

Using NetRemote

MCA FEE

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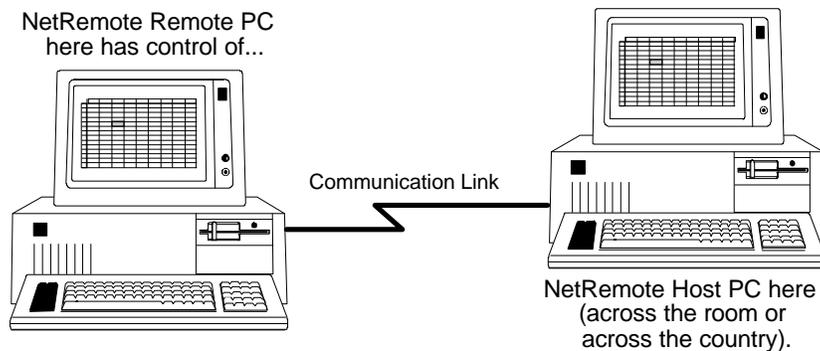
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Chapter 1 Introduction to NetRemote

What is NetRemote ?

Remote Control

NetRemote's *remote control* capability lets a PC user take control of a second PC, as if sitting at the second PC, typing on its keyboard and viewing its screen. As a "remote control" user, you can run programs, access data, print reports, or observe the operations of another PC user. When you press a key on the "remote control" PC keyboard, the "controlled" PC responds as if the key had been pressed on its keyboard (a mouse can also be used to "remotely control" mouse-capable programs). Also, anything the "controlled" PC displays appears on the "remote control" PC's screen.



Remote Access

NetRemote's *remote access* capability makes disk drives on a connected NetRemote PC available to your PC as "virtual drives." DOS, Windows, and programs on your PC can access these virtual drives as if they were "real" drives on your PC (much like using a LAN shared disk).

To use remote control or remote access, appropriate NetRemote software must be loaded on *both* PCs, and a communication link must be established. You can choose from many types of communication links, including direct cables, modems, or node-to-node connections across a LAN. A “controlled” PC can therefore be across the room or across the country.

Other Capabilities

NetRemote provides many other capabilities, including:

Capability	Description
File Transfer	Transfer files between PCs, including unattended or background transfers.
Remote Printing	Re-direct the printing done by “controlled” PC programs to a printer or file on your “remote control” PC.

Support for Modem Connections and Node-to-Node LAN Connections

The NetRemote software supports communication with another NetRemote user through two types of connections:

Connection	Description
Modem/Serial Port Connection	Connect two PCs via modems and a phone line, or connect directly using a null modem cable.
Node-to-Node LAN Connection	Connect two LAN workstations via the LAN's existing cabling and Network Operating System (NOS) software; this is currently supported for LANs with an NOS using IPX/SPX (such as Novell® NetWare®) or NetBIOS (such as Microsoft LAN Manager).

DOS and Windows Remote Control and Remote Access in One Product

NetRemote provides remote control and remote access for both Windows 3.1 and DOS programs (in Text and Graphics modes), including full keyboard and mouse support. These capabilities are available with the connected PC is using NetRemote.

Advanced Windows Remote Control Technology

NetRemote uses McAfee's exclusive Windows remote control technology that eliminates the need for special video, mouse, or keyboard drivers. This avoids the type of conflicts with your PC's existing drivers (e.g. accelerated video drivers) that some other remote control products can cause. It also extends NetRemote performance and flexibility. For example, NetRemote provides remote control for high video resolutions (e.g. 1280x1024) and "true color" (that is, 24-bit or "16 million color") video!

NetRemote also uses McAfee's exclusive Intelligent Graphics technology to speed Windows screen updates on the "Remote Control" PC.

What is NetRemote?

NetRemote merges NetRemote's advanced technology with the flexibility and ease of use of Microsoft Windows. NetRemote also takes advantage of Windows' memory management and multitasking features to support enhanced background operations, multiple connections, and other advanced capabilities.

A Few Quick (but Essential) Terms and Concepts

To use NetRemote effectively, you should understand the few concepts and standard terms described briefly in this section.

Host PC

The "controlled" PC is called the "Host PC." The Host PC allows the "remote control PC" to "visit" and take advantage of the Host PC's facilities — files, applications, printers, etc. However, the "Host PC" can disallow selected privileges based on the identity of the connected "remote control PC" user.

Remote PC

"Remote Control PC" is too long to use frequently, so it is instead called simply the "Remote PC." This makes sense from the Host PC's perspective, since the Remote PC may very well be "remote" from the Host PC.

About the NetRemote Host and NetRemote Remote Software

How does NetRemote determine which PC is the Host and which is the Remote? That's simple — there are two different types of NetRemote software, Host and Remote.

Either the Host PC *or* the Remote PC can initiate a NetRemote connection. The order of connection is not related to the NetRemote software run on a PC; i.e., a Host PC can “call” and a Remote PC can “answer,” *or* vice versa.

Drive Redirector

NetRemote's *Drive Redirector* provides remote access by making disk drives on a connected NetRemote PC available to your PC as “virtual drives.” For example, you can make drive **C:** on a connected NetRemote Host or Remote PC “appear” as drive **G:** on your PC. You can access that “virtual” G: drive as if it were a “real” drive on your PC. Similarly, programs on the connected PC can access drives on your PC as “virtual drives.”

Background Operation

Windows lets you run multiple applications concurrently (multitasking). With NetRemote, you can maintain a remote control connection (for example, to operate a DOS *or* Windows program running remotely on a Host PC) and still run other Windows applications locally on your PC. You can even use NetRemote Remote to establish and maintain multiple NetRemote Host connections simultaneously.

Furthermore, using NetRemote Remote, you can perform some tasks, such as file transfer, in the “background” on a Host PC while the Host PC user runs other programs. This is true even if the Host PC is running NetRemote for DOS Host instead of NetRemote Host.

Popular Uses for NetRemote

- NetRemote is used as a superior solution in a variety of business situations:
- Remote Customer and End User support and training
- Remote access to distant PCs and LAN facilities
- File Transfers, including file distribution and collection
- Network Administration

NetRemote Operating Requirements

System Requirements

To run NetRemote Host or Remote, your PC needs:

- Intel 80386, 80486, or Pentium processor (or a compatible non-Intel processor)
- Microsoft Windows Version 3.1 or later (which requires DOS 3.1 or later)
- At least 2 MB of system memory (4 MB or more is recommended)

For remote control, one PC must run NetRemote Remote software and the other must run NetRemote Host software. For example, you can run NetRemote Remote and control a PC running NetRemote Host.

To use remote disk access (which is optional), the NetRemote Drive Redirector program must also be loaded on both PCs.

The Remote software runs entirely within Windows. The Drive Redirector and part of the Host software are DOS TSR (terminate and stay resident) programs that occupy small amounts of system memory after loading. If adequate Upper Memory Blocks are available, these elements automatically load all or part of themselves into high memory in order to conserve conventional memory. For details on the amount of memory used by the resident portions, see the README file.

The NetRemote package includes both Host and Remote software, plus the Drive Redirector.

LAN Requirements (for Node-to-Node Connections)

LAN requirements frequently change as new LAN software is released and we expand our LAN support. For the latest LAN support and requirements, see the README file.

If You are Upgrading From an Earlier Version

This version of NetRemote includes several improvements over previous versions, including the following:

Improvement	Description
Node-to-node support	Besides modem and serial port connections, NetRemote lets a PC on a NetWare (IPX) or NetBIOS LAN establish a node-to-node connection with another PC on the LAN.

	For details, see Chapter 3.
Enhanced SETUP	The SETUP installation program now automates many installation functions and offers greater flexibility. For example, SETUP now detects the COM port to which a modem is attached, detects and notifies you of the presence of a 16550 serial port UART, and sets the baud rate automatically. SETUP also provides an Uninstall option and a DOS-only Host installation. For details, see Chapter 2.
Simplified HOST loading	If you are in Windows and HOST.EXE is not loaded, double-clicking on the NetRemote Host icon now offers an option to have NetRemote automatically exit Windows, load HOST, and restart Windows for you. For details, see Chapter 7.
No keyboard driver changes	Previous NetRemote versions changed Windows' keyboard driver (but not the mouse or video drivers). This new version does not change mouse, video, <i>or</i> keyboard drivers.
Improved security features	Previous versions of NetRemote Host let you define global directory access restrictions that applied to all Remote callers. This new version also lets you define individual directory access restrictions for each Phone Book Entry, so you can now apply different access restrictions to different callers. For details, see Chapter 7.
Support for multiple simultaneous remote connections	You can now run multiple instances of NetRemote Remote and have each instance maintain a different Host connection. This lets you control multiple Host PCs from a single Remote PC. Each Host can be connected across a LAN (node-to-node connection) or through modems. For details, see Appendix B.
Chat improvements	Remote and Host Chat in Windows now look and operate the same way. Also, when you exit from the Host Control Center, the Host Chat Window now closes itself automatically.
Performance and interface improvements	This version provides better speed and uses fewer Windows resources than previous versions. Also, to improve interface consistency, the Control Centers now "gray out" unavailable buttons instead of "X'ing" them.

Manual Organization

This *NetRemote Software User Guide* describes the NetRemote Remote and Host software in detail, including installation and operation. Besides this Introduction, the manual contains the following:

Chapter	Description
Chapter 2: Installing NetRemote	Explains how to install the NetRemote software onto your PC.
Chapter 3: Summary of NetRemote's Remote Procedures	Explains the basic operation of NetRemote Remote and provides convenient summarized instructions for commonly used Remote procedures.
Chapter 4: Using Remote Accessories and Setup Tools	Describes in detail each of the NetRemote Remote Accessories and Setup Tools, which perform special tasks that let you efficiently operate and manage NetRemote Remote.
Chapter 5: Using the File Transfer Accessory	Describes in detail how to operate the File Transfer Accessory, which lets a Remote user transfer files between their Remote PC and a connected Host PC, and also perform other maintenance tasks like deleting files and creating directories.
Chapter 6: Using the Drive Redirector	Describes in detail how to set up and use NetRemote's Drive Redirector, which provides remote access to disk drives on a connected NetRemote PC. DOS, Windows, and application programs on your PC can use "remote access" drives on a connected NetRemote PC as if they are local drives installed in your own PC.
Chapter 7: Using NetRemote Host	Explains the operation of NetRemote Host, including summarized instructions for common Host procedures.

NOTE: Appendices at the end of the manual provide reference information on such things as DOS Utility Programs, Advanced Topics, Troubleshooting, Modems and Cabling, and Post Connect Scripting. An Index is also provided, as is extensive on-line Help.

For information on contacting McAfee for assistance or product sales information, see the front of this manual.

Relevant Chapters and Appendices

This manual is shipped with Two PC (Remote and Host), Remote Only, and Host Only NetRemote packages. If you use just the Host or Remote software, only selected chapters and appendices in this manual are relevant, as shown in the table below.

	Chapters							Appendices						
	1	2	3	4	5	6	7	A	B	C	D	E	F	G
For Remote Use	Y	Y	Y	Y	Y	Y	-	-	M	M	M	M	M	M
For Host Use	Y	Y	-	-	-	Y	Y	M	M	M	M	-	M	-

Y=Yes, M=Maybe (special information)

What to do Next

First, use the instructions in Chapter 2 to install NetRemote.

To learn how to use NetRemote, go to Chapter 3, “Summary of NetRemote's Remote Procedures.” You can start using the product as described in the first few sections of that chapter and then refer to this manual or the on-line Help only as needed for specific tasks. Or, if you prefer, you can read all of Chapter 3 before using the Remote software.

To learn how to use NetRemote Host, refer to Chapter 7, “Using NetRemote Host.”

After learning basic Remote and/or Host operation, you may want to explore the use of the Drive Redirector for remote disk access from your local applications. See Chapter 6 for complete details.

Chapter 2 *Installing NetRemote*

What You Need

To install NetRemote, you need the following:

- The NetRemote diskette(s)
- If you will install support for node-to-node network connections, you will need to know the communication protocol used on your network (such as NetWare SPX or NetBIOS)

If You are Updating From an Earlier Version

Updating from an Earlier NetRemote Version

Version 6.0 of NetRemote completely replaces previous versions. Older revisions are not compatible with NetRemote 6.0. All files from the previous version of NetRemote must be removed from the system if you are installing NetRemote 6.0.

If Your PC Has a Non-NetRemote Remote Control Product Installed

NetRemote *does not* use special video, mouse, or keyboard drivers for Windows remote control. However, many other remote control products *do* use special keyboard, mouse, and/or video drivers for Windows remote control. These drivers can cause conflicts for other Windows programs, including NetRemote. If SETUP detects such a remote control product installed on your PC, it will inform you of the changes that you should make to your SYSTEM.INI file to avoid those conflicts. If this message appears, write down the changes so you can complete them after SETUP finishes installing NetRemote. For more details, see the README file.

Running SETUP

To install NetRemote onto your system, run SETUP as follows:

1. **IMPORTANT:** If you will use NetRemote with an external modem, be sure it is connected to your PC and switched on (so SETUP can automatically detect a generic modem type and set up NetRemote accordingly).
2. Insert the NetRemote diskette in drive A.
3. In the Windows Program Manager, select File | Run, enter a:setup, and then choose OK.

The first NetRemote installation dialog box appears.

4. Confirm or enter your Name and Company and then choose OK (or press Enter).
5. In the next panel, either leave the installation drive and directory as the default, C:\NRW, or enter a new destination. Choose OK (or press Enter).

SETUP creates the directory.

6. If you specified Full Install or support for multiple connection types, you are asked to specify the connection type (Modem/Serial or a node-to-node type) that you will use most often. Choose the button beside the proper option and choose OK (or press Enter).

To install all NetRemote Modem/Serial Port connection elements (but not node-to-node elements): Choose the button beside Full Install - Modem Only, and then choose OK (or press Enter).

To install only selected NetRemote elements: Choose the button beside Custom Install, and then choose OK (or press Enter). You will be asked to specify installation of only Host, only Remote, or both elements. Next, you will be asked to specify the type of connection support to install: Modem/Serial connections, node-to-node network connections (e.g. NetWare SPX or NetBIOS), or a combination.

7. The Install Options window appears, with Full Install selected. To install all of NetRemote: choose OK (or press Enter).

SETUP begins copying files. A progress bar appears, showing the status of the copying process.

8. After copying is complete, a dialog box appears indicating the name under which a backup of your current SYSTEM.INI file will be saved. Record this (in case you need to restore your SYSTEM.INI file) and choose OK.

SETUP makes the backup copy and then modifies your SYSTEM.INI file. These minor changes cause Windows to use NetRemote's enhanced communication drivers. For more details, see the README file.

9. Some additional query or information windows appear next. The exact windows that appear vary depending on your previous SETUP selections. Follow the on-screen instructions to respond to each window. You may also want to consider the following (where relevant):

Option	Description
Network Host Information	This box appears if you chose Full Install or are installing the Host software and node-to-node support. The Host information identifies your workstation to other NetRemote users when you are waiting for a node-to-node connection across the LAN. Type in a suitable short Host Name (up to 16 characters, such as "Jane") and a longer Host Description (up to 27 characters, such as "Jane Jones, Sales Manager"), and choose OK..
Modem Settings	This box appears if you chose Full Install, Full Install - Modem Only, or Modem/Serial support. SETUP automatically examines your serial ports looking for a modem and the presence of a special chip called a 16550 UART (which is required for reliable communication in Windows at speeds over 9600 baud). Based on its findings, SETUP reports whether you have a 16550, and then automatically selects the COM Port, Baud Rate, and Modem Type that should work for your setup. Because SETUP can determine the highest speed supported by your modem, but not the specific model, it chooses a generic modem type that should work. Optionally, you can scroll through the list of modem names to choose your particular model (if listed). IMPORTANT: If your modem has DIP switches, be sure they are set to recognize the true states of the Data Terminal Ready (DTR) and Carrier Detect (CD) signals. If these are set improperly, or your modem cable is wired incorrectly, you will have problems making and receiving calls. For details on configuring and cabling your modem, see Appendix C.
Phone Number (OPTIONAL)	This box appears if you chose Full Install, Full Install - Modem Only, or Modem/Serial support. If you enter a number, it is used as the default number for new Phone Book entries. By default, it is also the Quick Connect number that is dialed if you don't specify a particular Phone Book entry before calling.

10. After the last query box, Setup creates the configuration files and the NetRemote Program Group. When the successful completion box appears, choose OK (or press Enter).
11. You are asked whether you want to view the READ-ME file, which contains any special or last-minute information not in this manual. We recommend doing this now, before you use NetRemote.

NOTE: To review the READ-ME file later, double-choose the Read Me for NetRemote icon that is in the NetRemote Program Group.

12. A box appears that describes the batch files included with NetRemote and that also asks whether you want to restart Windows so SYSTEM.INI changes can take effect. After reading the batch file descriptions, if you want to exit Windows (for example, to run one of the batch files before restarting Windows), choose Exit Windows (or press Enter). If you want to Restart Windows now to activate SYSTEM.INI changes (for example, to run NetRemote Remote), choose Restart Windows. If you do not plan to run NetRemote before exiting Windows, choose Continue.

NOTE: To start NetRemote Host, you *must* exit Microsoft Windows first, as described in Chapter 7.

You have finished installation. Remove and store the NetRemote diskette. So we can notify you of product updates and provide the best possible support, also complete your product registration now and send it to McAfee.

Remote Control of Microsoft Windows Applications

If you will use NetRemote Remote to remotely control Windows 3.1 or higher applications, be sure to read the section “Remote Control of Microsoft Windows Applications” in Chapter 3. This section describes the setup requirements for the Host PC and other issues related to using NetRemote to remotely control Windows.

“Uninstalling” NetRemote for Windows

As a convenience, a NetRemote Uninstall program was copied to your system in case you ever need to remove NetRemote from your PC. To run this, use the Uninstall icon in the NetRemote Program Group.

Chapter 3 Summary of NetRemote Remote Procedures

Introduction

NetRemote offers numerous features for flexibility, power, and ease of use. To help you quickly explore NetRemote Remote's many capabilities, this chapter summarizes most of the tasks you can perform with NetRemote Remote (for NetRemote Host procedures, refer to Chapter 7).

For simpler procedures, this chapter explains the required steps. For advanced or less common procedures, this chapter directs you to the appropriate reference location for details (either in this manual or the on-line Help).

NOTE: This chapter assumes you understand the terms and concepts in Chapter 1 and have installed the software as described in Chapter 2.

If you prefer, instead of reading this chapter, use the on-line tutorial to learn the basics, and then refer to on-line Help as needed for specific tasks. In most NetRemote windows, a Help button is provided.

To Start NetRemote Remote

NOTE: To use a node-to-node connection, Network Operating System software should be loaded on your PC before you start Windows.

Double-click the NetRemote icon. The Control Center window appears.

About the NetRemote Control Center

The Control Center window acts as a convenient central location for managing NetRemote Remote tasks. Its major elements are shown below.

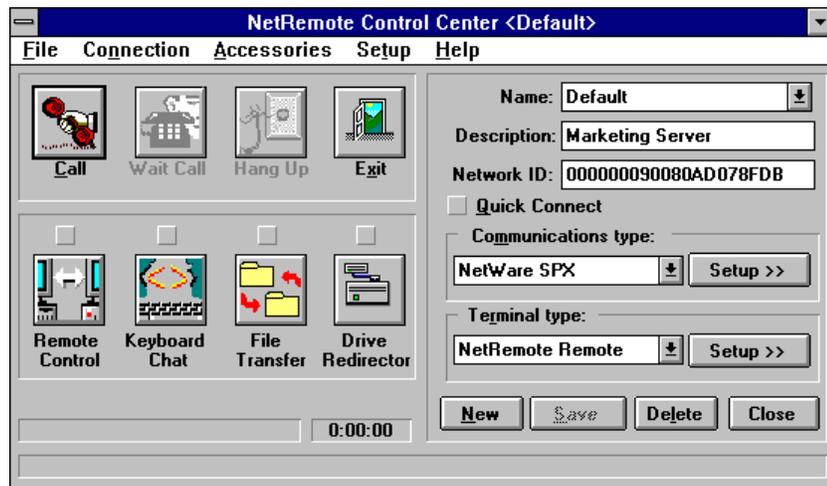


Figure 3-1: NetRemote Control Center Window (Phone Book Short View)

About the Phone Book Panel

You use the Name list box to quickly select the Phone Book Entry you want to use to make a connection. The Description and Phone/ID fields further identify the Phone Book Entry. Each Phone Book Entry contains all the information that NetRemote needs to make a connection (e.g. the Phone Number to dial for a modem connection).

There are two versions of the Phone Book Panel — the *Short View* (shown above) and the *Setup View* (discussed later in this chapter). The Short View shows only the Phone Book information that you need to select an appropriate Phone Book Entry. The Setup View shows more of the Phone Book Entry's settings and lets you add, modify, delete, or print Phone Book entries. To change to Setup View from Short View, choose the Phone Book button.

The Phone Book Panel in the Setup View lets you directly specify a Phone Book Entry's *Basic Settings*. It also provides single-choose access to the Terminal Setup and Comm Setup Accessories, which you use to specify a Phone Book Entry's *Terminal Options* and *Communication Options*. For more details, see "Managing Phone Book Entries" later in this chapter.

About the Title Bar

The currently selected Phone Book Entry's Name appears in brackets in the Title Bar of nearly all NetRemote screens (e.g. "<J. Smith's PC>"). This information is important because many NetRemote operations are affected by settings in the current Phone Book Entry.

About the Menu Bar

The menu bar provides pull-down access to many NetRemote functions, setup tools, and the *NetRemote Accessories*, which let you perform special tasks such as using your keyboard to "chat" with a Host user. Some functions and Accessories can also be quickly accessed using Control Center buttons.

File Menu

Exit: This terminates and unloads NetRemote Remote, closing the Control Center window and any active NetRemote Accessories. If a connection is active, NetRemote warns you. If you still choose to exit, NetRemote ends the connection and then quits.

Connection Menu

Call: This makes a call using information from the currently selected Phone Book Entry. For details, see "Making a Call" later in this chapter.

Wait for call: This places NetRemote Remote in Wait for Call mode to await an incoming call (using information from the selected Phone Book Entry). If the Phone Book Entry indicates that a modem is to be used, that modem is put into Auto-Answer mode. For more details, see "Receiving a Call" later in this chapter.

NOTE: To establish a node-to-node LAN connection, the Host must select Wait for Call and the Remote must then select Call to initiate the connection. Therefore, the Remote cannot select Wait for Call for a node-to-node connection.

Hang up: This ends a connection.

NOTE: You can quickly invoke Call, Wait for Call, and Hang Up using the *Connection Buttons*, which are described shortly.

Data/Voice Switch: This advanced feature switches between voice and data modes, but it is NOT valid if establishing or carrying on a node-to-node LAN connection. See "Voice-Data Switching" in Appendix B for more details.

Accessories Menu

This menu lets you invoke *NetRemote Accessories*, which let you perform the special tasks summarized below. For a detailed description of each Accessory, see Chapter 4 (which is organized alphabetically by Accessory name).

NOTE: You can quickly access some Accessories using the Control Center's *Accessory Manager*, which is described shortly.

Port Monitor: This lets you view in real time all data sent and received via a communications port. It is most useful for testing modem and connection control strings.

Remote Control: This lets you control a Host PC using your keyboard and mouse, and also shows information displayed on the Host's monitor. This is automatically invoked when you select **Call** or **Wait for Call**.

Important: Host screen changes update the Remote Control window even if it is not the active (topmost) window on your PC. However, your keystrokes (or mouse actions) are sent to the Host *only* when the Remote Control Accessory is the active window.

Keyboard Chat: This lets you conduct an interactive keyboard "conversation" between yourself and a connected Host PC user.

File Transfer: This lets you transfer files between your Remote PC and a connected Host PC. It also lets you perform other file management tasks such as deleting files, viewing file contents, and creating new directories.

Error Messages: This lets you view any error messages occurring in the current session and offers help for each error. It also lets you copy messages to the clipboard.

Setup Menu

This menu lets you invoke *NetRemote Setup Tools* and *Setup Switches*, which let you perform the setup tasks summarized below. For details on each Setup Tool and Switch, see Chapter 4 (which is organized alphabetically).

Global Setup: This lets you change NetRemote Remote's Global Options, which customize aspects of NetRemote Remote's operation.

Password: This lets you define a password to secure the Phone Book.

Billing Log: This switch toggles the Billing Log on and off. See "Billing Log" in Chapter 4 for details.

CXL Debugging: When this switch is set, NetRemote automatically invokes the CXL Debugging Environment *after* connecting with a Host PC, but *before* starting the NetRemote login. CXL script files are an advanced feature that you can use to automatically perform needed tasks after NetRemote successfully connects but before it logs in. For details on Post-Connect Scripting, see the on-line Help or Appendix E.

Comm Setup: This lets you view or change the Communication Options section of the currently selected Phone Book Entry. Most NetRemote users only need to change a Phone Book Entry's Communication Options for special situations (e.g. to directly connect to another PC using a "null modem" cable). See "Comm Setup" in Chapter 4 for more details.

You typically access Comm Setup from the Phone Book Panel, but it is included in the Control Center's Setup menu as a convenience.

NOTE: When you invoke Comm Setup, the actual Comm Setup window that appears depends on the current Phone Book Entry's Communication Type. See "Managing Phone Book Entries" later in this chapter for more details.

Terminal Setup: This lets you view or change the Terminal Options section of the currently selected Phone Book Entry. You should only need to change a Phone Book Entry's Terminal Options for special situations (e.g. calling a Host that has password checking enabled). See "Terminal Setup" in Chapter 4 for more details.

You usually access Terminal Setup from the Phone Book Panel, but it is included in the Control Center's Setup menu as a convenience.

NOTE: When you invoke Terminal Setup, the actual Terminal Setup window that appears depends on the current Phone Book Entry's **Terminal Type**. See "Managing Phone Book Entries" later in this chapter for more details.

Drive Redirector: This lets you define "remotely mapped drives" by assigning drive letters on your PC to selected physical disk drives on a Host PC (called remote drive mapping). For example, you can assign (i.e. map) drive letters E: and F: on your PC to a connected Host's C: and D: drives. DOS, Windows, or application programs running on your PC can access a "remotely mapped" Host drive simply by using the assigned "drive mapping" letter, as if the "remotely mapped drive" were installed in your PC. For details on using Drive Redirection, see Chapter 6.

Help Menu

Contents: This displays the NetRemote Help's main Table of Contents.

Search for Help On...: This lets you jump to a topic by choosing from an alphabetical list (like using an Index in a book).

How to Use Help: This invokes Microsoft’s Help file that describes how to use the Windows Help program.

Control Center: This jumps to the Control Center Help section.

About NetRemote: This displays the NetRemote Version and other data.

