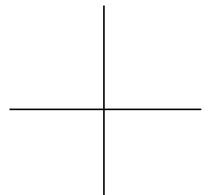




## Using a PC Card in Your NCD Thin Client Device

Part Number 9300674, Revision A  
November, 1998

Network Computing Devices, Inc.  
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Mountain View, California 94043  
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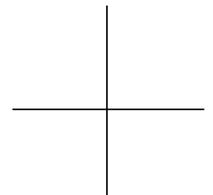
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## Revisions

Revision history of this document:

Part Number	Revision Date	Description
9300674	Rev. A November, 1998	Revised for NCDware 5.1, Replaces part number 9300588
9300588	Rev. A October, 1997	Replaces part number 9300378
9300378	Rev. A December, 1995	Replaces part number 9300365
9300365	Rev. A July, 1995	Replaces part number 9300311
9300311	Rev. A October, 1994	Replaces installation sheet 9300267



**Warnings and Certifications**

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

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. Le présent appareil numérique n' émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

As an ENERGY STAR® Partner, Network Computing Devices, Inc. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

**Declaration of Conformity**

**Manufacturer's Name:** Network Computing Devices, Inc.

**Manufacturer's Address:** 350 N. Bernardo Ave., Mountain View, CA 94043

**Type of Equipment:** X-Terminal

**Model No.:** Xplora and Xplorapro family of bases

**Application of Council Directives:** 89/336/EEC, 73/23/EEC

**Standards to which Conformity is Declared:** EN 55022, EN 50082-1, EN 60950

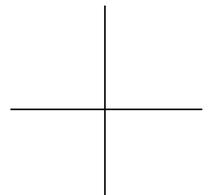
**Importer's Name:** Network Computing Devices (France) SARL

**Importer's Address:** 5, bis rue de Petit-Robinson, 78353 Jouy-en-Josas cedex, France

We hereby declare the equipment specified above conforms to the above Directives and Standards.

---

Jean-Claude Vau, Director, Strategic Sales Manager, NCD (France) SARL, August, 1997



### **Guidelines for Productive and Healthy Use of Your NCD Thin Client Device**

You might have read or heard of articles that linked prolonged viewing of computer video displays with eye fatigue, and prolonged use of computer keyboards and mouse devices with repetitive stress injuries such as carpal tunnel syndrome. One common example is the syndrome known as “tennis elbow.” Although a conclusive direct causal relationship between computer use and these adverse health effects has yet to be scientifically proven, NCD recommends that you read and follow these guidelines in setting up and using your new NCD thin client device (terminal).

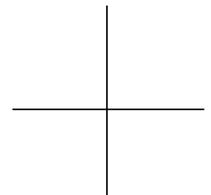
- Set up your terminal in a well lit, glare and shadow-free environment.
- Do not use your terminal in a position you find awkward or unnatural.
- Use a chair that provides good lower back support. Adjust your chair so that your feet rest flat on the floor with your thighs in a horizontal position.
- Place your keyboard on a surface so that your wrists are not tilted, or only slightly tilted, while using the keyboard. Many people find a comfortable keyboard height is at the same level as their elbows.
- If the height of your work surface cannot be adjusted, position the chair at a comfortable height and use a footrest to place your feet on a level surface.
- Place your mouse on a surface that is at the same height as your keyboard. Many people find using the mouse and keyboard within 16 inches (0.4 m) of the body is comfortable.
- Avoid resting your arm on your work surface and merely bending your wrist when using your mouse. Consider using a wrist rest to provide a padded surface for your wrists when working with your mouse.
- Place your display monitor at a comfortable viewing distance. Many people favor a distance of 16 to 28 inches (0.4 to 0.7 m) from their eyes. Position the screen so that you are not looking up or down at it.
- Take breaks to rest your eyes, stretch your muscles, and move around.
- Vary your work patterns so that you alternate working at your terminal with other tasks that use different muscle groups and allow you to focus your eyes at different distances.
- See your physician if you experience persistent muscle ache, joint pain, eye fatigue or other discomfort when using your thin client device.

These are guidelines. What is comfortable for some might not be comfortable for you. You are the only one who can decide if these guidelines are appropriate for your needs.

### **What about electromagnetic emissions from your monitor?**

Many objects we encounter in our everyday lives produce very low frequency (VLF) and extremely low frequency (ELF) electromagnetic emissions. These objects include such common appliances as portable cellular telephones, televisions, toasters, electric blankets, and video display terminals (VDT) such as the monitor that is part of your thin client device. VDTs have been the focus of a growing controversy over the potential health effect of VLF and ELF emissions.

NCD is monitoring this issue and shares the public’s concern over the potential health consequences of exposure to VLF and ELF emissions from VDTs. To date, the research and testing on this subject is inconclusive. Moreover, the link, if any, between VDT emissions and adverse health effects is unproven and the subject of much debate. Stress, postural strain, and poor working conditions are frequently cited

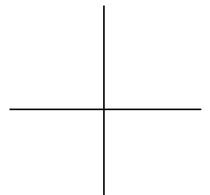


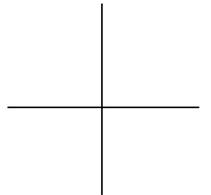
in addition to, or instead of, VDT emissions as posing potential health hazards to frequent users of VDTs.

The prevailing professional opinion to date is that VDTs are safe. NCD products comply with the applicable regulations and standards for electromagnetic radiation set forth by the U.S. Code of Federal Regulations, Underwriters Laboratories, Inc., the Canadian Standards Association, and the German VDE Standard. When and if new or additional standards are adopted, NCD will take appropriate steps to comply with them.

Even though the preponderance of professional opinion is that VDTs are safe, some of our customers have asked us for information on how to reduce their exposure to VLF and ELF emissions. Although NCD does not endorse the following as having health benefits, the easiest and perhaps most economical and effective measures are to turn off your display when not in use, to position your display at arm's length, and to avoid working in areas where you are positioned close to the rear of a VDT (where the emissions are strongest). Also, shields are available from third party vendors that reduce glare and electric emissions.

v





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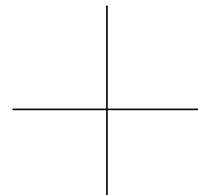
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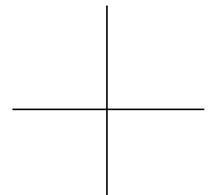
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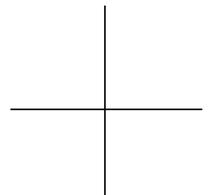


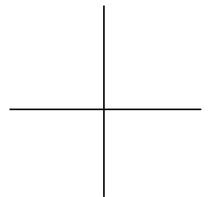
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# 1 Introduction

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## About this Manual

This manual describes how to install and use a PC card (also called a PCMCIA card) on NCD thin client devices (terminals).

The manual contains the following information:

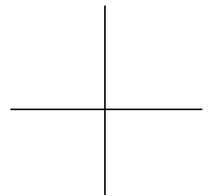
- ❑ Chapter 1 describes this manual and relevant information about other NCD manuals.
- ❑ Chapter 2 provides a general description of PC cards, cautions for handling them, and specifications for cards to be used in NCD terminals.
- ❑ Chapter 3 provides directions for installing PC cards in Explora terminals.
- ❑ Chapter 4 provides directions for installing PC cards in HMX terminals.
- ❑ Chapter 5 explains how to use NCD Quick Start cards. These cards contains all of the files needed to boot terminals from the card.
- ❑ Chapter 6 explains how to access and manage the files stored on a PC card.
- ❑ Chapter 7 provides some troubleshooting hints and explains how to contact NCD Technical Support.

---

## Information in Other Manuals

If you want to create your own bootable PC cards or use PC cards for local storage of files, see the instructions in the *NCDware System Administrator's Guide*. This manual also contains other information about configuring NCD terminals. The *NCDware User's Guide* included with your PC card contains information about using XRemote and other software features.

An order form for the *NCDware System Administrator's Guide* and other NCD manuals is included with your PC card.



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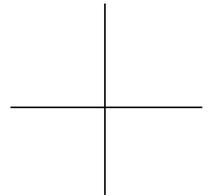
## Who Should Use this Manual

This book is for anyone who owns or is installing a PC card in a terminal. This manual does not include instructions for installing either the terminal or NCDware. See your system installation guides or other NCDware publications for that information.

---

## Comments on this Manual

You can send comments, suggestions, or questions about this manual to the NCD Technical Publications Department by Internet e-mail. Write to [techpubs@ncd.com](mailto:techpubs@ncd.com).



