DYNAMIX

8VDSL +2 Giga Ethernet Managed 4-Band VDSL IP DSLAM User’s Manual.

VDSL Solution

The 4-Band VDSL IP DSLAM networking solution delivers cost-effective, high-performance broadband access to multiunit buildings (hotels, apartment, and multi-tenant unit office buildings) and enterprise campus environments such as manufacturing, educational campuses, and medical facilities. VDSL technology dramatically extends Ethernet over existing Category 1/2/3 wiring at speeds from 5/15/25 Mbps (full duplex) and distances up to 1700/1100/600 meters. The VDSL technology delivers broadband service on the same lines as Plain Old Telephone Service (POTS), digital telephone, and ISDN system. In addition, VDSL supports modes compatible with symmetric digital subscriber line, allowing service providers to provision VDSL to buildings where broadband services already exist.

The 4-Band VDSL solution includes 8 ports IP DSLAM (CO side), and 4-Band VDSL converter as CPE device.

The 4-Band VDSL solution delivers everything needed to quickly deploy an Ethernet-based network with the performance required to deliver high-speed Internet access at much greater distances and drive services like IP telephony and audio/video streaming. With this technology, a broad range of customers can benefit from lower operating costs and rapid deployment. The 4-Band VDSL solution provides multicast, Layer 2 quality of service (QoS), Link Aggregation (LACP) dynamic trunking group, security, GVRP, IGMP for VOD (Video on demand) and SNMP RMON management and Web-based IP DSLAM network management.

The 4-Band VDSL IP DSLAM is a bridge between external Internet backbone through a router for IP sharing and the building 110D telephone rack or telephone box. It utilizes the available telephone wire to enable high-speed Internet access to building residents.

The 4-Band IP DSLAM uses the phone line networking technology endorsed by the VDSL (Very High Data Rate DSL), and the 4-Band IP DSLAM utilizes the already existing telephone wire to deliver 5/15/25 Mbps Internet access on each RJ-45 port.

Return to the catalogue.

This gives users a low-cost, end-to-end solution and eliminates the need to train installation teams on multiple systems.

8 Ports 5/15/25M 4-Band VDSL IP DSLAM + 2 10/100/1000M Giga Ethernet

The 4-Band IP DSLAM has 8 x 5/15/25M VDSL ports and 2 x 10/100/1000M Ethernet ports. The IP DSLAM is one rack-unit (1RU) high, 10-inches deep. It is a standard Rack mounted size.

4-Band IP DSLAM deliver dedicated bandwidth per port at rates of 5/15/25 Mbps. VDSL transmissions coexist with POTS and ISDN, and can be compatible with ADSL/HomePNA traffic in the same building. The IP DSLAMs can be configured on a
per-IP DSLAM basis to support the following modes:

- **5** Mbps symmetrical rate (up to 1700 meters)
- **15** Mbps symmetrical rate (up to 1100 meters)
- **25** Mbps symmetrical rate (up to 600 meters)

The 4-Band VDSL IP DSLAM and 4-Band VDSL Modem provide fast and easy connectivity into building patch panels with RJ-45 connector. The 10/100/1000 Giga Ethernet ports can be used to connect servers, Ethernet IP DSLAMs. These connectivity options provide multiple price/performance options to meet building and budget requirements. The 4-Band IP DSLAM provides the important features necessary for robust networks:

- **Class of Service:** 802.1p CoS support. Provides high-and low-priority queuing on a per-port basis.
- **Supports: IGMP Snooping** by 512 IP multicast table for VOD (Video on demand) and video conference and internet games application.
- **Scalability**: Up to **5/15/25** Mbps symmetric performance over single-pair wiring. Fast Ether Channel port aggregation.
- **Security**: **802.1Q** Tagging-based and **802.1V** protocol-based virtual local-area network (VLAN) support. Private VLAN access, assuring port security without requiring a VLAN per port, and also supports MAC filtering.

Return to the catalogue.

- **In band Management :** IP DSLAM provides a console port for setup IP or other function.
- **Out of band Management:** IP DSLAM supports remote control by Telnet and Web-based. Management easy-to-use configuration and ongoing monitoring. This software is embedded in the VDSL IP DSLAM and delivers remote, intuitive management of IP DSLAM and connected VDSL CPE devices through a single IP address. IP DSLAMs are easy-to-configure and deploy, and offer a compelling option in terms of cost, performance, scalability and services compared to traditional ATM-based xDSL solutions.
- **IEEE-802.1d Spanning tree:** This function is for MAC bridge to avoid port loop and link redundant.
- **IEEE-802.1ad port trunking:** Namely link aggregation
- **Port Mirroring:** This function could be mirroring and duplicate client side action as E-Mail, but need to be with mirroring AP as Session Wall or others.
- **Broadcast storm filtering:** This function is for avoid connecting node too much cause broadcast storm.
- **TFTP protocol:** This function is for remote firmware upgrade, and remote setup value backup and restore.
- **SNMP:** Support RFC-1493 bridge MIB; RFC-1213 MIB II; RFC-1643 Ethernet MIB and RFC-1757 RMON MIB with 1,2,3,9 groups
- **SNR(Signal to Noise Ratio) indicator :** This function is for checking CO and CPE both connecting quality over phone wiring.
- **Alarm** :In order to make sure system normal working, IP DSLAM provides Fan and Temperature monitor and management, you can through WEB or Telnet to show internal temperature and Fan speed, if **temperature exceeds 70**°C or **Fan speed stops, the IP DSLAM** will send a SNMP trap to inform of Trap management server.
- **Hacker prevention:** To avoid hacker to enter management system through client side, the 8 ports IP DSLAM will filter system IP from client side for preventing hacker attacking.

Return to the catalogue.

- **Supports multiple web browsers:** IE, Mozilla & Netscape under Windows O/S
  Mozilla & Netscape under Linux O/S

Return to the catalogue.

Contents

Return to the catalogue.

1.Unpacking Information

Check List

Carefully unpack the package and check its contents against the checklist.

Package Contents

1. 4-Band VDSL IP DSLAM 2 x10/100/1000 Giga Ethernet ports and 8 x 5/15/25Mbps VDSL ports
2. 1xUsers manual CD
3. 1xAC Power Cord
4. 2x Rack Mounting Brackets
5. 4x Screws
6. 4x Plastic feet

Please inform your dealer immediately for any missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use them to repack the unit in case there is a need to return for repair.

Return to the catalogue.

Product Guide

Product Name : 2ports 10/100/1000Mbps Giga Ethernet plus 8ports 4-Band VDSL With SNMP Management IP DSLAM

♦ ***Application : Hotel/Campus/Hospitality/Telecom***

Features

- Supports 5M/15M/25Mbps per port symmetrical bandwidth over phone wiring with long driver capable1.7/1.1/0.6Km(5666/3666/1999 feet) with auto speed.
- Provides 2 x 10/100/1000Mbps Ethernet RJ-45 Ports with Auto MDI/MDIX
- Supports quality of phone wiring detected with SNR(Signal to Noise Ratio) indications
- Supports GARP/GVRP IEEE-802.1p/q VLAN with 256 groups static Vid or 4094 groups dynamic Vid
- Supports IEEE 802.1q tagging VLan
- Supports IEEE 802.1v protocol VLan
- Support port base VLan
- Supports COS IEEE-802.1p
- Supports Multicast IP table/IGMP v2 with 512 groups
- Supports LACP IEEE-802.1ad Port Trunking(Link aggregation)
- Supports IEEE 802.1d Spanning trees for MAC bridge with redundant link
- Supports port Mirroring (Sniffer)
- Support Broadcast Storm filtering
- Ethernet transport with POTS / ISDN traffic over single copper wire pair
- Spectral compatibility with XDSL, ISDN(2B1Q/4B3T),HomePNA
- Supports port security with MAC address filtering & IP limitation.

Return to the catalogue.

- Supports Web Base and Telnet for remote management
- Supports system POST(Power On Self Testing) LED
- Supports SNMP v1 RFC-1493 Bridge MIBs
  RFC-1643 Ethernet MIB
  RFC-1213 MIB II
  Netsys Enterprise MIB(Fan and Temperature management)
- Supports RMON groups 1(Statistics), 2(Alarm), 3(Event), 9(History)
- Cascading up to 8 Units along with Giga Switch
- Supports TFTP/XMODEM for firmware upgrade
- Supports In-Band/Out-of-Band Management
- Supports Fan & Temperature Monitor & management
- Surge protected for VDSL ports
- Splitter on board

Return to the catalogue.

Product Specifications :

- Compliant with IEEE 802.3 & 802.3u & 802.3ab Ethernet Standards
- Compliant with ETSI, ITU, ANSI standards
- 10/100/1000Mbps Ethernet ports **:** 2 x RJ-45 with auto crossover
- POTS/ISDN Splitter port **:** 8 x RJ-45
- VDSL port **:** 8 x RJ-45
- MAC address table **:** 8K Entries
- Switch method **:** Store-and-forward
- Flow control method by IEEE802.3x for Full Duplex & Back Pressure for Half Duplex
- Compliant with GARP/GVRP IEEE 802.1p/q port-base VLAN with 256 groups static VID or 4094 dynamic VID
- Compliant with IEEE 802.1v protocol-base VLAN classification
- Compliant with IEEE 802.1d Spanning trees
- Multicast IP table **:** 512 groups
- Compliant with IEEE 802.1p QOS by class of service with 2-level priority queuing
- Compliant with LACP IEEE 802.3ad Trunking
- RS-232 console port **:** DB-9Pin Female / 9600bps
- SNMP v1 RFC-1493 Bridge MIBs
  RFC-1643 Ethernet MIB
  RFC-1213 MIB II
  Enterprise MIBs
  RMON groups 1(Statistics), 2(Alarm), 3(Event), 9(History)
- Port security by MAC address filtering

Return to the catalogue.

- LED indication : Power good and POST LED
  Link/Active/Speed Status for Ethernet port. Link
  for VDSL port.
- VDSL Frequency Spectrum :
  Transmitter : 0.9 ~ 3.9 MHz
  Receiver: 4 ~ 7.9 MHz
- POTS/ISDN pass filter Spectrum **:** 0 ~ 630 kHz
- Internal switching power adapter Input :AC 85-265 volts/50-60Hz/1A.
- Dimensions: 435 x 255 x 44 mm
- Operating Temperature : 0°C ~ 50°C(32F ~ 122F)
- Storage Temperature : - 20°C ~ 65°C(-4F ~ 149F)
- Humidity : 10%~90% non-condensing
- Safety: FCC, CE Mark
- RoHS compliant

Return to the catalogue.

2. General Description

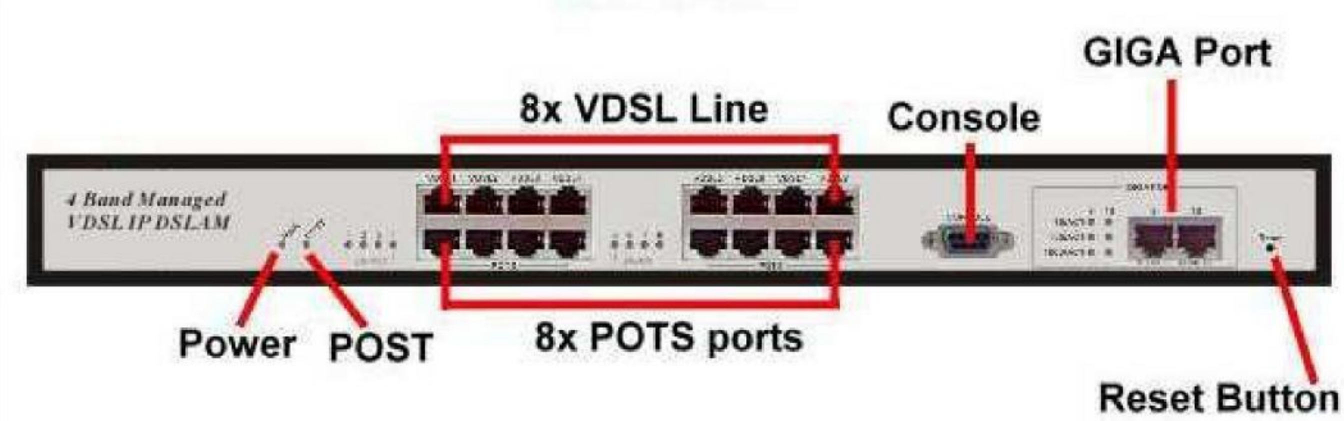
Hardware Description

This section describes the important parts of the IP DSLAM. It features the front and rear panel drawings showing the LED, connectors, and IP DSLAMes.

Front Panel

The following figure shows the front panel.

Figure Chapter 2.1 Front Panel description



Return to the catalogue.

Front panel.

(1) "PWR": Power Led light

(2) "POST": Power On Self Testing LED light

(3) 2 X 10/100/1000 Mbps auto-negotiation Giga Ethernet ports

(4) 8 X 5/15/25 Mbps VDSL Ports.

(5) 8 X POTS/ISDN Splitter Ports.

(6) RS-232 Console Port

(7) Reset Button

IP DSLAM has embedded Splitter between every VDSL side and POTS side. It permits you to deliver broadband service on the same lines as Plain Old Telephone Service (POTS), PBX, ISDN traffic and VDSL Signal. Several LED indicators for monitoring the device itself, and the network status. At a quick glance of the front panel, the user would be able to tell if the product is receiving power; if it is monitoring another IP DSLAM or IP DSLAM; or if a problem exists on the network.

Return to the catalogue.

LED Indications

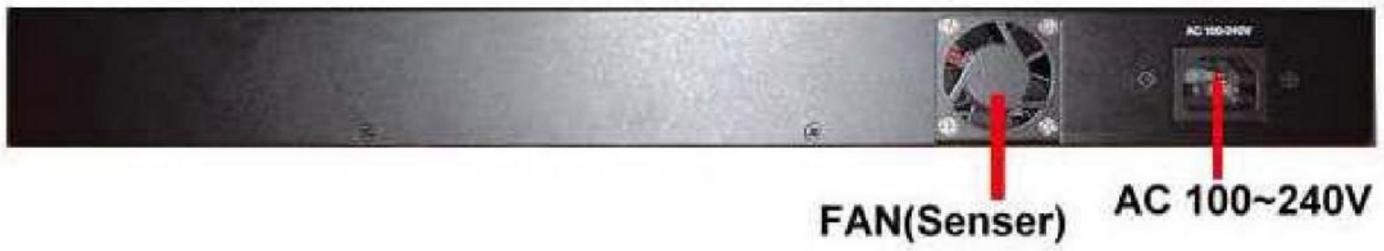
The following describes the function of each LED indicator.

LEDs	Status	Descriptions
PWR (Power LED)	Steady Green	This LED light is located at the left side on the front panel. It will light up (ON) to show that the product is receiving power. Conversely, no light (OFF) means the product is not receiving power.
POST	Steady	POST(Power On Self Testing) POST Led will light to show system is booting now. When system is ready the led will light off.
VDSL Link	Steady	Each RJ11 station port on the VDSL is assigned an LED light for "Good Linkage". Each LED is normally OFF after the power on operation, but will light up steadily to show good linkage.
10 LINK/ACT	Steady Green Flashing	Each RJ45 station port on the Ethernet is assigned an LED light for "10M Good Linkage". Each LED is normally OFF after the power on operation, but will light up steadily to show good linkage. And Flashing to show data transmission.
100 LINK/ACT	Steady Green Flashing	Each RJ45 station port on the Ethernet is assigned an LED light for "100M Good Linkage". Each LED is normally OFF after the power on operation, but will light up steadily to show good linkage. And Flashing to show data transmission.
1000 LINK/ACT	Steady Green Flashing	Each RJ45 station port on the Ethernet is assigned an LED light for "1000M Good Linkage". Each LED is normally OFF after the power on operation, but will light up steadily to show good linkage. And Flashing to show data transmission.

Return to the catalogue.

The following figure shows the rear panel

Figure Chapter 2.3 Rear Panel



AC Power Socket

The power cord should be plug into this socket. The AC Socket accepts AC power 85 to 265 voltage. 1A.

Return to the catalogue.

3.Installation

Hardware Installation

This chapter describes how to install the IP DSLAM. To established network connection. You may install the IP DSLAM on any level surface (table, shelf, 19 inch rack or wall mounting). However, please take note of the following minimum site requirements before you begin.

Pre-Installation Requirements

Before you start actual hardware installation, make sure you can provide the right operating environment, including power requirements, sufficient physical space, and proximity to other network devices that are to be connected. Verify the following installation requirement:

- Power requirements: AC 85V to 265 V at 50 to 60 Hz.
  The Switching power supply automatically adjusts to the input voltage level.
- The IP DSLAM should be located in a cool dry place, with at least 10cm/4in of space at the front and back for ventilation.
- Place the IP DSLAM out of direct sunlight, and away from heat sources or areas with a high amount of electromagnetic interference.
- Check if network cables and connectors needed for installation are available.

Return to the catalogue.

General Rules

Before making any connections to the IP DSLAM, note the following rules:

Ethernet Port (RJ-45)

All network connections to the IP DSLAM Ethernet port must be made using Category 5 UTP for 100/1000Mbps and Category 3,4 UTP for 10Mbps.

No more than 100 meters (about 328 feet) of cabling may be use between IP DSLAM or with HUB or an end node.

