Remote Office Client for NetRider

Windows Installation and Connection

Part Number: AA-QFFTB-TE

November 1995

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Software Version:	Remote Office Client for NetRider Version 2.2 for MS-DOS and Windows
Operating System:	MS-DOS Version 5.0 minimum, Windows Version 3.1 minimum Windows for Workgroups Version 3.11 minimum
Reader's Comments	Your comments and suggestions help us to improve the quality and usefulness of our documentation. You can respond to the documentation manager at: **Email:** doc_quality@lkg.mts.dec.com **FAX:** 508 486 5655

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Preface

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Purpose

This guide explains how to install the Remote Office Client for NetRider software in a Microsoft Windows environment. It also explains how to make a connection to a remote LAN.

Intended Audience

This book is written for individuals who install and use the Remote Office Client for NetRider software to access remote LANs using asynchronous telephone lines. This book assumes that readers are familiar with the hardware and software installed on their personal computer.

Conventions

This book uses the following conventions:

Convention	Description
boldface text	Boldface text represents the name of a button, icon, or menu option.
`monospaced text`	Monospaced text in examples and text represents commands that you type.
italic text	Italic text in a command indicates variable information that you provide.

Associated Documents

Contact your Digital reseller or sales representative to order additional documentation. The following documents can be of use:

Book	Description
NetRider Client for Macintosh Installation and Use	Explains how to install and use the NetRider Remote client in a Macintosh environment.
Remote Office Client for NetRider MS-DOS Installation and Use	Explains how to install and use the Remote Office Client in an MS-DOS environment.
Remote Office Client for NetRider RCHost Installation and Use	Explains how to install and use the Remote Office Client RCHost remote control program with an IPX network.
Remote Office Client for NetRider PC/TCP OnNet Applications Use	Explains how to use the PC/TCP OnNet applications supplied with the Remote Office Client for NetRider.
NetRider Remote Access Server Quick Start	Explains how to install the NetRider Remote Access Server, the Digital Network Access Server software, and automate the PC client installation.

Book	Description
DECserver Network Access Software Installation	Explains how to install the network access software on your operating system.
DECserver manual (90 or 900 series)	Explains how to install and operating the DECserver hardware.

Chapter 1

Remote Office Installation

Overview

In This Chapter

This chapter describes the following:

- Product description
- Preparing for installation
- Installation tasks
- Installation results
- Post-installation tasks
- Operation considerations

Product Description

Introduction

Remote Office Client for NetRider for MS-DOS and Windows, referred to as Remote Office, is a remote-client software solution that allows you to use a modem to dial into an access server, such as a DECserver, and connect to your main office LAN. People who travel, work in a satellite office, or work at home can use Remote Office to communicate on the main office LAN.

When To Use NetRider

Use the Remote Office client software if you use a modem to make an asynchronous connection to a remote network. Remote Office includes special network applications that enhance your ability to work when connected in this manner (for example, telnet and ftp).

If you connect to a local network with an Ethernet adapter (and without using a modem), Digital recommends that you do not use Remote Office or the Remote Office network applications. Instead, rely on the network software you use for your wired network connections.

Example

If you have Windows for Workgroups and Remote Office on your PC, you use Windows for Workgroups only for connections you make to a local LAN. You use Remote Office only for connections you make to a remote LAN using your modem.

Startup Procedures for Wired and Dial-Up Connections

To use both NetRider and network software for connections to a local network on the same computer, create startup procedures that allow you to select which type of network connection you want to use, wired or remote dial-up. See the Customizing Your Environment section in this chapter for an example of how to modify your system startup files.

Key Features

Created for enterprise-wide networks, Remote Office provides the same functionality to remote users as locally connected LAN users. When you dial into an access server, such as a DECserver, your remote PC becomes a node on the network. The Remote Office Client for NetRider product includes the following key features:

Item	Description
File and print services	Allows those who select NetRider with OnNet TCP/IP as their LAN operating system to connect to remote drives and printers through the use of the File Manager's Disk menu item or by using the Network option in your applications.
IP and IPX connections	Allows you to connect to a remote access server that supports IP and/or IPX protocols.
ISDN terminal adapter support	Allows you to use Remote Office over ISDN lines with the AT&T 5ESS switch type.
Remote control utilities	Allows those who use an IPX LAN operating system to remotely control a PC using the RCViewer and RCHost applications. RCViewer lets you take over any PC on the network. You install RCHost on any remote PC that you want to control using RCViewer.
Netscape Navigator	Allows you to use access the Internet World Wide Web. Installing this application is optional.

Item	Description
PC/TCP OnNet applications	The PC/TCP OnNet applications include: • Ping – tests the availability of network hosts and network gateways or traces the path that a messages takes from one host to another. • Telnet VT– Connects your PC to a remote system using DEC VT terminal emulation • FTP – Provides an alternate method to transfer files between remote hosts and your PC. • Statistics – Allows you to display information about your PC/TCP configuration, view network configuration information for your PC, and monitor network traffic. • DHCP– Sends DHCP or BOOTP request to configure the TCP stack. This application does not work with DECservers. **PC/TCP OnNet applications in MS-DOS:** If you choose to not install these as Windows applications, you can run them in an MS-DOS window. See the *Remote Office Client for NetRider PC/TCP OnNet Applications Use* book for instructions.
ULREDIR.EXE	A utility program that unloads the Digital Basic Redirector from memory. Remote Office loads the Digital Basic Redirector if you use NetRider with OnNet TCP/IP as your LAN operating system.

Typical Uses

Typical Remote Office uses include:

- Access to your office LAN from a remote PC.
- Access to your desktop PC from a remote PC using RCHost (for IPX users only).
- Ability to run non-client-server applications.
- Monitoring of unattended PCs, such as job servers or data-collecting workstations.

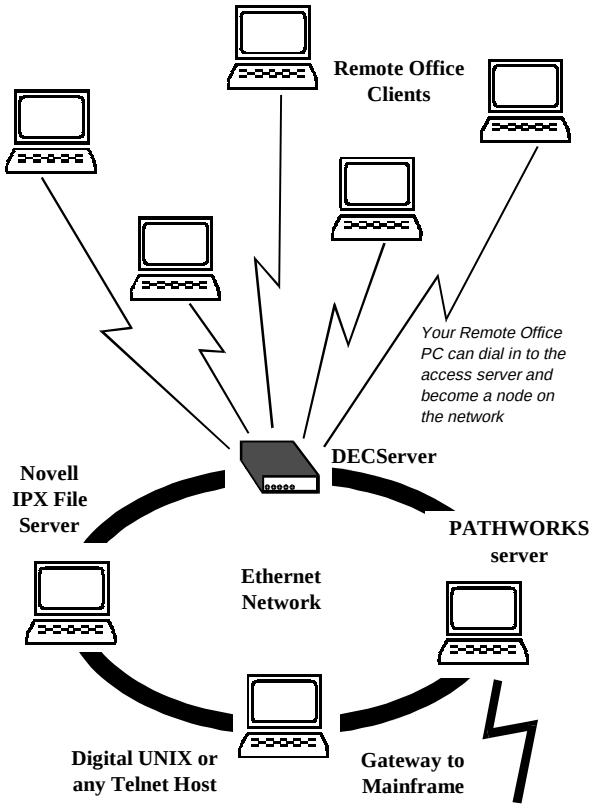
How To Use Remote Office

To use Remote Office after you install the product, you:

Step	Action
1	Click on the **Remote Office Client** icon in the Remote Office Gold program group to activate the application.
2	Dial into an access server by clicking on the **Remote Office Connect** button and selecting a phonebook record.
3	Close the Remote Office Login Status window, after you receive a successful connection message from Remote Office. At this point, you are connected to your remote LAN.
4	Use your applications as you normally do when connected locally. For example, you can connect to remote network drives, or click on the Netscape icon to access the World Wide Web.

Configuration Example

The following illustration shows an example of a Remote Office configuration.



Preparing for Installation

Check Your Product Package

You need the following items to install Remote Office on your PC:

- Remote Office client installation disk.
- VLM installation disk (for NetWare installations).
- OnNet TCP/IP installation disk (this installs the PC/TCP OnNet network software from FTP Software, Inc.) .
- NetRider Redirector installation disk (this installs the Digital Basic Redirector).
- *Remote Office Client for NetRider PC Quick Start* card.
- *Remote Office Client for NetRider Windows Installation and Connection* (this book).
- *Remote Office Client PC/TCP OnNet Applications Use.*

Netscape Navigator

Your product package includes the Netscape Navigator software. Netscape Navigator is an Internet browser that allows you to access the World Wide Web. To install Netscape Navigator, insert the Netscape Navigator disk into drive A (or B) and type **A:INSTALL** (or **B:INSTALL**). Installing Netscape is optional.

Other Items in the Package

The other items in your package are used for different clients and the DECserver. The DECserver items vary according to the type of DECserver your system or network manager is installing.

Check System Requirements

Your PC should be equipped as follows:

- MS-DOS Version 5.0, minimum.
- Microsoft Windows Version 3.1, minimum or Windows for Workgroups Version 3.11 minimum.
- 1 available COM port (COM1 is often used for the mouse, you may want to choose a different port).
- Modem (Digital recommends 9600 baud or faster).
- 5 MB of disk space.

Automated Installations

Your system or network administrator can automate the installation procedure to minimize the amount of information you provide when you run the procedure. Ask your system or network manager whether you have an automated installation and, if so, what information you need during installation.

Instructions

Appendix E in the *NetRider Access Server Quick Start* book contains instructions for creating an automated installation procedure.

Pre-Installation Checklist

The PC client installation requires software only. Refer to your modem manual to install your modem. Obtain the following information from your system or network manager before you install the Remote Office software on your PC (you do not need all of this information if you have an automated installation; see your system or network manager):

- The telephone number of the access server into which you will dial (your dial-in number).
- Your user name and password for logging in to the access server. These can be case sensitive; see your system or network administrator to confirm this.
- Your user name and password for logging into the network, if necessary. These can be case sensitive; see your system or network administrator to confirm this.
- Your username for connecting to remote file services. See your system or network administrator to determine if this is required.
- The type of modem installed in your PC (brand, model, and speed).
- The COM port, IRQ, and I/O Port settings that your modem uses. You can use the Microsoft MSD utility to check these settings.
- Your PC's node name.
- Your PC's Internet address and your domain name server's Internet address. If using NetRider with OnNet TCP/IP and NetWare as your LAN operating system, you also need an IPX network number.
- The host names and Internet addresses of the systems you plan to access.
- Whether the access server to which you plan to connect uses CHAP authorization protocol. If you use this protocol, you need to load it after you start Remote Office using Load Options on the menu bar. See the Remote Office online help for more details.

Installing the Software

What You Do

The following table lists the steps you take to install the Remote Office software. If you have an automated installation, you may be able to omit some of these steps; see your system or network manager for details. The following sections in this chapter describe each step in detail.

