



Fast Ethernet Workgroup Switch 8275 Models 318, 322, and 326

Installation and Planning Guide



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Installation and Planning Guide

Note:

Before using this information and the product it supports, be sure to read the "Safety Information" on page xvi and Appendix B, "Notices, Trademarks, and Warranty."

First Edition (January 1999)

This edition applies to the IBM Fast Ethernet Workgroup Switch 8275 Models 318, 322 and 326.

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About This Manual

This manual explains how to install and configure the Fast Ethernet Workgroup Switch 8275 Models 318, 322 and 326.

Who Should Read This Manual

This manual is intended for use by installation technicians, network administrators, and service personnel.

How This Manual is Organized

- Chapter 1, "Introduction," describes the features of the 8275.
- Chapter 2, "Installing and Powering On the 8275," contains step-by-step instructions for installing and connecting the 8275 to your network.
- Chapter 3, "8275 Models and LED Panels," describes the different model configurations of the the 8275 and the LED panels found on each model.
- Chapter 4, "Console-Based Management," describes how to set up local console management and Telnet console management sessions and how to configure the 8275.
- Chapter 5, "Web-Based Management," describes how to manage the 8275 through your Web browser.
- Chapter 6, "Troubleshooting and Service," describes how to troubleshoot the 8275.
- Appendix A, "Introduction to Virtual LANs and Spanning Tree Protocol," describes VLANs and Spanning Tree Protocols.
- Appendix B, "Notices, Trademarks, and Warranty," details warranty information and emission information.
- Appendix C, "Cable Pinout Diagrams," describes cable pinout diagrams.

Safety Information



Danger: Before you begin to install this product, read the safety information in *Caution: Safety Information—Read This First*, SD21-0030. This booklet describes safe procedures for cabling and plugging in electrical equipment.



Danger : Avant d'installer le présent produit, consultez le livret *Attention : Informations pour la sécurité—Lisez-moi d'abord*, SD21-0030, qui décrit les procédures à respecter pour effectuer les opérations de câblage et brancher les équipements électriques en toute sécurité.



Gevarr: Voodrat u begint met de installatie van dit produkt, moet u eerst de veiligheidsinstructies lezen in de brochure *PAS OP! Veiligheidsinstructies—Lees dit eerst*, SD21-0030. Hierin wordt beschreven hoe u elektrische apparatuur op een veilige manier moet bekabelen en aansluiten



Perigo: Antes de começar a instalar deste produto, leia as informações de segurança contidas em *Cuidado: Informações Sobre Segurança—Leia Primeiro*, SD21-0030. Esse folheto descreve procedimentos de segurança para a instalação de cabos e conexões em equipamentos elétricos.



危險：安裝本產品之前，請先閱讀
"Caution: Safety Information—Read
This First" SD21-0030 手冊中所提
供的安全注意事項。這本手冊將會說明
使用電器設備的纜線及電源的安全程序。



Opasnost: Prije nego što počnete sa instalacijom produkta, pročitajte naputak o pravilima o sigurnom rukovanju u
Upozorenje: Pravila o sigurnom rukovanju - Prvo pročitaj ovo, SD21-0030. Ovaj privitak opisuje sigurnosne postupke za priključivanje kabela i priključivanje na električno napajanje.



Upozornění: Než začnete instalovat tohoto produktu, přečtěte si nejprve bezpečnostní informace v pokynech, Bezpečnostní informace, SD21-0030. Tato brožurka popisuje bezpečnostní opatření pro kabeláž a zapojení elektrického zařízení.



Fare! Før du installerer dette produkt, skal du læse sikkerhedsforskrifterne i *NB: Sikkerhedsforskrifter – Læs dette først* SD21-0030. Vejledningen beskriver den fremgangsmåde, du skal bruge ved tilslutning af kabler og udstyr.



Gevarr: Voordat u begint met het installeren van dit produkt, dient u eerst de veiligheidsrichtlijnen te lezen die zijn vermeld in de publikatie *Caution: Safety Information - Read This First*, SD21-0030. In dit boekje vindt u veilige procedures voor het aansluiten van elektrische apparatuur.



VARRA: Ennen kuin aloitat tämän tuotteen asennuksen, lue julkaisussa *Varoitus: Turvaohjeet–Lue tämä ensin*, SD21-0030, olevat turvaohjeet. Tässä kirjasessa on ohjeet siitä, mitensähkölaitteet kaapeloidaan ja kytketään turvallisesti.



Vorsicht: Bevor mit der Installation des Produktes begonnen wird, die Sicherheitshinweise in *Achtung: Sicherheitsinformationen–Bitte zuerst lesen*. IBM Form SD21-0030. Diese Veröffentlichung beschreibt die Sicherheitsvorkehrungen für das Verkabeln und Anschließen elektrischer Geräte.



Κίνδυνος: Πριν ξεκινήσετε την εγκατάσταση αυτού του προϊόντος, διαβάστε τις πληροφορίες ασφάλειας στο φυλλάδιο *Caution: Safety Information-Read this first*, SD21-0030. Στο φυλλάδιο αυτό περιγράφονται οι ασφαλείς διαδικασίες για την καλωδίωση των ηλεκτρικών συσκευών και τη σύνδεσή τους στην πρίζα.



Vigyázat: Mielőtt megkezdi a berendezés üzembe helyezését, olvassa el a *Caution: Safety Information–Read This First*, SD21-0030 könyvecskeben leírt biztonsági információkat. Ez a könyv leírja, miyen biztonsági intézkedéseket kell megtenni az elektromos berendezés huzalozásakor illetve csatlakoztatásakor.



Pericolo: prima di iniziare l'installazione di questo prodotto, leggere le informazioni relative alla sicurezza riportate nell'opuscolo *Attenzione: Informazioni di sicurezza–Prime informazioni da leggere* in cui sono descritte le procedure per il cablaggio ed il collegamento di apparecchiature elettriche.



危険： 導入作業を開始する前に、安全に関する小冊子SD21-0030 の「最初にお読みください」(Read This First)の項をお読みください。
この小冊子は、電気機器の安全な配線と接続の手順について説明しています。



위험: 이 제품을 설치하기 전에 반드시 "주의: 안전 정보-시작하기 전에" (SD21-0030) 에 있는 안전 정보를 읽으십시오.



ОПАСНОСТ
Пред да почнете да го инсталирате овој продукт, прочитајте ја информацијата за безбедност:
"Предупредување: Информација за безбедност: Прочитајте го прво ова", SD21-0030.
Оваа брошура опишува безбедносни процедури за каблирање и вклучување на електрична опрема.



Fare: Før du begynner å installere dette produktet, må du lese sikkerhetsinformasjonen i *Advarsel: Sikkerhetsinformasjon – Les dette først*, SD21-0030 som beskriver sikkerhetsrutinene for kabling og tilkobling av elektrisk utstyr.



Uwaga:
Przed rozpoczęciem instalacji produktu należy zapoznać się z instrukcją:
"Caution: Safety Information - Read This First", SD21-0030.
Zawiera ona warunki bezpieczeństwa przy podłączaniu do sieci elektrycznej i eksploatacji.



Perigo: Antes de iniciar a instalação deste produto, leia as informações de segurança *Cuidado: Informações de Segurança–Leia Primeiro*, SD21-0030. Este documento descreve como efectuar, de um modo seguro, as ligações eléctricas dos equipamentos.



ОСТОРОЖНО: Прежде чем установить этот продукт, прочтите Инструкцию по технике безопасности в документе "Внимание: Инструкция по технике безопасности -- Прочсть в первую очередь", SD21-0030. В этой брошюре описаны безопасные способы каблирования и подключения электрического оборудования.



Nebezpečenstvo: Pred inštaláciou výrobku si prečítajte bezpečnosté predpisy v

Výstraha: Bezpečnosté predpisy - Prečítaj ako prvé, SD21-0030. V tejto brožúrke sú opísané bezpečnosté postupy pre pripojenie elektrických zariadení.



Pozor: Preden začnete z inštaláciou tega produkta preberite poglavje: "Opozorilo: Informacije o varnem rokovanju-preberit pred uporabo," SD21-0030. To poglavje opisuje pravilne postopke za kabliranje,



Peligro: Antes de empezar a instalar este producto, lea la información de seguridad en *Atención: Información de Seguridad-Lea Esto Primero*, SD21-0030. Este documento describe los procedimientos de seguridad para cablear y enchufar equipos eléctricos.



Varning — livsfara: Innan du börjar installera den här produkten bör du läsa säkerhetsinformationen i dokumentet *Varning: Säkerhetsföreskrifter – Läs detta först*, SD21-0030. Där beskrivs hur du på ett säkert sätt ansluter elektrisk utrustning.



危險：

開始安裝此產品之前，請先閱讀安全資訊。

注意：

請先閱讀 - 安全資訊 SD21-0030

此冊子說明插接電器設備之電纜線的安全程序。

Chapter 1. Introduction

This chapter describes the features of the Fast Ethernet Workgroup Switch 8275. The 8275 is an intelligent, managed switch designed for medium-sized networks or a remote location as part of a larger network.

Unless otherwise noted, the content of this manual uses the 8275-322 general configuration as an example.

Product Features

The Fast Ethernet Workgroup Switch 8275 has the following features:

- Three available models to choose from:
 - Model 318: Configured with two 8-port 100BASE-FX modules
 - Model 322: Configured with one 12-port 10BASE-T/100BASE-TX and one 8-port 100BASE-FX modules
 - Model 326: Configured with two 12-port 10BASE-T/100BASE-TX modules
- Two media slots supporting up to two optional, installable 2-port 100BASE-FX modules.
- Speed autosensing for 10-Mbps or 100-Mbps TX port configurations.
- Half- or full-duplex auto-negotiation for TX ports.
- A management interface that allows you to configure the 8275 for your network. The following management options can be used:
 - Console-based management
 - SNMP management
 - Web-based management
- Switch Security—Access to the 8275 is protected by user name and password. Two levels of security are available.
- Virtual LANs (VLANs)—The ability to divide the 8275 into as many as eight separate, port-based VLANs to aid in reducing network broadcasts.
- Port Trunking—Allows the creation of up to seven high-bandwidth trunking group connections between 8275 units (models 318, 322, 324, 326).
- Software Update—Allows you to download software upgrades to the 8275.
- Support for Spanning Tree Protocol 802.1D to prevent network looping.
- Upload and download of the configuration file via TFTP or Xmodem protocol.
- Port monitoring support for network monitoring.
- Support for Telnet management.

- SNMP support for RFC 1213, RFC 1757, RFC 1493, and IBM proprietary MIB.
- Support for RMON Statistics (1), History (2), Alarms (3) and Events (9).
- Status LEDs located on the front panel displaying selected power, link, speed, and duplex indicators.
- Diagnostic LEDs for each module.

Functional Characteristics

Figure 1-1, shows the front panel of an 8275-322.

- The LED panel displays information about the state of the 8275, the ports, and the network.
- The management port (EIA 232 port) is used for local console management and out-of-band management.
- The 12 MDI-X ports can be used for a 10/100-Mbps RJ45 network connection.
- The 100BASE-FX ports can be used for multimode fiber (MMF) SC network connections.

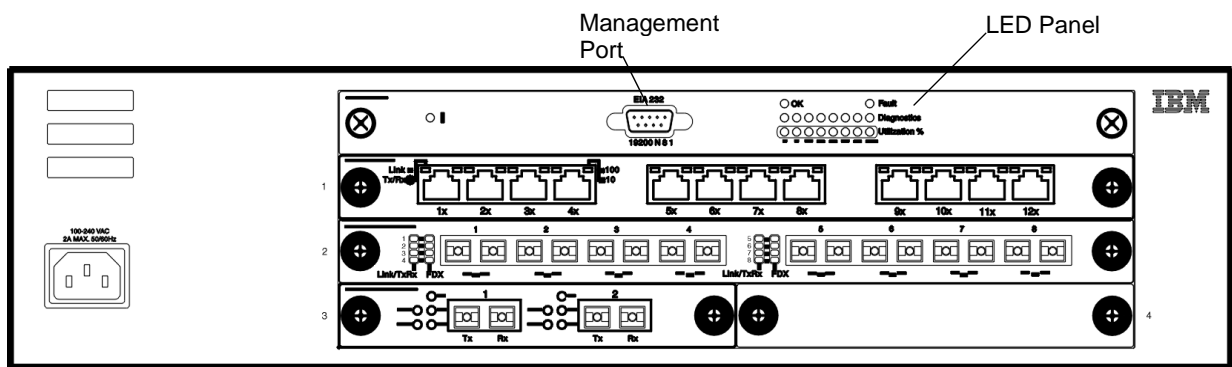


Figure 1-1. Front Panel

Communication Ports

The 8275 has the following types of ports:

- There are 12 10/100BASE-TX ports per TX module, referred to as MDI-X ports. The MDI-X ports use Category 3, 4, or 5, UTP or STP cables. All TX ports auto-negotiate between 10 Mbps and 100 Mbps as well as full-duplex and half-duplex.
- There are 8 100BASE-FX ports per FX module. These ports use MMF cables with SC connectors.
- Optional uplink modules have 2 100BASE-FX ports.

Management Port

The management port provides a local console or an out-of-band connection to the 8275. The management port also supports VT100 console connection. See “Telnet Console Management” on page 4-2.

Chapter 2. Installing and Powering On the 8275

Read “Safety Information” on page xvi and the notices and warranty information in Appendix B, “Notices, Trademarks, and Warranty” before installing the 8275.

This chapter provides step-by-step instructions for installing the 8275.

Installation Summary

Table 2-1. Summary of Installation Procedures for the 8275

Step	Procedure	Reference
1.	Read the safety instruction booklet shipped with the 8275.	<i>Caution: Safety Information—Read This First</i> SD21-0030
2.	Unpack and visually inspect the 8275 for any damage incurred during shipping.	“Unpacking Instructions” on page 2-1
3.	Install the 8275 on a desktop or a rack.	“Installation Options” on page 2-5
4.	Power on the 8275.	“Powering On” on page 2-8
5.	Connect the 8275 to the network and attach cables.	“Connecting the 8275 to the Network” on page 2-8
6.	Configure the 8275.	“Console-Based Management” on page 4-1 or “Web-Based Management” on page 5-1

Unpacking Instructions

Open the box and carefully unpack the 8275. Visually inspect the unit for any damage caused during shipping.

Verify that you have all the items on the following checklist. If an item is missing or has been damaged during shipping, call your place of purchase for assistance.

The package should contain:

- An IBM 8275 Fast Ethernet Workgroup Switch
- An accessory pack containing 2 mounting brackets and screws
- *Fast Ethernet Workgroup Switch 8275 Installation and Planning Guide*
- *8275 Quick Installation Guide*
- *8275 Quick Reference Card* which can be stored in the card tray beneath the 8275
- Power cord
- *Caution: Safety Information—Read This First*

Cables and Connectors

Table 2-2 shows the cable requirements. Cable requirements depend on the speed of the network. Cables and connecting hardware must meet the standards specified in the ANSI/TIA/EIA 568-A or CSA T529 standards.

Table 2-2. Cable Requirements

Ethernet Type	Cable requirements	Max. Cable length
10BASE-T	Category 3, 4, or 5, 100-ohm STP/UTP cable	100 m (328 ft)
100BASE-TX	Category 5, 100-ohm STP or UTP cable and connecting hardware	100 m (328 ft)
100BASE-FX	62.5/125 micron multimode fiber-optic cabling	2 km (6560 ft) at full duplex

Cabling Requirements for 10BASE-T Ports

10BASE-T ports operate correctly with Category 3, 4, or 5, 100-ohm UTP or STP cable and connecting hardware, as specified in the ANSI/TIA/EIA 568-A or CSA T529 standards.

Do not use telephone extension cables in 10BASE-T networks. The wire pairs in those cables are not twisted and the cable does not meet other requirements for use in a 10BASE-T network.

Cabling Requirements for 100BASE-TX

For connection to 100BASE-TX networks, you can use only Category 5 STP or UTP cables.

Cabling Requirements for 100BASE-FX

For connection to 100BASE-FX networks, you can use only 62.5/125 MMF cabling with SC connectors.

Cabling Requirements for the Management Port

The management port is a standard DB-9 male connector that provides an EIA 232 serial interface. You can connect using a null-modem cable to a local workstation or a standard serial cable to a modem for a remote connection using serial line Internet protocol (SLIP). Once connected you can manage the 8275. This is called out-of-band management.

Use a null-modem cable when connecting to a workstation. Use a serial cable when connecting to a modem.

Physical Characteristics and Requirements

Dimensions

Width	441 mm (17.4 in)
Depth	264 mm (10.4 in)
Height	113 mm (4.4 in) including rubber feet.

Operating Clearances

Front	Adequate space to view LEDs
Sides	50.8 mm (2 in)
Rear	50.8 mm (2 in)

Weight

8275-318	6.85 kg (15.10 lb)
8275-322	6.89 kg (15.19 lb)
8275-326	6.93 kg (15.28 lb)
2-port 100BASE-FX module	215 g (.48 lb)

Power Requirements

100 to 240 V ac, 50 to 60 Hz.

Power Dissipation

111.4 watts (380.1 BTU/Hour)

Electrical Power

0.141 kVA

Inrush Current

30 A at 115 V or 60 A at 230 V

Leakage Current

< 0.5 mA at 240 V ac

dB Rating

40.0 dB

Air Exhaust

8275-318 0.241 m³/min

8275-322 0.245 m³/min

8275-326. 0.245 m³/min

Operating Environment

Table 2-3. Operating Environment

Operating Temperature	10°C to 40°C
Storage Temperature	-25°C to 70°C
Operating Humidity	8% to 80% maximum relative humidity

Installation Options

There are two options for setting up the 8275: desktop/shelf installation or rack installation. Follow these guidelines for any of these options:

- Ensure that the surface supports the model you have, see “Weight” on page 2-3.
- Locate the 8275 within 1.8 m (6 ft) of a power source.
- Ensure that there is adequate ventilation around the 8275.

You can use any EIA standard 19-inch rack. See “Physical Characteristics and Requirements” on page 2-3 for the dimensions of the 8275.

Rack Installation

You can mount the 8275 on any EIA standard 19-inch rack.

The rack can be open or closed. If you mount the 8275 on a closed rack, be sure that enough air flows through the 8275. Covers on the front of the rack that prevent airflow from reaching the 8275 must be removed or modified to let air pass. Similarly, unvented rear rack covers that prevent air from exiting the 8275 or cause a build-up of back pressure from several machines must not be used.

Follow these steps for rack installation:

- Step 1.** Attach the two rack mounting brackets provided with the 8275 to the right and left sides of the 8275 with the screws provided.
- Step 2.** Mount the 8275 in the 19-inch rack. Rack-mounting screws are not provided.
- Step 3.** Plug the power cord into the three-pronged ac power connector. This powers on the 8275.

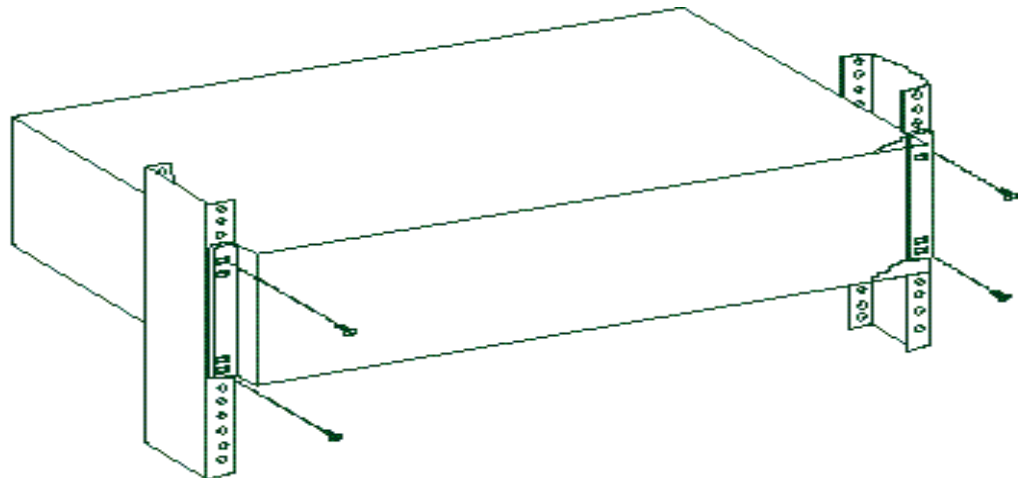


Figure 2-1. Rack Installation

Desktop or Shelf Installation

The 8275 can be installed on a flat surface, such as a desktop or shelf. Follow these steps to install the 8275 on a desktop or shelf:

- Step 1.** Place the 8275 on a level surface.
- Step 2.** Plug the power cord into the three-pronged ac power connector. This powers on the 8275.

Installation of Optional Modules

Optional modules are available for the 8275 Models 318, 322 and 326. Perform the following steps for installing an optional module into the 8275 Models 318, 322 or 326:

Note: These modules install into slots 3 or 4. For information on slot numbers see Figure 3-1 on page 3-1.

- Step 1.** Unplug the power cord from the 8275.
- Step 2.** Remove the blank bracket from the slot into which you will install the module by turning the thumbscrews located on the sides of the bracket counterclockwise.

Note: You can also use a Phillips-head screwdriver to unscrew the thumbscrews. See Figure 2-2.

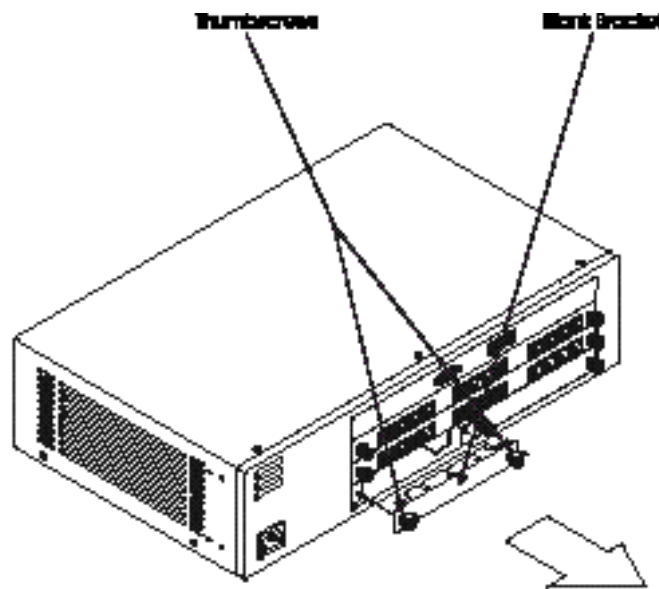


Figure 2-2. *Optional Module Installation, Part 1*

Note: Retain the blank bracket for re-installation if you remove the optional feature module.

Step 3. Insert the optional module by sliding it into the slot, as shown in Figure 2-3. Slide the module into the slot until you feel the module lock securely into place. Do not force, twist or bend the module. It should slide in smoothly.

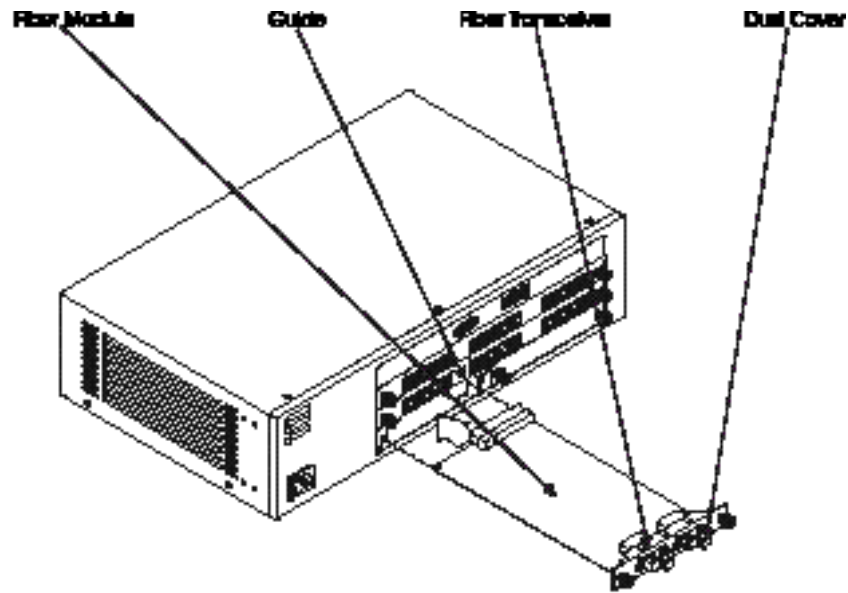


Figure 2-3. Optional Module Installation Part 2

Step 4. Gently push the thumbscrews of the module into the slot. Turn them clockwise to tighten. Do not over-tighten the thumbscrews.

Step 5. Re-connect the power cord to the 8275. The 8275 will automatically detect the optional module if it is installed correctly.

Step 6. Remove the dust cover from the ports and attach cables to the ports.

Step 7. Check the LEDs to verify that there is an active link to the port. See “Meaning of Optional 2-port 100BASE-FX Module LEDs” on page 3-5.

Notes: The module should be level and even with the front panel of the 8275. If no power is reaching the optional module see Chapter 6, “Troubleshooting and Service.”

Powering On

The power supply automatically adjusts to the local power source. You can power on the 8275 with all LAN segment cables connected. The three-pronged power connector is located at the far left of the front panel.

A power on self-test (POST) takes place every time the 8275 is powered on. If any component fails during the POST an error displays on the console. At that point, you have the option to continue or end the POST. Results from the POST also display on the LED panel.

