Disable the port.

Speed field

The choices are 10Mbps, 100Mbps, and Auto (Auto-negotiate with the speed of the attached device).

Duplex field

Offers the choice of Full, Half, or Auto (will auto-detect the value of the attached device and set the port duplex accordingly).

Port Security field

When enabled, Port Security allows the administrator to specify which workstations on that port will be allowed to send packets into the switch. Only workstations, whose MAC address and switch port number are entered into the Static Bridge Table, will be allowed to send packets into the switch. (Note: The filtering occurs only for packets sent from the "Secured" ports to other ports. All packets sent from other ports to the "Secured" port will be sent without any filtering).

Flow Control

Flow control stops the sender from sending data until the receiver can accept it.

Port	Link	Admin	Data Rate	Duplex	Security	FlowCtrl	State
1	Up	Enabled	Auto(100)	Auto(Full)	Off	Off	Forwarding
2	Down	Enabled	Auto	Auto	Off	Off	Forwarding
3	Up	Enabled	Auto(100)	Auto(Full)	Off	Off	Forwarding
4	Down	Enabled	Auto	Auto	Off	Off	Forwarding
5	Down	Enabled	Auto	Auto	Off	Off	Forwarding
6	Down	Enabled	Auto	Auto	Off	Off	Forwarding
7	Down	Enabled	Auto	Auto	Off	Off	Forwarding
8	Down	Enabled	Auto	Auto	Off	Off	Forwarding
9	Down	Enabled	Auto	Auto	Off	Off	Forwarding
10	Down	Enabled	Auto	Auto	Off	Off	Forwarding
11	Down	Enabled	Auto	Auto	Off	Off	Forwarding
12	Down	Enabled	Auto	Auto	Off	Off	Forwarding
13	Down	Enabled	Auto	Auto	Off	Off	Forwarding
14	Down	Enabled	Auto	Auto	Off	Off	Forwarding
15	Down	Enabled	Auto	Auto	Off	Off	Forwarding
16	Down	Enabled	Auto	Auto	Off	Off	Forwarding

Hit <Space> to Enable or Disable the port
 <ESC> Previous screen <Ctrl-L> Refresh <Ctrl-D> Logoff

Figure 4-19: Port Manager: All Ports

4.3.2.2 Group Configuration

Group setup allows you to make identical changes to multiple ports at the same time. First setup up a group under the 'group setup' option, then changes can be made under 'Port Configuration', 'Spanning Tree Configuration', and 'VLAN Membership' menus.

Contains:

- Group Setup
- Port Configuration
- Spanning Tree Configuration
- VLAN Membership

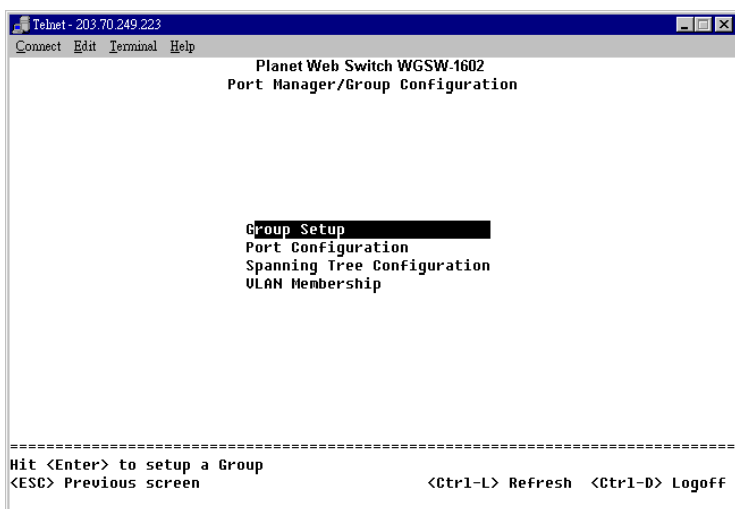


Figure 4-20: Port Manager: Group Configuration

◆ Group Setup

There are three options for setting up the group.

- Specific Ports
- No Ports
- All Ports

Specific Ports:

Allows you to add or remove one port at a time.

No Ports:

Deletes all ports from the group.

All Ports:

Adds all ports to the group.

