MA4000 Network Manager

User Guide

NEC Unified Solutions, Inc.

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Introduction

The *MA4000 Network Manager User Guide* details the Network Manager application tool and enhancements to MA4000 Installation Manager that configures and manages Station Message Detail Recording (SMDR) and Fusion Networks for UNIVERGE SV7000 and NEAX IPX PBXs for version R22 and higher.

The following topics are included in this chapter:

Chapter Topics

MA4000 Network Manager Overview

The MA4000 Network Manager is intended to enhance the capabilities already present within MA4000 Installation Manager. The Network Manager helps you manage your existing networks as you use Installation Manager to install and manage new networks

Though it adds functionality to MA4000 Installation Manager, the MA4000 Network Manager does not require MA4000 Installation Manager to perform its task. The MA4000 Network Manager is capable of running in a stand-alone mode to integrate SMDR and new PBX nodes into a Fusion (FCCS)network with a connecting node originally programmed using the MAT, the Installation Clipboard application, or MA4000 Installation Manager.

The MA4000 Network Manager enhancements do not require licensing separate of that included with MA4000 Installation Manager.

There are features/capabilities that must be added to an existing version of MA4000 Installation Manager in order to support FCCS networking. They are:

- Modify System Data (ASYD/L/N, AFMU, AIOC, and ALRTN)
- Modify Numbering Plan Data (ANDP, ANPDL, and ANPDN)
- Modify Station Data (ALGSL, ALGSN, and ASFC/N)
- Modify Route Data (ARTD/N and ARTI)

- Modify SMDR Configuration Data (ASYD/L/N)
- Modify Service Feature Data (ASFC/N)

Table 1-1 *Network Manager Features*

Function	Description
NCN FCCS Synchronization	Gathers all SMDR and Fusion related data, as well as, miscellaneous system data such as hardware type and software version.
Insert LCN Node	Programs both the NCN and LCN to establish the FCCS Fusion network connection.
NCN Network Settings Configuration	Configures the NCN PBX settings such as timer start, attendant FPC Console, etc.
NCN/LCN Station Integration	Gathers and integrates the Numbering Plan and Station data from both the NCN and LCN PBXs.
SMDR Configuration	Configures the SMDR for all nodes in the network including routes and service features class in both the network and local data memories.

How This Guide is Organized

Chapter 1
Introduction
This chapter outlines how to use this manual, including actual manual organization and chapter layout for the MA4000 Network Manager application.

Chapter 2
Getting Started
This chapter explains the hardware and software requirements of MA4000 Network Manager, and lists he steps needed to install the application.

Chapter 3
Graphical User Interface
This chapter provides an overview of the various interfaces of the MA4000 Network Manager software.

Chapter 4
Network Nodes
This chapter describes how MA4000 Network Manager gathers all SMDR and Fusion related data, as well as miscellaneous system data such as hardware type and software version.

Chapter 5
Network Settings
This chapter provides the information that MA4000 Network Manager uses to configure the NCN Switch network settings.

Chapter 6
Network Stations
This chapter explains how MA4000 Network Manager reads the Numbering Plan and station data from the NCN and LCN PBXs, then assigns the local stations from the PBX into the Fusion Network.

Chapter 7
SMDR Configuration
This chapter describes how MA4000 Network Manager configures SMDR for all nodes in the network, including routes and service features class in both the network and local data memories.

MA4000 Network Manager Application Abbreviations

CCIS	Common Channel Inter-Office Signaling
DM	Data Memory
DTI	Digital Trunk Interface
FCH	Fusion Call Handler
FCCS	Fusion Call Control Handling
LCN	Local Control Node
LDM	Local Data Memory
NCN	Network Control Node
NDM	Network Data Memory
MAT	Maintenance Administration Terminal
MC	Media Converter
MG	Media Gateway
SMDR	Station Message Detail Recording
TCP/IP	Transmission Control Protocol/Internet Protocol

2

Getting Started

This chapter lists the hardware and software requirements necessary to operate the MA4000 Network Manager. The chapter also provides the steps needed to install the MA4000 Network Manager.

MA4000 Network Manager is installed as a tool when installing MA4000 Installation Manager. The installation steps listed in this chapter are for installing the MA4000 Network Manager in the stand-alone mode.

Chapter Topics

Hardware and Software Requirements

Table 2-1 *System Requirements*

Minimum	Recommended
Operating System	
Windows 98 ***Note:*** *This is the bare minimum operating system.* *Windows NT 4.0 (Service Pack 5 or later)* *Windows 2000 (Service Pack 3 or later)* *Window XP Professional (Service Pack 1 or later)* ***Note:*** *This is the preferred operation system.*	
Note: *Other Windows operating systems may work, but will not be supported because of testing limitations. Users of Windows ME and Windows XP Home Edition will probably be able to successfully run MA4000 Installation Manager but these are not considered business operating systems.*	
Processor	
Pentium 400 MHz	*Pentium 700 MHz*
Memory	
64 MB	*128 MB, or more*

Minimum	Recommended
Hard Drive Space (available before installation)	
250 MB	300 MB, or more
Monitor	
800x600 SVGA	1024x768 SVGA
Web Browser (for support only)	
Any HTML 1.1 compliant	Internet Explorer 5.5, or greater
Ethernet Port	
10/100 MB Ethernet Port for connecting to SV7000-T and SV7000S	
Serial Port	
For configuration of Peripheral Hardware (MC, MG, VS)	
Modem	
For SV7000-T software registration	
PCMCIA Card Slot	
Intel compatible PCMCIA card slot for use when initializing SV7000-T Flash Card	
Database	
Microsoft MSDE 2000 (Included on CD-ROM)	
Additional Hardware	
CD-ROM	CD-ROM 2x, or higher
Mouse and 101 Keyboard	Mouse and Keyboard

Installing MA4000 Network Manager

To install MA4000 Network Manager in a stand-alone mode, use the installation disc included in your MA4000 Installation Manager package. You must run **Setup** from within Windows.

NOTE

*Be sure to close all open Windows programs and screen savers. Plus, disable any virus detection programs before using the **Setup** program.*

The following procedure walks you through the MA4000 Network Manager installation. The setup consists of a series of dialogs supplying you with default answers to questions regarding the installation of files to your hard disk. To accept the default answers, click the **Next** button. To make changes, click the **Browse** button and select a different directory, then click the **OK** button to return to the dialog box.

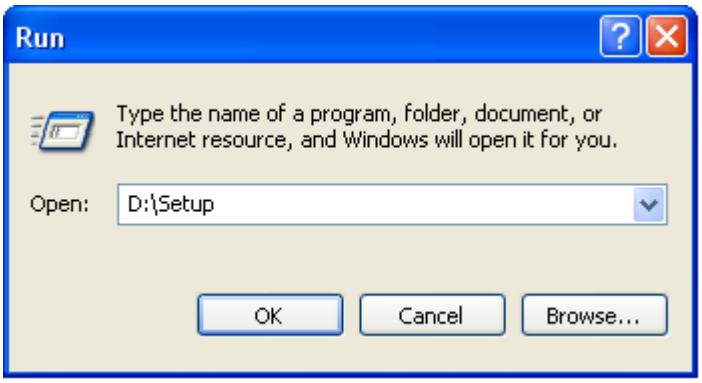
The following procedure assumes you are starting the Setup program from your computer's CD-ROM drive D:. If you start from a different drive, substitute the letter of that drive in this procedure.

Step 1 Launch Microsoft Windows 98, Windows 2000, or Windows XP Professional.

Step 2 Place the *MA4000 Network Manager* disc in the CD-ROM drive.

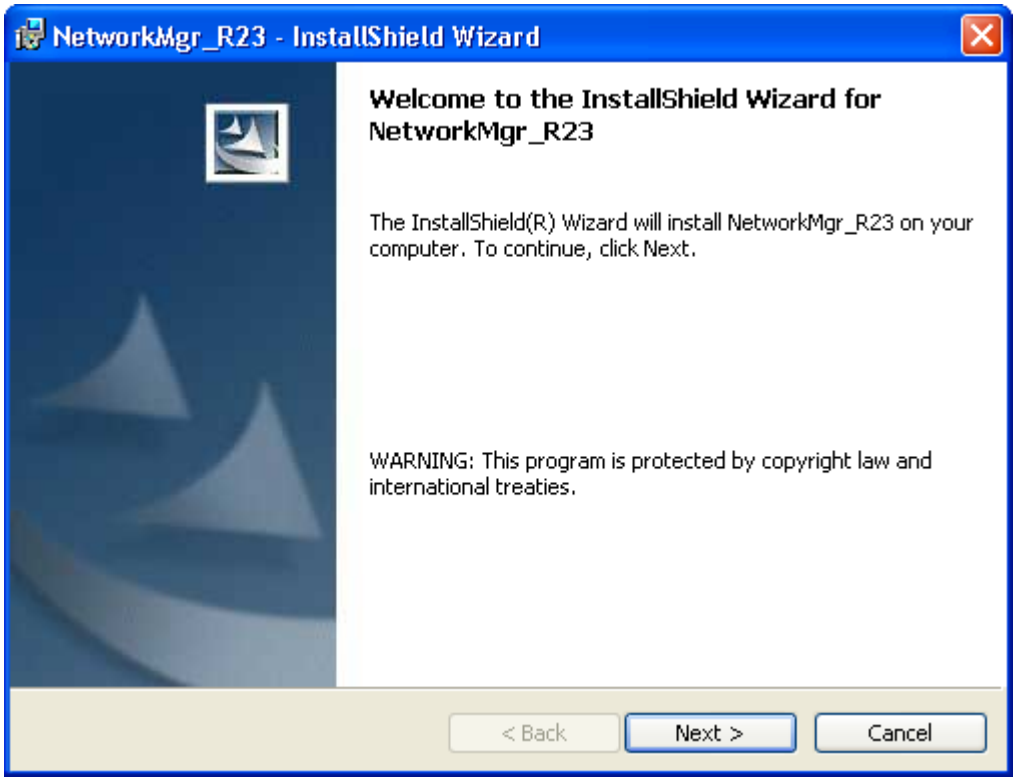
Step 3 Click the Windows **Start** button and select **Run....** from the pop-up menu. The *Run* dialog box (Figure 2-1) displays.

Figure 2-1 *Run*



Step 4 Type **D:\Setup** in the Open text box (as shown in Figure 2-1) and click the **OK** button. The *Network Manager R23 - InstallShield Wizard Welcome* dialog box displays (Figure 2-2).

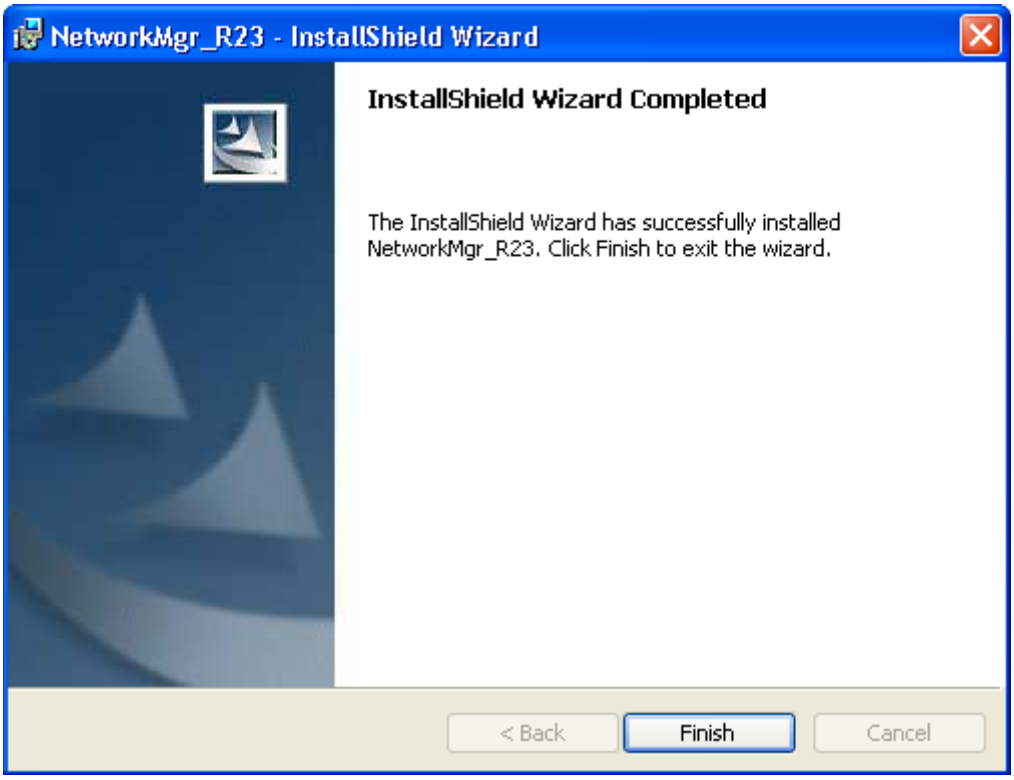
Figure 2-2 *Network Manager R23 - InstallShield Wizard Welcome*



Step 5 Follow the prompts in the Setup program to accept the software licensing agreement, to enter your customer information, and to select the setup type. The Setup program copies the required files to your hard drive.

The *Network Manager R23 - InstallShield Wizard Completed* dialog box displays (Figure 2-3) after the Setup program finishes copying files to your hard disk drive.

Figure 2-3 *Network Manager R23 - InstallShield Wizard Completed*



3

Graphical User Interface

This chapter provides an overview of the components of the MA4000 Network Manager software.

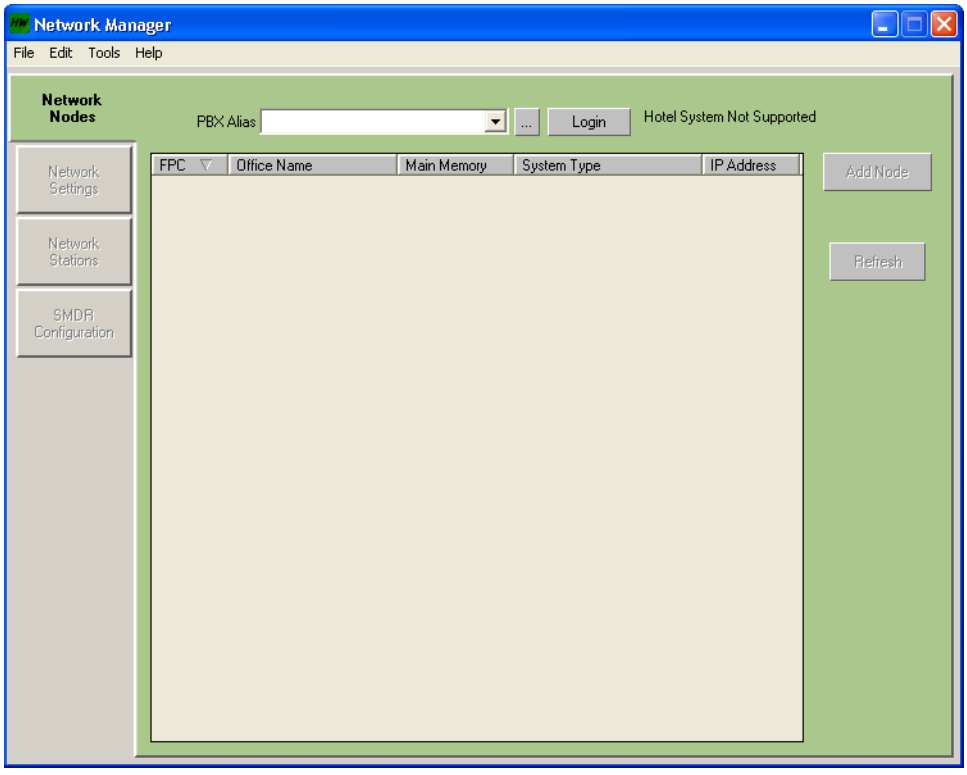
The following topics are included in this chapter:

Chapter Topics

Startup Dialog

When MA4000 Network Manager is initially started, Figure 3-1 displays.

Figure 3-1 *Initial MA4000 Network Manager Startup*



Pull-Down Menus

File Menu

The **File** pull-down menu (Figure 3-2) contains this function:

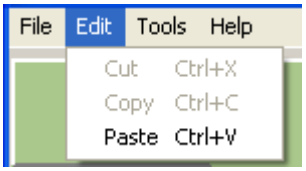
- *Exit*

Figure 3-2 *File Menu*

Edit Menu

The Edit pull-down menu (Figure 3-3) contains the common functions typically found in stand-alone applications.

Figure 3-3 *Edit Menu*



Cut (Ctrl+X)

Step 1 Select an item (this could be the context of a text box, or it could be multiple items in a list).

Step 2 After a selection is made, press the **Ctrl** and **X** keys to place the contents in the Windows Clipboard.

Step 3 You can now paste the contents to another location, such as another windows application, or to another location within MA4000 Network Manager. See *Paste (Ctrl-V)*.

Paste (Ctrl-V)

Step 1 Place the curser in the field or in the row below where the contents of the Windows Clipboard is to be pasted.

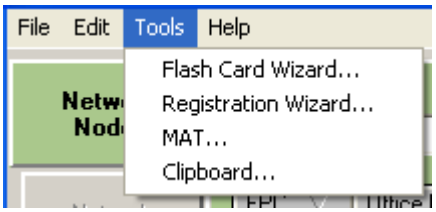
Step 2 If an item is selected, then the past operation will replace the selected item. In the case of a list box, the contents of the clipboard will be pasted above the cursor location.

The contents of the clipboard must have the same number of columns as the destination list box. If it does not have exactly the same number of columns, the operation will not occur.

Tools Menu

The **Tools** pull-down menu (Figure 3-4) contains the **Flash Card Wizard**, **Registration Wizard**, **MAT,** and **Clipboard** functions.

Figure 3-4 *Tools Menu*



Flash Card Wizard ...

WARNING

The Flash Card Wizard does not work on MPS due to MPS being Linux-based. See Registration Wizard ... for procedure to upgrade the system.

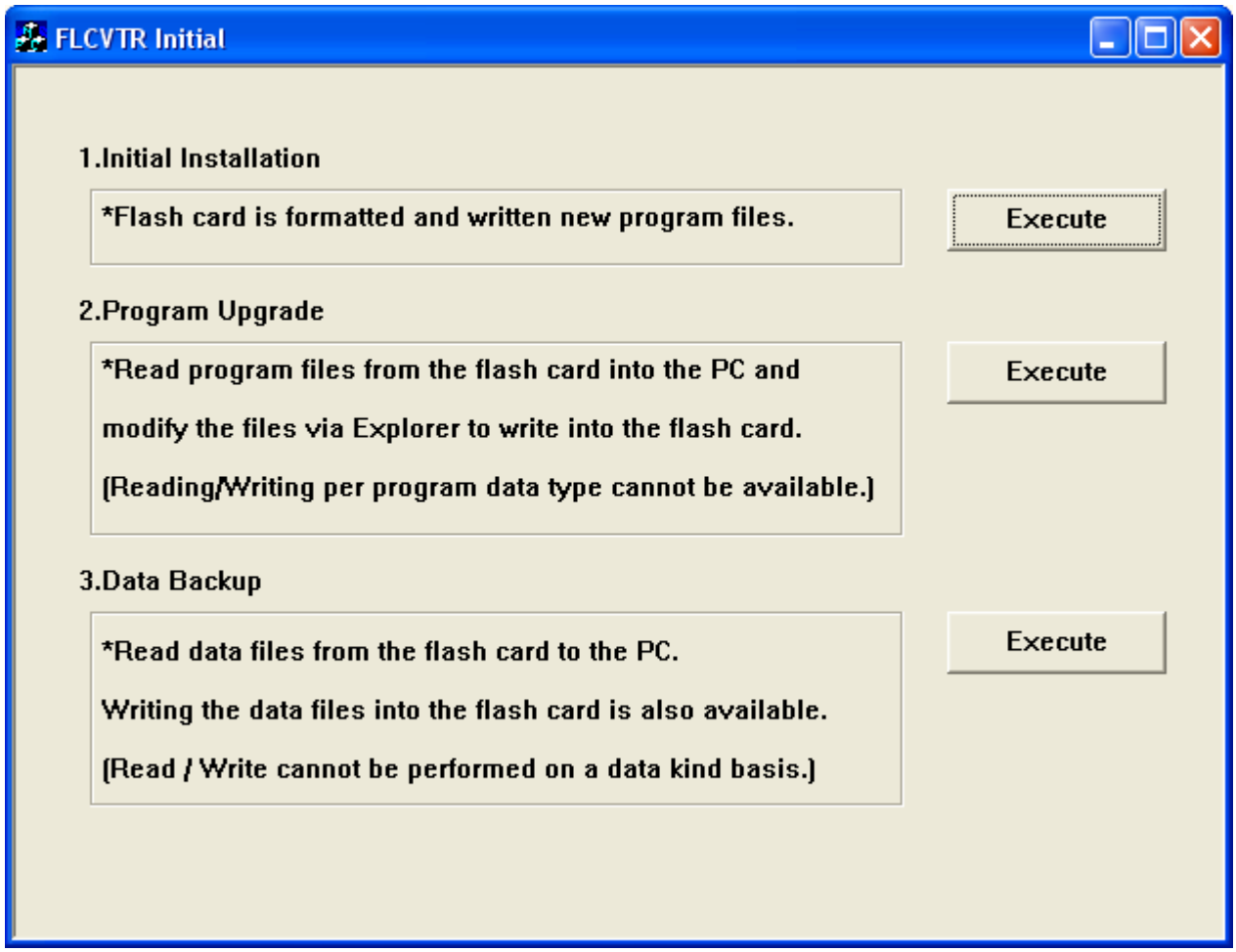
The **Flash Card Wizard** option provides the tools to:

- Format and write new program files to a new flash card
- Upgrade the program files by reading program files to the personal computer and modifying the files using Explorer to write to the flash card, or backup data by reading data from the flash card to the personal computer. See Figure 3-5.

