TEG-S081Fi

8-Port 100Base-FX Layer 2 Managed Switch with GBIC Slot

User's Guide

TRENDNET

1.
Introduction

The TEG-S081Fi Switch is compact desktop size switches which are ideal solutions for Fiber network infrastructure. It provides wire-speed, Fast Ethernet switching function that allows high-performance, low-cost connection. The Switch features a store-and-forward switching and it can auto-learn and MAC address on an 8K-entry MAC address table.

Figure 1-1. The TEG-S081Fi Switch

The Switch provides 8 100Mbps Fiber ports and one GBIC slot for optional GBIC modules.

The fiber ports are 100Base-SC type multi-mode fiber ports support up to 2kms distance.

With their build-in **Web-based Management,** managing and configuring the TEG-S081Fi Switch becomes easier. From cabinet management to port-level control and monitoring, you can visually configure and manage your network via Web Browser. Just click your mouse instead of typing command strings. However, the TEG-S081Fi Switch can also be managed via Telnet, Console, or SNMP Management.

Features

- Conforms to IEEE802.3u, IEEE802.3z and IEEE802.3x Ethernet Standards
- 8x 100Base-FX SC Type Fiber ports and one GBIC slot
- One Console port on the front side for switch Configuration
- Half-duplex mode for backpressure, and Full-duplex for flow control
- Store-and-forward switching architecture
- Automatic address learning, address migration
- 8K-entry MAC address table
- 2Mbits memory buffer sharing
- Performs non-blocking full wire speed
- LED-indicators for Power, LNK/ACT, FDX/COL, LNK/ACT(GBIC)
- 19-inch Rack-Mount size design

Intelligent Management Features

- Web-based management
- SNMP network management
- Console and Telnet management
- Port Base VLAN and IEEE 802.1q Tag VLAN, and VLAN group up to 256 , VLAN ID up to 4K
- IEEE 802.3 ad port trunk with LACP (Link Aggregation Control protocol) supported
- IEEE 802.1d Spanning Tree
- MIB II (RFC 1213) supported
- IP Multi-cast, IGMP Snooping, up to 256 IGMP groups
- Support Quality of Service (system provides 8 levels) and Class of service (per port Hi/Low Queue)
- Port Mirror, Broadcast Filter, Static MAC Address filtering, Port Security and GVRP supported

Package Contents

Unpack the contents of the *TEG-S081Fi Switch* and verify them against the checklist below.

- ■ Switch
- ■ Power Cord
- ■ Four Rubber Feet
- ■ RS-232 cable
- ■ User Guide

TEG-S081Fi Switch   **Power Cord**

Rubber Feet   **RS-232 cable**   **User Guide**

Figure 1-2. Package Contents

Compare the contents of your TEG-S081Fi switch package with the standard checklist above. IF any item is missing or damaged, please contact your local dealer for service.

Management Methods

The 8port Fiber Management Switch series supports following management methods:

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

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Console and Telnet Management

Console Management is done through the RS-232 Console Port. Managing the TEG-S081Fi Switch in this method requires a direct connection between PC and the TEG-S081Fi Switch. While Telnet management is done over the network. Once the TEG-S081Fi Switch is on the network, you can use Telnet to Log in and change the configuration.

Web-based Management

The Switch provides an embedded HTML web site residing in flash memory. It offers advanced management features and allow users to manage the TEG-S081Fi Switch from anywhere on the network through a standard browser such as Microsoft Internet Explorer.

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

The Front Panel of the Fiber Management Switch series consist of 8x 100Mbps Fast Ethernet Fiber and GBIC ports, and the LED indicators are also located on the frond panel of the switch.

Figure 2-1. The Front Panel of the Fiber Management 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.

Console Port
Baud Rate: 9600,N,8,1

Figure 2-2. The Front Panel of the TEG-S081Fi Switch with SC connector

- ■ **100Base-FX Fiber Port:** There are 2 types of fiber connectors available for the TEG-S081Fi Switchas shown above. The distance for fiber cabling can be extended up to 2 kilometers.

■ **GBIC port :** It only support 3.3V model Gigabit Transceiver for Gigabit SX or LX.

LED Indicators

Figure 2-3. LED Indicators

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

LED	Status	Color	Description
Power	On	Green	Power On
LNK / ACT	On	Green	The port is successfully connecting with the device on 100Mbps.
	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 and device is attached.
	Blinks	Orange	Collision of Packets occurs in the port.
	Off		Half-duplex mode or no device attached.

Table 2-1. The description of LED Indicator

Rear Panel

The Console port and 3-pronged power plug are located at the Rear Panel of the TEG-S081Fi Switch as shown in Figure 2-8. The Switches will work with AC in the range 100-240V AC, 50-60Hz.


Figure 2-7 The Rear Panel of the 8 Port 100Mbps Fiber plus one GBIC Management Switch

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.
Make sure there is enough clearance around the Switch to allow attachment of cables, power cord and air circulation.

Power On

Connect the power cord to the power socket on the rear panel of the Switch. The other side of power cord connects to the power outlet. The internal power supply in the Switch works with AC in the voltage range 100-240VAC, frequency 50~60Hz.
Check the power indicator on the front panel to see if power is properly supplied.

3.
Network Application

This section provides you a few samples of network topology in which the Switch is used. In general, the TEG-S081Fi Switch is designed to be used as a desktop or segment switch.

Segment Application

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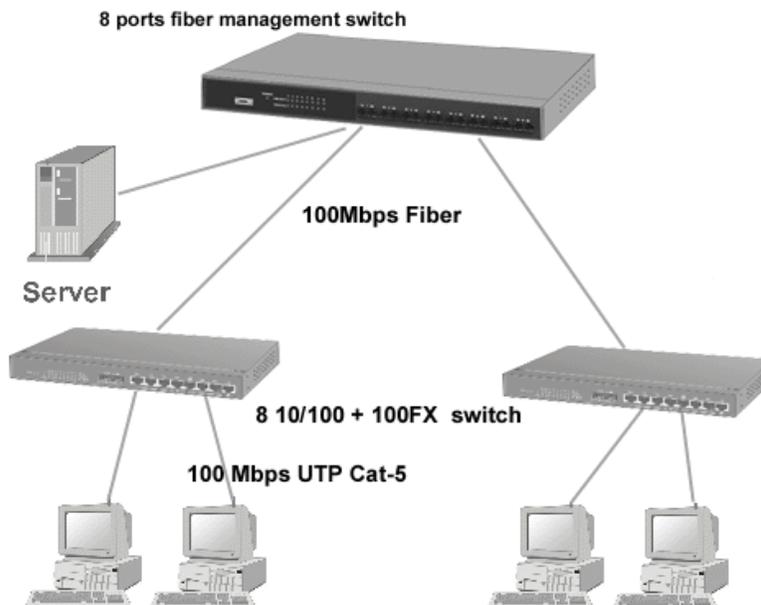

Figure 3-2 Segment Application

You can use the TEG-S081Fi Switch to connect PCs, workstations, and servers to each other by connecting these devices directly to the Switch. All the devices in this network can communicate with each other. Connecting servers to the backbone switch allow other users to access the server's data.

The Switch automatically learns node address, which are subsequently used to filter and forward all traffic based on the destination address. You can use any of the Fiber port of the Fiber Management Switch to connect with another Switch or Hub to interconnect each of your small switched workgroups to form a larger and long distance switched network.
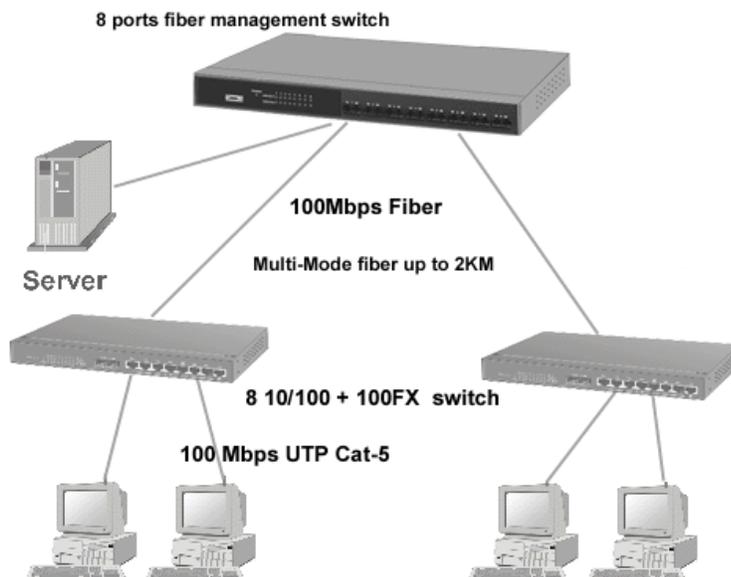

Figure 3-3 Use fiber port (TEG-S081Fi Switch) to extend the distance between workgroups

4.
Network Configuration

This Section explains how to configure console management via a direct connection to the console port of the 8 port Fast Ethernet Fiber Management Switch.

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, user has access to manage the functions of the Switch.