## 2 About Your PC Card

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### Uses for PC Cards in NCD Terminals

You can use a Quick Start PC card for booting the local terminal or remote terminals. This eliminates the necessity for installing NCDware on a network host. You can also use a PC card for local memory to allow users to store their files locally.

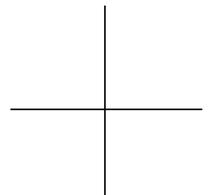
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### Handling PC Cards

Take the following precautions when handling or storing the card:

- Do not drop or bend the card
- Keep the card dry
- Keep the connector area clean and dust free
- Do not touch the connector area on the card
- Do not store the card in high temperatures or high humidity environments

If the PC card appears damaged, contact NCD Technical Support. Instructions for contacting Technical Support can be found in “Contacting Technical Support” on page 7-1.



## Physical Description

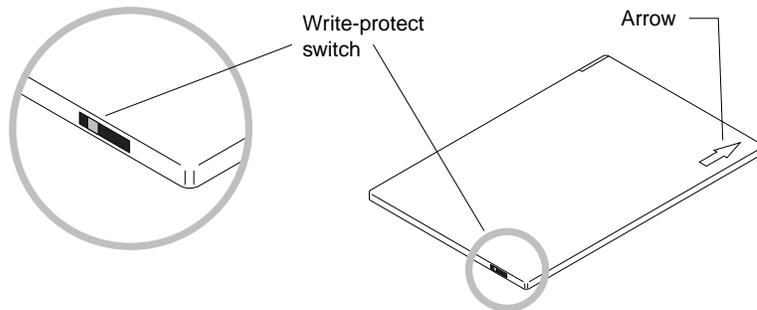
A PC card is a 68-pin device the size of a credit card. Figure 2-1 shows a typical PC card.



**Figure 2-1 Typical PC Card**

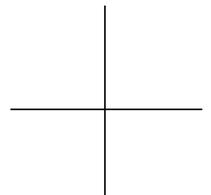
Most PC cards have an arrow on the top face showing the direction for insertion into the PC card socket. Cards are keyed and cannot be installed upside down.

The rear edge of some PC cards has a write-protect/write-enable switch. If the card you're using has a write-protect switch, put the switch in the off position for storing data. If the write-protect switch is on while you are trying to store data, an error message appears on the terminal. Setting the switch to on protects the data in the card from accidental overwrites, but limits you to using the card in the read-only mode. Figure 2-2 shows the arrow and write-protect/write-enable switch.



**Figure 2-2 PC Card's Write-Protect Switch and Arrow**

### 2-2 About Your PC Card



## Specifications

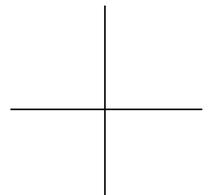
PC cards used in NCD terminals must conform to PC Card Standard Release 2.01 and the following specifications:

Connector:	PC Card Standard Release 2.01, 68-pin
Size:	85.6 mm x 54.0 mm (Type II)
Capacity:	4MB and 12MB PC local memory cards
Explora	Explora, Explora Pro, and Explora 400/450/700 terminals require 5-volt cards.
HMX	HMX terminals accept 12-volt or 5-volt PC cards.

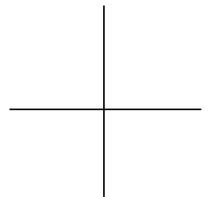


**Do not use a 12-volt PC card in Explora 400/450/700 terminals.  
Explora terminals support only 5-volt PC cards.**

For a list of currently supported cards, call NCD Technical Support at (800) 800-9599 or contact your local representative.



**2-4 About Your PC Card**



## 3 Installing PC Cards in Explora Terminals

This section describes the installation of a PC card in an Explora, Explora Pro, or Explora 400/450/700 terminal.

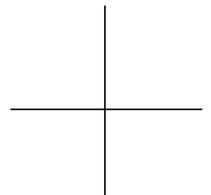


**Do not insert or remove the PC card while the terminal is running.  
Always turn off the terminal before removing or installing PC cards.**

**Do not use a 12-volt PC card on Explora terminals. Only 5-volt PC cards are supported on Explora terminals.**

Explora terminals are available with three different bases. The way you install the PC card depends on the base. The bases are as follows:

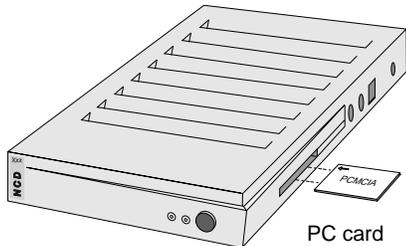
- Explora classic base  
See “Explora Terminals with a Classic Base” on page 3-2.
- Space-saver base  
See “Explora Terminals with a Space-Saver Base” on page 3-3.
- Monitor support base  
See “Explora Terminals with a Monitor Support Base” on page 3-4.



## Explora Terminals with a Classic Base

To install a PC card in an Explora terminal with a classic base:

1. Shut off the terminal.
2. If your PC card has a write-protect switch, set it to off.
3. With the arrow side facing up, slide the card into the PC card's socket until you feel the card make contact with the pins in the socket (Figure 3-1).



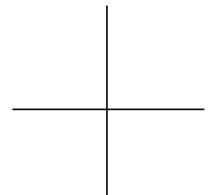
**Figure 3-1 Inserting the PC Card into the Classic Base**

4. Firmly push the card into the socket to seat it.



**Do not force the card into the socket. The card should go straight in.**

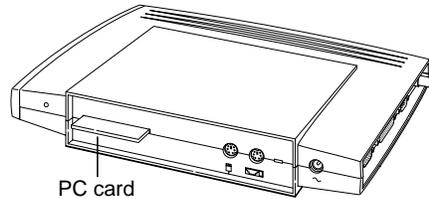
5. Turn on the terminal.



## Explora Terminals with a Space-Saver Base

To install a PC card in an Explora terminal with a space-saver base:

1. Shut off the terminal.
2. If your PC card has a write-protect switch, set it to off.
3. With the terminal's PC card's socket on your left and the arrow side facing up, slide the card into the PC card's socket until you feel the card make contact with the pins in the socket (Figure 3-2).



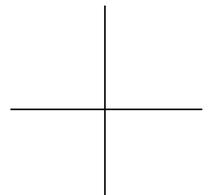
**Figure 3-2 Inserting the PC Card into the Space-Saver Base**

4. Firmly push the card into the socket to seat it.



**Do not force the card into the socket. The card should go straight in.**

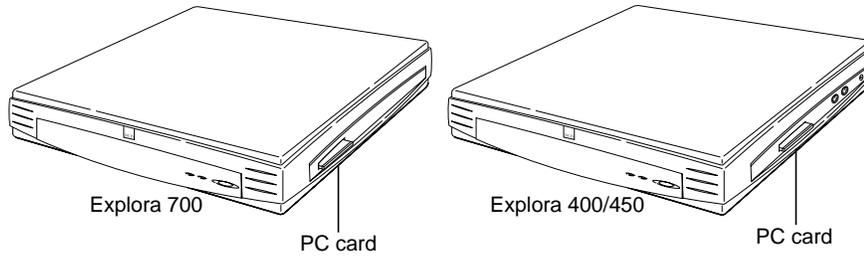
5. Turn on the terminal.



## Explora Terminals with a Monitor Support Base

To install a PC card in an Explora terminal with a monitor support base:

1. Shut off the terminal.
2. If your PC card has a write-protect switch, set it to off.
3. With the arrow side facing up, slide the card into the PC socket until you feel the card make contact with the pins in the socket (Figure 3-3).



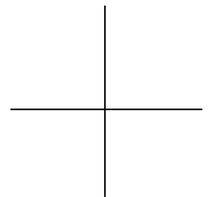
**Figure 3-3 Inserting the PC Card into the Monitor Support Base**

4. Firmly push the card into the socket to seat it.



**Do not force the card into the socket. The card should go straight in.**

5. Turn on the terminal.



## 4 Installing PC Cards in HMX Terminals

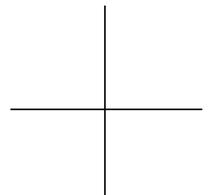
This chapter describes the installation and removal of a PC card in HMX terminals.

