

RouteAbout Access ES

Installation and Configuration

Part Number: ER-ROUTE-IN. A01

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This manual describes how to install the RouteAbout Access ES.

Revision/Update Information: This is a new document.

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This product is in conformity with the protection requirements of EC Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Proteon 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-Proteon option cards.

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The safety status of interconnection ports is as follows:

Host Connection Port	Safety Extra Low Voltage (SELV)
NTP Port	Telecom Network Voltage (TNV)
Console (maintenance)	SELV

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Safety Information

CAUTION

For your personal safety, follow these safety guidelines before installing the RouteAbout Access ES.

- Do *not* remove the covers. The unit is self-contained with no user-serviceable parts.
- Use only indoors. The unit is not intended for any other use.
- Disconnect power supply cord in case of emergency.
- Plug the unit directly into a grounded outlet.
- Be sure you have the required power for the RouteAbout Access ES. The unit requires 100-240 VAC/50-60 Hz power.
 - For 110 Volt Operation: Use a UL Listed/CSA labelled cord set consisting of a minimum 18 AWG, Type SVT or SJT three-conductor cord terminating in a molded connector body that has an IEC CEE-22 female configuration on one end and a molded-on parallel blade grounding type attachment plug rated 15A, 125V configuration (5-15P) at the other end.
 - For 230 Volt Operation (North America): Use a UL Listed/CSA labelled cord set consisting of a minimum 18 AWG, Type SVT or SJT three-conductor cord terminating in a molded connector body that has an IEC CEE-22 female configuration on one end and a molded-on tandem blade grounding type attachment plug rated 15A, 250V configuration (6-15P) at the other end.
 - For 230 Volt Operation (other than North America): Use a cord set, marked HAR, consisting of a minimum HO5VV-F cord that has a minimum 0.75 square millimeter diameter conductors provided with an IEC 320 receptacle and a male plug suitable for the country of installation.

ACHTUNG

Beachten Sie im Interesse Ihrer eigenen Sicherheit unbedingt die nachstehenden Sicherheitshinweise, bevor Sie den RouteAbout Access ES installieren!

- Nehmen Sie auf keinen Fall die Abdeckungen ab. Der RouteAbout Access ES enthält keine Teile, die vom Benutzer gewartet oder repariert werden können.
- Einheit nur in geschlossenen Räumen betreiben. Die Einheit ist nur für den vorgesehen Einsatzzweck zu verwenden.
- Bei Störfällen oder Fehlfunktionen Netzstecker ziehen.
- Netzstecker der Einheit direkt in eine geerdete Steckdose stecken.
- Achten Sie darauf, daß die Stromversorgung für den RouteAbout Access ES den technischen Daten der Einheit entspricht. Die Einheit wird mit 100-240 Volt Wechselstrom und 50-60 Hz betrieben.
 - Betrieb mit 110 Volt: Verwenden Sie eine UL-zugelassene Leitungsschnur mit CSA-Kennzeichnung und einem Drahtdurchmesser von mindestens 18 AWG, Typ SVT, oder eine SJT-Dreileiterschnur mit einem anvulkanisierten IEC CEE-22 Buchsenstecker an der einen Seite und einem anvulkanisierten Stiftstecker mit Schutzkontakt für 15 A, 125 V auf der anderen Seite (5-15P).
 - Betrieb mit 230 Volt (Nordamerica): Verwenden Sie eine UL-zugelassene Leitungsschnur mit CSA-Kennzeichnung und einem Drahtdurchmesser von mindestens 18 AWG, Typ SVT, oder eine SJT-Dreileiterschnur mit einem anvulkanisierten IEC CEE-22 Buchsenstecker an der einen Seite und einem anvulkanisierten Stiftstecker mit Schutzkontakt für 15 A, 250 V auf der anderen Seite (5-15P).
 - Betrieb mit 230 Volt (außerhalb Nordamerikas): Verwenden Sie eine Leitungsschnur mit HAR-Kennzeichnung und dem Typenkurzzeichen HO5VV-F, die einen Nennquerschnitt von mindestens 0,75 mm² hat sowie mit einer IEC 320-Steckbuchse und einem im Vertriebsland passenden Stecker ausgestattet ist.

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Preface

This guide contains information on the RouteAbout Access ES together with instructions for installing hardware and configuring software. You can configure your RouteAbout Access ES by using either the RouteAbout Access ES Configuration Tool, the graphical configuration utility shipped with your RouteAbout Access ES, or a command line interface. This Configuration Tool allows you to configure your RouteAbout Access ES interactively. It also provides detailed online Help.

This preface includes the following topics:

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Audience

This guide is intended for the inexperienced or moderately experienced user who has the support of an Internet Service Provider (ISP) or a network administrator and who has the responsibility for installing and configuring the RouteAbout Access ES on your local area network.

Related Documents

Digital provides the following sources of information for the RouteAbout Access ES:

- This guide
- Online Help — integral to the RouteAbout Access ES Configuration Tool

Correspondence

Documentation Comments

If you have comments or suggestions about this document, send them to Network Products Engineering.

Attn.: Documentation Project Manager

FAX: (508) 486-6093

E-MAIL:doc_feedback@lkg.mts.dec.com

Online Services

To locate product specific information, refer to the following online service:

BBS To read the Bulletin Board System, set your modem to 8 bits, no parity, 1 stop bit and dial 508-486-5777 (U.S.).

WWW The Digital Equipment Corporation Network Products Business Home Page on the World Wide Web is located at the following addresses:

North America: <http://www.networks.digital.com>

Europe: <http://www.networks.europe.digital.com>

Australia: <http://www.digital.com.au/networks>

Chapter 1

Introducing the RouteAbout Access ES

The RouteAbout Access ES is a remote access router that gives you inexpensive access from your Ethernet Local Area Network (LAN) to other LANs and to the Internet. It is an internetworking router that forwards (or routes) data along the most efficient network-to-network paths. It enables the PCs and workstations on your LAN to become part of the Internet or another Wide Area Network (WAN).

This chapter introduces you to your RouteAbout Access ES. It covers the following topics:

Hardware Capabilities	2
Software Capabilities	3
Connecting to the Internet	3

Hardware Capabilities

Your RouteAbout Access ES comes equipped with an RJ-45 connector for an Ethernet 10BaseT (twisted pair) LAN connection and a WAN connector. These connectors allow you to link to Ethernet segments and to connect to a WAN in order to access the Internet or another remote network.

Digital also offers an alternate model of the RouteAbout Access ES that has an Ethernet BNC connector that provides LAN connectivity using 10Base2 (ThinWire) cabling.

The following figure illustrates various ways of using your RouteAbout Access ES to connect your Ethernet LAN to the Internet or another WAN.

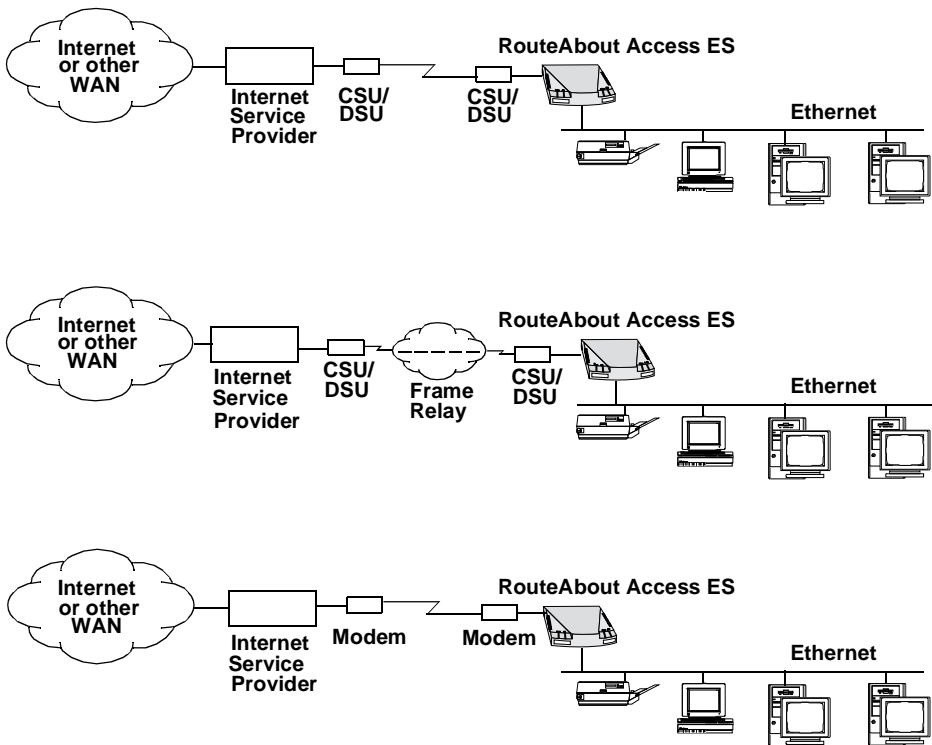


Figure 1-1 Connections to the Internet

Software Capabilities

The RouteAbout Access ES works right out of the box. All you need to do is assign IP network addresses supplied by either your Internet Service Provider (ISP) or your network manager.

The RouteAbout Access ES provides IP routing capability. This includes the ability to configure the Routing Information Protocol (RIP), static routes and filters, and access controls.