Connecting a Terminal or PC to the Console Port

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 **Hyper Terminal** 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
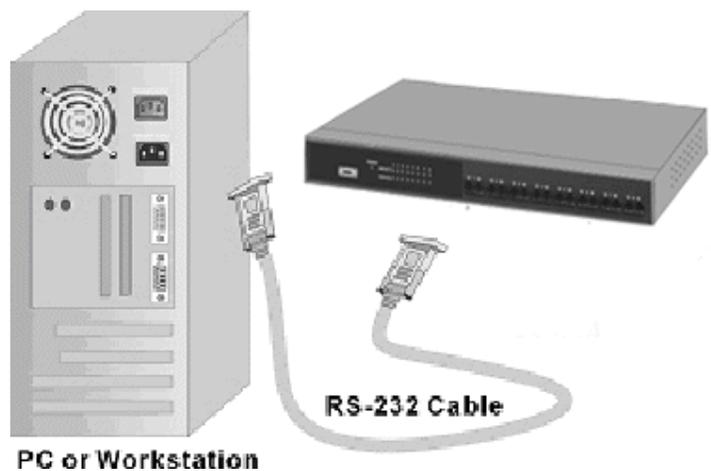
Figure 4-1. The settings of communication parameters

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

Console – Menu

1. The switch also provide a serial interface to manage and monitor the switch, user can follow the Console Port Information provide by web to use windows HyperTerminal program to link the switch.

2. You can type user name and password to login. The default user name is "root", the default password is "root ".

4-1 Main Menu

There are five items for selected as follows:

```
                          Main Menu
                          =========



                 Status and Counters

                 Switch Static Configuration

                 Protocol Related Configuration

                 Reboot Switch

                 Logout




                     Show the status of the switch.
Tab=Next Item      BackSpace=Previous Item     Enter=Select Item
```

Status and Counters: Show the status of the switch.
Switch Static Configuration: Configure the switch.
Protocol Related Configuration: Configure the protocol function.

Reboot Switch: Restart the system or reset switch to default configuration.

Logout: Exit the menu line program.

<Control Key>

The control key as follow provided in all menus:

Tab: Move the vernier to next item.

Backspace: Move the vernier to previous item.

Enter: Select item.

Space: Toggle selected item to next configure.

4-2. Status and Counters

```
            S081Fi Managed Switch : Status and Counters
            =====================


                        Port Status

                        Port Counters

                        System Information

                        Main Menu






            Displays current status of all the switch ports.
Tab=Next Item      BackSpace=Previous Item      Enter=Select Item
```

You can press the key of **Tab** or **Backspace** to choose item, and press **Enter** key to select item.

4-2-1. Port Status

This page display every port status

Type: Display the port type.

Enabled: Display the port is enabled or disable depended on user setting. Enable will be display "Yes", disable will be display "No".

Status: Display the port is link or no link, "Down" is no link, and "Up" is link.

Mode: Display the port speed and duplex.

Flowtrl: Display the flow control status is enable or disable mode.

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```
              S081Fi Managed Switch : Port Status
              =====================


    Port        Type       Enabled      Status        Mode        FlowCtrl
    ----      --------     -------      ------      ---------      --------
    1.        100FX         Yes         Up          100 Full        On
    2.        100FX         No          Down        100 Full        On
    3.        100FX         No          Down        100 Full        On
    4.        100FX         No          Down        100 Full        On
    5.        100FX         No          Down        100 Full        On
    6.        100FX         No          Down        100 Full        On
    7.        100FX         No          Down        100 Full        On
    8.        100FX         No          Down        100 Full        On
    9.        1000FX        Yes         Up          1000 Full       On




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

Actions->

You can press the key of **Tab** or **Backspace** to choose action menu, and press **Enter** key to select item

<Quit>: Exit the page of port status, and return to previous menu.

4-2-2. Port Counters

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

```
              S081Fi Managed Switch : Port Counters
              =====================


    Port  TxGoodPkt  TxBadPkt  RxGoodPkt  RxBadPkt  TxAbort  Collision
    ------------------------------------------------------------------------
    1.     143        0         1393       0         0        0
    2.     0          0         0          0         0        0
    3.     0          0         0          0         0        0
    4.     0          0         0          0         0        0
    5.     0          0         0          0         0        0
    6.     0          0         0          0         0        0
    7.     0          0         0          0         0        0
    8.     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
```

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You can press the key of **Tab** or **Backspace** to choose action menu, and press **Enter** key to select item
<Quit>: Exit the page of port status, and return to previous menu.
<Reset All>: Set all count to 0.

4-2-3. System Information

System Description: Display the name of device type.
MAC Address: The unique hardware address assigned by manufacturer.
Firmware Version: Display the switch's firmware version.
Hardware Version: Display the switch's Hardware version.
Kernel version: Display write to default EEPROM value version.

```
              S081Fi Managed Switch : Management Address Information
              ====================


System Description : TEG-S081Fi Intelligent Switch

MAC Address        : 000F38FFF1B3

Firmware version   : v01.02

Hardware version   : A03.00

Kernel version     : v01.14




                        Display the switch system.
    Esc=Previous menu
```

4-3. Switch Static Configuration

```
          S081Fi Managed 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
```

You can press the key of **Tab** or **Backspace** to choose item, and press **Enter** key to select item

4-3-1. Administration Configuration

```
          S081Fi Managed 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
```

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4-3-1-1. Device Information

This page provide user to configure the device information.

Actions->
<Edit>: Configure all items. Finished configure press **BackSpace** to go back action menu line.
<Save>: Save all configure value.
<Quit>: Exit the page of device information and return to previous menu.

```
            S081Fi Managed Switch : Device Information
            ======================


       Device Name :

       Device Content :

       Device Location :

       Device Description : TEG-S081Fi Intelligent Switch




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

4-3-1-2. IP Configuration
User can configure the IP setting and fill in the new value.
Actions->
<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.
<Save>: Save all configure value.
<Quit>: Exit the page of IP configuration and return to previous menu.

```
            S081Fi Managed Switch : IP Configuration
            =====================

              IP Address   : 192.168.1.182

              Subnet Mask : 255.255.255.0

              Gateway      : 192.168.1.254




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

Note: Always restart the computer after finishing the setup.

4-3-1-3. Change Username
Use this page; user can change web management user name.

```
            S081Fi Managed Switch : UserName Configuration.
            =====================


              UserName : root




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

4-3-1-4. Change Password
Use this page; user can change web management user password.

```
           S081Fi Managed Switch : Password Configuration
           =====================



              Old Password:










                      Please enter your old password!
      Esc=Previous menu
```

The default password is root

4-3-2. Port / Trunk Configuration

This page can change every port status and configure trunk group.
Press **TAB** key to change configure of per item.

1.Enabled: User can disable or enable this port control, but port 9 always is enabled, can't be disable.
2.Auto Negotiate: port 1 to 8 (100Mbps Fiber) is disabled, port 9 (GBIC port) is enabled.
3.Speed/Duplex Config: For port 1 to 8 (100 Mbps Fiber port)only can set Full or Half duplex , Port 9 (GBIC port) support 1000Mbps Full Duplex.
4.Flow Control: User can set flow control function is enable or disable(only for port 1 to 8), port 9(GBIC port) always support flow control.
5.Group: User can set trunk group for port1~prot8. There are four trunk groups to provided configure. Port 9 is not available for Trunk.

```
                S081Fi Managed Switch : Port Configuration
                ======================

  Port     Type     Enabled    Auto        Speed/Duplex   Flow      Group
                                Negotiate   Config         Control
  ----------------------------------------------------------------------------
  1.       100FX    Yes        Disabled    100 Full       On
  2.       100FX    Yes        Disabled    100 Full       On        Trk1
  3.       100FX    Yes        Disabled    100 Full       On        Trk1
  4.       100FX    Yes        Disabled    100 Full       On
  5.       100FX    Yes        Disabled    100 Full       On
  6.       100FX    Yes        Disabled    100 Full       On
  7.       100FX    Yes        Disabled    100 Full       On
  8.       100FX    Yes        Disabled    100 Full       On
  9.       1000FX   Yes         Enabled    1000 Full      On




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

Actions->

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

<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.

<Save>: Save all configure value.

4-3-3. Port Mirroring Configuration

The port mirroring is a method for monitor traffic in switched networks. Traffic through ports can be monitored by one specific port. That is traffic goes in or out monitored ports will be duplicated into monitoring port. Press **Space** key to change configure of per item.

1. Port Mirroring State: Type "space" key for enable/disable.

2. Analysis Port: It's mean mirror port can be used to see all monitor port traffic.

3. Port: The ports you want to monitor. All monitor port traffic will be copied to sinffer port. You can select max 9 monitor ports in the switch. User can choose want to monitored RX frames only or TX frames only or both RX and TX frame from the port at **Action** item.

```
            S081Fi Managed Switch : Port Mirroring Configuration
                  ====================

    Port Mirroring State: Disable













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

Actions->

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

<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.

<Save>: Save all configure value.

4-3-4. VLAN Configuration

```
             S081Fi Managed Switch : VLAN Configuration
                   ====================


                    VLAN Configure

                    Create a VLAN Group

                    Edit/Delete a VLAN Group

                    Previous Menu






                  Configure the VLAN PVID and Ingress Rule.
Tab=Next Item  BackSpace=Previous Item  Quit=Previous menu  Enter=Select Item
```

4-3-4-1. VLAN Configure

1. 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 that don't support tagging. Only one untagged VLAN is allowed per port.

2. Ingress Filter 1: It matches that Ingress Filtering Rule 1 on web. Forward only packets with VID matching this port's configured VID. Press **Space** key to choose forward or drop the frame that VID not matching this port's configured VID.

3. Ingress Filter 2: It matches that Ingress Filtering Rule 2 on web. Drop untagged frame.

Press **Space** key to choose drop or forward the untagged frame.