About the Connection Buttons

These let you perform typical connection tasks with a single choose.



Call: Choose this button to make a call. It is equivalent to choosing **Call** from the **Connection** menu.

Wait Call: Choose this button to wait for an incoming call. It is equivalent to choosing **Wait for Call** from the **Connection** menu.

Hang up: Choose this button to hang up and end a connection. It is equivalent to choosing **Hang Up** from the **Connection** menu.

Exit: Choose this button to quit NetRemote Remote. It is equivalent to choosing **Exit** from the **File** menu.

If a button is “grayed out,” it means the corresponding function is currently unavailable. For example, unless you are connected with another system, the **Hang up** button is “grayed out.”

About the Accessory Manager

The Accessory Manager area of the Control Center provides an *Accessory Button* and check-box for each of the most commonly used Accessories. Using this simple arrangement, you can use a single choose to open, close, or switch to any of those Accessories, and also instantly see which ones are open. Figure 3-2 summarizes Accessory Manager use.

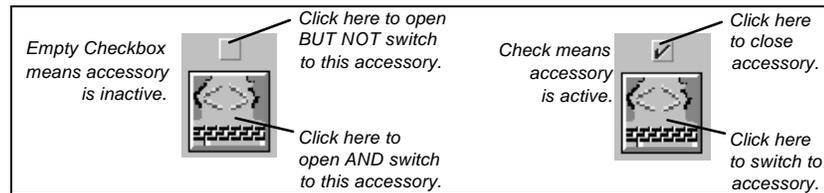


Figure 3-2: Using Accessory Manager Buttons and Check-Boxes

A check mark indicates the corresponding Accessory is open. In this case, choosing on the *check-box* closes the Accessory. If an Accessory is not open (no check mark), choosing on the *check-box* opens the Accessory but **does not** switch you to it; i.e. the Accessory window is not brought to the front.

Choosing on an *Accessory Button* **does** switch you to the corresponding Accessory (after opening it, if it was not open). This action is the same as selecting the Accessory from the Control Center's Accessories menu.

For a summary of each Accessory, see "Accessories Menu" earlier in this chapter. For more details, see Chapter 4 (which is organized alphabetically).

Remote Control of Microsoft Windows Applications

NetRemote for DOS Host Installation Issues

There are no special installation issues to control a Host using NetRemote.

Connection Issues

Once the NetRemote Host software is installed and configured on the Host PC to allow Windows remote control, you can make a Remote Control connection as usual. Once connected, you can remotely run Windows *or* DOS programs.

Starting Windows Remotely

If you start Windows remotely from a Host DOS prompt, use the command

```
WIN :
```

The colon suppresses the Windows opening screen, which can be slow to appear on the Remote (because it is not actually a Windows display, and thus must be sent pixel-by-pixel).

Managing Phone Book Entries

The Phone Book is the heart of NetRemote. Each Phone Book Entry provides all the information NetRemote needs to connect with another system. For instance, a Phone Book Entry for serial communications identifies the phone number to use for making a call, plus communication data such as baud rate, serial port number, and modem type.

This section discusses Phone Book Entry contents, and how to add, change, and delete Phone Book Entries.

Accessing Phone Book Management Controls (Setup View)

To manage Phone Book Entries, you use the Control Center's Phone Book Panel in its *Setup View*. If you are not in the **Control Center**, switch to it. If the Phone Book Panel is in *Short View*, choose the Phone Book button. Setup View appears, similar to Figure 3-3.

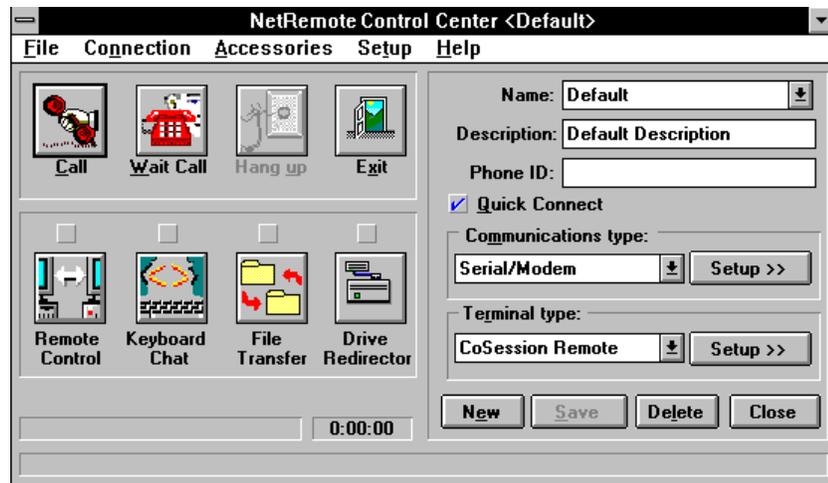


Figure 3-3: NetRemote Control Center Window (Setup View)

NOTE: To switch back to *Short View*, choose Close.

Node-to-Node Connections and the “Host Query” Phone Book Entry

If you included support for node-to-node LAN connections when you installed NetRemote, then the SETUP program created a special Phone Book Entry named either “NetWare Host Query” or “NetBIOS Host Query” (based on the type of LAN environment that you specified during SETUP). When you have this Phone Book Entry selected and you choose **Call**, NetRemote displays a list of all NetRemote Host PCs on your LAN that are waiting for a node-to-node connection. You then select the desired Host PC from the Host list and the connection proceeds.

With this convenient Host List connection feature, you do not need a separate Phone Book Entry for each Host on your LAN. You will probably also never need to modify the “Host Query” Phone Book Entry created by SETUP.

In fact, if you will use *only* node-to-node connections with NetRemote Hosts (no modem/serial connections), you should need to modify Phone Entries only to connect with a Host that is using password checking.

NOTE: If you think you will NOT need to modify or add any Phone Book Entries, you can skip to the next section, “Basic Remote Control Procedures,” and reference this section only if it is needed in the future.

What A Phone Book Entry Contains

Each Phone Book Entry consists of four sections:

Section	Description
Basic Settings	These are the Phone Book settings that appear in the Control Center Setup View (see Figure 3-3). For most Phone Book Entries, these are the only settings you need to change.
Communication Options	The Communication Type in a Phone Book Entry’s <i>Basic Settings</i> identifies the type of communications link that NetRemote uses when you connect using that Phone Book Entry. Related to each Communication Type are various Communication Options that affect how the connection is established and maintained. For example, Communication Options for a Serial Communications Type define the serial port number, baud rate, modem type, etc. to be used for connections, while the Communication Options for a node-to-node Communications Type (e.g. NetWare SPX or NetBIOS) are quite different. To view or change the Communication Options for a Phone Book Entry, you use the Comm Setup Accessory.
Terminal Options	The Terminal Type in a Phone Book Entry’s <i>Basic Settings</i> identifies the terminal <i>protocol</i> (i.e. set of rules) that NetRemote uses when you connect using that Entry. Related to each Terminal Type are Terminal Options that affect the way NetRemote manages a communication session. For example, the NetRemote Terminal Type (used for Remote Control connections with PCs using NetRemote Host software) has its own protocol. The Terminal Options for the NetRemote Terminal Type include security settings, login retry values, and other special settings. To view or change the Terminal Options for a Phone Book Entry, you use the Terminal Setup Accessory.
Drive Redirector Map Set	If the Drive Redirector program, MAPDRV.COM, is loaded (as described in Chapter 6), it looks for a Drive Redirector Map in the Phone Book Entry used to establish a connection. This map indicates how the Redirector should assign your PC’s drive letters to remote access drives on the connected Host PC (e.g., your PC’s drive letter E: should be used to access the Host’s C: drive, letter D: should access the Host drive A:, etc.). If no map is

defined for the Phone Entry, a default mapping method is used.

NOTE: The use of Drive Redirection and the creation of a Drive Redirector Map Set for a Phone Entry are optional. To define a Drive Redirector Map Set, you use the Drive Redirector Accessory (accessed by choosing the Control Center's Drive Redirector button). For details on this accessory and Drive Redirection capabilities, see Chapter 6.

As you can see, the Control Center's Phone Book Panel shows just Basic Settings, which are only part of the complete Phone Book Entry. However, you should only rarely need to change the default Terminal Options and Communication Options for a Phone Book Entry. If you do change those options, use the procedures described in the next topic.

Changing Communication and Terminal Options

To specify Communication Options and Terminal Options, you use the Comm Setup and Terminal Setup Accessories (which you can quickly access using the Setup buttons in the Phone Book Panel). The Comm Setup and Terminal Setup Accessories are described in detail in Chapter 4.

You should use Comm Setup *only* after choosing a Communication Type in the Phone Book Panel. Similarly, you should use Terminal Setup *only* after choosing a Terminal Type in the Phone Book Panel.

To see why the sequence is important, consider Comm Setup. NetRemote supports multiple pre-defined Communication Types. Significantly, *each Communication Type has its own set of relevant Communication Options, and thus its own version of Comm Setup*. When you invoke Comm Setup, NetRemote displays the version that matches the current Phone Book Entry's Communication Type. Therefore, you must use the Phone Book Panel to assign the correct Communication Type to a Phone Book Entry *before* you invoke Comm Setup.

Similarly, each Terminal Type has its own Terminal Setup version, so you must assign the correct Terminal Type to a Phone Book Entry *before* you invoke Terminal Setup.

Phone Book Fields

Field	Description
Name	Identifies the Phone Book Entry. This must be unique. It might be the person's name or other unique identifier, e.g. J. Smith or NYC Sales.
Description	Further identifies the Phone Book Entry.

Phone/ID <i>or</i> Network ID	<p>If the selected Phone Book Entry has a Serial/Modem Communication Type, the Phone/ID field shows the phone number of the other user, up to 50 characters including digits, dashes, and commas (each comma inserts a two-second pause); note that NetRemote supports all special characters accepted by Hayes-compatible modems. If you must dial a number (e.g. 9) to access an outside line, put that number first. For long distance numbers, remember to include 1 and the area code.</p> <p>If the selected Phone Book Entry has a node-to-node Communication Type (e.g. NetWare SPX or NetBIOS), the Network ID field shows the network address (for NetWare) or Host name (for NetBIOS) of the other user, <i>if specified</i>. However, node-to-node connection using the “Host List” method (described earlier in this section) does not require a Network ID, so the Network ID field may be blank.</p>
Quick Connect	<p>The Phone Book Entry with this box checked appears as the default in the Control Center’s Name field. The Quick Connect entry is also used at startup if Automatically Connect Upon Loading or Automatically Wait for Call Upon Loading is set (see “Global Options” in Chapter 4 for details).</p>
Communications Type	<p>This field identifies the type of communications link that will be used for connections made with this Phone Book Entry. To pick a different Communications Type, choose the arrow beside the Communications field to display a list of available Communication Types. Choose the one you want.</p> <p>Each Phone Book Entry includes <i>Communication Options</i>; the exact Options that are available depend on the Communication Type chosen (e.g. the Serial Communication type has corresponding Options for COM Port, baud rate, parity, modem type, etc., while a node-to-node type has quite different options). To change a Phone Book Entry’s Communication Options, use the Comm Setup Accessory (see Communications Setup next).</p>
Communications Setup	<p>To invoke the Comm Setup accessory so you can view or edit the Communications Options for the current Phone Book Entry, <i>first</i> select the desired Communications Type, and <i>then</i> choose the Setup button beside the Communications field. See “Comm Setup” in Chapter 4 for more details.</p>

Serial Communication	If you use just one modem, default <i>Serial Communication</i> Options should work for modem connections. If you use the “Host List” method (described earlier in this section) for node-to-node connections, default <i>NetWare SPX or NetBIOS Communication</i> Options should work for node-to-node connections.
Terminal Type	<p>This field identifies the type of terminal protocol that will be used for connections made with this Phone Book Entry. Use NetRemote Remote for remote control connections with PCs using NetRemote Host software (whether DOS or Windows). To change the Terminal Type, choose the arrow beside the Terminal field to display a list of available Terminal Types, and then choose the one you want.</p> <p>Each Phone Book Entry includes <i>Terminal Options</i>; the exact Options that are available depend on the Terminal Type chosen (e.g. the NetRemote Terminal Type has corresponding Options for security settings, login retry values, and other special settings). To modify a Phone Book Entry’s Terminal Options, use the Terminal Setup accessory (see Terminal Setup next).</p>
Terminal Setup	<p>To invoke the Terminal Setup accessory so you can view or edit the Terminal Options for the current Phone Book Entry, <i>first</i> select the desired Terminal Type, and <i>then</i> choose the Setup button beside the Terminal field. See “Terminal Setup” in Chapter 4 for more details.</p> <p>Note: To call a Host that has Password Checking enabled, you must use a Phone Book Entry with the correct Login Name and Login Password in the Terminal Options. See “Terminal Setup” in Chapter 4 for details.</p>

To Add a New Phone Book Entry

1. If not already there, move to the Control Center window (with the Phone Book Area in *Setup View*).
2. Choose New.
A New Phone Book Entry dialog appears (see Figure 3-4).

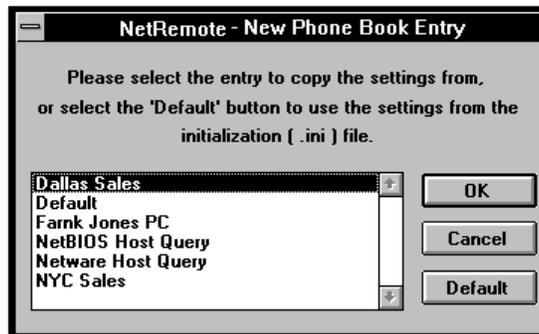


Figure 3-4: New Phone Book Entry Dialog Box

3. *To copy settings from an existing Phone Book Entry* to your new Phone Book Entry, choose the desired Phone Book Entry name and then choose OK (or double-click the desired Entry).

To copy settings from the default Phone Book values in NetRemote's NRW.INI file to your new Phone Book Entry, choose the Default button. These default values are those you selected during the Install procedure.

After your selection, the dialog box closes and the Control Center window reappears. Some of the new Phone Book Entry's settings are cleared, and the other settings are copied from the source that you chose.

NOTE: Communication and Terminal Option settings, although not visible, *are* copied from the selected source.

4. The text cursor appears in the Name field. Type in an appropriate and *unique* name for the person or system to be called. This might be the person's name or other unique identifier, e.g. S. Jones or NYC Sales.
5. Use the Tab key or mouse to move to and enter values for the other fields. The fields are described in the previous topic, "Phone Book Fields".

NOTE: To change or view Terminal Options, be sure the desired Terminal Type is selected *before* choosing the Setup button. Likewise, to change or view Communication Options, be sure the desired Communication Type is selected *before* choosing the Setup button.

6. Choose Save to store your new Entry (or Cancel to abandon the Entry). If you like, you can now choose Close to return to the *Short View*.
7. If you want to define a Drive Redirector Map for the Phone Book Entry, choose the Control Center's Drive Redirector button to open the Drive Redirector Accessory. See Chapter 6 for details on using this accessory.

To Change a Phone Book Entry

1. If not already there, move to the Control Center window (with the Phone Book Area in *Setup View*).
2. Choose the arrow to the right of the Name field to display a drop-down list of available Phone Book entries. Choose the one you want to modify.

User Tip: When the Name field is selected, you can press a letter key to jump to the next entry that begins with that letter.

3. Use the Tab key or mouse to move to and change values for other fields.
4. Choose Save to store your changes (or Close to abandon the changes).

To Delete a Phone Book Entry

1. If not already there, move to the Control Center window (with the Phone Book Area in *Setup View*).
2. Choose the arrow to the right of the Name field to display a drop-down list of available Phone Book entries. Choose the one you want to remove.
3. Choose Delete, and then choose Yes in the confirmation box that appears.

Basic Remote Control Procedures

This section describes the basic procedures for establishing, using, and ending a remote control session.

1. Load Host And Remote Software

To operate in Remote Control Mode, NetRemote Remote must be running on your PC and NetRemote Host must be loaded into memory on the other PC. Procedures for starting NetRemote Remote are explained earlier in this chapter.

IMPORTANT: For a node-to-node connection, load your PC's Network Operating System software before you start Windows.

2. Establish the Connection

For a modem/serial port connection, either the Remote PC or the Host PC can make a call to initiate a remote control session (although it is typically the Remote that makes the call). For a node-to-node connection, the Remote PC *must* make the "call" to initiate a remote control session. Follow the appropriate procedures below to establish a connection.

To Make a Call to the Host (Modem/Serial Port Connection)

Before you make the call, the Host user must complete the necessary steps to put their PC in Wait For Call mode. You can then make the call as follows:

NOTE: You can set Global Options so your PC automatically calls the Quick Connect Phone Book Entry when you start NetRemote Remote. See “Global Setup” in Chapter 4 for details.

1. In the Control Center Phone Book Panel, choose the Phone Book Entry for the PC you want to call from the Name drop-down list (the selected Phone Book Entry must have a Serial/Modem Communication Type).
2. Choose the Call Connection Button (shown to the left). As NetRemote starts the call sequence, a connection status window appears (see Figure 3-5).

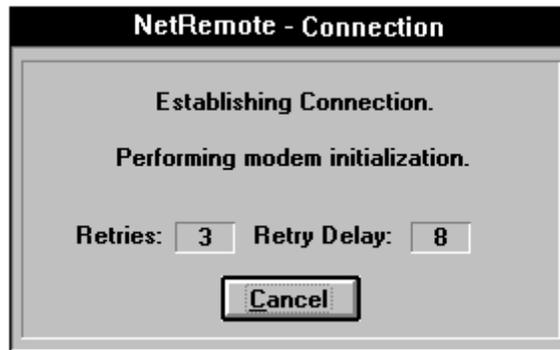


Figure 3-5: Initial Connection Status Window

As the call progresses, the Connection Status window changes to indicate what is happening. The normal sequence is: NetRemote Remote calls the Phone number from the Phone Book Entry, the Host modem answers, the Remote and Host software start their login procedures, and the Remote and Host software complete their login procedures.

The Remote Control connection is now complete. The Connection Status window closes and a Remote Control window opens.

To Answer a Call from the Host (Modem/Serial Port Connection)

Before the Host tries to call, put your PC into Wait For Call mode as follows:

NOTE: You can set Global Options so your PC automatically goes into Wait For Call mode when you start NetRemote Remote. See “Global Setup” in Chapter 4 for details.

1. From the Name drop-down list in the Control Center Phone Book Panel, choose a Phone Book Entry that is appropriate for the PC that will call (the Quick Connect Entry that appears by default will often work).
2. Choose the Wait Call Connection Button (shown at the left).

The Control Center window is minimized to an icon. The icon is animated to remind you that NetRemote Remote is loaded and in Wait for Call mode.

The Host user can now make the call to your PC. When your PC answers, the animated version of the NetRemote Control Center icon changes to the standard, non-animated icon version. Also, the current screen contents of the Host PC will appear in your Remote Control window (but it may be “covered up” by other Windows tasks).

NOTE: To cancel Wait for Call, double-click the animated icon to restore the Control Center, and then choose the Hang Up button.

To Make a Call to the Host (Node-to-Node Connection)

NetRemote offers two different ways to specify the Host with which you want to establish a node-to-node connection:

Option	Description
"Waiting Host List"	During installation, the NetRemote SETUP created a special “Host Query” Phone Entry. When you choose the Call function with this “NetWare Host Query” or “NetBIOS Host Query” Phone Entry selected, NetRemote displays a list of all NetRemote Hosts on your LAN that are in “Wait for Call” mode. From this list, you choose the Waiting Host with which you want to connect, and the connection proceeds.
Specific Network ID	You may need to specify a particular Login Name and Password for a Host that is set up to perform password checking. Or, there may be a particular Host workstation that you connect with frequently, so you would prefer to connect

with that workstation without having to select from a Host List. For either situation, you can create a *workstation-specific* node-to-node Phone Book Entry which you can select before choosing Call. In this case, instead of displaying a Waiting Host List, NetRemote connects to the Host specified in the Network ID field of the selected Phone Book Entry.

NOTE: Except for the special cases described above, you will probably use the “Waiting Host List” for nearly all node-to-node connections.

To “call” a Host to initiate a node-to-node connection, do the following:

Note: You can set Global Options so your PC automatically calls the Quick Connect Phone Book Entry when you start NetRemote Remote. See “Global Setup” in Chapter 4 for details.

1. Be sure the Host that you want to connect with is in Wait for Call mode.
2. In the Control Center Phone Book Panel, choose the appropriate node-to-node Phone Book Entry (that is, an entry with either a NetWare SPX or NetBIOS Communication Type), as follows:

To connect using the “Waiting Host List”: Select the proper “Host Query” Phone Entry (NetWare or NetBIOS).

NOTE: You can actually use any node-to-node Phone Book Entry that has Connect by Host List selected in its Communication Options. For details, see “Comm Setup — Node-to-Node Types” in Chapter 4.

To connect *without* using the “Waiting Host List”: Select the workstation-specific node-to-node Phone Book Entry that identifies the Network ID of the Host with which you want to connect.

NOTE: A workstation-specific Phone Book Entry is an Entry that you create. It identifies the desired Host PC in the Network ID field and also has Connect by Network ID selected in its Communication Options. For details, see “Comm Setup — Node-to-Node Types” in Chapter 4.

3. Choose the Control Center's Call button.
4. If you DID NOT select a “Host Query” Phone Book Entry in Step 2: Skip to Step 6.

If you DID select a “Host Query” Phone Book Entry in Step 2: NetRemote displays a list of all Hosts on the LAN that are in Wait for Call mode. By

default, the list shows the Host Name and Host Description of each waiting Host (as defined during the Host software installation on each workstation).

NOTE: You can modify a Phone Book Entry's settings to change the type of information shown for each listed Host. For more details, see "Comm Setup — Node-to-Node Types" in Chapter 4.

5. Double-click the Host with which you want to connect (or single-choose the Host and then choose Connect).
6. NetRemote attempts to connect with the selected Host. When the connection is established, the Host PC's current screen contents appear in the NetRemote Remote Control window.

You can now use the Remote Control window to remotely control the connected Host.

3. Take Control

If everything is set correctly, the Host PC's current screen contents now appear in the Remote Control window, similar to Figure 3-6. (If not, refer to "If Problems Occur" later in this chapter.)

The screenshot shows a window titled "NetRemote Remote Control <LA Sales>". The window displays a directory listing from a remote host, showing files and folders with their names, sizes, and dates. The listing includes entries like <DIR>, COLLECT2 BAK, QUATTRO BAK, ERRORS WK1, COLLECT WQ1, COLLECT2 WQ1, CS WQ1, DEMO WQ1, DEMOA WQ1, GENCHKRS WQ1, GRAPH WQ1, GRAPH2 WQ1, IB92 WQ1, INSTALL WQ1, PERS INT WQ1, SAMPLE WQ1, MEGARE WQ1, TSTGRAP WQ1, HC WQ1, COLLECT WSP, and GENDISC WQ1. At the bottom, it shows "22 File(s) 2056192 bytes free" and the current directory path "D:\QPRODATA>".

```

NetRemote Remote Control <LA Sales>
- <DIR> 6-05-92 9:37p
.. <DIR> 6-05-92 9:37p
COLLECT2 BAK 10097 11-09-91 2:08a
QUATTRO BAK 17880 3-28-92 8:45p
ERRORS WK1 10869 4-21-91 4:44p
COLLECT WQ1 5885 5-04-91 8:28p
COLLECT2 WQ1 7855 11-13-91 4:22p
CS WQ1 3055 8-12-91 12:02p
DEMO WQ1 4326 11-09-90 2:00a
DEMOA WQ1 165006 11-09-90 2:00a
GENCHKRS WQ1 23862 8-05-91 8:00p
GRAPH WQ1 6225 7-30-91 10:36a
GRAPH2 WQ1 8607 7-31-91 8:06p
IB92 WQ1 14501 10-31-91 11:05a
INSTALL WQ1 8766 5-16-91 3:01a
PERS INT WQ1 1832 8-05-91 8:08p
SAMPLE WQ1 3564 5-16-91 3:01a
MEGARE WQ1 7912 3-19-92 12:00p
TSTGRAP WQ1 4320 6-10-93 1:52p
HC WQ1 6744 2-03-93 11:15a
COLLECT WSP 44 2-17-91 6:09p
GENDISC WQ1 4568 6-23-93 11:32a
22 File(s) 2056192 bytes free
D:\QPRODATA>

```

Figure 3-6: Remote Control Accessory Window

Whenever the Remote Control window is the *active* window, your keyboard is effectively "connected" to the Host. When you press a key on your keyboard, the program on the Host responds as if you pressed the key on the Host's keyboard. Also, the Host PC's screen image appears in the Remote Control Window on your PC. For example, if you go to the DOS prompt and enter DIR, then you will see a directory listing of the *Host PC's* current directory.

If NetRemote is set to its default Options, the Host user sees the same thing on their screen, so they can watch what you do. They can also use their keyboard to interact with their PC while you watch.

Managing the Remote Control Window

You can use standard Windows functions (e.g. Size and Minimize) to manage the Remote Control window. In doing so, consider the special issues below.

Function	Description
Sizing the Remote Control Window	You can use Windows' Size, Maximize, and Restore functions to change the size of the Remote Control window. However, if you make the window too small, you will see only a portion of the Host screen image. In that case, resize the window, or use the bottom and right scroll bars to scroll the hidden portions into view (for a DOS text mode screen, you can also use the Fonts function under the Control Menu to change the size of the screen fonts; see the next section, "Special Control Menu Functions," for more details).
Minimizing the Remote Control Window	When you Minimize the Remote Control window (i.e. reduce it to an icon), the Remote Control task continues to receive screen updates from the Host. Therefore, when you restore the "iconized" Remote Control to a window, the latest Host screen contents appear.
Maximizing the Remote Control Window - Special Issues	<p>When you maximize the Remote Control window, the size to which the Remote Control window expands depends on the settings of two Terminal Option settings in the currently selected Phone Book Entry.</p> <p>The first setting is the Hide Title When Max. option, which appears in the Remote Setup window (in Full View). If this option is NOT checked, then the Remote Control window maximizes in "typical" Windows fashion, with the title bar and borders remaining visible. However, if this option IS checked, when you maximize the Remote Control window, the title bar and borders go away to provide the largest possible viewing area. Because this "pushes" the size controls and Control Menu off the screen, they are not directly available for use. To access them, press Alt-LeftShift to Restore the window to its previous size.</p>

IMPORTANT: The first time you maximize the Remote Control window with Hide Title When Max. checked in the current Phone Entry, NetRemote displays a message describing how to restore the previous window size. If you choose the option to subsequently suppress this message, it will no longer appear. If you later decide to, you can reactivate the message by modifying the “Show HotKey Message” line in the NRW.INI file (see the on-line Help for details).