For communication over a WAN, the RouteAbout Access ES supports Point-to-Point Protocol (PPP), Frame Relay, and Dialup Serial Interface. PPP and Dialup Serial Interface both support synchronous and asynchronous transmission.

RouteAbout Access ES software allows you to create user accounts and to configure your router to run the Simple Network Management Protocol (SNMP). This software also supports the Password Authentication Protocol (PAP) and the Challenge Handshake Authentication Protocol (CHAP), which provide additional security for your RouteAbout Access ES.

Connecting to the Internet

Your RouteAbout Access ES allows you to connect to the Internet. To do so,

1. Contact your ISP for an Internet account which provides you with a subnet address that allows you to assign an IP address to the RouteAbout Access ES and each of the devices on your Ethernet network. Your ISP should also provide an IP address for the RouteAbout Access ES WAN interface that allows you to communicate with the Internet.
2. Determine the WAN service you are using for communication with the Internet or another WAN. The services supported by your RouteAbout Access ES are Point-to-Point Protocol (PPP), Frame Relay, and Dialup Serial Interface.
3. Select the RouteAbout Access ES type that supports your WAN connection and be sure you use the appropriate cable for this connection depending on whether you are connecting the RouteAbout Access ES to a modem or a CSU/DSU. (Refer to the table in the “Connecting Your

RouteAbout Access ES to a Wide Area Network (WAN)” section in Chapter 2.)

4. Set up the RouteAbout Access ES WAN connection, as described in the “Connecting Your RouteAbout Access ES to a Wide Area Network (WAN)” section in Chapter 2.
5. Configure the IP address for the RouteAbout Access ES serial interface, as described in the “Basic Configuration Options” section in Chapter 3.

Note: Each device on your Ethernet network needs an IP address in the same subnet as the RouteAbout Access ES for communication to the WAN via your RouteAbout Access ES. Your ISP provides you with a subnet address that allows you to assign a range of IP addresses to these devices.

If you are unsure of what to do, consult your ISP or network administrator. Your ISP or administrator should be able to provide you with detailed instructions for connecting to the Internet, creating authentication scripts, setting passwords, and so forth.

Chapter 2

Setting Up Your RouteAbout Access ES Hardware

Your RouteAbout Access ES provides communication from one LAN to another LAN or to a WAN (including the Internet). This chapter describes the step-by-step procedures for setting up the necessary connections. It includes the following topics:

Introduction	6
Connecting Your RouteAbout Access ES to an Ethernet	8
Connecting Your RouteAbout Access ES to a Wide Area Network (WAN)	10
Connecting Your RouteAbout Access ES Console Port to a PC	12

Introduction

Put your RouteAbout Access ES in an accessible place. The RouteAbout Access ES does not require any special environment. It operates at normal room temperature and humidity and can co-exist with the usual computing equipment and electronic devices found in offices, homes, and classrooms.

For complete information about the RouteAbout Access ES operating environment, refer to Appendix B, “Technical Specifications.”

The following sections show how to connect your RouteAbout Access ES

- To an Ethernet
- To a WAN
- Console port to a PC

The following figure illustrates the back panel of a RouteAbout Access ES that has an RJ-45 connector for 10BaseT cable connections to an Ethernet network.

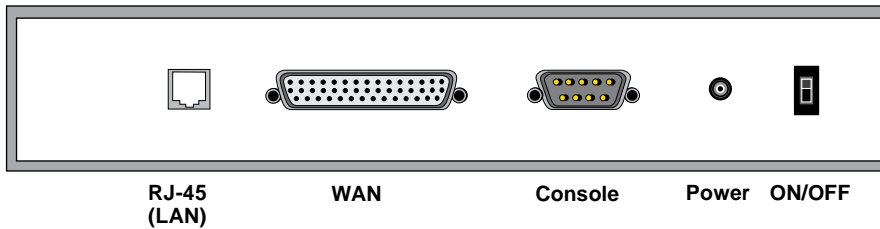


Figure 2-1 RouteAbout Access ES Back Panel

The following figure illustrates the back panel of a RouteAbout Access ES that has both a BNC and an RJ-45 connector for 10Base2 and 10BaseT cable connections to an Ethernet network, respectively.

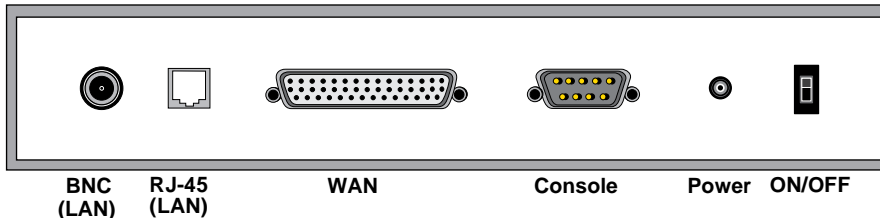


Figure 2-2 RouteAbout Access ES With a BNC Connector

Note: Even if you have a RouteAbout Access ES that has both a BNC and an RJ-45 connector, your RouteAbout Access ES does not support using both Ethernet LAN connections at the same time.

Caution

For your personal safety, follow the safety guidelines in the “Safety Information” section in the front of this guide before installing your RouteAbout Access ES.

Connecting Your RouteAbout Access ES to an Ethernet

You can connect your RouteAbout Access ES to an Ethernet by using 10BaseT (Twisted Pair) cable. If your RouteAbout Access ES is a model that also has a 10Base2 (BNC) connector, you can connect it to an Ethernet by using 10Base2 (ThinWire) cable.

Note: The RouteAbout Access ES does not support using both Ethernet LAN connections at the same time.

Using 10BaseT Cable

To connect the RouteAbout Access ES to an Ethernet using a 10BaseT cable, do the following:

1. Connect one end of the twisted pair (10BaseT) Ethernet cable to the RJ-45 connector on the RouteAbout Access ES.
2. Connect the other end of the cable to a 10BaseT concentrator or hub.

The following figure illustrates using 10BaseT (twisted pair) cable to connect your RouteAbout Access ES to the Ethernet LAN.

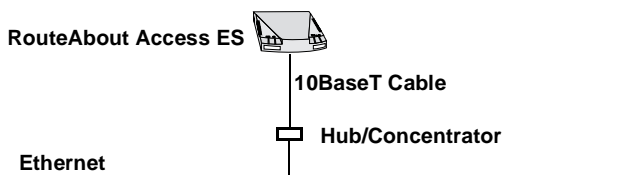


Figure 2-3 10BaseT Connection

Note: The maximum cable length for 10BaseT cable is 100 meters (approximately 328 feet).

Using 10Base2 Cable

To connect a RouteAbout Access ES to an Ethernet by using 10Base2 cable, do the following:

1. Attach a BNC T-connector to your RouteAbout Access ES BNC connector.

Note: Digital does not include the T-connector in your RouteAbout Access ES package, but you may purchase this and other equipment from Digital. Refer to the following list.

<u>Equipment</u>	<u>Part Number</u>
BNC T-connector	H8223
BNC barrel connector	H8224
BNC terminator	H8225

2. Connect one end of a ThinWire (10Base 2) coaxial cable to the BNC T-connector attached to your RouteAbout Access ES.
3. Connect the other end of the coaxial cable to the BNC T-connector attached to the Ethernet device.

Note: If either your RouteAbout Access ES or the Ethernet device is an end node, attach a BNC terminator to the open connector on the BNC T-connector.

The following figure illustrates using 10Base2 cable to connect your RouteAbout Access ES to an Ethernet.

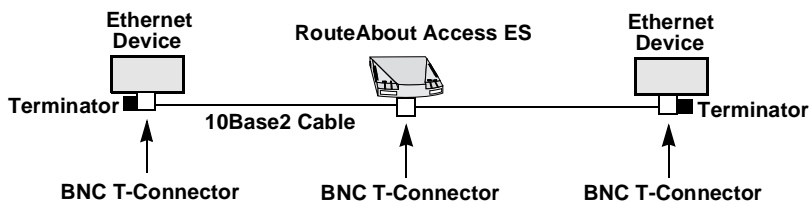


Figure 2-4 10Base2 Connection

Note: The maximum cable length for 10Base2 cable is 185 meters (approximately 600 feet).

Connecting Your RouteAbout Access ES to a Wide Area Network (WAN)

To connect your RouteAbout Access ES to the Internet or any other WAN, connect the WAN cable to the WAN connector on the RouteAbout Access ES.

To be sure that you are using the proper cable for each connection, check the part number on the cable with the information in the following table. To purchase cables, order by the Digital part number.

Part Number on Cable	Type of Cable	Digital Part Number
P4730-08	V.35 DTE	BN37D-02
P4730-09	RS-232 DTE	BN37E-02
P4730-10	X.21 DTE	BN37F-02
P4730-11	V.35 DCE	BN37G-02
P4730-12	RS-232 DCE	BN37H-02
P4730-13	X.21 DCE	BN37J-02

Note: The RouteAbout Access ES model that does not have a BNC connector for 10Base2 cable connections does not support X.21.

To connect a WAN cable from the RouteAbout Access ES to a Digital Switching Unit/Channel Switching Unit (DSU/CSU) or other Digital Communications Equipment (DCE) device, the DCE device must be full-duplex and provide clocking for both transmitting and receiving. The following figure shows various Data Terminal Equipment/Digital Communications Equipment (DTE/DCE) connections.

