MATWorX Studio

User Guide

NEC America, Inc.

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About This Guide

MATWorX Studio currently supports programming for the NEAX EXPRESS, NEAX 2000, and NEAX 2400 product families. However, the devices you can program depend upon your hardware configuration and the MATWorX Studio software you install.

Throughout this Guide, the word 'device' refers to hardware or software components such as the NEAX 2000 and NEAX 2400 families of PBXs.

This chapter includes the following topics:

Chapter Topics

Purpose of This Guide

This user guide contains useful information that helps you install and use the MATWorX Studio program. It highlights many key features of the program including the MATWorX Studio Work Area, Toolbar, DeviceServerWorX, add-ins, Device Configuration, MACH Script Editor, NEC Scheduler, DESIWorX, Extended Command Set, Error Codes, and the Online Help System.

This guide supplements the MATWorX Studio online Help system and the individual add-in Help systems. These Help systems provide context-sensitive information and procedures that help you perform MATWorX Studio tasks. Refer to Chapter 11 "MATWorX Studio Online Help" for information about the Help system and how to access it.

How This Guide is Organized

In addition to the chapter you are reading, the MATWorX Studio User Guide contains the following chapters:

Chapter 2 Installing and Upgrading MATWorX Studio

This chapter describes the necessary hardware (computer equipment) and software you need to run the MATWorX Studio program, as well as procedures for installing MATWorX Studio on your computer's hard drive.

Chapter 3 Quick Install	This chapter describes a software tool that gives you an easy, step-by-step way to set up and configure an NEC PBX.
Chapter 4 Getting Started	This chapter describes how to launch and exit MATWorX Studio, and how to launch the Device Configuration to configure a PBX or other device.
Chapter 5 MATWorX Studio Overview	This chapter describes the MATWorX Studio program, its features, buttons, work area, Toolbar, Toolboxes, add-ins, and application tools.
Chapter 6 DeviceServerWorX	This chapter describes how MATWorX Studio applications communicate with connected devices via the DeviceServerWorX. The DSW also provides logs and reports that help you evaluate a device's performance.
Chapter 7 Add-ins	This chapter describes what add-ins are, how they work, and how to add and remove them. Add-ins are the basic components of MATWorX Studio. Users can also create custom add-ins for specialized business solutions by purchasing a developer's kit from NEC or an authorized NEC dealer.
Chapter 8 MACH Script Editor	This chapter describes the concept and operation of the MOC Accelerated Command Heap (MACH) window. This window is a separate and powerful tool integrated into the MATWorX Studio software. It is similar to working with the Maintenance Operation Console (MOC), but provides much more functionality by letting you create a list of PBX commands (a script) which you can save and run at any time.
Chapter 9 NEC Scheduler	This chapter describes the features and operations of the NEC Scheduler application. The NEC Scheduler is a versatile application that lets you schedule add-ins or other programs to perform tasks at specific times. You can also use the NEC Scheduler to schedule NEAX 2000 Command Scripts that were created using the MACH Script Editor.
Chapter 10 DESIWorX	This chapter describes the features and operations of the DESIWorX application. Using DESIWorX, you can create labels for the function keys of your Dterm telephones. DESIWorX saves these labels in a database. You can enter function key caption information for the label and print the labels to be placed on the Dterm.
Chapter 11 MATWorX Studio Online Help	This chapter describes the online Help system in detail, how to access it, and how to print Help topics.
Appendix Extended Command Set	The appendix lists the Extended Command Set you can use in the MACH Script Editor window. The Extended Command Set characters are modifiers you type in front of a NEAX 2000 command in the MACH Script Editor window. Using Extended Commands greatly reduces the number of commands needed to perform certain tasks.

What You Need To Know

This guide assumes you are familiar with basic Windows operations, such as opening, closing, moving, and resizing windows; selecting items from menus; and using the mouse.

If you need more information about any of these tasks, refer to Microsoft's Windows documentation or the Windows online Help system installed on your computer.

2

Installing and Upgrading MATWorX Studio

This chapter gives you information you need to install, upgrade, or uninstall MATWorX Studio. Be sure to read each section completely before you begin installing the software. Pay particular attention to the first two sections, which describe hardware and software requirements, and present guidelines to help you avoid potential problems during installation.

This chapter includes:

Chapter Topics

MATWorX Studio System Requirements

Table 2-1 lists the hardware and software required to install and run MATWorX Studio:

Table 2-1 *System Requirements*

Minimum Requirements	Recommended
Pentium 166 MHz processor	Pentium 333 MHz processor or faster
Operating System Windows 98/ME/NT/2000/XP	
PBX NEAX EXPRESS NEAX 2000 family (with 1000 series software or higher) NEAX 2400 family PBX (with R7 software or higher)	
64 MB RAM (Windows 98/ME/NT) 128 MB RAM (Windows 2000/XP)	128 MB RAM (Windows 98/ME/NT) 256 MB RAM (Windows 2000/XP)

Minimum Requirements	Recommended
Available hard-disk space before installation: 75 MB - Minimum installation 200 MB - Full Installation	Available hard-disk space before installation: 200 MB - Minimum installation 300 MB - Full Installation
SVGA monitor, 800 x 600 resolution	17” SVGA monitor, 1024 x 768 resolution
3.5” diskette drive, CD-ROM drive	
Valid NEAX hardware connection (direct serial, modem, or TCP/IP)	
Mouse	
Web Browser Internet Explorer, version 4.0 or later (version 5.0 or later if running Device Registration Server)	

Before You Start

Please review the following information before you begin installing MATWorX Studio on your PC. These guidelines will help you avoid potential problems and provide valuable information you will need to complete the installation.

*Before installing MATWorX Studio, consult the **Read Me** file on the MATWorX Studio CD for the latest information about known problems, incompatibilities, or other issues which may affect installtion on your PC.*

Also, be sure to close all open Windows programs and screen savers and disable any virus detection programs before running the Setup program.

Restarts Required

The Setup program detects and uninstalls previous installations of MATWorX or MATWorX Studio (version 3.0 or earlier) on your computer. Depending on your configuration, Setup may need to restart your computer several times. After uninstalling the previous versions, Setup automatically continues installing the new version.

Leave the MATWorX Studio CD-ROM in your computer’s drive until the Setup program completes the installation and restarts your computer.

Key Diskette

Installing MATWorX Studio requires a configuration key diskette, which is included in your software package. This diskette instructs the Setup program to install and enable the MATWorX Studio software and any optional components you have purchased.

If you later purchase optional components, you will receive a new configuration key diskette enabling the new features. To replace missing diskettes or to order additional components, contact your NEC representative.

Single-drive Bay Laptops

The normal MATWorX Studio installation requires a PC equipped with both floppy diskette and CD-ROM drives. Some laptop PCs, however,

contain a single drive bay, requiring users to swap between removable diskette and CD-ROM drives. To install MATWorX Studio on a PC with a single drive bay, see "Installing MATWorX Studio on a Single-drive PC" on page 2-8 for details.

Acrobat Reader Required

MATWorX Studio requires the Adobe Acrobat Reader software be installed on your computer. You can install the version included on the MATWorX Studio CD-ROM or use an existing copy of the same or later Acrobat version you may already have installed.

Selecting a Standalone or Client/Server Installation

You can install MATWorX Studio in either of two configurations, depending on the license you purchased:

- Standalone
- Client/Server

A standalone installation consists of one PC running both MATWorX Studio and the DeviceServerWorX (DSW), connecting to a single PBX.

MATWorX Studio uses the DSW to communicate with your PBX. For more information on DSW functions and configurations, see Chapter 6, "DeviceServerWorX".

In a standalone installation, both MATWorX Studio and the DSW must reside on the same PC. If you install MATWorX Studio on additional PCs, they will be unable to connect to the DSW and PBX. The DSW accepts connections only from the PC on which it is installed.

A client/server installation consists of one or more PCs running MATWorX Studio, connecting to one or more PBXs. The DSW can reside on any of the PCs running MATWorX Studio.

When you install MATWorX Studio, the Setup program reads information from the configuration key diskette and detects automatically whether you have purchased a standalone or client/server configuration.

If you have purchased a client/server configuration, the Setup program displays two additional screens during installation. One indicates the number of available clients and servers your license authorizes (Figure 2-1), and the other lets you select whether to install the client software or the DeviceServerWorX (Figure 2-2).

Figure 2-1 *Number of Client and Server Licenses Available*

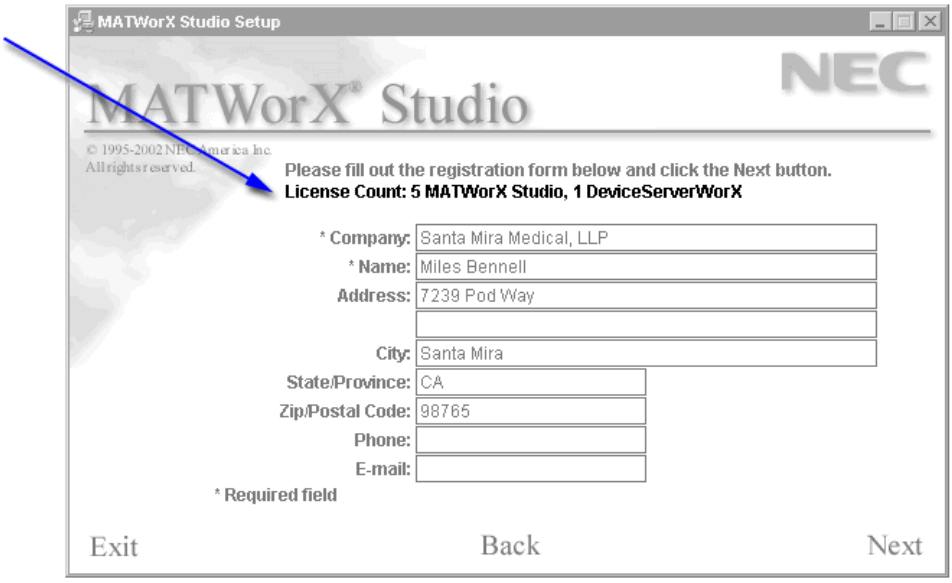
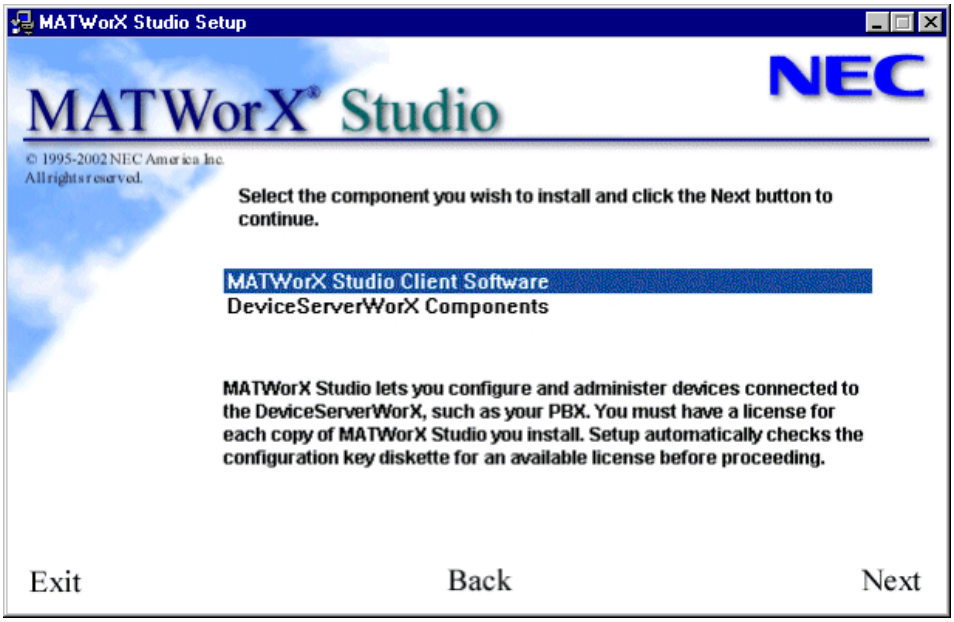


Figure 2-2 *Standalone - Client/Server Installation Selection*



Installing or Upgrading MATWorX Studio

To install MATWorX Studio for the first time, upgrade to a newer version, or to add optional components you purchase later, use the installation CD and license key diskette included in your MATWorX Studio package. You must run the Setup program from within Windows.

The following procedure explains how to install or upgrade MATWorX Studio. The Setup program consists of a series of dialogs that supply you with default selections regarding the installation of files to your hard disk. To accept the default answers, click the **Next** button.

If you want to install MATWorX Studio from a network drive, refer to the **Read Me** file on the MATWorX Studio CD-ROM.

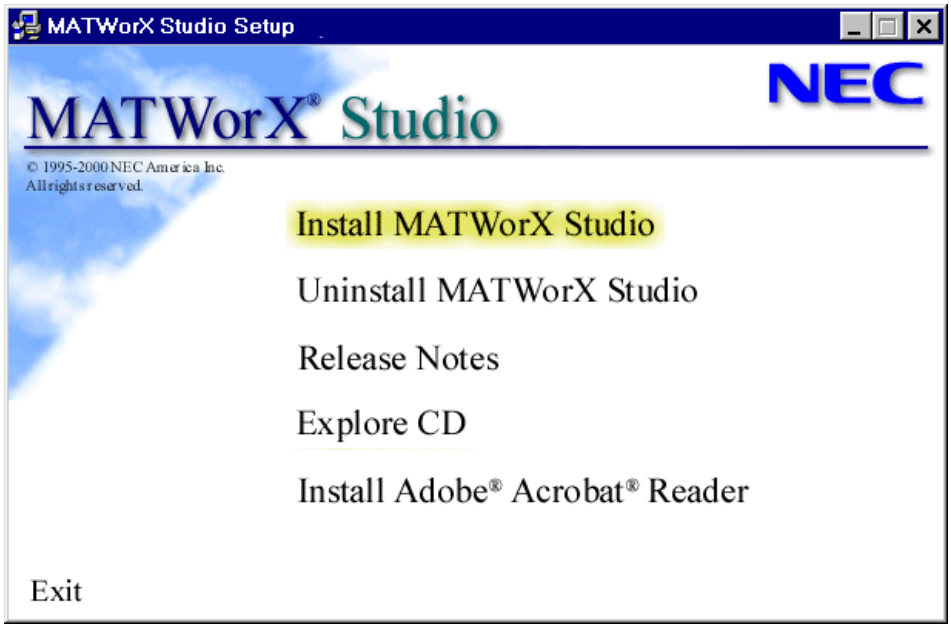
Step 1 Launch Microsoft Windows on your computer.

Step 2 Insert the MATWorX Studio Installation CD into the computer's CD-ROM drive. On most computers, setup will automatically start when the CD is loaded. If Autorun is not enabled on the computer, then do the following:

—After inserting the MATWorX Studio Installation CD into the computer's CD-ROM drive, open Windows Explorer and double-click the CD-ROM drive icon.

—In the CD-ROM file list, double-click the **Setup.exe** file. The MATWorX Studio Installation Menu displays (Figure 2-3).

Figure 2-3 *MATWorX Studio Installation Menu*



Step 3 Click **Install MATWorX Studio** and follow the prompts in the Setup program to continue the installation. The Setup program uninstalls previous versions of MATWorX/MATWorX Studio and upgrades any necessary Windows components.

NOTE

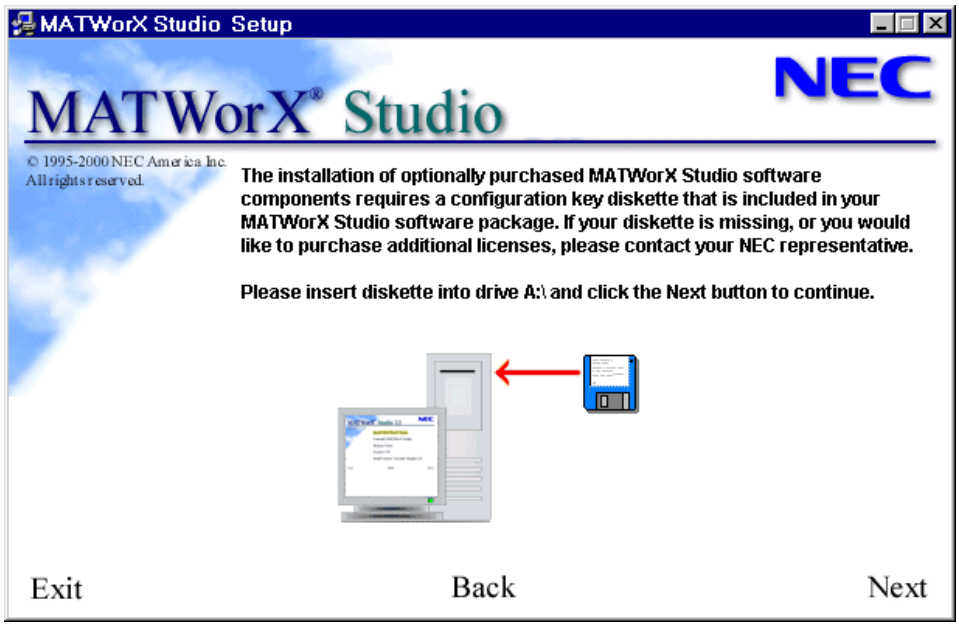
If you are upgrading MATWorX Studio to a newer version, Setup retains your existing configuration information.

Step 4 Insert the configuration key diskette in your computer's floppy drive when prompted (Figure 2-4).

NOTE

If you are upgrading MATWorX Studio and have an earlier version installed on your PC, you do not need to insert the key diskette. Skip to Step 5.

