D-Link®

DES-3226
Switch Management Module

First Edition (October 2002)

Printed In Taiwan

RECYCLABLE

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About this Guide

This User's Guide tells you how to use the D-View5.1 network management system to manage your DES-3226 Series intelligent Fast Ethernet switch, including how to install the management module for the switch, and how to use the module to control and monitor the switch. Additional information on installing your switch and configuring it for management can be found in the DES-3226 *User's Guide*.

Introduction

DES-3226 Series Intelligent Ethernet Switch

This guide discusses how to manage the DES-3226 Series switch using the D-View5.1 network management system. The DES-3226 Series combines conventional Ethernet, Fast Ethernet, Gigabit Ethernet, and switching technologies into one package. This device features twenty-four 10/100 NWay switching ports, and supports an optional ultra high-speed 1000BASE-SX Gigabit Ethernet rear module.

Additional information about configuring the DES-3226 Ethernet switch may be found in the Ethernet switch's hardware *User's Guide*.

Network Management

As networks grow larger, network management becomes more and more of a necessity. A large network requires a considerable amount of work to keep it running smoothly, including time and effort spent on user support, troubleshooting, network planning, and performance monitoring. The intent of a network management system (NMS) is to make it possible to monitor a widely spread-out network (possibly spanning many different sites) from a centralized location.

Network management works by placing a small degree of "intelligence" in the network elements (routers, switches, hubs, hosts, etc.) to be managed. This intelligence takes the form of an *agent* that is capable of collecting statistics and status information, as well as performing control operations that affect the operation of the network. The agent responds to commands and requests for information from the centralized network management system, allowing the health and performance of the network to be monitored and adjusted.

A network protocol known as the Simple Network Management Protocol (SNMP) is generally used to communicate between network management stations and the devices they manage. SNMP was originally developed for controlling the devices that made up the infrastructure of the Internet, and has become the primary standard for network management. SNMP commonly runs "on top of" the TCP/IP Internet Protocol, though other transmission methods are possible.

Because a network management station can be used to manage a wide range of devices, network management software is generally divided into two different parts: a base *platform* consisting of software common to the management of all devices; and a set of *modules*, each of which can communicate with a narrow range of devices by way of their SNMP-based agents. If a new device type is added to the network, then a new module (compatible with the particular platform being used) needs to be added to facilitate its management.

This manual describes the module used on the D-View5.1 platform for controlling DES-3226 intelligent Gigabit Ethernet switches.

Installing the Management Module

This section describes the requirements and procedures for installing the DES-3226 Series management module on your network management system.

Requirements

We recommend that your system meet the following requirements to be able to use the DES-3226 Series switch management module:

D-View

- An IBM PC AT or compatible computer with a 486DX2-66 or faster processor
- Microsoft Windows 95, 98, NT 4.0, 2000 or XP
- D-View SNMP Network Management Program, version 5.1
- 16 megabytes (32M preferred) of main memory (RAM)
- At least 10 megabytes of free hard disk space
- A Windows-compatible mouse or other pointing device
- An Ethernet network card with appropriate drivers
- A CD-ROM drive

Before installing the module, you need to have D-View5.1 installed on your system. Take note of the directory path where you installed it because you will need to enter the same path name when you install management modules.

Preparing the Switch for Management

You will need to make sure that your switch is properly set up before you can use the management module:

- Ensure that the switch is either connected to the same network as the network management station, or that it is connected using the SLIP protocol using the RS-232C console port.
- Ensure that the switch's TCP/IP settings are set properly. If the switch is on the same local network, the network portion of the switch's IP address needs to be the same as that of the network management station. If they are on separate LANs, the TCP/IP gateway (router) field of both the switch and the router need to be set properly so that information can be routed properly between the switch and the management station.

For more information about these and other items, consult the DES-3226 hardware *User's Guide*.

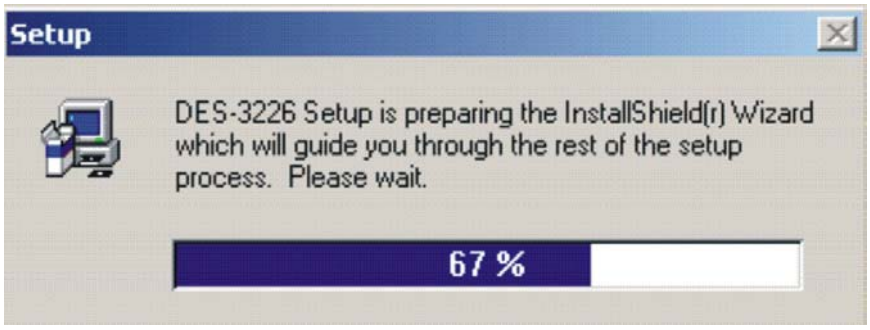
Installing the Module Software

Take the following steps to install the module on your network management system:

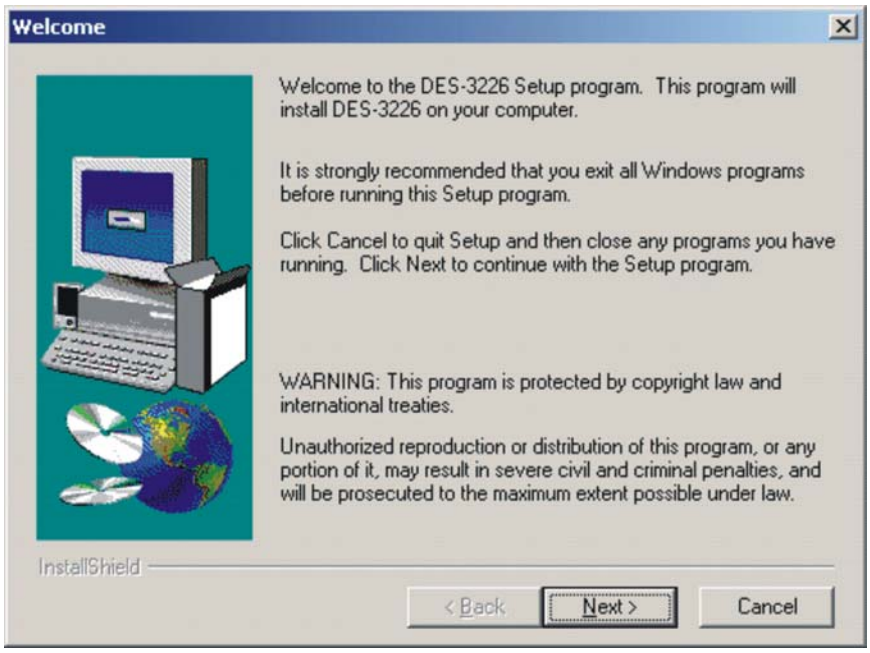
D-View

1. Exit D-View if you are running it.
2. Insert the DES-3226 disk into your system's CD-ROM drive.
3. Under Windows 98, choose **Run…** from the **Start** menu on the taskbar. When the dialog box appears, type the pathname of the `setup.exe` program (`D:\Setup`).

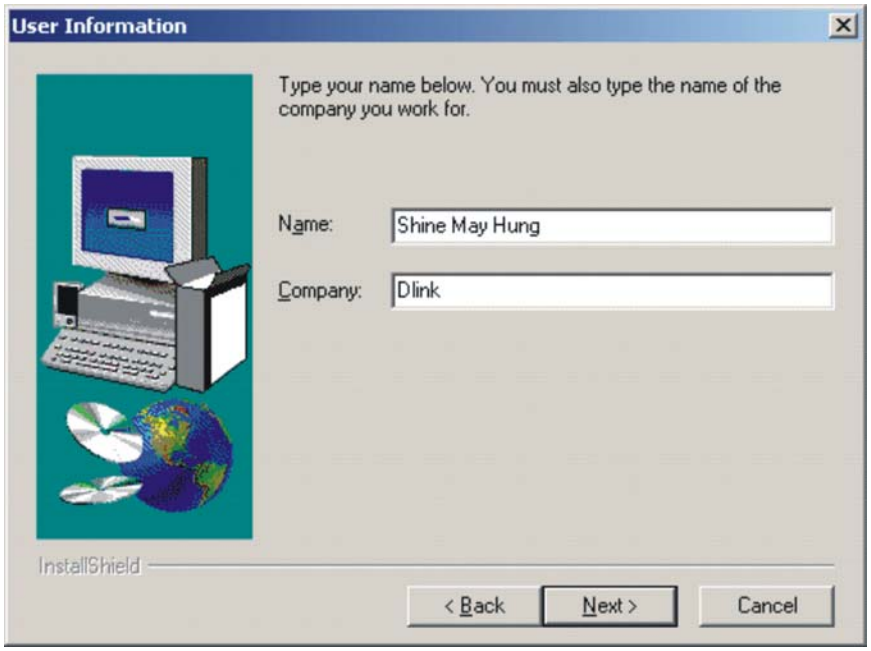
4. The installation program will start. You will see the following **Setup** prompt.



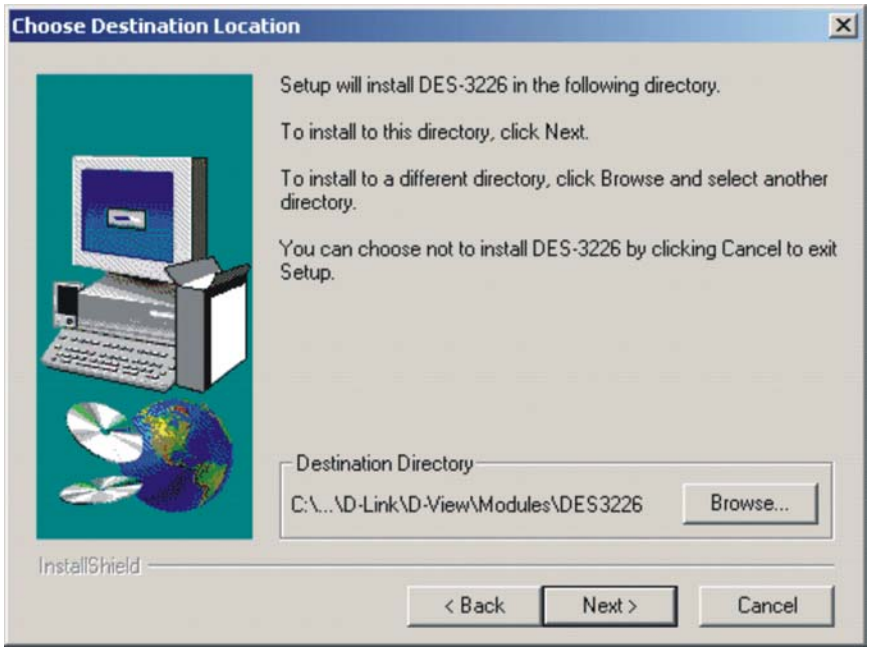
5. When the **Welcome to the DES-3226 Setup program** window opens, click **Next**.



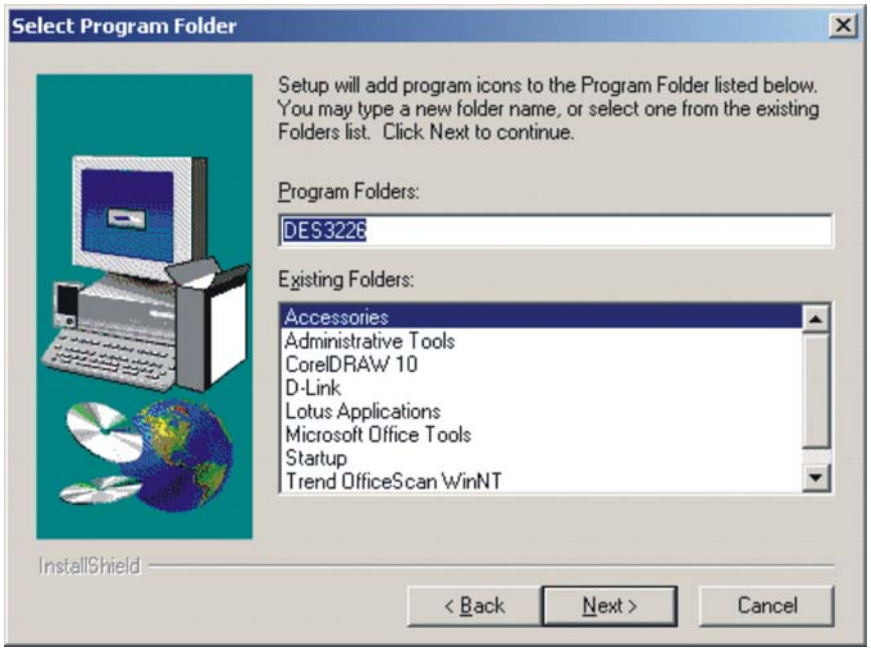
6. When the **User Information** screen appears enter the relevant information and then click **Next**.



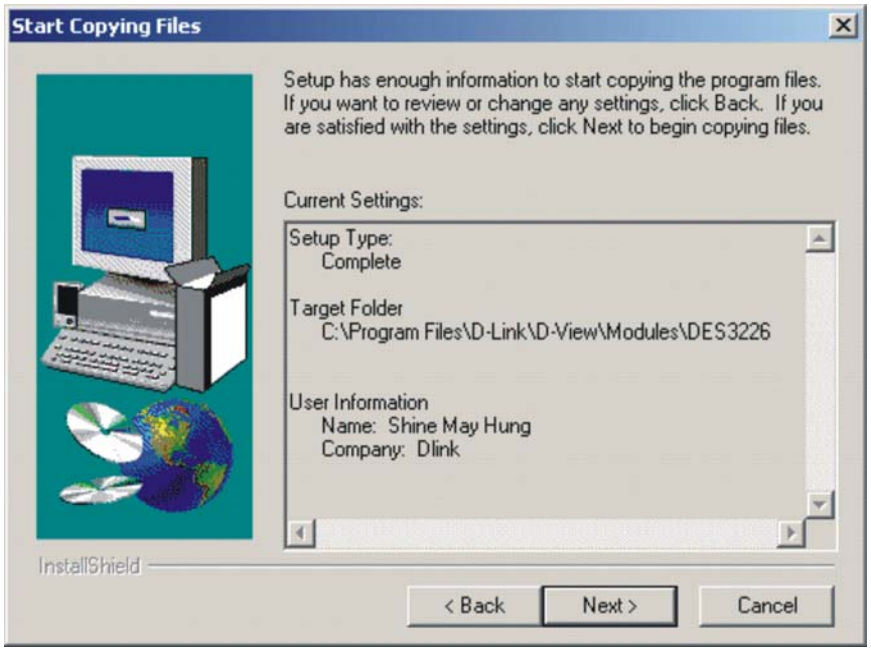
7. To install DES-3226 in the directory C:\…\D-Link\D-View\Modules\DES3226 click **Next** or click **Browse** to find an alternate location.



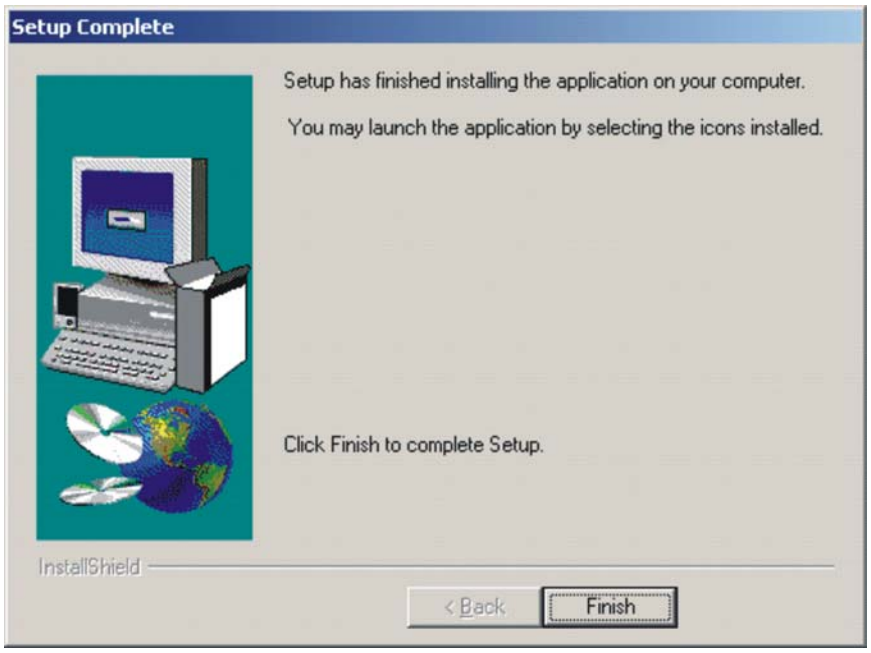
8. Select folder name and click **Next** to continue the module installation.



9. The current settings for copying files is listed. If you are satisfied with the settings click **Next**. If not click **Back** to change settings.



10. When your computer is finished, the **Setup Complete** window appears. Click **Finish**.



The D-View network management system will now be ready to manage DES-3226 Series switches once a switch icon is added to the network map (see the next section for instructions).