To launch the Flash Card Wizard, do the following:

Step From the Network Manager Menu Bar, click **Tools** > **Flash Card Wizard ...**.

Figure 3-5 *FLCVTR Initial*

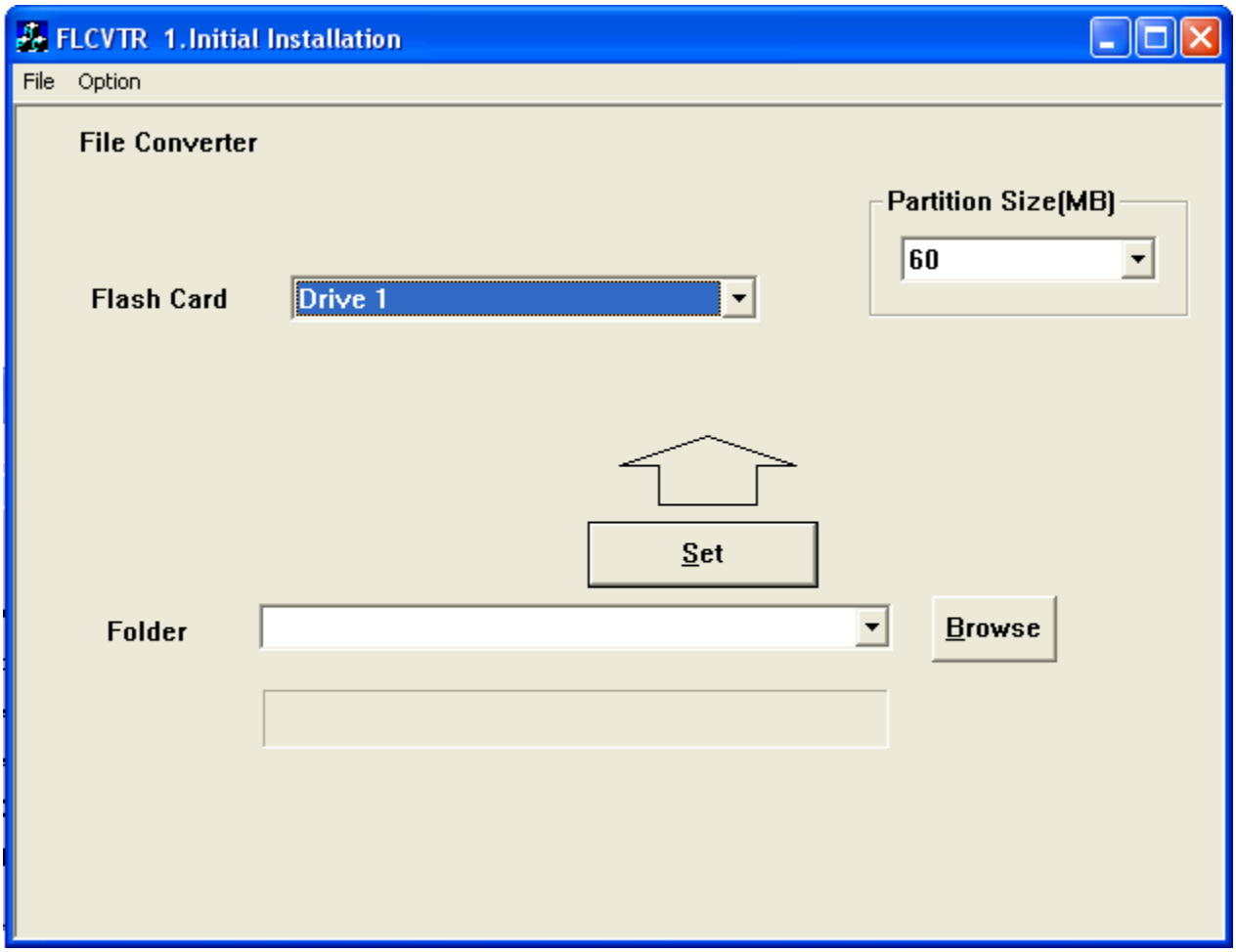


IMPORTANT

The flash card installation needs to be installed using the MPS System CD-ROM.

- If the Initial Installation **Execute** button is clicked, Figure 3-6 displays.

Figure 3-6 *FLCVTR Initial Installation Execute*



Step 1 Insert an unformatted flash card into an available PCMCIA slot. Ensure you insert a flash card prior to launching the FLCVTR program in order to display the PC's PCMCIA slot for the **Flash Card** field.

Step 2 Click the **Browse** button to locate the file containing the program to be written to the flash card.

NOTE

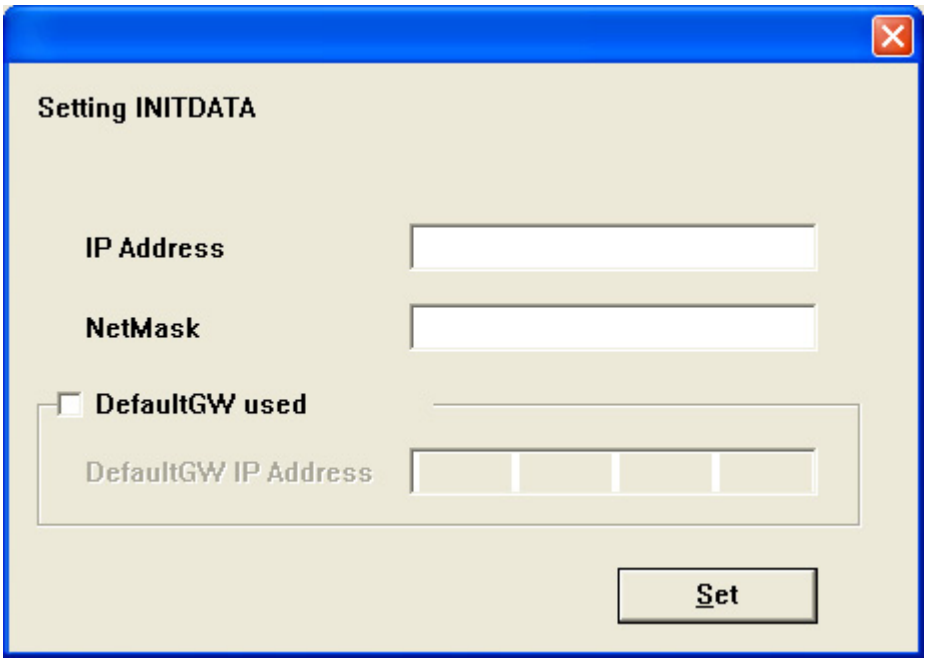
*If defining the partition size is necessary, select the appropriate size from the pull-down menu located in the **Partition Size (MB)** field. Normally, the **Partition Size (MB)** field is not visible, choose the **Option** menu item and select the **PartitionSize Select** option to make the field visible.*

Step 3 Select the PCMCIA slot for the flash card.

Step 4 Click the **Set** button to write the program to the flash card.

Step 5 After pressing the **Set** button, Figure 3-7 displays.

Figure 3-7 *Setting INITDATA*



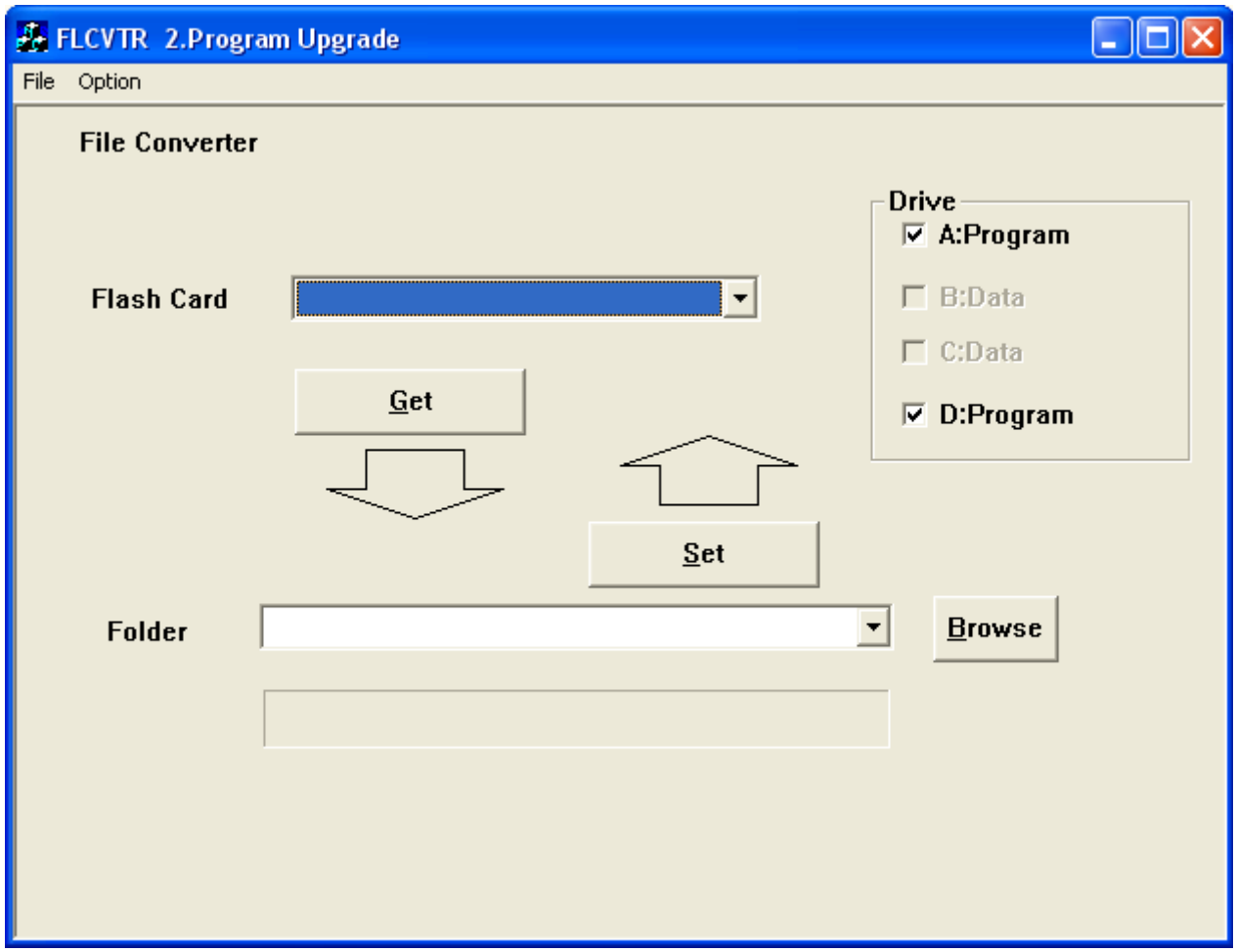
Step 6 Enter the IP Address, Subnet Mask and Gateway of the SV7000, then click the **Set** button.

NOTE

This option only applied to the UNIVERGE SV7000, and is not available for a NEAX 2400 IPX.

- If the Program Upgrade **Execute** button is clicked, Figure 3-8 displays.

Figure 3-8 *FLCVTR Program Upgrade Execute*



Step 1 Insert the flash card containing the program files into an available PCMCIA slot.

Step 2 In the **Drive** field, choose the drive containing the program files and the location where the files are to be written.

TIP

*If the **Drive** field is not visible, choose the **Option** menu item and select the **Drive Select** option.*

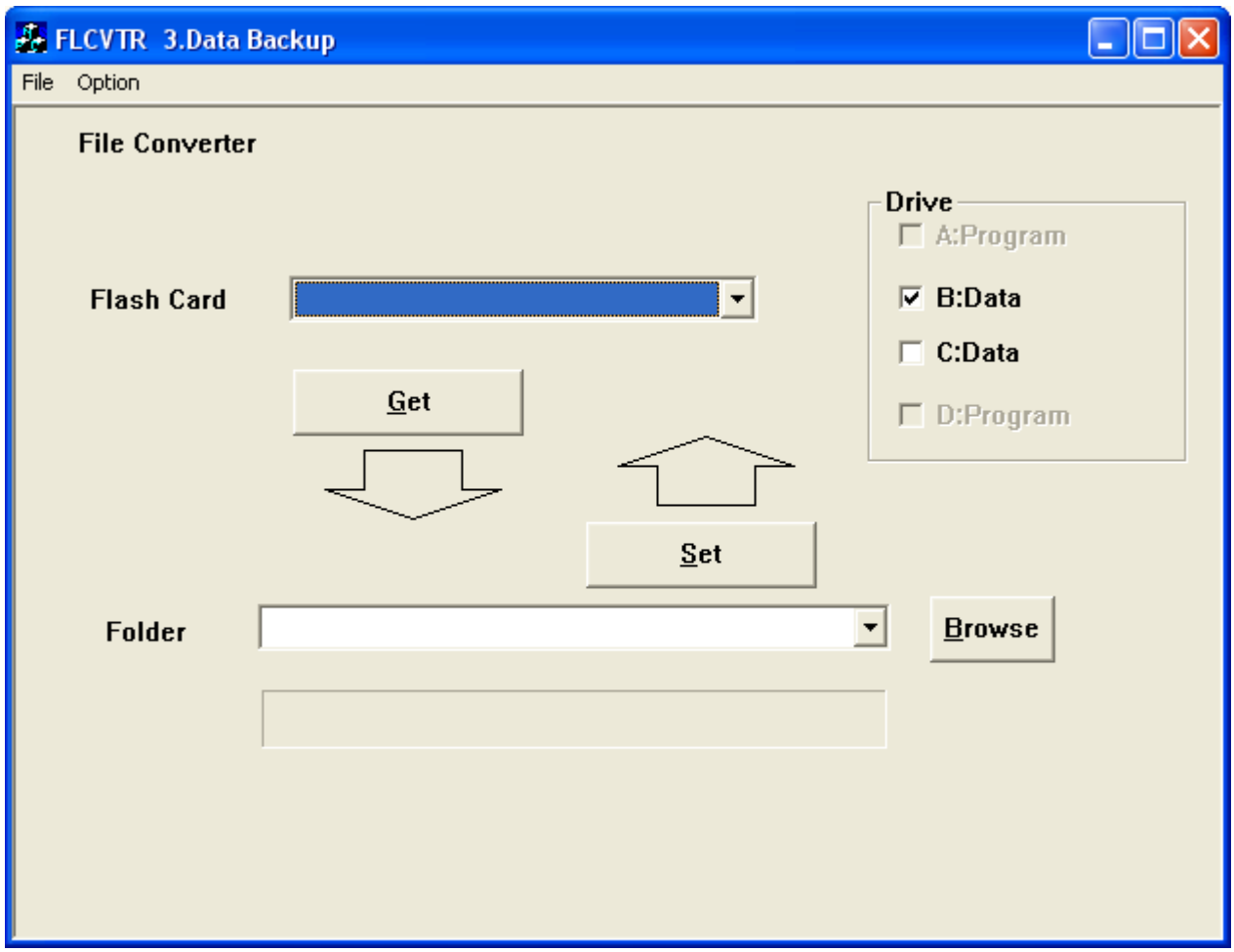
Step 3 Select the PCMCIA slot for the flash card.

Step 4 Click the **Browse** button to locate the folder or CD Drive where the Program Files are located.

Step 5 Click the **Set** button to load the Program Files to the Flash Card.

- If the Data Backup **Execute** button is clicked, Figure 3-9 displays.

Figure 3-9 *FLCVTR Data Backup Execute*



Step 1 Insert the flash card containing the program files into an available PCMCIA slot.

Step 2 In the **Drive** field, choose the drive containing the office data files and the location where the files are to be written.

TIP

*If the **Drive** field is not visible, choose the **Option** menu item and select the **Drive Select** option.*

Step 3 Select the PCMCIA slot for the flash card.

Step 4 Click the **Browse** button to locate the folder where the office data files will be written.

Step 5 Click the **Get** button to write the office data files located on the flash card to the location selected.

Registration Wizard ...

The **Registration Wizard** connects your system to the NEC Registration Service and obtains your Activation Code. See Figure 3-10.

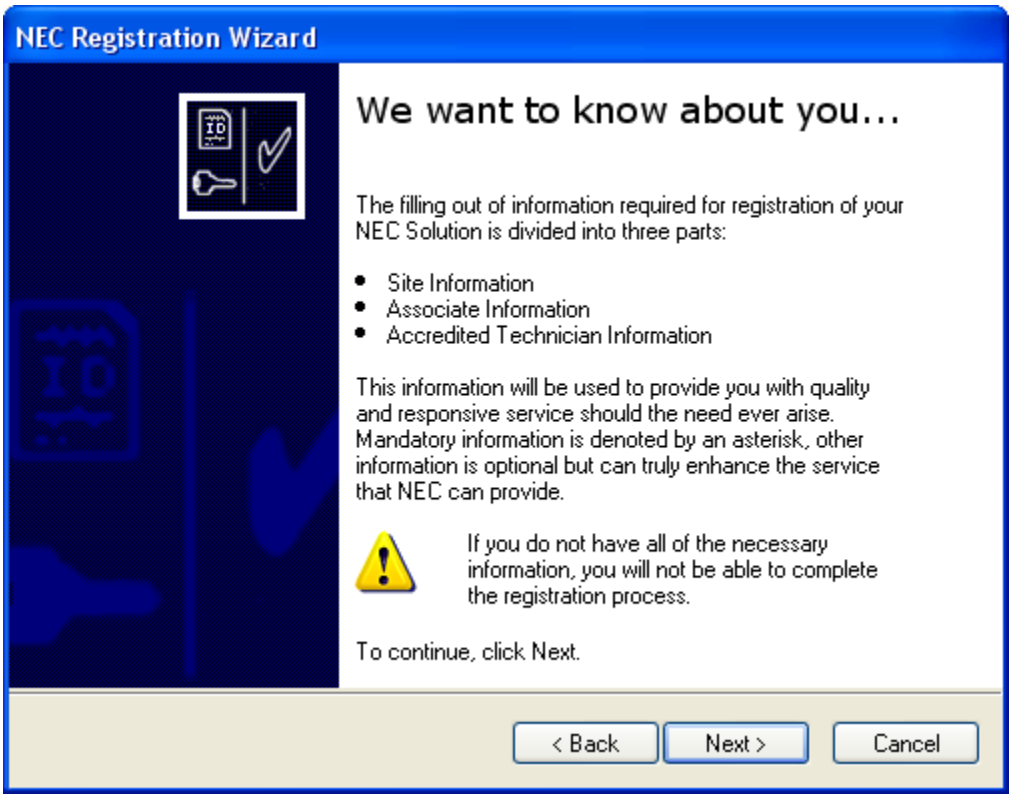
To launch the Registration Wizard, do the following:

Step From the Network Manager Menu Bar, click **Tools** > **Registration Wizard ...**.

