8275 Model 416 High Performance Ethernet
Workgroup Switch

Installation Guide

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Workgroup Switch

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Note

Before using this information and the product it supports, be sure to read “Appendix A. Safety Information” on page 19 and “Appendix B. Notices” on page 25.

First Edition (May 1999)

This edition applies to Release 1.0 of the IBM 8275 Model 416 High Performance Ethernet Workgroup Switch.

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About This Guide

This guide describes how to unpack, set up, and attach cables to the IBM 8275 Model 416 High Performance Ethernet Workgroup Switch, and to ensure that the hardware is operating correctly.

Who Should Use This Guide

This guide is intended for the person responsible for installing the 8275-416. It is assumed that this person is familiar with installing networking hardware on desktops or shelves or mounting it in equipment racks, as well as handling and attaching Ethernet cables and power cords.

How to Proceed

1. Read “Appendix A. Safety Information” on page 19 and “Appendix B. Notices” on page 25 before installing the 8275-416.
2. Go to Chapter 1 and read “Before You Begin” for the information that you will require before beginning the installation.
3. Go to “Detailed Installation Instructions” on page 3 and follow the detailed step-by-step instructions. The following summary lists the installation steps you will follow:
   - Step 1. Unpack and verify the contents.
   - Step 2. Read the safety instructions.
   - Step 3. Familiarize yourself with the front panel.
   - Step 4. Position the rack-mounting brackets.
   - Step 5. Install optional feature modules.
   - Step 6. Install the unit on a desktop or shelf.
   - Step 7. Install the unit in a rack.
   - Step 8. Attach the cables.
   - Step 9. Apply power to the unit and verify correct operation.
   - Step 10. Record information.
   - Step 11. Configure IP information.
   - Step 12. Contact the network administrator.

Accessing the Softcopy Library

Softcopy versions of 8275-416 product documentation are available from either the Documentation CD-ROM (shipped with the product) or the IBM Networking Products Web site. To access product documentation shipped on the CD-ROM, follow the instructions provided on the CD-ROM. Visit the following Web site to access the 8275-416 documentation:

`http://www.networking.ibm.com/did/8275bks.html`

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Online Support

To obtain support information, including technical tips, current product information, and code updates and fixes for the 8275-416, visit the IBM Networking Technical Support page at:

`http://www.networking.ibm.com/support`

You can also subscribe to receive e-mail notifications about code updates, tips, and FAQs for your 8275-416.

Obtaining Service

If you need assistance in troubleshooting or you need service for your 8275-416, call:

- **1-800-772-2227** in the United States
- **1-800-426-7378 (1-800-IBM-SERV)** in Canada.
- Your place of purchase in other countries.

Refer to your IBM Warranty for information concerning service for the product.

Chapter 1. Installing the 8275-416

This chapter explains the information that you require before you begin installation and provides detailed installation instructions.

Before You Begin

1. Make sure that you have the following information. If you are not the network administrator, request the information from your network administrator:
   - Type and quantity of cables that will be attached to the 8275-416.
   - IP information that will be required for configuring the 8275-416.
   - Planned location of the 8275-416 and identities of the devices that will be attached to it.
2. Review the following requirements for cabling and installing.

Cabling Requirements

Ethernet cables are not provided and must be separately purchased. You can order them through your IBM representative.

The following table shows the various 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 856-A or CSA T529 standards.

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-micron multimode fiber-optic cabling	2 km (6561 ft) at full duplex; 412 m (1352 ft) at half duplex

10BASE-T and 100BASE-TX

10BASE-T connections are MDX ports and operate correctly with standard Category 3, 4, or 5, 100–ohm UTP or STP cable and connecting hardware, as specified in the ANSI/TIA/EIA 856-A or CSA T529 standards when connected to MDI-type ports. When connecting to other MDX ports, such as ports of other 8275-416 switches, you must use crossover cables.

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

Do not use telephone extension cables in 10BASE-T and 100BASE-TX networks. The wire pairs in those cables are not twisted and the cables do not meet other requirements for use in an Ethernet network.

100BASE-FX

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

Serial Port

The serial port is a standard DB-9 male connector that provides an EIA 232 serial interface (sometimes referred to as the out-of-band management port).

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Installation Options

There are two placement options for setting up the 8275-416: desktop or shelf, or rack-mounted installation. Follow these guidelines for any of these options:

- Ensure that the surface supports the weight of the unit.
- Locate the unit within 1.8 m (6 ft) of a power source.
- Ensure that there is at least 15.25 mm (6 in.) clearance on all sides of the unit to allow adequate ventilation.

Rack-Mounting

If you choose rack-mounting, you must provide the rack and rack-mounting screws. They are not provided with the 8275-416.

You can use any EIA standard 19-inch rack. The rack can be open or closed. However, if you choose a closed rack, you must make sure that air flows freely around the 8275-416. To let enough air pass, you must remove or modify covers on the front of the rack that, otherwise, would not let air reach the 8275-416. Similarly, you must not use unvented rear rack covers that would not let air exit the 8275-416 or would cause back pressure to build up from several machines.

Desktop or Shelf-Mounting

If you are mounting the 8275-416 on a desktop or shelf, take note of its dimensions, which are as follows:

Height
63 mm (2.48 in.) 1.5 EIA rack units

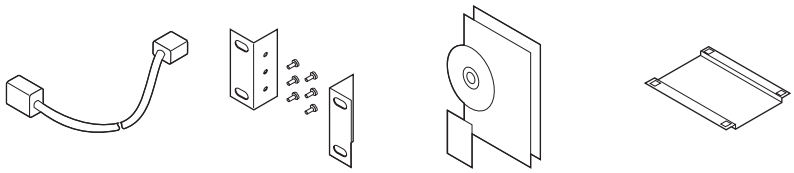
Width 440 mm (17.16 in.)

Depth 356 mm (14 in.)