If the LED panel fails during POST, the result will be displayed on the console but not on the LED panel. The console displays error messages with more detail.

If the management port does not pass the Serial Communications Controller Test, no results will be shown on the console screen.

Handling Cables

The following guidelines should always be observed when working with cables.

- Avoid stretching or bending cables.
- Avoid routing cables near sources of electromagnetic interference, such as motorized devices or fluorescent lights.
- Route cables away from aisles and walkways to avoid creating trip hazards. Use floor cable covers to secure cables if such routes cannot be avoided.

Connecting the 8275 to the Network

Label each end of the cable so that it is easy to identify the device at the other end of the cable. At the end of the cable nearest the switch, place a label with a unique identifier for the cable and the number of the port to which it is connected.

Keep a record of how the network is cabled so that you can identify and repair problems and expand the network as needed.

Figure 2-4 shows the 12 MDI-X ports.

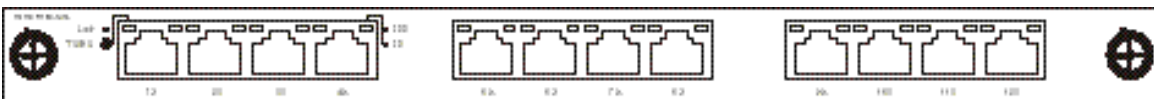


Figure 2-4. MDI-X ports

Table 2-4, “Straight-Through and Crossover Cabling,” indicates the correct cable to use when connecting the 8275 to other devices on the network. The table displays the typical port and connector found on most devices. Be sure to verify the type of port you are connecting to before attaching the cable.

Table 2-4. *Straight-Through and Crossover Cabling*

8275 port	Workstation	MDI-X	MDI
MDI-X	Straight	Crossover	Straight

The steps for connecting Category 3, 4, or 5 UTP/STP cables are the same for 10-Mbps and 100-Mbps ports and devices.

Follow these steps to connect cables to the 8275:

- Step 1.** See Table 2-4 for the appropriate cable to use when connecting to a device.
- Step 2.** Plug one end of a Category 3, 4, or 5 UTP/STP cable into any of the MDI-X ports of the 8275.
- Step 3.** Plug the other end into the appropriate port on the other device.
- Step 4.** Verify that the LED states are as indicated in “LED Panels” on page 3-3.

Cables must have the correct pin configuration. See “Cables and Connectors” on page 2-2, for cable specifications and Appendix C, “Cable Pinout Diagrams,” for pinout diagrams of straight-through and crossover cables

You can connect two 8275s if each has an 8-port 100BASE-FX module as shown in Figure 2-5. Use an MMF cable between devices. Be sure that the Tx/Rx (transmit/receive) ports of one device connect to the Rx/Tx (receive/transmit) ports, respectively, of another device.

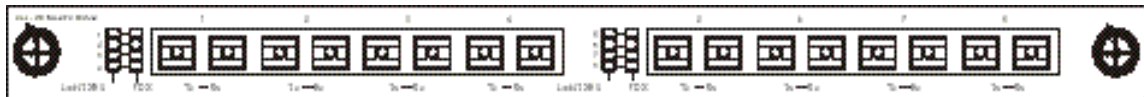


Figure 2-5. *8-port 100BASE-FX Module*

Chapter 3. 8275 Models and LED Panels

This chapter describes the 8275 Models 318, 322 and 326.

Each model has a system module and two switch modules, one in slot 1 and one in slot 2 as shown in Figure 3-1, “8275 Front Panel Slots.”

Figure 3-1 shows four slots. Slots 1 and 2 can contain the 12-port 10BASE-T/100BASE-TX and the 8-port 100BASE-FX or both, depending on the model.

Slots 3 and 4 represent slots for the installation of up to two optional modules, such as the 2-port 100BASE-FX module.

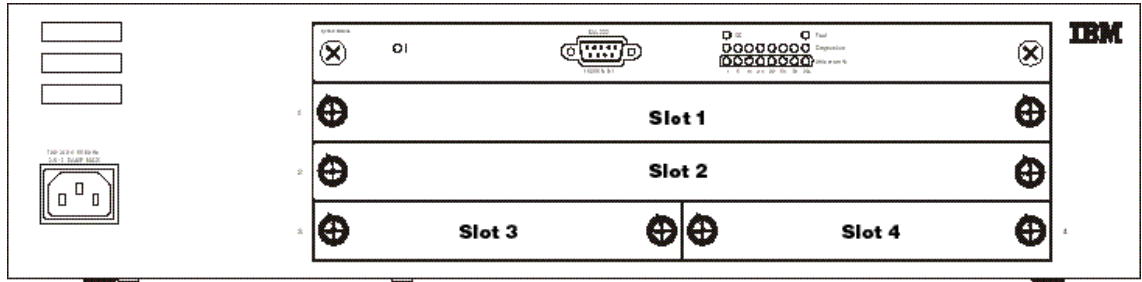


Figure 3-1. 8275 Front Panel Slots

Model 8275-318

Model 318, shown in Figure 3-2, has a system module and two 8-port 100BASE-FX modules—one in slot 1 and the other in slot 2.

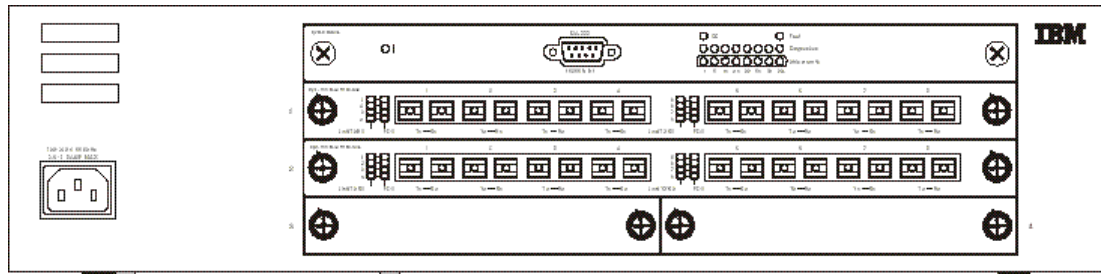


Figure 3-2. Model 318

Model 8275-322

Model 322, shown in Figure 3-3, has a system module, a 12-port 10BASE-T/100BASE-TX module in slot 1 and an 8-port 100BASE-FX module in slot 2.

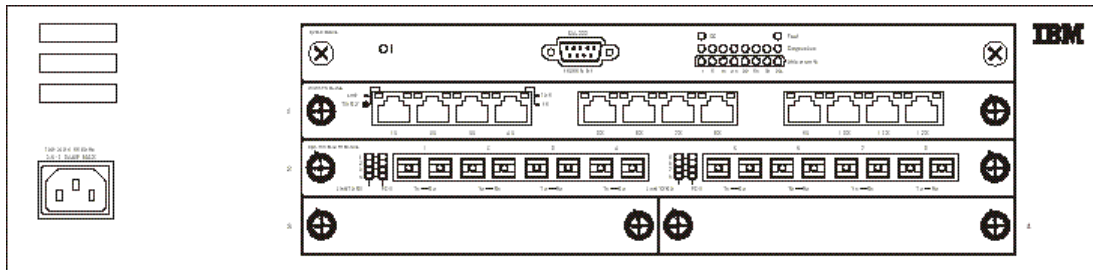


Figure 3-3. Model 322

Model 8275-326

Model 326, shown in Figure 3-4, has a system module and two 12-port 10BASE-T/100BASE-TX modules—one in slot 1 and the other in slot 2.

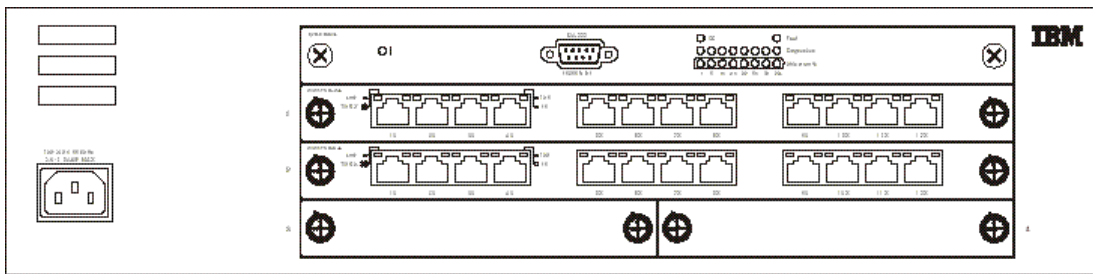


Figure 3-4. Model 326

2-port 100BASE-FX Module

Figure 3-5, “Optional 2-port 100BASE-FX Module,” displays the optional fiber module that can be installed in slots 3 or 4 of the 8275 Models 318, 322 and 326.



Figure 3-5. Optional 2-port 100BASE-FX Module

LED Panels

The LED panels, shown in the following figures, are an effective tool for monitoring the performance of the 8275.

System Module LEDs

The meanings of the system module LEDs are shown in Table 3-1 on page 3-3. The front panel provides CPU utilization statistics and allows you to monitor the 8275 at a glance. For further information on the system module LEDs see Chapter 6, “Troubleshooting and Service.”

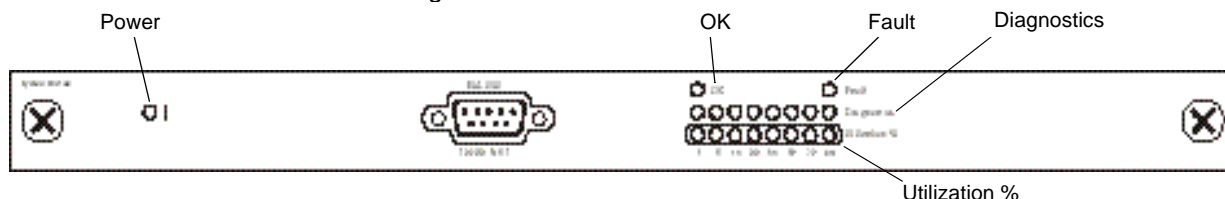


Figure 3-6. System Module LEDs

Table 3-1. Meanings of the System Module LEDs

LED	State	Meaning
Power	On	Power is on
	Off	8275 is not getting power
OK	On	Normal operation
	Off	8275 Internal fault
Fault	On	8275 Internal fault
	Off	Normal operation
Diagnostics	On	See Diagnostic LED Error Chart, shown in Figure 6-1 on page 6-1.
Utilization %	Blinking	Indicates the relative percentage CPU utilization by the 8275. Please note that the Utilization LEDs are also used to indicate module failures detected during POST. See “Troubleshooting and Service” on page 6-1 for more information.

12-port 10BASE-T/100BASE-TX LEDs

The meanings of the 12-port 10BASE-T/100BASE-TX module LEDs are shown in Table 3-2. The LEDs are located to both sides of the first four-port section of the module.

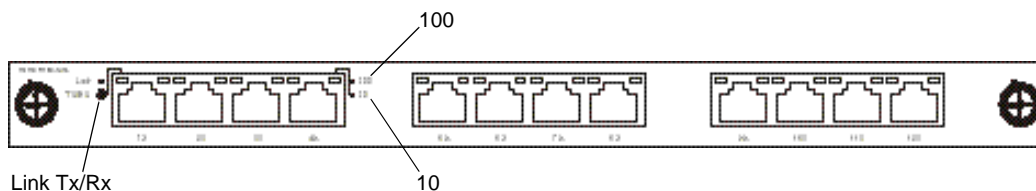


Figure 3-7. 12-port 10BASE-T/100BASE-TX Module

Table 3-2. Meaning of 12-port 10BASE-T/100BASE-TX Module LEDs

LED	State	Meaning
Link Tx/Rx (Green)	On	Link port has an active connection
	Blinking	Transmitting or Receiving
	Off	Link port does not have an active connection
10/100 (Green)	On	This is a 100-Mbps port
	Off	10-Mbps port or no 100-Mbps port detected

8-port 100BASE-FX LEDs

The meanings of the 8-port 100BASE-FX module LEDs are shown in Table 3-3. The LEDs are located to the left of the port sections.

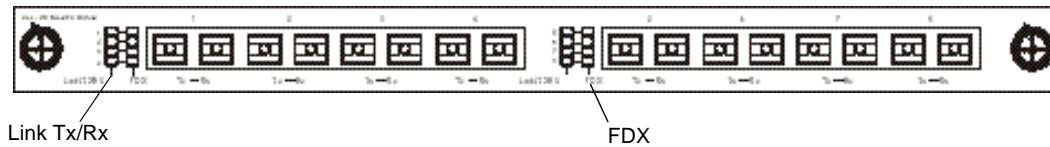


Figure 3-8. 8-port 100BASE-FX Module

Table 3-3. Meaning of 8-port 100BASE-FX Module LEDs

LED	State	Meaning
Link Tx/Rx (Green)	On	Link port has an active connection
	Blinking	Transmitting or receiving
	Off	Link port does not have an active connection
FDX (Green)	On	Transmission is set to full-duplex
	Off	Transmission is set to half-duplex

2-port 100BASE-FX LEDs

The meanings of the optional 2-port 100BASE-FX module LEDs are shown in Table 3-4. The LEDs are located to the left of the port sections.

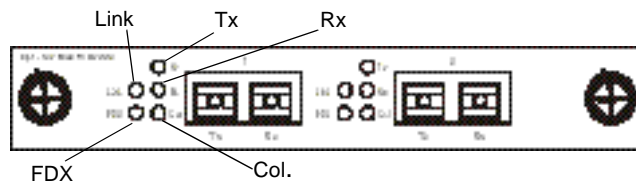


Figure 3-9. Optional 2-Port 100BASE-FX Module

Table 3-4. Meaning of Optional 2-port 100BASE-FX Module LEDs

LED	State	Meaning
Link (Green)	On	Link port has an active connection
	Off	Link port does not have an active connection
FDX (Green)	On	Transmission is set to full-duplex.
	Off	Transmission is set to half-duplex.
TX (Green)	On	Port is transmitting.
	Off	Port is not transmitting.
RX (Green)	On	Port is receiving.
	Off	Port is not receiving.
Col. (Amber)	On	Collisions are detected.
	Off	No collisions are detected.

Chapter 4. Console-Based Management

There are two types of console-based management on the 8275: local console management and Telnet Console management. Each management method is explained in the following sections.

This chapter provides information that applies to the 8275 Models 318, 322 and 326.

Unless otherwise noted, the following examples represent an 8275 Model 322.

Local Console Management

You can set up a management session by connecting a direct null-modem cable between the management port on the 8275 and the communication port on your workstation or terminal.

To connect a terminal to the 8275, perform the following steps:

Step 1. Install a terminal emulation application, such as Windows Hyperterminal, on your workstation.

Step 2. Launch the terminal emulation application.

Step 3. Configure the terminal emulation application as follows:

Baud Rate:	19 200
Parity:	None
Data bits:	8
Stop bits:	1
Flow Control:	None

Note: If you are using Microsoft Windows terminal emulation, disable the "Use function, arrow, and control keys for Windows" option in the Terminal Preferences menu under Settings.

Step 4. Connect the management port on the 8275 to your workstation or DTE device using a null-modem cable or straight-through cable and null-modem adapter. The 8275 has a 9-pin male connector. For more information see "Cabling Requirements for the Management Port" on page 2-2.

Step 5. Press **Enter** 2 or 3 times to see the login panel.

Note: If you have previously connected your workstation or terminal to the switch, removed the serial cable from the management port, and then reconnected it, you can use Ctrl-r to refresh the screen.

User Name:	admin
Default Password:	blank (none required)

Step 6. Press **Enter** to reach the Main Menu.

You can continue on to the Main Menu to configure the 8275. See "Main Menu" on page 4-7.

Telnet Console Management

Telnet console management can be performed either through an Ethernet port (in-band) or through the management port (out-of-band). You must configure an Ethernet IP address for the in-band management or a SLIP IP address for out-of-band management before using Telnet console management.

Before using Telnet through the management port you must configure the Serial Port Operation Mode to Out-of-Band. See the “Serial Port Configuration” on page 4-27 for more information.

You can use any Telnet application that emulates a VT100 terminal to establish a Telnet console management session on the 8275. Only one Telnet session can be active at a time.

Note: Telnet is a component of most operating systems. However, you must install and configure TCP/IP on your workstation before you can use this interface.

Connecting Through the Ethernet Ports

Follow these steps to connect the 8275 through the Ethernet port:

- Step 1.** Attach one end of an Ethernet cable to one of the Ethernet ports on the 8275.
- Step 2.** Attach the other end of the Ethernet cable to a workstation on the network.
- Step 3.** Access 8275 through Telnet.
- Step 4.** Log in using the default User Name and Password. The User Name and Password are not case sensitive.

User Name: admin
Default Password: blank (none required)

- Step 5.** Press **Enter** to reach the Main Menu.

The default timeout of Telnet sessions is 5 minutes. You will be notified of a timeout when you see the following message:

```
Console timeout, press Enter to reconnect.
```

If you have not saved your changes before the timeout period occurs, they will be lost.

You can change or eliminate the timeout period (see “Login Timeout Interval” on page 4-56).

Connecting Through the Management Port

Follow these steps to configure the 8275 through the management port:

- Step 1.** Attach one end of a null-modem cable to the management port of the 8275 and attach the other end of the cable to the workstation’s serial port.
- Step 2.** Press **Enter** to reach the Main Menu.

Step 3. Log in using the default User Name and Password. The User Name and Password are not case-sensitive.

User Name: admin

Default Password: blank (none required)

Help Message Panel

Selecting Help from the Main Menu displays the Help Message Panel, shown in Figure 4-1.

```
IBM Fast Ethernet Workgroup Switch, 8275
- Help Message -

Please read the following menu operation guide:
Keystroke Conventions
Example          Description
UP, DOWN, or TAB Select different items.
SPACEBAR        Toggle-switch.
DEL, or BACKSPACE Removes any input character from the screen.
LEFT or RIGHT keys Move cursor backward or forward.
Ctrl-r          Refresh Screen
Ctrl-q          Jump key between main menu area and menu control
                button

Typographic Conventions
Example          Description
:168.8.254.20   Each read only value follows a colon.
<Enable>        Each changeable value can only be changed by the
                toggle switch.
[168.8.254.1]   Each changeable value is enclosed in a square
                bracket.
EXIT            Uppercase letter Displays COMMAND.
Blinking Text   Information Message.

                Press ENTER to Continue...
```

Figure 4-1. Help Message Panel

Panel Command Usage: Use the Tab key and up and down arrow keys to toggle through available commands. Use the space bar to move through selections within a command. Use the Enter key to execute a command.

If a field on a panel is enclosed by brackets, [field], then you must type in the value for that field. If a field on a panel is enclosed by less-than and greater-than signs, <field>, then you can toggle through a list of values to be used for that field.

Panel Conventions

The following commands are used throughout the panels on the 8275:

Arrow keys	Use to move between fields
Back Space	Use to delete characters
Blinking text	Information messages
Colon	Followed by read-only values
Main Menu	Return to the main menu
Prev/Next	See previous or next screen for the same menu
Spacebar	Use to toggle values in some fields
Square Brackets	Enclose changeable values
Uppercase	Command items
< > Signs	Enclose values from which to select

Commands

Ctrl-q	Toggles between panel command line and data fields.
Ctrl-r	Refresh the screen
Delete	Delete characters
Escape	Move back one menu at a time
Execute	Process software upload or download
Exit	Exit current menu and returns to previous menu
Help	Display help about the current menu
Logoff	Log off from console session
Save	Save changes
Tab	Enables you to select items and move between fields

Note: All changes must be saved in order to take effect, unless stated otherwise. You are not prompted to save your changes.

Follow these steps to access any of the panels displayed:

Step 1. Select an option.

Step 2. Press **Enter** to go to that panel.

Logging In

The login panel appears when you begin a management session using any of the ways described in the preceding section. The default user name is `admin`. No password is required with the default log in method.

Type the default user name when you log in to the 8275 for the first time as shown in Figure 4-2. You should change the default user name and assign a password to prevent unauthorized access to the 8275. For more information on passwords, see “User Account Management” on page 4-40.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
Copyright 1999, IBM Corp.

User Name [admin      ]
Password  [           ]

MAC Address: 0004ACBA0018
```

Figure 4-2. Login Panel

To log in for the first time enter the default user name and leave the default password field blank.

Main Menu

The Main Menu, shown in Figure 4-3, displays a list of available management categories.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Main Menu-

System Information
Management Configuration
Device Configuration
User Account Management
System Utility

LOGOFF                                HELP
```

Figure 4-3. Main Menu

System Information	Displays information about the 8275 as well as the 8275's system name, system location, and the network administrator's contact information.
Management Configuration	Allows you to view and specify management configurations.
Device Configuration	Allows you to configure the rate, port configuration, serial port settings, VLANs, port trunking, and port monitoring.
User Account Management	Allows you to add and delete users and set passwords and access rights.
System Utility	Enables you to download code, upload configuration data, download configuration data, reset the 8275, change the BootP/TFTP server configuration and ping other devices.

System Information

Selecting this option displays the System Information Panel, shown in Figure 4-4. The System Information panel provides information about the hardware and software versions installed on the 8275.

There are three fields that you can specify: System Name, System Location, and System Contact. Changes to these fields take effect after they are saved.

```

                                IBM Fast Ethernet Workgroup Switch, 8275-322
                                -System Information-
Hardware Revision:                Rev. A1
Boot PROM Firmware Version:      V2.00
Software Version:                V2.00
MAC Address:                     0004ACBA0018
Serial Number:                   8275-322-K0002

System Description:
                                10/100 Fast Ethernet Switch
System Name:                      [IBM Fast Ethernet Workgroup Switch, 8275-322]
System Location:                  [          ]
System Contact:                   [          ]
System Object ID:                1.3.6.1.4.1.2.3.47
System Up Time                   2 Days, 3 Hours, 16 Minutes, 25 Seconds
MIBs Supported:                  RFC-1213, RFC-1493, RFC-1757, IBM proprietary MIB

                                SAVE          EXIT          MAIN MENU      HELP

```

Figure 4-4. System Information Panel

Follow these steps to set the System Name, System Location, and System Contact. You can enter a maximum of 64 characters in each field.

Step 1. Type the system name.

Step 2. Type the system location.

Step 3. Type the system contact.

Step 4. Select **SAVE** and press **Enter** to save and implement your changes.

Hardware Revision The hardware revision, including the 8275 and the release level. Revision numbers refer to the product generation.

Boot PROM Firmware Version The version of the boot code.

Software Version	The run-time software version being used. Software can be updated to enhance functions or add new features.
MAC Address	The unique network address that differentiates the 8275 from any other nodes on the network. The MAC address cannot be changed.
Serial Number	The serial number of the 8275.
System Description	A brief, predefined description of the 8275. The description cannot be changed.
System Name	The name assigned to the 8275.
System Location	The physical location of the 8275. You can type a building number or street address.
System Contact	The system administrator's name and other contact information.
System Object ID	The vendor identification of the network management subsystem contained in the 8275. This value provides an easy way of determining what kind of device is being managed.
System Up Time	The duration of time the 8275 has been running since the last warm or cold boot.
MIBs Supported	The SNMP MIBs that are supported by the 8275.

Management Configuration

Selecting this option displays the Management Configuration Menu, shown in Figure 4-5.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Management Configuration-

Network Configuration
Trap Receiver Configuration
SNMP Community Configuration

EXIT          MAIN MENU          HELP
```

Figure 4-5. Management Configuration Menu

Network Configuration	Specifies the 8275's IP address, subnet mask, and default gateway.
Trap Receiver Configuration	Allows you to specify who will receive trap information.
SNMP Community Configuration	Allows you to configure community names, access rights, and status.

Network Configuration

Selecting this option displays the Network Configuration Panel, shown in Figure 4-6. Use this panel to assign an IP address to the 8275. You must assign a unique IP address to manage the 8275 through the Web, SNMP and Telnet.

You must assign different IP addresses for Ethernet and SLIP.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
- Network Configuration -

Network Interface:  Ethernet          SLIP
Configuration:
IP Address:        [ 0.0.0.0 ]        [ 192.168.101.1 ]
Subnet Mask:       [ 0.0.0.0 ]        [ 255.255.255.0 ]
Default Gateway:   [ 0.0.0.0 ]        [ 0.0.0.0       ]

SAVE             EXIT             MAIN MENU       HELP
```

Figure 4-6. Network Configuration Panel

Follow these steps to set the IP Address, Subnet Mask and Default Gateway:

- Step 1.** Type the IP address.
- Step 2.** Type the subnet mask.
- Step 3.** Type the default gateway.
- Step 4.** Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Ethernet	IP Address	The IP address of the 8275.
	Subnet Mask	Specify your LAN's subnet mask.
	Default Gateway	Specify a default gateway only if you are attempting to reach a node outside your LAN's IP range.
SLIP	IP Address	The IP address used for a SLIP connection.
	Subnet Mask	The subnet mask must match the subnet mask used in the Ethernet setting.
	Default Gateway	The default gateway is used to reach a node outside your local area network. This is usually the IP address of a router.

Trap Receiver Configuration

Selecting this option displays the Trap Receiver Configuration Panel, shown in Figure 4-7. This panel allows you to set the IP address and SNMP community name of the trap receivers.