If you are controlling a DOS text mode screen on the Host, the maximized size is also affected by the settings in the Text Fonts window (which controls part of the current Phone Book Entry’s Terminal Options). If the Switch Fonts When Maximized option is checked, NetRemote adjusts the DOS text font size as needed so the Remote Control window occupies the full screen when it is Maximized. Otherwise, the Remote Control window, when Maximized, is made just big enough to show the entire DOS screen at the currently selected Font Selection size.

NOTE: To temporarily change Text Fonts settings during Remote Control, select the Fonts option from the Remote Control window’s Control Menu (described later in this chapter). You can also select the Remote Setup option from the Remote Control window’s Control Menu and then choose the Text Fonts>> button at the bottom of the Remote Setup window (if the button does not appear there, choose the More>> button first). This second method lets you save the setting changes for the selected Phone Book Entry, if desired.

Switching to the Control Center If the Control Center icon is visible, double-click it. If it is not visible, choose the Control Menu box (the dash in the top left corner of the Remote Control window) to display the Control Menu, and then select Control Center from that menu. You can also press Ctrl-Esc and use the task list as described next; this works even if the Control Menu box is “pushed” off-screen or the Remote Control window is minimized.

Switching to Another Windows Task If the window for the task you want is visible, choose it as you usually would. If the task you want is not visible, press Ctrl-Esc to invoke Windows’ Task List, and then pick the desired task from that list (see your Windows manual for details). In either case, the Remote Control window continues being updated to reflect any Host screen changes.

When Remote Control is NOT the Active (Topmost) Window	Host screen changes still appear in the Remote Control Accessory window. However, your keystrokes or mouse actions are sent to the Host <i>only</i> when the Remote Control Accessory <i>is</i> the active window. This can be quite useful. For example, if you arrange your desktop so the Remote Control window and another application's window are both visible, you can work in the other application and monitor the Host at the same time.
Closing the Remote Control Window	Closing the Remote Control Window (directly or from the Control Center) DOES NOT end the connection (to break a connection, you or the Host must select Hang Up). As a result, you can still use NetRemote functions that use a connection, such as Keyboard Chat or File Transfer. Programs on your PC can also use Drive Redirection to access Host disk drives (and vice versa).

Special Control Menu Functions

In addition to standard Windows functions (Restore, Size, etc.), the Remote Control window's Control Menu provides the following special functions:

Function	Description
Remote Setup	This activates the Terminal Setup Accessory.
Chat Window	This activates the Keyboard Chat accessory.
Control Center	This switches you to the Control Center window.
Fonts	This lets you change the size of the fonts used to display DOS text mode screens. See "Terminal Setup" in Chapter 4 for more details.
Run File Manager	This activates the File Manager program that is specified in the current Phone Book Entry's Terminal Options. If the Drive Redirector is loaded on your PC and a connected Host PC, that File Manager can be used with "remote access" drives on the Host PC as well as drives on your PC (e.g., to transfer files between PCs).
Print Immediate	If your printer is set up so printing goes directly to your printer (e.g. you have Windows' Print Manager disabled) or to a file, this command has no noticeable effect. However, if you print using Windows' Print Manager (or other "spooler" program), your print jobs are not scheduled to go to the printer until a program indicates that it has finished printing (by sending an ENDDOC message). When redirecting Host printing to your printer, NetRemote normally doesn't send an ENDDOC until Host

	printing ceases for the period specified in the Phone Book Entry's Inactive Print Timer field. Selecting Print Immediate instead forces NetRemote to immediately send an ENDDOC, which allows the printing already received from the Host to be scheduled for output to the printer. If the Host is actually still printing, a new print job is begun for the remaining printing. Print Immediate is most useful if you have a long print job coming from the Host and you want to go ahead and start printing before the Host application finishes (and the Inactive Print Timer period passes). However, depending on Print Manager's setup and "backlog", printing may be not be "immediate."
Redraw Display	This redraws the Host screen image in your Remote Control window (if it was corrupted by line noise or other sources).
Lock/Unlock Host Keyboard	If the Host's keyboard is "unlocked," this lets you remotely disable it (to prevent anyone at the Host PC from entering commands). If the Host keyboard is "locked," this lets you re-enable it.
Blank/Restore Host Screen	If the Host screen is enabled, this remotely "blanks" it, preventing anyone at the Host from seeing display activity (this does not affect the display of Host activity in your Remote Control window). If the Host screen is disabled, this re-enables it.
Reboot Host	After confirming your request, this reboots the Host PC.
Hang Up	This ends the connection (same as selecting Hang Up in the NetRemote Control Center).
Help	This jumps to the Remote Control Help topic.
About	This displays the NetRemote Version and other data.

4. End the Remote Control Session

Select Hang Up from the Remote Control window's Control Menu, or switch to the Control Center and select Hang Up. NetRemote ends the connection and closes the Remote Control window. The Host also hangs up when it senses the disconnection. If modems were used to connect, they are reset.

NOTE: If the Host hangs up, NetRemote senses that action and automatically hangs up.

To exit from the Control Center, choose Exit.

If Problems Occur

Occasionally, you may encounter problems when trying to connect or use remote control. For troubleshooting information, see Appendix D or the on-line Help. The most common problems are summarized below.

The Host Does Not Answer Your Call

Most likely the Host is not in Wait For Call mode, or the Phone number in your Phone Book Entry may be wrong.

The Host Answers But the Login Attempt Fails

Most likely the Host has password checking set up, but you are not using a Phone Book Entry with a proper login name and password. Change the login name and password in your Phone Book Entry (using Terminal Setup).

You Have No Keyboard Control During Remote Control

An emulation product (like IRMA or the AST5250) or other application is taking direct control of the keyboard. To run such applications remotely, be sure the *Host's* Special Keyboard Handling Option is set to YES.

Remote Control and Remote Access Capabilities

Once in control, NetRemote Remote allows you to perform a wide variety of tasks, which are summarized below.

Task	Description
Remote Operation of DOS or Windows programs	The most common Remote Control activity is to run applications located on the Host PC (or to watch the Host user run them). You can also use DOS or Windows commands and utilities, but be aware that different DOS and Windows versions use slightly different commands and utilities.

Using Host Disk Drives as “Remote Access” Drives on your PC	NetRemote’s Drive Redirector capability lets DOS, Windows, and applications running on <i>your</i> PC access <i>Host</i> disk drives as if they were installed in your computer. To access such a “remote access” drive, you simply use the DOS drive letter that you have assigned it (e.g. drive E:). See Chapter 6 for details.
Viewing and transferring files and directories	The File Transfer Accessory lets you transfer files between your PC and the Host PC (even if the Drive Redirector is not loaded). You can also view Host directories and file contents (e.g., examine a CONFIG.SYS file), and perform other management tasks like deleting files or creating directories. Transfers can occur in the “background,” so you can transfer files while you and the Host PC user work with other programs. See Chapter 5 for details on File Transfer.
Redirecting printing	If you use printing functions remotely on the Host, you can define Terminal Option settings that direct output to your PC’s printer, the Host PC’s printer, or both. See “Terminal Setup” in Chapter 4 for details.
Keyboard chatting	You can “chat” with a Host user by keyboard, so you can convey information back and forth without making a voice call. In this mode, two windows appear on each PC, a Send window and a Receive window, letting you and the Host user type at the same time. See “Keyboard Chat” in Chapter 4 for details.
Voice-Data switching	This advanced feature (which requires appropriate modem setups at both the Host and Remote PC) lets you switch the phone line between voice and data modes without losing the connection. It is not supported for node-to-node connections. See Appendix B for details.
“Locking out” a Host user	For security or other purposes, you can “lock” the Host PC’s keyboard and blank the Host PC’s screen. See “Remote Control” and “Terminal Setup” in Chapter 4 for details.
Logging activity	For billing or other purposes, you can have NetRemote keep a log file of connection activity, including Operator IDs and Descriptions for each log entry. See “Billing Log” in Chapter 4 for details.

Connecting to Multiple Hosts Simultaneously	If needed, you can use NetRemote Remote to establish and maintain simultaneous remote control connections with multiple Host PCs. These can be modem connections, node-to-node connections, or a combination. See “Multiple Host Connections” in Appendix B for details.
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Customizing NetRemote Remote

There are several ways to customize NetRemote Remote:

Option	Description
Global Setup Options	Global Setup Options control several NetRemote Remote operating factors. For a description of the Global Options and how to change them, see Global Setup in Chapter 4.
Quick Connect Phone Book Entry Settings	The Phone Book Entry designated as the Quick Connect Entry appears in the Phone Book Panel whenever Control Center is started. See “Managing Phone Book Entries” for details.
Current Phone Book Settings	The currently selected Phone Book’s settings, especially Terminal Option and Communication Option settings, affect many aspects of NetRemote’s operation. See “Terminal Setup” and “Comm Setup” in Chapter 4 for details.
NRW.INI Settings	You can manually edit the NRW.INI file to modify various aspects of NetRemote’s operation, including certain default values. For a description of the NRW.INI settings, see the on-line Help.

Advanced Procedures

NetRemote provides many advanced capabilities, such as Post Connect Scripting and Automatic Batch File execution. After using NetRemote awhile, review Appendix B or the on-line Help to learn more about these advanced procedures.

NOTES

Chapter 4 Using NetRemote Remote Accessories and Setup Tools

Introduction

NetRemote Remote Accessories and Setup tools perform special tasks that let you efficiently operate and manage NetRemote Remote. The NetRemote Accessories and Setup Tools (including Setup Switches) are:

- Billing Log switch
- Comm Setup
- CXL Debugging switch
- Drive Redirector
- Error Messages
- File Transfer
- Global Setup
- Keyboard Chat
- Modem Setup
- Password
- Port Monitor
- Remote Control
- Terminal Setup

This chapter describes each of these in detail (for general NetRemote Remote procedures, see Chapter 3). So you can quickly locate a particular section, this chapter is organized alphabetically by Accessory or Setup Tool name. If you prefer, instead of referring to this chapter for information on an Accessory or Setup Tool, you can use NetRemote's extensive on-line Help.

About Comm Setup and Terminal Setup “Variants”

As discussed in Chapter 3, there is a different version of Comm Setup for each Communication Type and a different version of Terminal Setup for each Terminal Type. This chapter contains a separate section for each version of those Accessories (e.g. “Terminal Setup — Serial Type”).

Closing Accessories

To close all Accessories *except Remote Control*, choose the Close button. For *all* Accessories (including Remote Control), you can double-choose the Control Menu box () or choose Control | Close.

Switching Among Accessories, the Control Center, and Other Applications

If you open multiple Accessories or switch between Accessories and other programs (e.g. Program Manager), the Accessory windows and NetRemote Control Center (or their icons) can get “covered up.” Therefore, you may need a way to move among the NetRemote Accessories, the Control Center, and non-NetRemote windows that are “hidden.” Fortunately, Windows’ own Task List and Task Switcher do just that.

Task List lists all active tasks and lets you switch to or end a selected task. It also lets you tile or cascade active windows for easier access. To invoke Task List from the Control Center or an Accessory, either press Ctrl-Esc, or select Switch To... from the Control menu (to access the Control menu, choose the Control menu box, , or press Alt-Spacebar).

NOTE: Some NetRemote windows have a Control Center option on the Control menu. Picking this option switches you to the Control Center.

The Task Switcher lets you cycle through the titles of active tasks and then switch to the desired one. To use this, press and hold the Alt key. Then, while still holding Alt, press Tab repeatedly. Each time you press Tab, the next active task’s title appears. When the desired task’s title appears, release the Alt key and Windows will bring that task to the front.

NOTE: The Task Switcher is not available if the Remote Control Accessory is the active window.

For more details on Task List and Task Switcher, see your *Microsoft Windows User’s Guide*.

NOTE: If you use a Windows shell (e.g. *Dashboard*), it may use other methods for task switching. See the shell software’s manual for details.

Billing Log Switch

NetRemote's Billing Log feature lets you maintain a log of session connect times for billing or other purposes. A sample is shown below:

Date	Time	Name	Number	Comment
====	====	====	=====	=====
Tue Aug 03	14:40:03	Default		Connection established.
Tue Aug 03	14:41:10	Default		User disconnected. 1 min. 7 secs.
Wed Aug 04	15:23:13	Default		Connection established.
Wed Aug 04	15:31:56	Default		User disconnected. 8 min. 42 secs.
Wed Aug 04	15:32:06	Default		Connection established.
Wed Aug 04	15:44:04	Default		User disconnected. 11 min. 58 secs.
Wed Aug 04	15:44:20	Default		Connection established.
Wed Aug 04	15:44:32	Default		Terminal requested disconnect. 11 secs.
Wed Aug 04	15:45:09	Default		Connection established.
Wed Aug 04	15:46:36	Default		User disconnected. 1 min. 27 secs.
Wed Aug 04	15:46:46	Default		Connection established.
Wed Aug 04	15:47:28	Default		User disconnected. 41 secs.

Figure 4- 1: Sample Billing Log Contents

The billing log is a text file which you can view using Windows Notepad or another text editor. By default, the billing log filename is NRW.BIL, but you can change this filename using Global Setup (as described later in this chapter).

Clicking on the Billing Log switch in the Control Center's Setup menu toggles logging on (checkmark appears) and off (checkmark disappears). If the Billing Log switch is on when a connection ends, then information about that connection is added to the log.

Comm Setup — Node-to-Node Types

You use the *node-to-node* versions of the Comm Setup Accessory to define the Communication Options for a Phone Book Entry that has a *NetWare SPX* or *NetBIOS* Communication Type. To access SPX or NetBIOS Comm Setup, do the following:

1. In the NetRemote Control Center, select the Phone Book Entry for which you want to define Communication Options. Be sure the Phone Book Entry has either *NetWare SPX* or *NetBIOS* (depending on your LAN setup) in the Communication Type field (which is only visible when the Control Center's Phone Book Panel is in *Setup View* mode).

2. *Either* choose the Setup button beside the Communication Type field in the Phone Book Panel (*Setup View*), or select SPX Setup or NetBIOS Setup from the Control Center’s Setup Menu. A window similar to Figure 4-2 appears.

NOTE: The NetBIOS Setup Accessory looks similar to Figure 4-2, except the Display Address field is absent.

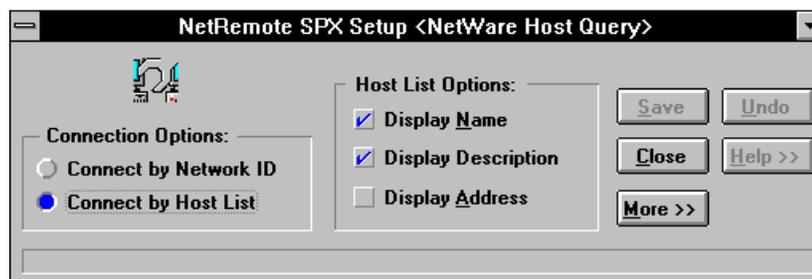


Figure 4-2: SPX Setup Accessory (Partial View)

NOTE: Communication Options that you select in SPX or NetBIOS Setup affect *only* the currently selected Phone Book Entry.

Partial View and Full View Modes

Figure 4-3 illustrates the *Partial View* version of the SPX Setup window, which shows only the SPX Communication Options that typically need changed. Clicking the **More** button in the Partial View displays the *Full View* (Figure 4-3), which shows the remaining Communication Options, which only occasionally need changing.

NOTE: The NetBIOS Full View Setup Accessory looks similar to Figure 4-3, except the Display Address field is absent.

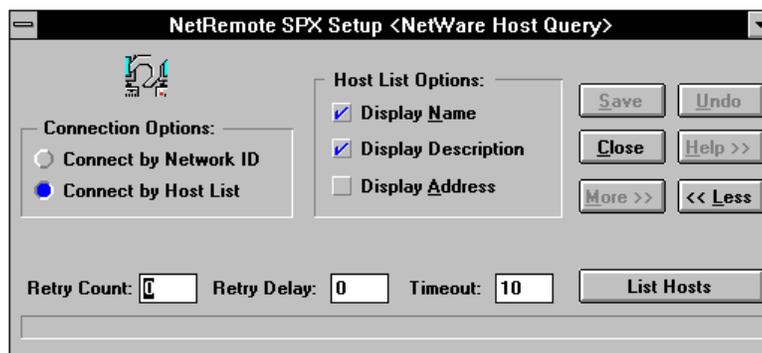


Figure 4-3: SPX Setup Accessory (Full View)

To Change Node-to-Node Communication Options

1. In the Control Center, be sure the currently selected Phone Book Entry is the one for which you want to change Communication Options.
2. Access *SPX* or *NetBIOS* Comm Setup (as described on the previous page).
3. Change Options as needed. For more details on each field, see “Description of Fields” later in this section.
4. When you are finished, choose Save to store the Communication Option changes (or choose Undo to abandon your changes).
5. Choose Close to return to the Control Center.

Creating Phone Book Entries to Connect Directly by Network ID

When establishing a node-to-node connection, you will, in most cases, probably use the “Host Query” Phone Book Entry created by SETUP to connect using the “Waiting Host List” method (described in Chapter 3).

However, if a Host workstation has password checking enabled, connection is easier if you create and use a specific Phone Book Entry for that Host which includes the proper Login Name and Password in its Terminal Options. Or, there may be a particular Host workstation that you connect with frequently, and you prefer to connect with that workstation without having to first select from a Host List. For either case, you create a *workstation-specific* node-to-node Phone Book Entry that you can select before choosing Call.

NOTE: For each Host that you want to connect with in this way, you must create a different workstation-specific Phone Book Entry.

Determining the Host's Network ID

To create a workstation-specific Phone Book Entry, you must determine and enter the proper identifier for the desired Host workstation in the Phone Book Entry's Network ID field. For a NetWare SPX Phone entry, the ID is the Host workstation's Network Address. For a NetBIOS Phone entry, the ID is the Host workstation's Host Name (created by SETUP and accessible through the Host's Global Options).

There are two convenient methods for determining a NetRemote Host's Network ID:

- Use the List Hosts button in the SPX Setup window (For SPX *or* NetBIOS types).
When you use this method to create a node-to-node Phone Entry for a particular Host, that Host must be in Wait for Call mode. While creating the Phone Book

Entry (as described later), you choose the List Hosts button in the SPX or NetBIOS Setup window, which displays a list of all Hosts on your LAN that are in Wait for Call mode. From that list, you select the Host for which you are setting up the Phone Book Entry. NetRemote then automatically determines that Host's identifier (Network Address or Host Name) and copies it to the Network ID field of the Phone Book Entry.

- Use the IPXADDR.EXE Utility on the Host PC (for SPX types *only*). The Host software installed on the Host workstation includes a utility called IPXADDR.EXE, which reports the workstation's Network ID. To run this utility, the Host user changes to the Host installation directory and enters IPXADDR at the DOS prompt. The program displays the Network ID, which you can then enter manually in the corresponding workstation-specific Phone Book Entry on your workstation.

NOTE: For a NetBIOS Phone entry, the Host user can view their Host Name by selecting the Options function in their Host Control Center.

To Create a Workstation-Specific Phone Book Entry

1. In the Remote Control Center, choose the Phone Book icon to open the Phone Book panel.
2. In the Phone Book panel, choose the New button.
3. When prompted for the entry from which to copy the settings for the new Phone Book entry, choose "NetWare Host Query" or "NetBIOS Host Query," depending on your LAN setup.
5. In the Phone Book Panel, type in a Name and Description for the NetRemote Host to which you will connect with this Phone Book Entry.
6. If you know the Host's Network Address (for SPX) or Host Name (for NetBIOS) and want to enter it manually, type it in the Network ID field.

NOTE: For SPX, the Network ID consists of the 8 digit network address, followed immediately by the 12 digit node address.

7. In the Communications type block, choose Setup.
The SPX or NetBIOS Setup window appears.
8. Under the Connection Options, choose the button beside Connect by Network ID.
9. If you already entered the Network ID manually (in Step 6), skip to Step 10. Otherwise, do the following to insert the Network ID now using the Host List feature:

- a. In the Setup window, choose More.

The Setup window changes to Full View.

- c. Be sure the Host for which you are creating this Phone Book Entry is in Wait for Call mode.

- d. Choose List Hosts.

NetRemote displays a list of all Hosts on your LAN that are in Wait for Call mode.

- e. Choose the Host for which you are creating this Phone Book Entry, and then choose Copy.

*NetRemote copies the selected Host's Network Address or Host Name into this Phone Book Entry's **Network ID** field.*

10. Choose Save and then choose Close.

To Connect Using a Workstation-Specific Phone Entry

1. Be sure the Host that you wish to connect with is in Wait for Call mode.
2. If necessary, start or switch to the Remote Control Center.
3. Select the workstation-specific Phone Book Entry for the Host with which you want to connect (choose the down-arrow by the Name field, and then choose the desired Phone Book Entry Name in the list that appears).
4. Choose the Control Center's Call button.

*NetRemote tries to connect with the Host specified in the selected Phone Book Entry. When the connection is established, the Host PC's current screen contents appear in your NetRemote **Remote Control** window.*

You can now use the Remote Control window to control the Host.

Description of Fields

Option	Description
Connection Options	<p>When you Call using this Phone Book Entry, the Connection Option that is enabled "tells" NetRemote how to identify the Host PC with which to connect. You enable one of the two options by clicking on the radio button beside it (which disables the other option). The choices are:</p> <p>Connect by Network ID. When you select Call, NetRemote tries to connect to the Host workstation that has the Network ID defined in the Phone Book Entry's Basic Settings (in the Control Center's Phone Book Panel). If that Host is not in Wait for Call mode, NetRemote displays an error message.</p> <p>Connect by Host List. When you select Call, NetRemote displays a list of all Host workstations on your LAN that are in Wait for Call mode. You select a Host from the list, and NetRemote then tries to connect with that Host.</p>
Host List Options	<p>If Connect by Host List is NOT selected, Host List Options are ignored. If Connect by Host List IS selected in the current Phone Book Entry when you select Call, the "Waiting for Call" Host List that appears shows only the type(s) of information specified in the Entry's Host List Options. The choices are:</p> <p>Display Name. Include each Host's short Name (defined when the Host software was installed on each Host workstation).</p> <p>Display Description. Include each Host's longer Host Description (defined when the Host software was installed on each Host workstation).</p> <p>Display Address (NetWare SPX type only). Include each Host's Network Address. Each address consists of an 8-digit network address followed by a 12-digit node address (all digits are hexadecimal).</p> <p>You can select any combination of these information types.</p>
<hr/> <p>The following fields appear only in Full View mode.</p> <hr/>	
Retry Count	<p>If a call attempt fails (times out waiting for a connection), NetRemote automatically retries the call this many times before giving up. A value of 0 means no retries.</p> <hr/>

Retry Delay	Sets the number of seconds that NetRemote waits after a failed call before retrying. This field is irrelevant if Retries is 0.
Timeout	This sets the amount of time (in seconds) that NetRemote waits for a connection attempt response before it considers that the attempt failed.
List Hosts button	When creating a workstation-specific Phone Book Entry, this button is used as a method of determining and entering a particular Host's Network ID. For more details, see the "Connecting by Network ID" topic earlier in this section.

Comm Setup — Serial Type

You use the *Serial* version of the Comm Setup Accessory to define the Communication Options for a Phone Book Entry that has a *Serial* Communication Type. *Serial* Communication Options include the serial port to be used (e.g. COM1) and related settings such as baud rate, parity, data bits, and modem type.

To access *Serial* Comm Setup, do the following:

1. In the NetRemote Control Center, select the Phone Book Entry for which you want to define Communication Options. Be sure the Phone Book Entry has *Serial* in the Communication Type field (which is only visible when the Control Center's Phone Book Panel is in *Setup View* mode).
2. *Either* choose Setup beside the Communication Type field in the Phone Book Panel (*Setup View*), or select Comm Setup from the Control Center's Setup Menu. A window similar to Figure 4-4 appears.

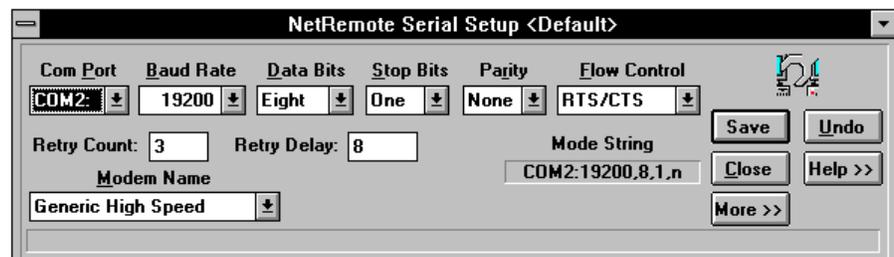


Figure 4-4: Comm Setup Accessory (for Serial Communication Type)

NOTE: The Communication Options that you select in the Comm Setup window affect *only* the currently selected Phone Book Entry.

About the Default Communication Options

When you installed NetRemote, SETUP used information you provided to set up default Communication Options in the NRW.INI file. If you create a new Phone Book Entry using the NetRemote defaults as the settings source, those default Communication Option settings are automatically copied to the new Phone Book Entry (see “To Add a New Phone Book Entry” in Chapter 3).

If you always use the same modem on the same serial port, you probably never need to change a Phone Book Entry’s default Communication Options.

When Communication Option Changes are Needed

To use different serial port setups for different situations, you must modify the default Communication Options for one or more Phone Book Entries. For example, if you have two modems, one on serial port COM1 and the other on COM2, you need some Phone Book Entries with Communication Options set for Com Port COM1 and others with Communication Options set for COM2.

Also, to directly communicate with a second computer using a “null modem” cable and no modem, you must create a Phone Book Entry that uses “Direct Connect” as the Modem Name in the Communication Options.

To reflect a change in your serial port setup, you must modify *all* Phone Book Entries that use that serial port. For example, if you replace a modem with a faster model, you need to make appropriate changes to the Communication Options for all Phone Book entries that used the older modem.

To Change Serial Communication Options

1. In the Control Center, be sure the currently selected Phone Book Entry is the one for which you want to change Communication Options.
2. Access *Serial Comm Setup* (as described on the previous page).
3. Change Options as needed. To do this, choose the arrow beside each field to display a list of possible settings, and then choose the desired setting. For more details on each field, see the next two topics, “Considerations for Serial Communication Options” and “Description of Fields.”
4. When you are finished, choose *Save* to store the Communication Option changes (or choose *Undo* to abandon your changes).
5. Choose *Close* to return to the Control Center.

Considerations for Serial Communication Options

“Description of Fields” later in this section summarizes each of the settings available on the Serial Comm Setup screen. However, you may need further explanation of some fields, which is provided next.

Serial Port Settings

Some serial port Options are interrelated and must be considered together. Some are also related to settings used by the system with which you connect.