- VDSL Port (RJ-45)

  All home network connections to the VDSL Port
  made using 18 ~ 26 Gauge phone wiring.
- **We do not recommend using 28 Gauge or above phone line.**

Connecting the IP DSLAM

The IP DSLAM has 2 10/100/1000 Mbps Giga Ethernet ports which support connection to 10/100/100Mbps Giga Ethernet. Support full or half-duplex operation. The transmission mode is using auto-negotiation. Therefore, the devices attached to these ports must support auto-negotiation unless they will always operate at half duplex. If transmissions must run at full duplex, but the attached device does not support auto-negotiation, then you should upgrade this device to a newer version that supports auto-negotiation and auto-crossover(MDI/MDIX).

Connecting "MDI-X" Station Port

1. You can connect the "9,10" port on the IP DSLAM to any device that uses a standard network interface such as a Cable modem, ADSL modem, Ethernet Switch, workstation or server, or also to a network interconnection device such as a bridge or router (depending on the port type implemented).
2. Prepare the network devices you wish to connect. Make sure you have installed suitable VDSL Modem before making a connection to any of the IP DSLAM (1-8) station ports. You also need to prepare 18 ~ 26 gauge one twist

Return to the catalogue.

pair phone Line wiring with RJ-45 plugs at both ends. 3. Connect one end of the cable to the RJ-45 port of the Home Access network adapter, and the other end to any available (1~8) station port on the VDSL. Every port supports 5/15/25 Mbps connections. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

- Do not plug a RJ-11 phone jack connector into the Ethernet port (RJ-45 port). This may damage the VDSL. Instead, use only twisted-pair cables with RJ-45 connectors that conform the FCC standards.

Note:

1. Be sure each twisted-pair cable (RJ-45) is not over by 100 meters (328 feet).
2. RJ-45 VDSL port use 18 ~ 26 gauge phone wiring, 28 gauge or above is not recommended.
3. We advise using Category 5 cable for Cable Modem or router connections or to attach to any high bandwidth device to avoid any confusion or inconvenience.

Connecting "MDI" Port (TX)

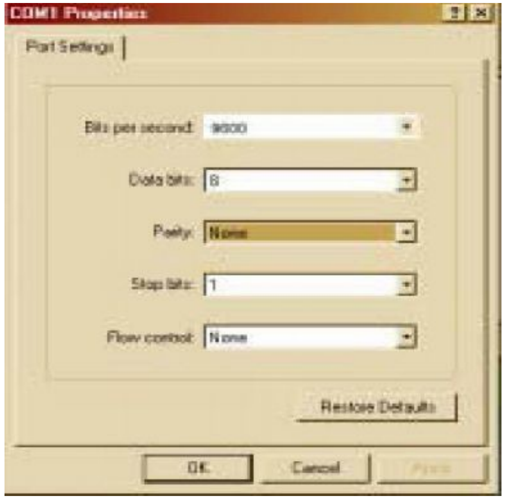
Prepare straight through shielded or unshielded twisted-pair cables with RJ-45 plugs on both ends. Use 100Ω Category 5 cable for connections. Connect one end of the cable to "9,10" port of the IP DSLAM, and the other end to a standard RJ-45 station port on cable modem, ADSL router, wireless bridge, etc. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

Note: Make sure the length of the twisted-pair cable is not over by 100 meters (328 feet)**.**

Return to the catalogue.

4. Management Configuration 4.1 In-Band Management Console port (RS-232) Configuration (Change IP Address By Terminal)

You can configure the product with the local serial console port, If one of the RJ11 port is not in use, you can disable it, that procedure is to connect a notebook computer to the RS-232 port, then boot windows @95/98/ME/2000 system, and run "Hyper-terminal" program into terminal window, and setup step are as follow.



COM1 Properties

Port Settings

Bits per second: 9600

Data bits: 8

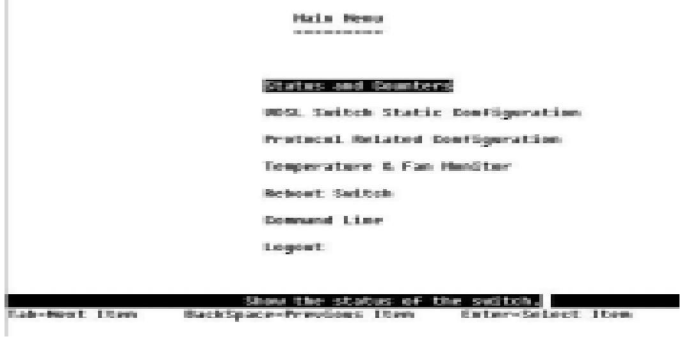
Parity: None

Stop bits: 1

Flow control: None

Return to the catalogue.

1. Set "Bits per second" at 9600 to the content window.
2. Set "Flow control" at None
3. Connects PC with the IP DSLAM, you will find login manual window on the screen then enter Login name ：”**admin**” ; password：”**123**” You will find the user manual window on the screen as following ：

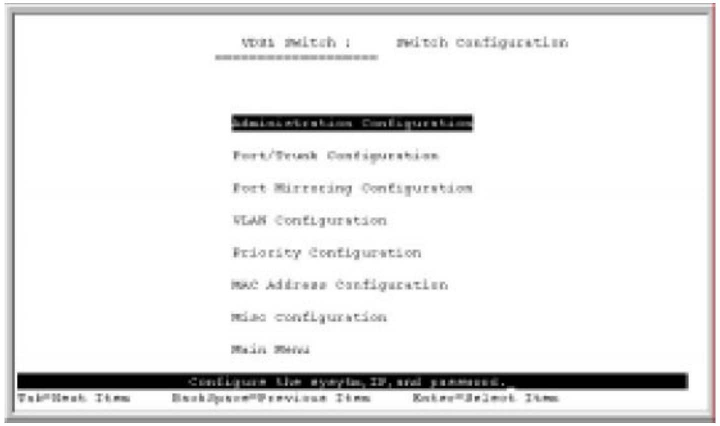


```
                    Main Menu
                    =========

                 Status and Counters
                 VDSL Switch Static Configuration
                 Protocol Related Configuration
                 Temperature & Fan Monitor
                 Reboot Switch
                 Command Line
                 Logout

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

4. Operation Button: Tab=Next
   Item; BackSpace=Previous
   Item Enter=Select ItemSelect

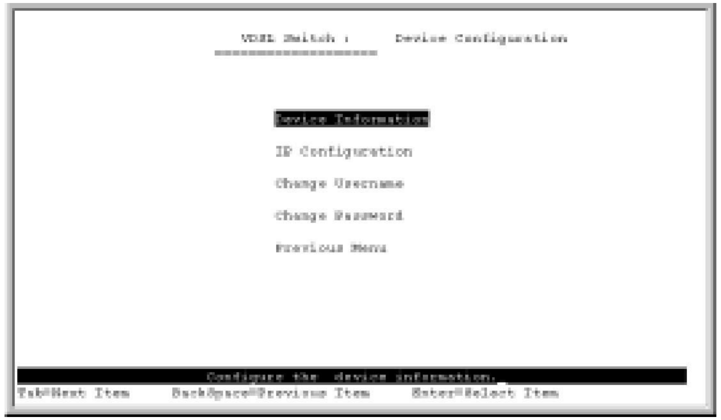
Return to the catalogue.

5. Set IP Address: Please follow the following steps (1) Choose **IP DSLAM Static Configuration** you can enter next page



```
                         VDSL 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
```

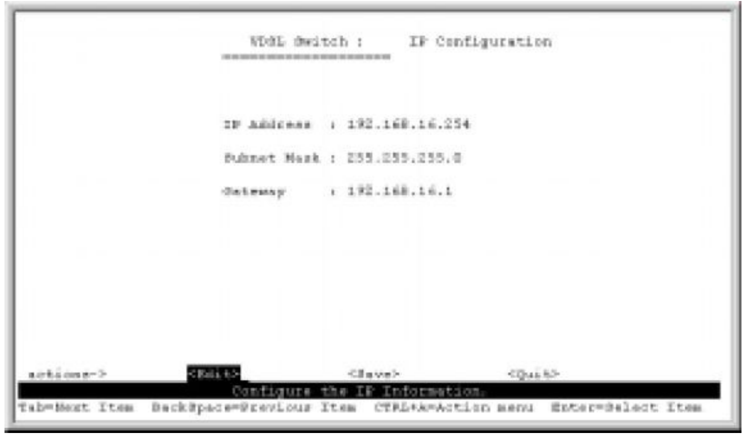
(2) Choose **Administration Configuration** the you can enter next page



```
                         VDSL 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
```

Return to the catalogue.

Choose **IP Configuration** you can enter IP configuration page



```
                         VDSL Switch :      IP Configuration
                        ====================


                        IP Address   : 192.168.16.254

                        Subnet Mask  : 255.255.255.0

                        Gateway      : 192.168.16.1




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

(3) a. Choose **Edit** item to Change IP address, Subnet Mask and Gateway

b.Use **CTRL+A** button to back actions choice

c.Choose **Save** item to save change and back to System Configuration page

d.Choose **Previous Menu** item to quit System Configuration page

e.Choose **Main Menu** item to quit IP DSLAM Configuration page and back to Main Manual

f. Choose **Reboot IP DSLAM** item

g. Choose **Restart** item to reboot your IP DSLAM.

Return to the catalogue.

4.2 Remote Network Management

4.2.1 IP Setting

You must setup the "IP Address" with the local serial console port (RS-232 Port), and then you can use this IP address to control this VDSL IP DSLAM by **Telnet** and **WEB.** Or you can change your computer's IP domain same with VDSL IP DSLAM. Then use the default IP address to control this VDSL IP DSLAM.

1. Remote control by "Telnet"

To enter Telnet, type the IP address of the IP DSLAM to connect management system. And type User name and password.

Default User Name: admin

Default Password: 123

Note:

1. For security reason, we limit the user login number on Telnet and Console port. So you can't login Telnet and Console port at the same time. But you can login Telnet and Console port at the different time.
2. WEB Login doesn't limit user login numbers. When you want to close console port control you must log-out to leave. Otherwise you can't login by Telnet.

2. Network control by "WEB"

Return to the catalogue.

4.2.2 Web Management Function

1. Provide a Web browser to manage and monitor the IP DSLAM, the default values as follows:

If you need change IP address in first time, you can use console mode to modify it.

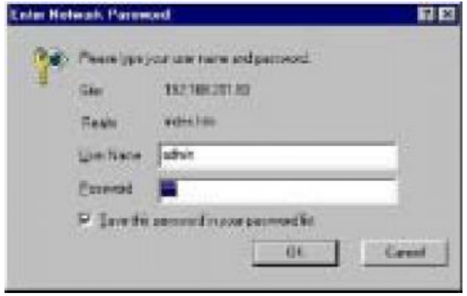
IP Address: 192.168.16.250

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.16.1

User Name: admin   Password: 123

2. You can browse http:// 192.168.16.250, type user name and password as above.



Enter Network Password

Please type your user name and password.

Site: 192.168.201.80

Realm: [illegible]

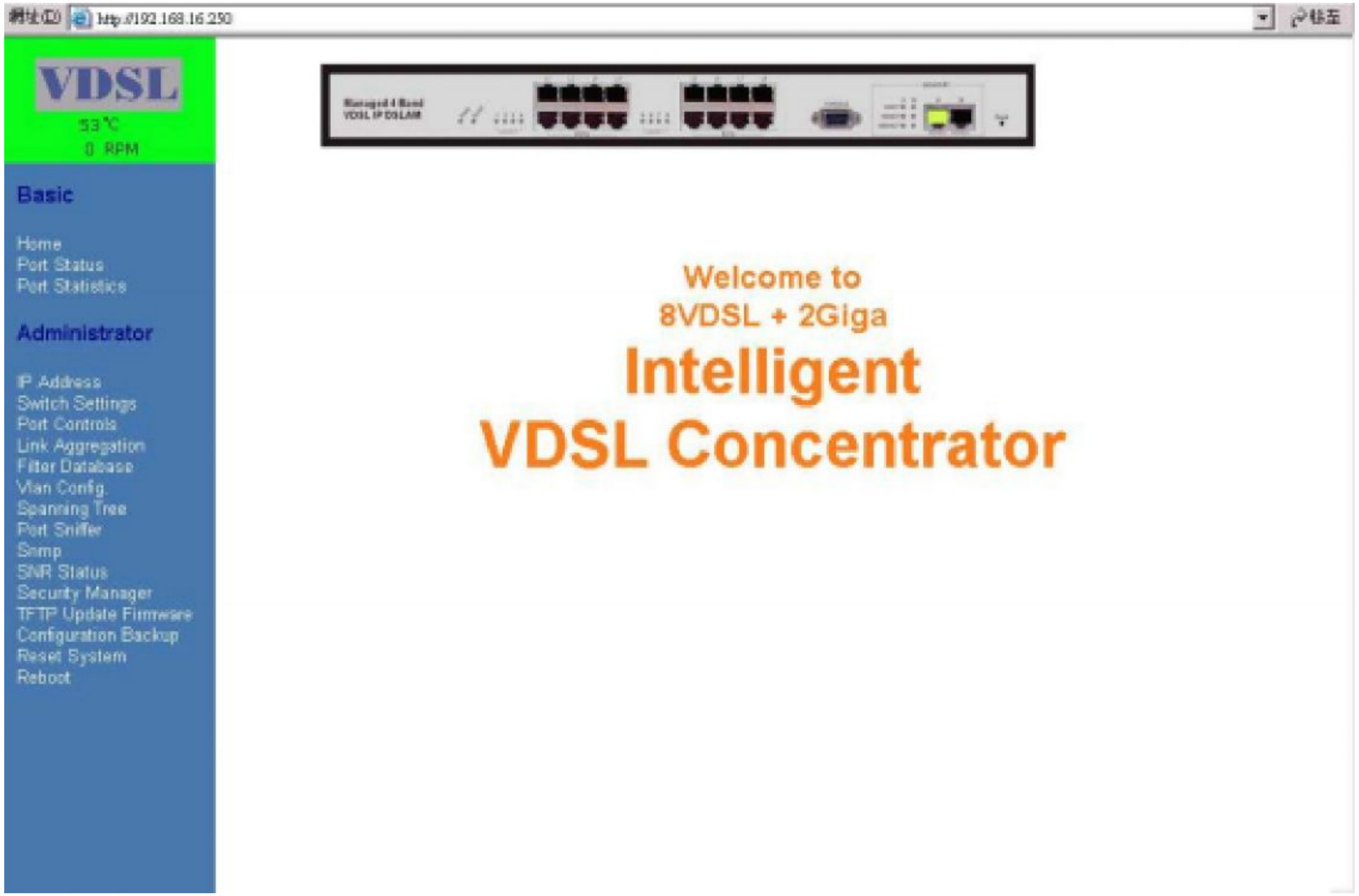
User Name: admin

Password:

☑ Save this password in your password list

Return to the catalogue.

4.2.2-1. Web Management Home Overview



Welcome to
8VDSL + 2Giga
Intelligent
VDSL Concentrator

This is VDSL Home Page.

Return to the catalogue.

4.2.2-2. Port status

1. This page can see every port status

State: Display port status disable or enable, disable is unlink port, enable is link port.

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

Auto Negotiation: IP DSLAM auto negotiation mode

Speed status: Port 9、10 are 10/100/1000Mbps or and Port 1- 8 are 5/15/25Mbps,

Configure: Display the state of user setup,

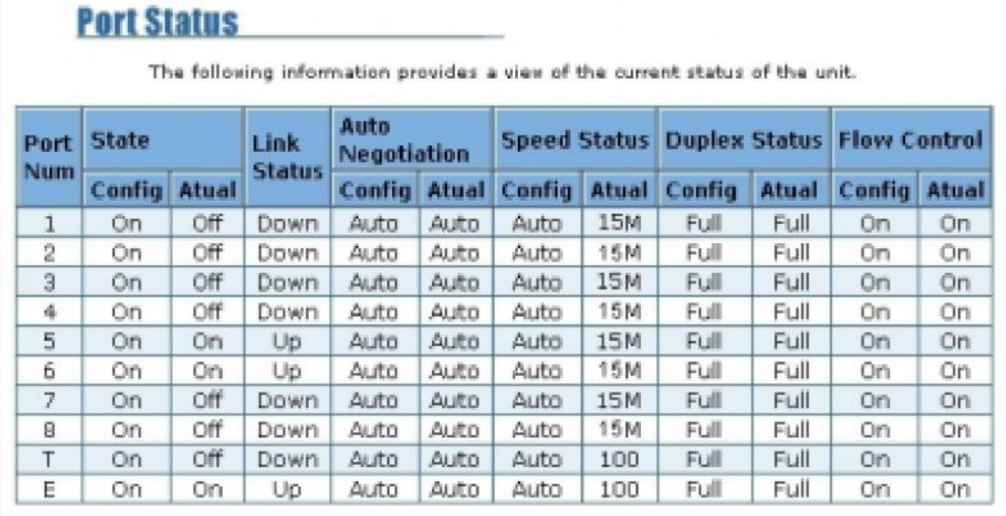
Actual: Display the negotiation result.

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

Configure: Display the user setup,

Actual: Display the negotiation result.