Traps are messages sent across a network to an SNMP Network Manager. These messages alert the manager to changes in the 8275.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Trap Receiver Configuration-

SNMP Trap Manager Setting
IP Address                SNMP Community String Status
[0.0.0.0                  ] [                ] <Delete>
[0.0.0.0                  ] [                ] <Delete>
[0.0.0.0                  ] [                ] <Delete>
[0.0.0.0                  ] [                ] <Delete>

SAVE          EXIT          MAIN MENU      HELP
```

Figure 4-7. Trap Receiver Configuration Panel

Follow these steps to configure trap receivers:

- Step 1.** Type the IP address of the trap receiver.
- Step 2.** Type the SNMP community string of the trap receiver.
- Step 3.** Set the status to **Enable** to make the trap receiver active, or to **Delete** to remove a trap receiver from the configuration.
- Step 4.** Select **SAVE** and press **Enter** to save and implement your changes.

IP Address	The IP address of the remote network manager station to which traps should be sent.
SNMP Community String	The SNMP community string of the remote network manager. You can type up to 64 characters in the field. Public and private are defaults and can be replaced with unique identifiers for each community.
Status	A trap receiver's status can be either enabled or deleted. Trap receivers with enabled status are active and receive all traps sent by the switch. Trap receivers with a deleted status are removed from the configuration. The default is delete.

Table 4-1. Trap Conditions

Warm Boot	Displays that a system reset has occurred.
Cold Boot	Displays the 8275 has been powered up, completed its self-initialization phase, and is working correctly.
Authentication Failure	Displays a failed access attempt.
IBM Hello Trap	Notifies the SNMP Management platform to the existence of the 8275 in the network.
Link Change Event Trap	Trap sent when the port changes from Link Up to Link Down or vice versa. Trap information includes the port's number, type, link status, duplex mode and port speed.

SNMP Community Configuration

Selecting this option displays the SNMP Community Configuration Panel, shown in Figure 4-8. Use this panel to define community names and access rights. The 8275 supports up to four communities simultaneously. Members within a community have the same access rights.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-SNMP Community Configuration-

SNMP Manager Setting

SNMP Community String   Access Right   Status
[ public                 ]   <Read Only >  <Enable>
[ private                ]   <Read/Write>  <Enable>
[                       ]   <Read Only >  <Delete>
[                       ]   <Read Only >  <Delete>

SAVE          EXIT          MAIN MENU     HELP
```

Figure 4-8. SNMP Community Configuration Panel

Follow these steps to create an SNMP Community. You can type up to 64 characters in each field.

- Step 1.** Type a community name.
- Step 2.** Set the access right to **Read Only** or **Read/Write**.
- Step 3.** Set the status to **Enable** to make the community active, or to **Delete** to remove a community from the configuration.
- Step 4.** Repeat steps 1 through 3 to create up to four community names.
- Step 5.** Select **SAVE** and press **Enter** to save and implement your changes.

SNMP Community String Name that identifies each SNMP community. A public community means users have read-only access. A private community is for users who have read/write access. Public and private are defaults and can be replaced with unique identifiers for each community.

Access Right

Users with read-only access can view the information on the panel and gather SNMP statistics. Users with read/write access can view the panel settings, gather SNMP statistics and make changes.

Status

Assign a status for the community. Enabled communities are active. Communities with a deleted status are removed from the configuration. The default is delete.

Device Configuration

Selecting this option displays the Device Configuration Menu, shown in Figure 4-9.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Device Configuration-

Switch Configuration
Port Configuration
Port Statistics
Spanning Tree Configuration
Serial Port Configuration
VLAN Port Management
Trunking Port Management
Port Monitoring

EXIT          MAIN MENU          HELP
```

Figure 4-9. Device Configuration Menu

Switch Configuration	Changes switch modes and address aging.
Port Configuration	Configures individual ports.
Port Statistics	Displays the statistics for each port including total bytes transmitted and received.
Spanning Tree Configuration	Allows you to configure or disable Spanning Tree. Spanning Tree is used to prevent Bridge Looping as specified in the IEEE 802.1D standard.
Serial Port Configuration	Changes the default settings of the serial port.
VLAN Port Management	Creates and configures port-based VLANs.
Trunking Port Management	Configures ports for trunking between switches.
Port Monitoring	Configures a port to be monitored and designates which port will do the monitoring.

Switch Configuration

Selecting this option displays the Switch Configuration Panel, shown in Figure 4-10. Use this panel to set the rate control, assign address aging, and enable or disable RMON statistics.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Switch Configuration-

Rate Control:                <Store&Forward>
Address Aging [ 10..1000000] (sec) [ 300 ]
RMON Statistics:            <Enable >

SAVE          EXIT          MAIN MENU      HELP
```

Figure 4-10. Switch Configuration Panel

Follow these steps to set the rate control, address aging, and RMON statistics:

- Step 1.** Set the rate control to **Store & Forward** or **Cut-Through**.
- Step 2.** Type a number to set the address aging.
- Step 3.** Set the RMON statistics to **Enable** or **Disable**.
- Step 4.** Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Rate Control

You can set the 8275 for Store & Forward or Cut-Through and change the address aging to better meet the needs of your network. The default is Store & Forward.

Note: The Store & Forward and Address Aging settings are global. They are set for the 8275 as a whole, not for individual ports.

Store & Forward

In Store & Forward mode, packets are stored until they are complete before being sent to their destinations. Runts and damaged packets are discarded.

Cut-Through

In Cut-Through mode, packets are sent as soon as the destination address is received. Cut-Through is faster than Store & Forward but it can perpetuate problems because runts and other bad packets are not filtered out. Do not use this mode unless you understand the effect it will have on the network.

Address Aging

Checks the status of each MAC address. It determines inclusion into the MAC address table. If the time interval for the MAC address expires, the MAC address is removed from the MAC address table. The aging can be set from 10 to 1000000 seconds. The default is 300 seconds.

RMON Statistics

RMON Statistics can be enabled or disabled. The default is enabled. When RMON is enabled you will be able to gather statistics from the statistics counter.

Port Configuration

Selecting this option displays the Port Configuration Panel Part 1, shown in Figure 4-11 . This panel allows you to configure individual ports as part of a module. The module's slot number is shown first, then the port number.

The NEXT option allows you to view the next eight higher numbered slot and port numbers.

Figure 4-11, shows an the 8275-326 port configuration panel. Each panel can display up to eight ports. Use the NEXT command to view higher numbered ports.

Figure 4-12 shows the port configuration panel of the 8275-326 with two 2-port 100BASE-FX modules. The ports are represented in the port column of Figure 4-12 as ports 3.1 and 3.2 and 4.1 and 4.2.

Note: Models 8275-318 and 8275-322 follow the same port numbering conventions described here. If your model has an optional feature module, such as the 2-port 100BASE-FX module, installed in slots 3 or 4, or both, then their slot number and port numbers appear on the final port configuration panel as ports 3.1, 3.2 and 4.1, 4.2.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Port Configuration-

Port: State:   Physical: Link Status: STP Priority: STP Port State: Module
1.1 <Enable> <Auto > 100TX/Half [ 128 ] Forwarding 12TX
1.2 <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX
1.3 <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX
1.4 <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX
1.5 <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX
1.6* <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX
1.7 <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX
1.8 <Enable> <Auto > Link Down [ 128 ] Forwarding 12TX

PREV NEXT SAVE EXIT MAIN MENU HELP
```

Figure 4-11. Port Configuration Panel Part 1

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Port Configuration-

Port: State:   Physical: Link Status: STP Priority: STP Port State: Module
3.1 <Enable> <100FX/Half> Link Down [ 128 ] Forwarding 2FX
3.2 <Enable> <100FX/Half> Link Down [ 128 ] Forwarding 2FX
4.1 <Enable> <100FX/Half> Link Down [ 128 ] Forwarding 2FX
4.2 <Enable> <100FX/Half> Link Down [ 128 ] Forwarding 2FX

PREV NEXT SAVE EXIT MAIN MENU HELP
```

Figure 4-12. Port Configuration Panel Part 2

Follow these steps to change the port settings.

Step 1. Set the port number's state to **Enable** or **Disable**.

Step 2. Set the port number's physical setting.

Step 3. Type a number to set the STP priority.

Step 4. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Port The module's slot number and the port number of the port you are configuring.

Note: If a port is configured to monitor another port then an asterisk appears next to the port number as shown in Figure 4-11.

State The state of the port. Each port can be enabled or disabled. An enabled port is active. A disabled port is partitioned and inactive, and cannot send or receive data. The default is Enable.

Physical The speed and the duplex mode of the port. Auto means that the port auto-negotiates the fastest compatible speed and duplex mode. The default is Auto for TX ports, indicating that the port auto-negotiates the correct speed and duplex mode. For FX ports the default is 100 Mbps half-duplex.

Link Status Reports whether the link is active and displays the speed and duplex mode of active ports.

Link Down The port connection is not active.

10T/Half Link is connected at 10 Mbps/half duplex.

10T/Full Link is connected at 10 Mbps/full duplex.

100TX/Half Link is connected at 100 Mbps/half duplex.

100TX/Full Link is connected at 100 Mbps/full duplex.

100FX/Half Link is connected at 100 Mbps/half duplex.

100FX/Full Link is connected at 100 Mbps/full duplex.

STP Priority Spanning Tree Priority (STP) determines the likelihood of the 8275 becoming the root. The smaller the value, the higher the bridge priority. STP can be set from 0 to 255. The default is 128.

STP Port State The port can be in four states: forwarding, listening, learning and blocking:

Forwarding The packets can pass through a port.

- Listening** The port is available and waiting for packets.
- Learning** The port is learning the MAC address of the nodes available to it.
- Blocking** The port is blocking all traffic, no packets can pass through a port.

Module Reflects the module type (8-FX, 12-TX or optional 2-FX).

PREV/NEXT If you select NEXT, the next eight ports are displayed. Selecting PREV displays the previous eight ports.

Each numbered line relates to the same module's slot number and port number on the front panel of the 8275.

Port Statistics

Selecting this option displays the Port Statistics Panel, shown in Figure 4-13. This displays the statistical information about each port.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Port Statistics

Port Number:  [1.1]

Tx_TotalBytes:  8209      Rx_Uni_frame:  27
Tx_Uni_frame:   1040      Rx_Mult_frame:  44
Tx_Mult_frame:   0        Rx_Broad_frame: 320
Tx_Broad_frame:  0        Rx_Good_Oversize: 0
Tx_Aged_frame:   0        Rx_Err_Oversize: 0
Tx_FCS_errors:  0        Rx_Good_Undersize: 0
Tx_Ex_collision: 0        Rx_Err_Undersize: 0
Tx_1_collision:  0        Rx_64:  217
Tx_mult_collision: 0      Rx_65_to_127: 618
Tx_underrun_err: 0        Rx_128_to_255: 150
Rx_TotalBytes:  57197     Rx_256_to_511: 621
Rx_Disc_Buff_Full: 0      Rx_512_to_1023: 0
Rx_align_err:    0        Rx_1024_to_1518: 1
Rx_FCS_errors:  0        Rx_Disc_Mem_Full: 0

EXIT          MAIN MENU          HELP
```

Figure 4-13. Port Statistics Panel

To view statistics about a port, type the module's slot number and port number separated by a period, then press **Enter**.

Note: To refresh the port statistics after a change in port configuration, tab to the port number field to reselect the port number, then press Enter. You can also use the Ctrl-r command.

Total Bytes Transmitted Total number of bytes transmitted to the port.

Unicast Frames Out Number of unicast frames transmitted.

Multicast Frames Out Number of multicast frames transmitted.

Broadcast Frames Out Number of broadcast frames transmitted.

Aged Frames	Number of frames that were dropped because they were in transit too long.
Tx FCS Errors	Number of frames that were discarded on the transmit side because of FCS errors.
Tx Excessive Collision	Number of frames that were dropped because of excessive collision.
Tx One Collision	Number of frames that were transmitted after one collision.
Tx Multiple Collisions	Number of frames that were transmitted after more than one collision.
Tx Run Errors	Number of frames that were discarded on the transmit side because of an underrun.
Total Bytes Received	Total number of bytes received on a port.
Disc Buff Full	Number of good frames that were discarded because the Rx Buffer was full.
Rx Align or Errors	Number of well-aligned frames that were received with FCS errors.
Unicast Frames In	Number of unicast frames received.
Multicast Frames In	Number multicast frames received.
Broadcast Frames In	Number of broadcast frames received.
Rx Good Oversized	Number of good oversized frames received.
Rx Error Oversized	Number of good oversized frames with errors (FCS, Alignment).
Rx Good Undersized	Number of good undersized frames received.
Rx Error Undersized	Number of undersized frames received with errors.
Rx64	Number of frames (including frames with errors) that were 64 bytes long.
Rx65 to 127	Number of frames (including frames with errors) 65 to 127 bytes long.
Rx128 to 255	Number of frames (including frames with errors) 128 to 255 bytes long.
Rx256 to 511	Number of frames (including frames with errors) 256 to 511 bytes long.
Rx512 to 1023	Number of frames (including frames with errors) 512 to 1023 bytes long.

Rx 1024 to 1518

Number of frames (including frames with errors)
1024 to 1518 bytes long.

Disc Mem Full

Number of good frames that were discarded because the
memory was full.

Spanning Tree Configuration

Selecting this option displays the Spanning Tree Configuration Panel, shown in Figure 4-14.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Spanning Tree Configuration-

Spanning Tree Algorithm      <Enable>
Bridge Priority [ 0..65535]   [ 32768 ]
Root Cost                    0
Hello Time [ 1..10] (Sec)    [ 2 ]
Forward Delay Time [ 4..30 ] (Sec) [ 15 ]
Max Age time [ 6..40] (Sec)  [ 20 ]
Root Bridge                  0080C81234DD
Root Port                    None

SAVE          EXIT          MAIN MENU      HELP
```

Figure 4-14. Spanning Tree Configuration Panel

Set the Spanning Tree Algorithm to **Disable** to disable Spanning Tree.

Follow these steps to change the settings:

- Step 1.** Set the Spanning Tree Algorithm to **Enable**.
- Step 2.** Type a number to change the Bridge Priority.
- Step 3.** Type a number to change the Hello Time.
- Step 4.** Type a number to change the Forward Delay Time.
- Step 5.** Type a number to change the Max Age Time.
- Step 6.** Select **SAVE** and press **Enter** to save and implement your changes.

Spanning Tree Algorithm	Discovers every node on the network and closes redundant paths to avoid loops. It enables one alternative path if the main path fails. The default is Enable.
Bridge Priority	Determines which bridge on the network is considered the root when the Spanning Tree Algorithm is calculated. Bridge Priority can be set from 0 to 65535. Zero is the highest Bridge Priority. The default is 32768.
Root Cost	The Root Cost is calculated automatically. It is the shortest distance from any bridge to the Root Bridge interval for the unit announcing its presence on the network. The default is zero.

Hello Time	The interval for the 8275 to announce its presence on the network. The interval can be set from 1 to 10 seconds. The default is 2 seconds.
Forward Delay Time	Specifies the time spent in listening and learning modes before forwarding packets. The value can be set from 4 to 30 seconds. The default is 15 seconds.
Max Age Time	Specifies the amount of time elapsing before the 8275 will determine a new root bridge. The value can be set from 6 to 40 seconds. The default is 20 seconds.
Root Bridge	Specifies the MAC address that is the Root Bridge on the network.
Root Port	Specifies the preferred port to the Root Bridge. Only one port per bridge can exist. The default is none.

Serial Port Configuration

Selecting this option displays the Serial Port Configuration Panel, shown in Figure 4-15. Serial Port Configuration refers to the management port.

The settings on this panel are accessible when the Operation Mode is set to Out-of-Band. The settings on this panel do not affect your ability to manage the 8275 through local console management.

This panel specifies the default operation mode for connecting to the 8275, as well as the settings for serial communications. The following shows default settings for serial port configuration.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Serial Port Configuration-

Operation Mode      <Console>
Baud Rate           <19200>
Character Size      < 8 >
Parity              <None>
Stop Bits           < 1 >

SAVE      EXIT      MAIN MENU      HELP
```

Figure 4-15. Serial Port Configuration Panel

Note: The settings on this panel are available only when the Operation Mode is set to Out-of-Band. They cannot be changed in console mode. If you change these settings, be sure you have assigned a SLIP IP address to the 8275 as discussed in “Network Configuration” on page 4-11.

Follow these steps to change the settings:

Step 1. Set the operation mode to **Out-of-Band**.

Step 2. Select the settings for Baud Rate, Character Size, Parity, and Stop Bits.

Step 3. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Operation Mode

The console connects the switch to a workstation through a null-modem cable by running terminal emulation. In Console mode, communications parameters are fixed. The default is Console mode.

Out-of-band mode is used for SLIP based management through the management port. See “Connecting Through the Management Port” on page 4-2 for instructions.

Note: You should select out-of-band mode only after you have assigned an IP address to the switch.

Baud Rate

Specifies the communications rate of the modem. This setting can only be changed when you are in out-of-band mode. The default is 19200.

The following settings are available:

- 57600
- 38400
- 19200
- 9600
- 4800

Character Size

Character size can be either 7 or 8 data bits. The default is 8 bits.

Parity

Parity can set to:

- None
- Even
- Odd

The default is none.

Stop Bits

You can set the stop bits for either 1 or 2. The default is 1.

VLAN Port Management

Selecting this option displays the VLAN Port Management Menu, shown in Figure 4-16. This panel allows you to configure VLANs.

A VLAN reduces traffic by defining which ports belong to which networked groups. The 8275 can be configured to define groups of people and keep their traffic local to their group.

Ports can belong to more than one VLAN simultaneously. The 8275 supports up to eight VLANs. See Appendix A, "Introduction to Virtual LANs and Spanning Tree Protocol" for more information about VLANs. The default is one VLAN covering all ports.

VLANs are optional. You can use them to reduce congestion on high-traffic networks. If you create VLANs, record the groups you create for future reference.

VLANs and Trunked ports can be used independently of each other. However, if a port is part of both a port trunking group and a VLAN, then all the ports in the trunking group must be part of that VLAN.

The following panel descriptions reflect an 8275-326 with two optional 2-port 100BASE-FX modules.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-VLAN Port Management-

Create VLAN
Delete VLAN
Modify VLAN

EXIT          MAIN MENU          HELP
```

Figure 4-16. VLAN Port Management Menu

Create VLAN	Creates VLANs.
Delete VLAN	Deletes VLANs.
Modify VLAN	Modifies or views existing VLANs.

Create VLAN

Select this option to displays Figure 4-17, "Create VLAN Panel."

```
IBM Fast Ethernet Workgroup Switch, 8275-326
- Create VLAN -

NEW VLAN Name: [      ]

Port #      TrunkGroup Status      Port #      TrunkGroup      Status
Port 1.1/4.1:      <Available> Port 2.1/3.1:      <Available>
Port 1.2/4.2:      <Available> Port 2.2/3.2:      <Available>
Port 1.3:          <Available> Port 2.3:          <Available>
Port 1.4:          <Available> Port 2.4:          <Available>
Port 1.5/1.9:      <Available> Port 2.5/2.9:      <Available>
Port 1.6/1.10:     <Available> Port 2.6/2.10:     <Available>
Port 1.7/1.11:     <Available> Port 2.7/2.11:     <Available>
Port 1.8/1.12:     <Available> Port 2.8/2.12:     <Available>

SAVE          EXIT          MAIN MENU    HELP
```

Figure 4-17. Create VLAN Panel

Create VLANs

Follow these steps to create VLANs:

- Step 1.** Type a name for the VLAN (up to 8 characters).
- Step 2.** Set the port status to **Selected** for the ports you want included.
- Step 3.** Select **SAVE**.
- Step 4.** Repeat steps 1 through 3 to create up to eight VLANs.
- Step 5.** Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Create VLANs with Overlapping Ports

Follow these steps to create a VLAN with overlapping ports:

- Step 1.** Create a VLAN.
- Step 2.** Press **Enter**.
- Step 3.** Set the port status to **Selected** for the ports you want included.
- Step 4.** Set a port from a previously created VLAN to **Selected**.
- Step 5.** Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Shared ports are now in the same collision domain as the VLANs.

New VLAN Name	Displays the names of the VLANs you create. You can type a maximum of eight characters.
Port #	Identifies the module's slot number and port numbers assigned to a specific VLAN. Some ports must share inclusion in a VLAN. An example of this is shown in Figure 4-17 where two modules' slot numbers and port numbers are shown separated by a slash (/) and they share the same status.
TrunkGroup	Identifies the name of the TrunkGroup to which the port belongs. See "Trunking Port Management" on page 4-34 for more information.
Status	Displays the status of the port. Available Available for inclusion in a VLAN. Selected A selected port belongs to a VLAN.

Delete VLAN

Selecting this option displays the Delete VLAN Panel, shown in Figure 4-18.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Delete VLAN-

VLAN      Delete
<vlan1>   <no>
<vlan2>   <no>
<vlan3>   <no>

SAVE      EXIT      MAIN MENU      HELP
```

Figure 4-18. Delete VLAN Panel

Follow these steps to delete a VLAN:

Step 1. Set the delete option to **yes**.

Step 2. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

VLAN Lists the VLANs that have been created on the 8275.

Delete When a VLAN has been created, the delete options, yes or no, are listed in the column. The default is no.

Modify / View VLAN

Selecting this option displays the Modify / View VLAN Panel, shown in Figure 4-19.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Modify / View VLAN-

VLAN
vlan1
vlan2
vlan3

SAVE          EXIT          MAIN MENU    HELP
```

Figure 4-19. Modify / View VLAN Panel

Select the VLAN you want to modify or view and press **Enter**.

The VLAN Modification Panel, shown in Figure 4-20, is displayed.

VLAN

The VLAN option is used to view or modify the VLANs you have created.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-VLAN Modification-

VLAN Name: vlan1

Port #      TrunkGroup status   port #      TrunkGroup    status
Port 1.1/4.1:      <Selected > Port 2.1/3.1:      <Available>
Port 1.2/4.2:      <Selected > Port 2.2/3.1:      <Available>
Port 1.3:          <Selected > Port 2.3:          <Available>
Port 1.4:          <Selected > Port 2.4:          <Available>
Port 1.5/1.9:      <Selected > Port 2.5/2.9:      <Available>
Port 1.6/1.10:     <Selected > Port 2.6/2.10:     <Available>
Port 1.7/1.11:     <Selected > Port 2.7/2.11:     <Available>
Port 1.8/1.12:     <Selected > Port 2.8/2.12:     <Available>

SAVE          EXIT          MAIN MENU    HELP
```

Figure 4-20. VLAN Modification Panel

Follow these steps to modify or view VLANs:

Step 1. Set port status to **Available** or **Selected**.

Step 2. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Trunking Port Management

Selecting this option displays the Trunking Port Management Menu, shown in Figure 4-21.

A trunking port combines two or more ports for cascading (connecting) switches. Each port has a maximum data exchange rate of 200 Mbps at full duplex (100 Mbps transmitting and 100 Mbps receiving). By grouping a maximum of eight ports into a trunk you can get an effective data exchange rate of 1.6 Gbps (8 x 200 Mbps) through the trunk.

Trunking port management is only available between the 8275 Models 318, 322, 324 and 326.

If you are using a VLAN, then all the ports selected for a trunking group must belong to the same VLAN. If you are not using a VLAN this restriction does not apply.

The following panels descriptions reflect an 8275-326 with two 2-port 100BASE-FX modules installed.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
      -Trunking Port Management-

Create/View Trunking Group
Delete Trunking Group
Modify Trunking Group

EXIT          MAIN MENU          HELP
```

Figure 4-21. Trunking Port Management Menu

- | | |
|-----------------------------------|--|
| Create/View Trunking Group | Creates and views existing trunking groups. The 8275 supports up to seven trunking groups. |
| Delete Trunking Group | Deletes trunking groups. |
| Modify Trunking Group | Modifies the trunking groups you have created. |

Create/View Trunking Group

Selecting this option displays the Create/View Trunking Group Panel, shown in Figure 4-22.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Create/View Trunking Group-

New Trunking Group Name: [ trunk1 ]

Port #   name           status   port #   name           status
Port 1.1: <Selected>  Port 2.3: <Available>
Port 1.2: <Selected>  Port 2.4: <Available>
Port 1.3: <Selected>  Port 2.5: < N/A >
Port 1.4: <Selected>  Port 2.6: < N/A >
Port 1.5: < N/A >    Port 2.7: < N/A >
Port 1.6: < N/A >    Port 2.8: < N/A >
Port 1.7: < N/A >    Port 2.9: <Available>
Port 1.8: < N/A >    Port 2.10: <Available>
Port 1.9: <Available> Port 2.11: <Available>
Port 1.10: <Available> Port 2.12: <Available>
Port 1.11: <Available> Port 3.1: < N/A >
Port 1.12: <Available> Port 3.2: < N/A >
Port 2.1: <Available> Port 4.1: < N/A >
Port 2.2: <Available> Port 4.2: < N/A >

SAVE          EXIT          MAIN MENU    HELP
```

Figure 4-22. Create/View Trunking Group Panel

Follow these steps to create a new trunking group:

Step 1. Name the trunking group.

Step 2. Set the Port Status to **Selected** for the ports you want included.

Step 3. Select **SAVE** and press **Enter**.

Step 4. Repeat steps 1 through 3 to create up to seven trunking groups.

Note: You must reset the 8275 to implement the changes.

New Trunking Group Name

Type a new trunking group name. You can type a maximum of eight characters. The 8275 supports up to seven trunking groups.

Port #

Displays the module's slot number and port number on the console of the 8275. Ports can belong to only one trunking group at a time. Up to eight ports can belong to a trunking group.

N/A means the port is not available.

Notes:

1. The 2-port 100BASE-FX module's ports cannot be included in a trunking port.

2. Model 8275-318 supports port trunking for all ports.
3. Model 8275-322 does not support trunking for ports 1.5, 1.6, 1.7 and 1.8.
4. Model 8275-326 does not support trunking for ports 1.5, 1.6, 1.7, 1.8 and 2.5, 2.6, 2.7 and 2.8

Name Displays the name of the trunking groups.

Status Displays the status of the port. Available ports can be selected as part of trunking groups. Selected ports have already been selected as part of a trunking group. Ports can belong to only one trunking group at a time.

Available Available for inclusion in a port trunk.

Selected A selected port belongs to a port trunk.

N/A The port is not available for port trunking.

Delete Trunking Group

Selecting this option displays the Delete Trunking Group Panel, shown in Figure 4-23. This panel allows you to delete trunking groups.