Data Bits, Stop Bits, and Parity

The Data Bits, Stop Bits, and Parity settings *must* match those used by the system with which you connect, or you will get “garbage” on your screen. Furthermore, Data bits and Parity are related. If you select 8 for Data Bits, then the Parity setting *must* be None. If you select 7 for Data Bits, then the Parity may be Even, Odd, or (very rarely) None.

NOTE: Phone Book Entries with the Terminal Type set to NetRemote Remote or NetRemote Host *always* use 8 for Data Bits, 1 for Stop Bits, and None for Parity (and do not allow changes to these settings).

If you and another user need to choose settings, then you should both use 8 for Data Bits, 1 for Stop Bits, and None for Parity (these settings are often abbreviated as 8, 1, N). If you aren’t sure what settings the other system is using, first try 8, 1, N since these are by far the most commonly used. If you experience “garbage” on your screen, then try other settings.

Flow Control

Flow control is used to start and stop data flow between two systems. It is needed if one system can send data faster than a connected system can process it. For example, a slow system might be unable to save data to disk as quickly as a fast system can send it. In this case, the slow system needs to “tell” the fast system to stop sending until it can save already received data to disk.

NetRemote supports three types of flow control:

- Xon/Xoff (also called *software flow control*) sends a special Xoff character (Ctrl-S) to “tell” the other system to stop sending and a special Xon character (Ctrl-Q) to “tell” the other system to resume. This is the most commonly used flow control method.

- RTS/CTS (also called *hardware flow control*) uses the modem's and serial port's RTS (Request To Send) and CTS (Clear To Send) lines to control data flow (between the modem and serial port). RTS/CTS flow control is required for some 9600 baud and faster modems. Note that RTS/CTS flow control *cannot* be used if the connected system is using Xon/Xoff (software) flow control.
- None, as the name implies, uses no flow control (even if the connected system is set to use flow control).

When you select a Modem Name, NetRemote automatically sets the Flow Control field to the type that is typically correct for that modem type. You generally should not need to change this setting.

If you have a special situation that requires you to change the flow control type that NetRemote has set, consider the following tips.

- If you are unsure what type to use, choose Xon/Xoff. This usually works, but it can't be used if a connected system is set for RTS/CTS flow control.
- Choose RTS/CTS only if your modem or computer recommends or requires it. If you do choose RTS/CTS flow control, be sure the other user *does not* use Xon/Xoff flow control.
- Use None as a last resort, since it can allow transmitted data to be lost.

Modem Considerations

For NetRemote to make and receive calls, you must specify the type of modem you will use, and you may also need to set some switches on the modem.

Modem Name

If your modem isn't included in NetRemote's list, but is Hayes-compatible *with* DIP switches, select Hayes Basic. If your Modem is Hayes-compatible *without* DIP switches, select Hayes Extended, which will configure your modem through software commands (without the need for DIP switches).

NOTE: If your modem isn't listed and isn't Hayes-compatible, or you need custom modem settings, then use the CUSTOM types (at the end of the Modem list) to define modem strings, or edit the modem strings for other modem types. See "Modem Setup" later in this chapter for details.

If you are directly connecting one of your PC's serial ports to another PC via a null modem cable, then select Direct Connect.

Modem Switches

If your modem has DIP switches, they must be set to recognize the true states of the Data Terminal Ready (DTR) and Carrier Detect (CD) signals. If these are set improperly, or your modem cable is wired incorrectly, you will have call problems. See Appendix C for details on modem switches and cables.

Directly Connecting to Another Computer

NetRemote lets you use a “null modem” cable to communicate directly with a second computer without using a modem. This *Direct Connect* feature is especially useful for rapidly transferring files to and from a laptop.

To “direct connect” with a second PC via a cable, add a Phone Book Entry with “Direct-Connect” or “Direct-Flow Control” as the Modem Name setting in the Communication Options. You must also use a properly wired “null modem” cable (see Appendix C for cabling information).

Important: “Direct-Connect” uses Xon/Xoff flow control and “Direct-Flow Control” uses RTS/CTS. Be sure the second PC is set for direct connection using the same flow control type.

Description of Fields

Field	Description
Com Port	Select the COM Port that will be used by this Communications Configuration. NetRemote supports COM1 through 4. If the COM Port number is incorrect, NetRemote will not be able to dial. Note: Windows Control Panel lets you change a serial port’s I/O Port address and IRQ. See the <i>Microsoft Windows User’s Guide</i> for details.
Baud Rate	Set this to the highest <i>serial port</i> speed supported by your modem or direct connection. NetRemote supports baud rates from 300 to 256,000 baud. However, for reliable operation with an external modem or direct connection, baud rates higher than 19,200 may require an enhanced serial port that uses a 16550A UART chip (high performance serial adapters like the Hayes ESP board provide this type of serial port).

Note: Some modems (especially 9600 baud or higher, or with MNP) use one baud rate between the modem and PC serial port but deliver a different *effective* baud rate for communication with other modems. For example, 14,400 baud modems typically recommend 19,200 baud or higher serial port settings. If you think you have such a modem, refer to its manual to find the recommended baud rate for the COM port used by the modem.

Baud rates of 115,200 and higher require a special Windows COM port driver, such as the TurboCom/2 driver from Pacific CommWare.

Data Bits	<p>This is typically 8, but it <i>must</i> match the setting used by the system with which you connect. It affects the number of bits used to represent a character.</p> <p>Important: If you select 8 for Data Bits, then Parity <i>must</i> be None. See “Considerations for Serial Communication Options” above for more details.</p>
Stop Bits	<p>This is typically 1, but it <i>must</i> match the setting used by the system with which you connect. It affects the interval of the special signal that must be inserted between transmitted characters. See “Considerations for Serial Communication Options” above for more details.</p>
Parity	<p>This is typically None, but it <i>must</i> match the setting used by the system with which you connect. If you use 8 for Data Bits, Parity <i>must</i> be None. See “Considerations for Serial Communication Options” above for more details.</p>
Flow Control	<p>NetRemote automatically selects a flow control type based on the Modem Name that you select. You should not need to change this type. However, if you think you do need to change the flow control type, see “Considerations for Serial Communication Options” above for details and recommendations.</p>
Modem Name	<p>The modem name should match the modem type connected to the selected Com Port (it should be Direct Connect to use a cable without a modem).</p>
More button	<p>To customize the control strings and control options for the modem type indicated in Modem Name, choose the More button, which displays the Modem Setup panel (described later in this chapter).</p>

Mode String	This presents the serial Option settings in a common “shorthand” that is useful for conveying settings to those with whom you need to connect. The format is <i>com_Port:Baud_Rate,Data_Bits,Stop_Bits,Parity</i> (e.g. COM1:9600,8,1,N indicates COM1 set for 9600 baud, 8 data bits, 1 stop bit, No Parity).
-------------	---

CXL Debugging Switch

After connecting with a Host PC, but before logging in, NetRemote Remote looks to see if a CXL filename is defined in the Phone Book Entry used to make the connection. If so, NetRemote Remote executes the special *CXL Post Connect script commands* in that CXL file before it proceeds with the NetRemote login procedures. Using this advanced feature, you can therefore make NetRemote Remote automatically perform special tasks after connecting with a Host PC, but before beginning the NetRemote login sequence.

You create a CXL script file by using a text editor (e.g. Window's Notepad) to enter appropriate CXL script commands (described in detail in Appendix E and in the on-line Help).

To simplify the testing and debugging of a script file, NetRemote Remote provides a CXL Debugging Environment. This special tool displays the script file commands in one window, highlighting each command as it is executed, while showing the results in a second window. It also provides useful controls, e.g., you can step through commands one at a time. You can also edit the file and re-run it without leaving the Debugging Environment.

Clicking on the CXL Debugging switch in the Control Center's Setup menu toggles the *CXL Debugging ready mode* ON (checkmark appears) and OFF (no checkmark). When ready mode is on *and* a CXL filename is defined in the current Phone Book Entry, NetRemote invokes the CXL Debugging Environment *after* connecting with a Host PC, but *before* starting the CXL script or NetRemote login. You can then use the debugging environment to step through the script or run it as usual.

Drive Redirector

The Drive Redirector feature makes disk drives on a connected NetRemote PC available to your PC as remotely mapped “virtual drives.” For example, you can make drive **C:** on a connected NetRemote PC “appear” as drive **F:** on your PC. DOS, Windows, and applications running on *your* PC can access that “remotely mapped” F: drive as if it were a “real” drive on your PC (much like using a LAN shared disk). Similarly, programs on the connected NetRemote PC can access drives on your PC as “remotely mapped drives.”

Clicking the Control Center's Drive Redirector button (or selecting Drive Redirector from the Control Center's Setup menu) displays the Drive Redirector Setup window (see Figure 4-5). You use this window to set up "remotely mapped drives" by assigning (i.e. mapping) unused drive letters on your PC to selected physical disk drives on the second NetRemote PC. For example, in Figure 4-5, drive letters D:, E:, and F: on your PC are mapped to the A:, B:, and C: drives, respectively, on the second NetRemote PC.

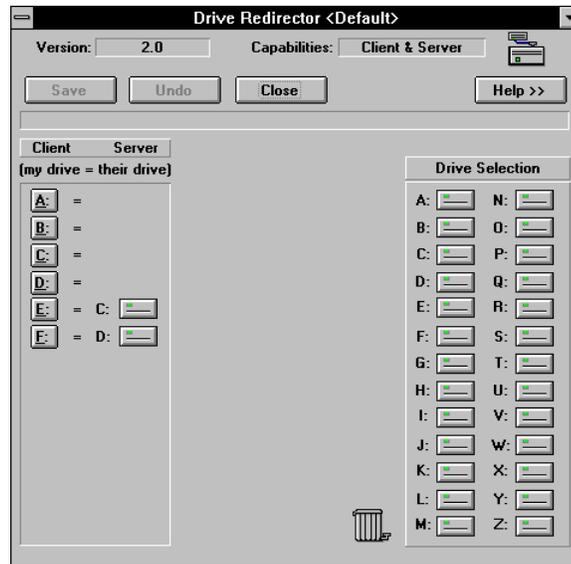


Figure 4-5: Drive Redirector Setup Window

To actually use remotely mapped drives, the Drive Redirector program, MAPDRV.COM, must be loaded on both NetRemote PCs before establishing a connection *and* before starting Windows. The setup and use of the Drive Redirector feature deserves detailed discussion, so it is described in detail separately in Chapter 6, "Using the Drive Redirector." Refer to that chapter or the on-line Help for detailed discussions.

Error Messages

The Error Messages Accessory lets you view any error messages occurring in the current session and offers help for each error. It also lets you copy messages to the Windows clipboard.

To access the Error Messages Accessory, select Error Messages from the Control Center's Accessories menu. A window similar to Figure 4-6 appears.

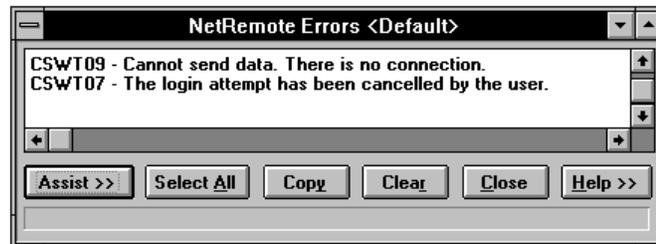


Figure 4-6: Error Messages Accessory

NOTE: You can customize NetRemote’s Global Options so the Error Message Accessory automatically appears whenever an error or other message occurs. See “Global Setup” in this chapter for details.

Using the Error Messages Accessory

To View an Error Message

NetRemote maintains a list of all error messages that have occurred since you started the program (or since you last cleared the list). The Error Messages Accessory lets you view not only the latest error message (which also appears in the Control Center’s Message Box), but all error messages on the list. The last error that occurred will be the last error included in the error message list. To move up and down through the error list, use the scroll bar to the right of the display.

To Get Assistance for an Error

To learn more about the possible causes of an error and, if appropriate, steps you can take to correct the error, choose Assist.

To Store an Error Message for Later Use

You can use Window’s clipboard to store one or more error messages for later use. To do this, drag your mouse to highlight the desired portion of the message list (to highlight the entire list, choose the Select All button). With the desired messages highlighted, choose the Copy button. Then, open another application, paste the messages, and store them in a file for later use.

To Clear the Error Display and Error Message List

To clear the display and NetRemote's error message list, choose Clear.

To Switch to the Control Center

Choose the Control Menu box (the dash in the upper left corner of the screen) to display the Control Menu, and then select Control Center from that menu.

File Transfer

The File Transfer Accessory lets you transfer files between your Remote PC and a connected Host PC. It also lets you perform other file management tasks such as deleting files, viewing file contents, and creating directories.

NOTE: You can also transfer files and perform file management tasks using NetRemote's Drive Redirector (see Chapter 6 for details). However, the File Transfer Accessory provides several specialized tools that simplify file management, including the transfer of selected files.

The File Transfer Accessory is an extremely useful and flexible application with numerous features that deserve detailed discussion. Therefore, it is discussed separately in Chapter 5, "Using the File Transfer Accessory." Refer to that chapter or the on-line Help for detailed discussions.

Global Setup

Global Setup lets you view and change NetRemote's Global Options. Those Options let you customize aspects of NetRemote's general operation.

NOTE: The Global Options that you select are always in effect, i.e., they are not specific to the currently selected Phone Book Entry.

To access the Global Setup Accessory, select Global Setup from the Control Center's Setup menu. A window similar to Figure 4-7 appears.

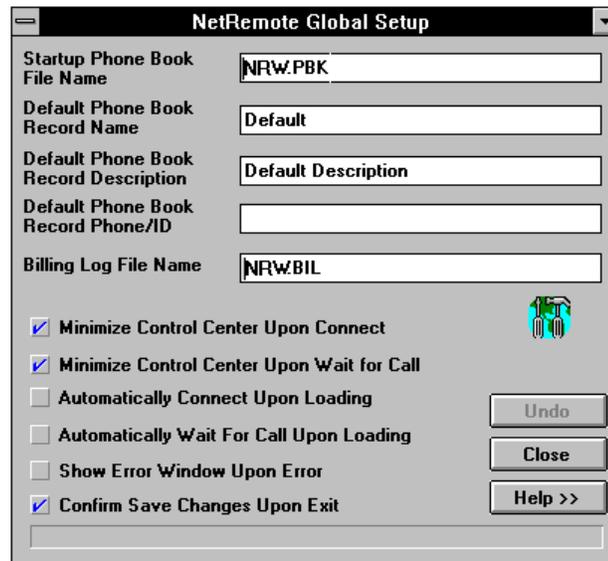


Figure 4-7: Global Setup Window

To Change Global Options

1. In the Global Setup window, change Options as needed. For more details on each field, see the next topic, “Description of Fields.”
2. When you are finished, choose Save to store the Global Option changes (or choose Undo to abandon your changes).
3. Choose Close to return to the Control Center.

Description of Fields

Field	Description
Startup Phone Book File Name (Default=NRW.PBK)	This defines the Phone Book file that is activated when you start NetRemote Remote. You can change this to any valid DOS filename (e.g. up to 8 main characters plus a 3-character extension). If the file is not in the NetRemote directory, then it must either include a complete DOS path (i.e. drive and directory), or it must be stored in a directory in your DOS search path.

Default Phone Book Record Name, Record Description, Record Phone/ID	These three fields show the corresponding default Phone Book values stored in the NRW.INI file; changing these fields changes the corresponding values in the NRW.INI file. You are offered the option of using the default Phone Book values in the NRW.INI file when you create a new Phone Book Entry.
Billing Log File Name (Default=NRW.BIL)	This defines the file used to maintain an optional Billing Log (see “Billing Log Switch” in this chapter for operating details). You can change this to any valid DOS filename (e.g. no more than 8 main characters plus a 3-character extension). If the file is not in the NetRemote directory, then it must either include a complete DOS path (i.e. drive and directory), or it must be stored in a directory in your DOS search path.
Minimize Control Center Upon Connect	If checked, then whenever a connection is first established, the Control Center window is minimized to an Icon.
Minimize Control Center Upon Wait for Call	If checked, then whenever a you put NetRemote into Wait for Call mode, the Control Center window is minimized to an Icon.
Automatically Connect Upon Loading	If checked, then whenever NetRemote is started it will automatically make a call using the Phone Book Entry that has the Quick Connect box checked.
Automatically Wait for Call Upon Loading	If checked, then whenever NetRemote is started it will automatically go into Wait for Call mode using the Phone Book Entry that has the Quick Connect box checked. Note: This field is ignored if Automatically Connect Upon Loading is checked.
Show Error Window Upon Error	If checked, then whenever an error occurs, NetRemote will automatically invoke the Error Messages Accessory (described in this chapter).

Keyboard Chat

The Keyboard Chat Accessory lets you and a connected NetRemote Host user carry on an interactive “conversation” using your keyboards.

To activate the Keyboard Chat Accessory:

1. Establish a remote control connection with the Host user.
2. Do one of the following:

- Option 1: In the NetRemote Control Center, choose the Keyboard Chat button. Two panels appear, similar to Figure 4-8.

or

- Option 2: In the Remote Control window, select Keyboard Chat from the Control menu. Two panels appear, similar to Figure 4-8.

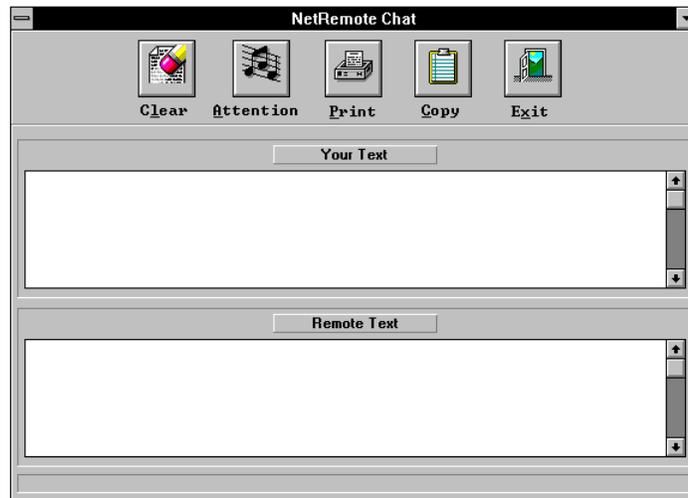


Figure 4-8: Keyboard Chat Accessory

Carrying On a Keyboard "Conversation"

When you invoke the Keyboard Chat window on your PC, your PC and the Host *do not* automatically go into Chat mode. Instead, you must first start typing in the “Your Text” panel (or choose the Attention button). When you do this, a Chat window appear on the Host user’s screen, and your PC goes into Chat Mode. Information that you type into the “Your Text” panel appears in the Host’s “Remote Text” panel. Similarly, information that the Host user types into their send panel appears in your “Host Text” panel.

Each of your Chat panels holds six lines of text. As new lines are typed, previous lines scroll up. Use the scroll bars to view information that has scrolled out of the display area.

NOTE: Remote control and monitoring stop while Chat mode is active.

Chat Restrictions

You can not chat if a DOS program is running on the *Host* PC in graphics (vs. text) mode. If the Host PC is using Host version 6.1 or earlier, this restriction also includes nearly all Windows screens except full-screen DOS.

To Clear the Chat Window

To clear the information in the Chat window, choose the Clear button. This erases the information from that window, but *doesn't* end the Chat session.

To Get the Other User's Attention

Choose the Attention button to beep the other PC's speaker.

To End Chat Mode Click on the Close button. This closes the window and ends the Chat session.

To Copy or Print Chat Window Contents

To copy the Chat contents to another application, first choose Copy to put the contents on Windows' clipboard. You can then switch to the other Windows application and paste the contents.

To print the Chat window contents to your currently active Windows printer, choose **Print**.

To Switch to the Control Center or Remote Control Accessory

Choose the Control Menu box (the dash in the upper left corner of the screen) to display the Control Menu, and then select either Control Center or Remote Control from that menu. This will suspend Chat mode.

Minimizing Chat Windows

Minimizing the Chat windows suspends Chat mode.

Modem Setup Panel

NetRemote provides pre-defined "control profiles" for a long list of modem types. Each profile includes control options and modem control strings that define how certain modem operations are invoked, and how characters are sent and received.

NetRemote's default modem profiles should work "as is" for almost all situations. If needed, though, you can customize each modem type's control strings to manage any asynchronous modem, or to "script" connections through PBXs, modem pools,

- If you are using a *Hayes-compatible* modem that *uses switches* for DTR and CD, select Hayes Basic as the modem type and edit the existing profile. Then, check the switch settings as described in Appendix C, “Modems and Cables.”
- If you are using a modem that *is not on NetRemote’s list* and *is not Hayes-compatible*, use one of NetRemote’s eight blank modem types, Custom1 through Custom8. NetRemote provides Custom1 through Custom8 to add modems or scripts that are not otherwise provided by NetRemote. Because these profiles are blank, you will need to provide all required control information yourself. You may find it useful to look at the pre-defined modem types for examples.

To Customize a Modem Profile

1. Choose the modem type that you want to customize from the Modem Name drop-down list. See the previous topic for more details.
2. Move to and edit the strings and check boxes as needed. See “Description of Fields” and “Special Characters” later in this section for more details.
3. When you are finished, choose the Save button (or choose Undo to abandon your changes).

Testing and Debugging Modem Strings

To test and debug modem strings, use NetRemote’s Port Monitor to watch each modem string as it is sent to the modem, and to view the results. See “Port Monitor” in this chapter for details.

Description of Fields

Field	Description
Modem Name	Identifies the modem type. Use Custom1 through Custom8 for new types.
Initialize	This string is used first on a Call, Wait For Call, and Voice-to-Data switch.
Dial Prefix	This string is used on a Call after the Initialize string, and before the string in the current Phone Book entry’s Phone field.

Dial Suffix	This string is used on a Call after the string in the current Phone Book entry's Phone field.
Auto Answer	This string is used on a Wait For Call after the Initialize string.
Disconnect	This string is used on a Hangup, and after the user has picked up the telephone handset on a Data-to-Voice Switch.
Voice Switch	This string is used on a Data-to-Voice Switch before the user is asked to pick up the telephone handset.
Data Sw-Orig.	This string is used for the originating side of the connection on a Voice-to-Data Switch, after the Initialize string.
Data Sw-Answ.	This string is used for the answering side of the connection on a Voice-to-Data Switch, after the Initialize string.
Connect Response	This string defines the minimum expected in the connect response message received from the modem on a Call, Wait For Call, and Voice-to-Data Switch.
Answer on Ring	This defines the number of rings that should occur before the modem answers.
Inter-Char Delay	If checked, control strings sent to the COM port are spaced at 200 millisecond intervals. Otherwise, they are sent as fast as possible by NetRemote. This option is necessary for some modems that are sensitive to the speed at which control strings are sent.

Keep Baud Fixed If this is *not* checked, NetRemote changes the serial port's baud rate to match the modem's connection speed (i.e. the baud rate used between modems). Otherwise, NetRemote sets the serial port baud rate to the value in the current Phone Book Entry's Communication Options and *does not* adjust the port's baud rate to the modem-to-modem speed. This option is required because modems using hardware compression (such as MNP or V42bis) have *effective* throughput greater than the actual baud rate between modems. To achieve this speed increase, characters must be sent from NetRemote to the modem at a higher speed than the modem-to-modem baud rate. For example, for a 9,600 baud modem using data compression, the serial port may need to send data to the modem at 19,200 or even 38,400 baud (using an enhanced serial port that can support 38,400 baud). The modem compresses the data at up to a 4-to-1 ratio and transmits it at 9600 baud to the other modem, which decompresses the data. The *effective* throughput is therefore greater than the 9600 baud modem-to-modem speed because of the compression the modems achieve.

Special Characters

Some characters have special meaning in modem strings, as follows:

~	1/2 second delay
,	2 second delay
\	carriage return
	line feed
@	send a break signal
^	control (for example, ^A = Ctrl-A)
]	end-of-string (terminates the string)
;	wait for response delimiter
#xxx	wait for xxx seconds for defined response, 1-999 are valid values
?	insert ring count, example, S0=?; ring count is set with the Global Option Answer on Ring Count.

NOTE: To have any of the special characters above treated normally, precede the character with the slash character /, for example, /@. To have / treated normally, specify it as //.

Password

The Password Accessory lets you set a Phone Book Password that prevents unauthorized people from viewing or changing the Login Name and Login Password information in Phone Book Entries.

With a Phone Book Password defined, the Login Name/Password fields are blanked out until a valid Phone Book Password is entered. Also, whenever NetRemote Remote is loaded, it prompts for the Phone Book Password. Although the user can continue without entering the password, if they do so they will not be able to view or change the Login Name or Login Password information in Phone Book Entries.

IMPORTANT: The Phone Book Password *is* case sensitive.

To define a new Phone Book Password:

In the Control Center, select Password from the Setup menu. When the Password window appears, type in the new password and then choose Save.

To change an existing Phone Book Password: In the Control Center, select Password from the Setup menu. When the Password window appears, type in the current password and then the new password. When done, press Save.

Port Monitor

The Port Monitor Accessory is an advanced tool to view in real time all data sent and received via a serial port. The Port Monitor is most useful for testing modem control strings.

To access the Port Monitor Accessory, do the following:

1. In the NetRemote Control Center, be sure an appropriate Phone Book Entry is selected. Consider the following:

To monitor a serial port that *is not* currently being used in a connection: Select a Phone Book entry Name that specifies the COM port and modem type that you want to monitor (see “Comm Setup — Serial Type” in this chapter for more details).

To monitor a serial port that *is* currently being used in a connection: Be sure the Phone Book Name used to make the connection is still selected.

2. Select Port Monitor from the Control Center’s Accessory menu. A window similar to Figure 4-10 appears.



Figure 4-10: Port Monitor Accessory

If the selected serial port was *inactive* before you opened the Port Monitor Accessory, DTR is now raised high (if the port was active, DTR should already be high). When you close the Port Monitor, DTR will be left high.

You can now view data sent and received via the serial port.

Viewing Port Activity

Choosing a Display Mode (Hex, Dec, Char)

For the Port Monitor display to be useful, you must use a display mode (Hexadecimal, Decimal, or text Character) that is most appropriate for the type of information that you need to monitor or type.

For example, to view commands going to a Hayes-compatible modem and the modem's responses, you would use Char mode, because Hayes commands and responses are always text characters.

On the other hand, to monitor port activity during a NetRemote connection, you would use either Hex or Dec mode, because you would be viewing binary data. The choice of Hex or Dec depends on your own familiarity with the two formats, and whether you are looking for values in a particular format (for instance, X.25 packet codes are typically represented in Hex notation).

About the Port Monitor Buffer

When you open the Port Monitor Accessory, it creates a Port Monitor Buffer (in your system's memory) in which it stores the data sent to and from the selected serial port. The Port Monitor window lets you view the contents of this buffer. To move up and down through the buffer contents, use the scroll bar to the right of the display area.

