



Managed 8 & 9 Port Switches

MIL-SM801P

Eight 10/100BASE-TX Ethernet ports
Plus One 100BASE-FX port

MIL-SM801G

Eight 10/100BASE-TX Ethernet ports
Plus One 1000BASE-SX port

MIL-SM800P

Eight 10/100BASE-TX Ethernet ports



USER GUIDE

Regulatory Approval

- FCC Class A
- UL 1950
- CSA C22.2 No. 950
- EN60950
- CE
- EN55022 Class A
- EN55024

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- EN61000-X - Electromagnetic Immunity
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1. Introduction

The MIL-SM801P, MIL-SM801G and MIL-SM800P managed series of compact desktop switches are ideal solutions for network users. They provide wire-speed, Fast Ethernet switching providing high-performance data transfer. The switches feature a store-and-forward architecture with auto-learning of source addresses with an 8K-entry MAC address table.



Figure 1-1. The MIL-SM801P switch

The switches provide 8 switched auto-sensing 10/100 Mbps RJ-45 Ethernet ports. The MIL-SM801P provides one additional 100BASE-FX fiber port and the MIL-SM801G provides one additional 1000BASE-SX Gigabit Ethernet port. The switch automatically detects the speed of the device attached allowing use of both 10 and 100Mbps devices. In addition, each RJ-45 port supports Auto MDI/MDIX.

There are 4 types of fiber connectors available on the MIL-SM801P switch. These fiber connectors include SC, MT-RJ, and VF-45 in multi-mode and SC in single-mode. The fiber port can be used to connect to remote sites up to 220 meters using multi-mode or 15 kilometers with SC single-mode.

With built-in Web-based Management, managing and configuring the switch is simplified. The Web Browser may be used to configure and manage the network, from cabinet level management to port level control and monitoring. Use of a mouse replaces typing of command strings. The switch can also be managed via Telnet, Console, or SNMP Management.

Features

- Conforms to IEEE 802.3, 802.3u, and 802.3x Ethernet Standards
- Eight auto-sensing 10/100Mbps Ethernet RJ-45 ports
- Automatic MDI/MDIX crossover for each 10BASE-T/100BASE-TX port
- One Fixed 100Mbps Fiber port SC/SC single-mode, MT-RJ, VF-45 connector for MIL-SM801P series only
- One Fixed 1000Mbps Gigabit Ethernet port for MIL-SM801G series only
- One Console port on the rear for switch software configuration
- Half-duplex mode for back pressure and flow control for full-duplex
- Store-and-forward switching architecture
- Automatic address learning
- Static MAC table for a secured network
- 8K-entry MAC address table
- 2Mbit memory buffer sharing
- Non-blocking full wire speed performance
- LED-indicators for Power, 100M, LK/ACT, FD/COL
- 10-inch design for desktop or rackmount

Intelligent Management Features

- Web-based management
- SNMP network management
- Console and Telnet management
- IEEE 802.1Q VLAN Tag, up to 4094 VLAN groups
- IEEE 802.1ad Port Trunking and IEEE 802.3 ad LACP supported
- IEEE 802.1d Spanning Tree
- MIB II (RFC1213) supported
- IP Multi-cast, IGMP Snooping
- Quality of Service (QoS)
- Port Mirroring
- Broadcast Filtering
- Static MAC Address support
- Port Security
- GVRP

Package Contents

Unpack the contents of the package and verify them against the checklist below.

- MIL-SM801P, MIL-SM801G or MIL-SM800P switch
- Power Cord
- Four Rubber Feet
- RS-232 console cable
- User Guide
- Warranty Card

If any item is missing or damaged, please contact your local dealer for service.

Management Methods

The MIL-SM801P, MIL-SM801G and MIL-SM800P switch series support the following management methods:

- Console and Telnet Management
- Web-based Management
- SNMP Network Management

Console and Telnet Management

Console Management is done through the RS-232 Console Port. Managing the switch in this method requires a direct connection between PC and the switch. Telnet management requires a network connection. The default IP address is 192.168.1.77 with a subnet mask of 255.255.255.0. This default address can be used to login and change the configuration using Telnet.

Web-based Management

The switch provides an embedded HTML web server residing in flash memory. It offers advanced management features and allows users to manage the switch from anywhere on the network through a standard browser such as Microsoft Internet Explorer or Netscape.

SNMP Network Management

SNMP (Simple Network Management Protocol) provides a means to monitor and control network device, and to manage configurations, statistic collection, performance, and security.

2. Hardware Description

Front Panel

RJ-45 Ports (Auto MDI/MDIX): Eight 10/100 auto-sensing for 10BASE-T or 100BASE-TX connections.



Figure 2-1. Front Panel for MIL-SM800P

100BASE-FX Fiber Port: There are 4 types of fiber connectors available for the MIL-SM801P. The distance for multi-mode fiber cabling can be up to 2 kilometers. However, the distance for SC single-mode fiber port is 60 kilometers.



Figure 2-2. Front Panel for MIL-SM801P

1000BASE-SX Gigabit Ethernet Port: There is one 1000Mbps Gigabit Ethernet port available for the MIL-SM801G.



Figure 2-3. Front Panel for MIL-SM801G

LED Indicators

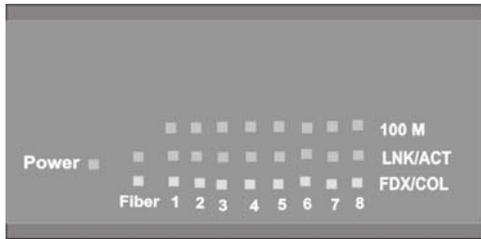


Figure 2-4. LED Indicators

There are three LED-Indicators (100M, LNK/ACT, FDX/COL) for each RJ-45 port. The following table provides descriptions of the LED statuses and meaning. They provide a real-time indication of systems operation status.

LED	Status	Color	Description
Power	On	Green	Power On
100M	On	Green	The port is operating at the speed of 100Mbps.
	Off		The port is operating at the speed of 10Mbps.
LNK / ACT	On	Green	The port is successfully connecting with a device.
	Blinks	Green	The port is receiving or transmitting data.
	Off		No device attached.
FDX / COL	On	Orange	The port is operating in full-duplex mode.
	Blinks	Orange	Collision of Packets is occurring on the port.
	Off		Half-duplex mode or no device attached.

Table 2-1. The description of LED Indicators

Rear Panel

The Console port and 3-pronged power plug are located at the Rear Panel of the MIL-SM801P, MIL-SM801G and MIL-SM800P switches as shown in Figure 2-5. The switches will work with AC in the range 100-240V AC, 50-60Hz.



Figure 2-5. The Rear Panel of the switch

Console Port: Console management can be done through the Console Port. It requires a direct connection between the switch and an end station (PC) via a RS-232 cable.

Desktop Installation

Set the switch on a sufficiently large flat space with a power outlet nearby. The surface where you put your switch should be clean, smooth, level, and sturdy. Provide enough clearance around the switch to allow attachment of cables, power cord and air circulation.

Attaching Rubber Feet

- A. Make sure the mounting surface on the bottom of the switch is grease and dust free.
- B. Remove adhesive backing from the rubber feet.
- C. Apply the rubber feet to each corner on the bottom of the switch.
These footpads can protect the switch from shock and vibration.



Figure 2-6. Attaching Rubber Feet to each corner on the bottom of the switch

Power On

Connect the power cord to the power socket on the rear panel of the switch. Connect the other end of the cord to an appropriate power outlet. Check the power indicator on the front panel to see if power is properly supplied. The internal power supply works with AC in the voltage range 100-240VAC, frequency 50~60Hz. Country specific power cords are available for the unit.

3. Network Application

Desktop Application

The switch can be used as a standalone switch connecting personal computers, servers, or print servers directly connecting to form small workgroups.

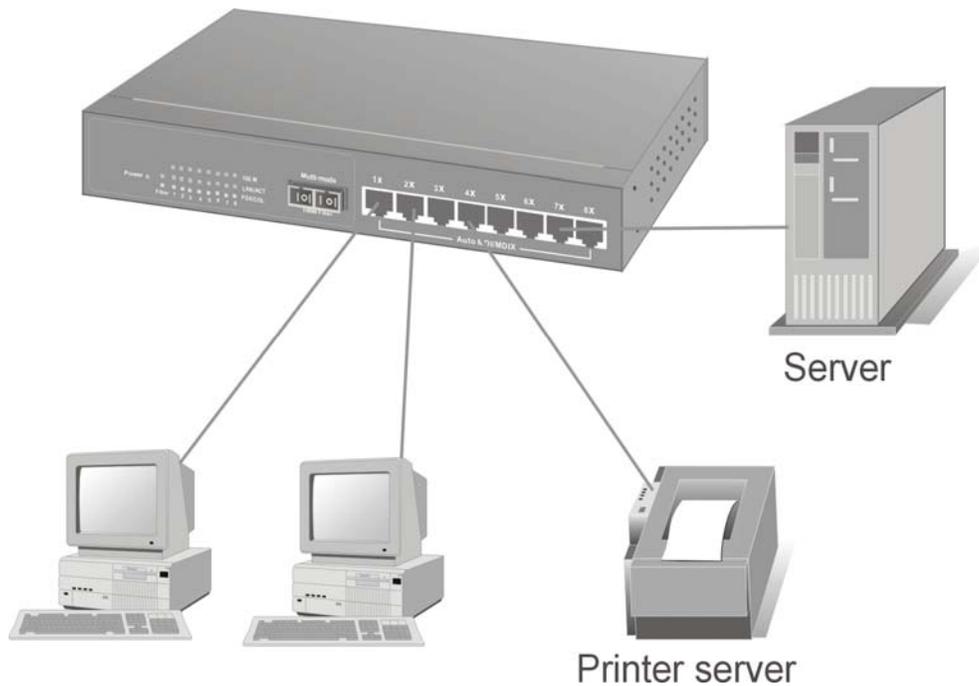


Figure 3-1. Desktop Application

Segment Application

For enterprise networks where large data broadcasts are constantly processed, this switch is suitable for individual department users to connect to the corporate backbone.

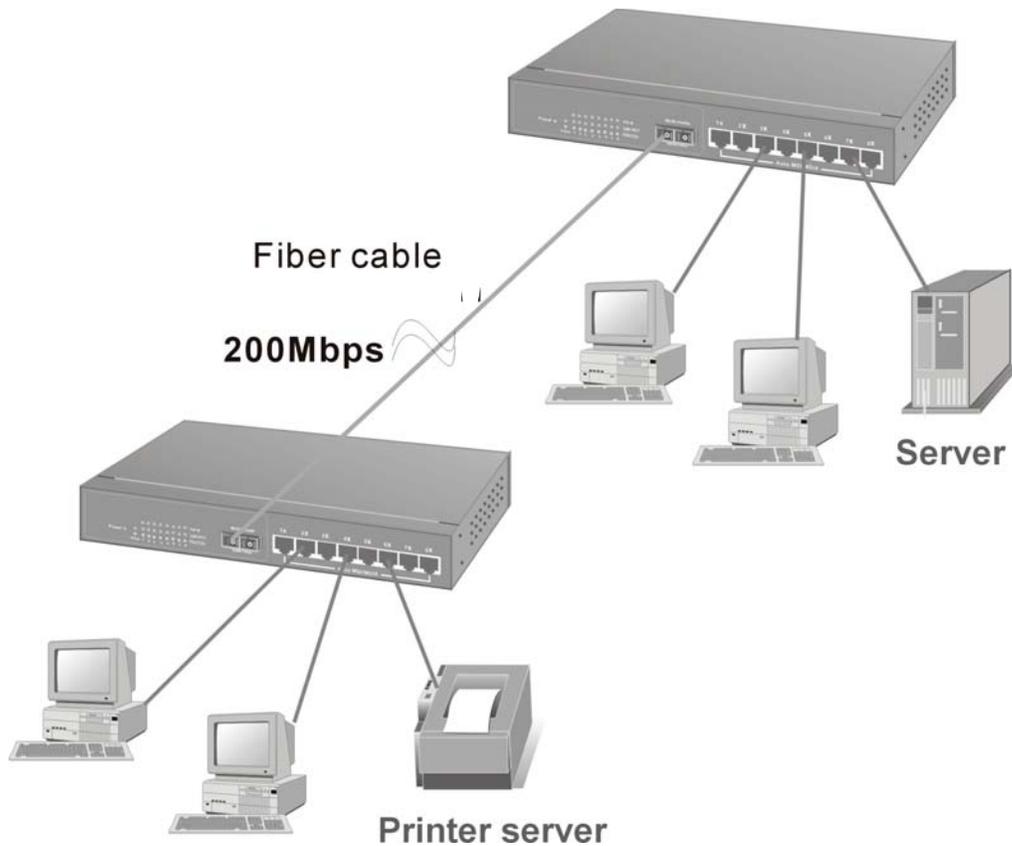


Figure 3-2. Fiber port on MIL-SM801P switch extends the distance between workgroups

4. Network Configuration

Connecting a Terminal or PC to the Console Port

Console management involves the administration of the switch via a direct connection to the RS-232 console port. This port is a female DB-9 connector. From the main menu of the console program, the user has access to manage the functions of the switch.