HMX terminals have a network interface board (such as an ESP, TRP, or PEP board) that holds the PC card. To install a PC card in a network interface board, you must:

- Remove the board from the terminal
- Install the PC card on the board
- Install the clip that keeps the card in place
- Reinstall the board into the terminal



**When working with a network interface board observe all ESD (electrostatic discharge) precautions. Handle all boards on edges only, avoid touching components or connector pins directly, and transport the circuit boards in ESD-approved containers.**



## Removing the Network Interface Board

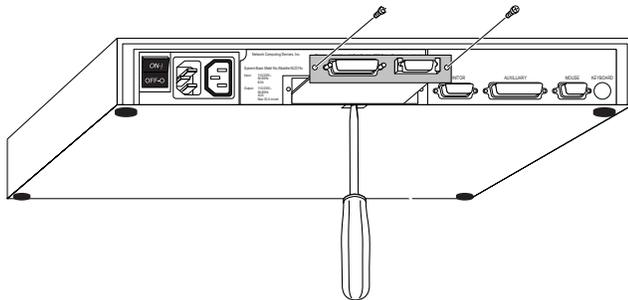
1. Shut down the terminal.
2. Remove the AC power cord from the back of the terminal.



**Never remove the network interface board from the terminal while the AC power cord is plugged into the terminal. Serious damage can occur to the network interface board and/or mother board. Always remove the AC power cord.**

3. Disconnect all cables from the network interface board's rear panel.
4. Remove the two screws holding the network interface board in the base. See the screw location in Figure 4-1.

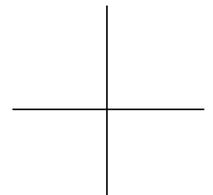
**Note** The back of your terminal might look different from that shown. However, all network interface boards are removed the same way.



**Figure 4-1 Screw Locations for an HMX Terminal**

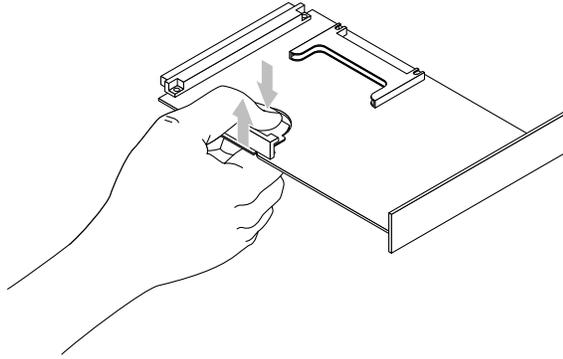
5. Place a flat-blade screwdriver in the slot at the bottom of the base and twist it to loosen the board, as shown above.
6. Slide the board out from the terminal.

### 4-2 Installing PC Cards in HMX Terminals



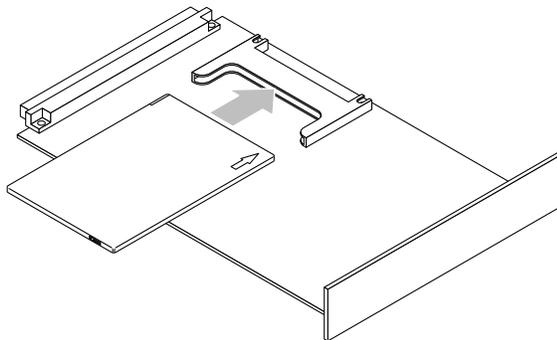
## Installing the PC Card on the Network Interface Board

1. If your PC card has a write-protect switch, set it to off.
2. Remove the PC card retainer clip from the network interface board by pressing up under the edge of the clip and pushing down in the middle of the clip. The clip pops out of the two retaining holes (Figure 4-2).

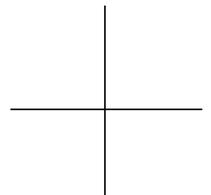


**Figure 4-2 Removing the Retainer Clip**

3. With the arrow side facing up, slide the card into the PC socket in the direction of the arrow until the card contacts the pins in the socket, as shown in Figure 4-3.



**Figure 4-3 Inserting the PC Card**



## Installing the Clip and Board

---

4. Firmly push the card into the socket to seat it.



**Do not force the card into the socket. The card should go straight in.**

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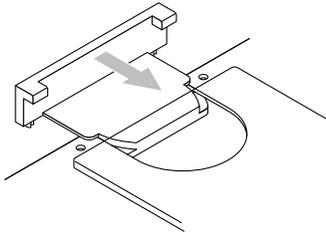
## Installing the Clip and Board



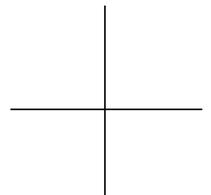
**Do not press directly on the PC card. Doing so can damage the PC card and possibly the network interface board.**

To install the retainer clip that keeps the PC card in place:

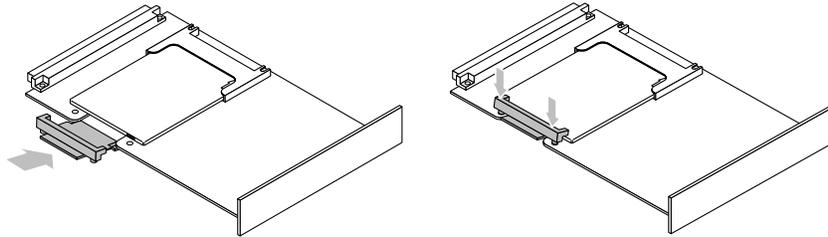
1. Slide the bottom of the retainer clip into the cut-out portion of the network interface board under the PC card (Figure 4-4).



**Figure 4-4 Sliding the Clip into the Network Interface Board**



2. Slightly raise the back end of the clip as you slide the clip on the board, so that the pins on the clip are above the holes on the network interface board(Figure 4-5).

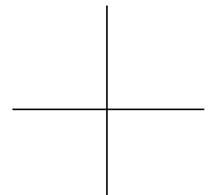


**Figure 4-5 Snapping the Clip into Place**

3. Line up the two pins with the two holes on the top side of the network interface board.
4. Position your hand so that your thumb is on top of the clip and your forefinger is on the bottom of the network interface board.
5. Press down on the top of the clip with your thumb, and up on the network interface board with your forefinger, so that the two pins enter the two holes. The clip snaps into place.

**Note** On a new network interface board, the fit between the pins and the holes might be very tight.

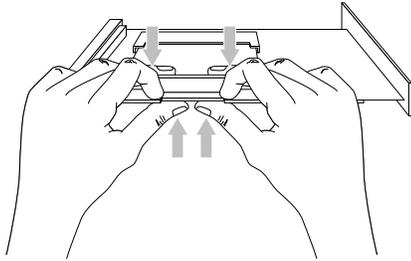
6. Slide the network interface board into the terminal.
7. Replace the two screws that secure the network interface board to the terminal.
8. Reconnect the cables to the network interface board rear panel.
9. Reconnect the AC power cord.
10. Turn the terminal on.



## Removing a PC Card from an HMX Terminal

To remove a PC card from a network interface board:

1. Remove the network interface board from the terminal. See “Removing the Network Interface Board” on page 4-2.
2. Place both thumbs under the edge of the retainer clip and your fingers on the top edge of the network interface board. See Figure 4-6.



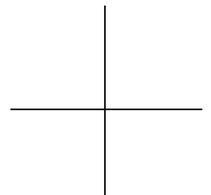
**Figure 4-6 Removing the Retainer Clip**

3. Gently push upward with your thumbs on the clip and downward with your fingers on the network interface board, until the clip starts to come out of the holes.
4. Slowly work the pins on the clip loose until both pins are free of the network interface board.

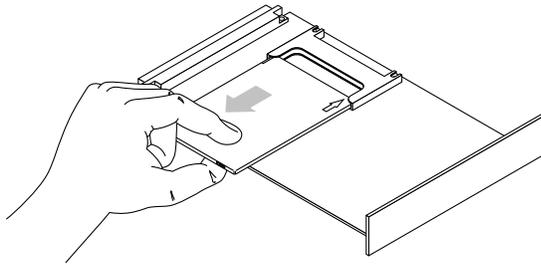


**Once the pins are loose, do not raise the clip too high. Do not bend the PC card in the socket because it can damage the card.**

5. Remove the retainer clip.

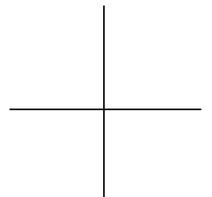


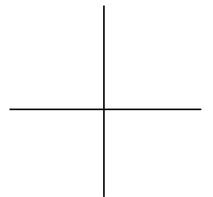
6. Grasp the PC card by placing your thumb underneath the card (in the network interface board cutout) and your forefinger on top of the card, and gently but firmly, pull the card straight out of the socket (Figure 4-7).



**Figure 4-7 Removing the PC Card**

7. Reinstall the network interface board in the terminal.
8. Reinstall all the cables and the power cord.





## 5 Using a Quick Start PC Card

This chapter tells how to configure terminals to use a Quick Start PC card for booting and for running your normal desktop environment.

