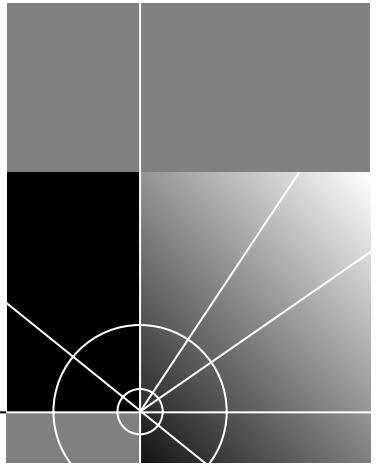
CoreBuilder® 9400 Getting Started Guide



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ABOUT THIS GUIDE

Introduction

This guide provides all the information that you need to set up your CoreBuilder® 9400 system and get it operating in your network. This guide provides an overview of your system and step-by-step procedures for planning your configuration, installing your system, cabling, powering up, configuring, and troubleshooting. When you are ready to configure your CoreBuilder 9400 system, see the *Command Reference Guide* and the *Corebuilder 9400 Implementation Guide* on the *Software and Documentation CD*.

If the information in the Software Installation and Release Notes that are shipped with your system differs from the information in this guide, follow the instructions in the Release Notes.

This guide is intended for the system or network administrator who is responsible for installing and managing network hardware. It assumes that you have a working knowledge of local area network (LAN) operations, but it does not assume prior knowledge of the CoreBuilder 9400 system.

Finding Specific Information in This Guide

This table shows where to find specific information.

For information on	Turn to
Best ways to use the CoreBuilder® 9400 system	"System Features and Benefits" on page 11
The front and back panels	"System Overview — Front Panel" starting on page 13
Site requirements and other issues to consider before you install your CoreBuilder 9400 system	"General Safety Requirements" starting on page 47
Installing the system on a table or in a distribution rack	"Installing the System on a Table Top" on page 17 and "Installing the System in a Distribution Rack" on page 18
Cabling the CoreBuilder 9400 system	Chapter 3
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Installing field-replaceable components	Appendix B: Field-Replaceable Units
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Returning 3Com products to 3Com for repair	"Returning Products for Repair" on page 57

Conventions

Table 1 and Table 2 list conventions that are used throughout this guide.

Table 1 Notice Icons

Icon	Type	Description
	Information Note	Information that describes important features or instructions
	Caution	Information that alerts you to potential loss of data or potential damage to an application, system, or device
	Warning	Information that alerts you to potential personal injury

Table 2 Text Conventions

Convention	Description
`Screen display`	This typeface represents information as it appears on the screen.
`Commands`	The word "command" means that you must enter the command exactly as shown and then press Return or Enter. Commands appear in bold. Example: To update the system software, enter the following command: **`system softwareUpdate`**  *This guide always gives the full form of a command in uppercase and lowercase letters. However, you can abbreviate commands by entering the fewest letters in each command that identify a unique command. Commands are not case sensitive.*
The words "enter" and "type"	When you see the word "enter" in this guide, you must type something, and then press Return or Enter. Do not press Return or Enter when an instruction simply says "type."
Keyboard key names	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
Words in *italics*	Italics are used to: ■ Emphasize a point. ■ Denote a new term at the place where it is defined in the text.

CoreBuilder 9400 Documentation

The following documents comprise the CoreBuilder 9400 documentation set. Documents are available in three forms:

- Paper documents that are shipped with your system or with optional components. They are listed in the next section.
- *CoreBuilder 9400 Software and Documentation CD* with online versions of the paper documents

  To order a paper copy of a document that you see on the compact disc, or to order additional compact discs, contact your supplier.
- Most 3Com documentation is also available on the 3Com Web site:

  http://support.3com.com/index.htm

Paper Documents

These documents are shipped with your system:

- *CoreBuilder 9400 Unpacking Instructions*

  How to unpack your CoreBuilder 9400 system. Also, an inventory list of items that are shipped with your system.
- *CoreBuilder 9400 Software Installation and Release Notes*

  All of the new features, system issues, and known problems for the software release.
- *CoreBuilder 9400 Quick Installation Guide*

  A quick checklist for how to install your system.
- *CoreBuilder 9400 Getting Started Guide* (this guide)

  All of the procedures necessary for getting your system up and running, including information on installing, cabling, powering up, configuring, and troubleshooting the system.
- *CoreBuilder 9400 Command Quick Reference Card*

  All of the Administration Console switching commands for the CoreBuilder 9400. For complete descriptions of commands, see the *Command Reference Guide*.
- *CoreBuilder 9400 Web Management User Guide*

  How to use the Web Management suite of applications for your system.

These documents are shipped with optional devices:

- *CoreBuilder 9400 Power Supply Assembly Removal and Replacement Guide*

  How to install an optional additional power supply for the CoreBuilder 9400.

- *CoreBuilder 9400 Fan Tray Removal and Replacement Guide*

  Overview information and removal and replacement instructions for the fan tray.

Software and Documents on CD-ROM

The compact disc that is shipped with your system contains the system software, online versions of the paper guides that are shipped with your system, and these guides:

- *Command Reference Guide*

  A complete multiplatform reference guide to all Administration Console commands for this system and several others.

- *CoreBuilder 9400 Implementation Guide*

  Information and examples about how to use the features of your system.

Documentation Comments

Your suggestions are very important to us. They help us to make our documentation more useful to you. Please send e-mail comments about this guide to:

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Please include this information when you comment:

- Document title
- Document part number (found on the front or back page of the document)
- Page number (if appropriate)

Example:

CoreBuilder 9400 Getting Started Guide

Part Number: 10013143

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For information on Year 2000 compliance and 3Com products, visit the 3Com Year 2000 Web page:

http://www.3com.com/products/yr2000.html

1 System and Setup Overview

This chapter contains:

- An overview of the CoreBuilder® 9400 system and how it provides solutions for your network
- A description of the major features and components of the system
- A network configuration example

CoreBuilder 9400 Intelligent Switch

The CoreBuilder 9400 system delivers full line rate switching among all 24 Gigabit Ethernet ports. The system has the following ports (shown in Figure 1 on page 15):

- 12 1000BASE-SX (MMF) ports with SC connectors
- 12 GBIC ports that can accept 1000BASE-LX or 1000BASE-SX GBIC transceivers

The system supports full-duplex mode on all Gigabit Ethernet ports and up to 32,000 MAC addresses. To deliver even higher performance rates among switches, the system supports trunking, which allows you to group up to six Gigabit Ethernet ports into a single multigigabit connection for a maximum of 12 trunks per system.

System Features and Benefits

The CoreBuilder 9400 is part of 3Com's CoreBuilder family. To combine technologies as your network grows, install the CoreBuilder 9400 in your network.

Some key features of the CoreBuilder 9400 system:

- High-density Gigabit Ethernet configuration

  This system exhibits no packet loss or delays even under maximum network traffic on its 24 Gigabit Ethernet ports.

- Trunking of Gigabit Ethernet ports

  This system allows you to configure up to six Gigabit Ethernet ports into a single multigigabit connection for a maximum of 12 trunks per unit.

- Trunking links and Spanning Tree Protocol support

  The CoreBuilder 9400 protects against cable and equipment failures with Spanning Tree Protocol and trunking links.

- Failure protection

  To protect your network, this system has an optional second power supply.

- Resilient links

  Resilient links technology protects your network against an individual link or device failure by providing a secondary backup link that is inactive until it is needed.

- Manageability

  The CoreBuilder 9400 provides full support for VLANs and RMON-1, as well as a roving analysis port through SNMP management.

System Management

The CoreBuilder 9400 system includes integrated management to provide fault tolerance and maximum network availability. This management is accessible in three ways:

- CoreBuilder 9400 Administration Console
- Standard network management applications based on SNMP, such as 3Com's Transcend applications, Sun's SunNet Manager, HP's OpenView, and IBM's NetView AIX applications
- Web Management suite of applications, with forms for many management tasks, charts and wizards to help you configure and monitor your system, and online Help (separately installed) give you instant information about your configuration choices.

Network Configuration Example

This section discusses one way to place the CoreBuilder 9400 in your network.

Speeding Up Server Access

To centralize your servers for easier service and support, use a configuration like the one shown in Figure 3.

Suppose that all of your organization's servers are located in that physical space. These servers must support a large number of clients that are distributed throughout the organization's campus. The clients are switched Fast Ethernet desktops.

First, you can multiplex the traffic from each group of desktop clients into one higher-bandwidth stream (trunk) through a SuperStack II Switch 3900.

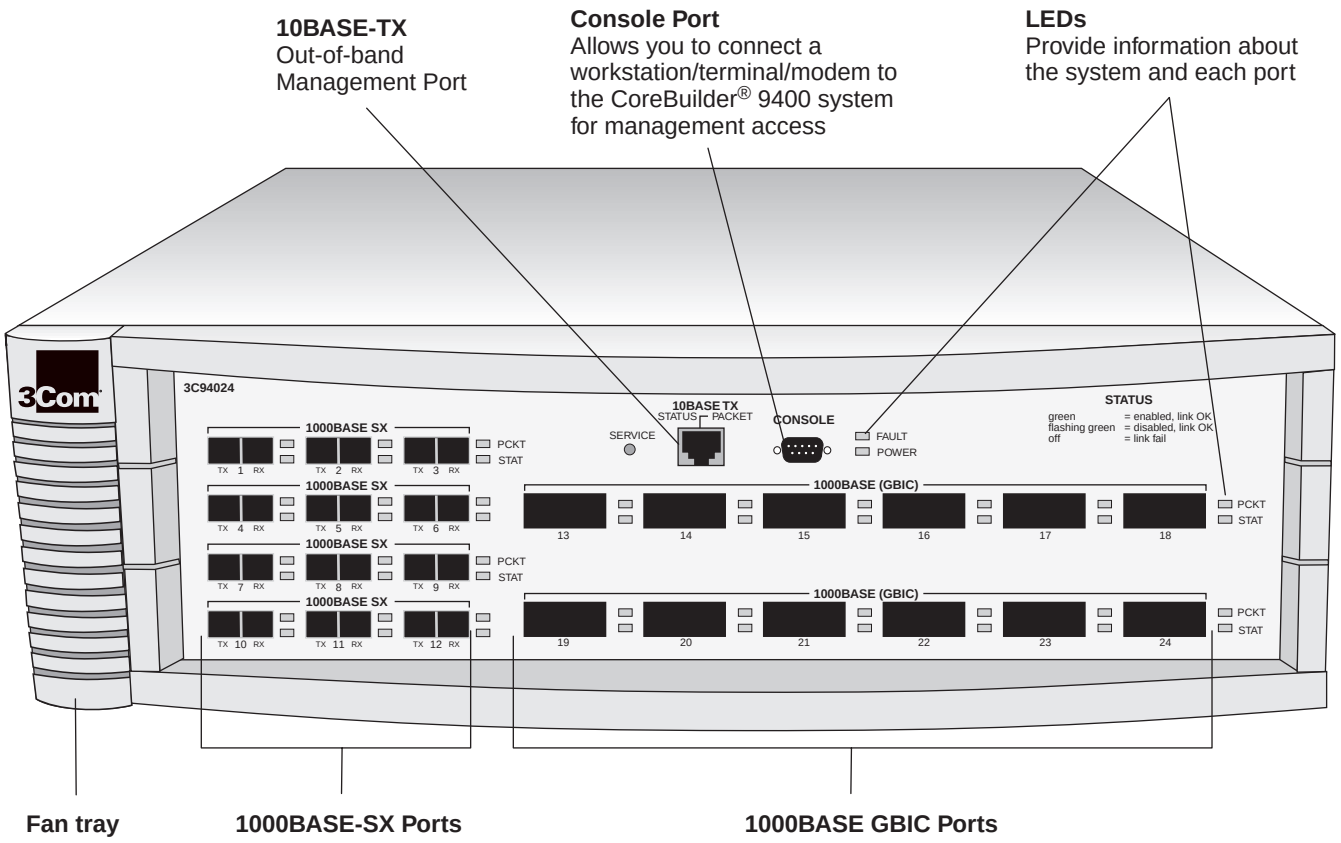
Each SuperStack II 3900 can, in turn, pass its traffic along to a CoreBuilder 9400, which multiplexes the traffic into Gigabit Ethernet streams for the servers.