Weight
6 kg (13 lb)

Detailed Installation Instructions

Step 1. Unpack and verify contents



Power Cord | Mounting Brackets and Screws | Publication Kit and CD-ROM | Card Tray

Verify that the following items are included:

Hardware:

- 8275-416
- Power cord
- Package of 2 rack mounting brackets and screws for attaching them to the 8275-416
- Plastic card tray with adhesive mounting pads (for storing the *Quick Reference card*)
- Depending on your order, you will receive (packaged and shipped separately) one, two, or a combination of the following feature modules:
  - 8-Port 10/100BASE-TX Feature Module, P/N 35L2355
  - 8-Port 100BASE-FX Feature Module, P/N 35L2356

Documentation:

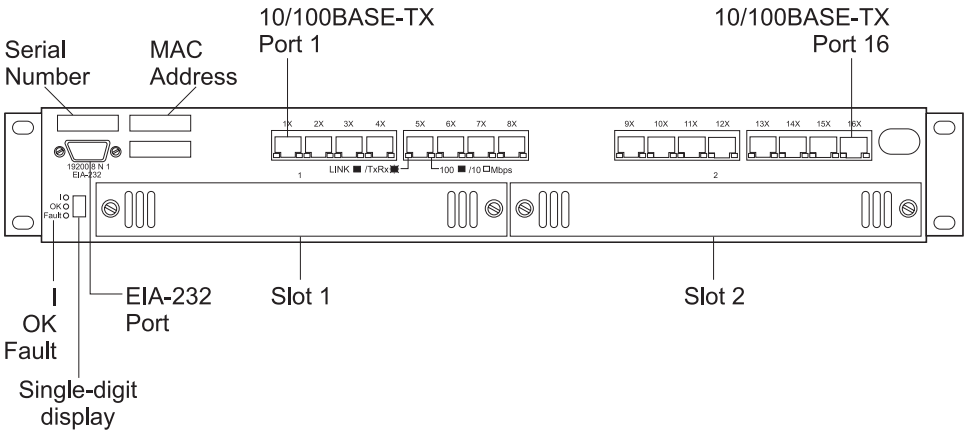
In addition to this document, the Publications Kit should include the following items:

- *CAUTION: Safety Information-Read This First* booklet, SD21-0030
- A *Quick Reference card*
- Documentation CD-ROM

Step 2. Read the Safety Instructions

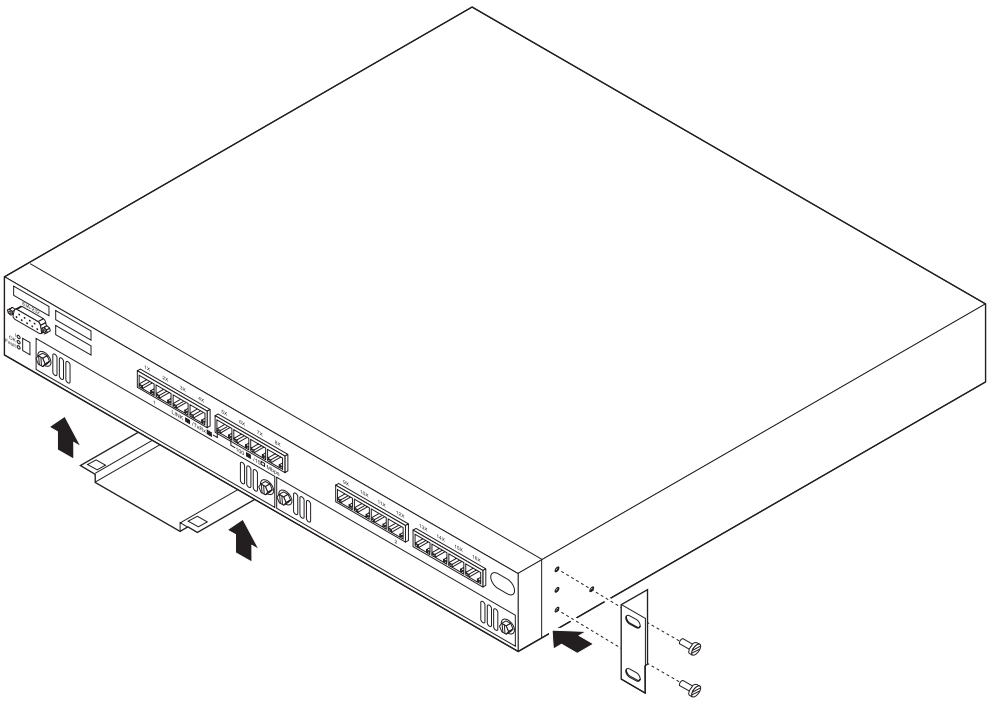
Before you begin installing your 8275-416, be sure to read “Appendix A. Safety Information” on page 19, and the *CAUTION: Safety Information-Read This First booklet*, SD21-0030

Step 3. Familiarize yourself with the front panel



Step 4. Position the rack-mounting brackets and card tray

1. If you are rack-mounting the 8275-416, install the rack-mounting brackets as shown in the following figure. The 8275-416 is shipped without the brackets installed. If you are installing the unit on a desktop or shelf you do not need to install the brackets.