- ❑ To configure terminals for use on a LAN, see “Using a Quick Start Card on a LAN” on page 5-3.
- ❑ To configure a terminal for remote use, see “Using a Quick Start Card for XRemote” on page 5-13.

---

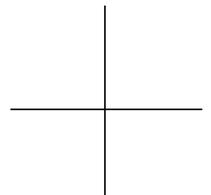
### Overview

A Quick Start card allows you to run your normal desktop environment on an NCD terminal without editing any files on a host computer. The 12 MB card can also be used to boot other NCD terminals on the LAN.

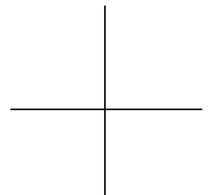
You can also use the card for booting only and load support files, such as fonts, from a network host. For more information, see the *NCDware System Administrator's Guide*.

Quick Start cards provide either 4 MB or 12 MB of local memory and have the following files pre-installed. For a detailed listing of the contents of the cards, see the *NCDware Release Notes*.

- ❑ The basic 5.1 X server and loadable modules. The modules are in a subdirectory named for the terminal type; for example, **modshmx**.
  - The 4 MB card contains a *compressed* X server and X server modules for Explora, Explora Pro, and Explora 400/450 terminals.
  - The 12 MB card comes in three different configurations, each containing an *uncompressed* X server and X server modules for one of the following:
    - Explora, Explora Pro, and Explora 400/450
    - Explora 700
    - HMX
- ❑ Enough fonts and font aliases to run most user interfaces and applications. Fonts and font management files are in the **fonts** directory.



- ❑ Terminal configuration files for the local terminal:
    - A pre-configured file called **ncd\_std**
    - An empty file called **ncd\_std.stp** for saving parameters from the Console's Change Setup Parameters and Change Quick Setup menus
  - ❑ On 12 MB cards, two additional configuration files in the **configs** directory are set up for remote terminals booting from this card:
    - A pre-configured file called **ncd\_std**
    - An empty file called **ncd\_std.stp** for saving parameters from the Console's Change Setup Parameters and Change Quick Setup menus
- These files are loaded by all of the remote terminals when they boot. To create individual files for each terminal, see "Making Permanent Changes to Terminal Configuration" on page 6-8.
- ❑ A color definition file (**rgb.txt**)
  - ❑ Keyboard files for the ICA Client in the **icakbds** directory
  - ❑ ASCII/EBCDIC conversion files for the 3270 terminal emulator in the **3270kbds** directory
  - ❑ The keysym file **XKeysymDB**



## Using a Quick Start Card on a LAN

This section describes how to set up a terminal with a Quick Start PC card for use on a local area network. There are separate instructions for setting up the local terminal (the terminal with the PC card installed) and any remote terminals you want to boot from the local terminal.

Booting remote terminals is only possible from a 12 MB card. This is because the X server image on the 12 MB card is uncompressed, and an uncompressed server is required for booting via NFS (Network File System).

### Host Software Required

On UNIX hosts, you should have a display manager (such as XDM, VUE, WCP, or CDE) running and properly configured on the login host. If a display manager is not running, you can use TELNET to log in.

On Microsoft Windows NT hosts, you need:

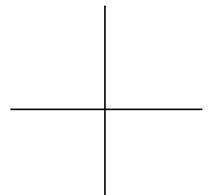
- Citrix WinFrame or MetaFrame if you are using the NCD ICA client to connect to the host, or
- NCD WinCenter if you are not using the ICA Client

### Information Required

Before continuing, gather the following information:

- The IP address of the terminal
- The subnet mask for the terminal (if any)
- The broadcast address for the terminal
- The IP address of the gateway for your network (if any)

You may also need the hostname or IP address of a host you can log in to.



## Setting Up the Local Terminal

**Note** When directed to click on a field in a window, move the pointer to the field and click the left mouse button.

On each terminal, complete the following steps:

1. Make sure the PC card is installed and the terminal is connected to the network.
2. Enter the Boot Monitor.

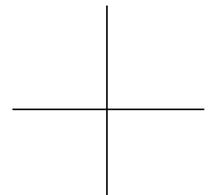
To enter the Boot Monitor, turn on the terminal and watch the messages displayed. When the message about searching for an IP address appears, press the Escape key (or the F11 key on VT220-style or N-108 keyboards). The Boot Monitor prompt (>) appears.

If the terminal does not display the Boot Monitor prompt when you press Escape or F11, you can enter the Boot Monitor after the terminal boots by using the appropriate key combination from Table 5-1.

**Table 5-1 Key Combinations for Entering the Boot Monitor**

Keyboard Type <sup>1</sup>	Key Combination
101- or 102-key (for the Windows 95-compatible, US English, and IBM PS/2 versions, use Caps Lock-Left Alt-Setup)	Ctrl-Left Alt-Setup
VT220-compatible	Ctrl-Compose-F3
108-key	Ctrl-Left Alt-F3
97-key	Left Alt-Caps Lock-Setup
107-key (Sun Type 4-compatible)	Stop-A (L1-A)
122-key (3270-compatible Lexmark)	Alt Rule-Home
123-key (Sun Type 5-compatible)	Stop-A (L1-A)

<sup>1</sup> NCD keyboard models are identified on the bottom of the keyboard.



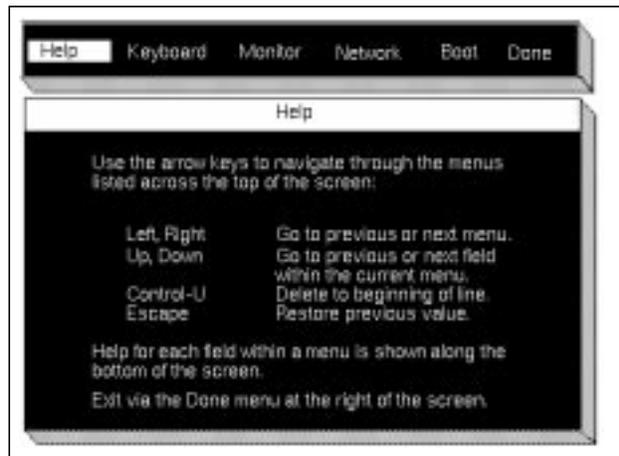
3. At the Boot Monitor prompt (>), type the commands shown in boldface type. <CR> indicates you should press the Return key.

```
> nv <CR>
->> l <CR>
->> s <CR>
Are you sure? y <CR>
->> q <CR>
>
```

4. Display the Boot Monitor Setup menus by pressing the Setup key or typing the following command:

```
> se <CR>
```

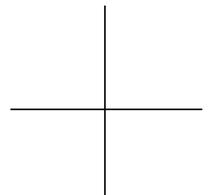
The menu shown in Figure 5-1 appears.



**Figure 5-1 Initial Boot Monitor Setup Menu**

5. Use the right arrow key to highlight **Monitor** in the menu bar. The Resolution and Color Depth windows appear.
  - a. Use the right arrow key and then the down arrow key to select the color depth.
  - b. Use the left arrow key and then the down arrow key to select the resolution and refresh rate.

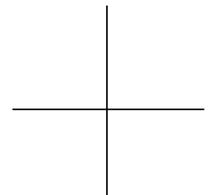
The available resolution and color depth settings are listed in Table 5-2 on the next page.