This architecture eliminates bottlenecks caused by each Fast Ethernet device as it vies for access to the server.

You can also use the CoreBuilder 9400 for many other applications, such as to consolidate LAN backbones or to provide more flexible trunking configurations.

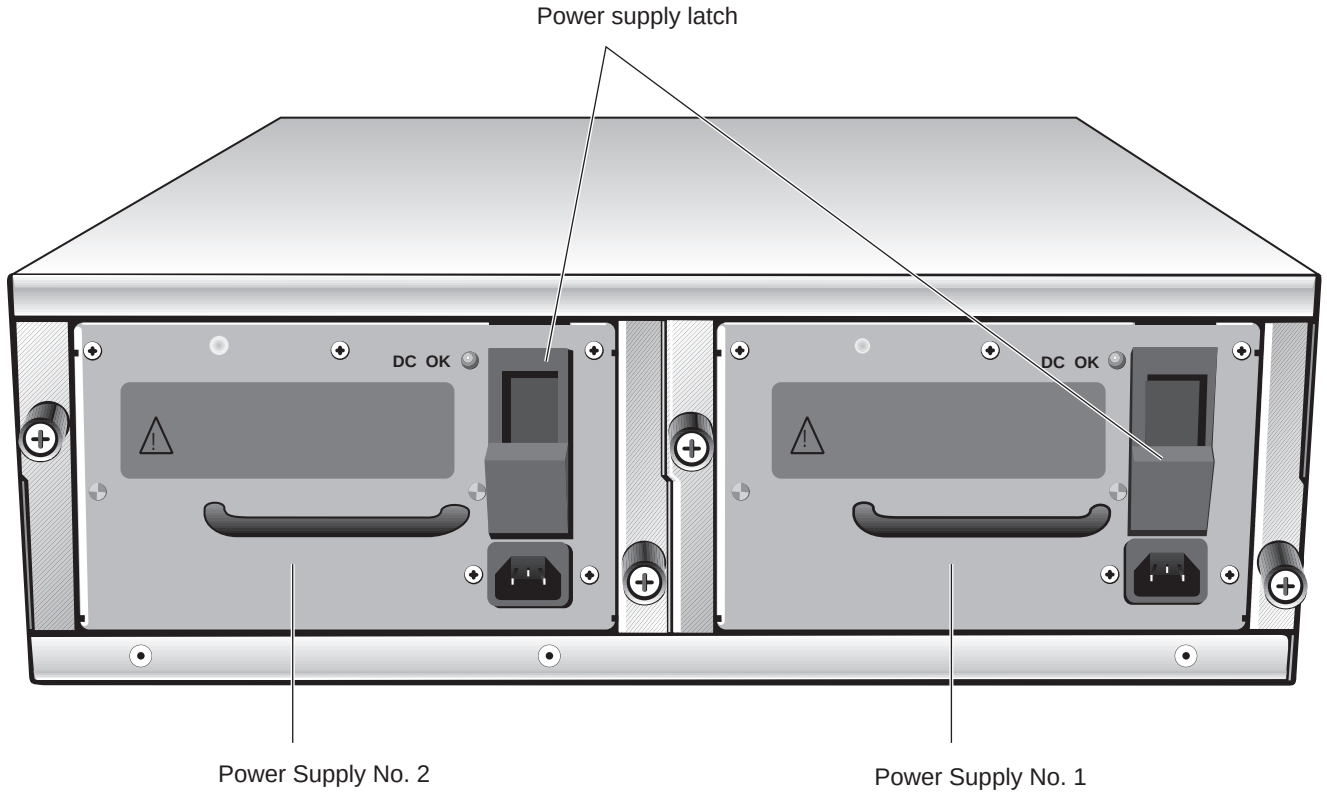
System Overview — Front Panel

Figure 1 Front Panel of the CoreBuilder 9400 System



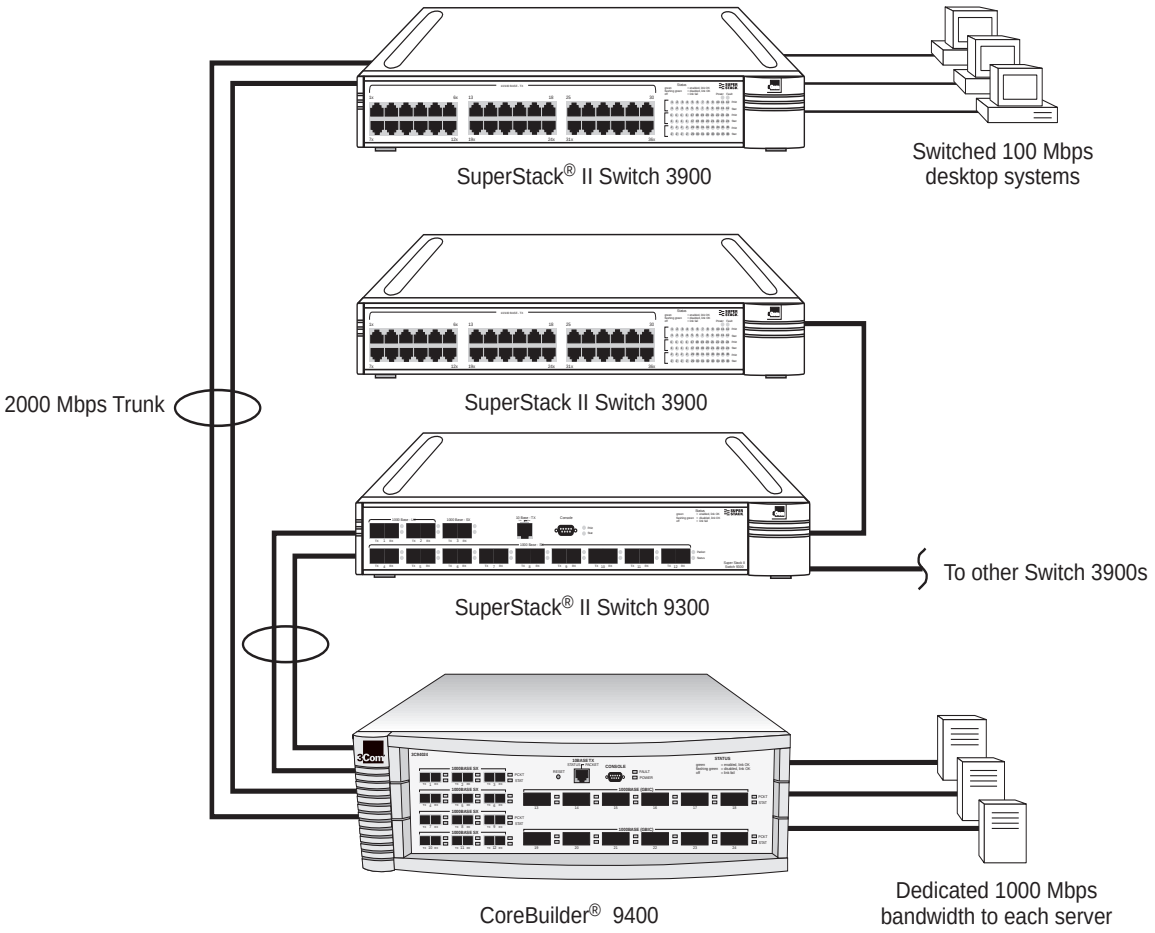
System Overview — Back Panel

Figure 2 Back Panel of the CoreBuilder 9400 System



System Overview — Sample Application

Figure 3 Centralizing a Data Center with the CoreBuilder 9400 System



2 INSTALLING THE SYSTEM

This chapter describes how to install your CoreBuilder® 9400 system on a table top or in a distribution rack.

See Appendix C for site requirements.

- To install the CoreBuilder 9400 system on a table top, read these sections:
  - "Before You Begin" (the next section)
  - "Installing the System on a Table Top" on page 17
- To install the CoreBuilder 9400 system in a distribution rack, read these sections:
  - "Before You Begin" (the next section)
  - "Installing the System in a Distribution Rack" on page 18

Before You Begin

Before you begin this procedure, be sure to:

- Move the CoreBuilder 9400 system close to where you plan to install it.

Install the system near an easily accessible power outlet. You can power down the system only by removing the power cord from the power source.

- Have a No. 2 Phillips screwdriver available.
- Have the system mounting kit available. See Table 3.

Table 3 CoreBuilder 9400 System Mounting Kit

Item	Qty	To use in
Rubber feet (self-adhesive)	4	Installing the system on a table top
Mounting brackets	2	Installing the system in a distribution rack
8-32 x 1/2 Phillips flat-head screws	8	Installing distribution-rack mounting brackets
10-32 x 1/2 Phillips pan-head screws	4	Installing the system in a distribution rack

Installing the System on a Table Top

To install the CoreBuilder 9400 system on a table top, follow these instructions:

1. See Appendix C for site requirements.
2. Turn the system on its side.
3. Remove the protective covering from the rubber feet and place one foot in each marked area at the four corners of the unit.
4. Turn the system onto its feet.
5. Verify that the air intake vents and fan exhaust vents at the sides of the system are not blocked.

You are now ready to cable your system. For instructions, see Chapter 3.

