Quick-Starting Routers and BNX Platforms

Router Software Version 11.0
Site Manager Software Version 5.0

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Bay Networks

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About This Guide

If you are responsible for activating a Bay Networks™ router or BNX® platform on your IP network, this guide can help you complete the Quick-Start installation procedure to

- Configure the initial IP network interface
- Install Site Manager on your workstation or PC

  You use Site Manager to remotely configure and manage routers and BNX platforms over the network.
- Use Site Manager to create a pilot configuration

When you finish the procedure, the router or BNX platform will actively route IP traffic on your network.

Note: Use this guide for first-time installations. For upgrades, use only those sections of this guide that are referred to in the appropriate upgrade guide:

- *Upgrading Routers from Version 7-10.xx to Version 11.0*
- *BNX 6.2 Release Notes*

Audience

Written for system and network managers, this guide describes how to initially configure your Bay Networks router or BNX platform on the IP network and install Site Manager on your hardware platform. This guide does not apply to AN™ routers. It covers local Quick-Start procedures for the ASN™ router. For ASN network booting information, refer to *Connecting ASN Routers and BNX Platforms to a Network*.

Before You Begin

Before using this guide, you must install the router. Refer to the installation manual that came with your router for instructions. Also, review the Read Me First and Release Notes documents for changes to the Quick Start instructions.

Conventions

angle brackets (< >)	Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. Example: if command syntax is **ping** *<ip_address>*, you enter **ping 192.32.10.12**
bold text	Indicates text that you need to enter, command names, and buttons in menu paths. Example: Enter **wfsm &**
	Example: Use the **dinfo** command.
	Example: ATM DXI > Interfaces > **PVCs** identifies the PVCs button in the window that appears when you select the Interfaces option from the ATM DXI menu.
brackets ([ ])	Indicate optional elements. You can choose none, one, or all of the options.
ellipsis points	Horizontal (. . .) and vertical (⋮) ellipsis points indicate omitted information.
italic text	Indicates variable values in command syntax descriptions, new terms, file and directory names, and book titles.
quotation marks (“ ”)	Indicate the title of a chapter or section within a book.
`screen text`	Indicates data that appears on the screen. Example: `Set Bay Networks Trap Monitor Filters`
separator (>)	Separates menu and option names in instructions and internal pin-to-pin wire connections. Example: Protocols > AppleTalk identifies the AppleTalk option in the Protocols menu.
	Example: Pin 7 > 19 > 20

vertical line (|)	Indicates that you enter only one of the parts of the command. The vertical line separates choices. Do not type the vertical line when entering the command. Example: If the command syntax is **show at routes | nets**, you enter either **show at routes** or **show at nets**, but not both.

Acronyms

AFN	Access Feeder Node
ALN	Access Link Node
ASN	Access Stack Node
BCN	Backbone Connector Node
BLN	Backbone Link Node
BOOTP	Bootstrap Protocol
CN	Concentrator Node
FTP	File Transfer Protocol
FDDI	Fiber Distributed Data Interface
LN	Link Node
NIC	network interface card
NVFS	Non-Volatile File System
OSI	Open Systems Interconnection
QENET	Quad Ethernet Link Module
RIP	Routing Information Protocol
RISC	Reduced Instruction Set Chip
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TFTP	Trivial File Transfer Protocol

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Tokyo, Japan	(81) 3-5402-0180	(81) 3-5402-0173

Chapter 1
Overview of Quick-Start

This manual describes the Quick-Start procedure to locally boot your router or BNX platform and initially configure it on the IP network. To complete the Quick-Start procedure, you follow these steps:

1. **Complete Quick-Start prerequisites.**

   Complete the following prerequisites before you begin the Quick-Start procedure.

   a. **Review whether Quick-Start procedures apply to your product.**

      Table 1-1 shows the Bay Networks routers with Quick-Start procedures covered in this manual. This manual does not apply to AN routers. AN routers have similar Local Boot procedures that are covered in their administrative manuals.

Table 1-1. Routers with Quick-Start Procedures

Bay Networks Router or BNX Platform
Access Feeder Node (AFN®)
Access Link Node (ALN)
Access Stack Node (ASN)
Backbone Concentrator Node (BCN®)
Backbone Link Node (BLN®)
Concentrator Node (CN®)
Link Node (LN®)

b. Review Release Notes.

Review the release notes in this version's documentation for new information about installation and configuration.

c. Install the router or BNX platform.

Install the router or BNX platform at your site. Refer to the installation manual that came with the router.

d. Understand ASN terminology.

To Quick-Start an ASN, you need to understand some ASN terminology. Certain terms have different meanings for the ASN than for other Bay Networks routers or BNX platforms.

Each ASN unit is a separate node. You can connect as many as 4 nodes together into an ASN stack. Site Manager treats the combined nodes in an ASN stack as a single router.

The networking hardware modules in an ASN are called net modules. (In other Bay Networks routers and BNX platforms, these are link modules.) In an ASN, the term slot refers to the main processor module in each ASN node. (For Bay Networks routers and BNX platforms other than the ASN, the slot is where the link module resides.) Each ASN slot contains one to four net modules.

When you configure the ASN (or ASN stack), you identify the location of a net module by specifying:

- The *slot* that contains the net module and
- The *module position* where the net module resides

The ASN slot ID identifies the slot number. You set the slot ID using the slot ID dial on the rear panel of each ASN node. The modules positions are numbered 1 through 4 in each slot. For more information, refer to *Installing and Maintaining ASN Routers and BNX Platforms*.

2. Fill out the Network Information Worksheet.

Complete the Network Information Worksheet (Chapter 2) to assemble the information you need to Quick-Start the router or BNX platform (for example, the IP address and subnet mask of the router's initial IP network interface).

3. **Connect a PC or ASCII console to the router.**

   Connect a PC or a terminal to the router's or BNX platform's console port to view the Technician Interface (Chapter 3).

4. **Connect to the IP network.**

   Connect a cable between the router or BNX platform and the IP network (Chapter 4).

5. **Establish a Technician Interface session.**

   Use the Technician Interface, Bay Network's command-line interface, to enter commands to run the Quick-Start installation script on the router (Chapter 5).

6. **Run the Quick-Start installation script.**

   Run Quick-Start to establish an initial IP network interface between the router or BNX platform and the workstation from which you'll manage the router (Chapter 6).

7. **Install Site Manager.**

   Install the Bay Networks Site Manager program on a PC or workstation located on the IP network. Site Manager uses Simple Network Management Protocol (SNMP) and Trivial File Transfer Protocol (TFTP) to communicate with the router or BNX platform so you can remotely configure and manage the router.

   Follow the instructions in the appropriate chapter to install the Site Manager software on a

   -- PC (Chapter 7)

   -- SPARCstation (Chapter 8)

   -- RS/6000 (Chapter 9)

   -- HP 9000 (Chapter 10)

Note: BNX Site Manager does not run on the HP 9000 workstation.

8. **Use Site Manager to create a pilot configuration.**

   Once you've installed Site Manager on a workstation, you can configure the router or BNX platform remotely by

   -- Creating a simple pilot configuration file

   -- Transferring the configuration file to the router

   -- Booting the router with pilot configuration

   Creating the pilot configuration file (Chapter 11) completes the Quick-Start procedure described in this manual.

   To refine your configuration file to meet your specific network needs, refer to *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* and the appropriate protocol configuration manuals.

Chapter 2
Filling Out the Network Information Worksheet

You fill out a Network Information Worksheet to refer to when you perform the Quick-Start installation script (*install.bat*) as described in Chapter 6. (See Appendix A for a sample installation script.)

The installation script prompts you for network information to connect the router or BNX platform to the IP network. The worksheet contains space for the advance information you will need when running *install.bat*.

Use only the portions of the worksheet that apply to your network requirements. For example, if you are not enabling OSPF on the IP interface, pass over any questions that pertain to OSPF.

Many steps in the installation script suggest default values. Accept the default values unless you have a reason to make a change.

Some steps are optional for your network requirements. For example, local PAP passwords are optional with PPP. Also, if you don't run optional features such as FTP or Telnet, your router will be more secure and use less memory and processing overhead.

The examples on the Network Information Worksheet reflect information from the sample network in Figure 2-1.

Note: Contact your network administrator for assistance in selecting worksheet options. AN and ANH™ routers are not covered by this worksheet.

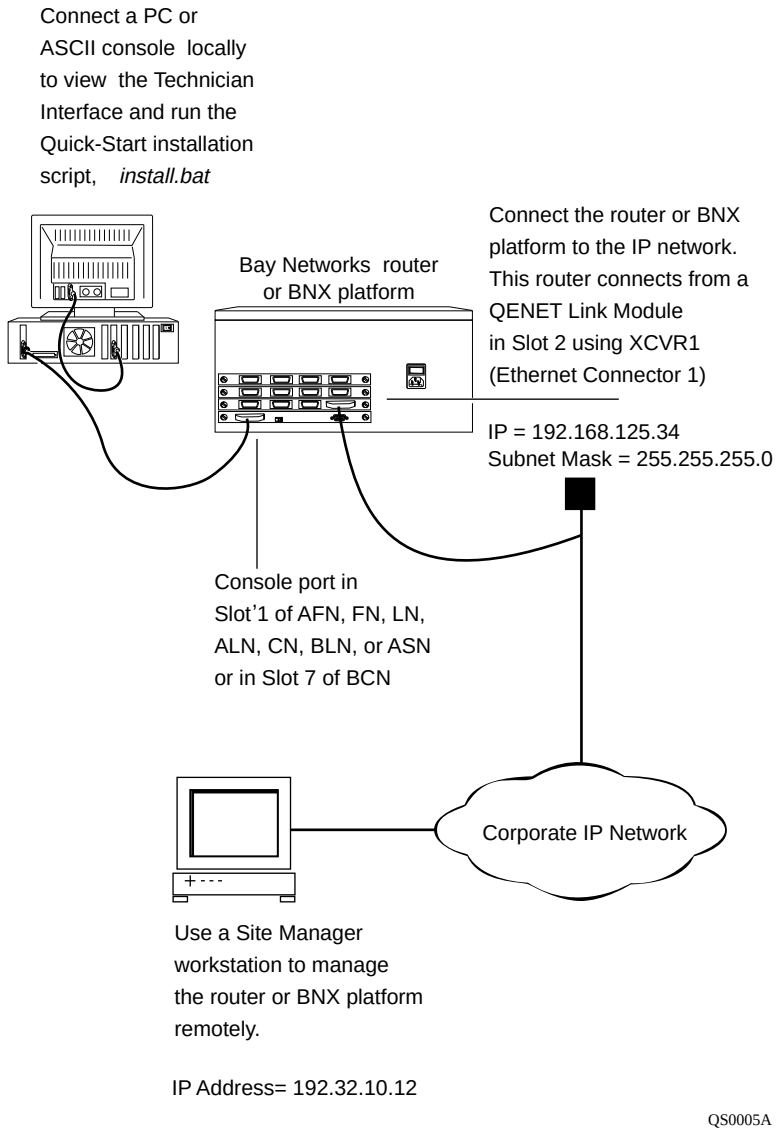

Figure 2-1. Sample Network Used In Worksheet Examples

Table 2-1. Network Information Worksheet

Requested Information	Example	Your Information
Physical Connector Information		
Enter the slot number containing the link module that provides the initial IP network interface (this module can reside in any slot that is designated for link module support). **Note:** You also provide the module number for the ASN (example - Module1).	2 QE/NF	
Number of the connector (port) providing the initial IP network interface.	1. XCVR1	
Circuit Information		
Enter the number of the circuit name.	1. E21	
IP Interface Configuration Information		
IP address of this initial network interface. (Advanced users only – *install.bat* supports unnumbered interfaces.)	192.168.125.34	
Subnet mask address of this initial network interface (in dotted decimal notation).	255.255.255.0	
Does this interface connect to the same local area network (LAN) as the Site Manager workstation?	No	
IP Routing Protocol Information		
IP Routing Protocol to configure to manage this router remotely. This is necessary only if you answered No to the previous question. See the following sections for details on the IP Routing Protocol you choose to configure.	RIP	
RIP Configuration Information		
Should RIP listen to the default route to the network or subnet where Site Manager is located?	Yes	

(continued)

Table 2-1. Network Information Worksheet *(continued)*

Requested Information	Example	Your Information
OSPF Configuration Information		
OSPF Router IP Address.	192.32.156.7	
OSPF Area Address.	0.0.0.0	
Enable Simple Password Authentication?	No	
MTU size for OSPF packets (Default, Ethernet Size, User-defined MTU).	Default	
OSPF interface type (Broadcast, NBMA, or Point to Point, Point to Multipoint, Point to Multipoint [std]). **Note:** Match to the interface type. The interface type, Hello Interval, and Dead Interval must match the current OSPF configuration of the network.	Broadcast	
Hello interval (in seconds).	10	
Router dead interval (in seconds).	40	
Router priority.	1	
Poll interval.	20	
If you are configuring OSPF neighbors, what is the IP address for each neighbor? **Note:** Neighbors are defined only if the OSPF interface type is NBMA.	Not applicable. Sample format: 192.32.156.8 192.32.156.9	
Static Route to Site Manager Configuration Information		
Destination network.	192.32.90.0	
Destination network mask.	255.255.255.0	
Next-hop address that is in the same subnet as the initial IP interface.	192.32.4.99	
Miscellaneous Information		
Set SNMP Community Management?	No	
Default volume where TFTP transactions will take place.	2	
Enable FTP?	Yes	
Default volume where FTP transactions will take place.	2	
Enable TELNET?	No	

(continued)

Table 2-1. Network Information Worksheet *(continued)*

Requested Information	Example	Your Information
Site Manager Workstation Information		
IP address of the workstation on which the Site Manager software will be installed. This information is requested when the installation is tested at the end of the procedure.	192.32.10.12	
WAN Information The following information about enabling Frame Relay, PPP, and SMDS from the installation script is for experienced users only. Normally these protocols are implemented from Site Manager on an additional interface.		
Frame Relay Information **(To enable Frame Relay on a synchronous connector on this initial IP interface)**		
Enable Frame Relay on the interface?	Yes	
Management protocol that communicates with the Frame Relay network.	LMI	
DLCI addressing types.	ADDR Q.922	
Frame Relay address field length.	2 bytes	
Frame Relay PVC ID.	30	
PPP Information (To enable PPP on a synchronous connector on this initial IP interface)		
Enable PPP on the interface?	Yes	
IP address of peer connection.	192.32.4.2	
Enable PPP Echo protocol?	Yes	
Number of seconds between transmission of echo requests.	10	
Acceptable loss of Echo-Reply packets.	3	
Enable local authentication protocol?	Yes	
Local PAP ID for this interface.	192.32.4.1	
Local PAP password (optional).	lpwd	
Authentication protocol enabled on remote peer?	Yes	
Remote peer PAP password.	rpwd	
Enable Link Quality Reporting (LQR) protocol?	Yes	

(continued)

Table 2-1. Network Information Worksheet *(continued)*

Requested Information	Example	Your Information
Enable use of remote peer's LQR timer?	Yes	
Minimum acceptable percentage of inbound packets.	90	
Minimum acceptable percentage of outbound packets.	90	
SMDS Information (To enable SMDS on a synchronous connector on this initial IP interface)		
Enable SMDS on the interface?	Yes	
Individual address.	C1617555433FFFF	
Group address.	E16175556667FFFF	
ARP address.	E16175550000FFFF	

Chapter 3
Connecting a PC or ASCII Console

You connect to the router or BNX platform locally, with a PC or ASCII console, so you can run the Technician Interface and start the Quick-Start procedure.

Connecting a PC

Connect your PC to the router or BNX platform as follows:

1. **Set the communications parameters in the Terminal program that comes with Microsoft Windows or other terminal-emulation program.**
   a. **From Windows, open the Terminal program in the Accessories group.**
   b. **Double-click on the Terminal icon.**
   c. **Select Settings>Terminal Emulation.**
   d. **Click on the DEC VT100 (ANSI) option and click on OK.**
   e. **Select Settings>Communications.**
   f. **Set the communications options as follows:**
      -- Baud rate = 9600
      -- Data bits = 8
      -- Stop bits = 1
      -- Parity = none
      -- Flow control = Xon/Xoff
   g. **Click on the COM port you want to connect to the router or BNX platform, and click on OK.**

      COM ports usually have a 9-pin female or a 25-pin female connection.

h. **Select Settings>Terminal Preferences.**

i. **Turn off the *Use Function, Arrow, and Control Keys for Windows* default option so that you can use keyboard combinations when running the installation script.**

Note: If you do not deselect the button for Use Function, Arrow, and Control Keys for Windows, you will not be able to use keyboard combinations such as Control-C when running the installation script.

j. **Select File>Save As.**

k. **Type the name of a new file in which to store the communications settings, and click on OK.**

l. **Select File>Open.**

m. **Select the file you just named and click on OK.**

2. **Connect the cable from the console port of the router or BNX platform to the COM port you selected in the terminal emulation program.**

   BCN, BLN, CN, and LN routers have a 25-pin male console port. ASN and AFN routers have a 9-pin male console port. Refer to the installation book that came with your router or BNX platform for more information.