NOTE: If the Port monitor buffer "fills up", the oldest information will "spill out the top." The default buffer size is 10K bytes. You can edit the NRW.INI file to change the buffer size to anywhere from 1K to 15K. See the on-line Help for details.

Clearing the Monitor Display and Buffer

To clear the display and the Port Monitor's buffer, choose the Clear button.

Remote Control

The Remote Control Accessory lets you control the Host PC using your keyboard and (if supported by the Host program) your mouse, and also lets you view the information displayed on the Host's monitor.

By default, the Remote Control Accessory automatically appears when you select Call or Wait Call in the NetRemote Control Center (you can change this in the Terminal Options for a Phone Book Entry). You can also access it by clicking on the Remote Control button in the NetRemote Control Center. A window similar to Figure 4-11 appears.

```

NetRemote Remote Control <LA Sales>
. <DIR> 6-05-92 9:37p
.. <DIR> 6-05-92 9:37p
COLLECT2 BAK 10097 11-09-91 2:08a
QUATTRO BAK 17880 3-28-92 8:45p
ERRORS WK1 10869 4-21-91 4:44p
COLLECT WK1 5885 5-04-91 8:28p
COLLECT2 WK1 7855 11-13-91 4:22p
CS WK1 3055 8-12-91 12:02p
DEMO WK1 4326 11-09-90 2:00a
DEMOA WK1 165006 11-09-90 2:00a
GENCHK5 WK1 23862 8-05-91 8:00p
GRAPH WK1 6225 7-30-91 10:36a
GRAPH2 WK1 8607 7-31-91 8:06p
IB92 WK1 14501 10-31-91 11:05a
INSTALL WK1 8766 5-16-91 3:01a
PERSINT WK1 1832 8-05-91 8:08p
SAMPLE WK1 3564 5-16-91 3:01a
WEEGARE WK1 7912 3-19-92 12:00p
TSTGRAF WK1 4320 6-10-93 1:57p
HC WK1 6744 2-03-93 11:15a
COLLECT WSP 44 2-17-91 6:02p
GENDISC WK1 4568 6-23-93 11:32a
22 File(s) 2056192 bytes free
D:\QPRODATA>

```

Figure 4-11: Remote Control Accessory (Connected with Host)

Although you can open the Remote Control window if you aren't connected with a Host user, you must be connected to actually use the window.

When a connection is established, as long as the Remote Control window is the *active* window on your PC, your keyboard is effectively "connected" to the Host PC. If you press a key on your keyboard, the program on the Host PC will respond just as if you pressed that key on the Host's keyboard. The Remote Control Window will show the results, just as they appear on the Host PC's screen. For example, if you enter DIR at the DOS prompt, then you see a directory listing of the *Host PC's* current directory.

If NetRemote is set to its default Options, the Host user will see the same thing on their screen, and they can watch what you do. They can also use their keyboard (or mouse) to interact with their PC while you watch.

NOTE: If needed, you can blank the Host screen and/or lock the Host keyboard (as described later in "Special Control Menu Functions").

Managing the Remote Control Window

When the Remote Control Window is NOT the Active Window

Host screen changes continue updating the Remote Control Accessory even if it is not the active window on your PC. However, your keystrokes (or mouse actions) are sent to the Host *only* when the Remote Control Accessory is the active window, which can be useful. For example, by arranging your desktop so Remote Control and another application's window are both visible, you can work in the other application *and* monitor the Host at the same time.

Sizing the Remote Control Window

You can use Windows' Size, Maximize, and Restore functions to change the size of the Remote Control window. However, if you make the window too small, you will see only a portion of the Host screen image. In that case, resize the window, or use the bottom and right scroll bars to scroll the hidden portions into view (for a DOS text mode screen, you can also use the Fonts function under the Control Menu to change the size of the screen fonts; see the later topic, "Special Control Menu," for more details).

Maximizing the Remote Control Window - Special Issues

When you maximize the Remote Control window, the size to which the Remote Control window expands depends on the settings of two Terminal Option settings in the currently selected Phone Book Entry.

The first important setting is the Hide Title When Max. option, which appears in the Remote Setup window (in Full View). If this option is NOT checked, then the Remote Control window maximizes in "typical" Windows fashion, with the title bar and borders remaining visible. However, if this option IS checked, when you maximize the Remote Control window, the title bar and borders go away to provide the largest possible viewing area. Because this "pushes" the size controls and Control Menu off the screen, they are not directly available for use. To access them, press Alt-LeftShift to Restore the window to its previous size.

NOTE: The first time you maximize the Remote Control window with Hide Title When Max. checked in the current Phone Entry, NetRemote displays a message describing how to restore the previous window size. If you choose the option to subsequently suppress this message, it will no longer appear. If you later decide you want to reactivate the message, you can do so by modifying the "Show HotKey Message" line in the NRW.INI file. For details on modifying NRW.INI, see the on-line Help.

If you are controlling a DOS text mode screen on the Host, the maximized size is also affected by the settings in the Text Fonts window (which controls part of the current Phone Book Entry's Terminal Options). If the Switch Fonts When Maximized option is checked, NetRemote adjusts the DOS text font size as needed so the Remote Control window occupies the full screen when it is Maximized. Otherwise, the Remote Control window, when Maximized, is made just big enough to show the entire DOS screen at the currently selected Font Selection size.

NOTE: To temporarily change Text Fonts settings during Remote Control, select the Fonts option from the Remote Control window's Control Menu (described later in this chapter). You can also select the Remote Setup option from the Remote Control window's Control Menu and then choose the Text Fonts>> button at the bottom of the Remote Setup window (if the button does not appear there, choose More first). This second method lets you save the setting changes for the selected Phone Book Entry, if desired.

Minimizing the Remote Control Window

When Minimized (i.e. reduced it to an icon), Remote Control continues to get screen updates from the Host. Therefore, when you restore the "iconized" Remote Control to a window, the latest Host screen contents appear.

To Switch to the Control Center, Keyboard Chat, or Remote Setup

Choose the Control Menu box (in the upper left corner of the screen) to display the Control Menu, and then select Control Center, Keyboard Chat, or Remote Setup from that menu (or use Ctrl-Esc as described next).

NOTE: If you make changes to Remote Setup options *and save them*, then they immediately affect the current connection.

To Switch to Another Windows Task

If the window for the task you want (e.g. the NetRemote Control Center) is visible, choose it as you usually would. If the task you want is not visible, press Ctrl-Esc to invoke Windows' Task List, and pick the desired task from that list (see your Windows manual for details). In either case, the Remote Control window continues being updated to reflect any Host screen changes.

Closing the Remote Control Window

Closing the Remote Control window does not end your connection (to break the connection, you or the Host user must select Hang Up). This means you can still use NetRemote functions that require a connection, such as Keyboard Chat. You can also use NetRemote's Drive Redirector to access Host files.

To End a Remote Control Session

Select Hang Up from the Remote Control window's Control Menu, or switch to the Control Center and select Hang Up. NetRemote ends the connection and closes the Remote Control window. The Host also hangs up when it senses the disconnection. If modems were used to connect, they are reset.

NOTE: If the Host hangs up, Remote senses the action and also hangs up.

Special Control Menu Functions

Besides standard Windows functions (Restore, Size, etc.), the Remote Control window's Control Menu provides the following special NetRemote functions:

Function	Description
Remote Setup	This activates the Terminal Setup Accessory.
Chat Window	This activates the Keyboard Chat accessory.
Control Center	This switches you to the Control Center window.
Fonts	This lets you change the size of the fonts used to display DOS text mode screens. See "Terminal Setup" in this chapter for more details.
Run File Manager	This activates the File Manager program that is specified in the current Phone Book Entry's Terminal Options.
Print Immediate	This requires some detailed discussion. See "Special Control Menu Functions" in the "3. Take Control" section of Chapter 3.
Redraw Display	This redraws the Host screen image in your Remote Control window (if it was corrupted by line noise or other sources).
Lock/Unlock Host Keyboard	If the Host's keyboard is "unlocked," this lets you remotely disable it (to prevent anyone at the Host PC from entering commands). If the Host keyboard is "locked," this lets you re-enable it.
Blank/Restore Host Screen	If the Host screen is enabled, this lets you remotely "blank" it, preventing anyone at the Host from seeing display activity (this does not affect the display of Host activity in your Remote Control window). If the Host's screen is disabled, this lets you re-enable it.

Reboot Host	After confirming your request, this reboots the Host PC.
Hang Up	This ends the connection (same as selecting Hang Up in the NetRemote Control Center).
Help	This jumps to the Remote Control Help topic.
About	This displays the NetRemote Version and other data.

Terminal Setup — NetRemote Remote Type

You use the *NetRemote* version of the Terminal Setup Accessory to define the Terminal Options for a Phone Book Entry that has a *NetRemote* Terminal Type. *NetRemote* Communication Options include security settings, login retry values, timeout values, and other special settings.

NOTE: The Communication Options that you select in the Comm Setup window affect *only* the currently selected Phone Book Entry.

To access *NetRemote* Terminal Setup, do the following:

1. In the NetRemote Control Center, select the Phone Book Entry for which you want to define Terminal Options. Be sure the Phone Book Entry has *NetRemote* in the Terminal Type field (which is only visible when the Control Center's Phone Book Panel is in *Setup View* mode).
2. *Either* choose the Setup button beside the Terminal Type field in the Phone Book Panel (*Setup View*), or select Terminal Setup from the Control Center's File Menu. A window similar to Figure 4-12 appears.

NOTE: You can also access the NetRemote version of Terminal Setup from the Remote Control window (by selecting Remote Setup from its Control menu). If you make changes to Remote Setup options *and save them*, then they immediately affect the current connection.

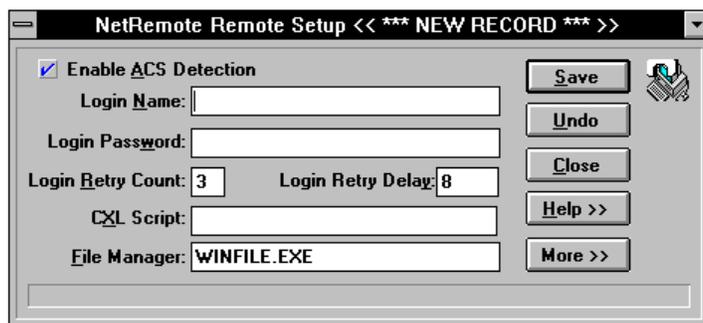


Figure 4- 12: NetRemote Terminal Setup Accessory (Partial View)

Partial View and Full View Modes

Figure 4-12 illustrates the *Partial View* version of the Terminal Setup window, which shows only those Terminal Options that typically need changed. Choosing the More button in the Partial View displays the *Full View* (Figure 4-13), which shows the rest of the Terminal Options, including advanced options that only occasionally need changing.

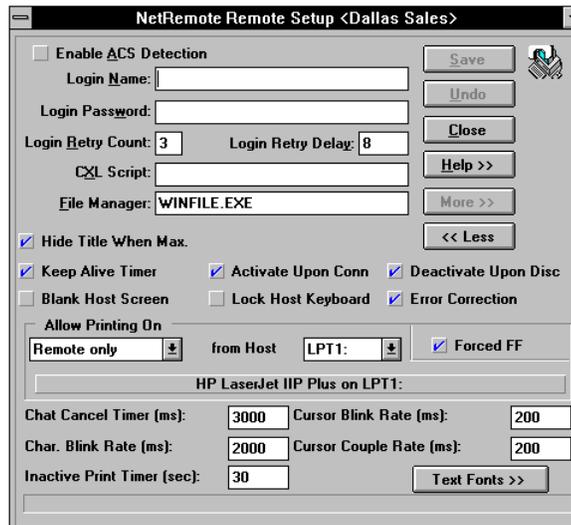


Figure 4-13: NetRemote Terminal Setup Accessory (Full View)

To return to the Partial View from the Full view, choose Less.

About the Default Terminal Options

NetRemote stores default Terminal Option settings in the NRW.INI file. Those default settings are automatically copied to any new Phone Book Entry that you create using the NetRemote defaults as a settings source (see “To Add a New Phone Book Entry” in Chapter 3).

To Change NetRemote Terminal Options

1. In the Control Center, be sure the currently selected Phone Book Entry is the one for which you want to change Terminal Options.
2. Access *NetRemote* Terminal Setup (as described on the previous page).
3. Change Options as needed. For more details on each field, see the next topic, "Description of Fields."
4. When you are finished, choose Save to store the Terminal Option changes (or choose Undo to abandon your changes).
5. Choose Close to return to the Control Center.

About Phone Book Password Protection

Using the Password function in the Control Center's Setup menu, you can set a Phone Book Password that prevents unauthorized people from viewing and changing the Login Name and Login Password information in Phone Book Entries. With a Phone Book Password defined, the Login Name/Password fields are blanked out until a valid Phone Book Password is entered.

IMPORTANT: The Phone Book Password *is* case sensitive.

Description of Fields

Field	Description
Enable ACS Detection	For a Phone Book Entry that you will use to call a Host running CoSession ACS software, this box <i>must</i> be checked. The box may be checked for calls to <i>any</i> NetRemote Host, although this adds very slightly to the time required for the NetRemote login sequence with a non-ACS Host.
Login Name, Login Password	For security, you can define a login name and password to introduce your call to an <i>answering</i> NetRemote Host. This pair is sent when <i>you</i> initiate a call (i.e. it is not sent when your PC answers). If the Host's Password Protection Option is enabled, then the Host verifies your login/password against the Receiving Login/Password pairs in its Phone Book. If a matching pair is not found, then the call attempt is terminated.
Login Retry Count	If a call attempt fails (e.g. the called number is busy), NetRemote automatically retries the call this many times before giving up. A value of 0 means no retries.
Login Retry Delay	Sets the number of seconds that NetRemote waits before retrying a failed call. This field is irrelevant if Retries is 0. Values below 15 may not allow a modem time to reinitialize.
CXL Script	After connecting with a Host PC using this Phone Book entry, but before beginning its login sequence, NetRemote will perform the procedures in the special <i>CXL Post Connect script file</i> named in this field (if any); this can be useful for X.25 or BBS connections. The script file name must include a complete DOS path (i.e. drive and directory), or the file must be in a directory in your DOS search path. See Appendix E for Post Connect scripting details.
File Manager	When you select Run File Manager from the Remote Control window's Control menu, NetRemote executes the program listed in this field (of the current Phone Book Entry). The filename must include a complete DOS path (i.e. drive and directory), or the file must be stored in a directory in your DOS search path. See Chapter 6 for details on remotely managing Host files using File Manager utilities and the NetRemote Drive Redirector feature.

The following fields appear only in *Full View* mode.

Hide Title When Max.	If this is checked (in the Phone Book Entry used to make a connection), then when you maximize the Remote Control window, the title bar goes away to provide the largest possible viewing area.
Keep Alive Timer	If this is checked (in the Phone Book Entry used to make a connection), then during extended periods of Host inactivity, NetRemote Remote will send a "Still alive?" query message to the Host and await a response. If the Host does not respond, then NetRemote Remote will disconnect.
Activate Upon Conn(ect)	If this is checked in the Phone Book Entry used to Call or Wait for Call, the Remote Control window is automatically activated after a connection is made.
Deactivate Upon Disc(onnect)	If this is checked in the current Phone Book Entry, the Remote Control window is automatically closed when a connection ends.
Blank Host Screen	If this is checked (in the Phone Book Entry used to make a connection), then the Host PC's screen is automatically blanked at the start of the connection.
Lock Host Keyboard	If this is checked (in the Phone Book Entry used to make a connection), then the Host PC's keyboard is automatically locked at the start of the connection.
Error Correction	If this is checked (in the Phone Book Entry used to make a connection), then keyboard and screen data Error Correction are activated. Disabling this can improve speed slightly, but will allow errors.

Allow Printing On	<p>During a remote control session, if a printing operation is selected on the Host PC (from DOS or an application), then the output is redirected based on the setting in this field. The options are:</p> <ul style="list-style-type: none">■ Nothing: This tells the Host to ignore data directed to the printer; that is, no printing occurs when a printing operation is selected. This might be used to demonstrate or test selection of printing functions without actually printing.■ Host only: This tells the Host to print on the Host printer. There is no redirection to your Remote PC's printer.■ Remote only: This is the default mode and redirects printing (from the specified Host Port) to your Remote PC's printer. No printing occurs on the Host printer.■ Host & Remote: This prints at the Host printer and also redirects printing (from the specified Host Port) to your Remote PC's printer <p>Note: NetRemote does not do printer conversion. To use redirected printing, change the Host application's printer settings to support <i>your</i> PC's printer.</p> <p>Also, NetRemote does not start to send redirected print data to your printer until the Host program has ceased printing for the period defined in the Inactive Print Timer field.</p>
Chat Cancel Timer	<p>After a Remote PC is put into Chat Mode (see "Keyboard Chat" in this chapter), if there is no chat activity for the number of milliseconds defined in this field, then NetRemote cancels Chat mode and closes the Chat windows.</p>
Cursor Blink Rate	<p>When remotely controlling a DOS application, this determines how often NetRemote "blinks" the cursor in the Remote Control window (to simulate DOS's blinking cursor).</p>
Char. Blink Rate	<p>When remotely controlling a DOS application, this sets how often NetRemote "blinks" characters that "blink" on the Host screen (because "blink" is a DOS character attribute that does not exist in Windows, NetRemote must simulate it by periodically erasing and re-displaying characters that "blink" on the Host).</p>

Cursor Couple Rate	If you have sized the Remote Control window so that only a part of the Host screen appears in that window, then it is possible for the Host cursor to move outside of the Remote Control window's "view" (e.g. if you press the down arrow several times). The Cursor Couple Rate determines how long NetRemote waits before it automatically shifts the Remote Control windows "view" to display the portion of the Host screen to which the cursor has moved.
Inactive Print Timer	To enhance performance, NetRemote "spools" printing that is redirected to the Remote PC's printer to a file. NetRemote Remote doesn't send the spooled information to the Remote PC's printer until print data ceases to be received for the period specified in the Inactive Print Timer field. Note: You can select Print Immediate from the Remote Control window's Control menu to force immediate printing of all spooled information.
Text Fonts button	Clicking this button displays the NetRemote Text Fonts window, described next.

NetRemote Text Fonts Window

This window lets you define the size of the fonts that NetRemote uses to display DOS text mode screens in the Remote Control Accessory window, either for personal preference or for special requirements. For example, if you are using 1024x768 display mode on a 14 or 15 inch monitor, you may want to use a larger font size to make the Remote Control display more readable. On the other hand, for DOS text screens using a 43- or 50-line display mode, you may want to make the font smaller so you can see it all without scrolling.

NOTE: Selecting Fonts from the Remote Control window's Control menu also displays the NetRemote Text Fonts window.

Font Selections values specify the font size in screen pixels; e.g. 8 x 12 will display each DOS character in a block 8 pixels wide and 12 pixels high. Note that as the font size gets higher and wider, the size of the Remote Control window needed to show a full DOS screen becomes proportionally larger.

If Switch Fonts when Maximized is checked, NetRemote adjusts the font size as needed so the Remote Control window occupies the full screen when it is Maximized. Otherwise, the Remote Control window, when Maximized, is made just big enough to show the entire DOS screen at the selected Font size.

Chapter 5 Using the File Transfer Accessory

Introduction

The File Transfer Accessory lets you transfer files between your Remote PC and connected Host PC, or locally between directories on your PC. It also lets you perform other file management tasks such as deleting files, viewing file contents, and creating directories.

NOTE: You can also transfer files and perform file management tasks using NetRemote's Drive Redirector (see Chapter 6 for details).

To access this menu, in the Control Center window, either choose the File Transfer button or select File Transfer from the Accessory menu. The File Transfer accessory window appears, similar to the one shown in Figure 5-1.

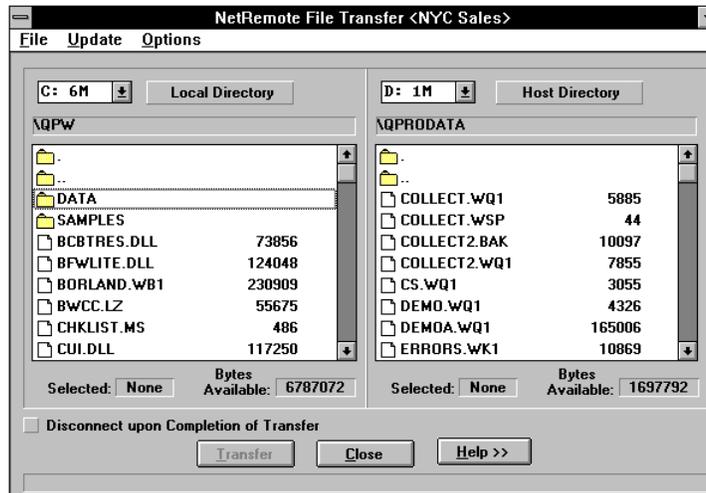


Figure 5-14: File Transfer Accessory Window

NOTE: If you have a CD-ROM drive and it does not have a CD-ROM inserted, you will get a "Cannot read from drive..." message, which is normal. Choose Cancel to continue to the File Transfer window.

About the File Transfer Window

Below the Menu Bar, the File Transfer window is split into two Directory Panels. Below these panels are Transfer, Close and Help buttons, followed by a message panel at the very bottom of the window.

The Menu Bar functions, Transfer button, and Directory Panels let you easily perform file operations using simple “point and choose” and “drag and drop” procedures. As discussed later, these operations occur in “background” on the Host PC, letting the Host user run other programs while you perform file transfers or other file operations from your Remote PC.

About the Directory Panels

When you first activate the File Transfer Accessory during a Remote Control connection, the left Directory Panel shows the contents of the current directory on the Local PC (i.e. *your* PC), and the right Directory Panel shows the contents of the current directory on the Host PC. If you are *not* connected, the right Directory Panel shows the current directory on your PC.

NOTE: It may take awhile for a large Host directory to display.

A selection box appears in the active Directory Panel. To move the highlight box between panels, simply choose the mouse in the desired panel.

Above each Directory Panel is a Directory Label showing the name of the currently displayed directory. Above the Directory Label is the Drive Label showing the currently selected drive. As explained shortly, you can easily change to other directories or drives as needed.

Any subdirectories contained in a displayed directory appear as file folder icons and are listed first. The files in each displayed directory appear after the subdirectories, and are listed alphabetically.

NOTE: All non-root directories always contain two special DOS directories named “.” and “..”. The “.” directory is the current directory and the “..” directory is the parent of the current directory.

If a directory has too many entries to fit in a Directory Panel, a scroll bar appears by the panel. To scroll through the directory listing, use your mouse and the scroll bar, up and down arrow keys, or PgUp and PgDn keys.

Active (Source) Directory Panels

The Directory Panel that contains the selection box is the *active panel* for functions. For example, if the selection box is in the left Directory Panel, selecting Delete only affects files in the directory shown in the left panel.

For file transfers, the Directory Panel that contains the selection box is also considered the *Source Panel*. For example, if the selection box is in the Local Directory Panel, then selecting Transfer copies files *from* the displayed Local Directory (the Source) *to* the displayed Host Directory (the Destination).

Tagging and Untagging Files

To use many File Transfer Accessory functions, you Tag (i.e., mark) the files that you want to affect *before* you choose the desired function. For example, you first Tag all the files you want to transfer, and then choose the Transfer button to transfer all those Tagged files.

NOTE: When a file is tagged, its entry is highlighted. For example, in Figure 5-2, CS.WQ1 and HC.WQ1 are tagged.

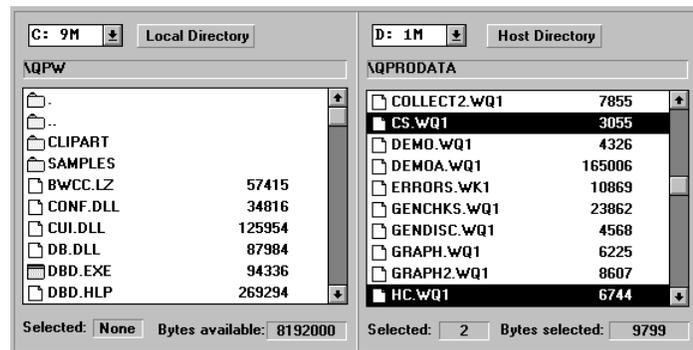


Figure 5-15: Tagged Files

To Tag files one at a time, simply choose each desired file name (or use the cursor keys to position over a file and press Spacebar). You can also Tag files in groups by using the Tag function and wildcard characters.

“Untagging” is the process of removing the tag from a file (i.e. “unmarking” it). To Untag files one at a time, simply choose each desired file name (or use the cursor keys to position over a file and press Spacebar). You can also Untag files in groups by using the Untag function and wildcards.

About the Menu Bar

The menu bar provides pull-down access to file transfer and management functions and control options. Most of these functions are described in detail later in this chapter.

File Menu

Command	Description
Tag	This marks (“tags”) all files that match the wildcard characters you specify. See “Tagging and Untagging Files” for details.
Untag	This unmarks (“untags”) all tagged files that match the wildcard characters you specify. See “Tagging and Untagging Files” for details.
Chdir (Change Directory)	This changes the current directory to the one you specify. See “Changing Directories” for details.
Mkdir (Make Directory)	This creates a new directory. See “Making a New Directory” for details.
Xfer (Transfer)	This transfers all tagged files in the <i>active</i> directory panel (Source) to the directory shown in the other panel (Destination). File overwrite procedures are controlled by the Overwrite setting (in the Options menu). See “Transferring Files” for details. Note: Choosing the Transfer button is the same as selecting Xfer.
Delete	This deletes tagged files (with or without verification). See “Deleting Files” for details.
Local	When active (checked), both the left and right Directory Panels become Local directory panels so you can do file management tasks on just your own PC. Local-only mode does not require a connection.
View	This displays the contents of tagged files (one at a time). See “Viewing File Contents” for details.

Update Function

When selected, this updates the Host Directory listing to reflect the current directory contents.

NOTE: To enhance performance, NetRemote *does not* update the Host Directory listing automatically after the Make Directory function. If you wish, choose Update (or press **Alt-U**) to update the Host listing.