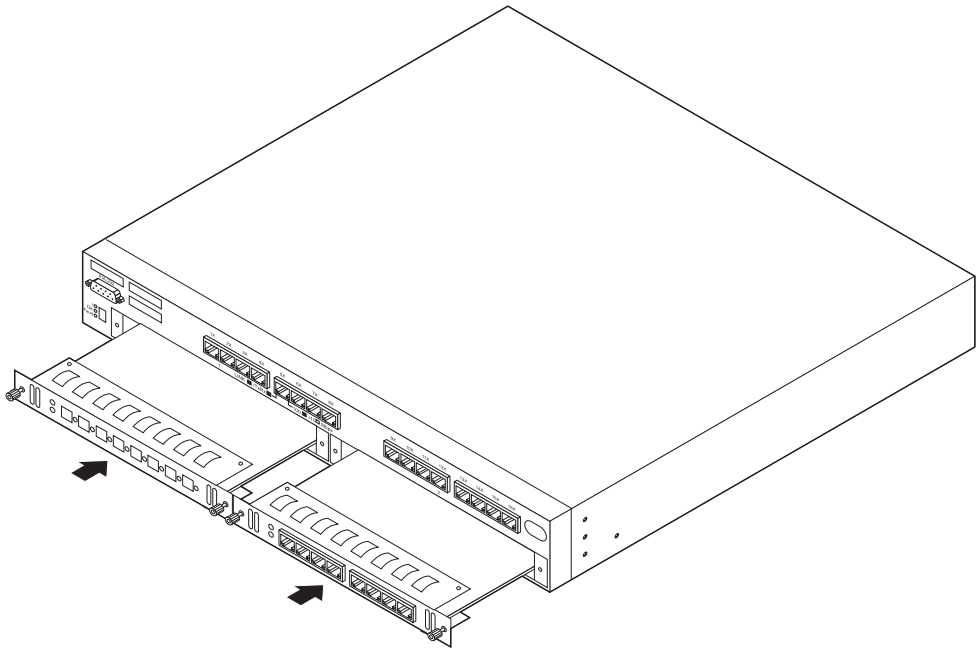


2. Install the adhesive pads at the corners of the card tray.
3. Position the card tray in the center of the underside of the 8275-416 (as shown) with the open end of the card tray flush with the front edge of the unit.
4. Place the *Quick Reference* card in the tray for safe keeping.

Step 5. Install optional feature modules

These feature modules are available and are shipped separately:

- 8-Port 10/100BASE-TX, P/N 35L2355
- 8-Port 100BASE-FX Multimode Fiber, P/N 35L2356



Obtain your feature modules and then perform the following steps to initially install the feature modules:

1. Remove the screws from the blank slot cover with a screwdriver.
2. Remove the feature module from its shipping container. It should still be in its antistatic bag. **Attention:** These modules can be damaged by static electricity discharge. Each feature module is shipped in an antistatic bag to prevent such damage. An electrostatic discharge (ESD) protection device must be used when handling these feature modules. Take the following precautions:
   - Do not remove the feature module from the antistatic bag until you are ready to install it.
   - With the feature module still in the antistatic bag, touch the metal frame of the 8275-416.
   - Hold the feature module by edges of the metal faceplate or thumbscrews. Avoid touching the circuit card, components, solder joints, or pins.
   - Handle the feature module carefully in order to prevent permanent damage.
3. Holding the feature card as recommended, remove it from the antistatic bag. Noting the card-edge grooves at each edge of the slot, place the edges of the card into the grooves and gently and firmly seat the card into its connector. Tighten the thumbscrews to secure the feature card in place.

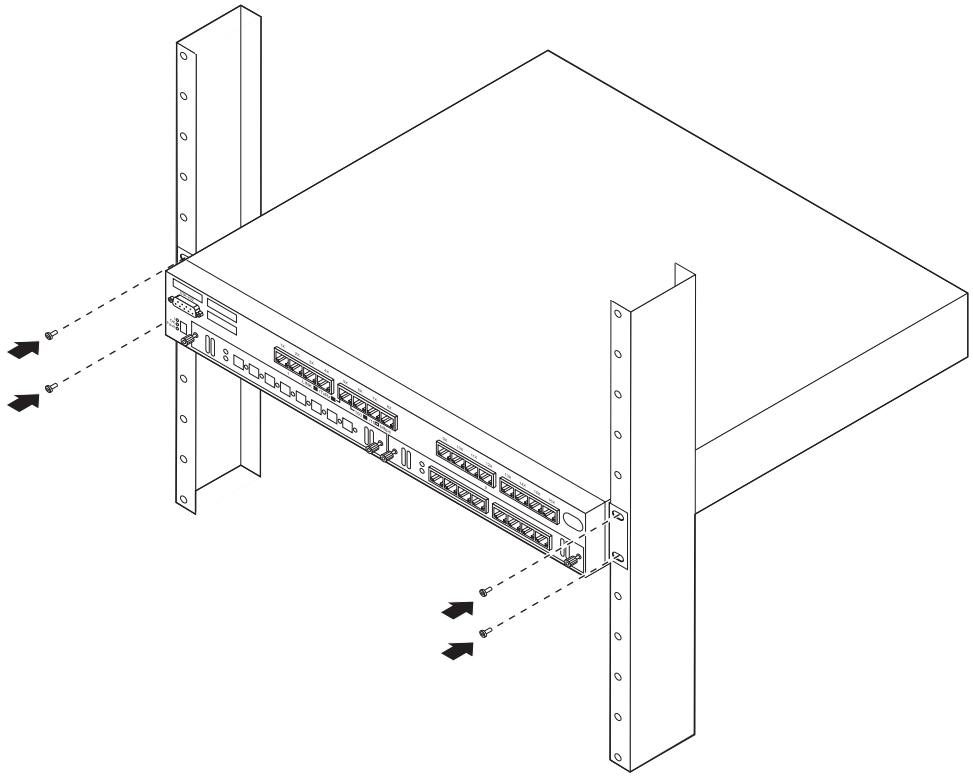
If you have selected to mount your 8275-416 on a desktop or shelf, go to Step 6. If you have selected to mount your 8275-416 in a 19-inch equipment rack, go to Step 7.

Step 6. Install unit on desktop or shelf

If you are installing the 8275-416 on a desktop or shelf, place it in the required location as instructed by your network administrator and go to Step 8.

Step 7. Install unit in rack

If you are installing the 8275-416, position it in the 19-inch rack, supporting it so it does not fall or otherwise damage other devices in the rack. Tighten the rack mounting screws. Continue with Step 8.