3. **Turn on the router to complete the internal diagnostics and startup.**

   When the router or BNX platform boots, the screen displays the Technician Interface `Login` prompt.

Note: While you can run the Technician Interface with a local connection, to manage the router or BNX platform with Site Manager on a PC, you must connect the PC to the IP network.

Connecting an ASCII Console

Connect an ASCII console (terminal) to the router or BNX platform as follows:

1. **Set the operating parameters of the ASCII console as follows:**

   - Baud rate = 9600
   - Stop bits = 1

- Parity = none
- Data bits = 8

2. **Connect the cable from the ASCII console to the router or BNX platform.**

   BCN, BLN, CN, and LN routers have a 25-pin male console port. ASN and AFN routers have a 9-pin male console port. Refer to the installation guide that came with your router or BNX platform for more information.

3. **Power on the router or BNX platform to complete the internal diagnostics and startup.**

   When the router or BNX platform boots, the screen displays the Technician Interface `Login` prompt.

Chapter 4
Connecting to the IP Network

When you ordered your router or BNX platform, you also ordered a cable to connect the router or BNX platform to the IP network. Connect it using the following procedure:

1. **Connect the cable to your router or BNX platform.**

   Table 4-1 gives the standard ports (also called *connectors*) for initially connecting the router or BNX platform to the IP network.

Table 4-1. Initial Connection Port to the IP Network

Bay Networks Router or BNX Platform	Default Connection Port
AFN/ES	XCVR1 port
AFN/TS	MAU1 port
ASN	Any port on any net module, excluding the Stack Packet Exchange (SPX) Module
FN, ALN, LN, CN, BLN, BCN	First port on the first link module (Slot 2 except BCN)

   You can configure any port on a router or BNX platform for the initial IP connection by modifying the connection port in the Quick-Start installation script described in Chapter 6.

   For information on the location of the port on your router or BNX platform, refer to the installation manual that came with your router or BNX platform.

2. **Connect the cable to the IP network.**

   The connection depends upon your LAN or WAN configuration.

For general information about cables, refer to *Cable Guide for Routers and BNX Platforms*.

Chapter 5
Establishing a Technician Interface Session

Use the Technician Interface, the router or BNX platform's command-line interface, to enter commands to run the Quick-Start program. Establish a Technician Interface session as follows:

1. **At the `Login` prompt, enter**

   Manager

Note: The Technician Interface is case-sensitive; that is, the command **Manager** is not the same as **manager**.

The screen displays the slot where the Technician Interface is running, followed by the $ prompt, showing that you are logged in (Figure 5-1).

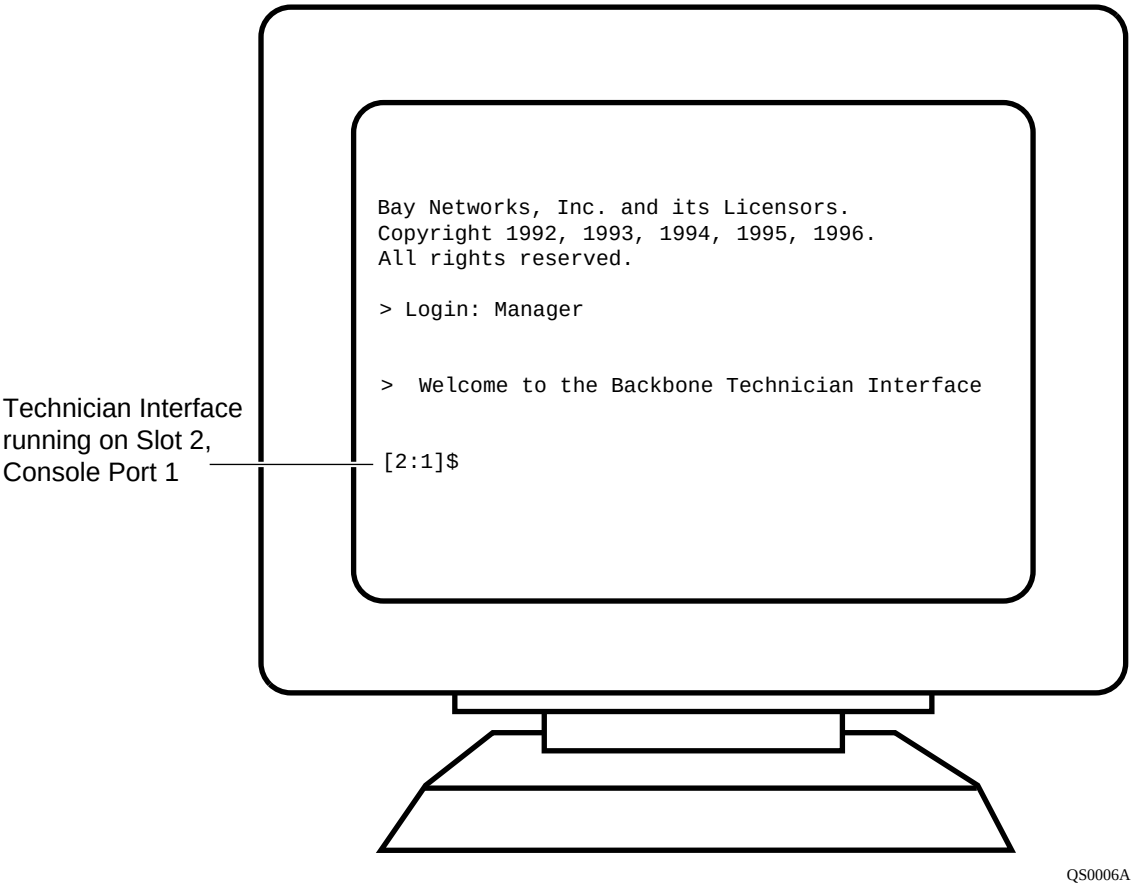

Figure 5-1. Technician Interface Screen

2. **For AFN, ASN, BLN, or BCN routers or BNX platforms, proceed to Chapter 6 to run the installation script.**

3. **For ALN, FN, LN, or CN routers, perform the steps below.**

   a. **Enter the backplane command:**

   backplane *<router_type>*

   <router_type> is **FN**, **LN**, or **CN**. If you have an ALN, use **LN** as your *<router_type>*.

Example

backplane LN

b. **Boot the router by entering**

boot

You *must* boot the router after issuing the **backplane** command.

c. **Log in again as Manager when the** `Login` **prompt appears.**

d. **Proceed to Chapter 6 to run the installation script.**

Chapter 6
Running the Quick-Start Installation Script

Run the Quick-Start installation script to establish an initial IP network interface between the router or BNX platform and the Site Manager workstation from which you'll manage the router or BNX platform.

To create the initial IP interface you need to

- Understand the router or BNX platform's file system.
- Review the Quick-Start installation files.
- Boot the router or BNX platform with the *ti.cfg* file (a special booting file that initializes the router or BNX platform without pre-existing configuration).
- Run the Quick-Start installation script *(install.bat*) once, to configure the initial interface.

The Quick-Start installation script prompts you to enter the network information that dynamically configures the initial IP interface. You configure subsequent interfaces with Site Manager, Quick2Config, or other router management software.

Understanding the Router or BNX Platform's File System

Your router or BNX platform stores installation files on memory cards. The Non-Volatile File System (NVFS) running in the router or BNX platform reads and writes to the memory cards for file storage. Some older models also have disk drives with the Disk Operating System (DOS), but installation files for this release are not distributed on disks. Call the Bay Networks Technical Response Center for information on updating to a memory card system.

Reviewing the Installation Files

After establishing the Technician Interface session, you are ready to display the Quick-Start installation files and verify that they are available:

1. **Find the memory card location.**

   Identify the slot where the router or BNX platform's memory card (volume) resides by typing

   dinfo

   The Technician Interface interface displays a table showing the memory card's slot and memory statistics (Figure 6-1). BCNs and BLNs may contain multiple memory cards -- 1 memory card per slot.

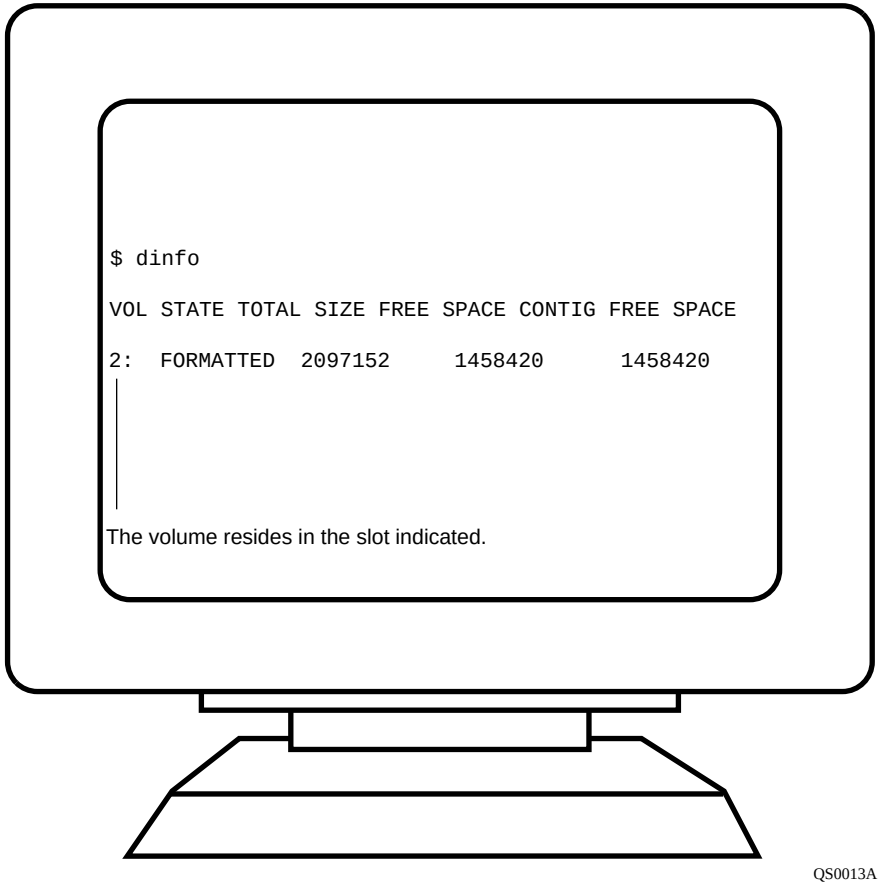

Figure 6-1. Sample NVFS dinfo Display

2. **Display the names of the files in the volume (Figure 6-2) by typing**

   dir *<slot_number>***:**

   <slot number> is the memory card's slot. Include the colon (:) after the slot number as part of the command string

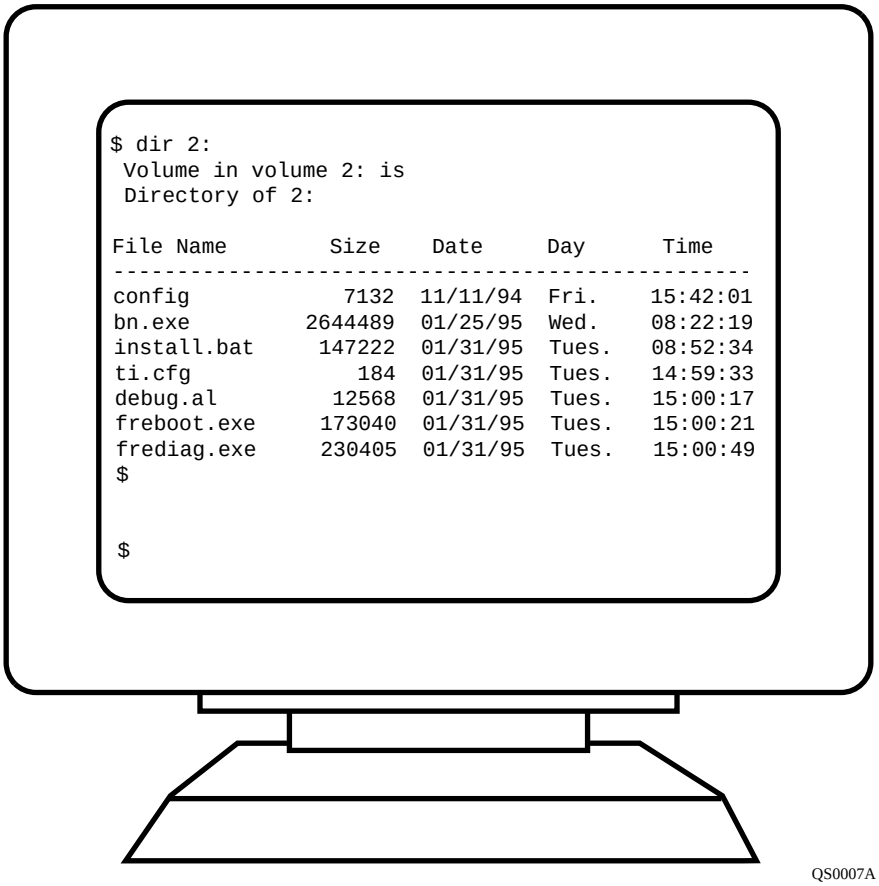

Figure 6-2. Sample Installation Files

3. **Verify that the directory lists the Quick-Start installation files shown in Table 6-1 or their equivalents.**

Table 6-1. Quick-Start Installation Files

Filename	File Type
file_name.exe (example – bn.exe) or *ace.out*	The bootable router or BNX platform software image (see Table 6-2)
config	Configuration file
debug.al	Alias file
install.bat	Installation script file
ti.cfg	Initial configuration file
Note: Other files may be in the directory.	

4. **Verify that the directory holds the correct software image for your router or BNX platform (Table 6-2).**

Table 6-2. Router or BNX Platform Software Images

Router	Router Software Image	Runs On
AFN	afn.exe	Memory card
ASN	asn.exe	Memory card
BLN	bn.exe	Memory card
BCN	bn.exe	Memory card
BNX	bnx.exe	Memory Card
AN	an.exe	Memory card and Flash Single Inline Memory Modules (SIMMs)
CN, FN, LN (VME)	ace.out	Memory card

If your installation files or software image are not available, contact the Bay Networks Technical Response Center.

Booting with the ti.cfg File

You initialize the router or BNX platform once with the *ti.cfg* file. The *ti.cfg* file is a special file that boots the router or BNX platform without configuration. You then run the installation script to create an initial configuration. Never change the *ti.cfg* file or overwrite it with another configuration file.

(Booting a new router or BNX platform uses the *ti.cfg* file by default. Performing this step verifies that you are using the correct configuration file.)

A normal, successful installation requires booting with the *ti.cfg* file only once, but under the following conditions you must reboot again with *ti.cfg* before running the Quick-Start installation script:

- The router or BNX platform is currently booted from a configuration file other than *ti.cfg*.
- You terminate the installation script.
- You change the initial IP connector (port) that you use to communicate with the Site Manager workstation.

To boot the router or BNX platform using the *ti.cfg* file:

1. **Enter the following command:**

   boot *<slot_number>*:*<image_file>* *<slot_number>*:**ti.cfg**

   <slot_number> identifies where the volume resides on the router or BNX platform and *<image_file>* is the software image for your router or BNX platform (refer to Table 6-2).

   Example:

   boot 2:bn.exe 2:ti.cfg

   The router or BNX platform boots and runs through its startup procedure.

2. **Establish a new Technician Interface session.**

   See Chapter 5 for instructions.

Running the Quick-Start Installation Script

After booting the router or BNX platform with the *ti.cfg* file and establishing a new Technician Interface session, you are ready to run the Quick-Start installation script *(install.bat*).

Note: Use *install.bat* once to configure the initial interface only. To configure other interfaces, use Site Manager, Quick2Config™, or other router management software to create new configurations, as described in Chapter 11.

To run the script:

1. **Review Table 6-3 for the commands you use to run the script.**

Table 6-3. Quick-Start Installation Script Commands

To Do the Following	Action	Result
Accept a default value	Press Return	Your terminal displays default values in brackets; for example, `[E21]`.
Repeat a step (for example, if you make a mistake)	Press Control-c	When prompted `Terminate script y/n?`, type **n**. The Technician Interface returns to the beginning of the step so you can re-enter the information.
Quit out of the Quick-Start installation script	Press Control-c	When prompted `Terminate script y/n?`, type **y**. The Quick-Start script terminates and returns to the Technician Interface prompt. Reboot the router or BNX platform using the *ti.cfg* file before rerunning the Quick-Start installation script.