Options Menu

Command	Description
Compression	<p>Choose this option to toggle it on and off. With this option on (checked), files are automatically compressed for transfer. You should generally leave this on. Note that NetRemote uses very efficient compression that can increase file transfer rates significantly. However, if a file is stored in a compressed format (e.g., an archived, arc'ed, or zipped file), additional compression efforts may increase the compressed file's transfer time. Therefore, if a file to be transferred has an extension that indicates it is a compressed type (e.g., .ZIP, .ARC, .or LZH) , then regardless of the Compression setting, NetRemote <i>does not</i> use compression to transfer that file.</p>
Overwrite	<p>Selecting this displays a sub-menu that you use to control what NetRemote does if a file to be transferred already exists in the destination directory. The menu lists a Verify switch, plus 3 <i>Overwrite Modes</i> (with a checkmark beside the active Overwrite Mode).</p> <p>If Verify is set, the Transfer function will prompt you to choose whether an existing file should be overwritten; otherwise you are not prompted. This works in conjunction with the selected Overwrite Mode, as follows:</p> <p>Always: If selected, files are unconditionally overwritten (with prompting based on the Verify switch setting).</p> <p>Never: If selected, files are never overwritten, regardless of the Verify setting (but a message is displayed if a file is skipped to avoid overwriting).</p> <p>Older: If selected, files are overwritten only when the destination file has an older date and time than the source file, with prompting based on the Verify setting (regardless of the Verify setting, a message is displayed if a file is skipped to avoid overwriting).</p>

Fullview	Choose this option to toggle it on and off. With this option on (checked), the name, size (in bytes), creation time and date, and attributes of each file are displayed. With this option off (unchecked), only the name and size (in bytes) of each file are displayed.
----------	--

Disconnect on Completion of Transfer Box

If this is checked when a transfer is started, NetRemote will automatically disconnect from the Host when the transfer of all selected files is completed.

Background File Operations

File transfer functions take place in the “background” on the Host PC. This is a powerful feature that allows a support person, for example, to perform file operations on a customer's PC without disturbing the customer's current work.

WARNING: If you do file operations on a Host that has a user running other tasks, do not modify or delete files the other user is accessing. Doing so can cause unpredictable results, including file corruption.

Minimizing the File Transfer Window

Once you start the transfer of a single file or a tagged group of files, you can choose the File Transfer window's Minimize button to reduce it to an icon. The File Transfer icon appears as a progress bar that is updated to show you the percentage of the file transfer that has completed.

This extremely powerful and useful feature lets you start a file transfer and then work with other Windows applications while the transfer continues.

Host Access Restrictions

Transfer Rights

If the Host PC you call has password protection enabled, then your File Transfer Rights may be restricted. This limit is triggered by the Transfer Rights setting in the Phone Book entry currently used on the Host.

Directory Access

The Host PC you call may have background file access restricted to specific directories. The Directory Access Restriction Option on the Host may contain a list of those directories that all callers are allowed to access (in some later Host versions, the Phone Book Entry used on the Host *also* has a Directory Access Restriction field that may list additional directories you can access). If there are any Directory Access Restriction lists, then you can transfer, move, delete, or view files *only* in the listed directories. See Chapter 7 for details.

Changing Directories

If the desired directory is immediately “above” or “below” the currently displayed directory (i.e. is a “parent” or “child”), then simply double-choose its folder icon to change to that directory.

If the desired directory is not immediately “above” or “below” the currently displayed directory, then use the Chdir function, as follows:

1. Select Chdir from the File menu.
2. When the dialog box appears, be sure the proper button (Host or Local) is selected to specify the PC on which you want to change directories.
3. Type the new directory name (including any path information required by DOS; e.g. C:\REMOTE) and press Enter. The new directory (and drive, if changed) appears.

Changing Drives

The quickest way to change drives is using the list box by each Drive Label (shown at the left). Choose the down arrow beside the Drive Label for the desired Directory Panel to display an available drives list. Then choose the desired drive.

You can also change drives using the Chdir function with a new drive name (however, to change to a root directory you must include the “\” root designator, e.g. enter “C:\” instead of just “C:”).

Transferring Files

Files transfer quickly and error-free with McAfee's sliding window protocol, which uses 16-bit CRC error-checking and data compression.

IMPORTANT: Before a transfer, be sure Overwrite and File Compression are set correctly (see the earlier “Options Menu” topic).

Using “Drag and Drop”

The simplest way to transfer a file is to “drag” the file to the desired destination in the other directory panel. To do this, use the mouse to choose *and hold* on the desired file name (i.e. *do not* release the mouse button). Then, while continuing to hold the mouse button down, drag the mouse pointer to the desired destination (the cursor changes to show a document with a “plus” sign). Finally, release the mouse button to start the transfer.

NOTE: If you drag and drop a file on top of a directory “folder” in the destination directory panel, the file is copied to that directory (which is then displayed in the destination directory panel).

To Transfer Multiple Files

1. If needed, move the selection box to the Source Panel (i.e. the panel of the directory you wish to transfer files *from*).
2. Tag all files that you want to transfer (see “Tagging and Untagging Files” for details).
3. To start the transfer, do any one of the following:
 - Choose the Transfer button, *or*
 - Select Transfer from the File menu, *or*
 - Drag the files to the desired destination. To do this, choose and hold on the last file that you are tagging, and then drag and drop on the desired destination in the other Directory Panel.
4. The File Transfer Status window appears, similar to Figure 5-3, and all tagged files are transferred.

NOTE: You can press Esc to terminate a file transfer and NetRemote will remove any partial file. If a file transfer is interrupted for any other reason (*except* a line disconnect), the partial file is deleted and a “Copy Error” message appears.

To Automatically Disconnect After the Transfer is Completed

Check Disconnect Upon Completion of Transfer before starting the transfer.

Transfer Status Screen

After you start a file transfer, the Transfer Status Screen appears, similar to the one in Figure 5-3.

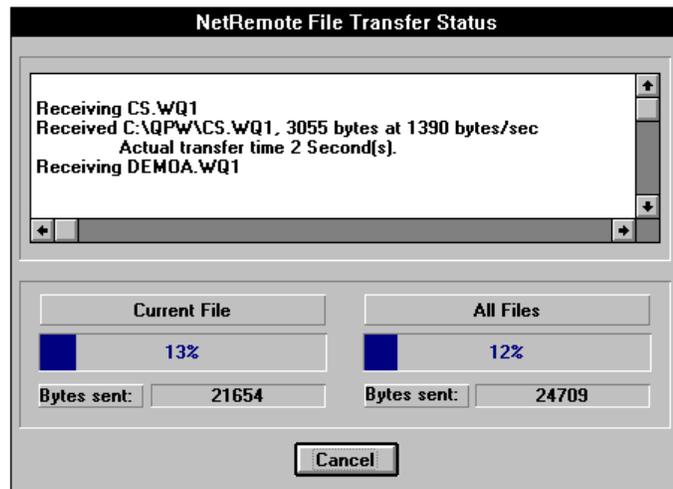


Figure 5-16: File Transfer Status Window

The panel in the top half of the window displays information about each file as its transfer begins and ends. After each file is transferred, this panel shows the *bytes sent* (size of the file), and *effective speed* (how fast the file was sent, in bytes per second [bits per second is eight times this figure]).

NOTE: Speed indications are inaccurate for transfers under a few seconds.

The bottom portion of the screen is divided into two panels:

- Current File panel - shows the number of bytes (of the file currently being transferred) and the percentage of the file that have been sent.
- All Files Panel - shows the total number of bytes sent so far, and the percentage of the total bytes in all tagged files that has been sent.

When all files have been transferred, NetRemote displays the average effective speed for all files, in bytes per second. Choose Close to return to the File Transfer Accessory window.

Making a New Directory

1. Select Mkdir from the File menu.
2. When the dialog box appears, be sure the proper button (Host or Local) is selected to specify the PC on which you want to make a directory.
3. Type the desired new directory name (including any path information required by DOS; e.g. C:\REMOTE) and press Enter. The new directory is created, and the dialog box closes.

NOTE: If you created the directory on the Host, choose Update to update the Host Directory listing.

Deleting Files

1. If necessary, move the selection box to the panel for the directory that contains the file(s) you wish to delete.
2. Tag all files that you want to delete.
3. Choose File | Delete.
4. You are asked if you want to verify each deletion before the file is removed. If you respond “Y”, you will be asked to confirm each file before it is deleted. If you respond “N”, there will be no prompt and all the tagged files will be deleted (USE THIS WITH EXTREME CAUTION).

As each file is deleted, its full path name is displayed. You can press Esc to terminate the file deletion process. When the deletion process is complete (or terminated), the File Transfer Accessory window re-appears.

Viewing File Contents

The File menu's View function displays the contents of one or more files on the Host or Local PC. Note that displaying a Host PC file does not interrupt other activity on that computer. It takes place in the background and therefore lets you display files while the Host user is running a program. For instance, you can display a Host user's AUTOEXEC.BAT or CONFIG.SYS file without making the user exit their program.

To view file contents:

1. Be sure the selection box is in the panel for the Directory that contains the file(s) you want to view.
2. Tag all files that you want to view.
3. Select View from the File menu.
4. The first file is displayed. If the file is too long or wide to fit in the display panel, use the scroll bars to scroll through the file. To end the display at any time, choose OK.

If you tagged multiple files, the next file appears (choose Cancel if you want to return to the File Transfer Accessory window).

When the display of all files is done, choose OK or Cancel to return to the File Transfer Accessory window.

NOTES

Chapter 6 Using the Drive Redirector

What is Drive Redirection?

When you are connected with another PC running NetRemote software, NetRemote's Drive Redirection capability can make disk drives on that second PC "look like" local disk drives on your own PC. For example, you can specify that the hard drive **C:** on a connected NetRemote Host or Remote PC "appear" as redirected drive **D:** on your PC. A DOS or Windows utility or application program on your PC can use that "remote access" D: drive as if it were a disk drive actually installed in your own PC.

Drive Redirection also works in reverse, i.e. a program running on the other PC can also use drives on your PC as if they were installed on the other PC.

The Drive Redirector Elements

The Drive Director capability is provided through two main programs:

Program	Description
Drive Redirector Setup	You use your NetRemote Host or Remote Drive Redirector Setup program to create Drive Redirector <i>Map Sets</i> . A Map Set specifies the drives on a connected PC that you want to have redirected, and assigns ("maps") a local drive letter on your PC to each redirected drive. Each Phone Book Entry can have its own associated Drive Redirector Map Set.
MAPDRV.COM	MAPDRV.COM runs in the "background" and manages Drive Redirector activities during a connection. To use the Drive Redirector during a NetRemote connection, MAPDRV.COM must be running on both your PC <i>and</i> the other PC.

To allow remote drive access in either Windows or DOS, MAPDRV.COM is a *DOS* memory resident (TSR) program. Because it is a DOS TSR program, MAPDRV.COM must be loaded on your PC *before* you run Windows (as described later).

How Drive Redirection Works

To use the Drive Redirector effectively, it is useful to understand basically how it works. This is best done through an example.

Assume you have two local floppy drives, A: and B:, and a local hard drive, C:. You are going to connect with a second NetRemote PC that also has two floppy drives, A: and B:, and a C: hard drive. Further assume you have specified that only the C: hard drive on the other PC should be redirected, and that it should be assigned to drive letter D: on your PC (i.e. you have “mapped” drive letter D: on your PC to the hard drive C: on the other PC).

Before making the connection, you and the other PC user must load MAPDRV.COM on each of your PCs. You then follow the normal procedures to establish a NetRemote remote control connection. Once the NetRemote connection is active, MAPDRV intercepts and properly routes any requests for disk reads and writes.

For example, if a program running on your PC tries to read data from a *non-redirected* drive (e.g. your local hard drive, C:), MAPDRV passes that request to DOS on your PC, where it is handled as usual.

However, if a program on your PC tries to read from a *redirected* drive (in this case, the redirected D: drive), MAPDRV on your PC passes that request through the NetRemote connection to the MAPDRV program running on the *other* PC. To service that request, MAPDRV on the other PC reads the requested data from the proper drive *on the other PC* (in this case, the other PC's C: hard drive) and then sends that data back to MAPDRV running on your PC. Finally, MAPDRV on your PC passes the data to the program that originally requested the read from the D: drive on your PC.

This activity is all “transparent” to the program that read the data from the D: drive. It requested the disk read in the same way it would from a local drive (technically speaking, it used the same DOS Interrupt function call), and the data was returned to the program in the same way. Thus, there is no need to change the programs on your PC to use redirected drives, because, to the programs, redirected drives “look and act” the same as local drives.

Client and Server — Important Terms

In technical terms, NetRemote's Drive Redirection is a “Client/Server” application. That is, when your PC uses a redirected drive, MAPDRV.COM on your PC acts as a Client requesting that data be sent to or from a drive on the other PC.

MAPDRV.COM on the other PC acts as a Server, servicing those requests by moving data to or from the proper drive on the other PC.

However, as mentioned earlier, a connected NetRemote PC can also access drives on your PC as redirected drives. In this case, MAPDRV.COM on the other PC acts as a Client and MAPDRV.COM on your PC acts as a Server. Thus, MAPDRV.COM supports both Client and Server functions.

NOTE: Using MAPDRV.COM command line parameters (described later), you can disable the Client or Server function. For example, you can disable the Server function in MAPDRV.COM on your PC to prevent the other PC from using drives on your PC as redirected drives.

Redirecting LAN Shared Drives

It is possible to use a NetWare file server drive as a redirected drive, i.e. you can map a drive letter on your PC (Client) to a drive letter on another PC (Server) that actually “points to” a LAN shared drive. However, some NetWare utilities may not work correctly on your PC because they do not recognize the redirected drive as a NetWare drive. There may also be other limitations with NetWare. See the README.WRI file for the latest details.

Mapping “In Use” Drive Letters to Redirected Drives

By default, any Client drive letter up to the last valid DOS drive can be mapped to a redirected Server drive, *even if that drive letter “points to” a local physical drive* (which effectively disables that local drive).

NOTE: Do not use drive letters on your PC that specify CD-ROM or network drives. DOS intercepts requests for these drive letters before NetRemote can, which prevents NetRemote control.

Why Use Drive Redirection — and When?

Alone, NetRemote’s remote control mode lets a Remote PC user view and control a program that is: (a) running on a connected Host PC, *and* (b) using data stored on the Host’s drives. Drive Redirection offers other possibilities:

- A program can be run *locally* on the Remote PC while using data that is located on the Remote PC’s local drives *or* on the connected Host PC’s drives (i.e. local program control with remote file access).

- A program running on the Host PC can use data that is located on the *Remote PC's* drives. This is true whether the program is run locally by the Host user or is run remotely by the connected Remote user.

In some cases, you might accomplish the same thing by transferring a file to the Host or Remote, and then using the file locally with a program. However, this is inconvenient and sometimes impossible.

Consider these examples:

Example 1: Word Processor

You want to run a word processor locally on a Remote PC to edit a file on a Host disk drive. Assume your PC's drive E: is mapped to the Host's C: drive.

After you make your connection, if you view the E: drive (e.g. using Windows File Manager or a DOS DIR command) you will see the files on the Host's (Server's) C: drive. When you start your word processor and open a file on the E: drive, the file will be downloaded over the NetRemote link into your PC's memory for editing. After this, your editing takes place locally until you save the file, at which point the Drive Redirector routes it back to the Host's drive (unless you decide to save it locally).

If the word processor is installed on both the Host and Remote PC, running it locally on the Remote PC may or may not be faster overall. For example, if the file is relatively small, the performance of drive redirection versus remote control mode is much faster. On the other hand, if you need to edit a 200KB file, it is better to run the word processor in remote control mode on the Host.

Note: It is the amount of data that must be transferred via drive redirection that is the determining factor. This is not necessarily the same as the file size. For example, using a database program locally to view a few records in a 1000 KB database file on a redirected drive may only require that a few KB of data actually be transferred.

Example 2: Spreadsheet Copy and Paste

You need to modify a spreadsheet file on a Host PC by inserting some data from a spreadsheet stored on a connected Remote PC's C: drive. Assume the *Host's* drive letter D: is mapped to the Remote's C: drive.

Run the spreadsheet program on the Host PC (either the Remote user *or* the Host user can do this), and open the *Host* spreadsheet file that you want to modify. Next, open the spreadsheet file stored on the Remote PC (by using D: as the drive in the file path). Now you can locate the required information in the Remote PC's spreadsheet file, do a Copy, and then do a Paste at the proper location in the Host spreadsheet. Finally, save the modified Host file and exit from the spreadsheet program.

This is more convenient than copying the file to the Host to Copy and Paste.

Example 3: Installing a Program Remotely

You are at a NetRemote Remote PC with a new program that you want to install on a Host PC's C: hard drive. Assume the *Remote* PC's drive letter E: is mapped to the *Host* PC's C: hard drive. You can invoke full-screen DOS on the Remote PC and enter A:INSTALL to run the install program from the diskette in the Remote PC's A: drive. By then specifying the installation target drive as E:, the new program will be installed on the *Host's* hard drive.

Example 4: Using Windows File Manager

If you run Windows' **File Manager** locally, "remote access" drives are available. For example, assume a Remote PC has its drive letters E: and F: mapped to a *connected* Host PC's A: and C: drives. When the Remote user opens File Manager locally (i.e. on their PC, *not* the Host), disk icons appear at the top for their local drives *plus* the E: and F: "remote access" drives. If the Remote user double-clicks on the F: drive icon, a File Manager panel will open showing a listing of the Host's C: drive. The Remote user can then "drag and drop" to copy files between drives or directories. For instance, dragging file COPYME.TXT from the F: drive display to the C: drive icon copies COPYME.TXT from the Host's C: drive to the Remote's C: drive.

Other File Manager functions (e.g. Delete, Create Directory, etc.) can also be used. However, **do not** use File Manager to "launch" a program stored on a "remote access" drive (because *your* PC's PATH, SYSTEM.INI, and other items will be used, instead of the other PC's, errors might occur).

NOTE: File management tools other than Windows' File Manager can be used similarly (since they see "remote access" drives as local drives).

Using the Drive Redirector - General Issues

As discussed earlier, there are two aspects to using the Drive Redirector — creating Drive Redirector Maps and properly loading MAPDRV.COM on both PCs. To set up or modify Drive Redirector Maps, you DO NOT have to be connected, nor do you need to have MAPDRV.COM loaded. However, to actually use remotely mapped drives, the Drive Redirector program, MAPDRV.COM, must be loaded on both NetRemote PCs *before* you can use NetRemote Host and Remote to establish a connection.

Loading MAPDRV.COM

Before establishing a NetRemote connection in which the Remote *or* Host user needs to use Drive Redirection, MAPDRV.COM must be loaded on *both* the Remote PC *and* Host PC, as follows.

IMPORTANT: Because MAPDRV.COM is a DOS memory resident program, you must load it on your PC *before* you start Windows.

1. If you are currently in Windows, *exit* to DOS. DO NOT simply activate DOS from within Windows.
2. Change to your NetRemote directory. For example, enter:


```
C:
CD \NRW
```
3. On the Remote PC:


```
Load the Drive Redirector and then Windows by entering:
MAPDRV
WIN
```

User Tip: To do this in one step, *instead* enter WINNRWR to execute WINNRWR.BAT, which loads MAPDRV and then starts Windows automatically.

```
On the Host PC:
Load the Drive Redirector, HOST.EXE, and then Windows by
entering:
MAPDRV
HOST
WIN
```

User Tips: To do this in one step, *instead* enter WINNRWH to execute WINNRWH.BAT, which loads MAPDRV and HOST.EXE and then starts Windows automatically.

Note: You can modify MAPDRV operation by using the MAPDRV command with different command line switches, e.g. MAPDRV -C loads just the Client code, preventing a connected PC from using your PC's drives as redirected drives. For details, see "MAPDRV.COM Command Line Switches."

If you *always* want MAPDRV loaded, add the MAPDRV command (and the HOST command on a Host PC) to your AUTOEXEC.BAT file.

MAPDRV is now loaded. It remains loaded (even if you leave Windows) until you re-boot or unload it using the -U command line switch (described later). When you connect with another NetRemote PC that has MAPDRV loaded, Drive Redirection will automatically be activated. However, to control how drive letters on your PC are

mapped to the physical drives on the connected PC, you need to define an appropriate Map Set, as described next.

NOTE: Because Drive Redirection is used differently by Remote and Host users, procedures for creating Map Sets and using Drive Redirection also differ. Separate Host and Remote instructions are provided below.

Managing Map Sets on a Remote PC

On a NetRemote Remote PC, a Map Set is stored as part of each Phone Book Entry. To create or change the Map Set for a Phone Book Entry, you use the Drive Redirector Setup window. This window lets you assign (i.e. map) drive letters on your PC to selected physical disk drives on the Host PC to which you will connect (or are currently connected).

When you connect with a Host PC, your Remote software looks in the current Phone Book Entry to see if a Map Set is defined. If so, that Map Set is used to map drive letters on your PC to physical drives on the Host PC. If not, your Remote software creates a default mapping, using the method described next.

Default Drive Mapping Method

NetRemote Remote generates a default redirected drive mapping as follows:

- A. Remote determines the last valid drive *letter* recognized by DOS on your PC (called LASTDRIVE). DOS's default last drive is E:, but you can change this using DOS's "LASTDRIVE=" command in your CONFIG.SYS file (see your DOS manual for details).
- B. Remote determines the last *physical* drive defined on your PC.
- C. Remote maps the first drive letter after the last physical drive on your PC to the Host's C: drive (the Host's A: and B: drives are not mapped). Remote continues to map each additional drive letter on your PC to the each additional physical Host drive until it reaches LASTDRIVE on your PC or the last physical drive on the Host (whichever comes first).

For example, assume "E:" is LASTDRIVE on your PC, and your PC has two floppy drives (A: and B:) and two hard drives (C: and D:). Assume the Host has two floppy drives (A: and B:) and *two* hard drives (C: and D:).

In this case, Remote maps your PC's drive letter E: to the Host's C: drive. The Host's D: drive is not mapped (and thus is unavailable as a "remote access" drive) because Remote "ran out of" valid drive letters on your PC.

Using the Remote Drive Redirector Setup Window

1. In the NetRemote Control Center, select the Phone Book Entry for which you want to define a Drive Redirector Map Set.
2. Choose the Control Center's Drive Redirector button (or select Drive Redirector from the Control Center's Setup menu). The Drive Redirector Setup Window appears, similar to Figure 6-1, showing the current Map Set for the selected Phone Book Entry. If MAPDRV.COM is loaded, its version and capabilities (Client and Server, Server Only, or Client Only) appear at the top.

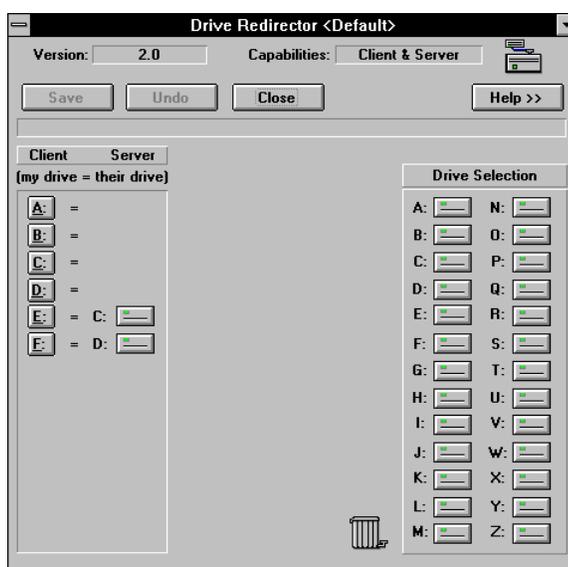


Figure 6-17: Remote Drive Redirector Setup Window

The Client (your PC) column in the panel on the left side of the window lists all drive letters that can be used on your PC. This list goes from A: through the last valid drive letter recognized by DOS for your PC (i.e. LASTDRIVE).

Any drives on the other PC (Server) that should be made available as redirected drives to your PC are listed in the Server column. Each redirected drive appears beside the drive letter assigned to it on your PC. For example, in Figure 6-1, drive letters D:, E:, and F: on your PC (Client) are mapped to the A:, B:, and C: drives, respectively, on the other PC (Server).

The Drive Selection panel on the right side shows all *possible* drive specifiers for a PC (it *does not* reflect the actual drives on any particular PC). You must determine the actual drives that are available on a PC with which you will connect using the current Phone Book Entry.

To Map A Redirected Drive

1. Determine the actual drive letter of the other PC's (Server's) disk drive that you want to use as a redirected drive. In the Drive Selection panel, choose *and hold* on that drive letter symbol.
2. While still holding the mouse button, drag the drive symbol to the Server column in the left side of the window, beside the Client drive letter to which you want to assign the redirected drive.
3. Release the mouse button. The specified drive letter on your PC is now mapped to the selected drive on the other PC as a redirected drive.

To “Un-Map” A Redirected Drive

1. In the Server column on the left side of the window, choose *and hold* on the Server drive letter that you want to “unassign” as a redirected drive.
2. While still holding the mouse button, drag the drive symbol to the trash can symbol near the bottom of the window.
3. Release the mouse button. The selected drive on the other PC is no longer mapped as a redirected drive.

To Change the Mapping of A Redirected Drive

1. In the Server column on the left side of the window, choose *and hold* on the Server drive letter that you want to “reassign” as a redirected drive.
2. While still holding the mouse button, drag the drive symbol beside the Client drive letter to which you want to assign the redirected drive (in the Server column).
3. Release the mouse button. The newly specified drive letter on your PC is now mapped to the selected drive on the other PC as a redirected drive.

To Save Your Map Changes

Choose the Save button at the top of the Window. If you are currently connected and drive redirection is active (i.e. MAPDRV.COM is loaded on both PCs), any map changes take effect immediately.

To Abandon Your Map Changes

Choose the Undo button at the top of the Window. If you are currently connected and drive redirection is activated (i.e. MAPDRV.COM is loaded on both PCs), any map changes you made DO NOT take effect.

Using the Drive Redirector on A Remote PC

To use Drive Redirection, do the following:

IMPORTANT: Because MAPDRV.COM is a DOS memory resident program, you must load it on your PC *before* you run Windows. Therefore, if you are currently in Windows, exit before proceeding.

1. Be sure MAPDRV.COM is loaded on your PC, as described earlier, and then start Windows.
2. Start NetRemote Remote. In the Control Center, select the Phone Book Entry you want to use to make the connection.
3. If you do not want NetRemote to activate its default Map Set, then be sure you have defined a Drive Redirector Map for the selected Phone Book Entry, as described earlier (see “Managing Map Sets on a Remote PC”).
4. Be sure the Host PC you will connect with has loaded MAPDRV.COM as required for their NetRemote version.
5. Establish the NetRemote connection as usual. Redirected Drives should be available (to confirm this, you can open Windows’ File Manager, where you should see the drive letters you assigned to the redirected drives).

NOTE: If the Host PC loaded MAPDRV.COM in Client-only mode, you WILL NOT have access to the redirected drives.

Managing Map Sets on a Host PC

On a NetRemote Host PC, Map Sets are stored in the file MAPDRV.DAT. When you create a new Map Set you give it a name. You use this name to load a particular Map Set.

To create or change a Map Set, you use the Drive Redirector Management windows to assign (i.e. map) drive letters on your PC to physical disk drives on the Remote PC to which you will connect (or are currently connected).