Flow control: Display flow control status enable or disable mode



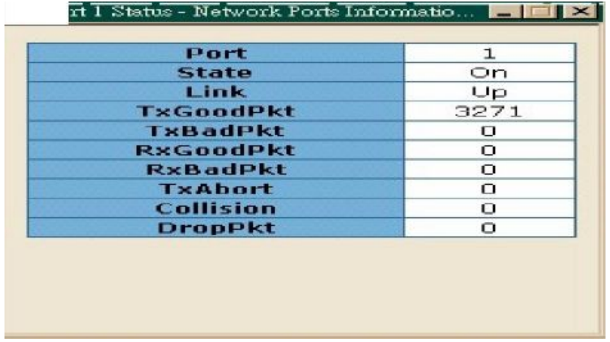
Port Status

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	Atual		Config	Atual	Config	Atual	Config	Atual	Config	Atual
1	On	Off	Down	Auto	Auto	Auto	15M	Full	Full	On	On
2	On	Off	Down	Auto	Auto	Auto	15M	Full	Full	On	On
3	On	Off	Down	Auto	Auto	Auto	15M	Full	Full	On	On
4	On	Off	Down	Auto	Auto	Auto	15M	Full	Full	On	On
5	On	On	Up	Auto	Auto	Auto	15M	Full	Full	On	On
6	On	On	Up	Auto	Auto	Auto	15M	Full	Full	On	On
7	On	Off	Down	Auto	Auto	Auto	15M	Full	Full	On	On
8	On	Off	Down	Auto	Auto	Auto	15M	Full	Full	On	On
T	On	Off	Down	Auto	Auto	Auto	100	Full	Full	On	On
E	On	On	Up	Auto	Auto	Auto	100	Full	Full	On	On

Return to the catalogue.

User can see single port counter as following

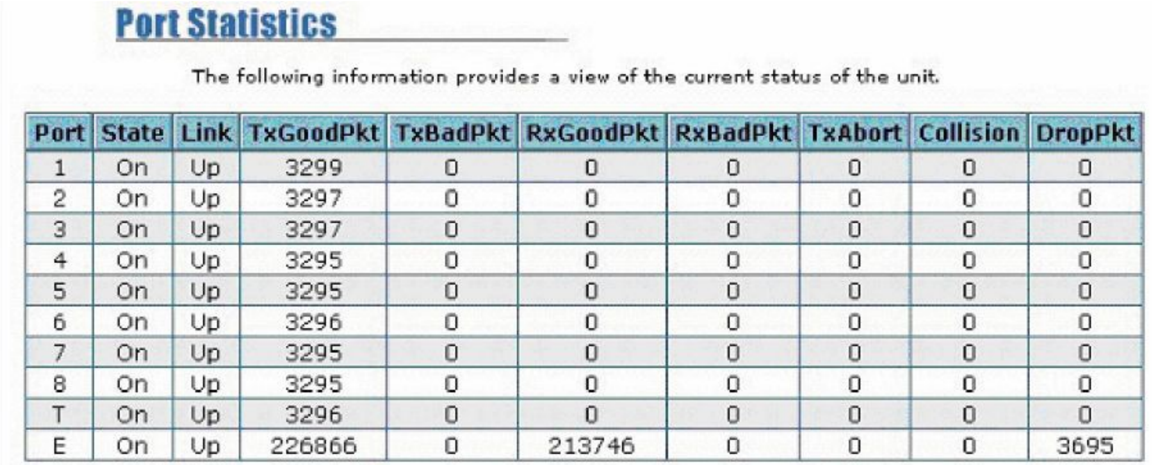


rt 1 Status - Network Ports Informatio...

Port	1
State	On
Link	Up
TxGoodPkt	3271
TxBadPkt	0
RxGoodPkt	0
RxBadPkt	0
TxAbort	0
Collision	0
DropPkt	0

4.2.2-3. Port Statistics

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



Port Statistics

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

Port	State	Link	TxGoodPkt	TxBadPkt	RxGoodPkt	RxBadPkt	TxAbort	Collision	DropPkt
1	On	Up	3299	0	0	0	0	0	0
2	On	Up	3297	0	0	0	0	0	0
3	On	Up	3297	0	0	0	0	0	0
4	On	Up	3295	0	0	0	0	0	0
5	On	Up	3295	0	0	0	0	0	0
6	On	Up	3296	0	0	0	0	0	0
7	On	Up	3295	0	0	0	0	0	0
8	On	Up	3295	0	0	0	0	0	0
T	On	Up	3296	0	0	0	0	0	0
E	On	Up	226866	0	213746	0	0	0	3695

Return to the catalogue.

4.2.2-4. Administrator

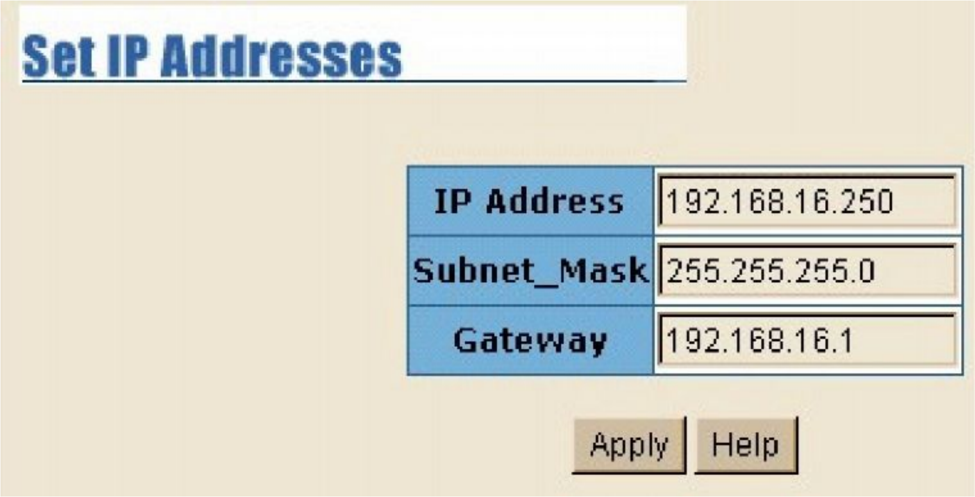
There are many management function, include:

IP Address
IP DSLAM Setting
Port Controls
Link Aggregation
Filter Database
VLAN Config.
Spanning Tree
Port Sniffer
Snmp
SNR Status
Security Manager
TFTP Update Firmware
Configuration Backup
Restart System
Reboot

Return to the catalogue.

4.2.2-4-1. IP Address

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



Set IP Addresses

IP Address	192.168.16.250
Subnet_Mask	255.255.255.0
Gateway	192.168.16.1

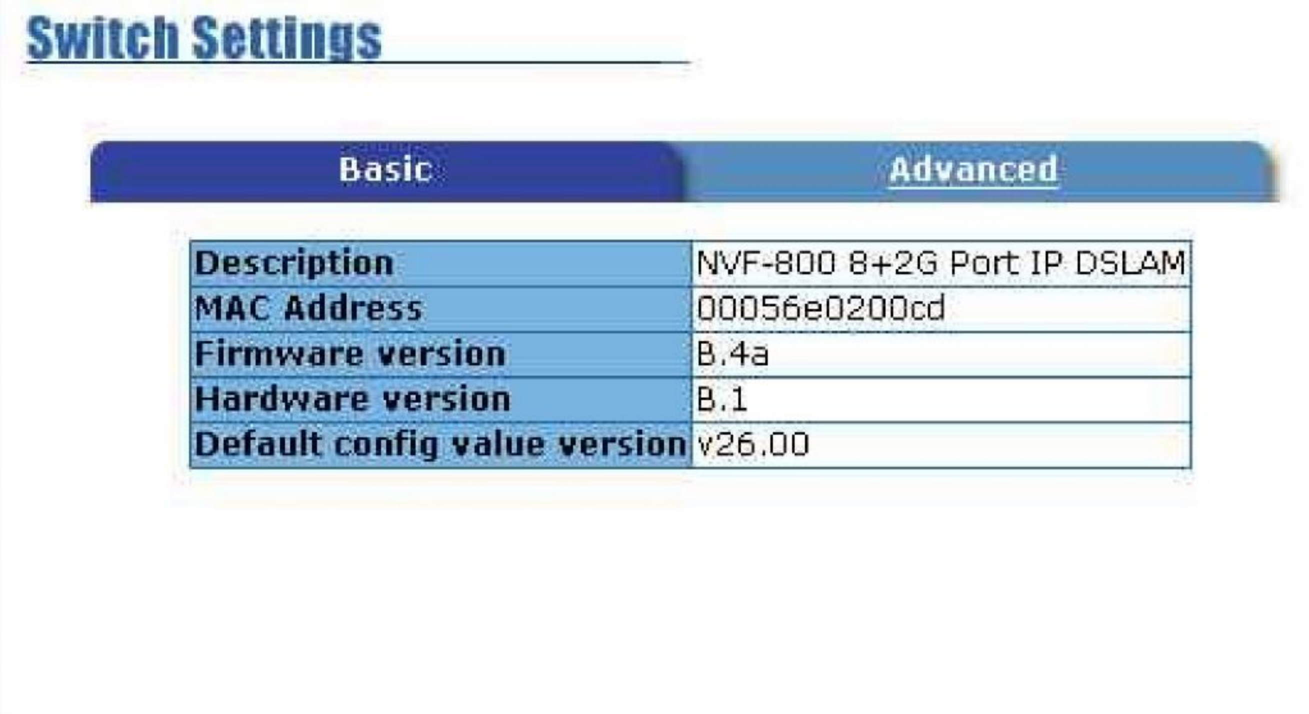
Default IP is 192.168.16.250

Return to the catalogue.

4.2.2-4-2. IP DSLAM Setting

2-4-2-1.Basic

1. **Description:** Display the device type of name.
2. **MAC Address:** The unique hardware address assigned by manufacturer
3. **Firmware Version:** Display the IP DSLAM firmware version.
4. **Hardware Version:** Display the IP DSLAM Hardware version.
5. **Default configure value version:** Display write to default EEPROM value tale version.



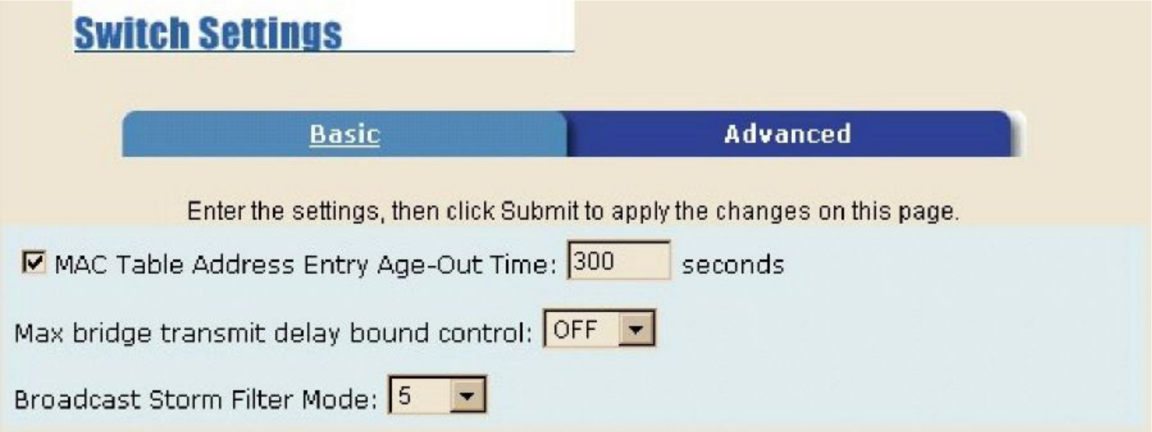
Description	NVF-800 8+2G Port IP DSLAM
MAC Address	00056e0200cd
Firmware version	B.4a
Hardware version	B.1
Default config value version	v26.00

2-4-2-2.Advanceed

Miscellaneous Setting:

MAC Address Age-out Time: Type the number of seconds that an inactive MAC address remains in the IP DSLAM 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 IP DSLAM. If enable, the packets queued exceed will be drop. This valid value are 1sec, 2 sec, 4 sec and off. Default is 2 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.



Switch Settings

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

☑ MAC Table Address Entry Age-Out Time: 300 seconds

Max bridge transmit delay bound control: OFF

Broadcast Storm Filter Mode: 5

Return to the catalogue.

Priority Queue Service settings:

First Come First Service: The sequence of packets sent is depend on arrive order.

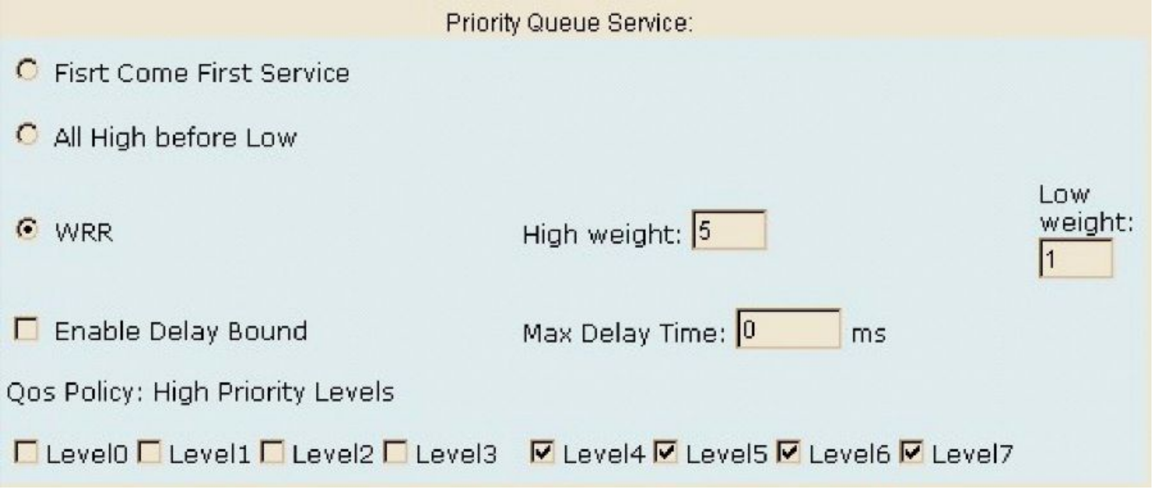
All High before Low: The high priority packets sent before low priority packets.

Weighted Round Robin: Select the preference given to packets in the IP DSLAM high-priority queue.

These options represent the number of high priority packets sent before one low priority packet is sent. For example,5 High : 2 Low means that the IP DSLAM sends 5 high priority packets before sending 2 low priority packet. **Enable Delay Bound:** Limit the low priority packets queuing time in IP DSLAM. Default Max Delay Time is 255ms. If the low priority packet stays in IP DSLAM 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.

Return to the catalogue.



Priority Queue Service:

○ Fisrt Come First Service

○ All High before Low

● WRR High weight: 5 Low weight: 1

□ Enable Delay Bound Max Delay Time: 0 ms

Qos Policy: High Priority Levels

□ Level0 □ Level1 □ Level2 □ Level3 ☑ Level4 ☑ Level5 ☑ Level6 ☑ Level7

Protocol Enable Setting:

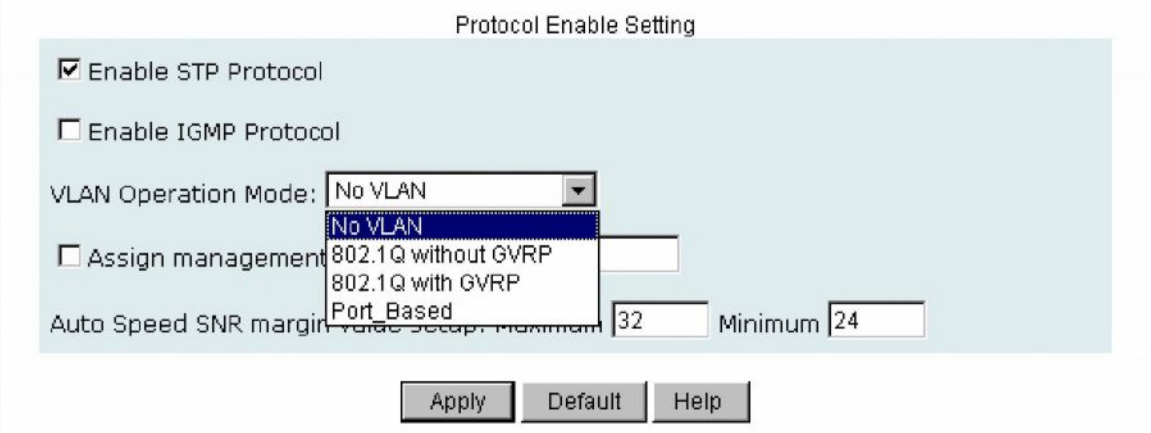
Enable Spanning Tree Protocol: Default recommend to enable STP

Enable Internet Group Multicast Protocol: enable IGMP protocol

VLAN Protocol: 802.1Q(Tagging Based) without GVRP VLAN mode

802.1Q(Tagging Based) with GVRP VLAN mode

Return to the catalogue.



Protocol Enable Setting

☑ Enable STP Protocol

□ Enable IGMP Protocol

VLAN Operation Mode: No VLAN

□ Assign managemen

Auto Speed SNR margin value setup: Maximum 32 Minimum 24

GVRP (GARP [Generic Attribute Registration Protocol] VLAN Registration Protocol)

GVRP allows automatic VLAN configuration between the IP DSLAM and nodes. If the IP DSLAM is connected to a device with GVRP enabled, you can send a GVRP request using the VID of a VLAN defined on the IP DSLAM, the IP DSLAM will automatically add that device to the existing VLAN.