Figure 3-10 *Welcome to the Registration Wizard*

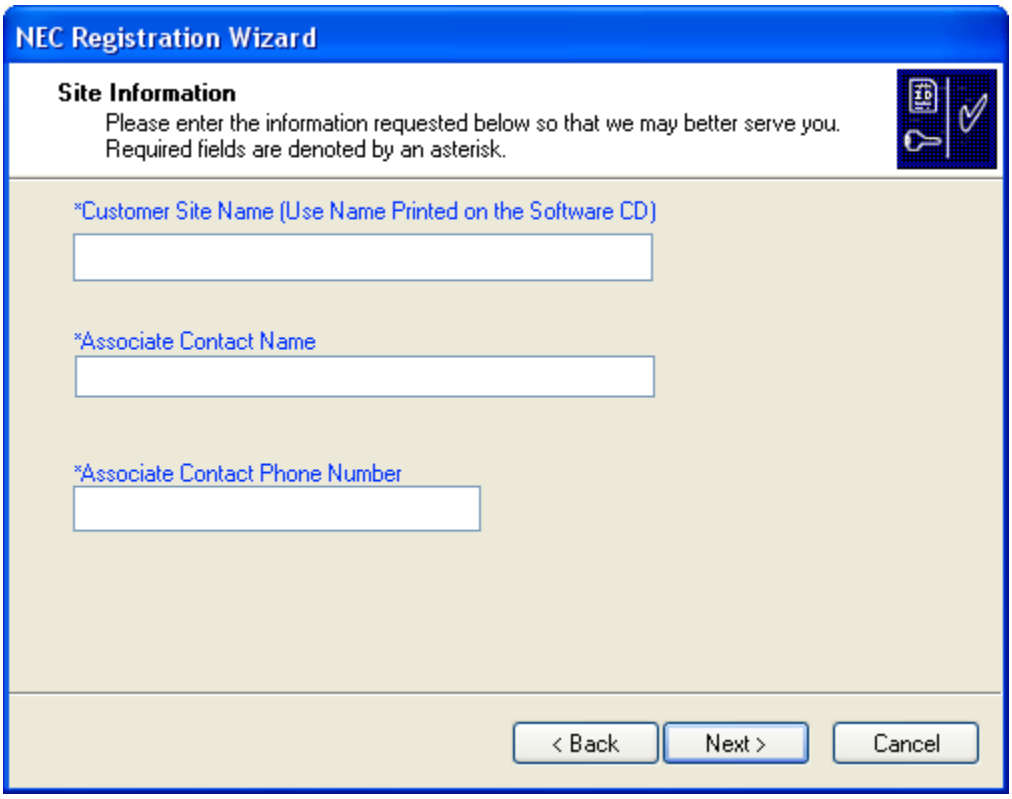
Step 1 Select the **Next** button to proceed. Figure 3-11 displays.

Figure 3-11 *NEC Registration Wizard - We Want To Know About You*



Step 2 Select the **Next** button to continue. Figure 3-12 displays.

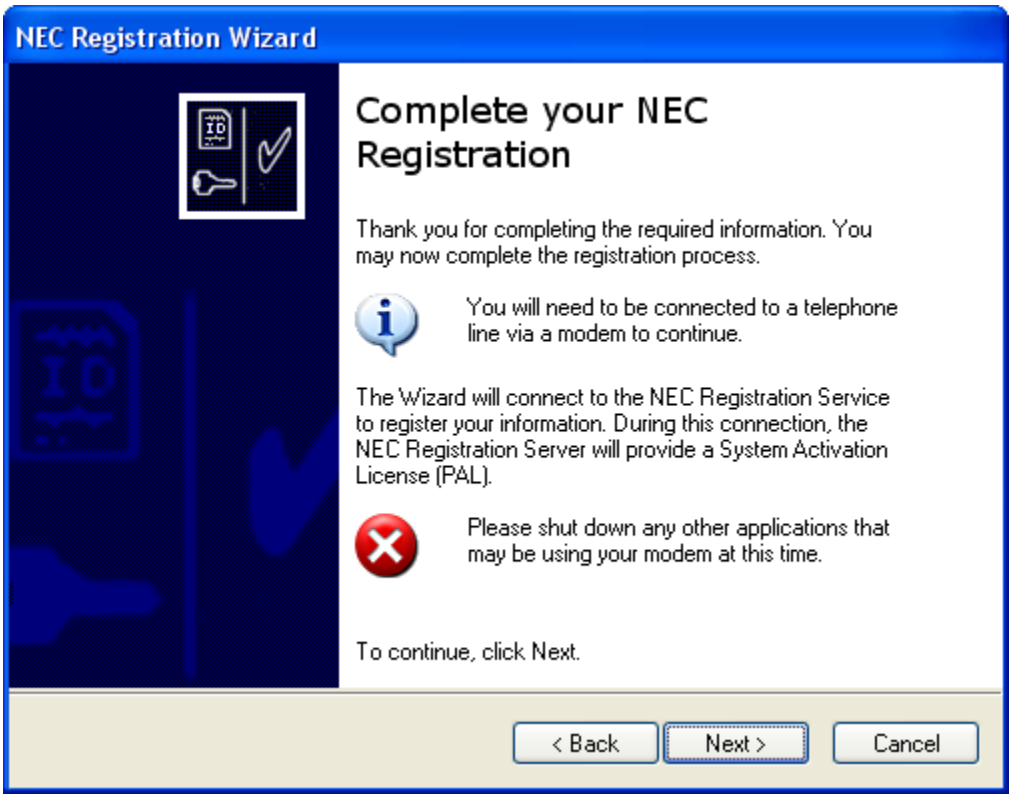
Figure 3-12 *NEC Registration Wizard - Site Information*



Step 3 Enter the site information requested. Those fields denoted with an asterisk require an entry.

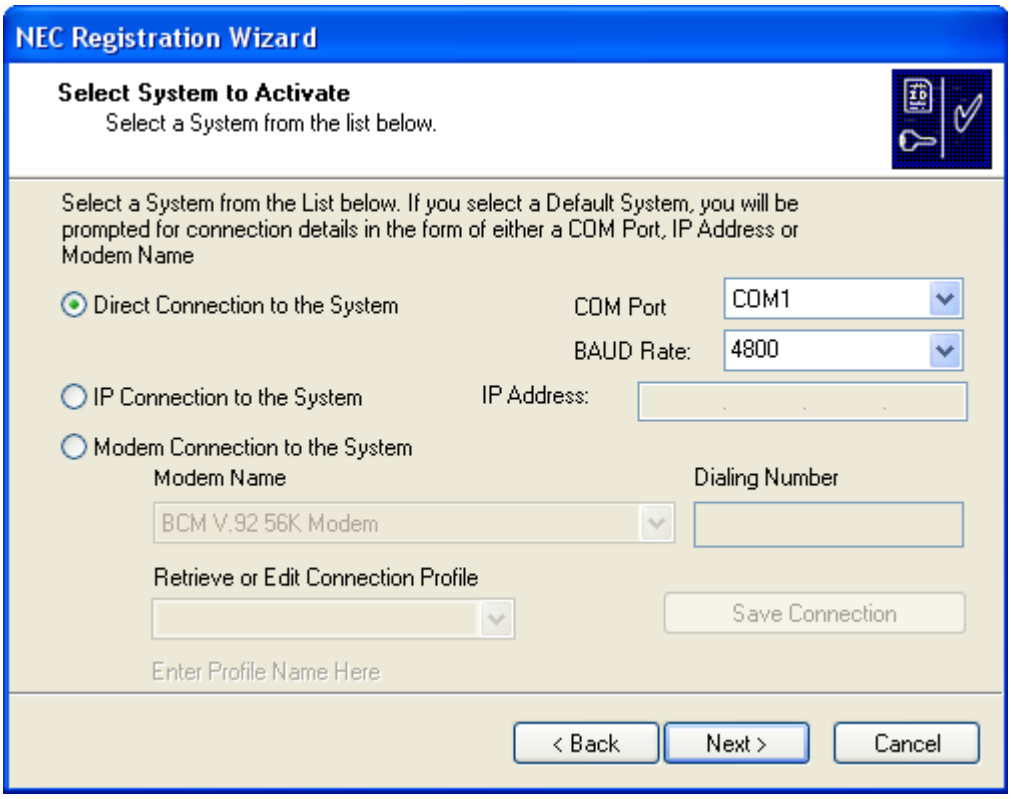
Step 4 Click the **Next** button to continue. Figure 3-13 displays.

Figure 3-13 *NEC Registration Wizard - Complete Your NEC Registration*



Step 5 Click the **Next** button. Figure 3-14 displays.

Figure 3-14 *NEC Registration Wizard - Select System to Activate*



Step 6 Select the appropriate system from the list provided.

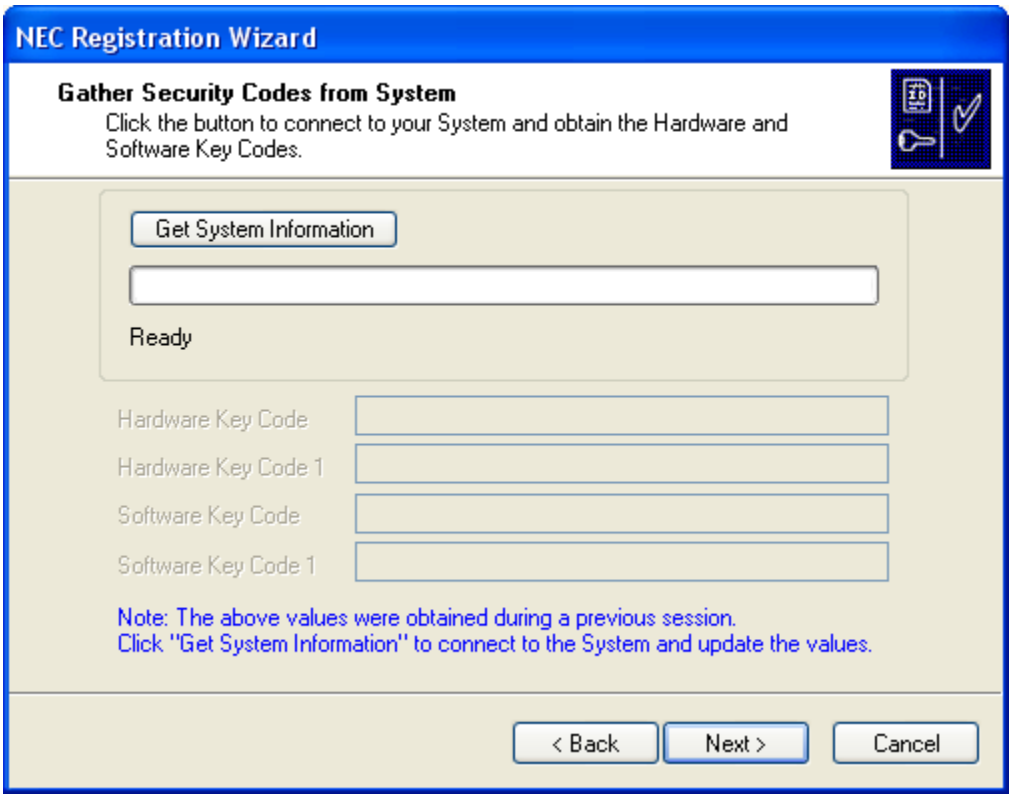
—**Direct Connection to the System**. Enter the communication port and baud rate.

—**IP Connection to the System**. Enter the IP address.

—**Modem Connection to the System**. Select the modem type, enter the dialing number, and create, edit or retrieve a connection profile. Click the **Save Connection** button to save the modem profile.

Step 7 Click the **Next** button. Figure 3-15 displays.

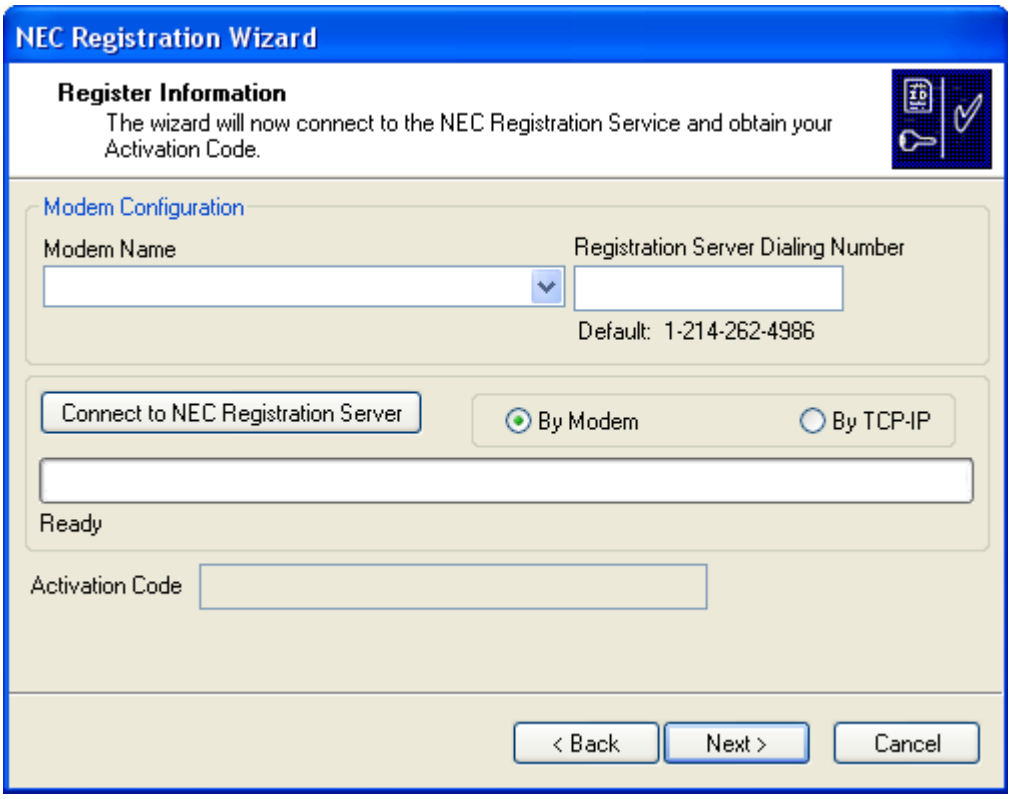
Figure 3-15 *NEC Registration Wizard - Gather Security Codes from System*



Step 8 Click the **Get System Information** button to connect your system and obtain/update the hardware and software key codes.

Step 9 Click the **Next** button to proceed. Figure 3-16 displays.

Figure 3-16 *NEC Registration Wizard - Registration Information*



Step 10 In the Modem Configuration Section, enter or select the correct information into the **Modem Name** and **Registration Server Dialing Number** fields.

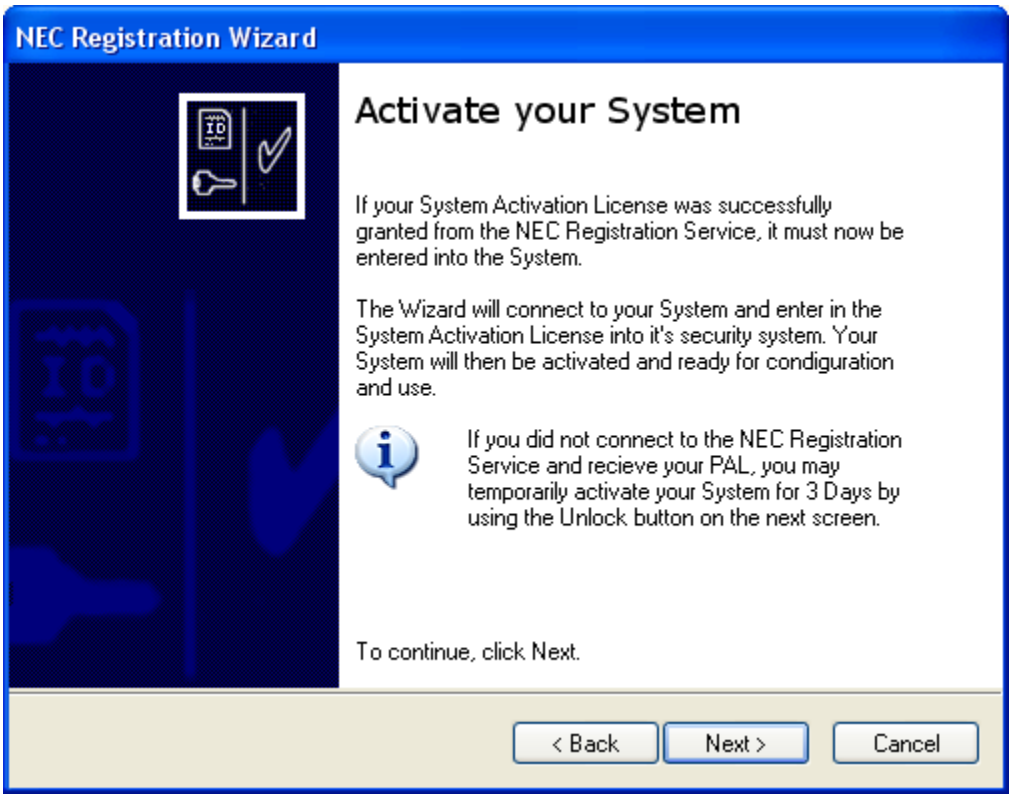
Step 11 Click **Connect to NEC Registration Server** and obtain the Activation Code.

—The modem defined in Step 10 calls into the server and retrieves the Activation Code, or you can select the **By TCP-IP** option button to connect using that method.

—The activation code will display in **Activation Code** field after successful registration with the NEC Registration Service.

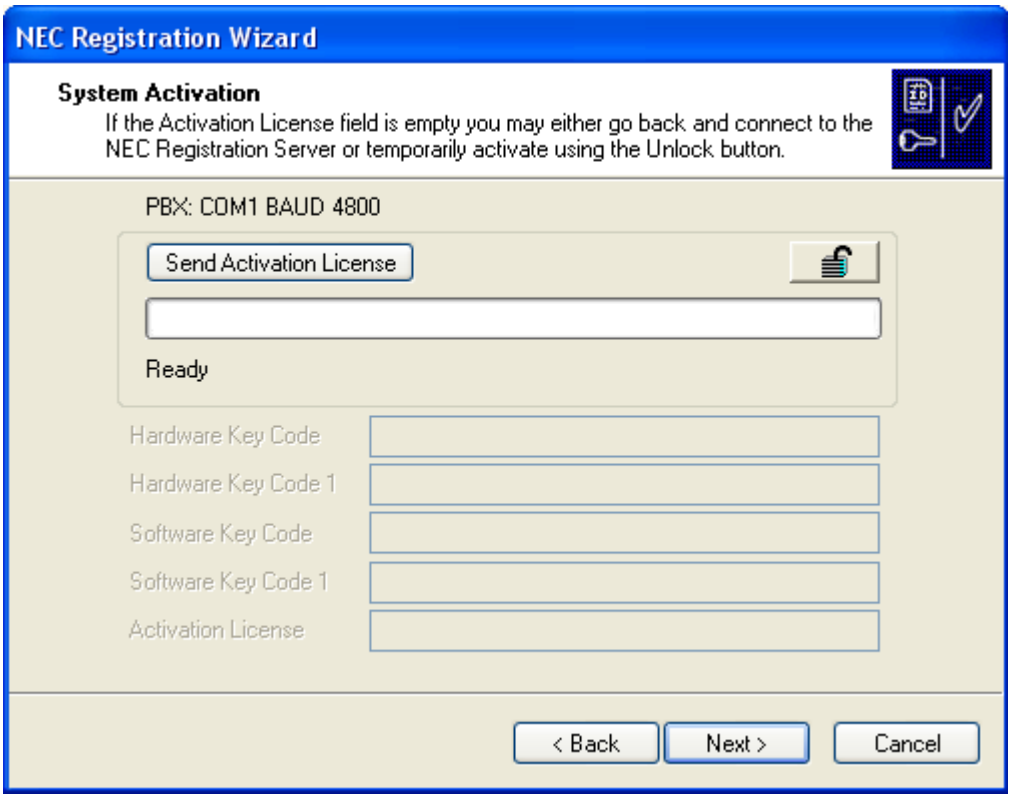
Step 12 Select the **Next** button. Figure 3-17 displays.