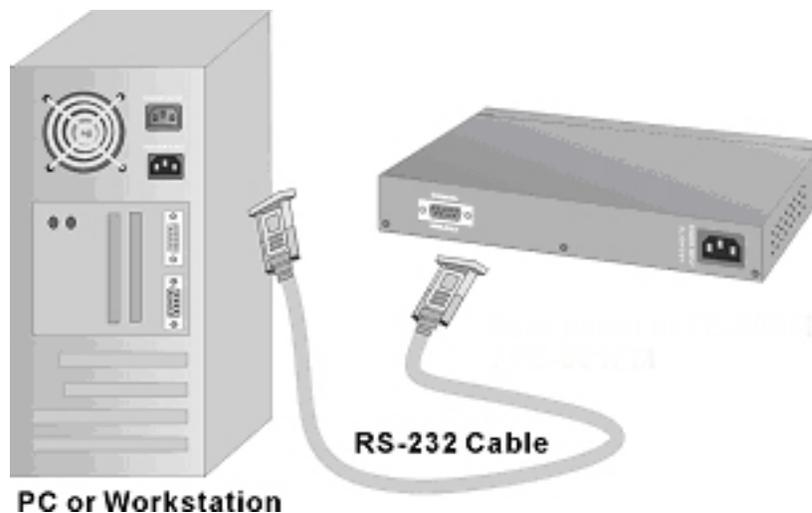


Figure 4-1. Connecting the switch to a terminal via RS-232 cable

Use the supplied RS-232 cable to connect a terminal or PC to the console port. The terminal or PC to be connected must support the terminal emulation program.

After the connection between switch and PC is finished, turn on the PC and run a **terminal emulation program** or **HyperTerminal** to match the following default characteristics of the console port:

Baud Rate: 9600 bps
Data Bits: 8
Parity: none
Stop Bit: 1
Control flow: None

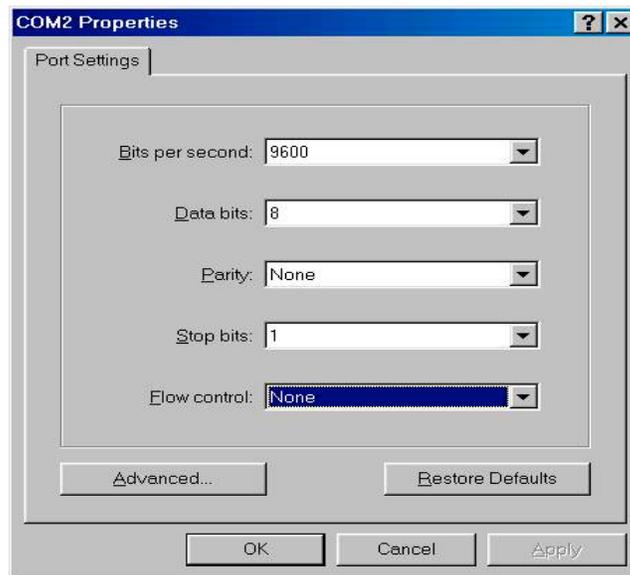


Figure 4-2. The settings of communication parameters

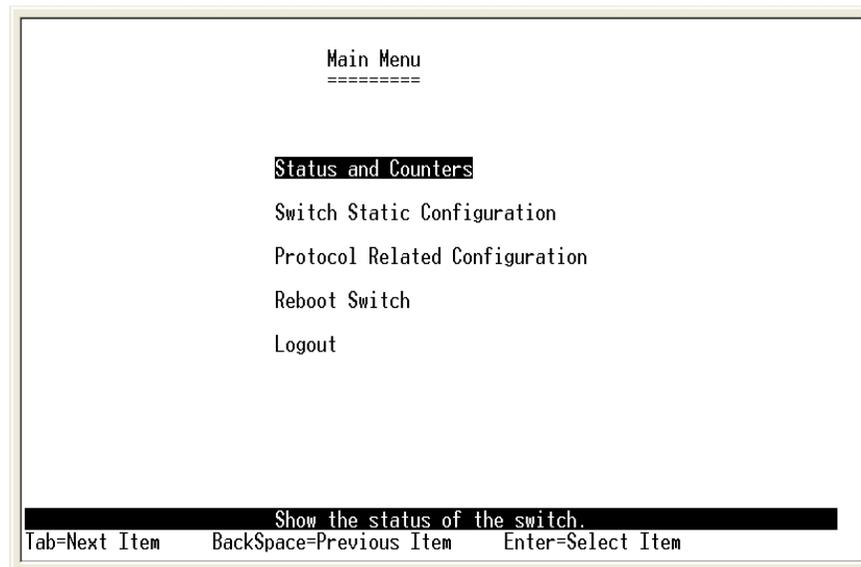
After you have finished parameter settings, press the **“Enter”** Key and the Main Menu of console management appears.

Console – Menu

1. The switch also provides a serial interface to manage and monitor the switch. The user can follow the Console Port Information provided by the web to use the Windows HyperTerminal program to link the switch.
2. Type the user name and password to login. The default user name is "root"; the default password is "root".
3. The timeout on the console port is 60 seconds. If no action is taken on the console screen for one minute, the program reverts back to the logon screen and a new login is necessary in order to continue.
4. The switch is shipped with a default IP address of 192.168.1.77. The default subnet mask is 255.255.255.0.

4-1 Main Menu

There are five items for selection as follows:



Status and Counters: Shows the status of the switch.

Switch Static Configuration: Menus to configure the switch.

Protocol Related Configuration: Configures protocol features.

Reboot switch: Restarts the system or resets switch to default configuration.

Logout: Exits the menu line program.

<Control Keys>

The control keys listed below are provided in all menus:

Tab: Moves the cursor to next item.

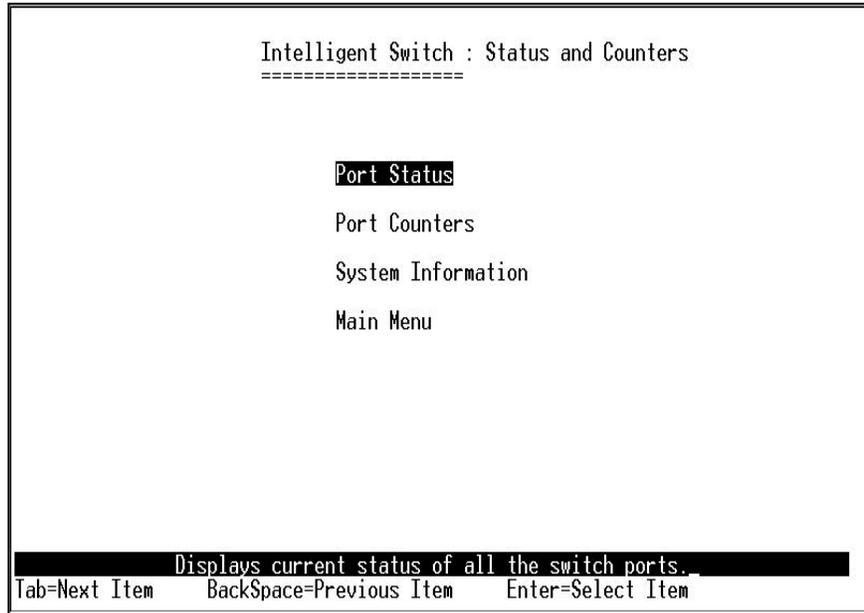
Backspace: Moves the cursor to previous item.

Enter: Selects item.

Space: Toggles selected item to next option.

Edit: Configures all items. When finished, pressing **ESC** returns to the action menu line.

4-2. Status and Counters



Press the **Tab** or **Backspace** key to choose action menu, and then press **Enter** key to select item.

4-2-1. Port Status

Type: Displays the port type of either 10/100TX or Fiber

Enabled: A port that is enabled will be displayed as “Yes”. A port that is disabled will be displayed as “No”.

Status: Displays the port’s link. “Down” the port has no link, and “Up” the port has a link with the remote device.

Mode: Displays the port speed and duplex mode.

FlowCtrl: Displays the flow control for the port as being either on or off.

```
Intelligent Switch : Port Status
=====
```

Port	Type	Enabled	Status	Mode	FlowCtrl
1.	10/100TX	No	Down	100 Full	On
2.	10/100TX	No	Down	100 Full	On
3.	10/100TX	No	Down	100 Full	On
4.	10/100TX	No	Down	100 Full	On
5.	10/100TX	No	Down	100 Full	On
6.	10/100TX	No	Down	100 Full	On
7.	10/100TX	No	Down	100 Full	On
8.	10/100TX	No	Down	100 Full	On

```
actions-> <Quit> <Previous Page> <Next Page>
Select the action meun
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Actions->

Press the **Tab** or **Backspace** key to choose action menu, and then press the **Enter** key to select item.

<Quit>: Exits port status page and returns to previous menu.

<Previous Page>: Displays previous page.

<Next page>: Displays next page.

4-2-2. Port Counters

The following information provides a view of the current data packet information of the unit. The screen is not automatically updated. To see updated statistics, exit the menu and re-enter.

SM801P Managed Switch : Port Counters

Port	TxGoodPkt	TxBadPkt	RxGoodPkt	RxBadPkt	TxAbort	Collision
1.	0	0	0	0	0	0
2.	0	0	0	0	0	0
3.	0	0	0	0	0	0
4.	0	0	0	0	0	0
5.	27069	0	31420	0	0	0
6.	0	0	0	0	0	0
7.	0	0	0	0	0	0
8.	0	0	0	0	0	0
9.	0	0	0	0	0	0_

actions-> <Quit> <Reset All>

Configure the action menu.

Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item

Actions->

Press the **Tab** or **Backspace** key to choose action menu, and then press **Enter** key to select item

<Quit>: Exits the page of port status and returns to previous menu.

<Reset All>: Sets all counters to 0.

4-2-3. System Information

System Description: Displays the name of device type.

MAC Address: The unique hardware address.

Firmware Version: Displays the switch's firmware version.

Hardware Version: Displays the switch's hardware version.

Default config value version: Rebooting the switch to defaults will load the version of software that is originally shipped with the switch.

4-3. Switch Static Configuration

```
Intelligent Switch : Switch Configuration
=====

Administration Configuration
Port/Trunk Configuration
Port Mirroring Configuration
VLAN Configuration
Priority Configuration
MAC Address Configuration
Misc Configuration
Main Menu

Configure the system,IP,and password.
Tab=Next Item   BackSpace=Previous Item   Enter=Select Item
```

Press the **Tab** or **Backspace** key to choose action menu, and then press the **Enter** key to select item

4-3-1. Administration Configuration

```
Intelligent Switch : Device Configuration
=====

Device Information
IP Configuration
Change Username
Change Password
Previous Menu

Configure the device information.
Tab=Next Item   BackSpace=Previous Item   Enter=Select Item
```

4-3-1-1. Device Information

```
SM801P Managed Switch : Device Information
=====

Device Name :
Device Content :
Device Location :
Device Description : MiLAN SM801P Intelligent Switch

actions->      <Edit>      <Save>      <Quit>
Select the action menu.
Tab=Next Item  BackSpace=Previous Item  Quit=Previous menu  Enter=Select Item
```

Device Name: 10 characters can be used to give the switch a unique name in order to distinguish it on the network. After configuration this name will show at the top of each menu screen.

Device Content: 32 characters can be used to describe devices attached.

Device Location: 32 characters can be used to give a location of the switch.

Device Description: 32 characters can be used to describe the switch.

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits the page of device information and returns to previous menu.

4-3-1-2. IP Configuration

This menu enables the user to change the default settings of the IP address, subnet mask and gateway. Rebooting the switch is necessary to have the configuration change take affect.