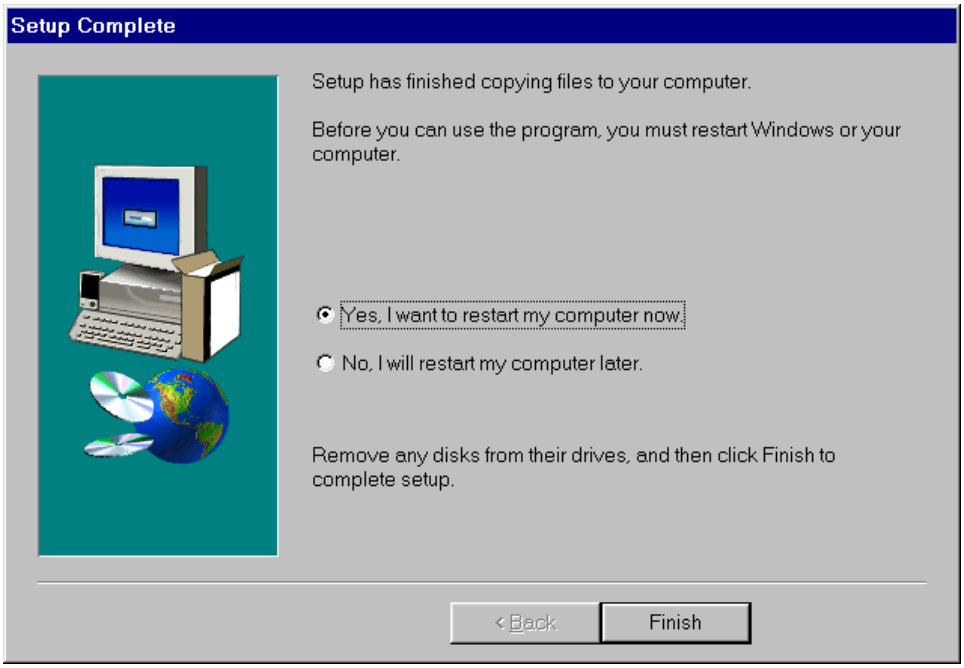
Figure 2-4 *Insert Configuration Key Diskette Dialog*



Step 5 Click **Next** to continue the installation. The Setup program reads the information on the configuration key diskette (or Windows Registry if you are upgrading) and determines which files and optional components to copy to your computer's hard drive.

Step 6 Follow the on-screen prompts to complete the installation. The **Setup Complete** dialog displays (Figure 2-5) after the Setup program finishes copying the necessary files to your computer's hard drive.

Figure 2-5 *Setup Complete Dialog*



Step 7 Select a radio button to specify whether you want to restart your computer immediately or later. Then, click the **Finish** button.

You must restart your computer to complete the installation. The Setup program then makes necessary changes to your computer's configuration and launches automatically after the computer restarts.

NOTE

Remove the configuration key diskette from the floppy drive before restarting your computer.

Installing MATWorX Studio on a Single-drive PC

The normal MATWorX Studio installation requires a PC equipped with both floppy diskette and CD-ROM drives. Some laptop PCs, however, contain a single drive bay, requiring users to swap between removable diskette and CD-ROM drives. To install MATWorX Studio on a PC with a single drive bay, you can either:

- Copy the files from the MATWorX Studio CD to a server on your network, then proceed with the network-based installation described in the **Read Me** file on the MATWorX Studio CD-ROM.

Or,

- Follow the procedure below to install MATWorX Studio using a PC with a single drive bay:

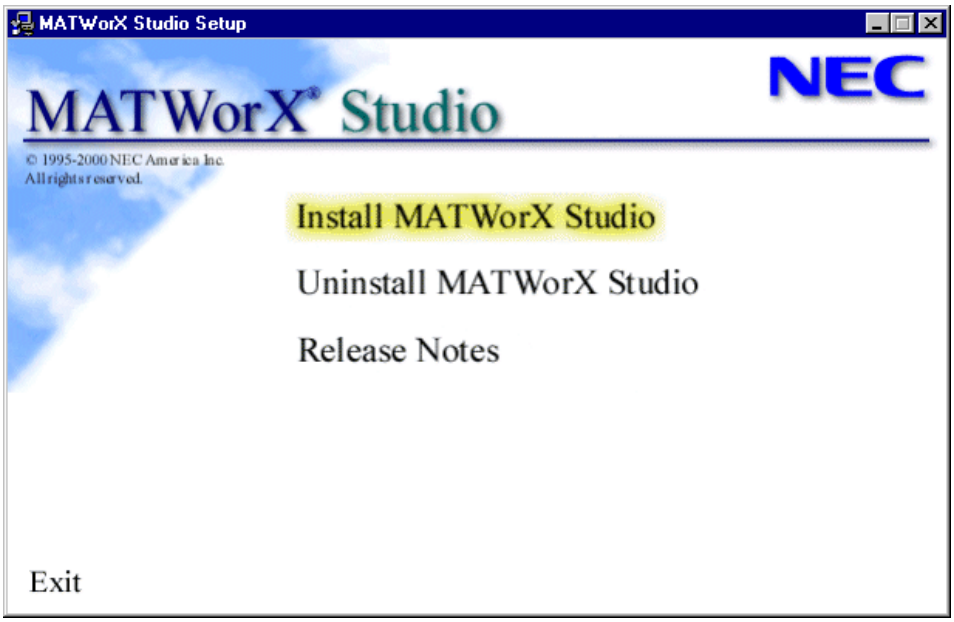
Step 1 Insert the MATWorX Studio key diskette in your PC's floppy drive.

Step 2 Select **Run...** from the Windows **Start** menu. The **Run** dialog displays.

Step 3 Type **A:\Install**. (Where **A:** represents the letter of your floppy drive.)

Step 4 Click the **OK** button. The MATWorX Studio Installation Menu displays.

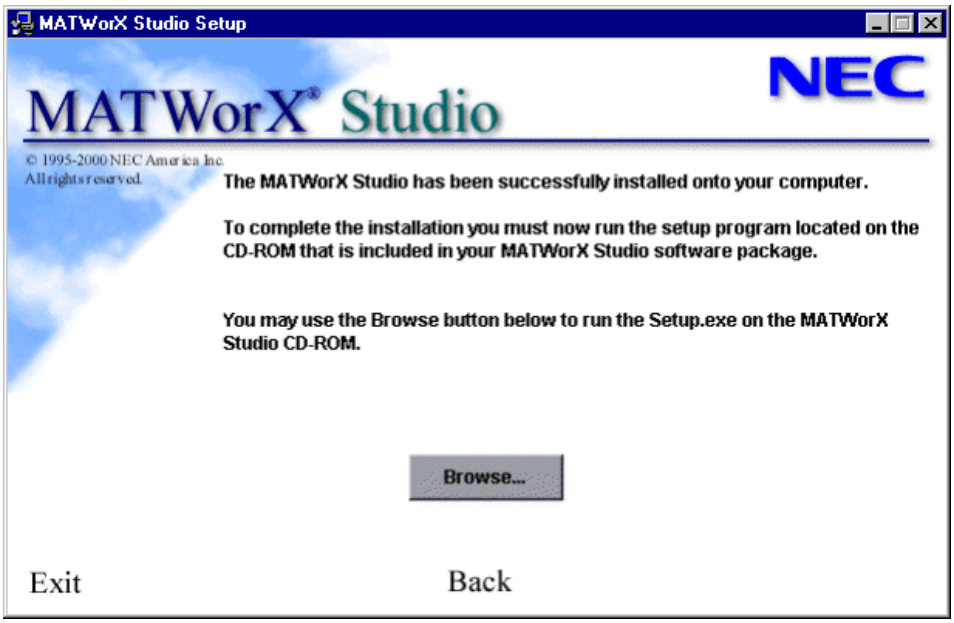
Figure 2-6 *MATWorX Studio Installation Menu (Single-drive PC)*



Step 5 Click **Install MATWorX Studio**. The Setup program reads the license information from the configuration key diskette.

Step 6 Follow the on-screen prompts to complete the installation. After copying the necessary license data to your computer's hard drive, the Setup program prompts you to locate the **Setup.exe** file to install the MATWorX Studio software and complete the installation (Figure 2-7).

Figure 2-7 *The Browse Screen*



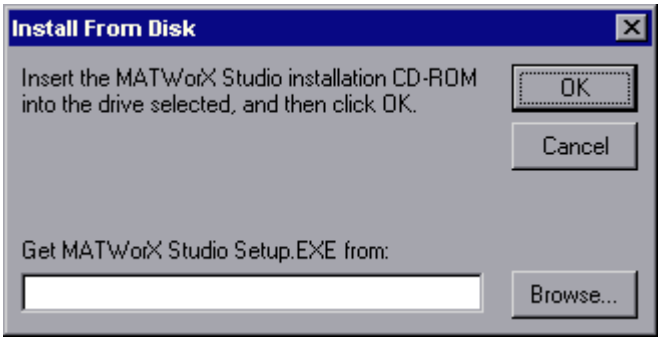
Step 7 Remove the configuration key diskette, then remove the diskette drive from your computer.

Step 8 Insert the CD-ROM drive into your computer.

Step 9 Insert the MATWorX Studio CD-ROM into your CD-ROM drive.

Step 10 Click the **Browse** button. The **Install From Disk** dialog displays (Figure 2-8).

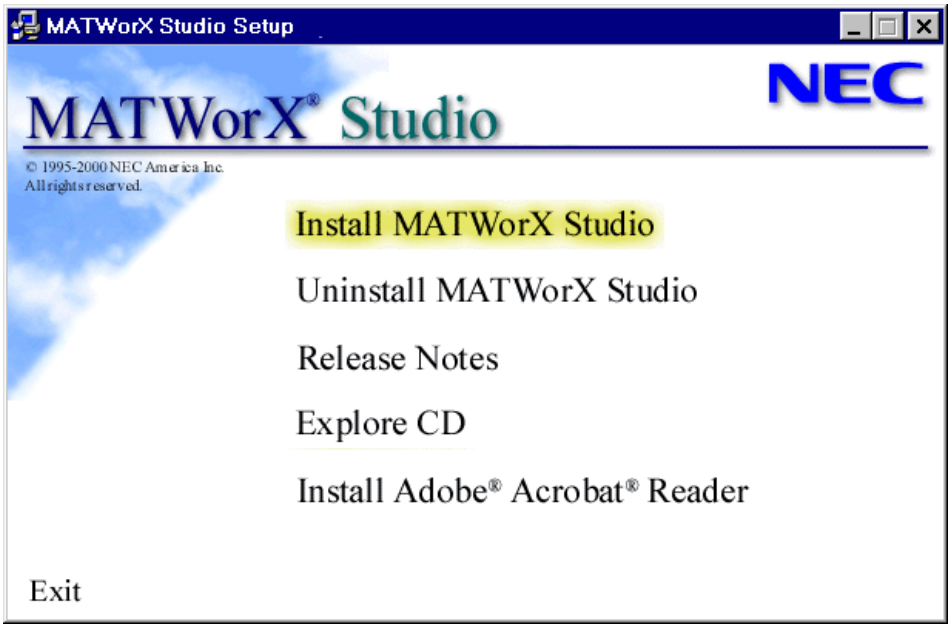
Figure 2-8 *Install From Disk Dialog*



Step 11 Click the **Browse** button and locate the Setup.exe file on the CD-ROM.

Step 12 Click the **OK** button to close the dialog. The installer locates the MATWorX Studio Setup program and launches it (Figure 2-9).

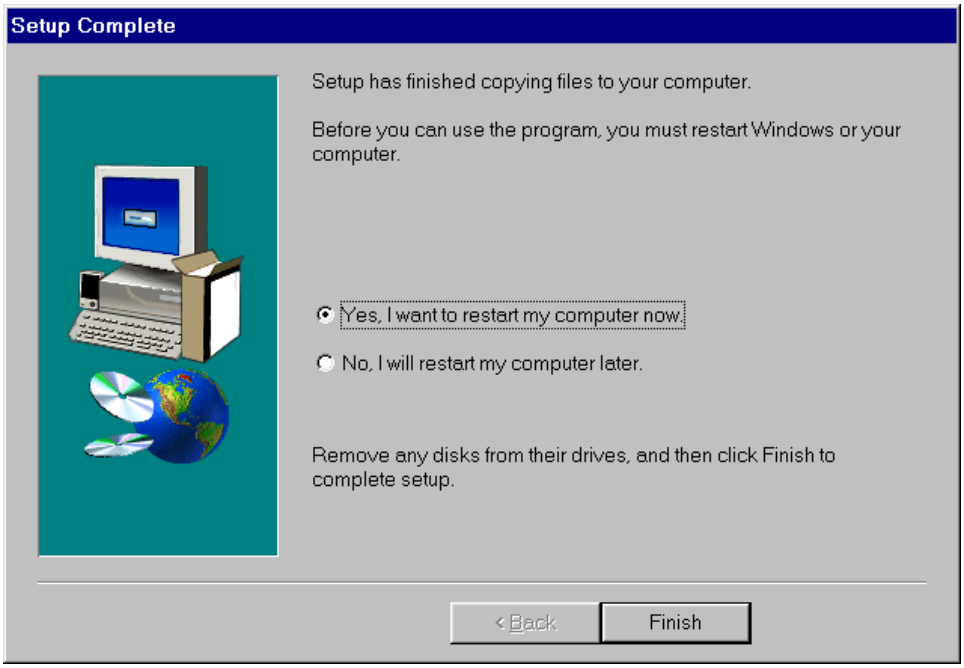
Figure 2-9 *MATWorX Studio Installation Menu*



Step 13 Click **Install MATWorX Studio** and follow the prompts in the Setup program to continue the installation. The Setup program uninstalls previous versions of MATWorX/MATWorX Studio and upgrades any necessary Windows components.

Step 14 Follow the on-screen prompts to complete the installation. The **Setup Complete** dialog displays (Figure 2-10) after the Setup program finishes copying the necessary files to your computer's hard drive.

Figure 2-10 *Setup Complete Dialog*



Step 15 Select a radio button to specify whether you want to restart your computer immediately or later. Then, click the **Finish** button.

You must restart your computer to complete the installation. The Setup program then makes necessary changes to your computer's configuration.

Installing MATWorX Studio Service Packs

Service Packs contain enhancements, revisions, and product compatibility improvements to MATWorX Studio in the interim between product version changes. Each Service Pack applies only to specific MATWorX Studio release versions.

NOTE

*Be sure to check the Service Pack's **Read Me** file to determine if it is the correct one for the MATWorX Studio version you have installed on your computer. The Service Pack installer will not allow you to continue if it detects the wrong version of MATWorX Studio.*

IMPORTANT

If you just installed MATWorX Studio, you should reboot your computer before installing a Service Pack.

CAUTION

If you add or install any new features or add-ins to a MATWorX Studio version which has had a Service Pack applied, you must re-apply the Service Pack. Simply run the Service Pack installer again to update the new files or features.

To install a MATWorX Studio Service Pack, do the following:

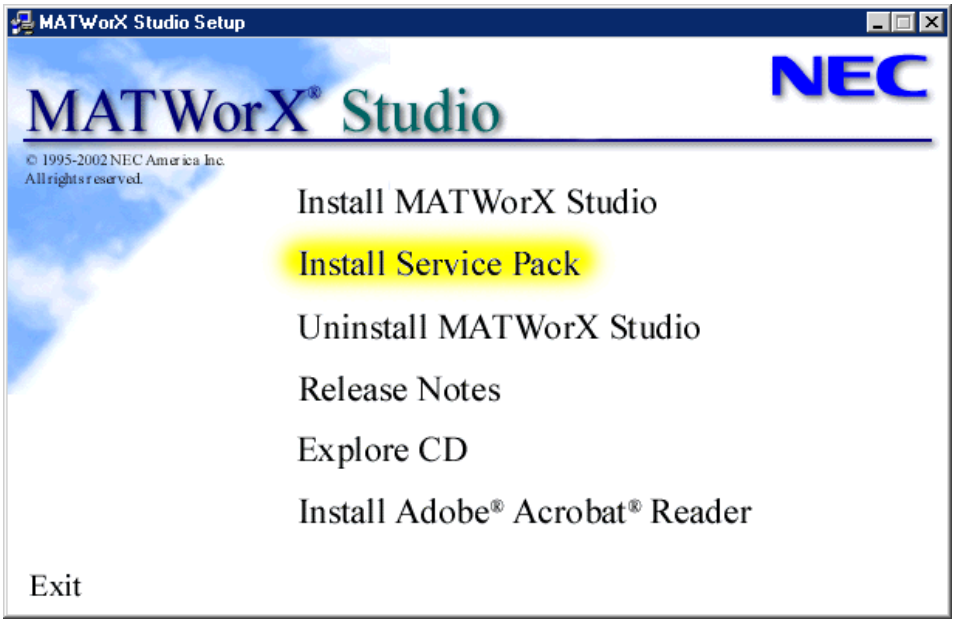
Step 1 Launch Microsoft Windows on your computer.

Step 2 Insert the MATWorX Service Pack CD into the computer's CD-ROM drive. On most computers, setup will automatically start when the CD is loaded. If Autorun is not enabled on the computer, then do the following:

—After inserting the MATWorX Service Pack CD into the computer's CD-ROM drive, open Windows Explorer and double-click the CD-ROM drive icon.

—In the CD-ROM file list, double-click the **Setup.exe** file. The MATWorX Studio Service Pack Installation Menu displays (Figure 2-11).