```
          S081Fi Managed Switch : VLAN Support Configuraton
          =====================

     VLAN Mode :802.1QwithGVRP


                         IngressFilter1      IngressFilter2
     Port      PVID      NonMember Pkt       Untagged Pkt
     --------------------------------------------------------
     1.        1         Enable              Disable
     4.        1         Enable              Disable
     5.        1         Enable              Disable
     6.        1         Enable              Disable
     7.        1         Enable              Disable
     8.        1         Enable              Disable
     Trunk1.   1         Enable              Disable
     9.        1         Enable              Disable



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

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

Create a VLAN and add tagged /untagged member ports to it.

1. VLAN Name: Type a name for the new VLAN.

2. VLAN ID: Type a VID (between 1~4094). The default is 1.

3. Protocol VLAN: Press **Space** key to choose protocols type.

4. Mode: Press **Space** key to choose VLAN member. There are three types to selected as 802.1Q, 802.1Q with GVRP and Port-Base

   UnTagged: the member port is un-tagged port.

   Tagged: the member port is tagged port.

   NO: The port is not member of this VLAN group.

```
                        Add a VLAN Group
                        ------------------------

        VLAN Name: [                    ] VLAN ID: [     ](1~4094)

        Protocol VLAN :  None

        Port            Member
        ----------------------
        1.              No
        4.              No
        5.              No
        6.              No
        7.              No
        8.              No
        Trunk1.         No
        9.              No


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

Actions->

<Quit>: Exit this page and return to previous menu.

<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.

<Save>: Save all configure value.

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

In this page, user can edit or delete a VLAN group.

1. Press **<Edit> or <Delete>** item.

2. Choose the VLAN group that you want to edit or delete and then press enter.

3. User can modify the protocol VLAN item and the member port is tagged or un-tagged and remove some member ports from this VLAN group.

4. After edit or delete VLAN, press **<Save>** key to save all configures value.

NOTE: 1.The VLAN Name and VLAN ID cannot modify.

       2. The default VLAN can't be deleting.

```
         NAME:            VID:        NAME:            VID:
         _____         _____
         default          1




 actions->  <Quit>   <Edit>   <Delete>   <Save>   <Previous Page>   <Next Page>
                          Edit/Delete a VLAN Group.
 Tab=Next Item   BackSpace=Previous Item   Quit=Previous menu   Enter=Select Item
```

4-3-5. Priority Configuration

1. There are 0~7 priority level can map to high or low queue.
2. High/Low Queue Service Ration: User can select the ratio of high priority packets and low priority packets.

```
            S081Fi 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>: Configure all items. Finished configure press **ESC** to go back
action menu line.
<Save>: Save all configure value.
<Quit>: Exit this page and return to previous menu.

High Low Queue service ratio: 1:1 ,2:1, 3:1, 4:1, 5:1, 6:1, 7:1, FIFO,H➜L

First In First Out (FIFO): The sequence of packets sent is depend on arrive order.

High to Low (H➜L): The high priority packets sent before low priority packets.

Ratio (1:1 ,2:1, 3:1, 4:1, 5:1, 6:1, 7:1)**:** 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

```
          S081Fi Managed Switch : MAC Address Configuration
          =====================


                    Static MAC Address

                    Filtering MAC Address

                    Previous Menu







                    Configure the MAC address.
Tab=Next Item      BackSpace=Previous Item      Enter=Select Item
```
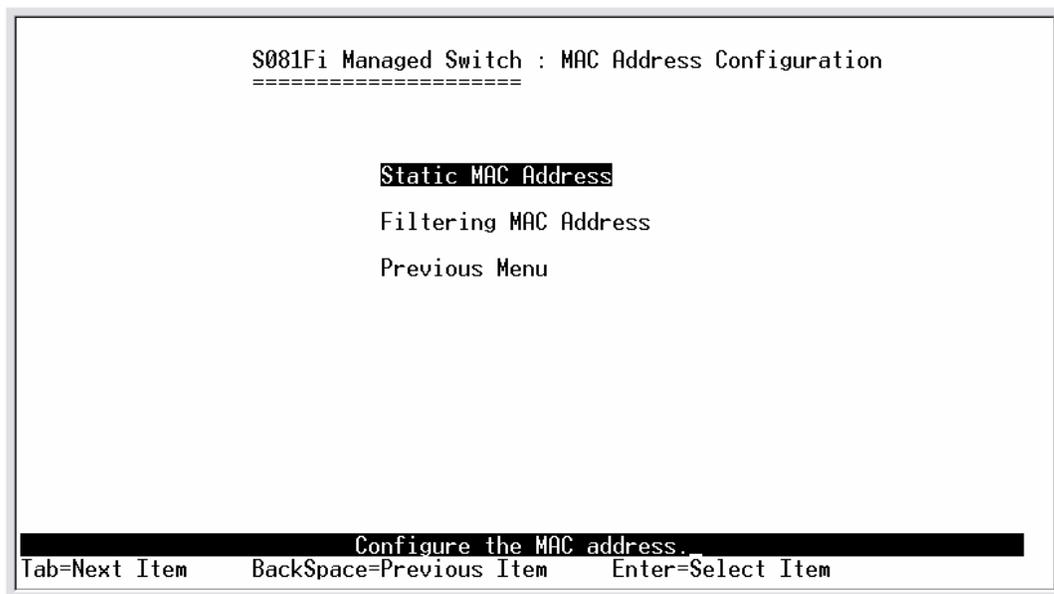
4-3-6-1.Static MAC Address

When you add a static MAC address, it remains in the switch's address table, regardless of whether the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the disconnected or powered-off device is active on the network again.

In this page user can add / modify / delete a static MAC address.

```
                  S081Fi Managed Switch : Static MAC Address Configuration
                  =====================

  Mac Address   Port num   Vlan ID          Mac Address    Port num   Vlan ID
  ----------------------------------         --------------------------------




















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

```
                  S081Fi Managed Switch : Add Static MAC Address
                  =====================


                  Mac Address :

                  Port num    :

                  Vlan ID     :














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

Add static MAC address

1. Press **<Add> --> <Edit>** key to add a static MAC or edit address.

2. Enter the MAC address to and from which the port should permanently forward traffic, regardless of the device's network activity.

3. In the Port num item, enter the port number.

4. If tag-based(802.1Q) VLAN are set up on the switch, static addresses are associated with individual VLANs. Type the VID to associate with the MAC address.

5. Press **ESC** to go back action menu line, and then select **<Save>** to save all configure value.

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Edit static MAC address

1. Press **<Edit>** key to modify a static MAC address.

2. Choose the MAC address that you want to modify and then press enter.

3. Press **<Edit>** key to modify all the items.

4. Press **ESC** to go back action menu line, and then select **<Save>** to save all configure value.

Delete static MAC address

1. Press **<Delete>** key to delete a static MAC address.

2. Choose the MAC address that you want to delete and then press enter.

3. After delete static MAC address, you have to press **<Save>** to complete the deleting operation.

4-3-6-2.Filtering MAC Address

```
                    S081Fi Managed Switch : Filter MAC Address Configuration
                    =====================

 Mac Address    Vlan ID                        Mac Address    Vlan ID
 -----------------------------                  -----------------------------








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

Edit Filtering MAC address

1. Press **<Edit>** key to modify a static Filtering address.

2. Choose the MAC address that you want to modify and then press enter.

3. Press **<Edit>** key to modify all the items.

4. Press **ESC** to go back action menu line, and then select **<Save>** to save all configure value.

Delete Filtering MAC address

1. Press **<Delete>** key to delete a Filtering MAC address.

2. Choose the MAC address that you want to delete and then press enter.

3. After delete Filtering MAC address, you have to press **<Save>** to complete the deleting operation.

4-3-7.Misc Configuration

```
            S081Fi Managed Switch : Misc Configuration
            ======================


                        Port Security

                        MAC Age Interval

                        Broadcast Storm Filtering

                        Bridge Transmit Delay Bound

                        Previous Menu




                      Configurate the port security.
Tab=Next Item      BackSpace=Previous Item      Enter=Select Item
```
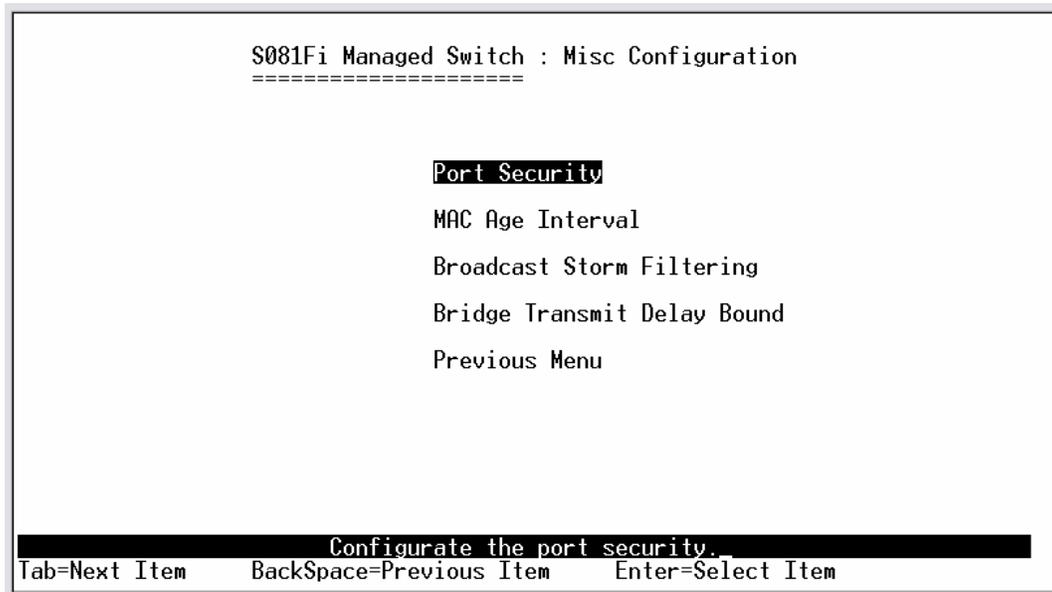
4-3-7-1.Port Security

A port in security mode will be "locked" without permission of address learning. Only the incoming packets with SMAC already existing in the address table can be forwarded normally. 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.