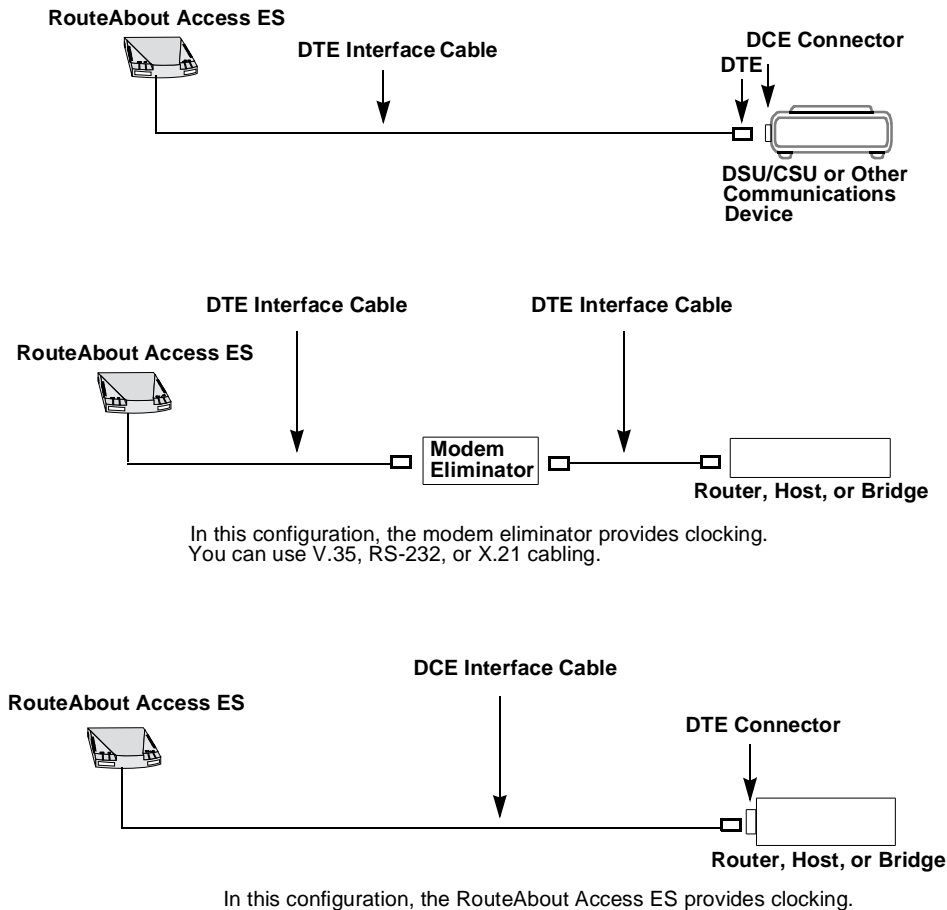


Figure 2-5 Various WAN Connections

Connecting Your RouteAbout Access ES Console Port to a PC

In order to set up the network interface for the RouteAbout Access ES, you must initially configure your RouteAbout Access ES from a PC connected to the RouteAbout Access ES Console port. You can use the RouteAbout Access ES Configuration Tool, Quick Config, or the Command Line Interface to do this initial configuration. (We discuss these configuration tools in Chapter 3.)

Use the cable supplied with the RouteAbout Access ES to connect a PC to the Console port. The following figure shows three ways to connect a PC to the RouteAbout Access ES.

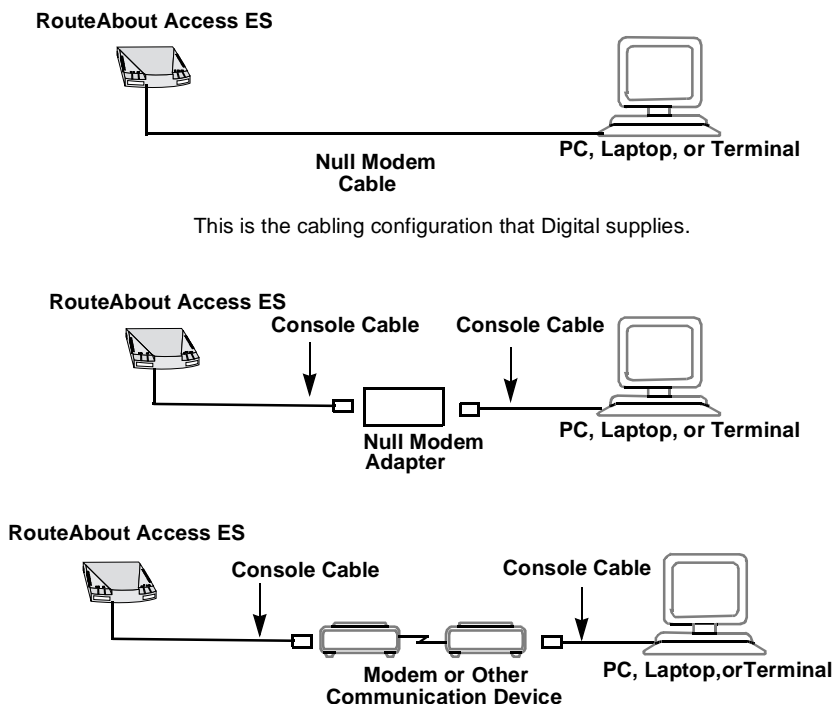


Figure 2-6 Console Connections

Running Windows

If you are running Windows on a PC not connected to the RouteAbout Access ES Console port, your PC needs the TCP/IP networking software or “stack” (WINSOCK.DLL) that allows communication with the Internet or other TCP/IP networks. This software is included with Windows 95. (Be sure to install it.) If you are running an earlier version of Windows (Windows 3.1, Windows for Workgroups, or Windows NT), be sure that this software has been installed on your PC.

Microsoft Windows Terminal Emulator

Digital supplies the Microsoft™ Terminal Emulation program with the RouteAbout Access ES Configuration Tool. If you want to configure your RouteAbout Access ES by using Quick Config or the Command Line Interface, connect your PC serial port to the RouteAbout Access ES Console port and run the Terminal Emulation program.

To be sure that your Terminal has the proper settings, select the Settings menu and configure the following settings:

1. Terminal Emulation: DEC VT-100 (ANSI)
2. Terminal Preferences: Do not select Use Function, Arrow, and Ctrl Keys for Windows. This allows you to use Ctrl-C to abort certain router commands or booting.
3. Communications: Select the following settings:
 - a. Baud Rate: **9600**
 - b. Data Bits: **8**
 - c. Stop Bits: **1**
 - d. Parity: **None**
 - e. Flow Control: **Xon/Xoff**
 - f. Connector: **COM1** or **COM2**

Microsoft Windows 95 HyperTerminal Application

If you are running Windows 95, do the following to set up your HyperTerminal Application:

1. Click the Start button and select Programs, Accessories, and HyperTerminal.
2. In the HyperTerminal window, double click the Hypertrm.exe icon.
3. Enter **rtabt** in the Name field and select any icon to represent your RouteAbout Access ES Terminal Emulation.
4. In the Phone Number screen, in the Connect using field, select the appropriate COM port to use, for example, Direct to Com 1.
5. In the COM1 Properties screen, select the following settings:
 - a. Baud Rate: **9600**
 - b. Data Bits: **8**
 - c. Parity: **None**
 - d. Stop Bits: **1**
 - e. Flow Control: **None**

Chapter 3

Configuring Your RouteAbout Access ES Software

This chapter discusses the tools available for configuring your RouteAbout Access ES. It focuses on one of those tools, the RouteAbout Access ES Configuration Tool. It includes the following topics:

Introduction	16
Installing the RouteAbout Access ES Configuration Tool	17
Running the RouteAbout Access ES Configuration Tool	18
Getting Online Help	20
Setting Passwords	21
Configuring Your RouteAbout Access ES	22
Internal Boot Device	29

Introduction

You receive your RouteAbout Access ES with software already installed. Configuring the RouteAbout Access ES involves setting a few configuration parameters to make it work. You can configure your RouteAbout Access ES by using one of the following tools:

- The RouteAbout Access ES Configuration Tool (discussed in this chapter)
- Quick Config (discussed in Appendix A)
- The Command Line Interface (discussed in Appendix A)

The RouteAbout Access ES Configuration Tool is a Microsoft Windows-based graphical configurator shipped with your RouteAbout Access ES. It runs under Windows 3.1, Windows for Workgroups, Windows NT, and Windows 95.

Quick Config and the Command Line Interface (CLI) are command line interfaces that allow you to configure or monitor your RouteAbout Access ES by entering commands at a terminal.

Note: For first-time configuration of your RouteAbout Access ES, you must use a PC (or dumb terminal) connected to the RouteAbout Access ES Console port in order to assign an IP address to your router. You can use either the RouteAbout Access ES Configuration Tool or one of the command line interfaces to do this initial configuration. Once the IP address is configured, you can configure your router over the network.