Figure 2-11 *MATWorX Studio Service Pack Installation Menu*

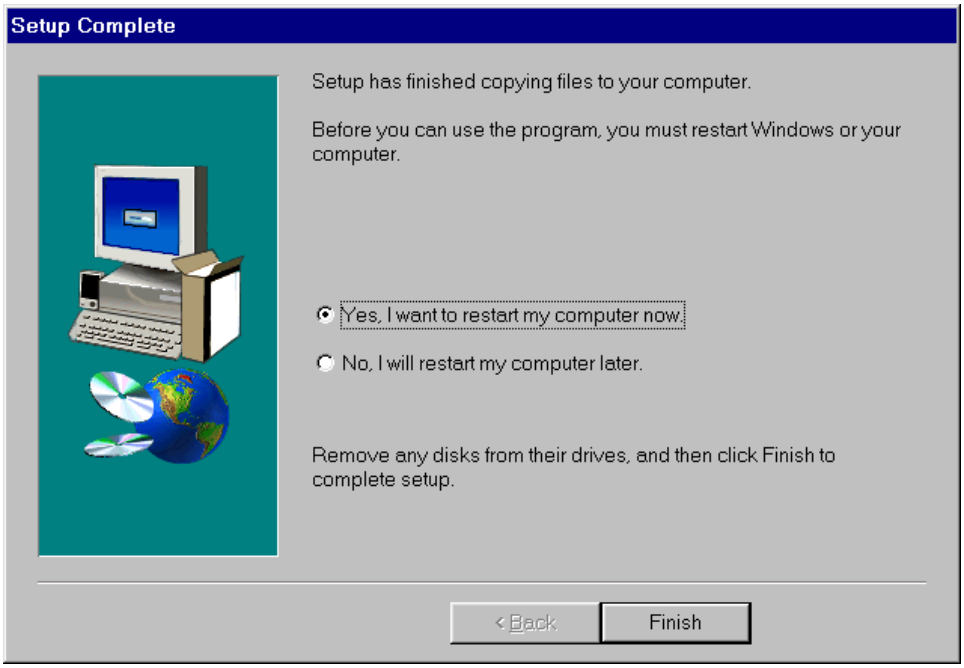


Step 3 Click **Install Service Pack** and follow the prompts in the Setup program to continue the installation. The Setup program checks your existing version of MATWorX Studio to ensure it is the correct release for the Service Pack.

Step 4 Click **Next** to continue the installation. The Setup program begins updating existing components and files.

Step 5 Follow the on-screen prompts to complete the installation. The **Setup Complete** dialog displays (Figure 2-12) after the Setup program finishes copying the necessary files to your computer's hard drive.

Figure 2-12 *Setup Complete Dialog*



Step 6 Select a radio button to specify whether you want to restart your computer immediately or later. Then, click the **Finish** button.

You must restart your computer to complete the installation. The Setup program then makes necessary changes to your computer's configuration.

NOTE

Remove the configuration key diskette from the floppy drive before restarting your computer.

Uninstalling MATWorX Studio

You must use the Setup program to uninstall MATWorX Studio. This is necessary to copy your license information back to the key diskette.

NOTE

*You cannot remove MATWorX Studio using the Windows **Add or Remove Programs** Control Panel. MATWorX Studio will display an error message instructing you to use the Setup program instead.*

NOTE

*Be sure there are no MATWorX Studio components running (such as DeviceServerWorX) before uninstalling MATWorX Studio. To close DeviceServerWorX, right-click on the DSW icon in the Windows System Tray, then select **Close Supervisor**.*

To uninstall MATWorX Studio, do the following:

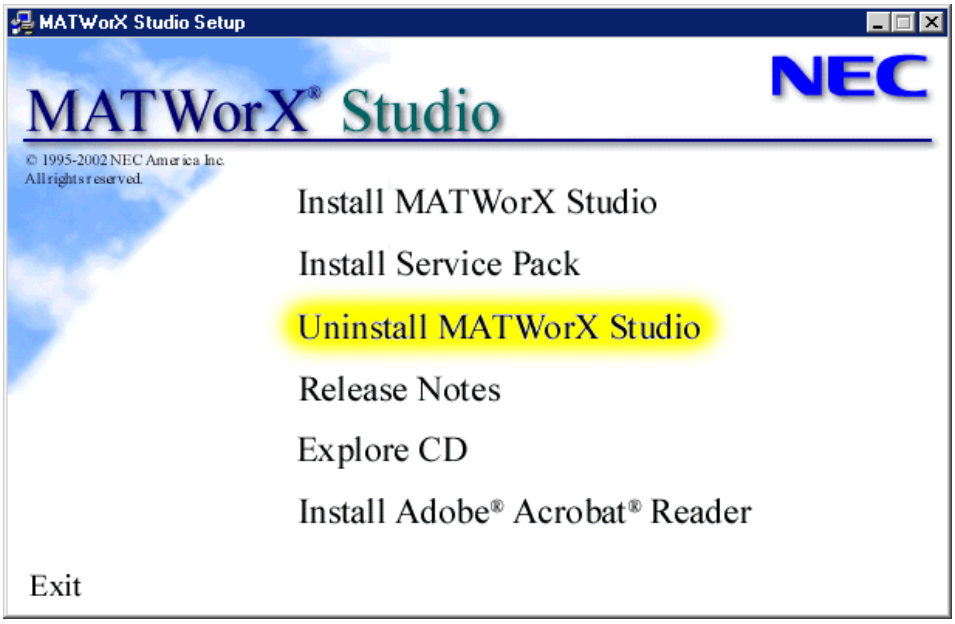
Step 1 Launch Microsoft Windows on your computer.

Step 2 Insert the MATWorX Studio CD into the computer's CD-ROM drive. On most computers, setup will automatically start when the CD is loaded. If Autorun is not enabled on the computer, then do the following:

—After inserting the MATWorX Service Pack CD into the computer's CD-ROM drive, open Windows Explorer and double-click the CD-ROM drive icon.

—In the CD-ROM file list, double-click the **Setup.exe** file. The MATWorX Studio Installation Menu displays (Figure 2-13).

Figure 2-13 *MATWorX Studio Installation Menu*

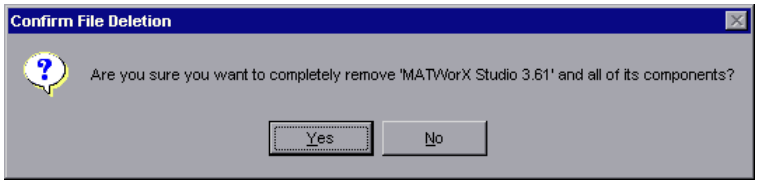


Step 3 Click **Uninstall MATWorX Studio**. The Setup program prompts you to insert the configuration key diskette.

Step 4 Insert your configuration key diskette in the diskette drive.

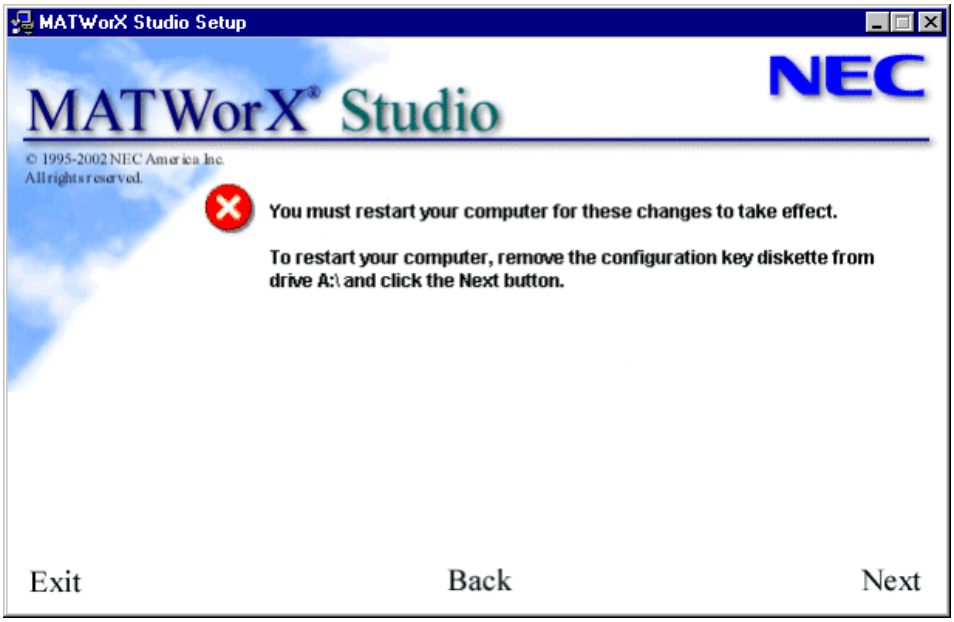
Step 5 Click **Next** to continue the uninstall process. The **Confirm File Deletion** dialog displays (Figure 2-14).

Figure 2-14 *Confirm File Deletion Dialog*



Step 6 Click the **Yes** button to confirm uninstalling MATWorX Studio. The Setup program displays a screen to prompt you to restart your PC (Figure 2-15).

Figure 2-15 *Restart Required Screen*



Step 7 Click the **Next** button to restart your computer.

IMPORTANT

After uninstalling MATWorX Studio, certain components, logs, databases, and registry entries remain on your computer to retain your settings during re-installation. If you need to perform a clean install, first manually remove the MATWorX Studio and NEC Core Services folders from the NEC folder on your PC.

3

Quick Install

Quick Install helps you set up and configure a NEAX EXPRESS or NEAX 2000 family PBX. The handy checklist format helps ensure important settings are made in the correct order. Administrators can save a Quick Install configuration to a Notebook file (.nbk) and use it to configure multiple PBXs with common settings.

In this chapter you learn about the following:

Chapter Topics

What is the Quick Install?

The Quick Install provides an easy, step-by-step way to set up an NEC PBX. MATWorX Studio includes three Quick Install programs you can use to configure a NEAX EXPRESS, NEAX 1000, or NEAX 2000. Everything you need is conveniently packaged in one checklist that resembles a notebook.

Quick Install provides you with a lot of flexibility. For example, you can create a Notebook file (.nbk) anywhere, save it, and then carry it to the PBX site. Once there, you load it on the PC connected to the PBX and then write the data to the PBX. It's that simple! You can also create a new notebook for each PBX you install, or you can create a few standard notebooks that you can load and edit.

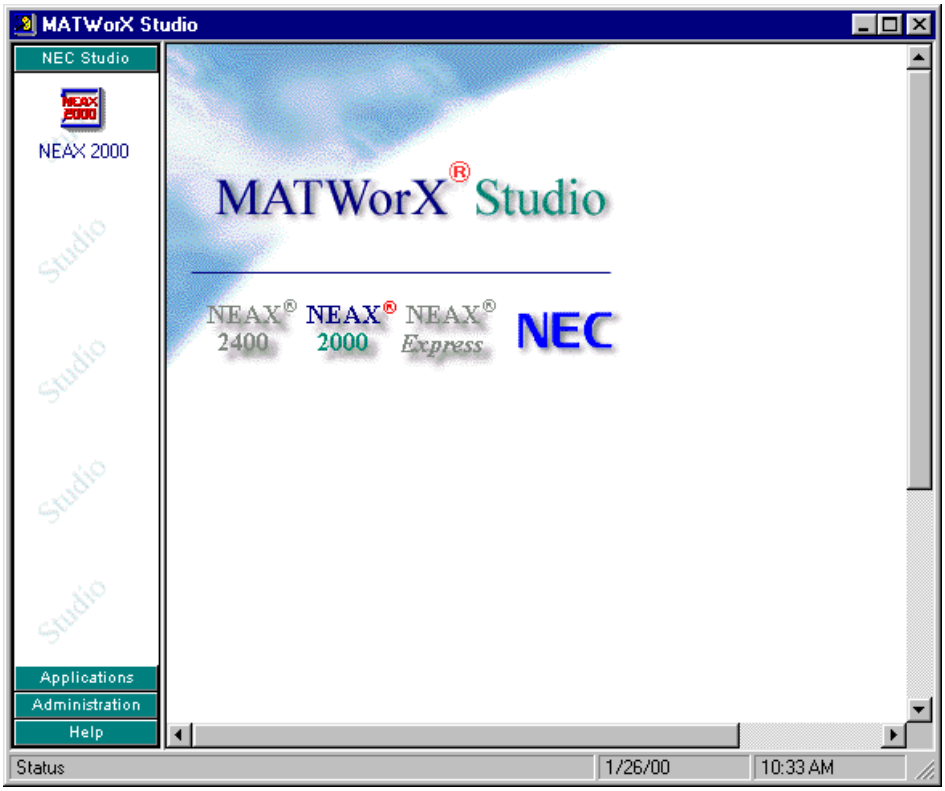
To set up a PBX, simply work sequentially through the checklist and make all the settings. Then, when you reach the **Update Data to System** tab, click the **Write To PBX** button. Quick Install reads your Notebook file and sends the necessary commands to the PBX.

Starting the Quick Install

The following procedure explains how to access and run the Quick Install from MATWorX Studio.

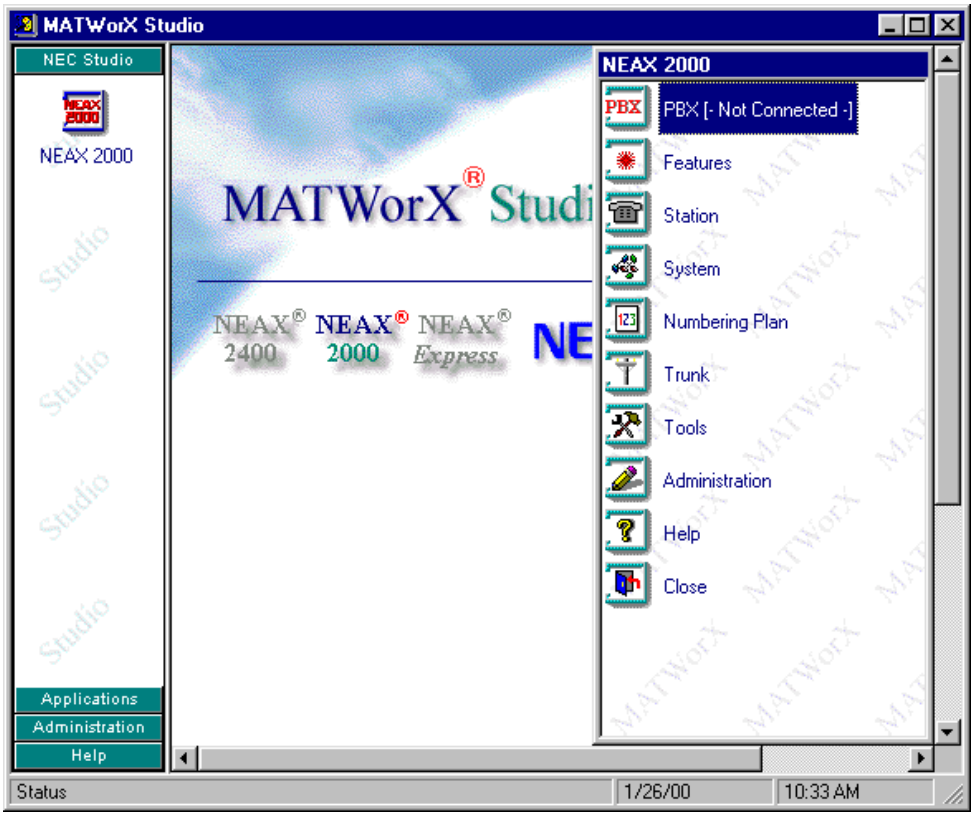
Step 1 Launch MATWorX Studio. The Toolbar and Work Area windows display (Figure 3-1).

Figure 3-1 *Toolbar and Work Area Windows*



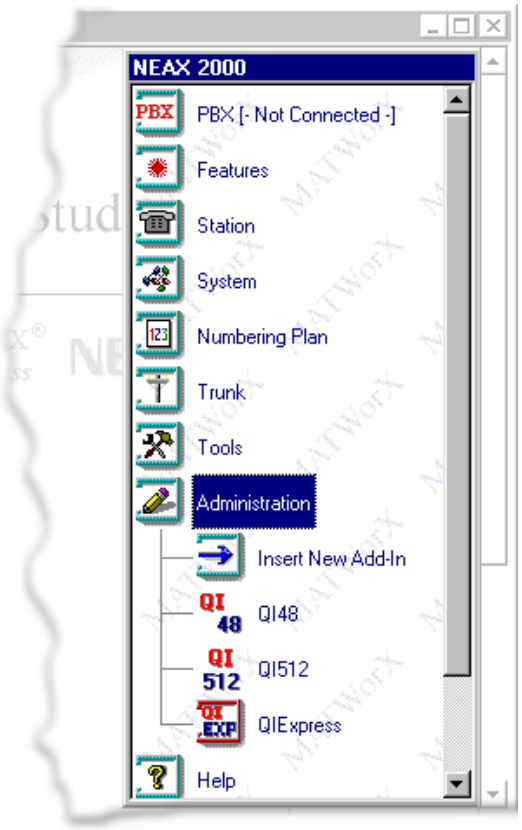
Step 2 Click the item in the Toolbar representing your PBX. The Toolbox window displays (Figure 3-2).

