



DFE-2600 Series Web-based Management User's Guide

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WEB-BASED NETWORK MANAGEMENT

Introduction

The content of this user's guide pertains to intelligent (management) Hub models only.

An embedded web-based (hypertext) interface allows users to manage the switch from anywhere on the network through a standard browser such as Netscape Navigator/Communicator or Microsoft Internet Explorer. The web-browser acts as a universal access tool and can communicate directly, with the Hub, using HTTP protocol.

getting started

The first step in getting started in using web-based management for your Hub, is to secure a web-browser. A web-browser is a program which allows a person to read hypertext. Follow the installation instructions for the browser.

The second and last step is to configure the IP interface, of the Hub, through console management. See the *In-Band Setup Instructions* on page 39 to do this.

Management

Your Hub has a hypertext interface, allowing you to do management through your browser. Your web-browser screen may vary with the screen-shots (pictures) in this guide.

Configuration

Hub configuration settings can be set via the web-browser. These options are described below.

Information

The information screen provides the hardware, firmware, and software profile of the device. The values displayed with a white background can be user-defined or list-selected by user.

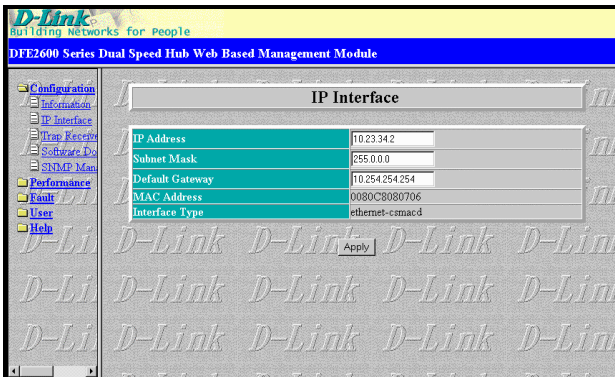


The Hub information is described as follows:

- ◆ **System Description** A description of the hub type.
- ◆ **System OID** The SNMP Object Identifier for this hub type.
- ◆ **System Uptime** The amount of time that the hub stack has been powered on.
- ◆ **System Contact** User-defined information for the physical location of the hub.
- ◆ **System Name** A user-assigned name for the hub.
- ◆ **System Location** A user-assigned description for the physical location of the hub.
- ◆ **Runtime Software Version** Version number for the resident and downloadable software.
- ◆ **PROM Firmware Version** Version number for the firmware chip. This information is needed for new Runtime Software downloads.
- ◆ **Hardware Revision** Revision number for the hub hardware.

IP Interface

The IP Interface screen displays information about each interface to the device.

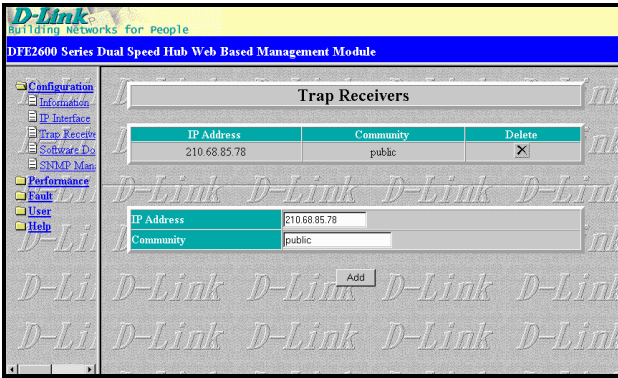


The information is described as follows:

- ◆ **IP Address** The Internet address for the device.
- ◆ **Subnet Mask** The subnet mask determines the level of the subnet that the hub is on.
- ◆ **Default Gateway** The default router for the device.
- ◆ **MAC Address** The physical address for the device.
- ◆ **Interface Type** The media protocol.

Trap Receivers

Defining a Trap Receivers allows network management stations to be notified when exceptional events happen.



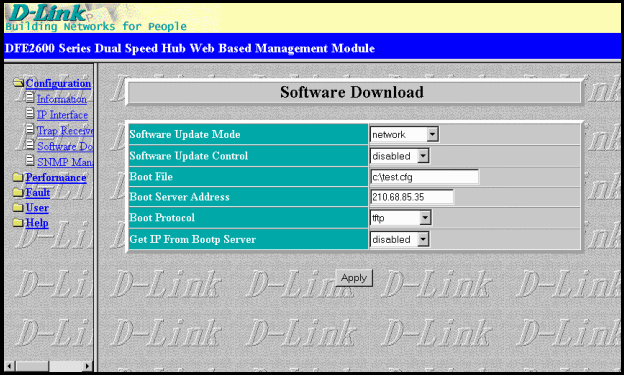
The information is described as follows:

- ◆ **IP Address** This is the address of the network station that should receive traps from the hub stack.