```
        S081Fi Managed Switch : The Configuration of Port Security
        =====================


        Port            Enable Security
                        (disable for MAC Learning)
        ------------------------------
        1.                  Disable
        4.                  Disable
        5.                  Disable
        6.                  Disable
        7.                  Disable
        8.                  Disable
        Trunk1.             Disable
        9.                  Disable




 actions->    <Quit>      <Edit>    <Save>
                        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 **Space** key to choose enable / disable item.

3. Press **ESC** to go back action menu line, and then select **<Save>** to save all configure value.

4-3-7-2.MAC Age Interval

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.

```
            S081Fi Managed Switch : The Configuration of Aging Time
            =====================




        MAC Age Interval (sec) [300  ] : 300   (0,300~765)








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

29

4-3-7-3.Broadcast Storm Filtering

This page is configuring broadcast storm control, press **<Edit>** to configure the broadcast storm filter mode.
Press **Space** key to choose the threshold value. The valid threshold value are 5%, 10%,15%,20%,25% and NO.

```
              S081Fi Managed Switch : Broadcast Storm Filter Mode
              =====================



              Broadcast Storm Filter Mode :NO








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

Actions->

<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.
<Save>: Save all configure value.
<Quit>: Exit this page and return to previous menu.

4-3-7-4.Max bridge transmit delay bound

Max bridge transmit delay bound (0,1-4 sec): Limit the packets queuing time in switch. If enable, the packets queued exceed will be drop. Press **Space** key to set the time. These valid values are 1sec, 2sec, 4sec and off. Default is 1 seconds.

Enable Delay Bound: Limit the low priority packets queuing time in switch. If enable, the low priority packet stays in switch exceed Max Delay Time, it will be sent. Press **Space** key to enable or disable this function.
Max Delay Time: To set the time that low priority packets queuing in switch. The valid range is 0~255 ms.
NOTE: Make sure of "Max bridge transit delay bound control" is enabled before enable Delay Bound, because Enable Delay Bound must be work under "Max bridge transit delay bound control is enabled" situation.

```
           S081Fi Managed Switch : Configure Bridge Transmit Delay Bound
                   ====================



              Bridge Transmit Delay Bound :OFF

              Enable Delay Bound :Disable

              Max Delay Time :0




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

Actions->
<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.
<Save>: Save all configure value.
<Quit>: Exit this page and return to previous menu.

4-4.Protocol Related Configuration

4-4-1.STP

```
         S081Fi Managed Switch : The Protocol Related configuration
         =====================


                         STP

                         SNMP

                         GVRP

                         LACP

                         Previous Menu




                 Configure the Spanning Tree Protocol.
Tab=Next Item     BackSpace=Previous Item     Enter=Select Item
```

4-4-1-1.STP Enable
This page is enable or disable Spanning Tree function. Press **Space** key to select enable or disable.

```
         S081Fi Managed Switch : STP Enabled/Disabled Configuration
         =====================



                 STP :Enabled






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

```
         S081Fi Managed Switch : STP System Configuration
         =====================


    Root Bridge Information          Configure Spanning Tree Parameters
    ------------------------         -----------------------------------
    Priority      : 32768            Priority (1-65535)   :32768
    Mac Address   : 000F3869F13F
    Root_Path_Cost: 20               Max Age (6-40)       :20
    Root Port     : 1
    Max Age       : 20               Hello Time (1-10)    :2
    Hello Time    : 2
    Forward Delay : 15               Forward_Delay_Time(4-30)  :15




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

1. You can view spanning tree information about the Root Bridge on the left.
2. On the right, user can setting new value for STP parameter.

You must enable STP function, then can select configuration menu.

4-4-1-3.Perport Configuration

```
          S081Fi Managed Switch : STP Port Configuration
          =====================


    Port        PortState        PathCost        Priority
    -----------------------------------------------------------
    1.          Forwarding       10              128
    2.          Disabled         10              128
    3.          Disabled         10              128
    4.          Disabled         10              128
    5.          Disabled         10              128
    6.          Disabled         10              128
    7.          Disabled         10              128
    8.          Disabled         10              128
    9.          Forwarding       10              128




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

33

1. **PortState:** You can view spanning tree status about the switch for per port.

2. **PathCost:** Specifies the path cost of the port that switch uses to determine which port are the forwarding ports. If you change the value, you need to restart the switch for valid value.

3. **Priority:** This is mean port priority, you can make it more or less likely to become the root port. If you change the value, you need to restart the switch for valid value.

4-4-2.SNMP

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

```
         S081Fi Managed Switch : SNMP Configuration
         =====================


                        System Options

                        Community Strings

                        Trap Managers

                        Previous Menu




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

4-4-2-1.System Options

```
            S081Fi Managed Switch : System Options Configuration
            =====================


       System Name :

       System Contact :

       System Location :




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

Press **<Edit>** to enter all items, and then press **<Save>** to save configure value.
1. **System Name:** Type a name to be used for the switch.
2. **System Contact:** Type the name of contact person or organization.
3. **System Location:** Type the location of the switch.

4-4-2-2.Community Strings

Use this page to enter SNMP community strings.
1. Community Name: Type the name of current strings. Default "public"
2. Write Access: Enable the rights is read only or read/write.
Read only: Read only, enables requests accompanied by this string to display MIB-object information.
Read/Write: Read write, enables requests accompanied by this string to display MIB-object information and to set MIB objects.

```
               S081Fi Managed 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_
```

Actions->

<Add>: Create a community strings.

<Edit>: Modify all items. Finished configure press **ESC** to go back action menu line.

<Delete>: Delete a community strings. After delete item press **<Save>** to complete the deleting operation.

<Save>: Save all configure value.

<Quit>: Exit this page and return to previous menu.

4-4-2-3.Trap Managers

A trap manager is a management station that receives traps, 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.

```
                S081Fi Managed 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_
```

Actions->

<Add>: Create a trap manager.

<Edit>: Modify all items. Finished configure press **ESC** to go back action menu line.

<Delete>: Delete a trap manager. After delete item press **<Save>** to complete the deleting operation.

<Save>: Save all configure value.

<Quit>: Exit this page and return to previous menu.

4-4-3.GVRP

This page you can enable / disable the GVRP (GARP VLAN Registration Protocol) support.
Press **Space** key to choose Enabled / Disabled.

```
          S081Fi Managed Switch : GVRP Configuration
          =====================


          GVRP : Enabled








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

Actions->

<Edit>: Configure all items. Press **Space** key to choose Enable or
Disabled mode. Finished configure press **ESC** to go back action menu
line.
<Save>: Save all configure value.
<Quit>: Exit this page and return to previous menu.

4-4-4.LACP

```
          S081Fi Managed Switch : LACP Configuration
          =====================


                    Aggregator Setting

                    State Activity

                    LACP Status

                    Previous Menu






                            LACP setting.
Tab=Next Item      BackSpace=Previous Item      Enter=Select Item
```

4-4-4-1.Aggregator Setting

1. Group: Display the trunk group ID.
2. LACP: Press **Space** key to enable or disable LACP (Link Aggregation Control Protocol) support. If enable, the group is LACP static trunking group. If disable, the group is local static trunking group.
3. LACP Work Port Num: The max number of ports can be aggregated at the same time. If LACP static trunking group, the exceed ports is standby and able to aggregate if work ports fail. If local static trunking group, the number must be the same as group ports.
NOTE: *Before set LACP support, you have to set trunk group on the page of Port / Trunk Configuration first.*

```
            S081Fi Managed Switch : LACP Group Configuration
            ====================


            Group        LACP        LACP Work Port Num
            ------------------------------------------------
            Trunk1.      Disabled            2










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

Actions->
<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.
<Save>: Save all configure value.
<Quit>: Exit this page and return to previous menu.

4-4-4-2.State Activity

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

```
            S081Fi Managed Switch : LACP Port State Active Configuration
            =====================


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






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

Actions->
<Edit>: Configure all items. Finished configure press **ESC** to go back action menu line.
<Save>: Save all configure value.
<Quit>: Exit this page and return to previous menu.

4-4-4-3.LACP Status

When you setting trunking group, you can see relation information in here.

```
              S081Fi Managed Switch : LACP Group Status
              =====================

                      Static Trunking Group

          Group Key : 1

          Port_No   : 2 3




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

Actions->

<Quit>: Exit this page and return to previous menu.

4-5.Reboot Switch

Default: Reset switch to default configuration.
Restart: Reboot the switch in software reset.

```
              S081Fi Managed Switch : Restart Configuration
              =====================


                           Default

                           Restart

                           Previous Menu






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

Note: It may make the system setting parameter error that execut Default command and power off without wait consol appear "$$$ Press X key to start Xmodem receiver:" message if. Regarding this issue, user must wait console appear that message then can shut down power.

Note: RS-232 Local console firmware upgrade (X modem)

1.Press X key to start upgrading for Xmodem.
2. First, disconnect terminal and modify baud rate to 57600bps, then do the connection again.

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


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

```
Send File                                    ? X
Folder: D:\
Filename:
D:\Image.bin                          Browse...
Protocol:
1K Xmodem                                    ▼
                    Send      Close      Cancel
```

6.After successfully upgraded the new firmware, please modify baud rate
to 9600bps.