Figure 3-2 *Toolbox Window*



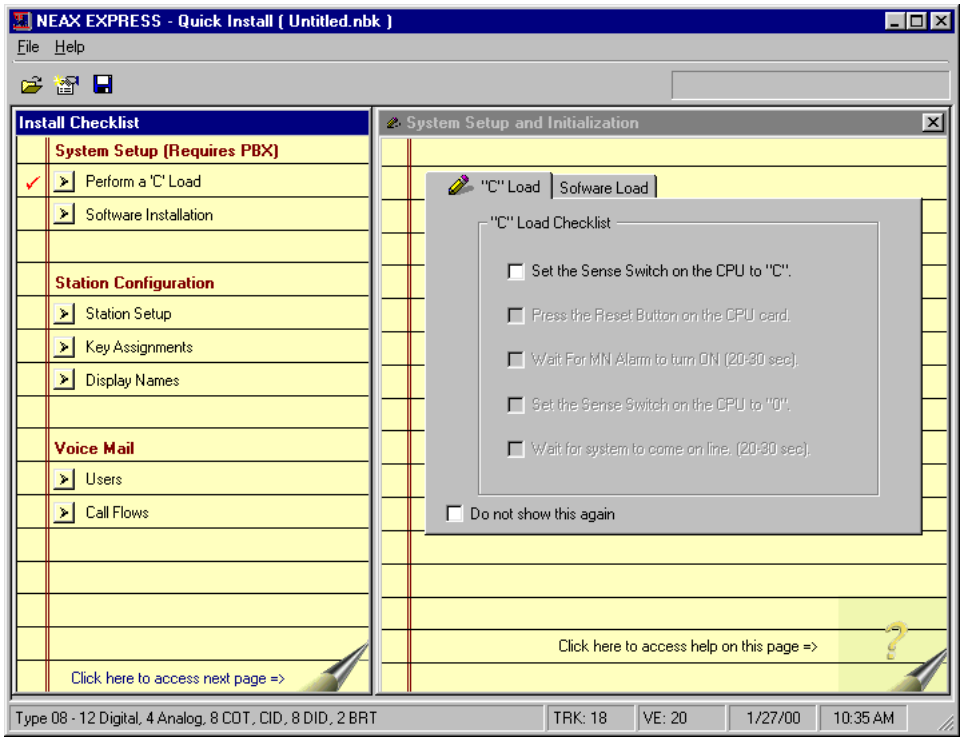
Step 3 Click the **Administration** item in the Toolbox. A list of installed administration applications displays (Figure 3-3).

Figure 3-3 *Toolbox and Administration Items*



Step 4 Click the **QIEXPRESS**, **QI48**, or **QI512** item, depending on whether you are setting up a NEAX EXPRESS, NEAX1000, or NEAX 2000, respectively. The Quick Install notebook displays (Figure 3-4).

Figure 3-4 *Quick Install Notebook (NEAX EXPRESS)*



You have now successfully launched the Quick Install notebook.

Quick Install Online Help

This guide provides a simple overview to the features and capabilities of the Quick Install. For more detailed information, including procedures and descriptions, access the online Help for the Quick Install.

Help for the Quick Install is included in the MATWorX Studio online Help system. You can access the Help system from the Help menu or by pressing **F1**. Refer to Chapter 11, "MATWorX Studio Online Help" for features and ways to access and print Help topics.

4

Getting Started

MATWorX Studio provides a convenient, graphical interface you can use to configure and administer a NEAX 2000 series or NEAX 2400 series PBX. This chapter gives you the information you'll need to run MATWorX Studio and use it to connect to your PBX.

In this chapter you learn about the following:

Chapter Topics

Starting MATWorX Studio

This procedure describes how to launch MATWorX Studio each time you want to run the program.


NOTE

Before you can use MATWorX Studio to program a device, you must configure a communication link between it and your PC. Refer to "Configuring Device Connections" on page 3.

Step 1 Launch Microsoft Windows on your computer.

Step 2 Select **Programs / NEC / MATWorX Studio / MATWorX Studio** from the Windows **Start** button (Figure 4-1). The MATWorX Studio Toolbar and Work Area display. (Figure 4-2).

Figure 4-1 *Starting MATWorX Studio*

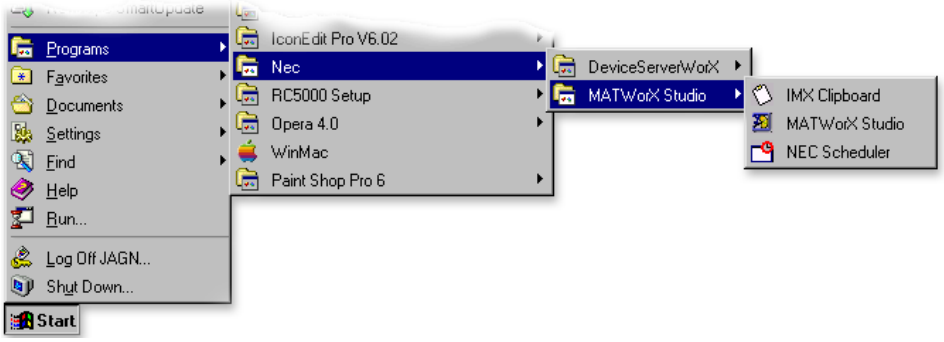
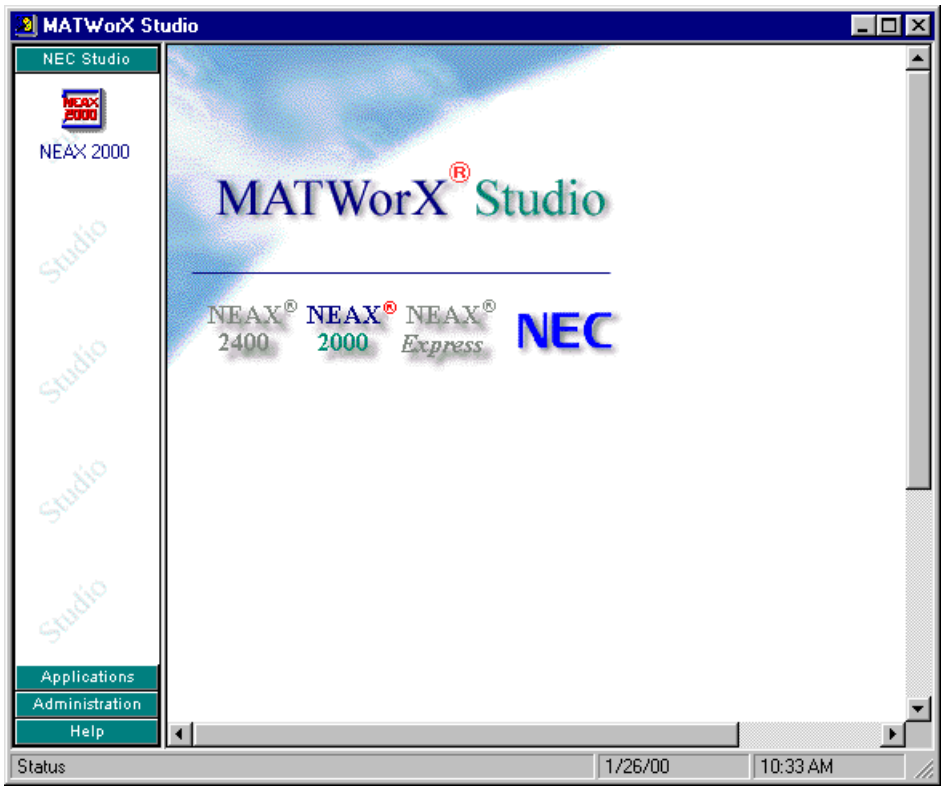


Figure 4-2 *MATWorX Studio Toolbar and Work Area*



You have now successfully started MATWorX Studio.

Configuring Device Connections

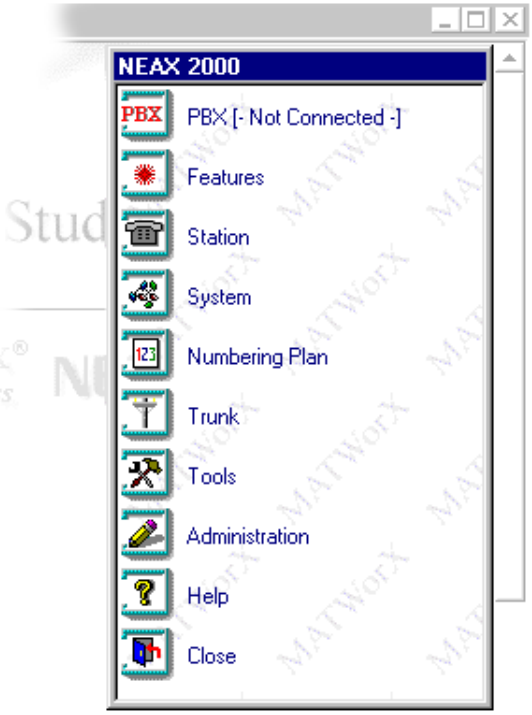
The Device Configuration lets you specify which type of connection you want to establish, and determines the proper communication settings between your PC and a connected device.

If you have already established a connection between your computer and a device, you can also run the Device Configuration to connect to a different device or change the connection type. The following procedure explains how to launch the Device Configuration:

Step 1 Launch MATWorX Studio.

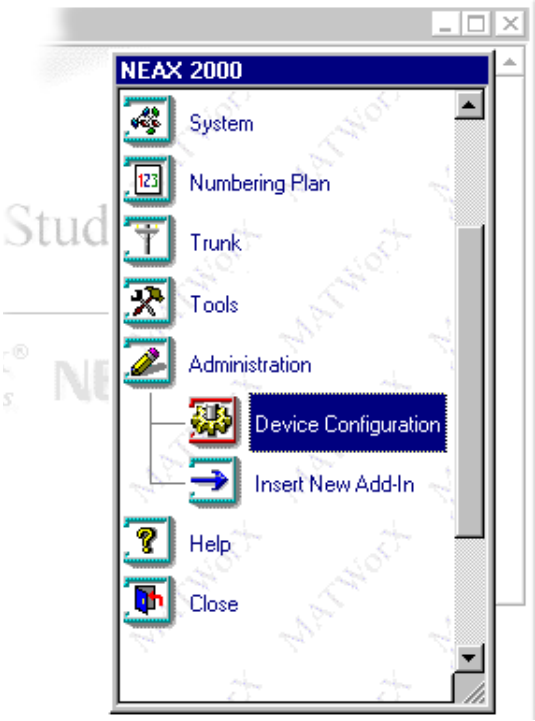
Step 2 Click the item representing your device in the Studio Toolbar. The Toolbox window displays. (Figure 4-3).

Figure 4-3 *Toolbox Window*



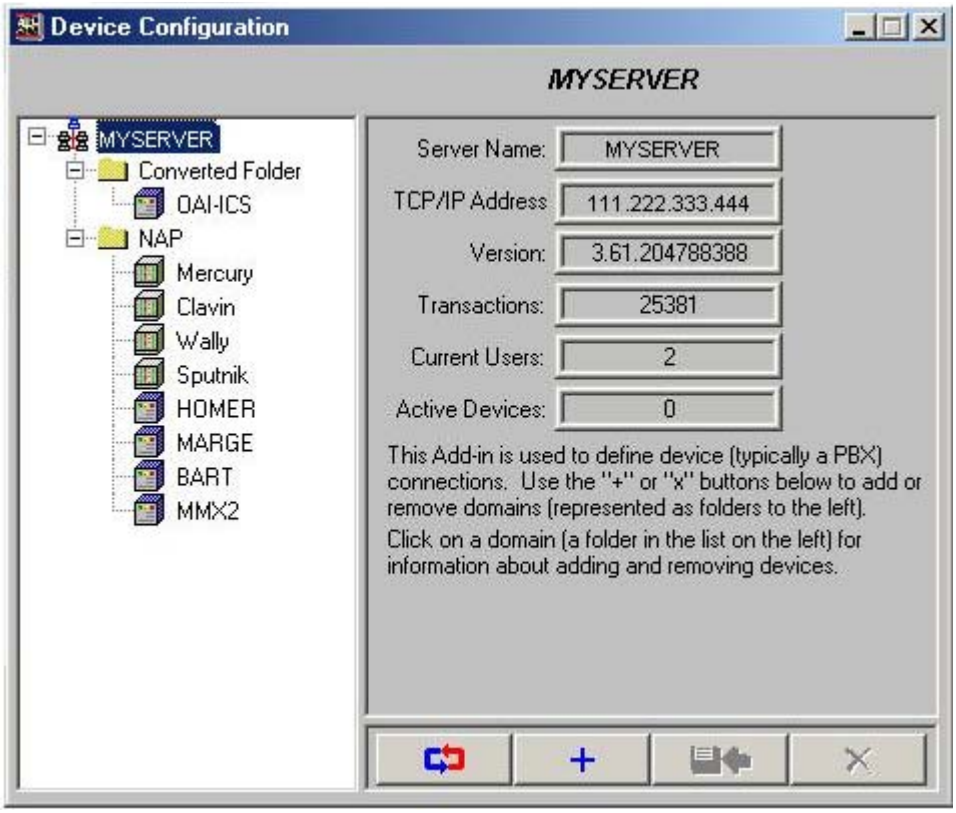
Step 3 Click the **Administration** item. The Administration item expands to display the Device Configuration item. You may need to use the window's scroll bars or resize the Toolbox to see all the items (Figure 4-4).

Figure 4-4 *Toolbox and Administration Items*



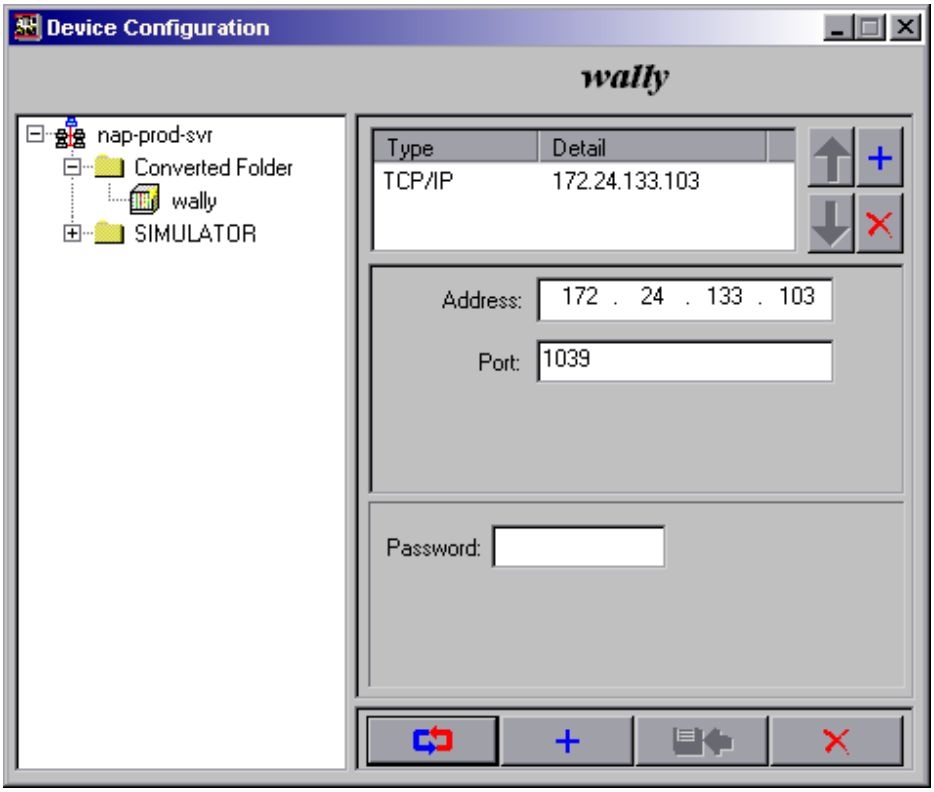
Step 4 Click the **Device Configuration** item. The Device Configuration window displays (Figure 4-5).

Figure 4-5 *Device Configuration Window*



Step 5 Select the device you wish to configure from the list of connected devices. A panel displays showing the current settings (Figure 4-6).

Figure 4-6 *Device Configuration Settings*



Step 6 Make any changes to the configuration information using the available fields. For more detailed information about configuring devices, refer to the Device Configuration online Help. You can press **F1** at any time during the configuration to view online Help.

Connecting to a PBX

There are three ways to connect your PC to an NEC PBX:

- Use a modem to establish a dial-up connection.
- Use a serial cable to establish a direct connection.
- Use TCP/IP over your Local Area Network (LAN), if so configured. (Requires DeviceServerWorX.)

The method you use depends on how you installed and configured the device to which you want to connect. A serial cable direct connection offers better performance than a modem connection, but requires that the PC and device be within 50 feet of each other. A TCP/IP connection offers excellent performance and flexibility but requires a network connection to both your PC and the device.

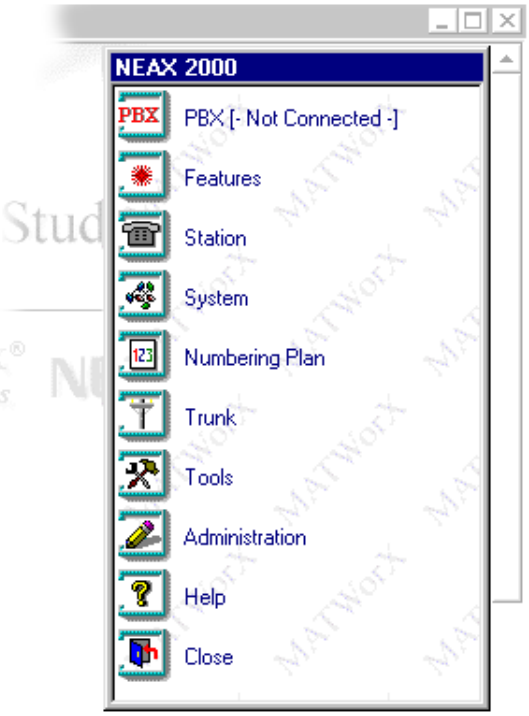
Establishing a Modem Connection

To connect to a PBX using a modem connection, do the following:

Step 1 Launch MATWorX Studio.