2. **Change to the slot where the router's memory card resides by entering**

   cd *<slot_number>***:**

   Include the colon (:) after the slot number as part of the command string.

3. **Start the script by entering**

   run install

   The Quick-Start installation script begins.

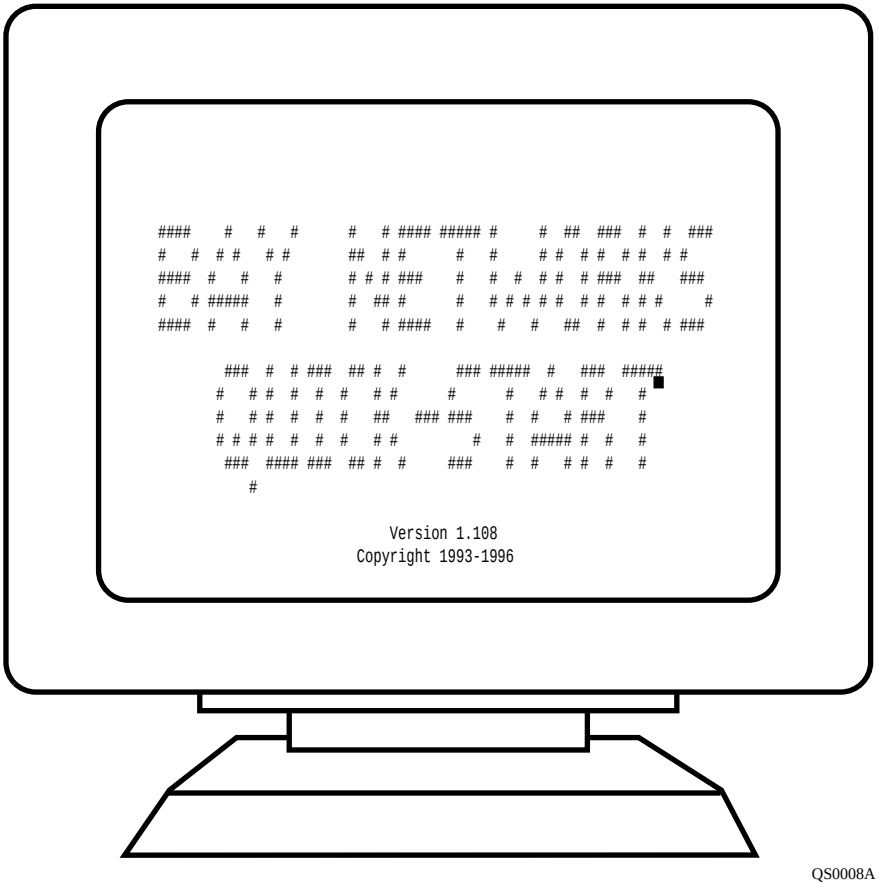

Figure 6-3. Beginning of the Quick-Start Installation

4. Enter the network information as you are prompted.

Refer to your Network Information Worksheet as you proceed through the script. See Appendix A for a sample script. The script prompts you to enter information for

-- The physical connector

-- IP interface configuration

-- IP routing protocol

-- TFTP and FTP default volumes

-- Telnet (optional)

-- Site Manager workstation address

Many steps in the installation script suggest default values you should accept. Some steps are optional for your network requirements.

The script displays a summary of the newly configured IP interface (Figure 6-4), and then prompts you to save the configuration to a file.

Note: If you terminate the installation script, reboot the router or BNX platform using the *ti.cfg* file before you rerun the Quick-Start installation script.

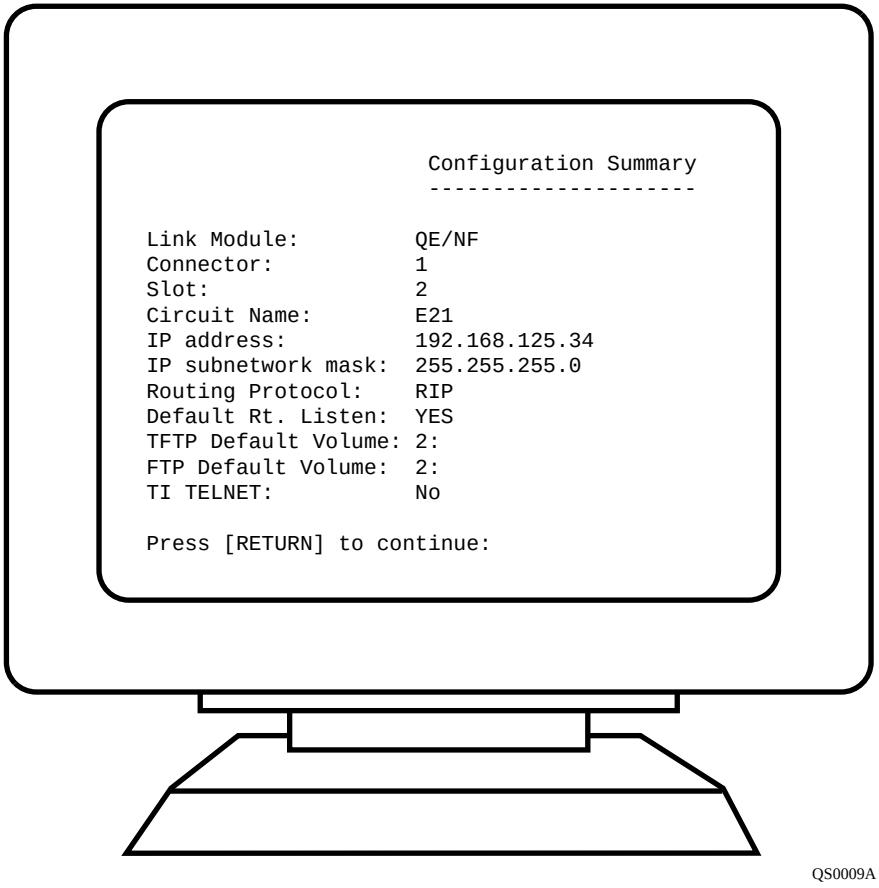

Figure 6-4. Summary Information for a Quick-Start Installation

5. **Save the configuration file as** *startup.cfg*.

   Accept the default name of *startup.cfg.* You save this initial IP configuration to the file to maintain a permanent copy. If you do not save the configuration to a file, you will lose it the next time you reboot the router or BNX platform.

   The router or BNX platform then tests the IP interface configuration by "pinging" its own interface. If successful, it prompts you for the IP address of the Site Manager workstation.

6. **Enter the IP address of the Site Manager workstation.**

   The router or BNX platform pings the Site Manager workstation. If the ping is successful, the initial IP interface is enabled and the script displays this message:

   ```
   Quick-Start Installation Completed
   ```

   The Technician Interface prompt appears and you have completed the Quick-Start procedure. Don't reboot the router or BNX platform after successfully completing this procedure.

Note: Boot with the *ti.cfg* file and run *install.bat* once to configure the initial interface only. To configure other interfaces, use Site Manager, Quick2Config, or other router management software to create new configurations, as described in Chapter 11.

Quick-Start Troubleshooting

If the router or BNX platform cannot ping the Site Manager workstation during the Quick-Start installation:

-- Check the physical connections.

-- If the Site Manager workstation is a PC, Distinct or other networking software must be running for a successful ping. (See Chapter 7 for Distinct installation instructions.) You can skip the ping test by typing **Q** and later verify that the PC is communicating with the router.

-- Verify the IP address of the router or BNX platform. Use the **show ip circuits** command in the Technician Interface to make sure that the physical interface is up and that the IP address is correct. For more information about the **show** command, refer to *Using Technician Interface Scripts*.

-- Verify the IP address and subnetwork mask address of the Site Manager PC or workstation.

-- Verify that routing is working, if the workstation is on a different network. Use the **show ip routes** command in the Technician Interface to examine the routing table and verify that there is a route or a default route to the network where the Site Manager workstation is located. For more information about the **show** command, refer to *Using Technician Interface Scripts*.

Assigning a Password

If you want to assign a security password to the Technician Interface before logging out of the Technician Interface, see *Using Technician Interface Software* for instructions.

Exiting the Technician Interface

To exit the Technician Interface interface, type **logout** at the prompt.

If you used an ASCII console to establish a Technician Interface session, you can now disconnect it from the router or BNX platform. If you used terminal emulation to establish a Technician Interface session, select File>Exit.

After you install Site Manager, you use the Technician Interface primarily as a backup interface if Site Manager becomes unavailable.

Chapter 7
Installing Site Manager on a PC

Use Site Manager to remotely configure and manage the router or BNX platform over the IP network. You install Site Manager on a PC in this order:

- Review system requirements
- Install Distinct TCP/IP or equivalent WINSOCK-compatible TCP/IP stack
- Load the Site Manager software
- Start up Site Manager

Reviewing System Requirements

Site Manager or Site Manager BNX for the PC requires the following to run:

- A 386 PC with at least 8 MB of RAM and at least 32 MB of free disk space. (We recommend a 486 PC with at least 8 MB of RAM.)
- A CD-ROM drive -- if you intend to load the Site Manager software from CD rather than disks.
- A VGA monitor. (We recommend a SuperVGA monitor.)
- DOS 5.0 or later.
- Microsoft Windows 3.1 or later.
- A network interface card (NIC) with a driver type of Packet, Network Driver Interface Specification (NDIS), or Novell Open Data Link Interface (ODI).
- The supplied Distinct TCP/IP for Microsoft Windows, Version 3.31 or any WINSOCK-compatible TCP/IP stack, including NetManage Chameleon, Novell's LAN Workplace, and FTP Software's PC/TCP for Windows.

Installing Distinct TCP/IP

Site Manager on the PC uses a WINSOCK-compatible TCP/IP stack to communicate across the IP network. If you already have an installed TCP/IP stack, you can use it with Site Manager. If not, Bay Networks supplies Distinct TCP/IP for Microsoft Windows, a Distinct Corporation application, with Site Manager. Appendix B provides an example of a successful Distinct installation.

You install TCP/IP or its equivalent by

- Preparing information for
  - -- Serial number and key code
  - -- Network interface card and driver
  - -- Network configuration
- Loading the Distinct software
- Testing Distinct

This section provides the general guidelines for installing Distinct TCP/IP. For detailed instructions about the Distinct product, refer to *Distinct TCP/IP for Microsoft Windows Run Time Installation and Configuration Guide*, the Distinct Corporation documentation supplied with Site Manager. Also check the Bay Networks *Read Me First* documentation for changes to the installation instructions.

The use of Distinct's TCP/IP Run Time software is subject to the Distinct Software License Agreement. Each Distinct License Agreement allows you to install Distinct on up to 15 PCs per IP subnet. We recommend installing and configuring Distinct's TCP/IP Run Time software successfully on one PC before you install it on additional systems.

Only the Distinct features required for Site Manager -- TFTP and Ping -- are operational. To obtain a complete version of Distinct, contact the Distinct Corporation at 408-366-8933.

If you use another WINSOCK-compatible TCP/IP stack, consult its documentation for installation requirements. After installation, proceed to the section "Starting Up Site Manager" later in this chapter.

Preparing Information for the Distinct Installation

The Distinct installation prompts you to provide

- Serial number and key-code information
- Network interface card and driver information
- Network configuration information

Preparing Serial Number and Key-Code Information

You must initialize the software at installation time by entering a serial number and a key code. There is a serial number associated with each copy of the software licensed. You must use a *different* serial number for each computer on which you install the software.

Table 7-1. Distinct Serial Numbers and Key Codes

Serial No.	Key Code
R00WELLF00	F6-73-F2
R00WELLF01	00-53-46
R00WELLF02	EA-B3-00
R00WELLF03	F4-93-BC
R00WELLF04	9E-F3-D5
R00WELLF05	88-D3-1E
R00WELLF06	92-33-F1
R00WELLF07	BC-13-60
R00WELLF08	A6-73-20
R00WELLF09	B0-53-E6
R00WELLF10	FF-53-5C
R00WELLF11	09-33-43
R00WELLF12	F3-93-73
R00WELLF13	FD-73-37
R00WELLF14	A7-D3-17

Preparing Network Interface Card and Driver Information

The Distinct installation process prompts you for the network interface card installed on your PC, the card driver, and the driver type you want to use. Driver types are

- NDIS
- ODI
- Packet

Normally, driver types NDIS and ODI involve less configuration than the Packet type.

Distinct and other applications include standard card drivers with their software. An incorrect or outdated driver generates an error message such as Bind Failed upon reboot. If this happens, verify from the network interface card documentation that you selected the right card model, driver, and driver type. Try using the driver supplied on disk with the card or contact the card manufacturer (via FTP) for the latest update to the driver.

If Distinct doesn't support your driver, refer to the section "Configuring the System for Your Own Ethernet or Token Ring Driver" in Chapter 2 of the *Distinct TCP/IP for Microsoft Windows* manual.

If you have a laptop PC and are using a Xircom Pocket Ethernet Adapter to fulfill the NIC system requirement, we recommend selecting the "NDIS Driver over Ethernet" procedure in Chapter 2 of the Distinct manual.

Depending on your network interface card, you may also be prompted to change information about

- Hardware interrupt
- I/O base address
- Memory address
- Transceiver

Accept the defaults for this information unless you have a reason for making a change.

Preparing Network Configuration Information

Use the worksheet in Table 7-2 to prepare the information Distinct TCP/IP needs to know about the configuration of your network. A minimum network configuration includes

- The gateway to this subnet
- Your host PC
- Any other hosts on this subnet

The installation process prompts you for this configuration information.

Table 7-2. Distinct Configuration Worksheet

Information	Default	Your Information
LAN		
System Name		
Internet Address		
Subnet Address		
Default Gateway		
Domain		
Domain Name		
Primary Server		
Alternate Server		
Serial		
Client Name	<none>	
Server Name	<none>	
Type: SLIP or PPP	<not enabled>	
Compression	<disabled>	
State	<disabled>	
Scripts	<none>	
Com Port (if SLIP or PPP)	1	
Parameters (if SLIP or PPP)	9600,N,8,1	

Installing the Distinct Software

You can install Distinct software from the Site Manager CD or from a disk.

From CDs

To load Distinct from the Site Manager CD:

1. **Insert the Bay Networks Site Manager CD into your CD-ROM drive.**
2. **Double-click on the File Manager icon.**
3. **Click on the CD-ROM drive icon in the File Manager window.**
4. **Click on the Distinct icon in the top-level directory.**
5. **Double-click on the *setup.exe* utility to start the program.**

   The Distinct installation process prompts you for path and directory information. Accept the default suggestions unless you have reason to change.

   The process then prompts you for the information you prepared in the previous sections about

   - Serial number and key code
   - Network interface card and driver
   - Network configuration

   For specific questions about the Distinct configuration process, refer to the *Distinct TCP/IP for Microsoft Windows Run Time Installation and Configuration Guide*. Also refer to the sample installation in Appendix B.

6. **At the end of the Distinct installation, accept the prompt to reboot the PC.**

   You reboot the PC to load the TCP/IP stack and set up the environment variables.

7. **Enter Windows. The Distinct Group window is open on the desktop.**
8. **Proceed to the section "Testing Distinct TCP/IP" and test the Distinct TCP/IP configuration before installing Site Manager.**

From disks

To load Distinct from a disk:

1. **Insert the Distinct TCP/IP disk into the disk drive.**
2. **Select File>Run.**
3. **Enter the following in the Command Line box to install the Distinct TCP/IP Run Time software:**

   <drive>:**lsetup**

   <drive> specifies the drive (for example, A or B) in which you inserted the Distinct TCP/IP Run Time disk.

   The Distinct installation process prompts you for path and directory information for installing the software. Accept the default suggestions unless you have reason to change.

   The process then prompts you for the information you prepared in the previous sections about

   - Serial number and key code
   - Network interface card and driver
   - Network configuration

   For specific questions about the Distinct configuration process, refer to the *Distinct TCP/IP for Microsoft Windows Run Time Installation and Configuration Guide*. Also refer to the sample installation in Appendix B.

4. **At the end of the Distinct installation accept the prompt to reboot the PC.**

   You reboot the PC to load the TCP/IP stack and set up the environment variables.

5. **Enter Windows. The Distinct Group window is open on the desktop.**
6. **Proceed to the section "Testing Distinct TCP/IP"and test the Distinct TCP/IP configuration before installing Site Manager.**

Testing Distinct TCP/IP

Use the Distinct ping function to send an echo request to the router or BNX platform after installing and configuring Distinct TCP/IP. This procedure tests the functionality of your network and your Distinct configuration.