Step 8. Attach cables

Note: Correct installation is a condition for compliance with the regulations of electromagnetic interference (See “Appendix B. Notices” on page 25)

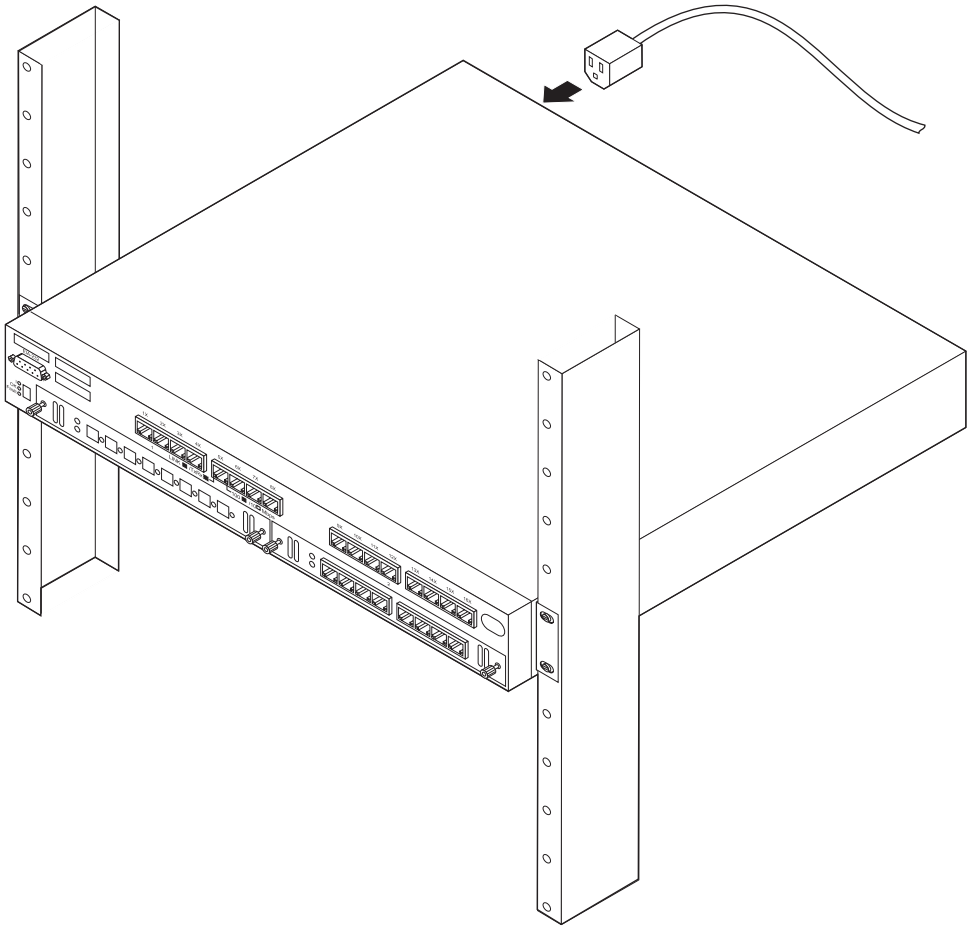
Connect the Ethernet cables as instructed by your network administrator. Some cable handling tips to observe are:

- Avoid stretching or bending cables.
- Avoid routing cables near potential 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.

Step 9. Apply power to unit and verify correct operation

1. Connect the power cord to the ac power cord plug on the back of the unit.
2. Connect the power cord to a power source, wait approximately 30 seconds for diagnostics to run, and verify that:
   - The Power On LED labeled I (at the left of the single-digit display) is ON.
   - The OK LED (at the left of the single-digit display) is ON.

See “Chapter 2. Troubleshooting” on page 13 if the status of the LEDs.



Step 10. Record information

Transfer all relevant information that your network administrator provided you about cable connections, people to contact, and their telephone numbers onto the *Quick Reference* card, and then store it in the card slot on the underside of the unit.

Hardware setup and installation is complete.

Step 11. Configure IP information for your 8275-416

In this step you will be assigning to your 8275-416 an IP address for your network, and verifying that it operates with the default configuration. After hardware installation, the switch must have its IP address configured to be fully operational in your network with the factory-default configuration. Your network administrator might want to change some of the defaults at a later time.

Although the 8275-416 can be accessed through in-band or out-of-band connectivity, this step instructs you how to access your newly installed 8275-416 through the out-of-band method. A brief introduction to in-band connectivity follows, but for a complete discussion about connectivity and configuration, refer to the *8275 Model 416 High Performance Ethernet Workgroup Switch User's Guide* (on the CD-ROM).

In-Band Connectivity

In-band connectivity allows access to the 8275-416 from a remote workstation using your Ethernet network as shown in Figure 1. In order to use in-band connectivity, your 8275-416 must be configured with IP information (IP address, subnet mask, and default gateway).

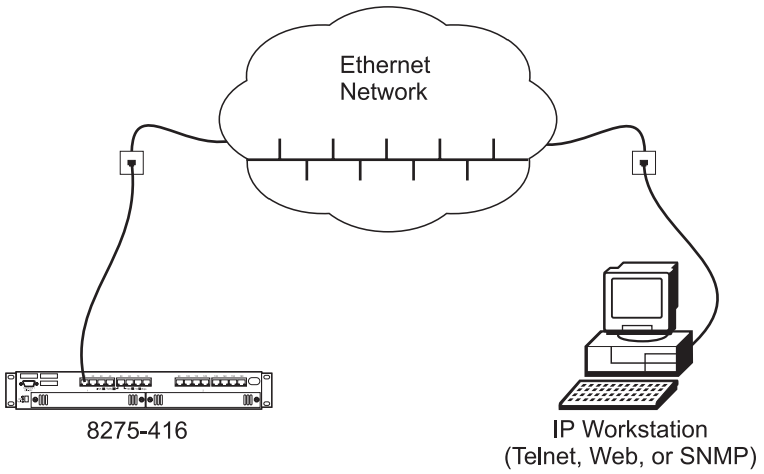


Figure 1. In-Band Connectivity — Ethernet Network

IP information can be initially assigned through:

- DHCP or BootP
- Terminal interface through the EIA 232 serial port (to configure the IP information)

If you are using DHCP or BootP, the DHCP or BootP server must be configured with the appropriate information for the 8275-416.