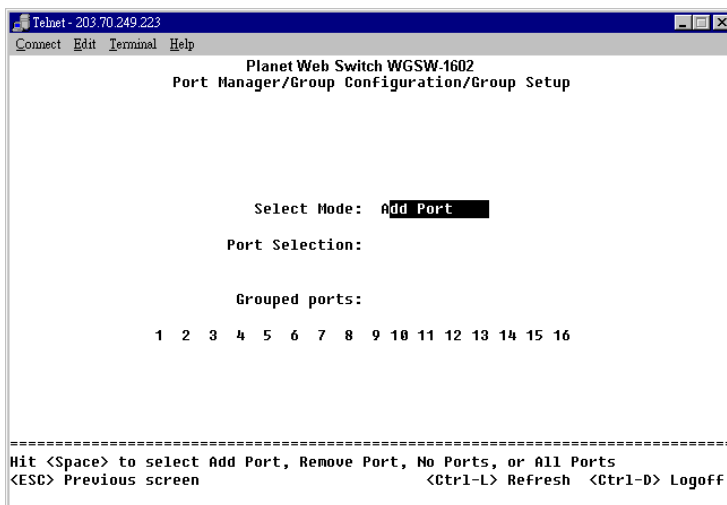


Figure 4-21: Group Setup

◆ Port Configuration

The following parameters are accessible from this screen:

- Duplex
- Data rate
- Default VLAN
- Comments
- Admin Status
- Source Security
- Flow control

Please note that changes made in this screen will immediately change the setting for all the ports in the group.

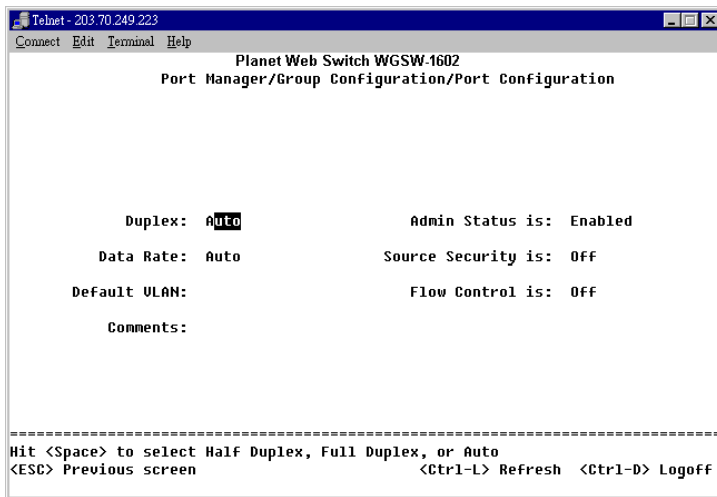


Figure 4-22: Port Configuration

◆ Spanning Tree Configuration

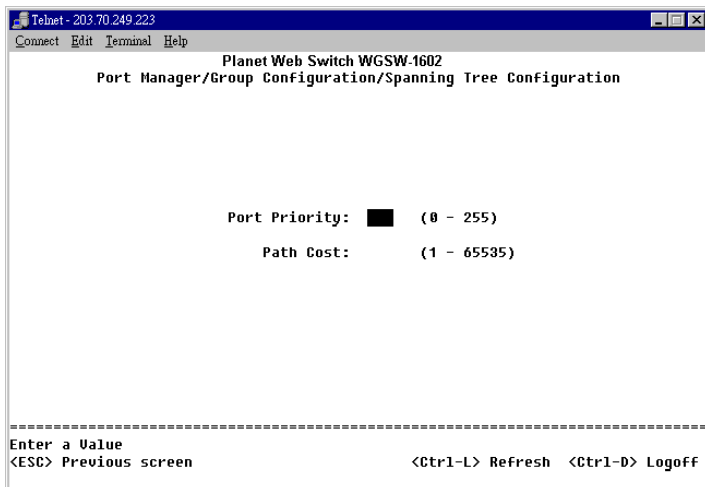


Figure 4-23: Spanning Tree Configuration

Changes to the Spanning Tree Priority and Cost can be made here. All ports in the group will be affected.