DES-3226 Management

Adding your DES-3226 Switch to the Map

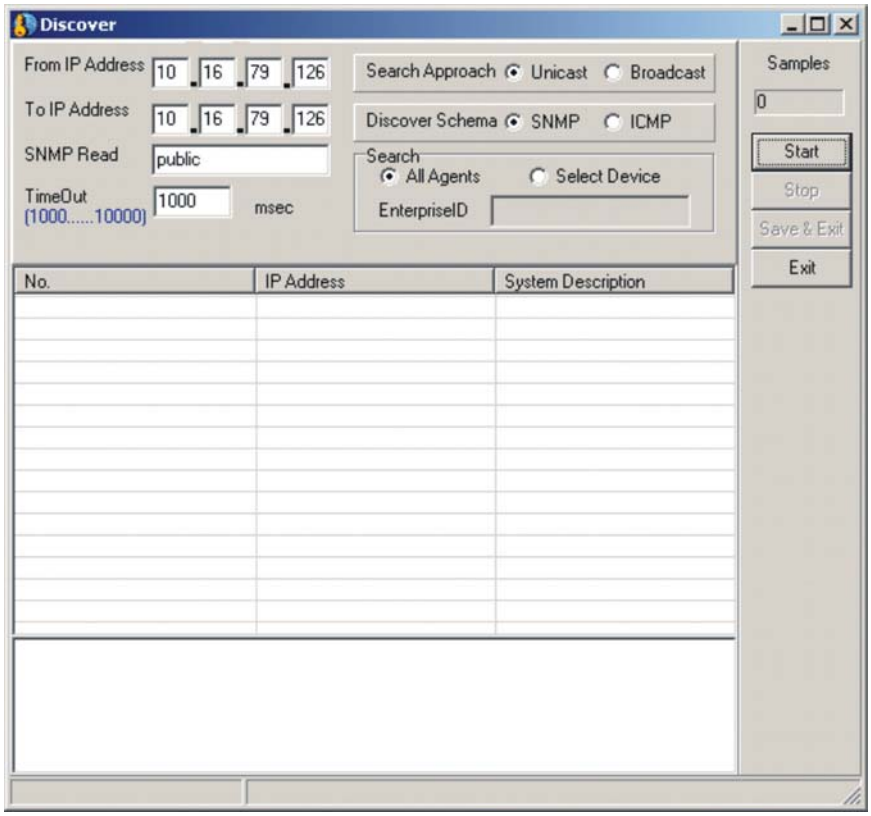
Before you can manage individual DES-3226 Series Ethernet switches, you need to add them to your network map.

D-View

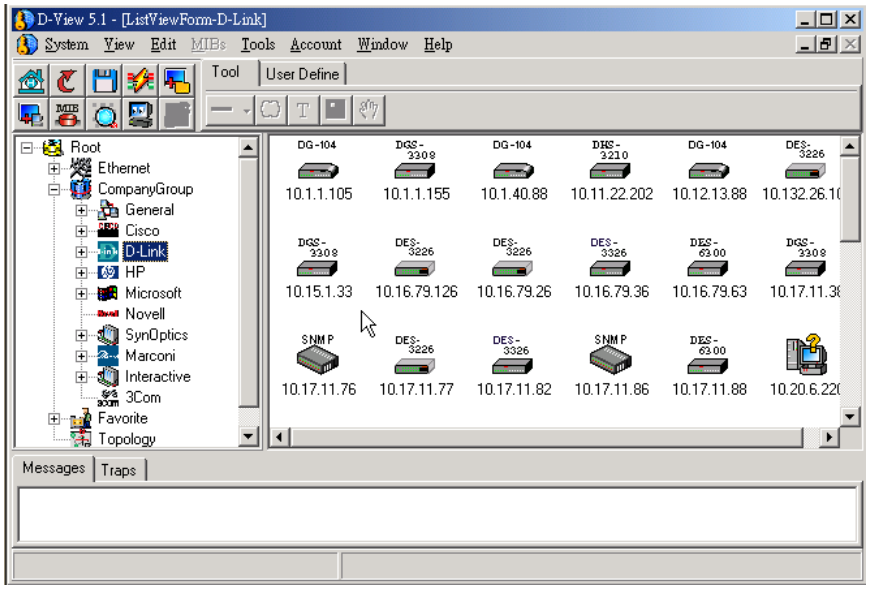
You can do this either by:

- Using D-View's Auto Discover capability to add all new SNMP-manageable devices to the map.
- Using the manual Discover Devices capability.

To use the second method the following screen will appear when you click on **Discover** under the **System** drop-down menu. Enter the appropriate IP settings and Discover the device of choice.

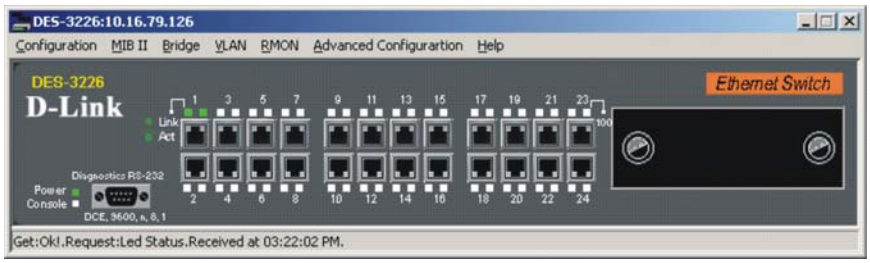


The DES-3226 switch icon should now be displayed on your network map as shown below:



The Module Display

Double-clicking on the icon in the network map causes the module display to open. The module display is used to monitor and perform network management functions on the selected device. The module display for the DES-3226 appears as follows:



- **Menu Buttons** The **Configuration**, **MIBII**, **Bridge**, **VLAN**, **RMON**, **Advanced Configuration**, and **Help** buttons display their respective pull-down menus. The items listed in these menus are described later on in this manual.
- **Ports** Each of the ports on the switch are depicted on the panel. You can select individual ports to perform operations on them. Clicking on the gray area immediately surrounding the ports will deselect the port and select the switch as a whole.
- **Port Status Indicators** There are corresponding port status indicators for each of the ports on the switch. Each port indicator can be interpreted as follows:
  - **Link** Lights green when a port is connected to a powered-on Ethernet device.
  - **Act** Lights blink off briefly when information is transmitted or received on a port.
  - **100M** Lights when a 100 Mbps connection is made on a port.
- **Switch Status Indicators** There are two switch status indicators. Each switch indicator can be interpreted as follows:
  - **Power** Lights green when device is powered on.
  - **Console** Lights when the console management program is in use.

Selecting Ports

Many of the switch management functions can be applied to the switch itself, or to a particular port. You can select an individual port by clicking on the port

itself. You can select the switch itself by clicking in the gray area surrounding the ports, so that none of the ports are selected.

Menu Buttons

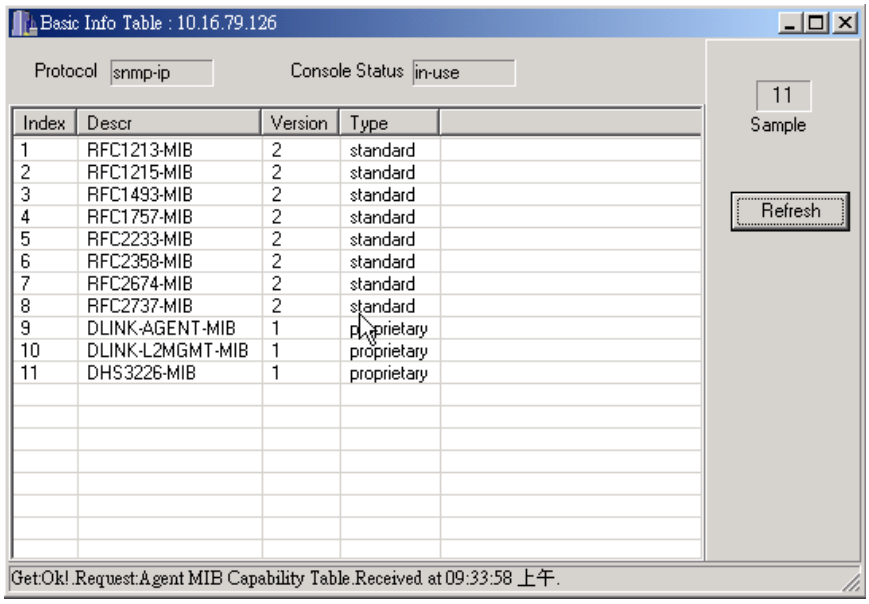
The menu buttons on the module - **Configuration**, **MIBII**, **Bridge**, **VLAN**, **RMON**, **Advanced Configuration**, and **Help** – are used to access all the configuration settings, polling parameters and viewing tables used in management. The section below addresses the function and use of each item in the menu button's drop-down menus.

Configuration Menu Button

The **Configuration** menu contains options that allow you to get information about current settings, configure switch parameters, and setup the switch for monitoring.

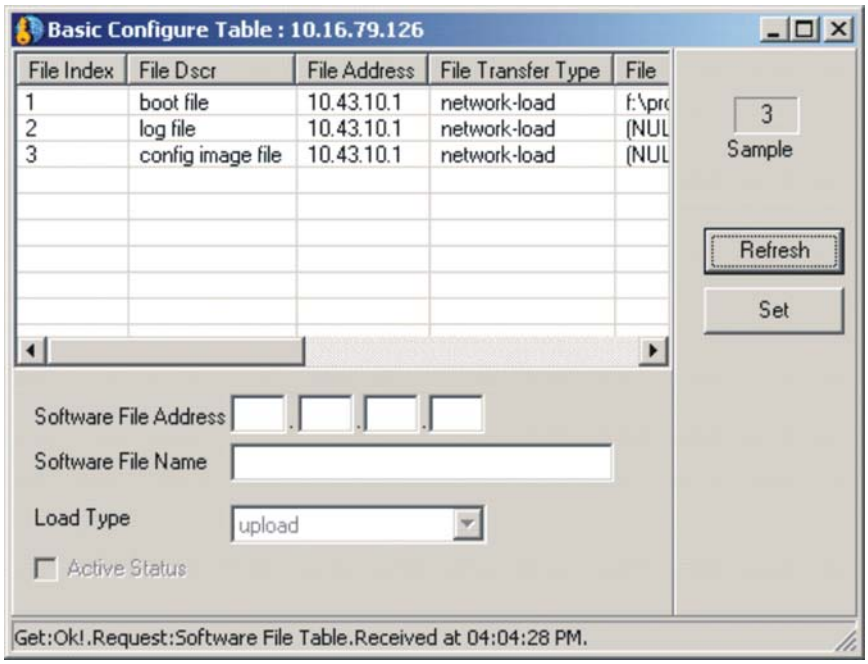
Configuration→Basic→Basic Information

You may access this window by choosing **Basic** under the **Configuration** button and then by selecting **Basic Info**. It gives a list of the MIBs that are supported by the device, the version and type of the MIB. It indicates whether the console is currently in use.



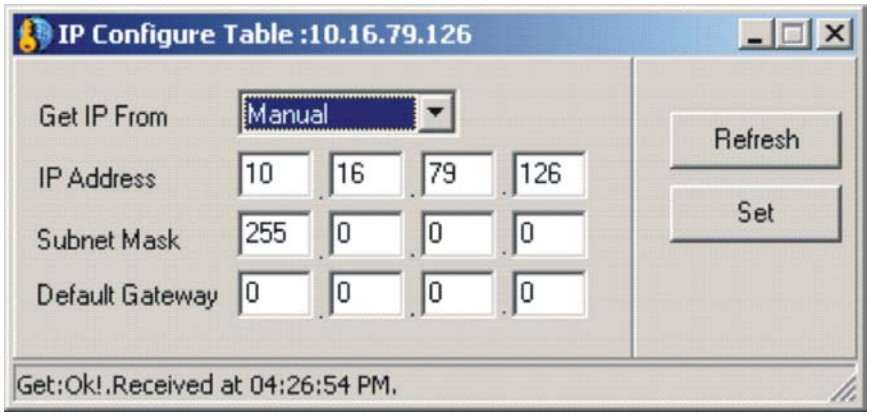
Configuration→Basic→Basic Configure

A basic configuration entry contains information about downloading or uploading the boot file, log file and config file.



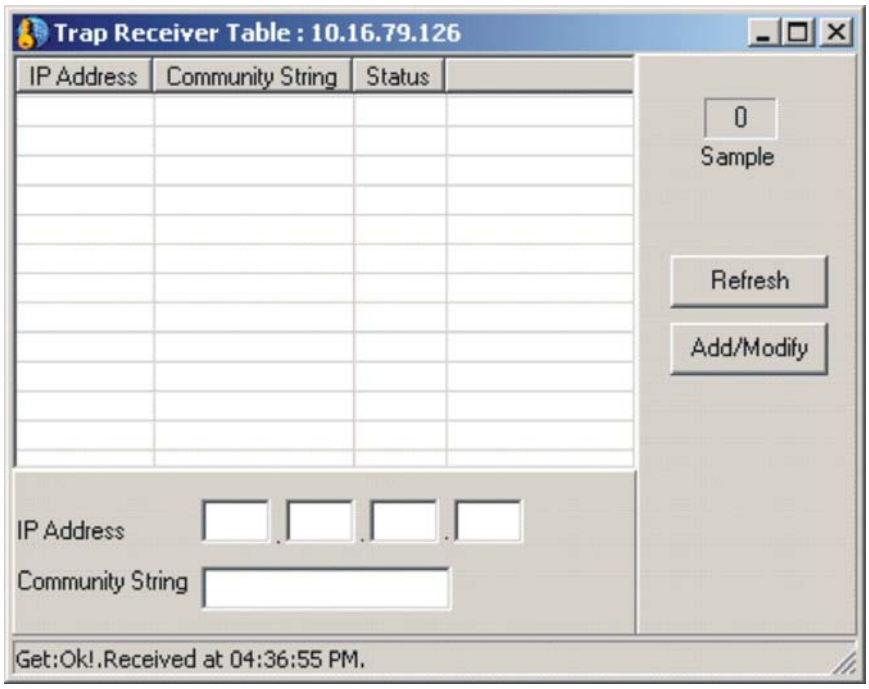
Configuration→Basic→IP Configure

Use this screen to manually set the IP Address, Subnet Mask and Default Gateway of the device.



Configuration→Basic→Trap Receiver

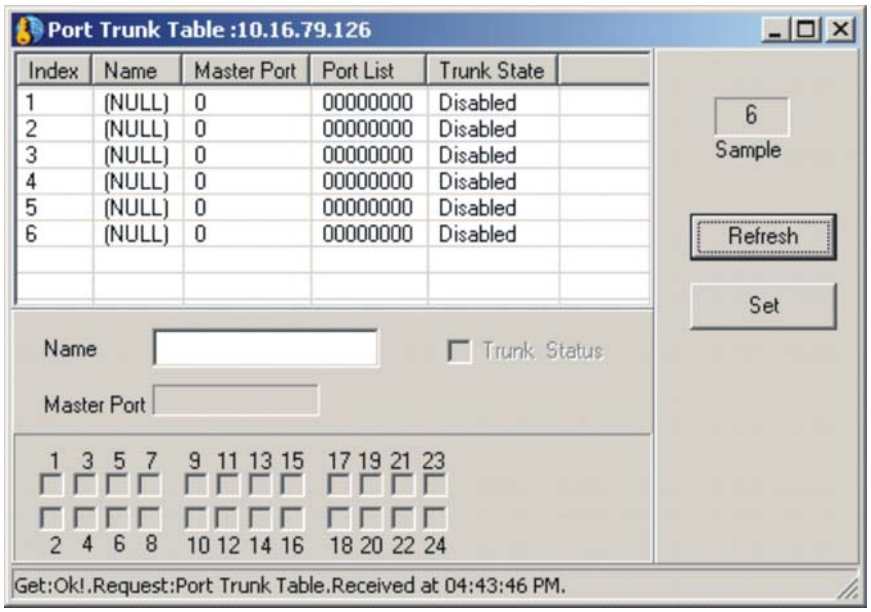
This screen gives a list of trap managers to which SNMP traps will be sent.



Configuration→Basic→Port Trunk

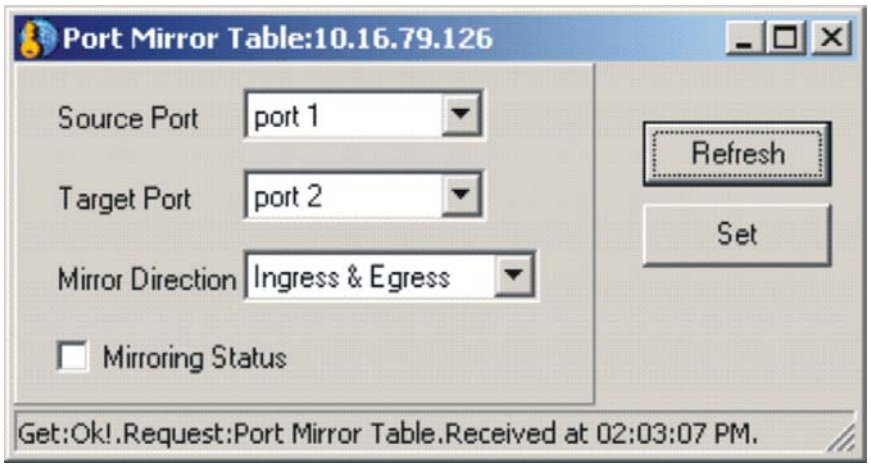
The DES-3226 can support up to 6 trunk groups, each of which combines multiple ports into a single, logical, high-bandwidth data pipe.

To view or edit the Port Trunking Table, choose **Port Trunk** from the **Configuration** menu:



Configuration→Basic→Port Mirror

A list of information provides an easy way to monitor traffic on any port. The user can bring a fancy network monitor attaching to any target mirror port and set the port to be monitored as the source mirror port. The user can set the source port, target port, and mirror direction.