Step	Action
1	Start the installation procedure.
2	Specify the communication port that your modem uses.
3	Select the type of modem installed in your PC.
4	Select a NetRider LAN operating system.
5	Specify host access information (user names and passwords).
6	Specify whether you want to install the Remote Office Windows applications.
7	Confirm the installation settings you specified.

During Installation

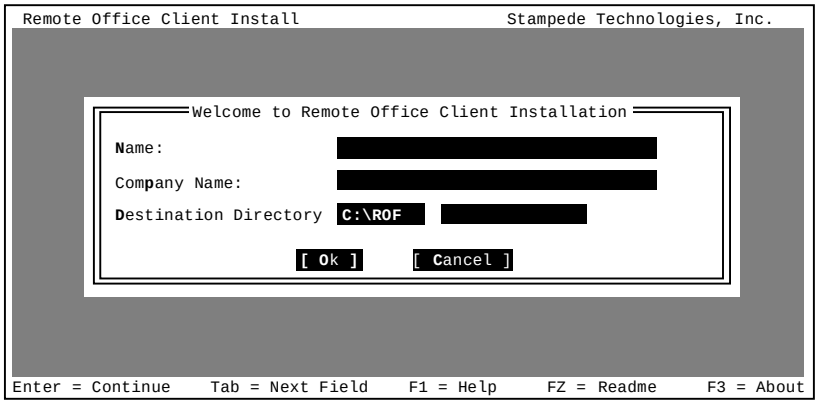
The installation procedure does the following:

- Copies files from the installation disk to your PC after you respond to the displayed installation prompts.
- Modifies your AUTOEXEC.BAT, SYSTEM.INI, and PROGMAN.INI files. The installation procedure first makes a copy of these files and gives them a numeric file extension. For example, the installation procedure can rename AUTOEXEC.BAT to AUTOEXEC.001
- Uses some of the information you provide during installation to create a phonebook record called HOST. You use phonebook records to dial into DECservers or other access servers. See the Remote Office Client online help for information about maintaining phonebook records. Chapter 2 describes how to open the online help.

Start the Procedure

Do the following to start the Remote Office installation procedure:

Step	Action
1	Exit from Windows, if it is loaded.
2	Insert your installation disk in drive A or B.
3	At the DOS prompt, type **A:INSTALL** (or **B:INSTALL**) and press [Enter]. You see the following screen:



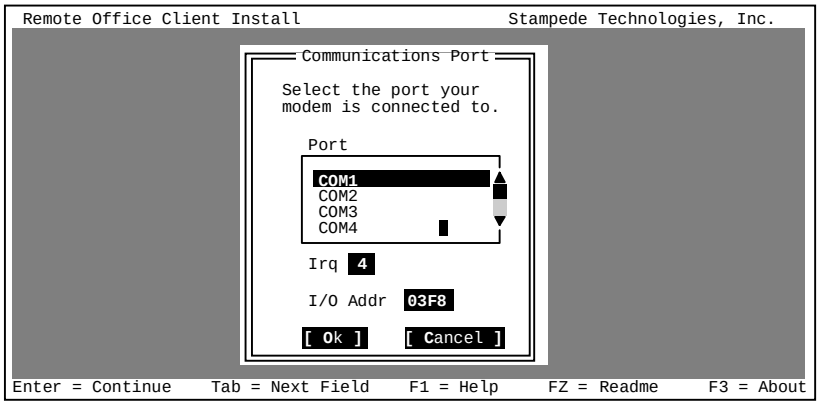
Keys To Use: Use the [Tab] key or press [ALT] + the highlighted letter to progress through this screen. You can also use the left mouse button to select any field or button.

Automated Installations: If you are using an automated installation procedure, the screen displays the pre-configured information. If the information is correct, go to Step 7 in this procedure. Otherwise, go to Step 4 in this procedure.

4	Type your name in the **Name** box. Press [Tab].
5	Type your company name in the **Company Name** box. Press [Tab].
6	Type a directory name to contain Remote Office files, if you wish to use a directory other than C:\ROF.
7	Click **OK** or press [Enter] to continue.

Specify Communication Port

After you respond to the initial installation prompts, you see the following screen:



Automated Installations

If you are using an automated installation procedure that pre-configures this option, you do not see this screen.

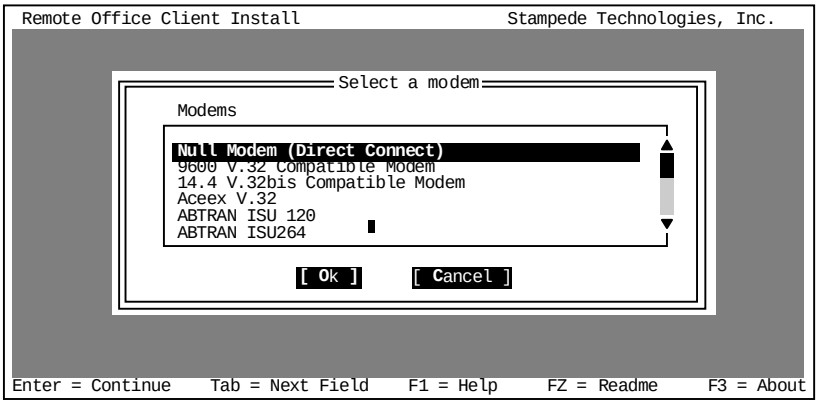
Procedure

Do the following to select a communication port:

Step	Action
1	Scroll up or down to select the port to which the modem on your PC is connected.
2	Make sure the IRQ and I/O Port settings match the settings for your port. If you need to change either of these, tab to the box and type the appropriate value.
3	Click **OK** or press [Enter] to continue.

Select a Modem

After you select a communication port, you see the following screen:



Automated Installations

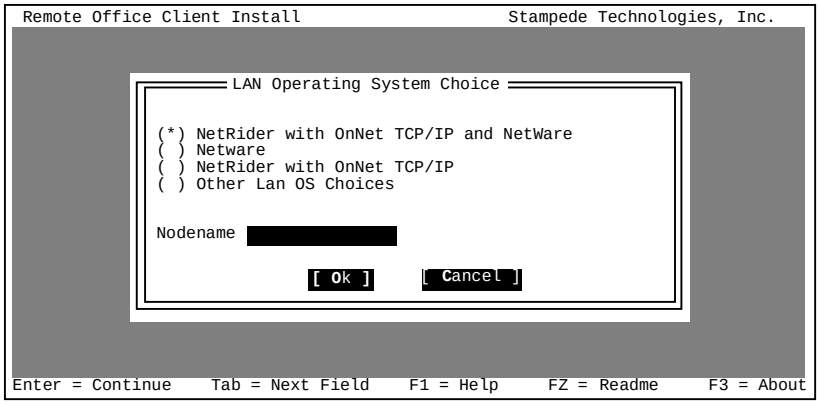
If you are using an automated installation procedure that pre-configures this option, you do not see this screen.

Procedure

To select a modem, scroll up or down to highlight the modem you are using, then press [Enter]. If you do not see your modem listed, choose a modem that is similar to the one you have.

Select LAN Operating System

After you select the modem, you see the following screen:



Automated Installations

If you are using an automated installation that pre-configures this option, you do not see this screen.

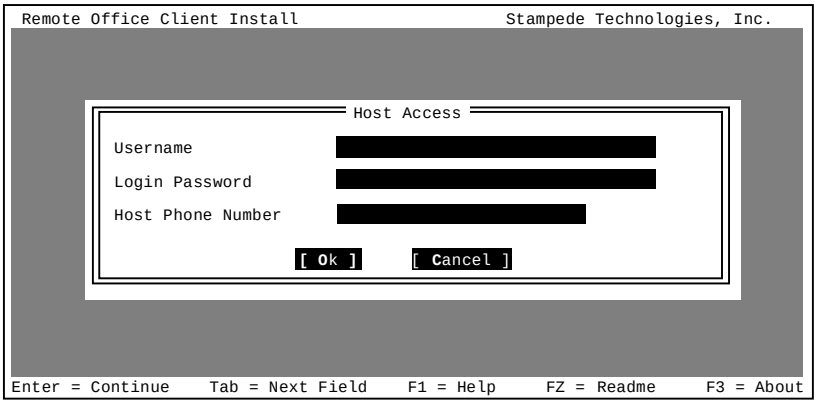
Procedures

Do the following:

Step	Action
1	Use the arrow keys to select NetRider with OnNet TCP/IP and NetWare or NetRider with OnNet TCP/IP and click **OK** or press [Enter] to continue. This installs the Digital Basic Redirector with the OnNet PC/TCP network software.
2	Press [Tab] and enter your PC's node name.
3	When prompted, enter your PC's Internet address and your domain name server's Internet address.
4	Click **OK** or press [Enter] to continue with the installation. The procedure prompts you to insert the NetRider Redirector installation disk after it installs the OnNet TCP/IP software.

Specify Host Access

After you specify a LAN operating system, you see the following screen:



Automated Installations

If you are using an automated installation procedure, the Host Access screen displays the pre-configured information. If the information is correct, go to Step 5 in the following procedure. If the information is incorrect, go to Step 1.

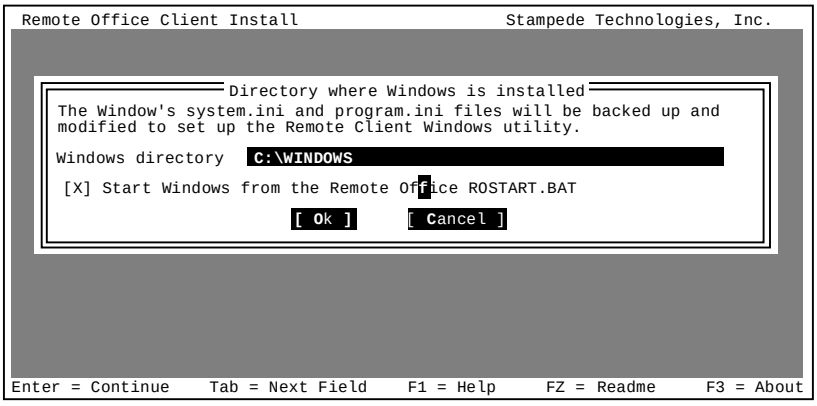
Procedure

Do the following:

Step	Action
1	Enter the user name as it is configured on the access server and press [Tab]. This can be case sensitive; see your system or network administrator.
2	Enter the password as it is configured on the access server and press [Tab]. This can be case sensitive; see your system or network administrator. Each character you type appears as an asterisk (*). If you want to be prompted for the password when using Remote Office, type one asterisk in this field.
3	Enter the phone number of the system to which you will be dialing and press [Enter]. Include any of the following that applies: • 9 or other digit needed to access outside lines from your location • 1 plus area code, if number is long distance • Any other applicable digits **Note:** Place a comma (,) in the number to tell the system to pause while dialing, if necessary. See Appendix B for specific modem settings.
4	The procedure prompts you to re-enter your password. Re-enter it as you entered it previously.
5	Click **OK** or press [Enter] to continue with the installation.