- ◆ **Community** This is the SNMP community name to authenticate the receiving of traps.
- ◆ **Delete** This will remove a trap receiver from the trap receiving table.

Software Download

The Software Download screen allows you to cause an immediate update of the hub's parameters and/ or firmware.



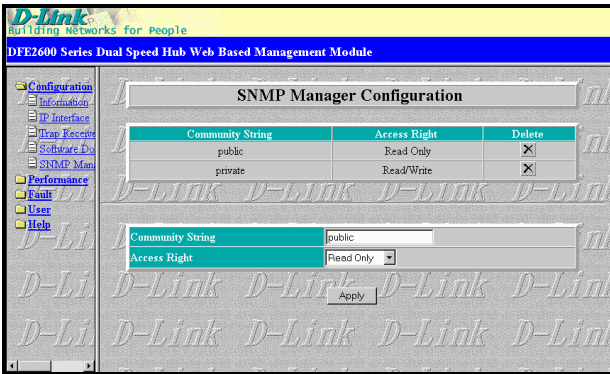
The fields are described as follows:

- ◆ **Software Update Mode** Set to either **network** or **out-of-band**. Determines whether the configuration file should be obtained through the Ethernet network or through the console port.
- ◆ **Software Update Control** Determines whether or not the Hub should download its configuration file the next time the Hub is booted.
- ◆ **Boot File** The path and configuration file name on the TFTP server. If you are using bootp-tftp mode, or if *Get IP From BOOTP Server* is enabled, the pathname will be obtained from the BOOTP server.

- ◆ **Boot Server Address** The IP address of the TFTP server where the configuration file is located.
- ◆ **Boot Protocol** Set to either `bootp-tftp` or `tftp only`. Applies only if the *Software Update Control* is enabled.
- ◆ **Get IP From Bootp Server** If enabled, the address will be obtained from the BOOTP server.

SNMP Manager Configuration

The SNMP Manager Configuration screen allows you to define community strings and access privileges.



The information is described as follows:

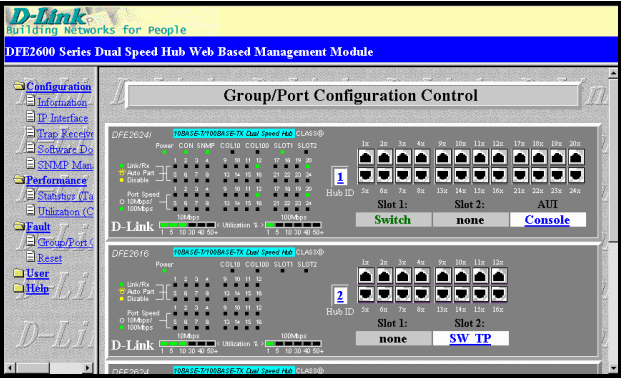
- ◆ **Community String** A user-defined SNMP community name.
- ◆ **Access Right** The permitted access using the SNMP community name.
- ◆ **Delete** Click this to delete the community name.

Control

The operations described in this section allow you to manage the Hub while it is operating.

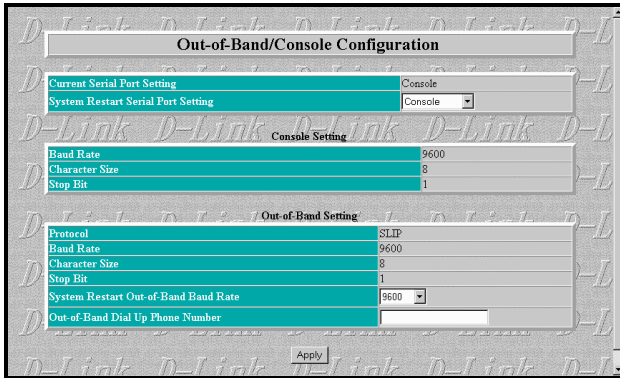
Group/ Port and Console Control

Click [Fault](#) → [Group/Port Control](#) to show the *Group/Port Configuration Control* screen. Hub (group), port, and console configurations can be easily selected from this screen. Simply, click the particular component you want to view or modify.



Out-of-Band/ Console Configuration

The Hub can be configured for out-of-band (dial-up) management or console-based management, by clicking [Console](#).