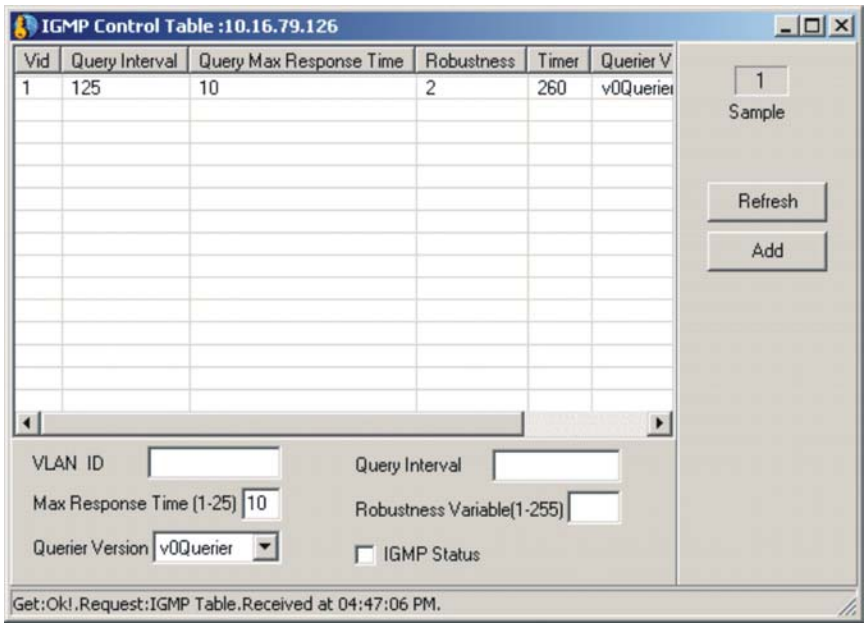


Configuration→Basic→IGMP Control Table

The **IGMP Control Table** option allows you to set up the switch for handling multicast transmissions. You may access this window by choosing **Basic** under **Configuration** and then by selecting **IGMP Control Table**.

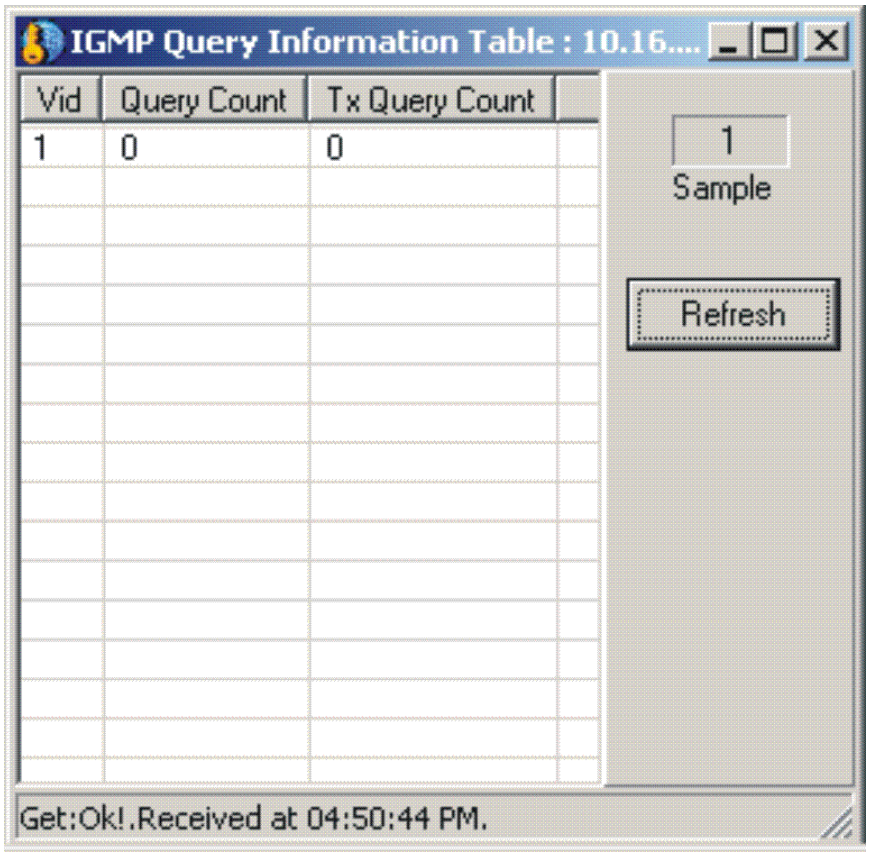
Internet Group Management Protocol (IGMP) allows multicasting on your network. When IP Multicast Filtering is enabled, the switch can intelligently forward (rather that broadcast) IGMP queries and reports sent between devices connected to the switch and an IGMP-enabled device hosting IGMP on your network.

The table controls the VLAN's IGMP function. Its scale depends on current VLAN state.



Configuration→Basic→IGMP Query Information

IGMP Host-Query packets are transmitted on this interface. The information is displayed in the table below.



Configuration→IF-MIB→General Table

The following table gives a brief description of the IF MIB:

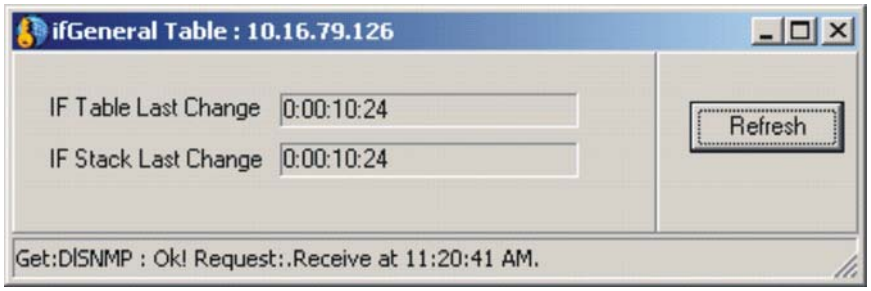
IF-MIB (RFC 2233)
1. The ifGeneralInformationGroup. This group contains those objects applicable to all types of network interfaces,

including bit-oriented interfaces.

2. The ifPacketGroup. This group contains those objects applicable to packet-oriented network interfaces.
3. The ifFixedLengthGroup. This group contains the objects applicable not only to character-oriented interfaces, such as RS-232, but also to those subnetwork technologies, such as cell-relay/ATM, which transmit data in fixed length transmission units. As well as the octet counters, there are also a few other counters (e.g., the error counters) which are useful for this type of interface, but are currently defined as being packet-oriented. To accommodate this, the definitions of these counters are generalized to apply to character-oriented interfaces and fixed-length-transmission interfaces.

It should be noted that the octet counters in the if Table aggregate octet counts for unicast and non-unicast packets into a single octet counter per direction (received/transmitted). Thus, with the above definition of fixed-length-transmission interfaces, where such interfaces which support non-unicast packets, separate counts of unicast and multicast/broadcast transmissions can only be maintained in a media-specific MIB module.

The General Table tells when the IfTable was last changed and when the If Stack was last changed.



Configuration→IF-MIB→IfX Table

The **IfX Table** gives a list of interface entries. The number of entries is given by the value of the **IfNumber**. This table contains additional objects for the interface table.

IfName is the textual name of the interface. The value of this object should be the name of the interface as assigned by the local device and should be suitable for use in commands entered at the device's console. This might be a text name or a simple port number depending on the interface naming syntax of the device.

IfInMulticastPkts is the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a multicast address at this sub-layer.

IfInBroadcastPkts is the number of packets delivered by this sub-layer to a higher (sub-) layer, which were addressed to a broadcast address at this sub-layer.

IfOutMulticastPkts is the total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including ones that were discarded or not sent.

IfOutBroadcastPkts is the total number of packets that higher-level protocols requested be transmitted, and which were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.

IfHCInUcastPkts is the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This object is a 64-bit version of **ifINUcastPkts**.

IfHCInMulticastPkts is the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a multicast address at this sub-layer. For a MAC layer protocol, this includes both Group and Functional addresses. This object is a 64-bit version of **ifInMulticastPkts**.

IfHCInBroadcastPkts is the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a broadcast address at this sub-layer. This object is a 64-bit version of **ifInBroadcastPkts**.

IfHCOutOctets is the total number of octets transmitted out of the interface, including framing characters. This object is a 64-bit version of **ifOutOctets**.

IfHCOutUcastPkts is the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This object is a 64-bit version of **ifOutUcastPkts**.

IfHCOutMulticastPkts is the total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses. This object is a 64-bit version of **ifOutMulticastPkts**.

IfHCOutBroadcastPkts is the total number of packets that higher-level protocols requested be transmitted, and which were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent. This object is a 64-bit version of **ifOutBroadcastPkts**.

IfLinkUpDownTrap Enable indicates whether linkup/linkDown traps should be generated for this interface. By default, this object should have the value enabled (1) or interfaces which do not operate on 'top' of any other interface (as defined in the **ifStackTable**), and disabled(2) otherwise.

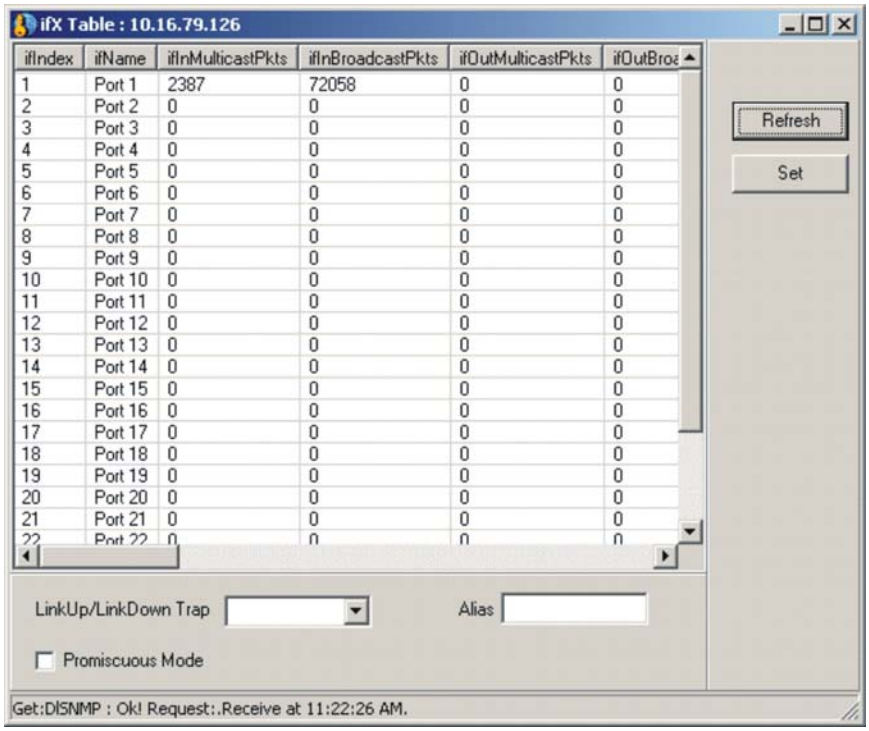
IfHighSpeed is an estimate of the interface's current bandwidth in units of 1,000,000 bits per second.

IfPromiscuous Mode is an object that has a value of false(2) if this interface only accepts packets/frames that are addressed to this station. This object has a value true(1) when the station accepts all packets/frames transmitted on the media.

IfConnectorPresent is an object that has the value 'true(1)' if the interface sublayer has a physical connector and the value 'false(2)' otherwise.

IfAlias is an 'alias' name for the interface as specified by a network manager, and provides a non-volatile 'handle' for the interface.

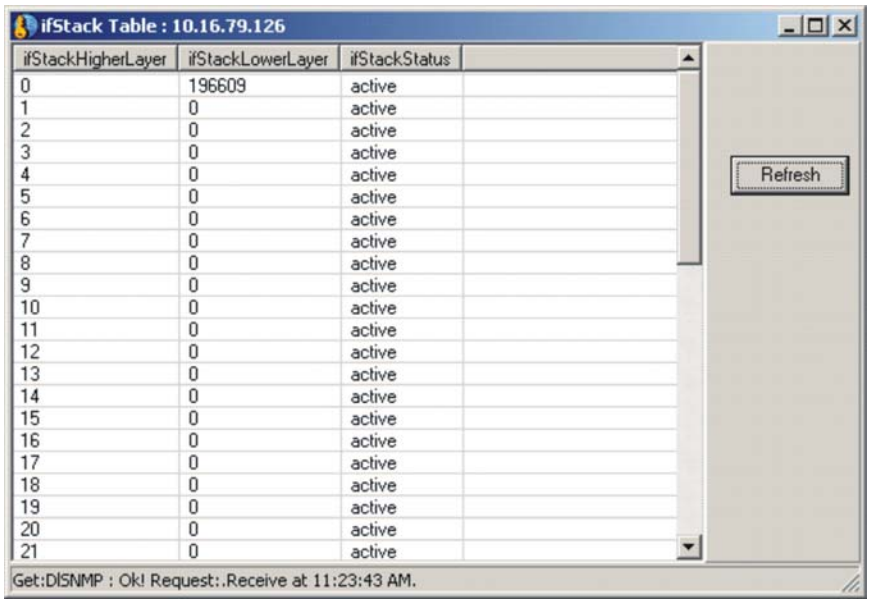
IfCounterDiscontinuityTime. The value of **sysUpTime** on the most recent occasion at which any one or more of this interface's counters suffered a discontinuity. The relevant counters are the specific instances associated with this interface of any Counter32 or Counter64 object contained in the **ifTable** or **ifXTable**.



Configuration→IF-MIB→IfStack Table

The **IfStack Table** contains information on the relationships between the multiple sub-layers of network interfaces. In particular, it contains information

on which sub-layers run 'on top of' which other sub-layers, where each sub-layer corresponds to a conceptual row in the ifTable.



Configuration→Entity→Physical Table

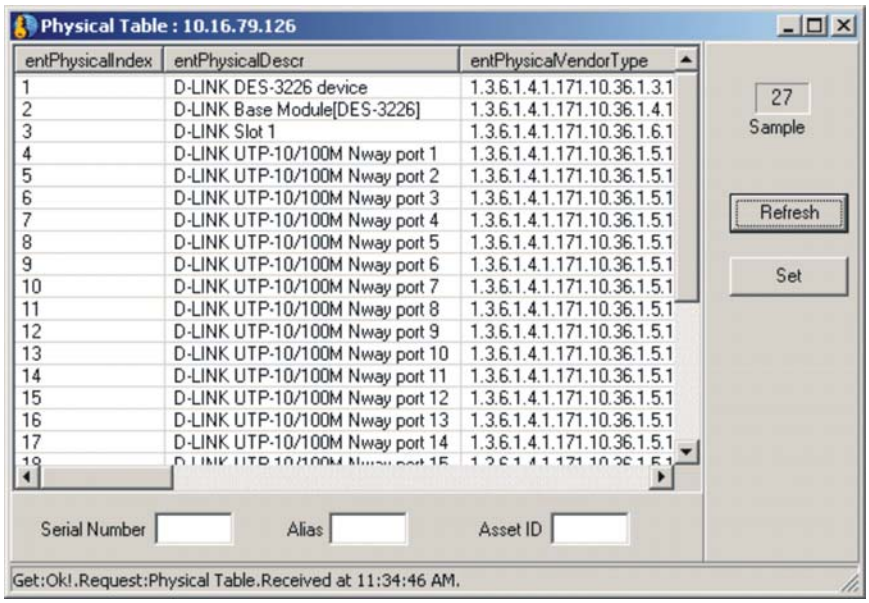
The following table gives information about the Entity MIB:

Entity MIB (RFC 2737)
- Logical Entity A managed system contains one or more logical entities, each represented by at most one instantiation of each of a particular set of MIB objects. A set of management functions is associated with each logical entity. Examples of logical entities include routers, bridges, print-servers, etc.

- Physical Entity
  A "physical entity" or "physical component" represents an identifiable physical
  resource within a managed system. Zero or more logical entities may utilize a physical resource at any given time. It is an implementation-specific manner as to which physical components are represented by an agent in the EntPhysicalTable. Typically, physical resources (e.g., communications ports, back planes, sensors, daughter-cards, power supplies, the overall chassis) which can be managed via
  Functions associated with one or more logical entities are included in the MIB.

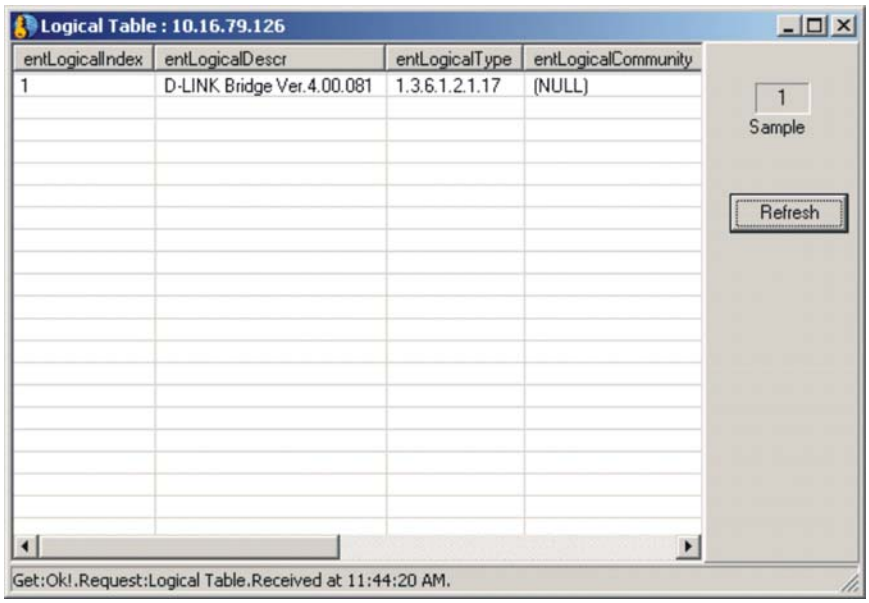
- Containment Tree
  Each physical component may be modeled as 'contained' within another physical component. A "containment-tree" is the conceptual sequence of entPhysicalIndex values which uniquely specifies the exact physical location of a physical component
  within the managed system. It is generated by 'following and recording' each 'entPhysicalContainedIn' instance 'up the tree towards the root', until a value of zero indicating no further containment is found.