BootP and DHCP are user datagram protocol/Internet protocol (UDP/IP)-based protocols that allow the 8275-416 to obtain IP information from a BootP or DHCP server. Your 8275-416 can be configured from remote locations using BootP.

If you are not using BootP or DHCP, set the Network Configuration Protocol with a value of *None* to reduce network traffic.

When you use DHCP or BootP to get the 8275-416's IP information, you configure the Network Configuration Protocol by selecting **Server Configuration Menu** from the Management Menu in the Terminal interface, and by defining one of the following values:

BootP/Static DHCP (the default)
When selected, the 8275-416 periodically sends requests to a BootP or DHCP server until a response is received.

None When selected, you must manually configure the 8275-416 with the appropriate IP information.

To configure the IP information using the terminal interface, select **Network Connectivity Configuration Menu** from the Management Menu. You must configure the following IP information to have in-band connectivity to 8275-416:

IP Address
Unique IP address of your 8275-416. Each IP parameter is made up of four decimal numbers. The numbers range from 0 to 255. The default for all IP parameters are *zeros* (that is, 0.0.0.0).

Subnet Mask
Specifies the subnet mask for the LAN.

Default Gateway
If the 8275-416 is a node outside the IP range of the LAN.

A locally administered MAC address for the 8275-416 is an additional parameter that you can configure for in-band connectivity. The burned-in MAC address is the default MAC address used for in-band connectivity. To configure a locally administered MAC address, select **Network Connectivity Configuration Menu** from the Management Menu, and specify the locally administered MAC address.

You must apply these changes for them to be effective. To do so:

1. Press **F2** to go to the Command bar.
2. Move the cursor to **APPLY** and press **Enter**.

To enable these changes to be retained across a reset of the 8275-416, you must save these changes by using one of the following procedures:

- Press the **F4** (Save) key, or
- From the Main Menu, select **System Utilities Menu**, and then from the System Utilities Menu, select **Save Applied Changes**.

Your 8275-416 is now configured with its correct IP address. Your 8275-416 is now ready for in-band connectivity over the network.

Out-of-Band Connectivity

Out-of-band connectivity lets you access your 8275-416 through the serial port (EIA 232). It can be either through a locally attached terminal (Figure 2 on page 10) or through a remotely attached terminal (Figure 3 on page 10).

The following instructions are for out-of-band connectivity using a *locally attached terminal* (running a VT100 emulation application) to configure the IP information.

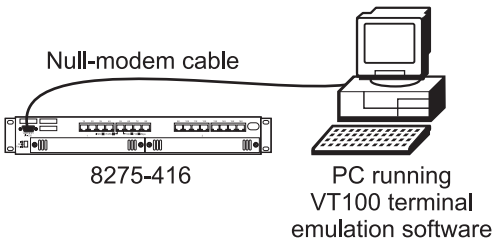


Figure 2. Out-of-Band Connectivity — Locally Attached Terminal

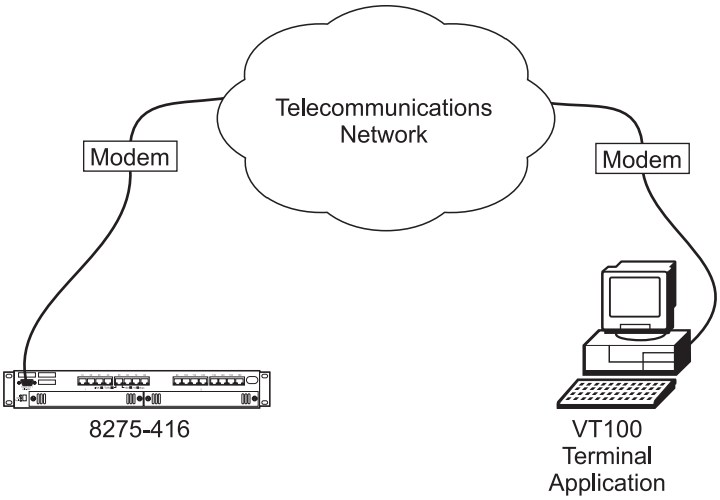


Figure 3. Out-of-Band Connectivity — Remotely Attached Terminal

1. Make your connections as appropriate (local or remote attach).

   For Local Attach

   Attach one end of a null-modem serial cable to the EIA 232 port of the 8275-416 and the other end to the COM port of your terminal or workstation (see “Appendix C. Cable Pinout Diagrams” on page 31). Make the connections as shown in Figure 2.

   For Remote Attach

   Attach one of the standard serial cable to the EIA 232 port of the 8275-416 and the other end to your modem. Make the connections as shown in Figure 3.

2. The terminal must use a VT100 terminal emulator program. Switch on your terminal. Bring up the VT100 application. Configure the COM port of your attached terminal as follows:
   - 19 200 baud
   - 8 data bits
   - 1 stop bit
   - No parity
   - Hardware flow control OFF
3. The Log In screen is displayed first when the terminal interface is initialized. You must enter an approved user name and password to log in. The default is *admin* for the user name and the password is blank (null password).

4. Your 8275-416 is now installed and loaded with default configuration.

Installation is complete.

Step 12. Contact network administrator

Inform your network administrator that hardware installation is complete, that the IP information has been configured, and that the 8275-416 is operating correctly.

Chapter 2. Troubleshooting

This chapter describes how to troubleshoot problems and to obtain service for your 8275-416. The 8275-416 has been designed for ease in troubleshooting problems through the use of LEDs and a single-digit display. The status of LEDs gives a clear indication as to whether there is power to the component and if it is operating correctly. There are 8275-416 LEDs, Port LEDs, and Feature Module LEDs.