Perform the test as follows:

1. **From the Program Manager window, double-click on the Distinct icon.**
2. **Double-click on the Ping icon.**

   The Distinct TCP/IP Ping window appears.
3. **Select Host in the menu bar.**
4. **Enter the name or address of the host in the Host box.**
5. **Click on Select.**
6. **Select the Start option in the menu bar.**

   The display indicates the number of requests transmitted and replies received. If both are increasing, your network and your Distinct configuration are functional.
7. **Select the Stop option in the menu bar to terminate the test.**

   The Distinct TCP/IP Ping window appears.
8. **Select Exit in the menu bar.**

Distinct TCP/IP must be successfully loaded before installing Site Manager. If the installation is unsuccessful, review Appendix C, “Trouble Shooting,” in *Distinct TCP/IP for Microsoft Windows Run Time Installation and Configuration Guide*.

Loading the Site Manager Software

After you install Distinct or other Windows Sockets-supported TCP/IP stack, you're ready to load the Site Manager software.

Note: If your PC uses the IBM Token Ring Adapter driver, you must install the IBM LAN Support driver package before installing Site Manager.

Caution: If you are reinstalling Site Manager, be aware that the installation will overwrite the *c:\windows\siteman.ini* file. If you are installing multiple versions of Site Manager on the same PC, make a copy of this file and later edit the new file with the information about the other versions.

Site Manager software is distributed on CDs and disks. The following section describes the installation procedures for both types of media. It assumes that Windows is running.

From CDs:

1. **Insert the Bay Networks Site Manager CD into your CD-ROM drive.**
2. **Double-click on the File Manager icon.**
3. **Click on the CD-ROM drive icon in the File Manager window.**
4. **Click on the *ms_win* directory.**
5. **Double-click on the *setup.exe* utility.**

   The installation process prompts you for the directory in which you want to install Site Manager.

6. **Enter the directory in which to install Site Manager, or accept the default, *c:\WF*.**

   The Site Manager files install in the chosen directory. When the installation completes, the following prompt appears:

   ```
   Create windows program group/items automatically?
   ```

7. **To allow Site Manager to automatically create a Windows group, click on Yes.**

If you want to manually create a Windows group, click on No. You can manually create a Windows group later as specified in the section "Creating a Windows Group." Then proceed to the section "Starting Up Site Manager."

8. **Click on "Yes" at the prompt to start Site Manager.**

   The following prompt appears:

   ```
   Do you want to start Site Manager now?
   ```

   Select **Yes** to start Site Manager. Select **No** to return to Windows.

From disks:

1. **Insert the PC Site Manager disk 1 into the disk drive.**
2. **Select File>Run.**
3. **Type the following in the Command Line box to install the Site Manager software:**

   *<drive>***:\setup**

   <drive> specifies the drive (for example, A or B) in which you inserted the PC Site Manager disk 1.

   Install the remaining disks as you are prompted.

Note: The set of disks shipped with Site Manager includes disks with scripts for the Technician Interface feature. You don't have to install them until you need them. Refer to *Using Technician Interface Scripts* for more information.

The Site Manager files install in the chosen directory. When the installation is complete, the following prompt appears:

```
Create windows program group/items automatically?
```

4. **To allow Site Manager to automatically create a Windows group, click on Yes.**

   If you want to manually create a Windows group, click on No. You can manually create a Windows group later as specified in the section "Creating a Windows Group." Then proceed to the section "Starting Up Site Manager."

5. **Click on "Yes" at the prompt to start Site Manager.**

   The following prompt appears:

   ```
   Do you want to start Site Manager now?
   ```

   Select **Yes** to start Site Manager. Select **No** to return to Windows.

Creating a Windows Group

The following example shows you how to create a sample Windows group for the Site Manager executable software. (You only need to do this if you chose to manually create a Windows program group.)

1. **Create a Program Object:**
   a. **Select File>New.**

      The New Program Object window appears.

   b. **Select the Program Group option and click on OK.**

      The Program Group Properties window appears.

   c. **Enter Site Manager in the Description box.**

   d. **Enter WF in the Group File box.**

   e. **Click on OK.**

2. **Create a Program Item:**
   a. **Select File>New.**

      The Program Item window appears with Program Item selected.

   b. **Click on OK.**

   c. **Enter PC/Site Manager in the Description box.**

   d. **Enter c:\WF\wfsm.exe in the Command box.**

   e. **Enter c:\WF\config in the Working Directory box.**

   f. **Click on OK.**

Adding a Well-Known Service for TFTP

If you want to add a well-known service like TFTP, you have to edit the *services* file provided with the Distinct or equivalent TCP/IP stack. The *services* file provides the post number and type of service.

Add a well-known service to the *services* file for TFTP as follows:

1. **Change to the directory where the *services* file resides.**

   Some protocol stacks store the *services* file in the same directory as the protocol software. For Distinct, the *services* file resides in the *etc* directory.

2. **At the DOS prompt, type**

   cd c:\etc

3. **Enter the following command to edit the *services* file:**

   edit services

   The *services* file appears.

4. **Verify that the following lines are present or insert them:**

   ```
   tftp      69/udp
   snmp   161/udp
   snmp-trap 162/udp
   ```

5. **Press Alt-f to display the File menu, type x to exit, and type y to save the changes.**

Note: All TCP/IP stacks use a services stack. For example, Chameleon uses *\net\netmanag\services*. The location of the services stack may vary with your IP package.

Starting Up Site Manager

Start up the Site Manager application from Windows as follows:

1. **Select the Site Manager program group.**
2. **Double-click on the PC/Site Manager icon.**

   The Site Manager window appears (Figure 7-1).

After you have successfully installed and started up Site Manager, proceed to Chapter 11 to create a pilot configuration file.

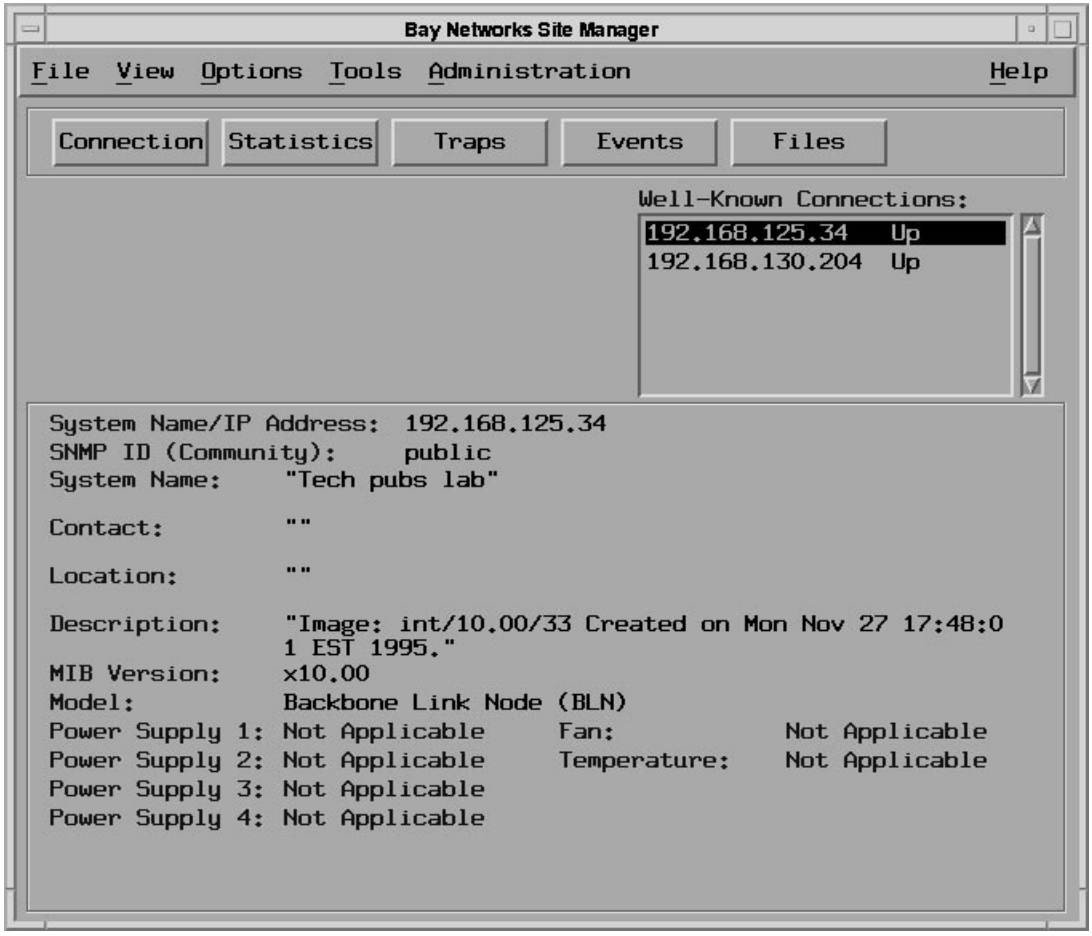

Figure 7-1. Site Manager Window

Chapter 8
Installing Site Manager on a SPARCstation

You use Site Manager to remotely configure and manage the router or BNX platform over the IP network. You install Site Manager on a SPARCstation in the following order:

- Review system requirements
- Set up the SPARCstation
- Load the Site Manager software
- Add Site Manager user accounts
- Verify Site Manager installation
- Start up Site Manager

Reviewing System Requirements

The SPARCstation Site Manager or Site Manager BNX requires the following to run:

- Sun Microsystems Sun4 SPARCstation equipped with an Ethernet, Token Ring, or FDDI network adapter
- CD-ROM drive
- Sun OpenWindows 3.0 or later, or MIT X11 Window System 4.0 or later
- SunOS 4.1 or later, or Solaris 2.3 or later
- At least 16 MB of RAM; at least 55 MB of free disk space; and at least 32 MB of swap space

Setting Up the SPARCstation

Before you load the Site Manager software on your SPARCstation:

1. **Log in to the SPARCstation as root (or *su root*).**
2. **Edit the */etc/services* system file (on each host device) to include the following lines at the bottom of the file:**

   snmp161/udp
   snmp-trap162/udp

   You can use any text editor to edit the file. The first line associates the service name **snmp** with UDP Port number **161** on this host device. The second line associates the service name **snmp-trap** with UDP Port number **162**.
3. **Save */etc/services*, and exit from the text editor.**

Loading the Site Manager Software

Load the Site Manager software on the SPARCstation as follows:

1. **Insert the Site Manager CD into your CD-ROM drive.**
2. **If you have not already created a CD-ROM mountpoint, log in as root and create a root-level directory. For example, enter**

   mkdir /cdrom
3. **Mount the CD-ROM drive as follows:**

   On SunOS, enter

   mount -r -t hsfs /dev/*<device_number>* **/cdrom**

   <device-number> is the device number assigned to the CD-ROM drive (example -- **sr0**).

   Example

   mount -r -t hsfs /dev/*sr0* **/cdrom**

   On Solaris, enter

   mount -F hsfs -o ro /dev/dsk/*<device_number>* **/cdrom**

   <device_number> is the device number assigned to the CD-ROM drive (example -- **c0t6d0s0**).

Example

mount -F hsfs -o ro /dev/dsk/c0t6d0s0 /cdrom

Note: If you use Solaris and you are running the vold daemon, the CD-ROM will automatically mount as */cdrom/release_1000_400* rather than */cdrom*.

4. **Change to the CD-ROM mountpoint by entering**

   cd /cdrom

   or, if you use Solaris and are running the vold daemon, by entering

   cd /cdrom/release_1000_400

   for a router or, for a BNX platform, entering

   cd /cdrom/release_600

5. **Run the script to load the Site Manager software by entering**

   . / INSTALL.SH

   Type the command in all uppercase letters. The installation process

   -- Lists the directories that contain enough space to install Site Manager. You can then specify which directory you want to use.

   -- Executes the Site Manager installation script, *WFSM_INSTALL*.

   When the installation is finished, your workstation displays the message

   `Site Manager Installation Complete.`

   Additional messages about your SPARCstation environment may appear.

6. **Press Control-d to exit the root account.**

Adding Site Manager User Accounts

Set up individual Site Manager users on the SPARCstation as follows:

1. **Log in to the user's account.**

Note: For BNX, skip Step 2 because BNX does not support Image Builder.

2. **If this is the first time you've installed Site Manager, create the directory in which to install the Site Manager's image builder application by entering**

   mkdir $HOME/.builder_dir

3. **Edit the user's account setup file on C and Bourne shells as follows:**

   - If you use *csh* or clones, add the following lines to *.cshrc*:

Note: For BNX, do not include the last line about BUILDER_DIR.

```
set path = ($path   /usr/wf/bin)
setenv   WF_SMPATH /usr/wf
setenv   SMTERM X
setenv   SM_CONFIGS <directory where config files are stored >
setenv   BUILDER_DIR    $HOME/.builder_dir
```

Note: If the shell variable path is already set in some other line of the *.cshrc* file, then add these new lines immediately after the last `set path` line.

   - If you use the Bourne shell (*sh*) or clones, then add the following lines to *.profile*:

```
PATH=$PATH:/usr/wf/bin
WF_SMPATH=/usr/wf
SMTERM=X
SM_CONFIGS=<directory where config files are stored >
BUILDER_DIR=$HOME/builder_dir
export   WF_SMPATH    SMTERM     SM_CONFIGS BUILDER_DIR
```

Note: For BNX, do not include the BUILDER_DIR line and the references to BUILDER_DIR in the last line.

4. **Log out of the user's account.**

   Repeat Steps 1 through 4 for each user who wants to run Site Manager.

Verifying Site Manager Installation

Verify the Site Manager installation and environment as follows:

1. **Log in to the user's account.**
2. **Open your windows environment (X Windows or OpenWindows).**
3. **Verify the Site Manager installation by entering**

   wfchkinst

   After installation is verified, the workstation displays the message

   ```
   Installation is complete and correct!
   ```

4. **Verify the Site Manager environment by entering**

   wfchkenv

   After the environment is verified, the workstation displays the message

   ```
   Your environment seems to have been set up correctly.
   ```

Repeat Steps 1 through 4 for each user that has Site Manager installed.

Note: If your environment variables are incorrect, you'll receive an error message to reset the variables.

Starting Up Site Manager

Start up the Site Manager application as follows:

1. **Log in to a user account that has been set up for Site Manager operation.**
2. **Open your windows environment (X Windows or OpenWindows).**
3. **Change to the directory where you want to store configuration files.**

   The following sample command changes to the directory */home/siteman/config_files*:

   cd /home/siteman/config_files

4. **Activate Site Manager by entering the following command:**

   wfsm -a *<router_IP_address >* **&**

<router_IP_address> is the IP address of the router or BNX platform's initial IP network interface you configured in Chapter 6.

Example

wfsm -a 192.168.125.34 &

The Site Manager window appears (Figure 8-1).

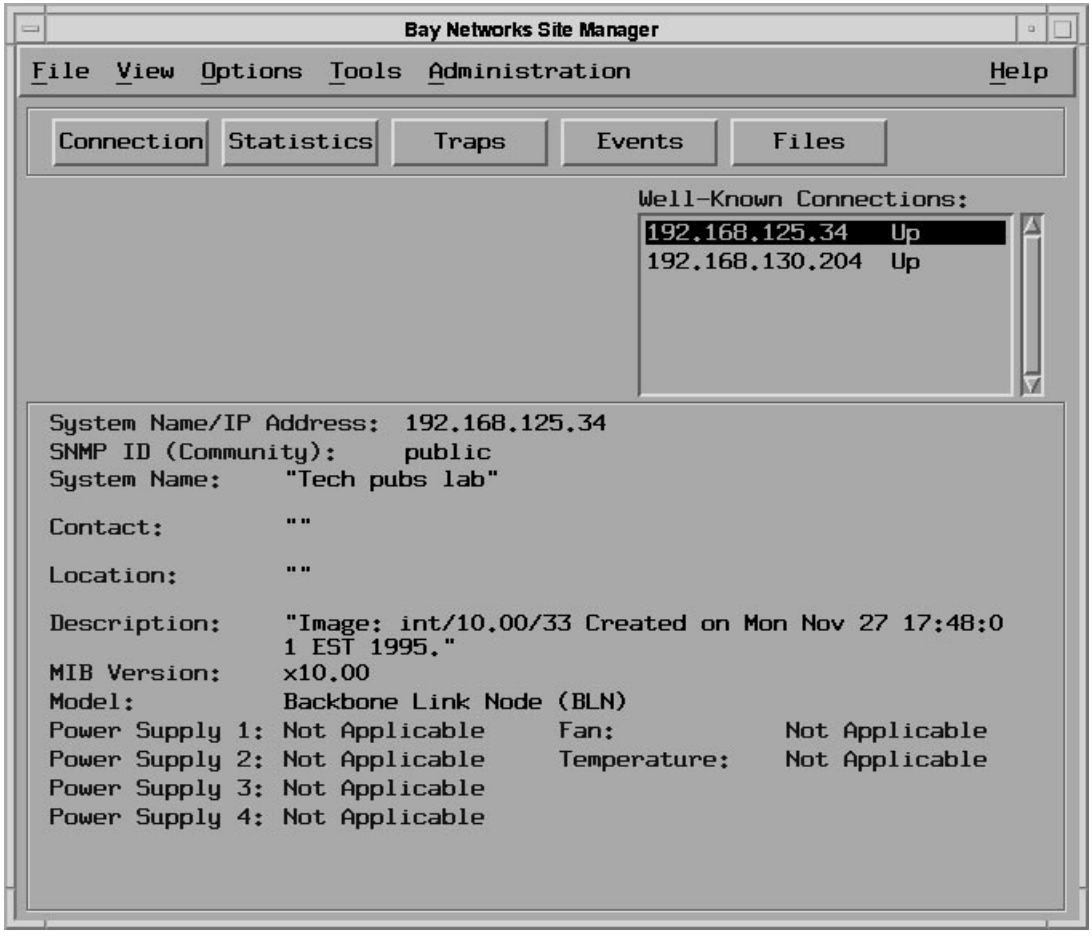

Figure 8-1. Site Manager Window

After you have successfully installed and started up Site Manager, proceed to Chapter 11 to create a pilot configuration file.