Install PC/TCP OnNet Applications

After you enter the host access information, you see a screen asking if you want to install the Remote Office Client applications for Microsoft Windows. Select **Yes** to install the PC/TCP OnNet Windows applications. You see the following screen:



Automated Installations

If you are using an automated installation procedure that specifies installation of the Windows application, you are not asked to install the applications; however, you still see the Directory where Windows is installed screen.

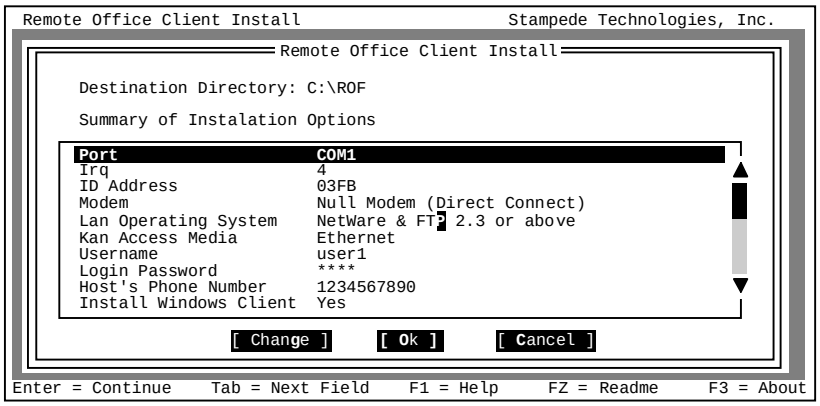
Procedure

Do the following:

Step	Action
1	If this is the directory where Windows is installed, press [Enter]. If not, type the correct directory name and press [Enter].
2	In order to run the Windows Remote Office client program, you need to exit Windows to load the ROSTART.BAT program. If you want ROSTART.BAT to restart Windows for you, select the appropriate box on this screen.

Confirm Installation Settings

After you specify the directory where Windows is installed and whether you want the ROSTART.BAT file to restart Windows, you see a screen similar to the following:



This screen confirms the selections you made during the installation.

Automated Installations

If you are using an automated installation procedure, you do not see this screen.

Procedures

If the displayed selections are correct, press [Alt] + [O] or click **OK** to continue. The installation procedure copies all the necessary files to your PC and completes the installation. The procedure may prompt you to enter additional installation disks (for example, the during the copy operation).

If you want to change the displayed settings, do the following:

Step	Action
1	Scroll up or down to highlight the setting you want to change.
2	Press [Alt] + [G] to change the setting.
3	Change the setting as shown in the installation instructions.
4	Press [Alt] + [O] or click **OK** to continue. The installation procedure copies all the necessary files to your PC, prompting you to enter the OnNet TCP/IP and NetRider Redirector installation disks during the copy operation, and completes the installation. **Rebooting Your System:** At the end of the installation, the procedure instructs you to reboot your system. Read the Customizing Your Environment section in this chapter before rebooting your system.

VLM Installation

If you select NetWare or any combination of NetWare and TCP/IP as your LAN operating system, the Remote Office installation procedure prompts you to insert the NetWare VLM software disk when copying files to the PC.

Next Steps

After the installation completes, do the following:

Task	See:
Read the online text file	Customizing Your Environment section in this chapter.
Edit system files and reboot your system	Customizing Your Environment section in this chapter.
Read the online help	The Help menu on the Remote Office Client Main window. See Chapter 2 for details about accessing the online help.
Connect to an access server	Connecting to a Remote LAN section in Chapter 2.

Installation Results

If You Select NetWare

If you install the NetWare VLM software, the installation procedure makes the following changes.

- Updates the necessary files in the Windows directory, if Remote Office Windows client is installed
- Makes the necessary changes to the SYSTEM.INI file
- Sets the LASTDRIVE statement in CONFIG.SYS to Z

If You Select NetRider With OnNet TCP/IP

If you select NetRider with OnNet TCP/IP or NetRider with OnNet TCP/IP and NetWare as your LAN operating system during the installation, the Remote Office installation procedure installs the OnNet PC/TCP network software from FTP Software, Inc. and the Digital Basic Redirector. The Digital Basic Redirector allows you to connect to remote drives and printers through the use of the File Manager's Disk option.

Components Installed

The table lists the key components that reside on the client PC after running the installation procedure.

File/Component	Description
EXEGUARD	A program that warns you when you are about to run an application across the communications link. It displays a warning message, giving you the option of not running the program.
HOST phonebook record	A record defined using the information you supplied during the installation. This is the default record displayed the first time you select the Connect option after installing the software.
LAN OS text files	Contains a set of with updated configuration information for use with Remote Office. These files are located on the installation disk in the LANOSDEP directory. The text file corresponding to the LAN OS installed is copied to the ROF directory during installation.
Modem Lights	A real-time modem light simulator designed for users with internal modems. It has light indicators representing the carrier, send, and receive lights on a modem, providing a visual display of modem traffic.
PKROF-E.EXE	A file that provides an ftp packet driver interface into ROFFICE.EXE. No special configuration is required. The Packet Driver is for Ethernet networks only.
RCViewer	A program that allows you to control remote PCs on the LAN from your PC (this program requires you to install IPX).

File/Component	Description
RO.EXE	An interactive program that contains further setup and phonebook functions. You can use this program to modify your phonebook entries and to log into and log out of a remote access server in MS-DOS. Appendix A describes the RO commands.
ROSTART.BAT	A batch file that contains commands necessary to start your network operating system, start Remote Office, and log into an access server.

Files Modified

The installation program modifies the following files:

File	Modification
AUTOEXEC.BAT	Adds the Remote Office directory to the PATH statement.
PROGMAN.INI	Adds the Remote Office Gold program group.
SYSTEM.INI	• Sets the TimerCriticalSection parameter to 10000 for improved I/O operations. • Sets the name of the network driver in the network.drv line. The network driver for the NetRider with OnNet PC/TCP and NetRider with OnNet PC/TCP and NetWare LAN operating systems is PATHWRKS.DRV.

Backup Files

Before the installation procedure modifies the system files, it makes a copy of the original file and saves it with the same file name and a numeric extension. For example, your original SYSTEM.INI file can become SYSTEM.001.

Customizing Your Environment

Read the Online Text File

The Remote Office installation procedure copies a README.TXT file to the directory where you installed the Remote Office files.

This text file provides additional information about how to configure and run the Remote Office client. Read this file before you edit system files and before you make your first connection to a remote LAN.

Modify ROSTART.BAT

The installation procedure creates a batch file called ROSTART.BAT. This file contains all the commands necessary to load your network operating system, start Remote Office, and log in to an access server system. ROSTART.BAT does the following:

1. Executes ROFFICE.EXE to start the Remote Office program.
2. Executes either ODIROF-E, NDROF-E, or PKROF-E.
3. Executes transport protocol (for example, IPX or TCP/IP).
4. Loads the LAN Operating System(s).
5. Starts Windows (if you selected that option during installation).

Depending on your network environment, you may need to edit this file before you start Remote Office. Read the Remote Office Client README.TXT file or see your system or network administrator for details.

Adding Other Redirectors

If you plan to run other redirectors in addition to the NetRider redirector (for example, for a CD-ROM drive), edit ROSTART.BAT so that the other redirectors load after ROFFICE.EXE loads and before the command that starts Windows executes.

Modify Files for NetRider With OnNet TCP/IP

If you select NetRider with OnNet TCP/IP or NetRider with OnNet TCP/IP and NetWare as your LAN operating system, do the following:

Step	Action

1	Create a file named **nbnames** in the C:\ROF directory (or the directory where you installed the Remote Office files). The nbnames file contains the names and IP addresses of the remote hosts you want to access. Build the file as follows:
	
	HOSTNAME <*ipaddress*>
	
	The *HOSTNAME* is the name of the remote host you plan to access as it is known on the network. Enter the HOSTNAME in **uppercase characters**. The <*ipaddress*> is the host's IP address.
	
	Example: The following is an example of entries in the nbnames file.
	
	`MYNODE 123.123.12.12`
	`YRNODE 123.123.12.10`

2	Edit the PCTCP.INI file in the C:\ROF directory (or the directory where you installed the Remote Office files). Do the following: Find the following entry in the [pctcp netbios] section: `namefile=` Enter the path that specifies the location of the **nbnames** file in the directory tree. For example, `namefile=c:\rof\nbnames`.

3	If performance is slow, check that the following entries are in the [PCTCP Kernel] section of the PCTCP.INI file:
	
	`mtu-discovery=no`
	`slow-link-multiplier=3`
	`rtt-multiplier=2`

Modify NET.CFG for NetWare Networks

NetWare networks use the ODI driver. The following illustrates the specifications for your NET.CFG file. You must specify IPX as the protocol to interface to Remote Office through the ODIROF-E MLID.

NET.CFG Example

```
#  Define ODIROF-E as board #1
#
Link Driver ODIROF-E
   frame ETHERNET_802.2
   frame ETHERNET_II
;  frame ETHERNET_802.3
   vlmipx ETHERNET_802.2
Protocol IPX
   bind #1
```

Modify PROTOCOL.INI for LAN Manager

A file called NDROF-E provides an NDIS interface into ROFFICE.EXE. LAN Manager uses this interface over TCP/IP, among others. Your protocol may require a “BINDINGS” statement in the PROTOCOL.INI. If so, it should read “BINDINGS=NDROF-E.”

Modify Files for Windows for Workgroups

If you install Remote Office on a Windows for Workgroups system, use the Remote Office software and applications for asynchronous dial-up connections only. Use your Windows for Workgroups software and applications for your wired LAN connections only.

To run Remote Office and Microsoft Windows for Workgroups on the same machine, modify your AUTOEXEC.BAT and CONFIG.SYS files to allow multiple startup configurations. When you boot your PC, select whether to use Windows for Workgroups software or Remote Office software for remote access operations. Do the following:

Step	Action
1	If Microsoft TCP/32 (or any other IP networking software) is currently installed on your Windows for Workgroups system, create a subdirectory in your WINDOWS directory named WINSOCK and move the WINSOCK.DLL file to this subdirectory.
2	Create a menu section in your CONFIG.SYS file that allows you to select different configurations when you boot your PC.
3	Create sections in your AUTOEXEC.BAT file for starting Windows for Workgroups and Remote Office Client configurations. **Example:** Create a section called Local for the Windows for Workgroups start up entries and a section called Remote for the Remote Office Client startup entries.
4	Add entries to the configuration sections in the AUTOEXEC.BAT file that: • Specify the path of the appropriate WINSOCK.DLL file • Start the networking software and Windows.