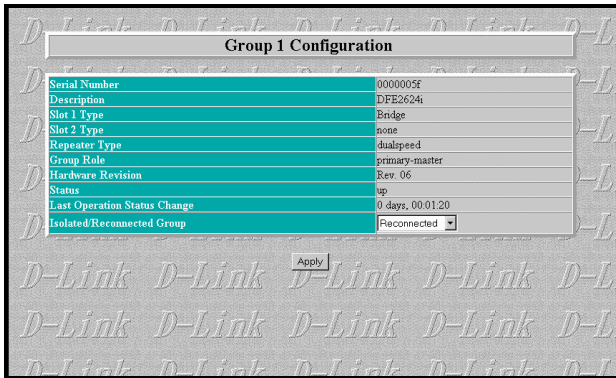


The information is described as follows:

- ◆ **Current Serial Port Setting** Displays the current session, either *Console* or *Out-of-band*.
- ◆ **System Restart Serial Port Setting** You can choose to select *Console* or *Out-of-band* management upon reboot.
- ◆ **Baud Rate** This is cps (characters per second) of the information exchange between the Hub and its console manager.
- ◆ **Character Size** This is the number of bits in the byte unit of the information exchange between Hub and console manager.
- ◆ **Stop Bit** This bit marks the end of a unit of transmission (normally a byte or character).
- ◆ **Protocol** This is the protocol used by the Hub for out-of-band (dial-up) management.
- ◆ **System Restart Out-of-Band Baud Rate** This sets the baud rate (cps) on the Hub.
- ◆ **Out-of-Band Dial Up Phone Number** Administrator can place number here for reference.

Group (Hub) Configuration

Clicking [Fault](#) → [Group/Port Control](#) → [\[Hub ID\]](#) will show the current configuration information of the Hub.



The information is described as follows:

- ◆ **Serial Number** This is a unique hardware serial number of the Hub.
- ◆ **Description** This is the product ID.
- ◆ **Slot 1/ Slot 2 Type** These indicate the type of module, if present, in the back-slot of the Hub.
- ◆ **Repeater Type** Product information of the Hub.
- ◆ **Group Role** The role of the Hub within the stack, either primary-master, backup-master, or slave.
- ◆ **Hardware Revision** The version of the repeater hardware board used in this Hub.
- ◆ **Status** Tells whether the Hub is *up* or *down*.
- ◆ **Last Operation Status Change** Time of the last status change for the Hub. A status change occurs when the Hub goes online or off-line.

- ◆ **Isolated/ Reconnected Group** This is an option to isolate or reconnect the Hub in the hub stack.

Port Configuration

Clicking **Fault**→**Group/Port Control**→**[Port ID]** will show the current configuration information of the port.

| Group 1 Port 12 Configuration | |
|---------------------------------------|----------------------|
| Port Type | UTP |
| Link Status | link-up |
| Auto Partition Status | not auto-partitioned |
| Speed | 100M |
| Polarity Status | reversed |
| Link Test Function State | enabled |
| Administration State | enabled |
| Port Speed State | auto negotiation |
| Generate Trap When Link State Change | disabled |
| Generate Trap When Speed State Change | disabled |

Apply

The information is described as follows:

- ◆ **Port Type** The type is UTP, BNC, or AUI.
- ◆ **Link Status** Indicates link status: *link up* or *link down*.
- ◆ **Auto Partition Status** Indicates whether the port has been auto-partitioned or not.
- ◆ **Speed** Indicates the port speed: *100Mbps* or *10Mbps*.
- ◆ **Polarity Status** Indicates the polarity status: *normal* or *reversed*.

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- ◆ **Link Test Function State** Indicates the whether the port link-test is *enabled* or *disabled*. If enabled, the port will check for link pulses, and will only transmit if there is a good link to another station.
 - ◆ **Administration State** Indicates the port's partition status, either *enabled* or *disabled*.
 - ◆ **Port Speed State** Indicates how the port speed is set: *auto-negotiation*, *10Mbps*, or *100Mbps*.
 - ◆ **Generate Trap When Link State Change** Indicates whether or not the port will send a trap if it's link status changes.
 - ◆ **Generate Trap When Speed State Change** Indicates whether or not the port will send a trap if it's speed changes.

Reset

Doing a remote reset is equivalent to turning the hub off and on again. All parameters are returned to the values stored in EEPROM.