Troubleshooting Procedure

Use the following procedure to isolate any problem that occurs:

1. Check the status of the LEDs as the unit is being powered on. Refer to the tables following in this chapter.
2. Check the power cord (where it is plugged into the 8275-416 and where it is plugged into the power source.
3. Determine if the fans are running. If they are not running, test the ac power outlet.
4. Remove and reattach all cables. Check all cables, connectors, and ports for damage.
5. Verify that the configuration settings are correct.
6. Verify that the power-on self-test (POST) runs correctly.

Preparing to Call the IBM Product Help Center

Gather the following information:

- Product model and serial number
- Proof of purchase
- Status of LEDs (all LEDs on the front panel)
- Description of problem
- Hardware and software configuration
- Any relevant symptoms (such as, trap information)

If possible, be near your 8275-416. The technical support representative might want to walk you through a procedure during the call.

Placing a Call to the IBM Product Help Center

In the U.S.A., call the IBM PC Help Center at: **1-800-772-2227**

In Canada, call HelpPC at: **1-800-426-7378 (1-800-IBM-SERV)**

Outside the U.S.A. and Canada, contact your place of purchase or your local IBM branch office.

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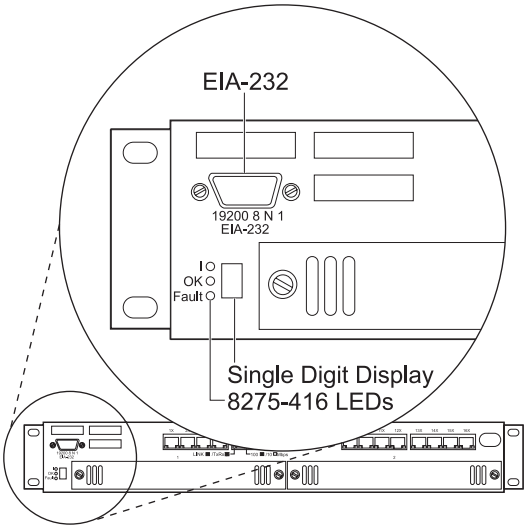
LED Status for the 8275-416

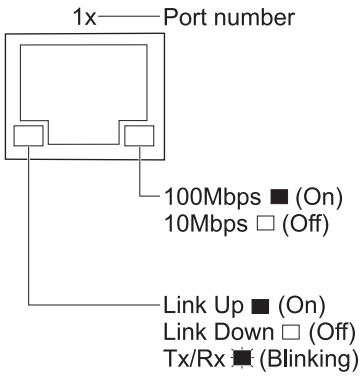


The unit LEDs are located at the left side of the 8275-416 when facing the front panel; their states are described in the following table.

LED	Color	State	Explanation
I	Green	ON	There is power to the 8275-416 and the power supply is OK.
		OFF	The is no power is present, or there is a power supply failure.
OK	Green	ON	The 8275-416 is operational.
		OFF	The 8275-416 is not operational.
		Blinking	Configuration file or Operational code file transfer is in process. Do not power-off or reset the 8275-416.
Fault	Yellow	ON	There is a hardware fault.
		OFF	There is no hardware fault.
		Blinking	Diagnostics is in process.

LED Status for the Base 10/100BASE-TX Port LEDs

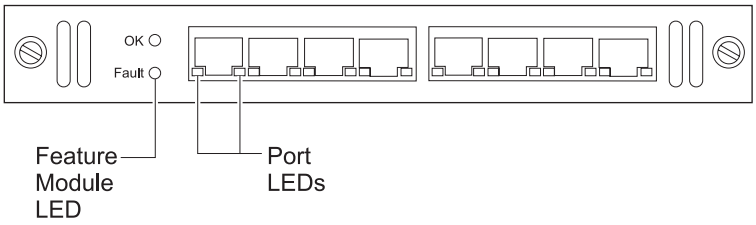
The port LEDs are located on each of the base 10/100BASE-TX ports (ports 1x-16x) on the 8275-416.



LED	Color	State	Explanation
Right Ethernet Port LED	Green	ON	Indicates a 100-Mbps port.
		OFF	Indicates a 10-Mbps port.
Left Ethernet Port LED	Green	ON	Link is up.
		OFF	Link is down.
		Blinking	Transmitting (Tx) and Receiving (Rx) traffic.

LED Status for 10/100BASE-TX Feature Module

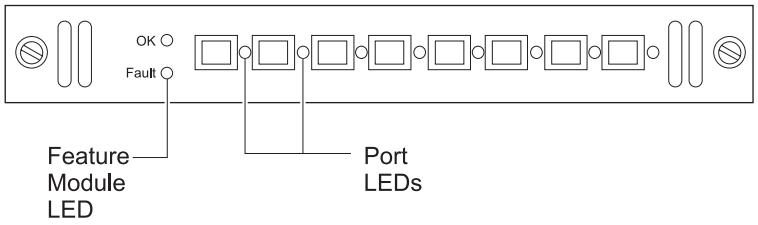
8-Port 10/100BASE-TX Feature Module



LED	Color	State	Explanation
OK	Green	ON	There is power to feature module.
		OFF	There is no power to feature module, no power to the 8275-416, or the module has failed.
Fault	Yellow	ON	There is a module fault.
		OFF	There is no module fault.
Right Ethernet Port LED	Green	ON	Indicates a 100-Mbps port.
		OFF	Indicates a 10-Mbps port.
Left Ethernet Port LED	Green	ON	Link is up.
		OFF	Link is down.
		Blinking	Transmitting (Tx) and Receiving (Rx) traffic.