Starting Site Manager from SunNet Manager

To start a Site Manager session on a platform running SunNet Manager:

1. **Open a view containing the icon of a router or BNX platform that you want to configure using Site Manager.**
2. **Click on the icon of the router or BNX platform you want to configure.**
3. **From the Tools menu, choose Tools, then drag right and choose Site Manager (Figure 8-2).**

   The Site Manager window appears.

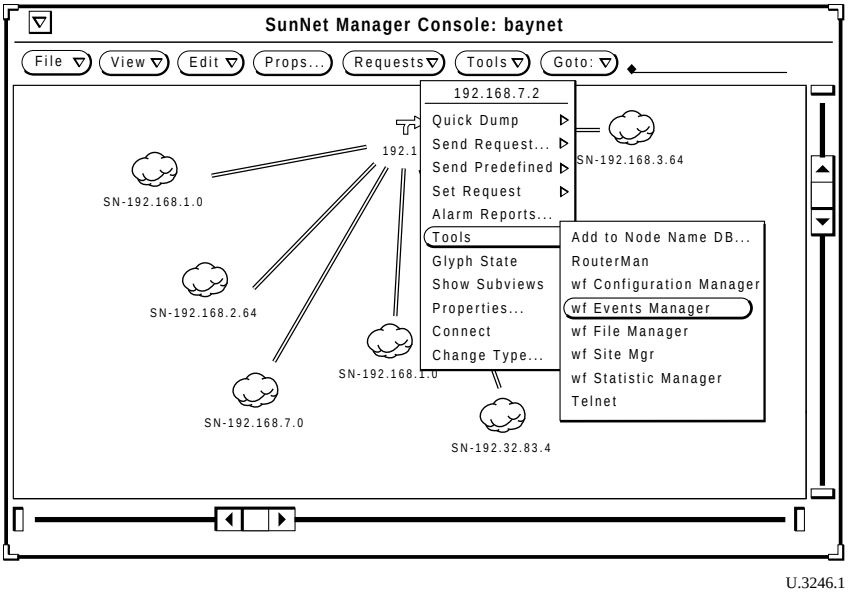

Figure 8-2. Starting a Site Manager Session from SunNet Manager

Starting Site Manager from OpenView

Read this section if you plan on installing or are currently running the HP OpenView application on your SPARCstation.

If you install OpenView *after* you install the Site Manager software, follow these steps to integrate Site Manager with the OpenView application:

1. **Change to the */usr/wf* directory.**
2. **Re-execute the Site Manager script by entering**

   ./WFSM_INSTALL

In the future, follow these steps any time you reinstall OpenView.

Start a Site Manager session from the IP Internet window menu bar in OpenView,:

1. **Open a view containing the icon of the router or BNX platform that you want to configure using Site Manager.**
2. **Click on the icon of the router or BNX platform you want to configure.**

   The IP Internet window opens (Figure 8-3).
3. **Choose Site Manager from the Tools menu, as shown in Figure 8-3.**

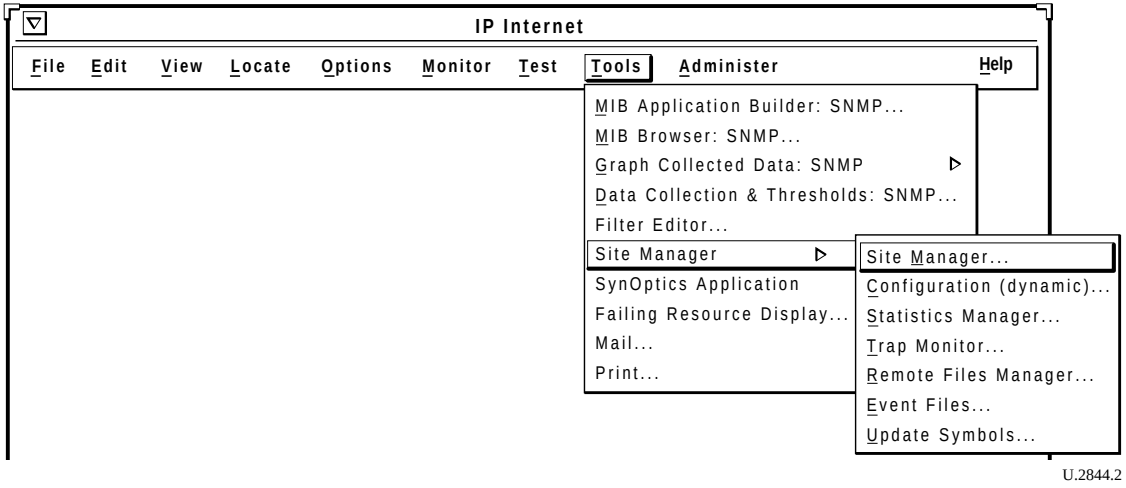

Figure 8-3. Starting a Site Manager Session from OpenView

Chapter 9
Installing Site Manager on an RS/6000

You use Site Manager to remotely configure and manage the router or BNX platform on an IP network. You install Site Manager on an RS/6000 workstation in the following order:

- Review system requirements
- Load Motif
- Load the Site Manager software
- Add Site Manager user accounts
- Verify Site Manager installation
- Start up Site Manager

Reviewing System Requirements

The RS/6000 Site Manager or Site Manager BNX requires the following to run:

- IBM RISC System/6000 equipped with either an IBM Ethernet High-Performance network adapter or an IBM Token Ring High-Performance network adapter
- IBM AIX Version 3.2.4 or later
- X11 Release 5 or later

Note: When ordering an IBM RS/6000 or an upgrade of the IBM AIX, request X11 Release 5. Site Manager does not run with earlier versions of X11.

- Motif 1.1.4 or later (see the following section, “Loading Motif”)
- CD-ROM drive
- 16 MB of RAM (minimum)
- 50 MB of free disk space (minimum)
- 64 MB of swap space (minimum -- use 96 MB of swap space with the NetView/6000 application)

Loading Motif

NetView/6000 Versions 2.1 and earlier require Motif Version 1.1.4. However, X11 Release 5 typically ships with Motif Version 1.2 as the default. Therefore, if you are using NetView/6000 Version 2.1, and you are running a later version of Motif (such as 1.2), then you must use the instructions that follow to switch the currently installed version of Motif to Motif Version 1.1.4. This allows Site Manager and NetView/6000 Version 2.1 to operate.

Switch to Motif 1.1.4 as follows:

1. **Enter the following AIX commands:**

   /usr/lpp/X11rte/set_symlinks.Motif1.1
   /usr/lpp/X11dev/set_symlinks.Motif1.1

2. **Restart NetView/6000.**

   To switch back to Motif 1.2:

   a. **Enter the following AIX commands:**

      /usr/lpp/X11rte/set_symlinks.Motif1.2
      /usr/lpp/X11dev/set_symlinks.Motif1.2

   b. **Restart NetView/6000.**

Note: The services (network services) directory supplied with the operating system should be complete. If the snmp or snmp-trap files are missing, contact your system administrator.

Loading the Site Manager Software

Load the Site Manager software on the RS/6000 as follows:

1. **Insert the Bay Networks Site Manager CD into your CD-ROM drive.**
2. **If you have not already created a CD-ROM mountpoint, log in as root and create a root-level directory. For example, enter**

   mkdir /cdrom
3. **To mount the CD-ROM drive, enter**

   mount -o ro -v cdrfs /dev/*<device_number>* **/cdrom**

   <device_number> is the number of the device assigned to the CD-ROM drive (Example -- **cd0**).

   Example

   mount -o ro -v cdrfs /dev/*cd0* **/cdrom**
4. **Change to the CD-ROM mountpoint by entering**

   cd /cdrom
5. **Run the script to load the Site Manager software by typing**

   . /install.sh

   Type the command in all lowercase letters. The installation process

   -- Lists the directories that contain enough space to install Site Manager. You can accept the default or specify which directory you want to use.

   -- Executes the Site Manager installation script, *WFSM_INSTALL*.

   When the installation is finished, your workstation displays the message

   ```
   Site Manager Installation Complete.
   ```
6. **Press Control-d to exit the root account.**

Setting Up Site Manager User Accounts

Set up individual Site Manager users on the RS/6000 as follows:

1. **Log in to the user's account.**

Note: For BNX, skip Step 2 because BNX does not support Image Builder.

2. **Create the directory for the Site Manager's image builder application by entering**

   mkdir $HOME/.builder_dir

3. **Edit the user's account setup file as follows for C and Bourne shells:**

   - If you use *csh* or clones, then add the following lines to *.cshrc*:

Note: For BNX, do not include the last line about BUILDER_DIR.

```
set path = ($path   /usr/wf/bin)
setenv   WF_SMPATH /usr/wf
setenv   SMTERM X
setenv   SM_CONFIGS <directory where config files are stored >
setenv   BUILDER_DIR    $HOME/.builder_dir
```

Note: If the shell variable path is already set in some other line of the .cshrc file, then add these new lines immediately after the last `set path` line.

- If you use the Bourne shell (*sh*) or clones, then add the following lines to *.profile*:

```
PATH=$PATH:/usr/wf/bin
WF_SMPATH=/usr/wf
SMTERM=X
SM_CONFIGS=<directory where config files are stored >
BUILDER_DIR=$HOME/builder_dir
export PATH WF_SMPATH SMTERM SM_CONFIGS BUILDER_DIR
```

Note: For BNX, do not include the BUILDER_DIR line and the references to BUILDER_DIR in the last line.

4. **Log out of the user's account.**

Repeat Steps 1 through 4 for each user who wants to run Site Manager.

Verifying Site Manager Installation

Verify the Site Manager installation and environment as follows:

1. **Log in to the user's account.**
2. **Start up the X Windows environment.**
3. **Verify the Site Manager installation by entering**

   wfchkinst

   After installation is verified, the workstation displays the message

   ```
   Installation is complete and correct!
   ```

4. **Verify the Site Manager environment by entering**

   wfchkenv

   After the environment is verified, the workstation displays the message

   ```
   Your environment seems to have been set up correctly.
   ```

Repeat Steps 1 through 4 for each user that has Site Manager installed.

Starting Up Site Manager

Start up the Site Manager application on an RS/6000 as follows:

1. **Log in to a user account that has been set up for Site Manager operation.**
2. **Start up the X Window environment.**
3. **Change to a directory where you want to store configuration files.**

Example

The following sample command changes to the directory */home/siteman/config_files*:

cd /home/siteman/config_files

4. **Activate Site Manager by entering the following command:**

   wfsm -a *<router_IP_address>* **&**

   <router_IP_address> is the IP address of the router or BNX platform's initial IP network interface. A sample command is as follows:

   wfsm -a 192.168.125.34 &

   The Site Manager window appears (Figure 9-1).

   After you have successfully installed and started up Site Manager, proceed to Chapter 11 to create a pilot configuration.

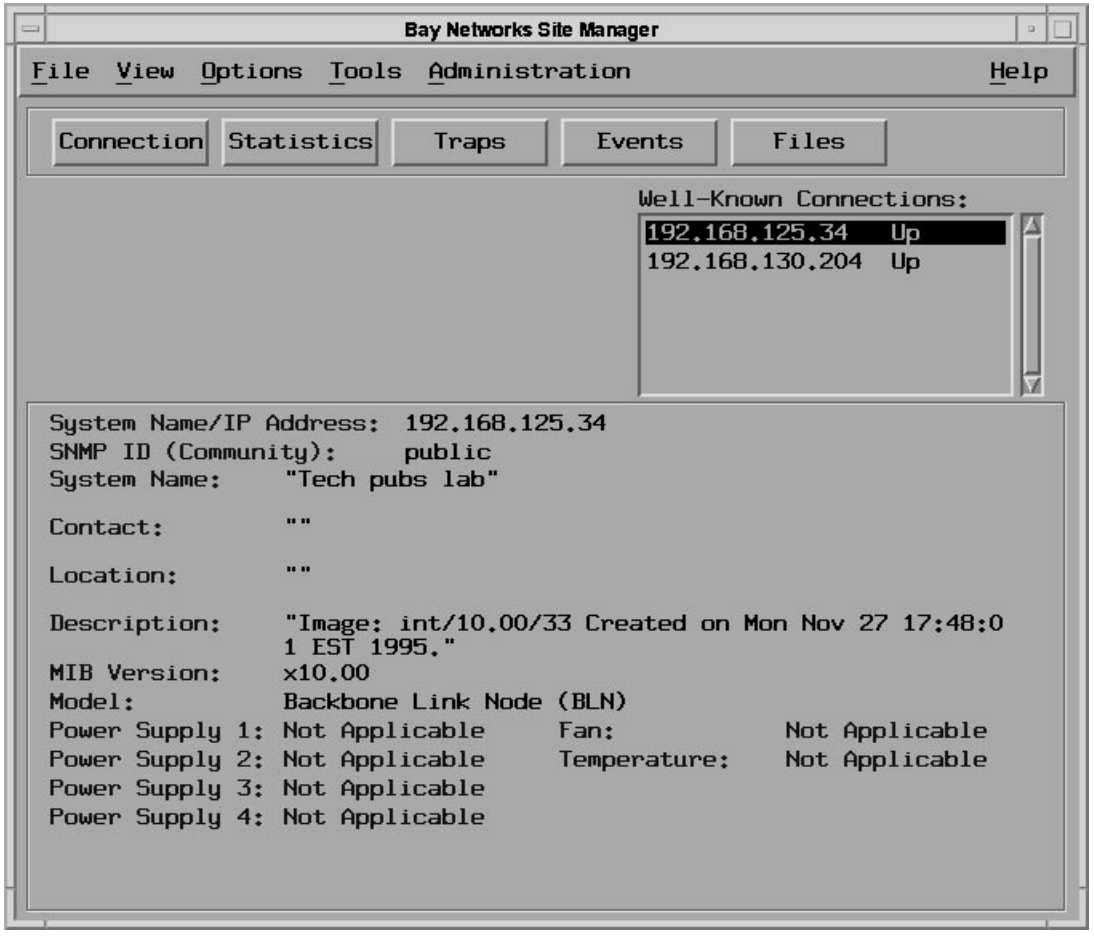

Figure 9-1. Site Manager Window

Starting Site Manager from NetView/6000

Read this section if you plan on installing or are currently running the NetView/6000 application on your RS/6000 workstation.

If you install NetView/6000 on your RS/6000 *after* you install the Site Manager software, follow these steps to integrate Site Manager with the NetView/6000 application:

1. **Change to the */usr/wf* directory.**
2. **Re-execute the Site Manager script by entering**

   ./WFSM_INSTALL

In the future, follow these steps any time you reinstall NetView/6000.

To start a Site Manager session from the IP Internet window menu bar in NetView:

1. **Open a view containing the icon of the router or BNX platform that you want to configure using Site Manager.**
2. **The IP Internet window appears with a map of your Internet.**
3. **Click on the icon of the router or BNX platform you want to configure.**
4. **Choose Site Manager from the Tools menu shown in Figure 9-2.**

   A list of options available from Site Manager appears.