Installing the System in a Distribution Rack

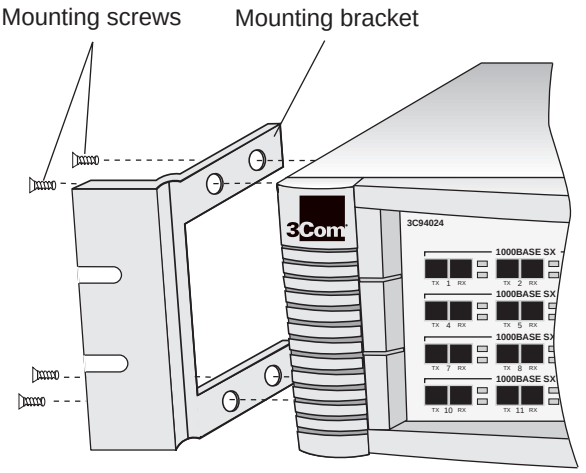
You can mount the CoreBuilder 9400 system into a 48.26 mm (19-in.) distribution rack. This section describes how to prepare the system and distribution rack for installation and how to mount the system in the rack.

Install your distribution rack near an easily accessible power outlet. You can power down the system only by removing the power cord from the power source.

To prepare the system and distribution rack for installing the CoreBuilder 9400 system:

1. See Appendix C for distribution rack requirements.
2. Attach one of the L-shaped mounting brackets to one side of the CoreBuilder 9400 using the 8-32 x 1/2 Phillips flat-head screws. Attach the other bracket to the other side. See Figure 4.

Figure 4 Installing System Mounting Brackets



3. Carefully lift the system into place, aligning the bracket holes with the distribution rack holes.
4. While you hold the system in place, insert the four mounting screws (10-32 x 1/2 Phillips pan-head) into the mounting holes on each side of the rack.
5. Tighten the mounting screws.

You are now ready to cable the system. For cabling instructions, see Chapter 3.

3 CABLING COREBUILDER 9400 PORTS

This chapter describes how to cable your CoreBuilder® 9400 system for connection to the network. It gives an overview of cabling and describes how to cable:

- Gigabit Ethernet ports
- Console port
- Out-of-band management port

When all of your Gigabit Ethernet and system network connections are complete, see Chapter 4.

If you are staging the system, you do not need to connect it to the network at this point. See Chapter 4 to start your system before you cable it.

Overview of Cabling

The CoreBuilder 9400 system is a Gigabit Ethernet switch with this fixed configuration:

- Twelve 1000BASE-SX ports
- Twelve 1000BASE GBIC ports (LX or SX transceivers)

Fiber Safety Precautions

The CoreBuilder 9400 system uses lasers in its fiber optic ports. To ensure your safety, comply with the following precautions.

WARNING: *The fiber optic lasers used in this system meet the regulatory requirements for casual exposure to the eye. As with any source of bright light, however, 3Com recommends that you do not look into the laser light source.*

IEC 825, Class 1 Laser Devices are for connection only to Class 1 Laser Devices. MMF and SMF fiber optic interfaces use lasers.

Cabling Gigabit Ethernet Ports

Before you cable the system, consider this Caution.

CAUTION: *You* ***may not*** *want to connect the network cables before you power on the system (chapter 4) if you need to configure trunks, resilient links, or the Spanning Tree Protocol (STP). To avoid bridge loops, configure trunks, resilient links, and STP using the Administration Console* ***before*** *you connect the cables and after you power up the system. See the* Command Reference Guide *and the* Implementation Guide *for your system.*

Guidelines for Gigabit Ethernet Cabling

For all Gigabit Ethernet cabling, keep the ports and connectors free of dust. See "Cleaning Dirty Fiber Optic Ports and Connectors" on page 40 for details.

Recommended Distances for 1000BASE-SX Ports or Transceivers

When you cable 1000BASE-SX ports or transceivers, verify that the length of the fiber cable from the system to any attached device does not exceed these recommended distances:

- Use 62.5-micron MMF fiber with a modal bandwidth specification of 160 MHz*km for distances of up to 220 m (722 ft).
- Use 62.5-micron MMF fiber with a modal bandwidth specification of 200 MHz*km for distances of up to 275 m (902 ft).
- Use 50-micron MMF fiber with a modal bandwidth specification of 400 MHz*km for distances of up to 500 m (1645 ft).
- Use 50-micron MMF fiber with modal bandwidth specification of 500 Mhz*km for distances of up to 550 m (1805 ft).

Recommended Distances for 1000BASE-LX Transceivers

When you cable 1000BASE-LX transceivers, verify that the length of the fiber cable from the system to any attached device does not exceed these recommended distances:

- Use 62.5-micron MMF fiber with a modal bandwidth specification of 160 MHz*km for distances of up to 550 m (1805 ft).
- Use 62.5-micron MMF fiber with a modal bandwidth specification of 200 MHz*km for distances of up to 550 m (1805 ft).
- Use 50-micron MMF fiber with a modal bandwidth specification of 400 MHz*km for distances of up to 550 m (1805 ft).
- Use 50-micron MMF fiber with a modal bandwidth specification of 500 MHz*km for distances of up to 550 m (1805 ft).
- Use 9-micron SMF fiber for distances of up to 10 km (6.2 mi). The specification requires and specifies 5 km (3.1 mi).

Use a conditioned launch cable to connect the 1000BASE-LX transceiver to multimode fiber. Using this cable ensures reliability over the maximum 550 m distance.

Cabling 1000BASE-SX Ports

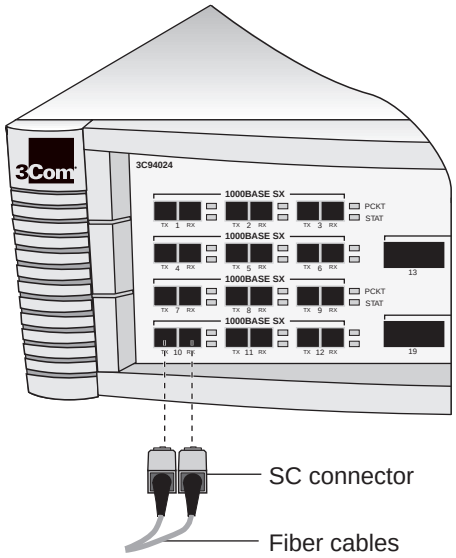
To cable one of the 1000BASE-SX ports with SC connectors:

1. Read the Caution at the beginning of "Cabling Gigabit Ethernet Ports" earlier in this chapter.
2. Remove the dust covers and save them for future use.
3. Examine the port and connector pair for dust. Verify that nothing blocks the light transmission between the port and its connectors.
4. Attach one male connector of the SC cable connector pair to the right side of a fixed Gigabit Ethernet port.
5. Attach the remaining connector of the SC cable connector pair to the left side of the Gigabit Ethernet port.
6. To cable another port, repeat steps 1 through 4.

When you cable GBIC transceivers, notice that the SC Receive (RX) port is on the left and the SC Transmit (TX) port is on the right. See Figure 9.

Figure 5 shows cabling for the 1000BASE-SX ports.

Figure 5 Cabling the 1000BASE-SX Port



Cabling 1000BASE GBIC Ports

Each 1000BASE GBIC (Gigabit Interface Converter) port accepts one of these transceivers:

- **1000BASE-SX GBIC** — Use this transceiver to connect the GBIC port directly to multimode fiber-optic cable. For instructions, see the procedure in this section.
- **1000BASE-LX GBIC** — Use this transceiver to connect the GBIC port directly to single-mode fiber-optic cable or to multimode fiber using a conditioned launch cable. For instructions on using this transceiver to connect to single-mode fiber, see the procedure in this section. To connect this transceiver to multimode fiber, see "Connecting the LX Transceiver to MMF" on page 24 for details.

To ensure optimal compatibility, performance, and regulatory compliance, use only GBIC transceivers and conditioned launch cables that 3Com supports. For a list of currently supported GBICs and launch cables, visit this 3Com Web site:

`http://www.3Com.com/gigabit_ethernet/gbics`

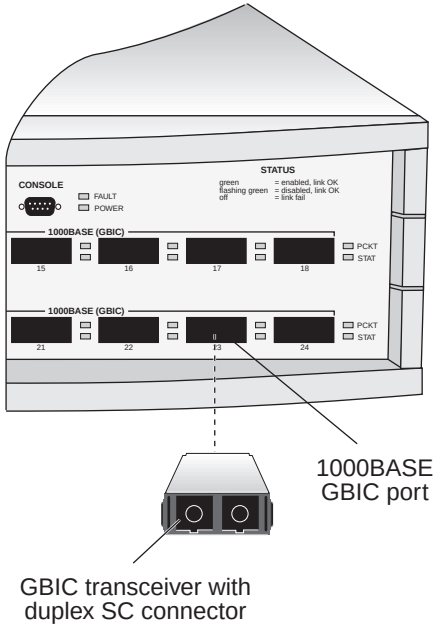
You can insert and remove the GBIC transceiver while the system is powered on and running.

To connect a GBIC port directly to single-mode fiber with an LX transceiver, or to connect a GBIC port directly to multimode fiber with an SX transceiver, follow these steps:

1 Read and follow the "Fiber Safety Precautions" on page 19 and the Caution at the beginning of "Cabling Gigabit Ethernet Ports" earlier in this chapter.

2 Orient the transceiver so that the duplex SC connector is toward you, as shown in Figure 6.

Figure 6 Inserting the GBIC Transceiver



3 Do one of the following, depending on the transceiver that you are using:

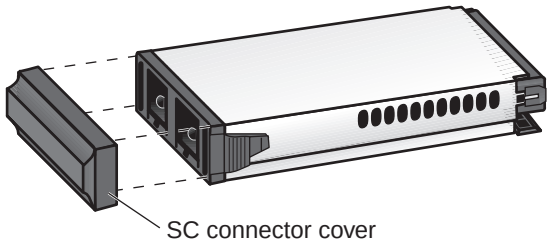
- **Side tabs** — Compress the side tabs and gently slide the transceiver into the GBIC port until it clicks into place.

  OR

- **Front lever** — Move the front lever to the upright position and gently slide the transceiver into the GBIC port until it clicks into place (or until you cannot insert it any further). Then move the front lever to the downward position to lock the transceiver into place.

4 If you haven't already done so, remove the SC connector cover from the transceiver, as shown in Figure 7.

Figure 7 Removing the SC Connector Cover



5 Plug the male duplex SC connector on the fiber optic network cable into the duplex SC port on the GBIC transceiver, as shown in Figure 8. If you are using an SX transceiver, the fiber optic cable must support multimode transmission. If you are using an LX transceiver, the fiber optic cable must support single-mode transmission or multimode transmission with a conditioned launch cable.

You can also connect an LX transceiver to multimode fiber. See "Connecting the LX Transceiver to MMF" on page 24 for details.