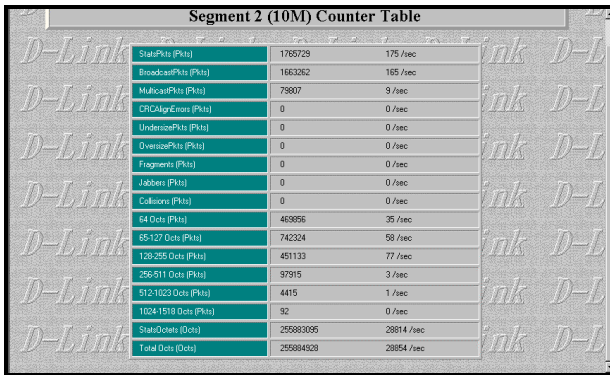
Click **RESET** to reset the Hub.

Performance

Hub performance is measured with packet statistics and it's utilization in the network.

Statistics

The Hub allows you to collect network statistics of individual ports, 10Mbps segments or 100Mbps segments, and any Hub in the stack.



The screenshot displays a table titled "Segment 2 (10M) Counter Table" with the following data:

| Counter Name | Value | Rate (/sec) |
|-------------------------|-----------|-------------|
| StatsPkts (Pkts) | 1765729 | 175 |
| BroadcastPkts (Pkts) | 1663262 | 165 |
| MulticastPkts (Pkts) | 79807 | 9 |
| CRCAlegErrors (Pkts) | 0 | 0 |
| UndersizePkts (Pkts) | 0 | 0 |
| OversizePkts (Pkts) | 0 | 0 |
| Fragments (Pkts) | 0 | 0 |
| Jabbers (Pkts) | 0 | 0 |
| Collisions (Pkts) | 0 | 0 |
| 64 Octets (Pkts) | 463956 | 35 |
| 65-127 Octets (Pkts) | 742324 | 59 |
| 128-255 Octets (Pkts) | 451133 | 77 |
| 256-511 Octets (Pkts) | 97915 | 3 |
| 512-1023 Octets (Pkts) | 4415 | 1 |
| 1024-1518 Octets (Pkts) | 92 | 0 |
| StatsOctets (Octets) | 256883095 | 28814 |
| Total Octets (Octets) | 256884928 | 28854 |

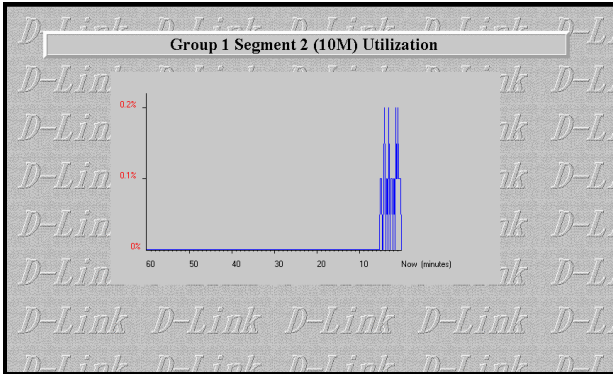
Statistics collected by the Hub are described as follows:

- ◆ **StatsPkts (Pkts)** Counts valid frames.
- ◆ **BroadcastPkts (Pkts)** Counts valid frames that are broadcast to all stations on the network.
- ◆ **MulticastPkts (Pkts)** Counts valid frames that are sent to multicast Ethernet addresses.

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- ◆ **CRC AlignErrors (Pkts)** Counts otherwise valid frames that did not end on a byte (octet) boundary.
 - ◆ **UndersizePkts (Pkts)** Counts packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.
 - ◆ **OversizePkts (Pkts)** Counts packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed.
 - ◆ **Fragments (Pkts)** Counts packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Errors).
 - ◆ **Jabbers (Pkts)** Counts frames longer than the maximum 1518 bytes (octets) with either bad framing or an invalid CRC.
 - ◆ **Collisions (Pkts)** Counts transmission collisions on the Ethernet segment.
 - ◆ The Hub also collects packet distribution statistics categorizing Ethernet frames by length:
 - **64 Octs (Pkts)**
 - **65-127 Octs (Pkts)**
 - **128-255 Octs (Pkts)**
 - **256-511 Octs (Pkts)**
 - **512-1023 Octs (Pkts)**
 - **1024-1518 Octs (Pkts)**

Utilization

An Ethernet segment can be monitored using the Utilization display.



Utilization is calculated and plotted every 10 seconds. At any time, at most, a one hour utilization history can be shown by the graph.

User List

The User List display, displays the Ethernet (MAC) addresses of packets recently received by the hub stack. This information is displayed per port.