◆ VLAN Membership

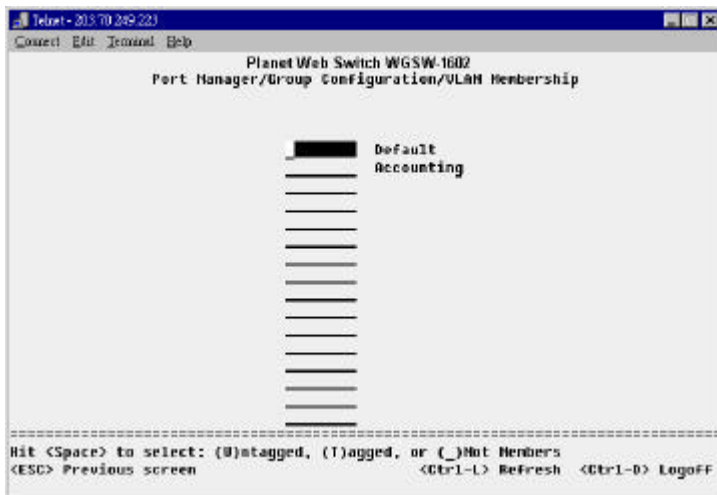


Figure 4-24: VLAN Membership

Hitting the SPACE bar will toggle the VLAN membership status for all ports in the group.

4.3.2.3 Port Specific

Contains:

- Port Configuration

- Spanning Tree Configuration

- VLAN Membership

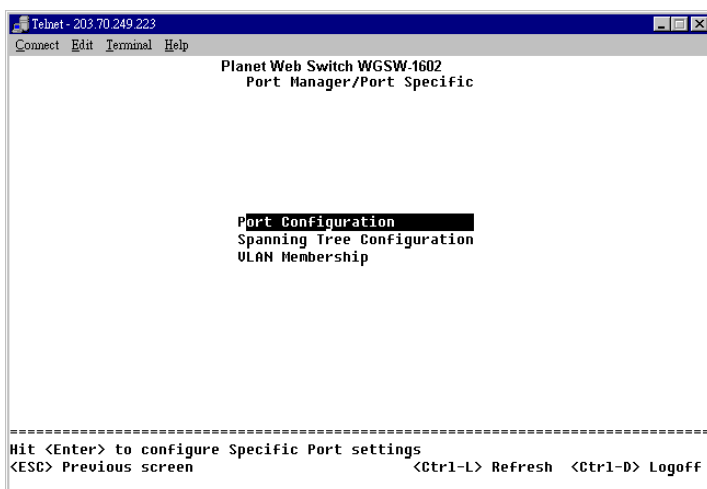


Figure 4-25: Port Specific

The options here are similar to those in the group configuration menus. The difference is that only the specified port will be changed.

◆ Port Configuration

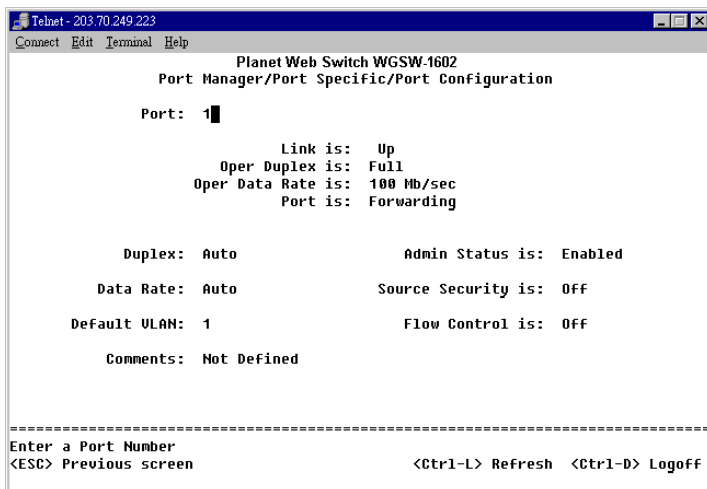


Figure 4-26: Port Configuration

The upper half of this screen shows the current status for the following parameters:

- Link Status
- Duplex
- Data Rate
- Port State

The lower half of the screen will allow you to make changes to the port settings.