Before You Begin

To run the RouteAbout Access ES Configuration Tool, you need a PC with the following:

- Microsoft Windows 3.1, Windows for Workgroups 3.11, Windows 95, or Windows NT
- A 386 processor (minimum)
- 8 megabytes of RAM (minimum)
- The TCP/IP stack (the TCP/IP networking software)

Note: If you are running Windows on a PC not connected to the RouteAbout Access ES Console port, your PC needs the TCP/IP networking software or “stack” (WINSOCK.DLL) in order to communicate with the Internet or other TCP/IP networks and to configure your RouteAbout Access ES over the network. The TCP/IP software is included with Windows 95. (Be sure to install it.) If you are running an earlier version of Windows (Windows 3.1, Windows for Workgroups, or Windows NT), be sure this software has been installed on your PC.

The following sections provide information on using the RouteAbout Access ES Configuration Tool for configuring your RouteAbout Access ES. (Appendix A provides similar information on Quick Config and the Command Line Interface.)

Installing the RouteAbout Access ES Configuration Tool

To install the RouteAbout Access ES Configuration Tool on your PC, do the following:

1. Insert the RouteAbout Access ES Configuration Tool disk in your PC floppy drive (A: or B:).
2. If you are running Windows 3.1, Windows for Workgroups, or Windows NT, from the Windows Program Manager, select the **Run...** command from the File menu.

If you are running Windows 95, click the Start button and select the **Run...** command.

3. Type the following command in the text box:

A:\setup OR **B:\setup**

4. Execute the command by clicking OK.
5. Choose the Continue button to complete the installation.

When you install the RouteAbout Access ES Configuration Tool, the Setup program creates a directory (rtabtcfg) on your C: drive with all the files

needed for running the Configuration Tool (including the executable, `rtabtcfg.exe`), and Windows software (for Windows 3.1, Windows for Workgroups, and Windows NT) creates a RouteAbout Access ES Setup Group containing an icon called `rtabtcfg`. Under Windows 95, the Setup program does not create a Setup Group. The icon (`rtabtcfg.ico`) is available in the installed directory. The Setup program also installs a Readme file and the Microsoft Terminal Emulation program (Windows 3.1, Windows for Workgroups, and Windows NT) or the Microsoft HyperTerminal application (Windows 95).

Running the RouteAbout Access ES Configuration Tool

Once you have installed the RouteAbout Access ES Configuration Tool, you can run the program and use it to configure your RouteAbout Access ES. Do the following:

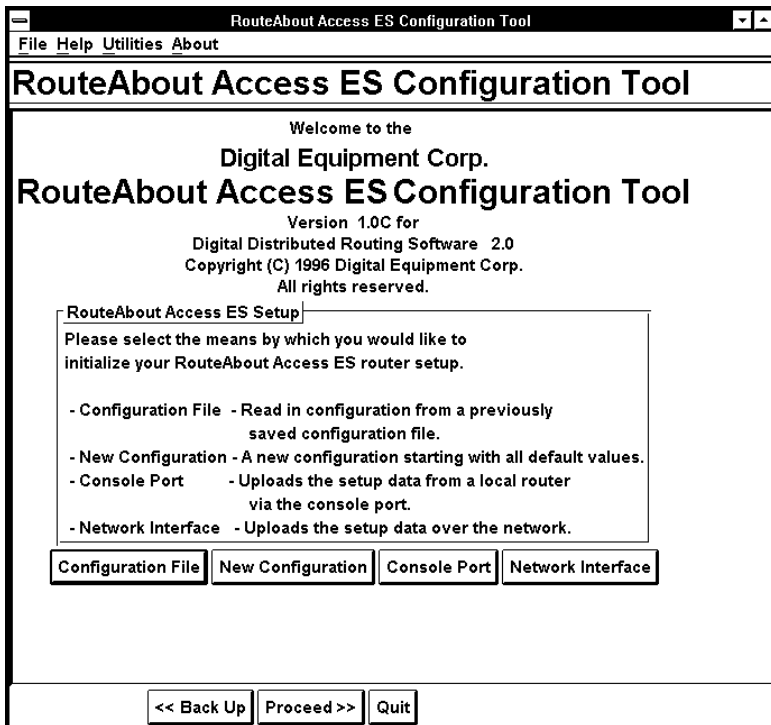
1. In Windows 3.1, Windows for Workgroups, or Windows NT, in Program Manager, either double click the RouteAbout Access ES Configuration Tool icon (`rtabtcfg`) or select the **Run...** command from the File menu.

In Windows 95, click the Start button and select the **Run...** command

2. If you select the **Run...** command, enter the path and filename of the executable program. For example,

```
C:\rtabtcfg\rtabtcfg.exe
```

The following window is the first to appear. From this window, you can access all the protocols and parameters/options that you need to configure your RouteAbout Access ES.



Proceed through the windows in the Configuration Tool and configure the parameters/options that you need for your particular RouteAbout Access ES.

For procedures and information on each of the configurable options or parameters, consult the Configuration Tool's online Help.

Getting Online Help

The RouteAbout Access ES Configuration Tool provides the following types of online Help:

Type of Help	For information about...
Context	The field in which the cursor is currently blinking (active)
Window	The entire active window
Overview	A particular topic

You can access Help on the context or the active window in either of the following ways:

- Select the Help menu (at the top of each RouteAbout Access ES Configuration Tool window) and then select the type of Help you want.
- Press `h` for Help on the current context or `w` for Help on the entire window.

To access Overview Help, choose the Overview button at the top of each Help window.

In the RouteAbout Access ES Configuration Tool Help, there are instructions for using the Configuration Tool and detailed information on the protocols and parameters needed to configure your RouteAbout Access ES. To access basic instructions for using the Configuration Tool and its Help effectively, press `h` in the opening window.

Setting Passwords

Passwords limit access to the router and the ability to change the configuration parameters.

When Do You Need a Password?

You do not need a password to start the RouteAbout Access ES Configuration Tool and to enter configuration settings on your PC. If the RouteAbout Access ES that you are configuring has the Console Login enabled, you do need a password to load your setup information and to set up some advanced options. The setup procedure prompts you for a password when you need one.

How to Choose a Password

Choose a password that is unique, easy to remember, and yet complicated enough so that no one can easily discover or ascertain it.

The best passwords combine numbers and letters. An easily remembered personal phrase is also a good password choice. The RouteAbout Access ES setup software accepts passwords up to 40 characters long. RouteAbout Access ES passwords are sensitive to upper and lower case.

Configuring Your RouteAbout Access ES

The following sections provide information for configuring your RouteAbout Access ES.

Before You Begin

To configure your RouteAbout Access ES, you need to do the following:

1. Ask your ISP or network manager for the network addressing information that you need for your RouteAbout Access ES configuration.

Note: You need two sets of addresses, one for your Ethernet LAN and one for your WAN connection.

2. The first time you configure your RouteAbout Access ES, you must use a PC or dumb terminal connected to the RouteAbout Access ES Console port to configure your RouteAbout Access ES. You can do this in either of the following ways:

- Run the RouteAbout Access ES Configuration Tool and select either the Console Port or New Configuration button at the bottom of the opening window.

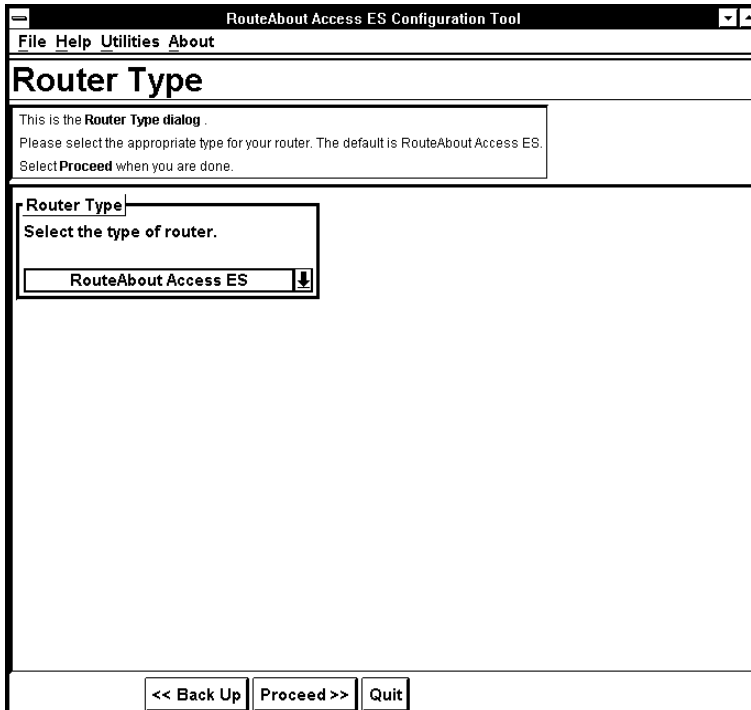
Be sure you are running the RouteAbout Access ES Configuration Tool version that supports the software load in your RouteAbout Access ES. The opening window and the About menu in any window of the Configuration Tool provide this information.

- Use one of the command line interfaces (Quick Config or the Command Line Interface).