```
SM801P Managed Switch : IP Configuration
=====

IP Address  : 192.168.1.77
Subnet Mask : 255.255.255.0
Gateway     : 192.168.1.6

actions->      <Edit>          <Save>          <Quit>
Select the action menu.
Tab=Next ItememBackSpace=Previous ItememQuit=Previous menuc=Enter=Select Item
```

Note: Always reboot the switch after finishing a new configuration.

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits the page of IP configuration and returns to previous menu.

4-3-1-3. Change Username

Use this page to change the User Name.

```
Intelligent Switch : UserName Configuration.
=====

UserName : admin

actions->      <Edit>      <Save>      <Quit>
Configure the username.
Tab=Next Item BackSpace=Previous Item CTRL+A=Action menu Enter=Select Item
```

4-3-1-4. Change Password

Use this screen to change the user management password.

```
Intelligent Switch : Password Configuration
=====

Old Password:***
new password:***
enter again :***

password changed successfully!press any key to return!
Esc=Previous menu
```

4-3-2. Port / Trunk Configuration

The menu provides per port configuration for speed and duplex as well as port trunking. Use the **Space** key to select the option preferred for each item.

1. **Enabled:** User can disable or enable the port.
2. **Auto Negotiate:** User can set auto-negotiation to be enabled or disabled. The default is that auto-negotiation is enabled.
3. **Speed/Duplex Config:** User can set the port speed to be 100Mbps or 10Mbps on ports 1 through 8. The port 9 fiber port is fixed at 100Mbps for the MIL-SM801P model series. The port 9 fiber port for the MIL-SM801G models is fixed at 1000Mbps. All ports can be set for full-duplex or half-duplex mode.
4. **Flow Control:** User can set the flow control function to be on or off. The default is that flow control is enabled.
5. **Group:** User can set trunk groups for port 1 through port 8. There are four possible trunk groups.

```
Intelligent Switch : Port Configuration
=====
```

Port	Type	Enabled	Auto Negotiate	Speed/Duplex Config	Flow Control	Group
1.	10/100TX	Yes	Enabled	100 Full	0n	Trk1
2.	10/100TX	Yes	Enabled	100 Full	0n	Trk1
3.	10/100TX	Yes	Enabled	100 Full	0n	Trk2
4.	10/100TX	Yes	Enabled	100 Full	0n	<u>Trk2</u>
5.	10/100TX	Yes	Enabled	100 Full	0n	
6.	10/100TX	Yes	Enabled	100 Full	0n	
7.	10/100TX	Yes	Enabled	100 Full	0n	
8.	10/100TX	Yes	Enabled	100 Full	0n	

```
actions->  <Quit>    <Edit>    <Save>    <Previous Page>  <Next Page>
          Configure the port group status.
          Tab=Next Item BackSpace=Previous Item Space=Toggle Ctrl+A=Action menu
```

Actions->

<Quit>: Exits the page of port configuration and return to the previous menu.

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Previous Page>: Returns to previous page.

<Next page>: Goes to next page to configure.

4-3-3. Port Mirroring Configuration

Port mirroring is a method for monitoring traffic in switched networks. Traffic through ports can be monitored by one specific port. The traffic being received or transmitted by the monitored ports will be duplicated into the monitoring port.

Press the **Space** key to change the configuration of an item.

1. **Analysis State:** Select YES or NO to enable the port-mirroring function.
2. **Mirroring Port:** The port to which all traffic to be mirrored will be sent.
3. **Source Port:** The port(s) you want to monitor. All monitored port traffic will be copied to the monitoring port. You can select a maximum of 8 ports to monitor in the switch. User can choose to monitor RX frames only or TX frames only or both RX and TX frames at the **Action** command line.

```
Intelligent Switch : Port Monitoring Configuration
=====
Analysis State   :YES
Mirror Port :   1

Source Port  Type      Action
-----
1.          10/100TX
2.          10/100TX
3.          10/100TX
4.          10/100TX
5.          10/100TX
6.          10/100TX
7.          10/100TX
8.          10/100TX

actions->  <Quit>    <Edit>    <Save>    <Previous Page>  <Next Page>
Edit the monitor configuration.
Tab=Next Item BackSpace=Previous Item Space=Toggle Ctrl+A=Action menu
```

Actions->

<Quit>: Exits the page of port monitoring configuration and returns to the previous menu.

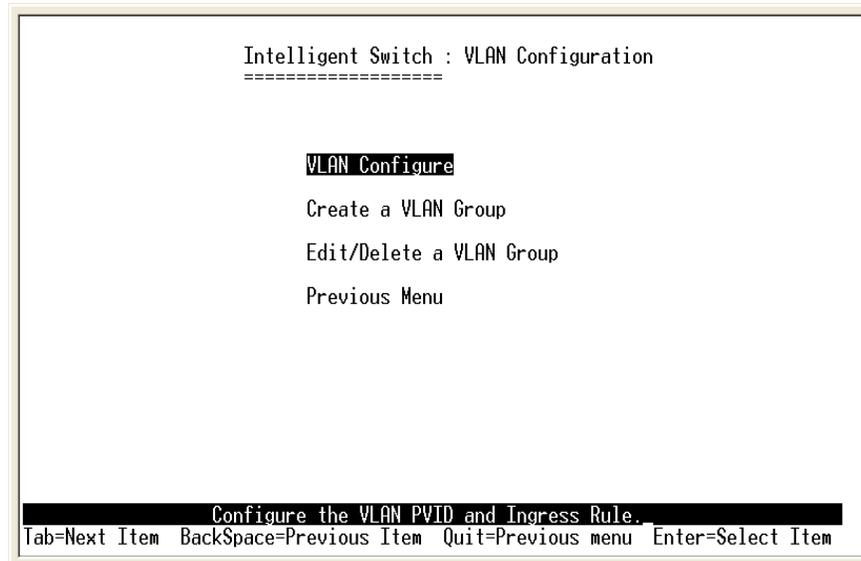
<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Previous Page>: Returns to the previous page.

<Next page>: Goes to the next page to configure.

4-3-4. VLAN Configuration



All ports are automatically placed in VLAN 1, the default VLAN. To create new VLANs, use the Create a VLAN Group menu and add a VLAN. Make sure when you enter a VLAN name you do not leave spaces. For example VLAN2 is correct; VLAN 2 will give an error. The VLAN name can be any 15 alphanumeric characters. Special characters are not allowed.

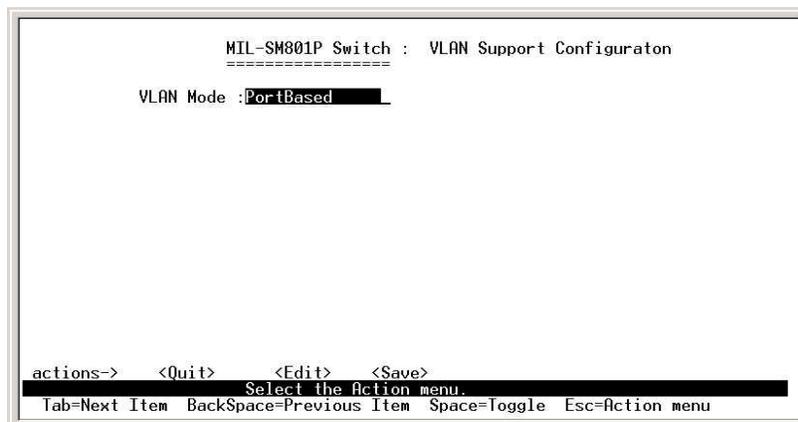
4-3-4-1. VLAN Configuration

Choose a VLAN

In the VLAN Configure menu select the type of VLAN you want to configure: No VLAN (default), Port Based, 802.1Q, or 802.1Q with GVRP. Save the configuration. There are 4 different options for VLANs to choose from using the space bar: Disabled, Port Based, 802.1Q and 802.1Q with GVRP.

Port Based VLANs

These VLANs only apply to this switch. The VLANs can be overlapping, meaning that any port can belong to more than one VLAN. One configuration that is common for port based VLANs is to have all the ports on the switch on separate VLANs except for the port that has the server connected. The port connected to the server belongs to all the VLANs. This enables security between ports but allows all ports access to the server. Up to 256 different port based VLANs may be configured.



Port Based VLANs

To configure a new VLAN, select **Edit** and then use the tab key to select items you want to configure. The space bar allows you to select the different options. In the following configuration, ports 6, 7, and 8 are trunked.

```

                                Add a VLAN Group
                                -----
VLAN Name: [vlan2          ] Grp ID: [2    ](1~4094)

Port      Member
-----
1.        Member
2.        Member
3.        Member
4.        No
5.        No
Trk1.     No
0.        No
0.        No
9.        No

actions->  <Quit>    <Edit>    <Save>
Save successfully!Press any key to return!
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item

```

After adding a VLAN group, the configuration option **Edit a VLAN Group** will allow you to change the membership by adding or deleting ports.

```

                                Edit an VLAN Group
                                -----
VLAN Name: [vlan2          ] Grp ID: [2    ](1~4094)

Port      Member
-----
1.        Member
2.        Member
3.        Member
4.        No
5.        No
Trk1.     No
0.        No
0.        No
9.        No

actions->  <Quit>    <Edit>    <Save>
Select the Action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item

```

IEEE802.1Q VLANs

If IEEE802.1Q VLANs is selected, all the ports will belong to the default VLAN 1.

```
MIL-SM801P Switch : VLAN Support Configuraton
=====
VLAN Mode :802.1Q

Port      PVID      IngressFilter1      IngressFilter2
-----
1.        1          Enable              Disable
2.        1          Enable              Disable
3.        1          Enable              Disable
4.        1          Enable              Disable
5.        1          Enable              Disable
6.        1          Enable              Disable
7.        1          Enable              Disable
8.        1          Enable              Disable
9.        1          Enable              Disable

actions->  <Quit>      <Edit>      <Save>
Save successfully !Press any key to return!
Tab=Next Item  BackSpace=Previous Item  Quit=Previous menu  Enter=Select Item
```

If more than one VLAN is necessary, the additional VLANs may be created.

PVID (Port VID): Set the port VLAN ID that will be assigned to untagged traffic on a given port. This feature is useful for accommodating devices that you want to participate in the VLAN, but don't support tagging. Only one untagged VLAN is allowed per port. Other VLANs need to be tagged.

Ingress Filter 1: If this is set, the port will only forward packets with VID (VLAN ID) matching this port's configured VID. Press the **Space** key to choose forward or drop the frame with the VID not matching this port's configured VID.

Ingress Filter 2: Drop untagged frame. Press the **Space** key to choose drop or forward the untagged frame.

```
Intelligent Switch : VLAN Support Configuraton
=====
VLAN Mode :802.1Q

Port      PVID      IngressFilter1      IngressFilter2
-----
1.        1          Enable              Disable
2.        1          Enable              Disable
3.        1          Enable              Disable
4.        1          Enable              Disable
5.        1          Enable              Disable
6.        1          Enable              Disable
7.        1          Enable              Disable
8.        1          Enable              Disable

actions->  <Quit>    <Edit>    <Save>    <Previous Page>    <Next Page>
Select the Action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

4-3-4-2. Create a VLAN Group

To create a VLAN and add tagged /untagged member ports to it:

1. **VLAN Name:** Type a name for the new VLAN using 15 alphanumeric characters and no spaces.
2. **VLAN ID:** Type a VID (between 2~4094). The default is 1.
3. **Protocol VLAN:** Press the **Space** key to choose protocol type. When set, this acts as a packet filter on the port by restricting packets on the port of only the selected protocol type.
4. **Member:** Press the **Space** key to choose VLAN membership. There are three selections:
 - UnTagged: the member port is an untagged port.
 - Tagged: the member port is a tagged port.
 - No: The port is not a member of this VLAN group.
5. Save the configuration.

```

                                Add a VLAN Group
                                -----
VLAN Name: [adminvlan      ] VLAN ID: [44  ](1~4094)
Protocol VLAN : None
Port      Member
-----
1.        No
2.        No
3.        UnTagged
4.        No
5.        Tagged      |
6.        No
7.        No
8.        No

actions->  <Quit>      <Edit>      <Save>      <Previous Page>  <Next Page>
          Select the Action menu.
          Tab=Next Item BackSpace=Previous Item Space=Toggle Ctrl+A=Action menu

```

Actions->

<Quit>: Exits this page and returns to previous menu.

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Previous Page>: Return to previous page.