```
$$$ Switch LOADER Checksum O.K !!!
$$$ Press X key to  start Xmodem receiver: Key = 78
$$$ Download IMAGE through console(1K Xmodem;baudrate=57600bps)
$$$ Start Xmodem Receiver: CCCCC
$$$ Download IMAGE ....O.K !!!
$$$ Update firmware ........................................
..........................................................
..........................................................
..........................................................
...........................
$$$ Update firmware ....O.K !!!
$$$ Note: console baudrate of new image is 9600bps..
$$$ Reboot .....
```
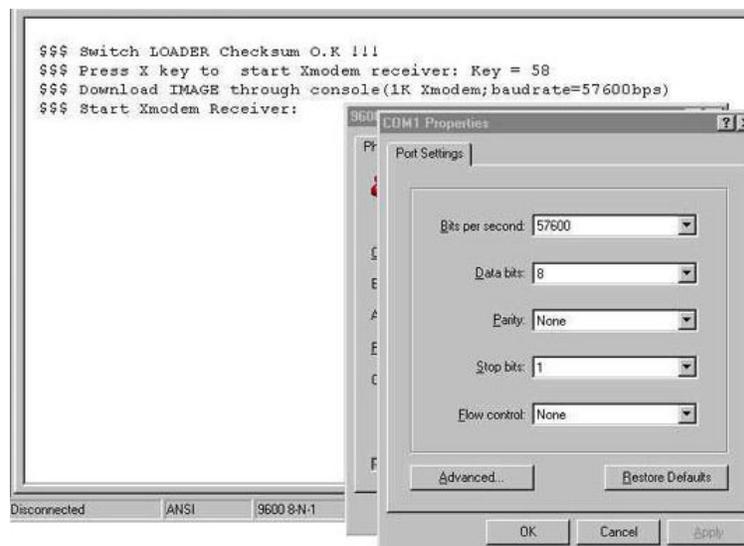
5.
Web-Based Management

Web Management Function

1. Web Management Function provides a Web browser to manage and monitor the switch, the default values as follows:
   If you need change IP address in first time, you can use console mode to modify it.

   IP Address: 192.168.16.1
   Subnet Mask: 255.255.255.0
   Default Gateway: 192.168.6.254
   User Name: **root**
   Password: **root**

2. You can browse http://192.168.16.1, type user name and password as above.

5-1. Web Management Home Overview

1. Home Page.

5-2. Port status

1. port status

State: Display port status off or on depended on user setting. "unlink" will be treated as "off ".

Link Status: Down is "No Link", UP is "Link"

Auto Negotiation: auto negotiation mode

Speed status: Display link speed, Port 1- 8 is 100Mbps, Port 9 is 1000Mbps.

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

Flow control: Display flow control status enable or disable mode

Config: Display the state of user setting.

Actual: Display the negotiation result.

User can see a single port counter as follows

http://192.168.1.182 - Po...

Port	1
State	On
Link	Up
TxGoodPkt	4400
TxBadPkt	0
RxGoodPkt	31875
RxBadPkt	0
TxAbort	0
Collision	0

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	Off	Off	100	100	Full	Full	On	On
2	On	Off	Down	Off	Off	100	100	Full	Full	On	On
3	On	Off	Down	Off	Off	100	100	Full	Full	On	On
4	On	Off	Down	Off	Off	100	100	Full	Full	On	On
5	On	Off	Down	Off	Off	100	100	Full	Full	On	On
6	On	Off	Down	Off	Off	100	100	Full	Full	On	On
7	On	Off	Down	Off	Off	100	100	Full	Full	On	On
8	On	Off	Down	Off	Off	100	100	Full	Full	On	On
9	On	Off	Down	Auto	Auto	1000	1000	Full	Full	On	On

5-3. Port Statistics

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

5-4. Administrator

Those management functions include:
IP address, Switch settings, Console port information, Port controls
Link aggregation, Filter database, VLAN configuration ,Spanning
Tree, Port Mirror, SNMP, Security Manager, TFTP Update Firmware
Configuration Backup, Reset system and Reboot.

5-4-1. IP Address

1. User can configure the IP Settings and fill in the new value, than clicks apply button.
2. User must be reset switch and use new IP address to browser this web management.

Default IP:192.168.16.1
Subnetmask:255.255.255.0
Gateway:192.168.16.254
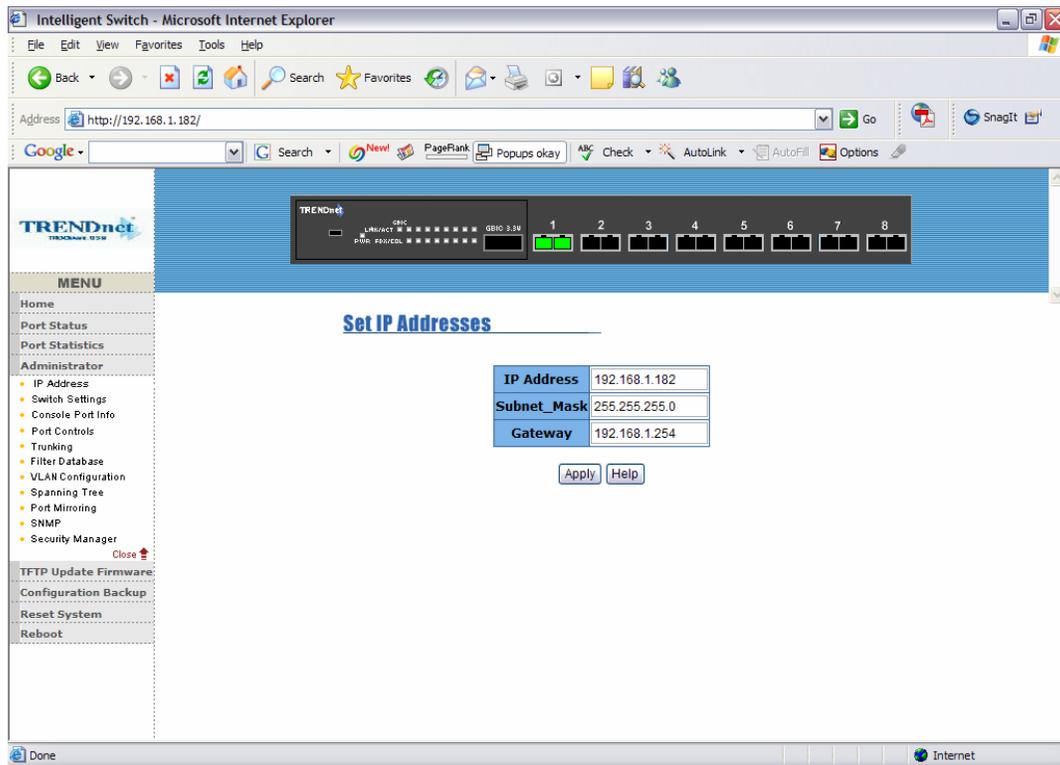
5-4-2. Switch Setting

5-4-2-1.Basic

1. **Description:** Display the name of device type.
2. **MAC Address:** The unique hardware address assigned by manufacturer (default)
3. **Firmware Version:** Display the switch's firmware version.
4. **Hardware Version:** Display the switch's Hardware version.
5. **Kernel version:** Display write to default EEPROM value version.
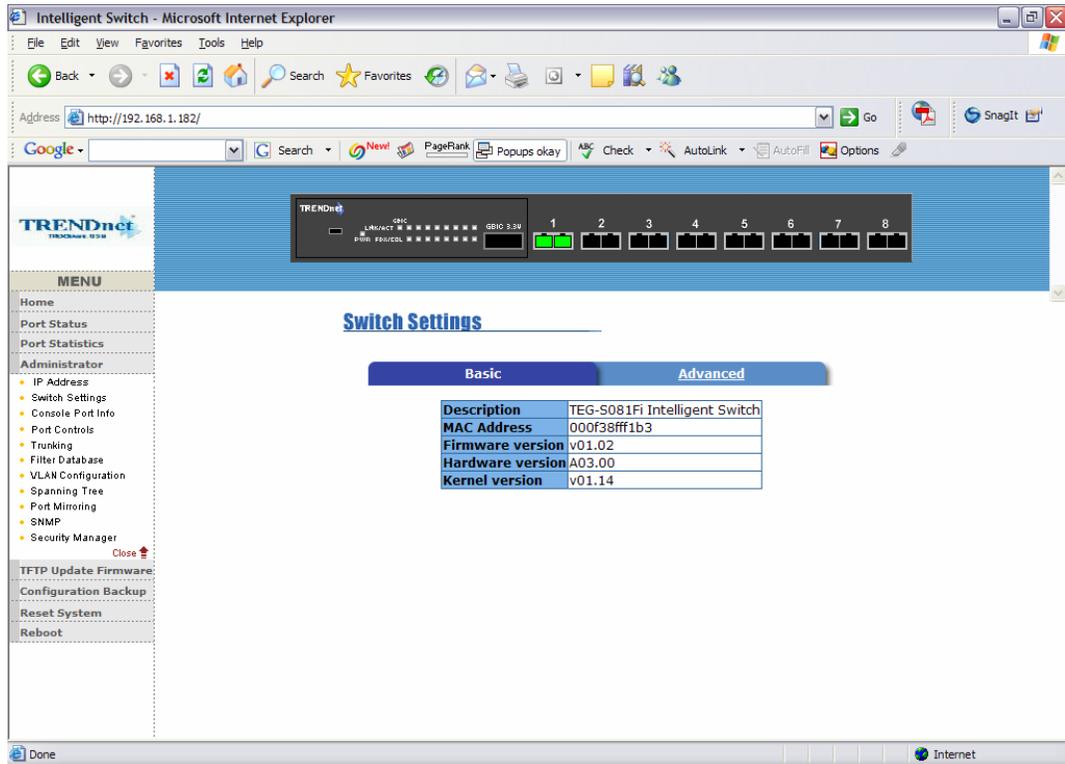
5-4-2-2.Advanced

Miscellaneous Setting :
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: Limit the packets queuing time in switch. If enable, the packets queued exceed will be drop. This valid value are 1sec, 2 sec, 4 sec and off. Default is 1 seconds.
Broadcast Storm Filter: To configure broadcast storm control, enable it and set the upper threshold for individual
ports. The threshold is the percentage of the port's total bandwidth used by broadcast traffic. When broadcast traffic for a port rises above the threshold you set, broadcast storm control becomes active. The valid threshold value are 5%, 10%, 15%, 20%, 25% and OFF.

Priority Queue Service settings:
First Come First Service: The sequence of packets sent is depend on arrive order.
All High before Low: The high priority packets sent before low priority packets.
Weighted Round Robin: 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.

Enable Delay Bound: Limit the low priority packets queuing time in switch. Default Max Delay Time is 255ms.
If the low priority packet stays in switch exceed Max Delay Time, it will be sent. The valid range is 1~255 ms.
NOTE: Make sure of "Max bridge transit delay bound control" is enabled before enable Delay Bound, because Enable Delay Bound must be work under "Max bridge transit delay bound control is enabled" situation.

Qos Policy: High Priority Levels: 0~7 priority level can map to high or low queue. When the VLAN Tag number of a frame is mapping the priority level of the port, and this frame can have high priority.(This QoS Policy is for global Switch, not for any single port)
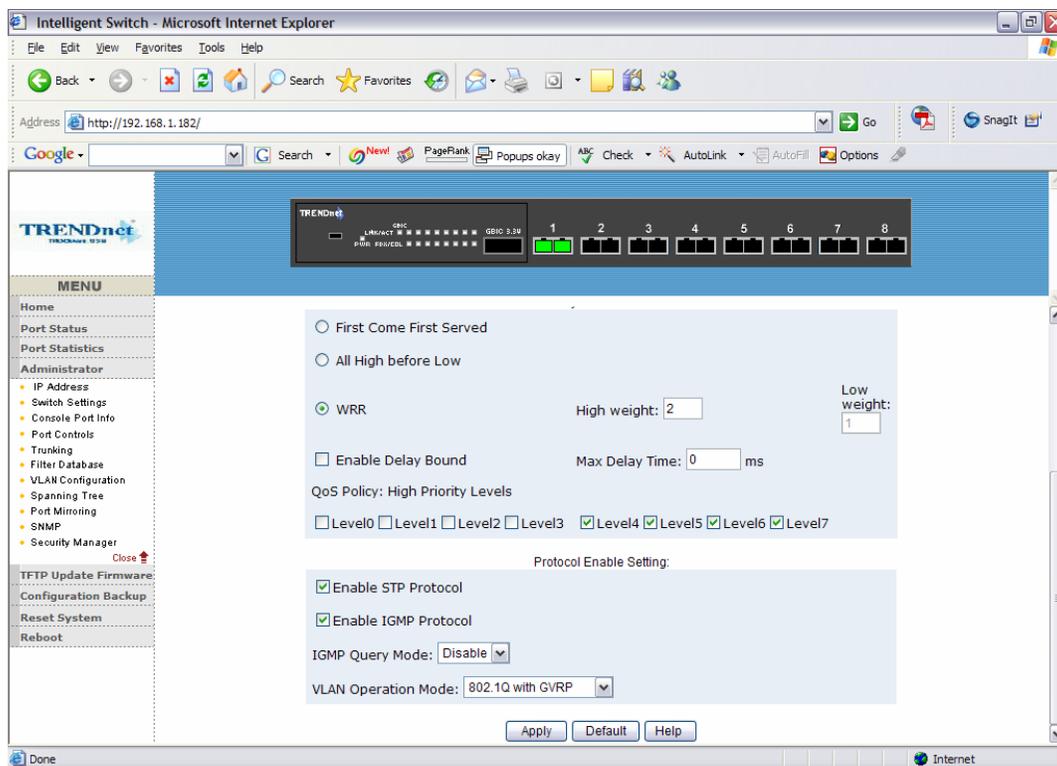
Protocol Enable Setting :

Enable Spanning Tree Protocol : Default recommend to disable STP
Enable Internet Group Multicast Protocol: enable IGMP protocol