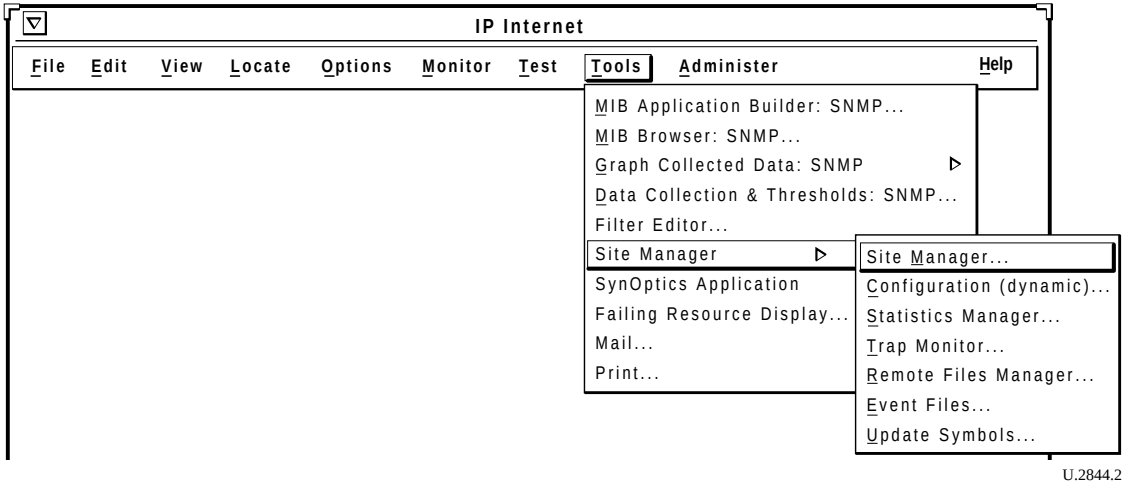

Figure 9-2. Starting a Site Manager Session from NetView

Chapter 10
Installing Site Manager on an HP 9000

Use Site Manager to remotely configure and manage the router on the IP network. You install Site Manager on an HP 9000 workstation in this order:

- Review system requirements
- Load the Site Manager software
- Add Site Manager User Accounts
- Verify Site Manager Installation
- Start up Site Manager

Note: BNX Site Manager does not run on the HP 9000 workstation.

Reviewing System Requirements

The HP 9000 Site Manager requires the following to run:

- HP Precision Architecture System (HP 9000/7*xx* or HP 9000/8*xx*) equipped with an Ethernet network adapter or a Token Ring network adapter
- HP-UX 9.01 or later releases
- X11 Release 5 or later
- Motif Version 1.2 or later
- 16 MB of RAM (minimum)
- 65 MB of free disk space (minimum)

- 32 MB of swap space (minimum)
- CD-ROM drive

Note: The *services* (network services) directory supplied with the operating system should be complete. If the *snmp* or *snmp-trap* files are missing, contact your system administrator.

Loading the Site Manager Software

Load the Site Manager software on the HP 9000 as follows:

1. **Insert the Site Manager CD into your CD_ROM drive.**
2. **If you have not already created a CD-ROM mountpoint, log in as root and create a root-level directory. For example, enter**

   mkdir /cdrom
3. **Mount the CD-ROM drive by entering**

   mount -r -o ro -t cdfs /dev/dsk/*<device_number>* **/cdrom**

   <device_number> is the number of the device assigned to the CD-ROM drive (Example -- **c201d2s0**).

   Example

   mount -r -o ro -t cdfs /dev/dsk/c201d2s0 /cdrom
4. **Change to the CD-ROM mountpoint by entering**

   cd /cdrom
5. **Run the script to load the Site Manager software by typing**

   . / "INSTALL.SH;1"

   Type the command in all uppercase letters.

   The installation process

   -- Lists the directories that contain enough space to install Site Manager. Accept the default or specify which directory you want to use.

   -- Executes the Site Manager installation script, *WFSM_INSTALL*.

   When the installation is finished, your workstation displays the message:

   ```
   Site Manager Installation Complete.
   ```

Note: If you get the message `OvwDbInit failed`, OpenView is not installed. See the section "Starting Site Manager from OpenView" for information.

6. **Press Control-d to exit the root account.**

Adding Site Manager User Accounts

Set up individual Site Manager users on the HP 9000 as follows:

1. **Log in to the user's account.**
2. **Create the directory for the Site Manager's image builder application by entering**

   mkdir $HOME/.builder_dir

3. **Edit the user's account setup file using a C or Bourne shell as follows:**

   - If you use *csh* or clones, then add the following lines to *.cshrc*:

   set path = ($path /usr/wf/bin)
   setenv WF_SMPATH /usr/wf
   setenv SMTERM X
   setenv SM_CONFIGS *<directory where config files are stored >*
   setenv BUILDER_DIR $HOME/.builder_dir

Note: If the shell variable path is already set in some other line of the .cshrc file, then add these new lines immediately after the last `set path` line.

   - If you use the Bourne shell (*sh*) or clones, then add the following lines to *.profile*:

   PATH=$PATH:/usr/wf/bin
   WF_SMPATH=/usr/wf
   SMTERM=X
   SM_CONFIGS=*<directory where config files are stored >*
   BUILDER_DIR=$HOME/.builder_dir
   export WF_SMPATH SMTERM SM_CONFIGS BUILDER_DIR

4. **Log out of the user's account.**

Repeat Steps 1 through 4 for each user who wants to run the Site Manager application.

Verifying Site Manager Installation

Verify the Site Manager installation and environment as follows:

1. **Log in to the user's account.**
2. **If it is not already started, start up the HP VUE or X Window environment.**
3. **Verify the Site Manager installation by entering**

   wfchkinst

   After installation is verified, the workstation displays the message

   ```
   Installation is complete and correct!
   ```
4. **Verify the Site Manager environment by entering**

   wfchkenv

   After the environment is verified, the workstation displays the message

   ```
   Your environment seems to have been set up correctly.
   ```

Repeat Steps 1 through 4 for each user that has Site Manager installed.

Starting Up Site Manager

Start up the Site Manager application as follows:

1. **Log in to a user account that has been set up for Site Manager operation.**
2. **If it is not already started, start up the HP VUE or X Window environment.**
3. **Change to a directory in which you want to store configuration files.**

Example

The following command changes to the directory */home/siteman/config_files*:

cd /home/siteman/config_files

4. **Activate Site Manager by entering the following command:**

   wfsm -a *<router_IP_address >* **&**

   <router_IP_address> is the IP address of the router's initial IP network interface, which you configured in Chapter 6.

Example

wfsm -a 192.168.125.34 &

The Site Manager window appears (Figure 10-1).

After you have successfully installed and started up Site Manager, proceed to Chapter 11 to create a pilot configuration.

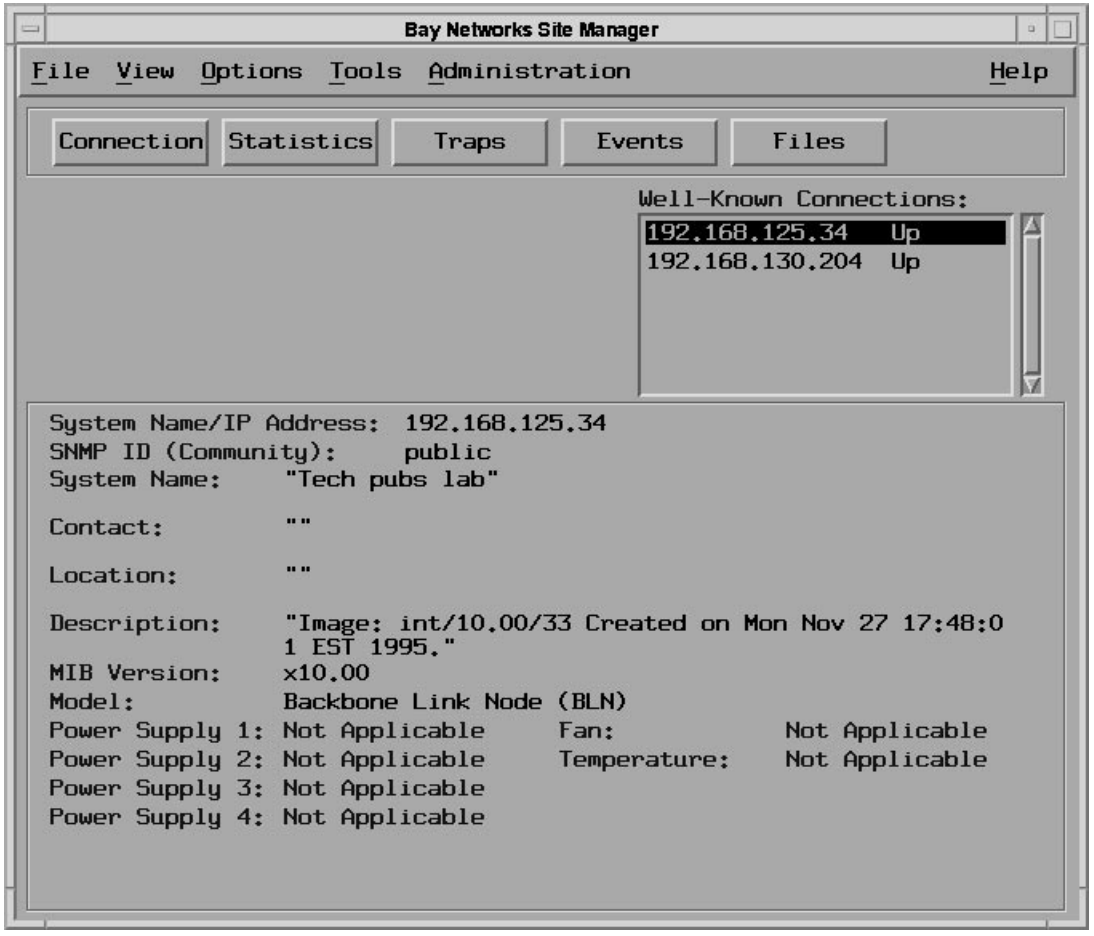

Figure 10-1. Site Manager Window

Starting Site Manager from OpenView

Read this section if you run the HP OpenView application on your HP 9000 workstation.

If you install OpenView *after* you install the Site Manager software, follow these steps to integrate Site Manager with the OpenView application:

1. **Change to the */usr/wf* directory.**

2. **Re-execute the Site Manager script by entering**

   ./WFSM_INSTALL

In the future, follow these steps any time you reinstall OpenView.

To start a Site Manager session from the IP Internet window menu bar in OpenView:

1. **Open a view containing the icon of the router that you want to configure using Site Manager.**
2. **Click on the icon of the router you want to configure.**

   The IP Internet window opens (Figure 10-2).
3. **Choose Site Manager from the Tools menu, as shown in Figure 10-2.**

   A list of options available from Site Manager appears.

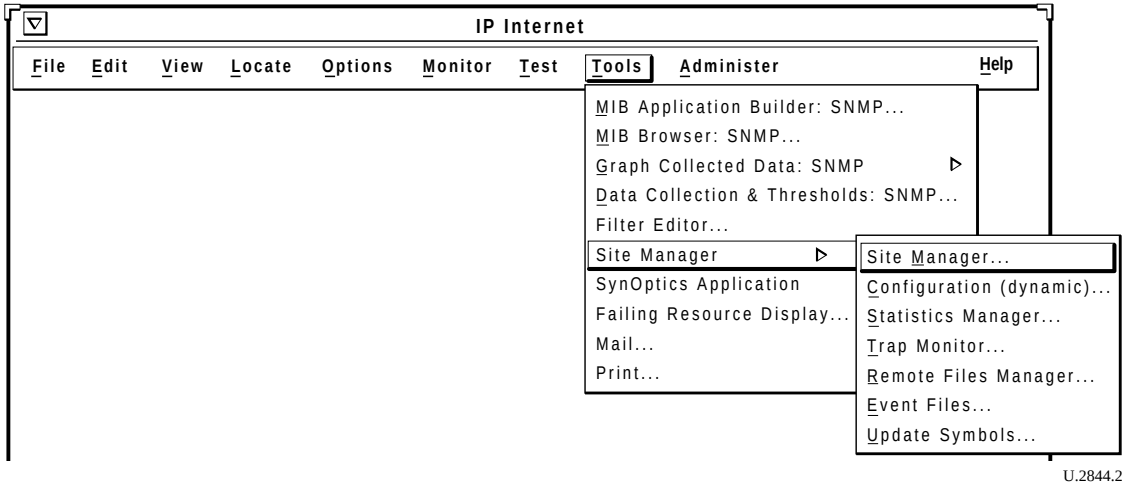

Figure 10-2. Starting a Site Manager Session from OpenView

Chapter 11
Creating a Pilot Configuration File

In this chapter you use Site Manager to create a second IP interface on a router or BNX platform and save it as a new configuration file, *pilot.cfg*. In the process of creating this simple pilot configuration you learn to use several Site Manager configuration features.

You use Site Manager to create a pilot configuration for the router or BNX platform in this order:

- Connect to the router or BNX platform
- Use remote mode to create a configuration file
- Configure the pilot IP interface
  - -- Add a circuit on a connector
  - -- Enable the IP protocol
  - -- Save the pilot configuration file
  - -- Reboot the router or BNX platform with the pilot configuration file
  - -- Enhance the pilot configuration file

This chapter also introduces how to secure the router or BNX platform by

- Restricting read/write access
- Setting the router or BNX platform to Secure mode

Note: Accept the Site Manager default parameter settings as you create this pilot configuration file. Later, you can edit the parameters to meet your specific network needs using the instructions in *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* and in the protocol configuration manuals.

All examples in this chapter reflect the sample pilot configuration shown in Figure 11-1. Circuit E21 with IP Address 192.168.125.34 is the initial interface created with the Technician Interface. Circuit E22 with an IP address of 192.1.182.1 is the pilot IP interface you'll create with Site Manager. The router or BNX platform in Figure 11-1 contains a single memory card (volume), located in Slot 2.

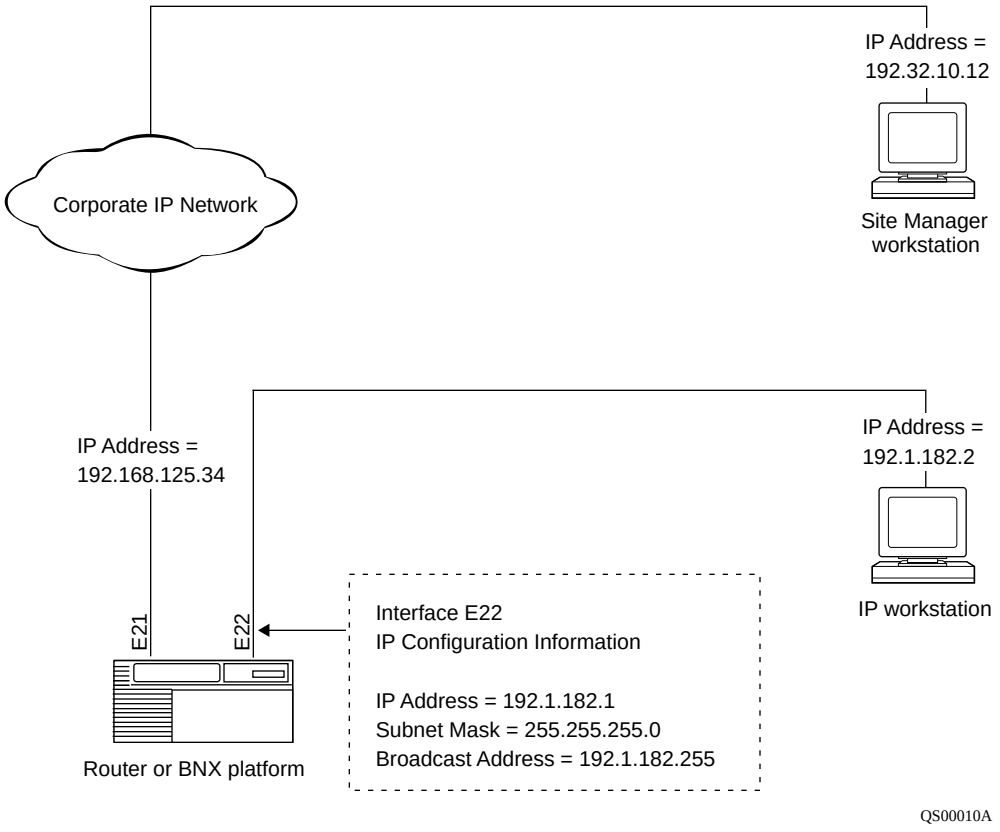

Figure 11-1. Sample Pilot Configuration

Connecting to the Router or BNX Platform

After you install Site Manager on your workstation, the initial Site Manager window appears (Figure 11-2). You select many of the major Site Manager menus and features from this screen.

The Site Manager window displays the IP address of the interface and system record information. To edit the system information, select the Platform > Edit System Information option (see *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* for details).