The **Entity Physical Table** can be accessed by choosing **Entity** under **Configuration** and then **Physical Table**. This table contains one row per physical entity. There is always at least one row for an ‘overall’ physical entity.



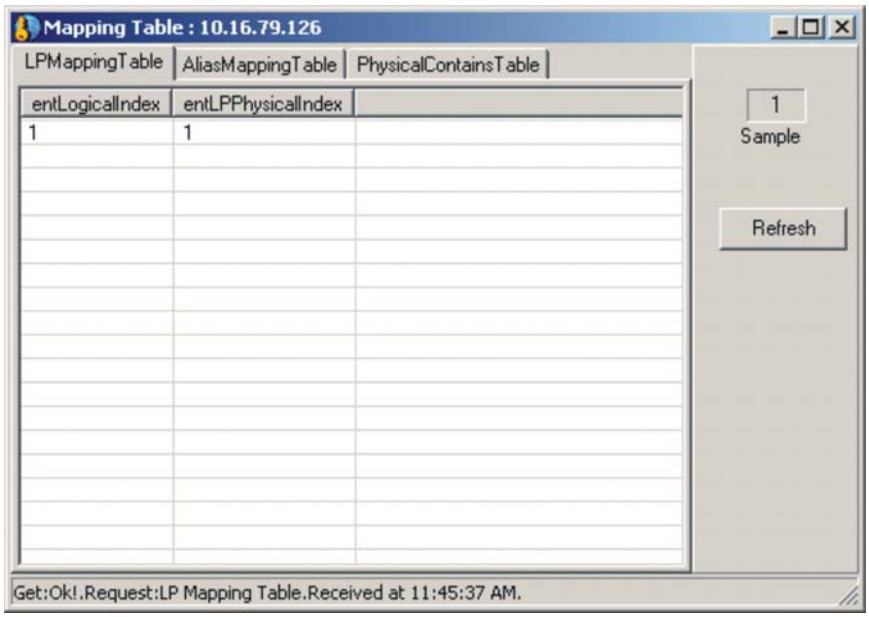
Configuration→Entity→Logical Table

The **Entity Logical Table** can be accessed by choosing **Entity** under the **Configuration** menu tab and then by choosing **Logical Table**. This table contains one row per logical entity. For agents which implement more than one naming scope, at least one entry must exist.

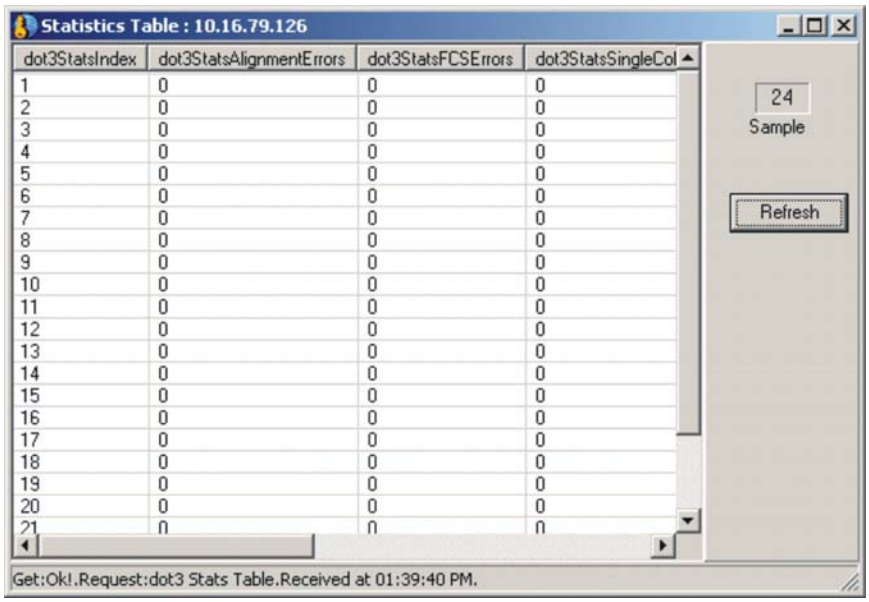


Configuration→Entity→Mapping

The **Entity Mapping** table contains zero or more rows of logical entity to physical equipment associations. For each logical entity known by this agent, there are zero or more mappings to the physical resources which are used to realize that logical entity.


Mapping Table : 10.16.79.126
LPMappingTable
AliasMappingTable
PhysicalContainsTable
entLogicalIndex
entLPPhysicalIndex
1
1
1
Sample
Refresh
Get:Ok!.Request:LP Mapping Table.Received at 11:45:37 AM.

Configuration→dot 3 Statistics



Configuration→Save Changes

To save the changes made to the settings above choose **Save Changes** under the **Configuration** button. A screen asking you, "Are you sure?" will pop up. Click **OK** to put changes into effect or click **Cancel**.

Configuration→Reset

To reset the device click on **Reset** under the **Configuration**. You will be prompted, "Are you sure?" Click **OK** to reset the device. Otherwise click **Cancel**.

MIBII Menu Button

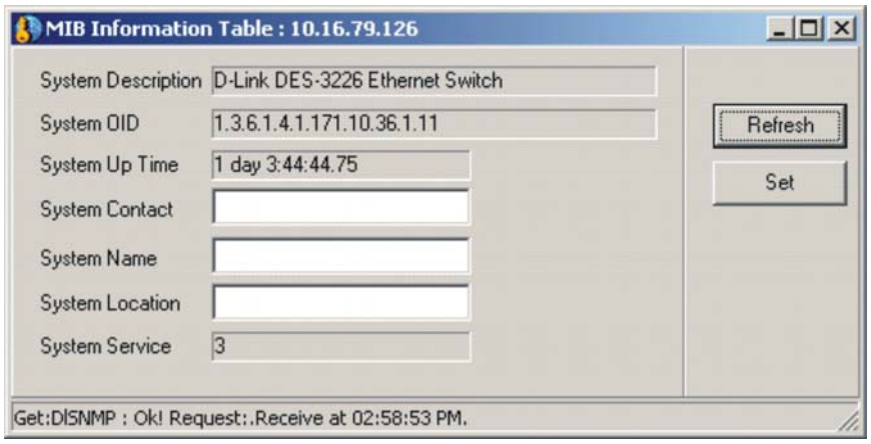
MIB II pop-up menus are accessed as drop-down menus and can be viewed alone. You can also have multiple windows opened simultaneously.

MIB II→Information

Use the MIB II Information window to view and write basic device SNMP information.
Enter the following:

- **System Contact,**
- **System Name**
- **System Location**

Type in the new text and click on **Set** to make these change effective.

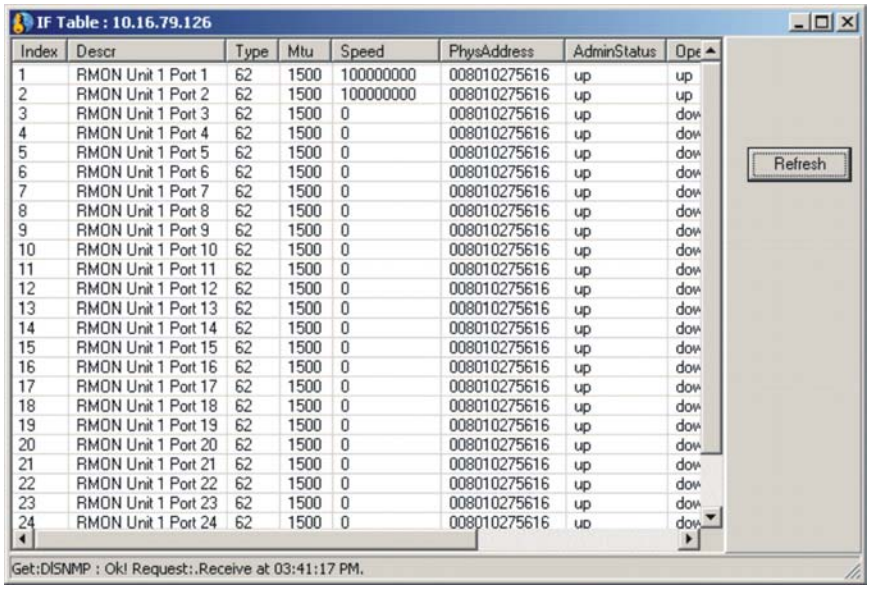


The remaining menus under MIB II are the following read-only table and counter windows (examples pictured below):

- **IF Table**
- **IF Counters**
- **IP Counters**
- **IP Routing**
- **IP Address Table**
- **ICMP Counters**
- **UDP Counters**
- **SNMP Counters**

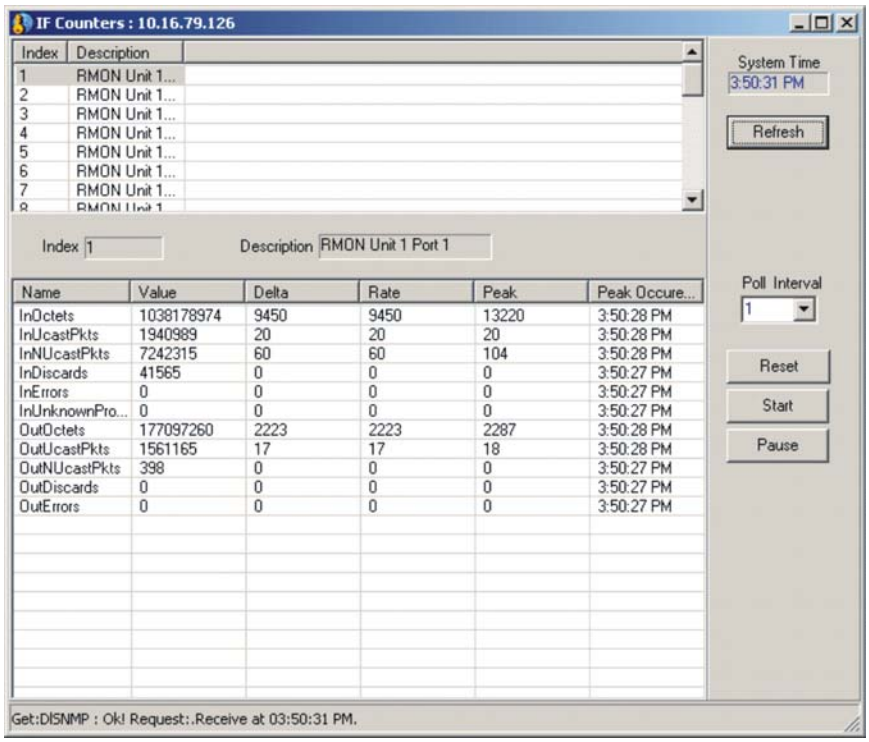
Read-only menus can be refreshed, reset and paused; you may adjust the poll interval for the counters. Examples are provided below.

MIB II → IF Table

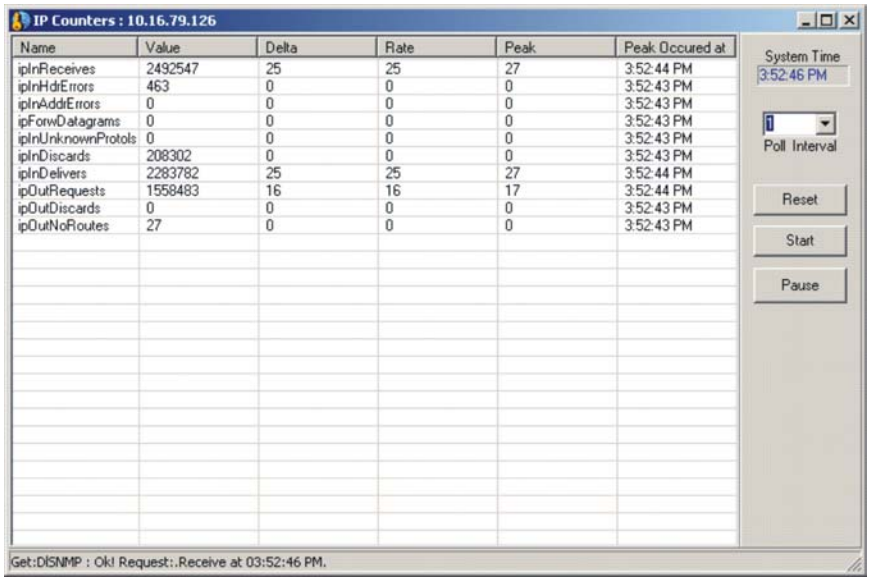


Index	Descr	Type	Mtu	Speed	PhysAddress	AdminStatus	Ope
1	RMON Unit 1 Port 1	62	1500	100000000	008010275616	up	up
2	RMON Unit 1 Port 2	62	1500	100000000	008010275616	up	up
3	RMON Unit 1 Port 3	62	1500	0	008010275616	up	dow
4	RMON Unit 1 Port 4	62	1500	0	008010275616	up	dow
5	RMON Unit 1 Port 5	62	1500	0	008010275616	up	dow
6	RMON Unit 1 Port 6	62	1500	0	008010275616	up	dow
7	RMON Unit 1 Port 7	62	1500	0	008010275616	up	dow
8	RMON Unit 1 Port 8	62	1500	0	008010275616	up	dow
9	RMON Unit 1 Port 9	62	1500	0	008010275616	up	dow
10	RMON Unit 1 Port 10	62	1500	0	008010275616	up	dow
11	RMON Unit 1 Port 11	62	1500	0	008010275616	up	dow
12	RMON Unit 1 Port 12	62	1500	0	008010275616	up	dow
13	RMON Unit 1 Port 13	62	1500	0	008010275616	up	dow
14	RMON Unit 1 Port 14	62	1500	0	008010275616	up	dow
15	RMON Unit 1 Port 15	62	1500	0	008010275616	up	dow
16	RMON Unit 1 Port 16	62	1500	0	008010275616	up	dow
17	RMON Unit 1 Port 17	62	1500	0	008010275616	up	dow
18	RMON Unit 1 Port 18	62	1500	0	008010275616	up	dow
19	RMON Unit 1 Port 19	62	1500	0	008010275616	up	dow
20	RMON Unit 1 Port 20	62	1500	0	008010275616	up	dow
21	RMON Unit 1 Port 21	62	1500	0	008010275616	up	dow
22	RMON Unit 1 Port 22	62	1500	0	008010275616	up	dow
23	RMON Unit 1 Port 23	62	1500	0	008010275616	up	dow
24	RMON Unit 1 Port 24	62	1500	0	008010275616	up	dow