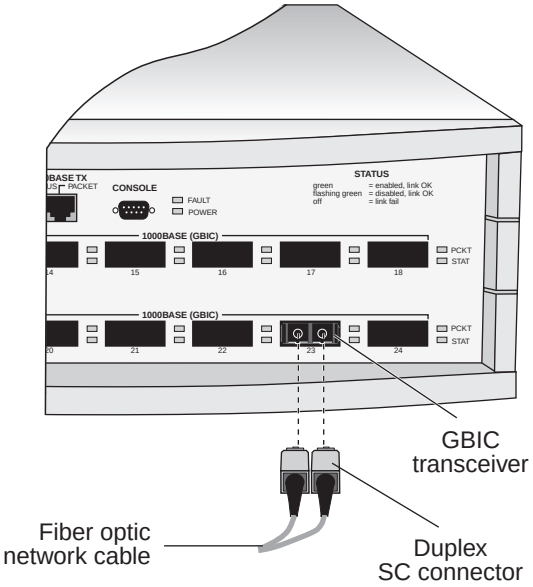
In the event that you need to remove the GBIC transceiver, follow these steps, depending on the transceiver that you are using:

- ***Side tabs*** *— Compress the side tabs and gently pull the transceiver out of the port.*

  OR

- ***Front lever*** *— Move the front lever to the upward position. Then grasp the lever and gently pull the transceiver out of the port.*

Figure 8 Cabling the GBIC Transceiver



6 Attach the other end of the network fiber-optic cable to the network device that you want to connect.

7 Repeat steps 1 through 6 for additional GBIC ports.

Connecting the LX Transceiver to MMF

The LX transceiver supports a connection to multimode fiber using a conditioned launch cable. The conditioned launch cable consists of an offset mechanism on the transmit side of the cable that aligns the single-mode laser launch away from the center of the multimode fiber core, creating a transmission signal similar to typical multimode light-emitting-diode (LED) launches. This offset allows the transmission of LX signals over multimode fiber cable.

You need a conditioned launch cable to complete the following procedure. To ensure optimal compatibility, performance, and regulatory compliance, use only conditioned launch cables that 3Com supports. For a list of currently supported launch cables, visit this 3Com Web site:

`http://www.3Com.com/gigabit_ethernet/gbics`

To cable a GBIC port to multimode fiber using an LX transceiver:

1 Read and follow the "Fiber Safety Precautions" on page 19 and the Caution at the beginning of "Cabling Gigabit Ethernet Ports" earlier in this chapter.

2 Insert a GBIC LX transceiver into a GBIC port until it clicks into place, as shown in Figure 6.

3 If you haven't already done so, remove the SC connector cover from the transceiver, as shown in Figure 7.

When you cable GBIC transceivers, note that the SC Receive (RX) port is on the left and the SC Transmit (TX) port is on the right. See Figure 9.

4 Insert the SC connectors on the conditioned launch cable into the transceiver as shown in Figure 9, ensuring that you:

- Insert the SC connector on the multimode Receive (RX) side of the conditioned launch cable into the RX port on the transceiver.
- Insert the SC connector on the single-mode Transmit (TX) side of the conditioned launch cable into the TX port on the transceiver.

You can think of the conditioned launch cable as an extension to the multimode network cable.

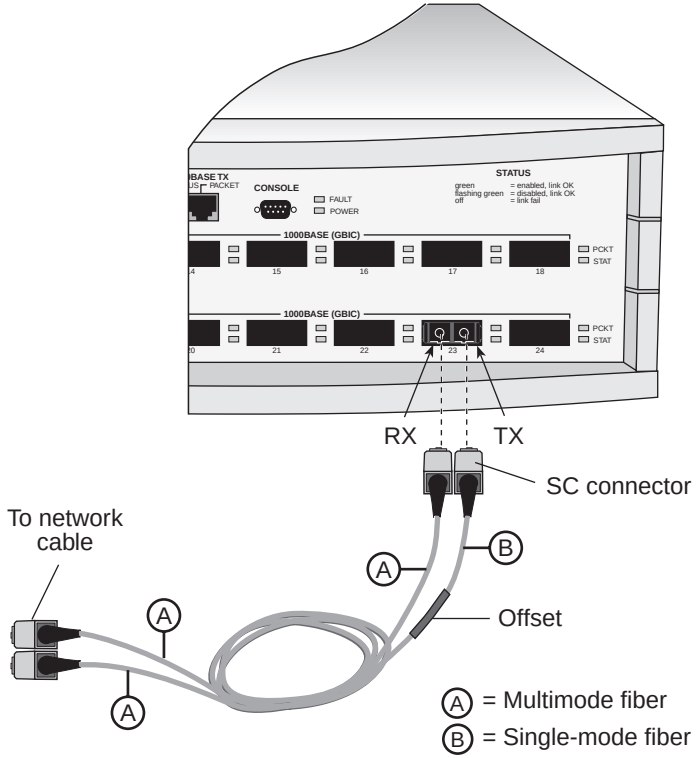
5 Attach the other end of the conditioned launch cable to the multimode network cable, ensuring that you:

- Connect the multimode RX side of the conditioned launch cable to the RX side of the network cable.
- Connect the multimode TX side of the conditioned launch cable to the TX side of the network cable.

If necessary, use fiber-optic couplers to connect the male SC connectors on the multimode end of the conditioned launch cable to the multimode network cable.

6 Attach the other end of the network fiber-optic cable to the network device that you want to connect.

Figure 9 Connecting Using a Conditioned Launch Cable



7 Repeat steps 1 through 6 for additional 1000BASE GBIC ports.

Cabling the Console Port

The Console port provides access for either local or remote administration.

For local administration of the CoreBuilder 9400, the Console port provides an RS-232 connection to a local terminal or workstation that runs a terminal emulation program and acts as the console.

For remote administration, the Console port provides the means to connect an external modem, which you can use to establish a connection between your current Administration Console session and the modem port.

The Console port has a male 9-pin, D-type connector. See "Console Port Pin Assignments" next for pin-out information.

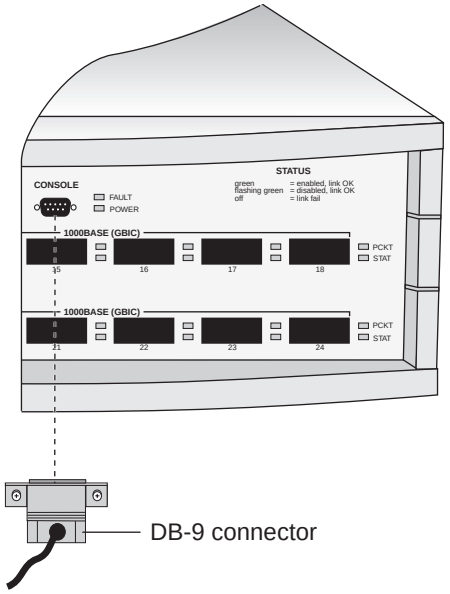
To cable the Console port:

1. Attach the female DB-9 cable connector to the Console port's male connector. See Figure 10.
2. Attach the other end of the serial cable to your terminal or workstation.

You can also remotely access the system through any Gigabit Ethernet port using Telnet. See the *Command Reference Guide*.

To use the Administration Console to configure the system for management access through the Console port, see Chapter 5.

Figure 10 Cabling the Console Port



Console Port Pin Assignments

Table 4 shows the Console port pin assignments.

Table 4 Console Port Pin Assignments

Pin No.	Signal	Description
1	DCD	Data Carrier Detect
2	RDA	Received Data
3	TD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	—	Not used

Cabling the Out-of-Band Management Port

You can use the 10BASE-TX port on the CoreBuilder 9400 to manage your network out-of-band. Out-of-band management lets you diagnose network problems easily because you manage your network from a workstation on a different network.

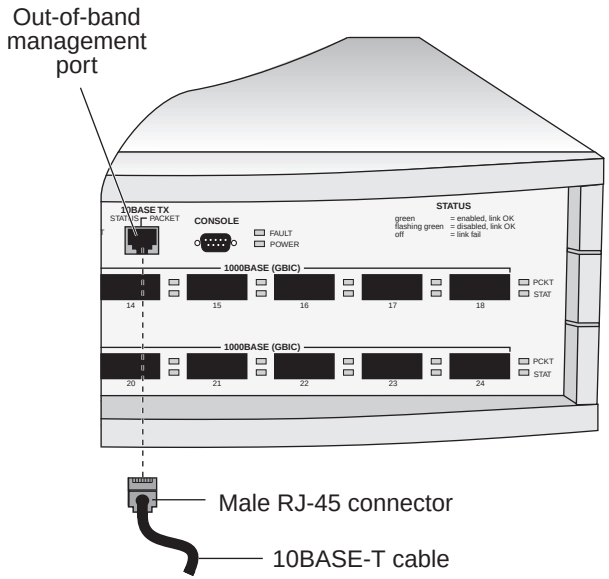
To cable the out-of-band 10BASE-TX port:

1. Plug the male RJ-45 connector on the 10BASE-TX cable into the 10BASE-TX port until it clicks into place. See Figure 11.
2. Attach the other end of the 10BASE-TX cable to the workstation or to a different network connection.

To configure your CoreBuilder 9400 to use out-of-band network management, see the *Command Reference Guide*.

This port is not a switch port, that is, it carries no network traffic. It is a port for management purposes only.

Figure 11 Cabling the Out-of-Band Management Port



4 System Power Up

This chapter contains:

- "Power Up" instructions for the CoreBuilder® 9400 system
- A description of "Power-up Diagnostics"
- A list of "System Checks" after power up

For information on troubleshooting the system during power up, see Chapter 6.

Power Up

To get your CoreBuilder 9400 powered up and ready to operate, follow the steps in this section.

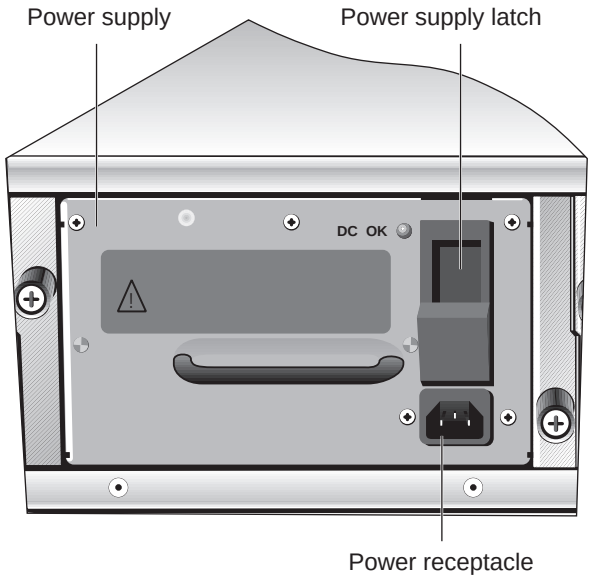
See Chapter 3 and Chapter 5 for information about cabling and configuring the Console port.

To view error messages while the system runs power-up diagnostics, connect a terminal, a workstation, or a PC that has terminal emulation to the system's Console port.