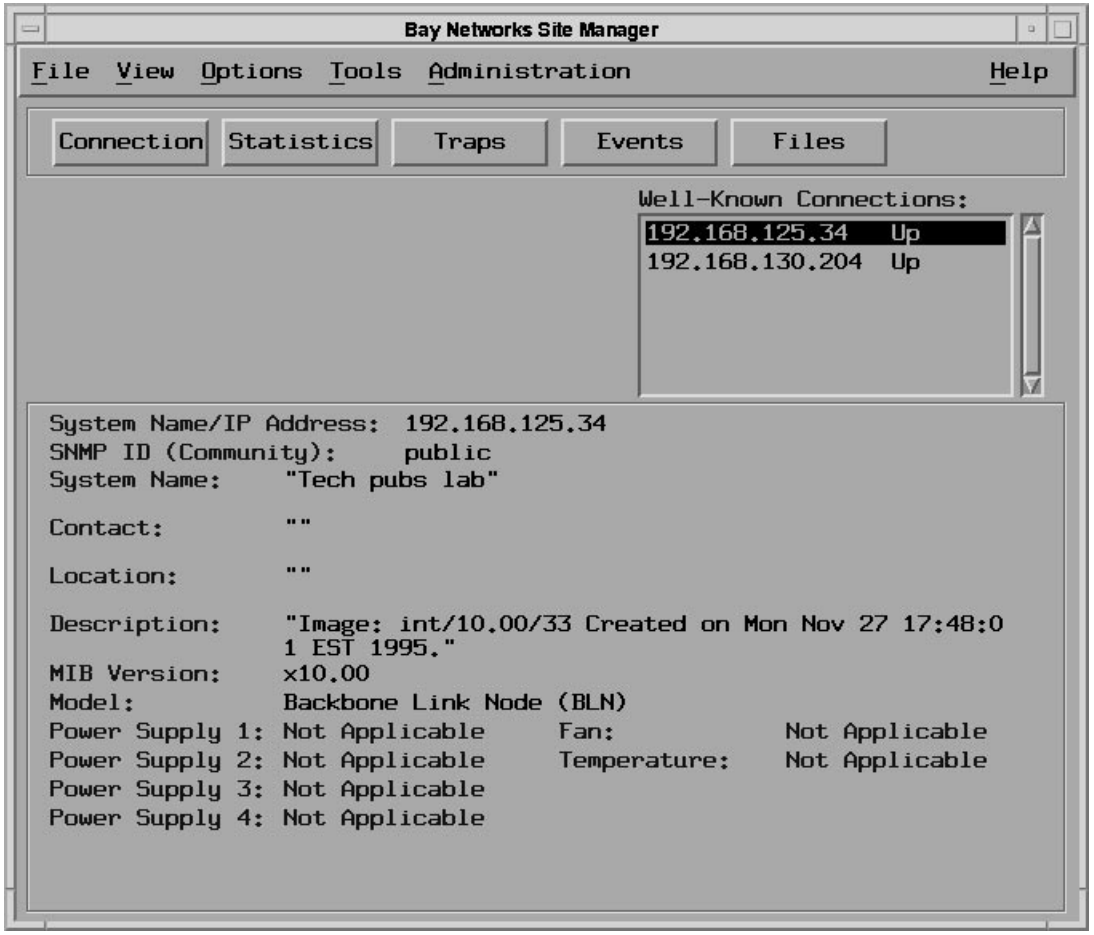

Figure 11-2. Site Manager Window

When you are managing additional routers or BNX platforms from this workstation, you can connect to them from the initial Site Manager window by selecting Options > Router Connections (see *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* for more information).

Using Remote Mode

Site Manager offers three operating modes for configuring the router or BNX platform: remote, local, and dynamic. For the pilot configuration, use remote mode.

1. **Select Tools** > **Configuration Manager** > **Remote File.**

   The Edit Remote Configuration File window appears (Figure 11-3). Site Manager retrieves the file information from the router and displays it in this window. The Volume button on the right side of the screen identifies the volume on which the configuration file will be stored.

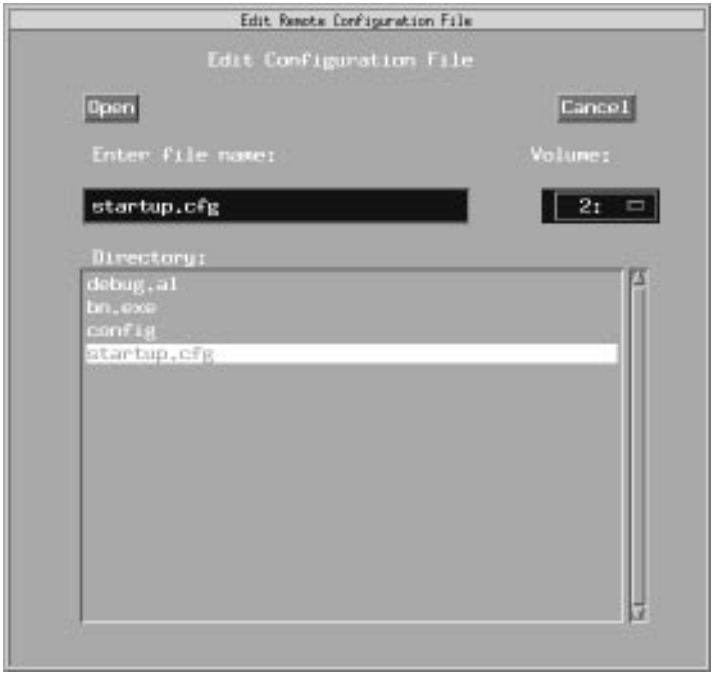

Figure 11-3. Naming the Configuration File

Usually, the volume is the number of the slot containing the memory card (except LNs and CNs that have two cards on a slot, or DOS drives). To access other memory cards residing in different slots:

a. **Select the button showing the current volume and hold the mouse button down.**

   A menu displays the NVFS volumes.

b. **Select the slot of the volume that you want and release the mouse button.**

   The volume you selected appears.

   In a DOS file system, the default volume is *A*.

2. **Select your initial configuration file, *startup.cfg*, and click on Open.**

   If you named the initial configuration file something other than *startup.cfg*, select that file instead.

In remote mode, Site Manager queries the router or BNX platform and displays its hardware configuration in the Configuration Manager window (Figure 11-4).

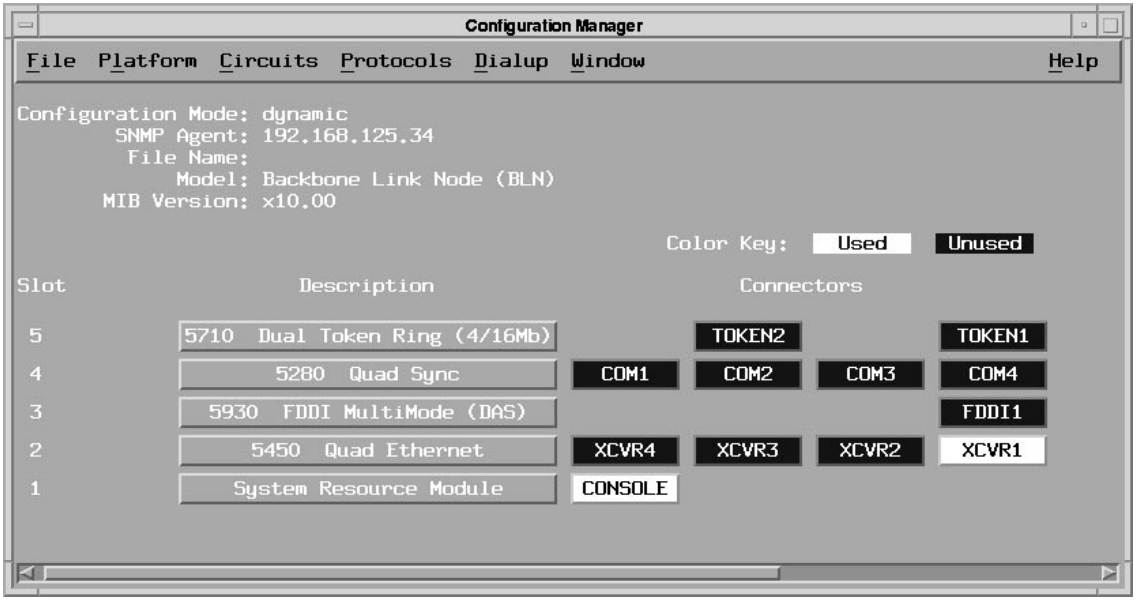

Figure 11-4. Configuration Manager Window

The router or BNX platform model determines the number of slots in the window. Figure 11-4 shows 5 slots because the example is for a BLN. The window numbers each slot and identifies the module in each slot as well as the type and position of the connectors (or ports) on the module.

Note: The position of the slot numbers in the Configuration Manager window corresponds to that in the router or BNX platform. For the ASN, the module numbering in the Configuration Manager window represents that on the router or BNX platform. In the ASN, modules are the locations where the net modules reside.

Configuring the Pilot IP Interface

Next, configure a pilot IP interface for the router or BNX platform as follows:

- -- Add a circuit on a connector
- -- Enable the IP protocol
- -- Save the pilot configuration file
- -- Reboot with the pilot configuration file
- -- Enhance the pilot configuration file

Adding a Circuit on a Connector

1. **Select the Circuits > Add Circuit option from the Configuration Manager window (refer to Figure 11-4).**

   The Add Circuit window appears (Figure 11-5). This window displays the connectors for each link module or net module installed in the router or BNX platform. The model determines the number of slots (or in the case of the ASN, the number of modules) shown in the window. Figure 11-5 shows 5 slots for a BLN.

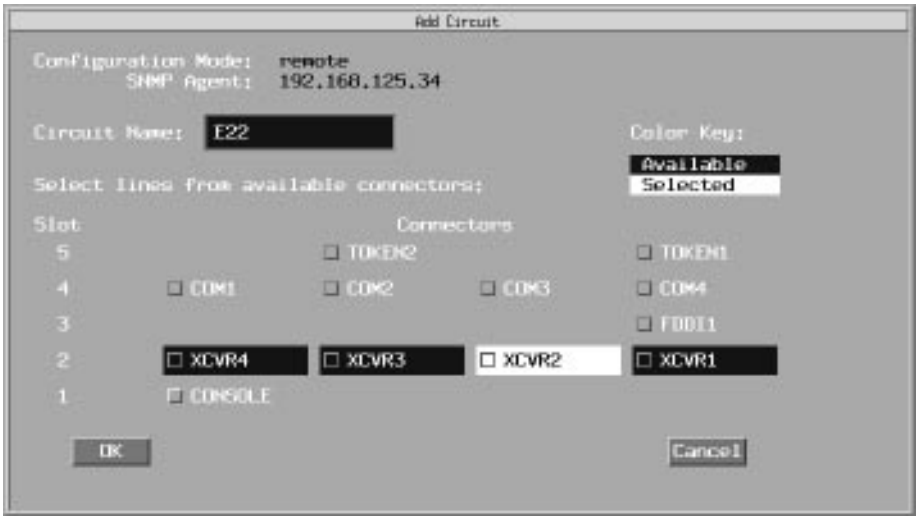

Figure 11-5. Add Circuit Window

2. **Click on one of the available connectors.**

   After you click on a connector, Site Manager names the circuit that interfaces with this connector in the Circuit Name box. The default circuit name identifies the type of circuit and the location of the connector (Figure 11-6).

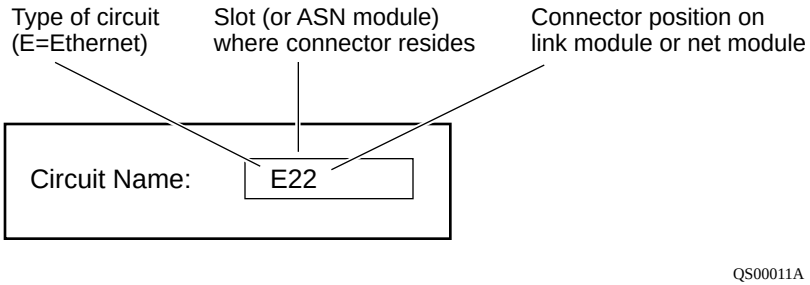

Figure 11-6. Site Manager Default Circuit Name

Note: We recommend that you follow the default circuit-naming conventions, so that circuit types and locations are represented consistently.

Table 11-1 lists the default circuit types.

Table 11-1. Circuit-type Designators in Default Circuit Names

Letter Designator	Connector Type
A	ATM
E	Ethernet
E1	E1
F	FDDI
H	HSSI
MCE1	MCE1
MCT1	MCT1
O	Token Ring
S	Synchronous
T1	T1

If you choose not to follow the conventions, enter a circuit name. Circuit names have a 15-character limit and must consist of alphabetical, numeric, underline, and slash characters. Do not enter spaces in circuit names. Circuit names are case-sensitive.

3. **Click on OK to save the circuit.**

   You *must* save each circuit after you associate it with a connector.

   If the link module or net module has hardware filters, the following message appears: `Do you want to enable Hardware Filters on this circuit?` Click on OK to enable hardware filters. Otherwise, click on Cancel.

Enabling the IP Protocol

After you save the circuit, Site Manager displays the Select Protocols window (Figure 11-7). You enable the circuit with bridging and routing protocols from this window.

Note: The Select Protocols window differs slightly, depending on the circuit type. If appropriate, you may be prompted to select a WAN protocol. See *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* for more information.

Figure 11-7. Select IP in the Protocols Window

1. **Select the IP option and click on OK.**

   The IP Configuration window appears (Figure 11-8).

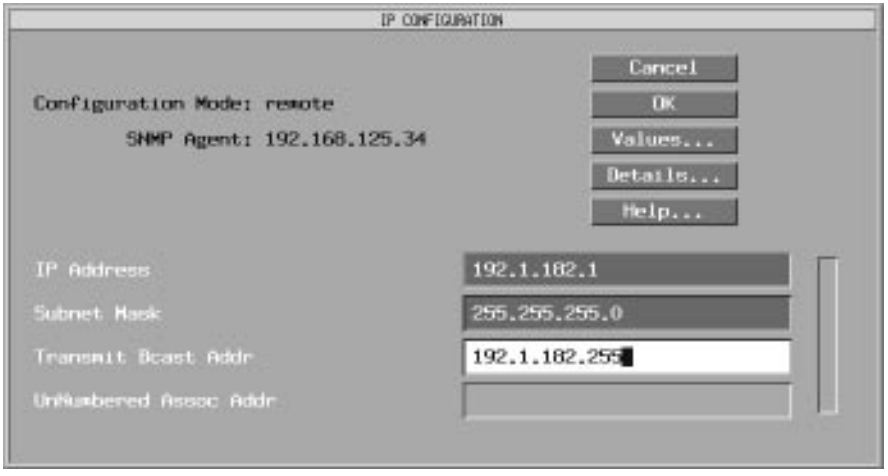

Figure 11-8. IP Configuration Window

2. **Enter the following information for the new IP interface:**

   -- IP Address (Example – 191.1.182.1)

   -- Subnet Mask (Example – 255.255.255.0)

   -- Transmit Broadcast Address (Accepting the default of 0.0.0.0 calculates the actual address)

   You can ignore the Unnumbered Associated Address parameter for now (see *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* for information).

3. **Click on OK.**

   The Configuration Manager (Figure 11-4) appears again with the connector box highlighted to indicate that the circuit has been configured. Later, when you create a complete configuration file, you add circuits and select protocols for all circuits on the router or BNX platform.

Saving the Pilot Configuration File

From the Configuration Manager window, you save the configuration you just created to a file.

Note: Site Manager does not create a configuration file until you save the configuration information you specified.

1. **Select the File > Save As option.**

The Save Configuration File window appears (Figure 11-9). This window displays the name *startup.cfg* -- which is the file you retrieved earlier in the procedure.

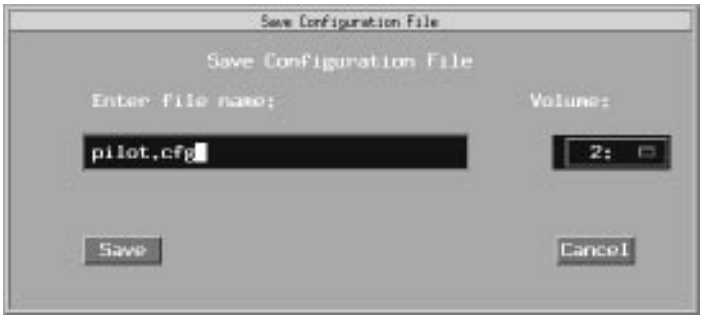

Figure 11-9. Save Configuration File Window

2. **Delete the text displayed in the Enter file name box.**
3. **Enter the name pilot.cfg, then click on Save.**

   Site Manager generates a configuration file, transfers it to the router or BNX platform (via TFTP), and saves it to the file system with the name *pilot.cfg*. Site Manager stores the file remotely on the router or BNX platform, because Site Manager is operating in Remote mode.
4. **Click on OK when the File Saved pop-up window appears.**
5. **Select the File > Exit option to exit the Configuration Manager window.**

   You are returned to the initial Site Manager window.