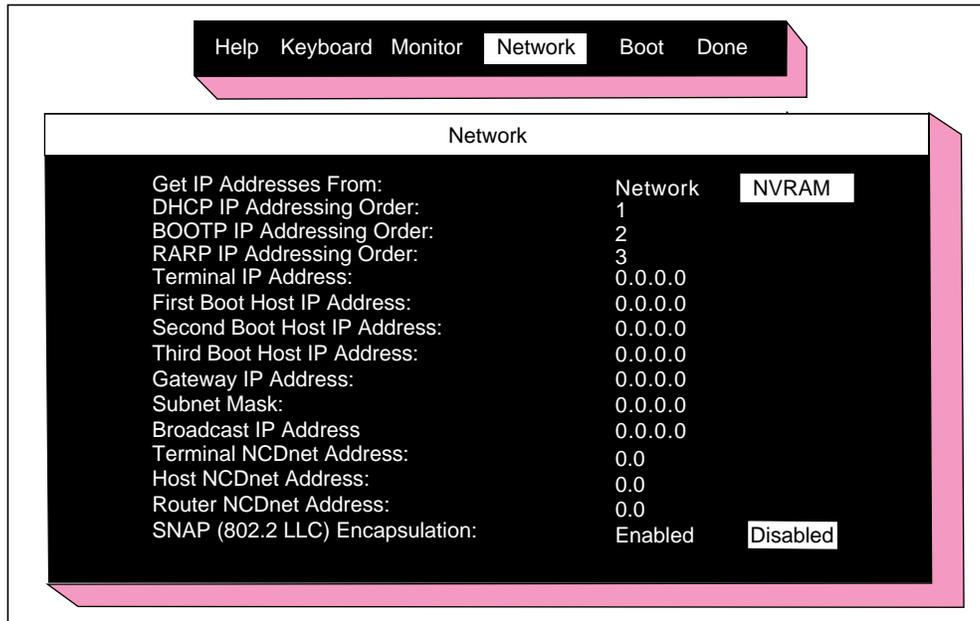
**Table 5-2 Monitor Resolution and Color Depth Settings**

Resolution (pixels)		Color Depth (bits per pixel)	
Automatic Detection (DDC)		This selection appears if a DDC-compatible monitor is attached to the terminal. When you specify the color depth, the resolution is automatically set to the best available.	
640x480	60 Hz	8, 16, or 24	
	72 Hz		
	75 Hz		
	85 Hz		
800x600	60 Hz		
	72 Hz		
	75 Hz		
	85 Hz		
1024x768	60 Hz		8 or 16
	70 Hz		
	75 Hz		
	85 Hz		
1152x900	66 Hz	8 only	
	76 Hz		
1280x1024	60 Hz		
	70 Hz		
	75 Hz		
	85 Hz		
1600x1200 <sup>1</sup>	60 Hz		
	65 Hz		

<sup>1</sup> Not supported on some terminals.

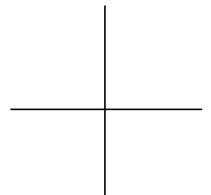


6. Use the right arrow key to highlight the word `Network`. The menu shown in Figure 5-2 appears.



**Figure 5-2 Boot Monitor Setup Network Menu**

- c. Use the down arrow key to highlight `Terminal IP Address`, backspace to erase the current address, and enter the terminal's IP address. Follow the instructions in the help text displayed at the bottom of the screen.
- d. Use the down arrow key to highlight `Gateway IP address`, backspace to erase the current address, and enter the gateway address.
- e. Use the down arrow key to highlight `Subnet Mask` and `Broadcast IP Address`, and change them to the addresses used on your network.



7. Reboot the terminal by using the right arrow key to highlight Done and pressing the Return key (Figure 5-3).

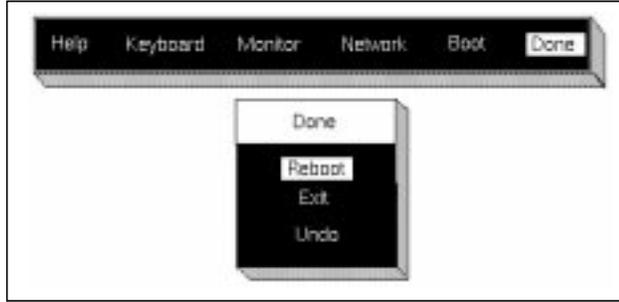


Figure 5-3 The Boot Monitor Done Menu

8. The terminal boots and displays the Console and Login Chooser (Figure 5-4). For information about logging in, see “Logging In” on page 5-10.

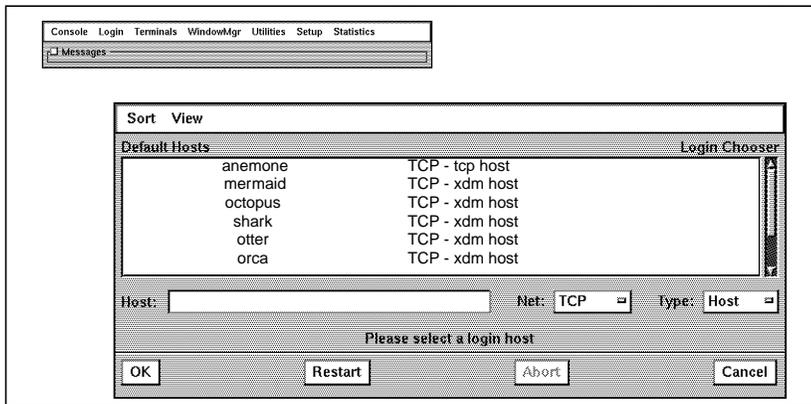
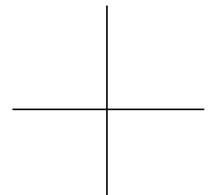


Figure 5-4 The Console and Login Chooser



## Setting Up Remote Terminals

You can boot remote NCD terminals on the LAN from a terminal equipped with a 12 MB Quick Start card.

**Note** When directed to click on a field in a window, move the pointer to the field and click the left mouse button.

On each remote terminal booting from the PC card, use the Boot Monitor to configure network parameters:

1. Enter the Boot Monitor, following the directions in Step 2 on page 5-4.
2. At the Boot Monitor prompt (>), type the commands shown in boldface type. <CR> indicates you should press the Return key.

```
> nv <CR>
->> l <CR>
->> s <CR>
Are you sure? y <CR>
->> q <CR>
>
```

3. Display the Boot Monitor Setup menus by typing the following command:

```
> se
```

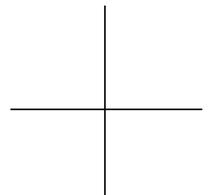
4. Use the right arrow key to highlight `Monitor` in the menu bar. The Resolution and Color Depth submenus appear.
  - a. Use the right arrow key and then the down arrow key to select the color depth.
  - b. Use the left arrow key and then the down arrow key to select the color depth.

The available color depths and resolutions are listed in Table 5-2 on page 5-6.

5. Use the right arrow key to highlight the item `Network` in the menu bar. Set the following items in the Network window.

Follow the instructions in the help text displayed at the bottom of the screen.

- a. Use the left arrow key to set the value of `Get IP Addresses From` to "NVRAM."
- b. Use the down arrow key to highlight `Terminal IP Address`, and backspace to erase the current address and enter the terminal's IP address.



- c. Use the down arrow key to highlight `First Boot Host IP Address`, and backspace to erase the current address. Enter the IP address of the terminal equipped with the PC card.
  - d. Use the down arrow key to highlight `Gateway IP Address`, and backspace to erase the current address. Enter the gateway address for your network.
  - e. Use the down arrow key to highlight `Subnet Mask and Broadcast IP Address` and change them to the addresses for your network.
6. Use the right arrow key to highlight `Done` in the menu bar. Then, use the down arrow key to highlight `Exit` and press Return. The Boot Monitor prompt (`>`) appears.
  7. Each remote terminal must be booted manually the first time. At the Boot Monitor prompt, type the command for manual booting via NFS:  

```
> bn
```

The terminal boots and loads its X server from the terminal with the PC card.
  8. After booting, the terminal displays the Console and Login Chooser.
    - For information on logging in, see the next section.
    - For information on permitting users on remote terminals to make permanent configuration changes, see “Making Permanent Changes to Terminal Configuration” on page 6-8.

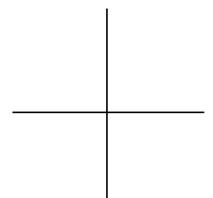
## Logging In

This section contains instructions for logging in to both UNIX hosts and Microsoft Windows NT hosts.

### Logging In To a UNIX Host

To log in to a UNIX host:

1. If your login host is listed in the Login Chooser, click on the host's entry in the Login Chooser.  
If your host is not listed, move the pointer to the Chooser's `Host` field, type the IP address or hostname of the login host.
2. Click `OK`.
3. Log in when the login prompt appears.



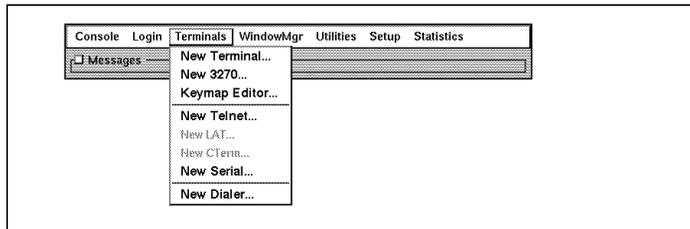
What happens next depends on how whether a display manager is running on the login host.