IGMP Query Mode: Recognize different Query from client or server to decide which Queryer will be the first priority, they are three mode as follow:

1. **Auto Mode**: Choose the indicated Switch, which has the smallest IP address will be set for the IGMP Queryer.
2. **Enable Mode**: Enable one of Switch to be the IGMP Queryer.
3. **Disable Mode**: Disable the other Switches to be the IGMP Queryer.
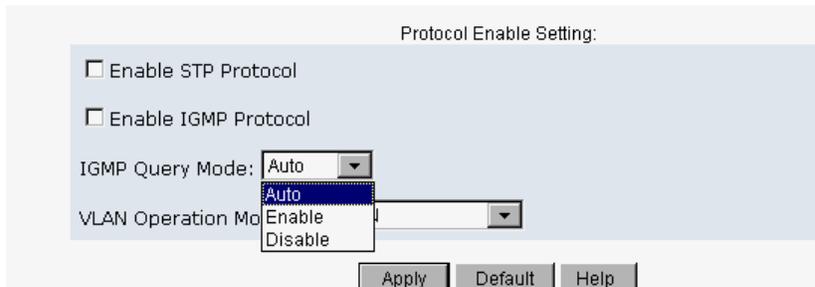
VLAN Operation Mode:
No VLAN (**Default**)
802.1Q(Tag VLAN) without GVRP VLAN mode
802.1Q(Tag VLAN) with GVRP VLAN mode
Port Based
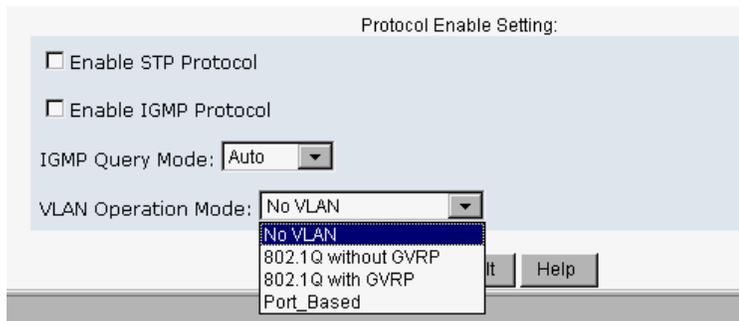
Also, three kind of typologies shown as below indicate how the IGMP Query work within a network:
1.   This topology has to be set for when the router's IP address is smaller than other Switch in subnet.
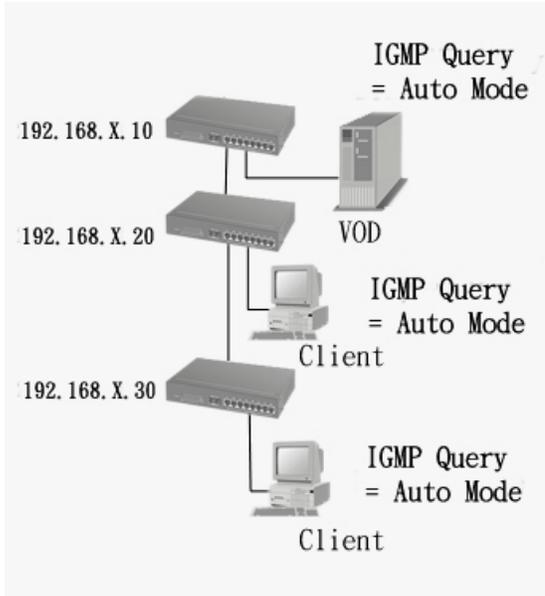
2. This topology has to be set for when the router's IP address is not smaller than other Switch in subnet.
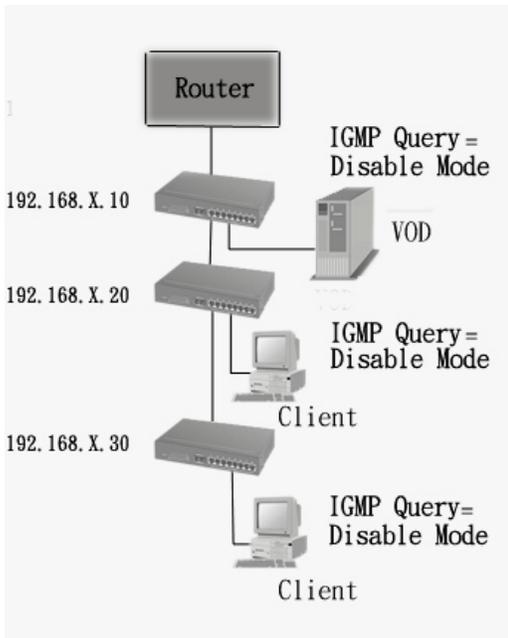
Note: This Router supports IGMP protocol, but IGMP has to be in enable mode, and the Router has to be the Queryer.

3. This topology must be set for when the Switch's IP address is not the smallest in the subnet. If in Auto mode, the network will cause multi-cast storm from the client IGMP report, the topology shown as below is necessary to be set for.
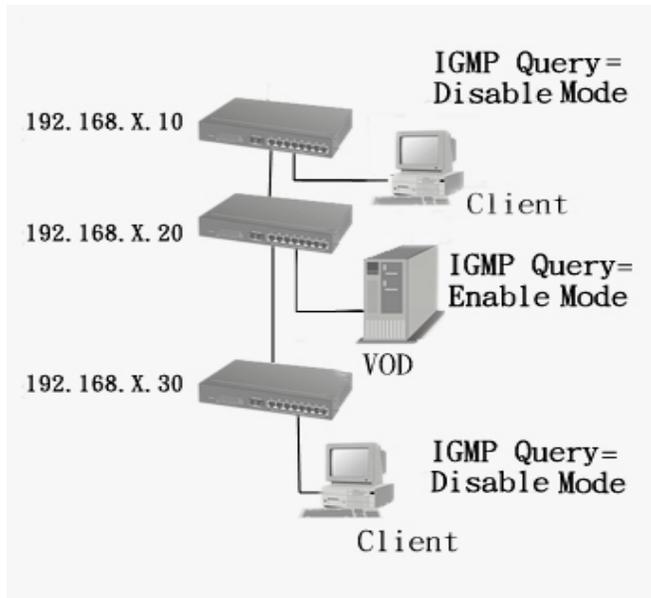
Note: Suggest VOD server set with Switch has smallest IP address.

4. All of Switch must be in Disable mode, When VOD server is set up for IGMP Queryer.

GVRP (GARP [Generic Attribute Registration Protocol] VLAN Registration Protocol)
GVRP allows automatic VLAN configuration between the switch and nodes. If the switch is connected to a device with GVRP enabled, you can send a GVRP request using the VID of a VLAN defined on the switch, the switch will automatically add that device to the existing VLAN.

5-4-3. Console Port Information

1. Console is a standard UART interface to communicate with Serial Port.
   User can use windows HyperTerminal program to link the switch.
   Connect To->Configure

   Baud rate (bits/sec): 9600
   Data bits: 8
   Parity check: none
   Stop Bits: 1
   Flow control: none
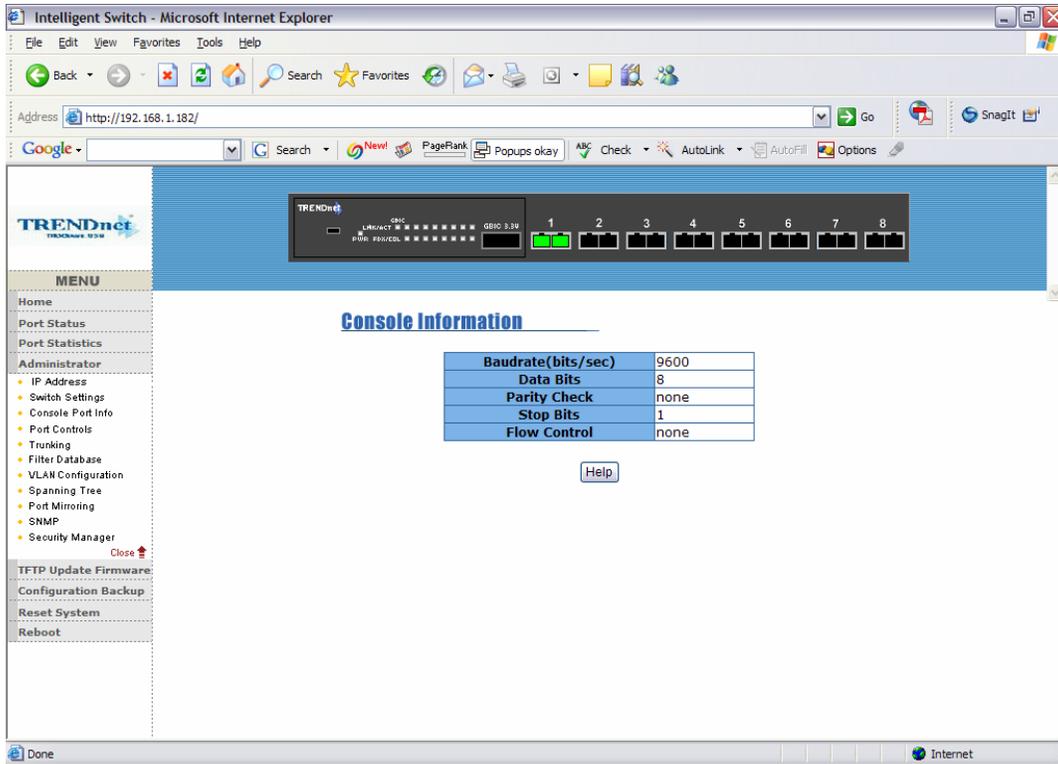
5-4-4. Port Controls

1. This page can Change every port status
   State: User can disable or enable port 1-8, port 9 always enable.
   Auto Negotiation: Port 1-8 is fixed to disable mode, and port 9 is enabled.
   Speed setting: The speed mode is fixed. 100Mbps (1-8 port) , 1000Mbps (GBIC port)
   Duplex setting: port 1-8 support Full or Half Duplex, port 9 only support Full Duplex.
   Flows control setting: Port 1-8 can enable/disable, port 9 always enable.
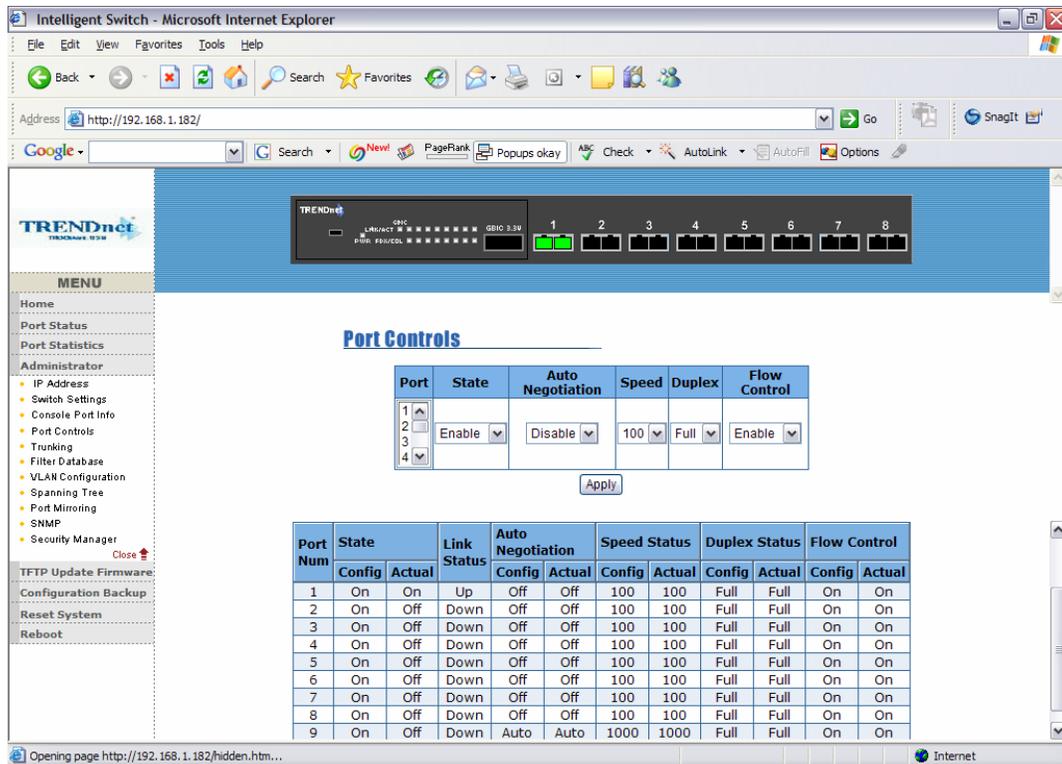
5-4-5. Trunk

The Port Trunk 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. In conclusion, Link aggregation lets you group 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,** more detail information refer to IEEE 802.3ad.

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.

1.Group ID: you can create a link aggregation across two or more ports, choose the "group id" and click "Get".

2.LACP: If enable, the group is LACP static trunking group. If disable, the group is local static trunking group.

All ports support LACP dynamic trunking group. If connecting to the device that also supports LACP, the LACP dynamic trunking group will be created automatically.

3. Work ports: The max number of ports can be aggregated at the same time. If LACP static trunking group, the exceed ports is standby and able to agreate if work ports fail. If 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 enable, you can configure LACP Active/Passive status in each ports.

6. Click Apply.

5-4-5-2. Aggregator Information

When you are setting LACP aggregator, you can see relation information in here.

Trunking

| Aggregator Setting | Aggregator information | State Activity |

The following information provides a view of LACP current status.

Static Trunking Group	
Group Key	1
Port_No	1 2

5-4-5-3. State Activity

Active (select)**:** The port automatically sends LACP protocol packets.
Passive (no select)**:** The port does not automatically sends LACP protocol packets, and responds only if it receives LACP protocol packets from the opposite device.

1. A link having either two active LACP ports or one active port can perform dynamic LACP trunking.
   A link has two passive LACP ports will not perform dynamic LACP trunking because both ports are waiting for and LACP protocol packet from the opposite device.
2. If you are active LACP's actor, when you are select trunking port, the active status will be created automatically.

5-4-6. Filter Database

5-4-6-1. IGMP Snooping

The TEG-S081Fi Switchsupport IP multicast , you can enable IGMP
protocol on web management's switch setting advanced
page, then display the IGMP snooping information in this page, you can
view difference multicast group ,VID and member port in here, IP multicast
addresses 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

have 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 to be a member of a specific multicast group.