◆ Spanning Tree Configuration

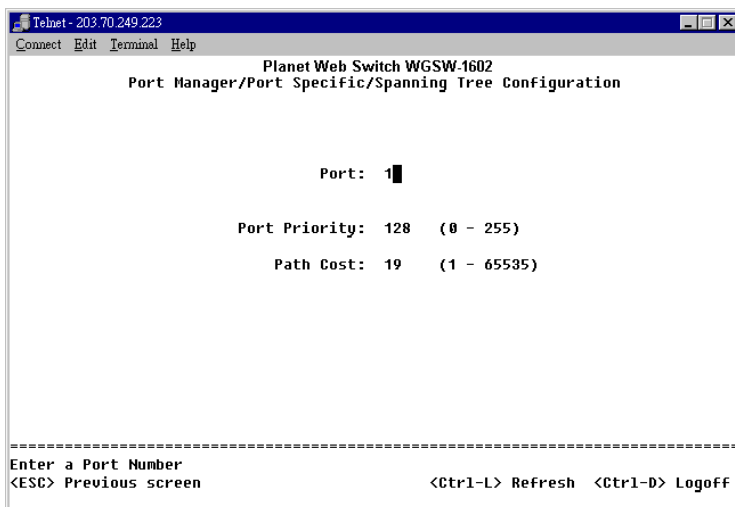


Figure 4-27: Spanning Tree Configuration

The Spanning Tree Priority and Cost can be set here for the specified port.

◆ VLAN Membership

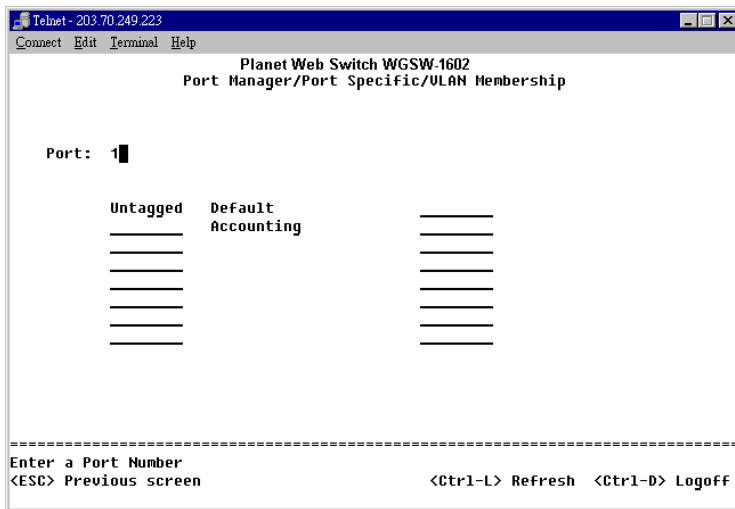


Figure 4-28: VLAN Membership

Hitting the SPACE bar will toggle the VLAN membership status for the specified port.

4.3.3 Statistics

There are two sections in this screen. The left-side Port-ID field allows users to choose a port to be observed. The central portion of the screen displays the basic statistics associated with the port, which is highlighted at the Port-ID field.

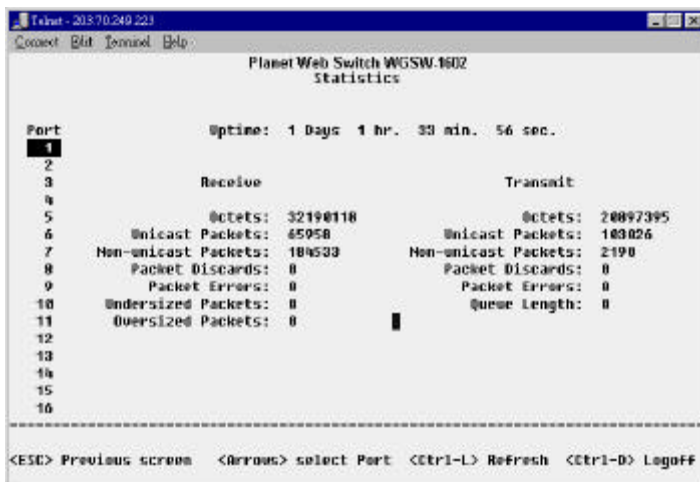


Figure 4-29: Statistics