Assign management IP address to specific VLAN

Can limit management system only for specific VLAN, This function must enable 802.1Q. •

Auto Speed SNR margin value setup: Maximum Minimum

VDSL Speed auto adaptive function is based on SNR value, you can specify target SNR margins. Maximum: When SNR value bigger than Maximum value, VDSL speed will increase. Minimum: When SNR value smaller

Return to the catalogue.

than Minimum value, VDSL speed will decrease. Priority of Minimum setup is higher than Maximum setup.

4.2.2-4-3. Console Port Information

1. Console is a standard UART interface to communicate with Serial Port.

User can use windows HyperTerminal program to link the IP DSLAM. Connect To->Configure

Bits per seconds: 9600

Data bits: 8

Return to the catalogue.

Parity: none
STOP BITS: 1
Flow control: none

4.2.2-4-4. VDSL Speed Control and port Enable/Disable

This section shows you how to change every port status and speed mode
State: You can disable or enable VDSL port control
Auto Negotiation: You can set enable or disable VDSL port
Speed: You can change VDSL Speed mode by 5Mbps, 15Mbps or 25Mbps
Speed Default Value: Auto-speed
Distance between VDSL & VDSL modem when standard 24 Gauge 0.5mm cable is used:
5 Mbps -> 1.7 Km.(Without PBX) 15
Mbps -> 1.1 km.(Without PBX) 25
Mbps -> 0.6 km.(Without PBX)

Duplex: User can set full-duplex or half-duplex mode of Ethernet port. VDSL port fix on Full Duplex.
Flow Control: Full: User can set flow control function is enable or disable in hull mode. Half: User can set backpressure is enable or disable in half mode.

Auto Speed procedures:

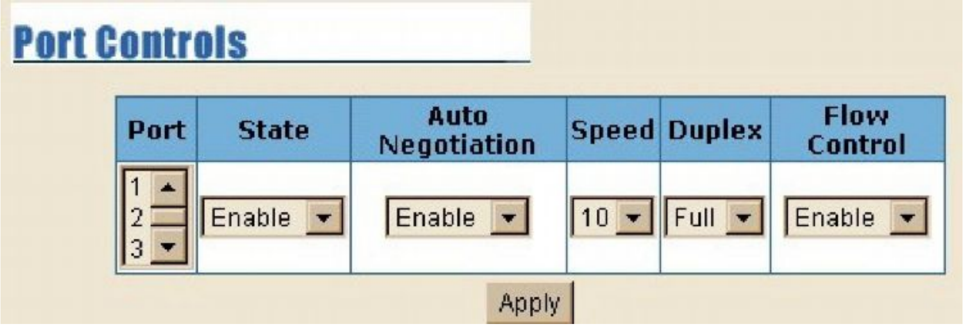
a. Confirm the phone cable have been connected with IP DSLAM and VDSL MODEM both.
b. Power on IP DSLAM and VDSL MODEM
c. Start auto-speed function after VDSL MODEM re-boot.
d. IP DSLAM will try 25M mode to link with VDSL MODEM, if fail, auto speed down to 15M mode and re-link with VDSL

Return to the catalogue.

MODEM,   If fail, auto-speed down to 5M and keep this mode then re-link with VDSL MODEM

e. Please note any length of phone cable change, VDSL MODEM must re-power again, due to auto-speed function only work on re-starting.

f. Await 5 ~ 120 seconds until VDSL port link up with depend on length of phone cable.



Port Controls

Port	State	Auto Negotiation	Speed	Duplex	Flow Control
1 2 3	Enable	Enable	10	Full	Enable

***Note:** VDSL port supports auto-speed, the speed mode depend on phone cable length and crosstalk issues, any auto-speed start on phone cable re-plug in and re-power IP DSLAM, auto-speed need spend for few minutes.

25M/25M symmetric run at 600 meters
15M/15M symmetric run at 1.1km
5M/5M   symmetric run at 1.7km
With above speed mode testing is base on 24 gauge twist pair phone cable without PBX.

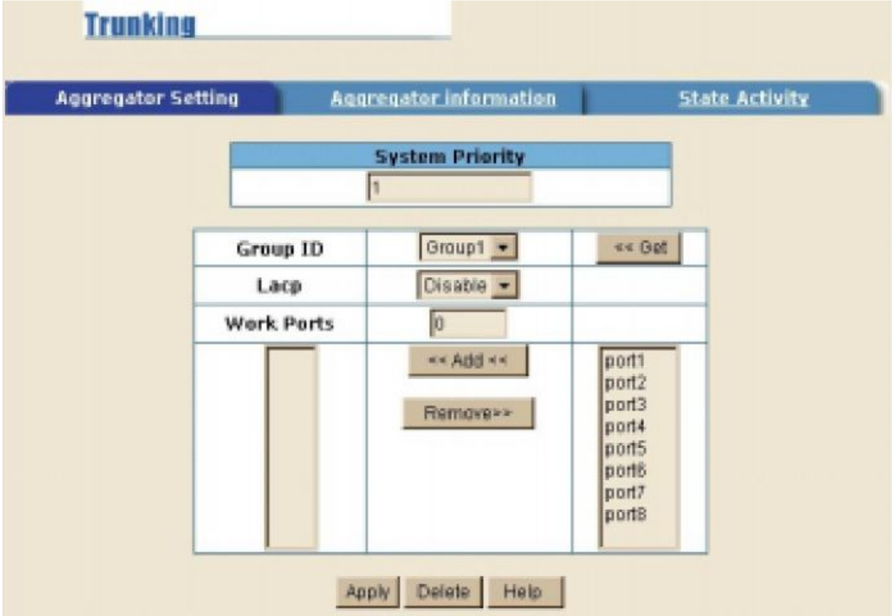
4.2.2-4-5. Link Aggregation

The Link Aggregation Control Protocol (LACP) 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

Return to the catalogue.

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.

2-4-5-1. Aggregator setting



System Priority: 1

Group ID: Group1

Lacp: Disable

Work Ports: 0

port1
port2
port3
port4
port5
port6
port7
port8

System Priority: A value used to identify the active LACP. The IP DSLAM 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

Return to the catalogue.

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.

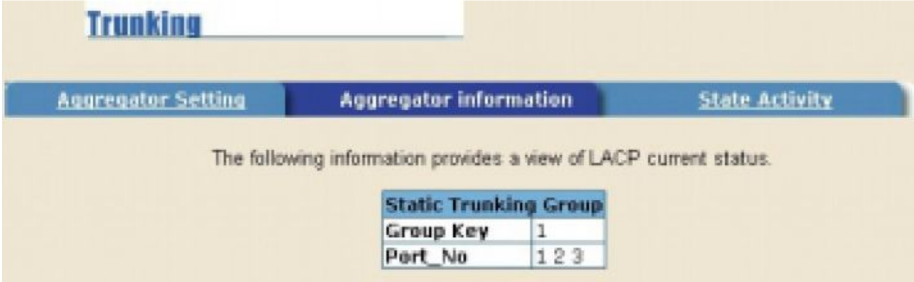
4. Select the ports to join the trunking group

5. If LACP enable, you can configure LACP Active/Passive status in each ports

6. Click Apply.

2-4-5-2. Aggregator Information

When you are setting LACP aggregator, you can see relation information in here. This page is Actor and Partner trunking one group with port 1 to port 1.



The following information provides a view of LACP current status.

Static Trunking Group	
Group Key	1
Port_No	1 2 3

2-4-5-3. State Activity

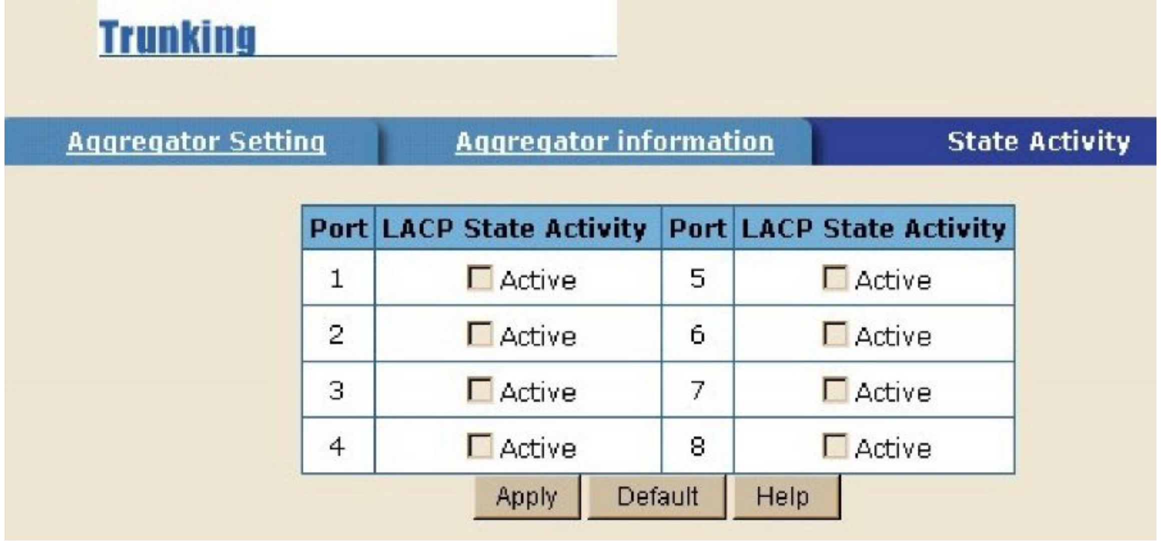
Active (select): The port automatically sends LACP protocol packets.

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

Return to the catalogue.

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.

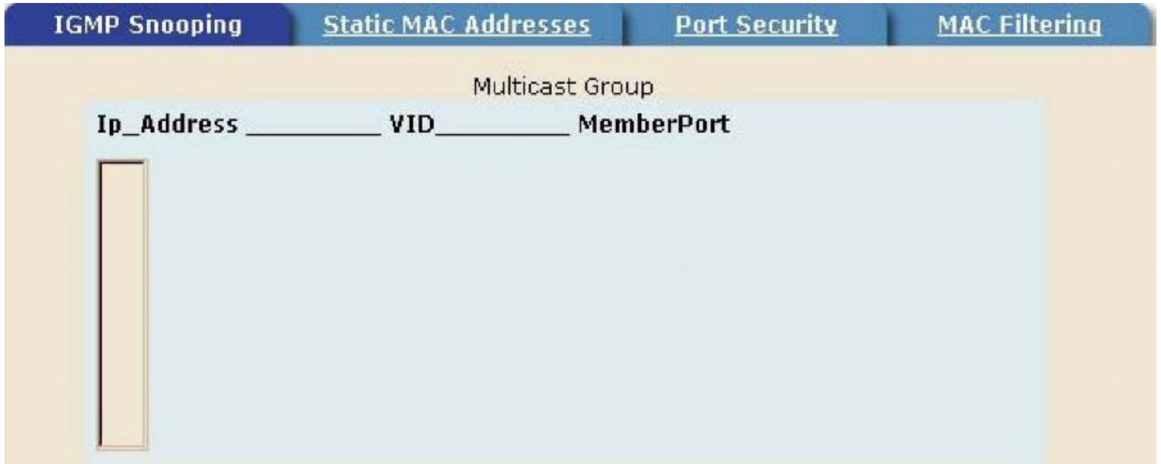


Port	LACP State Activity	Port	LACP State Activity
1	□ Active	5	□ Active
2	□ Active	6	□ Active
3	□ Active	7	□ Active
4	□ Active	8	□ Active

Return to the catalogue.

4.2.2-4-6. Filter Database

2-4-6-1. IGMP Snooping



The IP DSLAM support IP multicast, you can enable IGMP protocol on web management's IP DSLAM 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 IP DSLAM, 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 IP DSLAM.

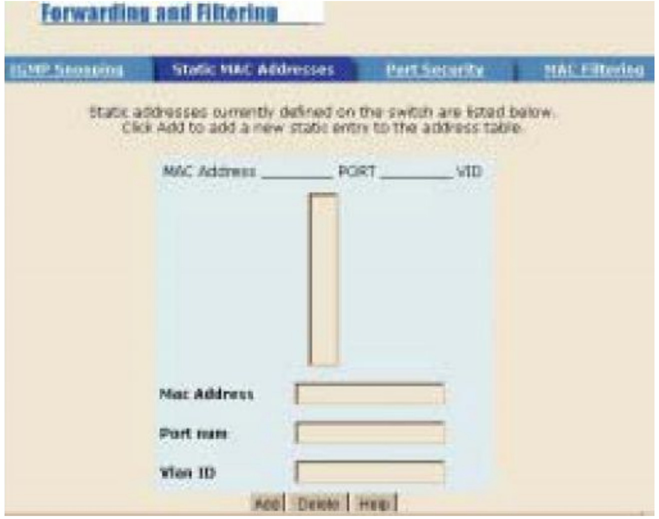
Return to the catalogue.

IGMP have three fundamental types of message as follows:

Message	Description
Query	A message sent from the queries (IGMP router or IP DSLAM) asking for a response from each host belonging to the multicast group.
Report	A message sent by a host to the queries 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 queries to indicate that the host has quit to be a member of a specific multicast group.

Return to the catalogue.

2-4-6-2. Static MAC Address



Forwarding and Filtering

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 ________ VID

Mac Address

Port num

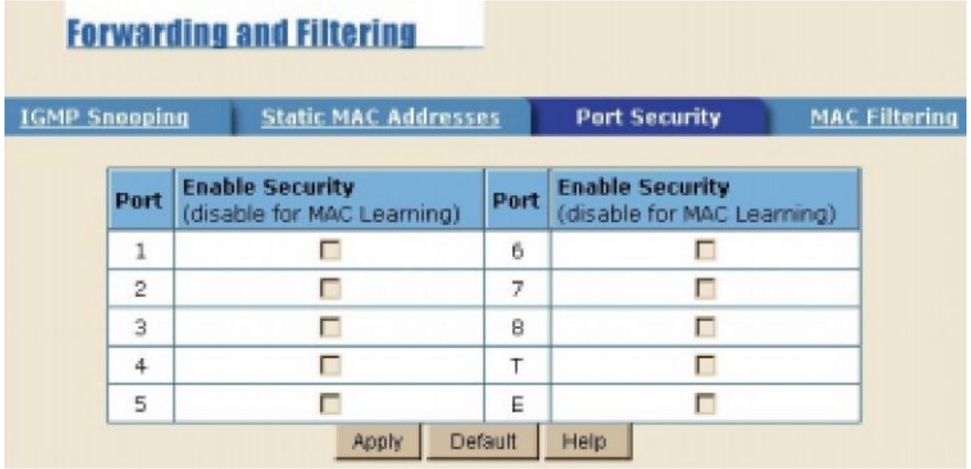
Vlan ID

When you add a static MAC address, it remains in the IP DSLAM address table, regardless of whether the device is physically connected to the IP DSLAM. This saves the IP DSLAM 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.
5. If tag-based (IEEE 802.1Q) VLANs are set up on the IP DSLAM, static addresses are associated with individual VLANs. Type the VID (tag-based VLANs) to associate with the MAC address.
6. Click "add"

Return to the catalogue.

2-4-6-3. Port Security

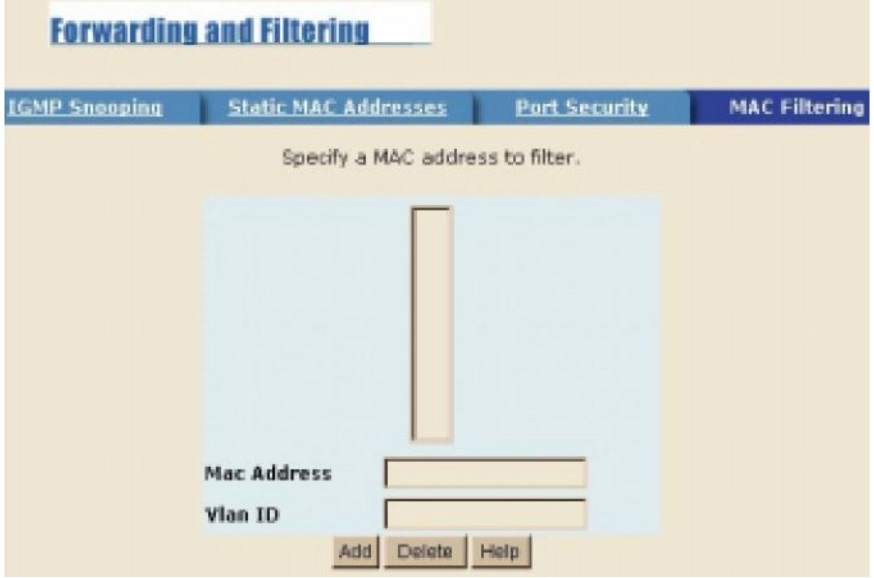


Port	Enable Security (disable for MAC Learning)	Port	Enable Security (disable for MAC Learning)
1	□	6	□
2	□	7	□
3	□	8	□
4	□	T	□
5	□	E	□

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.

Return to the catalogue.

2-4-6-4. MAC filtering



Specify a MAC address to filter.