**If a display manager (such as XDM, VUE, CDE, or WCP) is running on the login host:**

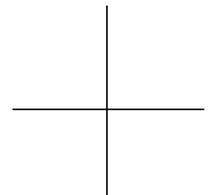
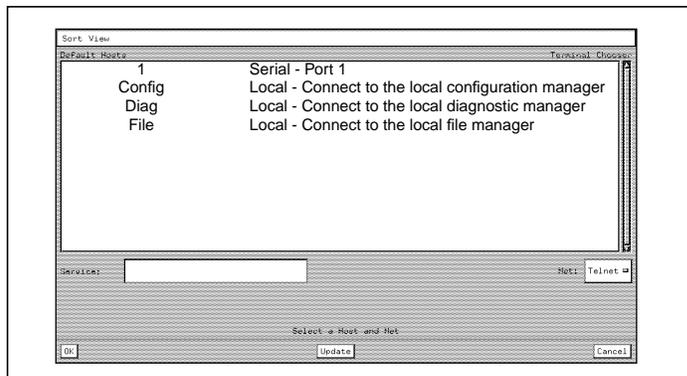
- ❑ If there is a session management file (**Xsession** or **.xsession**), an initial X session is created for you. If not, an *xterm* terminal emulator window is displayed.
- ❑ To run the local window manager, click on the WindowMgr item in the Console menu bar. Then click on the NCD Window Manager menu item.
- ❑ For more information about using your NCD terminal, see the *NCDware User's Guide*.

**If a display manager is not running on the login host:**

1. Click on the Terminals item in the Console menu bar. The following menu appears.



2. Click on the New Terminal menu item. A Terminal Host Chooser window similar to the following appears.



- a. In the `Service:` field type the hostname or IP address of a host to log into via TELNET.
  - b. Click `OK`.
3. A terminal emulator window with a login prompt appears. Log in as usual.
4. To run the local window manager, click on the `WindowMgr` item in the Console menu bar. Then, click on `NCD Window Manager` menu item.
5. For more information about using your NCD terminal, see the *NCDware User's Guide*.

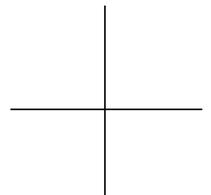
### Logging In To a Windows NT Host

If you are logging into a Windows NT host, use the following procedure:

1. If your login host is listed in the Login Chooser, click on the host in the Login Chooser.
2. If your host is not listed, move the pointer to the Chooser's `Host` field, type the IP address or hostname of the login host.
3. Select `WinCenter` or `ICA` from the drop-down `Protocol` list.
4. Click `OK`.
5. The Windows Logon Information dialog box appears. Log in to the Windows host.

You can use the Windows Access utility to configure connections to Windows NT hosts. After configuring connections, you can use the Windows Access chooser to connect to hosts. To start Windows Access:

1. Click on the `Utilities` item in the Console menu bar.
2. Click on the `Windows Access` menu item.
3. Click on `New`. You can create one or more connections to Windows NT hosts. When you click `OK`, the chooser window appears. To connect to a host, click on the hostname, then click `Connect`.
4. For more information on using Windows Access, see the *NCDware User's Guide*.



## Using a Quick Start Card for XRemote

This section covers using the terminal remotely over a serial line. The software that enables you to use the terminal remotely is called XRemote.

### Host Software Required for Remote Use

You must have NCDware 5.1 XRemote host binaries installed on the login host. If you install NCDware using *ncdinstall*, XRemote binaries are placed on the installation host. For host platforms not supported by *ncdinstall*, check the NCD web site, [www.ncd.com](http://www.ncd.com), for source files.

### Setting Up the Terminal

On each terminal with a Quick Start card installed, complete the following steps:

1. Enter the Boot Monitor:

Turn on the terminal and watch the messages displayed. When the message about searching for an IP address appears, press the Escape key (or the F11 key on VT220-style or N-108 keyboards). The Boot Monitor prompt (>) appears.

If the terminal does not display the Boot Monitor prompt when you press Escape or F11, you can enter the Boot Monitor after the terminal boots by using the appropriate key combination from Table 5-3.

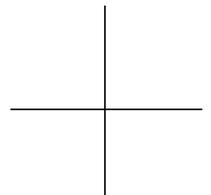


Table 5-3 Boot Monitor Access Key Combinations

Keyboard Type <sup>1</sup>	Key Combination
101- or 102-key (for the Windows 95-compatible, US English, and IBM PS/2 versions, use Caps Lock-Left Alt-Setup)	Ctrl-Left Alt-Setup
VT220-compatible	Ctrl-Compose-F3
108-key	Ctrl-Left Alt-F3
97-key	Left Alt-Caps Lock-Setup
107-key (Sun Type 4-compatible)	Stop-A (L1-A)
122-key (3270-compatible Lexmark)	Alt Rule-Home
123-key (Sun Type 5-compatible)	Stop-A (L1-A)

<sup>1</sup> NCD keyboard models are identified on the bottom of the keyboard.

2. Reset the terminal's NVRAM to its default values by typing the commands shown in boldface type. <CR> indicates you should press the Return key.

```
> nv <CR>
-->> l <CR>
-->> s <CR>
Are you sure? y <CR>
-->> q <CR>
>
```

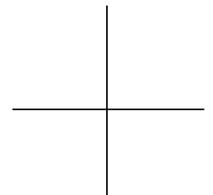
3. Reboot the terminal by typing the following command:

```
> b1 <CR>
```

4. The terminal boots and displays the Console and the Dialer -1 window (Figure 5-5) or the Dialer Port Chooser window.

If the Dialer Port Chooser window is displayed:

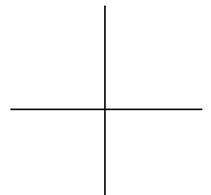
- a. Move the pointer to the serial port that has the serial line connected to it, and press the left mouse button.
- b. Move the pointer to OK and press the left button. A Dialer window appears.





**Figure 5-5 The Dialer-1 Window**

5. At this point, you can start typing modem commands.  
For more information about using XRemote, including the protocols you can use over a modem, see the XRemote chapter in the *NCDware User's Guide*.



## Hints for Specific Hosts

You may notice some differences when running the following desktop environments on an NCD terminal equipped with a QuickStart card.

### HP-VUE

In VUE's Style Manager, the Font window allows you to select different size fonts. These font sizes are not exactly what you see with an HP X Server because NCD aliases HP fonts to MIT fonts. Aliasing substitutes a similar font for a font that may not be available.

### Sun OpenWindows

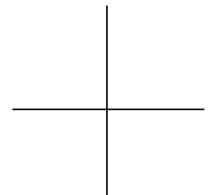
The SunOS `Help` and `Desktop Intro` items in the Workspace menu do not work on an X terminal. This is because these selections do not start X Window System applications. The Solaris versions of these menu items *do* work with an NCD X terminal if the terminal loads the Display PostScript module. Display PostScript requires a license. For more information about X server modules, see the *NCDware System Administrator's Guide*.

### IBM AIX

The `aixterm` application relies on fonts that are not in the public domain. Therefore, `smit -C` or other commands that rely on the line-drawing character set do not draw lines correctly. To solve this problem, add the font server to the terminal's font path. See the AIX man page on `fs(1)` for more information.

### SCO

The `scoterm` application relies on fonts that are not in the public domain. Therefore, `sysadmsh` or other applications that rely on the line-drawing character set do not draw lines correctly. To solve this problem, add the font server to the terminal's font path. See SCO's man page on `fs(1)` for more information.



# 6 Accessing and Managing Files on the PC Card

This chapter describes the local file system on a PC card and explains how to use the Local File Manager to access and manage the files on a card and how to mount the PC card file system on a UNIX host.

---

## The Local File System

The NCDware interface to PC card memory is a local file system specified by using the pathname `/local`. The file system is hierarchical, which permits a normal UNIX directory structure.

To boot a terminal and read such files as configuration files and font files from the PC card, you must change parameters that refer to the locations of the boot files and other files to `/local`. These changes have been made in the configuration files on the Quick Start cards.

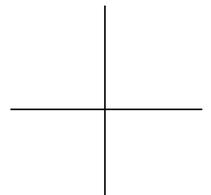
The pathname `/local` must refer only to the local file system on a PC card. You cannot configure the terminal to access files from a file system on another host that has `/local` at the beginning of its pathname until after the terminal has read the configuration file.

---

## Methods of Accessing the Local File System

This chapter explains the following methods of accessing and managing the files on a PC card:

- ❑ Using the Local File Manager to access the PC card on the local terminal or remote terminals. See “Using the Local File Manager” on page 6-2.
- ❑ NFS mounting the local file system and using UNIX file management commands. See “NFS Mount of a Local File System” on page 6-7.
- ❑ Writing parameters to a configuration file from the Setup menus in the Console. See “Making Permanent Changes to Terminal Configuration” on page 6-8.