```
IBM Fast Ethernet Workgroup Switch, 8275-326
- Delete Trunking Group-

Trunking Group      Delete
trunk1              <No >
trunk2              <Yes>

SAVE                EXIT                MAIN MENU                HELP
```

Figure 4-23. Delete Trunking Group Panel

Follow these steps to delete a trunking group:

Step 1. Set the delete option to **Yes**.

Step 2. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Trunking Group Lists all the trunking groups on the on the 8275. There is no default trunking group.

Delete Allows you to specify whether to delete the trunking group.

Trunking Group Modification

Selecting this option displays the Trunking Group Modification Panel, shown in Figure

```
IBM Fast Ethernet Workgroup Switch, 8275-326
-Trunking Group Modification-

Trunking Group Name: [ trunk1 ]

Port #   name       status   port #   name       status
Port 1.1:      <Selected> Port 2.3:      <Available>
Port 1.2:      <Selected> Port 2.4:      <Available>
Port 1.3:      <Selected> Port 2.5:      < N/A  >
Port 1.4:      <Selected> Port 2.6:      < N/A  >
Port 1.5:      < N/A  > Port 2.7:      < N/A  >
Port 1.6:      < N/A  > Port 2.8:      < N/A  >
Port 1.7:      < N/A  > Port 2.9:      <Available>
Port 1.8:      < N/A  > Port 2.10:     <Available>
Port 1.9:      <Available> Port 2.11:     <Available>
Port 1.10:     <Available> Port 2.12:     <Available>
Port 1.11:     <Available> Port 3.1:      < N/A  >
Port 1.12:     <Available> Port 3.2:      < N/A  >
Port 2.1:      <Available> Port 4.1:      < N/A  >
Port 2.2:      <Available> Port 4.2:      < N/A  >

          SAVE      EXIT      MAIN MENU      HELP
```

Trunking Group Modification Panel

Follow these steps to modify trunking groups:

Step 1. Set the port status of the group to **Available** or **Selected**.

Step 2. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Trunking Group Name Lists the trunking group that is currently being modified.

Port Monitoring

Selecting this option displays the Port Monitoring Panel, shown in Figure 4-24. Port monitoring mirrors data traffic sent or received by a particular port. You can define which port is to be monitored and which port will perform the monitoring. You can also define the types of packets to be monitored. Use the port monitoring panel to configure these options.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Port Monitoring-

Port Monitoring:      <Disable>
Monitoring Port:     [1.6]
Port to be Monitored: [1.1]
Monitored Data:      <Transmitted>
Monitored Packet Type: <All>

SAVE                EXIT                MAIN MENU            HELP
```

Figure 4-24. Port Monitoring Panel

Note: Settings to this panel take effect immediately after saving the changes.

Port Monitoring	Enables or disables port monitoring. The default is disable.
Monitoring Port	The port that receives the monitoring data. Type the module number and then the port number.
Port to be Monitored	The monitored port. Type the module number and then the port number.
Monitoring Data	Selecting Transmitted defaults the monitoring to all outgoing packet types. Selecting Received enables you to choose either all packet types or one of the three packet types. Selecting Transmitted & Received defaults the monitoring to all packet types.
Monitored Packet Type	Available only when the monitored data is set to Received. Select one of the following types: All Monitors all packet types. Unicast Monitors only unicast packets. Broadcast Monitors only broadcast packets. Discarded Monitors all packets discarded by the 8275.

User Account Management

Selecting this option displays the User Account Management Menu, shown in Figure 4-25. This menu is used to add and delete users, and to change passwords. The 8275 supports up to three user names.

The 8275 allows two levels of users: Read/Write users and Read Only users.

Read/Write Users with read/write access can see the panel settings, gather SNMP statistics, make changes to passwords and create and delete users.

Read Only Users have read-only access to most information and panels but cannot make configuration changes to the 8275.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-User Account Management-

Create New User
Modify Users
Change Password

EXIT                      MAIN MENU                      HELP
```

Figure 4-25. User Account Management Menu

Create New User Creates new users, and sets access levels and status.

Modify Users Modifies the access level and status of users.

Change Password Changes user passwords.

Create New User

Selecting this option displays the Create New User Panel, shown in Figure 4-26.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Create New User-

User Name      [      ]
Password       [      ]
Confirm Password [      ]

Access Level <Read/Write>

SAVE          EXIT          MAIN MENU          HELP
```

Figure 4-26. Create New User Panel

Follow these steps to add new users:

- Step 1.** Type a new user name, up to 8 characters.
- Step 2.** Type a password, up to 8 characters.
- Step 3.** Type the password again to confirm.
- Step 4.** Set the user's access level to **Read/Write** or **Read Only**.
- Step 5.** Repeat steps 1 through 4 to configure up to three users.
- Step 6.** Select **SAVE** and press **Enter** to save and implement your changes.

User Name	You can type up to eight characters. User names are not case-sensitive.
Password	You can type up to eight characters. Passwords are not case-sensitive.
Confirm Password	Re-type the password for confirmation.
Access Level	You can select either Read/Write or Read Only.

Modify Users

Selecting this option displays the Modify Users Panel, shown in Figure 4-27.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Modify Users-

User Name    Access Level  Status      Delete
ADMIN        <Read/Write> <Active>    <No>
Stan         <Read Only > <Active>    <No>
Joe          <Read/Write> <Active>    <No>

SAVE         EXIT         MAIN MENU   HELP
```

Figure 4-27. Modify Users Panel

Follow these steps to modify user accounts:

Step 1. Set the user's access level to **Read/Write** or **Read Only**.

Step 2. Set the user's status to **Active** or **Inactive**.

Step 3. To delete user, set Delete to **Yes**.

Step 4. Select **SAVE** and press **Enter** to save and implement your changes.

User Name	Lists all the users that have access to the 8275. The 8275 has a default user name of <code>admin</code> and default password which is blank (none required).
Access Level	The users' access level.
Status	The status of the users. Active users have access to the 8275. Inactive users cannot access the 8275.
Delete	Use to delete users.

Change Password

Selecting this option displays the Change Password Panel, shown in Figure 4-28.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Change Password-

User Name      [          ]
Old Password   [          ]
New Password   [          ]
Confirm Password [          ]

SAVE          EXIT          MAIN MENU          HELP
```

Figure 4-28. Change Password Panel

Follow these steps to change user passwords:

- Step 1.** Type the user name to be modified.
- Step 2.** Type the user's old password.
- Step 3.** Type the user's new password.
- Step 4.** Re-type the user's new password to confirm it.
- Step 5.** Select **SAVE** and press **Enter** to implement your changes.

User Name	User name whose password is to be changed.
Old Password	User's old password.
New Password	User's new password. You can enter up to eight characters. Passwords are not case-sensitive.
Confirm Password	Reenter the password for confirmation.

System Utility

Selecting this option displays the System Utility Menu, shown in Figure 4-29. This menu allows you to update the run-time software and the boot code. You can also perform a warm boot, restore factory default settings, and ping an IP address.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
      -System Utility-

Download Code to Switch
Download Configuration Data to Switch
Upload Configuration Data from Switch
System Reset
Factory Reset to Default Config Values
BOOTP/TFTP Server Configuration
Login Timeout Interval
Ping

EXIT          MAIN MENU          HELP
```

Figure 4-29. System Utility Menu

Download Code to Switch	Updates the run time program or the boot program from a binary file.
Download Configuration Data to Switch	Restores 8275 configuration from a saved file. You can use the file to configure other 8275s.
Upload Configuration Data from Switch	Saves the 8275's configuration data to a file on a diskette or hard disk.
System Reset	Resets the system. Use this after you have reconfigured the 8275 and after downloading code.
Factory Reset to Default Config Values	Restores the factory default settings.
BootP/TFTP Server Configuration	Specify the method by which the run time code will be updated each time the 8275 is reset. The boot program cannot be updated from this panel.
Login Timeout Interval	Sets the amount of time that the 8275 waits before logging users out of a Telnet or local console session.
Ping	Allows you to test a network connection by sending a ping to an IP address.

Download Code to Switch

Selecting this option displays the Download Code to Switch panel shown in Figure 4-30. Use this panel to update the 8275's boot program or run-time program.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
      -Download Code to Switch-

Download Mode          <XMODEM>
Download File          <RUN_TIME_PROGRAM>
TFTP Server IP Address [ 0.0.0.0 ]
File Name              [          ]

EXECUTE   EXIT   MAIN MENU   HELP
```

Figure 4-30. Download Code to Switch Panel

Notes:

1. Use terminal emulation on the workstation from which you will download the code. See Chapter 2, "Installing and Powering On the 8275," for the correct parameters and instructions for connecting a workstation and the 8275.
2. Do not power-off the 8275 at any time while downloading or uploading information.

Follow these steps to download code to the 8275:

- Step 1.** Set the download mode to **XMODEM** or **TFTP**.
- Step 2.** Set the download file to **BOOT_PROGRAM** or **RUN_TIME_PROGRAM**.
- Step 3.** Type the IP address of the server the file will be downloaded from if choosing TFTP transfer protocol.
- Step 4.** Type the \path\filename to be downloaded if using TFTP transfer protocol.
- Step 5.** Select **EXECUTE** and press **Enter** to begin download.

Download Mode	Switch Code can be downloaded in two modes: TFTP or Xmodem. When using Telnet management, you must use TFTP when downloading switch code. You can use either TFTP or Xmodem when you are downloading in local console mode.
Download File	You can download either the boot program or the run-time program.
TFTP Server IP Address	The IP address of the server from which the new file will be downloaded.
File Name	The path/filename to be downloaded.

Figure 4-31 displays the confirmation panel. Select **Yes** and press **Enter** to begin the download.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Download Code to Switch-

Do you want to download Switch Code right now?

No    Yes

EXIT      MAIN MENU      HELP
```

Figure 4-31. Download Code to Switch Confirmation Panel

Figure 4-32 displays a successful Xmodem download.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Download Code to Switch-

Do you want to download Switch Code right now?

No    Yes

*****
* Please start to transfer image file to the device!*
* (COM Port Setting: XMODEM 19200, n, 8, 1)          *
* (Hit <CTRL-C> to abort the operation                *
*****
Erasing EEPROM .....OK
Writing EEPROM .....OK
Update completed.

EXIT      MAIN MENU      HELP

XMODEM download successful. Reboot system in order for changes to take effect.
```

Figure 4-32. Successful XMODEM Download Panel

Figure 4-33 displays a successful TFTP download.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Download Code to Switch-

Do you want to download Switch Code right now?

                No   Yes
Filename :c:\pj\prom\exec\ibmboot.104
TFTP Server IP: 192.152.81.75

Exchanged Bytes Exchanged Blocks Retry
-----
                65536           128           0

                Erasing EEPROM .....OK
                Writing EEPROM .....OK
                Update completed.

                EXIT                MAIN MENU                HELP

TFTP download successful. Reboot system in order for changes to take effect.
```

Figure 4-33. Successful TFTP Download Panel

Download Configuration Data to Switch

Selecting this option displays the Download Configuration Data to Switch Panel, shown in Figure 4-34. Use this panel to select whether the 8275 will obtain configuration data through the management port or from a workstation.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Download Configuration Data to Switch-

Download Mode          <XMODEM>
TFTP Server IP Address [0.0.0.0]
File Name              [          ]

EXECUTE   EXIT       MAIN MENU   HELP
```

Figure 4-34. Download Configuration Data to Switch Panel

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Download Configuration Data to Switch-

Do you want to download the Configuration Data right now?

No   Yes

EXIT       MAIN MENU   HELP
```

Figure 4-35. Download Configuration Data to Switch Confirmation Panel

Download using Xmodem

Follow these steps to download using Xmodem:

Step 1. Configure the terminal session for these settings.

- 19200 baud
- 8 bits
- No parity
- One stop bit
- No Flow Control

Step 2. Set the download mode to **XMODEM**.

Step 3. Select **EXECUTE** and press **Enter**.

Step 4. Select **Yes** and press **Enter** on the confirmation panel shown in Figure 4-35.

Step 5. From the terminal, initiate the file upload and specify the `\path\filename` to be sent.

Download using TFTP

Follow these steps to download using TFTP:

- Step 1.** Set the download mode to **TFTP**.
- Step 2.** Type the server's IP address.
- Step 3.** Type the `\path\filename` to be sent.
- Step 4.** Select **EXECUTE** and press **Enter**.
- Step 5.** Select **Yes** and press **Enter** on the confirmation panel shown in Figure 4-35. Figure 4-36 displays an example of a successful download.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Download Configuration Data to Switch-

Do you want to download the Configuration Data right now?
No Yes
File Name: 8275_322.bin
TFTP Server IP:9.1.37.1
Exchanged Bytes      Exchanged Blocks      Retry
-----
          46089                0                0

Writing EEPROM.....OK

EXIT                MAIN MENU                HELP
TFTP transfer successful. Reboot system in order for changes to take effect.
```

Figure 4-36. Download Configuration Data Transfer Panel

Download Mode	Displays which method you use to download configuration data. There are two options:
	Xmodem Use Xmodem when the 8275 is receiving data over a null-modem cable.
	TFTP Use TFTP when the 8275 is receiving data from the network.
TFTP Server IP Address	The IP address of the TFTP server from which you want to download the configuration data.
File Name	The <code>\path\filename</code> that the 8275 will use to download.

Upload Configuration Data from Switch

Selecting this option displays the Upload Configuration Data from Switch Panel, shown in Figure 4-37. Use this panel to save configuration data over the management port or to a workstation.

Xmodem Refers to sending configuration data over the management port.

TFTP Refers to sending configuration data to a workstation.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Upload Configuration Data from Switch-

Upload Mode          <TFTP  >
TFTP Server IP Address  [          ]
File Name             [          ]

EXECUTE      EXIT      MAIN MENU      HELP
```

Figure 4-37. Upload Configuration Data from Switch Panel

Upload Configuration Data Through Xmodem

Follow these steps to upload configuration data using Xmodem:

Step 1. Set the upload mode to **Xmodem**.

Step 2. Configure the terminal session with the following options:

- 19200 baud
- 8 data bits
- No parity
- One stop bit
- No Flow Control

Step 3. Select **EXECUTE** and press **Enter**.

Step 4. Select **Upload** (or equivalent) from the terminal.

Step 5. Set the `\path\filename` to be sent.

Step 6. Select **EXECUTE** and press **Enter**.

Note: Blinking text appears under the command line to confirm the upload. It reads "TFTP upload is successful!"

Upload Configuration Data to TFTP Server

Follow these steps to upload configuration data to a TFTP server:

Step 1. Set the upload mode to **TFTP**.

Step 2. Type the server's IP Address.

Step 3. Set the `\path\filename` to be sent.

Step 4. Select **EXECUTE** and press **Enter**.

Step 5. Select **Yes** and press **Enter** to begin uploading as shown in Figure 4-38.

Note: Text appears under the command line to confirm the upload.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Upload Configuration Data from Switch-

Do you want to upload the Configuration Data right now? No Yes

EXIT          MAIN MENU  HELP
```

Figure 4-38. Upload Configuration Data from Switch Confirmation Panel

Upload Mode	Switch code can be uploaded in two modes: TFTP or Xmodem. You must use TFTP when uploading switch code through Telnet. You can use either TFTP or Xmodem protocol when you are uploading in local console mode.
TFTP Server IP Address	The IP address of the TFTP server receiving the download.
File Name	The <code>\path\filename</code> for the configuration data.

System Reset

Selecting this option displays the System Reset Panel, shown in Figure 4-39. Use this option to reset the 8275 without powering off. It will take approximately 10 seconds for the 8275 to reset.

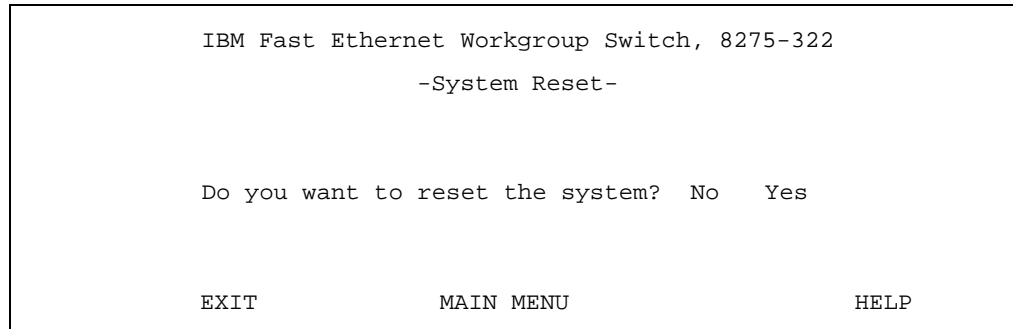


Figure 4-39. System Reset Panel

Follow these steps to reset (warm boot) the 8275:

Step 1. Select **Yes** and press **Enter**.

Step 2. Select **Yes** and press **Enter** on the confirmation panel shown in Figure 4-40.

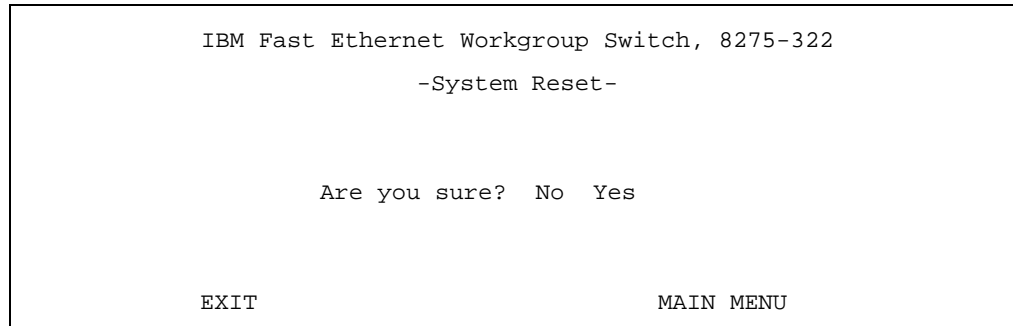


Figure 4-40. System Reset Confirmation Panel

Factory Reset to Default Config Values

Selecting this option displays the Factory Reset to Default Config Values Panel, shown in Figure 4-41. Use this panel to reset the 8275 to factory default values. Do this only as a last resort, because all settings and configurations will be lost, including the IP address.

Note: You should upload configuration data prior to doing a factory reset.

Confirm factory reset by selecting **Yes** and pressing **Enter**.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Factory Reset to Default Config Values-

Do you want to load factory default parameters? No   Yes

EXIT          MAIN MENU          HELP
```

Figure 4-41. Factory Reset to Default Config Values Panel

The confirmation panel is shown in Figure 4-42. If you do not want to reset to factory defaults, select **EXIT** or **MAIN MENU** and press **Enter** to exit the panel.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Factory Reset to Default Config Values-

System will automatically reset. Are you sure? No Yes

EXIT          MAIN MENU          HELP
```

Figure 4-42. Factory Reset to Default Config Values Confirmation Panel

Confirm factory reset by selecting **Yes** and pressing **Enter**.

The 8275 is reset to the factory default parameters.

BootP/TFTP Server Configuration

Selecting this option displays the BootP/TFTP Server Configuration Panel, shown in Figure 4-43. Use this panel to specify whether the 8275 will update its run time code and what update method will be used.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
  -BOOTP/TFTP Server Configuration-

Software Update Control <Disable >

Boot Protocol          <BOOTP&TFTP>
Boot Server IP Address [0.0.0.0 ]
Boot File Name        [          ]
Boot Server Port Number [1.1 ]

SAVE          EXIT          MAIN MENU          HELP
```

Figure 4-43. BootP/TFTP Server Configuration Panel

Follow these steps to update the switch code to BootP & TFTP, TFTP only or BootP Only:

- Step 1.** Set the software update control to **Enable**.
- Step 2.** Set the boot protocol to **BOOTP&TFTP**, **TFTP Only** or **BOOTP Only**.
- Step 3.** Type an IP address and a boot file name (not necessary with BootP & TFTP or BootP protocol).
- Step 4.** Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to initiate the code download.

Software Update Control	Sets the update status of the run-time program. It can be enabled or disabled. The default is disable. If Software Update Control is set to enable the software will be updated after the next reset and the setting will then be reset to disable.
Boot Protocol	Select BOOTP&TFTP , TFTP Only or BOOTP Only . You can use any of these options to update the run-time program. BootP & TFTP Requests and receives configuration data for the 8275's IP address, subnet mask, default gateway, the IP address of the TFTP server and boot filename from the

BootP server. It then uses this configuration data to transfer the run time code from the TFTP server.

TFTP Only Uses the TFTP server IP address and the boot filename to load the run time code from the TFTP server.

BootP Only Requests and receives configuration data for the 8275's IP address, subnet mask, default gateway, TFTP server and boot filename from the BootP server. This option does not perform an update to the software.

Boot Server IP Address The IP address of the boot server where you get the configuration data for the switch. If you have a BootP server then no file name or IP address is necessary. If you have a BootP and TFTP server then you can enter an IP address and filename.

Boot File Name The *\\path\\filename* used to update the run-time program. This information is not required when using the BootP/TFTP protocol.

Boot Server Port Number This is the port number where the BootP server or TFTP server can be accessed.

Login Timeout Interval

Selecting this option displays the Login Timeout Interval Panel, shown in Figure 4-44.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Login Timeout Interval-

Session Auto Logout Interval [ 0..100 ] (Min):[ 5]

SAVE          EXIT          MAIN MENU    HELP
```

Figure 4-44. Login Timeout Interval Panel

Follow these steps to set the Login Timeout Interval:

Step 1. Type a number to change the timeout interval.

Step 2. Select **SAVE** and press **Enter**.

Note: You must reset the 8275 to implement the changes.

Login Timeout Interval

Displays the amount of time that the 8275 waits before logging you out of a Telnet or local console session. You can set the timeout interval from 0 to 100 minutes. Setting it to zero means there is no timeout. The default is 5 minutes.

Ping

Selecting this option displays the Ping Panel, shown in Figure 4-45. Use this panel to test a network connection. Pinging enables you to send a packet to a designated IP address for confirmation that a remote station is connected to the network.

A successful reply displays the IP address and packet size in bytes, sequencing and the port number through which the reply message was received. An unsuccessful reply displays a timeout and the sequence number.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Ping-

IP Address:  [      ]
Packet Count: <single>

SEND          EXIT          MAIN MENU      HELP
```

Figure 4-45. Ping Panel

IP Address	Specify the IP address to be tested.
Packet Count	Select one of the following values:
Single	Sends a single ping.
Multiple	Sends three pings with a one second interval between pings.
Continuous	Sends one ping per second until user stops the pinging process. To stop the pinging process you must select the stop command from the menu.
SEND	Initiates the ping.
STOP	When you select the STOP command, the ping command halts and then resets to SEND. To reattempt a ping re-select the SEND command.

Figure 4-46 displays an example of a continuous ping sequence. Continuous pings are sent at a rate of one ping per second until you select the STOP command.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Ping-

IP Address:    [192.152.81.171]
Ping Count:   <continuous>
Reply from 192.152.81.171: bytes=60 sequence=6301 port=1.1
Reply from 192.152.81.171: bytes=60 sequence=6302 port=1.1
Reply from 192.152.81.171: bytes=60 sequence=6303 port=1.1
Reply from 192.152.81.171: bytes=60 sequence=6304 port=1.1
Reply from 192.152.81.171: bytes=60 sequence=6305 port=1.1
Reply from 192.152.81.171: bytes=60 sequence=6306 port=1.1

STOP          EXIT          MAIN MENU    HELP
```

Figure 4-46. Continuous Ping Panel

Figure 4-47 displays a failed ping attempt which displays a timed out request and a sequence number. When you select a continuous ping the **SEND** command changes to **STOP**.

```
IBM Fast Ethernet Workgroup Switch, 8275-322
-Ping-

IP Address:    [192.152.81.171]
Ping Count:   <continuous>

Request timed out, sequence=6536
Request timed out, sequence=6537
Request timed out, sequence=6538

SEND          EXIT          MAIN MENU    HELP
```

Figure 4-47. Failed Ping Attempt Panel

Chapter 5. Web-Based Management

You can manage the 8275 through your Web browser and Internet connection. This type of management is referred to as Web-based management. The panels appear different from the Console-based panels, but their function is the same.

Powering off, resetting, or performing a factory reset while the 8275 is connected to the network can have an adverse effect on the network. Always disconnect the 8275 from the network before powering off, resetting, or performing a factory reset on the 8275 to prevent packets from being lost.

This chapter provides information that applies to the 8275, Models 318, 322 and 326. However, the 8275-322 is used in the examples, unless otherwise noted.