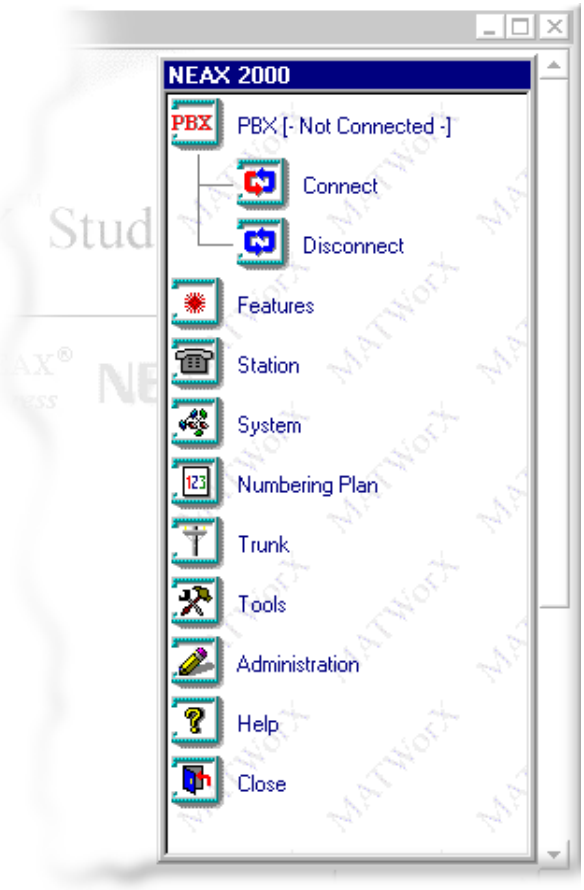
Step 2 Click the item representing your PBX in the Studio Toolbar. The Toolbox window displays. (Figure 4-7).

Figure 4-7 *Toolbox Window*



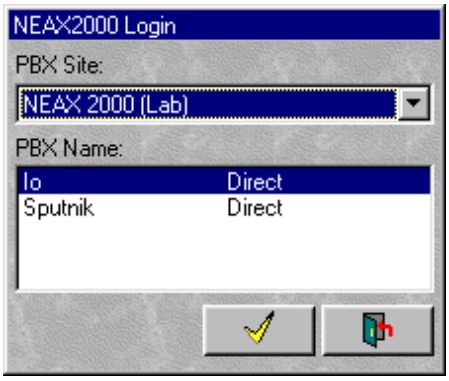
Step 3 Click the **PBX** item. The Connect and Disconnect items appear (Figure 4-8).

Figure 4-8 *Connect and Disconnect Items*



Step 4 Click the **Connect** item. The PBX Login dialog displays (Figure 4-9).

Figure 4-9 *PBX Login Dialog (Standalone Configuration)*



Step 5 Select the PBX to which you want to connect from the PBX Name list. Click the PBX Site drop-down menu to view available PBXs at other sites, if necessary.

Step 6 Click the **Connect** button  .

You have now successfully connected MATWorX Studio to the PBX.

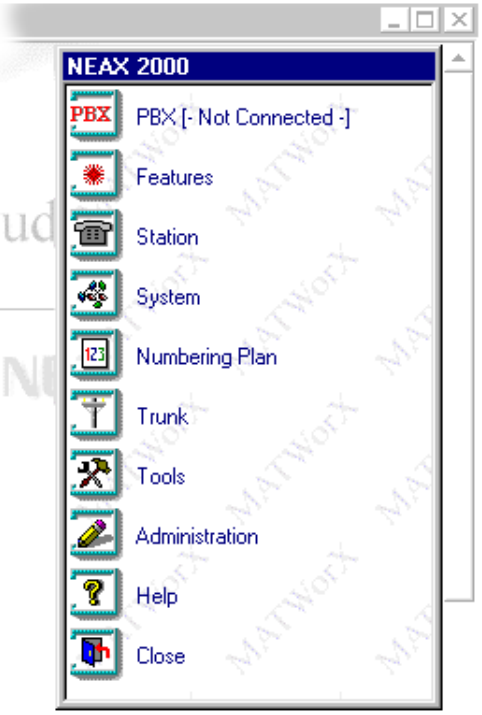
Establishing a Direct or TCP/IP Connection

Once you have established the communication settings between your computer and the PBX, you can connect to it using MATWorX Studio.

Step 1 Launch MATWorX Studio.

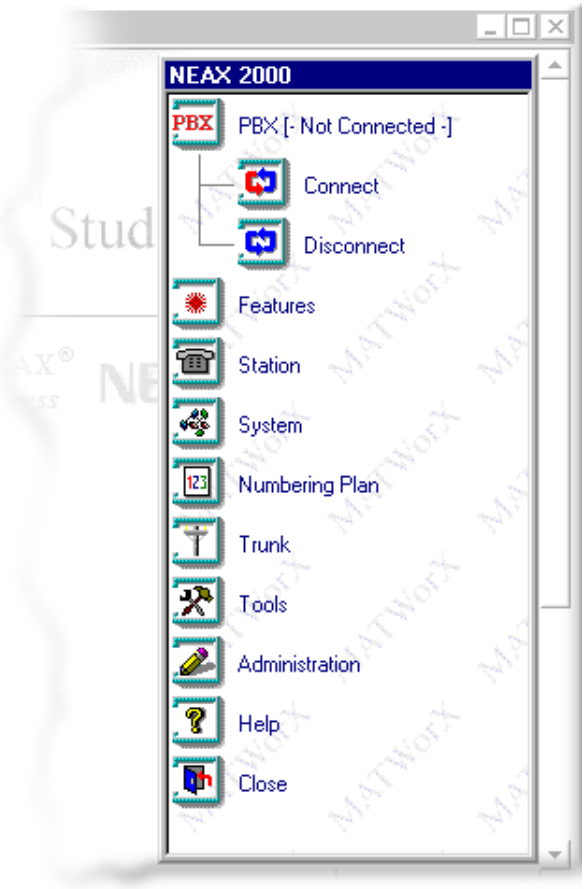
Step 2 Click the item representing your PBX in the Studio Toolbar. The Toolbox window displays (Figure 4-10).

Figure 4-10 *Toolbox Window*



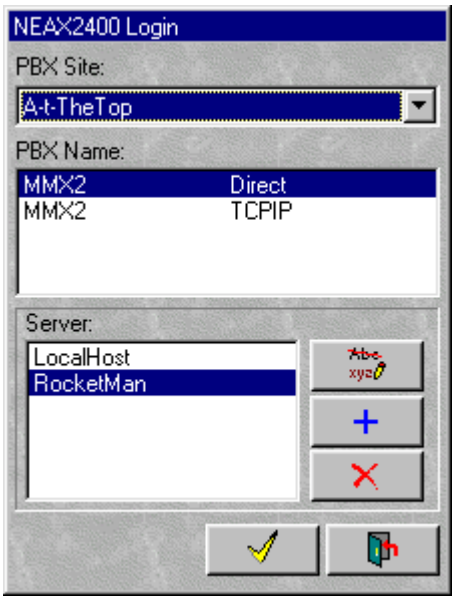
Step 3 Click the **PBX** item. The Connect and Disconnect items display (Figure 4-11).

Figure 4-11 *Connect and Disconnect Items*



Step 4 Click the **Connect** item. The PBX Login dialog displays (Figure 4-12).

Figure 4-12 *PBX Login Dialog (Client/Server Configuration)*



Step 5 Double-click the name of the server to which you want to connect. A list of available PBX Sites and PBX Names appears in the appropriate dialog fields.

Step 6 Select your PBX site from the drop-down menu, if necessary. A list of connected PBXs displays in the PBX Name window.

Step 7 Select the PBX to which you want to connect from the list of PBX names.

Step 8 Click the **Connect** button  . This launches the connection process.

You have now successfully connected MATWorX Studio to the PBX.

Troubleshooting a Failed Connection (All Types)

The following list provides possible reasons for a failed connection between your computer and the PBX, as well as the action required to correct the problem.

- Have you created a hardware link between your PC and the PBX?
  - — **Yes** - Go to the next bullet item.
  - — **No** - MATWorX Studio will not operate properly until the hardware link is made. Linking your PC to the PBX is an important part of the PBX installation. This differs from configuring the communication settings between your PC and the PBX (using the Device Configuration.) Please read your PBX's Operation Guide for complete instructions on setting up the hardware link.

  - — **I don't understand the question** - Your PC and the PBX need to be connected by a serial cable, modem connection, or TCP/IP connection. For example, when the PC is located near the PBX, it is best to link them directly using a serial cable. When the PC is located away from the PBX, they must be linked over a telephone line using a modem, or over a local area network using TCP/IP.
- Have you entered configuration information for your PBX?
  - — **Yes** - Go to the next bullet item.
  - — **No** - Run the Device Configuration to establish the proper communication settings between your computer and the PBX.
  - — **I don't understand the question** - Once you establish a proper hardware link, you must tell your PC how to communicate with the PBX. For example, to dial the PBX using a modem connection, your PC must know the PBX modem's phone number. If you have not entered this data, you must do so by using the Device Configuration.
- Have you used the Device Configuration again since the connection failed?
  - — **Yes** - Go to the next bullet item.
  - — **No** - Check the Device Configuration to confirm any connection changes and re-establish the proper communication settings between your computer and the PBX.
  - — **I don't understand the question** - You may have inadvertently changed a communication setting while modifying or adding a device.
- Is the failed connection a direct serial cable link, modem connection, or TCP/IP connection?

Troubleshooting a Failed Direct Connection

A failed direct connection to the PBX can result from any of the following conditions:

- The PC COM port is currently in use by another application
- Wrong PC COM port selected during configuration
- Defective cable
- Loose cable connection
- Incorrect cable type
- Defective PC COM port hardware, or the COM port is not enabled
- Defective PBX COM port hardware, or the COM port is currently used by built-in SMDR on the PBX's modem

Troubleshooting a Failed Modem Connection

Several effective troubleshooting techniques require listening to the sounds your modem makes while it connects to a PBX. You may need to adjust the **Speaker volume** settings in the Windows **Modems** control panel on your computer to hear modem sounds and dial tones.

Table 4-1 *Failed Modem Connection Symptoms and Causes*

Symptom	To Check for This Condition:	Possible Reasons
No dial tone	Listen to the modem while it dials.	• PC modem's power is off (external only) • Wrong modem driver installed • PC modem's telephone line is not active or not properly plugged in • Device Configuration indicates the wrong PC COM port • Device Configuration indicates a Direct setting when the connection is really Modem • External modem data cable is not properly connected to the PC • External modem data cable is defective • Telephone line cable is defective
No ringing	Listen to the modem after it dials to determine that no ringing occurred.	• Incorrect phone number (too short, wrong digits, misdialed, etc.)
Ringing followed by a voice answer or a recorded message	Listen to the modem while it dials to determine that the call was answered.	• Too many digits were entered for the phone number • Incorrect digits • Incorrect access code • Incorrect area code
Ringing, but no answer	Listen to the modem while it dials to determine that it kept ringing.	• Incorrect phone number • PBX Port 1 is not set for the built-in PBX modem • PBX power is off • A valid telephone number is not assigned to the built-in PBX modem • Missing access code (01)
Busy signal	Listen to the modem while it dials to determine that a busy signal is received.	• PBX modem is being accessed by another user • Incorrect phone number
Ring and answer, but no connect message.	Listen to the modem while it dials to determine that the PBX answered. Then, watch for a Connect message.	• PC modem's highest speed is less than the PBX modem's speed • Improper modem initialization string
Connect message, but no carrier detect message	Listen to the modem while it dials to determine that an answer was received. Then, watch for the Connect message, followed by the Carrier Detect message.	• Possible incorrect PBX command. (Do not use PBX Command 40, YY = 11, Second Data = 5

If you are an advanced user, you can change any of the device configuration settings using the Device Configuration dialog. Access this dialog from the DeviceServerWorX (DSW) by right-clicking the DSW icon in the Windows Toolbar system tray, then selecting the Configure Devices item.

Troubleshooting a Failed TCP/IP Connection

Check the following items to diagnose a failed TCP/IP connection:

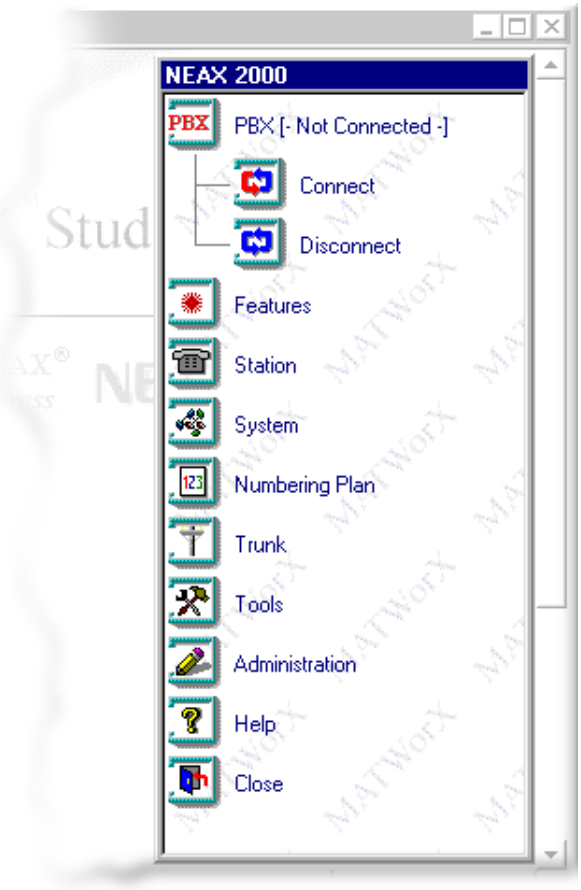
Action	Possible Reasons
Check the cable between your PC or PBX and the local area network.	• The cable is unplugged from one end • The cable is not completely plugged in • Defective cable
Check to be sure the lights on your network card (if available) indicate a proper link to the network.	• The network card is defective, or incorrect network card driver • The network card is not fully seated • Your PC's network card is configured incorrectly • The cable is not completely plugged in
Check with your system administrator to see if there are network problems.	• The local area network is down • The DeviceServerWorX is down
Check your network settings in the Windows Network control panel.	• TCP/IP networking hasn't been configured • The TCP/IP settings are incorrect (TCP/IP address)

Disconnecting from the PBX

This procedure explains how to disconnect from a PBX when you are finished working with it.

Step 1 Click the PBX item in the Toolbox. The Connect and Disconnect items display (Figure 4-13).

Figure 4-13 Connect and Disconnect Items



Step 2 Click the **Disconnect** item. MATWorX Studio disconnects from the PBX.

Exiting MATWorX Studio

This procedure explains how to exit MATWorX Studio when you are finished working in the program. You should close all open MATWorX Studio add-ins, the Toolbox, and applications, then disconnect from the PBX before exiting the program.

Step 1 Click the Windows Close button in the upper-right corner of the MATWorX Studio window, or press Alt-F4. The Close dialog displays (Figure 4-14).

Figure 4-14 *Close Confirmation Dialog*

Step 2 Click the **Yes** button in the Close dialog.

You have now shut down MATWorX Studio.

5

MATWorX Studio Overview

MATWorX Studio comprises several components and applications which you use to administer your PBX. In this chapter you learn about the following:

Chapter Topics

What is MATWorX Studio?

MATWorX Studio is a Windows-based software application that lets you program and configure different NEC device types from your computer.

MATWorX Studio provides a common "look and feel" for all related NEC device software applications. Its graphical user interface (GUI) makes it easier for you to manage and configure your device's features, especially if your installation contains several different device types.

MATWorX Studio's add-ins make it easy for you to add or remove device features at any time. Add-ins are modular components that let you program specific features such as Caller ID, Station Management, Day/Night Modes, Line Key Assignments, and more.

Because add-ins are modular, you can add, remove, and upgrade them individually from within MATWorx Studio. Add-ins let you modify a device's features without having to upgrade the MATWorX Studio application itself.

MATWorX Studio also gives you a convenient way to launch other commonly used applications, such as Microsoft Word or Excel, directly from its Toolbar.

MATWorX Studio Tools

MATWorX Studio includes several types of tools that help you perform specific tasks and procedures. You access these tools from the Toolbox.

Add-Ins

Add-ins are the basic tools of MATWorX Studio. Each one gives you specific ways to program device features and functions. MATWorX Studio comes with many add-ins pre-installed in the Toolbar. Also, you can create custom add-ins for specialized business solutions by purchasing a developer's kit from NEC or an authorized NEC dealer. Refer to Chapter 7 "Add-ins" for more information.

MACH Script Editor

This is a powerful, time-saving tool that lets you create a list of NEAX 2000 commands that perform a sequence of specific PBX tasks. This list, called a script, can be saved and run at any time. You can also use the MACH Script Editor to perform many other operations. Refer to Chapter 8 "MACH Script Editor" for more information.

Device Configuration

The Device Configuration helps you establish the proper communication settings between your computer and a device.

It also helps you establish and manage groups of multiple devices, called domains. For example, you can assign, modify, and delete the device name (alias), type of device, device product version, features, connection settings, monitoring settings, remote modem settings, and other miscellaneous items.

MATWorX Studio Applications

MATWorX Studio software includes several applications that can run independently. However, when used in conjunction with MATWorX Studio or each other, these applications provide a robust suite of tools for configuring connected devices.

DeviceServerWorX (DSW)

The DSW provides and manages communication between MATWorX Studio tools and connected devices. It also provides logs and reports that help you evaluate a device's performance. Refer to Chapter 6 "DeviceServerWorX" for more information.

NEC Scheduler

The NEC Scheduler is a versatile application that can be used by itself or in conjunction with the MACH Script Editor. You can build scripts (a series of NEAX 2000 commands) using the MACH Script Editor and then schedule them to run using the Scheduler.

You can also use the NEC Scheduler automatically to launch add-ins or applications at convenient times, such as backing up PBX data regularly. Refer to Chapter 9 "NEC Scheduler" for more information.

DESIWorX

DESIWorX is a unique application that lets you create and print function key labels for your Dterm telephones. The labels are saved in a database and can be modified and printed when necessary. Refer to Chapter 10 "DESIWorX" for more information.

MATWorX Studio Windows and Components

MATWorX Studio has four primary windows: the Toolbar, the Work Area, Message Queue, and Toolboxes (Figure 5-1).