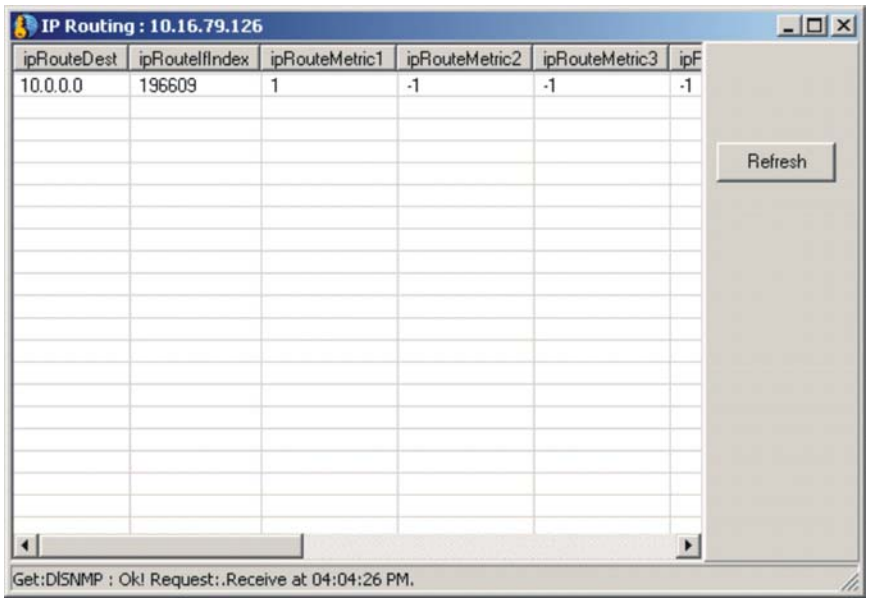
MIB II → IF Counters



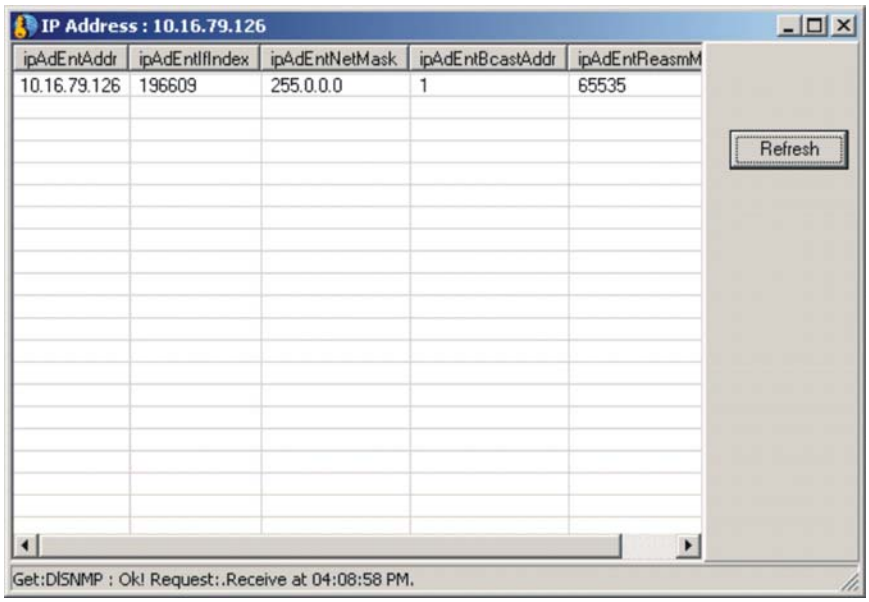
MIB II → IP Counters



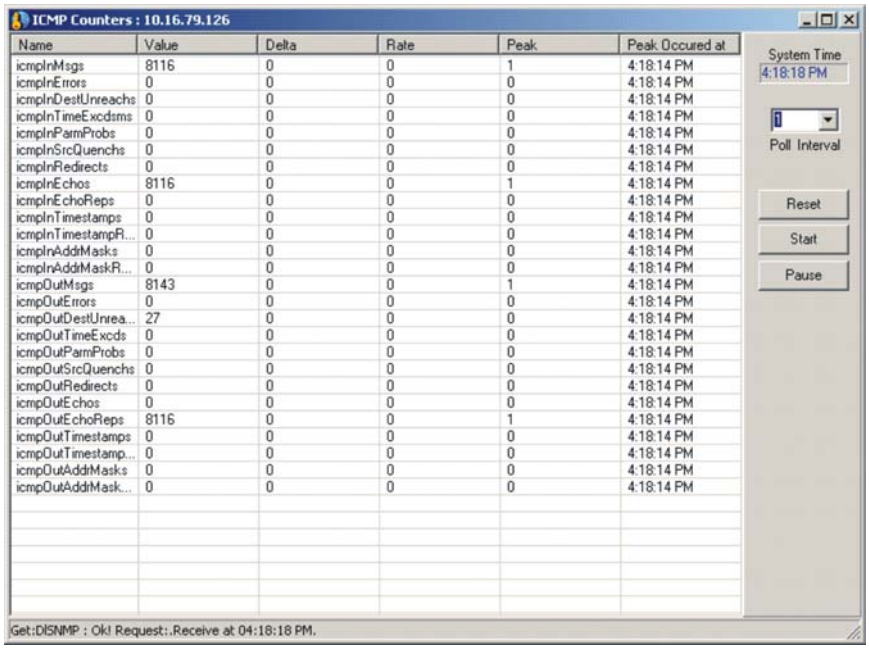
MIB II → IP Routing



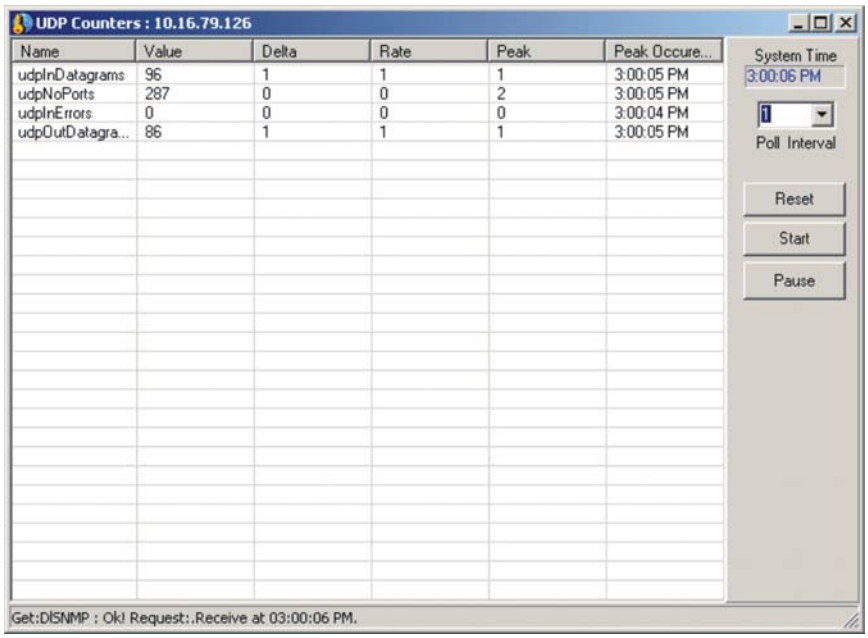
MIB II → IP Address Table



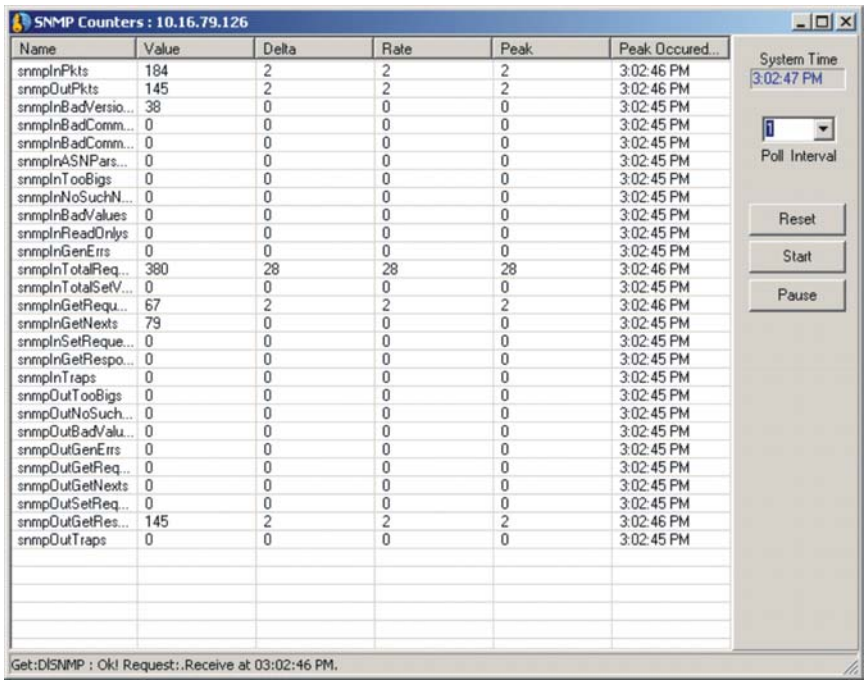
MIB II → ICMP Counters



MIB II → UDP Counters



MIB II → SNMP Counters



Bridge Menu Button

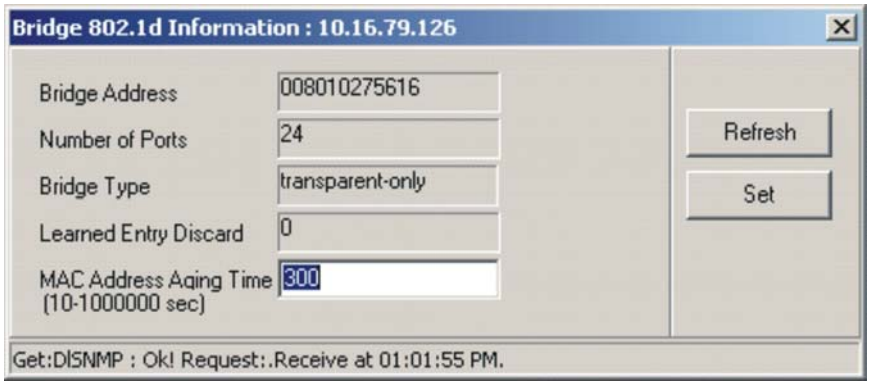
Bridge→802.1d→Information

First some Bridge 802.1D (RFC 1493) MIB Group Definitions:

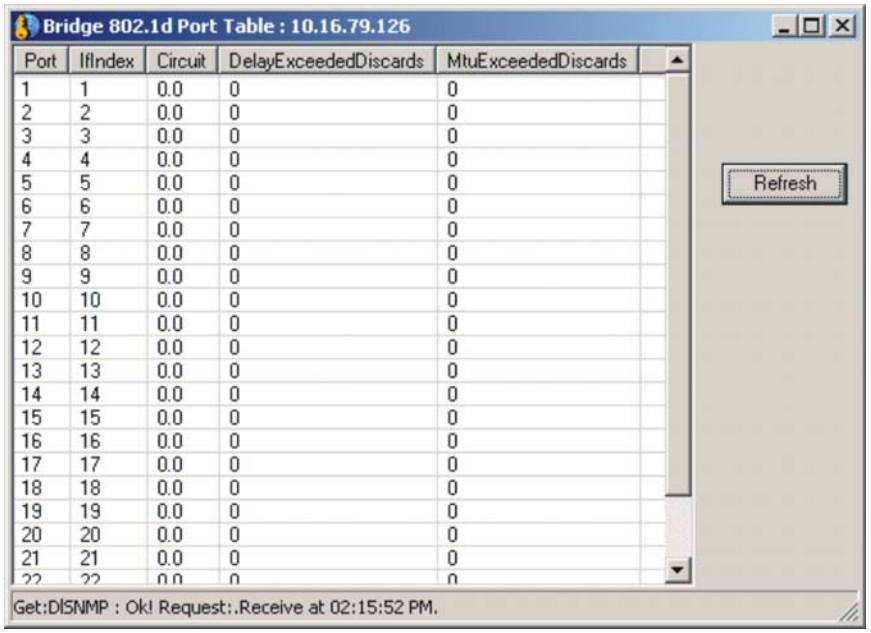
Bridge 802.1D (RFC 1493) MIB Groups
The dot1dBase Group
This mandatory group contains the objects, which are applicable to all types of bridges.
The dot1dStp Group

This group contains the objects that denote the bridge's state with respect to the Spanning Tree Protocol. If a node does not implemented the Spanning Tree Protocol, this group will not be implemented.
The dot1dSr Group
This group contains the objects that describe the entity's state with respect to source route bridging. If source routing is not supported this group will not be implemented. This group is applicable to source route only, and SRT bridges. This group will be described in a separate document applicable only to source route bridging.
The dot1dTp Group
This group contains objects that describe the entity's state with respect to transparent bridging. If transparent bridging is not supported this group will not be implemented. This group is applicable to transparent only and SRT bridges.
The dot1dStatic Group
This group contains objects that describe the entity's state with respect to destination-address filtering. If destination-address filtering is not supported this group will not be implemented. This group is applicable to any type of bridge which performs destination-address filtering.
Relationship to Other MIBs
As described above, some IEEE 802.1d management objects have not been included in this MIB because they overlap with objects in other MIBs applicable to a bridge implementing this MIB. In particular, it is assumed that a bridge implementing this MIB will also implement (at least) the 'system' group and the 'interfaces' group defined in MIB-II.
Relationship to the 'system' group
In MIB-II, the 'system' group is defined as being mandatory for all systems such that each managed entity contains one instance of each.

Bridge aging time can be adjusted in the Information window; otherwise Bridge 802.1 windows are read-only

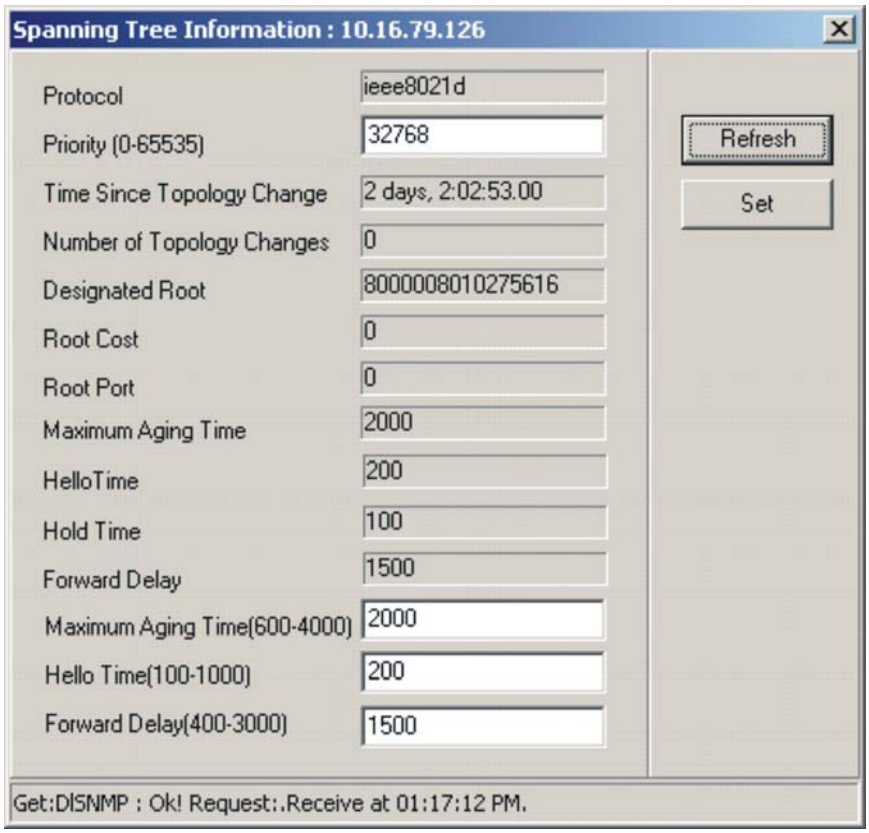


Bridge→802.1d→Port Table



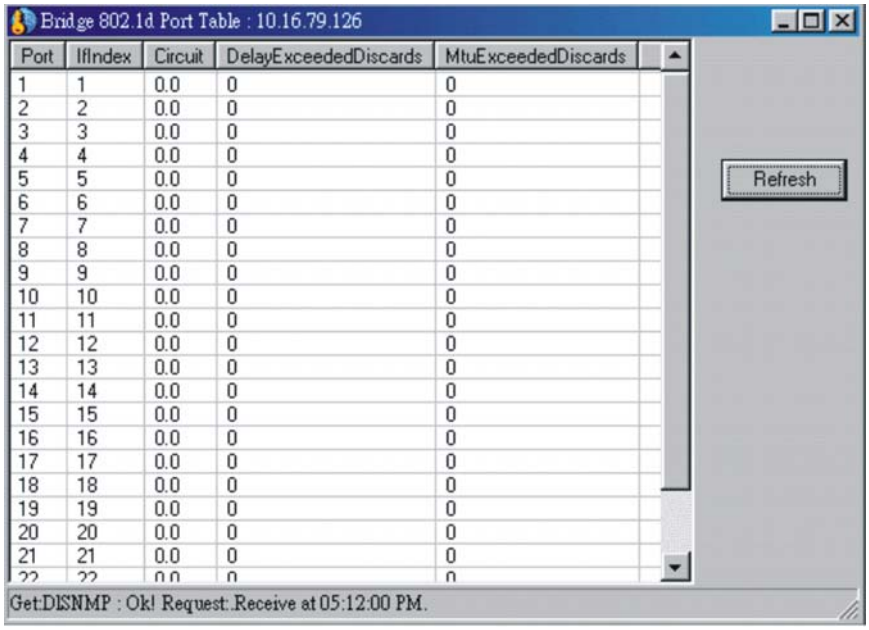
Bridge→Spanning Tree→Information

Use the STP Information window for global changes to the selected device. User configurable global STP settings include **Priority**, **Maximum Aging Time**, **Hello Time** and **Forward Delay**.