<Next page>: Go to next page to configure.

4-3-4-3. Edit / Delete a VLAN Group

```
NAME:          VID:          NAME:          VID:
-----          -          -          -
default        1
vlan2          2
123456789012345 49

actions-> <Quit> <Edit> <Delete> <Save> <Previous Page> <Next Page>
Delete Static MAC Address.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Use this menu to edit or delete a VLAN group.

Choose **<Edit>** or **<Delete>**. Choose the VLAN to delete or edit by using the TAB key. VLAN 1, the default VLAN, can never be deleted. All other VLANs can be deleted using this menu.

```
                                Edit an VLAN Group
                                -----
VLAN Name: [vlan2          ] VLAN ID: [2      ](1~4094)
Protocol VLAN : None
|
Port          Member
-----
1.            UnTagged
2.            No
3.            UnTagged
4.            No
5.            No
6.            No
7.            No
8.            No

actions-> <Quit> <Edit> <Save> <Previous Page> <Next Page>
Select the Action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

When editing the chosen VLAN, the user can change the protocol VLAN or a member port. A new protocol can be configured and the ports can be changed to tagged or untagged or deleted as member ports from this VLAN. In edit mode the VLAN Name and VLAN ID are read-only and cannot be modified. After editing or deleting a VLAN, press the **<Save>** key to save all configured values.

4-3-5. Priority Configuration

1. There are eight (0~7) priority levels that can be mapped as high or low priority queues.

2. **High/Low Queue Service Ratio (High:Low)** : User can select the ratio of high priority packets to low priority packets.

```
SM801P Managed Switch : Priority Configuration
=====

Level 0 : Low
Level 1 : Low
Level 2 : Low
Level 3 : Low
Level 4 : High
Level 5 : High
Level 6 : High
Level 7 : High

High/Low Queue Service Ratio H:L :[2:1 ]

actions->      <Edit>      <Save>      <Quit>
Select the action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Actions->

<Edit>: Configures all items. When finished press **ESC** to return to the action menu.

<Save>: Saves all configuration values.

<Quit>: Exits this page and returns to the previous menu.

First In First Out: The sequence of packets sent depends upon the arrival order.

High - Low: The high priority packets are sent before the low priority packets.

Ratio: Select the preference given to packets in the switch's high-priority queue. These options represent the number of high priority packets sent before one low priority packet is sent. For example, 2 High : 1 Low means that the switch sends 2 high priority packets before sending 1 low priority packet.

4-3-6.MAC Address Configuration

4-3-6-1.Static MAC Address

When you add a static MAC address, it remains in the switch's address table regardless of whether or not the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the device is disconnected or powered off and then becomes active again.

The menu shows the current configured static MAC addresses. The user can add, modify or delete a static MAC address. Once added, the MAC address will be listed on this page.

```
Intelligent Switch : Static MAC Address Configuration
=====
MAC Address   Port Num  VLAN ID   MAC Address   Port Num  VLAN ID
-----
0000864769FB 1         2
000086470906 3         2

actions->    <Add>    <Edit>    <Delete>    <Save>    <Quit>
Add/Edit/Delete static MAC addresses.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Add static MAC address

1. Press the **<Add>** key. Then press the **<Edit>** key on this menu to add a static MAC address.
2. Enter the MAC address to and from which the port should permanently forward traffic.
11. In the **Port Num** field, enter the port number for the device.
12. The VLAN ID field is not available if the switch is configured for port based VLANs. If tag-based (802.1Q) VLANs are configured, the static addresses are associated with individual VLANs. The user must add the VID to be associated with the MAC address.
4. Press **ESC** to go back to the action menu line, and then select **<Save>** to save all configured values.

Note: If you change VLAN types from IEEE to port based, all your static MAC addresses will be deleted.

```
Intelligent Switch : Edit Static MAC Address
=====

MAC Address :0000864769FB
Port Num    :1
VLAN ID     :2

actions->  <Edit>          <Save>          <Quit>
          Select the action menu.
Tab=Next Item  BackSpace=Previous Item  CTRL+A=Action menu  Enter=Select Item
```

Edit static MAC address

1. Press the **<Edit>** key to modify a static MAC address.
2. Use the tab key to choose the MAC address that you want to modify and then press enter.
3. Press the **<Edit>** key to modify all the items.
4. Press **ESC** to go back to the action menu line, and then select **<Save>** to save all configured values.

Delete static MAC address

1. Press the **<Delete>** key to delete a static MAC address.
2. Choose the MAC address that you want to delete and then press enter.
3. After deleting a static MAC address, you must **<Save>** to complete the deletion.

4-3-7.Misc. Configuration

```
Intelligent Switch : Misc Configuration
=====

Port Security

MAC Age Interval

Broadcast Storm Filtering

Max bridge transmit delay bound

Previous Menu

Configure the port security.
Tab=Next Item BackSpace=Previous Item Enter=Select Item
```

4-3-7-1.Port Security

A port set in security mode will be “locked” and be without address learning. Only the incoming packets with the source MAC address already existing in the address table can be forwarded. With port security, users can disable a port from learning new MAC addresses. The user may then return to the static MAC addresses menu to define a list of MAC addresses that can access the secured port.

```
Intelligent Switch : The Configuration of Port Security
=====

Port          Enable Security
              (disable for MAC Learning)
-----
1.            Disabled
2.            Disabled
3.            Disabled
4.            Disabled
5.            Disabled
6.            Disabled
7.            Disabled
8.            Disabled

actions->  <Quit>  <Edit>  <Save>  <Previous Page>  <Next Page>
Select the Action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

1. Press **<Edit>** to enable or disable the port security.
2. Press the **Space** key to choose enable or disable.
3. Press **ESC** to return to the action menu line, and then select **<Save>** to save all configured values.

4-3-7-2.MAC Age Interval

To configure a different MAC Age Interval, type the number of seconds that an inactive MAC address remains in the switch's address table before it is deleted. Once the address is removed from the table, a device will have to send out broadcast packets to be relearned by the switch and have its address put in the table. The valid range is 300 to 765 seconds. Default is 300 seconds or 5 minutes.

```
Intelligent Switch : The Configuration of Aging Time
*****

MAC Age Interval (sec) [300 ] : 300 (300~765)

actions-> <Edit> <Save> <Quit>
configure the MAC aging time.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action line.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-3-7-3.Broadcast Storm Filtering

Broadcast storm filtering is used to limit the amount of broadcast traffic on the network. An excessive amount of broadcast traffic can inhibit data packets from timely delivery.

The valid threshold values are 5%, 10%, 15%, 20%, 25% and NO. If the broadcast traffic is greater than the configured value, broadcast packets will be dropped. The default is NO. The default is set so that no broadcast packets are ever dropped no matter how many broadcast packets there are on the network.

```
Intelligent Switch : Broadcast Storm Filter Mode
*****

Broadcast Storm Filter Mode :NO

actions->  <Edit>          <Save>          <Quit>
Configure the broadcast storm filter mode.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits this menu and returns to the previous menu.

4-3-7-4.Max Bridge Transmit Delay Bound

Max bridge transmit delay bound: Limits the packets queuing time in the switch. If enabled, the packets exceeding the queuing time will be dropped. Press the **Space** key to set the time. The valid values are 1sec, 2sec, 4sec and Off. Default is OFF. This setting does not depend on what values are set in the “Priority Configuration” menu.

Enable Delay Bound: If this parameter is enabled, the “Max bridge transmit delay bound” must also be configured. This item allows you to limit the queuing time of low priority packets in the switch. When the low priority packets exceed the “Max Delay Time” they will be transmitted. Press the **Space** key to enable or disable this function. By default the Enable Delay Bound is set OFF.

Max Delay Time: Sets the time that low priority packets are queued in the switch. The valid range is 1~255 ms. Since the default is OFF, the Max Delay Time is 0. This item must be set if “Enable Delay Bound” is configured.

NOTE: “Max bridge transit delay bound control” must be enabled before Max Delay Bound is enabled.

```
Bound                Intelligent Switch : Configure Max Bridge Transmit Delay
                      =====

                      Max bridge transmit delay bound :1 Sec

                      Enable Delay Bound :Enable

                      Max Delay Time :255

actions->             <Edit>             <Save>             <Quit>
                      Configure the max bridge transmit delay bound.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-4.Protocol Related Configuration

4-4-1.STP

```
Intelligent Switch : Spanning Tree Protocol
*****

STP Enable

System Configuration
Perport Configuration
Previous Menu

Enabled or disabled the Spanning Tree Protocol.
Tab=Next Item BackSpace=Previous Item Enter=Select Item
```

4-4-1-1.STP Enable

This page enables or disables the Spanning Tree function. Press the **Space** key to select Enabled or Disabled.

```
SM801P Managed Switch : STP Enabled/Disabled Configuration
*****

STP :Disabled

actions-> <Edit> <Save> <Quit>
Select the action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

4-4-1-2.System Configuration

```
Intelligent Switch : STP System Configuration
*****

Root Bridge Information          Configure Spanning Tree Parameters
-----
Priority      : 32768            Priority (1-65535)   :32768
Mac Address   : ABEA00001DEA    Max Age (6-40)      :15
Root_Path_Cost: 0              Hello Time (1-10)   :3
Root Port    : Root           Forward_Delay_Time(4-30) :5
Max Age      : 15
Hello Time   : 3
Forward Delay : 5

actions->      <Edit>          <Save>          <Quit>
Configure the STP system.
Tab=Next Item  BackSpace=Previous Item  Quit=Previous menu  Enter=Select Item
```

The data on the left is for display only. The parameters on the right can be configured with new values.

Priority: The value used to identify the root bridge. The bridge with the lowest value has the highest priority and is selected as the root. Enter a number 1 through 65535.

Max Age value is the number of seconds a bridge waits without receiving Spanning-Tree Protocol configuration messages before attempting a reconfiguration. Enter a number 6 through 40.

Hello Time value is the number of seconds between the transmission of Spanning-Tree Protocol configuration messages. Enter a number 1 through 10.

Forward Delay Time is the number of seconds a port waits before changing from its Spanning-Tree Protocol learning and listening states to the forwarding state. Enter a number 4 through 30.

4-4-1-3.STP Port Configuration

```
Intelligent Switch : STP Port Configuration
=====
```

Port	PortState	PathCost	Priority
1.	Forwarding	128	128
2.	Forwarding	128	128
3.	Forwarding	128	128
4.	Forwarding	128	128
5.	Forwarding	128	128
6.	Forwarding	128	128
7.	Forwarding	128	128
8.	Forwarding	128	128

```
actions-> <Quit> <Edit> <Save> <Previous Page> <Next Page>
Select the Action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

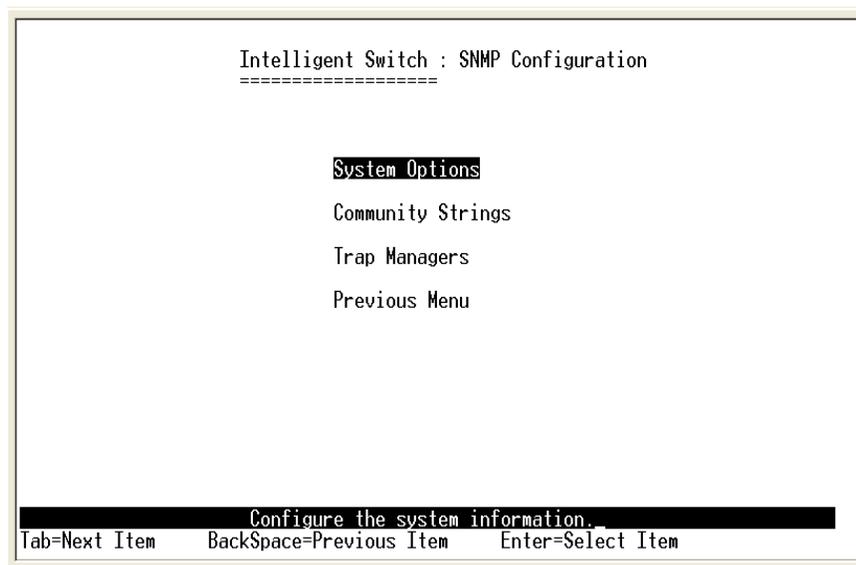
1. **PortState:** Port spanning tree status.
2. **PathCost:** Specifies the path cost of the port that the switch uses to determine which ports are the forwarding ports. If you change the value, you need to restart the switch for the value change to take effect.
3. **Priority:** Specifies the path cost of the port that the switch uses to determine which ports are the forwarding ports. The lowest number is picked as the forwarding port. The range is 1-65535 and the default value is based on IEEE802.1D standard. The values should be in the range: 10Mb/s = 50-600 100Mb/s = 10-60.