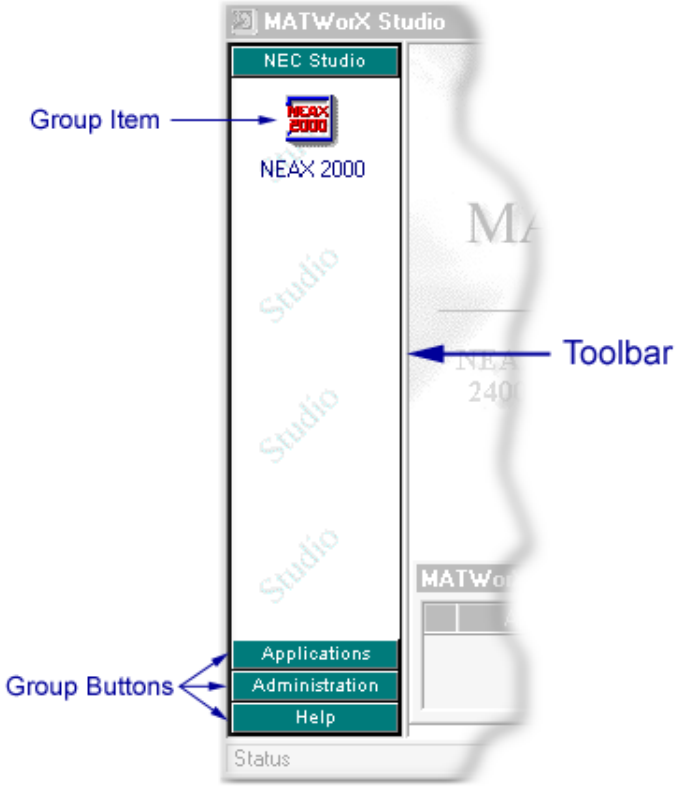
Figure 5-1 *MATWorX Studio Windows*

Toolbar

The Toolbar (Figure 5-2) contains Group items representing categories for the types of tasks you will perform. Click on each Group's item to reveal items that launch MATWorX Studio applications, device Toolboxes, stand-alone applications such as DESIWorX, online Help, shortcuts to programs you use frequently, or configure the way MATWorX Studio windows appear.

You can add or delete Groups, as well as Toolbox or Application items within each Group. The exact number and appearance of the items in your Toolbar varies depending on MATWorX Studio's configuration and your personal preferences.

Figure 5-2 *MATWorX Studio Toolbar*



Work Area

The Work Area (Figure 5-3) contains message windows, wizards and windows for stand-alone applications, Toolboxes representing the installed add-ins, and dialog boxes for configuring each add-in's features.

The exact number and appearance of the items in your Work Area varies depending on your device's configuration and MATWorX Studio's configuration.

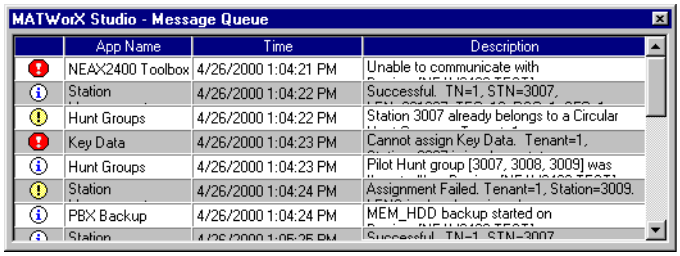
Figure 5-3 *MATWorX Studio Work Area (Displaying Message Queue Window and Toolbox)*

Message Queue Window

The Message Queue window (Figure 5-4) displays alarms, errors, events, and other information generated by the MATWorX Studio components. Right-click in the window to access many features, including:

- Printing the window's contents
- Sorting by priority, reporting application name, or time
- Show only alarms from a selected application or of a specified priority type
- Save window's contents to a comma-delimited file

Figure 5-4 *Message Queue Window*

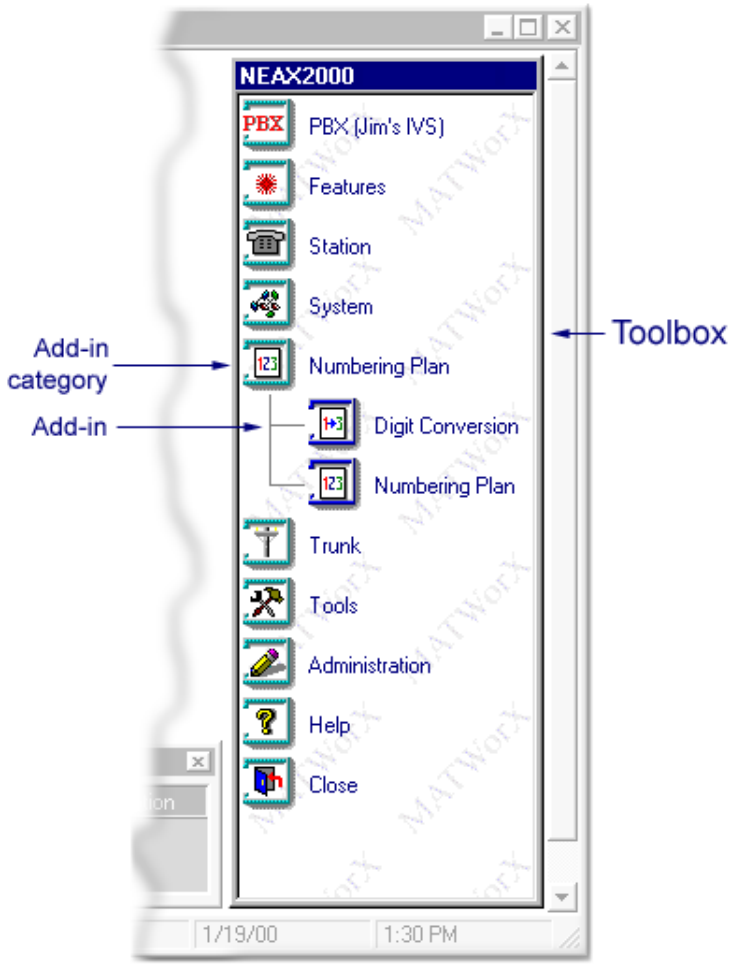


Toolbox

When you click an item within the Toolbar's NEC Studio Group, MATWorX launches the Studio application and displays a Toolbox window in the Work Area. This window contains items representing functions and tools you use to configure a connected device. Click an item to expand it and view its tools or related add-ins.

The exact number and appearance of items and add-ins in the Toolbox varies depending on the device's configuration.

Figure 5-5 *MATWorX Studio Toolbox*

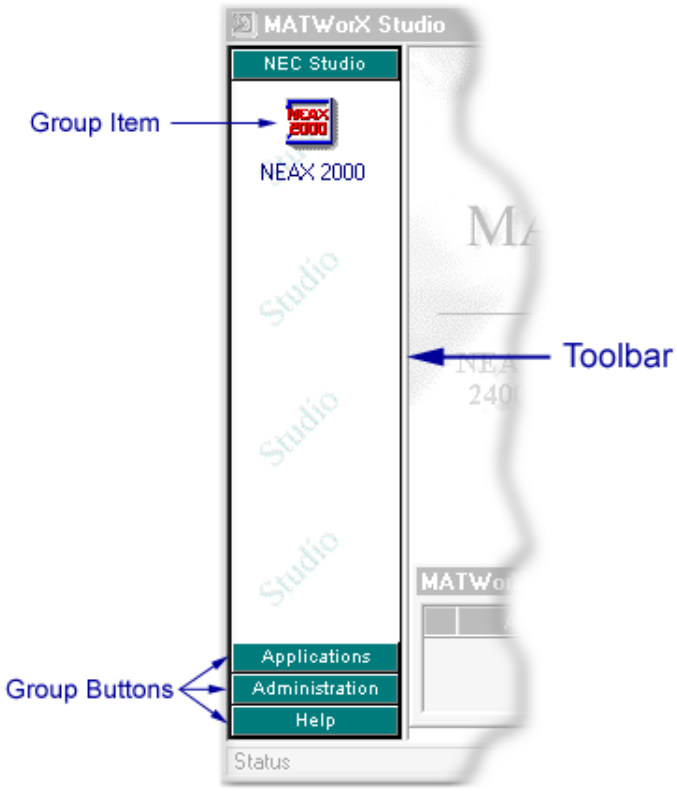


Using the MATWorX Studio Toolbar

The MATWorX Studio Toolbar (Figure 5-6) organizes MATWorX Studio functions into groups, each containing a list of items you can use to launch NEC device programming software, 3rd-party application software, and online Help systems. Each Toolbar group lets you add, rename, and remove items within the group.

The default MATWorX Studio Toolbar contains 4 groups: NEC Studio, Applications, Administration, and Help.

Figure 5-6 *MATWorX Studio Toolbar*



Studio Group

The Studio group contains Toolbox items representing devices you want to manage and configure. Click on a Toolbox item to launch it. MATWorX Studio then opens a Toolbox window in the Work Area containing add-ins and tools you use to configure connected devices.

Applications Group

The Applications group contains several stand-alone applications, such as the NEC Scheduler, DESIWorX, and the NEC Report Generator. You can also add shortcuts to applications you use frequently, such as Microsoft Word or Excel.

Administration Group

The Administration group contains items that let you customize MATWorX Studio's appearance. Use the Cascade/Tile Windows item to specify whether Work Area Windows overlap or display side-by-side. Use the Alarms/Events item to display the Message Queue window in the Work Area.

Help Group

The Help group contains items that let you access MATWorX Studio online Help, connect to the NEC National Technical Assistance Center for technical support (requires an Internet connection), and display which version of MATWorX Studio you are using.

Configuring MATWorX Studio

MATWorX Studio gives you the flexibility to customize not only its window appearance, but to add or remove components as your device configuration or personal preferences change.

Adding a New Group

To add a group to the MATWorX Studio Toolbar, do the following:

Step 1 Right-click in the Toolbar. A pop-up menu displays.

Step 2 Select **Add New Group** from the pop-up menu. A new group displays in the Toolbar, with the title "New Group" highlighted.

Step 3 Change the name by typing a new name and pressing **Enter**. The newly titled group displays in the MATWorX Studio Toolbar.

Removing a Group

To remove a group from the MATWorX Studio Toolbar, do the following:

Step 1 Select the group in the Toolbar you wish to remove.

Step 2 Right-click in the Toolbar. A pop-up menu displays.

Step 3 Select **Remove Group** from the pop-up menu. MATWorX removes the selected Group and its items from the Toolbar.


NOTE

You cannot remove the four default groups (NEC Studio, Applications, Administration, and Help) from the Toolbar.

Inserting a Toolbox Item

To insert a Toolbox item in the MATWorX Studio Toolbar, do the following:

Step 1 Right-click in the Toolbar. A pop-up menu displays.

Step 2 Select **Insert New Toolbox** from the pop-up menu. The MATWorX Studio Components window displays.

Step 3 Select the desired .mws file from the window and click the **Open** button. The new toolbox displays in the NEC Studio group in the Toolbar.

Removing a Toolbox Item

To remove a Toolbox item from the MATWorX Studio Toolbar, do the following:

Step 1 In the **NEC Studio** group, right-click on the toolbox item you wish to remove. A pop-up menu displays.

Step 2 Select **Remove Toolbox** from the pop-up menu. The Remove window displays.

Step 3 Click **Yes** to remove the toolbox item. MATWorX removes the toolbox item from the NEC Studio group. The corresponding **.mws** file remains on the hard drive and can be re-inserted at another time.

Renaming a Toolbox Item

To rename a Toolbox item in the MATWorX Studio Toolbar, do the following:

Step 1 In the **NEC Studio** group, right-click on the toolbox item to be renamed. A pop-up menu displays.

Step 2 Select **Rename Toolbox** from the pop-up menu. The Toolbox name is highlighted.

Step 3 Type the new name and press **Enter**. The new toolbox name displays in the NEC Studio group.

Inserting an Application

To insert an application shortcut in the MATWorX Studio Toolbar, do the following:

Step 1 Select the **Applications** group item from the Toolbar.

Step 2 Right-click in the Toolbar. The MATWorX Studio Applications window displays.

Step 3 Change directories and folders to locate the application for which you want to insert a shortcut in the Applications group Toolbar.

Step 4 Select the file and click the **Open** button. The application's software shortcut displays in the Applications group.


NOTE

You can add an application to the Applications group only.

Removing an Application

To remove an application shortcut from the MATWorX Studio Toolbar, do the following:

Step 1 Select the **Applications** group item from the Toolbar.

Step 2 Right-click on the application you want to remove. A pop-up menu displays.

Step 3 Select **Remove Application** from the pop-up menu. The Remove window displays.

Step 4 Click **Yes** to remove the application. MATWorX Studio removes the application shortcut from the Applications group.

Renaming an Application

To rename an application shortcut in the MATWorX Studio Toolbar, do the following:

Step 1 Select the **Applications** group item from the Toolbar.

Step 2 Right-click on the application you want to rename. A pop-up menu displays.

Step 3 Select **Rename Application** from the pop-up menu. The application name is highlighted.

Step 4 Type the new name and press **Enter**. The new application name displays in the Applications group.

Setting Studio Display Options

To change the way MATWorX Studio displays windows in the Work Area, do the following:

Step 1 Select the **Administration** group item from the Toolbar.

Step 2 Click the **Cascade Windows** item. MATWorX Studio displays all open add-in windows in the Work Area by overlapping them so the title bars are visible.

To display messages and alarms in the MATWorX Studio Work Area, do the following:

Step 1 Select the **Administration** group item from the Toolbar.

Step 2 Click the **Alarms/Events** item. The MATWorX Studio Message Queue window displays in the Work Area.


NOTE

The Alarms/Events item is a toggle that alternately hides and displays the Message Queue window.

Arranging MATWorX Studio Windows

You can configure MATWorX Studio to display multiple windows in the Work Area so they overlap (cascade) or so they appear side-by-side (tile) horizontally or vertically.

To cascade windows in the Work Area, do the following:

Step 1 Right-click in the Work Area. The Work Area pop-up menu displays.

Step 2 Select **Cascade Windows**. The open windows cascade within the MATWorX Studio Work Area.

To arrange windows top-to-bottom so they do not overlap, do the following:

Step 1 Right-click in the Work Area. The Work Area pop-up menu displays.

Step 2 Select **Horizontally Tile Windows**. The open windows display from top to bottom within the MATWorX Studio Work Area without overlapping.

To arrange windows side-by-side so they do not overlap, do the following:

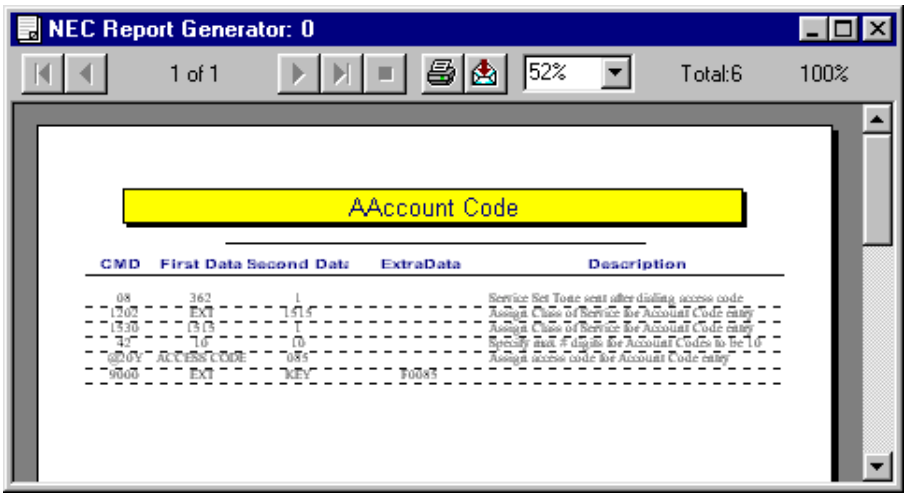
Step 1 Right-click in the Work Area. The Work Area pop-up menu displays.

Step 2 Select **Vertically Tile Windows**. The open windows display side-by-side within the MATWorX Studio Work Area without overlapping.

Printing a Report

The MACH Script Editor, NEC Scheduler, and several add-ins let you print reports and listup data by clicking the **Print Data** button. The Print Preview dialog (Figure 5-7) automatically displays so you can preview the report before printing.

Figure 5-7 *Print Preview Dialog*



You can use the Print Preview dialog to:

- View any page of a multiple-page report by using the arrow buttons.
- Print the displayed report by clicking the **Print Data** button.
- Zoom in and out on the report by using the drop-down **Zoom** menu.
- Save and export the displayed report to a file.
- E-mail the report directly from within MATWorX Studio if your e-mail system supports MAPI.

6

DeviceServerWorX

The DeviceServerWorX is a vital component in the link between MATWorX Studio and your PBX. In addition, the DeviceServerWorX helps administrators monitor and analyze the data flow between it and any connected device. In this chapter you learn about the following:

Chapter Topics

What is the DeviceServerWorX?

The DeviceServerWorX (DSW) serves as a formatting and communication bridge between MATWorX Studio and the PBX or other connected devices. It replaces the PBX Access Manager (PAM) used in MATWorX 32 and earlier versions of MATWorX Studio.

Two additional components, the DeviceServerWorX Interface (DSI) (Figure 6-1) and the DeviceServerWorX Monitor (Figure 6-2), provide access to real-time logs of events and transactions between the server and the connected device.