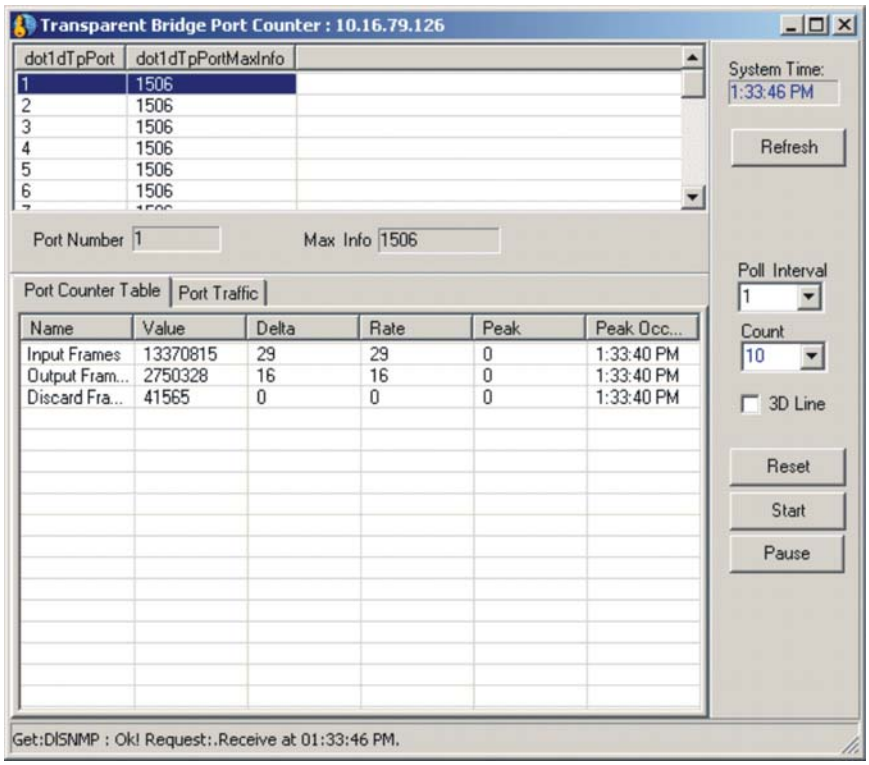
Bridge→Spanning Tree→Port Table

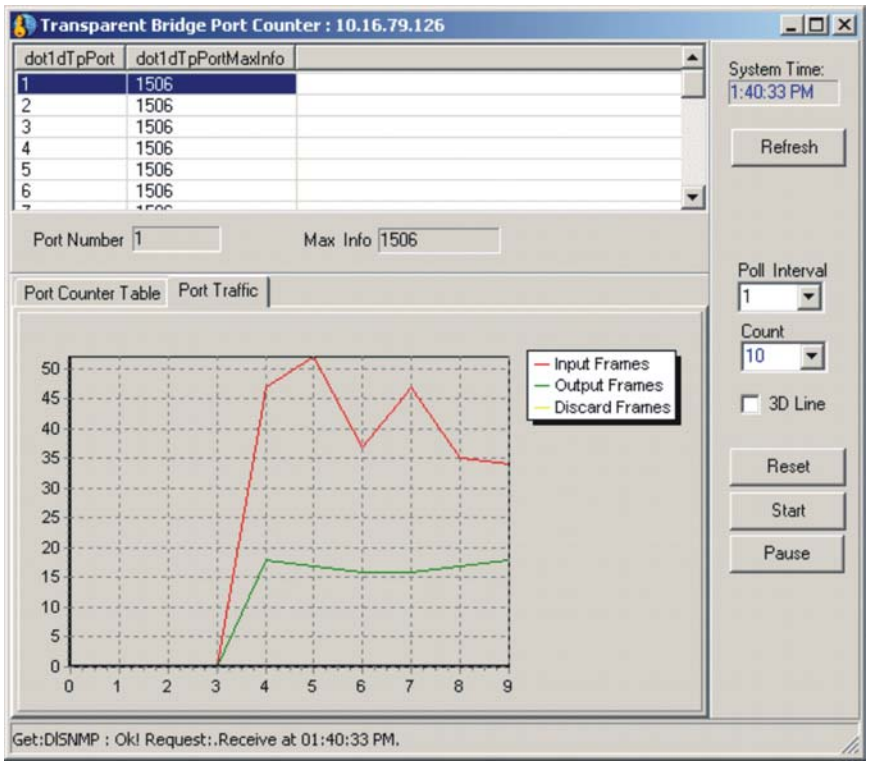
The STP Port Table allows you to configure STP port settings. Select the port you wish to configure and type in the desired Priority and Path Cost for the port. The Status pull-down menu is used to enable or disable the STP settings for the port.



Bridge→Transparent Bridge→Port Counters

Counter tables and traffic graphs can be paused or reset as desired. The user can change the Poll Interval and Count, graphs may use a three dimensional line by checking the 3D Line box.


Transparent Bridge Port Counter : 10.16.79.126
dot1dTpPort
dot1dTpPortMaxInfo
1 1506
2 1506
3 1506
4 1506
5 1506
6 1506
Port Number 1
Max Info 1506
Port Counter Table
Port Traffic
Name Value Delta Rate Peak Peak Occ...
Input Frames 13370815 29 29 0 1:33:40 PM
Output Fram... 2750328 16 16 0 1:33:40 PM
Discard Fra... 41565 0 0 0 1:33:40 PM
System Time:
1:33:46 PM
Refresh
Poll Interval
1
Count
10
3D Line
Reset
Start
Pause
Get:DISNMP : Ok! Request:.Receive at 01:33:46 PM.



VLAN Menu Button

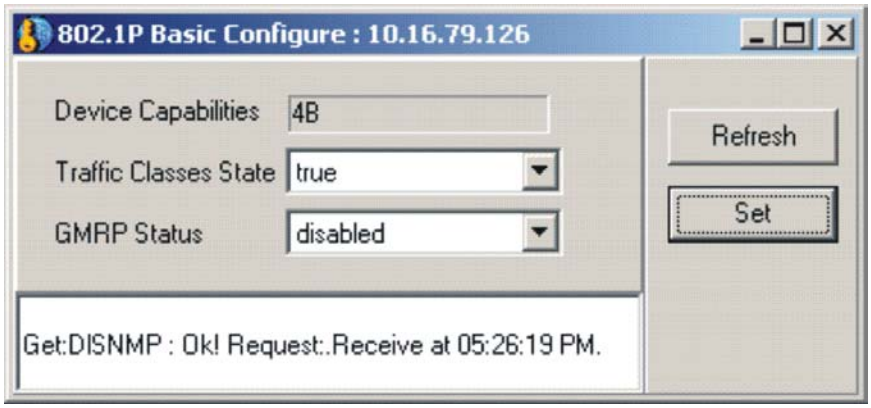
Use the 802.1P side menus to view and set 802.1P port priority as well as **GMRP** and **GARP** settings. The read-only **Port Capability Form** is accessed as a side menu.

802.1P / 802.1Q (RFC2674) MIBs
1pPriority Group

This group contains the objects for configuring and reporting status of priority-based queuing mechanisms in a bridge. This includes per-port user priority treatment, mapping of user priority in frames into internal traffic classes and outbound user priority and access priority.
1pGarp Group
This group contains the objects for configuring and reporting on operation of the Generic Attribute Registration Protocol (GARP).
1pGmrp Group
This group contains the objects for configuring and reporting on operation of the GARP Multicast Registration Protocol (GMRP).
Dot1qBase Group
This mandatory group contains the objects, which are applicable to all bridges implementing IEEE 802.1Q virtual LANs.
The dot1qTp Group
This group contains objects that control the operation and report the status of transparent bridging. This includes management of the dynamic Filtering Databases for both unicast and multicast forwarding. This group will be implemented by all bridges that perform destination-address filtering.
The dot1qStatic Group
This group contains objects that control static configuration information for transparent bridging. This includes management of the static entries in the Filtering Databases for both unicast and multicast forwarding.
The dot1qVlan Group
This group contains objects that control configuration and report status of the Virtual LANs known to a bridge. This includes management of the statically configured VLANs as well as reporting VLANs discovered by other means e.g. GVRP. It also controls configuration and reports status of per-port objects relating to VLANs and reports traffic statistics. It also provides for management of the VLAN Learning Constraints.

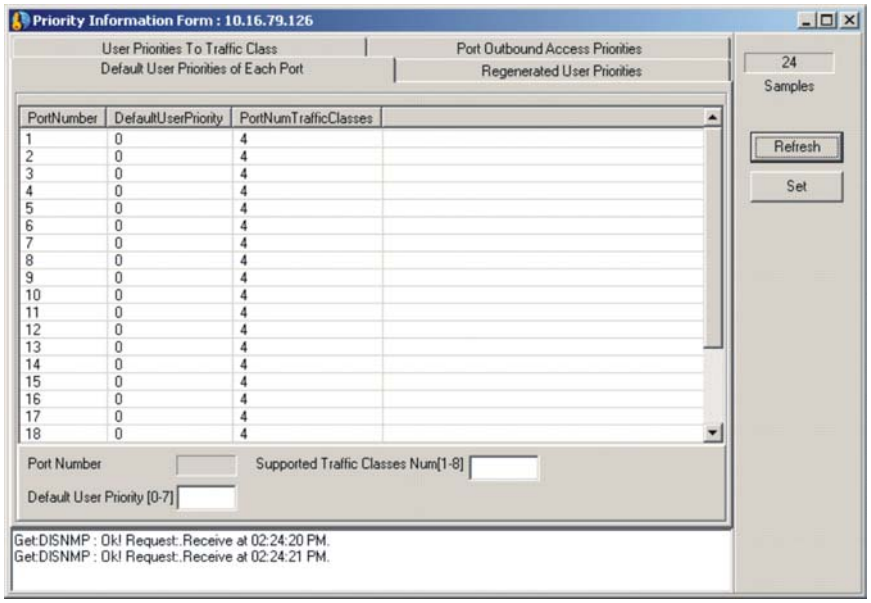
VLAN→802.1P→Basic Configure

Set the Traffic Class State (true, false) and GMRP Status.



VLAN→802.1P→Priority Information

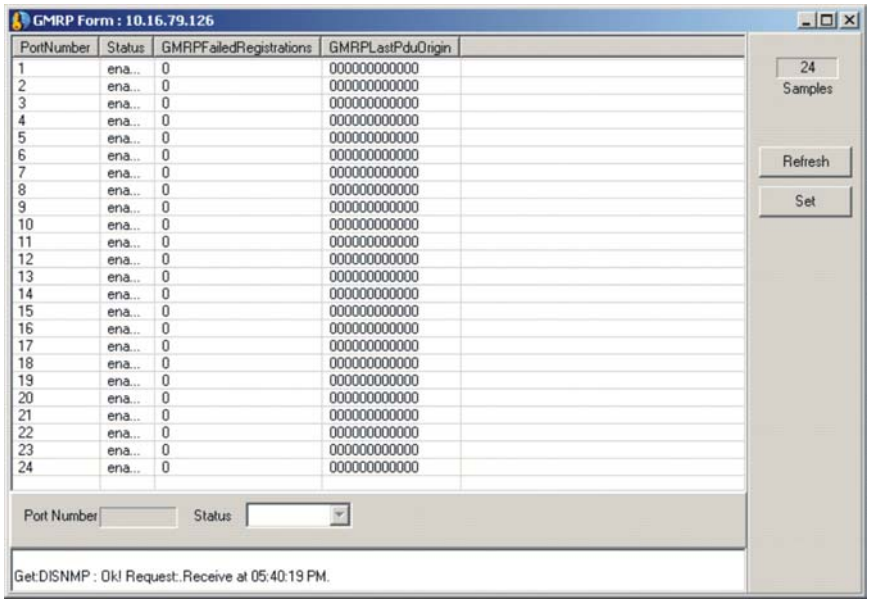
Choose the appropriate tab to view information listed by port number. Select the port number and type in the appropriate priority values; click Set to effect the change.



Path: VLAN→ 802.1P → Priority Information Form		
Default User Priorities of Each Port	**Table Information**	PortNumber, DefaultUserPriority, PortNumTrafficClasses
	Set	SupportedTrafficClassesNum, DefaultUserPriority
Regenerated User Priorities	**Table Information**	PortNumber, UserPriority, RegeneratedUserPriority
	Set	UserPriority
User Priority To Traffic Class	**Table Information**	PortNumber, TrafficClassPriority, MappedTrafficClass
	Set	MappedTrafficClass
Port Outbound Access Priority	**Table Information**	PortNumber, RegenerateUserPriority

VLAN→802.1P→GMRP

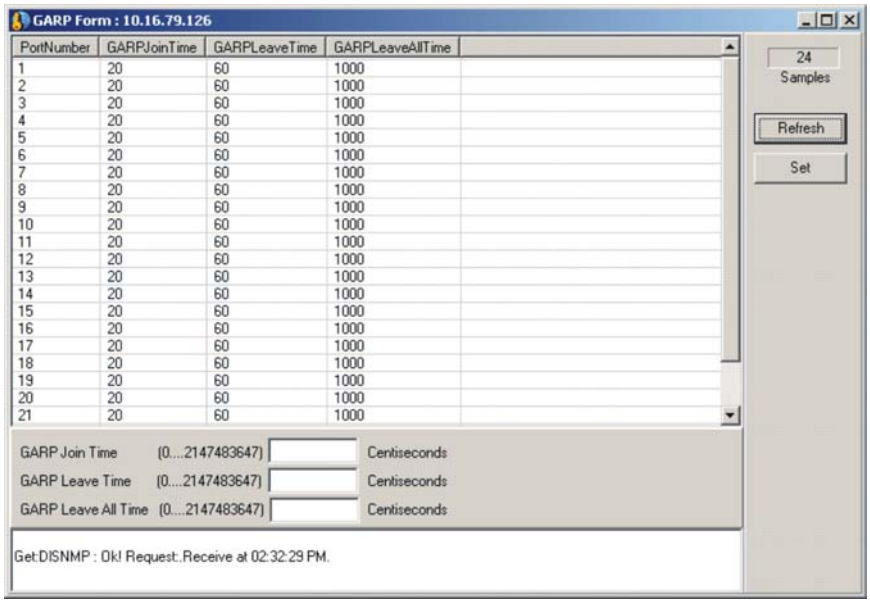
The GMRP Form allows you to enable GMRP for a selected port. To enable GMRP for a given port, highlight to select, choose Enable from the pull-down menu and click Set.



Path: VLAN → 802.1P → GMRP	
GMRP Table Information	PortNumber, Status, GmrpFailed, GmrpLastPduOrign

VLAN→802.1P→GARP

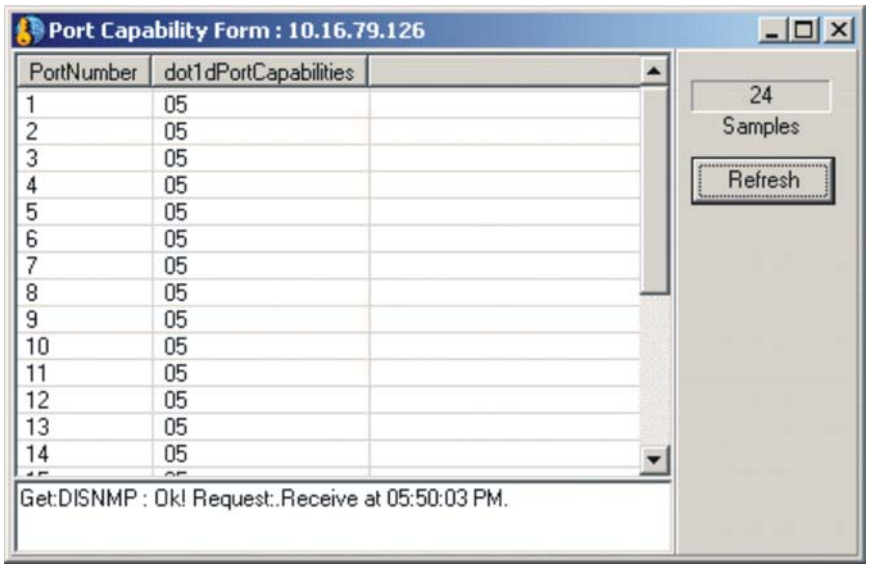
GARP settings are expressed in Centi-seconds (hundredths of a second) for each port.



Path: VLAN → 802.1P → GARP	
GARP Table Information	PortNumber, GarpJoinTime, GarpLeaveTime, GarpLeaveAllTime
Set	GarpJoinTime, GarpLeaveTime, GarpLeaveAllTime

VLAN→802.1P→Port Capability

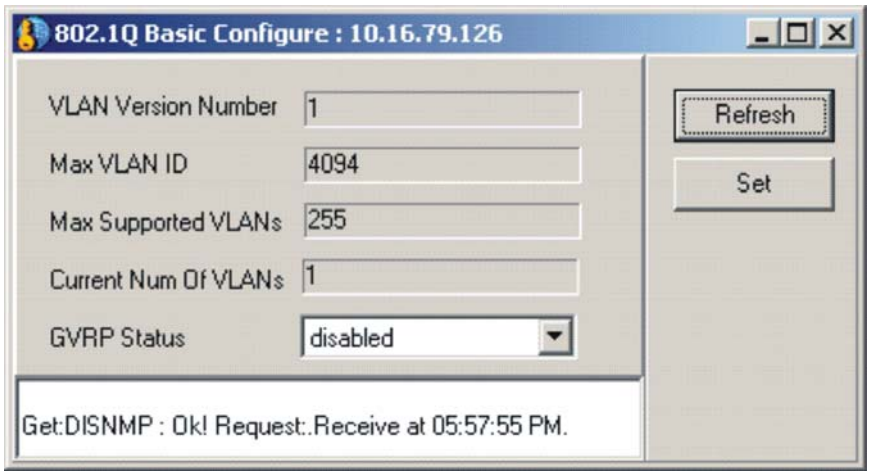
The Port Capability window (accessed as a side menu from 802.1P submenu) is read-only and lists Port Capabilities Entry Messages listed by port number.



Path: VLAN → 802.1P → Port Capability	
Table Information	PortNumber, dot1dPortCapabilities

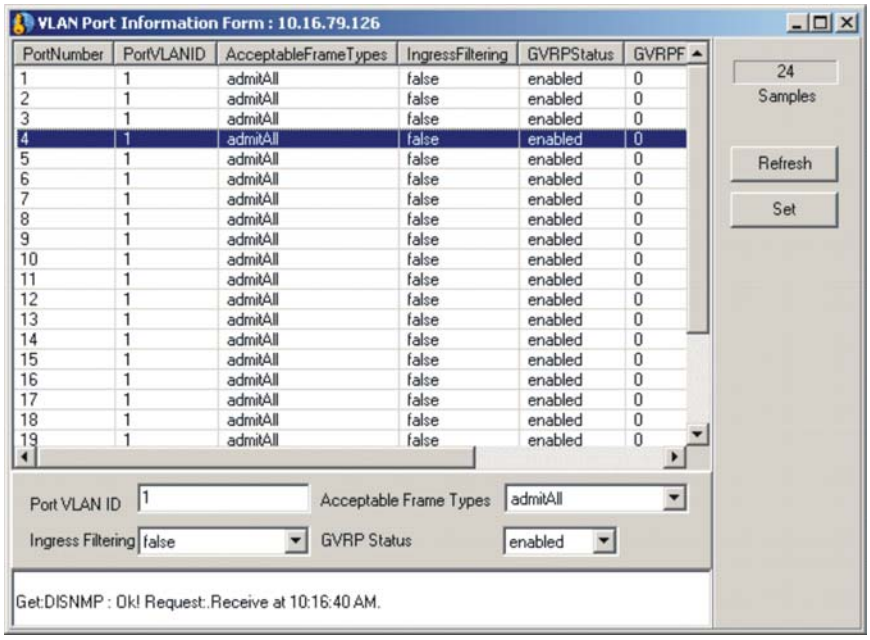
VLAN→802.1Q→802.1Q Bridge→Basic Configure

Set GVRP Status. The rest of this screen is read-only.