Step	Action
5	Edit ROSTART.BAT and add the following before the line, `win c:\rof\roclnt /s :` `setname` *pcname* `setlogin` *username* The *pcname* and the *username* are the names of the PC and the username you provided during installation. **Important:** Before starting a connection, check that a login batch file **does not** execute after successful connection See Check Batch File Execution in the Connecting to a Remote LAN section in Chapter 2.

Sample AUTOEXEC.BAT File

The following is an example of an AUTOEXEC.BAT file that defines different configurations for Windows for Workgroups and Remote Office. In this example, the lines you enter to setup multiple startup configurations are in **bold** text.

```
@ECHO OFF
SET TEMP=C:\WINDOWS\TEMP
SET PATH=C:\;C:\DOS;C:\WINDOWS
LH /L:0:1,45472 /S SMARTDRV.EXE
LH /L:1,6384 DOSKEY

goto %config%
:Local
REM SETUP FOR LAN BASED WFW
REM
PATH = %path%;c:\windows\winsock
c:\windows\netstart
win
goto end
:Remote
REM SETUP FOR NETRIDER
REM
PATH = %path%;c:\rof
rostart.bat
gotoend
:end
```

Sample CONFIG.SYS File

The following is an example of a CONFIG.SYS file that defines menu entries so you can select different configurations when you boot your PC. In this example, the lines you enter for different configuration selections are in **bold** text.

```
[MENU]
menuitem=Local, Load without NetRider
menuitem=Remote, Load with NetRider
menucolor=14,1

[COMMON]
DOS=HIGH
DEVICEHIGH /L:1,12048 =C:\DOS\SETVER.EXE
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE NOEMS
BUFFERS=10,0
FILES=80
DOS=UMB
LASTDRIVE=Z
FCBS=16,0
BREAK=ON
STACKS=9,256
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /E:512 /p

[LOCAL]

[REMOTE]
```

Additional Configuration Information

The NetRider Remote Office Client README.TXT file contains additional information about Windows for Workgroups configurations.

Reboot Your System

After you edit system files, reboot your system so the changes take effect. If you do not edit any system files, you still need to reboot your system.

Operation Considerations

Working with Third Party Communications Packages

When a Remote Office client is idle (not logged in), other communication packages can use the serial port for which Remote Office is configured. Therefore, you can have the Remote Office components loaded and still get control of the serial port in a Windows environment.

Working with Windows and LAN Operating Systems

When installing the Remote Office client software in a Windows environment, make sure you also configure Windows for the same network operating system. Do this by double-clicking on the Windows Setup icon in Program Manager, choosing Network Setup, and scanning the list for the correct network type. This is necessary for proper operation in a Windows environment.

Improving I/O Operations

Remote Office includes a virtual device driver called VROF.386. VROF.386 greatly improves I/O to a serial port by interfacing to the port using 80386 instructions. VROF.386 is automatically loaded when Windows loads in enhanced mode. You can disable VROF.386 using the command `RO CFGCH VROF386=NO` before ROFFICE.EXE is loaded.

When you install the Windows version of the client software, the installation procedure sets TimerCriticalSection=10000 in your SYSTEM.INI file.

If You Do Not Run VROF.386

If you choose not to run VROF.386, do the following when running in enhanced mode:

- Make sure that device=vcd is in your SYSTEM.INI file.
- If going into an MS-DOS box, make sure that COMxAutoAssign=0. x (x indicating the port Remote Office is connected) is set in your SYSTEM.INI file in the [386Enh] section. Do this either with a text editor or by going into the Control Panel's 386 Enhanced section and choosing Never Warn for the corresponding COM port. This prevents Windows from displaying warning messages in a DOS box while Remote Office is communicating.

Baud Rates for Windows in Enhanced Mode

It may be necessary to set your baud rate to 19,200 or below when running Windows in enhanced mode on an older PC.

EXEGUARD

Remote Office includes an application called EXEGUARD that warns you when you are about to run an application across the communications link. If you attempt to run a program across the link, a warning message appears, giving you the option of not running the program. ROSTART.BAT automatically loads this file you configure Remote Office to do so. Refer to the RO command line section of this book for further information.

Chapter 2

Remote LAN Connection

Overview

In This Chapter

This chapter contains the following information:

- Login overview
- Login considerations
- Connection setting descriptions
- Connecting to the access server
- After making a connection
- Disconnecting from the access server

Login Overview

Login Sequence

The following occurs when you try to connect to an access server.

Phase	Description
Modem Lights	The first phase of the login process shows the status of modem lights while initiating the call. A filled-in box corresponds to a modem light that is on.
Modem Status	After initiating login, the modem sends back status information concerning the negotiation of compression protocols, the line speed between the two modems (DCE speed), and the speed between the computer and the modem (DTE speed). Remote Office displays this information as the modem returns it. Check your modem manual for the control string needed to enable modem echo. It is usually part of the initialization string.
LCP Status	LCP indicates Link Establishment Status. Once the modem is communicating with the access server modem, the access server and client exchange “link control protocol” packets to determine basic communication parameters.
Authentication Status	After the LCP status phase, the access server sends a message to check the user's identity. The client returns the user name and password. After this, the login process continues into the callback phase (if necessary).
NCP Establishment Status	After the authentication status phase, the client and access server exchange network protocol packets to determine additional communication parameters. These are based on Network Control Protocol, or NCP.

Login Error Information

If you encounter errors during the login, see Chapter 3 for explanations and suggested solutions.

Login Considerations

Before You Begin

When dialing into an access server, remember the following important points:

- Remote Office allows your PC to act as an actual node on the network. All traffic that the client PC generates is actually sent across the telephone link, which is slower than in-house network traffic.
- When planning for login scripts, it is vital that you design scripts that run applications from the local drive on the client, not the server. For instance, when running in a NetWare environment, if the login script were to perform a capture command, the entire CAPTURE.EXE program would be transferred across the telephone link to the local CPU. This adds unnecessary overhead to an already slower process. Instead, it is preferable to store the CAPTURE.EXE program on the client drive, and configure the script to execute it from the client drive. The INSTALL program copies CAPTURE.EXE, MAP.EXE, and LOGOUT.EXE for NetWare clients.
- Application planning is an important consideration. You do not want the remote client to load applications from a network drive because this adds unnecessary traffic on the wire. Use the server to store data that an application accesses from the client's local drive.

Script File Information

See the Using Login Options section in this chapter for details about script files.

Connection Settings

Introduction

Connection settings tell the Remote Office software how to connect to an access server. You usually store these settings in phonebook records. You can also change them when a Remote Office displays the settings during a connection operation.

HOST Record

Remote Office uses information you supply during installation to create a phonebook record called HOST. If you select NetRider with OnNet TCP/IP as your LAN operating system, the software associates a login batch file with the HOST record. This file executes after you connect to an access server and contains commands that set the name of your PC and the username required for accessing file services.

To edit the login batch file, select the **After successful connection** in the **Batch File Execution** box in the Advanced Options window and click on **Edit** in the **Batch File Execution** box. This opens the batch file associated with the phonebook record. The filename appears in the title bar. Use the **Save** option (not **Save As...)** after you edit the file.

Types of Connection Settings

The Remote Office connection settings consist of:

- Login options
- Advanced options
- Network control protocol options

Creating and Changing Phonebook Records

For information about creating and changing phonebook records, see the online help from the Remote Office Client Main window. See the Starting the Application section in this chapter for instructions about accessing the online help.

Login Options

Introduction

When the Login to Host window appears, use the scroll bar to select the name of the phonebook record you want to use for your remote connection session. The phonebook record contains all of the necessary information to log in to a specified access server. The HOST phonebook record contains the information you supplied during the installation.

Options You Set

You can set the following login options on the Login to Host window for the current session (to set options permanently, use the Remote Office Phonebook option):

Option	Description
Phone Number	All of the necessary digits, including 9 to obtain outside lines, or credit card digits. Use commas (,) to create a pause in the dialing process. See Appendix B for information on using credit cards.
Username and Password	The user name and password as configured in the access server. These can be case sensitive.
COM Port	The communication port that your modem uses.
Callback Number	A number for an access server to call back to the client. DECservers do not currently support this feature.
Baud Rate	The baud rate of the interactions between your PC and your modem. Because of Remote Office's use of data compression, you can set this value higher than your modem's actual baud rate. For example, a 14.4 modem can use a baud rate of 57,600 and a 28.8 modem can use a baud rate of 115,200.

Option	Description
Inactivity Timeout	Indicates whether you want the link to automatically disconnect after being idle for a period of time.
Enter TTY Mode	You can tell the interactive Remote Office Login utility program to enter "TTY" mode immediately after it establishes a phone connection. In TTY mode, your PC acts as a teletype terminal emulator. This allows you to manually respond to any security prompting devices that may be attached to your dial-in network. **For More Information:** See the Using Login Options section in this chapter.
Script filename	If you select TTY Mode, you can specify a script file that runs after the phone connection is established. **For More Information:** See the Using Login Options section in this chapter.

Advanced Options

Options You Set

You can set the following advanced options on the Advanced Options window for the current remote connection session:

Option	Description
Connect Timeout	The number of seconds to allow for a successful connection to an access server. If the access server will be calling you back, be sure to allow enough time for the callback.
Number of Auto Reconnects	If you lose your connection to the access server, Remote Office tries to reconnect you. The value specifies the number of times Remote Office should try to reconnect to the access server.
Network Control Protocol	The network protocol between your PC and the access server. The default is concurrent IPXCP and IPCP.
Compression	You can choose to compress data traveling between the access server and client. For IPXCP, Remote Office uses CIPX compression. For IPCP, Remote Office uses VJ compression. **Load VJ compression:** If you plan to use VJ compression, tell Remote Office to load it by selecting the Load option from the Options menu on the Remote Office Main window. See the online help for details.

Option	Description
Login to network after connection	This option appears for NetWare users only. If selected, a NetWare login occurs after you connect successfully to an aces server. The login process prompts you to enter a server name, your login name, your password, and the option of processing NetWare login scripts.
Batch File Execution	Indicates a batch file is to be executed after a successful connection and/or before logging out. **For More Information:** See the Using Login Options section in this chapter.

Network Control Protocol Options

Options You Set

You can set the following network control protocol options on the Network Control Protocol Options window.

Option	Description
IPX Network Address	If necessary, you can enter an IPX network address. This field has two parts: the network number and the node address. a) The network number portion consists of a four-digit hexadecimal number. b) The node address portion consists of a six-digit hexadecimal number. Each digit is represented by two characters entered in the prompt. Therefore, you must enter an even number of characters. Valid characters are 0-9 and A-F. **Example:** To set the network number to 12F4, you enter eight characters, 01020F04.
Internet Address	If necessary, you can enter an IP address. The IP address consists of 4 groups of numbers, each between 0 and 255. Separate the groups with decimal points (.), for example, 222.60.56.54. If you specify an address of 0.0.0.0, the access server usually assigns an Internet address during the login process.
Domain Name Server Address	Enter the address of your domain name server. The IP address consists of 4 groups of numbers, each between 0 and 255. Separate the groups with decimal points (.), for example, 222.60.56.54.