Figure 6-1 *DeviceServerWorx Interface Window*

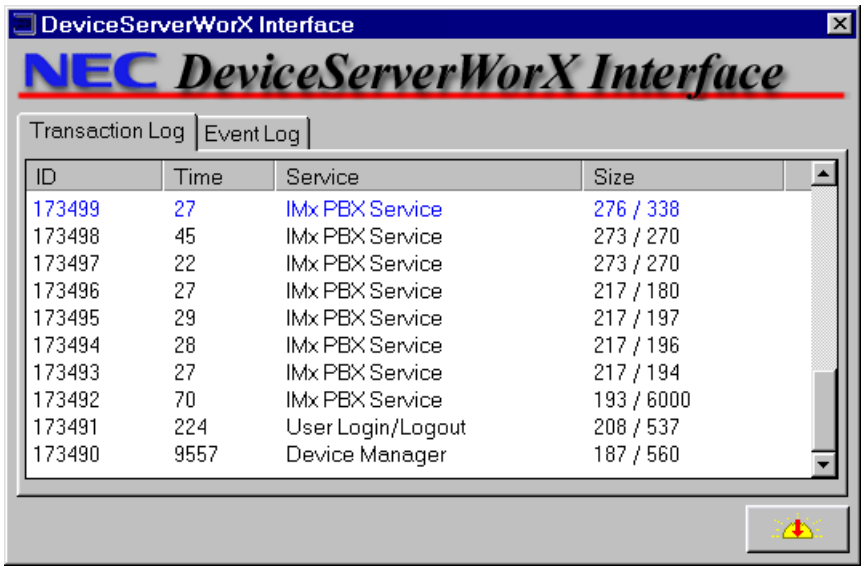
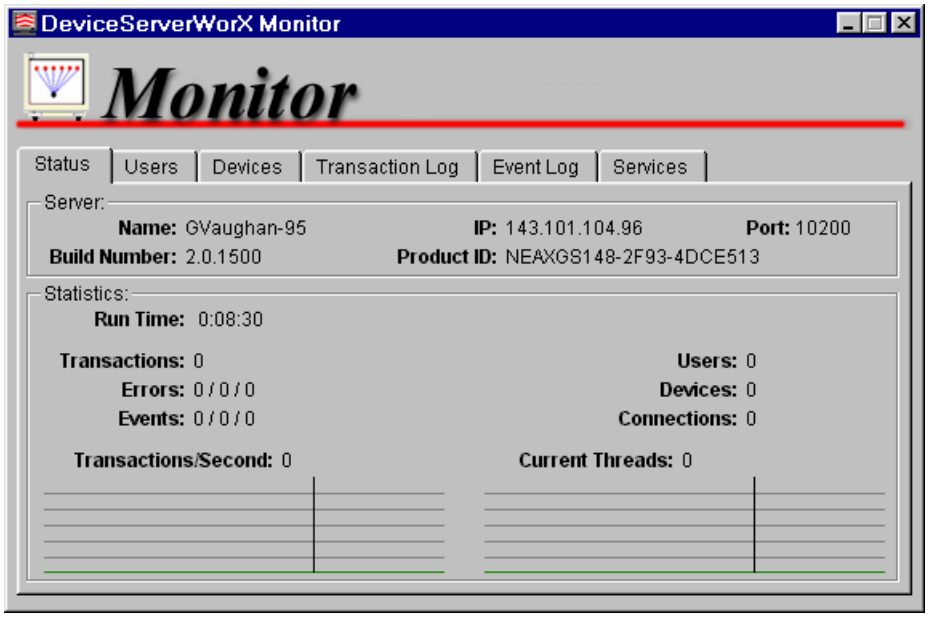


Figure 6-2 *DeviceServerWorX Monitor Window*



When you start MATWorX Studio, the DeviceServerWorX automatically starts. Then, when MATWorX Studio tools need access to connected devices, they send specific, formatted device commands to the DeviceServerWorX. This operation is transparent to the user.

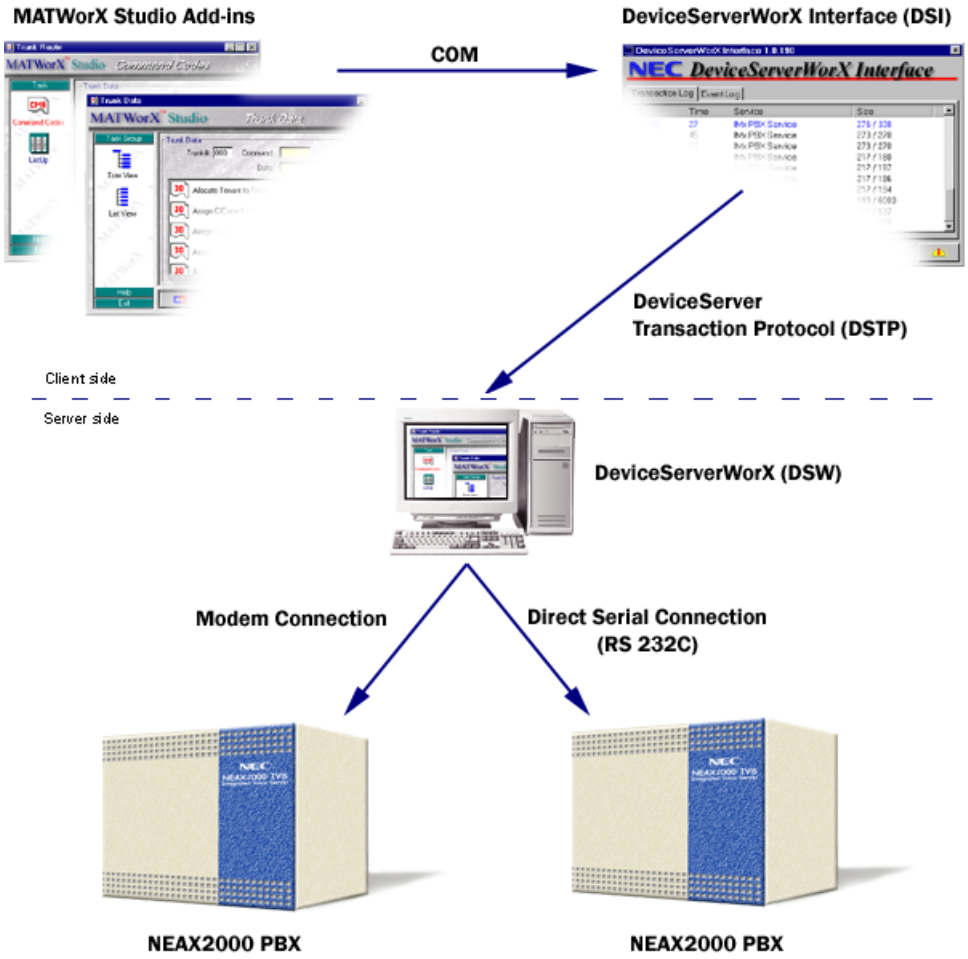
DeviceServerWorX Communication Overview

The DeviceServerWorX provides an Application Programming Interface (API) that:

- Provides high-level Component Object Model (COM) commands that can be used by Windows-based applications, such as MATWorX Studio tools, to retrieve and program device data.
- Ensures all COM client applications yield enough time to each other to complete command transactions with the connected device.

Figure 6-3 represents the communication flow between MATWorX Studio tools, the DeviceServerWorX, and connected devices.

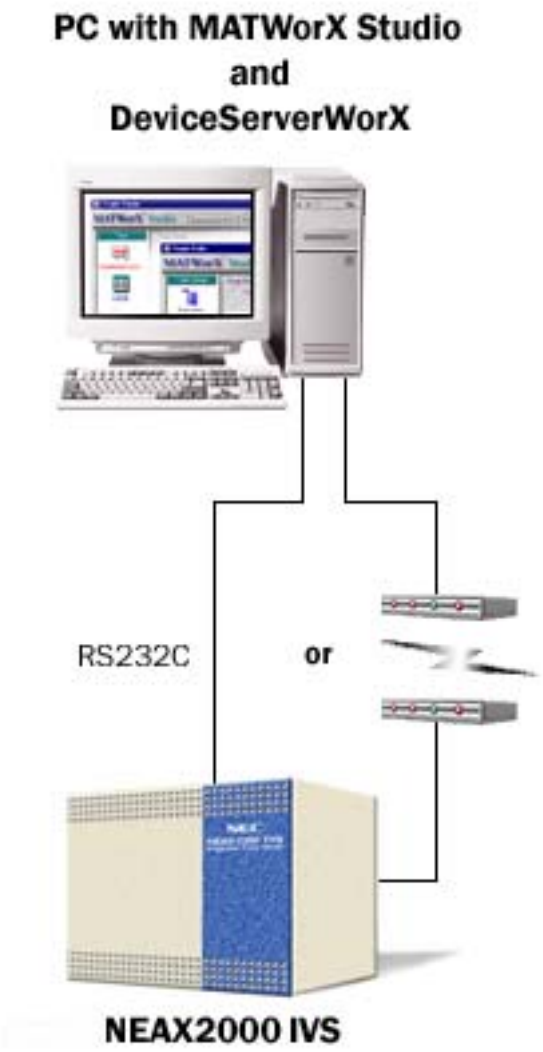
Figure 6-3 *DeviceServerWorX Communication Flow*



DeviceServerWorX Configurations

You can install the DeviceServerWorX in either a stand-alone or client/server configuration. When in a stand-alone configuration (Figure 6-4), it resides on the same computer as MATWorX Studio and connects to a single device via a modem, serial cable, or TCP/IP.

Figure 6-4 *DeviceServerWorX Stand-alone Configuration*

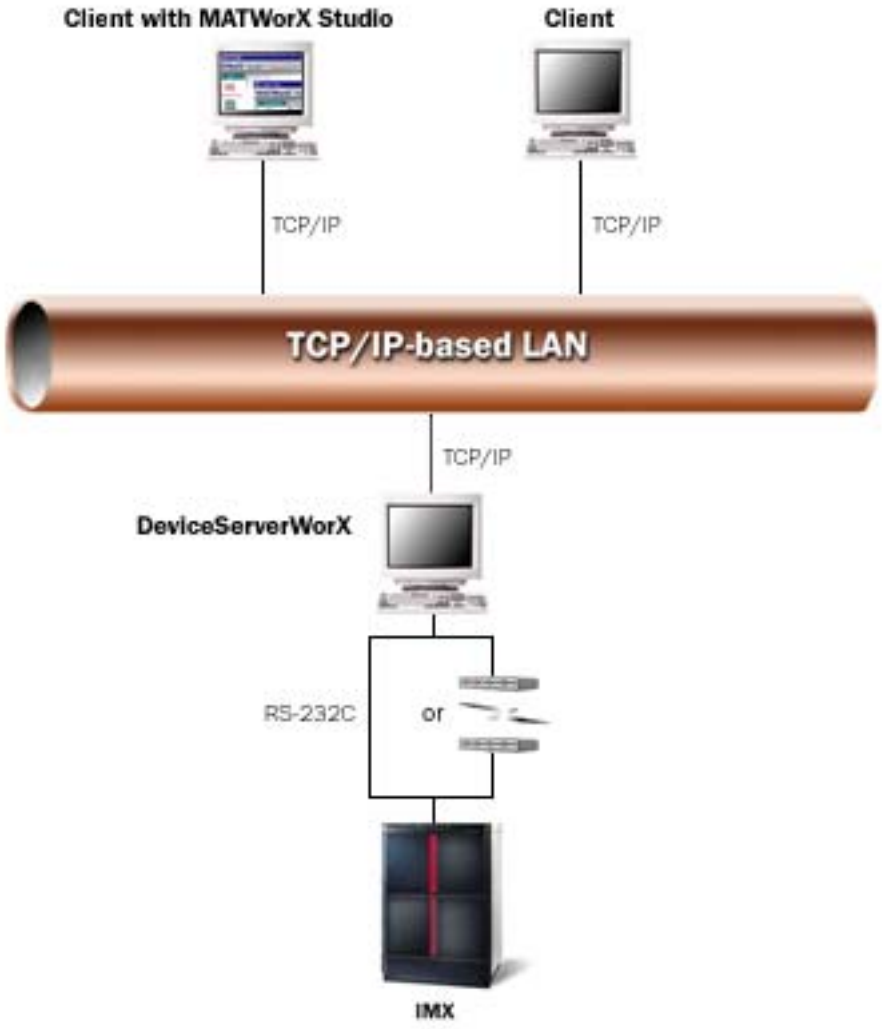


In a client/server configuration (Figure 6-5) the DeviceServerWorX gives connectivity to, and access from, multiple devices on a network.

NOTE

The example configuration in Figure 6-5 shows the DeviceServerWorX and MATWorX Studio installed on separate computers. You can also install both components on the same computer.

Figure 6-5 *Example Client/Server Configuration*



DeviceServerWorX Online Help

The DeviceServerWorX application contains its own context-sensitive online Help system. This guide provides a simple overview to the features and capabilities of the DSW. For more detailed information, including procedures and detailed descriptions, access the DSW online Help system.

Accessing the DSW Help System

To display Help for the current DSW dialog, press **F1**. Refer to Chapter 11 "MATWorX Studio Online Help" for more information about features and ways to access and print Help topics.

What's This? Help

What's This? Help displays pop-up information about a particular field or button within a dialog. To display What's This? Help for a field or button, do the following:

Step 1 Click the **Help** item from the Studio Toolbox to display a list of Help resources. Then, click the **What's This?** Help item. The cursor changes to a question mark.

Step 2 Position your cursor over a field or button in the Studio program and click it to display a pop-up containing information about that item.

Tool Tips

Tool Tips, sometimes referred to as "Balloon Help," provide a brief (one- or two-word) description of an active button on a dialog or menu. To display Tool Tips for a button, place your cursor over the button for one or two seconds, then a small pop-up window displays with the button's description.

7

Add-ins

Add-ins are the most basic component of MATWorX Studio and provide specific features and functions you can add or remove as your communications needs evolve. In this chapter you learn about the following:

Chapter Topics

What is an Add-in?

Add-ins are the individual tools of MATWorX Studio. Each one acts like a separate application and provides you with specialized capabilities to program PBX or other device features and functions. Using add-ins, you can program a PBX with information like station and trunk assignments, numbering plan data, caller ID, and more.

MATWorX Studio comes with several add-ins you can access from the Toolbox. You can run multiple add-ins at the same time. You can also create custom add-ins for specialized business solutions by purchasing a developer's kit from NEC or an authorized NEC dealer.

You can install or remove add-ins from the MATWorX Studio Toolbox. When you remove an add-in, MATWorX Studio does not delete it from the program, it simply removes it from the Toolbox. You can easily add it back with just a few mouse clicks. This feature lets you customize the Toolbox so it displays only those add-ins you use regularly.

Four Categories of Add-ins

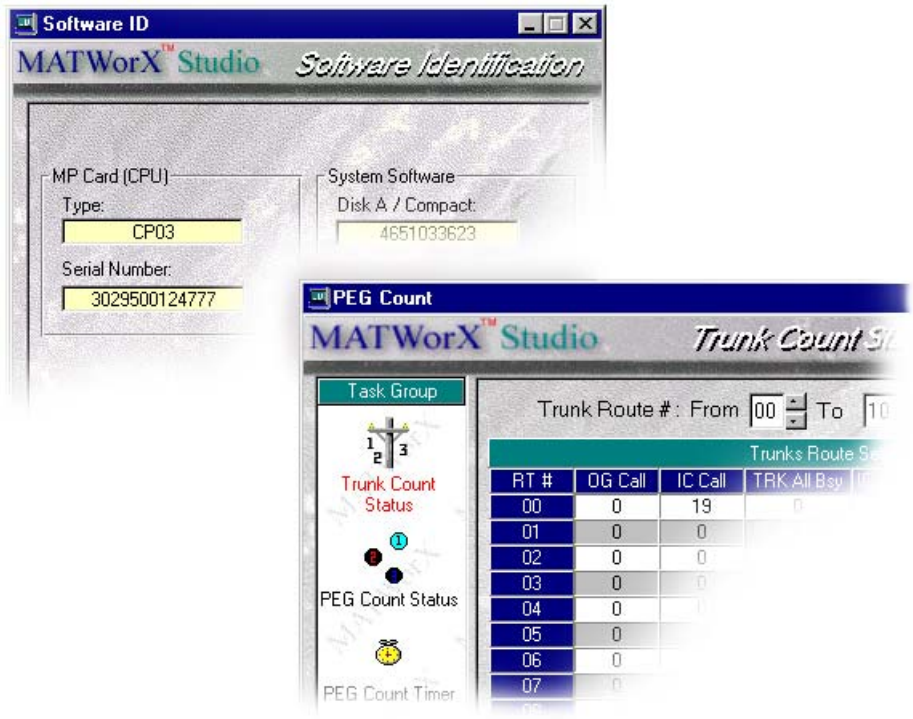
MATWorX Studio contains four categories of add-ins, grouped by common functions:

- Features
- Enhanced Features
- Commands
- Wizards

Features

Feature add-ins (Figure 7-1) simplify PBX or device response messages by translating them from cryptic data into a meaningful format. Software ID and Display Issue are two examples of this type of add-in.

Figure 7-1 *Feature Add-ins*



Enhanced Features

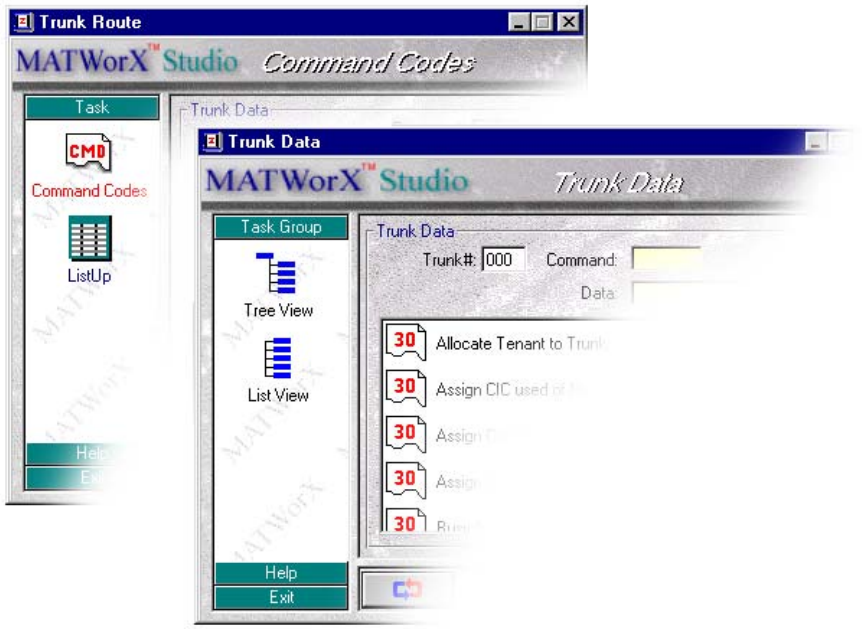
Enhanced Feature add-ins (Figure 7-2) use one or more related commands to set up a specific task or feature within the PBX or device. For example, the MATWorX Studio NEAX 2000 IVS & NEAX 2000 IVS^2 Caller ID add-in uses multiple commands such as command 30, 09, 05, 06, 08, etc. to configure this enhanced feature in the PBX.