Relating a Host Map Set to a Host Phone Book Entry

When you connect with a Remote PC, your Host software looks at the current Phone Book Entry Name and then looks to see if a Map Set exists with the same Name. If so, that Map Set is used to map drive letters on your PC to physical drives on the Remote PC. If not, your Host software uses the Map Set with the name DEFAULT (if it exists).

IMPORTANT: Phone Book Entry Names and Map Set Names *are* case-sensitive.

Note: If you have Password Checking enabled in your Host Options and your PC answers an incoming call, the Login Name/Password sent by the calling Remote PC is used to locate the Phone Book Entry on your PC that has a matching Login Name/Password. That “matched” Phone Book Entry on your PC then becomes the current Phone Book Entry, and its Name is used to search for a Map Set with the same Name.

Stored (Permanent) Map Sets vs. Current (Temporary) Map Sets

The Map Sets that you create and save using the Drive Redirector Management windows are called Stored Map Sets. These Map Sets are permanent and are stored in the MAPSET.DAT file. When you first make a connection with a Remote PC, one of those stored Map Sets is activated (or a default mapping is generated by the Host software). The Map Set that is then in effect is called the Current Map Set.

Unlike a Stored Map Set, the Current Map Set is temporary; it exists only for the duration of a connection. Once connected, you can use the Drive Redirector Management windows to edit the Current Map Set without having to create or edit a Stored Map Set.

Using the Host Drive Redirector Management Windows

There are two Drive Redirector Management windows - the Drive Redirector Control Window and the Director Mapping Window. To access the Drive Redirector Control Window, choose the Control Center’s Drive Redirector button (or select Drive Redirector from the Control Center’s Setup menu). The Drive Redirector Control Window appears (Figure 6-2), with the most recently opened Stored Map Set in the Map Set field. If MAPDRV.COM is loaded, its version and capabilities (Client and Server, Server Only, or Client Only) appear at the top.

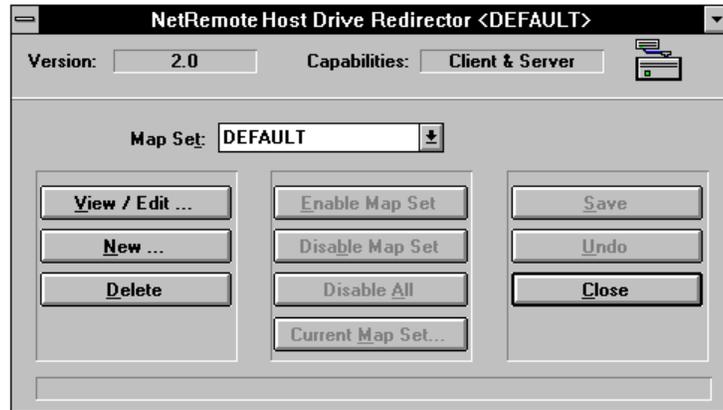


Figure 6-18: Host Drive Redirector Control Window

The leftmost set of buttons is called the *Stored Map Panel*. These buttons are called used to view, edit, create, or delete *Stored Map Sets* (without affecting the *Current Map Set*).

The middle set of buttons is called the *Current Map Panel*. These buttons are used to view or modify the *Current Map Set* (without affecting any *Stored Map Sets*). If you are not connected, all the buttons in this panel are “grayed out” (since a *Current Map Set* exists only during a connection).

General Procedures

Choosing View/Edit or New in the *Stored Map Panel* invokes the Drive Redirector Mapping Window in its *Stored Map Management Mode*. In that mode, you specify or modify the drive mappings for the currently selected *Stored Map Set*. When finished, you return to the Drive Redirector Control Window by either choosing OK (which keeps your Map Set changes *in memory*) or Cancel (which abandons your changes). If you clicked OK, you must then choose Save in the Drive Redirector Control Window to store the revised Map Set in the MAPDRV.DAT file.

CAUTION: The Undo button in the Drive Redirector Control Window removes *all* changes that have been made to MAPDRV.DAT file *since it was opened*. Use this button only if you are sure you want to abandon *all* changes that you have made to MAPDRV.DAT in the current session.

Note: If have just made changes to a currently selected (or new) *Stored Map Set* and clicked OK to return to the Drive Redirector Control Window, but now decide you actually want to abandon those changes, simply *do not* choose Save.

Choosing **Current** in the Current Map Panel invokes the Drive Redirector Mapping Window in its *Current* Map Management Mode. In that mode, you can directly modify the drive mappings for the Current Map Set. When finished, you return to the Drive Redirector Control Window by either choosing **Apply** (which activates the modified Current Map Set) or **Cancel** (which leaves the Current Map Set as it was before you clicked **Current**).

You can also modify the Current Map Set using the **Enable Map Set**, **Disable Map Set**, and **Disable All** buttons. See “Current (Temporary) Map Set Procedures” for details.

Stored (Permanent) Map Set Procedures

To Create a Stored Map Set

1. Choose **New**. The Drive Redirector Mapping Window (Figure 6-3) appears .
2. Enter a Name for the New Map Set.
3. Define mappings as needed (see “Using the Drive Redirector Mapping Window”).
4. To store the new Map Set: Choose **OK** to return to the Drive Redirector Control window, and then choose **Save** to store the new Map Set.

NOTE: *Save does not* apply the new Map Set to the Current Map Set.

To abandon the new Map Set: Choose **Cancel** to return to the Drive Redirector Control window.

To View or Edit a Stored Map Set

1. Select the desired Map Set from the Map Set drop-down list.
2. Choose **View/Edit**. The Drive Redirector Mapping Window (Figure 6-3) appears, showing the selected Stored Map Set .
3. Modify the mappings as desired (see “Using the Drive Redirector Mapping Window”).
4. To store your changes: Choose **OK** to return to the Drive Redirector Control window, and then choose **Save** to store the new Map Set.

NOTE: *Save does not* apply the new Map Set to the Current Map Set.

To abandon your changes: Choose **Cancel** to return to the Drive Redirector Control window.

To Delete a Stored Map Set

1. Select the desired Map Set from the Map Set drop-down list.
2. Choose Delete, and then choose Yes or No in the dialog box that appears.

NOTE: Delete *does not* affect the Current Map Set.

Current (Temporary) Map Set Procedures

To View or Edit the Current Map Set

1. Choose Current Map Set. The Drive Redirector Mapping Window (Figure 6-3) appears, showing the Current Map Set.
2. Modify the mappings as desired (see “Using the Drive Redirector Mapping Window”).
3. Choose Apply to activate any Map Set changes, or choose Cancel to abandon them.

NOTE: Apply *does not* save any changes to a Stored Map Set.

To Merge a Stored Map Set into or Extract a Stored Map Set from the Current Map Set

1. Select the desired Map Set from the Map Set drop-down list.
2. Choose either Enable Map Set or Disable Map Set.

Enable Map Set *merges* the drive mappings in the selected Stored Map Set with the Current Map Set. For example, assume the Current Map Set maps drive letters D: and E: on your PC to Drives A: and C: on the Remote PC, and the selected Stored Map Set maps drive letter E: on your PC to Drive F: on the Remote PC. Selecting Enable Map Set would change the Current Map Set to map drive letters D: and E: on your PC to drives A: and F:, respectively, on the Remote PC.

NOTE: Enable Map Set *does not* change the Current Map Set to the Stored Map Set. To accomplish that, use Disable All first, and then use Enable Map Set.

Disable Map Set *extracts* the drive mappings in the selected Stored Map Set from the Current Map Set. For example, assume the Current Map Set maps drive letters D:, E:, and F: on your PC to Drives A:, B:, and C:, respectively, on the Remote PC, and the selected Stored Map Set maps drive letter E: on your PC to Drive C: on the Remote PC. Selecting Disable Map Set would change the Current Map Set to map drive letters D: and F: on your PC to drives A: and C:, respectively, on the Remote PC.

To Clear the Current Map Set

1. Choose Disable All. This clears all drive mappings in the Current Map Set.

Using the Host Drive Redirector Mapping Window

The Drive Redirector Mapping Window (Figure 6-3) is used to define mappings for both Stored Map Sets and the Current Map Set (however, with a Current Map Set, the OK button becomes an Apply button).

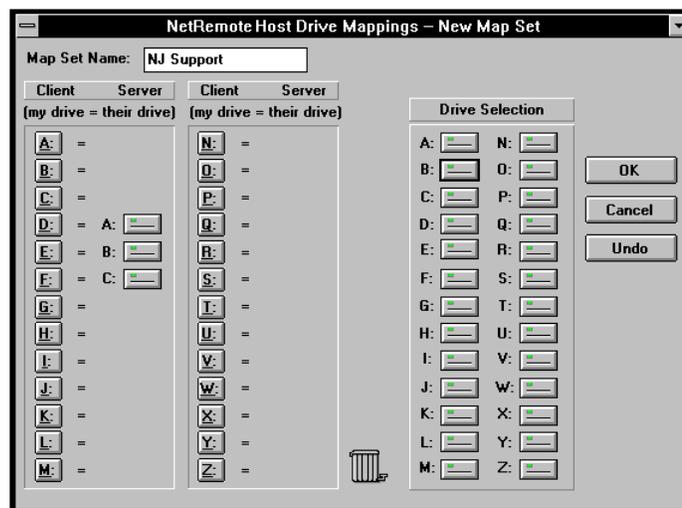


Figure 6-19: Host Drive Redirector Mapping Window

The Client (your PC) column in the panels on the left side of the window lists drive letters to be used on your PC. Any drives on the other PC (Server) that should be available as redirected drives are listed in the Server columns. Each redirected drive appears beside the drive letter assigned to it on your PC. For example, in Figure 6-3, drive letters D:, E:, and F: on your PC (Client) are mapped to the A:, B:, and C: drives, respectively, on the other PC (Server).

The Drive Selection panel on the right side shows all *possible* drive specifiers for a PC (it *does not* reflect the actual drives on any particular PC). You must determine the actual drives available on a PC with which you will connect.

NOTE: If you have Password Checking enabled in your Host Options and your PC will be answering, the Host software will locate the Phone Entry on your PC that has a Login Name/Password matching the Login Name/Password sent by the Remote PC. That “matched” Phone Book Entry on your PC then becomes the current Phone Book Entry, and its Name is used to search for and activate a Map Set with the same Name.

To Map A Redirected Drive

1. Determine the actual drive letter of the other PC’s (Server’s) disk drive that you want to use as a redirected drive. In the Drive Selection panel, choose *and hold* on that drive letter symbol.
2. While still holding the mouse button, drag the drive symbol to the Server column in the left side of the window, beside the Client drive letter to which you want to assign the redirected drive.

NOTE: Do not map any drive letters on your PC past your DOS LASTDRIVE setting.

3. Release the mouse button. The specified drive letter on your PC is now mapped to the selected drive on the other PC as a redirected drive.

To “Un-Map” A Redirected Drive

1. In the Server column on the left side of the window, choose *and hold* on the Server drive letter that you want to “unassign” as a redirected drive.
2. While still holding the mouse button, drag the drive symbol to the trash can symbol near the bottom of the window.
3. Release the mouse button. The selected drive on the other PC is no longer mapped as a redirected drive.

To Change the Mapping of A Redirected Drive

1. In the Server column on the left side of the window, choose *and hold* on the Server drive letter that you want to “reassign” as a redirected drive.
2. While still holding the mouse button, drag the drive symbol beside the Client drive letter to which you want to assign the redirected drive (in the Server column).

3. Release the mouse button. The newly specified drive letter on your PC is now mapped to the selected drive on the other PC as a redirected drive.

To Apply Current Map Set Changes

Choose the Apply button at the top of the Window. If you are currently connected and drive redirection is active (i.e. MAPDRV.COM is loaded on both PCs), any Current Map Set changes take effect immediately.

To Abandon Your Current Map Set Changes

Choose the Undo button at the top of the Window. If you are currently connected and drive redirection is activated (i.e. MAPDRV.COM is loaded on both PCs), any Current Map Set changes you made DO NOT take effect.

Using the Drive Redirector on a Host PC

To use Drive Redirection, do the following:

IMPORTANT: Because MAPDRV.COM is a DOS memory resident program, you must load it on your PC *before* you run Windows. Therefore, if you are currently in Windows, exit before proceeding.

1. Be sure MAPDRV.COM and HOST.EXE are loaded on your PC, as described earlier, and then start Windows.
2. Start the Host Control Center. In the Control Center, select the Phone Book Entry you want to use to make the connection.

NOTE: If you have Password Checking enabled in your Host Options and your PC will be answering, the Login Name/Password sent by the calling Remote PC is used to locate the Phone Book Entry on your PC that has a matching Login Name/Password. That “matched” Phone Book Entry on your PC then becomes the current Phone Book Entry, and its Name is used to search for a Map Set with the same Name.

3. Be sure you have either defined a Drive Redirector Map with the same Name as the current Phone Book entry (or the Entry that will be invoked based on the callers Login Name/Password), or have defined a DEFAULT Map Set.
4. Be sure the Remote PC you will connect with has loaded MAPDRV.COM as required for their NetRemote version.

5. Establish the NetRemote connection as usual. Redirected Drives should be available (to confirm this, you can open Windows' File Manager, where you should see the drive letters you assigned to the redirected drives).

NOTE: If the Remote PC loaded MAPDRV.COM in Client-only mode, you WILL NOT have access to the redirected drives.

6. If needed, modify the Current Map Set as described earlier.

MAPDRV.COM Command Line Switches

You can modify MAPDRV.COM operating characteristics using MAPDRV command line switches (see Table 6-1).

Precede each switch with a '-' or '/'. You can use multiple switches on a single command line. For switches with arguments (e.g. *-Bnnnn*) the argument must immediately follow the switch. See "Switch Examples".

Switch	Description	Comments
<i>The following switches are only valid AT MAPDRV.COM startup.</i>		
-C	Client only	This loads only Client code. No Server code is loaded, so the PC cannot act as a Server to other PCs.
-S	Server only	This loads only Server code. No Client code is loaded, so the PC cannot use redirected drives.
-Bnnnn	Buffer size (<i>nnnn</i> bytes, from 1024 to 32768)	This changes the Server buffer size. Increasing the buffer size can speed access to remote drives by allowing the Server to read from and write to the disk in larger blocks. The default size is 2048 bytes (2K).
-Ixx	Install at Int 2F service <i>xx</i> (in hex)	This changes the default Interrupt 2F function service number (which is C1h). If you use this, you must specify a similar command line option on all utilities that must communicate with the Redirector (e.g. MAPSETUP.EXE and NetRemote,).
-Nc	NO compression	This disables data compression. It also reduces memory use by 15K.

-Np	NO physical drive mapping	By default, any Client drive letter up to the last valid DOS drive can be mapped to a redirected Server drive, <i>even if that drive letter "points to" a local physical drive</i> (which effectively disables that local drive). The -Np switch prevents this, allowing only unused drive letters to be mapped.
-Nu	NO upper memory buffers	This disables the use of upper memory blocks for data compression buffers.
-Tnnn	Time out value (nnn Seconds, from 5-150)	This changes the time out value (default is 30 seconds). On slower connections (e.g.: 1200 baud), you may get 'Not Ready' errors if the Redirector does not receive a block within the specified time period. Increasing this value may solve this problem.

Switch	Description	Comments
<i>The following switches are only valid <u>AFTER</u> MAPDRV.COM startup.</i>		
-M<x:=y :> (see Note)	Map drive x: to Server drive y:	If there is already a NetRemote connection, remaps one or more drives, where Client drive letter x: is assigned to Server drive y:. Use a comma (“,”) to specify multiple mappings (e.g. MAPDRV -MD:=C:,E:=D:).
-P	Parameter settings displays	This displays current drive mappings and operating parameters (e.g. compression status, time out, etc.)
-U	Uninstall Redirector	This option “uninstalls” the Redirector, freeing the memory it was using. Use this only after exiting from Windows.
<i>The following switch is valid <u>ANYTIME</u>.</i>		
-H or ?	Help	Displays switch options.

NOTE: On a Host PC, use the Drive Redirector Management Windows instead of the -M switch. On a Remote PC, the -M and -P switches are used in full-screen or windowed DOS under windows. However, any map changes made with the -M switch will only be active while in that DOS window.

Switch Examples

MAPDRV -C	Load as client only
MAPDRV -S	Load as server only
MAPDRV -T60 -B8192	Load with 60 second timeout & 8K buffer
MAPDRV -U	Unload the Redirector
MAPDRV -P	Display MAPDRV parameters and currently mapped drives

Appendix A *DOS Utilities*

SAFEGUARD - DOS Level Security

SafeGuard provides dial-in security that lets a Host User restrict DOS access on their PC. SafeGuard uses the Directory Access Restriction specification from the Host's Options settings, and therefore SafeGuard's restrictions apply to all dial-in users. See the Directory Access Restriction field in "Host Options Fields" in Chapter 7 for more information.

IMPORTANT: DO NOT prevent access to the NetRemote install directory; doing so will keep NetRemote from operating correctly.

SafeGuard is designed primarily to restrict DOS access only when an active NetRemote connection is in progress. With SafeGuard, a Remote user may not access any drive or directory (from DOS, Windows, or application programs on the Host PC) that are not permitted by the Directory Access specifications.

NOTE: Without SafeGuard, Directory Access Restriction only restricts file and directory access through the NetRemote File Menu.

However, using SafeGuard's "-a" command-line option, you can restrict DOS access always, even when there is no active NetRemote connection. The "-a" option still requires NetRemote to be loaded, and the NetRemote install directory must be permitted as specified in the Directory Access Restriction.

SafeGuard requires about 3.7K of RAM, and cannot be unloaded from memory without re-booting.

IMPORTANT: Load SafeGuard *before* loading NetRemote or Windows.

To load SafeGuard on the Host *for use only when a NetRemote connection is active*, type the following at the DOS prompt:

SAFEGUARD

To load SafeGuard on the Host *for use always*, even when a NetRemote connection is not active, type the following at the DOS prompt:

SAFEGUARD -A

PTMON - DOS Host Port Monitor

PTMON.EXE is an advanced tool that lets you view in real time all data sent and received via a serial port. It is useful for testing modem configurations and modem control strings.

To run the Host Port Monitor, do the following:

1. Be sure the NetRemote Host DEFAULT Phone Book Entry is set up to use the serial port and modem that you want to monitor.
2. If you are in Windows, exit to DOS.
3. Change to the directory where NetRemote is installed, and then, at the DOS prompt, type PTMON and press Enter.

The Port Monitor screen appears. Anything you now type goes directly to the Serial Port defined in the DEFAULT Phone Book Entry (using the baud rate defined in that entry).

Examples of Use

To check the modem connection and setup:

In the Port Monitor, type ATZ. If the modem communication settings (I/O Port, IRQ, etc.) are correct, OK should appear on the screen (this is the modem's response to the ATZ command that you typed).

To test a modem control string:

Manually enter the control string and confirm the proper modem response.

Control Options

Option	Description
<F1> = Clear Screen	Clears the port monitor screen
<F3> = Insert Line Feed Toggle	Insert a line feed when return is pressed
<F7> = Local Echo Toggle	Echo characters locally to the Port Monitor screen
<F9> = Send Break	Sends a break command monitor screen
<Ctrl><Alt> = Pause	Pause scrolling of monitor display <F10> = QuitExits port monitor mode

NOTES

Appendix B Advanced Topics

Introduction

NetRemote can be used in a variety of environments with a range of applications. This appendix describes some ways to adapt NetRemote to varying needs, plus advanced features that, to simplify instructions, were not discussed elsewhere. Topics include:

- **Power Use Features**
 - Host Command Line Options
 - DOS Host Maintenance Utilities
 - Making NRW.EXE Use a Different INI File
 - Connecting with Multiple Hosts
 - Voice/Data Switching
 - Using Multiple Network Adapters in a Single PC
 - Automatic Batch Execution
- **Compatibility Issues**
 - 43/50 Line Text Modes
 - 3270/5250 Emulation Software
- **Other Useful Information**
 - High Memory (Upper Memory Block) HOST Operation
 - Unattended Remote Access

NOTE: The NetRemote Host and Remote software work cooperatively to provide remote control, so to use some NetRemote features, you may need to understand procedures for either the Host PC or Remote PC (or both). This appendix discusses both Host and Remote program topics. It also includes some discussion of Host versions other than NetRemote Host (e.g. NetRemote DOS Host). If a topic applies to only certain programs, the programs are noted.

Host Command Line Options

HOST.EXE's operation can be modified during and after loading by adding *arguments* to the HOST command line. (An *argument* is one or more characters or words added to a command that modify the operation of the program it executes). These arguments, unlike the Host Options, are effective only for the session being started.

The Command Line Structure

The full HOST command line structure is:

HOST *{argument_list}*

where *{argument_list}* is an optional list of command line arguments.

User Tip: For ease of use, you can place the command line, with arguments, in a batch file.

Basic Command Line Options for HOST Connection Control

This section discusses the arguments used to start and end NetRemote connections (which are the most commonly used arguments).

You can't connect with a Remote PC unless you have an appropriate Phone Book Entry. You must have created such an entry (as described earlier in this chapter), and know the name of that entry, *before* making a connection.

Making a Call To make a call use the `-c` argument. The command line structure is:

HOST *-cname*

where *name*, which is optional, is the name of a Phone Book entry. If *name* is not specified, the DEFAULT Phone Book entry is used. For example:

HOST-cCORPMKTG

makes a call using the Phone Book entry named CORPMKTG.

Waiting for a Call To wait for a call you use the `-a` argument. The command line structure is:

HOST *-aname*

where *name*, which is optional, is the name of a Phone Book entry. If *name* is not specified, then the DEFAULT Phone Book entry is used. For example:

HOST -aCORPMKTG

waits for a call using the connection and security settings in the Phone Book entry named CORPMKTG.

NOTE: If you activate the Auto-Answer on Loading Host Option, the command HOST is equivalent to the command HOST -a, i.e. HOST automatically loads the software in Wait for Call mode using the DEFAULT Phone Book settings.

Disconnecting To disconnect a call you use the **-x** argument. If a modem was used, this also resets the modem. The command line structure is:

HOST -x

NOTE: Only one end of a remote control connection needs to issue a disconnect command. For example, if the Remote user disconnects at their end, you don't need to disconnect at your end.

Voice/Data Switching The Voice/Data Switch argument, **-v**, is an advanced option used to switch from voice to data communication modes. The command line structure is:

HOST - v

IMPORTANT: This feature is only usable if you can access a phone that is connected to the modem you will use. See “Voice/Data Switching” later in this Appendix for details.

Directory Options

NetRemote Host can be installed in different environments. This section describes some of the options, including LAN installation.

NetRemote can be installed on any drive and in any directory. Furthermore, the NetRemote data files can be stored in a different directory than the NetRemote install directory.

IMPORTANT: The NetRemote Host data files consist of the following: Phone Book (SESSION.RMP), Options (SESSION.CFG), and Modem configuration files (SESSION.MDM). If you move *any* of the data files to a different directory, then you must move *all* of the data files.

To load HOST.EXE from a directory other than the install directory, or use Host data files in a different directory, you must use the following arguments:

-ed:path where **d**: specifies the drive where NetRemote is installed, and **path** specifies the directory where NetRemote is installed.

-dd: where **d**: specifies the drive where the data files (SESSION.xxx) are installed.

-ppath where *path* specifies the path where the data files (SESSION.xxx) are installed.

For example, the command:

HOST -eF:\COS -dF: -p\COSJONES

loads HOST.EXE from drive F: and directory \COS, and uses the NetRemote data files from F:\COSJONES.

HOST -dC: -p\MYPHONES -cSALESNYC

loads HOST.EXE from the current directory and makes a call (because of the -c argument, explained earlier) using the SALESNYC Phone Book entry from the Phone Book in C:\MYPHONES.

User Tip: For convenience, put the command lines with appropriate directory arguments into batch files. However, note that, if a batch file is in the same directory as the program it executes, then the batch file must have a different root name than the program; e.g. you *can not* have a batch file named HOST.BAT in the same directory as HOST.EXE.

Networks

NetRemote Host can easily be installed on a LAN file server. However, if individualized data files (Phone Books, Options, etc.) are needed, each user will need a separate NetRemote data directory. This will require using the options described above for specifying the disk drive and directory.

A host name and host description can be passed as a command line option as follows:

Host -hn=16 characters (example: Host -hnMark)

Host -hd=27 characters (example: Host -hdMark in development)

NetRemote works with all popular PC LANS including Novell NetWare, Banyan VINES, 3COM and AT&T Starlan.

The -oN Special Operation Options

To modify some operations of the HOST.EXE program at loading, use the -oN argument, where different N values cause different effects, as described in the following table.

NOTE: To combine options, add the N values together, e.g. use -o10 if you want option 2 and 8. Also, in some cases, using options when loading the Host software can affect Remote operation while connected.

N=	-oN Usage
1	if you do NOT want Host to cycle back to Wait for Call mode after every call; normally, if it was originally put into Wait for Call mode, the Host cycles back to Wait for Call after every connection .
2	if you want NetRemote to always take over the printing BIOS vector when the remote printing option is selected, even when not connected. Normally NetRemote takes over the printing BIOS vector for remote printing only when there is an actual connection. Typically, this option is required with network print spool utilities that are loaded after NetRemote.
N=	-oN Usage
8	if you do NOT use a Hercules compatible graphics adapter and NetRemote beeps when you try to hot key to menus, or totally garbles the remote PC screen.
16	if your PC locks up when you attempt loading NetRemote; some PC clones with a particular type of BIOS do not support a clock initialization that NetRemote attempts when loading, this option inhibits this clock initialization.
32	if you have a Hercules compatible video card and the remote screen displays improperly when in Hercules graphic mode.
128	this causes NetRemote to get the current cursor position via BIOS rather than directly via hardware; if, when you remotely execute a particular application, the remote control screen does not get updated, try this option.
256	this causes NetRemote to adjust its timing handling to assume one timer interrupt every 5 milliseconds versus every 55 milliseconds; this assumes an increase of about 12 to 1; you would use this option with an Alloy NTNX system.
512	to toggle the OUT1 bit in the UART Modem Control Register when initializing the port; used by some internal modems as a hardware reset.
1024	if using a mouse driver on HOST and, when connecting, you want the REMOTE mouse driver to be initialized to the HOST mouse driver state; HOST and REMOTE mouse drivers may need to be same version; useful if connecting to a mouse driven application already active on the HOST.

2048	to inhibit a disconnect if a timeout occurs on the “other end OK” message exchange; by default, if NetRemote does not receive an “other end OK” message at least once per minute it will assume a problem and disconnect.
4096	if Host PC is an AT&T 6300 series or compatible and/or the Remote PC, when connected, scrolls improperly and appears to be using a 43-line display mode, use this option on the Host.
8192	if a connected Remote PC scrolls improperly, and changing the Host’s Special Console Driver option has no effect (after restarting the connection), then use this option with the Host application.