Basic Configuration Options

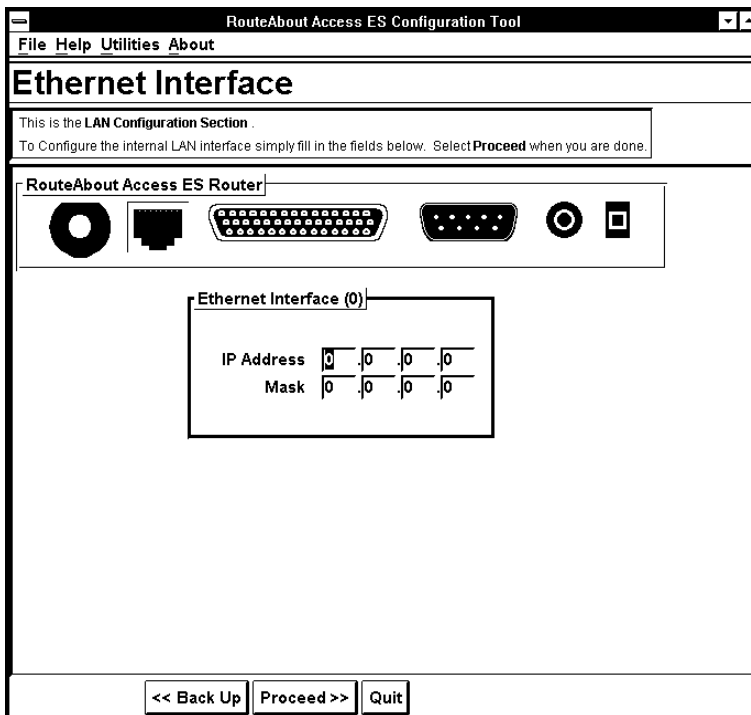
To configure your RouteAbout Access ES, do the following:

1. Choose the New Configuration button in the RouteAbout Access ES Configuration Tool opening window. The Router Type window appears:



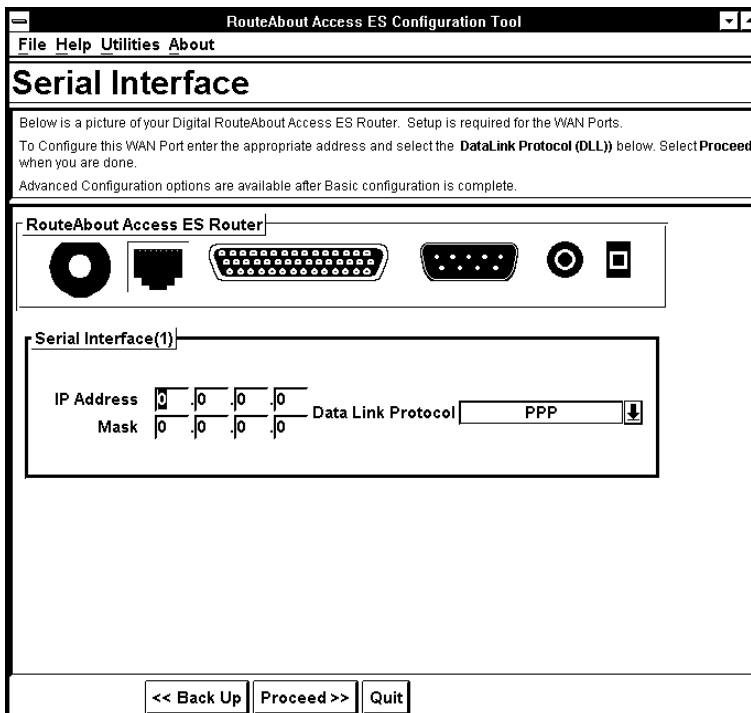
2. Select the type of router you are configuring (RouteAbout Access ES) from the drop-down list and choose the Proceed button at the bottom of the window.

The Ethernet Interface window appears.



3. Enter the IP address and network mask. If you already have a valid network address for Ethernet, use that address. If not, consult your network administrator.

4. Choose the Proceed button at the bottom of the window. The Serial Interface window appears.

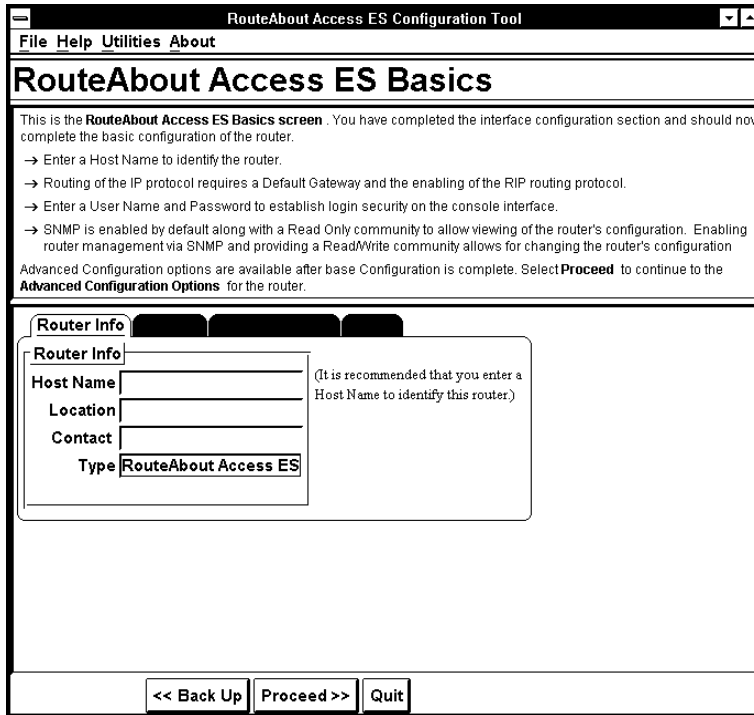


5. Enter the IP Address that your ISP or network administrator provides for your serial (WAN) interface.

6. From the Data Link Protocol drop-down list select PPP, Frame Relay, or Dial Serial Interface on the advice of your ISP or network administrator. Choose the Proceed button at the bottom of the window.

If you selected either PPP or Frame Relay, the RouteAbout Access ES Basics window appears.

If you selected Dial Serial Interface, the Phone Book window appears. You must proceed through a series of windows to reach the RouteAbout Access ES Basics window. Follow the advice of your ISP or network administrator about setting the parameters/options in these windows.



7. Follow the directions and advice given to you by your ISP or network administrator for configuring the parameters/options in the following windows:
 - Routing Info
 - Routing
 - Console Logon
 - SNMP
8. Enable the Routing Information Protocol (RIP) by selecting the Enable RIP check box in the Routing window.
9. If you want the console to have a password, select the Console Logon window and enter the appropriate information.
10. If this is your initial configuration, you must first configure SNMP. Only then can you configure your RouteAbout Access ES over the network. Do the following:
 - a. Select the SNMP window.
Note: SNMP is enabled by default.
 - b. Enable router management via SNMP.
 - c. Add a Read/Write management community.
Use a community name that you can remember and that provides security for your RouteAbout Access ES
11. Choose the Proceed button at the bottom of the window.
The Advanced Configuration Options window appears.

Advanced Configuration Options

The Advanced Configuration Options window lets you configure additional networking protocols and advanced configuration options for your RouteAbout Access ES.

RouteAbout Access ES Configuration Tool

File Help Utilities About

Advanced Configuration Options

This is the **Advanced Configuration Section**.
 You have completed the basic configuration of the router. Click on the appropriate button to configure any of the Advanced features of this router.
 Select **Proceed** to **Export** this configuration to your router.

RouteAbout Access ES
 Host Name

Ethernet Interface(0)

IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Mask	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Serial Interface(1)

IP Address	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Data Link Protocol	<input type="text" value="PPP"/>
Mask	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>		

Advanced Configuration Options

<input type="button" value="IP Setup"/>	<input type="button" value="SNMP Setup"/>	<input type="button" value="User List"/>
---	---	--

<< Back Up | Proceed >> | Quit

Digital recommends that your ISP or network administrator carry out any advanced configurations you may need for your RouteAbout Access ES.

Your RouteAbout Access ES, has the following options:

- IP Setup
- SNMP Setup
- User List

Internal Boot Device

From any window in the RouteAbout Access ES Configuration Tool, you can access the Internal Boot Device (IBD) Manager from the Utilities menu at the top of the window. The IBD is a utility that stores your RouteAbout Access ES software and boots your RouteAbout Access ES on startup.

To use the IBD Manager, you must enter the IP address of the RouteAbout Access ES that you want information on and a valid user name and password for accessing that RouteAbout Access ES. Once you have gained access (been granted permission) to use the RouteAbout Access ES, you can execute the commands listed in the following table.

Table 3-1 IBD Commands

Command	Meaning
List	Allows you to list the current contents of the IBD.
Get	Allows you to copy a file from the IBD.
Put	Allows you to copy a file to the IBD.
Delete	Allows you to delete a file from the IBD.
Reload Router	Allows you to load a new configuration into the RouteAbout Access ES.