1. Verify that the power outlet is near the system and easily accessible. You can turn the system off only by removing the power cord from the power source or from the system itself.
2. On the back panel, slide the power supply latch up and plug the power cord into the power receptacle.

See Figure 12 for the location of the power receptacle.

Figure 12 CoreBuilder 9400 System Power Receptacle



3. Plug the other end of the power cable into a power outlet.
4. If you want add an additional power supply, repeat step 2 and step 3 for the second power supply.

Power-up Diagnostics

The CoreBuilder 9400 system runs diagnostic software at power up. This software verifies that the system works before you add it to the network.

If any component fails during power-up diagnostics, the system fails to power up.

During power up, the system and port status LEDs provide information about the CoreBuilder 9400 system. See Figure 1 in Chapter 1 for the location of the LEDs.

To view error messages that are displayed during power-up diagnostics, connect a terminal, workstation, or PC that has terminal emulation to the system's Console port. See Chapter 3.

System Diagnostics

This section describes the LEDs that provide information about the system as a whole.

Power LED Activity

- **Green** — The system is on; the system is running or has run diagnostics.
- **No Light** — The system has no power; no diagnostics are running.

Fault LED Activity

- **No Light** — System diagnostics have been successfully completed and the system is operational.
- **Solid or Blinking Yellow** — The system has failed diagnostics, or some other operational error has occurred.

See Chapter 6 for troubleshooting information.

Gigabit Ethernet Port Diagnostics

This section summarizes the information displayed by the port LEDs.

Packet LED Activity

- **No light** — Data is not being transmitted or received by the port.
- **Blinking yellow** — Data is not being transmitted or received by the port.
- **Yellow** — Data is passing through the port.

Status LED Activity

- **No light** — The port is off-line.
- **Blinking green** — The port is online but disabled.
- **Green** — The port is online and enabled.

See Chapter 6 for troubleshooting information.

System Checks

After the system has successfully completed the power-up diagnostics, check the items in Table 5 to verify that the system is operating correctly. If you discover abnormal conditions, see Chapter 6.

Table 5 System Power-Up Checklist

Check	Description
Power-up error messages	If there is a problem during power-up, the messages are displayed in the Administration Console connection through the Console port.
Normal LED activity	When the power-up diagnostics are running, the LEDs light in a certain pattern as described in the "Power-up Diagnostics" section. After you properly cable the system and the system successfully completes the power-up diagnostics, look for the following normal LED activity: **System:** **Power** LED = Green **Fault** LED = Not lit **Each port:** **Pckt** status LED = Yellow **Stat** status LED = Green If an LED does not light or shows a color different from the one indicated here, see Chapter 6 for information about the cause of the problem.

Next Step: Software Configuration

Your CoreBuilder 9400 system is shipped from the factory with the software installed and IEEE 802.1d Spanning Tree Protocol *disabled*. To configure your system for your particular networking environment (including setting up SNMP), you must first establish management access. See Chapter 5.

5 QUICK SETUP FOR MANAGEMENT ACCESS

This chapter provides easy instructions for configuring the CoreBuilder® 9400 system for management access. When you decide how you want to manage your system, follow the configuration instructions for your preferred type of management access.

About CoreBuilder 9400 System Management

To configure and manage your CoreBuilder 9400 system, you can use one of several applications after you establish a connection:

- CoreBuilder 9400 Administration Console
- Other SNMP-based network management applications
- Web Management suite of applications

The Administration Console is a character-oriented, menu-driven user interface for administering the system. You can access the Administration Console out-of-band, using either the 10BASE-TX port or the Console port, or in-band, using one of the Gigabit Ethernet ports through the IP network protocol. For more detailed information, see the *Command Reference Guide*.

For more complete network management, use an external SNMP-based management application such as 3Com's Transcend Enterprise Manager for UNIX or Windows or another network management application.

The Web Management suite of applications allows you manage your system using a Web browser. It consists of WebConsole (including Configuration Wizards), DeviceView, Performance, and the HTML-based Help system.

How Do You Want to Manage the System?

You can manage your system locally through a terminal connection or through the network with an IP connection. Table 6 describes the access mechanisms.

Table 6 Management Access Mechanisms

Access Mechanism	Allows you to	Using
Terminal	Connect directly to the Administration Console and stay attached across system reboots	Console port
Modem	Connect remotely to the Administration Console	Console port

Table 6 Management Access Mechanisms

Access Mechanism	Allows you to	Using
IP	■ Use a dedicated network to manage your network out-of-band. Access the Administration Console in-band with the rlogin or Telnet commands.	Ethernet 10BASE-TX out-of-band port
	■ Access the Administration Console in-band with the rlogin or telnet commands. Or use an external SNMP management application to communicate with the CoreBuilder 9400 SNMP agent.	One of the Gigabit Ethernet ports assigned to an IP interface
	■ Use the Web Management interface.	Netscape Navigator or Internet Explorer

These mechanisms are described more fully in the next sections.

Terminal Connection

Direct access through the Console port is often preferred because it allows you to remain on the system during system boots. A Macintosh or PC attachment can use any terminal emulation program for connecting to the Console port. A workstation attachment under UNIX can use the emulator TIP or you can attach a terminal.

For more details, see the documentation that is shipped with your terminal emulation program.

Modem Connection

To access the system through a modem, establish a connection between your workstation and the Console port. When you configure the external modem from the Administration Console menu system, the Console appears to be directly connected to the external modem. See the *Command Reference Guide* for more information.

Use the Console port for either a terminal connection or a modem connection.

IP Management Interface

An IP interface is the connection between the CoreBuilder 9400 system and a subnetwork. Use the IP interface to manage the system in two ways:

- **In-band** — Through a Gigabit Ethernet port

  You can use this port for switching and managing the system simultaneously.

This method decreases the total bandwidth available on the port for switching.

- **Out-of-band** — Through the 10BASE-TX port that is located to the left of the Console port

  You can use this port only to manage the system, not for switching network traffic. Managing your system out-of-band conserves all available bandwidth for the Gigabit Ethernet ports. Also, if network problems exist, you can manage the system from a different network. See the *Implementation Guide* for more information on in-band and out-of-band management.

With an IP interface and either the in-band or the out-of-band port, you use the rlogin or Telnet commands to access the Administration Console using TCP/IP from a host computer. You can also use the IP interface to manage the system with an external management application via SNMP or the Web Management software.

Initial Management Access

The first time that you access your system, you connect through the Console port using a terminal or terminal emulator. These are the default settings for this port: 9600 baud, 8 bits, 1 stop bit, No parity.

When you access the Administration Console using the Console port, you see this prompt:

```
Select access level (read, write, administer):
```

1. At the prompt, enter:

   `administer`

2. At the password prompt, press Return.

   The following menu appears:

```
Menu options:
-------------------------------------------------------
system       - Administer system-level functions
management   - Administer system management interface
ethernet     - Administer Ethernet ports
bridge       - Administer bridging/VLANs
ip           - Administer IP
snmp         - Administer SNMP
analyzer     - Administer Roving Analysis
script       - Run a script of console commands
logout       - Logout of the Administration Console

Type ? for help.
-------------------------------------------------------
Select menu option:
```

Use this menu to change the Console port baud setting for the terminal or to configure your system for another management access mechanism.

Changing the Console Port Baud Setting

To change the baud setting of the Console port:

1. From the top level of the Administration Console, enter:

   `system serialPort serialPortMode`

2. At the prompt, if the default value shown in brackets is `modem`, enter **`console`**. Otherwise, press Return.

3. Enter **`baudRate`**.

4. Enter 9600 for the Console port. The system supports these baud settings: 19200, 9600, 4800, 2400, and 1200.

   The system displays this message:

```
Enter new value (1200-19200) [1200]: 9600
Error setting baud rate to 9600.
Baud rate will change upon next connection.
```

Configuring the IP Interface

These instructions include information on how to define an IP interface through which you can manage your CoreBuilder 9400 system. An IP interface contains the following parameters:

- **IP address** — This address, which is specific to your network, is used to manage the system. The IP address defines both the number of the network to which the interface is attached and its host number on that network.
- **Subnet mask** — This 32-bit number uses the same format and representation as an IP address. The subnet mask determines which bits in the IP address are interpreted as the network number, which as the subnet number, and which as the host number. Each IP address bit that corresponds to a 1 in the subnet mask is in the network and subnet part of the address. Each IP address bit that corresponds to a 0 is in the host part of the IP address.

In-band Management

To set the IP interface parameters to manage the system in-band:

1. From the top level of the Administration Console, enter:

   ```
   ip interface define
   ```

2. Enter the IP address of the interface.
3. Enter the subnet mask of the subnetwork to which the interface is to be connected.
4. Enter the interface type: **vlan**
5. Enter the VLAN interface index

   For more detailed instructions on assigning interface parameters, see the *Command Reference Guide*.

Out-of-band Management

To set the IP interface parameters to manage the system out-of-band:

1. From the top level of the Administration Console, enter:

   ```
   ip interface define
   ```

2. Enter the IP address for the out-of-band port.
3. Enter the subnet mask of the subnetwork to which the interface is to be connected. Press Return to accept the default subnet mask.
4. Enter the interface type: **system**

   For more detailed instructions on assigning interface parameters, see the *Command Reference Guide*.

6 TROUBLESHOOTING THE SYSTEM

This chapter explains how to troubleshoot certain problems with the CoreBuilder® 9400 system. It covers:

- Getting Additional Help
- Diagnosing Problems
- Cleaning Dirty Fiber Optic Ports and Connectors

Getting Additional Help

If you experience system problems that are not addressed in this chapter, contact your network supplier or 3Com Technical Support. Before you call, gather the following information and have it available:

- System serial number
- Maintenance agreement, or date of purchase and warranty information from the last pages of this guide.
- Software revision number
- Brief description of the problem

You can view some of this information in the Administration Console. From the top-level menu, enter **`system display`**. In the WebConsole, select the System folder and then click Summary.

For additional information and phone numbers, see Appendix D.

Diagnosing Problems

By observing system diagnostics, you can identify and correct problems that might occur when the system powers up.

Power Failures

If the system does not respond when you insert the power cord, see the troubleshooting suggestions in Table 7.

Abnormal LED Activity

The CoreBuilder 9400 system has LEDs that indicate system or port problems. If you see abnormal LED activity, see Table 8 and Table 9 for troubleshooting suggestions.

Table 7 Troubleshooting Power Failures

Symptom	Possible Sources of the Problem	Steps to Take
System does not power up.	■ System is not receiving power. ■ Power supply malfunctioned.	**1** Verify that the building's power outlet has power. **2** Verify that the power cord is firmly plugged into the system and into the building's power outlet. **3** Try another power cable. **4** If the system still does not operate, contact your network supplier or 3Com Technical Support.