VLAN→802.1→802.1Q Bridge→Ports Information

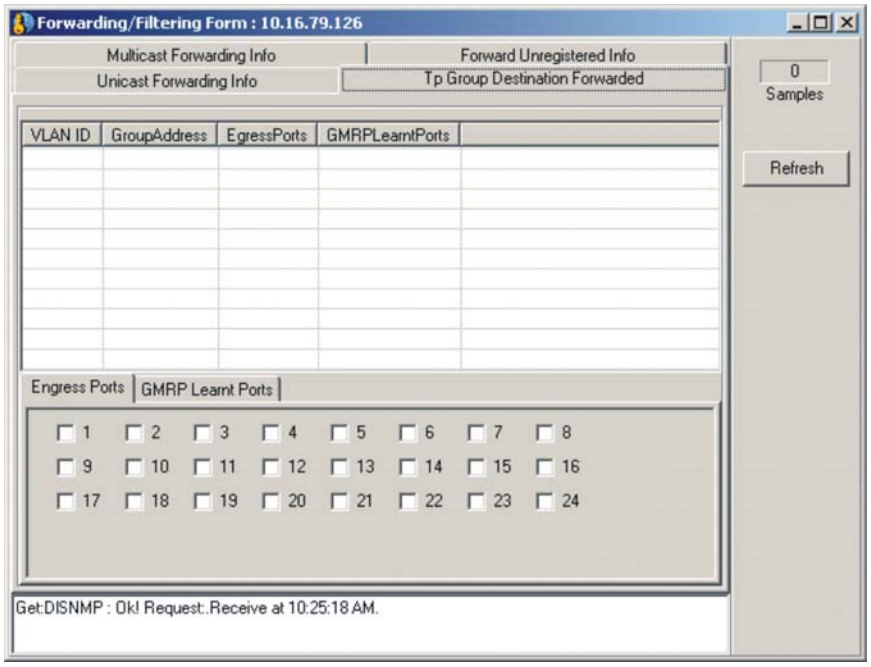
Configure VLANs settings for the selected device in the VLAN ports information side menu.



Path: VLAN→ 802.1Q → 802.1Q Bridge → Ports Information		
VLAN Ports Information Form	**Table Information**	PortNumber, PortVlanID, AcceptableFrameTypes, IngressFiltering, GvrpStatus, GvrpFailedRegistrations, GvrpLastPduOrigin
	Set	PortVlanID, AcceptableFrameTypes, IngressFiltering, GvrpStatus

VLAN→802.1Q→Forwarding/Filtering

Forwarding and Filtering information is presented in four separate menus. The menus listed here appear as tabs in the Forwarding/Filtering Form.

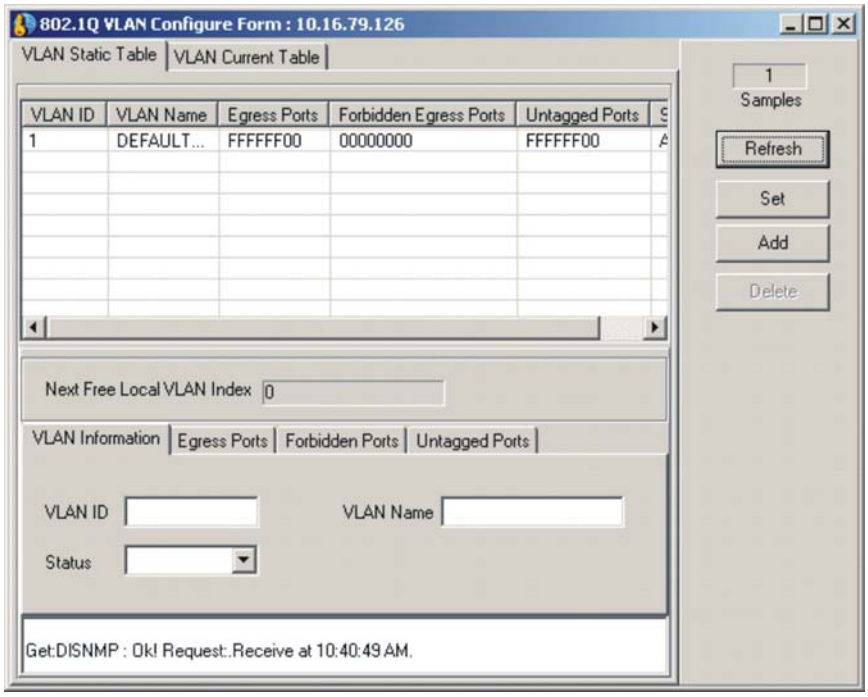


Path: VLAN → 802.1Q → Forwarding/Filtering Form		
Unicast Forwarding Info	**Table Information**	Fdb Id, FdbMacAddress, PortNumber, Status
Tp Group Destination Forwarded	**Table Information**	VLAN ID, GroupAddres, EgressPorts, GMRPLearntPorts
	Configure	EgressPorts, GMRPLearntPorts
Multcast Forwarding	**Table information**	VLAN ID, AllPorts, StaticPorts, ForbiddenPorts

Info	**Configure**	AllForwardedPorts, AllStaticPorts, AllForbiddenPorts
Forward Unregistered Info	**Table Information**	VLAN ID, UnregisteredPorts, Unregistered,StaticPorts
	Configure	UnregisteredPorts, UnregisteredStaticPorts, UnregisteredForbiddenPorts

VLAN→802.1Q→802.1Q VLAN

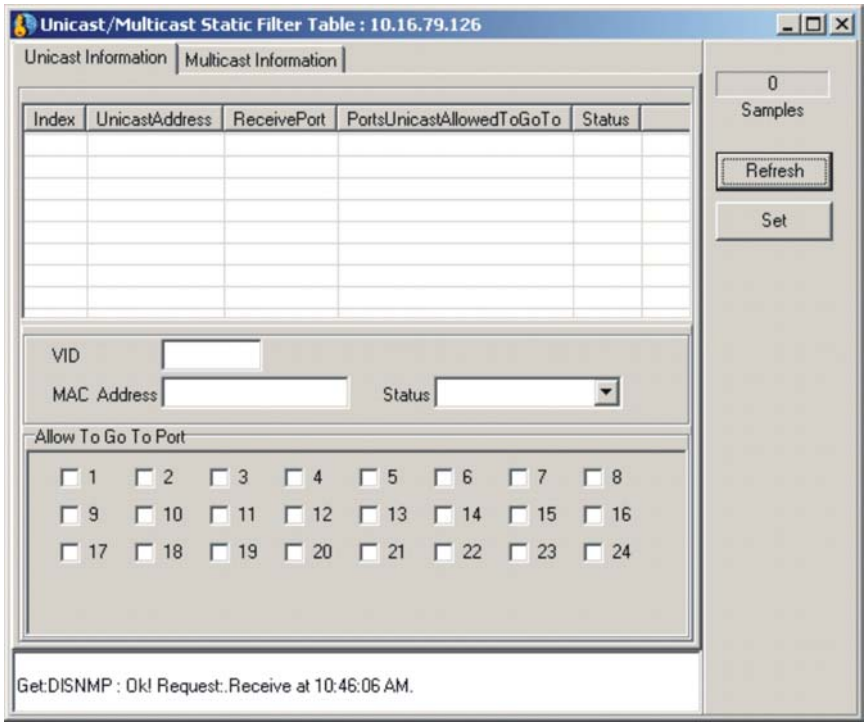
The Basic VLAN Configuration Form presents in two tables to display VLAN Static and VLAN Current information.



Path: VLAN → 802.1Q → 802.1Q VLAN		
VLAN Static Table	**Table Information**	VLAN ID, VLAN Name, Egress Ports, Forbidden Egress Ports
	Set	VLAN Information, Egress Ports, Forbidden Ports, Untagged Ports
VLAN Current Table	**Table information**	VLAN ID, VLAN Name, Egress Ports, Forbidden Egress Ports, Untagged Ports, Status

	Set	Egress Ports, Untagged Ports

VLAN→802.1Q→Unicast/Multicast Static Filtering



Path: MIBs → 802.1Q → Unicast/Multicast Static Filter Table		
Unicast Info	**Table Information**	UnicastAddress, ReceivePort, PortsUnicastAllowedToGoTo, Status

	Configure	VID, MAC Address, Status, Allow To Go To Ports (select ports)
VLAN Current Table	**Table information**	MAC Address, Receive Port, Egress Port, Forbidden Ports, Status
	Configure	VID, MAC Address, Status, Egress Ports, Forbidden Ports (select ports)

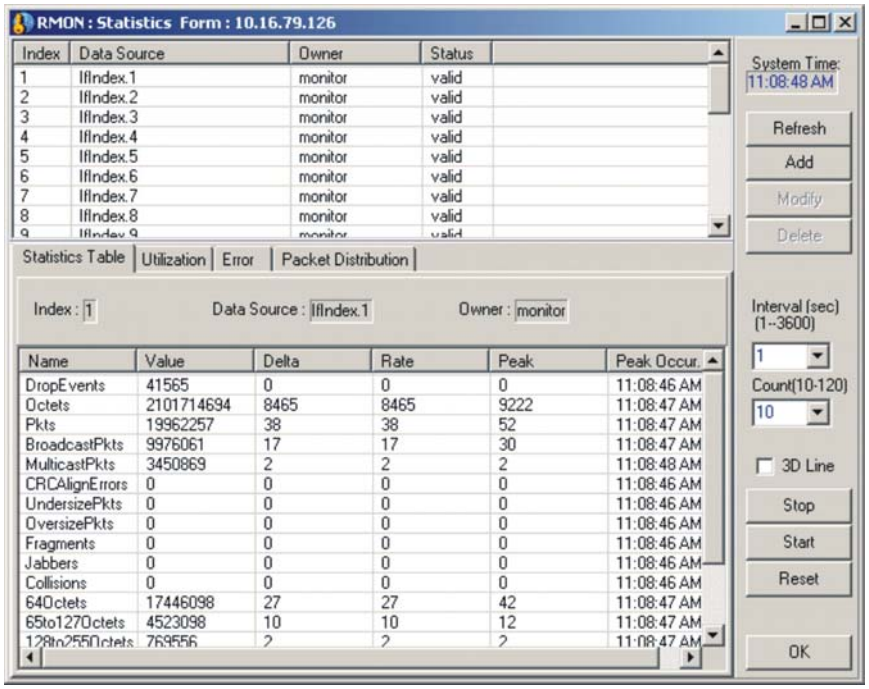
RMON Menu Button

RMON→Statistics

View RMON statistics for any port on the selected device by clicking the index (port) number. By default the **Statistics Table** is displayed for index 1. **Port Utilization**, **Error** and **Packet Distribution** are displayed graphically. Check the 3D Line for more readily visible graph lines.

Remote Network Monitoring Object Groups
The Ethernet Statistics Group
The Ethernet statistics group contains statistics measured by the probe for each monitored Ethernet interface on this device. This group consists of the etherStatsTable. In the future other groups will be defined for other media types including Token Ring and FDDI. These groups should follow the same model as the Ethernet statistics group.
The History Control Group
The history control group controls the periodic statistical sampling of data from various types of networks. This group consists of the historyControlTable.
The Alarm Group

The alarm group periodically takes statistical samples from variables in the probe and compares them to previously configured thresholds. If the monitored variable crosses a threshold, an event is generated. A hysteresis mechanism is implemented to limit the generation of alarms. This group consists of the alarmTable and requires the implementation of the event group.
The Event Group
The event group controls the generation and notification of events from this device. This group consists of the event Table and the log Table.

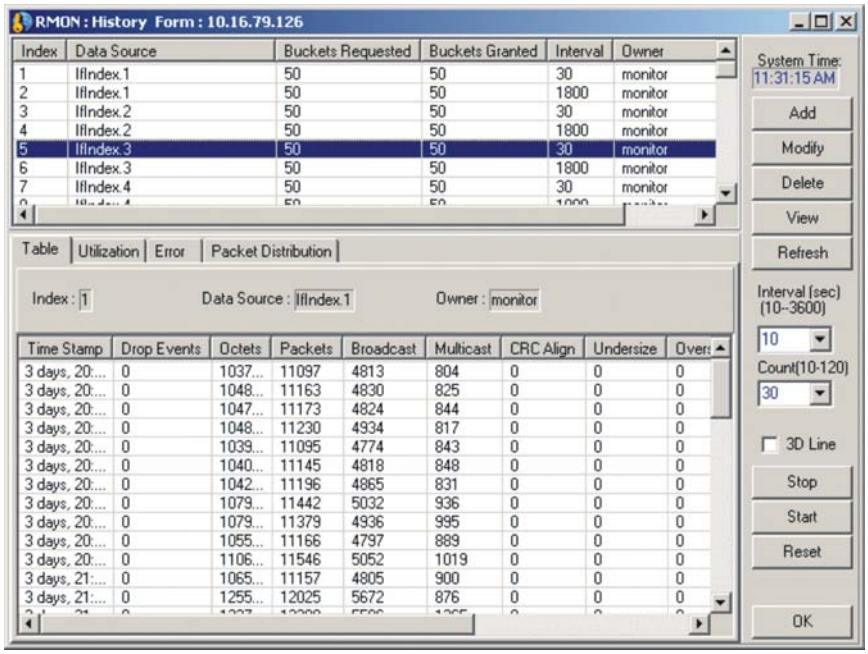


Use the Add and Modify function to add an index or change a selected index's variables. Clicking the Add or Modify button will bring up the Control Table pop-up menu. The Control Table pop-up screen is used to input index variables. Statistics information displayed may be frozen at any point and resumed using the Start and Stop buttons.

Path: RMON → Statistics	
RMON Statistics Table Information	Index, Data source, Owner, Ststus, Name, Value, Delta, Rate, Pea, Peak Occurred At

RMON→History

View the history table and graphs including Utilization, Error and Packet Distribution. Add or modify and index with the Control Table.

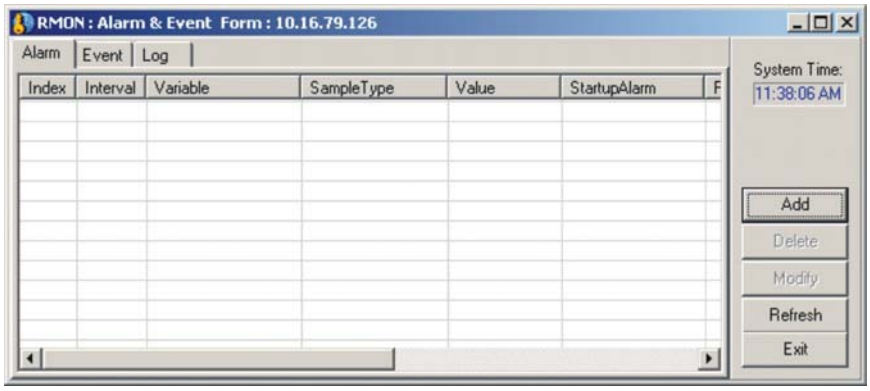


Path: RMON → History

RMON History Table Information	Index, Data source, Buckets Requested, Buckets Granted, Interval, Owner, Status, Time Stamp, Drop Events, Octets, Packets, Broadcast, Multicast, CRCAlign, Umndersize, Oversize, Fragments, Jabbers, Collisions, Utilizations

RMON→Alarm/Event

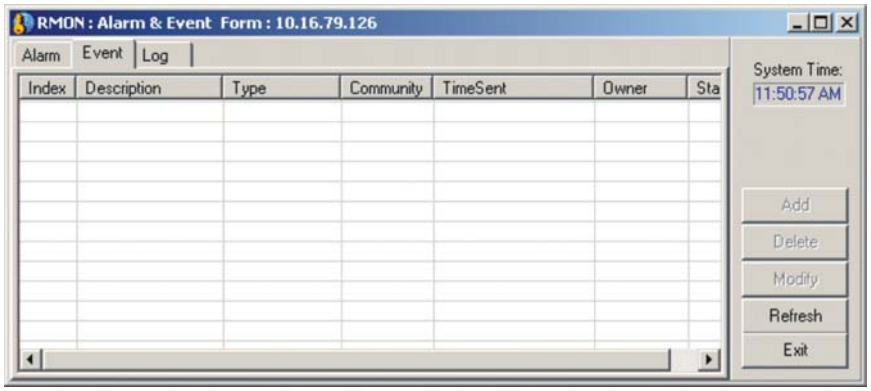
To add an alarm and define parameters for it click the Add button. The Alarm Table pop-up will accept a user-defined index number or you can use the index automatically generated.



Path: RMON → Alarm/Event	
RMON Alarm Table Information	Index, Interval, Variable, SampleType, Value, StartupAlarm, RisingThreshold, FallingThreshold, RisingEvent, FallingEvent, Owner, Status

RMON Alarm : Add/Modify Parameters	Index, Interval, Variable, Owner, StartUp Sampling, Threshold Value: Rising/Falling, Rising Event: Activate/Index/Description/Community/Type Falling Event: Activate/Index/Description/Community/Type

The Event controls work in a similar fashion. Add or modify an Event control and define its parameters by clicking the Add or Modify button, the Event Control pop-up menu appears.