Using Login Options

Introduction

This section provides additional information about using the login options, TTY mode and script files, and the advanced option, batch file execution.

Using TTY Mode

When you select the TTY mode option, the Remote Office software enters this mode after it successfully connects to an access server. The characters you type are immediately transmitted over the communications link, and any received characters are immediately displayed.

TTY Actions

The following actions are available in TTY mode:

Action	Description
[Alt] + [E	Exit TTY mode and resume the Remote Office login process.
[Alt] + [C]	Exit TTY mode and cancel the Remote Office login process.

Using Script Files

You can run script files if you choose to enter TTY mode after connecting to an access server. You can use any text editor to create a script file. A script file contains ASCII commands and command data of up to 80 characters (characters are not case sensitive). You need to include at least one space between the command text and the command data.

Save your file in the same directory where the Remote Office software resides. If Remote Office cannot find a specified script file, the login process does not start. After processing the entire script, TTY mode automatically ends and the Remote Office login resumes.

Script File Commands

The following table lists the script file commands.

Item	Description
SEND *xxxxxxx*	*xxxxxxx* is the data sent to the host. A carriage return (hex character 0D) is automatically sent after the data unless the CR_TOGGLE is OFF.
PAUSE *nn*	*nn* is the number of seconds to pause before reading the next script command.
PROMPT *xxxxxxxxx*	*xxxxxxxxx* is displayed. Script file processing is suspended until the keyboard sends a carriage return. All characters received from the keyboard are sent to the modem.
MATCH *xxxxxxx*	Script file processing is suspended until *xxxxxxx* is received from the host.
PPP	Ends TTY mode immediately. Starts PPP mode and resumes the login process.
HEXSEND *xx*	Converts the hexadecimal string *xx* to binary and sends the number to the host.
CR_TOGGLE	This command prevents a carriage return (hex value 0D) from being appended to the data sent to the host.

Script Example

The following is an example of commands you can put in a script file and what they do:

Script Command	Description
MATCH #	Wait for access server to send “#”
SEND ABCDEF	Send the characters to the access server
MATCH username:	Wait for access server to send “username”
SEND fred	Append carriage return and send “fred”
MATCH LOCAL>	Wait for access server to send “LOCAL>“ prompt
SEND C PPP	Send the characters to the access server
PPP	End TTY mode, resume login

Using Batch Files

You can specify whether you want to execute a batch file immediately after you connect to an access server or before you complete a disconnection. A typical use for this feature is to log into a network server or disconnect your network drives before logging off of the remote connection (in a NetWare environment, this is not necessary, because Remote Office takes care of it for you).

Sample Batch File

On a NetWare network , your login batch file could contain:

```
CD\ROF
LOGIN SERVER/USER
C:
```

Replace the word “server” in this statement with the actual NetWare server name and “user” with your actual user name.

Using the NetRider Login Batch File

If you select NetRider With OnNet TCP/IP or NetRider with OnNet TCP/IP and NetWare as your LAN operating system, the installation procedure creates a login batch file for the HOST phonebook record in the c:\rof directory (or the directory where you installed the Remote Office files). The batch file executes after you connect to the access server.

Login Batch File Names

Remote Office names the batch file $xxLI.BAT file. The xx in the file name is a unique decimal number associated with each phonebook record. The login batch file name for the HOST phonebook record is usually $01LI.BAT.

Login Batch File Commands

The login batch file sets the name of your PC with a setname command and the username for the file services you plan to access with a setlogon command. To edit the batch file, use the Phonebook option on the Remote Office Client main window to access the Advanced Options window.

If you specify a NetWare login in the login batch file, put the NetWare login commands after the setlogon command. If NetWare login commands execute before the setlogon command, Remote Office displays an error message.

Sample NetRider Login Batch File

The NetRider login batch file looks similar to the following:

```
REM Batch file for Remote Office
REM PhoneBook Record - HOST

CD \ROF
REM     Batch file for setting your machine name
REM     and your network logon name.
REM
setname USPC40
setlogon f_bloggs
```

Starting the Application

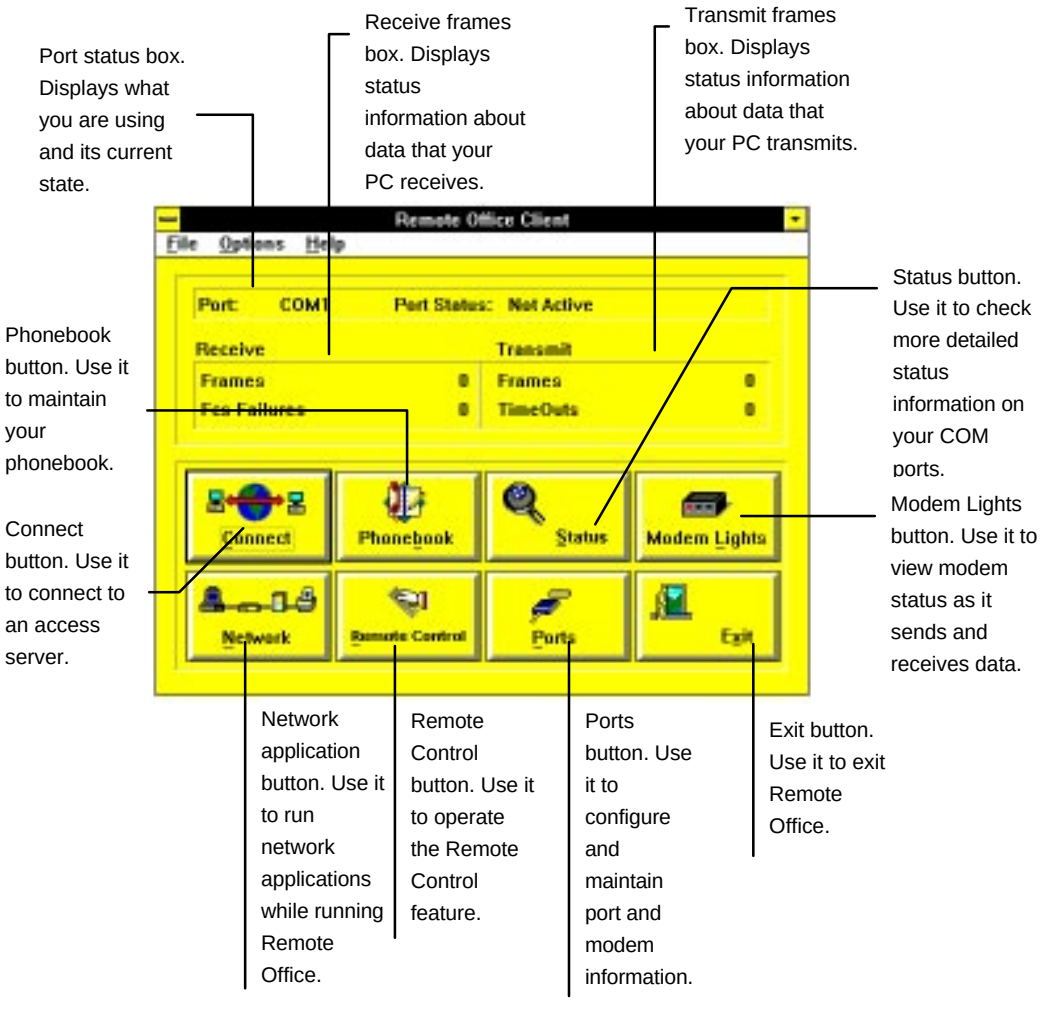
Procedure

Do the following:

Step	Action
1	If you have Windows running, exit Windows.
2	At the DOS prompt, run ROSTART.BAT by typing ROSTART. You can also add the ROSTART.BAT command to the end of your AUTOEXEC.BAT file to automatically load Remote Office when you start your PC. **Note:** Do NOT run ROSTART.BAT in the MS-DOS Shell in Windows.
3	Restart Windows if ROSTART does not automatically do this.
4	Double-click the Remote Office Client icon to start the client program. **Remote Office Client Icon:** See the highlighted icon in the following figure. 

The Remote Office Client Main Window

After you click on the Remote Office Client icon, the Remote Office Client Main window appears. The following illustration is a quick overview of the Remote Office Client main window.



Accessing Online Help

Remote Office provides detailed online help that explains how to use all of the Remote Office options available on the Remote Office Client main window. To access the online help, select Help from the menu bar and select **Online User's Guide**.

RCViewer Online Help

The RCViewer application is a remote control application that allows you to take over another PC. RCViewer requires installation of the IPX LAN operating system. The RCViewer online help describes how to use the application. To access the online help, click on the **Remote Control Viewer** button in the Main Remote Office Client window and select Help from the menu bar.

Connecting to a Remote LAN

Check Batch File Execution

Before you make your first connection, edit the HOST phonebook record to ensure the NetRider login batch file executes after a successful connection. Do the following if you selected NetRider with OnNet TCP/IP as your LAN operating system:

Step	Action
1	Click the **Phonebook** button on the Remote Office Client main window. The HOST record login options window appears.
2	Click the **Modify** button.
3	Click the **More** button.
4	Click the **After successful connection** box in the **Batch File Execution** box if a checkmark does not appear in the box. This activates the **Edit** button. Click the **Edit** button if you want to view or edit the batch file. This starts the Notepad application. Exit Notepad to close the file. **Important:** If using Windows for Workgroups, do not check the **After successful connection** box.
5	Save the change by: a) Clicking OK on the displayed window. b) Click Modify on the Modify Phonebook Records window. c) Click Exit until you return to the Remote Office Client main window.

Starting the Connection

Do the following to connect to an access server:

Step	Action
1	Click the **Connect** button on the Remote Office Client main window to start the connection. You see the Login to Host window.

Displayed settings: If this is the first time you are making a connection, the window shows the information stored in the HOST phonebook record (the information you provided during installation). If you previously made a connection, Remote Office stores these settings in a record called LAST_LOGIN. This record appears when you make your next connection.

2 Is the displayed Phonebook Name the name of the phonebook record that you want to use?

- If yes, click **OK** to dial the displayed access server number.
- If no, do one of the following:
  - Click on the down arrow next to the **Phonebook Name** box and select a different phonebook record. Then click **OK** to dial the access server.
  - Change the displayed information. Then click **OK** to dial the access server.

Adding or Changing Login Information

If you add or change information displayed for the current phonebook record, the changes remain in effect for the current session and Remote Office stores them in a record called LAST_LOGIN. To store changes in a phonebook record permanently, use the Phonebook option from the Remote Office Client Main window.