Figure 3-17 *NEC Registration Wizard - Activate Your System*



Step 13 To activate your system, click the **Next** button. Figure 3-18 displays.

Figure 3-18 *NEC Registration Wizard - System Activation*



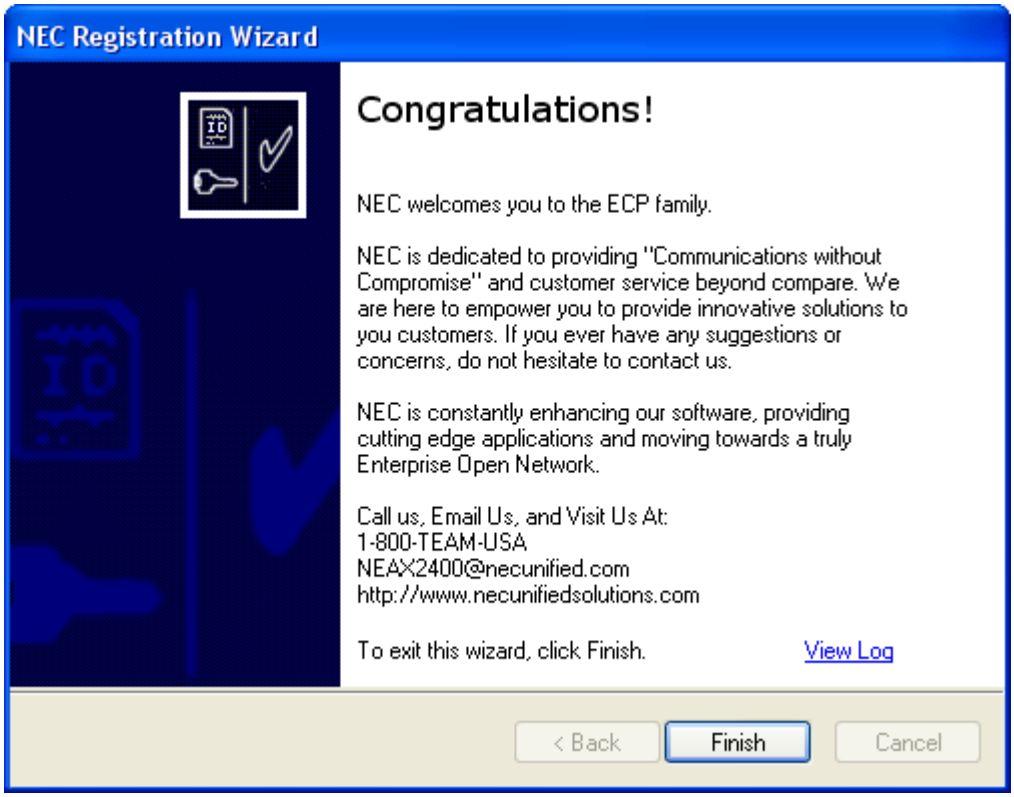
Step 14 Select the **Send Activation License** button to activate your system.

Step 15 Select the **Next** button to proceed. Figure 3-19 displays.

NOTE

*If the **Activation License** field is empty, you can either go back and connect to the NEC Registration Server or temporarily activate your system with the **Unlock** button.*

Figure 3-19 *NEC Registration Wizard - Congratulations*



Step 16 Click the **Finish** button to exit the Registration Wizard.

MAT ...

The Maintenance Administration Tool (MAT) is a command-line interface application for configuring your system. Experienced users who wish to use the MAT to send commands directly to the switch can launch it from within Network Manager.

To launch the MAT, do the following:

Step 1 Launch the Network Manager. The Startup dialog displays.

Step 2 Select an existing project or create a new project. The Network Manager main screen displays.

Step 3 Select **Tools** > **MAT....** The MAT launches and displays as a separate application.

Clipboard...

Network Manager now provides experienced users with integrated access to the MAT Clipboard application. You can use this tool to access MAT commands and transfer information directly to the Voice Server or work offline and upload all changes at once.

The Clipboard can save command data from the Voice Server as XML (Extensible Markup Language) files. You can then edit the XML files using Microsoft Excel and upload the modified data back to the Voice Server. Many MAT commands are time-consuming when programmed individually. Using the Clipboard to download and upload the command data in a single operation can make many tasks more efficient. For example:

- Create an off-line XML file containing a large number of new users, configured using the ASDT and AKYD commands, then upload the file to the Voice Server.
- Transfer data from an old Voice Server to a new Voice Server by downloading user data, editing it off-line, then uploading it to the new Voice Server.

REFERENCE

For more complete information on using the Clipboard, refer to its user documentation.

The Clipboard application (Figure 3-20) speeds system installations and eliminates errors by importing data from one switch to a destination switch.

Clipboard has been enhanced to be able to perform batch downloads. You have the ability to:

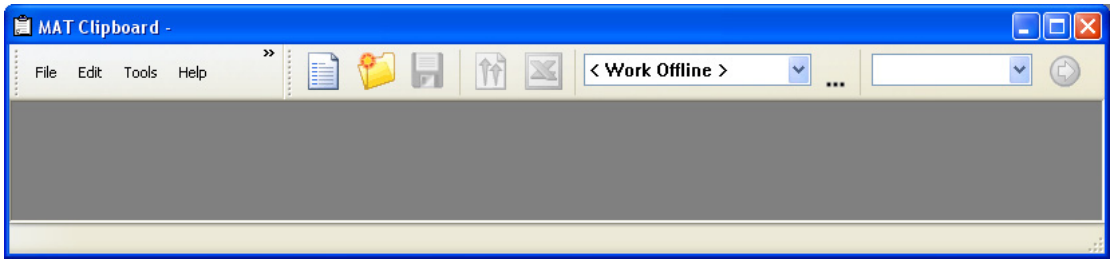
- Download data from the switch based on categories (for example, Station Data, Trunk Data, Restricted Data, etc.)
- Add commands the data needs to be download to a list that would be run as a batch process.
- Save selected commands in user template files for future access.

This enhancement lessens the work needed when downloading data for the same set of commands.

To launch Clipboard, do the following:

Step From the Network Manager Menu Bar, click **Tools** > **Clipboard**.

Figure 3-20 *MAT Clipboard*



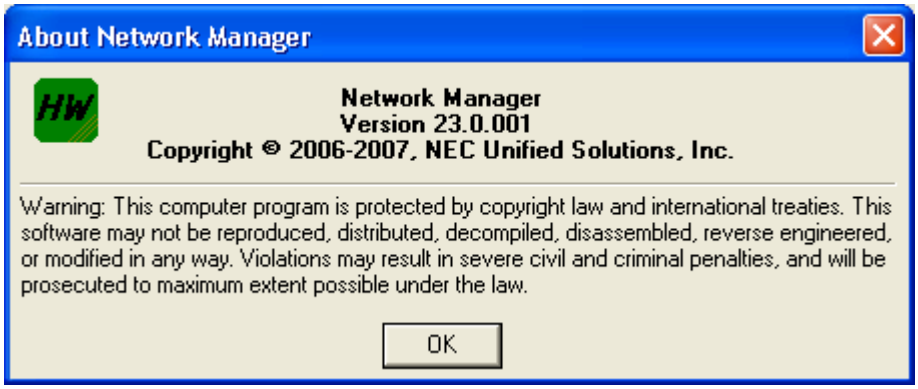
Help Menu

The **Help** pull-down menu is the place to go for assistance or information.

About MA4000 Network Manager ...

The **About MA4000 Network Manager...** option displays the application's version and copyright information (Figure 3-21).

Figure 3-21 *About MA4000 Network Manager*



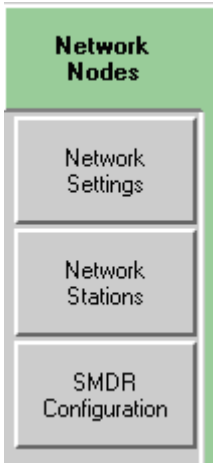
View Log File ...

The **View Log File...** option lists the current MA4000 Network Manager log build information.

Primary Sections

The tabs located along the left side of the graphical user interface in the Main window (see Figure 3-22) contain the core functions of MA4000 Network Manager. This is where you will view, manipulate, and prepare the data to be sent to the system.

Figure 3-22 *Primary Section Tabs*



When a tab is selected, a view displays for each. This information is a logical break down of the tab.

The following chapter describes in detail every tab and its purpose.

4

Network Nodes

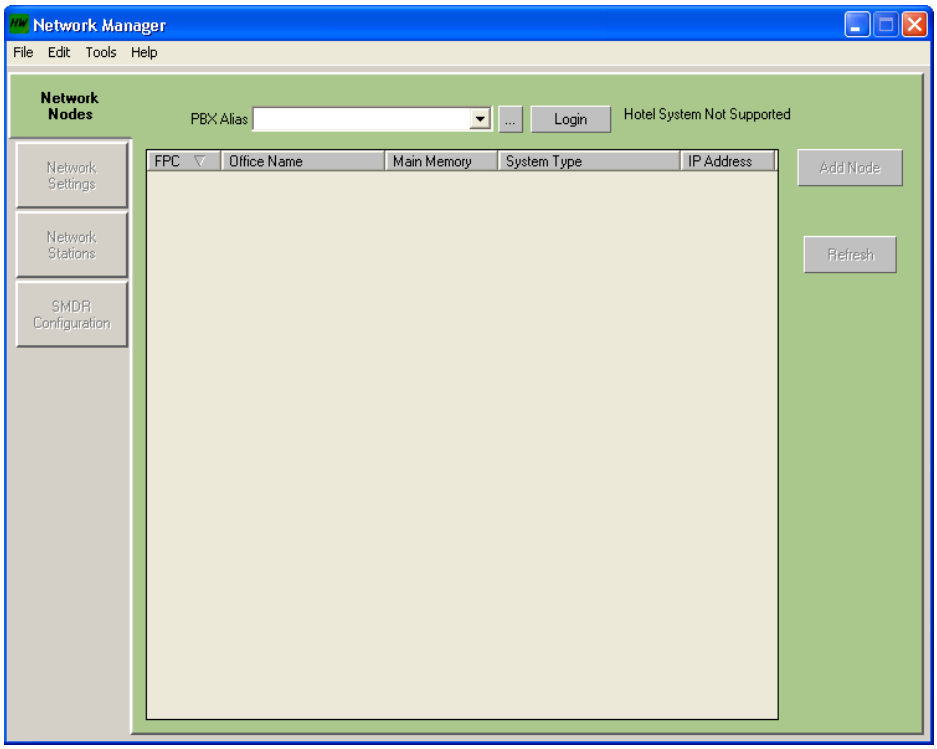
This chapter describes the MA4000 Network Manager's **Network Node** tab.

Chapter Topics

Network Nodes Overview

The **Network Nodes** tab is used, after Network Manager is connected to a PBX, to gather all SMDR and Fusion related data, as well as miscellaneous system data such as hardware type and software version.

Figure 4-1 *MA4000 Network Manager - Network Nodes Tab*

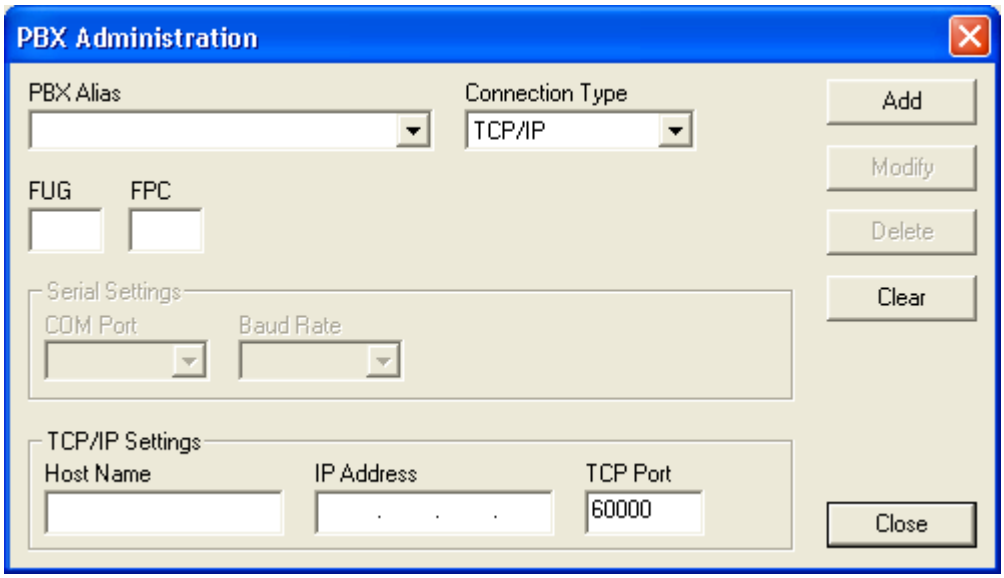


Creating a PBX Alias

To create a new PBX Alias, do the following:

Step 1 Select the **Browse** button located immediately to the right of the **PBX Alias** drop-down field. Figure 4-2 displays.

Figure 4-2 *PBX Administration - New PBX Alias*



Step 2 Enter the desired information in the fields described in Table 4-1.

Table 4-1 *PBX Administration Field Descriptions*

Field	Description
PBX Alias	Select an existing, or create a new alias name for the PBX.
Connection Type	Specify the communication interface used to connect to the system. The choices are: • Serial/Direct (not supported) • TCP/P
FUG	Fusion Group Group Number. Used by the AFUGN command (and others). Used when you have two groups of PBXs in two different Fusion Networks. Allows you to have a Centralized MAT to access both networks.
FPC	Fusion Point Code (LCN Only). If the system is to be a LCN in a Fusion Network, select an appropriate Fusion Point Code.
Serial Settings - COM Port	— not supported —
Serial Settings - Baud Rate	— not supported —
TCP/IP Setting - Host Name	Enter the name of the SV7000 T10 or IPX.
TCP/IP Setting - IP Address	Enter the IP address of the SV7000 T10 or IPX.
TCP/IP Setting - TCP Port	Enter 60000.

Inserting LCN Node

The following procedure inserts a new LCN PBX into an existing Fusion Network. The LCN Fusion Point Code should not match any Fusion Point Code of an existing switch in the fusion network.

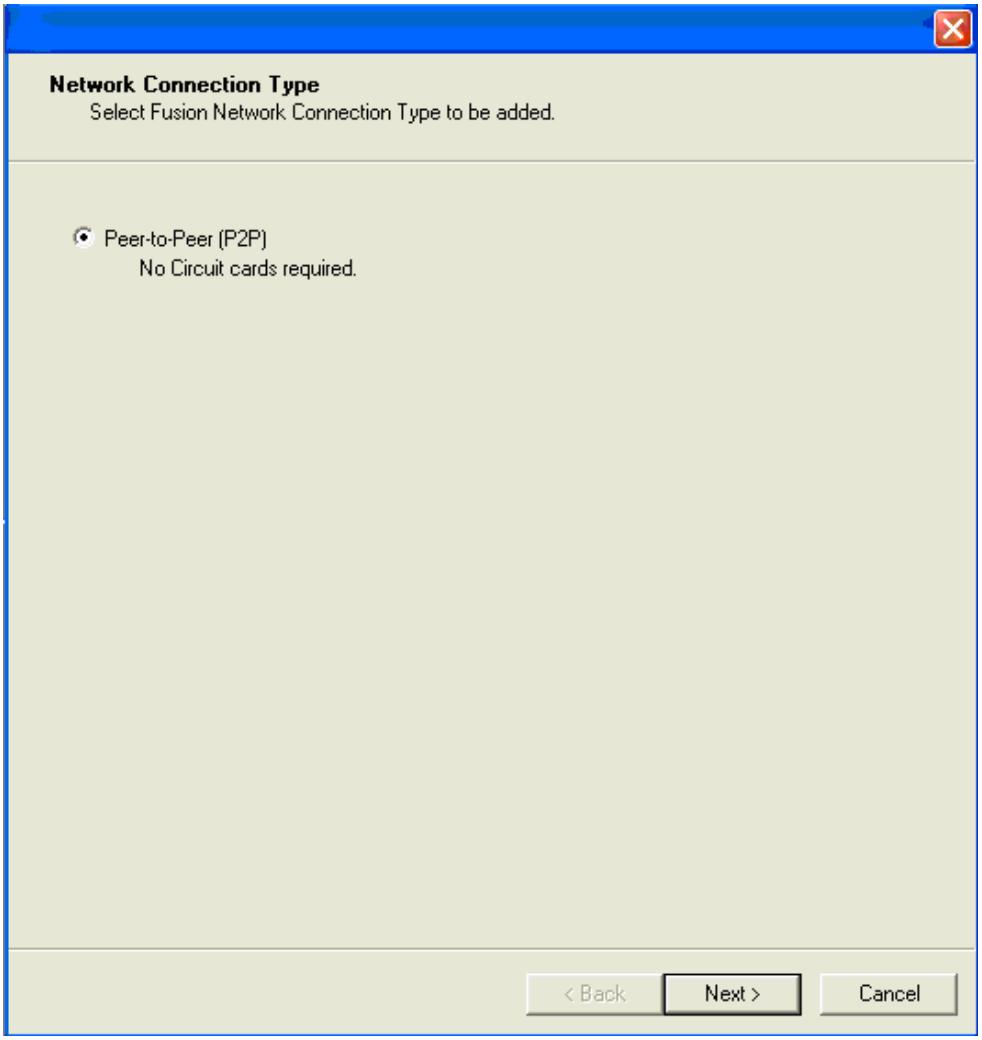
The memory version of the PBX software must match all the existing switches in the fusion network. Currently, only TCP/IP Connection PBX's can be added into a Fusion network.

Step 1 In Figure 4-1, click the **Add Node** button. Figure 4-3 displays.