Mac Address

Vlan ID

MAC address filtering allows the IP DSLAM to drop unwanted traffic. Traffic is filtered based on the destination addresses. For example, if your network is congested because of high utilization from one MAC address, you can filter all traffic transmitted from that MAC address, restoring network flow while you troubleshoot the problem.

Return to the catalogue.

4.2.2-4-7. 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 IP DSLAM is logically equivalent of reconnecting a group of network devices to another Layer 2 IP DSLAM. However, all the network devices are still plug into the same IP DSLAM physically.

The IP DSLAM supports port-based and protocol-base VLAN in web management page, In the default configuration, VLAN support is enable and all ports on the IP DSLAM belong to default VLAN, VID is 1.

Support Multiple VLAN (IEEE 802.1Q VLAN)

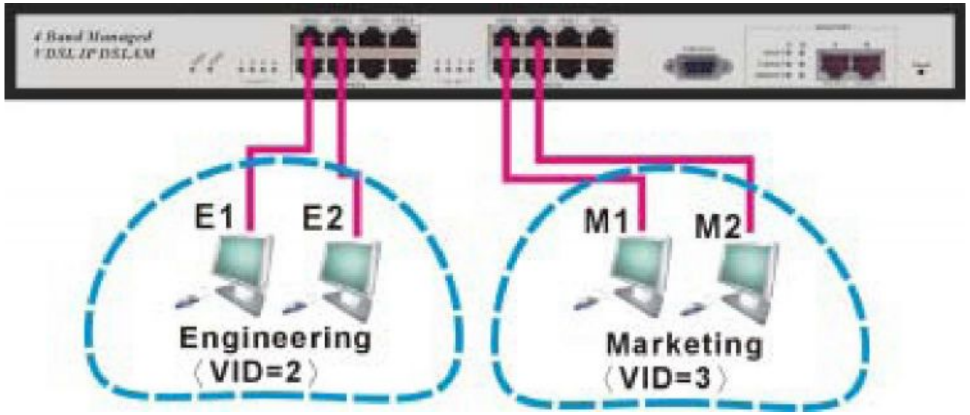
Port-based Tagging rule VLAN is an IEEE 802.1Q specification standard. Therefore, it is possible to create a VLAN across devices from different IP DSLAM venders. IEEE 802.1Q VLAN uses a technique to insert a “tag” into the Ethernet frames. Tag contains a VLAN Identifier (VID) that indicates the VLAN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

Return to the catalogue.

Support Protocol-based VLAN

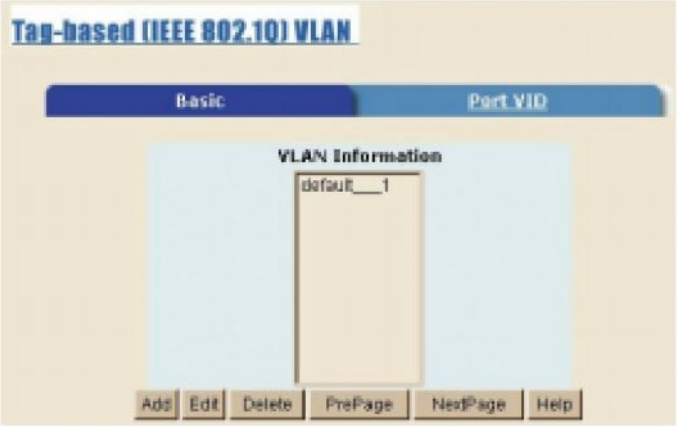
In order for an end station to send packets to different VLAN, it itself has to be either capable of tagging packets it sends with VLAN tags or attached to a VLAN-aware bridge that is capable of classifying and tagging the packet with different VLAN ID based on not only default PVID but also other information about the packet, such as the protocol.

IP DSLAM will support protocol-based VLAN classification by means of both built-in knowledge of layer 2 packet formats used by selected popular protocols, such as Novell IPX and AppleTalk's EtherTalk, and some degree of programmable protocol matching capability.



Return to the catalogue.

2-4-7-1. Basic

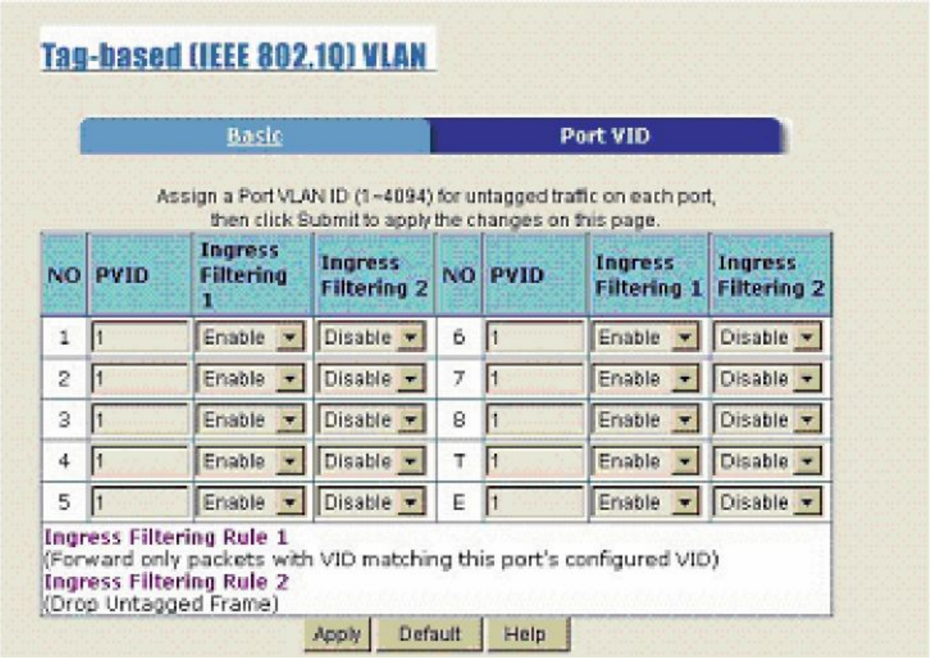


Create a VLAN and add tagged member ports to it.

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 IP DSLAM and click Add.
6. Click “Apply”.

Return to the catalogue.

2-4-7-2. Port VID



Tag-based (IEEE 802.1Q) VLAN

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	T	1	Enable	Disable
5	1	Enable	Disable	E	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)

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 10's Default PVID is 100, all untagged packets on port 10 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.

Return to the catalogue.

Ingress Filtering

Ingress filtering lets frames belonging to a specific VLAN to be forwarded if the port belongs to that VLAN.

IP DSLAM has 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

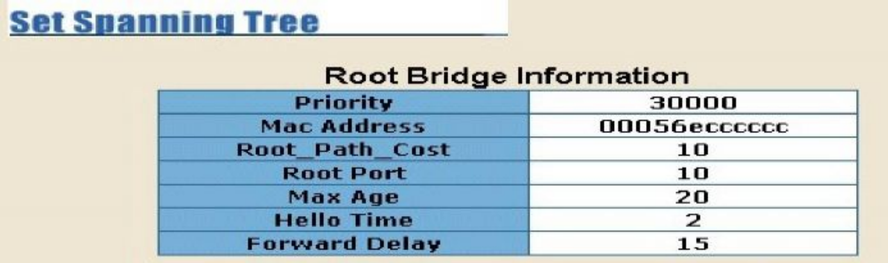
Return to the catalogue.

4.2.2-4-8. Spanning Tree

The Spanning-Tree Protocol (STP) is a standardized method (IEEE 802.1d) for avoiding loops in IP DSLAM 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 IP DSLAM setting advanced item, select enable Spanning-Tree protocol. We are recommended that you enable STP on all IP DSLAM ensures a single active path on the network.

1. You can view spanning tree information about the Root bridge as following screen:

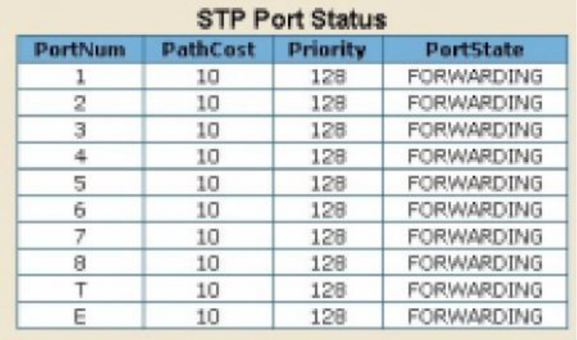


Set Spanning Tree

Root Bridge Information

Priority	30000
Mac Address	00056ecccccc
Root_Path_Cost	10
Root Port	10
Max Age	20
Hello Time	2
Forward Delay	15

2. You can view the spanning tree status about the IP DSLAM as following screen.

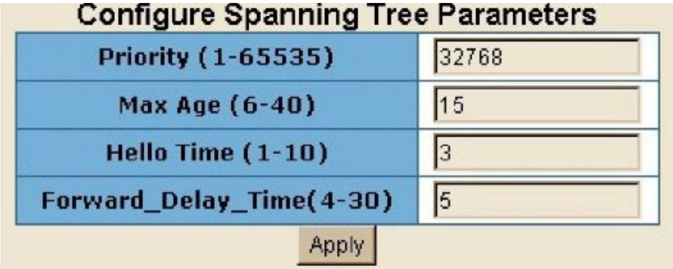


STP Port Status

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
T	10	128	FORWARDING
E	10	128	FORWARDING

Return to the catalogue.

3. You can set new value for STP parameter, then click set Apply button to modify.



Configure Spanning Tree Parameters

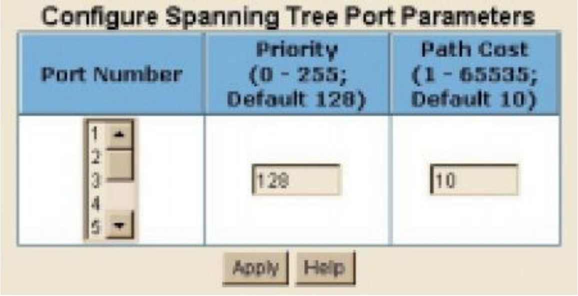
Priority (1-65535)	32768
Max Age (6-40)	15
Hello Time (1-10)	3
Forward_Delay_Time(4-30)	5

Parameter	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

Return to the catalogue.

forwarding state. Enter a number 4 through 30.

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



Configure Spanning Tree Port Parameters

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

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 IP DSLAM.
Path Cost	Specifies the path cost of the port that IP DSLAM 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 1000Mb/s = 3-10 If you change the value, you must reboot the IP DSLAM.

Return to the catalogue.

4.2.2-4-9. Port Sniffer

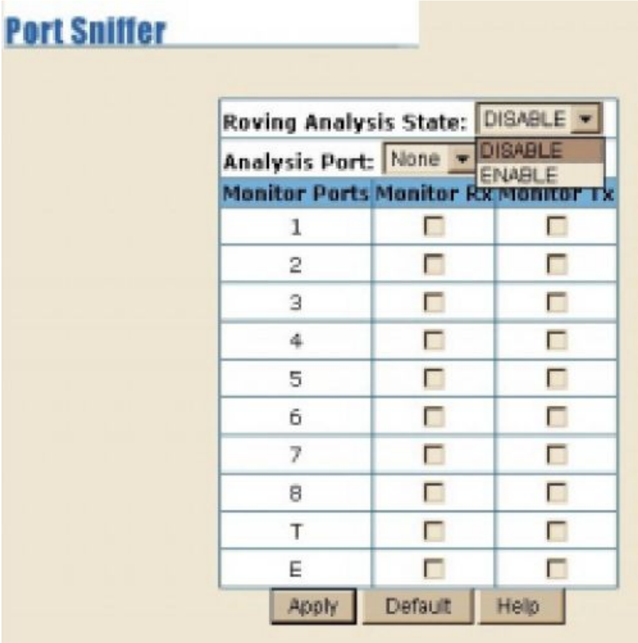
The Port Sniffer is a method for monitor traffic in IP DSLAM networks. Traffic through ports can be monitored by one specific port. That is, traffic goes in or out monitored ports will be duplicated into sniffer port.

Roving Analysis State: Enable or disable the port sniffer function.

Analysis Port: Analysis port can be used to see all monitor port traffic. You can connect sniffer port to LAN Analysis, Session Wall or Netxray. **Monitor Ports:** The ports you want to monitor. All monitor port traffic will be copied to sniffer port. You can select max 9 monitor ports in the IP DSLAM. If you want to disable the function, you must select monitor port to none.

Monitor Rx: Monitored receive frames from the port. **Monitor Tx:** Monitoring sent frames from the port.

Return to the catalogue.



Port Sniffer

Roving Analysis State: DISABLE

Analysis Port: None

Monitor Ports	Monitor Rx	Monitor Tx
1	□	□
2	□	□
3	□	□
4	□	□
5	□	□
6	□	□
7	□	□
8	□	□
T	□	□
E	□	□

4.2.2-4-10. SNMP

Any Network Management running the Simple Network Management Protocol (SNMP) can management the IP DSLAM, 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 VDSL IP DSLAM support SNMP V1.

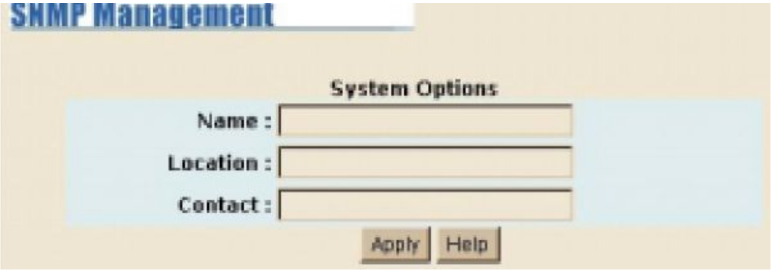
1. Use this page to define management stations as trap managers and to enter SNMP community strings. User can also define a name, location, and contact person for the IP DSLAM. Fill in the system options data, and then click Apply to update the changes on this page

Name: Enter a name to be used for the IP DSLAM.

Location: Enter the location of the IP DSLAM. Contact:

Enter the name of a person or organization.

Return to the catalogue.


SNMP Management

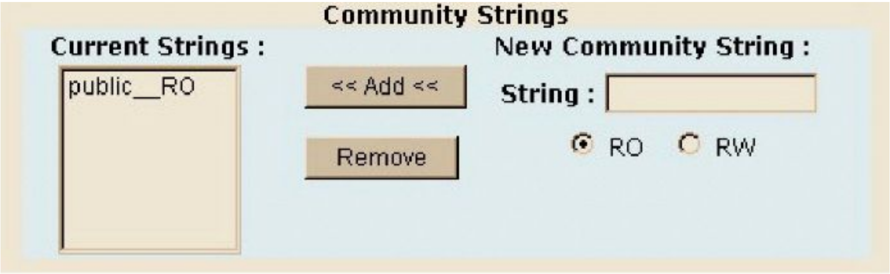
System Options

Name :

Location :

Contact :

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


Community Strings

Current Strings :

public__RO

New Community String :

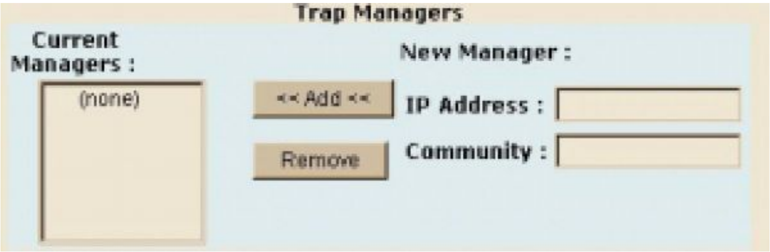
String :

● RO ○ RW

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.

Return to the catalogue.

3. Trap Manager



A trap manager is a management station that receives traps, the system alerts generated by the IP DSLAM. 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.

Enterprise MIB contains two traps:

a. When IP DSLAM internal temperature is greater than 70℃, system will send a "Temperature alarm " trap.