5-4-6-2. Static MAC Address

When you add a static MAC address, it remains in the switch's address table, regardless of whether the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the disconnected or powered-off device is active on the network again.

1. To add a static MAC address
2. From the main menu, click administrator, then click 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.

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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" without permission of address learning. Only the incoming packets with SMAC already existing in the address table can be forwarded normally. 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, then click Submit to apply the changes on this page.

5-4-6-4. MAC Filtering

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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 of reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plug into the same switch physically.
The TEG-S081Fi Switchsupport port-based and protocol-base VLAN in web management page.

NOTE: The default VLAN can't be deleted.

Support Port-based VLANs (IEEE 802.1Q VLAN)
Port-based Tagging rule VLAN is an IEEE 802.1Q specification standard. Therefore, it is possible to create a VLAN across devices from different switch venders. IEEE 802.1Q VLAN uses a technique to insert a "tag" into the Ethernet frames. 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 itself has to be either capable of tagging packets it sends with VLAN tags or attached to a VLAN-aware bridge that is capable of classifying and tagging the packet with different VLAN ID based on not only default PVID but also other information about the packet, such as the protocol.

5-4-7-1. Basic
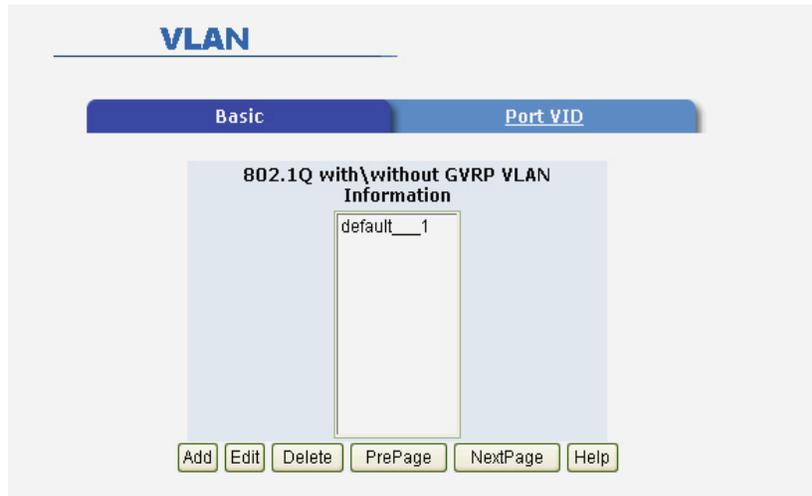
Create a VLAN and add tagged member ports to it.

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)

Sets 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 Configuration

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)

Apply   Default   Help

Ingress Filtering

Ingress filtering lets frames belonging to a specific VLAN to be forwarded if the port belongs to that VLAN. TEG-S081Fi Switchhave two ingress filtering rule as follows:
Ingress Filtering Rule 1: Forward only packets with VID matching this port's configured VID.
Ingress Filtering Rule 2: Drop Untagged Frame.

5-4-8. Spanning Tree

The Spanning-Tree Protocol (STP) is a standardized method (IEEE 802.1D) for avoiding loops in switched networks. When STP enabled, to ensure that only one path at a time is active between any two nodes on the network.
You can enable Spanning-Tree Protocol on web management's switch setting advanced item, select enable Spanning-Tree protocol. We are recommended that you enable STP on all switches ensures a single active path on the network.

1. **You can view spanning tree information about the Root Bridge. Such as follow screen.**

2. **You can view spanning tree status about the switch. Such as below screen.**

Prameter	Description
Priority	You can change priority value, A 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	You can change Max Age value, 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	You can change Hello time value, the number of seconds between the transmission of Spanning-Tree Protocol configuration messages. Enter a number 1 through 10.

Forward Delay time	You can change forward delay time, 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.

3. The following parameter can be configured on each port , click set Apply button to modify .

Parameter	Description
Port Priority	You can make it more or less likely to become the root port, the rage is 0-255,default setting is 128 the lowest number has the highest priority. If you change the value, you must reboot the switch.
Path Cost	Specifies the path cost of the port that switch uses to determine which port are the forwarding ports the lowest number is forwarding ports, the rage is 1-65535 and default value base 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 Mirror

The Port Mirror is a method for monitor traffic in switched networks. Traffic through ports can be monitored by one specific port. That is, traffic goes in or out monitored ports will be duplicated into mirror port.

Port Mirroring

Roving Analysis State: Enable or disable the port mirror function.
Mirror Ports: The ports you want to mirror. All mirror port traffic will be copied to mirror port. You can select max 9 monitor ports in the switch. If you want to disable the function, you must select monitor port to none.
Monitor Rx: Monitored receive frames from the port.
Monitor Tx: Monitored send frames from the port.

5-4-10. SNMP

Any Network Management running the simple Network Management Protocol (SNMP) can management the switch,
Provided the Management Information Base (MIB) is installed correctly on the management station. The SNMP is a Protocol that governs the transfer of information between management and agent. The TEG-S081Fi Switchsupports SNMP V1.

1. Use this page to define management stations as trap managers and to enter SNMP community strings. User can also define a name, location, and contact person for the switch. Fill in the system options data, then click Apply to update the changes on this page