NOTE

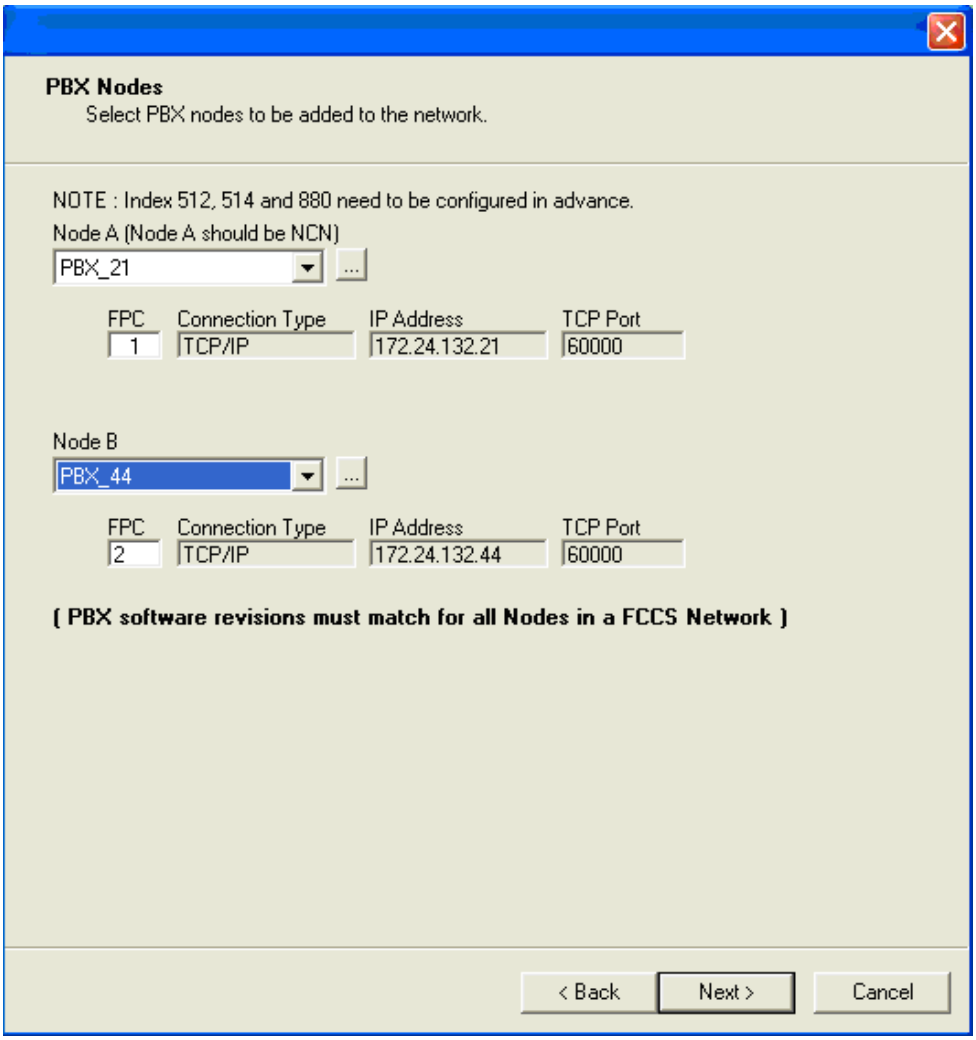
At this time, only the TCP/IP Connection PBX's can be added to a Fusion network.

Figure 4-3 *Network Connection Type*



Step 2 Select the **Peer-to-Peer (F2P)** option button and click the **Next** button. Figure 4-4 displays.

Figure 4-4 *PBX Nodes*



Step 3 Select the NCN PBX and the new LCN PBX nodes to be added to the fusion network.

—**Node A** is the Network Control Node (NCN) PBX of the fusion network, and should always be a NCN PBX.

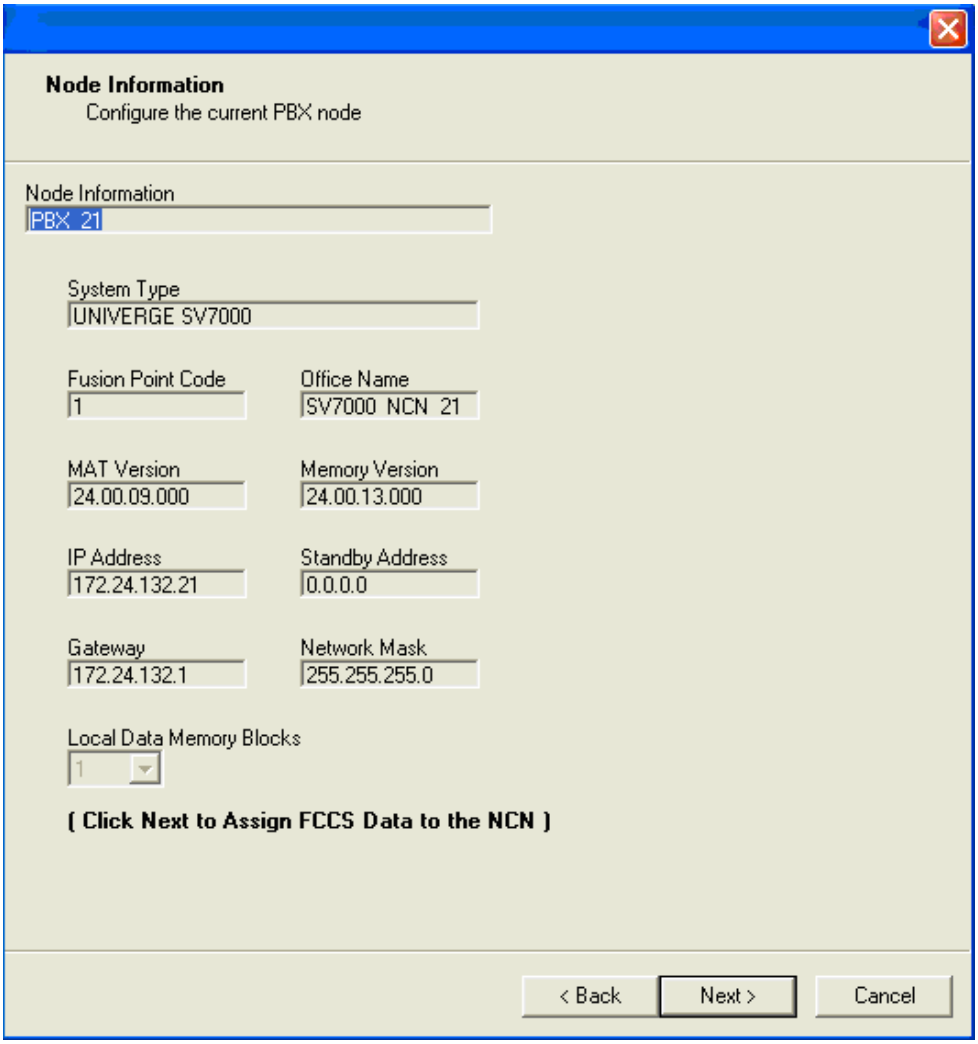
—**Node B** is the LCN PBX that will be added to the fusion network.

Step 4 After selecting the **Node B** to be inserted into the fusion, enter the **Fusion Point Code (FPC)** of the node, then click the **Next** button. Figure 4-5 displays the Node A Configuration (NCN).

WARNING

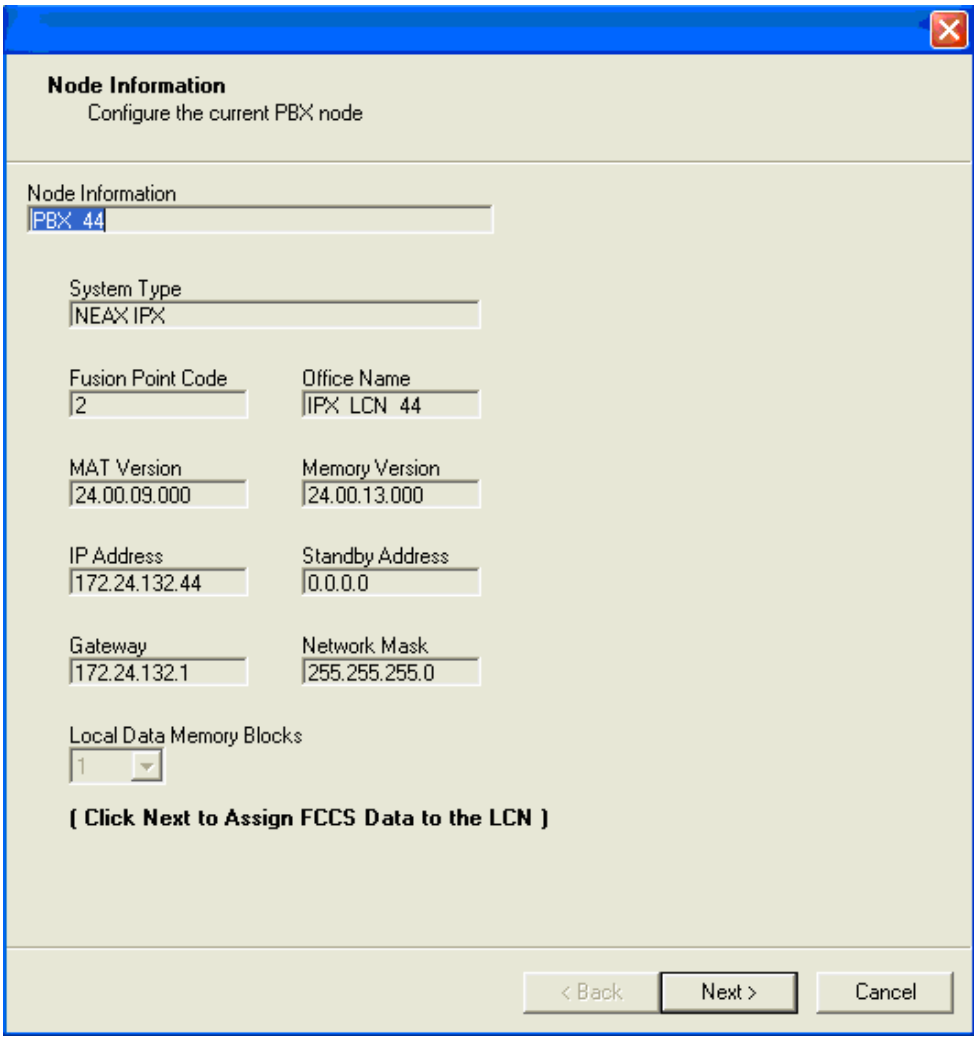
Restriction*: The PBX software revisions should match for all the nodes in the fusion network. The FPC should be greater than 0 and less than 253. All the PBX's in the fusion network should have different FPC's.*

Figure 4-5 *Node Information - NCN PBX*



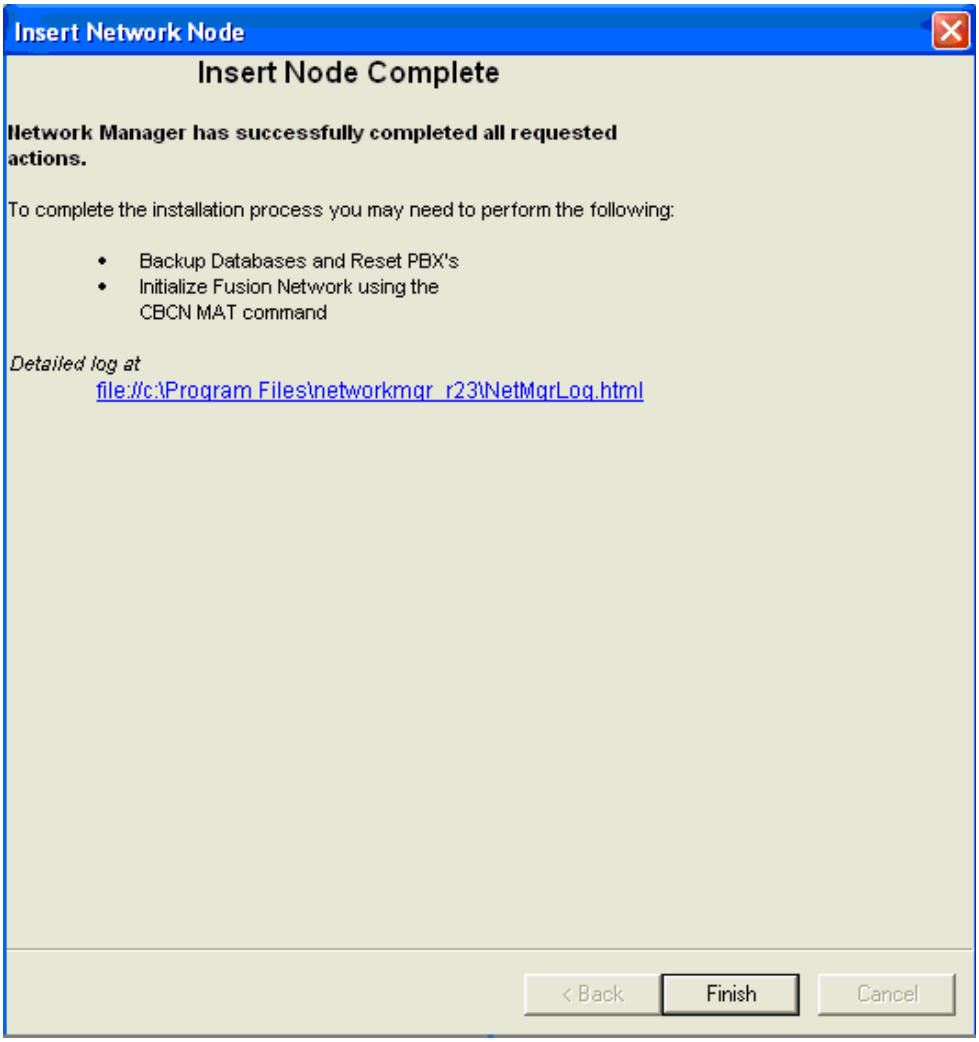
Step 5 Click the **Next** button programs the Node A (NCN) with the Node B information, assigning the FCCS data to the NCN. Figure 4-6 displays the Node B configuration with the newly added LCN PBX node information.

Figure 4-6 *Node Information - LCN PBX*



Step 6 Click the **Next** button to program the Node B and assign Node B to the fusion network, assigning the FCCS data to the LCN. Figure 4-7 displays.

Figure 4-7 *Insert Network Node*



Step 7 Click the **Finish** button to complete the node insertion. You may need to perform the following to complete the installation process:

—Backup databases and reset the PBX's

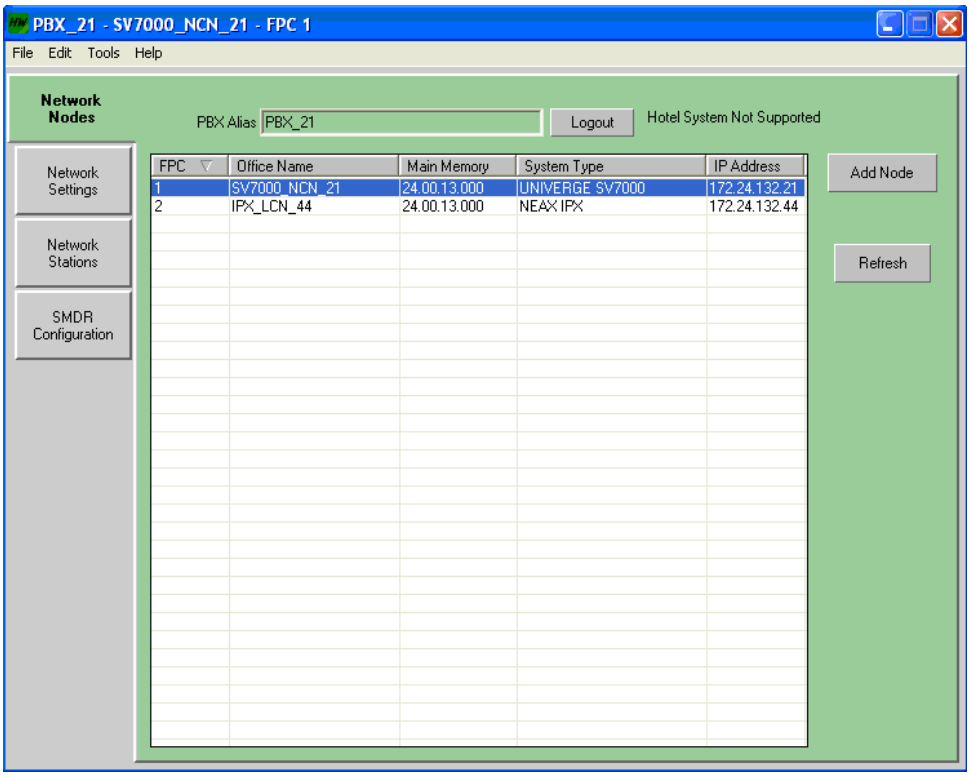
—Initialize the Fusion Network using the CBCN MAT command.

After the installation is finished, the network nodes (Figure 4-8) refresh displaying the newly added LCN in the fusion network.

The MAT commands are issued to both the NCN and LCN PBXs in order to insert the new mode into the existing network (AFIPN, AFRIL). All the LCN PBXs should have the same memory version as the NCN PBX.

After a new PBX mode is successfully integrated in the Fusion network, it will display on the Node list view control on the Network Nodes tab.

Figure 4-8 *Network Nodes - LCN Fusion Network Example*

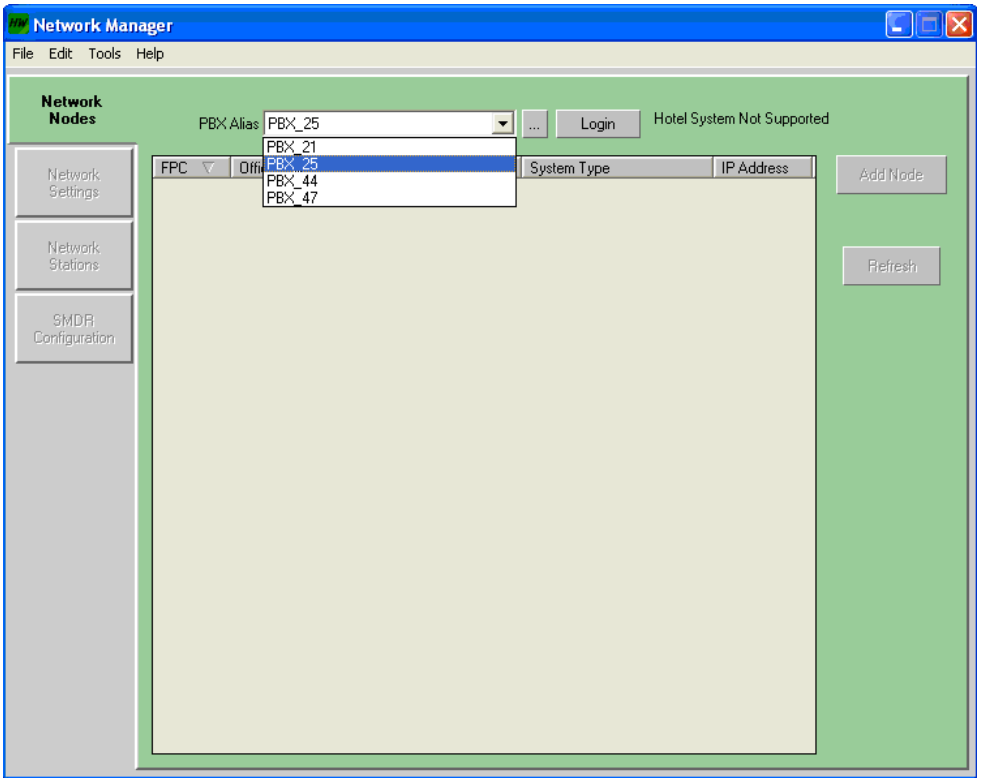


Using an Existing PBX Alias

To use an existing PBX Alias, do the following:

Step 1 Select a specific PBX from the **PBX Alias** drop-down field. See Figure 4-9.

Figure 4-9 *Network Nodes - PBX Alias*

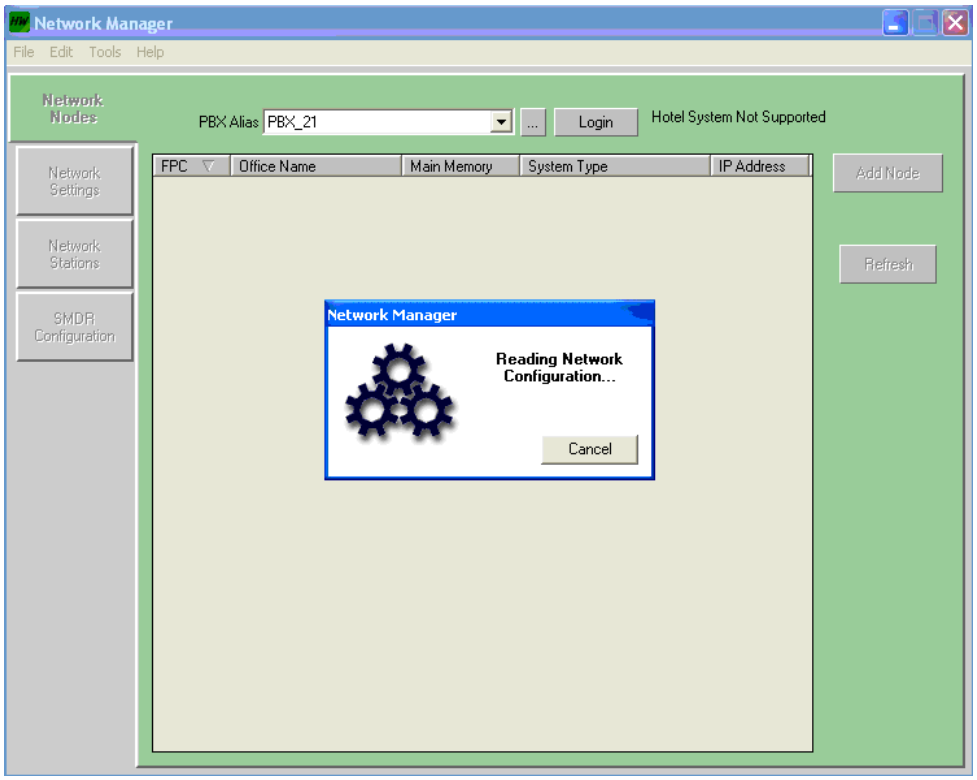


Step 2 Click the **Login** button.