Table 8 Troubleshooting Abnormal System LED Activity

LED Status	Possible Sources of the Problem	Steps to Take
Fault LED blinks yellow.	Diagnostic software is not running.	**1** Check the Administration Console display. **2** Call your network supplier or 3Com Technical Support.
Power LED does not light.	System has failed or power is not being supplied.	**1** Shut down the system by disconnecting the power plug. **2** Call your network supplier or 3Com Technical Support.

Table 9 Troubleshooting Abnormal Port LED Activity

LED Status	Possible Sources of the Problem	Steps to Take
Pckt LED does not light.	System is not processing any packets. ■ Cable problem. ■ No data being transmitted or received. ■ Port is disabled ■ Port is off-line.	Check the Administration Console display.
Stat LED does not light.	System does not recognize a connection to the port. ■ Cable is not fully attached to the port. ■ Port cable is faulty. ■ Device attached to port is not powered on. ■ Fiber optic ports or connectors are dirty. ■ If a GBIC port is affected, the transceiver may not be properly seated or is defective.	**1** Verify that all cables are firmly plugged into both the system's affected port and the attached device. **2** If a GBIC port is affected, verify that the transceiver is properly seated. Re-seat the GBIC. If the transceiver is properly seated, try another transceiver. **3** Test for faulty cables. **4** Clean the fiber optic ports and connectors. See next section. When the problem is corrected, the LED lights green. If the LED still does not light, contact your network supplier or 3Com Technical Support.

Cleaning Dirty Fiber Optic Ports and Connectors

Fiber optic transceivers are sensitive optical devices. Handle them carefully. If dirt collects on a fiber optic lens, the associated LED may not light. You may also notice degradation in port performance, indicated by adverse changes in the Gigabit Ethernet statistics on a port.

To prevent dust from collecting on the fiber optic lens, keep the dust covers on the ports at all times when they are not in use.

WARNING: *The fiber optic lasers used in this system meet the regulatory requirements for casual exposure to the eye. As with any source of bright light, however, 3Com recommends that you do not look into the laser light source.*

To clean a fiber optic lens, take these steps:

1 Remove any accumulated dust or debris from the port or connector by blowing across all surfaces with a canned air duster.

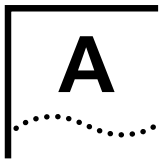
Compressed gas is recommended, such as Chemtronics' Ultrajet or the Triangle Tool Group's Liqui-Tool Dust-A-Way. Do not use commercial compressed air or "house air" because of the risk of oil contamination.

2 Reconnect the cable to the port to check whether dusting has corrected the problem.

3 Gently wipe the ports with a lint-free, nonabrasive, nonadhesive swab. Microswabs by Texwipe are recommended.

4 Gently wipe the connectors with a lint-free, nonabrasive wipe or pad. Texwipe pads are recommended.

Avoid touching any connector surface after you clean the connectors.



SYSTEM SPECIFICATIONS

Table 10 System Specifications for the CoreBuilder 9400

Specifications	
Physical Dimensions	13.3 cm (H) x 44 cm (W) x 41.9 cm (D) 5.22 inches (H) x 17.32 inches (W) x 16.50 inches (D) Weight: 14.5 kg (32 lbs)
Environmental Requirements	
Operating Temperature	0 to 50 °C (32 to 122 °F)
Operating Humidity	10 to 95% relative humidity, noncondensing
Storage Temperature	–20 to 85 °C (–4 to 185 °F)
Storage Humidity	95% maximum relative humidity, noncondensing
Safety	
Agency Certifications	UL 1950, CSA 22.2 No. 950, TUV EN60950 **UK General Approval Statement** The CoreBuilder 9400 is manufactured to the international Safety Standard EN60950 and is approved in the UK under the General Approval Number NS/G/12345/J/100003 for indirect connection to the public telecommunication network.
Designed to Comply with...	IEC 950
Electromagnetic Emissions	Meets FCC part 15, Class A limits, and CISPR22 Class A limits Complies with EMC Council Directive 89/336/EEC, Class A limits
Heat Dissipation	327 watts maximum (1116 BTU/hour maximum)
Power Supply	
Receptacles	15 ampere service receptacles, type N5/15 or NEMA 5-15R (United States and Canada only)
AC Line Frequency	47 to 63 Hz
Input Voltage Options	100 to 240 VAC
Current Rating	2.7 amperes at 120 volts

Table 11 Standards Supported by the CoreBuilder 9400

Standard Type	RFC/IEEE Supported
SNMP	■ SNMP protocol (RFC 1157) ■ MIB II (RFC 1213) ■ Ethernet MIB (RFC 1284) ■ Bridge MIB (RFC 1286)
Software Installation	tftp (RFC 959)
Terminal Emulation	■ telnet (RFC 854) ■ rlogin (RFC 1282)
Protocols Used for Administration	■ UDP (RFC 768) ■ IP (RFC 791) ■ ICMP (RFC 792) ■ TCP (RFC 793) ■ ARP (RFC 826) ■ STP ((IEEE 802.1d)) ■ Flow control (IEEE 802.3x) ■ VLANs (IEEE 802.1Q)

For updated MIB information, see the Release Notes.

Table 12 LED Indicators on the CoreBuilder 9400

LED	Type	Description
System LEDs	■ **Power**	■ **Green** — System is on. ■ **Off** — System is receiving no power.
	■ **Fault**	■ **Off** — System is operational. ■ **Solid or Blinking Yellow** — System failed diagnostics, or some other operational failure has occurred.
Port LEDs	■ **Stat**	■ **Off** — Port is off-line. ■ **Blinking Green** — Port is online but disabled. ■ **Green** — Port is online and enabled.
	■ **Pckt**	■ **Off** — Port is off-line. ■ **Blinking Yellow** — Port is passing data. ■ **Yellow** — Port is passing data.

B FIELD-REPLACEABLE UNITS

This appendix contains information on how to remove and replace the CoreBuilder® 9400 Field-Replaceable Units (FRUs). The FRUs include:

- Power supply assembly
- Fan tray assembly

Only trained technical personnel should remove and install the power supply.

Audience

This appendix is intended for **trained technical personnel** only. Do not attempt to remove or replace a CoreBuilder 9400 power supply if you have not had the proper training from 3Com. For training information, call 1-800-NET-3COM or see the numbers for your country in Appendix D.

WARNING: *Hazardous energy exists within the CoreBuilder 9400 system. Use extreme caution when you remove or replace the FRUs. Always be careful to avoid electric shock or equipment damage. See "Safety Precautions" next.*

Safety Precautions

Be sure that you follow all safety precautions when you replace components in a CoreBuilder 9400 system. Hazardous energy exists inside the system chassis. To avoid electric shocks, burns, or equipment damage, read and following these warnings:

WARNING: *Always unplug the power cord before you open any electronics chassis box or enclosure.*

When the system is on, do not touch any connections within the chassis. Do not insert metal objects into the system.

Power Supply Assembly Removal and Replacement

The CoreBuilder 9400 system operates using a single power supply assembly. You can add a second power supply to the system for redundancy. If either power supply fails, the Fault LED lights yellow.

Removing and Replacing the Power Supply

1. Remove the power cord from the power supply.
2. Loosen the captive screws that secure the power supply to the chassis.
3. Grasp the power supply handle and gently slide the power supply out of the chassis.

4 Grasp the handle of the new power supply and gently slide it into the chassis.

5 To seat the power supply, ensure that all connectors are aligned. Then push the power supply inward until the connectors engage and latch. The latch should slide up. You feel a slight resistance as the connectors engage.

CAUTION: *If the resistance is too great, the connectors may not be aligned. Forcing the power supply inward could damage the connectors. If necessary, remove and reinsert the power supply, ensuring that the connectors are properly aligned.*

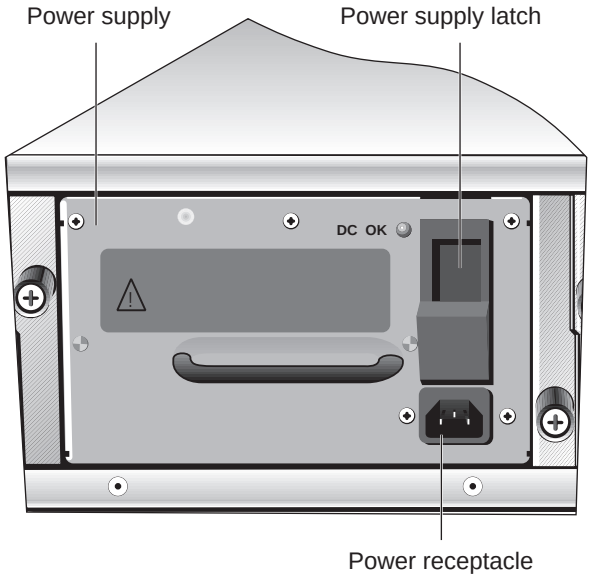
6 Tighten the captive screws that secure the power supply to the chassis.

7 Plug the power cord into the system.

8 Plug the other end of the power cord into the building's power outlet.

If your system has two power supplies, be sure to plug in the second power supply. Leaving the second power supply unplugged causes the system diagnostics to generate a power supply error.

Figure 13 Removing and Replacing the Power Supplies



Fan Tray Assembly Removal and Replacement

The CoreBuilder 9400 is cooled by the fan tray assembly, which contains two 12-volt DC fans. The fans are thermally controlled, which means that they run at slower speeds when the system is operating at temperatures of less than 30 °C and at full speed when the system temperature is above that.

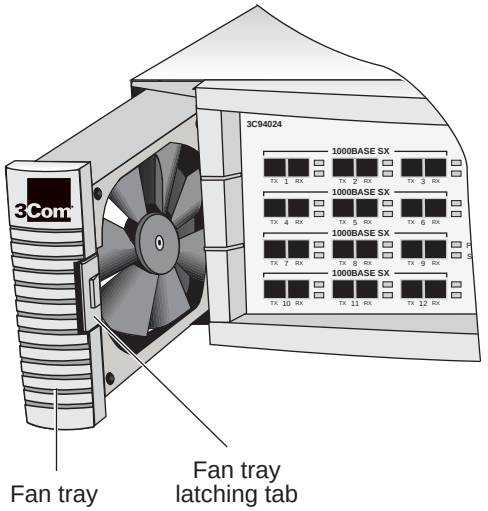
You need no tools to remove the fan tray. You can remove and replace the fan tray with the power on.

To remove and replace the fan tray assembly, follow these steps:

1. Facing the front of the system, squeeze the fan tray latching tab.
2. Slide the fan tray out of the system.
3. Slide the new fan tray into the system chassis.
4. To seat the fan tray, ensure that the connectors are aligned, and then push the fan tray inward until the connectors engage and the fan tray latches. You feel a slight resistance as the connectors engage.