The table displays the source addresses and times of packets received on Group 1 Port 20. The source addresses are listed in hexadecimal format, and the times are shown in days, hours, and minutes.

| Source Address | Time |
|-------------------|------------------|
| 00 40 05 40 0c 94 | 0 days, 03:56:16 |
| 00 80 5e 0d ea c9 | 0 days, 03:56:53 |
| 00 80 c7 00 00 01 | 0 days, 03:54:47 |
| 00 80 c8 0c 18 ef | 0 days, 03:55:49 |
| 00 80 c8 10 50 10 | 0 days, 03:56:01 |
| 00 80 c8 26 60 80 | 0 days, 03:57:04 |
| 00 80 c8 26 69 81 | 0 days, 03:56:59 |
| 00 80 c8 33 45 67 | 0 days, 03:56:35 |
| 00 80 c8 5a 9c 49 | 0 days, 03:56:23 |
| 00 80 c8 5a e4 d3 | 0 days, 03:55:04 |
| 00 a0 24 50 38 a8 | 0 days, 03:56:48 |
| 08 00 20 89 b4 94 | 0 days, 03:54:53 |

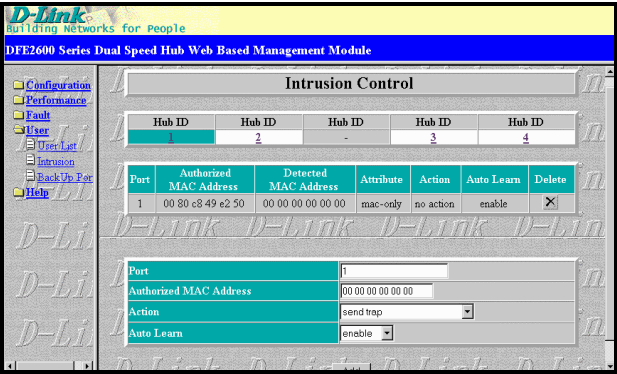
The information is described as follows:

- ◆ **Source Address** Shows the source Ethernet address of the frame as received by the hub.

- ◆ **Time** Shows the amount of time since the last packet was transmitted on the port.

Intrusion

The Hub's intrusion security feature can be used to dedicate a port to a given piece of hardware. If a different device transmits to the port, the hub can be set to either partition the port, send a trap notification to the network manager, or both. The device identification is by Ethernet address.



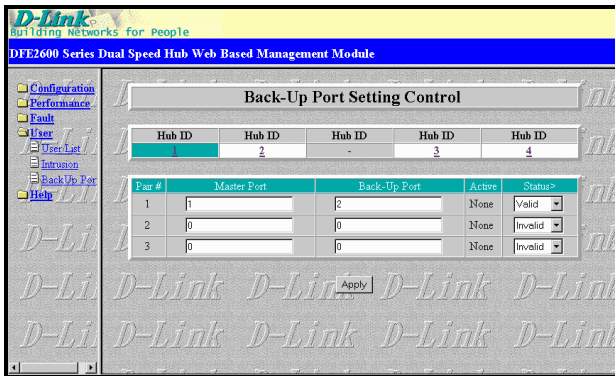
The information is described as follows:

- ◆ **Hub ID** Select a Hub from the hub stack.
- ◆ **Port** Port ID for which Intrusion is enabled.
- ◆ **Authorized MAC Address** This is the Ethernet (MAC) address of the station allowed to use this port.
- ◆ **Detected MAC Address** This is the Ethernet (MAC) address of the last frame received by the port.
- ◆ **Attribute** This indicates MAC address type, always.

- ◆ **Action** The action to be taken in event of intrusion on the port: *send trap*, *partition*, *send trap & partition*, or *no action*.
- ◆ **Auto Learn** Can set auto-learning to *enable* or *disable*.
- ◆ **Delete** Click this to delete and disable a port/ intrusion entry.

Back-Up Port

A *Back-Up Port* is a link pair consisting of a *master port* and a *back-up port*. The back-up port is immediately enabled should the master port fail. If the master port returns (from failure), back-up link traffic is switched back to the master link. A maximum limit of 3 back-up's are allowed per Hub.



Eavesdrop information is described as follows:

- ◆ **Hub ID** Select a Hub from the hub stack.
- ◆ **Master/ Back-Up Port** Enter the port ID numbers to create a back-up pair.
- ◆ **Active** Displays *None*, if both ports are inactive; *Master*, if master port is active; and *Back-Up*, if back-up port is active.
- ◆ **Status** Select *Valid* to enable the pair, else *Invalid* to disable the pair.