   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.

System Options

Name : [   ]

Location : [   ]

Contact : [   ]

[Apply] [Help]

Community Strings

Current Strings :   New Community String :

public__RO   [<< Add <<]   String : [   ]

                [Remove]   ⦿ RO   ○ RW

Trap Managers

Current Managers :   New Manager :

(none)   [<< Add <<]   IP Address : [   ]

                [Remove]   Community : [   ]

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, 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.

5-4-11.Security Manager

1. Use this page, user can change web management user name and password.

User name: root (default)

Password: root (default)

5-4-12. TFTP Update Firmware

1. **The following menu options provide some system control functions to allow a user to update**

firmware and remote boot 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 then in web management press <update firmware>.

TFTP Download New Image

TFTP Server IP Address	192.168.1.78
Firmware File Name	image.bin

Apply   Help

5-4-13. Configuration Backup

5-4-13-1. TFTP Restore Configuration

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

TFTP Configuration

TFTP Restore Configuration	TFTP Backup Configuration

TFTP Server IP Address	192.168.1.78
Restore File Name	flash.dat

Apply   Help

5-4-13-2. TFTP Backup Configuration

Use this page to set TFTP server IP address. You can save current EEPROM value from here, then go to the TFTP restore configuration page to restore the EEPROM value.

5-4-14. Reset System

Reset Switch to default configuration

5-4-15. Reboot

Reboot the Switch in software reset.

6.
Technical Specifications

This section provides the specifications of 8 port Fiber plus GBIC Management Switch series, and the following table lists these specifications.

Specifications

Standards Compliance	IEEE 802.3u 100Base- FX Fast Ethernet IEEE 802.3z Gigabit Fiber
Protocol	CSMA/CD
Max Forwarding and Max Filtering Rate	14,8800 pps per Fast Ethernet port, 148,8000 pps per Gigabit Ethernet port (GBIC)
LED Indicators	Fiber Port : LINK/ACTIVE, Full Duplex/Collision (100Mbps Fiber port), Link/Active(GBIC port) Per Unit: Power
Fiber Link Max. Distance	SC/ Multi-mode: Half-duplex: 412m, Full-duplex: 2Km
Storage Temp.	-40ºC to 70ºC (-40ºF to 158ºF)
Operational Temp.	0ºC to 45ºC (32ºF to 113ºF)
Humidity	10% to 90% (Non-condensing)
External Power	100-240V AC, 50-60Hz

7.
Troubleshooting

This section is intended to help you solve the most common problems on the TEG-S081Fi Switch.

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 a different cable.

- **Non-standard cables**
  Non-standard and miswired cables may cause numerous network collisions and other network problem, and can seriously impair network performance.

- **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 (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.

Diagnosing LED Indicators

The Switch can be easily monitored through panel indicators to assist in identifying problems, which describes common problems you may encounter and where you can find possible solutions.

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 a while, 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**

100Base-FX fiber port: For multi-mode Fiber connector type must use 50/125 or 62.5/125 um multi-mode fiber cable. You can connect two devices over a 2 kilometer distance.

Limited Warranty

TRENDware warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

TEG-S081Fi– 5 Years Warranty

If a product does not operate as warranted above during the applicable warranty period, TRENDware shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product.   All products that are replaced will become the property of TRENDware.   Replacement products may be new or reconditioned.

TRENDware shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to TRENDware pursuant to any warranty.

There are no user serviceable parts inside the product.   Do not remove or attempt to service the product by any unauthorized service center.   This warranty is voided if (i) the product has been modified or repaired by any unauthorized service center, (ii) the product was subject to accident, abuse, or improper use (iii) the product was subject to conditions more severe than those specified in the manual.

Warranty service may be obtained by contacting TRENDware office within the applicable warranty period for a Return Material Authorization (RMA) number, accompanied by a copy of the dated proof of the purchase. Products returned to TRENDware must be pre-authorized by TRENDware with RMA number marked on the outside of the package, and sent prepaid, insured and packaged appropriately for safe shipment.

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AC/DC Power Adapter, Cooling Fan, and Power Supply carry 1 Year Warranty

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Product Warranty Registration

Please take a moment to register your product online.
Go to TRENDware's website at http://www.TRENDNET.com

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