Do the following to add or change displayed login settings (you do not need to change all of the settings):

Step	Action
1	To change the phone number of the access server: a) Select the **Phone Number** box. b) Type the new number. Use commas to create a pause in the dialing process.
2	To change the user name or password: a) Select the **User Name** or **Password** box. b) Type the new user name or password. The user name and password must be the name configured in the access server.
3	To change the COM port: a) Click the down arrow next to the **Port** box. b) Select the correct port.
4	To change or add a callback number that the server uses to call you: a) Select the **Callback Number** box. b) Enter the number where you are currently located. Include any extra digits and commas to pause dialing, if needed. **DECserver support:** This option does not work with DECservers at this time.

Step	Action
5	To set a baud rate different than the currently configured baud rate: a) Click the down arrow next to the **Baud Rate Override** box. b) Select a new baud rate.
6	To specify a timeout value when Remote Office will automatically disconnect you if there is no activity: a) Select the **Inactivity Timeout** box. b) Enter the timeout value. A value of 0 means the connection will not time out.
7	To specify TTY mode, select **Enter TTY mode upon completion of initial login phone call** box.
8	To indicate you want to run a script file after entering TTY Mode: a) Select the **Script Filename** box. b) Enter the script filename.

Next Steps

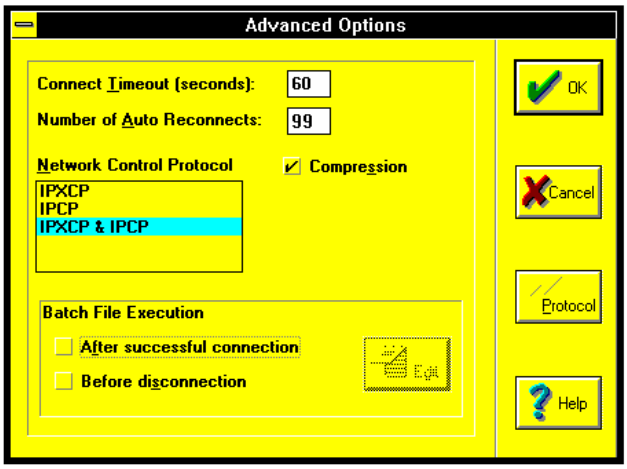
If you want to set the advanced or network protocol options, select the **More** button on the Login to Host Window. For further details, refer to the Setting Advanced Options and Setting Network Protocol Options sections in this chapter.

If you are finished with setting options, click **OK** to dial the access server number. Remote Office displays the status of the call while dialing and connecting.

Setting Advanced Options

Do the following to set the advanced options:

Step	Action
1	Select the **More** button on the Login to Host window. You see the following window:



2	To specify a connection attempt timeout value: a) Click on the **Connect Timeout** box. b) Enter a numeric value. The default is sixty seconds.
3	To specify the number of times Remote Office attempts to reconnect lost connections: a) Click on the **Number of Auto Reconnects** box. b) Enter a numeric value from 0 through 9. A value of 0 means Remote Office will not attempt to reconnect lost connections.
4	To select a network protocol, click on one of the protocols displayed in the **Network Control Protocol** box. The default value is IPXCP & IPCP.
5	To compress data, select the **Compression** box.

Step	Action
6	To log into a NetWare network after you connect successfully to an access server, select the **Login to network after connection** box. **For NetWare users only:** This option appears for NetWare users only.
7	To specify batch file execution, select the appropriate option in the **Batch File Execution** box. If the batch file does not exist, Remote Office starts the Notepad application. You can also select the **Edit** button to change an existing file. When finished with the batch file, exit Notepad. Remote Office names and saves the file for you. DO NOT save the file using the **Save As...** option. **NetRider with OnNet TCP/IP**: If NetRider with OnNet TCP/IP is your LAN operating system, select the **After successful connection** option so that the NetRider login batch file executes.

Next Steps

If you want to set Network Control Protocol options, go to the Setting Network Protocol Options section in this chapter. If you are finished with setting options, click **OK** to return to the Login to Host window. Click **OK** again to start dialing the access server number.

Setting Network Protocol Options

Do the following to set Network Control Protocol options.

Step	Action
1	Select the Protocol button on the Advanced Options window. You see the following window: 
2	Select the **IPX Network Address** box and enter a network number and node address. Do the following: a) Enter a four-digit hexadecimal number for the network number portion. b) Enter a six-digit hexadecimal number for the node address portion. Each digit is represented by two characters entered in the prompt. Therefore, you must enter an even number of characters. For example, to set the network number to 12F4, you enter eight characters, 01020F04.
3	Select the **Internet Address** box and enter 4 groups of numbers, each between 0 and 255. Separate the groups with decimal points (.), for example, 222.60.56.54.
4	Select the **Domain Name Server Address** box and enter 4 groups of numbers, each between 0 and 255. Separate the groups with decimal points (.), for example, 222.60.56.54.

Next Steps

After you finish setting all of the options, you can connect to the access server. Continue to click **OK** to return to the Login to Host window. When the Login to Host window appears, click **OK** again to dial the access server number.

After Making a Connection

Login Status Display

When Remote Office starts to dial your access server, it displays several messages while attempting to log into an access server in a Login Status window. Refer to the troubleshooting section in Chapter 3 for descriptions of these messages.

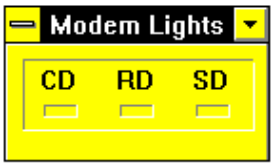
After Successful Connection

Once you successfully complete a connection, click **OK** to close the Login Status window. You can then start your applications and proceed as you normally would on the network.

Starting Modem Lights

The Modem Lights utility simulates the Carrier Detect, Receive Data, and Send Data lights on a modem. This is particularly useful for internal modems.

To start Modem Lights, select the Modem Lights button or select the Options menu and choose **Start Modem Lights after Connection**. The modem lights window appears on your screen.



Connecting to Print and File Services

If you install NetRider with PC/TCP as your LAN OS, do the following to access your file and print services:

Step	Action
1	Select File Manager.
2	Select Disk from the menu bar.
3	Select Connect Network Drive from the Disk menu.
4	Enter the network path of the service to which you want to connect using the appropriate format for the Network Operating System on the system to which you are connecting.
5	Click the **Connect** button.

Network Path Formats

The following table lists path formats for commonly used Network Operating Systems.

For This Network Operating System:	Use This Path Format:
IP file or print server	\\server\service
InfoServer	[\\server\] service
LAD	[\\server\] service
LAN Manager	\\server\service
NetWare	server\volume:directory

Disconnecting From a Remote LAN

Logging Off

Do the following to disconnect from the access server.

Step	Action
1	Log off from all servers, if you are still logged in on the network.
2	Select the **Remote Office Gold** program group.
3	Select the **Remote Office Disconnect** icon. A window appears confirming the disconnect. **Alternate Method:** Select the **Remote Office Client** icon. After you log in, the **Connect** button changes to a **Disconnect** button. To disconnect, select the **Disconnect** button. A window appears confirming the disconnect.
4	If you specified a batch file to execute before disconnecting, you have the option at this point of not executing the batch file by deselecting the **Execute batch file** box in this window.

Exiting Remote Office

To exit Remote Office, select the **Exit** button or choose the **File** menu and select **Exit**.

Chapter 3
Troubleshooting

Overview

In This Chapter

This chapter contains information about the following:

- Troubleshooting tools
- Operation tips
- Speed-related issues
- Ensuring high throughput
- Messages and common problems
- Technical support

Troubleshooting Tools

Introduction

You can use the RO commands `RO FIND` and `RO SHOW` to help in your troubleshooting efforts. To use these commands, you must exit Windows and run the commands from DOS. Appendix A describes the RO commands in detail.

Displaying Port Information

Type `RO FIND COM1` or select **Connections-PortStatus** from the RO utility to display a port statistics such as port configuration information, tallies on sends and receives, and packet errors. The key tallies include FCS Errors, Drops, and Receive Overruns.

FCS Errors

When a packet is received a two byte integrity check sum is included. This is known as the frame check sequence (FCS). The algorithm used to calculate this FCS is described in the Internet document that defines the point-to-point protocol. If the FCS field in the packet does not match what is expected based on the algorithm then the packet is dropped. An FCS error indicates that an interrupt from the COM port was missed. If you have an excessive number of FCS errors (greater than one per cent), chances are that your CPU cannot keep up with the asynchronous traffic.

To resolve this condition, you may want to decrease the baud rate of your connection, or try a different modem, first on the access server side, then on the client side.

Receive Drops

This indicates that the Remote Office driver that fields the asynchronous interrupts could not recognize a frame out of the data. Each frame starts and ends with the character 7EH. If the 7EH character is missed, the data is dropped and the receive drop tally is incremented.

If you have an excessive number of receive drops (greater than 1 percent), it is likely that the CPU cannot keep up with the asynchronous traffic. Try using a lower baud rate.

Receive Overruns

This indicates that the Remote Office module is unable to handle the number of packets being sent from the modem.

This could be caused by a shortage of Remote Office buffers. Check the buffer usage, and increase the number of buffers if peak usage matches the total number available.

Displaying Version, Usage, and Compression Statistics

The `RO SHOW` command displays the Remote Office software version, buffer usage (including peak usage), and compression statistics.

Buffer Usage

Use the `RO SHOW` command to monitor buffer usage on both the access server and client PCs. If the peak buffer usage approaches the total number of available buffers, it may be necessary to increase the number of available buffers.

Compression Statistics

The compression statistics displayed with the `RO SHOW` command are an indication of how compressible the data being transmitted is for a given compression algorithm. It is also a good measure of how much traffic is being channeled through the system. This tally shows compression information for all ports, and is a running tally until the PC is reset or the tally is cleared using `RO SHOW CL`.

Version Information

The `RO SHOW` command also displays the version of the ROFFICE.EXE module.

Loading ROSTART.BAT Line By Line

You can load ROSTART.BAT line by line to diagnose problems relating to an inability to find a network server. By loading the components line by line, you can verify that each component loaded without error, and check to see that proper frame types are in use.

Operation Tips

Running NETX

If you are running NETX, the Remote Office client must be logged into the access server or NETX will not load. Also, be sure to type in "netx u" prior to breaking the Remote Office connection. Otherwise, the program may appear to hang the machine.

Displaying Command Line Help

You will find a wealth of command line functionality by entering `RO /?` or `RO /HELP`. The most useful commands are `RO FIND` and `RO SHOW`.

About RO Commands

To use the RO commands, you must exit Windows. See Appendix A for details about the RO commands.

Displaying Modem Statistics

You can use the `RO TTY` command to display interesting modem statistics. For many modems, `RO TTY ATI6` causes the modem to return statistics about the most recent session. See your modem's user's guide for other diagnostic functions you can perform with this command.

Battery Operation

While running some makes of laptop computers and modems on batteries that are not fully charged, the reliability of sustaining a Remote Office session degrades when running at 38,400 baud. If you are having connection trouble, check the battery level or try running with AC power.