If you change the value, you must reboot the switch to save the value change.

4-4-2.SNMP

Any Network Management station running the Simple Network Management Protocol (SNMP) can manage the switch provided that the Management Information Base (MIB) is installed. SNMP is a protocol that governs the transfer of information between management and agent. The switch supports SNMP V1.

Use this menu to define management stations as trap managers and to enter SNMP community strings. Users can also define a name, location, and contact person for the switch.



4-4-2-1. System Options

```
Intelligent Switch : System Options Configuration
=====

System Name :

System Contact :

System Location :

actions->      <Edit>      <Save>      <Quit>
Configure the SNMP system information.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

Press **<Edit>** to enter all items and then press **<Save>** to save the configured values.

1. **System Name:** Enter a name to be used to identify the switch.
2. **System Contact:** Enter the name of the contact person or organization.
3. **System Location:** Enter the location of the switch.

4-4-2-2.Community Strings

Community strings serve as passwords and can be entered as one of the following:

1. **Read only:** Enables requests accompanied by this string to display MIB-object information.
2. **Read Write:** Enables requests accompanied by this string to display MIB-object information and to set MIB objects.

```
Intelligent Switch : SNMP Community Configuration
=====
Community Name      Write Access
-----
public              Read only

actions->    <Add>    <Edit>    <Delete>    <Save>    <Quit>
Add/Edit/Delete community strings.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item_
```

```
Intelligent Switch : Add SNMP Community
=====

Community Name :private
Write Access   :Read Write

actions->    <Edit>    <Save>    <Quit>
Select the action menu.
Tab=Next Item BackSpace=Previous Item Space=loggle Ctrl+A=Action menu
```

Actions->

<Add>: Create a community strings.

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Delete>: Deletes a community string. After delete, press **<Save>** to complete the deletion.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-4-2-3. Trap Managers

A trap manager is a management station that receives traps. System alerts are generated by the switch. If no trap manager is defined, no traps are issued. Create a trap manager by entering the IP address of the station and a community name.

```
Intelligent Switch : Trap Managers Configuration
=====
IP          Community Name
-----

```

```
actions->  <Add>    <Edit>    <Delete>  <Save>    <Quit>
Add/Edit/Delete trap managers.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item
```

```
Intelligent Switch : Add SNMP Trap Manager
=====

IP :
Community Name :


```

```
actions->  <Edit>    <Save>    <Quit>
Add trap manager.
Tab=Next Item BackSpace=Previous Item CTRL+A=Action menu Enter=Select Item
```

Actions->

<Add>: Creates a trap manager.

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

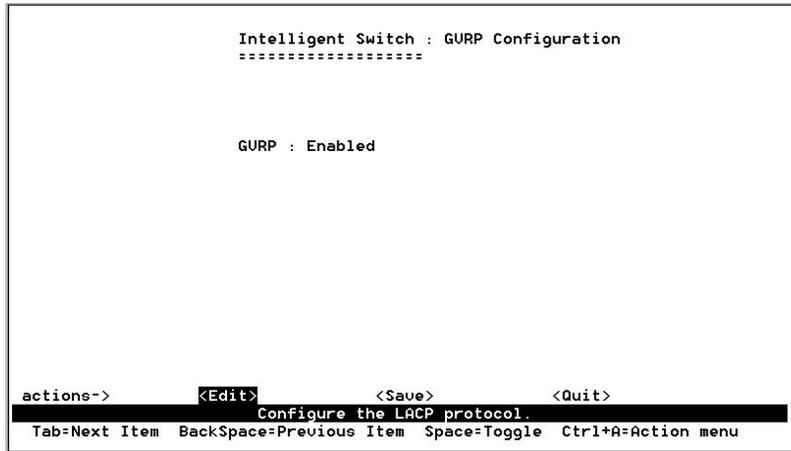
<Delete>: Deletes a trap manager. After deleting the trap, press **<Save>** to complete the deletion.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-4-3.GVRP

Use the GVRP Configuration screen to enable or disable GVRP (GARP VLAN Registration Protocol) support.
Press the **Space** key to choose Enabled or Disabled.



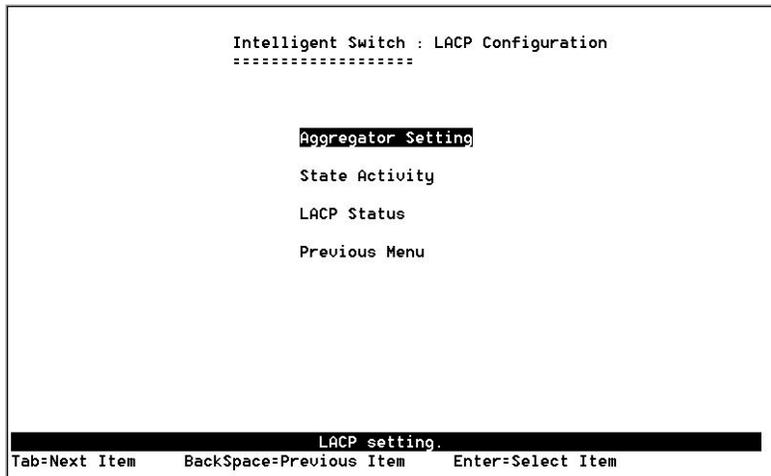
Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-4-4.LACP



4-4-4-1. Aggregator Setting

1. **Group:** Displays the trunk group ID.
NOTE: Before setting LACP support, you must first set the trunk group using the *Port / Trunk Configuration* screen.
2. **LACP:** Press the **Space** key to enable or disable the LACP (Link Aggregation Control Protocol) support. If enabled, the group is an LACP static trunking group. If disabled, the group is a local static trunking group.
3. **LACP Work Port Num:** The maximum number of ports that can be aggregated at the same time. If the group is an LACP static trunking group, the exceed ports are in standby mode and able to aggregate if the work ports fail. If the group is a local static trunking group, the number must be the same as group ports.

```
Intelligent Switch : LACP Group Configuration
*****

Group      LACP      LACP Work Port Num
-----
Trk1.      Disabled   3

actions->  <Edit>          <Save>          <Quit>
          Configure the LACP protocol.
          Tab=Next Item BackSpace=Previous Item Space=Toggle Ctrl+A=Action menu
```

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-4-4-2.State Activity

Active: The port automatically sends LACP protocol packets.

Passive: The port does not automatically send LACP protocol packets and responds only if it receives LACP protocol packets from the opposite device.

```
Intelligent Switch : LACP Port State Active Configuration
=====

Port          State Activity
-----
1             Passive
2             Passive
3             Passive
4             Passive
5             Passive
6             Passive
7             Passive
8             Passive

actions->      <Edit>          <Save>          <Quit>
Configure the port active status.
Tab=Next Item BackSpace=Previous Item Space=Toggle Ctrl+A=Action menu
```

Actions->

<Edit>: Configures all items. When finished, pressing **ESC** returns to the action menu line.

<Save>: Saves all configured values.

<Quit>: Exits this page and returns to the previous menu.

4-4-4-3.LACP Status

When setting a trunking group, the relationship status information may be seen on the LACP Group Status screen.

```
Intelligent Switch : LACP Group Status
*****

Static Trunking Group

Group Key : 1
Port_No   : 1 2 3

actions->  <Quit>      <Previous Page>  <Next Page>
           Select the action menu.
Tab=Next Item BackSpace=Previous Item Quit=Previous menu Enter=Select Item_
```

Actions->

<Quit>: Exits this page and returns to the previous menu.

<Previous Page>: Returns to previous page to view.

<Next page>: Go to next page to view.

4-5.Switch Reboot

Default: Resets the switch to the factory defaults. The software version that the switch will be reset to can be found on the “System Information” menu under the main menu “Status and Counters”.

Restart: Reboots the switch to enable items that have been configured.

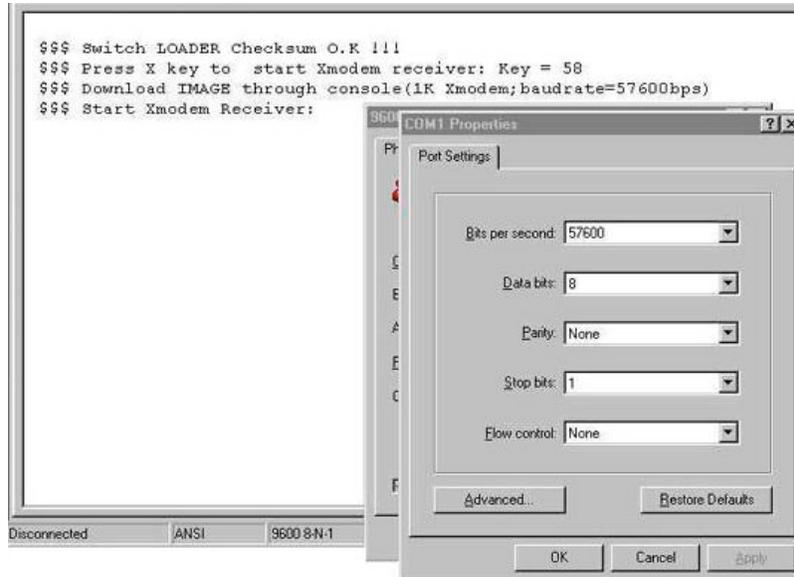
```
Intelligent Switch : Restart Configuration
=====

Default
Restart
Previous Menu

Recovering to default.
Tab=Next Item    BackSpace=Previous Item    Enter=Select Item
```

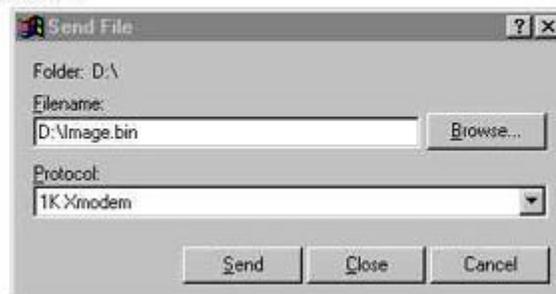
4-6. Xmodem Upgrade

1. First, modify the baud rate of the terminal to 57600bps. Then connect to the switch.
2. Press the **X** key to start upgrading for Xmodem.



3. Select **"send file"** under the **"transfer"** menu from menu bar.
4. Press the **"browse"** button to select the path.
5. Select the **"1K Xmodem"** of protocol and press the **"Send"** button.