Using Web-Based Management

You can use your Web browser to configure the 8275. You must first assign an IP address to the 8275 through Console management. Follow these steps to configure the 8275 through Web-based management:

Step 1. Type the IP address of the 8275 in the address field of your Web browser and press Enter.

Step 2. Log in with your user name and password. The default login name is `admin`, no password is required when logging in using the default.

Commands

The following commands are used throughout the Web-based panels of the 8275.

Apply Implements and saves the changes you have just made. Some settings may require you to reset the system in order to take effect.

Refresh Select the Refresh button that appears next to the Apply button in Web-based panels after you have made changes. It also allows you to view the progress of download/upload of information.

Another Refresh button is located in the lower left corner of the graphical representation of the 8275 front panel. The front panel of the 8275 will always be displayed with a representation of the physical configuration of the switch. The display will remain static until you press the Refresh button. The graphical representation of the front panel is located in the top right half of the Web-based management user interface.

This monitoring console reflects the configuration information of the ports and the LED status lights located on the front panel of the 8275. Select the refresh button to report the updated status of the 8275's port configurations.

Logging In

Login Panel 1, shown in Figure 5-1, appears when you begin a management session using any of the methods described in the preceding section. The default user name is `admin`. No password is required with the default login method.

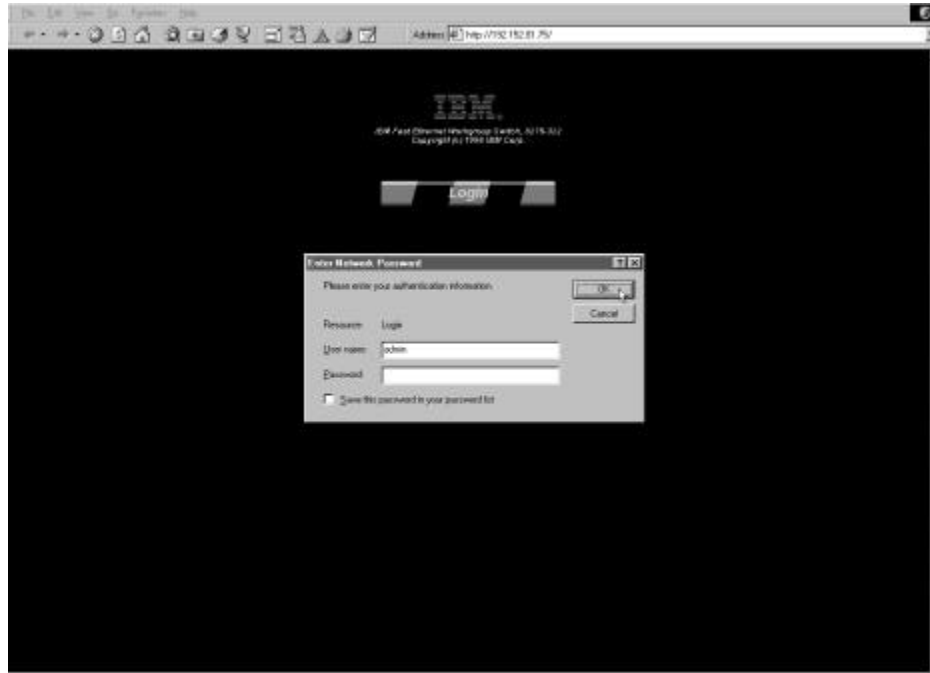


Figure 5-1. Login Panel 1

Select **Login** to display the login panel.

Follow these steps to log in:

- Step 1.** Type your user name, if one is configured. If no user name is configured, enter the default user name `admin`.
- Step 2.** Type your password, if one is already configured. If no password is configured and you are logging in as `admin` then leave the password field empty.
- Step 3.** Select **OK**.

System Information

The System Information Panel, shown in Figure 5-2, is the first panel you see when logging in through the Web. You can access other menus by selecting one of the menu options to the left of the panel.

The System Information Panel, shown in Figure 5-2, provides information about the hardware and software versions installed on the 8275. There are three fields that you can specify: System Name, System Location and System Contact.

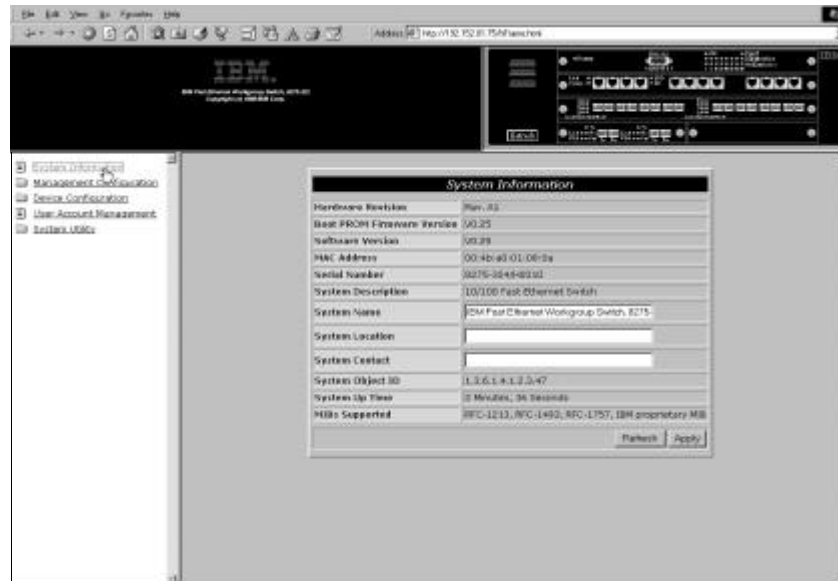


Figure 5-2. System Information Panel

Follow these steps to set the System Name, System Location and System Contact. You can enter a maximum of 64 characters in each field.

- Step 1.** Type the system name.
- Step 2.** Type the system location.
- Step 3.** Type the system contact.
- Step 4.** Select **Apply** to save and implement your changes.

Hardware Revision	Displays the hardware revision for the 8275 release level. Revision numbers refer to the product generation.
Boot PROM Firmware Version	Displays the version of the boot code.
Software Version	Displays the run-time software version being used. Software can be updated to enhance functions or add new features.

MAC Address	The unique address that differentiates the 8275 from any other nodes on the network. The MAC address cannot be changed.
Serial Number	The serial number of the 8275.
System Description	A brief, predefined description of the 8275.
System Name	The assigned name of the 8275.
System Location	The physical location of the 8275. You can enter a building number or street address.
System Contact	The system administrator's name and other contact information.
System Object ID	The vendor identification of the network management subsystem contained in the 8275. This value provides an easy way of determining what kind of device is being managed.
System Up Time	The duration of time the 8275 has been running since the last warm or cold boot.
MIBs Supported	Lists the SNMP MIBs that are supported by the 8275.

Management Configuration

This selection branches in to the three sub-menus used for management configuration:

Network Configuration	Specifies the 8275's IP address, subnet mask and default gateway.
Trap Receiver Configuration	Assigns who will receive trap information.
SNMP Community Configuration	Configures unique community names, access rights and status.

Network Configuration

Selecting this option displays the Network Configuration Panel, shown in Figure 5-3. Use this panel to assign an IP address to the 8275. You must assign a unique IP address to manage the 8275 through the Web, SNMP and Telnet.

You must assign different IP addresses for Ethernet and SLIP.

The Ethernet column on the panel refers to management over the network (in-band management). SLIP IP is used for out-of-band management.

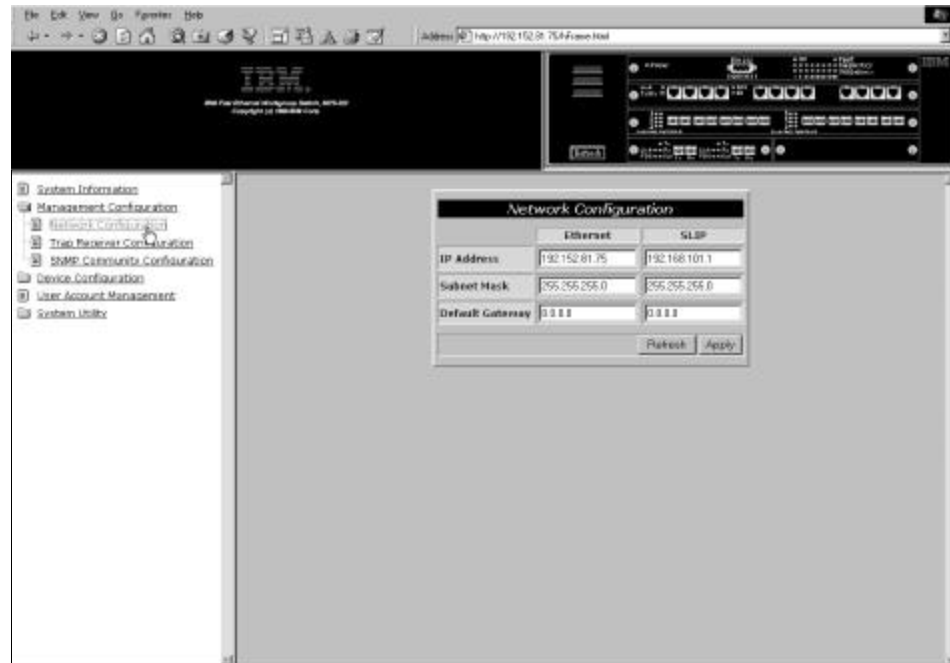


Figure 5-3. Network Configuration Panel

Follow these steps to set the IP address, subnet mask and default gateway:

- Step 1.** Type the IP address.
- Step 2.** Type the subnet mask.
- Step 3.** Type the default gateway.
- Step 4.** Select **Apply**.

Note: You should reset the 8275 to implement the changes.

Ethernet		
	IP Address	The IP address of the 8275.
	Subnet Mask	Specify your LAN's subnet mask.
	Default Gateway	Specify a default gateway. This is necessary only if you are attempting to reach a node outside of your LAN's IP range.

SLIP	IP Address	You must use a separate IP address to create a SLIP connection.
	Subnet Mask	The subnet mask must match the IP address used in the Ethernet setting.
	Default Gateway	The default gateway is used to reach a node outside your LAN. This is usually the IP address of a router.

Trap Receiver Configuration

Selecting this option displays the Trap Receiver Configuration Panel, shown in Figure 5-4. This menu allows you to set the IP address and SNMP community name of the trap receivers.

Traps are messages sent across a network to an SNMP Network Manager. These messages alert the manager to changes in the 8275.



Figure 5-4. Trap Receiver Configuration Panel

Trap Receiver Configuration

Follow these steps to configure the trap receiver:

- Step 1.** Type the IP address of the trap receiver.
- Step 2.** Type the SNMP community string of the trap receiver.
- Step 3.** Select **Apply** to save and implement your changes.

Deleting the Trap Receiver Configuration

Follow these steps to delete a trap receiver configuration:

- Step 1.** Select the Delete check box of the SNMP community string of the trap receiver.
- Step 2.** Select **Apply** to save and implement your changes.

IP Address

The IP address of the remote network manager station to which traps should be sent.

SNMP Community String The SNMP community string of the remote network manager. You can enter up to 64 characters in the field. Public and private are defaults and can be replaced with unique identifiers for each community.

Table 5-1. Trap Conditions

Warm Boot	A system reset has occurred.
Cold Boot	The 8275 has been powered up, completed its self-initialization phase, and is working correctly.
Authentication Failure	A failed access attempt has occurred.
IBM Hello Trap	Notifies the SNMP Management platform to the existence of the 8275 in the network.
Link Change Event Trap	Trap sent when the port changes from Link Up to Link Down or vice versa. Trap information includes the port's number, type, link status, duplex mode and port speed.

SNMP Community Configuration

Selecting this option displays the SNMP Community Configuration Panel, shown in Figure 5-5. Use this panel to define community names and access rights. The 8275 supports up to four communities simultaneously. Members within a community have the same access rights.

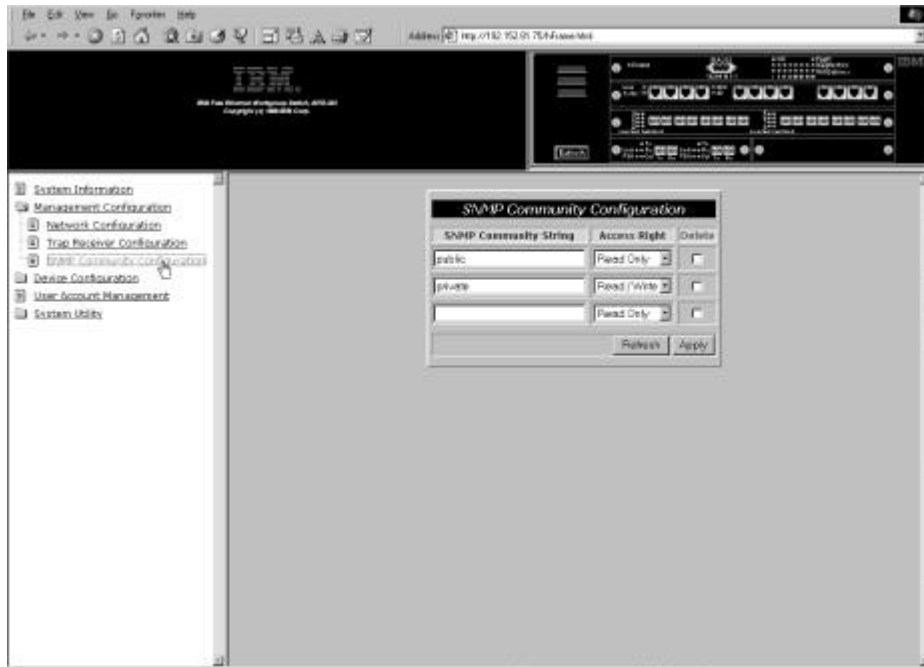


Figure 5-5. SNMP Community Configuration Panel

Follow these steps to create or edit an SNMP community string. You can enter up to 64 characters in each field.

- Step 1.** Type a community name in the SNMP Community String field.
- Step 2.** Set the access right to **Read/Write** or **Read Only**.
- Step 3.** Press **Enter**.
- Step 4.** Repeat steps 1 through 3 to create up to four community names.
- Step 5.** Select **Apply** to save and implement your changes.

SNMP Community String

A name that identifies each SNMP community. A public community means users have read-only access. A private community is for users who have read/write access. Public and private are defaults and can be replaced with unique identifiers for each community.

Access Right

Users with read-only access can view information on the panel and gather SNMP statistics. Users with read/write access can view the panel settings, gather information and make changes.

Device Configuration

This selection branches into the seven sub-menus used to access device configuration.

Switch Configuration	Changes switch modes and address aging.
Port Configuration	Configures individual ports.
Port Statistics	Displays the statistics for each port including total bytes transmitted and received.
Spanning Tree Configuration	Allows you to configure or disable Spanning Tree. Spanning Tree is used to prevent Bridge Looping as specified in the IEEE 802.1D standard.
Serial Port Configuration	Changes the default settings of the serial port.
VLAN Port Management	Creates and configures port-based VLANs.
Trunking Port Management	Configures ports for trunking between switches.

Switch Configuration

Selecting this option displays the Switch Configuration Panel, shown in Figure 5-6. Use this panel to set the rate control, assign address aging and enable or disable RMON statistics.

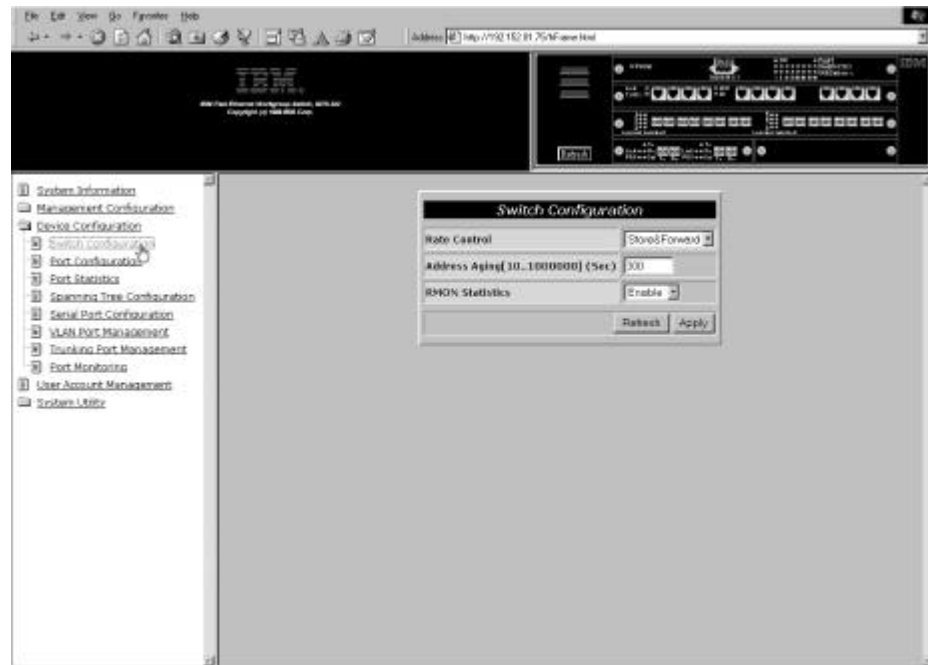


Figure 5-6. Switch Configuration Panel

Follow these steps to set the rate control, address aging and RMON statistics:

- Step 1.** Set the rate control to **Store & Forward** or **Cut-Through**.
- Step 2.** Type a number to set the address aging.
- Step 3.** Set the RMON statistics to **Enable** or **Disable**.
- Step 4.** Select **Apply** to save and implement your changes.

Rate Control

You can set the 8275 for Store & Forward or Cut-Through and change the address aging to better meet the needs of your network. The default is Store & Forward.

Note: The Store & Forward and Address Aging settings are global. They are set for the 8275 as a whole, not for individual ports.

Store & Forward

In Store & Forward mode, packets are stored until they are complete before being sent to their destinations. Runts and damaged packets are discarded.

Cut-Through In Cut-Through mode, packets are sent as soon as the destination address is received. Cut-Through is faster than Store & Forward but it can perpetuate problems because runts and other bad packets are not filtered out. Do not use this mode unless you understand the effect it will have on the network.

Address Aging

Checks the status of each MAC address. It determines inclusion into the MAC address table. If the time interval for the MAC address expires, the MAC address is removed from the MAC address table. The aging can be set from 10 to 1000000 seconds. The default is 300 seconds.

RMON Statistics

RMON statistics can be enabled or disabled. The default is enabled. When RMON is enabled, you will be able to gather statistics from the statistics counter.

Port Configuration

Selecting this option displays the Port Configuration Panel, shown in Figure 5-7. This panel allows you to configure individual ports as part of a module. The module's slot number is shown first, then the port number. Scroll to view higher numbered slots and ports. The following examples reflect an 8275-326.

Figure 5-7 and Figure 5-8 show the 8275-326 port configuration panels and include two 2-port 100BASE-FX modules, one in slot 3 and one in slot 4.

The 8275-326 has a 12-port 10BASE-T/100BASE-TX module in slot 1 and one in slot 2. They appear in the port columns of Figure 5-7 and Figure 5-8 as ports 1.1 through 1.12 and ports 2.1 through 2.12, respectively.

The two 2-port 100BASE-FX modules are represented in the port column in Figure 5-8. They appear in the port columns as ports 3.1 and 3.2, and 4.1 and 4.2.

Note: Models 8275-318 and 8275-322 follow the same port numbering conventions as described above. If your model has the optional fiber uplink installed in slots 3 or 4, or both, then the slot number and port numbers of the fiber uplink appear when you scroll to the end of the port configuration panel and appear as 3.1, 3.2 and 4.1, 4.2.

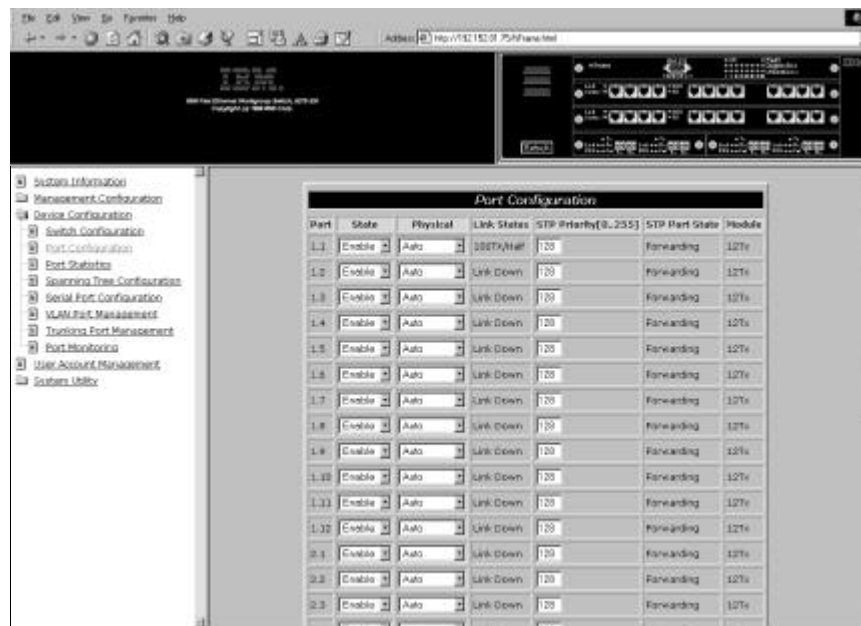


Figure 5-7. Port Configuration Panel

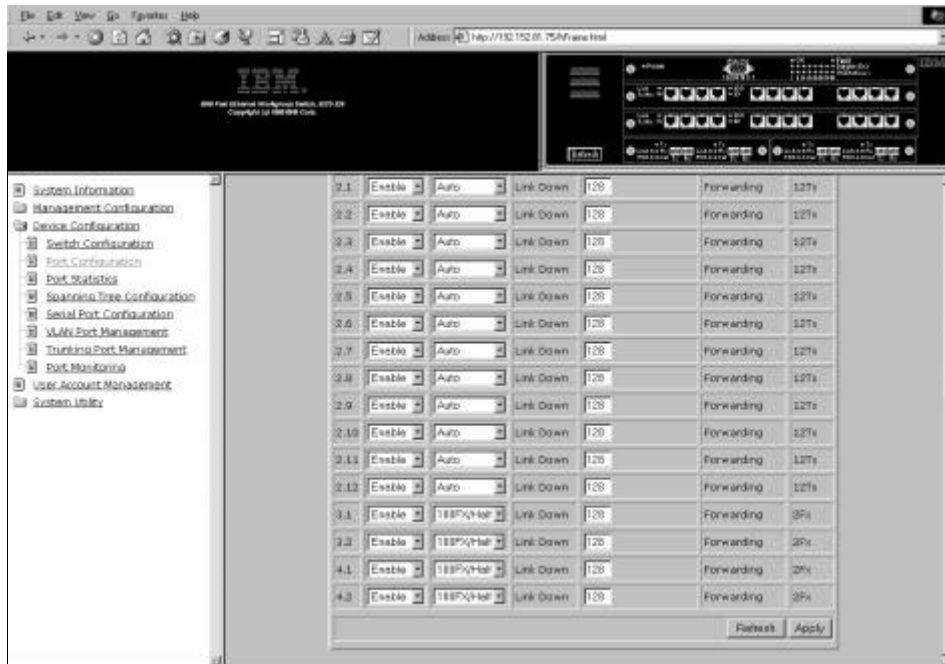


Figure 5-8. Port Configuration Panel Continued

Follow these steps to change the port settings:

Step 1. Set the port number's state to **Enable** or **Disable**.

Step 2. Set the port number's physical setting.

Step 3. Type a number to set the STP priority.

Step 4. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Port The module's slot number and number of the port you are configuring.

Note: If a port is configured to monitor another port then an asterisk appears next to the port number.

State The state of the port. Each port can be enabled or disabled. An enabled port is active. A disabled port is partitioned and inactive, and cannot send or receive data. The default is Enable.

Physical Displays the speed and the duplex mode of the port. Auto means that the port auto-negotiates the fastest compatible speed and duplex mode. The default is Auto for TX ports, indicating that the port auto-negotiates the correct speed and duplex mode. For FX ports the default is 100 Mbps half-duplex.

Link Status	Reports whether the link is active and displays the speed and duplex mode of active ports.
Link Down	Displays that the port connection is not active.
10T/Half	Link is connected at 10 Mbps/half duplex.
10T/Full	Link is connected at 10 Mbps/full duplex.
100TX/Half	Link is connected at 100 Mbps/half duplex.
100TX/Full	Link is connected at 100 Mbps/full duplex.
100FX/Half	Link is connected at 100 Mbps/half duplex.
100FX/Full	Link is connected at 100 Mbps/full duplex.
STP Priority	Spanning Tree Priority (STP) determines the likelihood of the 8275 becoming the root. The smaller the value, the higher the bridge priority. It can be set from 0 to 255. The default is 128.
STP Port State	The port can be in four states: forwarding, listening, learning and blocking:
Forwarding	The packets can pass through a port.
Listening	The port is available and waiting for packets.
Learning	The port is learning the MAC address of the nodes available to it.
Blocking	The port is blocking all traffic, no packets can pass through a port.
Module	Reflects the module type (8-FX, 12-TX or optional 2-FX).

Port Statistics

Selecting this option displays the Port Statistics Panel, shown in Figure 5-9. This displays the statistical information about each port.