Call Waiting

Telephone call waiting features can interfere with your Remote Office connection. You can modify your Modem dial strings (or phonebook records) to turn call waiting off by putting *70 as part of the modem initialization string. You can also modify your modem hang-up string to turn call waiting back on.

Speed-Related Issues

Introduction

Speed is always a key issue. One of the most important things to do when evaluating the speed of the system is to understand the architecture. In many cases, speed comparisons are made relative to the time it takes a certain function to complete in a remote control environment versus the time it takes to complete in a remote node environment.

The architecture of Remote Office, by design, simply routes packets to a remote PC by means of an asynchronous telephone line. This means that if a client runs a 100K executable file located on the server, 100K of data must be passed across the phone line in order for the program to load. (Compression can significantly reduce the amount of data transferred.) In a remote control environment, only screen and keyboard I/O traverse the asynchronous line, meaning that the same 100K program run in a remote control environment passes substantially less data across the line.

Avoid Running Server-Based Applications

Do NOT plan on running applications from a server across the telephone link. This mode of operation is not recommended because of the slow telephone link speed. Instead, install applications on the client and run them from the client's local disk drive. Use the server to store and retrieve data.

If you experience slowness at login time, do the following:

- Check the scripts that might be executing to see that they do not load applications from the server. If this is the case, you may wish to alter the scripts for remote users to load programs from their local drivers.
- Remove network drives from the search path on the client. This helps prevent incidental loading of utility programs across the telephone link.

Ensuring High Throughput

Introduction

This section describes steps you can take to ensure the highest degree of throughput.

Investigate Tallies for Possible Errors

Data frame errors can often perpetuate slowness in a link. These errors take the form of FCS Errors, Drops, Overruns, and Out of Buffer conditions. If you suspect that the link is running slower than expected, you may want to monitor these error tallies to determine if data packets are encountering problems, resulting in upper layer protocol retransmissions. See the Troubleshooting Tools section of this chapter for more information on monitoring these conditions.

Tune the Protocol

Most protocols are not, by default, tuned for slower link speeds. If this is the case with a given LAN operating system, the access server may be forced to unnecessarily handle extra packets due to protocol packet retransmits. Check the appropriate LAN OS TXT file supplied with your installation disk for details.

Customize Login Scripts

This section lists some scripts designed to avoid the pitfalls of loading executables across the phone link, thus improving login time. The key is to avoid loading programs from the server's hard disk using unnecessary telephone bandwidth.

Using NetWare script commands, you can effectively alter the script path and exit out before any executables are run from the server. You may also note that server drives are not inserted into the PATH statement on client PCs during the Remote Office installation.

By simply setting an environment variable on the remote PC and checking the value of that variable in the script, you can alter the course of the script. This allows one script (USER or SYSTEM) to be used for local and remote access purposes.

Example

In the following example, we check the environment variable "LOCATION" to see if it is set to "REMOTE." If it is, then we exit out of the script before adding drives to the search path and running executables from the access server.

Similar logic can be implemented with other LAN operating system login script routines. We chose NetWare here for example purposes.

```
MAP DISPLAY OFF
MAP ROOT P:=SYS:PUBLIC
MAP M:=SYS:
MAP Q:=SYS:
MAP DISPLAY ON
MAP
IF <LOCATION>="REMOTE" THEN BEGIN
   WRITE "You are logged on Remotely!"
   DRIVE C:
   EXIT
END
write "You are logged on locally!"
MAP INS S1:=SYS:PUBLIC
MAP INS S2:=SYS:PUBLIC\%MACHINE\%OS\%OS_VERSION
#CAPTURE /L=1 /Q=HPLASER
#CAPTURE /L=2 /Q=HPLASER
#WHOAMI
DRIVE C:

** Remote Office Load Sequence

Set LOCATION=REMOTE   (Sets variable location
                       for LOGIN script)
ROFFICE
LSL
ODIROF-E
IPXODI
RO          (Establishes phone link
             with access server)
VLM
LOGIN
```

Messages and Common Problems

Introduction

This section contains descriptions of messages or error situations you may encounter while using Remote Office.

8801, 8901: Drive Mapping Could Not Be Completed

Cause

This error may occur in NetWare environments.

User Action

If you are using the VLM client, set your LASTDRIVE statement in CONFIG.SYS to Z for mapping to take place.

Computer Hangs When NetRider is Running

Cause

You may not have sufficient conventional memory available.

User Action

You need 330 K or more of free conventional memory. From Windows, open a DOS window and type the following to check the available memory.

```
mem/c/p
```

General Error Reading Network Device ...Abort, Retry, Fail...

Cause

This problem can occur on modem link speeds of 2400 baud. This speed is not fast enough to support most protocols.

User Action

If you are running in a LAN Manager environment, it may be necessary to set a parameter in your LANMAN.INI file to perform large file transfers. To disable raw data transfer SMB enter the following line in the [WORKSTATIONS] section of the workstation LANMAN.INI file, then restart the workstation:

WRKHEURISTICS=xxxxxxxxxxxxxx1xxxxxxxxxxxxxxxxxx

There are 14 x's, followed by a 1, then 18 x's. The “x” means “use defaults.”

Access Server Never Called Back

Cause

Either the access server instructed the client to expect a callback or the user requested a callback and the callback did not occur within the connection timeout interval.

User Action

Check that you specified the correct phone number and retry the connection. DECservers currently do not support this option.

Login Succeeded

Cause

This message indicates the login was successful and the client may now communicate on the LAN served by the access server.

User Action

Proceed as you normally would on the LAN. For example, if you use the File Manager application to connect to a network drive, you can perform this task as usual after making a connection.

No CTS Outputting to Modem

Cause

The modem never detected a Clear to Send message. This could indicate the modem cable is not connected or the modem is not turned on.

User Action

Check that the correct modem cable is connected and that the modem is on.

Other Side Not Recognizing ROFFICE Packets

Cause

The modems were able to communicate, but the access server either rejected the packets sent by the client or the access server sent back packets the client did not recognize. This message may also occur if the access server port is not active.

User Action

Do one or more of the following:

- Make sure that your modem is configured for hardware flow control.
- Check for FCS errors on the client side in the Port Status window. If these errors exist, this could mean the line speed between the computer and the modem is too high, especially, when running the modem or a laptop on battery power. You may need to adjust the modem speed to a slower speed.
- Make sure the access server port is ready to receive calls. Check the Modem Ready status for the port you are dialing into on the access server PC. There should be a “1” in the MR status field.
- Check phone line functionality for bad connections, noise on the line, or faulty wiring.
- Check modem cables and applicable hardware to verify all connections.
- If you are working in a PBX environment, try to isolate the phone line from the PBX.

Port is not a UART

Cause

Remote Office does not recognize the serial port. This could indicate that the IRQ or I/O Address conflicts with another device or was improperly configured in the Ports and Modems Setup screen.

User Action

Make sure you specified the correct COM port in your login settings. If this is the correct COM port, turn off and restart your PC.

Problem Establishing Carrier Between access server and Client

Cause

Any of the following:

- The modem initialization string may be improperly set up.
- This error may occur with poor telephone connections or line noise.
- There may be a problem with a modem on either the access server or client side.

User Action

Try the following:

- Reset your modem initialization string. Refer to Appendix B for key modem settings.
- If possible, try a different modem on either side to rule out a hardware problem.

Timeout Waiting for Connect

Cause

A call was made, but either one side did not answer, or the modems were unable to communicate.

User Action

Set a higher timeout value, giving the access server and client more time to complete the connection. See the Setting Advanced Options section in Chapter 2 to set the Connect Timeout value.

Unexpected Error 9 (89FF)

Cause

This occurs in NetWare environments when using the NETX shell and having the LASTDRIVE statement set to Z in CONFIG.SYS.

User Action

NETX requires that the LASTDRIVE statement be set one drive greater than the actual last drive located on the PC. For example, if you have a local C and D drive, set LASTDRIVE to E.

Technical Support

Introduction

When calling technical support, be prepared with answers to the questions listed in this section. This makes it easier for the product support personnel to understand and diagnose your problem promptly.

See your warranty card or contact the person who sold you the NetRider product for technical support telephone numbers. When speaking with a technical support person, request support for the NetRider product.

Before Contacting Product Support

Refer to the Messages and Common Problems section of this chapter to see if you can resolve the problem. Then check the following:

- Make sure all cables are properly connected.
- Make sure all modem(s) are installed properly. Refer to the modem's installation instructions.
- Make sure you are using the right COM port. Make sure your modem cable is connected to the COM port you are checking, or if you are using an internal modem, verify that the IRQ/Port settings are correct.
- Is the port configuration information correct (speed/modem string/port)? Verify that the Ports and Modems settings contain accurate information pertaining to the modem string, download string, and selected serial port. Check your modem guide for specifics on the download string and supported speeds.
- Have you checked online help for field descriptions? If you have questions pertaining to parameter settings, detailed information can be found in the online help throughout the interactive RO utility.
- If you have questions on particular parameters, check your documentation.

If you still cannot solve your problem, contact your technical support person.

Information You Provide

Your technical support representative may ask the following questions, so please be prepared to answer them.

- Computer brand name, CPU type, clock speed and bus type.
- Is this a network-related problem or a PC-related problem?
- Modem manufacturer.
- Modem Initialization string (have your modem manual handy).
- DOS version.
- Remote Office components software version (accessed from command line by typing RO SHOW).
- If you are experiencing a duplicable problem, list the sequence of steps.
- Make note of any error or status message that may have appeared on the screen.
- Responses to the following RO commands:

  RO FIND

  RO PORT

  RO SHOW

Appendix A

Command Line Reference

Overview

In This Chapter

This appendix contains the following information:

- WROCLIENT commands
- ROFFICE commands
- RO command line functions

WROCLIENT Commands

Introduction

Remote Office provides the following client PC functions with WROCLIENT.EXE for command line use. These commands are only available in DOS; exit Windows before using them.

WROCLIENT *hostname* [*option...*]

Starts the Remote Office Client in Windows and connects to a host and performs a task as specified by the options.

Options

The following table lists the options for the command.

Option	Description
R=*application path*	Starts an application after making a connection.
M=*application path*	Starts an application as an icon after making a connection
S	Displays the Remote Office Gold program group in the Windows Program Manager after exiting the Remote Office client.

WROCLIENT DISCONNECT

Disconnects the current connection. This command performs the same function as the **Disconnect** button on the Remote Office Client main window.

ROFFICE Commands

Introduction

Remote Office provides the following client PC functions with ROFFICE.EXE for command line use. These commands are only available in DOS; exit Windows before using them.

ROFFICE BUFFERS=*nn*

Allocates memory for Remote Office Buffers. *nn* is the number of buffers to allocate. One buffer holds a single Ethernet packet.

ROFFICE DSA=*nnnn*

Reserves space for dynamic allocation of internal Remote Office data structures. *nnnn* is the number of bytes of memory to reserve.

ROFFICE LOADHIGH=*Y/N*

ROFFICE loads partially into upper memory by default. Specify N to inhibit upper memory loading.