—The PBX selected should be a NCN (Network Control Node) switch.

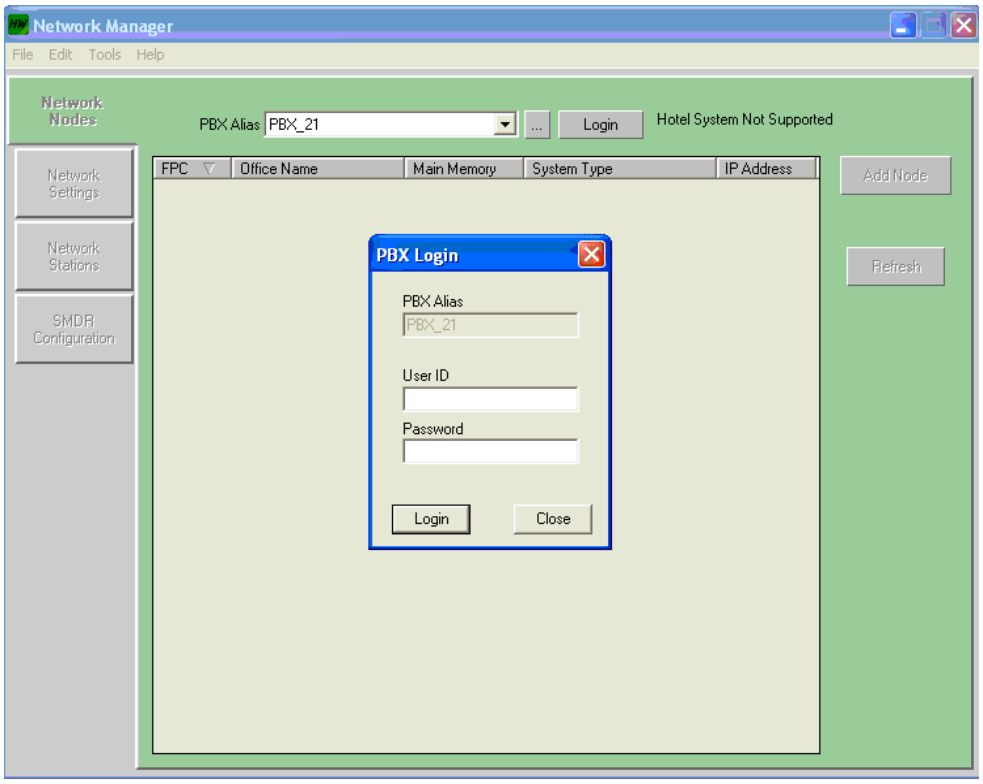
—Figure 4-10 displays indicating that the network configuration is being read. Click the **Cancel** button to abort the process.

Figure 4-10 *Network Manager - Reading Network Configuration*



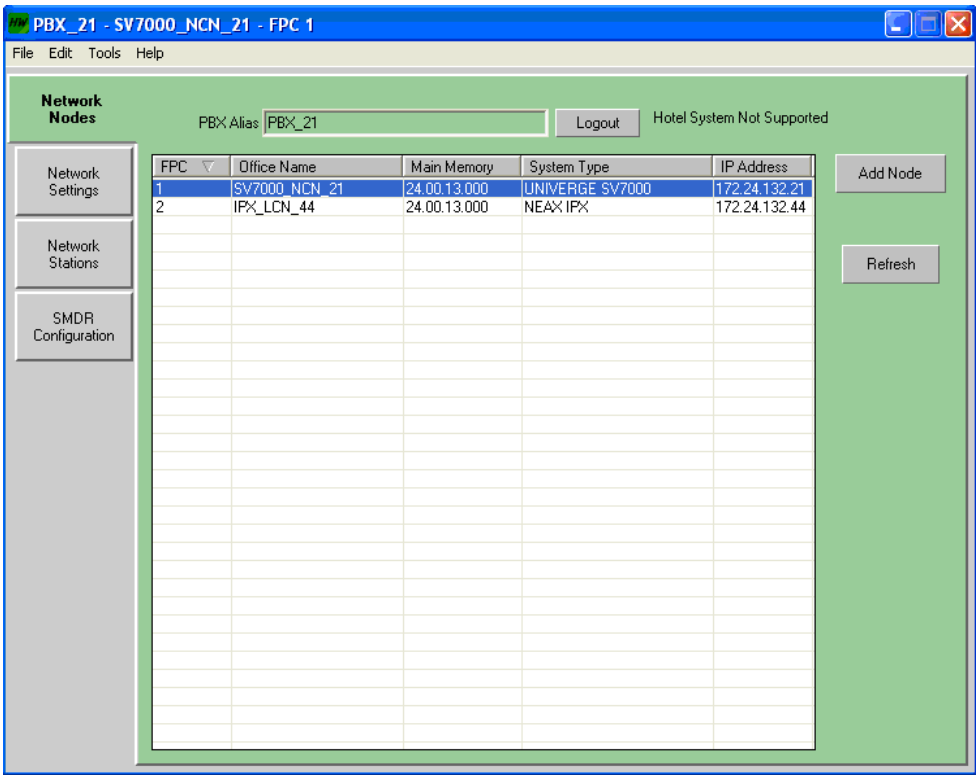
—If the PBX is password-protected, Figure 4-11 displays prompting the user to enter the appropriate user identification and password.

Figure 4-11 *Network Manager - PBX Login*



Step 3 Enter the user's name and password. The application reads the network information and displays the current Fusion network (see Figure 4-12).

Figure 4-12 *Network Manager - Current Fusion Network*



5

Network Settings

This chapter describes the MA4000 Network Manager's **Network Settings** tab.

Chapter Topic

Network Settings Overview

The **Network Settings** tab is used to configure the NCN Switch network settings displayed in Figure 5-1 and described in Table 5-1. The changes affect the NCN PBX only. The Network Settings tab contains complete information about the Fusion node selected previously, and lets you configure certain Network Data Memory (NDM) settings.

Figure 5-1 *MA4000 Network Manager - Network Settings Tab*

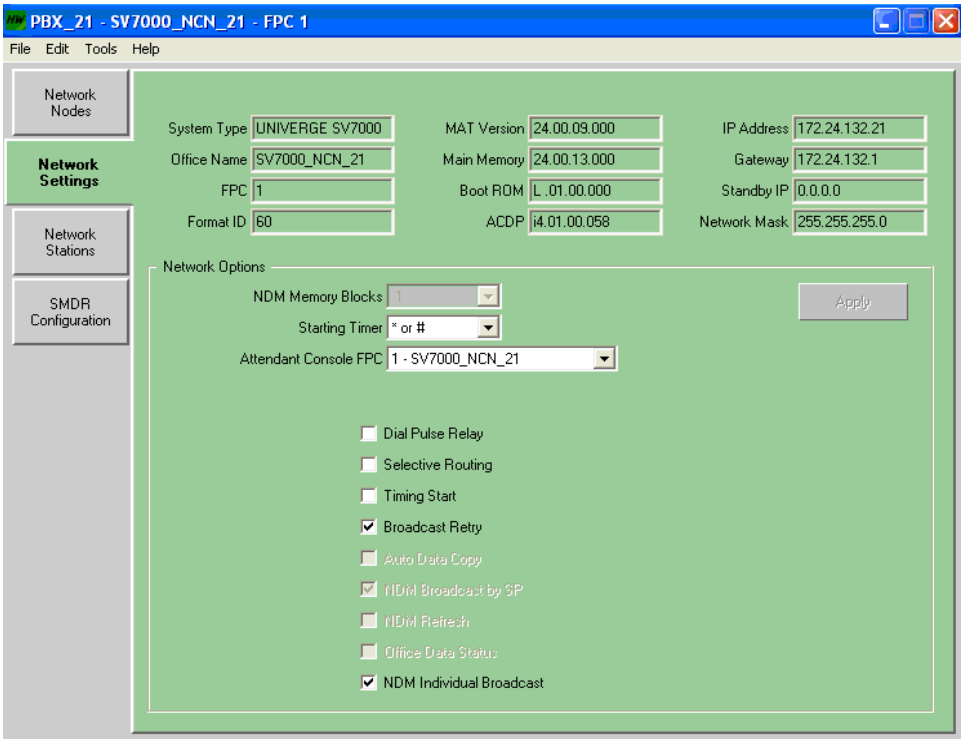


Table 5-1 *Network Settings Field Descriptions*

Field	Description
ACDP	Denotes the ACD (Automatic Call Distribution) version of the PBX software.
Attendant Console FPC	Denotes the FPC (Fusion Point Code) of the node providing the Attendant Console.
Auto Data Copy	If not checked, Data Broadcasting is performed at every NDM (Network Data Memory) command. If checked, Data broadcasting is performed by the CBCN Command. This option is enabled only on the IPX-UMG.
Boot ROM	Denotes the Boot ROM version of the PBX software.
Broadcast Retry	If not checked, stops NDM Broadcasting to LCN's from NCN's. If checked, starts NDM broadcasting to LCN's from NCN's.
Dial Pulse Relay	If checked, Conference over Fusion Call and DP Pulse Relay over FCCS is valid, otherwise it is invalid.
Format ID	Denotes the identification of the Command Format supported by the PBX software.
FPC	Denotes the PBX Fusion Point Code.
Gateway	The Gateway address for routing.
IP Address	The Internet Protocol address for the equipment.
Main Memory	Denotes the Main Memory version of the PBX Software.
MAT Version	Denotes the MAT version of the PBX Software.
NDM Broadcast by MP	If checked, Data Broadcasting is performed by the SP Processor when assigning NDM commands. If not checked, Data broadcasting is performed by the MP Processor when assigning NDM Commands. This option is enabled only on IPX-UMG.
NDM Individual Broadcast	If checked, NDM Data would be broadcasted to the individual LCN. If not checked, NDM Data would be broadcasted to ALL the LCN's.
NDM Memory Blocks	Denotes the number of Network Data Memory Blocks allocated. This option is grayed out. It only displays the number of blocks allocated; no changes can be done via Network Manager.
NDM Refresh	If checked, the System message for error during "periodic refresh" is valid, otherwise it is invalid. This option is enabled only on IPX-UMG.
Network Mask	A string of 0's and 1's that mask or screen out the network part of an IP address (IP) so that only the host computer part of the address remains.
Office Data Startup	if checked, System Message Output is in service, otherwise it is out of service. This option is enabled only on IPX-UMG.
Office Name	Denotes the PBX office name. The office name is set by the AOFC Command.

Field	Description
Selective Routing	Denotes the FCCS Control information for Selective routing. If checked, takes the primary route specified by AFPC/AETH command. If not checked, takes the route which the last signal packet sent out.
Standby IP	Denotes the IP Address of the standby CPU (applicable in the case of a dual cpu).
Starting Timer	Options for choosing the Timing start key. By dialing the station followed by the timing start key, the station user will not have to wait for ring start.
System Type	Denotes the PBX System type (UNIVERGE SV7000, NEAX IPX, NEAX IPX-UMG).
Timing Start	If checked, timing start service is enabled. If not checked, timing start service is disabled.

Configuring NDM Settings

To view network information and to specify NDM options about a selected node, do the following:

Step 1 From within Network Manager, click the **Network Nodes** tab.

Step 2 Use the **PBX Alias** dropdown menu to select a PBX from a list of existing nodes on your network. This PBX should be a Network Control Node (NCN).

Step 3 Click **Login**. A progress dialog displays while Network Manager retrieves your network configuration information.

(Optional) If the PBX is password protected, a login dialog displays. Enter your User ID and Password in the appropriate fields, then click Login.

Step 4 Click the **Network Settings** tab to display it. Current information about the selected nodes displays (see Table 5-1).

Step 5 Use the **NDM Memory Blocks** dropdown menu to specify the number of Network Data Memory Blocks the selected node uses. (UMG or IPX systems only.)

Step 6 Use the **Starting Timer** dropdown menu to specify.

Step 7 Use the **Attendant Console FPC** dropdown menu to specify the Fusion Point Code of the PBX that contains the attendant console.

Step 8 Use the checkboxes to enable or disable the options (see Table 5-1).

Step 9 Click **Apply** to save your changes.

6

Network Stations

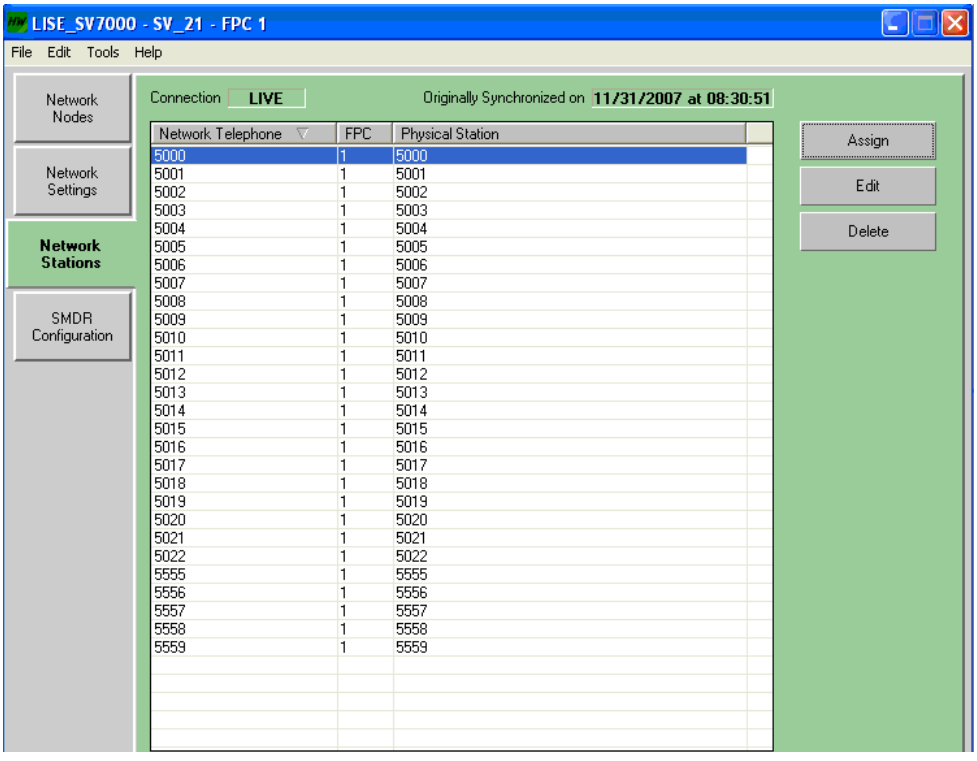
This chapter describes the MA4000 Network Manager's **Network Stations** tab.

Chapter Topic

Network Stations Overview

The **Network Stations** tab (Figure 6-1) reads the Numbering Plan and station data from the NCN and LCN PBXs, then assigns the local stations from the PBX into the Fusion Network.

Figure 6-1 *MA4000 Network Manager - Network Stations Tab*



Assigning Network Stations

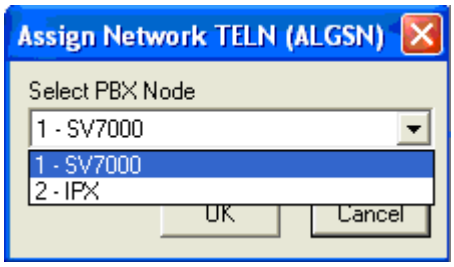
The **Network Stations** tab contains a list of all the Fusion networks physical stations, their station numbers, and their corresponding network station number, if any.

To assign a local station to a Fusion network, do the following:

Step 1 From within Network Manager, click the **Network Stations** tab to select it. A list of existing physical stations and their network assignments, if any, displays.

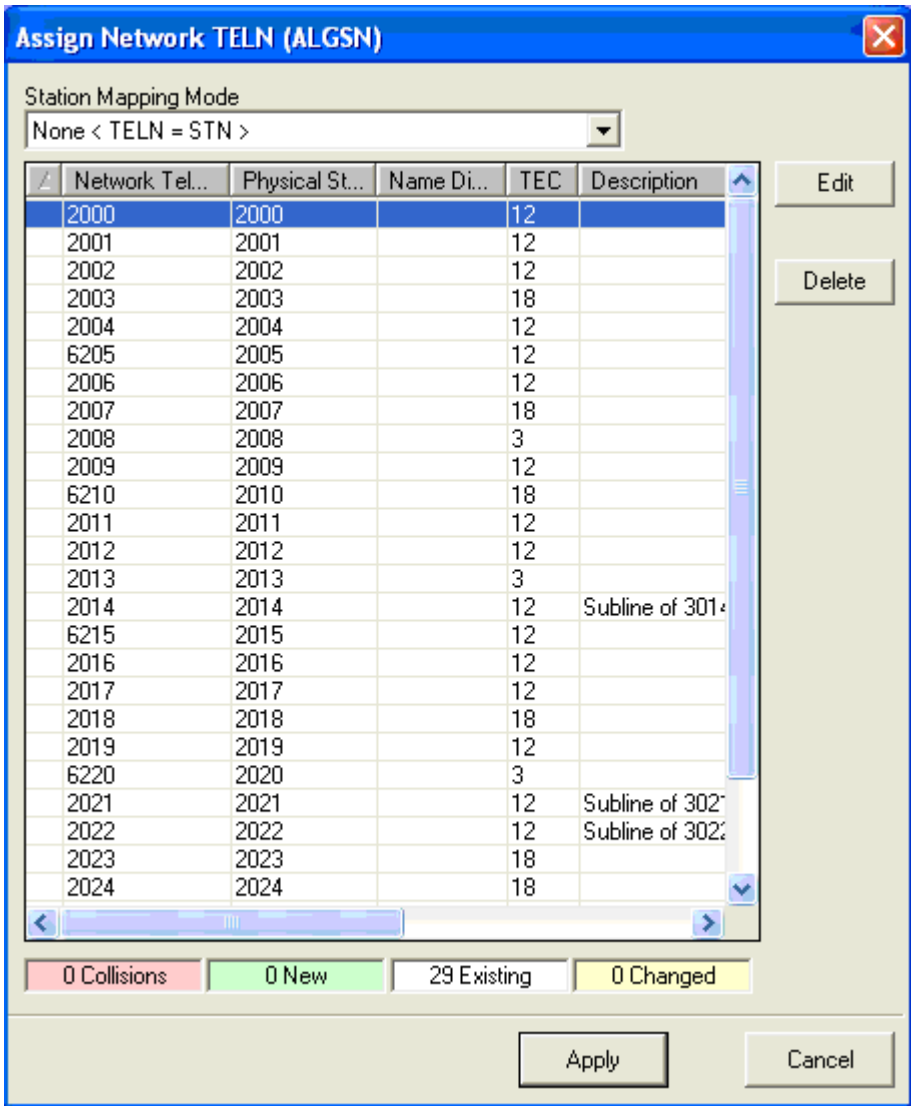
Step 2 Click **Assign**. Figure 6-2 displays.

Figure 6-2 *Select PBX Node*



Step 3 Use the **Select PBX Node** dropdown menu to select the PBX containing the physical station you wish to assign to the Fusion network, then click **OK**. Figure 6-3 displays a list of the PBX's configured stations.