LED Status for 100BASE-FX Feature Module

8-Port 100BASE-FX Feature Module



LED	Color	State	Explanation
OK	Green	ON	There is power to the feature module.
		OFF	There is no power to the feature module, no power to the 8275-416, or the module has failed.
Fault	Yellow	ON	There is a module fault.
		OFF	There is no module fault.
Port LED	Green	ON	Link is up.
		OFF	Link is down.
		Blinking	Transmitting (Tx) and receiving (Rx) traffic.

Appendix A. 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.

Gevaar: Voordat 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 electrische apparatuur op een veilige manier moet bekabelen en aansluiten.

Danger: Avant de procéder à l'installation de ce produit, lisez d'abord les consignes de sécurité dans la brochure *ATTENTION: Consignes de sécurité—A lire au préalable,* SD21-0030. Cette brochure décrit les procédures pour câbler et connecter les appareils électriques en toute sécurité.

Perigo: Antes de começar a instalar este produto, leia as informações de segurança contidas em *Cuidado: Informações Sobre Segurança—Leia Isto 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。

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Opasnost: Prije nego sto 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 priključrivanje kabela i priključivanje na električno napajanje.

Upozornění: než zahájíte instalaci tohoto produktu, přečtěte si nejprve bezpečnostní informace v pokynech „Bezpečnostní informace“ č. 21-0030. 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.

Gevaar 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 appratuur.

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

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.

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: Mielôtt megkezdi a berendezés üzembe helyezését, olvassa el a *Caution: Safety Information— Read This First,* SD21-0030 könyvecskében leírt biztonsági információkat. Ez a könyv leírja, milyen 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 инсталлировать этот продукт, прочтите Инструкцию по технике безопасности в документе "Внимание: Инструкция по технике безопасности -- Прочесть 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: Bezpeč osté predpisy - Prečítaj ako prvé, SD21 0030. V tejto brožúrke sú opísané bezpečnosté postupy pre pripojenie elektrických zariadení.

Pozor: Preden zaènete z instalacijo tega produkta preberite poglavje: 'Opozorilo: Informacije o varnem rokovanju-preberi 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。

Appendix B. Notices

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Electronic Emission Notices

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the

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instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

European Norm (EN) Statement

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.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class A equipment were derived from commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

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

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richlinie 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 Deutschland Informationssysteme GmbH, 70548 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 Warnhinweis 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 einer industriellen 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.

Japanese Voluntary Control Council for Interference (VCCI) Statement

This product is a Class A Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Korean Communications Statement

Please note that this device has been certified for business purpose with regard to electromagnetic interference. If you find this is not suitable for your use, you may exchange it for one of residential use.

Taiwanese Class A Warning Statement

警告使用者:
這是甲類的資訊產品，在
居住的環境中使用時，可
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種情況下，使用者會被要
求採取某些適當的對策。

Class 1 Laser Statement

Class 1 Laser Product

Laser Klasse 1

Laser Klass 1

Luokan 1 Laserlaite

Appareil À Laser de Classe 1

To IEC 825-1:1993

Class 1 LED Statement

Class 1 LED Product

LED Klasse 1

LED Klass 1

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To IEC 825-1:1993

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Appendix C. Cable Pinout Diagrams

This appendix specifies Ethernet and null-modem cable pinouts.

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

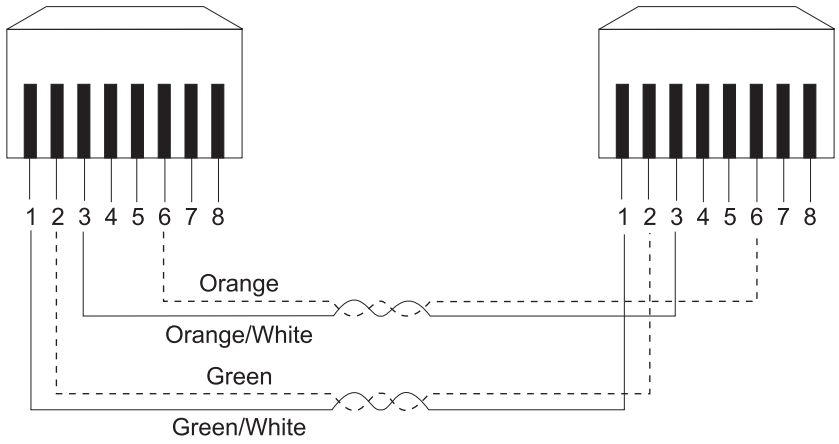

Figure 4. Straight-Through UTP Cable (RJ-45 to RJ-45), T568A

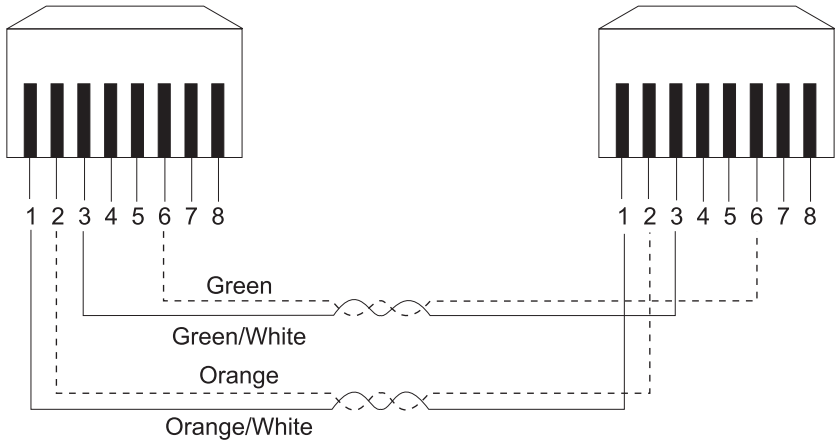

Figure 5. Straight-Through UTP Cable (RJ-45 to RJ-45), T568B

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

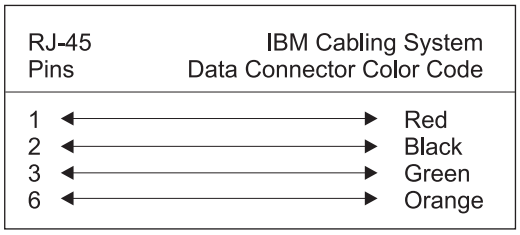

Figure 6. Straight-Through STP Cable (RJ-45 to IBM Data Connector)