## Using the Local File Manager

The Local File Manager is a built-in utility for managing a local file system. The Local File Manager includes commands to:

- Format the local file system and verify its structure
- Make and remove directories, change the current working directory, and list directory content recursively
- Copy, delete, list, rename, and compare files
- Display information about the local file system and the current directory

## Starting the Local File Manager

The Local File Manager on the terminal at which you're working (the local terminal) can be used with or without requiring a password. A password *is required* when connecting to a remote terminal's Local File Manager; see "Specifying a Password" on page 6-5.

After you start the Local File Manager, you can use the commands listed in Table 6-1. Press Return after each command.

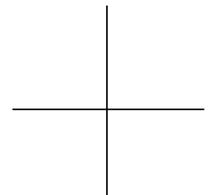
To use the Local File Manager:

1. From the Console, select **Terminals** ⇒ **New Terminal** to start a Terminal Host Chooser.
  - To access files on the local terminal, select **File** from the Default Hosts list.
  - To access files on a remote terminal, type the hostname or IP address of the terminal, followed by the port number, in the **Service** field of the Terminal Host Chooser. The default port number is 5996.
2. Click **OK**.

If a password is required, the Local File Manager password prompt appears:

```
Trying 192.43.116.50 . . .
Connected to ncd7.
Escape character is '^]'.
***NCD X Terminal Local File Manager ***
Password:
```

Type the Local File Manager password and press Return.



3. The Local File Manager starts immediately and a prompt (>) appears:  

```
***NCD X Terminal Local File Manager***  
>
```

If the Local File Manager disconnects instead of displaying a prompt (>), make sure a password has been defined and you are using the correct password. See “Configuring the Local File Manager” on page 6-5.
4. Before copying files, read the following section, “Hints for Copying Files”. To copy files, use the following command:  

```
> copy sourcefile destfile
```
5. To disconnect from the Local File Manager, use the following command:  

```
> quit
```

## Hints for Copying Files

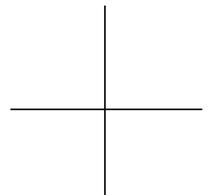
Before copying files, make sure that the terminal’s file service table includes an entry for the remote file system. You can access and configure the file service table through the Console (Setup ⇒ Change Setup Parameters ⇒ File Service ⇒ File Service Table). For more information about the file service table, see the *NCDware System Administrator’s Guide* or the *NCDware Reference Manual*. The *NCDware Reference Manual* can be viewed on NCD’s web site ([www.ncd.com](http://www.ncd.com)).

The PC card must be write-enabled; see Chapter 2 for more information.

Make sure the PC card has been formatted. For information on formatting, see the following Local File Manager commands.

If you are copying files to a PC card and you have recently deleted files from the local file system, use the **reclaim** command first to ensure that all available space is accessible.

Before using TFTP to copy files from the local file system to a remote file system, an empty file with the desired name must exist already on the remote file system and write access must be enabled for the file.



## Local File Manager Commands

Table 6-1 lists the Local File Manager commands.

The Local File Manager does not recognize wildcard characters.

Press Return after typing a Local File Manager command.

**Table 6-1 Local File Manager Commands**

Command	Description
<b>cd</b> <i>directory</i>	Changes the current working directory.
<b>compare</b> <i>file1 file2</i> or <b>cmp</b> <i>file1 file2</i>	Compares the contents of the two files and displays a message stating whether the files are equivalent.
<b>copy</b> <i>sourcefile destfile</i> or <b>cp</b> <i>sourcefile destfile</i>	Copies <i>sourcefile</i> to <i>destfile</i> . Copying files may take a long time and affect the X server's response time while it is taking place.
<b>cwd</b> or <b>pwd</b>	Displays the current working directory.
<b>delete</b> <i>file(s)</i> or <b>del</b> <i>file(s)</i> or <b>remove</b> <i>file(s)</i> or <b>rm</b> <i>file(s)</i> or	Deletes files from the local file system. After using the <b>delete</b> command, use the <b>reclaim</b> command to re-pack previously used file space for subsequent use.
<b>format</b>	Formats <b>/local</b> on the PC card. <i>Formatting destroys all data on the card.</i> Formatting requires about two minutes per megabyte.
<b>help</b>	Displays a list of Local File Manager commands.
<b>info</b> or <b>df</b> [ <i>filesystem</i> ]	Lists the total size (in bytes) of the local file system and the total number of free bytes available.
<b>list</b> or <b>ls</b> or <b>dir</b> [ <b>-R</b> ] [ <i>directory</i> ]	Displays a list of the files stored in the local file system. The <b>-R</b> option lists subdirectory content recursively.
<b>mkdir</b> <i>dir_name</i>	Creates a directory in the local file system.
<b>quit</b>	Disconnects from the Local File Manager.
<b>rename</b> <i>file1 file2</i>	Changes a filename without altering its contents.

### 6-4 Accessing and Managing Files on the PC Card

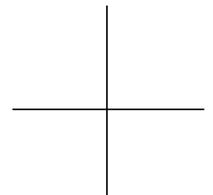


Table 6-1 Local File Manager Commands (Continued)

Command	Description
<code>rmdir</code> <i>directory ...</i>	Deletes directories.
<b>reclaim</b>	Reclaims previously used file system space. This command may take several minutes, so use it after you have finished other operations on the local file system.
<b>verify</b>	Confirms that the local file system structure is valid.

## Configuring the Local File Manager

This section provides information on:

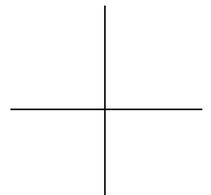
- Specifying a password
- Host-based access control
- TCP and TELNET ports

### Specifying a Password

No password is required for the Local File Manager on the local terminal. If you are using host-based TELNET to run the Local File Manager or accessing a remote terminal from the local terminal, you must define a password for the Local File Manager.

You specify a password through the Console (Setup ⇒ Change Setup Parameters ⇒ Access Control [File Manager section] ⇒ Password). The password takes effect immediately and is saved in NVRAM after you click `Apply` at the bottom of the Setup Parameters window.

Passwords take up space in the limited area of NVRAM reserved for passwords and certain other strings. Instead of setting a separate password for accessing the Local File Manager, you can use the global password, which controls access to the Console, Setup menus, and SNMP (Simple Network Management Protocol) as well as the Local File Manager. You specify a global password through the Console (Setup ⇒ Change Setup Parameters ⇒ Access Control [Unit Password section] ⇒ Password). The password takes effect immediately and is saved in NVRAM after you click `Apply` at the bottom of the Setup Parameters window.

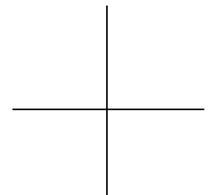


## Configuring Other Local File Manager Characteristics

You can configure the Local File Manager parameters listed in Table 6-2 for the current session or permanently by writing changes to the remote configuration file. The table lists the name of the parameter in the Console Setup menus and the corresponding name as it appears in the remote configuration file. To make sure your configuration changes are permanent, see “Making Permanent Changes to Terminal Configuration” on page 6-8.

**Table 6-2 Local File Manager Characteristics**

<b>Configurable Characteristic</b>	<b>Setup ⇒ Change Setup Parameters ⇒</b>	<b>Remote Configuration Parameter</b>	<b>Default Value</b>
Specifying the hosts permitted access to the Local File Manager  (Requires setting both parameters)	Access Control (File Manager section) ⇒ Enable File Manager Access Control	<b>file-manager-access-control-enabled</b>	<b>disabled</b>
	Access Control (File Manager section) ⇒ Enable File Manager Access Control List	<b>file-manager-access-control-list</b>	none
Specifying the ports used for Local File Manager access	File Manager ⇒ TCP Port Number	<b>file-manager-tcp-port</b>	<b>5976</b>
	File Manager ⇒ Telnet Port Number	<b>file-manager-telnet-port</b>	<b>5996</b>



---

## NFS Mount of a Local File System

You can mount a terminal's local file system on a UNIX host and access the local file system via NFS. After mounting the file system and configuring the terminal, you can use standard UNIX commands (such as *cp*, *mv*, *rm*, *mkdir*, *rmdir*) to access the local file system.

You may need to reclaim space on the card periodically. This can be done with the Local File Manager; see "Hints for Copying Files" on page 6-3.

To make sure that terminal configuration changes in the following procedure are permanent, see the directions in "Making Permanent Changes to Terminal Configuration" on page 6-8.