CAUTION: *If the resistance is too great, the connectors may not be aligned. Forcing the fan tray inward could damage the connectors. If necessary, remove and reinsert the fan tray, ensuring that the connectors are properly aligned.*

Figure 14 Removing and Replacing the Fan Trays



C SITE REQUIREMENTS AND SAFETY CODES

For your reference, this appendix summarizes the criteria that your site should meet for the CoreBuilder® 9400 to operate safely and effectively.

The topics covered in this appendix:

- General Safety Requirements
- Wiring Closet Recommendations
- Distribution Rack Requirements, if you mount one or more CoreBuilder 9400 systems in a distribution rack
- Building and Electrical Codes

General Safety Requirements

For safe operation, your site must meet these general safety requirements:

- Environmental requirements. See Appendix A and "Wiring Closet Recommendations" for details. Pay special attention to temperature and humidity.
- All building and electrical codes for your city and country. See relevant "Building and Electrical Codes" for more information.
- Grounding requirements. See "Wiring Closet Recommendations" and "Distribution Rack Requirements" for details.

Wiring Closet Recommendations

The cabling system plan at your facility probably covers most wiring closet concerns. 3Com also recommends that you check these items:

- Verify that your wiring closet meets all of the requirements in your facility cabling plan.
- Verify that your wiring closet and your facility meet all state, local, and country building and wiring codes.
- Be sure that your system is easily accessible for installation and service.
- Provide adequate overhead lighting for easy maintenance.
- Be sure that all wiring closet doors have locks to prevent unauthorized access.
- Assign wiring closet identification numbers using architectural location codes or some type of floor-grid matrix.
- Select a vinyl floor covering for your wiring closet. Concrete floors accumulate dust; carpets can cause static electricity.
- Be sure that the wiring closet floor is flat and level. If you are using distribution racks and the floor is not level, bolt the racks to the floor to prevent them from tipping over.

- Be sure that each wiring closet has a suitable ground. Ground all metal racks, enclosures, boxes, and raceways in the closet.
- Use AC power, 15-ampere service receptacles, type N5/15 or NEMA 5-15R for 120 VAC, and the other system specifications shown in Appendix A.
- Be especially sure to meet all system environmental requirements in Appendix A, such as ambient temperature and humidity.
- Be sure that the ventilation in the wiring closet is adequate to maintain a temperature below 40 °C (104 °F).
- Install a reliable air conditioning and ventilation system if you plan to have two or more CoreBuilder 9400 systems in a single wiring closet.
- To prevent overheating during nonbusiness hours, guard against the ventilation being shut down while a CoreBuilder 9400 system remains powered up.

Distribution Rack Requirements

If you plan to mount your CoreBuilder 9400 system in a distribution rack, verify that your rack meets the basic mechanical and space requirements described in this section.

Protective Grounding for the Rack

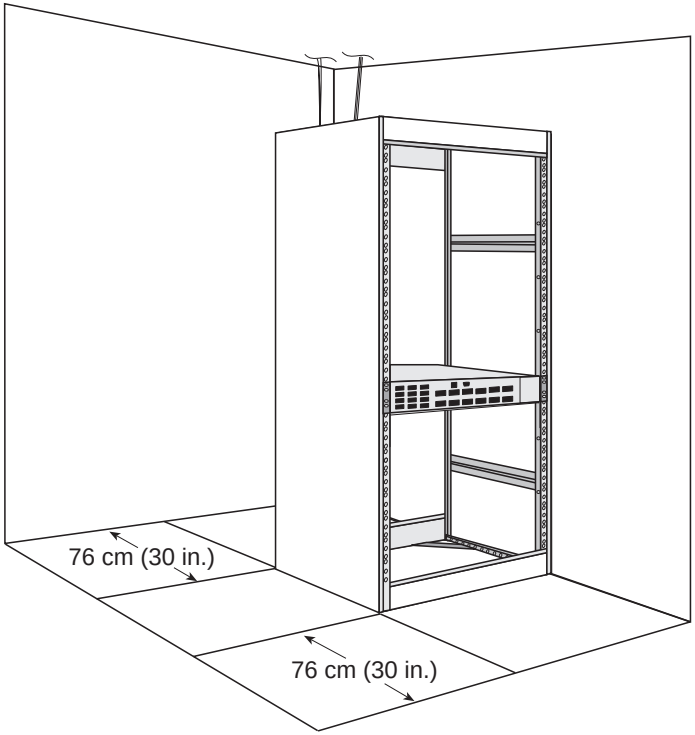
Proper distribution rack grounding ensures that voltages induced into wiring by lightning or other disturbances are directed to ground. Normally, you use a distribution rack grounding kit and a ground conductor that is carried back to earth or to another suitable building ground. To order the grounding kit, contact your sales representative.

Space Requirements for the Rack

Provide enough space in front of and behind the system so that you can service it easily. Allow a minimum of 76 cm (30 in.) between the rack and any wall behind or in front of it. Extra room on each side is optional. See Figure 15.

Install your distribution rack near an easily accessible power outlet. You can power down the system only by removing the power cord from the power source.

Figure 15 Recommended Service Access



Mechanical Requirements for the Rack

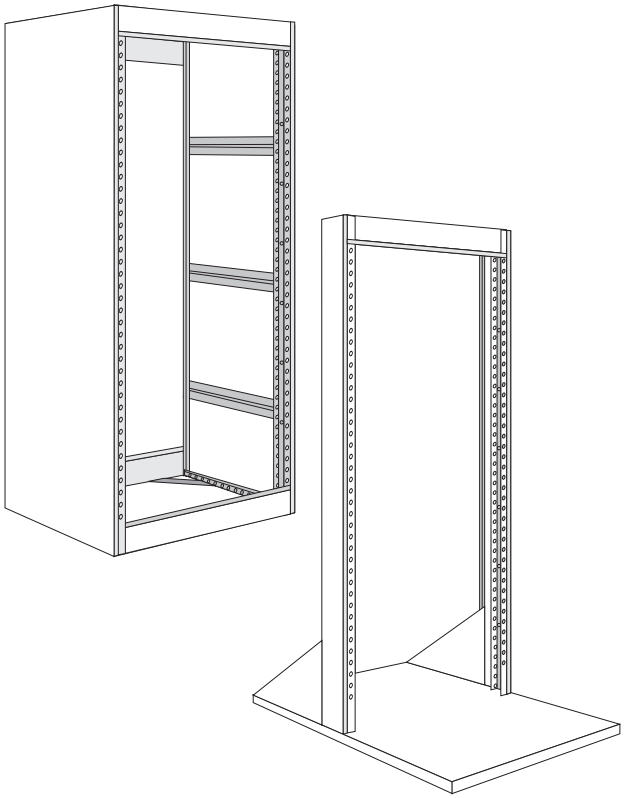
Verify that your racks comply with the standards and requirements in your cabling system plan and conform to these conventional standards:

- In the United States, comply with EIA Standard RS-310C: Racks, Panels, and Associated Equipment.
- In countries other than the United States, comply with IEC Standard 297: Dimensions of Panels and Racks.

In addition, 3Com recommends that your distribution racks meet these requirements:

- Use an open style, 19-inch rack. The rack styles shown in Figure 16 facilitate easy maintenance and provide excellent ventilation.
- Use a rack that has the universal mounting rail hole pattern identified in IEC Standard 297.
- Use a rack that is made of steel.
- Install equipment in the lower half of the distribution rack to avoid making it top heavy.
- Use a rack that supports approximately 272 kg (600 lb)
- Use a rack that has adequate electrical grounding, for instance, with a distribution rack grounding kit.
- Verify that the floor under the rack is level within 5 mm ($3/16$ in.). Use a floor-leveling cement compound or bolt the racks to the floor.
- Attach the rack to the wiring closet floor with 9.5 mm ($3/8$ in.) lag screws or equivalent hardware.
- Brace open distribution racks if the channel thickness is less than 6.4 mm ($1/4$ in.).

Figure 16 Recommended Rack Styles



Building and Electrical Codes

Follow all appropriate building codes and authorities on electrical codes when planning your site and installing your cable for the CoreBuilder 9400 system.

Specific building and electrical codes vary depending on your location. The following lists are provided as resources to help you find additional information. In countries other than the United States, consult the appropriate regulatory and industry organization.

U.S. Building Codes

Major building codes:

- Uniform Building Code

  International Conference of Building Officials (ICBO)
  Headquarters: 5360 Workman Mill Road
  Whittier CA 90601-2298 USA
  www.icbo.org

- BOCA Basic Building Code

  Building Officials and Code Administrators (BOCA) International, Inc.
  Headquarters: 4051 West Flossmoor Road
  Country Club Hills IL 60478 USA
  www.bocai.org

- Standard Building Code (SBC)

  Southern Building Code Congress International, Inc.
  900 Montclair Road
  Birmingham AL 35213-1206 USA
  www.sbcci.org

U.S. Electrical Codes

Authorities on electrical codes:

- National Electrical Code (NEC) Classification — A recognized authority on safe electrical wiring. U.S. Federal, state, and local governments use NEC standards to establish their own laws, ordinances, and codes on wiring specifications. The NEC Classification is published by:

  National Fire Protection Association (NFPA)
  1 Batterymarch Park
  P.O. Box 9101
  Quincy MA 02269-9109 USA
  www.nfpa.org

- Underwriters' Laboratories (UL) Listing — An independent research and testing laboratory. UL evaluates the performance and capability of electrical wiring and equipment to determine whether they meet certain safety standards when properly used. Acceptance is usually indicated by the words "UL Approved" or "UL Listed."

  UL
  333 Pfingsten Road
  Northbrook IL 60062-2096 USA
  www.ul.com

- National Electrical Manufacturers Association (NEMA) — An organization of electrical product manufacturers. Members develop consensus standards for cables, wiring, and electrical components.

  NEMA
  1300 North 17th Street, Suite 1847
  Rosslyn VA 22209 USA
  www.nema.org

- Electronic Industries Association (EIA) — A trade association that develops technical standards, disseminates marketing data, and maintains contact with government agencies in matters relating to electronics and related industries.

  EIA
  2500 Wilson Boulevard
  Arlington VA 22201-3834 USA
  www.eia.org

D TECHNICAL SUPPORT

3Com provides easy access to technical support information through a variety of services. This appendix describes these services.

Information contained in this appendix is correct at time of publication. For the most recent information, 3Com recommends that you access the 3Com Corporation World Wide Web site.

Online Technical Services

3Com offers worldwide product support 24 hours a day, 7 days a week, through the following online systems:

- World Wide Web site
- 3Com Knowledgebase Web Services
- 3Com FTP site
- 3Com Bulletin Board Service (3Com BBS)
- 3Com Facts℠ Automated Fax Service

World Wide Web Site

To access the latest networking information on the 3Com Corporation World Wide Web site enter this URL into your Internet browser:

`http://www.3com.com/`

This service provides access to online support information such as technical documentation and software library, as well as support options that range from technical education to maintenance and professional services.