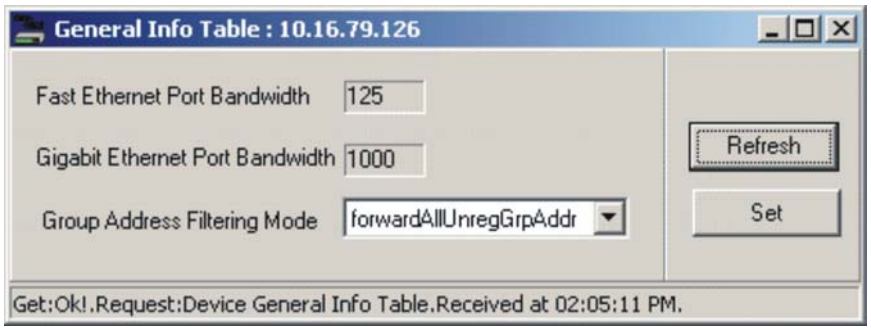


Path: MIBs → RMON → Alarm/Event	
RMON Alarm Event Table Information	Index, Description, Type, Community, TimeSent, Owner, Status
	LogEventIndex, logIndex, logTime, logDescription

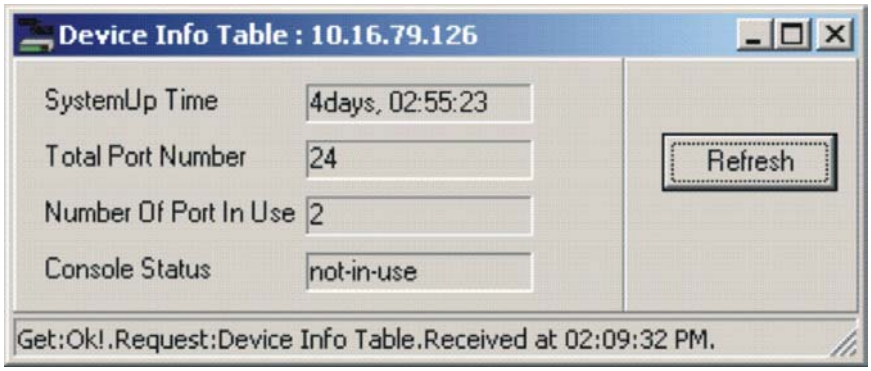
Advanced Configuration Menu Button

Advanced Configuration→General

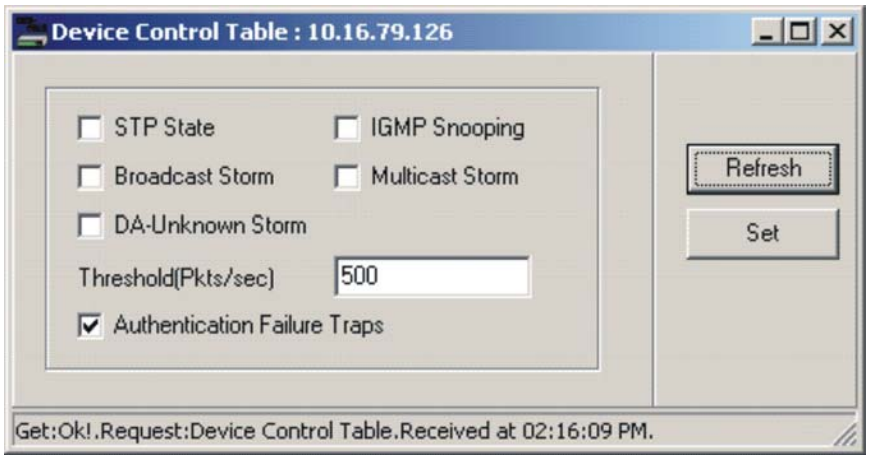
Set **Group Address Filtering Mode**. Other items are read-only.



Advanced Configuration→Device Management→Device Information

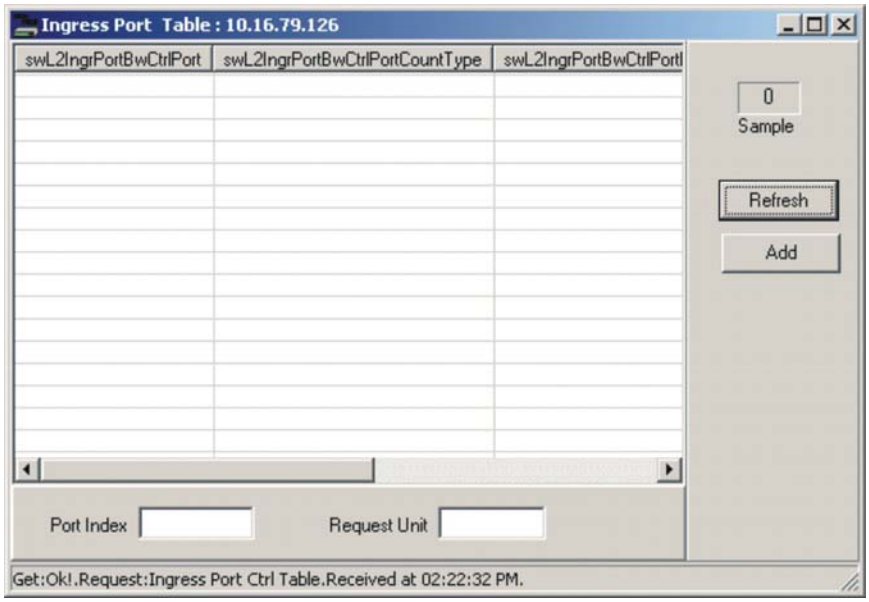


Advanced Configuration→Device Management→Device Control



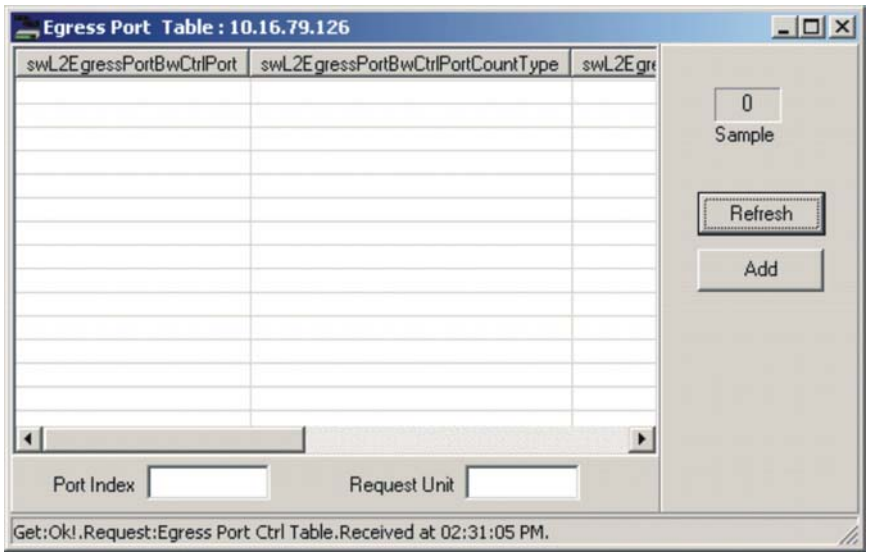
Advanced Configuration→Bandwidth Management→IngrPortBwControl

This table contains current control information about the ingress bandwidth of the port.



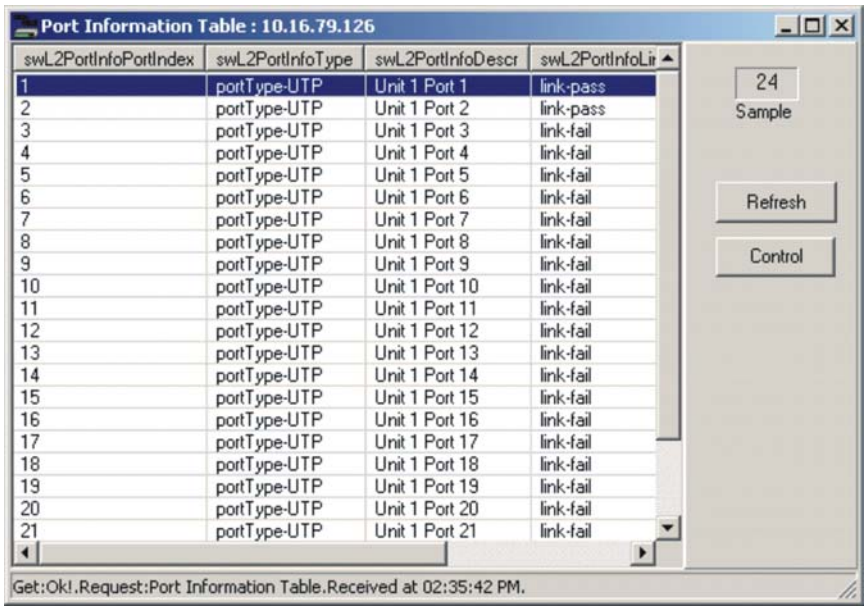
Advanced Configuration→Bandwidth Management→Egress PortBwControl

This table contains the current control information about the egress bandwidth of the port.



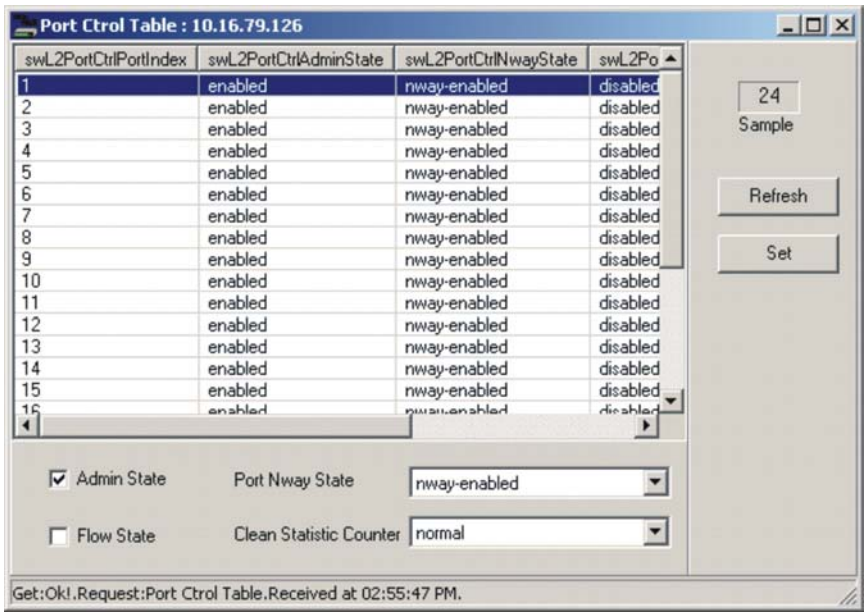
Advanced Configuration→Port Management→Port Information Table

This table contains information about every port.



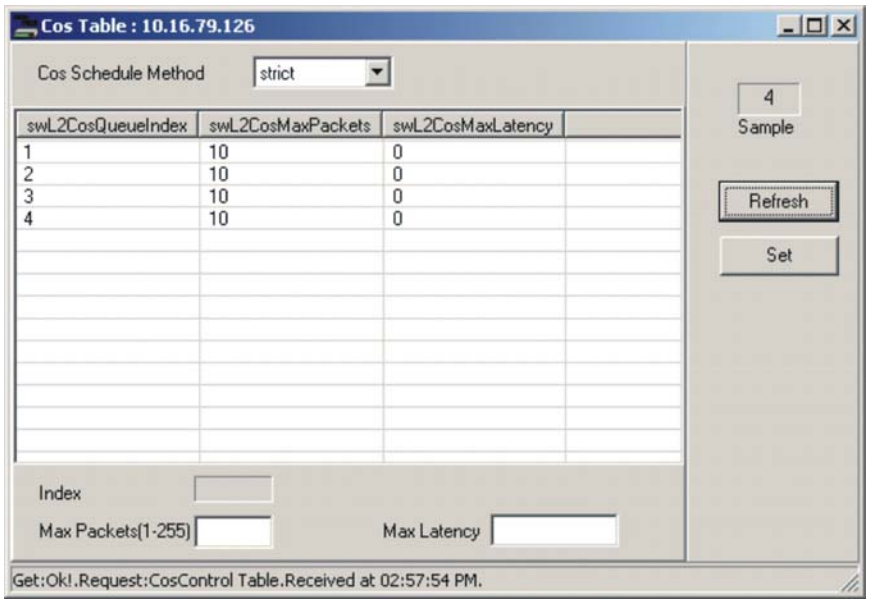
Advanced Configuration→Port Management→Port Control Table

This table contains control information about every port.



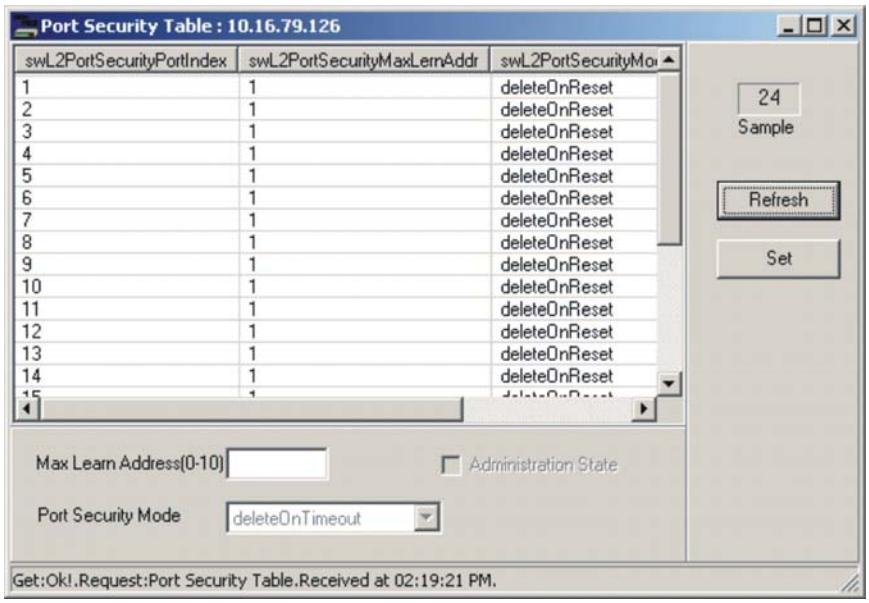
Advanced Configuration→ Cos Management

Class of Service Configuration Table.



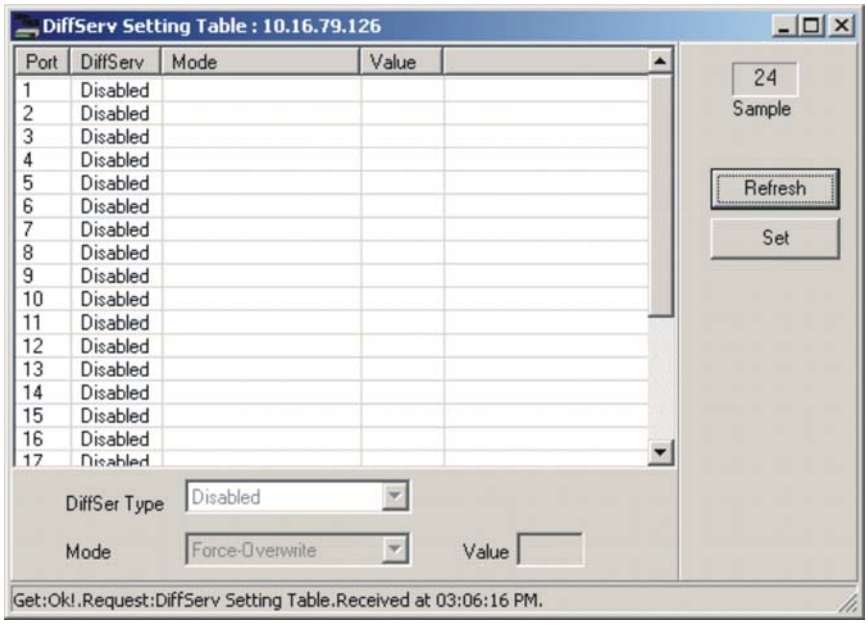
Advanced Configuration→Port Security Management

This is a port security feature which controls the address learning capability and the traffic forwarding divisions. Each port can have this function enabled or disabled.



Advanced Configuration→DiffServ Settings

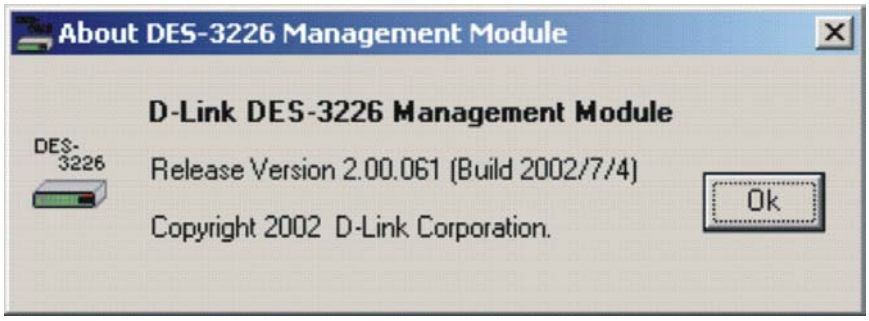
This is a table that contains Differentiated Service type information of each port.



Help Menu Button

About

Gives release version, authorship, and copyright date for DES-3226 Management Module.



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