Chapter 4

Monitoring the RouteAbout Access ES

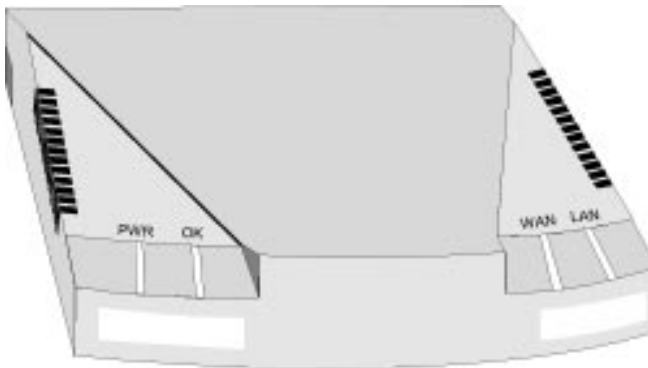
You can monitor the operational status of your RouteAbout Access ES by checking the status lights on the front of your router. You can also check the connection between your PC and the RouteAbout Access ES by running either the Ping or Telnet program.

This chapter contains the following topics:

Monitoring RouteAbout Access ES Status Lights	32
Running Ping and Telnet	33

Monitoring RouteAbout Access ES Status Lights

There are four green status lights in slots on the front of the RouteAbout Access ES. These lights indicate the current operating status of the RouteAbout Access ES. The lights can glow steadily (ON) or they can blink. The following list indicates the meaning of each light.



Light	Meaning
PWR	When the PWR light is ON, the RouteAbout Access ES power supply is operating within its specifications.
OK	When the OK light is ON, the RouteAbout Access ES is running its operational software. When it is blinking, the RouteAbout Access ES is running its startup (BOOT) software.
WAN	When the WAN light is ON, the RouteAbout Access ES WAN connection is up, and the RouteAbout Access ES is sending maintenance messages to the remote device on its WAN link. If the light is blinking, the RouteAbout Access ES is sending and receiving user data on its WAN link.
LAN	When the LAN light is ON, the RouteAbout Access ES LAN connection to your local network is up. If the light is blinking, the RouteAbout Access ES is sending and receiving user data on its LAN link.

Running Ping and Telnet

After you run the RouteAbout Access ES Setup Utility and download (export) the configuration to your RouteAbout Access ES, via the Console port, you can quickly check to see if your PC can reach the RouteAbout Access ES and whether the RouteAbout Access ES can forward data from your PC to a system on a remote LAN. If the **ping** and **telnet** commands are present on your PC or workstation, use these commands to check your connections. (The location of the Ping and Telnet utilities varies from system to system, depending on your operating system and the vendor's TCP/IP stack.)

Note: The examples in the following sections are Windows 3.1 examples.

From Your PC to the RouteAbout Access ES

To run Ping or Telnet from your PC to the RouteAbout Access ES, do the following:

1. In Program Manager, select the File menu and choose the **Run...** command.
2. In the command line text box, enter **ping** or **telnet** and the address of the LAN connector (port) on your RouteAbout Access ES.

Example: ping 128.185.19.6

If Ping succeeds, you receive a message indicating that the RouteAbout Access ES address is reachable; or you receive lines of output showing that your PC is receiving bytes of data back from the RouteAbout Access ES. If Telnet succeeds, you see a RouteAbout Access ES welcome message.

From Your PC to a Remote Network

To run Ping or Telnet from your PC to a remote network, do the following:

1. Ask your Internet Service Provider for the IP address or name of a remote system that your PC can reach through the RouteAbout Access ES.
2. In Program Manager, select the File menu and choose the **Run...** command.
3. In the command line text box, enter **ping** or **telnet** and the address of the remote system.

Example: ping 120.193.10.16

If Ping succeeds, you see either a message indicating that the address is reachable or a series of short messages that show when your PC receives bytes of data back from the remote system. If Telnet succeeds, a welcome message appears prompting you to log in to the remote system.

Chapter 5

Troubleshooting

This chapter provides information on the more common problems you may encounter in using your RouteAbout Access ES. It contains the following topics:

Hardware Problems and Solutions	36
Software Problems and Solutions	38

Hardware Problems and Solutions

The following table lists the more common hardware problems you may encounter with your RouteAbout Access ES or with routers in general. It identifies the problem, possible cause(s) of the problem, and the steps to take to solve the problem.

Table 5-1 Hardware Problems and Solutions

Problem	Possible Cause(s)	Solution
No LED, console, or other activity.	RouteAbout Access ES is not plugged into a power source.	Plug your RouteAbout Access ES into a grounded power outlet and ensure that the Power switch is ON.
	Circuit power interrupted.	Check outlet and circuit fuses or breakers.
Cannot communicate from your RouteAbout Access ES to another network device.	Wrong cable	Check the Part Number (P/N) on the cable and use the appropriate cable.
	Loose connection	Secure all connections.

Table 5-1 Hardware Problems and Solutions (Continued)

Problem	Possible Cause(s)	Solution
Cannot access a remote network or the Internet.	WAN interface connection is loose.	Seat the WAN connection securely.
	ISP service is down.	Try again later. Contact your ISP for status.
	Gateway between the RouteAbout Access ES and the ISP is down.	Try again later. Contact your ISP for status.
	Telephone lines are down.	Check for active telephone service on line. For a 10Base2 connection, ensure that the cable network is correctly terminated.

Software Problems and Solutions

The following table lists the more common software problems you may encounter with your RouteAbout Access ES or with routers in general. It identifies the problem, possible cause(s) of the problem, and the steps to take to solve the problem.

Table 5-2 Software Problems and Solutions

Problem	Possible Cause(s)	Solution
Cannot find a destination.	Wrong IP address	Configure the correct address.
Cannot read a configuration.	Configuration not loaded in the RouteAbout Access ES.	Download the appropriate configuration file.
User cannot access the RouteAbout Access ES.	User does not have appropriate permission.	Check user's account and assign the required permission.
Data is not being received.	RIP is not enabled.	Enable RIP.
	Data-link protocols are not compatible.	Verify that the same protocol is configured on the source and destination routers.
	Configuration settings are not compatible.	Verify that the settings are the same for both the source and destination routers.

Table 5-2 Software Problems and Solutions (Continued)

Problem	Possible Cause(s)	Solution
Cannot access a remote network or the Internet.	Wrong IP address	Correct the IP address for the destination.
	Incorrect network mask address	Correct the network mask address.
	Incorrect default gateway address	Correct the default gateway address.
RouteAbout Access ES Configuration Tool does not display all the configurable parameters.	Wrong version of the Configuration Tool.	Check that you are using the version that supports the software load in your RouteAbout Access ES.

Appendix A

Command Line Interface

This appendix provides instructions for using Quick Config and the Command Line Interface to configure your RouteAbout Access ES. It includes the following topics:

Using Quick Config	42
Understanding the Command Line Interface	43
Using the Command Line Interface	45
Commands	49

Using Quick Config

Quick Configuration (Quick Config) is a command line interface that provides a question and answer script that allows you to configure basic device, routing, and booting information without having to enter and exit the different configuration processes. (Other parameters are set to normal default values.)

Whatever parameters or options you cannot configure with Quick Config you can configure using CONFIG processes after exiting Quick Config.

You cannot delete Quick Config information from within Quick Config; but you can correct it by exiting and returning to Quick Config or by typing **r** for **restart** as a response to a Quick Config question.

Entering the Quick Config Mode

If you want to use the Quick Config mode to demonstrate the router's capabilities or to reconfigure on the fly without having to learn the router's operating system commands, type **qconfig** at the `Config>` prompt.

Exiting Quick Config

To exit Quick Config, type **r** for restart at any prompt and follow the queries until you type **no** and then **q** for **quit**. The router returns to the `Config (only)>` prompt or the `Config>` prompt.

Understanding the Command Line Interface

The processes you use most often are OPCON, GWCON, CONFIG, and MONITR. Figure A-1 shows the processes and how they fit within the structure of the router software.

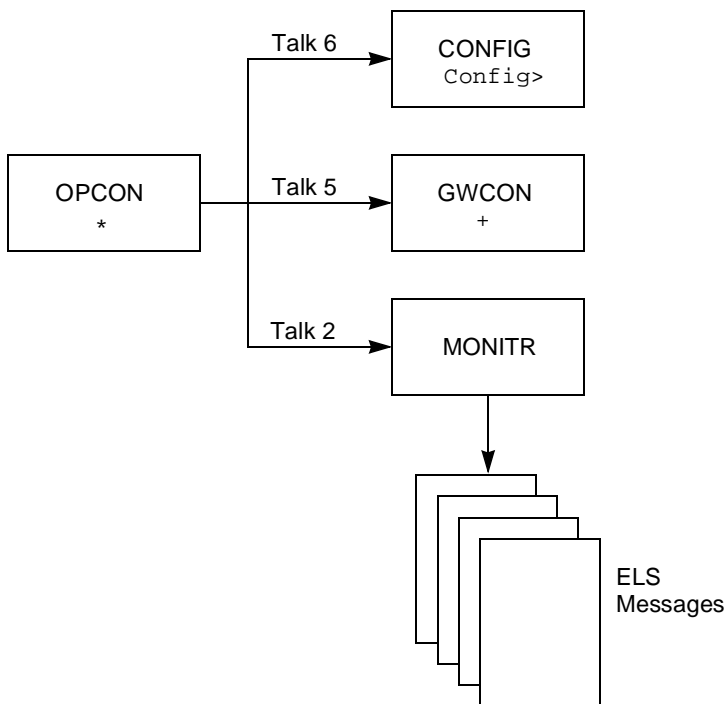


Figure A-1 Router Software Processes

Table A-1 is a list of processes on the router, with definitions and prompts.