3Com Knowledgebase Web Services

This interactive tool contains technical product information compiled by 3Com expert technical engineers around the globe. Located on the World Wide Web at **`http://knowledgebase.3com.com`**, this service gives all 3Com customers and partners complementary, round-the-clock access to technical information on most 3Com products.

3Com FTP Site

Download drivers, patches, software, and MIBs across the Internet from the 3Com public FTP site. This service is available 24 hours a day, 7 days a week.

To connect to the 3Com FTP site, enter the following information into your FTP client:

- Hostname: **`ftp.3com.com`**
- Username: **`anonymous`**
- Password: **`<your Internet e-mail address>`**

You do not need a user name and password with Web browser software such as Netscape Navigator and Internet Explorer.

3Com Bulletin Board Service

The 3Com BBS contains patches, software, and drivers for 3Com products. This service is available through analog modem or digital modem (ISDN) 24 hours a day, 7 days a week.

Access by Analog Modem

To reach the service by modem, set your modem to 8 data bits, no parity, and 1 stop bit. Call the telephone number nearest you:

Country	Data Rate	Telephone Number
Australia	Up to 14,400 bps	61 2 9955 2073
Brazil	Up to 28,800 bps	55 11 5181 9666
France	Up to 14,400 bps	33 1 6986 6954
Germany	Up to 28,800 bps	4989 62732 188
Hong Kong	Up to 14,400 bps	852 2537 5601
Italy	Up to 14,400 bps	39 2 27300680
Japan	Up to 14,400 bps	81 3 5977 7977
Mexico	Up to 28,800 bps	52 5 520 7835
P.R. of China	Up to 14,400 bps	86 10 684 92351
Taiwan, R.O.C.	Up to 14,400 bps	886 2 377 5840
U.K.	Up to 28,800 bps	44 1442 438278
U.S.A.	Up to 53,333 bps	1 847 262 6000

Access by Digital Modem

ISDN users can dial in to the 3Com BBS using a digital modem for fast access up to 64 Kbps. To access the 3Com BBS using ISDN, call the following number:

1 847 262 6000

3Com Facts Automated Fax Service

The 3Com Facts automated fax service provides technical articles, diagrams, and troubleshooting instructions on 3Com products 24 hours a day, 7 days a week.

Call 3Com Facts using your Touch-Tone telephone:

1 408 727 7021

Support from Your Network Supplier

If you require additional assistance, contact your network supplier. Many suppliers are authorized 3Com service partners who are qualified to provide a variety of services, including network planning, installation, hardware maintenance, application training, and support services.

When you contact your network supplier for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

If you are unable to contact your network supplier, see the following section on how to contact 3Com.

Support from 3Com

If you are unable to obtain assistance from the 3Com online technical resources or from your network supplier, 3Com offers technical telephone support services. To find out more about your support options, call the 3Com technical telephone support phone number at the location nearest you.

When you contact 3Com for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

Here is a list of worldwide technical telephone support numbers:

Country	Telephone Number
Asia Pacific Rim	
Australia	1 800 678 515
Hong Kong	800 933 486
India	+61 2 9937 5085
Indonesia	001 800 61 009
Japan	0031 61 6439
Malaysia	1800 801 777
New Zealand	0800 446 398
Pakistan	+61 2 9937 5085
Philippines	1235 61 266 2602
P.R. of China	10800 61 00137 or 021 6350 1590
Singapore	800 6161 463
S. Korea	
From anywhere in S. Korea:	00798 611 2230
From Seoul:	(0)2 3455 6455
Taiwan, R.O.C.	0080 611 261
Thailand	001 800 611 2000
Europe	
From anywhere in Europe, call:	+31 (0)30 6029900 phone +31 (0)30 6029999 fax
Europe, South Africa, and Middle East	
From the following countries, you may use the toll-free numbers:	
Austria	0800 297468
Belgium	0800 71429
Denmark	800 17309
Finland	0800 113153
France	0800 917959
Germany	0800 1821502
Hungary	00800 12813
Ireland	1800 553117
Israel	1800 9453794
Italy	1678 79489
Netherlands	0800 0227788
Norway	800 11376
Poland	00800 3111206
Portugal	0800 831416
South Africa	0800 995014
Spain	900 983125
Sweden	020 795482
Switzerland	0800 55 3072
U.K.	0800 966197
Latin America	
Argentina	AT&T +800 666 5065
Brazil	0800 13 3266
Chile	1230 020 0645
Colombia	98012 2127
Mexico	01 800 CARE (01 800 2273)
Peru	AT&T +800 666 5065
Puerto Rico	800 666 5065
Venezuela	AT&T +800 666 5065
North America	1 800 NET 3Com (1 800 638 3266) Enterprise Customers: 1 800 876-3266

Returning Products for Repair

Before you send a product directly to 3Com for repair, you must first obtain an authorization number. Products sent to 3Com without authorization numbers will be returned to the sender unopened, at the sender's expense.

To obtain an authorization number, call or fax:

Country	Telephone Number	Fax Number
Asia, Pacific Rim	+65 543 6500	+65 543 6348
Europe, South Africa, and Middle East	+31 30 6029900	+31 30 6029999

From the following countries, you may call the toll-free numbers; select option 2 and then option 2:

Austria	0800 297468
Belgium	0800 71429
Denmark	800 17309
Finland	0800 113153
France	0800 917959
Germany	0800 1821502
Hungary	00800 12813
Ireland	1800 553117
Israel	1800 9453794
Italy	1678 79489
Netherlands	0800 0227788
Norway	800 11376
Poland	00800 3111206
Portugal	0800 831416
South Africa	0800 995014
Spain	900 983125
Sweden	020 795482
Switzerland	0800 55 3072
U.K.	0800 966197

Country	Telephone Number	Fax Number
Latin America	1 408 326 2927 (not toll-free)	1 408 326 3355 (not toll-free)
U.S.A. and Canada	1 800 NET 3Com (1 800 638 3266) Enterprise Customers: 1 800 876 3266	1 408 326 7120 (not toll-free)

INDEX

3Com Corporation LIMITED WARRANTY

CoreBuilder® 9400 High-Availability Switch

HARDWARE

3Com warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for one (1) year from the date of purchase from 3Com or its authorized reseller.

3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

SOFTWARE

3Com warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from 3Com or its authorized reseller. 3Com warrants the media containing software against failure during the warranty period. No updates are provided. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable 3Com published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. 3Com makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the 3Com software product documentation or specifications as being compatible, 3Com will make reasonable efforts to provide compatibility, except where the noncompatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with 3Com's published specifications or user manual.

THIS 3COM PRODUCT MAY INCLUDE OR BE BUNDLED WITH THIRD-PARTY SOFTWARE, THE USE OF WHICH IS GOVERNED BY A SEPARATE END-USER LICENSE AGREEMENT. THIS 3COM WARRANTY DOES NOT APPLY TO SUCH THIRD-PARTY SOFTWARE. FOR THE APPLICABLE WARRANTY, PLEASE REFER TO THE END-USER LICENSE AGREEMENT GOVERNING THE USE OF SUCH SOFTWARE.

YEAR 2000 WARRANTY

In addition to the Hardware Warranty and Software Warranty stated above, 3Com warrants that each product sold or licensed to Customer on and after January 1, 1998, that is date sensitive will continue performing properly with regard to such date data on and after January 1, 2000, provided that all other products used by Customer in connection or combination with the 3Com product, including hardware, software, and firmware, accurately exchange date data with the 3Com product, with the exception of those products identified at 3Com's Web site, http://www.3com.com/products/yr2000.html, as not meeting this standard. If it appears that any product that is stated to meet this standard does not perform properly with regard to such date data on and after January 1, 2000, and Customer notifies 3Com before the later of April 1, 2000, or ninety (90) days after purchase of the product from 3Com or its authorized reseller, 3Com shall, at its option and expense, provide a software update which would effect the proper performance of such product, repair such product, deliver to Customer an equivalent product to replace such product, or, if none of the foregoing is feasible, refund to Customer the purchase price paid for such product.

Any software update or replaced or repaired product will carry a Year 2000 Warranty for ninety (90) days after purchase or until April 1, 2000, whichever is later.

OBTAINING WARRANTY SERVICE

Customer must contact a 3Com Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from 3Com or its authorized reseller may be required. Products returned to 3Com's Corporate Service Center must be preauthorized by 3Com with a Return Material Authorization (RMA) number or User Service Order (USO) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. Responsibility for loss or damage does not transfer to 3Com until the returned item is received by 3Com. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after 3Com receives the defective product.

3Com shall not be responsible for any software, firmware, information, or memory data of Customer contained in, stored on, or integrated with any products returned to 3Com for repair, whether under warranty or not.

Dead- or Defective-on-Arrival. In the event a product completely fails to function or exhibits a defect in materials or workmanship within the first forty-eight (48) hours of installation but no later than thirty (30) days after the date of purchase, and this is verified by 3Com, it will be considered dead- or defective-on-arrival (DOA) and a replacement shall be provided by advance replacement. The replacement product will normally be shipped not later than three (3) business days after 3Com's verification of the DOA product, but may be delayed due to export or import procedures. The shipment of advance replacement products is subject to local legal requirements and may not be available in all locations. When an advance replacement is provided and Customer fails to return the original product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement product, at list price.

Advance Replacement is provided for ninety (90) days, after which time it may be available for a specified fee. 3Com will make commercially reasonable efforts to ship the replacement product not later than five (5) business days after receiving the request for advance replacement, but may be delayed due to product availability or export or import procedures. The shipment of advance replacement products is subject to local legal requirements and may not be available in all locations. When an advance replacement is provided and Customer fails to return the original product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement, at list price. This advance replacement is different from the fee-based Advance Hardware Replacement Service, which is available as a contracted service offering.

INCLUDED SERVICES:

Telephone Support, with coverage for basic troubleshooting only, will be provided for ninety (90) days from the date of purchase, on a commercially reasonable efforts basis. Please refer to the Technical Support appendix in the Getting Started Guide for telephone numbers.

3Com's Web and Bulletin Board Services provide 3Knowledgebase, bug tracking, documentation, release notes, and some software maintenance releases at no charge.

WARRANTIES EXCLUSIVE

IF A 3COM PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT 3COM'S OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, TERMS, OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS, OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NONINFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. 3COM NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, OR USE OF ITS PRODUCTS.

3COM SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT OR MALFUNCTION IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLECT, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO OPEN, REPAIR, OR MODIFY THE PRODUCT, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, POWER CUTS OR OUTAGES, OTHER HAZARDS, OR ACTS OF GOD.

LIMITATION OF LIABILITY

TO THE FULL EXTENT ALLOWED BY LAW, 3COM ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF 3COM OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT 3COM'S OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

DISCLAIMER

Some countries, states, or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to you. When the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights which may vary depending on local law.

GOVERNING LAW

This Limited Warranty shall be governed by the laws of the State of California, U.S.A., excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.

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