```
$$$ Switch LOADER Checksum O.K !!!  
$$$ Press X key to start Xmodem receiver: Key = 58  
$$$ Download IMAGE through console(1K Xmodem;baudrate=57600bps)  
$$$ Start Xmodem Receiver:
```



6. After successfully upgrading to the new firmware, change the baud rate back to the default 9600bps.

5. Web-Based Management

This section introduces the configuration and functions of the web-based management of MIL-SM801P, MIL-SM801G and MIL-SM800P switch series. The managed switch series provides an embedded HTML website residing in flash memory. This feature allows users to manage the switch from anywhere on the network through a standard web browser.

NOTE: The web management function will have unexpected displays using Win2000 with Service Pack2 when the IE is below version 5.5.

Web Management

Web Management enables a web browser to manage and monitor the switch. The default TCP/IP values are listed below. Use the console port if you need to change the IP address in order to use the web browser.

IP Address: 192.168.1.77
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.6
User Name: **root**
Password: **root**

Enter the TCP address in the web browser - <http://192.168.1.77> and type the user name and password as shown above.

Enter Network Password

Please type your user name and password.

Site: 192.168.1.77

Realm: index.htm

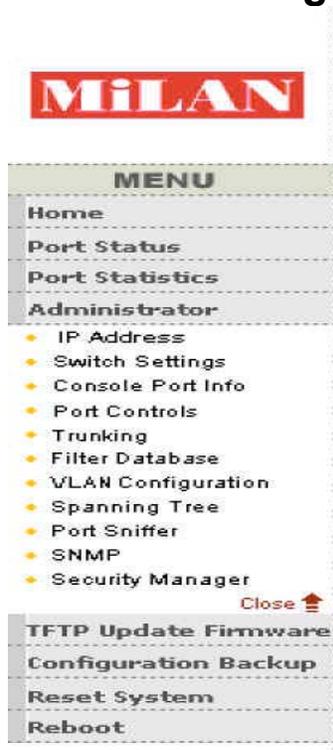
User name: root

Password: ****

Remember my password

OK Cancel

5-1. Web Management Home Overview



1. Home Page.



5-2. Port Status

1. Port status

State: Displays port status as off or on depending on user setting. “Unlink” means the port is offline or “off”.

Link Status: Down is “No Link”, Up is “Link”.

Auto Negotiation: Indicates if the port is in auto negotiation mode.

Speed status: Displays 100Mbps or 10Mbps speed. Ports 1 - 8 are 10/100Mbps. Port 9 may be 100Mbps or 1000Mbps.

Duplex status: Displays full-duplex or half-duplex mode.

Flow control: Displays flow control status as enabled or disabled.

Config: Displays the state of user settings.

Actual: Displays the negotiation status.

Port Status

The following information provides a view of the current status of the unit.

Port Num	State		Link Status	Auto Negotiation		Speed Status		Duplex Status		Flow Control	
	Config	Actual		Config	Actual	Config	Actual	Config	Actual	Config	Actual
1	On	On	Up	Auto	Auto	100	100	Full	Full	On	On
2	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
3	Off	Off	Down	Off	Off	10	10	Half	Half	On	On
4	Off	Off	Down	Auto	Auto	100	100	Half	Full	Off	Off
5	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
6	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
7	On	On	Up	Auto	Auto	100	100	Full	Full	On	On
8	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
9	On	Off	Down	Off	Off	100	100	Full	Full	On	On

5-3. Port Statistics

The following information provides a view of the current status of the unit.

MILAN

MENU

- Home
- Port Status
- Port Statistics
- Administrator
 - IP Address
 - Switch Settings
 - Console Port Info
 - Port Controls
 - Trunking
 - Filter Database
 - VLAN Configuration
 - Spanning Tree
 - Port Mirroring
 - SNMP
 - Security Manager
- TFTP Update Firmware
- Configuration Backup
- Reset System
- Reboot

Port Statistics

The following information provides a view of the current status of the unit.

Port	State	Link	TxGoodPkt	TxBadPkt	RxGoodPkt	RxBadPkt	TxAbort	Collision
1	Off	Down	0	0	0	0	0	0
2	Off	Down	0	0	0	0	0	0
3	Off	Down	0	0	0	0	0	0
4	Off	Down	0	0	0	0	0	0
5	On	Up	28123	0	32588	0	0	0
6	Off	Down	0	0	0	0	0	0
7	Off	Down	0	0	0	0	0	0
8	Off	Down	0	0	0	0	0	0
9	Off	Down	0	0	0	0	0	0

Reset

A single port counter as follows:

Port	1
State	Off
Link	Down
TxGoodPkt	0
TxBadPkt	0
RxGoodPkt	0
RxBadPkt	0
TxAbort	0
Collision	0

5-4.Administrator

The management functions include IP address, switch settings, console port information, port controls, link aggregation, filter database, VLAN configuration, spanning tree, port mirroring, SNMP, security manager, TFTP update firmware, configuration backup, system reset, and reboot.

5-4-1. IP Address

The IP Settings can be changed by filling in new values and clicking on the apply button. The switch must be reset for the new IP address to take effect. **Default IP address is 192.168.1.77.**

Set IP Addresses

IP Address	172.16.15.200
Subnet_Mask	255.255.252.0
Gateway	172.16.12.1

Apply Help

5-4-2. Switch Settings

5-4-2-1.Basic

1. **Description:** Displays the name of device type.
2. **MAC Address:** Displays unique hardware address assigned by the manufacturer.
3. **Firmware Version:** Displays the switch's downloaded firmware version.
4. **Hardware Version:** Displays the switch's hardware version.
5. **Default config value version:** Rebooting the switch to defaults will load this version of software, which is the version originally shipped with the switch.

5-4-2-2.Advanced

1. Miscellaneous Settings:

Switch Settings

Enter the settings, then click Submit to apply the changes on this page.

MAC Table Address Entry Age-Out Time: 300 seconds

Bridge Transmit Delay Bound: OFF

Broadcast Storm Filter Mode: OFF

Priority Queue Service:

First Come First Served

All High before Low

WRR

High weight: 2

Low weight: 1

Enable Delay Bound

Max Delay Time: 0 ms

QoS Policy: High Priority Levels

Level0 Level1 Level2 Level3 Level4 Level5 Level6 Level7

MAC Address Age-out Time: Type the number of seconds that an inactive MAC address remains in the switch's address table. The valid range is 300~765 seconds. Default is 300 seconds.

Max bridge transit delay bound control: Limits the packets queuing time in the switch. If enabled, the packets that exceed the time limit in the queue will be dropped. The valid values are 1 sec, 2 sec, 4 sec and off (no limit). Default is 1 second.

Broadcast Storm Filter: The threshold is the percentage of the port's total bandwidth used by broadcast traffic. When the threshold is reached, broadcast traffic is dropped. To configure broadcast storm control, first enable it and then set the upper threshold for each individual port. When broadcast traffic for a port rises above the threshold set, broadcast storm control becomes active. The valid threshold value are 5%, 10%, 15%, 20%, 25% and off.

2. Priority Queue Service settings:

First Come First Service: The sequence of packets sent is dependent on the order of arrival. The first packets in the queue are transmitted before any other packets.

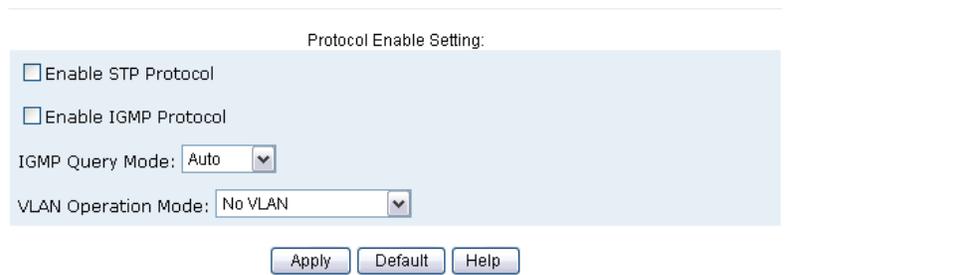
All High before Low: The high priority packets are sent before the low priority packets.

Weighted Round Robin: This option enables the user to choose a ratio of the number of high priority packets sent before one low priority packet is sent. For example, 2:1 (2 High : 1 Low) will have the switch send 2 high priority packets before sending 1 low priority packet.

Enable Delay Bound: Limits the low priority packets queuing time in the switch. Default Max Delay Time is 255ms. If the low priority packet exceeds the Max Delay Time, it will be sent. The valid range is 1~255 ms.

NOTE: Make sure the “Max bridge transit delay bound control” is enabled before enabling Delay Bound. The Enable Delay Bound only works under “Max bridge transit delay bound control is enabled”.

QoS Policy: High Priority Levels: 0~7 priority level can map to a high or low queue. When the VLAN Tag number of a frame is mapped as a high priority level, the frame always has a high priority. In this example, the QoS policy applies to the switch, not for a single port.



The screenshot shows a configuration window titled "Protocol Enable Setting:". It contains the following elements:

- Two unchecked checkboxes: "Enable STP Protocol" and "Enable IGMP Protocol".
- An "IGMP Query Mode:" dropdown menu set to "Auto".
- A "VLAN Operation Mode:" dropdown menu set to "No VLAN".
- Three buttons at the bottom: "Apply", "Default", and "Help".

3. Protocol Enable Setting:

Enable Spanning Tree Protocol: Enables STP. The recommended default is enabled.

Enable Internet Group Multicast Protocol: Enables IGMP protocol.

IGMP Query Mode: Recognizes different queries from clients or servers to decide which Query will be the first priority. The three modes are:

1. **Auto Mode:** Chooses the switch that has the smallest IP address to be set for the IGMP Query mode.
2. **Enable Mode:** Enables the switch to be the IGMP Queryer.
3. **Disable Mode:** Disables all other switches from being the IGMP Queryer.

Protocol Enable Setting:

Enable STP Protocol

Enable IGMP Protocol

IGMP Query Mode: Auto

VLAN Operation Mo: without GVRP

Auto
Enable
Disable

Apply Default Help

4. VLAN Operation Mode:

No VLAN

802.1Q(Tag VLAN) without GVRP VLAN mode

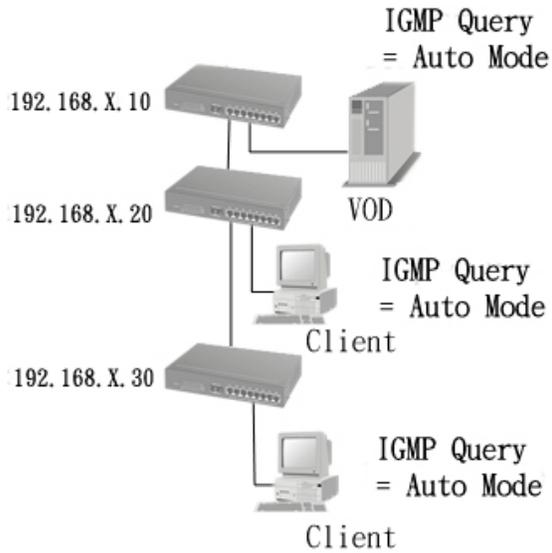
802.1Q(Tag VLAN) with GVRP VLAN mode (Default)

Port Based

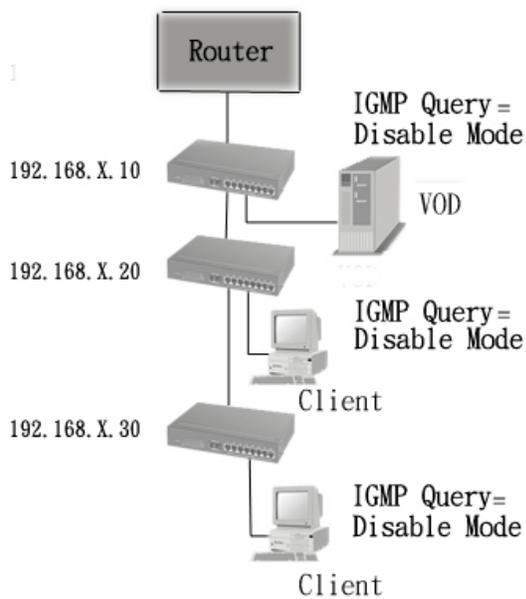
4. IGMP Theory of Operation

The following three topologies detail how IGMP Query works and to be configured within a network:

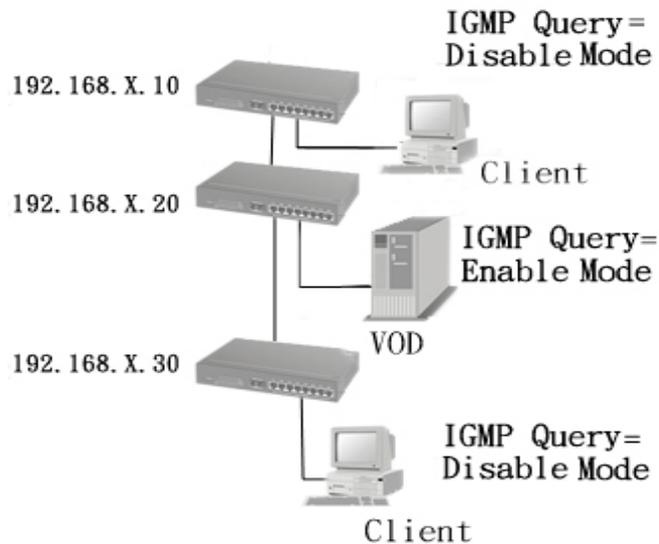
1. Auto mode needs to be enabled when the router's IP address is smaller than other switches in the subnet.



2. IGMP needs to be enabled when the router's IP address is not smaller than other switches in the subnet. This Router supports IGMP protocol, but IGMP has to be enabled, and the Router has to be the Querier.



3. The following topology must be set when the IP address of the switch is not the smallest in the subnet. The network will cause a multi-cast storm from the IGMP client report if it is in Auto mode. All switches must be in disable mode when the VOD server is configured for IGMP Querier.



Note: It is suggested that the VOD server switch have the smallest IP address.

All of the switches must be in disable mode when the VOD server is configured for IGMP Querier.

GVRP (GARP VLAN Registration Protocol)

GVRP allows automatic VLAN configuration between the switch and nodes. A GVRP request can be sent using the VID of a VLAN defined on the switch when the switch is connected to a device with GVRP enabled. The switch will automatically add that device to the existing VLAN.

5-4-3. Console Port Information