Table A-1 Process Definitions

Process	Definition	Prompt
OPCON (First Level)	Provides access to the second-level processes.	*
ROPCON	Provides OPCON service for two remotely-connected terminals. Functionally, OPCON and ROPCON are the same.	*
GWCON (Second Level)	Allows you to monitor the status and statistics of the router's hardware and software. Provides access to the third-level processes, which allow the user to monitor configured protocols and features. (CGWCON and GWCON are the same.)	+
CONFIG (Second Level)	Allows you to configure router parameters for interfaces, protocols, users, and booting. Provides access to third-level processes, which allow the user to configure various protocols and features.	Config>
MONITR (Second Level)	Receives Event Logging System (ELS) messages and messages from the operating system and displays them on the terminal, according to user-selected filtering criteria.	None

Using the Command Line Interface

This section includes the following procedures for using the command line interface to configure and monitor your RouteAbout Access ES:

- Logging in
- Connecting to a process
- Identifying the process by the prompt
- Getting back to the * prompt
- Exiting the router

Logging In

Logging in to a local terminal is the same as logging in to a remote terminal except that on a remote terminal you must first connect to the router by starting Telnet on your host system.

Note: Before you can perform the following procedure, you must have already configured your RouteAbout Access ES with an IP address.

To prepare for remote login,

1. Connect to the router by starting Telnet on your host system. Your host system is the system to which remote terminals are connected. Supply the router's name or Internet Protocol (IP) address. To use router names, your network must have a name server.

```
% telnet boston
or
%telnet 128.185.132.43
```

The router supports Telnet client and server. The remote terminal on the router acts as a Telnet server. The router acts as a Telnet client when connecting from the router to either another router or a host using the **telnet** command.

From this point on, there is no difference whether you have logged in remotely or locally.

The password controls access to the router.

2. If prompted, type your login name and password.

```
login: abc
Password:
```

If the `Password:` prompt appears and you have no password, press `^A` for the `*` prompt.

Logins are not set automatically. For security, you can set up user names and passwords. Type **add user** at the `Config>` prompt. Reload or restart to activate their use.

Note: If you do not type a login name and valid password within a minute of the initial prompt, or if you type an incorrect password three times in succession, the router drops the Telnet connection.

3. Type whatever commands you need.

Connecting to a Process

When you start the router, the screen displays first a boot message, then the `*` prompt. The `*` prompt is the top-level prompt. From this prompt, you can communicate with different processes. (Prompts are symbols for processes.)

To connect to a process, do the following:

1. To find out the process ID (PID) number of a process, type **status** at the `*` prompt. For example,

```
*status
Pid  Name      Status  TTY  Comments
1    COpCon    IOW     TTY0
2    Monitr    DET     --
5    CGWCon    IOW     --
6    Config    OW      --
```

The **status** command displays information about the router processes, such as the PIDs, the process names, and the status of the process.

2. Type **talk pid**, where *pid* is the number of the process to which you want to connect.

For example, to configure the router, type

```
*talk 6
Config>
```

Identifying the Process by the Prompt

Each process uses a different prompt. You can tell which process you are connected to by looking at the prompt. If you type **talk *pid***, you are no longer at the * prompt. If a prompt does not appear, press **^** once.

The following list shows the prompts for the main processes:

Process	Prompt
OPCON	*
GWCON	+
CONFIG	Config>

Getting Back to the * Prompt

To get back to the * prompt from any main process, such as CONFIG (Config> prompt) or GWCON (+ prompt), press **., p**, which is called the intercept character. (GWCON and CGWCON are the same.) You must always return to the * prompt before you can go to another main process. For example, if you are at the + prompt and you want to go to the Config> prompt, press **., p** to return to the * prompt first.

```
*talk 6
Config> .,p
*talk 5
+ .,p
*
```

Exiting the Router

Return to the * prompt and close the Telnet connection.

For example:

```
Config> ,,p  
* logout  
%
```

You can also use local Telnet commands on your Telnet client to close the connection.

Commands

The OPCON process provides access to second-level processes, which allow you to configure (`Config>`) and monitor (+) your router. The OPCON prompt (*) is the main user interface to these processes.

Some changes to the router's operating parameters made while in OPCON take effect immediately without requiring re-initializing the router. If the changes do not take effect, use the **restart** command at the * prompt.

Note: The following figure and tables are only samples. What you actually see on your router may not match these samples exactly.

Figure A-2 shows the OPCON command tree.

Table A-2 is a list of the OPCON commands. To use these commands, access the OPCON process and enter the command at the * prompt.

Table A-3 is a list of the GWCON commands for monitoring your router. To use these commands, access the OPCON process and enter the **talk 5** command at the * prompt. At the + prompt, enter whatever GWCON commands you need.

Table A-4 is a list of the CONFIG commands for configuring your router. To use these commands, access the OPCON process and enter the **talk 6** command at the * prompt. At the `Config>` prompt, enter whatever CONFIG commands you need.

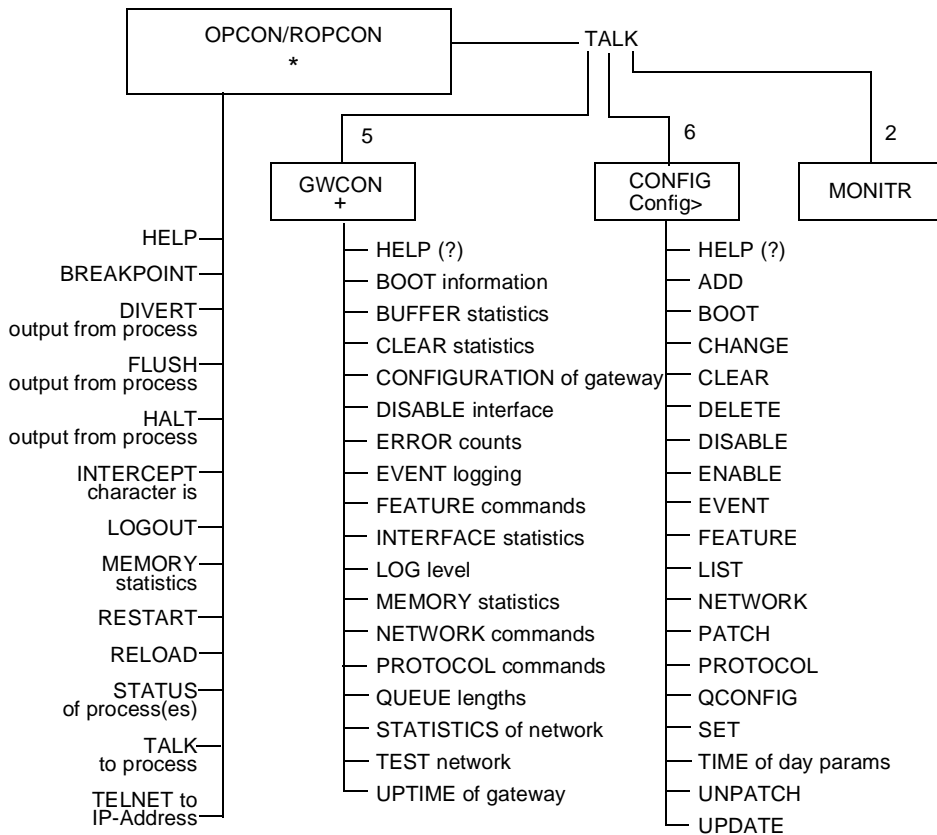


Figure A-2 OPCON Command Tree

Note: Treat Figure A-2 as a sample listing of the OPCON Command Tree. What you actually see on your router may not be identical with the tree displayed here.

Table A-2 OPCON Command Summary

Command	Function
? (Help)	Lists all the OPCON commands.
Breakpoint	Enters the DDT debugger.
Divert	Sends output to a console or other terminal.
Flush	Discards output.
Halt	Stops output.
Intercept	Sets the OPCON default intercept character.
Logout	Logs out of a remote console.
Memory	Reports the router's memory usage.
Restart	Restarts (but does not reload) the router software.
Reload	Reloads the router software.
Status	Shows information about all router processes.
Talk	Contacts another router process and enables the use of its commands.
Telnet	Connects to another TCP/IP node.

Table A-3 GWCON Command Summary

Command	Function
? (Help)	Lists the GWCON commands.
Boot	Displays information on how the router was booted last.
Buffer	Displays information about packet buffers assigned to each interface.
Clear	Clears network statistics.
Configuration	Lists the status of current protocols and interfaces.
Disable	Takes the specified interface off line.
Error	Displays error counts.
Event	Enters the Event Logging System environment.
Feature	Provides access to monitoring commands for independent router features outside the usual protocol and network interface monitoring processes.
Interface	Displays network hardware statistics or statistics for the specified interface.
Log	Sets or views the logging level for events not included in the Event Logging System.
Memory	Displays memory, buffer, and packet data.
Network	Enters the monitoring environment of the specified network.
Protocol	Enters the command environment of the specified protocol.
Queue	Displays buffer statistics for a specified interface.
Statistics	Displays statistics for the specified interface.
Test	Enables a disabled interface or tests the specified interface.
Uptime	Displays time statistics for the router.