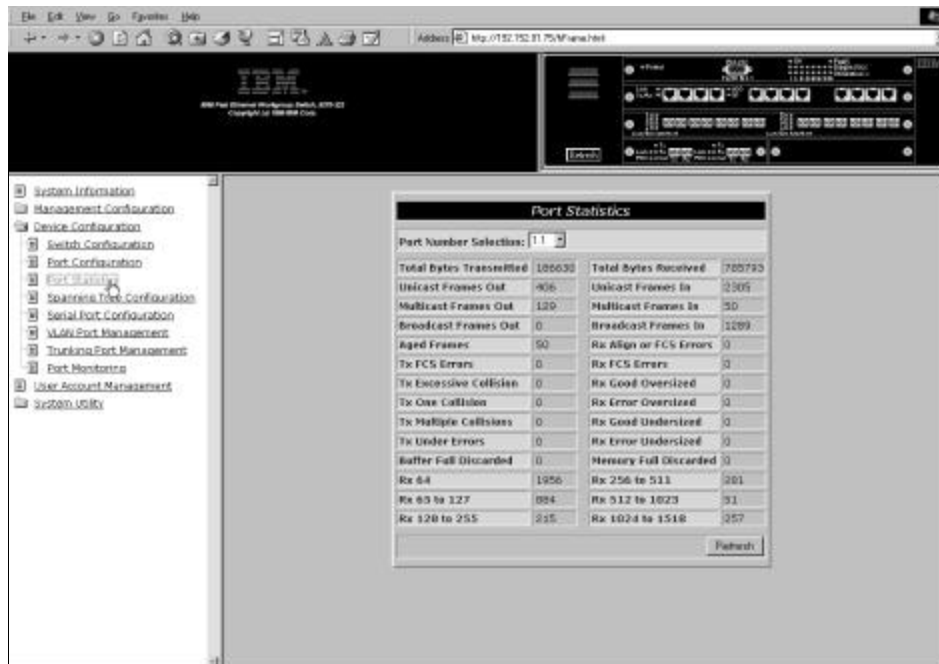


Figure 5-9. Port Statistics Panel

To view statistics about a port, select the module's slot number and port number and then press **Enter**.

Note: To refresh the port statistics after a change in port configuration, select the port number field and select Apply.

Total Bytes Transmitted	Total number of bytes transmitted to the port.
Unicast Frames Out	Number of unicast frames transmitted.
Multicast Frames Out	Number of multicast frames transmitted.
Broadcast Frames Out	Number of broadcast frames transmitted.
Aged Frames	Number of frames that were dropped because they were in transit too long.
Tx FCS Errors	Number of frames that were discarded on the transmit side because of FCS errors.
Tx Excessive Collision	Number of frames that were dropped because of excessive collision.

Tx One Collision	Number of frames that were transmitted after one collision.
Tx Multiple Collisions	Number of frames that were transmitted after more than one collision.
Tx Run Errors	Number of frames that were discarded on the transmit side because of an underrun.
Total Bytes Received	Total number of bytes received on a port.
Disc Buff Full	Number of good frames that were discarded because the Rx Buffer was full.
Rx Align or Errors	Number of well-aligned frames that were received with FCS errors.
Unicast Frames In	Number of unicast frames received.
Multicast Frames In	Number multicast frames received.
Broadcast Frames In	Number of broadcast frames received.
Rx Good Oversized	Number of good oversized frames received.
Rx Error Oversized	Number of good oversized frames with errors (FCS, Alignment).
Rx Good Undersized	Number of good undersized frames received.
Rx Error Undersized	Number of undersized frames received with errors.
Rx64	Number of frames (including frames with errors) that were 64 bytes long.
Rx65 to 127	Number of frames (including frames with errors) 65 to 127 bytes long.
Rx128 to 255	Number of frames (including frames with errors) 128 to 255 bytes long.
Rx256 to 511	Number of frames (including frames with errors) 256 to 511 bytes long.
Rx512 to 1023	Number of frames (including frames with errors) 512 to 1023 bytes long.
Rx 1024 to 1518	Number of frames (including frames with errors) 1024 to 1518 bytes long.
Disc Mem Full	Number of good frames that were discarded because the memory was full.

Spanning Tree Configuration

Selecting this option displays the Spanning Tree Configuration Panel, shown in Figure 5-10.

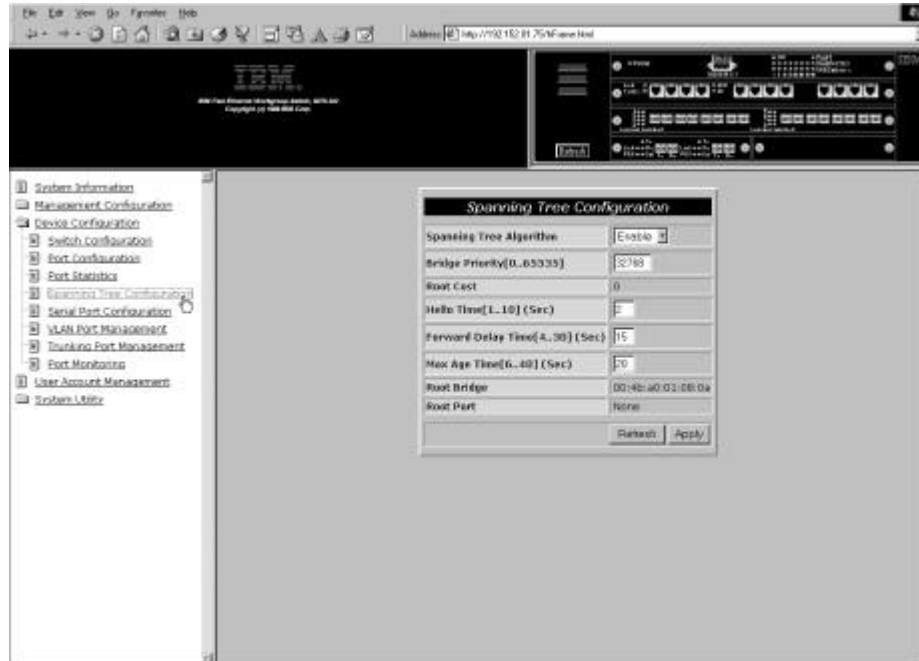


Figure 5-10. Spanning Tree Configuration Panel

Follow these steps to change the settings:

Set the Spanning Tree Algorithm to **Disable** to disable Spanning Tree.

Follow these steps to change the settings:

- Step 1.** Set the Spanning Tree Algorithm to **Enable**.
- Step 2.** Type a number to change the Bridge Priority.
- Step 3.** Type a number to change the Hello Time.
- Step 4.** Type a number to change the Forward Delay Time.
- Step 5.** Type a number to change the Max Age Time.
- Step 6.** Select **Apply** to save and implement your changes.

Spanning Tree Algorithm

Discovers every node on the network and closes redundant paths to avoid loops. It enables one alternate path in the event that the main path fails. The default is Enable.

Bridge Priority

Determines which bridge on the network is considered the root when the Spanning Tree Algorithm is calculated. Bridge Priority can be set from 0 to 65535. Zero is the highest Bridge Priority. The default is 32768.

Root Cost	The Root Cost is calculated automatically. It is the shortest distance from any bridge to the Root Bridge interval for the unit announcing its presence on the network. The default is zero.
Hello Time	The interval time for the 8275 to announce its presence on the network. The interval can be set from 1 to 10 seconds. The default is 2 seconds.
Forward Delay Time	Specifies the time spent in listening and learning modes before forwarding packets. The value can be set from 4 to 30 seconds. The default is 15 seconds.
Max Age Time	Specifies the amount of time elapsing before the 8275 will determine a new root bridge. The value can be set from 6 to 40 seconds. The default is 20 seconds.
Root Bridge	Specifies the MAC address that is the Root Bridge on the network.
Root Port	Specifies the preferred port to the Root Bridge. Only one port per bridge can exist. The default is none.

Serial Port Configuration

Selecting this option displays the Serial Port Configuration Panel, shown in Figure 5-11. Serial port configuration refers to the management port.

The settings on this panel are supported only when the Operation Mode is set to Out-of-Band. The settings on this panel do not affect the settings configured through local console management.

This panel specifies the default operation mode for connecting to the 8275, as well as the settings for serial communications. The panel displays the default settings for serial port configuration.

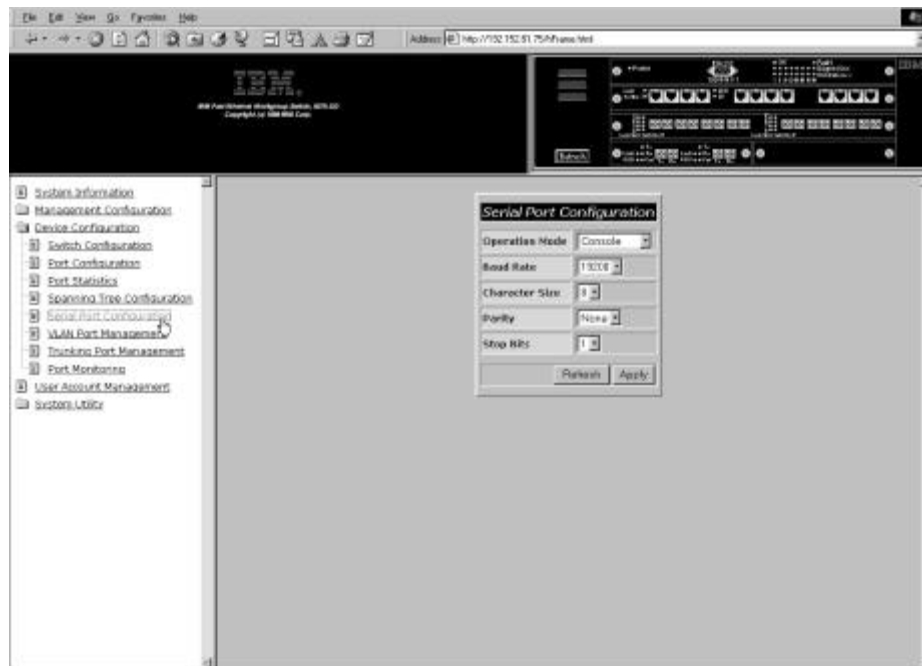


Figure 5-11. Serial Port Configuration Panel

Note: The settings on this panel are available only when the Operation Mode is set to Out-of-Band. They cannot be changed in Console mode. If you elect to change these settings, be sure you have assigned an IP address to the 8275 as discussed in “Network Configuration” on page 5-5.

Follow these steps to change the settings:

- Step 1.** Set the operation mode to **Out-of-Band**.
- Step 2.** Select the settings for Baud Rate, Character Size, Parity, and Stop Bits.
- Step 3.** Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Operation Mode The console connects the switch to a workstation through a null-modem cable by running terminal emulation. Communications parameters are fixed. The default is Console mode.

Out-of-Band mode is used when the 8275 is managed through the serial port.

Note: You should select Out-of-Band mode only after you have assigned an IP address to the switch.

Baud Rate

Specifies the communications rate of the modem. This setting can only be changed when you are in Out-of-Band mode. The default is 19200.

The following settings are available:

- 57600
- 38400
- 19200
- 9600
- 4800

Character Size

Character size can be either 7 or 8 data bits. The default is 8 data bits.

Parity

Parity can be set to:

- none
- even
- odd

The default is none.

Stop Bits

You can set the stop bits for either 1 or 2. The default is 1.

VLAN Port Management

Selecting this option displays the VLAN Port Management Panel, shown in Figure 5-12. This panel allows you to configure VLANs.

A VLAN reduces traffic by defining which ports belong to which networked groups. The 8275 can be configured to define groups of people and keep their traffic local to their group.

Ports can belong to more than one VLAN simultaneously. The 8275 supports up to eight VLANs. See Appendix A, "Introduction to Virtual LANs and Spanning Tree Protocol" for more information about VLANs. The default is one VLAN covering all ports.

VLANs are optional. You can use them to reduce congestion on high traffic networks. If you elect to create VLANs, record the groups you create for future reference.

VLANs and Trunked ports can be used independently of each other. However, if a port is part of both a port trunking group and a VLAN, then all the ports in the trunking group must be part of that VLAN.

The following panel descriptions reflect an 8275-326 with two optional 2-port 100BASE-FX modules.



Figure 5-12. VLAN Port Management Panel

Create VLANs

Follow these steps to create VLANs:

- Step 1.** Type a name for the VLAN.
- Step 2.** Select the check boxes below the module's port numbers you want in the VLAN. Scroll to view more ports.
- Step 3.** Press **Enter**.

Step 4. Repeat steps 1 through 3 to create up to eight VLANs.

Step 5. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Create VLANs with Overlapping Ports

Follow these steps to create a VLAN with overlapping ports:

Step 1. Create a VLAN. See “Create VLANs” on page 5-22.

Step 2. Select the check boxes below the module’s port numbers you want in the VLAN.

Step 3. Select the ports you want to include from a previously created VLAN.

Step 4. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Both VLANs are now in the same collision domain.

Delete VLAN

Follow these steps to delete a VLAN:

Step 1. Scroll to view the delete check box of the VLAN.

Step 2. Select the delete check box.

Step 3. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Modify VLAN

Follow these steps to modify a VLAN:

Step 1. Select or clear the module’s port number check boxes for the VLAN.

Step 2. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

VLAN Name	Displays the name of the VLANs you create. You can enter up to eight characters.
Port #	Identifies the module’s slot number and port numbers assigned to a specific VLAN. Some ports must share inclusion in a VLAN. An example of this is shown in Figure 5-12 where two modules’ slot numbers and port numbers are shown separated by a slash, and they share one checkbox.
TrunkGroup	Identifies the name of the TrunkGroup to which the port belongs. See “Trunking Port Management” on page 5-24 for more information.
Status	Displays the status of the port.

Trunking Port Management

Selecting this option displays the Trunking Port Management Panel, shown in Figure 5-13. Use this panel to Create/View Trunking Groups, Delete Trunking Groups, and Modify Trunking Groups.

A trunking port combines two or more ports for cascading (connecting) switches. Each port has a maximum data exchange rate of 200 Mbps at full duplex (100 Mbps transmitting and 100 Mbps receiving). By grouping a maximum of eight ports into a trunk you can get an effective data exchange rate of 1.6 Gbps (8 x 200 Mbps) through the trunk.

If you are using a VLAN, then all the ports selected for a trunking group must belong to the same VLAN. If you are not using a VLAN this restriction does not apply.

This panel reflects an 8275-326 with two 2-port 100BASE-FX modules installed.



Figure 5-13. Trunking Port Management Panel

Create Trunking Groups

Follow these steps to create a trunking group:

- Step 1.** Type a name for the trunking group.
- Step 2.** Select the check boxes of the module's ports you want to include.
- Step 3.** Select **Apply**.
- Step 4.** Repeat steps 1 through 3 to create up to seven trunking groups.

Note: You must reset the 8275 to implement the changes.

Delete Trunking Groups

Follow these steps to delete a trunking group:

Step 1. Scroll to view the delete check box of the trunking group.

Step 2. Select the delete check box.

Step 3. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Modify Trunking Groups

Follow these steps to modify trunking groups:

Step 1. Select or clear the port number check boxes for the trunking group you want to modify.

Step 2. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Trunking Group Name

Displays the names of the trunking groups. You can enter up to eight characters. The 8275 supports up to seven trunking groups.

Port

Displays the module's slot number and port number on the console of the 8275. Ports can belong to only one trunking group at a time. Up to seven ports can belong to a trunking group.

Notes:

1. The 2-port 100BASE-FX module's ports cannot be included in a trunking port.
2. Model 8275-318 supports port trunking for all ports.
3. Model 8275-322 does not support trunking for ports 1.5, 1.6, 1.7 and 1.8.
4. Model 8275-326 does not support trunking for ports 1.5, 1.6, 1.7, 1.8 and 2.5, 2.6, 2.7 and 2.8 (see Figure 5-13, "Trunking Port Management Panel.")

Port Monitoring

Selecting this option displays the Port Monitoring Panel, shown in Figure 5-14. Port monitoring mirrors data traffic sent or received by a particular port. You can define which ports are to be monitored and which ports will perform the monitoring. You can also define the types of packets to be monitored. Use the port monitoring panel to configure these options.

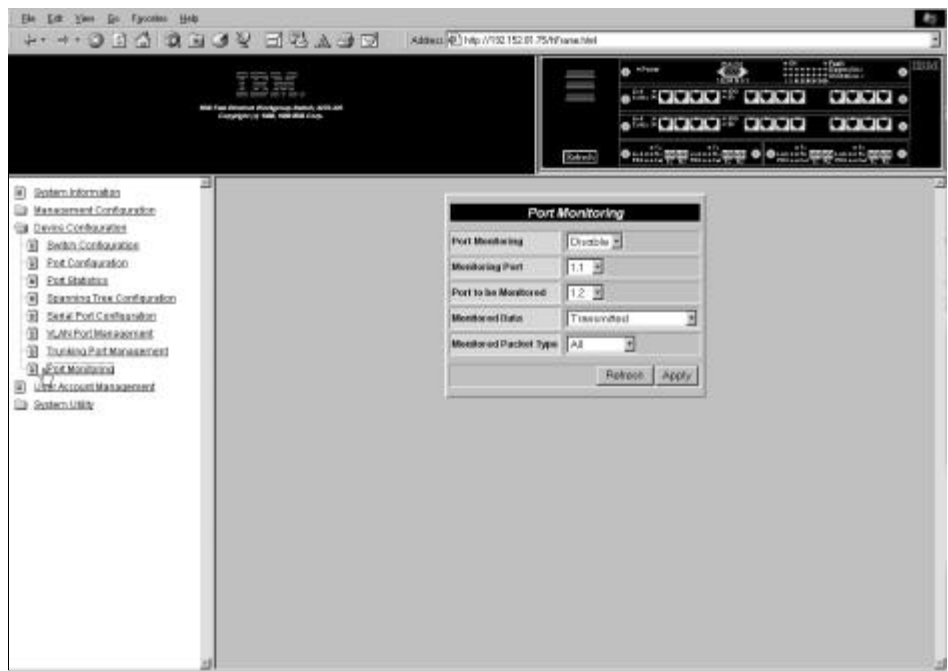


Figure 5-14. Port Monitoring Panel

Port Monitoring Enables or disables port monitoring. The default is disable.

Monitoring Port The port that receives the monitoring data. Type the module's slot number and then the port number.

Port to be Monitored The monitored port. Type the module's slot number and then the port number.

Monitoring Data Selecting Transmitted defaults the monitoring to all outgoing packet types. Selecting Received enables you to choose either all packet types or one of the three packet types. Selecting Transmitted & Received defaults the monitoring to all packet types.

Monitored Packet Type Available to only received monitoring data.

Select one of the following types:

- All** Monitors all packet types
- Unicast** Monitors only unicast packets
- Broadcast** Monitors only broadcast packets
- Discarded** Monitors all packets discarded by the
8275.

User Account Management

Selecting this option displays the User Account Management Panel, shown in Figure 5-15. Use this panel to add and delete users, and to change passwords. The 8275 supports up to three user names.

The 8275 supports two levels of users: Read/Write users and Read Only users.

Read/Write Users with read/write access can see the panel settings, gather SNMP statistics, make changes to passwords and create and delete users.

Read Only Users have read only access to most information and panels but cannot make configuration changes to the 8275.

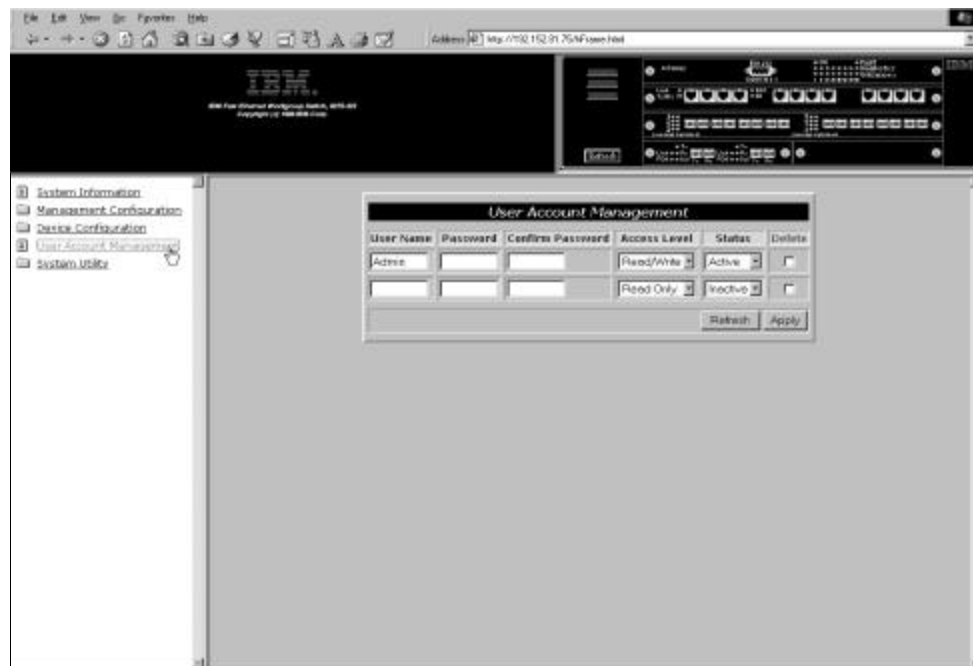


Figure 5-15. User Account Management Panel

Create New Users

Follow these steps to create new users:

- Step 1.** Type a user name, up to 8 characters.
- Step 2.** Type a password, up to 8 characters.
- Step 3.** Type the password again to confirm.
- Step 4.** Set the access level to **Read/Write** or **Read Only**.
- Step 5.** Set the status to **Active** or **Inactive**.
- Step 6.** Select **Apply** to save and implement your changes.
- Step 7.** Repeat steps 1 through 6 to configure up to three users.

Delete Users

Follow these steps to delete a user:

Step 1. Select the delete check box for the user name you want to delete.

Step 2. Select **Apply** to save and implement your changes.

Change Passwords

Follow these steps to change passwords:

Step 1. Type a new password to replace the user's old password.

Step 2. Type the password again to confirm.

Step 3. Select **Apply** to save and implement your changes.

User Name	The name of the user. User names are not case-sensitive.
Password	The password of the user. You can enter up to eight characters. Passwords are not case-sensitive.
Confirm Password	Reenter the password for confirmation.
Access Level	Select either Read/Write or Read Only.
Status	The status of the users. Active users have access to the 8275. Inactive users cannot access the 8275.
Delete	Use to delete users.

System Utility

Selecting this option allows you to access the System Utility sub-menus. Use the sub-menus to update the run-time software and the boot code. You can also perform a warm boot, restore the default factory settings and ping an IP address.

Download Code to Switch	Updates the run time program or the boot program from a binary file.
Download Configuration Data to Switch	Restores 8275 configuration from a saved file. You can use the file to configure other 8275s.
Upload Configuration Data from Switch	Saves the 8275's configuration data to a file on a diskette or hard disk.
System Reset	Resets the system. Use this after you have reconfigured the 8275 and after downloading code.
Factory Reset to Default Config Values	Restores the factory default settings.
BootP/TFTP Server Configuration	Specify the method by which the run time code will be updated. The boot program cannot be updated from this panel.
Login Timeout Interval	Sets the amount of time that the 8275 waits before logging users out of a Telnet session.
Ping	Allows you to test a network connection by sending a ping (packet internet groper) to an IP address.

Download Code to Switch

Selecting this option displays the Download Code to Switch Panel, shown in Figure 5-16. Use this panel to update the 8275's boot program and run-time program.

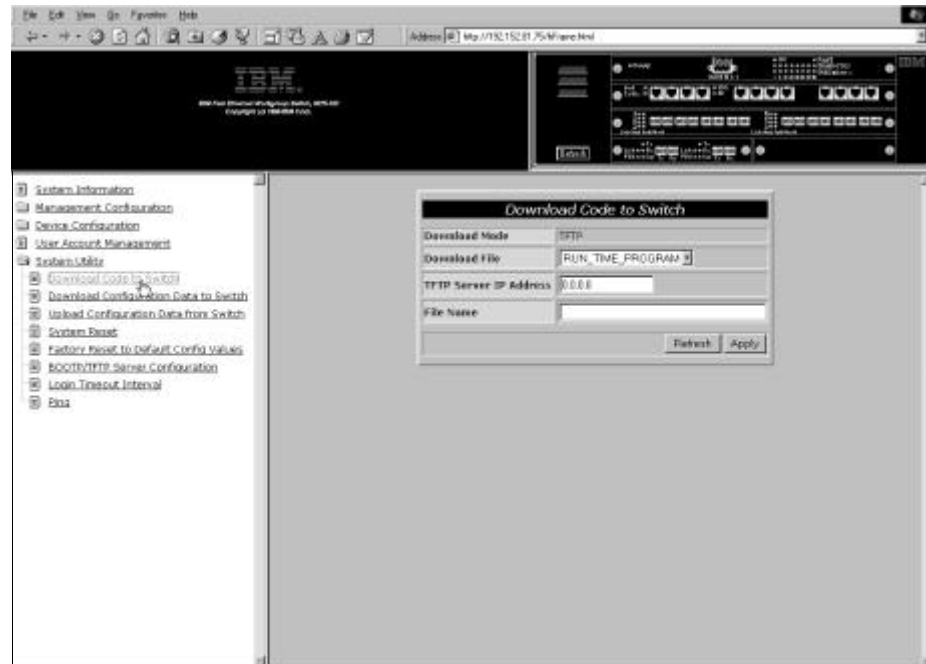


Figure 5-16. Download Code to Switch Panel

Follow these steps to update the 8275 run-time program or boot program:

Note: Do not power-off the 8275 at any time while downloading or uploading information.