Figure 6-3 *Local PBX Stations*



Step 4 Use the **Station Mapping Mode** dropdown menu (Figure 6-4) to specify how the physical station's number will be mapped to the Fusion network. The available options are:

—None <TELN = STN>

—Prefix Digit(s) <TELN = 'xx' + STN>

—Prefix Digit(s) <TELN = 'xx' minus 1st digit of STN>

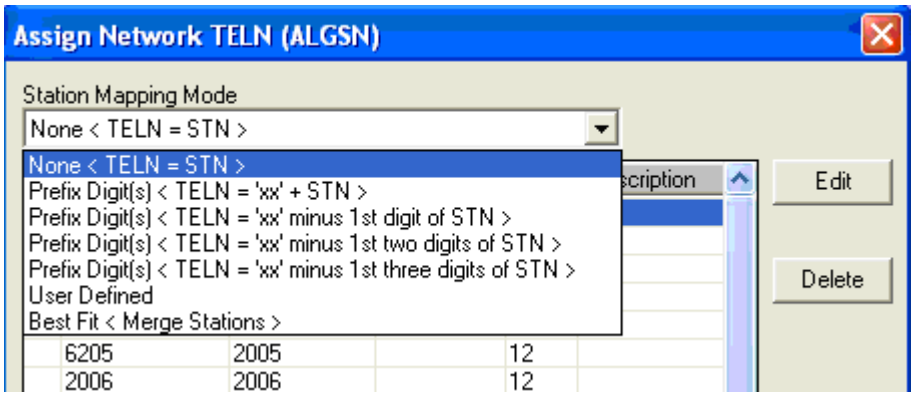
—Prefix Digit(s) <TELN = 'xx' minus 1st two digits of STN>

—Prefix Digit(s) <TELN = 'xx' minus 1st three digits of STN>

—User Defined

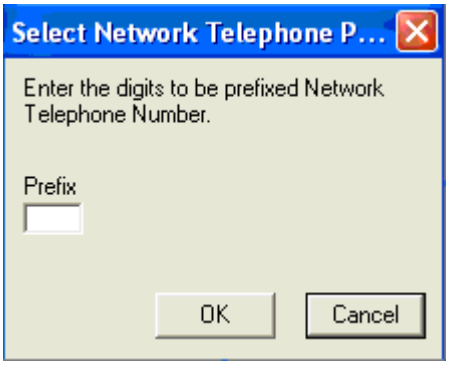
—Best Fit <Merge Stations>

Figure 6-4 *Local to Network Station Mapping*



Step 5 (Optional) If you selected any of the Prefix Digit(s) options in the previous step, the **Select Network Telephone P...** dialog displays (Figure 6-5). Enter the digits you wish added as a prefix to the STN number, then click **OK**.

Figure 6-5 *Prefixed Network Telephone Number Digits*



Example: *Consider LCN Station number 5432 and the digits to be prefixed are 66.*

TELN = 'xx' + STN e.g. TELN = 66 + 5432 = 665432

TELN = 'xx" minus 1'st digit of STN e.g. TELN = 66 - (5)432 = 66432

TELN = 'xx' minus 1'st two digits of STN e.g. TELN = 66 - (54)32 = 6632

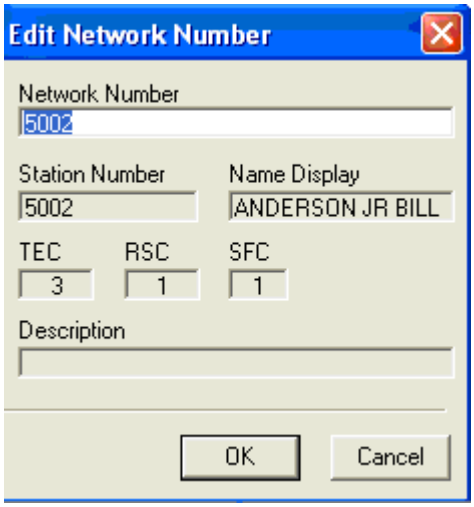
TELN = 'xx' minus 1'st three digits of STN e.g. TELN = 66 - (543)2 = 662

NOTE

*The **Best Fit < Merge Stations >** option selects stations from an existing numbering plan scheme.*

Step 6 Click a station in the list you wish to assign to the Fusion network, then click **Edit**. Figure 6-6 displays.

Figure 6-6 *Edit Network Number*



Step 7 Enter the station's new Fusion station number in the **Network Number** field, then click **OK**. The list of network station numbers updates with the new number.

Step 8 Check the status panes at the bottom of the Assign Network TELN (ALGSN) dialog (Figure 6-3) to determine whether there are any conflicts with existing network numbers. See Table 6-1.

Table 6-1 *Status Panes Descriptions*

Color	Description
9 Collisions	The number of "collisions" or conflicts with existing network numbers.
0 New	How many new stations were created.
84 Existing	The number of existing network stations.
9 Changed	The number of stations that have been edited or changed.

Step 9 (Optional) Select one or more stations, then click **Delete** to remove the station(s) from the Assign Network TELN (ALGSN) dialog.

NOTE

This does not delete the station itself but merely removes it from the list in the dialog box. This technique can help you simplify a large list when looking for conflicts, available numbers, etc.

Step 10 Click **Apply** to save the station's network number.

Editing a Network Station

To change an existing network station's Fusion network number, do the following:

Step 1 From within Network Manager, click the **Network Stations** tab to select it. A list of existing physical stations and their network assignments, if any, displays (see Figure 6-3).

Step 2 Select the station whose network number you wish to change, then click **Edit**. The Network Number dialog displays (see Figure 6-6).

Step 3 Enter the new number in the Network Number field.

Step 4 Click **Apply** to save the new network number.

Deleting a Network Station

To remove an existing network station from the Fusion network, do the following:

Step 1 From within Network Manager, click the **Network Stations** tab to select it. A list of existing physical stations and their network assignments, if any, displays (see Figure 6-3).

Step 2 Select the station whose network number you wish to remove, then click **Delete**. A confirmation dialog displays.

Step 3 Click **Yes** to remove the network station.

7

SMDR Configuration

This chapter describes the MA4000 Network Manager's **SMDR Configuration** tab.

Network Manager lets you specify whether you wish to enable Station Message Detail Recording (SMDR) on a route, node, or feature basis. Network Manager only administers a pure Fusion (FCCS) network. If your network contains a mixture of Fusion and CCIS nodes, you must configure SMDR manually using the MAT.

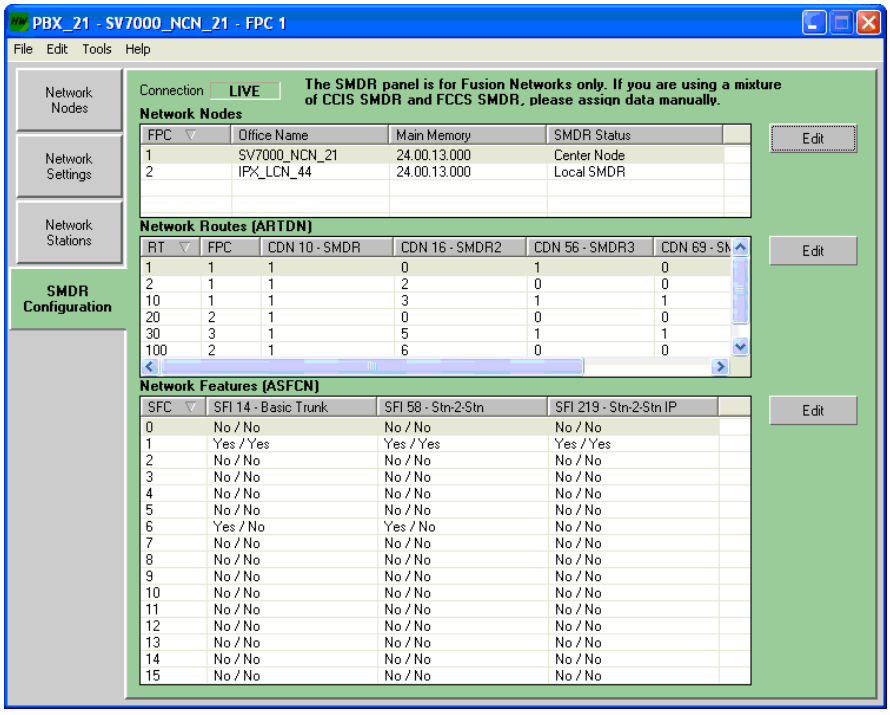
The SMDR Configuration tab contains lists of the available network nodes, network routes, and network features in your Fusion network. If no entries display in the lists, you must first select a node to manage and login to the NCN.

Chapter Topic

SMDR Configuration Tab

The **SMDR Configuration** tab (Figure 7-1) configures SMDR for all nodes in the network, including routes and service features class in both the network and local data memories. The panel is for FCCS SMDR only.

Figure 7-1 *MA4000 Network Manager - SMDR Configuration Tab*



To configure the local SMDR System and route and service features settings do the following:

Step 1 Select the node in the Network Nodes section (see Figure 7-1) for the SMDR that needs to be configured, then click the **Edit** button. Figure 7-2 displays and the dialog box tabs are described in Table 7-1.

Figure 7-2 *Edit SMDR Configuration*

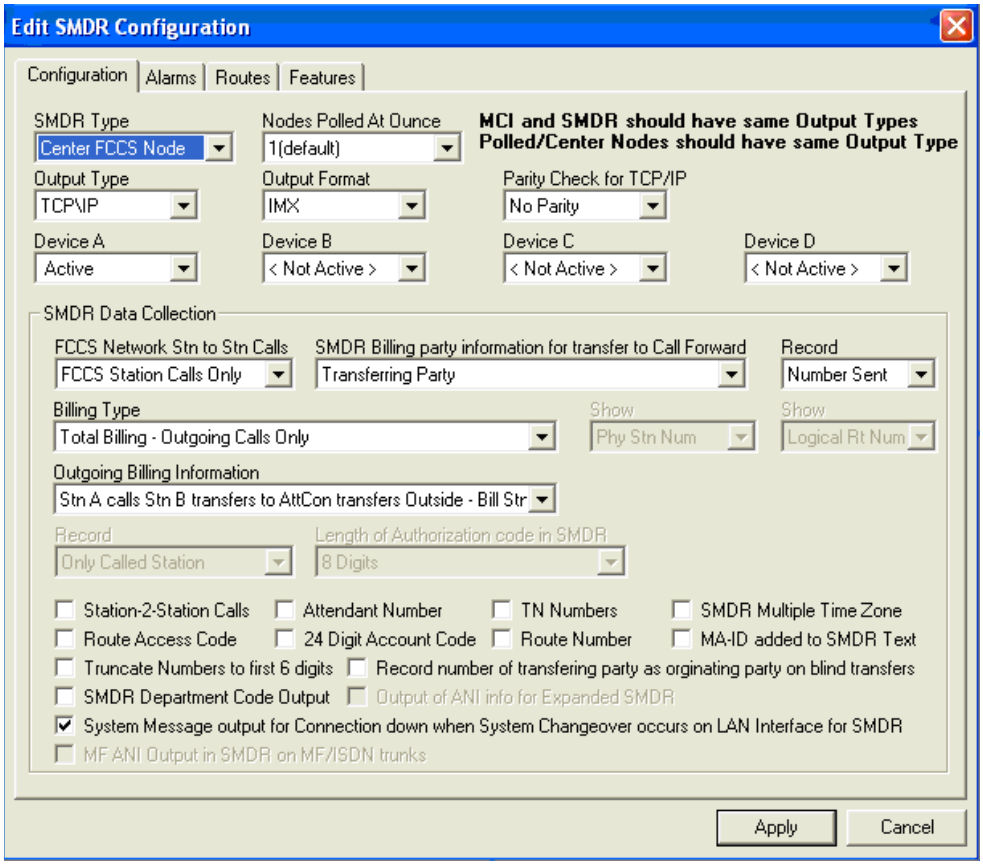


Table 7-1 *SMDR Configuration Tab Descriptions*

Tab	Description
Configuration	Configures the basic SMDR settings.
Alarms	Configures the alarms.
Routes	Configures the SMDR Route settings.
Features	Configures the SMDR Feature class settings.

Configuration Tab

The **Configuration** tab (Figure 7-2) lists the basic SMDR setting. MA4000 Network Manager uses this tab to configure the basic settings, such as SMDR Type (Center, Polled or Local), SMDR Output Type (RS-232 / TCP/IP), Output Format (IMX, ICS Extended or Normal), etc.

Table 7-2 *Configuration Tab Field Descriptions*

Field	Description
SMDR Type	Select a SMDR node type to provide the user with options specific to that node in order to configure them. The SMDR node types are: • Local SMDR • Center FCCS Node • Polled FCCS Node
Nodes Polled At Once	Denotes the number of nodes to poll. This option displays only for the Center FCCS SMDR type.
Output Type	The output types are: • RS-232 • TCP/IP This option is enabled for Local and Center FCCS SMDR nodes only. To change the output format of a Polled FCCS node, change the SMDR type of Polled FCCS Node to Center. Change the output format and then revert the SMDR Type back to Polled FCCS node.
Output Format	The output formats are: • IMX • ICS Extended • Normal Format This option is enabled for the Local and Center FCCS SMDR types only.
Parity Check for TCP/IP	This option is enabled only when the output type is TCP/IP.
Device A **Device B** **Device C** **Device D**	***RS-232 Output Type***: Devices identify the I/O output port number for SMDR each device, respectivley. ***TCP/IP Output Type***: Devices denote whether each of the devices need to be turned ON or OFF.
SMDR Data Collection	Collects the information indicating what is, or is not, to be recorded. Information collected is: • SMDR Billing Party Information for Transfer to Call Forward • Billing Type • Outgoing Billing Information • Record Physical Station or Logical TELN • Record Physical Route or Logical Route • Length of Authorization Code in SMDR • Record Number Dialed or Number Sent on SMDR

Notes

- There can only be the Center FCCS Node in the fusion network.
- All the polled and center SMDR types should have the same output type (TCP/IP or RS-232).
- RS-232 is not supported on the UNIVERGE SV7000.
- MCI and SMDR should have the same Output types no matter what SMDR node type selected.
- For the RS-232 Output type, it must match the data assignment in the AIOC Command.

Alarm Tab

MA4000 Network Manager uses the Alarms tab (Figure 7-3) to configure the basic alarm settings.

Configuring SMDR Alarms

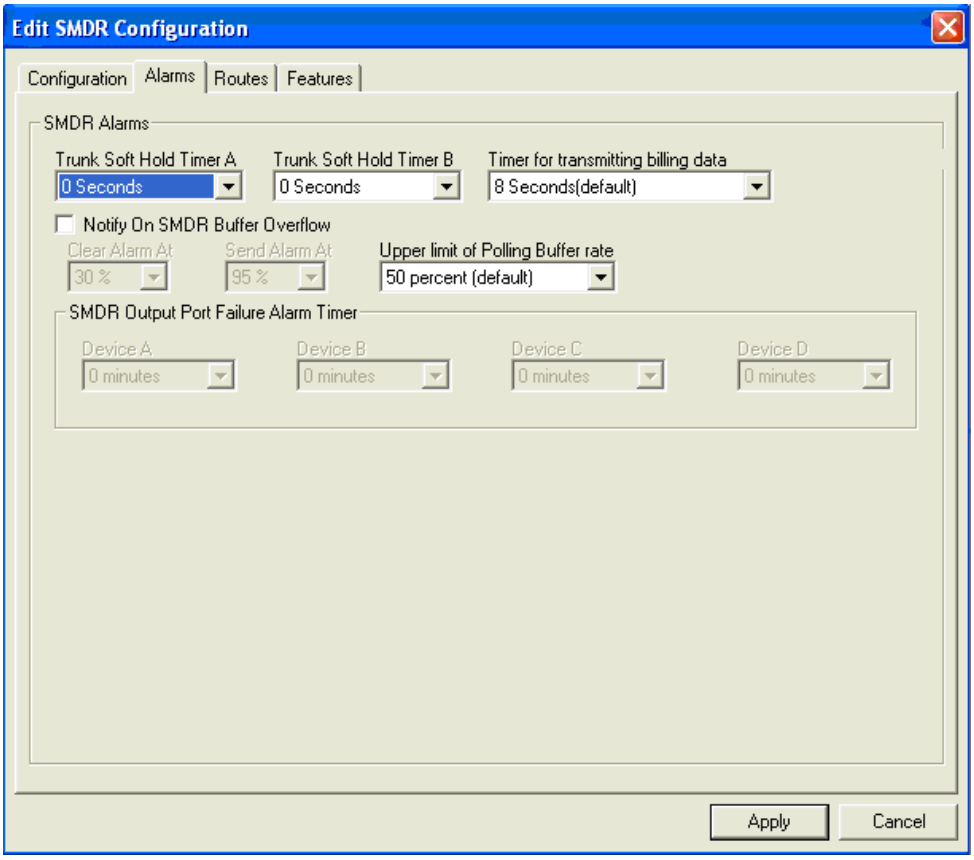
To set SMDR alarm timers for a specific node, do the following:

Step 1 Click the **SMDR Configuration** tab to select it. A list of available network nodes displays. If no entries display in the list, you must first select a node to manage and login to the NCN.

Step 2 Select the network node for which you wish to enable SMDR, then click **Edit**. The Edit SMDR Configuration dialog displays, containing four sub-tabs.

Step 3 Click the **Alarms** sub-tab. Figure 7-3 displays.

Figure 7-3 *Edit SMDR Configuration - Alarms Tab*



Step 4 Use the dropdown menus to specify a value (in seconds) for the timers. See Table 7-3.

Table 7-3 *SMDR Timer Values*

Timer	Range of Values (sec.)	Default Value (sec.)
Trunk Soft Hold Timer A	0-30 seconds, in 2-second intervals	30
Trunk Soft Hold Timer B	0-30 seconds, in 2-second intervals	18
Timer for transmitting billing data	2-14 seconds, in 2-second intervals	8

Step 5 (Optional) Click the **Notify On SMDR Buffer Overflow** checkbox to enable the alarm. Then use the dropdown menus to specify a value (in percentages) for the timers. See Table 7-4.

Table 7-4 *Notify On Hold SMDR Buffer Overflow Timer Values*

Timer	Range of Values (pct)	Default Value (pct)
Clear Alarm At	30, 40, 50, 60, 70, 80	50
Send Alarm At	60, 70, 80, 90, 95, 99	80
Upper limit of Polling Buffer rate ***Note:*** *Enabled on Center FCCS Node only.*	1 to 99% in 1% intervals	50

The SMDR Output Port Failure Alarm Timer option is only enabled when the output type of the SMDR is RS-232. Additionally, each device option -- A, B, C and D -- are only enabled when the device output ports are active.

Step 6 (For RS-232 SMDR Output Type only) Use the dropdown menus to specify a value (in minutes) for the **SMDR Output Port Failure Alarm Timer** for Devices A-D. The device timers are enabled only if the corresponding port is active.

Step 7 Click **Apply** to save the new alarm timer settings.