Table A-4 CONFIG Command Summary

Command	Function
? (Help)	Lists the CONFIG commands or lists the options associated with specific commands.
Add	Adds an interface to the router configuration or a user to the router user list.
Boot	Enters the Boot CONFIG command process.
Change	Changes the current interface's configuration or a user's password.
Clear	Clears configuration information.
Delete	Deletes a user or an interface from the router configuration.
Disable	Disables login from a remote terminal, remote access using a modem, or a specified interface.
Enable	Enables login from a remote terminal, remote access using a modem, or a specified interface.
Event	Enters the Event Logging System configuration process.
Feature	Provides access to configuration commands for independent router features outside the usual protocol and network interface configuration processes.
List	Displays the system parameters or the hardware configuration.
Network	Enters the configuration menus of the specified network.
Patch	Modifies the router's global configuration.
Protocol	Enters the command environment of the specified protocol.
Qconfig	Initiates the Quick Config process.
Set	Sets system-wide parameters for buffers, hostname, inactivity timer, logging disposition and level, packet size, restart count, location, and contact-person. Also sets the data-link protocol for a WAN interface.
Time	Sets up system time and displays it.
Unpatch	Restores variables of the patches to default values.
Update	Updates the configuration.

Appendix B

Technical Specifications

This appendix contains a table of the hardware specifications for the RouteAbout Access ES. It contains the following topic:

Hardware Specifications

56

Hardware Specifications

The following table lists the hardware specifications for the RouteAbout Access ES.

Table B-1 Hardware Specifications

Processor	MC 68360
Memory	
DRAM	2 MB
Flash	1 MB
Input/Output Interfaces	1 or 2 Ethernet (10BaseT/10Base2) 1 WAN
WAN Speeds	4,800 bps to 2.048 Mbps
Dimensions	7.25" x 6.38" x 1.25" (18.4 x 16.2 x 3.2 cm)
Weight	1 lb (0.45 kg)
Power	100 to 240 VAC 50-60 Hz 18 VA
Operating Temperature	5 to 41 degrees C (50 to 105 degrees F)
Relative Humidity	8% to 80%
Agency Approvals	FCC Class B UL, CSA, TUV CISPR-22, Class B CE Mark

Appendix C

Cable Specifications

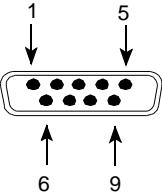
This appendix describes the signals associated with the pins on the Console port, the 10BaseT Ethernet port, and the WAN port. It also shows the voltages of the power connector. This information can assist you in obtaining custom cables from your supplier.

Console Port	58
Ethernet 10BaseT Connector	59
WAN Port	59
Power Connector	64

Console Port

Table C-1 lists pin assignments for the RouteAbout Access ES Console port.

Table C-1 Console Port Cable – RS-232 DTE Male



The diagram shows a 9-pin DTE male connector. Arrows point to pins 1 and 5 from above, and pins 6 and 9 from below.

Connector Pin #	Signal
1	Data Carrier Detect
2	Received Data
3	Transmitted Data
4	Data Terminal Ready
5	Signal Ground
6	DCE Ready
7	Request To Send
8	Clear To Send
9	Call Indicate

Ethernet 10BaseT Connector

Table C-2 lists the pin assignments for the Ethernet 10BaseT RJ-45 connector.

Table C-2 Ethernet Cable Pin Assignments for 10BaseT Connector

	Brown/White	1	—	Transmit +
	Green/White	2	—	Transmit -
	Orange/White	3	—	Receive +
	Blue/White	4	—	Unused
	White/Blue	5	—	Unused
	White/Orange	6	—	Receive -
	White/Green	7	—	Unused
	White/Brown	8	—	Unused

Connector Pin #	Description
1	Transmit Data +
2	Transmit Data -
3	Receive Data +
6	Receive Data -

WAN Port

The following interchange circuits are available on the RouteAbout Access ES serial interfaces:

- RS-232 physical interface (V.24/V.28)
- V.35 physical interface
- V.11 physical interface

RS-232 Physical Interface (V.24/V.28)

Note: Purchase the WAN cables for the RouteAbout Access ES separately. To extend the length of these cables, refer to the connector specifications in this section.

RS-232 WAN Cable Pin Assignments				
Connector	Mechanical	Electrical	Interface	Recommended Cable
25-pin D subminiature male pins	ISO 2110	Data Terminal Equipment	EIA RS-232-C, type E	Belden 9937 0.024 μ per foot 12 pF per foot Wire run list 1 to 1

Connector Pin #	EIA	CCITT V.24/V.28	Description	Signal Direction	
				DTE	DCE
1	AA	101	Shield		
2	BA	103	Transmit Data	--->	
3	BB	104	Receive Data	<---	
4	CA	105	Request to Send	--->	
5	CB	106	Clear to Send	<---	
6	CC	107	Data Set Ready	<---	
7	AB	102	Signal Ground		
8	CF	109	Data Carrier Detect	<---	
15	DB	114	Transmit Clock	<---	
17	DD	115	Receive Clock	<---	
20	CD	108/2	Data Terminal Ready	--->	
22	CE	125	Ring Indicator	<---	
24	DA	113	Transmit Timing Clock	--->	

V.35 Physical Interface

V.35 WAN Cable Pin Assignments				
Connector	Mechanical	Electrical	Interface	Recommended Cable
Rectangular 34-position male pins	ISO 2593	AT&T PUB 41450 CCITT V.35	CCITT V.35	Belden 9813 0.0649Ω per foot 15.5 pF per foot Wire run list A to A

Connector Pin #	PUB 41450 Designation	V.24/V.28 Interchange Circuit	Description	Signal Direction	
				DTE	DCE
A	AA	101	Shield		
B	AB	102	Signal Ground		
C	CA	105	Request to Send	--->	
D	CB	106	Clear to Send	<---	
E	CC	107	Data Set Ready	<---	
F	CF	109	Data Carrier Detect	<---	
H	CD	108/2	Data Terminal Ready	--->	
J	CE	125	Calling Indicator	<---	
K		N/C			
L		N/C			
M		N/C			
N		N/C			
P	SD(A)	103	Transmit Data A-wire	--->	

R	RD(A)	104	Receive Data A-wire	<---
S	SD(B)	103	Transmit Data B-wire	--->
T	RD(B)	104	Receive Data B-wire	<---
U	SCTE(A)	113	Transmitter Signal Element Timing (DTE source) A-wire	--->
V	SCR(A)	115	Receiver Signal Element Timing A-wire	<---
W	SCTE(B)	113	Transmitter Signal Element Timing (DTE Source) B-wire	--->
X	SCR(B)	115	Receiver Signal Element Timing B-wire	<---
Y	SCT(A)	114	Transmitter Signal Element Timing A-wire	<---
Z	-	N/C	-	
AA	SCT(B)	114	Transmitter Signal Element Timing B-wire	<---

Twisted Pair Combinations

- Pins P and S
- Pins R and T
- Pins U and W
- Pins V and X
- Pins Y and AA

V.11 Physical Interface

V.11 WAN Cable Pin Assignments				
Connector	Mechanical	Electrical	Interface	Recommended Cable
15-pin D subminiature, male pins	ISO 4903	EIA RS-423/ CCITT V.10	CCITT V.11	Belden 9832 0.024 Ω per foot 15.5 pF per foot Wire run list 1 to 1
Connector Pin #	CCITT X.24	Description	Signal Direction	
			DTE	DCE
1	Shield	Shield		
2	T(A)	Transmit	---	>
3	C(A)	Control	---	>
4	R(A)	Receive	<---	
5	I(A)	Indication	<---	
6	S(A)	Signal Element Timing	<---	
7	N/C			
8	G	Signal Ground		
9	T(B)	Transmit	---	>
10	C(B)	Control	---	>
11	R(B)	Receive	<---	
12	I(B)	Indication	<---	
13	S(B)	Signal Element Timing	<---	
14	N/C			
15	N/C			
Twisted Pair Combinations				
Pins 2 and 9				
Pins 3 and 10				
Pins 4 and 11				
Pins 5 and 12				
Pins 6 and 13				
Note: The connection at the NTP end of the cable should be fitted with M3 screws.				

Power Connector

Figure C-1 shows the voltages of the power connector pins.

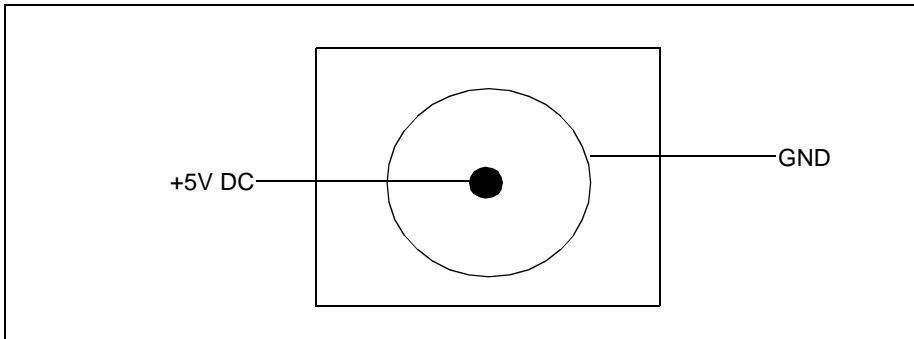


Figure C-1 Power Connector

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