Step 1. Set Download File to **BOOT_PROGRAM** or **RUN_TIME_PROGRAM**.

Step 2. Type the IP address of the server the file will be downloaded from.

Step 3. Type the `\path\filename` of the file to be downloaded.

Step 4. Select **Apply**.

Step 5. Select **Apply** again to confirm, as shown in Figure 5-17, and press **Enter** to begin the download.

Note: You must reset the 8275 to implement the changes to the code.

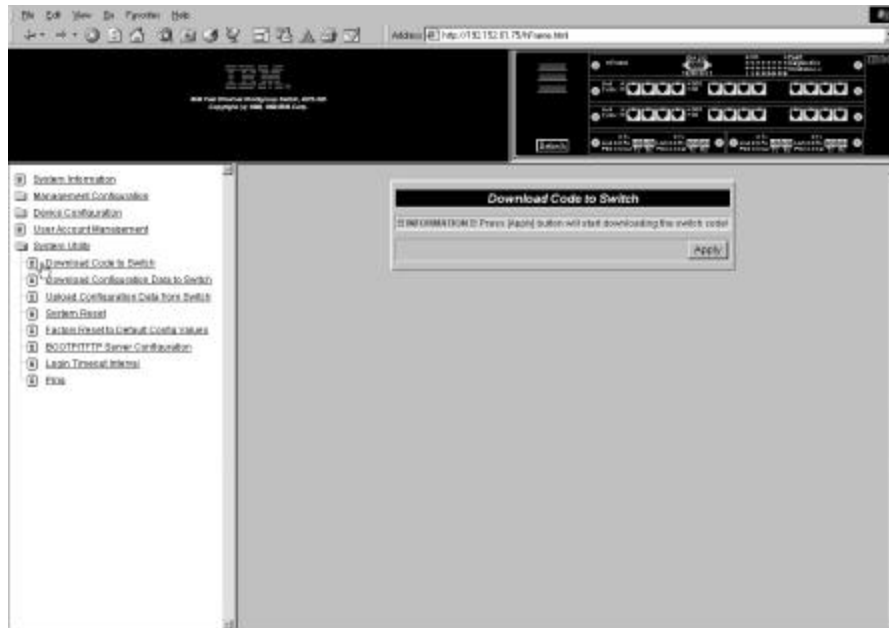


Figure 5-17. Download Code to Switch Confirmation Panel.

Download Mode	The 8275 automatically assigns the download mode that corresponds with the management method you are using. TFTP is used when downloading switch code when you use Telnet management.
Download File	You can download either the boot program or the run-time program.
TFTP Server IP Address	The IP address of the server from which the new file will be downloaded.
File Name	The path/filename that will be downloaded.

Download Configuration Data to Switch

Selecting this options displays the Download Configuration Data to Switch Panel, shown in Figure 5-18. Use this panel to specify whether the 8275 will obtain configuration data through the management port or from a workstation.

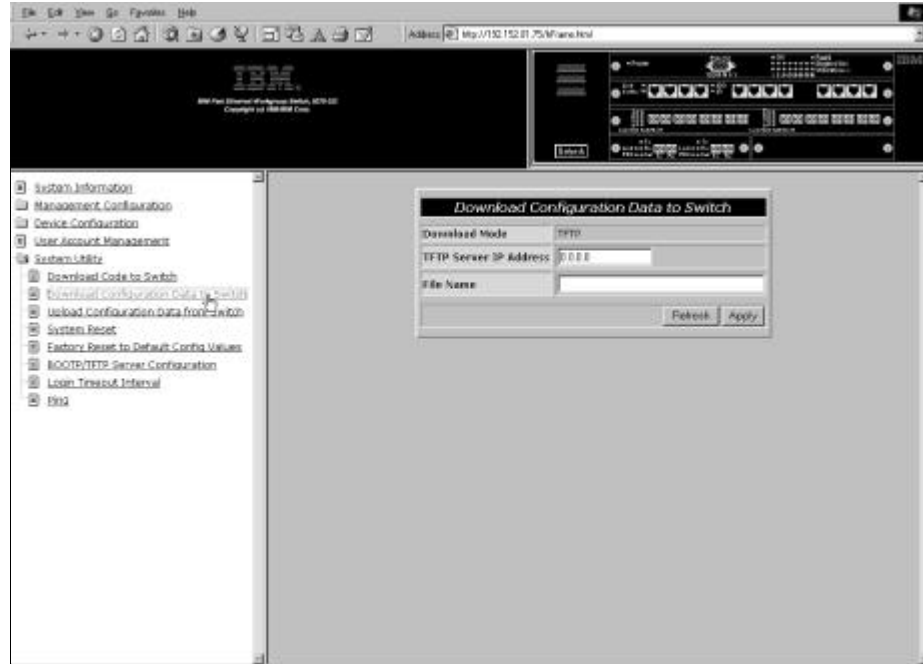


Figure 5-18. Download Configuration Data to Switch Panel

Follow these steps to download the 8275's configuration data to switch:

Step 1. Type the IP address of the server the file will be downloaded from.

Step 2. Type the `\path\filename` of the file to be downloaded.

Step 3. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Download Mode	TFTP is the download mode.
TFTP Server IP Address	Specifies the IP address of the TFTP server from which you want to download the configuration data.
File Name	The <code>\path\filename</code> that the 8275 will use to download.

Upload Configuration Data from Switch

Selecting this option displays the Upload Configuration Data from Switch Panel, shown in Figure 5-19. Use this panel to specify whether the 8275 saves configuration data over the management port or to a workstation.

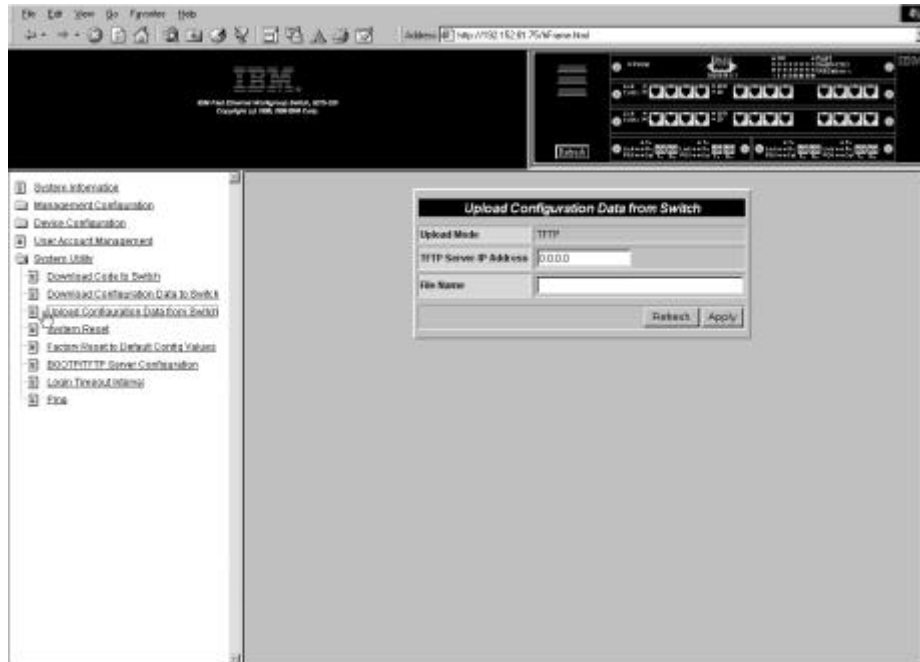


Figure 5-19. Upload Configuration Data from Switch Panel

Follow these steps to upload configuration data from the 8275:

- Step 1.** Type the IP address of the server the file will be uploaded from.
- Step 2.** Type the `\path\filename` of the file to be uploaded.
- Step 3.** Select **Apply**.

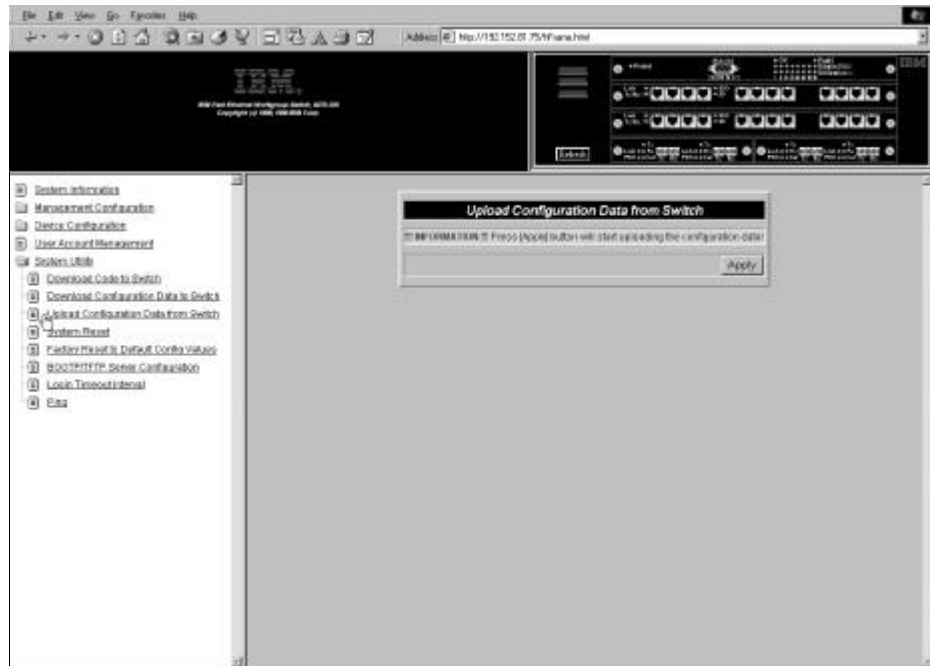


Figure 5-20. Upload Configuration Data from Switch Confirmation Panel

Step 4. Select **Apply** again to confirm upload as shown in Figure 5-20.

Note: You must reset the 8275 to implement the changes.

Upload Mode	Displays the upload method used by the 8275. TFTP is the default.
TFTP Server IP Address	The IP address of the server the configuration data will be uploaded to.
File Name	Specifies the <code>\path\filename</code> for the configuration data.

System Reset

Selecting this option displays the System Reset Panel, shown in Figure 5-21. Use this option to reset the 8275 without powering off. It will take approximately 10 seconds for the 8275 to reset.

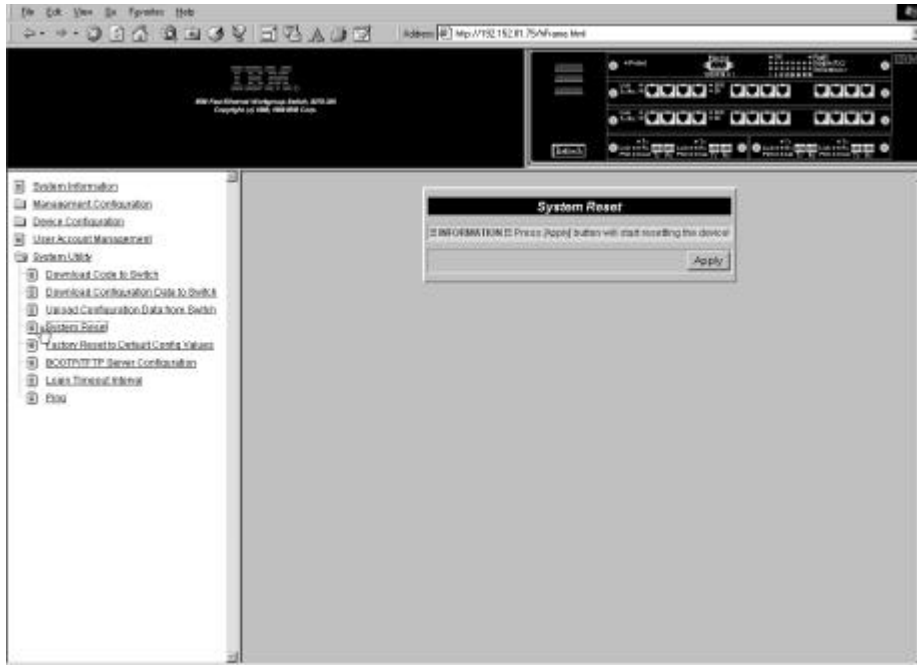


Figure 5-21. System Reset Panel

Follow these steps to reset (warm boot) the 8275:

- Step 1.** Select **Apply**.
- Step 2.** Select **Apply** again when the information panel displays, as shown in Figure 5-21.

Factory Reset to Default Config Values

Selecting this option displays the Factory Reset to Default Config Values Panel, shown in Figure 5-22. Use this panel to reset the 8275 to factory default values. Do this only as a last resort, because all current settings and configurations will be lost, including the IP address.

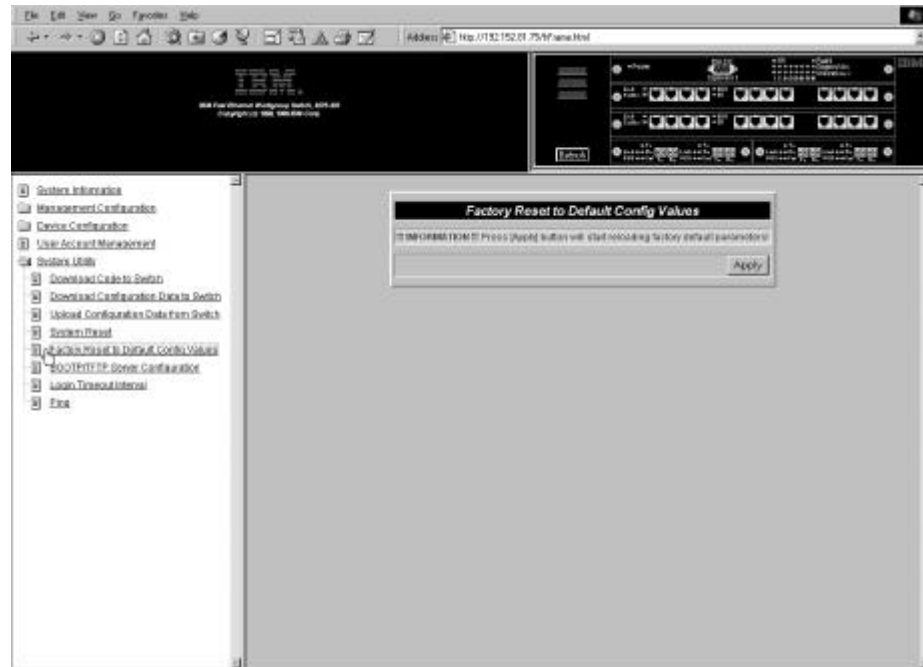


Figure 5-22. Factory Reset to Default Config Values Panel

Note: You should upload configuration data prior to doing a factory reset.

Follow these steps to reset to factory default configuration values:

Step 1. Select **Apply**

Step 2. Press **Enter**.

Note: An information panel displays to confirm that you want to reset to factory default values.

Step 3. Select **Apply** again to confirm.

BootP/TFTP Server Configuration

Selecting this option displays the BootP/TFTP Server Configuration Panel, shown in Figure 5-23. Use this panel to specify whether the 8275 will update switch code and what method will be used.

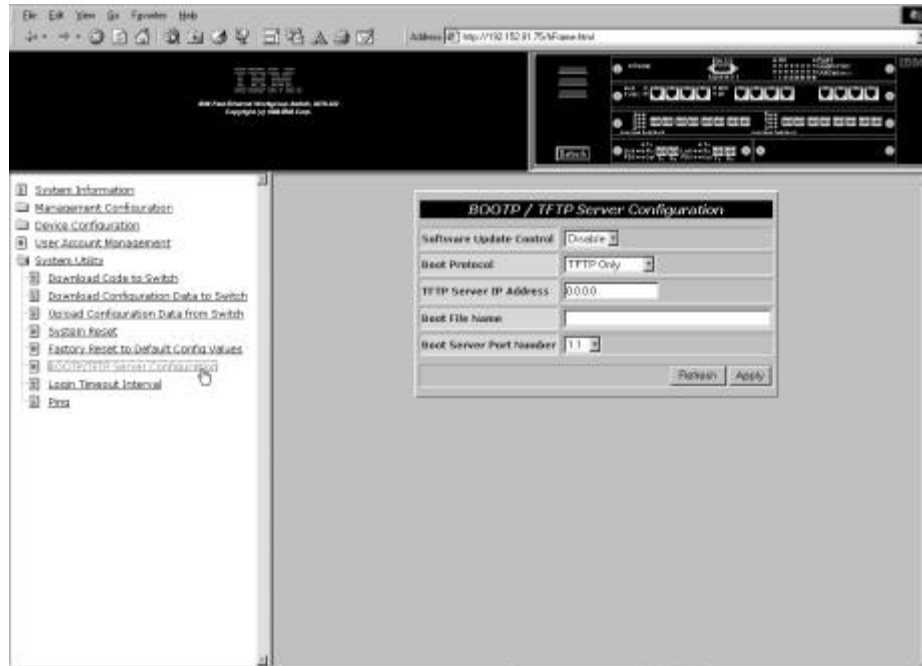


Figure 5-23. BootP/TFTP Server Configuration Panel

Follow these steps to set the update switch code to BootP & TFTP, TFTP only or BootP Only:

- Step 1.** Set the software update control to **Enable**.
- Step 2.** Set the boot protocol to **BOOTP&TFTP**, **TFTP Only** or **BOOTP Only**.
- Step 3.** Type an IP address and a boot file name (not necessary with BootP & TFTP or BootP protocol).
- Step 4.** Select **Apply** to save and implement your changes.

Boot Protocol

Select **BOOTP&TFTP**, **TFTP Only** or **BOOTP Only**. You can use any of these options to update the run-time program.

BootP & TFTP Requests and receives configuration data for the 8275's IP address, subnet mask, default gateway, the IP address of the TFTP server and boot filename from the BootP server. It then uses this configuration data to transfer the run time code from the TFTP server.

TFTP Only Uses the TFTP server IP address and the boot filename to load the run time code from the TFTP server.

BootP Only Requests and receives configuration data for the 8275's IP address, subnet mask, default gateway, TFTP server and boot filename from the BootP server. This option does not perform an update to the software.

**Boot Server
IP Address**

The IP address of the boot server where you get the configuration data for the switch. If you have a BootP server then no file name or IP address is necessary. If you have a BootP and TFTP server then you can enter an IP address and filename.

Boot File Name

The *\\path\filename* used to update the run-time program. This information is not required when using the BootP/TFTP protocol.

**Boot Server Port
Number**

This is the port number where the BootP server or TFTP server can be accessed.

Login Timeout Interval

Selecting this option displays the Login Timeout Interval Panel, shown in Figure 5-24.

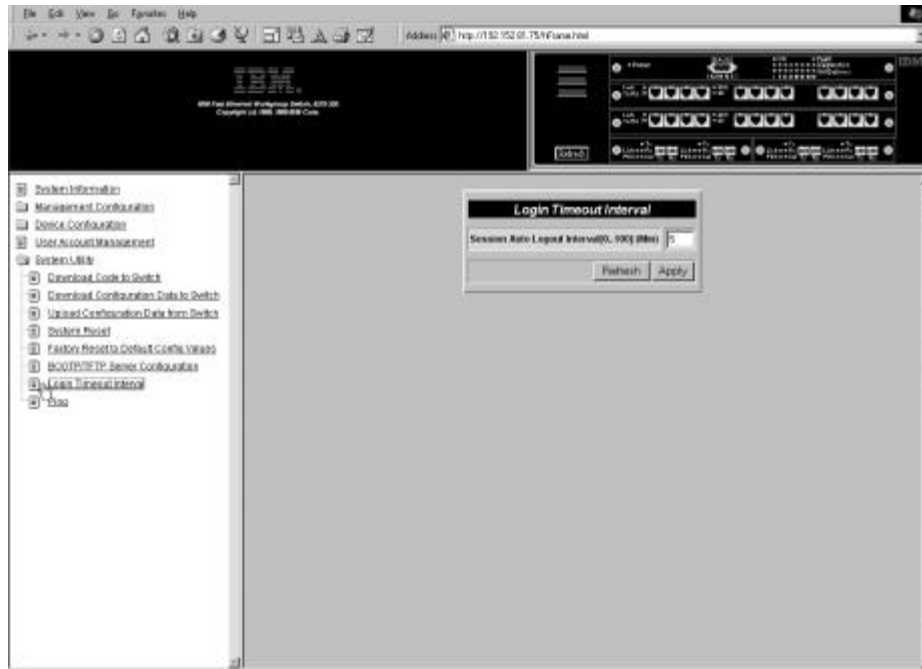


Figure 5-24. Login Timeout Interval Panel

Follow these steps to set the Login Timeout Interval:

Step 1. Type a number to change the timeout interval.

Step 2. Select **Apply**.

Note: You must reset the 8275 to implement the changes.

Login Timeout Interval

Displays the amount of time that the 8275 waits before logging you out of a Telnet or local console session. You can set the timeout interval to from 0 to 100 minutes. Setting it to zero means there is no timeout. The default is 5 minutes.

Ping

Selecting this option displays the Ping Panel, shown in Figure 5-25. Use this panel to test a network connection. Pinging enables you to send a packet to a designated IP address for confirmation that a remote station is connected to the network.

A successful reply displays the IP address and packet size in bytes, sequencing and the port number through which the reply message was received. An unsuccessful reply displays a timeout and the sequence number.

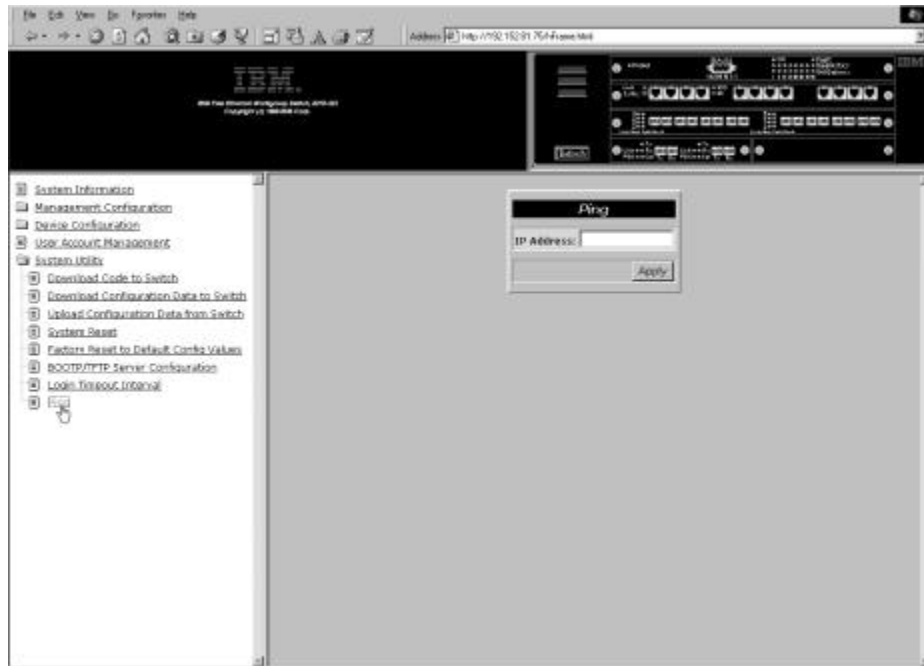


Figure 5-25. Ping Panel

IP Address Specify the IP address to be tested.

Figure 5-26 displays a successful ping response.



Figure 5-26. Successful Ping Response Panel

Chapter 6. Troubleshooting and Service

This chapter is intended to help you troubleshoot problems with the 8275 and its connections to other devices.

Be sure to read "Safety Information" on page xvi before proceeding.

Diagnosing Problems

The following sections have lists of symptoms and actions to assist in problem resolution prior to contacting IBM Support.

Power On Self-Test Failures

Every time the 8275 is powered on it performs a power-on self-test (POST). If the 8275 is connected to a PC with a null-modem cable and terminal emulation is running then results of the POST are displayed on the console.

If any component fails during the POST an error is displayed on the console. At that point, you have the option to continue or abort the POST. Results from the POST also display on the LED panel as shown in Figure 6-1 on page 6-1.

If the LED panel fails during the POST, the result will be displayed on the console but not on the LED panel. The console displays error messages with more detail.

If the COM port does not pass the Serial Communications Controller Test, no results will be shown on the console screen.

Diagnostics LEDs

If the 8275 fails during the POST, an error code is displayed in the eight diagnostic LEDs as shown in Figure 6-1. Table 6-1 explains the meanings of these errors.