Crossover 10BASE-T/100BASE-TX Cables

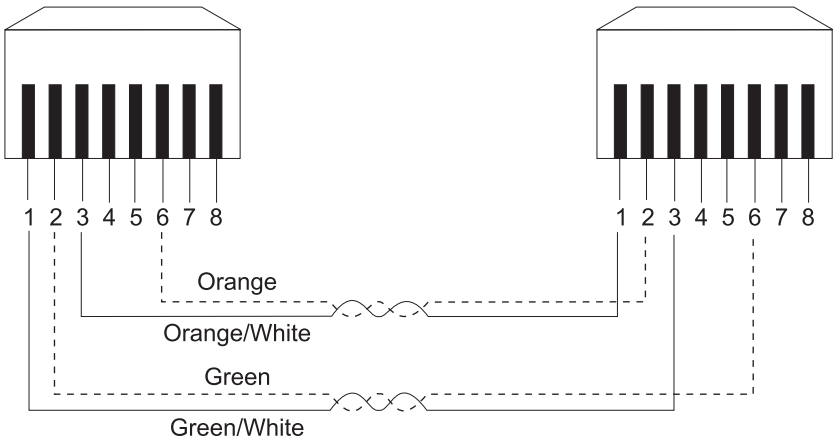

Figure 7. Crossover UTP Cable (RJ-45 to RJ-45), T568A

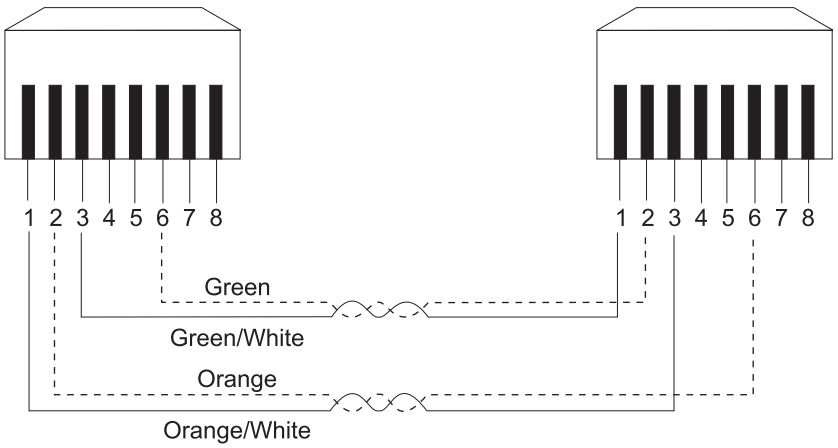

Figure 8. Crossover UTP Cable (RJ-45 to RJ-45), T568B

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

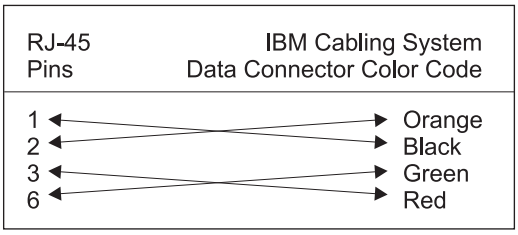

Figure 9. Crossover STP Cable (RJ-45 to IBM Data ConnectorCrossover)

EIA-232 Port

Pin	Signal Name
Shell	CHS GND
3	TXD
2	RXD
7	RTS
8	CTS
6	DSR
5	SGND
1	DCD
4	DTR
9	RI

Figure 10. Pinout of the EIA-232 Port

Null-Modem Cables

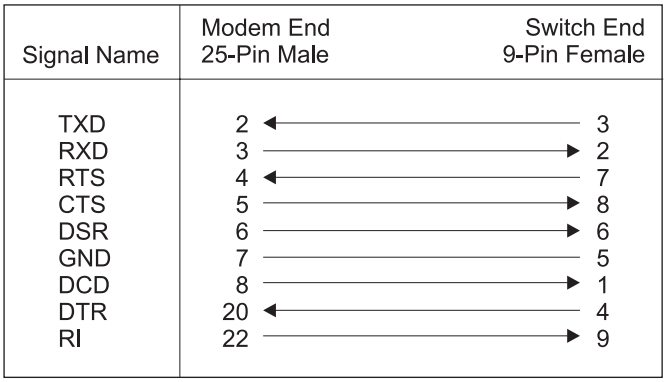

Figure 11. EIA-232 Modem Cable for Terminal with 25-Pin Connector

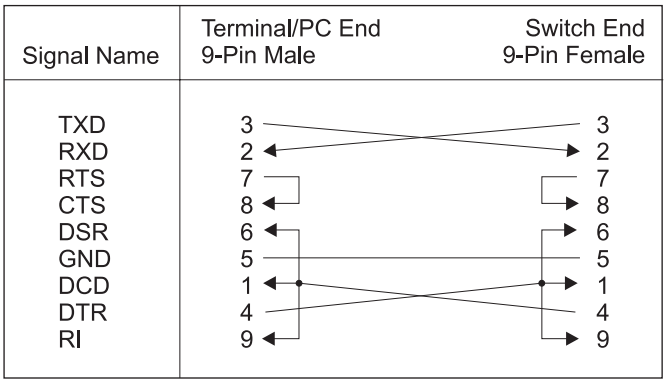

Figure 12. EIA-232 Modem Cable for Terminal with 9-Pin Connector

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Installation Guide

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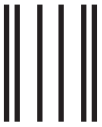

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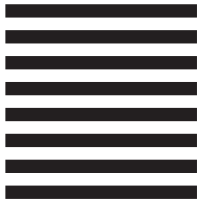

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