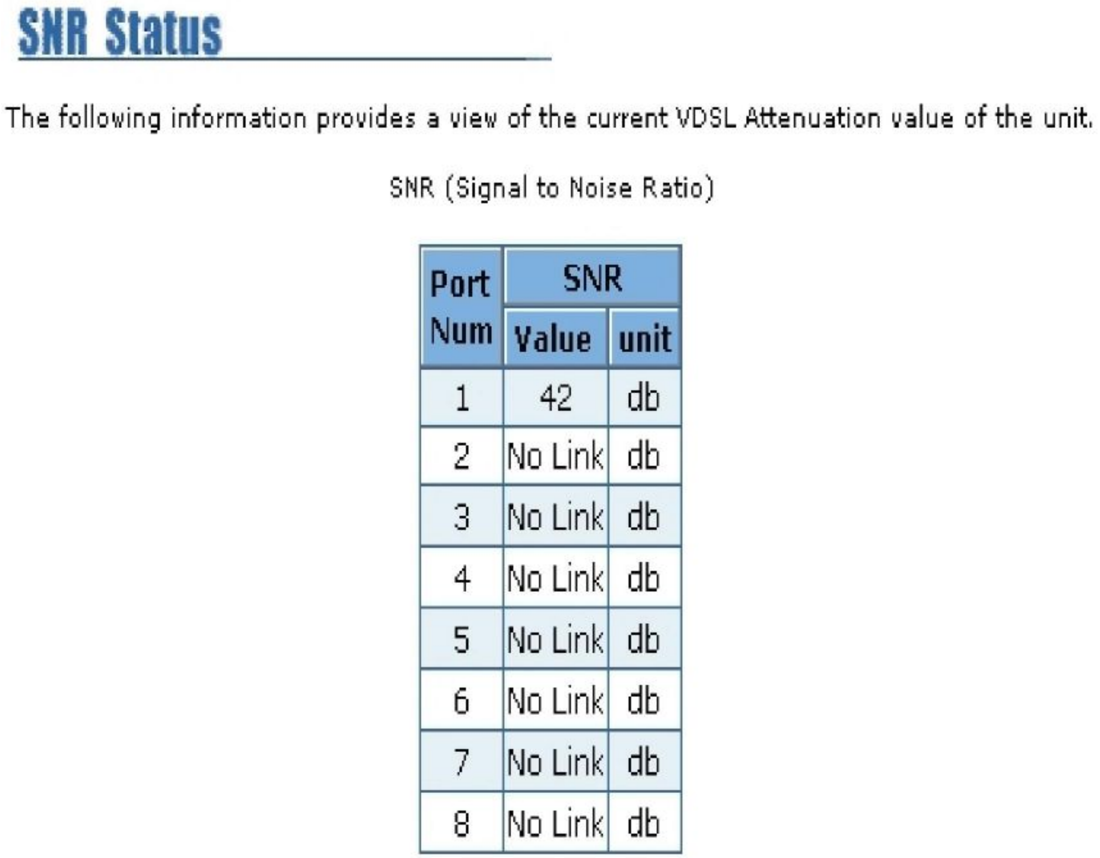
b. When the IP DSLAM internal cooling FAN doesn't run, the system will send a "FAN speed alarm" trap.

4.2.2-4-11 SNR

The following information provides a view of the current VDSL Attenuation value of the unit.

SNR(Signal to Noise Ratio)

Return to the catalogue.



SNR Status

The following information provides a view of the current VDSL Attenuation value of the unit.

SNR (Signal to Noise Ratio)

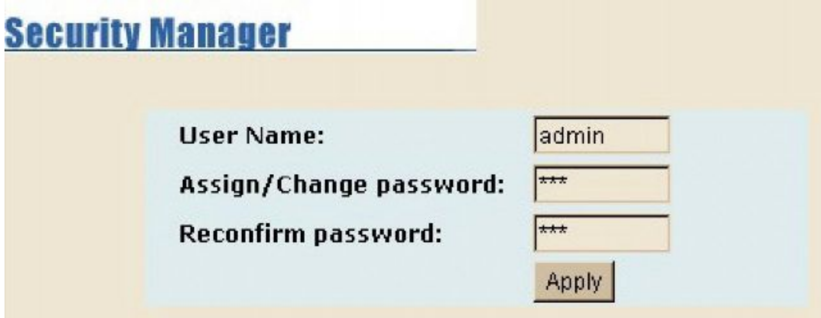
Port Num	SNR	
	Value	unit
1	42	db
2	No Link	db
3	No Link	db
4	No Link	db
5	No Link	db
6	No Link	db
7	No Link	db
8	No Link	db

4.2.2-4-12 Security Manager

1. Use this page; user can change web management user name and password.
   User name: Admin

Return to the catalogue.

Password: 123



Security Manager

User Name: admin

Assign/Change password: ***

Reconfirm password: ***

4.2.2-4-13. TFTP Update Firmware

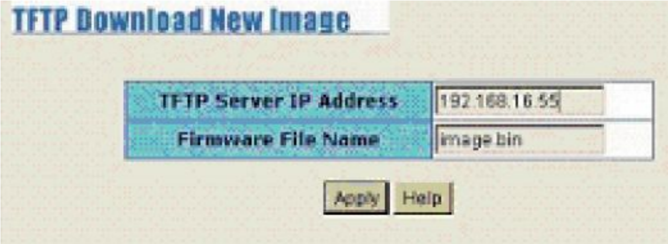
1. The following menu options provide some system control functions to allow a user to update firmware and remote boot IP DSLAM system:

* Install TFTP Turbo98 and execution.

* Copy firmware update version image.bin to TFTP Turbo98 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

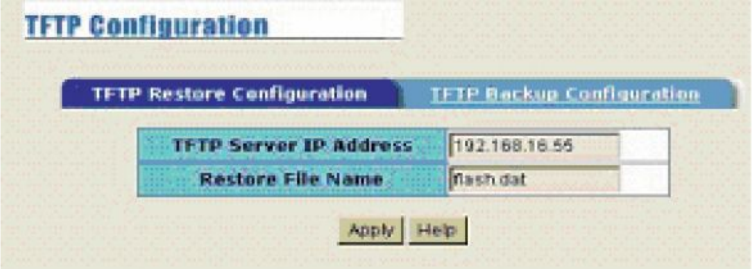
TFTP Server IP Address: 192.168.16.55

Firmware File Name: image.bin

4.2.2-4-14. Configuration Backup

2-4-13-1. TFTP Restore Configuration

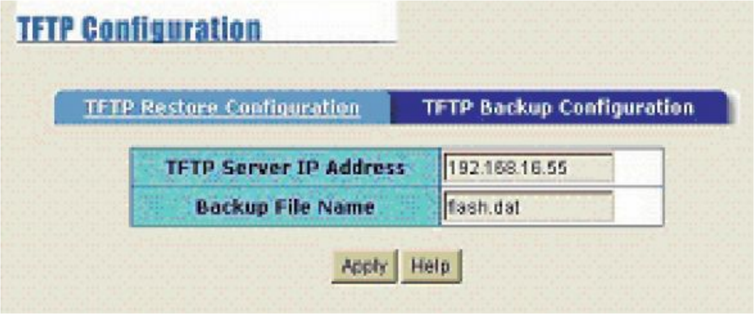
Return to the catalogue.



TFTP Server IP Address	192.168.16.55
Restore File Name	flash.dat

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

2-4-13-2. TFTP Backup Configuration



TFTP Server IP Address	192.168.16.55
Backup File Name	flash.dat

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.

Return to the catalogue.

4.2.2-4-15. Reset System

Reset IP DSLAM to default configuration Note. Please make sure the IP DSLAM has been disconnected with VDSL Modem

4.2.2-4-16. Reboot

Reboot the IP DSLAM in software reset

Return to the catalogue.

5. Applications

The VDSL provides home network architecture. Transforming an apartment into a Multiple-Family Home network area, sharing a single internet account for multiple users via Router & Cable Modem, it can provide unlimited access time in the internet at a reasonable low price.

Bridging Functions – The IP DSLAM provides full transparent bridging function. It automatically connects node addresses, that are later used to filter and forward all traffic based on the destination address. When traffic passes between devices attached to the shared collision domain, those packets are filtered from the IP DSLAM. But when traffic must be passed between unique segments (i.e., different ports of the IP DSLAM), a temporary link is set up between the IP DSLAM port in order to pass this traffic, via the high-speed VDSL fabric.

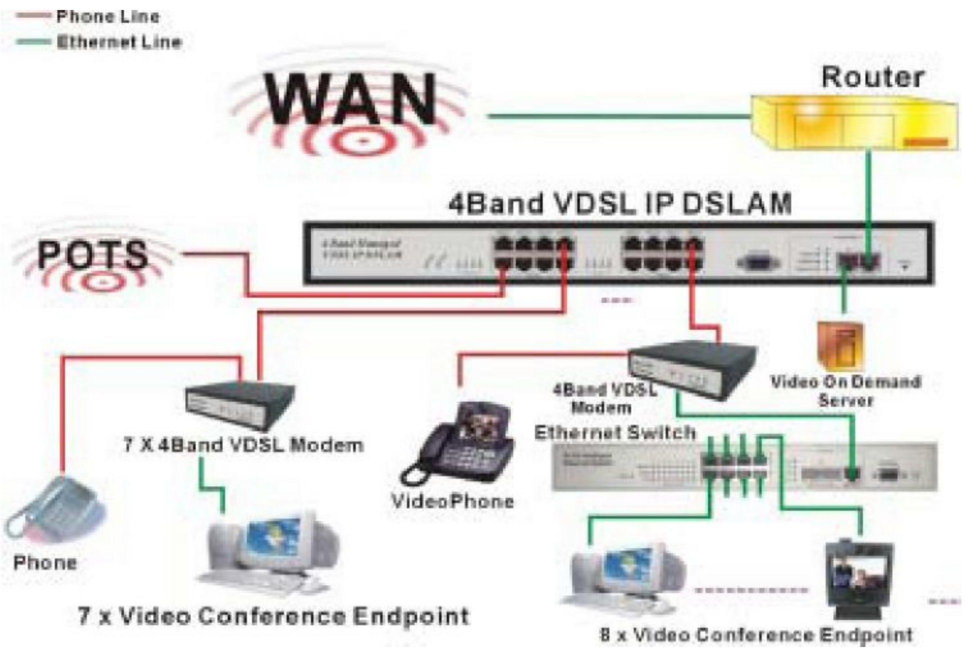
Transceiver function

The IP DSLAM support Ethernet to VDSL convert, It can be transmit or receive packet from Ethernet port to the RJ11 port. Or VDSL port to Ethernet port.

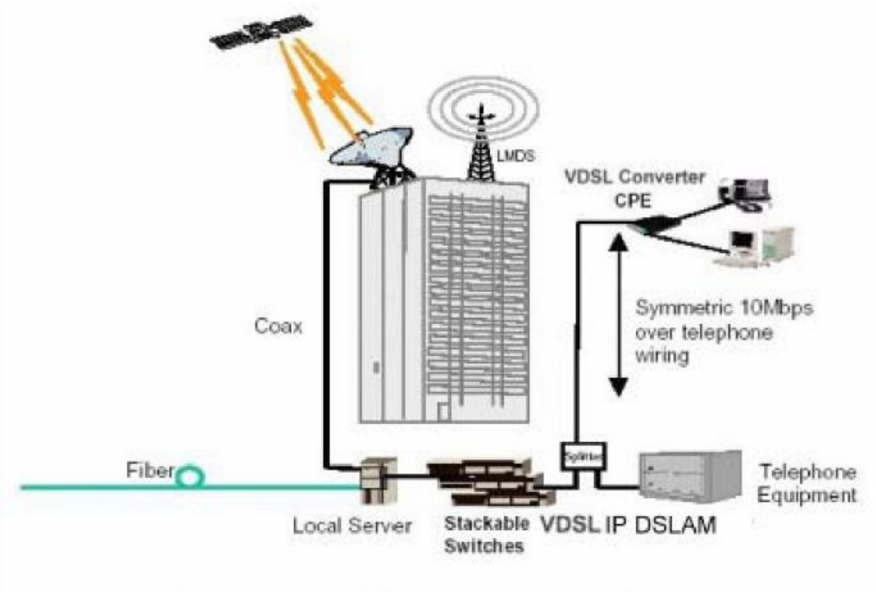
Flexible Configuration–The IP DSLAM is not only Designed to segment your network, but also to provide a wide range of options in the configuration of Home network connections. It can be used as a simple stand-alone IP DSLAM; or can be connected with another IP DSLAM, Cable modem, Router, XDSL, ISDN, gateway or other network interconnection devices in various configurations. Some of the common applications of the IP DSLAM are described in this chapter.

Return to the catalogue.

***Application for Video on demand and Video conference**



Return to the catalogue.



Broadband Access Applications Utilizing VDSL IP DSLAM

Used as apartment for Internet access

The IP DSLAM provides a high speed, auto-speed transmission over existing home telephone wiring over a single Internet account to provide simultaneous independent Internet access to multiple users.
No matter ISDN Telephone system nor POTS Telephone system you have, the VDSL Technology let you can use the telephone system and VDSL network system in the same time.

Return to the catalogue.

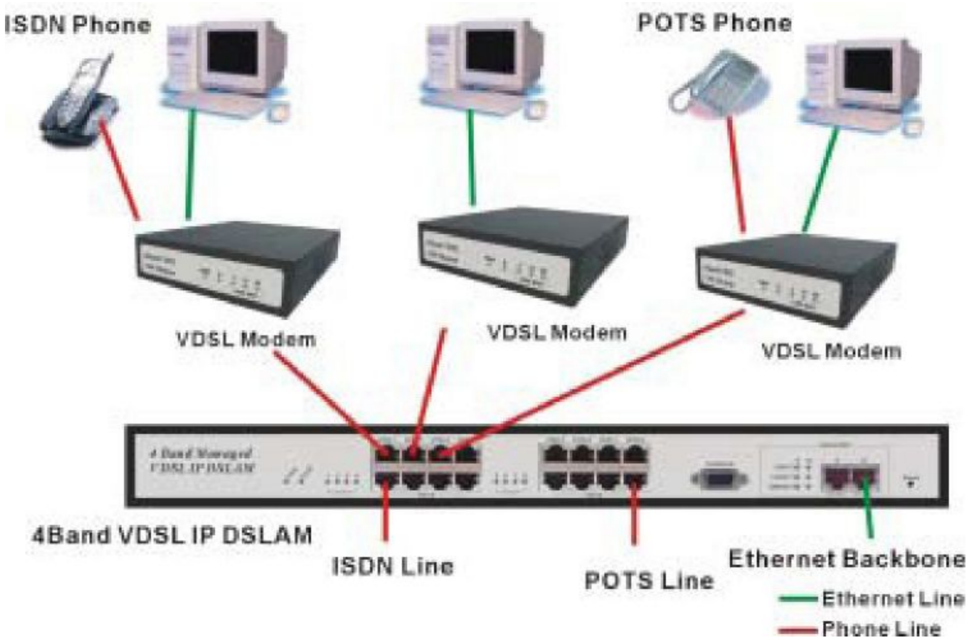


Figure Chapter 4.1

Application for Sharing a single internet account

If multiple users would like to share a single internet account using the IP DSLAM, which is to be connected to a IP sharing device, then to a xDSL or Cable Modem.

Note:

For network applications that actually require Router (e.g., Interconnecting dissimilar network types), attaching the IP DSLAM directly to a router can significantly improve overall home networking performance.

Return to the catalogue.

High bandwidth backbone ready

The IP DSLAM provides 10/100/1000Mbps auto sensing for external trunk device (Fiber optics, Wireless Bridge, xDSL & other WAN services)

Return to the catalogue.

Appendix A: Troubleshooting

Diagnosing VDSL Indicators

The VDSL can be easily monitored through its comprehensive panel indicators. These indicators assist the network manager in identifying problems the IP DSLAM may encounter. This section describes common problems you may encounter and possible solutions

1. Symptom: POWER indicator does not light up (green) after power on.

   Cause: Defective power outlet, power cord, internal power supply

   Solution: Cheek the power outlet by trying another outlet that is functioning properly. Check the power cord with another device. If these measures fail to resolve the problem, have the unit power supply replaced by a qualified distributor.

2. Symptom: Link indicator does not light up (green) after making a connection.

   Cause: Network interface (e.q., a network adapter card on the attached device), network cable, or IP DSLAM port is defective. Solution: 2.1 Verifies the IP DSLAM and attached device are powered on.

   2.2 Be sure the cable is plug into both the IP DSLAM and corresponding device.
   2.3 Verify that the proper cable type is used and its length does not exceed specified limits.
   2.4 Check the adapter on the attached device and cable connections for possible defects.
   2.5 Replace the defective adapter or cable if necessary.

3. Symptom: VDSL always link on 5M/5M speed mode at short phone cable.

   Cause: VDSL auto speed lock up.

   Solution: Please re-power VDSL MODEM.

   Note : IP DSLAM will redo auto speed function while VDSL MODEM be re-power on.

Return to the catalogue.

System Diagnostics

Power and Cooling Problems

If the POWER indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or internal power supply as explained in the previous section. However, if the unit should turn itself off after running for a while, check for loose power connections, power loss or surges at the power outlet, and verify that the fan on back of the unit is unobstructed and running prior to shutdown. If you still cannot isolate the problem, then the internal power supply may be defective. In this case, contact your supplier for assistance.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (e.g., the power cord or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

Transmission Mode

The selections of the transmission mode for the RJ-45 ports are auto-negotiation using the default method. Therefore, if the Link signal is disrupted (e.g., by unplugging the network cable and plugging it back in again, or by resetting the power), the port will try to reestablish communications with the attached device via auto-negotiation. If auto-negotiation fails, then communications are set to half duplex by default. Based on this type of industry-standard connection policy, if you are using a full-duplex device that does not support auto-negotiation, communications can be easily lost (i.e., reset to the wrong mode) whenever the attached device is reset or experiences a power fluctuation. The best way to resolve this problem is to upgrade these devices to version that will support auto-negotiation.

Return to the catalogue.

Cabling

1. Verify that the cable type is correct. Be sure RJ-45 cable connectors are securely seated in the required ports. Use 100Ω straight-through cables for all standard connections. Use Category 5 cable for 100Mbps Fast Ethernet connections, or Category 3, 4 or 5 cables for standard 10Mbps Ethernet connections. Be sure RJ-45 phone wiring, use 18~26 gauge.
2. Make sure all devices are connected to the network. Equipment any have been unintentionally disconnected from the network.
3. When cascading two devices using RJ-45 station ports at both ends of the cable (i.e., not an MDI port), make sure a crossover cable is used. Crossover cable should only be used if a MDI port is not available.