Diagnostic LED Indicators	Error Status
On ● Off ○	
○ ○ ● ○ ○ ○ ○ ●	Boot Program Flash Damaged
○ ○ ● ○ ○ ○ ● ○	Run-Time Program Flash Damaged
○ ○ ● ○ ○ ○ ● ●	CPU Memory Failure
○ ○ ● ○ ○ ● ○ ○	Peripheral Controller Failure
○ ○ ● ○ ○ ● ○ ●	COM Port Failure
○ ● ○ ○ ○ ○ ○ ●	NPB Failure
○ ● ○ ○ ○ ○ ● ○	PSP Memory Failure
○ ● ○ ○ ○ ○ ● ●	PSP Failure
○ ● ○ ○ ○ ● ○ ○	FBU Failure
○ ● ○ ○ ○ ● ○ ●	PRIV Failure
○ ● ○ ○ ○ ● ● ○	ARL Failure
○ ● ○ ○ ○ ● ● ●	ARL Memory Failure

Figure 6-1. Diagnostic LED Error Chart

Table 6-1. Meaning of Diagnostic LED Errors

Error	Meaning
Boot Program Flash Damaged	Indicated that the boot program section of flash memory is damaged. Recover from error by reloading the boot program code.
Run Time Program Flash Damaged	The run time program section of flash memory is damaged. Recover from error by reloading the run time program code.
CPU Memory Failure	CPU Memory has failed read/write test.
Peripheral Controller Failure	Onboard 82C59 Interrupt Controller failed.
Com Port Failure	The SIO chip has failed its diagnostic test.
PSP Memory Failure	Port buffer has failed its read/write test.
FEIU Failure	General failure of FEIU chip.
PHY Failure	General failure of PHY chip.
ARL Failure	General failure of ARL chip.
ARL Memory Failure	MAC address table (ARL memory) has failed its read/write test.

Utilization LEDs

If a system module fails during POST, the Utilization % LEDs are used to indicate which module is in error. Figure 6-3, "System Module Error Indicators," show the slots' error indicators.

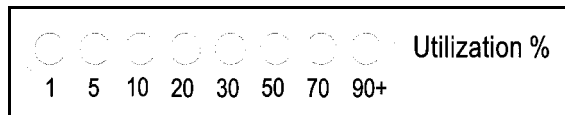


Figure 6-2. Utilization % LEDs

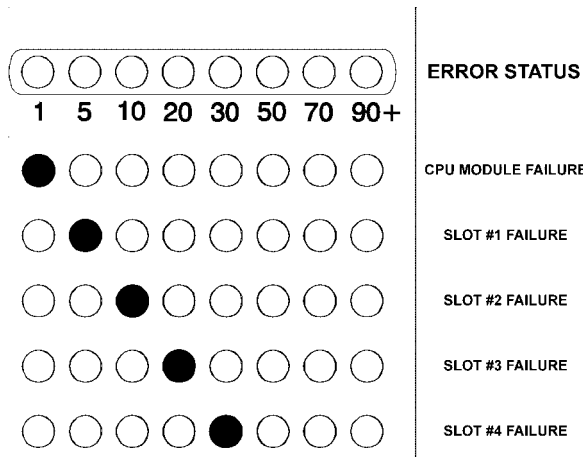


Figure 6-3. System Module Error Indicators

POST Error Display

Scrolling text, as shown in Figure 6-4 appears on the console when the POST is running. Figure 6-4 is only an example.

```
*****
*
*   Press <Ctrl>+C to Skip Memory Test
*
*****
* NPB Test/Initialize ..... DeviceNo = 5  PID = 0
* PSP number detect.....
Test PSP 0 Registers ...OK REV = D3 CNF = 4
Test PSP 1 Registers ...OK REV = D3 CNF = 5
Test PSP 2 Registers ...OK REV = D3 CNF = 6
Test PSP 3 Registers ...OK REV = D3 CNF = 7
* PSP memory read/write test .....
0x400  -- 0x4000  ... OK
0x8000 -- 0xffff  ... OK
0x10000 -- 0xfffff ... OK
0x100000 -- 0x140000 ... OK
0x140000 -- 0x180000 ... OK
0x180000 -- 0x1c0000 ... OK
0x1c0000 -- 0x1fffff ... OK
* PSP initial ..... OK
* Fast Ethernet Interface Unit detect.
PSP 0 :FEIU/GIU 0 test ..... OK REV=9 DeviceNo=1 PSPNo=0 Type=1
      :FEIU/GIU 1 test ..... OK REV=9 DeviceNo=3 PSPNo=0 Type=1
PSP 1 :FEIU/GIU 0 test ..... OK REV=9 DeviceNo=1 PSPNo=1 Type=1
      FEIU/GIU 1 test ..... OK REV=9 DeviceNo=3 PSPNo=1 Type=1
PSP 2 :FEIU/GIU 0 test ..... OK REV=9 DeviceNo=1 PSPNo=2 Type=1
      FEIU/GIU 1 test ..... OK REV=9 DeviceNo=3 PSPNo=2 Type=1
PSP 3 :FEIU/GIU 0 test ..... OK REV=9 DeviceNo=1 PSPNo=3 Type=1
      FEIU/GIU 1 test ..... OK REV=9 DeviceNo=3 PSPNo=3 Type=1
* PHY Register test ..... OK
* FEIU initialize ..... OK
* ARL number detect .....
  PSP 0 ..... Found Rev= 7 DeviceType = 4
  PSP 1 ..... Found Rev= 7 DeviceType = 4
  PSP 2 ..... Found Rev= 7 DeviceType = 4
  PSP 3 ..... Found Rev= 7 DeviceType = 4
*****
* Module type : 12 ports module
* Module type : 12 ports module
* Module type : 2 Ports FX
* Module type : 2 Ports FX
* Total port number : 28
* Total PSP number : 4
* Total FEIU number : 8
* Total ARL number : 4
* Total PSP memory size: 2
*****
* ARL memory read/write test .....
ARL 0 mem read/write test 0x0 -- 0x8000 ....OK
ARL 0 mem read/write test 0x80000 -- 0x801ff....OK
ARL 0 mem read/write test 0x80200 -- 0x88000....OK
ARL 1 mem read/write test 0x0 -- 0x8000 ....OK
ARL 1 mem read/write test 0x80000 -- 0x801ff....OK
ARL 1 mem read/write test 0x80200 -- 0x88000....OK
ARL 2 mem read/write test 0x0 -- 0x8000 ....OK
ARL 2 mem read/write test 0x80000 -- 0x801ff....OK
ARL 2 mem read/write test 0x80200 -- 0x88000....OK
ARL 3 mem read/write test 0x0 -- 0x8000 ....OK
ARL 3 mem read/write test 0x80000 -- 0x801ff....OK
ARL 3 mem read/write test 0x80200 -- 0x88000....OK
* ARL initial ..... OK
```

Figure 6-4. POST

System Module LEDs

Symptom	Action
Power LED off	Check the power cable to ensure that it is firmly connected to both the 8275 and the power outlet. Verify there is power coming from the power outlet.
Fault LED on or OK LED off	Connect the 8275 and a PC so that you can observe the POST and then reboot. See Chapter 4, "Console-Based Management," for information on Terminal Emulation. If any part of the POST fails or the problem continues, contact IBM Support.

Management Port

Symptom	Action
Menu panels incorrectly displayed	Check that the management port passed the POST. Check that the terminal emulator is correctly configured: 19 200 bps, 8 data bits, 1 stop bit, no parity, no flow control, and VT100 emulation.
Login menu does not display	Check that the terminal emulator is correctly configured: 19 200 bps, 8 data bits, 1 stop bit, no parity, no flow control, and VT100 emulation. Verify that the 8275 is in Local Console mode. Perform the command line "wake up" procedure by pressing Enter two or three times or press Ctrl-r to refresh the screen. Verify that you are using a null-modem cable or a serial cable with a null-modem adapter.

Telnet Session

Symptom	Action
Cannot Telnet into the 8275	<p>Check to make sure the IP Address, subnet mask and default gateway are configured correctly.</p> <p>Ensure that you have entered the IP address correctly.</p> <p>Ensure that you are not attempting more than one Telnet session at a time.</p>
Configuration file does not upload	Check to be sure the filename exists. If it does not, create a blank file with that filename.

Password

Symptom	Action
User has lost password	Contact a user who has read/write access to reset the password. If this fails, contact IBM Support.

Web-Based Management through a Modem

Symptom	Action
Unable to make a dial-up connection	<p>Check to make sure that the modem is configured correctly. The baud rate must be the same for both the modem and the management port.</p> <p>Check to make sure the IP address, subnet and default gateway are correct.</p>

Web Browser

Symptom	Action
Web browser cannot access the 8275	<p>Check that the 8275's IP address, subnet mask, and default gateway are correctly configured.</p> <p>Ensure that you entered the IP address of the 8275 correctly on your web browser.</p> <p>If you are using Microsoft Internet Explorer, see "Help for Using Internet Explorer."</p>

Help for Using Internet Explorer

In Microsoft Internet Explorer, using an IP address instead of a host name can cause problems related to Java classes. You can use either of the following methods to enable the Java communication in the 8275's panel.

Method 1:

Step 1. Construct a host entry in the host table of your local machine. Place the host table in file in `WINDOWS\hosts`.

For example, if the IP address of the 8275 is 255.67.16.98 and you select a unique host name, "switch8275," then you can edit the file as follows:

- 127.0.0.1 localhost
- 255.67.16.98 switch8275

Step 2. Type **switch8275** in the URL text field of IE 3.0 or IE 4.0 to get the HTML document and download the Java class.

Method 2:

Create the host entry in the host table of the one Domain Name Server and set up the Domain Name Server of your local machine.

Note: Method 1 is the recommended method.

Obtaining Software and Publications

You can obtain the latest level of code, MIBs, tips, and publications about the 8275 from the IBM Networking Technical Support Web site at:

<http://www.networking.ibm.com/support>

Obtaining Service

If you need assistance in troubleshooting or if you need service for your 8275, call IBM at **1 800 772-2227** in the United States and **1 800 426-7378 (1 800 IBM-SERV)** in Canada. See “Warranty Service” on page B-7 for information concerning service for the product.

Appendix A. Introduction to Virtual LANs and Spanning Tree Protocol

Virtual LANs

The purpose of a Virtual LAN (VLAN) is to increase the efficiency of your network by subdividing it. The following sections explain how VLANs work and how they can be implemented.

What are VLANs?

A VLAN is defined as a group of location and topology-independent devices that communicate as if they were on the same physical LAN. This means that LAN segments are not restricted by the hardware that physically connects them; the segments are defined by flexible user groups that you create using software.

With VLANs, you can define your network according to:

- Departmental groups—for example, you can have one VLAN for the Marketing department, another for the Finance department, and another for the Development department.
- Hierarchical groups—for example, you can have one VLAN for directors, another for managers, and another for general staff.
- Usage groups—for example, you can have one VLAN for users of e-mail and another VLAN for users of multimedia.

Benefits of VLANs

Implementing VLANs has the following three main advantages:

- It eases the change and movement of devices on IP networks.
- It helps to control broadcast traffic.
- It provides security.

How VLANs Ease Change and Movement

In traditional IP networks, network administrators spend much of their time dealing with moves and changes. If you move to a different IP subnet, the IP address of each device must be updated manually.

Using a VLAN setup, if a device in VLAN 1 is moved to a port in another part of the network, you only need to specify that the new port is in VLAN 1.

How VLANs Control Broadcast Traffic

In traditional networks, congestion can be caused by broadcast traffic that is directed to all network devices whether they require it or not. VLANs increase the efficiency of your network because each VLAN can be set up to contain only those devices that need to communicate with each other.

How VLANs Provide Security

When using VLANs with the 8275, packets received on a port configured in a given VLAN will normally only be sent to other ports within that VLAN. This prevents traffic within a VLAN workgroup from being seen by other VLAN workgroups. An exception to this is if the MAC address that a packet is sent to has been learned by a port on another VLAN (for example, a PC was attached to a port in one VLAN and then moved to a port in another VLAN). In this case, the packets will also be forwarded to the port in the other VLAN that has learned the MAC address. However, in normal operation, the MAC addresses are learned only by ports within a given VLAN and the traffic stays local to that VLAN.

VLANs and the 8275

The 8275 supports eight VLANs. Each port can belong to more than one VLAN. The default is all ports belong to one VLAN.

Spanning Tree Protocol

Using the Spanning Tree Protocol (STP) function makes your network more fault-tolerant. The following sections explain more about STP and the STP features supported by the 8275.

What is STP?

STP is part of the 802.1D bridge specification defined by the IEEE. To explain STP more effectively, the 8275 is shown as a bridge in Figure A-1 on page A-3.

STP is a bridge-based system for providing fault tolerance on networks. STP allows you to implement parallel paths for network traffic and ensure that:

- Redundant paths are disabled when the main paths are operational.
- Redundant paths are enabled if the main paths fail.

For example, Figure A-1 and Figure A-2 on page A-3 show a network containing three LAN segments separated by three bridges. Each segment can communicate with the others using two paths. The configuration creates loops that cause the network to overload; however, STP allows you to have this configuration because it detects duplicate paths and disables them. If the primary path goes down, STP will reactivate the redundant path.

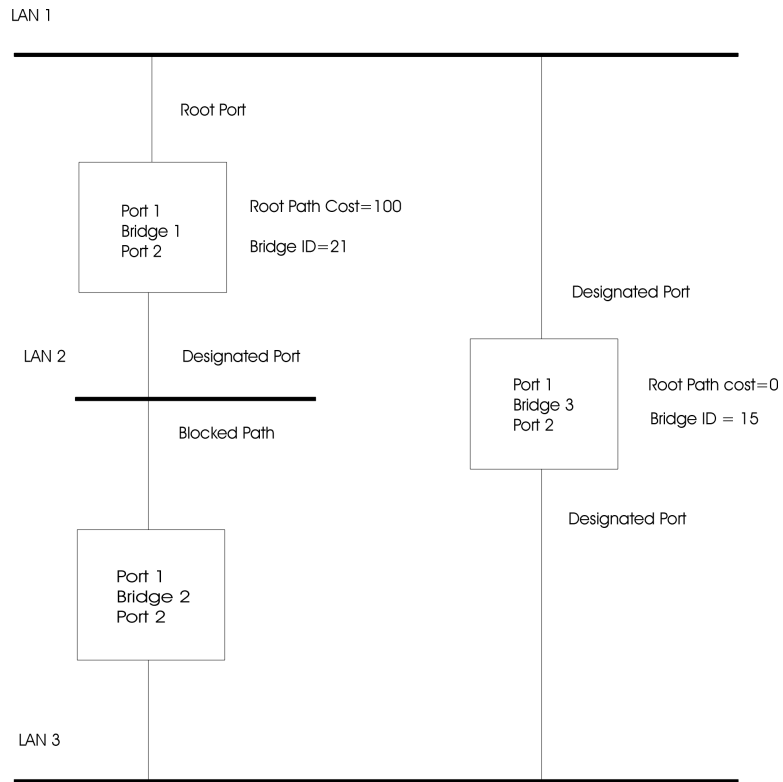


Figure A-1. Before Applying the STA Rules

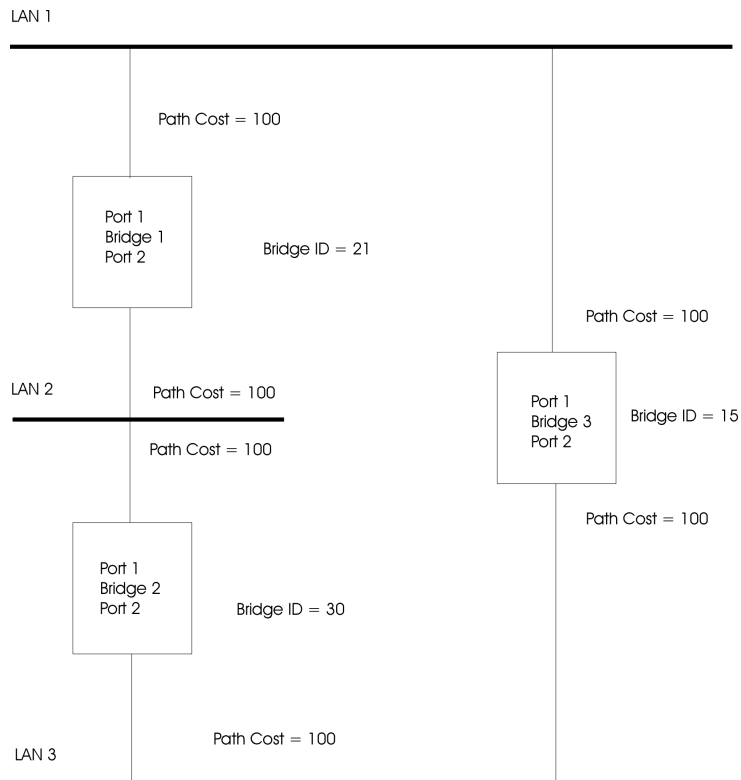


Figure A-2. After Applying the STA Rules

How STP Works

Initially, the STP system has the following requirements before it can configure the network.

The network must be able to communicate between all bridges. This communication is carried using Bridge Protocol Data Units (BPDUs), which are transmitted in packets with a known multicast address.

One of the bridges must be the root bridge, a central point from which the network is configured.

The root bridge is selected because of it has the lowest bridge identifier value. All other bridges in the network have a root port. This is the port nearest to the root bridge, and it is used for receiving the BPDUs initiated by the root bridge.

STP Reconfiguration

In the event of a network failure, such as a segment going down, the STP system reconfigures the network to adjust for the changes. If the topology of your network changes, the first bridge to detect the change sends out an SNMP Trap.

Appendix B. Notices, Trademarks, and Warranty

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Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone 1-919-543-2193

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Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336).

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Corporation. Deutschland Informationssysteme GmbH, 70547 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse A.

EN 55022 Klasse A Geräte müssen mit folgendem Warhinweis versehen werden:

"Warnung: dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen."

EN 50082-1 Hinweis

"Wird dieses Gerät in eine Umgebung betrieben (wie in EN 50082-2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern."

Anmerkung

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

European Norm (EN) Statement for Shielded Cables—Model 8275-326 Only

This product is in conformity with the protection requirements of EU Council Directive 89/336. EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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Zulassungsbescheinigung Laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336)950.

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Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

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Models 318, 322, and 326

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Appendix C. Cable Pinout Diagrams

Straight-Through 10BASE-T/100BASE-TX Cables

10BASE-T/100BASE-TX connections to devices such as workstations and servers require straight-through cables, as shown in Figure C-1 and Figure C-2 for UTP and Figure C-3 on page C-2 for STP.

Two standards are shown for wiring UTP connectors, T568-A and T568-B. The only difference between them is in the color of the insulation around the wires.

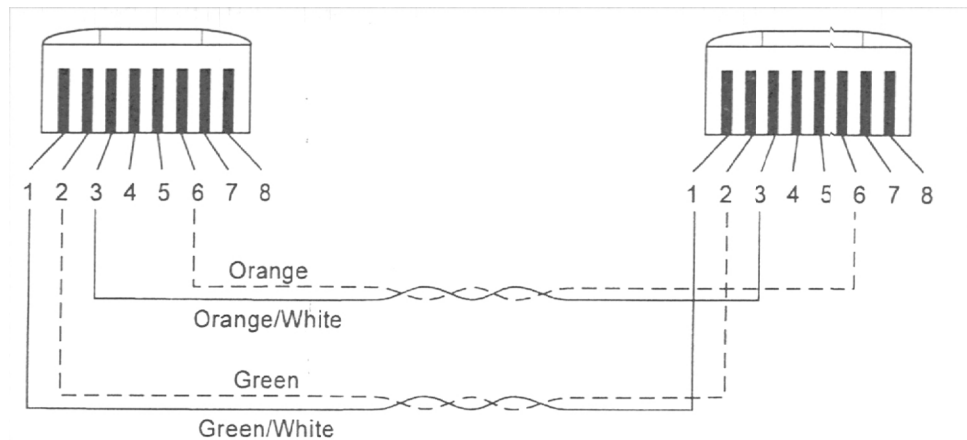


Figure C-1. Straight-Through UTP Cable (RJ-45 to RJ-45), T568A

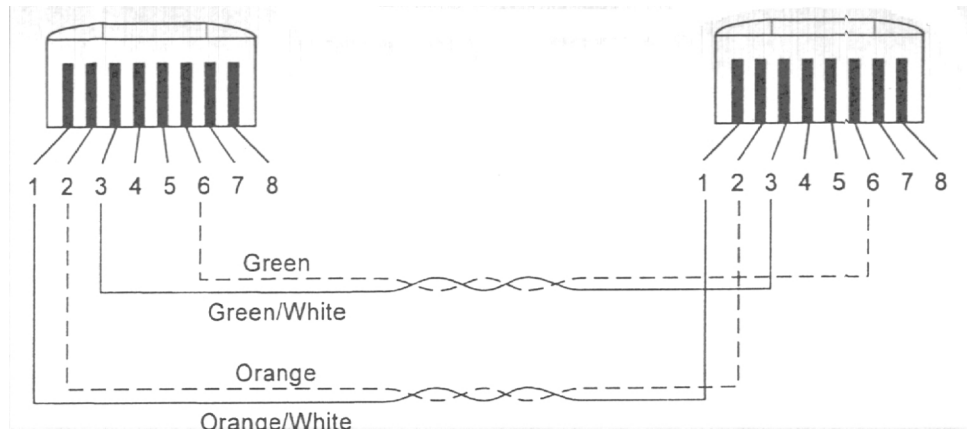


Figure C-2. Straight-Through UTP Cable (RJ-45 to RJ-45), T568B

Straight-Through 10BASE-T/100BASE-TX Cables for STP

RJ-45 Pins	IBM Cabling System Data Connector	Color Code
1	←————→	Red
2	←————→	Green
3	←————→	Black
6	←————→	Orange

Figure C-3. Straight-Through STP Cable (RJ-45 to IBM Data Connector)

Crossover 10BASE-T/100BASE-TX Cables

Crossover cables are typically required when making 10BASE-T/100BASE-TX connections to other hubs. The 8275-324 does not require crossover cables, but if you need them, Figure C-4 and Figure C-5 show you how to wire the connectors for UTP and Figure C-6 on page C-3 shows you how to wire the connectors for STP.

Two standards are shown for wiring UTP connectors, T568-A and T568-B. The only difference between them is in the color of the insulation around the wires.

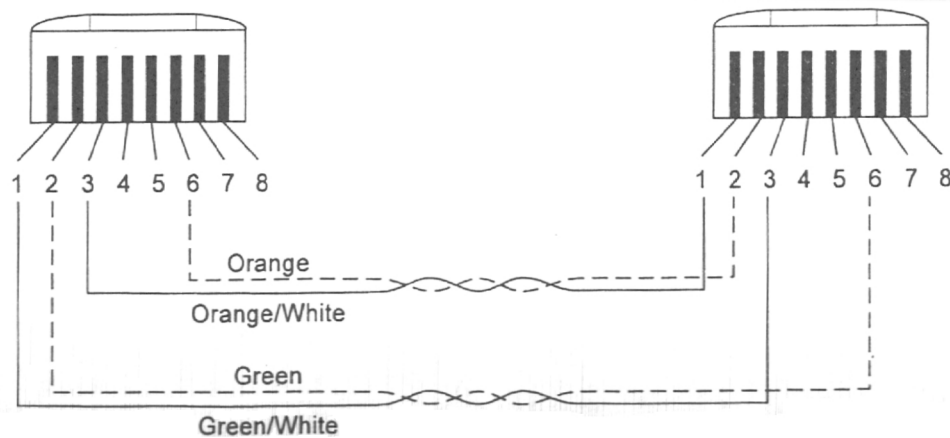


Figure C-4. Crossover UTP Cable (RJ-45 to RJ-45), T568-A

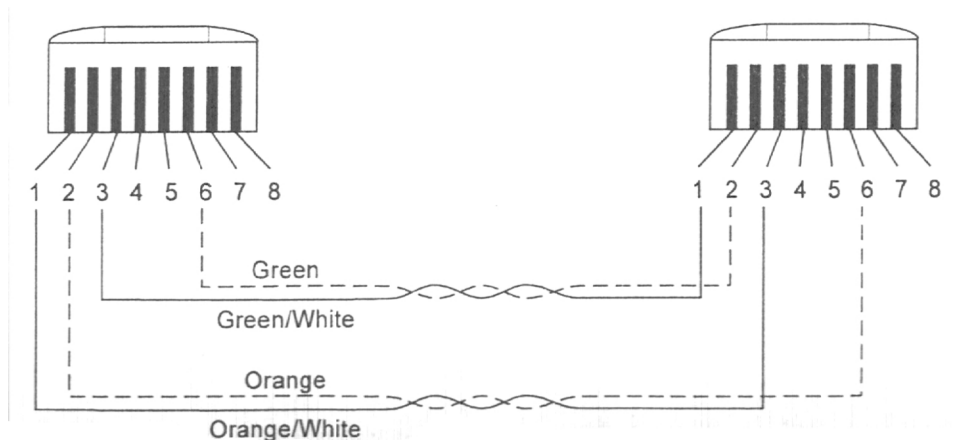


Figure C-5. Crossover UTP Cable (RJ-45 to RJ-45), T568-B

Crossover 10BASE-T/100BASE-TX Cables for STP

RJ-45 Pins	IBM Cabling System Data Connector Color Code
1	Orange
2	Black
3	Green
6	Red

Figure C-6. Crossover STP Cable (RJ-45 to IBM Data Connector)

Null-Modem Cable

A null modem cable should be used for a direct connection from a PC serial port to the 8275 Management Port.

Switch's 9-Pin Management Port	PC's 9-Pin COM Port
1 DCD	1 DCD
2 RXD	2 RXD
3 TXD	3 TXD
4 DTR	4 DTR
5 SGND	5 SGND
6 DSR	6 DSR
7 RTS	7 RTS
8 CTS	8 CTS
9 RI	9 RI

Figure C-7. Null-Modem Cable Connection

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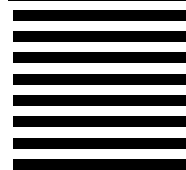
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