The Windows HyperTerminal program can be used to link the switch with the console port. In order to change any of these parameters, you must be connected to the console port.

Bits per seconds: 9600
Data bits: 8
Parity: none
Stop Bits: 1
Flow control: none

Console Information

Baudrate(bits/sec)	9600
Data Bits	8
Parity Check	none
Stop Bits	1
Flow Control	none

Help

5-4-4. Port Controls

The menu allows changing of port configurations.

State: User can disable or enable this port. If disabled, there is no network communication through this port.

Auto Negotiation: User can set port duplex and port speed to use auto negotiation.

Speed setting: User can set 100Mbps or 10Mbps speed (Port1~Port8)

Duplex setting: User can set port to use full-duplex or half-duplex.

Flow control setting: User can set flow control function to be enabled or disabled.

Port Controls

Port	State	Auto Negotiation	Speed	Duplex	Flow Control
1					
2					
3	Enable	Disable	10	Half	Enable
4					

Port Status

The following information provides a view of the current status of the unit.

Port Num	State		Link Status	Auto Negotiation		Speed Status		Duplex Status		Flow Control	
	Config	Actual		Config	Actual	Config	Actual	Config	Actual	Config	Actual
1	On	On	Up	Auto	Auto	100	100	Full	Full	On	On
2	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
3	Off	Off	Down	Off	Off	10	10	Half	Half	On	On
4	Off	Off	Down	Auto	Auto	100	100	Half	Full	Off	Off
5	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
6	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
7	On	On	Up	Auto	Auto	100	100	Full	Full	On	On
8	On	Off	Down	Auto	Auto	100	100	Full	Full	On	On
9	On	Off	Down	Off	Off	100	100	Full	Full	On	On

5-4-5. Trunking

Trunking provides a standardized means for exchanging information between Partner Systems on a link to allow their Link Aggregation Control instances to reach agreement on the identity of the Link Aggregation Group to which the link belongs, move the link to that Link Aggregation Group, and enable its transmission and reception functions in an orderly manner. Link aggregation allows grouping of up to eight consecutive ports into a single dedicated connection. This feature can expand bandwidth to a device on the network. **LACP operation requires full-duplex mode.** For more detailed information refer to IEEE 802.3ad.

If there are two trunk groups A and B, and B group is enabled LACP, then it will act as a redundant link (Backup group for Trunk group A). If trunk group A fails, Group B will be its backup.

5-4-5-1. Aggregator Setting

System Priority: A value used to identify the active LACP. The switch with the lowest value has the highest priority and is selected as the active LACP.

Aggregator Setting	Aggregator information	State Activity
System Priority		
<input type="text" value="1"/>		
Group ID	<input type="text" value="Group1"/>	<input type="button" value="Get"/>
LACP	<input type="text" value="Disable"/>	
Work Ports	<input type="text" value="2"/>	
<input type="text" value="port7"/> <input type="text" value="port8"/>	<input type="button" value="Add"/> <input type="button" value="Remove"/>	<input type="text" value="port1"/> <input type="text" value="port2"/> <input type="text" value="port3"/> <input type="text" value="port4"/> <input type="text" value="port5"/> <input type="text" value="port6"/>
<input type="button" value="Apply"/> <input type="button" value="Delete"/> <input type="button" value="Help"/>		

1. **Group ID:** To create a trunk across two or more ports, choose the "Group ID" and click "Get".
2. **LACP:** If enabled, the group supports LACP. If disabled, the group is a local static trunking group between two switches. All ports support LACP dynamic trunking group. If connecting to another device that also supports LACP, the LACP dynamic trunking group will be created automatically.
3. **Work ports:** Defines the maximum number of ports that can be aggregated at the same time. If the group is an LACP static trunking group, the exceed ports is standby and able to aggregate if work ports fail. If the group is a local static trunking group, the number must be the same as group ports.
4. Select the ports to join the trunking group.
5. If LACP is enabled, you can configure LACP Active/Passive status for each port.
6. Click Apply.

5-4-5-2. Aggregator Information

The LACP Aggregator relation information is displayed as shown.



The following information provides a view of LACP current status.

Static Trunking Group	
Group Key	1
Port_No	7 8

5-4-5-3. State Activity

Active (select): The active port automatically sends LACP protocol packets.

Passive (no select): The passive port does not automatically send LACP protocol packets, but responds only if it receives LACP protocol packets from the other device.

A link having either two active LACP ports or one active port can perform dynamic LACP trunking. A link that has two passive LACP ports will not perform dynamic LACP trunking because both ports are waiting for an LACP protocol packet from the opposite device.

If the port has active LACP's, and you select the trunking port, the active status will be created automatically.

Trunking



Port	LACP State Activity	Port	LACP State Activity
1	<input type="checkbox"/> Status	5	<input type="checkbox"/> Status
2	<input type="checkbox"/> Status	6	<input type="checkbox"/> Status
3	<input type="checkbox"/> Status	7	N/A
4	<input type="checkbox"/> Status	8	N/A

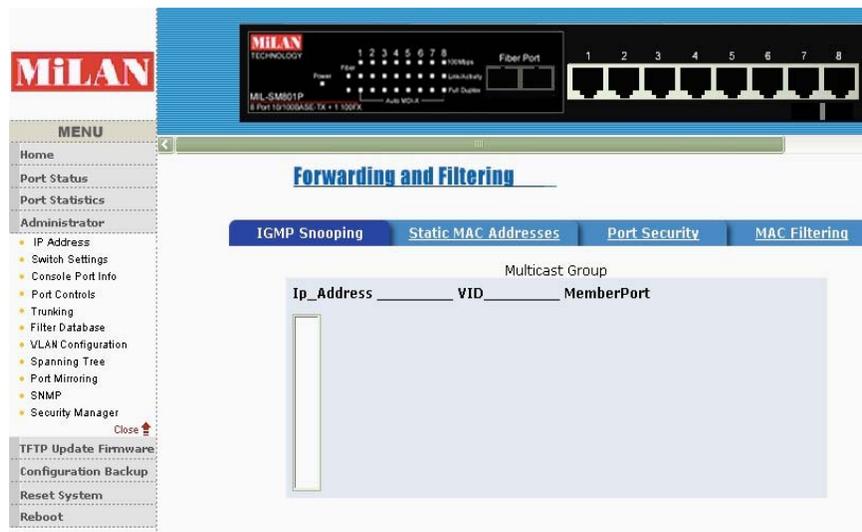
Apply

Default

Help

5-4-6. Filter Database

5-4-6-1. IGMP Snooping



The switch supports IP multicasting. You can enable IGMP via the web management's configuration screen. In addition, you can view difference multicast groups, VIDs and member ports, and IP multicast addresses that range from 224.0.0.0 through 239.255.255.255.

The Internet Group Management Protocol (IGMP) is an internal protocol of the Internet Protocol (IP) suite. IP manages multicast traffic by using switches, routers, and hosts that support IGMP. Enabling IGMP allows the ports to detect IGMP queries and report packets and manage IP multicast traffic through the switch. IGMP has three fundamental types of message as follows:

Message	Description
Query	A message sent from the querier (IGMP router or switch) asking for a response from each host belonging to the multicast group.
Report	A message sent by a host to the querier to indicate that the host wants to be or is a member of a given group indicated in the report message.
Leave Group	A message sent by a host to the querier to indicate that the host has quit a specific multicast group.

5-4-6-2. Static MAC Address

Forwarding and Filtering

IGMP Snooping **Static MAC Addresses** Port Security

Static addresses currently defined on the switch are listed below.
Click Add to add a new static entry to the address table.

MAC Address	PORT
000000000001	1

MAC Address

Port Num

Vlan ID

When a static MAC address is added, it remains in the switch's address table, regardless of whether or not the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the device is disconnected or powered-off.

To add a static MAC address:

1. Click on **Administrator** on the main menu.
2. Click on **Filter Database**.
3. Click **Static MAC Addresses**. In the MAC address box, enter the MAC address to and from which the port should permanently forward traffic, regardless of the device's network activity.
4. In the **Port Number** box, select a port number.
5. If tag-based (IEEE 802.1Q) VLANs are set up on the switch, static addresses are associated with individual VLANs. Type the VID (tag-based VLANs) to associate with the MAC address.
6. Click **Add**.

5-4-6-3. Port Security

A port in security mode will be “locked” with address learning blocked. Only the incoming packets with SMAC already existing in the address table can be forwarded normally. The user can disable the port from learning any new MAC addresses, then use the static MAC addresses screen to define a list of MAC addresses that can use the secure port. Enter the settings, and then click **Submit** to apply the changes on this page.

Forwarding and Filtering

IGMP Snooping Static MAC Addresses **Port Security**

Port	Enable Security (disable for MAC Learning)	Port	Enable Security (disable for MAC Learning)
1	<input checked="" type="checkbox"/>	6	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	7	<input type="checkbox"/>
3	<input type="checkbox"/>	8	<input type="checkbox"/>
4	<input type="checkbox"/>	9	<input type="checkbox"/>
5	<input type="checkbox"/>		

Apply Default Help

5-4-7. VLAN Configuration

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain. It allows you to isolate network traffic so only members of the VLAN receive traffic from the same VLAN members. Basically, creating a VLAN from a switch is logically equivalent to reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plugged into the same switch physically.

The MIL-SM801P, MIL-SM801G, and MIL-SM800P switch series support port-based and protocol-based VLANs. In the default configuration, VLAN support is enabled and all ports on the switch belong to the default VLAN. VID is 1.

NOTE: The default VLAN can't be deleted.

Support Port-based VLANs (IEEE 802.1Q VLAN)

The IEEE 802.1Q specification is the standard for Port-based Tagging. Therefore, it is possible to create a VLAN across devices from different switch suppliers. IEEE 802.1Q VLAN uses a technique to insert a “tag” into the Ethernet frames. The tag contains a VLAN Identifier (VID) that indicates the VLAN numbers.

Support Protocol-based VLAN

In order for an end station to send packets to different VLANs, it has to be either capable of tagging the packets it sends with VLAN tags OR be attached to a VLAN-aware bridge. The VLAN-aware bridge must be capable of classifying and tagging the packet with different VLAN ID. The classification and tagging of the packets is based on default PVID and other information about the packet, such as the protocol.

5-4-7-1. Basic

VLAN Configuration

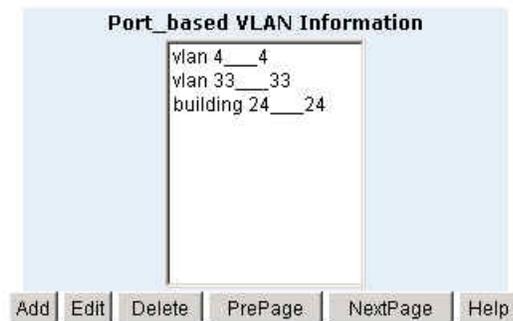
By default, there are no VLANs set for the switch. In order to configure any of the different types of VLANs, VLANs need to be enabled in the switch using Settings/Advanced/Protocol Enable Settings/VLAN Operational Mode. The following are the choices offered:

```
No VLAN
802.1Q without GVRP
802.1Q with GVRP
Port Based
```

Port Based VLANs

This screen shows the current Port Based VLANs configured. To configure new VLANs click the **Add** button. You can also delete configured VLANs using this screen. To edit a VLAN (change the ports) highlight the VLAN name and then click **Edit**. There can be up to 256 different port based VLANs configured.

VLAN



When adding a VLAN this screen allows the configuration of the VLAN. The configuration includes the number of ports, the text name and the Group ID that will belong to the specific VLAN. These VLANs only apply to this switch. The VLANs can be overlapping, meaning that any port can belong to more than one VLAN. One configuration that is common for port based VLANs is to have all the ports on the switch on separate VLANs except for the port that has the server connected to it. This port is then shared by all the VLANs. This enables security between ports, but allows all ports access to the server.

VLAN

VLAN Name:

Grp ID:

1
2
3
4
5
6
7

1
2
3
4
5
6
7

Add >>

<< Remove

Apply Help

Create a VLAN and add tagged member ports.

1. From the main menu, click **Administrator -- VLAN configuration**.
2. Click **Add**.
3. Type a name for the new VLAN.
4. Type a VID (between 2-4094). The default is 1.
5. From the **Available** ports box, select ports to add to the switch and click **Add**.
6. Click **Apply**.

5-4-7-2. Port VID

Configure port VID settings

From the main Tag-based (IEEE 802.1Q) VLAN page, click **Port VID Settings**.

Port VID (PVID)

Used for setting the Port VLAN ID that will be assigned to untagged traffic on a given port. For example, if port 9's Default PVID is 100, all untagged packets on port 9 will belong to VLAN 100. The default setting for all ports is VID 1.

This feature is useful for accommodating devices that you want to participate in the VLAN but that don't support tagging. Only one untagged VLAN is allowed per port.

VLAN

Basic				Port VID			
Assign a Port VLAN ID (1~4094) for untagged traffic on each port, then click Submit to apply the changes on this page.							
No.	PVID	Ingress Filtering 1	Ingress Filtering 2	No.	PVID	Ingress Filtering 1	Ingress Filtering 2
1	1	Enable	Disable	6	1	Enable	Disable
2	1	Enable	Disable	7	1	Enable	Disable
3	1	Enable	Disable	8	1	Enable	Disable
4	1	Enable	Disable	9	1	Enable	Disable
5	1	Enable	Disable				
Ingress Filtering Rule 1 (Forward only packets with VID matching this port's configured VID)							
Ingress Filtering Rule 2 (Drop Untagged Frame)							
<input type="button" value="Apply"/> <input type="button" value="Default"/> <input type="button" value="Help"/>							

Ingress Filtering

Ingress filtering lets frames belonging to a specific VLAN be forwarded if the port belongs to that VLAN. The frames are dropped if not. The switch's two ingress filtering rules are:

Ingress Filtering Rule 1: Forwards only packets with VID matching this port's configured VID. By default, only packets with this VID are forwarded.

Ingress Filtering Rule 2: Drop Untagged Frame. By default all untagged frames are forwarded.

5-4-8. Set Spanning Tree

The Spanning-Tree Protocol (STP) is a standardized method (IEEE 802.1D) for avoiding loops in switched networks. When STP is enabled it ensures that only one path at a time is active between any two nodes on the network.

Spanning-Tree Protocol can be enabled using web management's switch setting advanced item, and selecting enable Spanning-Tree protocol. By default, spanning tree is disabled on the switch.

Set Spanning Tree

Configure Spanning Tree Parameters

Priority (1-65535)	<input type="text" value="32768"/>
Max Age (6-40)	<input type="text" value="15"/>
Hello Time (1-10)	<input type="text" value="3"/>
Forward_Delay_Time(4-30)	<input type="text" value="5"/>

Apply

Description

Priority

The priority value used to identify the root bridge can be changed. The bridge with the lowest value has the highest priority and is selected as the root. Enter a number 1 through 65535.

Max Age

Max Age value is the number of seconds a bridge waits without receiving Spanning-Tree Protocol configuration messages before attempting a reconfiguration. It can be changed from 6 seconds through 40 seconds.

Hello Time

The Hello Time value is the number of seconds between the transmission of Spanning-Tree Protocol configuration messages. It can be modified. 1 second through 10 seconds are permissible values.

Forward Delay time

You can change Forward Delay Time, which is the number of seconds a port waits before changing from its Spanning-Tree Protocol learning and listening states to the forwarding state. Enter a number 4 through 30.

Information about the current spanning tree status is displayed in this table.

PortNum	PathCost	Priority	PortState
1	10	128	FORWARDING
2	10	128	FORWARDING
3	10	128	FORWARDING
4	10	128	FORWARDING
5	10	128	FORWARDING
6	10	128	FORWARDING
7	10	128	FORWARDING
8	10	128	FORWARDING
9	10	128	FORWARDING

The priority and path cost can be configured for each port. Click the **Apply** button to modify the configuration.

Port Number	Priority (0 - 255; Default 128)	Path Cost (1 - 65535; Default 10)
1 2 3 4 5	128	10

Apply Help

Description

Port Priority

A change to the Port Priority affects which port will be the root port. The lowest number has the highest priority. The range is 0-255 and the default setting for all ports is 128. If you change the value, you must reboot the switch.

Path Cost

Path Cost specifies the path cost of the port that the switch uses to determine which ports are the forwarding ports. The lowest number becomes the forwarding port. The range is 1-65535 and the default value is based on IEEE802.1D

10Mb/s = 50-600 100Mb/s = 10-60

If you change the value, you must reboot the switch.

5-4-9. Port Mirroring

The Port Mirroring feature can monitor traffic in switched networks. Traffic transmitted or received on monitored ports (source ports) will be duplicated to a destination port or mirror port.

Port Sniffer

Analysis State : DISABLE ▾		
Mirror Port: None ▾		
Source Ports	Monitor Rx	Monitor Tx
1	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>
Apply	Default	Help

Analysis State: Enables or disables the port mirroring function.

Mirror Ports: The ports you want to mirror. All source port traffic will be copied to a mirror port. You can select a maximum of 8 source ports in the switch. If you want to disable the function, you must select monitor port to none.

Monitor Rx: Monitors received frames from the port.

Monitor Tx: Monitors transmitted frames from the port.

5-4-10. SNMP

SNMP is a protocol that governs the transfer of information between management and agent. The switch supports SNMP V1. Any Network Management station running the Simple Network Management Protocol (SNMP) can manage the switch provided that the Management Information Base (MIB) is installed.

Use this menu to define management stations as trap managers and to enter SNMP community strings. Users can also define community strings for a name, location, and contact person for the switch.

1. System Options – The length of each can be 26 characters.

Name: Enter a name to be used for the switch.

Location: Enter the location of the switch.

Contact: Enter the name of a person or organization.

SNMP Management

The screenshot displays the SNMP Management configuration interface, which is organized into three main sections:

- System Options:** This section contains three input fields for "Name:", "Location:", and "Contact:". Below these fields are two buttons: "Apply" and "Help".
- Community Strings:** This section is divided into two parts. On the left, under "Current Strings:", there is a list box containing the entry "public_RO" and a "Remove" button. On the right, under "New Community String:", there is a "String:" input field and two radio buttons labeled "RO" (which is selected) and "RW". A "<< Add <<" button is positioned between the current strings list and the new string input field.
- Trap Managers:** This section is also divided into two parts. On the left, under "Current Managers:", there is a list box containing the entry "(none)" and a "Remove" button. On the right, under "New Manager:", there are two input fields: "IP Address:" and "Community:". A "<< Add <<" button is positioned between the current managers list and the new manager input fields.

2. Community strings serve as passwords and can be entered as one of the following:

Read only: Enables requests accompanied by this string to display MIB-object information.

Read write: Enables requests accompanied by this string to display MIB-object information and to set MIB objects.

3. Trap Manager

A trap manager is a management station that receives traps. Traps are the system alerts generated by the switch. If no trap manager is defined, no traps are issued. Create a trap manager by entering the IP address of the station and a community string.

Community Strings

Current Strings : public_RO

<< Add << Remove

New Community String : String :

RO RW

Trap Managers

Current Managers : (none)

<< Add << Remove

New Manager : IP Address :

Community :

5-4-11.Security Manager

The user can change the user name and password to keep the switch secure. The default user name and password are below.

User Name: **root**

Password: **root**

Security Manager

User Name: root

Assign/Change password: ****

Reconfirm password: ****

Apply

5-4-12. TFTP Update Firmware

The following menu options provide some system control functions to allow a user to update firmware and remotely boot the switch system:

- Executing TFTP software
- Copy firmware update version image.bin to TFTP software directory.
- In web management select **Administrator—TFTP update firmware**.
- Download new image.bin file. In web management, press **<update firmware>**.

TFTP Download New Image

TFTP Server IP Address	<input type="text" value="192.168.1.78"/>
Firmware File Name	<input type="text" value="image.bin"/>

5-4-13. Configuration Backup

5-4-13-1. TFTP Restore Configuration

Use this screen to set TFTP server address. You can restore EEPROM value from here, but you must put the image back in the TFTP server. The switch will download back flash image.

TFTP Configuration

TFTP Restore Configuration

TFTP Backup Configuration

TFTP Server IP Address	<input type="text" value="192.168.1.78"/>
Restore File Name	<input type="text" value="flash.dat"/>

5-4-13-2. TFTP Backup Configuration

Use this screen to set the TFTP server IP address. You can save current EEPROM value from here, then go to the **TFTP Restore Configuration** screen to restore the EEPROM value.

TFTP Configuration

TFTP Restore Configuration	TFTP Backup Configuration
TFTP Server IP Address	192.168.1.78
Backup File Name	flash.dat

Apply Help

5-4-14. Reset System

Reset switch to default configuration. The default value is shown below:

Reset System

Reset Switch to Default Configuration

reset

5-4-15. Reboot

Reboot the switch in software reset.

Reboot Switch System

reboot Help

6. Technical Specifications

This section provides the specifications of MIL-SM800P, MIL-SM801P, and MIL-SM801G switch series.

Specifications

Standards Compliance	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX/FX Fast Ethernet ANSI/IEEE 802.3 Auto-negotiation
Protocol	CSMA/CD
Max Forwarding and Max Filtering Rate	14,880 pps per Ethernet port, 148,800 pps per Fast Ethernet port 1,488,000 pps per Gigabit Ethernet port
LED Indicators	Per Port: (10/100 UTP) : 100M, LK/ACT, FD/COL (3 LEDs) Fiber Port: [MIL-SM801P/G switch series only] LK/ACT, FD/COL (2 LEDs) Fiber Port: [MIL-SM801G switch series only] LK/ACT (1 LED) Per Unit: Power
Copper Network Cables	10BASE-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100BASE-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)
Fiber Link Max. Distance	SC, ST, MT-RJ, VF-45 Multi-mode: Half-duplex: 412m, Full-duplex: 2Km SC Single-mode: Half-duplex: 412m, Full-duplex: 15Km SC Multi-mode Gigabit: Full-duplex: 220m
Dimensions	250mm x 132mm x 37mm (L x W x H)

Weight	MIL-SM800P switch: 1060 g MIL-SM801P/G switch series: 1080 ±20 g
Storage Temp.	-40°C to 70°C (-40°F to 158°F)
Operational Temp.	0°C to 45°C (32°F to 113°F)
Operational Humidity	10% to 90% (Non-condensing)
External Power	100-240V AC, 50-60Hz
Power Consumption	MIL-SM800P switch: 15 Watts (Max) MIL-SM801P/G switch series: 17 Watts (Max)
EMI	FCC Class A, CE Mark
Safety	UL, cUL

7.

Troubleshooting

This section is intended to help you solve some common problems encountered while using the MIL-SM801P, MIL-SMS801G, and MIL-SM800P switch series.

Incorrect connections

- **Faulty or loose cables**
Look for loose or obviously faulty connections. If they appear to be OK, make sure the connections are snug. If that does not correct the problem, try different cables.
- **Non-standard cables**
Non-standard and miswired cables may cause numerous network collisions and other network problems. This can seriously impair network performance. A category 5 cable tester is a recommended tool for every network installation.
- **Improper Network Topologies**
It is important to make sure that you have a valid network topology. Common topology faults include excessive cable length and too many repeaters or hubs between end nodes. In addition, you should make sure that your network topology contains no data path loops. Between any two ends nodes, there should be only one active cabling path at any time. Data path loops will cause broadcast storms that will severely impact your network performance.

Diagnostic LED Indicators

The switch can be easily monitored through panel indicators to assist in identifying problems.

If the power indicator does not turn on when the power cord is plugged in, you may have a problem with power outlet or power cord. However, if the switch powers off after running for awhile, check for loose power connections, power losses or surges at power outlet. If you still cannot resolve the problem, contact your local dealer for assistance.

■ Cabling

RJ-45 ports: Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100Ω Category 3, 4 or 5 cable for 10Mbps connections or 100Ω Category 5 cable for 100Mbps connections. Be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

100BASE-FX fiber port: Multi-mode fiber connector types must use 50/125 or 62.5/125 μm multi-mode fiber cable. Two devices may be connected over a 2 kilometer distance. Single-mode fiber connector types must use 9/125 μm single-mode fiber cable. Two devices may be connected over a 15 to 60 kilometer distance in full duplex operation in single-mode.

1000BASE-SX fiber port: Multi-mode fiber connector types must use 50/125 μm multi-mode fiber cable for 500 meters or 62.5/125 μm multi-mode fiber cable for 220 meters. Two devices may be connected over 220m to 500m distances.



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