Physical Configuration

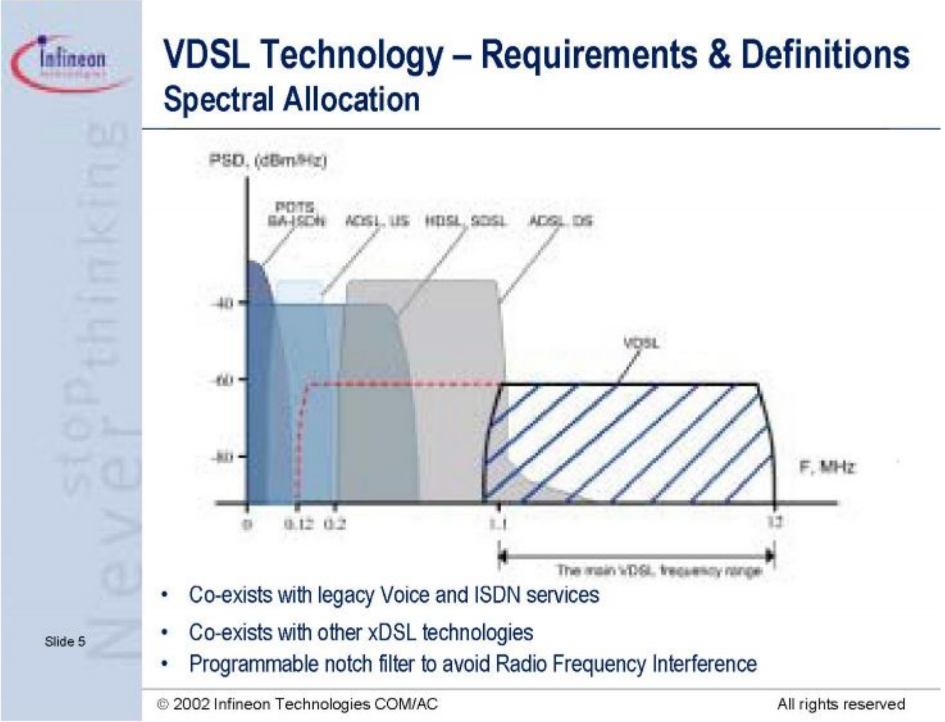
If problems occur after altering the network configuration, restore the original connections, and try to track the problem down by implementing the new changes, one step at a time. Ensure that cable distances and other physical aspects of the installation do not exceed recommendations

System Integrity

As a last resort verify the IP DSLAM integrity with a power-on reset. Turn the power to the IP DSLAM off and then on several times. If the problem still persists and you have completed all the preceding diagnoses, contact your dealer for assistance.

Return to the catalogue.

Appendix B: VDSL Spectrum



VDSL Technology – Requirements & Definitions

Spectral Allocation

- Co-exists with legacy Voice and ISDN services
- Co-exists with other xDSL technologies
- Programmable notch filter to avoid Radio Frequency Interference

Slide 5

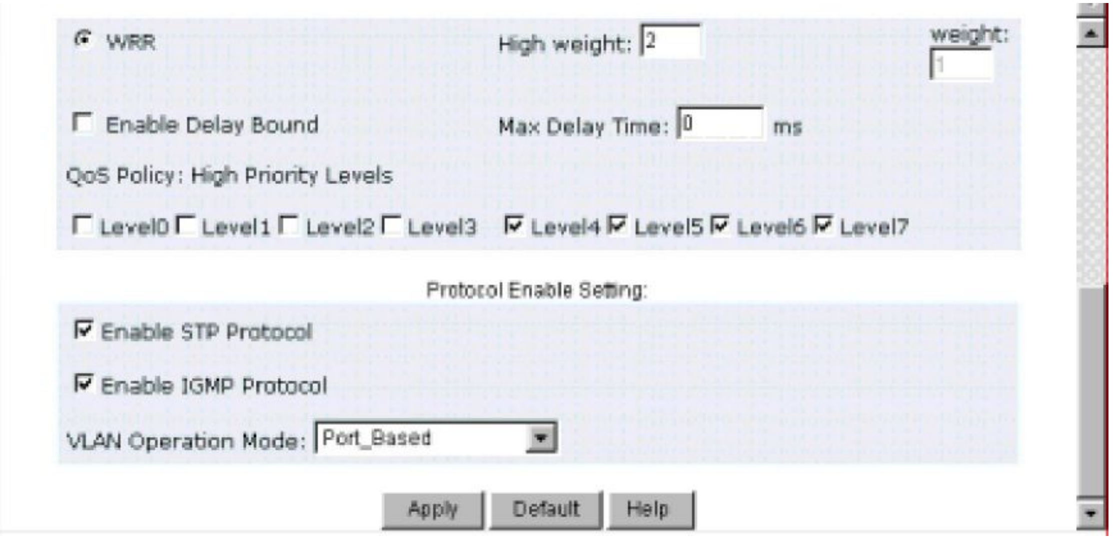
VDSL Spectral Allocation

Return to the catalogue.

Appendix C: Example of VLAN Setting

1. Port_Based VLAN Setting

Web management **->** Administrator **->** IP DSLAM settings **->** Advanced:
Protocol Enable Setting-> VLAN Operation Mode: Select "**Port_Based**"



● WRR High weight: 2 weight: 1

□ Enable Delay Bound Max Delay Time: 0 ms

QoS Policy: High Priority Levels

□ Level0 □ Level1 □ Level2 □ Level3 ☑ Level4 ☑ Level5 ☑ Level6 ☑ Level7

Protocol Enable Setting:

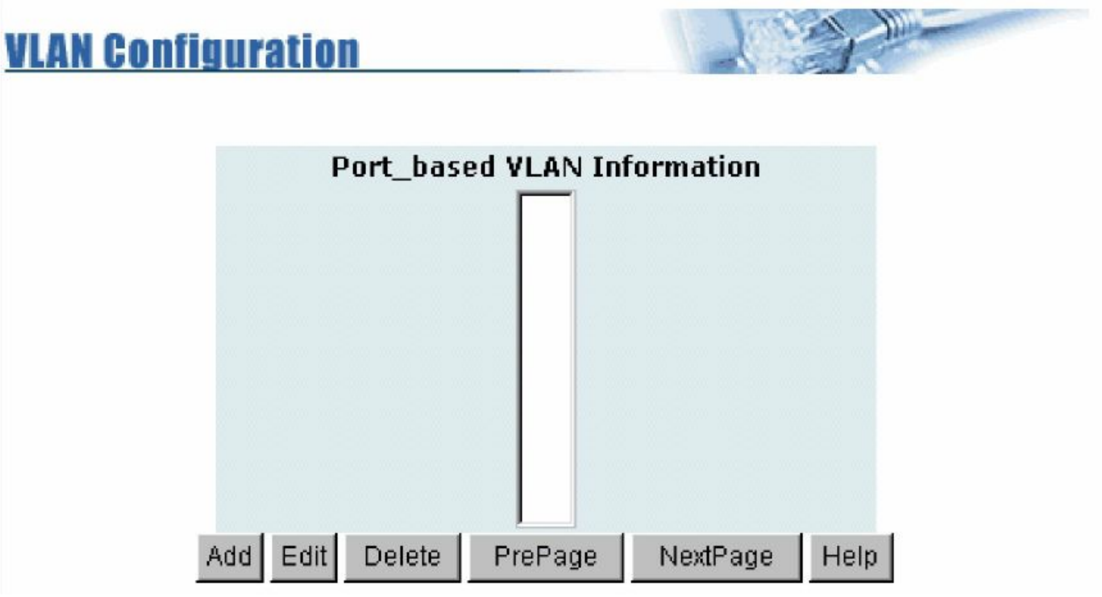
☑ Enable STP Protocol

☑ Enable IGMP Protocol

VLAN Operation Mode: Port_Based

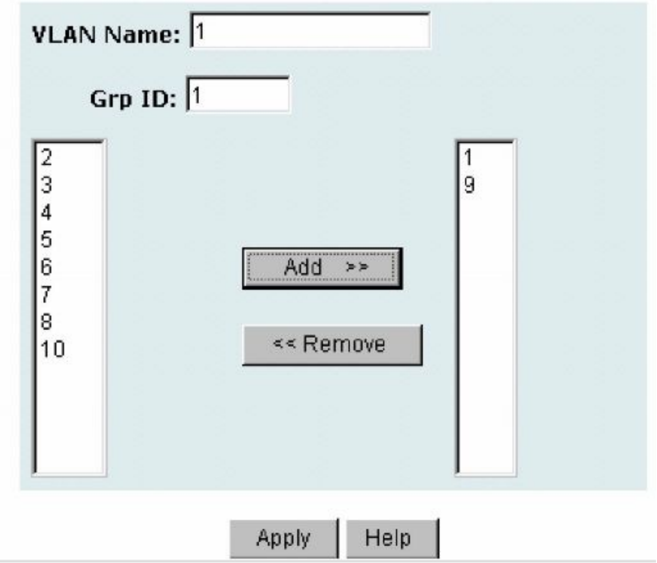
Return to the catalogue.

Web management **->** Administrator **->** IP DSLAM settings->Vlan Configuration:



Return to the catalogue.

Add VLAN Group 1, member: port 1 and port 9



VLAN Name: 1

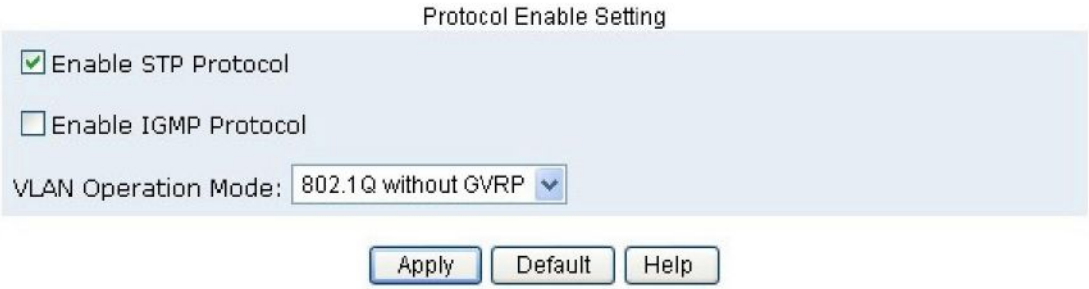
Grp ID: 1

Return to the catalogue.

2. Tag_Based (IEEE 802.1Q) VLAN Setting

Web management **->** Administrator **->** IP DSLAM settings **->** Advanced:

Protocol Enable Setting-> VLAN Operation Mode: Select "**802.1Q without GVRP**"



Protocol Enable Setting

☑ Enable STP Protocol

□ Enable IGMP Protocol

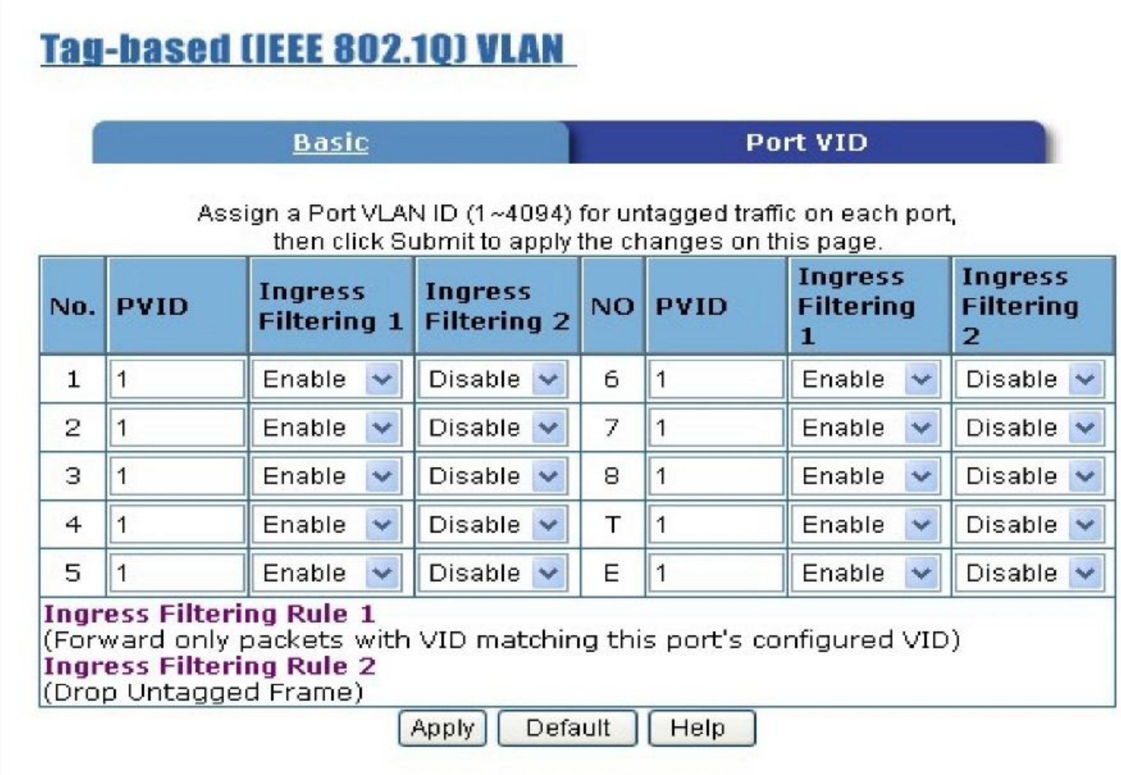
VLAN Operation Mode: 802.1Q without GVRP

Return to the catalogue.

Administrator **->** VLAN Configuration: Select "**Port VID**" in this stage, you can define each port's PVID and set traffic rules for each port.

Note: There are two basic rules for setting traffic filtering rule while you use Tag VLAN.

1. Ingress rule will be taking effect when the packet is "incoming" packet.
2. Ingress rule 1 and 2 will be checked when you use tag. Otherwise the ingress rule will be meaningless.



Tag-based (IEEE 802.1Q) VLAN

Assign a Port VLAN ID (1~4094) for untagged traffic on each port, then click Submit to apply the changes on this page.

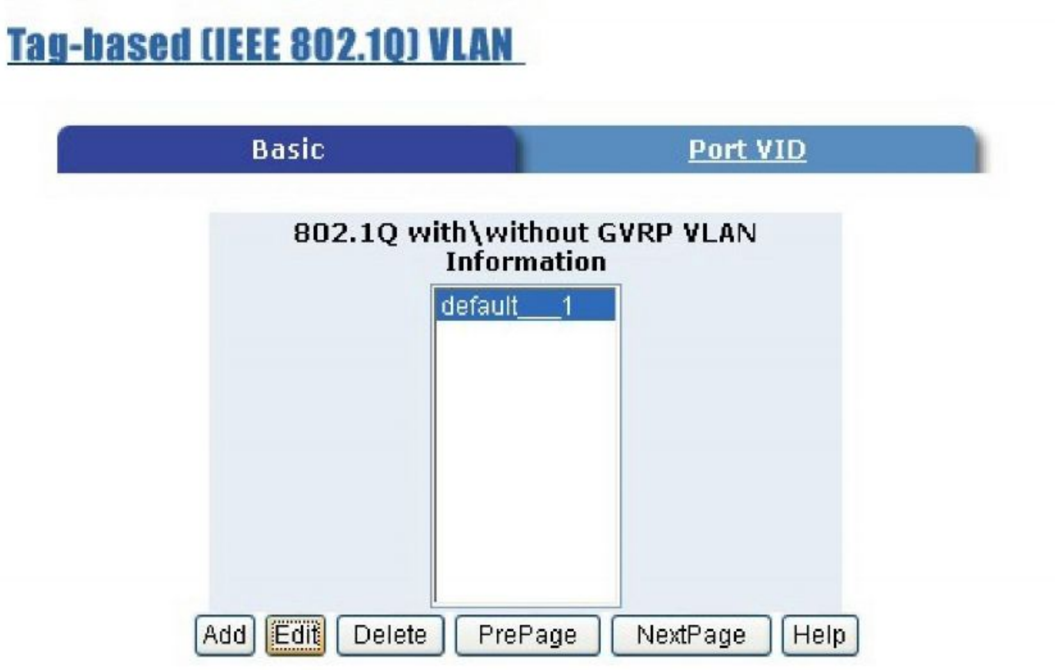
No.	PVID	Ingress Filtering 1	Ingress Filtering 2	NO	PVID	Ingress Filtering 1	Ingress Filtering 2
1	1	Enable	Disable	6	1	Enable	Disable
2	1	Enable	Disable	7	1	Enable	Disable
3	1	Enable	Disable	8	1	Enable	Disable
4	1	Enable	Disable	T	1	Enable	Disable
5	1	Enable	Disable	E	1	Enable	Disable

Ingress Filtering Rule 1
(Forward only packets with VID matching this port's configured VID)
Ingress Filtering Rule 2
(Drop Untagged Frame)

Return to the catalogue.

VLAN Configuration: Select "**Basic**"

- Default_1 exists when you use **802.1Q Tag VLAN.**
- Highlight default_1 and click Edit button to add/remove each port.