ROFFICE U

Unloads ROFFICE.EXE.

Note

ROFFICE cannot unload if you load other TSR programs after ROFFICE.

RO Command Line Functions

Introduction

Remote Office provides the following client PC functions with RO.EXE for command line use. These commands are only available in DOS; you must exit Windows before using them.

Command Syntax

To run an RO command line, use the following syntax while in DOS:

RO [*command*] [*parameter1=xxx*] [*parameter2=yyy*] ...

Command Example

The following example changes the number of buffers used for Remote Office to 15:

```
RO CFGCHANGE BUFFERS=15
```

RO CFGCHANGE

Changes the CONFIG file parameters. Other parameters are available for this function on host systems.

Parameters

Use the following parameters for this command.

Parameter	Description
BUFFERS=*nn*	Sets the number of buffers to use for communication. Specify 0 to let Remote Office calculate a value.
	Default: 0
DSA=*nnnn*	Sets the size of the dynamic storage area. Specify 0 to let Remote Office calculate a value.
	Default: 0
EXEGUARD=*Y/N*	Specifies whether to load Remote Execution Warning TSR program
EXESIZE=*nnn*	Warns if executable is greater than nnn Kilobytes.
EXEWARN=*Y/N*	Specifies whether to display a warning if executable files are run across the link.
IPADDRESS=*nn.nn.nn.nn*	Specifies the IP address if NCP=2.
LCPACCM=*nn.nn.nn.nn*	Sets desired asynchronous character control map field.
NCP=*nn*	Specifies the default Network Control Protocol. 1=IPXCP, 2=IPCP, 3=IPXCP and IPCP.
NETWORKNUMBER=*hhhhhhhh*	Specifies the network number if NCP=1 or 3.
NODEADDRESS=*hhhhhhhhhhhh*	Specifies a hex node address.

Parameter	Description
NUMSBUFFS=*nnn*	Specifies the number of small buffers. 0 means let Remote Office calculate.
SIZESBUFFS=*nnnn*	Specifies the size of small buffers. 0 means let Remote Office calculate.
UMB_LOAD=*Y*|*N*	Specifies whether to load Remote Office into upper memory. **Default:** Y
VROF386=*Y*|*N*	Specifies whether to load VROF.386 VxD when running Windows enhanced mode. **Default:** Y

RO CFGSHOW

Displays the contents of the CONFIG file. No optional parameters.

RO DIAGNOSTICS

Performs PPP diagnostics over a port with an established connection.

Parameters

Use the following parameters with this command.

This Parameter:	Specifies:
COUNT=*nnnn*	The number of times to send frame. 0 means use duration value.
DURATION=*nnn*	Number of seconds to run test. 0 means run until key hit.
ECHO=*Y/N*	Whether to echo diagnostic packets. **Default:** N

This Parameter:	Specifies:
INCREMENTAL=*Y* | *N*	Whether to do an incremental test from 1 to PACKETSIZE value.
PACKETSIZE=*nnnn*	The size of packet. 0 means random.
	Default: 1500
PORTNAME=*aaaa*	The communications port.
	Default: COM1
REPORT=*nnnn*	The report interval in seconds.
	Default: 5

RO EXPAND

Provides a means to expand files from the Remote Office installation disks.

Parameter

Use the following parameter with this command.

RO EXPAND *source-file* [*destination*]

RO FIND

Finds and displays information about a communication port.

Parameter

Use the following parameter with this command.

CLEAR=*Y* | *N* Specifies whether to clear port tallies.

Default: N

RO HELP

Displays detailed Help information.

Tips

The following tips help you use this command.

- Brackets [] denote default values.
- "PORTNAME=aaaa"can be shortened to just "COMx" if it is the first argument to a command
- RO HELP *function* give help only on the specified function.
- RO *function* /? also provides help on a specified function.

RO LOGIN

Starts a connection and logs in to a access server.

Parameters

Use the following parameters with this command.

This Parameter:	Specifies:
AUTORECONNECT=*nn*	The number of times to attempt a reconnection after a connection drops. Values 0 to 99. **Default:** 99
BAUD=*nnnnn*	The baud rate for communication. **Default:** 9600
CALLBACK=*aaaaaaaaaaa*	A number for the access server to call back to the client computer. Number can be up to 47 characters. **Default:** No callback number

This Parameter:	Specifies:
CONNECTSECS=*nnn*	The number of seconds to allow for connection to complete. Values 0 to 127. **Default:** 60
DIAL=*aaaaaaaaaaaaaaa*	The phone number to dial in to the access server computer. The number can be up to 47 characters. See Appendix A for details on long distance or credit card dialing. **Default:** None (direct connect)
PASSWORD=*aaaaaaaa*	The user's login password. To prompt the user for a password at login time, specify "*". **Default:** No password
PHONEBOOK=*aaaa*	A phonebook record containing the desired phone number and password.
PORTNAME=*aaaa*	The communications port. **Default:** COM1
SCRIPT=*aaaaaaaa.aaa*	The name of a script file containing SEND and PAUSE commands.
TTY=*yes or no*	Whether to enter TTY mode at login time.
USERNAME=*aaaaaaaaa*	A username for login.

RO LOGOUT

End connection and logout from a Remote Office access server.

Parameter

Use the following parameter with this command.

PORTNAME=*aaaa* Specify the communications port.

Default: COM1

RO PHC

Shorter function name for PHONEBOOKCHANGE.

RO PHONEBOOKCHANG

Change a record in the FONEBOOK file.

Parameters

Use the following parameters with this command.

This Parameter:	Specifies:
AUTORECONNECT=*nn*	The number of times to attempt a reconnection after a connection drops Values 0 to 99.
	Default: 99
BAUD=*nnnn*	A baud rate that is different from the one in the phonebook record. 0=keep same.
CALLBACK=*nnnnnnnnn*	A number for the access server to call back to the client. Phone number can be up to 47 characters. See Appendix A for long distance and credit card phone number strings.
CONNECTSECS=*nnn*	The number of seconds to allow for connection to complete. Values 0 to 127.
	Default: 60
DIAL=*nnnnnnnnnn*	The phone number of the access server computer.
IPADDRESS=*nn.nn.nn.nn*	The Internet address. Used only if NCP=2 or 3.
NAME=*aaaa*	The optional name of the access server computer.

This Parameter:	Specifies:
NCP=*n*	The type of Network Control Protocol. Values: 1=IPXCP, 2=IPCP, 3=IPXCP & IPCP. **Default:** 3
PASSWORD=*aaaaaa*	The password to be used for login. To prompt the user for the password, specify "*".
SCDIR=*aaaaaa*	The Remote Office Control Directory. **Default:** ROF\CONTROL
TTY=*Y*|*N*	Whether to enter TTY mode after carrier detect.
USERNAME=*aaaaaaaaa*	The user name for logging in to the access server.

RO PHONEBOOKDEL

Deletes a record in the FONEBOOK file.

Parameter

Use the following parameter with this command.

NAME=*aaaa* Specify name of the phonebook record to delete.

RO PHONEBOOKSHOW

Display records in the FONEBOOK file.

Parameter

Use the following parameter with this command.

NAME=aaaa Optional name of the phonebook record.

RO PORTCHANGE

Changes a record in the PORTS file.

Parameters

Use the following parameters with this command.

This Parameter:	Specifies:
ANSWERSTR=*aaaa*	The modem answer string.
BAUD=*nnnnn*	The baud rate for the port.
BCDTICKS=*nn*	The between command delay in CPU ticks. Range: 1-240.
	Default: 10
	Note: A CPU tick is about 1/18th of a second.
COMMENT=*nnnnnn*	A user-defined comment of up to 23 characters.
CTSTICKS=*nn*	Clear to send timeout in CPU ticks. Range: 1-240.
	Default: 10
DEACTIVATE=*Y* | *N*	Whether to inhibit any port activity.
	Default: Y
DIALSTR=*aaaa*	The modem dial string.
HANGBCDS=*nn*	The amount of delay after hangup in BCDs. Range: 1-240.
	Default: 8
HANGSTR=*aaaaa*	The modem hangup string.
INITSTR=*aaaa*	The modem initialization string.
IOADDR=*xxxx*	The I/O address for the port.
IRQ=*xx*	The IRQ for the port.
MODEMKEY=*nn*	The key value of modem.

This Parameter:	Specifies:
POLLEDXMIT=*Y* | *N*	Whether to perform transmits in polled mode.
PORTNAME=*aaaa*	The port name.
	Default: COM1
SCDIR=*aaaaaa*	The Remote Office Control Directory

RO CFGSHOW

Displays the contents of the CONFIG file. No optional parameters.

Appendix B

Modem Settings

Overview

In This Appendix

This appendix contains the following information:

- Dialing with credit cards
- Important modem settings

Dialing With Credit Cards

Introduction

The Phone Number field is 47 characters long. This should be sufficient to handle virtually any credit card dialing string/phone number combination. If you need to provide more characters for a particular dialing string, you can use the DIAL field defined for a particular port to add up to an additional 15 characters.

Characters to Facilitate Dialing

You can use the following characters to facilitate credit card dialing

Character	Meaning
,	Pause approximately 2 seconds
W	Wait for a second dial tone
@	Wait for silence
!	Issue hookflash
$	Wait for calling card prompt tone (check modem manual for availability)

Example

The following is an example of calling card string.

9,05132915936,,,51329150367575

In this example:

- 9, is the outside line followed by a pause of 2 seconds
- 05132915936 is the phone number
- ,,, is a 6 second pause
- 513329250367575 is the credit card number

Important Modem Settings

Most Important Settings

The following table lists the three most important modem settings. Refer to your modem manual to determine the AT command string to achieve these settings.

Setting	Description
Flow Control	Use this setting to enable RTS/CTS local flow control.
Track Status of CD	Use this setting to enable modem tracking of the status of the carrier detect signal.
Monitor DTR signal	When an on to off transition of DTR signal occurs, the modem hangs up and enters the command state.

Speeds Greater Than 14.4 KB

If you experience problems establishing a connection at speeds greater than 14.4 KB, try reducing the speed at which the connection is to be made. If this helps, refer to the modem manual to determine if any special modem parameters are needed for higher speeds.

Example AT Command Strings

The following are examples of AT command strings for some of the more commonly used modems. See your modem documentation for the latest command strings.

Parameter	Hayes Ultra 14.1	US Robotics V.32	AT&T Paraydyne 3830
HW Flow Control	&K3*	&H1	\Q2*
Track Status of CD	&C1	&C1	&C1
Monitor DTR	&D2	&D2	&D2
Recall Factory	&F	&F	&F0
Disable Keyboard Echo in Command State	E0	E0	E0
Return Result Codes	Q0*	Q0*	Q0*
Display Result Codes as Words	V1	V1	V1*
Display Extended result codes	X4*	X4	X4*

*Default Settings

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