Routes Tab

Configuring SMDR for Routes (Per Node)

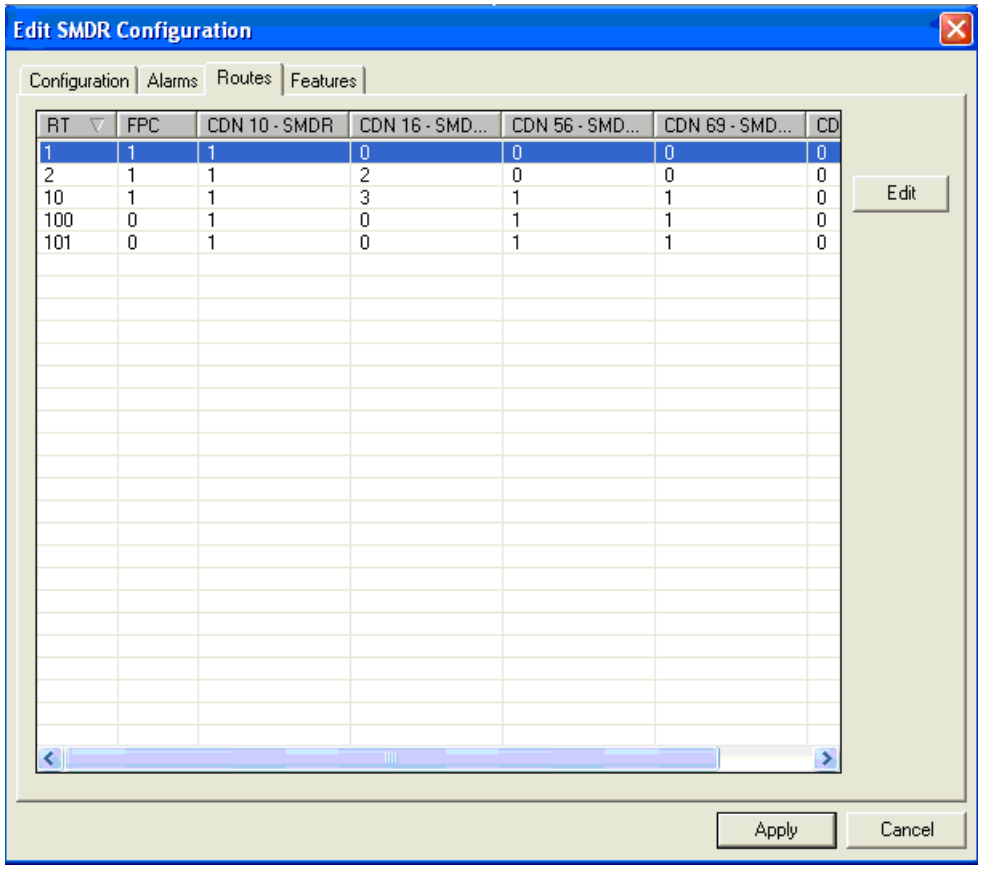
To enable SMDR on one or more of a node's configured routes, do the following:

Step 1 Click the **SMDR Configuration** tab (Figure 7-1) to select it. A list of available network nodes displays. If no entries display in the list, you must first select a node to manage and login to the NCN.

Step 2 Select the network node for which you wish to enable SMDR on a route, then click **Edit**. The Edit SMDR Configuration dialog displays, containing four sub-tabs.

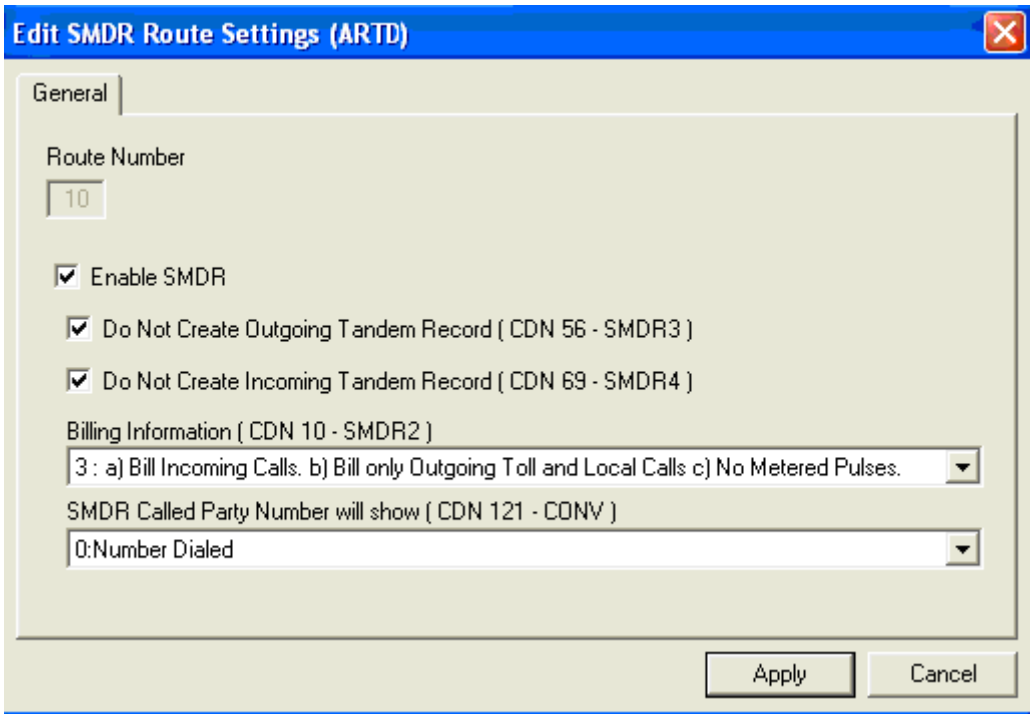
Step 3 Click the **Routes** sub-tab. Figure 7-4 displays. A list of existing routes displays.

Figure 7-4 *Edit SMDR Configuration - Route Tab*



Step 4 Click the route for which you wish to enable SMDR, then click **Edit**. The Edit SMDR Route Settings (ARTD) dialog displays. See Figure 7-5.

Figure 7-5 *Edit SMDR Route Settings (ARTD)*



Step 5 Click the **Enable SMDR** checkbox.

Step 6 (Optional) Use the appropriate checkbox to specify whether SMDR should create an incoming and outgoing tandem record, as follows:

—Do Not Create Outgoing Tandem Record (CDN56 - SMDR3)

—Do Not Create Incoming Tandem Record (CDN69 - SMDR4)

Step 7 Use the **Billing Information (CDN10 - SMDR2)** dropdown menu to specify the type of incoming and outgoing calls that will create a billing record.

Step 8 Use the **SMDR Called Party Number will show (CDN121 - CONV)** dropdown menu to the number dialed or the number sent.

Step 9 Click **Apply** to save the SMDR options for the selected route.

Step 10 (Optional) Repeat the previous steps to configure any additional routes for the selected node.

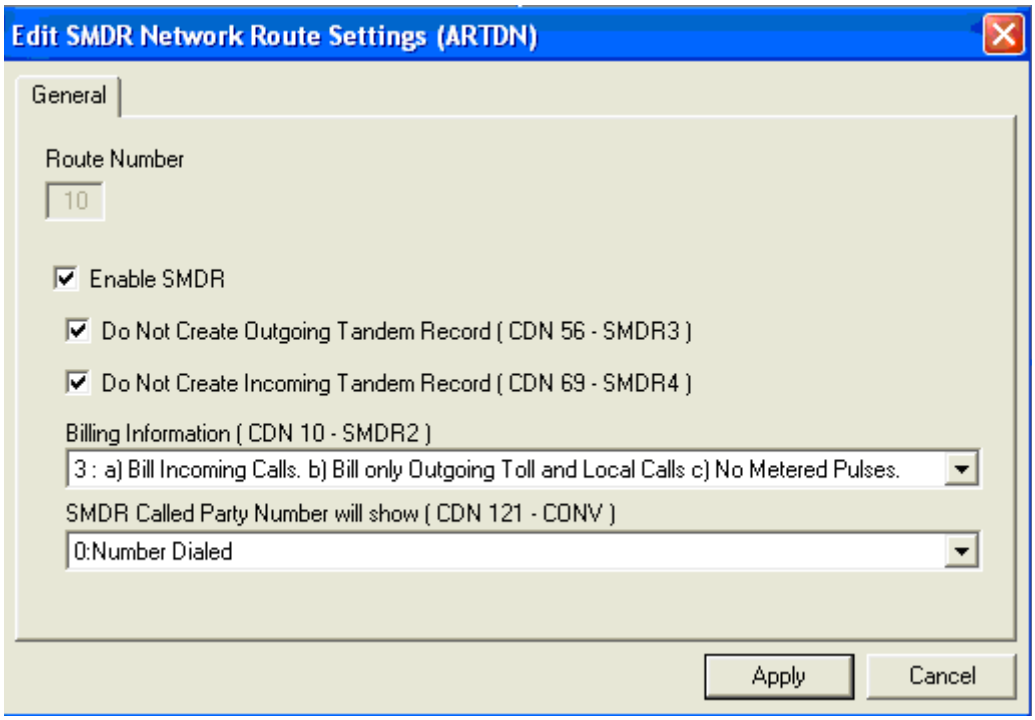
Configuring SMDR for Network Routes

To enable SMDR for one or more of a the Fusion network's available routes, do the following:

Step 1 Click the **SMDR Configuration** tab (Figure 7-1) to select it. A list of available network nodes displays. If no entries display in the list, you must first select a node to manage and login to the NCN.

Step 2 From the Network Routes (ARTDN) list, select the network route for which you wish to enable SMDR, then click **Edit**. Figure 7-6 displays.

Figure 7-6 *Edit SMDR Network Route Settings (ARTDN)*



Step 3 Click the **Enable SMDR** checkbox.

Step 4 (Optional) Use the appropriate checkbox to specify whether SMDR should create an incoming and outgoing tandem record, as follows:

—Do Not Create Outgoing Tandem Record (CDN56 - SMDR3)

—Do Not Create Incoming Tandem Record (CDN69 - SMDR4)

Step 5 Use the **Billing Information (CDN10 - SMDR2)** dropdown menu to specify the type of incoming and outgoing calls that will create a billing record.

Step 6 Use the **SMDR Called Party Number will show (CDN121 - CONV)** dropdown menu to the number dialed or the number sent.

Step 7 Click **Apply** to save the SMDR options for the selected route

Features Tab

Configuring SMDR for Features (Per Node)

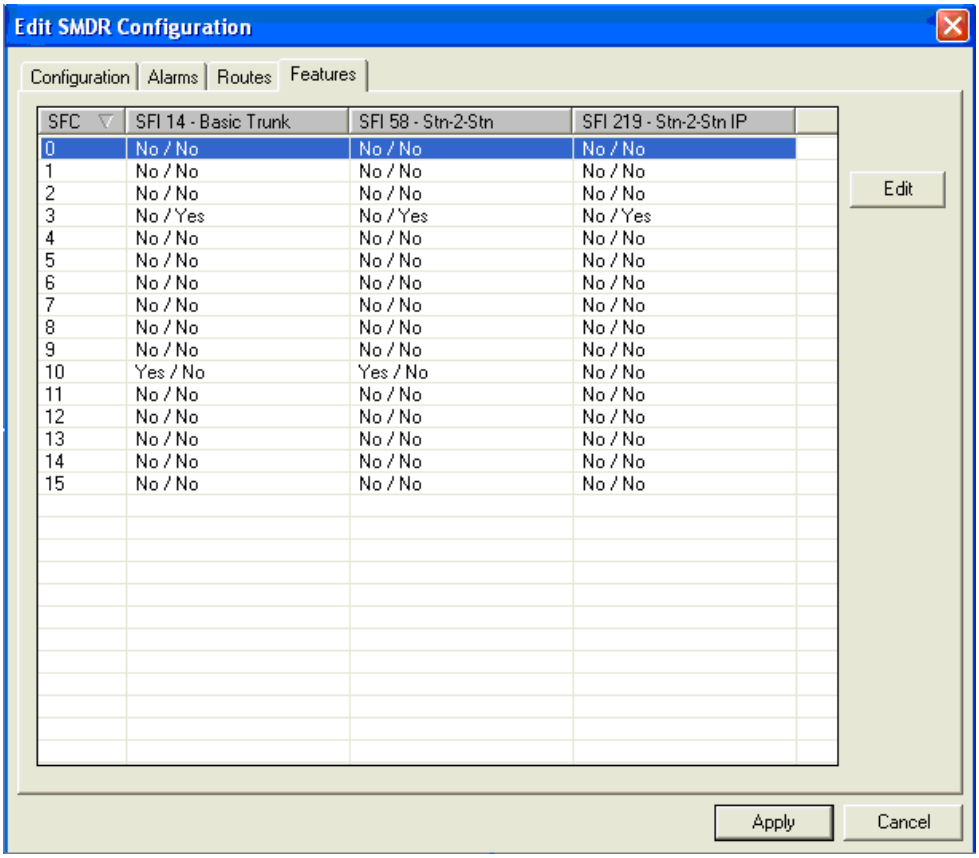
To enable SMDR for one or more of a node's configured features, do the following:

Step 1 Click the **SMDR Configuration** tab (Figure 7-1) to select it. A list of available network nodes displays. If no entries display in the list, you must first select a node to manage and login to the NCN.

Step 2 In the Network Nodes list, select the node for which you wish to enable SMDR for a Service Feature Class (SFC), then click Edit. The **Edit** SMDR Configuration dialog displays, containing four sub-tabs.

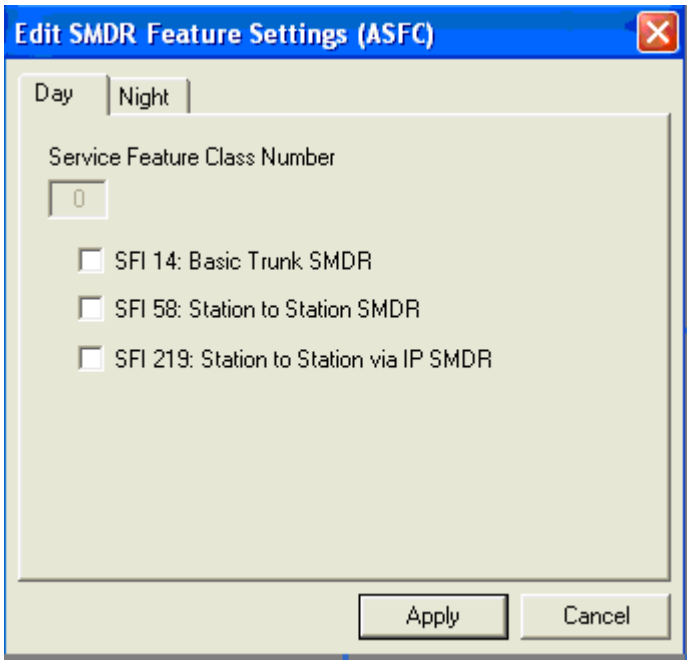
Step 3 Click the **Features** sub-tab. Figure 7-7 displays.

Figure 7-7 *Edit SMDR Configuration - Features Tab*



Step 4 Click the feature class for which you wish to enable SMDR, then click **Edit**. Figure 7-8 displays.

Figure 7-8 *Edit SMDR Feature Settings (ASFC)*



Step 5 Select the **Day** or **Night** tab, as needed, to specify SMDR for a feature during Day or Night mode.

Step 6 Use checkboxes to enable or disable SMDR for the following features:

—SFI 14: Basic Trunk SMDR

—SFI 58: Station to Station SMDR

—SFI 219: Station to Station via IP SMDR

Step 7 Click **Apply** to save the SMDR feature settings for the selected node.

Configuring SMDR for Network Features

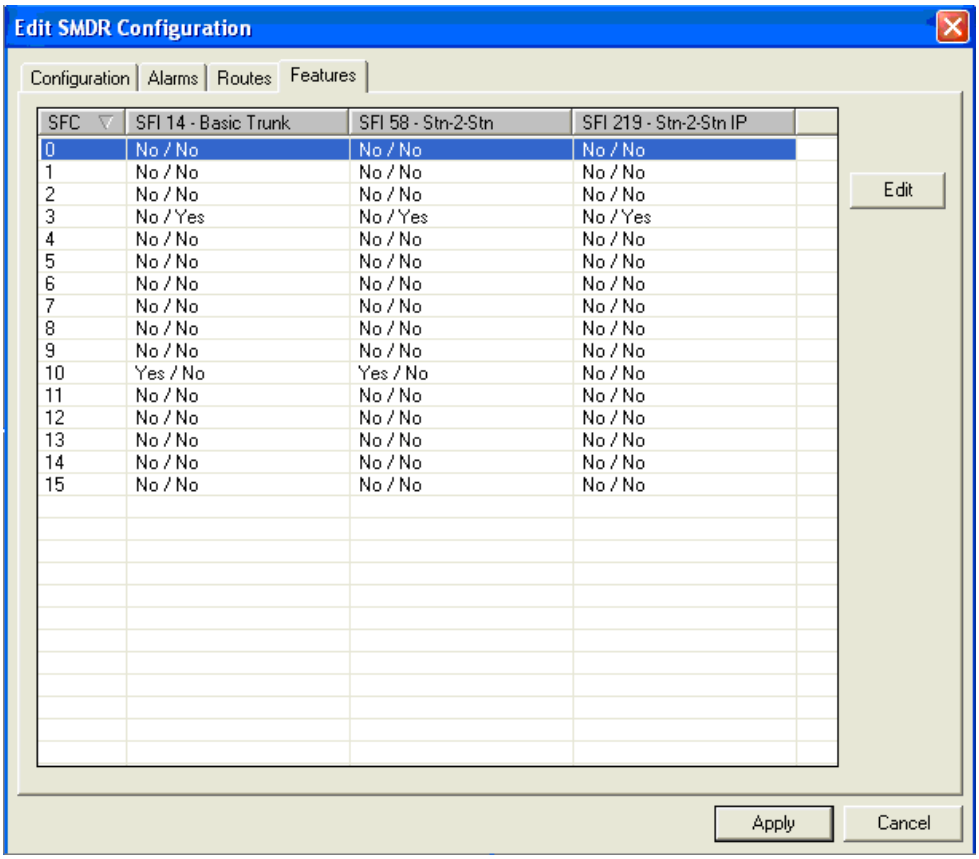
To enable SMDR for one or more of a node's configured features, do the following:

Step 1 Click the **SMDR Configuration** tab (Figure 7-1) to select it. A list of available network nodes displays. If no entries display in the list, you must first select a node to manage and login to the NCN.

Step 2 From the Network Features (ASFCN) list, select the network feature for which you wish to enable SMDR, then click **Edit**. The Edit SMDR Network Feature Settings (ASFCN) dialog displays containing four sub-tabs.

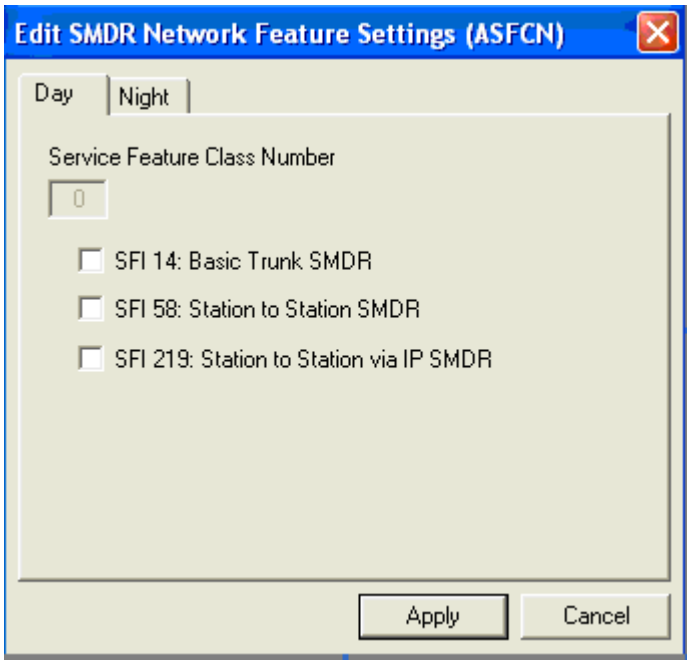
Step 3 Click the **Features** sub-tab. Figure 7-9 displays.

Figure 7-9 *Edit SMDR Configuration - Features Tab*



Step 4 Click the feature class for which you wish to enable SMDR, then click **Edit**. Figure 7-10 displays.

Figure 7-10 *Edit SMDR Network Feature Settings (ASFCN)*



Step 5 Select the **Day** or **Night** tab, as needed, to specify SMDR for a feature during Day or Night mode.

—SFI 14: Basic Trunk SMDR

—SFI 58: Station to Station SMDR

—SFI 219: Station to Station via IP SMDR

Step 6 Click **Apply** to save the SMDR network feature settings.

For additional information or support on this NEC Unified Solutions product, contact your NEC Unified Solutions representative.

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