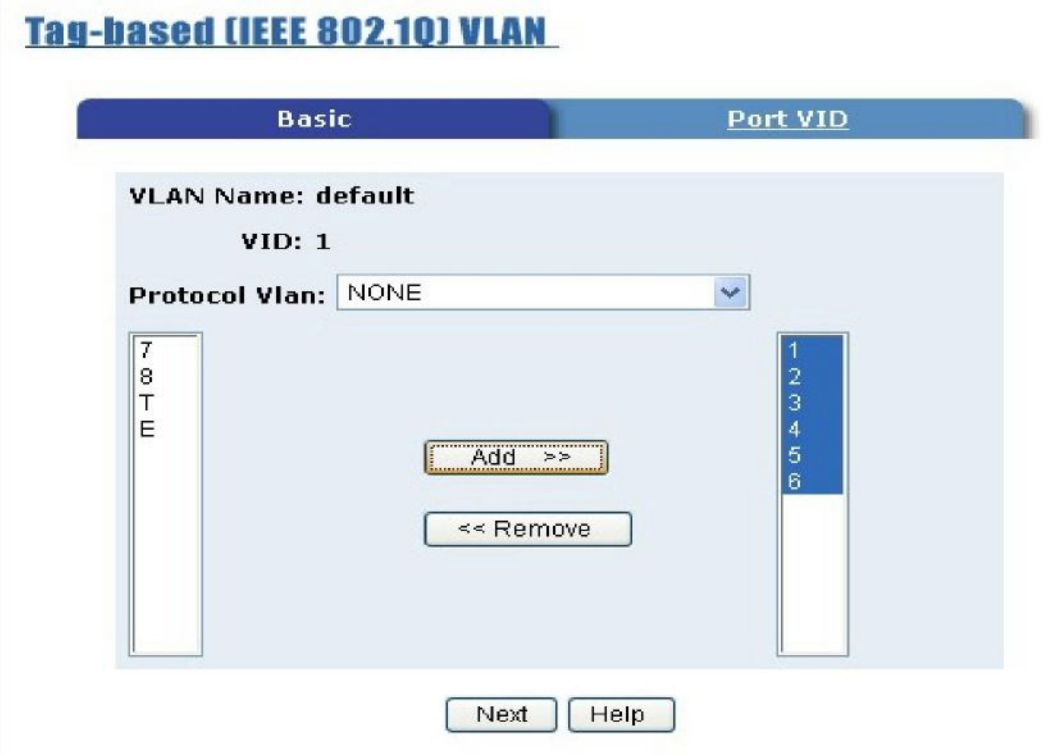


Tag-based (IEEE 802.1Q) VLAN

802.1Q with\without GVRP VLAN Information

default___1

In default_1 group, add in or remove group members. Click Next button to set Tag or Untag for each assigned port.



Tag-based (IEEE 802.1Q) VLAN

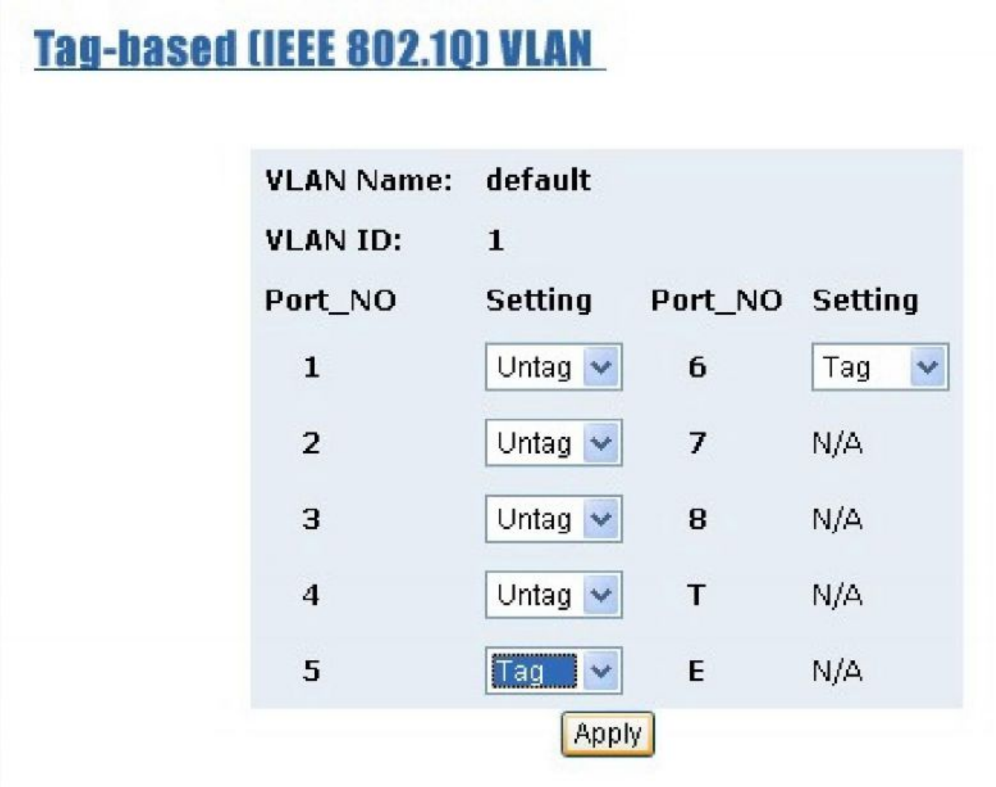
VLAN Name: default

VID: 1

Protocol Vlan: NONE

Return to the catalogue.

From this page, you can set Tag or Untag for assigned port and click Apply button.



Tag-based (IEEE 802.1Q) VLAN

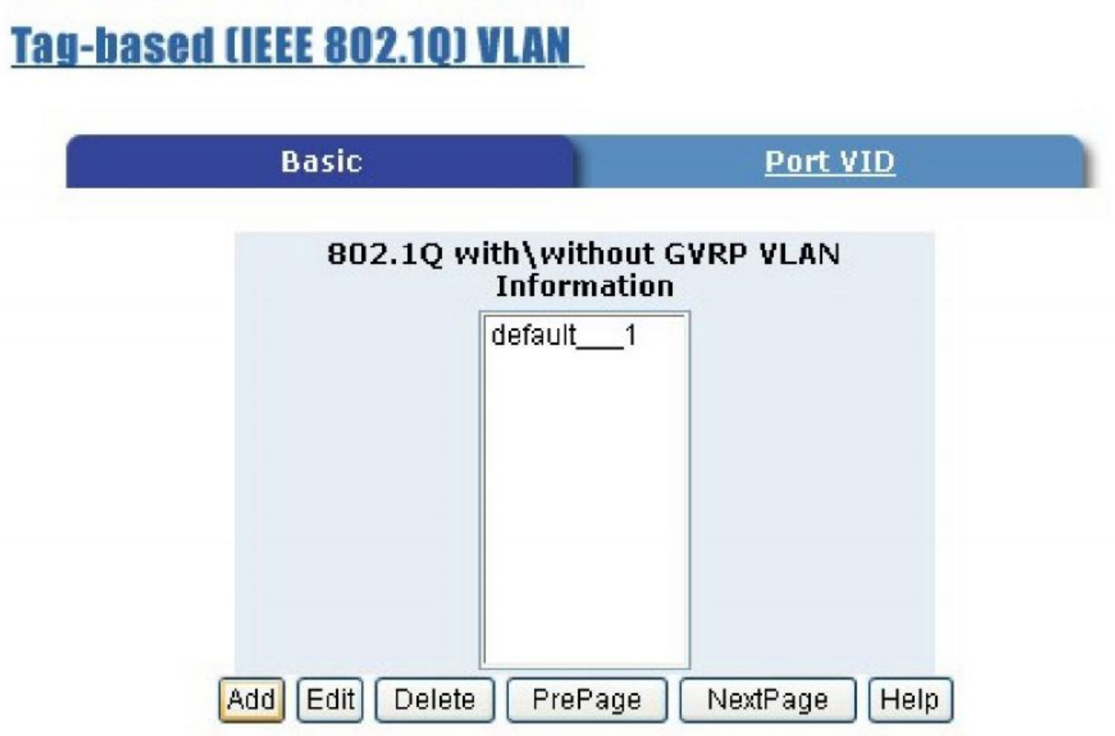
VLAN Name: default

VLAN ID: 1

Port_NO	Setting	Port_NO	Setting
1	Untag	6	Tag
2	Untag	7	N/A
3	Untag	8	N/A
4	Untag	T	N/A
5	Tag	E	N/A

Add in new group.

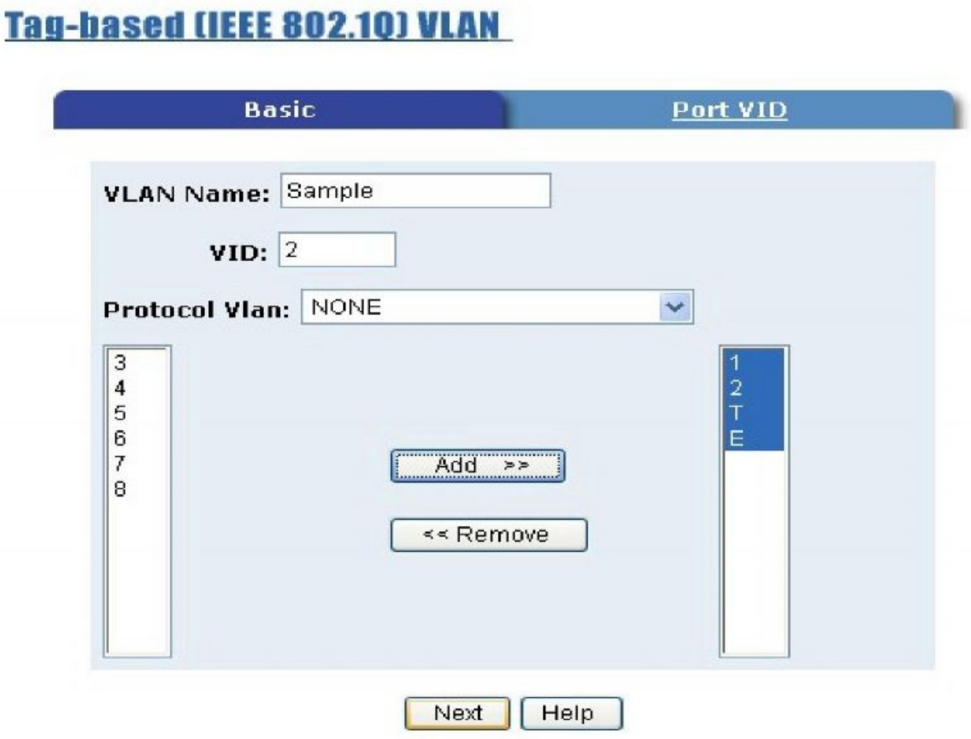
- Click Add button into new group setting page.


Tag-based (IEEE 802.1Q) VLAN
Basic
Port VID
802.1Q with\without GVRP VLAN Information
default___1
Add
Edit
Delete
PrePage
NextPage
Help

Return to the catalogue.

Add in new group page.

- Fill in new group name into VLAN Name
- Set the VID number.
- Add in new group members.
- Click Next button.



Tag-based (IEEE 802.1Q) VLAN

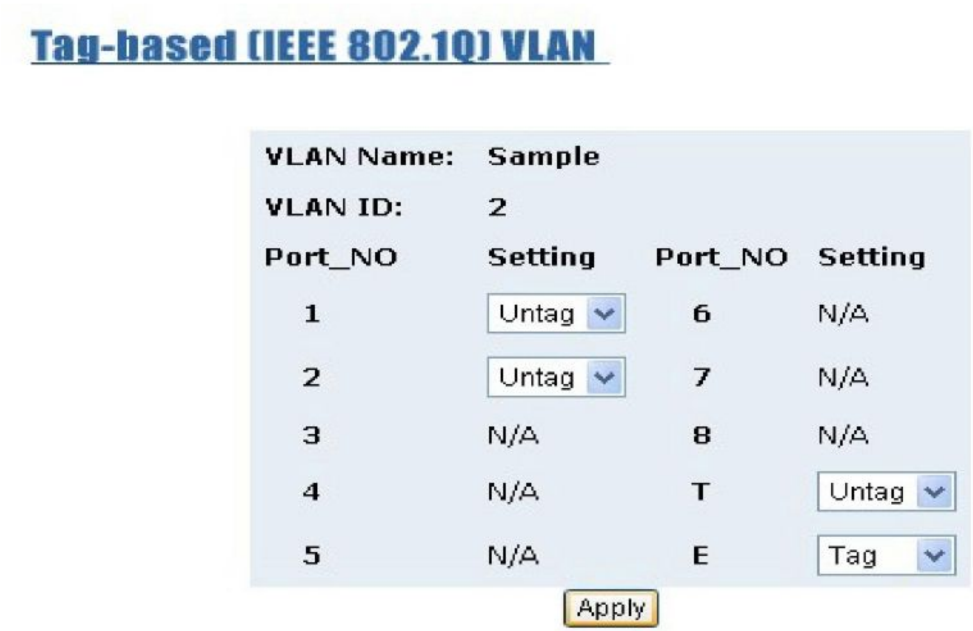
VLAN Name: Sample

VID: 2

Protocol Vlan: NONE

Return to the catalogue.

Set Tag or Untag for group members and click Apply button.

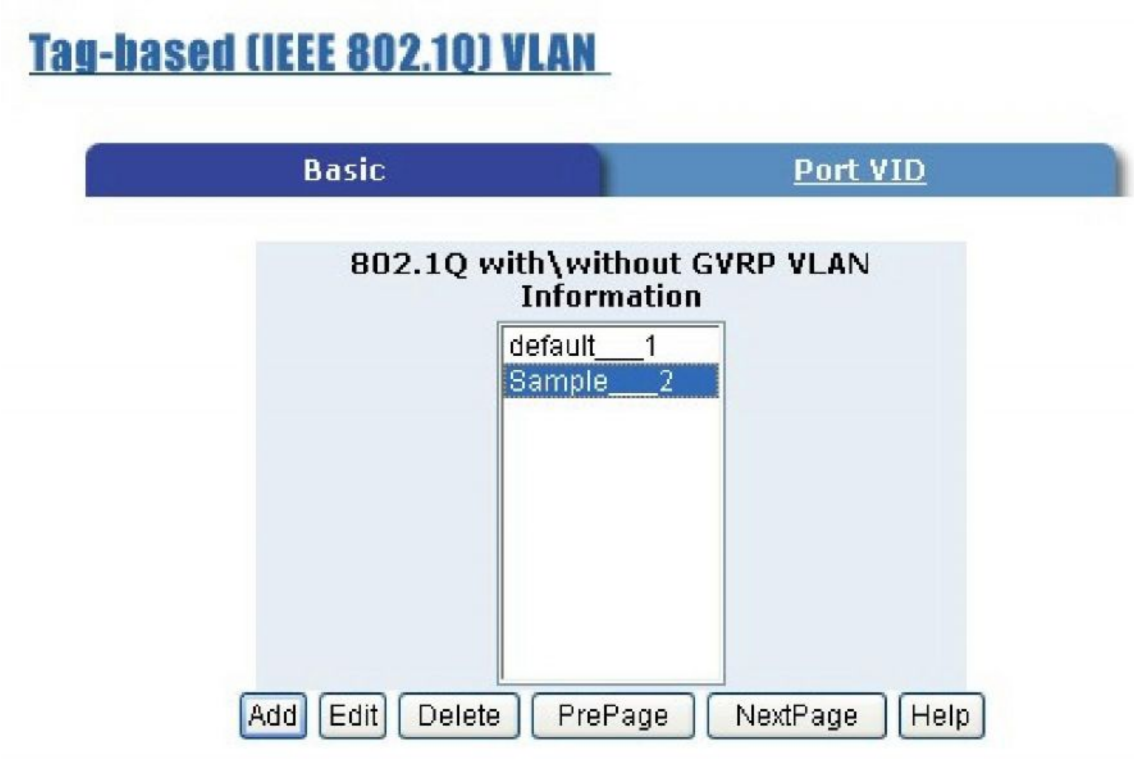


Tag-based (IEEE 802.1Q) VLAN

VLAN Name:	Sample		
VLAN ID:	2		
Port_NO	Setting	Port_NO	Setting
1	Untag	6	N/A
2	Untag	7	N/A
3	N/A	8	N/A
4	N/A	T	Untag
5	N/A	E	Tag

Return to the catalogue.

New group has been created, now you can highlight each group and click Edit or Delete button to modify or delete VLAN Group.


Tag-based (IEEE 802.1Q) VLAN

802.1Q with\without GVRP VLAN Information

default___1
Sample___2

Return to the catalogue.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a CE class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Return to the catalogue.

Warranty

Dynamix Promotions Ltd. Confirm that the product was delivered in this package will be free from defects in material and workmanship from one year parts after purchase.

There will be a minimal charge to replace consumable components, such as fuses, power transformers, and mechanical cooling devices. The warranty will not apply to any products which have been subjected to any misuse, neglect or accidental damage, or which contain defects which are in any way attributable to improper installation or to alteration or repairs made or performed by any person not under control of the original owner.

The above warranty is in lieu of any other warranty, whether express, implied, or statutory, including but not limited to any warranty of merchantability, fitness for a particular purpose, or any warranty arising out of any proposal, specification, or sample. Shall not be liable for incidental or consequential damages. We neither assumes nor authorizes any person to assume for it any other liability.

www.godynamix.com

Note: Please do not tear off or remove the warranty sticker as shown, otherwise the warranty will be void.

Return to the catalogue.