To mount and configure access to a terminal's local file system:

1. Make sure that Setup ⇒ Change Setup Parameters ⇒ File Service ⇒ Enable NFS Server is enabled. This starts the NFS server daemon on the terminal after the terminal is rebooted.

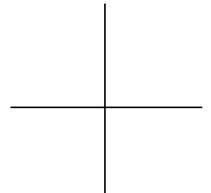
When saved in the remote configuration file, this parameter's name is **file-enable-nfs-server**.

2. Mount the local file system on the UNIX host using the terminal's hostname and `/local` to specify the local file system. For example:

```
# mount ncd325:/local /u/ncd325
```

If the UNIX host is one of the following, note the recommended changes to the default *mount* command:

- On AIX hosts, use **-o soft, timeo=30, retrans=10, and wsize=2048**.
  - On Solaris 2.3 or 2.4 or HP-UX hosts, use **-o soft, retrans=10, and wsize=2048**.
  - On SunOS hosts, use **-o soft and retrans=10**.
3. By default, all hosts can access the local file system and all hosts have read/write access. Note, however, that in the configuration files on the 12 MB Quick Start cards, the default access policy is set to read-only.



You can specify both the hosts that have access and the default access policy:

- To change the default policy for all access to the local file system via NFS, select the desired policy from the drop-down list in Setup ⇒ Change Setup Parameters ⇒ Access Control (NFS Section) ⇒ NFS Server Access Control Default.

When saved in the remote configuration file, this parameter's name is **file-nfs-access-control-default**.

- To specify the hosts that can access the local file system, add them to Setup ⇒ Change Setup Parameters ⇒ Access Control (NFS Section) ⇒ NFS Server Access Control List. Specify the file system (*/local*), the name or IP address of each host, and select the policy from the drop-down list.

When saved in the remote configuration file, this parameter's name is **file-nfs-access-control-list**.

---

## Making Permanent Changes to Terminal Configuration

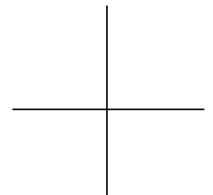
Some configuration parameters (those essential for booting) are saved to the terminal's NVRAM (non-volatile RAM) and some can only be made permanent by saving them in the terminal's remote configuration file. Parameters not saved to NVRAM or the remote configuration file revert to their default values if the terminal is rebooted.

To save configuration data to the remote configuration file on the PC card, the card must be write enabled. See Chapter 2 for information about the write-enable switch on some cards.

### Permanent Configuration Changes on the Local Terminal

To write changes from the Setup menus to the local terminal's remote configuration file on the PC card and to NVRAM:

1. Make your configuration changes in the Console (Setup ⇒ Change Setup Parameters).
2. Make sure that the `Auto Save File` field at the bottom of the Setup Parameters window is selected.



3. Click `Apply` at the bottom of the Setup Parameters window.  
The parameters that are saved in NVRAM are saved both to NVRAM and to the remote configuration file. The parameters not saved in NVRAM are saved to the remote configuration file only.

### Permanent Configuration Changes on Remote Terminals

By default, all of the remote terminals load the `configs/ncd_std` file when they boot. If you want to individually configure the remote terminals that boot from the local terminal's PC card:

1. Create a configuration file for each terminal.
2. If desired, create a `.stp` file for each remote terminal so that users can save their own configuration settings from the Setup menus.
3. Change the access policy for the PC card to read/write. See Step 3 on page 6-7.
4. If desired, configure each remote terminal and write the settings to its individual remote configuration file.

The following subsections explain these procedures in detail.

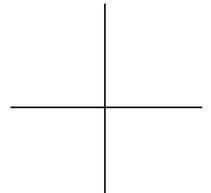
For more information about configuration file loading and file names, see the *NCDware Reference Manual*.

#### On the Local (Boot Host) Terminal

To create an individual remote configuration file for each terminal and make it writable by the user:

1. Using the Local File Manager, make a copy of the general-purpose `ncd_std` file in the `configs` directory for each remote terminal. The name of the configuration file for a given terminal is the terminal's IP address in decimal-dot notation. For example:  

```
> cd configs  
> cp ncd_std 192.40.105.3
```
2. In the Setup menus (Setup ⇒ Change Setup Parameters ⇒ Access Control [NFS Section]) set NFS Server Access Control Default to Read-Write.
3. Make sure the `Auto Save File` field at the bottom of the Setup Parameters window is enabled.
4. Click `Apply` at the bottom of the Setup Parameters window to save the change to the local terminal's configuration file.

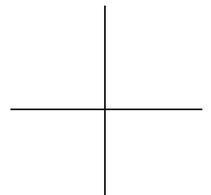


### On Remote Terminals

To configure each remote terminal and make sure it loads its individual configuration file:

1. In the Setup menus (Setup ⇒ Change Setup Parameters ⇒ Configuration), enable Use Decimal IP Address Notation as Filename.
2. To customize a terminal's configuration file:
  - a. Change the desired settings in Change Setup Parameters.
  - b. Enter the pathname of the terminal's configuration file in Setup ⇒ Change Setup Parameters ⇒ Configuration ⇒ Auto Save Filename.
  - c. Make sure the `Auto Save File` field at the bottom of the Setup Parameters window is enabled.
  - d. Click `Apply` at the bottom of the Setup Parameters window to save the changes to the terminal's configuration file.

When you reboot the remote terminal, it will load its own individual configuration file from the boot host's PC card.



# 7 Troubleshooting

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## If Applications Are Not Using the Normal Fonts

Third-party applications and applications running in highly customized user environments might not find all the fonts necessary to provide the desired appearance. Adding the appropriate fonts or a font server to the terminal's font path should solve this problem. For more information on how to add fonts, see your UNIX host's man pages for *fs(1)* and *xset(1)*.

---

## Is the Problem in Hardware or Software?

One of the best ways of tracking down problems to either hardware or software is to swap components among compatible terminals. Swapping components lets you determine which, if any, component is faulty. If the hardware is good, the problem is in the software.

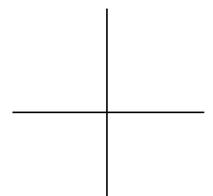
For example, if you have a PC card problem with an HMXpro24, the network interface board could be faulty. Turn off the terminal, remove the board, and install a board from another HMXpro24. If the PC card now works, you know that the problem is with the first board or its PC card and not with software.

---

## Contacting Technical Support

If you encounter difficulties, you can send e-mail or a fax to NCD Technical Support, contact them by phone, or contact them through NCD's web site.

For information about services available from NCD Technical Support, contact your NCD representative or send e-mail to [info@ncd.com](mailto:info@ncd.com).



## Sending E-Mail or Faxes to Technical Support

NCD Technical Support uses an automated system for e-mail. Send e-mail to the Internet address **support@ncd.com**, or send a fax to (503) 641-2959. To ensure that your e-mail is answered quickly, please provide as much as possible of the information listed under “Information to Provide” below.

## Using the Web

To submit a request through NCD Web Services, go to **http://www.ncd.com** and select Service and Support.

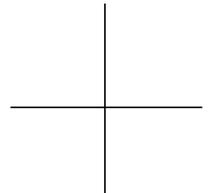
## Phoning Technical Support

From the U.S. and Canada, you can phone (800) 800-9599 and ask for Technical Support. International customers can call (503) 641-2200. Be prepared to provide as much as possible of the information listed under “Information to Provide”.

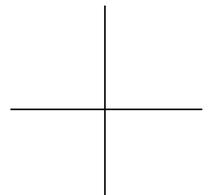
## Information to Provide

Regardless of the method you use to report the problem to NCD, you must have the following information ready:

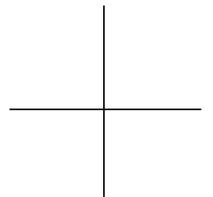
- Your name and title
- Company or organization
- Phone number
- FAX number
- E-mail address
- Billing address
- Shipping address
- For each hardware item:
  - Serial number
  - Description of the problem
  - Type of warranty (Standard, Express, Extended, Express Exchange, Out-of-Warranty)
- For a software problem:
  - Problem type: question, enhancement, bug, crash, or other
  - Type of host and its OS release



- Window manager
- Boot Method: TFTP, NFS, PROM, PC card, or MOP
- Model of NCD terminal
- Amount of installed memory
- NCDware version
- NCDware Boot Monitor version
- Detailed problem description
- If the problem involves a third-party application, the name of the application and which version you are running



7-4 Troubleshooting



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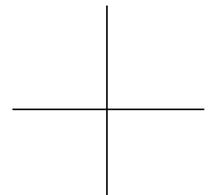
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