The -nN Special Operation Options

The **-nN** options handle some special cases not covered by the **-oN** arguments, where different **N** values cause different effects, as follows:

NOTE: You can add the **N** values together for a combination of options. For example, **-n10** if you want option 2 and 8.

Optio n	Description
N=	-nN Usage
8	suppresses NetRemote use of 16550A UART FIFO buffers (for serial port)
16	use on Host for some applications where the colors on a Remote PC don't match the Host colors, e.g. if remotely running Lotus 1-2-3 in WYSIWYG mode; this option suppresses the sending of Palette Register information from the Host to the Remote

Other Special Operation Options

HOST.EXE supports several other special operation options:

Option	Description
-b	if using a PC3270 style keyboard with over 101 keys
-f	causes use of flow control to stop receive data before any file transfer disk I/O; if you experience transmit or receive errors during file transfers, particularly at speeds over 2400BPS and/or on LANs when doing I/O to the file server, try loading with the “-f” option

-h	causes HOST to swap to its own Program Segment Prefix (PSP) before making any DOS calls; this may resolve problems encountered when the foreground application uses up all available file handles leaving none free for HOST
-nc	suppresses the automatic loading of the Host Control Center and Chat when Windows is started and HOST.EXE is loaded; typically this is done to free up Windows resources
-r	automatically redirects both LPT1 and LPT2 Host printers to corresponding Remote printers
-s	use this option with the Genius 66-line display mode
-w	suppresses ability to Hot Key to Chat Window
-y	causes Host to initiate a login when answering (instead of Remote)
-zX	sends Chat display print to printer other than LPT1, where X=1 for LPT2 and X=2 for LPT3

DOS Host Maintenance Utilities

As a convenience, you can use the following programs to maintain Host setup files from DOS.

This program... lets you maintain this file

OPTIONS	Host Options
PHONE	Host Phone Book Entries
MAPSETUP	Drive Redirector Mappings

To run one of these utility programs, change to the NetRemote directory and, at the DOS prompt, type the program name (Such as PHONE) and press Enter. The programs main screen will appear.

The screens are mostly self-explanatory, but consider the following.

OPTIONS

The Options menu choices correspond to the different panels in the Host Options Setup window that you access from the NetRemote Host Control Panel (see Chapter 7). To select a menu item, use your cursor keys or mouse to highlight the item and then press Enter or the mouse button.

Selecting a menu item displays a list of specific Options for the selected category. To change an Option, press the key that labels the Option, which cycles through the

available values. Alternatively, you can highlight the item and press the space bar or mouse button to cycle through the values. When the Options in the list are set as you want, press F10 to save the changes or Esc to abandon them.

For a description of each Option, see “Host Options Fields “ in Chapter 7.

PHONE

To the right of the Phone Book Menu is a window listing all of your Phone Book Entries. PgUp and PgDn display any additional entries that could not fit in the window.

Delete and Change require you to first highlight the desired Phone Book Entry. To highlight an Entry, use your cursor keys (or mouse). Pressing Tab moves the highlight bar between the menu and Phone Entries list.

To select a menu item (after selecting a Phone Book Entry, if required), use your cursor keys or mouse to highlight the item and then press Enter or the left mouse button.

When the Phone Book fields appear, edit them as needed. Note that the fields are presented in two pages. To switch between pages press PgUp or PgDn. When the Phone Book fields are set as you want, press F10 to save the changes or Esc to abandon them.

For a description of each Phone Book Entry field, see “Managing Host Phone Book Entries“ in Chapter 7.

MAPSETUP

To the right of the Redirector Menu is a window listing all of your currently defined Drive Redirector Map Sets. PgUp and PgDn display any additional entries that could not fit in the window.

Except for the Sort option (which sorts the list of Map Sets), the DOS Redirector Menu options are essentially the same as those in the Windows Host Drive Redirector Control screen (see “Using the Host Drive Redirector Management Windows” in Chapter 6). As with the Windows version, for some functions (such as Change Set) you must select a Map Set from the list before selecting the menu function (see Chapter 6).

If you select Change Set or Add Set, the Drive Mapping screen appears. You define mappings according to the same concepts as the Window version (described in Chapter 6). However, instead of dragging to assign mappings, you use the mouse or cursor keys to move to the appropriate fields and type in the drive letter assignments. When the mappings are set as you want, press F10 to save the changes or Esc to abandon them.

Loading of HOST.EXE Into Upper Memory

On 386 or 486 PCs with a memory manager (DOS 5.0, 386MAX, QEMM, etc.), HOST can conserve memory below 640K by automatically attempting to load all or a portion of itself into upper memory. The upper memory area is an address range in memory just above the 640k of conventional memory.

Making Upper Memory Available to NetRemote

HOST.EXE takes advantage of the upper memory area by loading all or part of itself into Upper Memory Blocks (UMBs). Before HOST can use this area, though, you must make it available to programs by one of two methods below:

- Using utilities provided with MS-DOS 5.0 or later on a 80386 or 80486 PC
- Using a third-party Memory Manager (e.g. 386MAX or QEMM)

These methods are described in detail below.

Using Utilities in MS-DOS 5.0 or Later on 80386 or 80486 PC

This method utilizes utilities included with MS-DOS 5.0 or later on a 80386 or 80486 PC by setting up the CONFIG.SYS file to allow use of the upper memory area.

The following lines must be included in the CONFIG.SYS file:

- A command to load the HIMEM memory manager:

```
device=c:\dos\himem.sys
```

The line is normally installed automatically by the MS-DOS Setup program if your system has extended memory.

- A command that directs MS-DOS to maintain a link between conventional memory (below 640k) and the upper memory area, *either*:

```
dos=umb  
or  
dos=high,umb
```

Either command can be used depending on whether MS-DOS should also load a part of itself into the high memory.

- A command to enable the upper memory area manager

```
device=c:\dos\emm386.exe {noems|ram}
```

This command must include one of the following switches:

Switch Description

noems This allows EMM386 to manage the upper memory area only. Use this switch if you do not need expanded memory. This switch provides the greatest amount of upper memory area.

ram This allows EMM386 to manage the upper memory area and to also simulate expanded memory. If EMM386 is started with this switch, a portion (64k) of the upper memory area is set aside for use as an EMS (expanded memory) page frame.

Optional switches that merit attention include:

x=mmmm-nnnn This prevents EMM386 from using a particular range of segment addresses. This is useful in a situation where a PC adapter uses the upper memory area not detected by EMM386 which will cause a memory conflict.

i=mmmm-nnnn This specifies a range of segment addresses that should be included in the UMB's that were automatically excluded by EMM386.

Using a Third-Party Memory Manager

This method uses a third-party memory manager that conforms to the Extended Memory Specification (XMS), Version 2.00 or greater for MS-DOS. Examples of memory managers that conform to the XMS specification are QUALITAS 386MAX Version 6 and QEMM.

XMS allows DOS programs to make use of additional memory located in Upper Memory Blocks (UMBs). These are blocks of upper memory on 80x86 based machines which are addressed between DOS's 640k limit and the 1Mb address boundary. The number, size, and address of these blocks vary dependent upon the types of hardware adapters installed.

How HOST Loads Itself Into Upper Memory

If you run HOST without command line arguments to control upper memory loading, it automatically tries to use Upper Memory Blocks (UMBs) in the following sequence:

1. Try to load both the HOST program and data portions into UMBs.
2. If that fails, try to load the HOST program portion into UMBs and load the data portion into conventional memory.
3. If that fails, try to load the HOST data portion into UMBs and load the program portion into conventional memory.
4. If that fails, load HOST into conventional memory.

Besides automatic upper memory loading, the following HOST command line arguments can be used for manual control of upper memory loading:

<u>Switch</u>	<u>Description</u>
-ux Memory	Disables automatic loading of NetRemote into Upper
-up Upper Memory	Attempts to load only the program portion of NetRemote into
-ud Upper Memory	Attempts to load only the data portion of NetRemote into

For example, **HOST -up** will load only the program section of HOST into Upper Memory.

Connecting with Multiple Hosts

If you are using NetRemote Remote, you can establish and maintain connections with multiple NetRemote Host PCs at the same time. These can be modem connections, node-to-node connections, or a combination.

Note: Obviously, each additional modem connection requires an additional modem and phone line. However, your single LAN attachment can support multiple node-to-node connections.

To make multiple Host connections, you must start a new instance of the Remote Control Center for each connection. You do this as follows:

1. In the NetRemote Program Group click on the NetRemote for Windows Remote icon to start the Remote Control Center.
2. Establish the connection to the first Host as usual.
3. Switch to Program Manager (if you like, minimize the Control Center).
4. Go again to the NetRemote Program Group and click on the NetRemote Remote icon to start another instance of the Remote Control Center.
5. Establish a connection to the next Host.
6. Repeat Steps 3 through 5 for each additional Host connection.

Starting NRW.EXE Using a Different INI File

If necessary, you can cause NRW.EXE (the Remote Control Center) to start up using a different INI file than NRW.INI. This may be useful if you want to maintain multiple INI files to satisfy different situations (for example, to use different Phone Book files, since the Phone Book File name is specified in the NRW.INI file).

The simplest way to create another INI file is to copy NRW.INI to a different file name (which doesn't need to have an INI extension). For advanced needs, a user program can maintain and invoke INI files as needed. For example, in a Help desk environment, a program could be used to look up a caller's INI file in a "Supported User" database and then automatically launch NRW with that INI file. A program could also be written to automatically update the INI file when relevant changes are made in a supported party's database records.

To start up NRW.EXE so it uses a different INI file, you must use a startup command line in the following form:

```
EXE_path\NRW.EXE INI_path\INI_filename
```

where *EXE_path* is the full path to the NRW.EXE program, *INI_path* is the full path to the desired INI file, and *INI_filename* is the name of the INI file to use. The EXE and INI paths MUST be included. For example:

```
C:\NRW\NRW.EXE C:\NRW\DATA\JJONES.INI
```

Use Windows Program Manager's File_Run function to enter the command line, or modify the NetRemote Remote Program Item Properties using Program Manager's File_Properties (or create a new Program Item using Program Manager's File_New command).

Automatic Batch Execution (Host Only)

NetRemote can run a batch file on the Host automatically upon connection. Specifically, HOST supports a feature that automatically executes a named batch file upon a connect. If password protection is *disabled*, NetRemote looks for the file CONNECTE.BAT; if password protection is *enabled*, NetRemote looks for the BAT file named with the phone book entry for the matched Login ID and Password.

Important: This feature can be only be used if the Host PC is in DOS when the connection occurs. Within Windows, this must be *full-screen* DOS (versus a DOS window).

The requirements for automatic batch file execution are:

- The batch files must be in the same directory as the other NetRemote files; this directory should be part of your PATH command unless the PC will always be in the NetRemote directory when connecting.
- When the connection occurs, NetRemote executes the batch file, if it exists, without “knowing” whether the PC is currently at the DOS prompt; if the PC is not at the DOS prompt, results are unpredictable.
- Only the Alpha or Numeric characters from the phone book name, maximum of 8, are used; for example, if phone book entry name HQ_CENTRAL contains the matched Login ID and Password, then NetRemote will attempt to execute HQCENTRA.BAT.

3270/5250 Terminal Emulation Software

NetRemote works with most terminal emulation packages for remote access to mainframes and minicomputers, as long as the Special Keyboard Handling Option is enabled on the Host. If a Remote user needs to remotely run a 3270 product like DCA IRMA 3270, IDEA Associates 3270, or Attachmate 3270, or a 5250 product like DCA SmartAlec or AST 5250, then the Special Keyboard Handling Option must be set to YES on the Host.

43/50 Line Extended Text Modes

NetRemote supports extended 43-line text mode on EGA monitors and extended 50-line text mode on VGA monitors. The modes are detected automatically, so no special options are needed.

Using Multiple Network Adapters in a Single PC

If your PC has multiple network adapters installed, you need to edit your NRW.INI and NRWH.INI files in order to fully utilize all the adapters with NetRemote. See the README file for details.

Unattended Remote Access

Basic Host Options settings for unattended Remote access to the Host PC are:

Auto Answer on Loading: YES
Unattended Access: YES

With Auto Answer set to YES, you must insure that the Host's DEFAULT Phone Entry has its port parameters set to match the port, baud rate, and modem type to be used. Optionally, the following Host settings can be used:

Re-boot on Remote Hangup: YES - ALWAYS
Notification Pop-Ups: OFF

Voice/Data Switching (Remote Only)

This function is only usable if you can access a phone connected to the modem you will use (it is not available for node-to-node connections). Voice switching is most useful if both the Host and Remote user are using (and have physical access to) modems that share a line with a voice phone. This requires you each use a modem connected to the same line as a telephone. Most modems have a separate jack in the back to plug in your telephone. For those that do not, you can use a Y-connector to plug your telephone and modem into the same wall jack.

Voice Switching can be useful if you *must* go through a "human" switchboard to reach a modem extension.

The Data /Voice Switch option in the Control Center's Connection Menu is "context-sensitive"; its function changes depending on your current connection mode, as follows:

- **If NetRemote is DISCONNECTED:** selecting Data Switch tells NetRemote to immediately connect, without dialing or answering the phone (because you already have a voice connection)
- **If NetRemote is CONNECTED and currently in Data Mode:** selecting Voice Switch changes to voice mode (i.e. Data-to-Voice Switch)
- **If you are CONNECTED, and currently in Voice Mode:** selecting Voice Switch changes to data mode (i.e. Voice-to-Data Switch)

NOTES

Appendix C *Modems and Cables*

Most technical support calls we receive concern modems not being installed properly or port parameters not being specified correctly. Therefore, before you call, please read this section.

Cabling Pin Arrangements

Modem Cable

<u>25 Pin Serial Port</u>		<u>Modem</u>	
XMIT	2	2	XMIT
RCV	3	3	RCV
RTS	4	4	RTS
CTS	5	5	CTS
DSR	6	6	DSR
GND	7	7	GND
DCD	8	8	DCD
DTR	20	20	DTR

9 Pin Serial Port Modem

DCD	1	8	DCD
RCV	2	3	RCV
XMIT	3	2	XMIT
DTR	4	20	DTR
GND	5	7	GND
DSR	6	6	DSR
RTS	7	4	RTS
CTS	8	5	CTS
RI	9	22	RI

Direct Connect (Null Modem) Cable

25 Pin Serial Port 25 Pin Serial Port

XMIT	2	3	RCV
RCV	3	2	XMIT
RTS	4	5	CTS
CTS	5	4	RTS
DSR	6	20	DTR
GND	7	7	GND
DTR	20	6	DSR

9 Pin Serial Port 9 Pin Serial Port

RCV	2	3	XMIT
XMIT	3	2	RCV
DTR	4	6	DSR
GND	5	5	GND
DSR	6	4	DTR
RTS	7	8	CTS
CTS	8	7	RTS

9 Pin Serial Port 25 Pin Serial Port

RCV	2	2	XMIT
XMIT	3	3	RCV
DTR	4	6	DSR
GND	5	7	GND
DSR	6	20	DTR
RTS	7	5	CTS
CTS	8	4	RTS

Modem Selection

If the modem you are using is on the NetRemote modem list, then select it as described in “Comm Setup — Serial Type” in Chapter 4. If the modem you are using is not listed by NetRemote then do the following:

1. If you are using a modem that is Hayes-compatible and doesn't use DIP switches to define DTR (Data Terminal Ready) and DCD (Data Carrier Detect) handling, select Hayes Extended as your modem type.

2. If you are using a modem that is Hayes-compatible and uses DIP switches for DTR and DCD, select Hayes Basic as your modem type and check the switch settings as described next in this chapter.

NOTE: If your modem is not listed and *is not* Hayes-compatible, or you need custom modem settings, use the CUSTOM types (at the end of the Modem list) to define modem strings, or edit the modem strings for other modem types. See “Modem Setup Panel” in Chapter 4 for details.

Modem Switch Settings

NetRemote needs to control and know the status of your modem and phone line. If your modem has switches, they must be set properly. Check the following:

- DTR - Data Terminal Ready - must be controlled by NetRemote and NOT set to always be true or ignored. DTR is used by NetRemote to tell the modem it is ready to connect. If your modem has a switch to force DTR to always be true or for the modem to ignore DTR, it must be disabled.
- DCD - Date Carrier Detect (or CD) - NetRemote uses this to sense complete connections. Modem must be set to recognize the actual line state and NOT force CD to be true or ignored.

Below is a list of some specific modems' switch settings:

U.S. Robotics Courier HST Dual Standard - Switches 3, 5, and 8 down, all others up.

U.S. Robotics Sportster 2400E - Switch 1 and 6 off, all others on.

U.S. Robotics Sportster MNP - All switches up.

U.S. Robotics Sportster 14,400 - Switches 3, 5, and 8 down, all others up.

Microcom AX - Front switches 2 and 8 down, rear switches 6 and 7 down, all others up.

Microcom QX - Front switches 2, 3 and 8 down, rear switches 2, 3, 6, 7 and 8 down, all others up.

Multitech 224E - Bottom switch 1 up. Inside switch 1 down. RTS jumper set to Normal.

Multitech 1432 - Switches 3, 8, 9, 11, and 12 down, all others up.

NOTES

Appendix D Troubleshooting

Introduction

If you encounter problems using NetRemote, this appendix should help you isolate the problem and resolve it. In addition, some special situations can be handled using Host command-line arguments described in Appendix B.

If these efforts do not resolve your problem, please call McAfee's technical support for assistance. See the Customer Support Information at the front of this manual for contact details.

Keyboard Problems

Many technical support questions concern the keyboard or mouse and not having keystrokes or mouse movements on the Remote recognized on the Host. In other words, a Remote user can see what's happening on the Host but cannot control it. Below are some typical problems and solutions.

PROBLEM: When I type on a Remote PC, keystrokes are displayed slowly.

EXPLANATION: When communicating between computers, keystrokes will be slower because of the speed of the modem. With some high-speed modems, keystrokes may appear in bursts. This is due to the modem buffering data as it is received and sending it out in "packets".

PROBLEM: My keyboard does not work. I'm working on the Remote and my keystrokes are ignored.

EXPLANATION: The Host is running a program that has taken control of the keyboard and NetRemote is therefore not seeing the keystrokes that you type. On the Host, activate the **Special Keyboard Handling** Option. Almost all emulation hardware and software products, such as 3270 and 5250 products, require this option.

PROBLEM: Chat mode doesn't seem to work on the Host PC (or pressing **Alt-LeftShift** while in DOS on the Host doesn't invoke Chat mode).

EXPLANATION: Because of DOS limits on mixed display modes, the Host Chat Window does not work (on the Host) if a *DOS* Host application is currently running in graphics mode (vs. text mode).

NOTE: If you are a Remote user working with a Host PC that is using NetRemote version 6.1 or earlier, this limitation also applies to nearly all Windows screens (except full-screen DOS).

The most likely Alt-LeftShift problem is that the Host application currently running (or memory resident) is intercepting these keystrokes and is not “passing them on” to NetRemote. In some cases, you can change the application’s “Hot Key” assignments to resolve this problem.

Modem Problems

If you suspect modem problems, you should review these problems and cures. If you don't find your problem, refer to Appendix C for further information.

PROBLEM: My high-speed (9600 baud or higher) modem doesn't work correctly, but I set the Phone Book **Baud** value to my modem's highest speed.

EXPLANATION: Some high-speed modems (especially if using MNP, V42bis, or other hardware compression) use one baud rate between the PC serial port and modem but deliver a different *effective* baud rate between modems (e.g. modems with a 14,400 baud effective rate *between modems* require a baud rate different than 14,400 *between the PC serial port and the modem*). See your modem's manual to find the recommended baud rate setting for the COM port used by the modem, and use this value in your NetRemote Phone Book Entries.

PROBLEM: When I select **Hang Up**, my line does not hang-up and my modem does not reset.

EXPLANATION: The DTR switch on your modem is set incorrectly. Your modem is ignoring the DTR signal from NetRemote. Check your modem manual to change the DTR switch. If your modem does not have switches then use the **Hayes Extended** modem setting in your Phone Book Entry.

PROBLEM: My modem will not dial.

EXPLANATION: This may be a DTR problem. See the previous explanation.

PROBLEM: When the other computer disconnects, my modem does not disconnect the line.

EXPLANATION: The DCD or CD switch on your modem is set incorrectly. Your modem is assuming that CD is always true and does not recognize that the line has

been disconnected. Check your modem manual to change the DCD or CD switch. If your modem does not have switches, then use the **Hayes Extended** modem selection in your Phone Entry.

PROBLEM: When I try to Call or Wait For Call, NetRemote immediately fails.

EXPLANATION: An immediate failure indicates that NetRemote is not able to make contact with the modem. This is probably due to a port conflict. A port conflict occurs when two or more cards in the computer have the same I/O Port address or when NetRemote is directed to the wrong port.

Many add-on cards and internal modems have switches that are used to define COM port assignments. The COM port can be 1,2,3 or 4 and no two cards can have the same assignment. You should verify that this is the case.

Another possibility is that you have specified the wrong port number in the Phone Entry you are using. Check and make sure the Port number in the Phone Entry matches the port number that the modem is connected to.

PROBLEM: My computer does not answer incoming calls or the other computer does not answer my call.

EXPLANATION: First verify the phone number. Next, verify that each modem is connected properly to its PC and phone line.

To answer a call, NetRemote must be in Wait Dial In mode. If this fails you may have an incorrect port, modem type, or baud rate specified. If using the Call Menu, be sure you highlight the right Phone Entry before selecting Wait For Call. If you set NetRemote to automatically Auto Answer then be sure the DEFAULT Phone Book entry has the correct Port Parameters.

PROBLEM: I call at 9600 Baud , but the connection is made at 2400 Baud.

EXPLANATION: The remote modem may be a 2400 Baud modem or, if the other computer is set for automatic Auto Answer, then its DEFAULT Phone Book Entry may not be set for 9600 Baud.

Problems With Direct Connect

If you are unable to connect using a direct cable then check the following:

- The Phone Book entry used on both PCs must be set for the same baud rate.
- The Phone Book entry used on both PCs must be set for the proper port and use a modem type of either Direct-Connect or Direct-Flow Control (which must be the same on both PCs)

- The cable used must be a null-modem cable as defined in Appendix C.
- The “answering” PC must be in a Wait for Call mode.

IMPORTANT: If NetRemote is set to automatically invoke Wait for Call mode, it uses the DEFAULT Phone Book entry (or the Quick Connect Entry for NetRemote Remote) , which must have the correct port and baud rate, and a modem type of Direct Connect or Direct-Flow Control.

Scrolling And Slow Screen Updates

PROBLEM: Whenever the display on the Host scrolls, the entire screen on the Remote is redrawn or is very slow in updating.

EXPLANATION: NetRemote should scroll the display on the Remote quickly. If this is not occurring, the Host is probably using a console driver like ANSI.SYS. Check the *Host* PC's CONFIG.SYS file for a command line like **device = ANSI.SYS**.

If such a line exists, **and the Host is using DOS 4.01 or earlier**, then, on the Host, activate the Special Console Driver option. If Special Console Driver is activated and the display is slow, try deactivating it. (For DOS 5.0 or later, Special Console Driver should **always** be deactivated).

If this doesn't solve the problem, then use the **-o8192** special Host option: i.e. start the Host program using **HOST -o8192** (if working with a Host not using NetRemote, **HOSTMENU -o8192** is also valid).

Appendix E Post Connect Scripting

Introduction

A CXL Post Connect Script file is a text file that contains commands to provide any required post connect “handshaking”; some special situations may require such “handshaking” *after* a connection is made and *before* NetRemote can begin its login sequence with the called system.

When you use Call to initiate a connection, NetRemote checks to see if a CXL Script file name is defined in the selected Phone Book Entry’s Terminal Options. If a CXL Script file is defined, then after the connection has been made, but before the NetRemote login sequence begins, NetRemote executes the commands contained in that CXL Script file.

While the CXL script executes, a CXL dialog box appears. CXL commands can display messages in this box, or prompt for user input as shown below.



Figure E-20: CXL Dialog Box

Creating CXL Script Files

A CXL script file is a text file that contains a list of CXL commands, comments, or labels. The file can be created with any text editor (e.g. Windows Notepad). Each line in the file contains one command, comment, or label, with each line having a maximum of 64 characters.

A CXL script file can have any valid DOS file name and be located in any directory (as long as you enter the entire path in the CXL Script Phone Book field). However, to ease maintenance, you may want to give all CXL files a .CXL file name extension and store them all in the same directory.

NOTE: To simplify development and testing of CXL script files, NetRemote provides a special CXL Debugging Environment, which is described in detail in the on-line Help.

Command Summary

The CXL commands (and special ON_ESC: label) are listed below. Details on each are provided in the on-line Help.

Command	Description
DISCONNECT	Disconnect call
ENDIF	Terminates true condition for IF statement
EXIT	Terminates CXL script for successful connect
GOTO	Go to label
IF [NOT	Conditional command
KEYIN	Prompt for user input in CXL dialog box
MESSAGE	Display string in message area of CXL dialog box
ON_ESC:	Label branched to automatically if Esc is pressed
PAUSE	Pause for seconds or minutes
SBREAK	Sends line break signal (default duration is 300 ms)
SEND	Outputs characters to remote
WAITFOR	Wait for timeout or character sequence

Comments

Comments can be added to a CXL script file by preceding the comment line with a semicolon, ";". The semicolon must be in the first column of the line.

Labels

Labels are used to mark a line in a CXL script file so it can be branched to with a GOTO statement. A label must appear on a line with no other command, and must be followed with a colon, ":".

Labels are uniquely identified by the first six characters and are case sensitive. Currently, a maximum of 16 labels may be defined in a CXL file.

Variables

CXL supports the use of variables. Variables can be assigned text string values. Currently, a maximum of 16 variables may be defined in a CXL file.

All variables begin with the percent sign character, “%”. The next six characters uniquely define the variable and are case sensitive. Any characters after these six characters are ignored.

NOTES

Appendix F Miscellaneous Reference Information

NetRemote Data Files

NetRemote creates and uses the following data files:

Host and Remote

SESSION.MDM contains defined modem strings.

Remote Only

NRW.INI contains Global Option settings, default Phone Book settings, and control information used by NRW.EXE.
SESSION.LOG contains Billing Log data.
***.FON files** font files used in Remote Control Accessory window.

Host Only

NRWH.INI contains default serial communication settings and control information used by NRWH.EXE.
MAPDRV.DAT contains all Host Drive Redirector Maps.
SESSION.OPT contains all Host Option settings and path information.
SESSION.PHN contains all the Host Phone Entries.

By default, all files are created in the NetRemote install directory. Host files can be moved to and maintained in another directory, but this requires the use of Directory Option command line arguments, which are described in Appendix B. Also, NetRemote Remote can be made to use a different INI file, as described in Appendix B.

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