Rebooting with the Pilot Configuration File

After you save the pilot configuration file, implement the configuration by rebooting the router or BNX platform.

To reboot the router or BNX platform, from the Site Manager window (refer to Figure 11-2):

1. **Select Administration > Boot Router.**

The Boot Router window appears (Figure 11-10). The default volume is displayed next to the boot image file (example: *bn.exe*) and configuration file (*config*). The default volume is the first available NVFS (indicated by slot number) or it is the DOS file system (indicated by the disk drive designator *A*). If your boot or configuration file is located on a different volume, you can click on the volume number to change it.

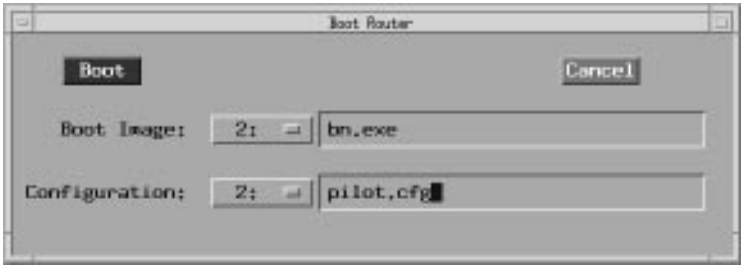

Figure 11-10. Sample Boot Router Window

2. **Replace the text displayed in the Configuration box with the name of your configuration file, *pilot.cfg*.**
3. **Click on Boot.**

   You'll receive a confirmation asking if you want to proceed with the boot.
4. **Click on OK.**

Note: The software image and configuration file revert to their respective default volumes and filenames (example: *bn.exe* and *config*) after every boot unless you specify a different configuration file when you boot. To change the default configuration file to use your newly created file, use the Copy option to back up *config*, the old default file, to a new filename. Then use the Copy option again to overwrite the original config file with the new *pilot.cfg* file.

Once you have successfully rebooted the router or BNX platform with the pilot configuration, the Quick-Start procedure is complete. The router or BNX platform is now operating on the network with two IP interfaces configured.

Enhancing the Pilot Configuration File

You are now ready to enhance the pilot configuration file. Use *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* and the protocol configuration manuals to learn how to

- Configure additional interfaces
- Modify the Site Manager default parameter settings
- Implement optional features (for example, route filters)
- Create new configuration files in the three operating modes: remote, local, and dynamic

Note: Be sure to boot with the *pilot.cfg* file when enhancing your pilot configuration.

Securing the Router or BNX Platform

You may want to take some steps to immediately secure the router or BNX platform by

-- Restricting read/write access

-- Setting secure mode

Restricting Read/Write Access

Site Manager uses SNMP to monitor and control the router or BNX platform. To safeguard against unauthorized SNMP access, we recommend that you restrict read/write access *as soon as possible*. You restrict read/write access by reconfiguring the SNMP community named “public.”

When you run the Quick-Start installation script (the *install.bat* file) and accept the default community, the script creates a read/write SNMP community named “public” with a wildcard manager (0.0.0.0). We *strongly* recommend that you restrict this read/write access as follows:

1. **Delete the "public" community and create a read/write community with its own name (for example, WFSM) and a manager list containing the IP addresses of the Site Manager workstations that need access to the router or BNX platform.**
2. **Reconfigure the "public" community to be read-only with universal access.**

See *Configuring Routers* or *Configuring Customer Access and Trunks (BNX Software)* for instructions on how to perform these two steps.

Setting Secure Mode

Bay Networks routers or BNX platforms have an optional security mechanism for all SNMP **SET** requests. This proprietary mechanism solves some of SNMP's security problems until a stable, widely accepted, industry-standard security solution is available.

When you enable the security mechanism, the router or BNX platform operates in *secure mode*. In secure mode, a Site Manager **SET** request to the router or BNX platform includes the encrypted value of a counter. When the agent on the router or BNX platform receives the **SET** request, it compares the encrypted value with the value of its own counter plus one. If the 2 counters match, the agent considers the SET request authentic, increments the counter by 2, stores it in an encrypted form in the MIB, and sends it back to Site Manager.

The security mechanism protects against these security violations:

- *Message stream modification,* in which an intruder reorders, delays, or replays **SET** requests to specify unauthorized management settings
- *Masquerade operations,* in which an intruder assumes the identity of an authorized party to specify unauthorized management settings

The security mechanism does not protect against the following security violations, which are beyond the scope of our proprietary interim security system:

- *Modification of information,* in which an intruder intercepts a packet, modifies its contents, and reinserts it into the message stream before the agent's counter is incremented
- *Disclosure,* in which an intruder observes which variables are being set

Enabling the security mechanism only minimally affects router or BNX platform performance. The security mechanism has no effect on the ability of Site Manager, or of any SNMP network manager, to monitor the router or BNX platform by performing **GET**, **GET-NEXT**, or trap functions. You cannot use "public," the default SNMP community, with secure mode. See the prior section for instructions on changing the SNMP community. The next section describes the procedure for enabling secure mode.

Specifying Secure Mode

Using the Technician Interface, set the router or BNX platform to operate in secure mode by completing the following steps:

1. **Enter the following command:**

   wfsnmpmode 3

   3 indicates that the router or BNX platform should operate using the proprietary security mechanism.

2. **Specify the key that the encryption algorithm uses when it encrypts the security counters by entering the following command:**

   wfsnmpkey *<key>*

   <key> is the string of ACSII characters that you select to make up the encryption code for this router or BNX platform. Make the key six characters or less.

   The encryption algorithm uses the attributes of the key (size, range, and value) as integral parts of its encryption process. Also, when Site Manager issues the first **SET** request within an application, you must enter this key as a password that enables the Site Manager to operate in secure mode.

   See *Using Technician Interface Software* for more information about using the Technician Interface.

Appendix A
Sample Install.bat Script

To perform the Quick-Start installation procedure on your router or BNX platform, run the *install.bat* script as described in Chapter 6. A typical script follows. Your script will vary, depending on your router or BNX platform model and network configuration.

```
------------------------------------------------------------------------

       ####    #   #   #      #   # #### ##### #     #  ##  ###  #  #  ###
       #   #  # #   # #       ##  # #      #   #     # #  # #  # #  # #
       ####  #   #   #        # # # ###    #   #  #  # #  # ###  ##   ###
       #   # #####   #        #  ## #      #   # # # # #  # #  # # #     #
       ####  #   #   #        #   # ####   #    #   #   ##  #  # #  # ###

              ###  #  # ###  ## #  #      ### #####  #   ###  #####
             #   # #  #  #  #   # #      #      #   # #  #  #   #
             #   # #  #  #  #   ##   ### ###    #  #   # ###    #
             # # # #  #  #  #   # #         #   #  ##### #  #   #
              ###  #### ###  ## #  #     ###    #  #   # #  #   #
                 #

                                  Version 1.108
                               Copyright 1993-1996
------------------------------------------------------------------------


                                  Introduction
                                  ------------

This part of the Quick-Start procedure configures the initial IP
network interface on the router. You perform this procedure so that
the router can communicate with the Site Manager workstation.

Each step of this procedure is further described in the
Quick-Start manual. As you perform the procedure, refer to the Quick-
Start manual for additional helpful information and examples.
```

```
When you are finished with this procedure, the router will be able to
communicate with the Site Manager workstation over the IP network. You
are then ready to install Site Manager Software, as described in
Chapter 4 of the Quick-Start Guide.

Each procedure step requires you to do one of the following things:
        1. Enter a number that corresponds to a selection.
        2. Enter 'y' for Yes;  'n' for No; 'q' for Quit.
        3. Enter a word or phrase referred to as a "text string"
        4. Enter <Return> to accept default displayed in [].

You must press the <Return> key after entering one of the above responses.

Press <Return> to Continue, q<Return> to Quit:
------------------------------------------------------------------------

                    Preliminary Information You Need to Know
                    ---------------------------------------

Before you begin this procedure, you should gather the network
information listed below:

You Need to Know This Information:                For Example:
---------------------------------                 ------------
Type of Link Module connecting the router's       DSDE
IP network interface to the Site Manager.

Slot number where the Link Module resides.        2

Communication type and connector number           Ethernet XCVR1

IP address of initial IP network interface        192.32.10.189

Subnet mask of initial IP network interface       255.255.255.0

IP address of Site Manager workstation            192.32.10.100

Do you wish to continue? (y/n)[y]:
```

```
------------------------------------------------------------------------

Step 1.  Specify the slot number where the Link Module resides.

                      Slot Menu for Link Module
                      -------------------------

 Slot    Link Module        Processor Module
 ----    -----------        ----------------
    1    SRML               SRMF
    2    QE/NF              FRE2
    3    MCT1-2             FRE2
    4    WF_FDDI_2M         FRE
    5    SYNC-2             FRE

Enter the slot number [2]:

------------------------------------------------------------------------------
Step 2. Specify the Link Module and network interface information for
        the initial IP connection to the Site Manager.

Link Module: QE/NF

Connector Menu
--------------
1. XCVR1
2. XCVR2
3. XCVR3
4. XCVR4

Enter connector number [1]:

Recommended Circuit Name: E21

Enter circuit name [E21]:
```

```
------------------------------------------------------------------------

Step 3.  Specify the IP configuration information for the network
         interface.

                              IP Configuration Menu
                              ---------------------

 IP address format:          ###.###.###.###

 IP subnetwork mask format:  ###.###.###.###
                    Example: 255.255.255.0


Enter IP address in dotted decimal notation: 192.168.135.100

Enter IP subnetwork mask in dotted decimal notation: 255.255.255.224

Is the router connected to the same local area network as
the Site Manager workstation? (y/n)[n]:

Since the router is not on the same network as the Site
Manager workstation an IP Routing Protocol must be
configured in order to manage the box remotely

               IP Routing Protocol Configuration Menu
               --------------------------------------
               1. RIP
               2. OSPF
               3. Static Route to Site Manager.

Enter Routing Protocol Number [1]:

------------------------------------------------------------------------

                                RIP Configuration
                                -----------------

RIP will listen to a specific route to the network or subnet where
Site Manager is located.  If you also would like RIP to listen
to the default route (0.0.0.0) then answer 'y' below.  The default
route is useful when no specific route is available in the RIP
updates received by this router.

Should RIP listen to the default route? (y/n)[n]:

RIP Configuration Complete
```

```
------------------------------------------------------------------------

                        SNMP Community Management Menu
                        ------------------------------

Setting up SNMP community management is optional.

It allows you to limit control of this router to a single
Site Manager workstation at a given IP address.  The default
is to allow any Site Manager from any workstation to manage
and to configure the router.

Note: You can later configure this using Site Manager.

Do you wish to set SNMP community management? (y/n)[n]:
------------------------------------------------------------------------
Step 4.  Select TFTP default volume.

                           TFTP Default Volume Menu
                           ------------------------

 NVFS File System:

VOL    STATE      TOTAL SIZE    FREE SPACE    CONTIG FREE SPACE
-----------------------------------------------------------------
 2:    FORMATTED    4194304        415822           403326

Enter volume number [2]:


TFTP default volume is 2:

------------------------------------------------------------------------
Step 5.  Select FTP default volume.

                                   FTP Menu
                                   --------

Do you want to enable FTP? (y/n)[n]: y

 NVFS File System:

VOL    STATE      TOTAL SIZE    FREE SPACE    CONTIG FREE SPACE
-----------------------------------------------------------------
 2:    FORMATTED    4194304        415822           403326

Enter volume number [2]: 2
```

```
FTP default volume is 2:

------------------------------------------------------------------------
Step 6.  Enable TELNET

                  Enable the Technician Interface via TELNET
                  ------------------------------------------

Do you want to enable TI TELNET? (y/n)[n]:


------------------------------------------------------------------------

                              Configuration Summary
                              ---------------------

Link Module:         QE/NF
Connector:           1
Slot:                2
Circuit Name:        E21
IP address:          192.168.135.100
IP subnetwork mask:  255.255.255.224
Routing Protocol:    RIP
Default Rt. Listen:  No
TFTP Default Volume: 2:
FTP Default Volume:  2:
TI TELNET:           No

Press [RETURN] to continue:

------------------------------------------------------------------------
Step 7. Specify a name for the configuration file.

                        Save configuration to a file.
                        -----------------------------

The Quick-Start configuration of the router is now complete and active.

Do you wish to save this configuration to a file? (y/n)[y]:

Default file name is startup.cfg on the current volume.

NOTE: Do *NOT* name this file 'config'. Later, you may wish to rename
      this file 'config' after you perform a named boot and verify its
      operation.

Enter file name [startup.cfg]:
```

```
------------------------------------------------------------------------
Step 8.  Test this initial IP interface configuration.

                                TEST IP Interface
                                -----------------

IP Interface 192.168.135.100 is up.


Testing local IP interface.

ping -IP 192.168.135.100 -r5
IP ping: 192.168.135.100 is alive (size = 16 bytes)
IP ping: 192.168.135.100 is alive (size = 16 bytes)
IP ping: 192.168.135.100 is alive (size = 16 bytes)
IP ping: 192.168.135.100 is alive (size = 16 bytes)
IP ping: 192.168.135.100 is alive (size = 16 bytes)


This test attempts to ping the Site Manager workstation.

NOTE:  If routing has not yet converged, an attempt
       to ping the Site Manager workstation may fail.  If
       this happens, you may either enter a new IP address or
       quit and wait a short period of time and try again from
       the TI command line.

Type q<return> to cancel this test.

Enter IP address of Site Manager workstation: q

Exiting...
  More Mode: ON
  Lines per screen: 24

[2:1]$
```

Appendix B
Sample TCP/IP Stack and NIC Driver Installation

This appendix describes a test installation of Distinct TCP/IP and a NIC driver on a PC, presented here as an example only. Your installation steps will vary depending on the PC, network interface card, and network you use. Refer to the Distinct Corporation and network-interface card documentation for more details.

To install Distinct TCP/IP, it was necessary to:

1. **Obtain the latest NDIS driver for our Ethernet network interface card.**

   The first time we performed Steps 2 to 14, we received a message that Distinct does not supply the needed driver for our network-interface card. Distinct does supply a driver for many cards, but sometimes you may have to use the driver supplied with the card or obtain the latest update.

   We made an FTP connection to the manufacturer and downloaded the latest driver *(elnk3.dos)* to a disk that we used in step 15.

   Similarly, if you install a driver and get the message "Bind failed," you may have to update the driver software that came with your card.

2. **Remove interfering network management software.**

   Because we wanted to test a new installation, we eliminated interference from an old version of Distinct and other networking software on our test computer by

   - Deleting the old Distinct directory
   - Making backup copies of the *autoexec.bat* and *config.sys* files

- Editing the *autoexec.bat* and *config.sys* files to delete references to the old version of Distinct and the other networking software

---

Note: You can only run one TCP/IP stack at a time.

---

3. **Roboot the PC.**
4. **Enter win to start Windows.**
5. **Insert the Distinct installation disk in the disk drive.**
6. **Select File > Run.**
7. **Enter A:\setup and run Distinct.**
8. **Accept the default to "Add Library to Path."**
9. **Accept defaults for the destinations for the program and driver.**
10. **Accept defaults to create the directories for the program and drivers.**

    The program then copied files from the disk to the created directories.
11. **Enter the Distinct serial number and key code from Table 7-1 in Chapter 7.**
12. **Accept the prompt to select and set up a network interface card.**

    Skip this step if you already have a NIC installed or if you are using SLIP or PPP over a modem.
13. **From the Choose Adapter menu, choose the EtherLink III (3C509B) card that was installed in the PC.**
14. **Select the NDIS driver type, as opposed to Packet or ODI type.**
15. **Copy the driver from the disk when prompted to supply a location for the card driver.**
16. **Click on OK on the request to update the *autoexec.bat, config.sys,* and *protocol.ini* files.**
17. **Choose to define a host instead of dynamically defining it using the BOOTP or RARP protocols.**
18. **Define our host's Name and Internet Address (192.---.---.---).**
19. **Choose not to enter a Domain Server Name.**

20. **Choose to enter a Default Server Gateway.**
21. **Define our Gateway Name and Internet Address.**
22. **Choose not to set up a serial line IP (SLIP or PPP).**
23. **Reboot the PC.**

The Distinct TCP/IP and network interface card driver installation succeeded.

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