Figure 7-2 *Enhanced Feature Add-ins*

Commands

Command add-ins (Figure 7-3) let you set up data within the PBX or other devices for a specific command. For example, the MATWorX Studio NEAX 2000 Trunk Data and Trunk Route add-ins represent commands 30 and 35, respectively.

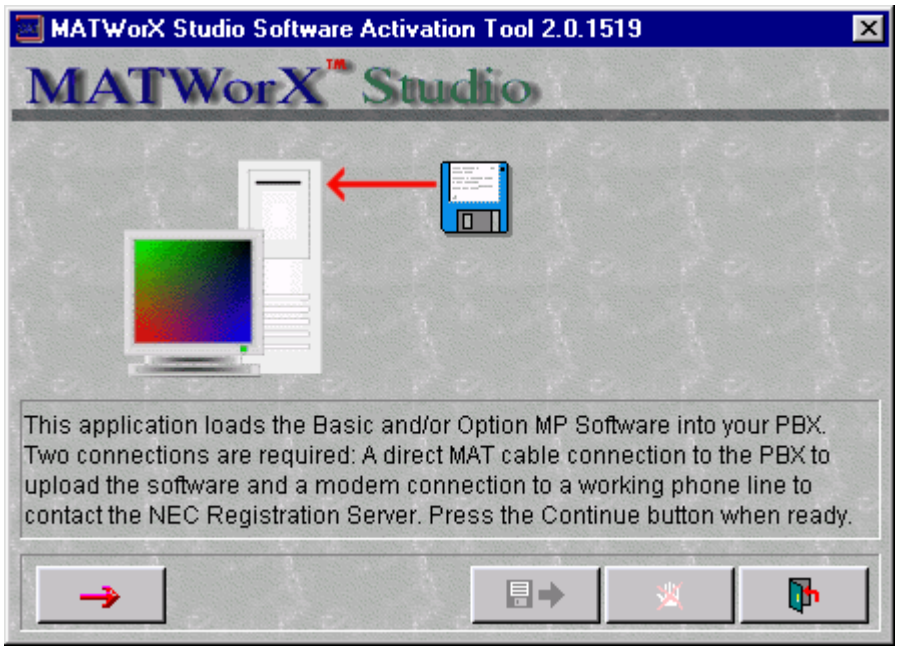
Figure 7-3 *Command Add-ins*



Wizards

Wizard add-ins (Figure 7-4) provide a simple way to perform difficult tasks by walking you through a series of questions in an automated process. MATWorX Studio then uses the answers to perform the task. For example, the Software Activation Tool Wizard (Figure 7-4) helps you obtain the key codes and serial numbers needed to activate device software.

Figure 7-4 *Software Activation Tool Wizard*

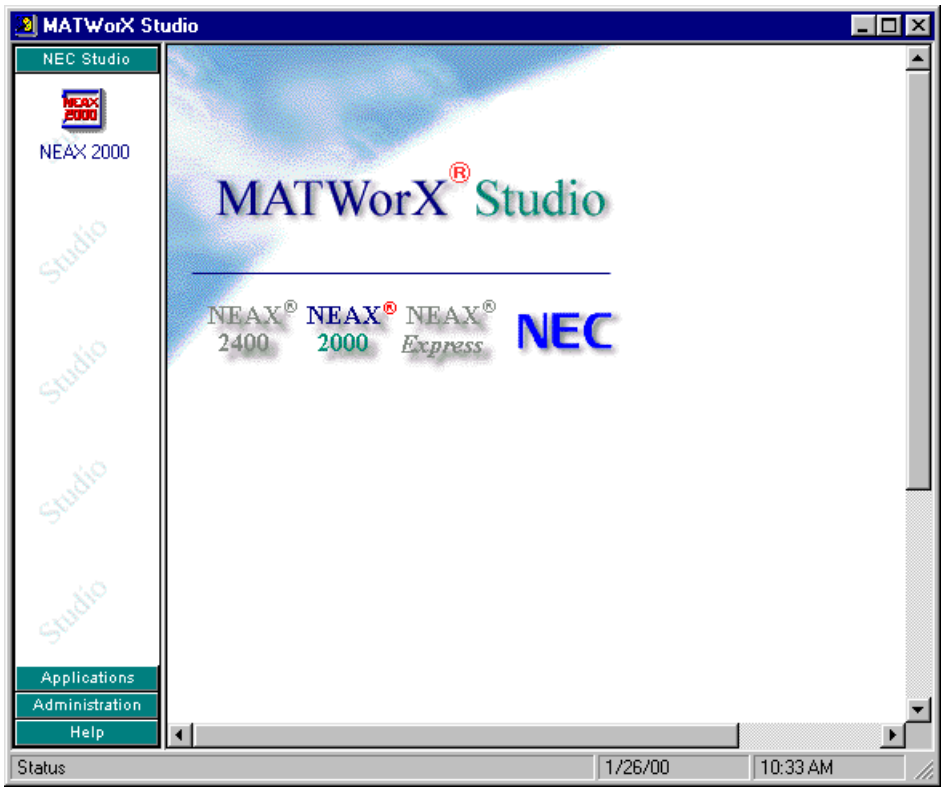


Installing an Add-in

The following procedure explains how to install an add-in to the MATWorX Studio program so you can access it from the Toolbox:

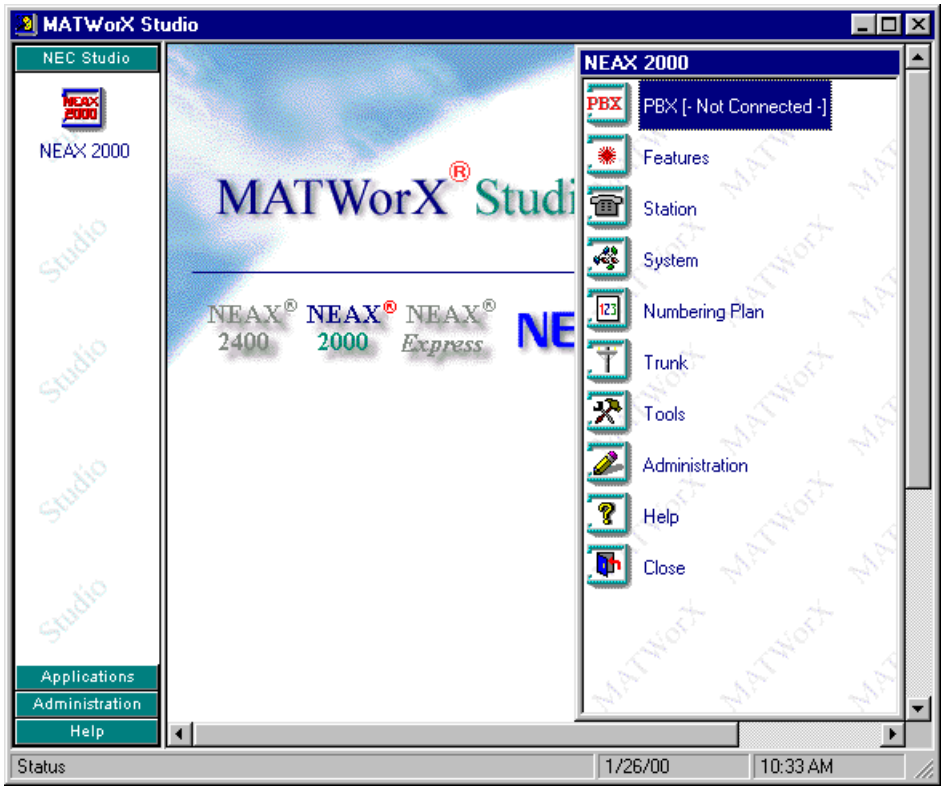
Step 1 Launch MATWorX Studio. The Toolbar and Work Area windows display (Figure 7-5).

Figure 7-5 *Studio Toolbar and Work Area Windows*



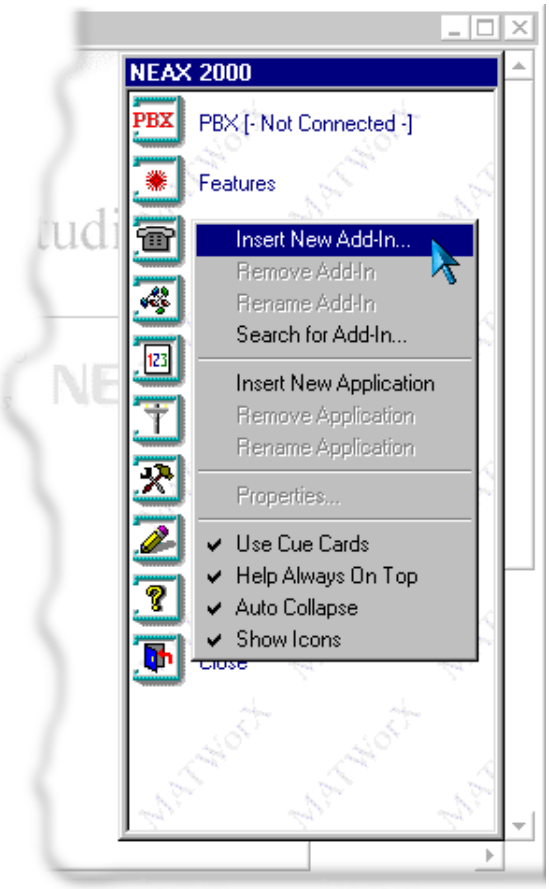
Step 2 Click the item in the Toolbar representing your PBX or other device (Figure 7-5). The Toolbox window displays (Figure 7-6).

Figure 7-6 *Studio Toolbar, Work Area, and Toolbox Windows*



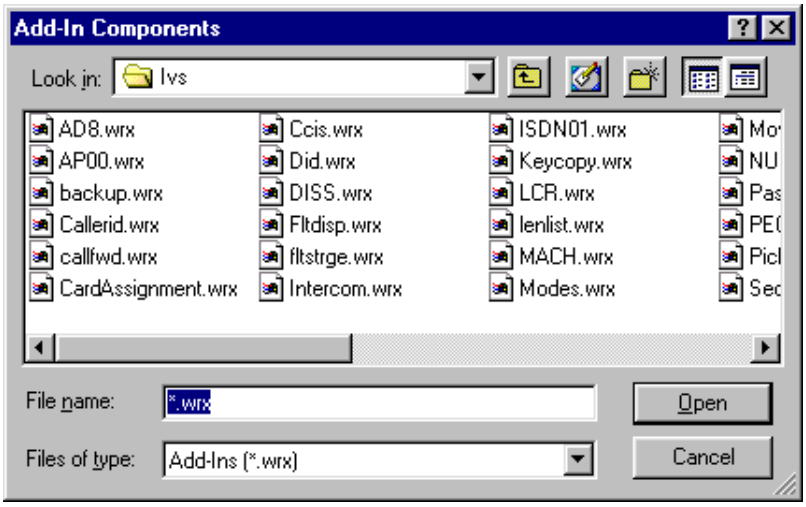
Step 3 Right-click anywhere in the Toolbox to display the pop-up menu (Figure 7-7), then select **Insert New Add-In...**. The Add-In Components dialog appears (Figure 7-8).

Figure 7-7 *Toolbox Pop-up Menu*



Step 4 Select the add-in you wish to install from the Add-In Components dialog (Figure 7-8) and click the **Open** button. MATWorX Studio installs the add-in under the appropriate Toolbox category. You may need to click the appropriate Toolbox category to view the add-in.

Figure 7-8 *Add-in Components Dialog*



You have now successfully installed an add-in.

Starting an Add-in

Use the MATWorX Studio Toolbox to start add-ins. After connecting to a device, click any Toolbox item to launch it or display a list of related add-ins.

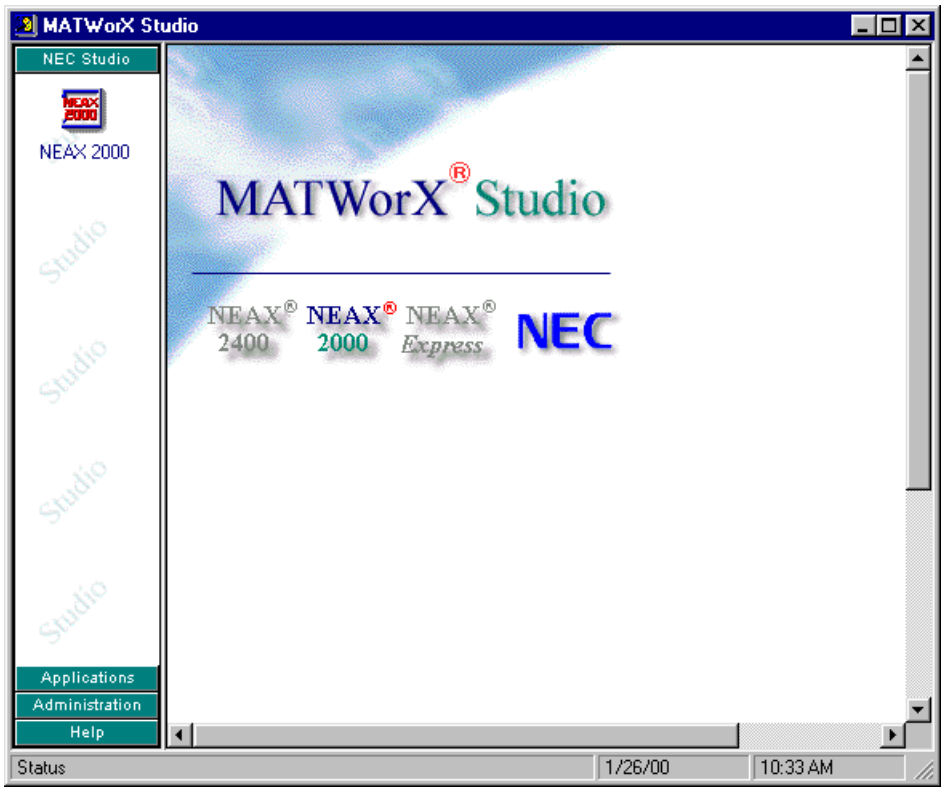
Removing an Add-in

By default, MATWorX Studio installs all add-ins and makes them accessible from the Toolbox. When you remove an add-in, MATWorX Studio does not delete it from your computer's hard drive, it simply removes it from the Toolbox. You can easily add it back with just a few mouse clicks. This lets you customize the Toolbox so it displays only the add-ins you use regularly.

The following procedure explains how to remove an existing add-in from the MATWorX Studio Toolbox:

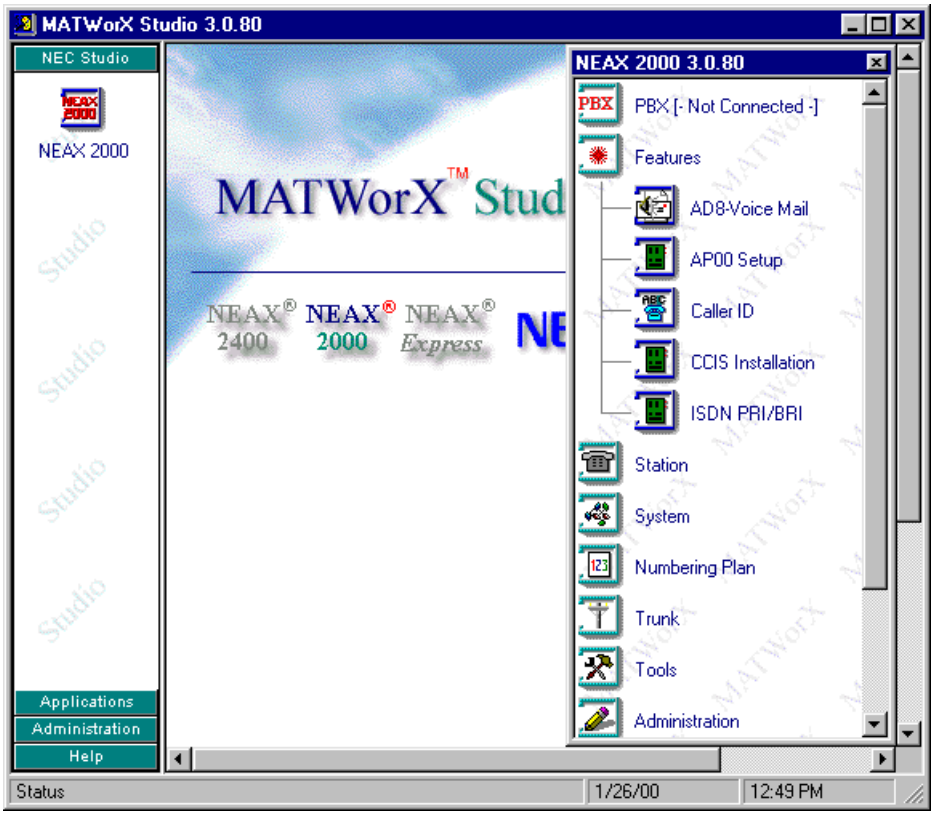
Step 1 Launch MATWorX Studio. The Toolbar and Work Area windows display (Figure 7-9).

Figure 7-9 *Studio Toolbar and Work Area Windows*



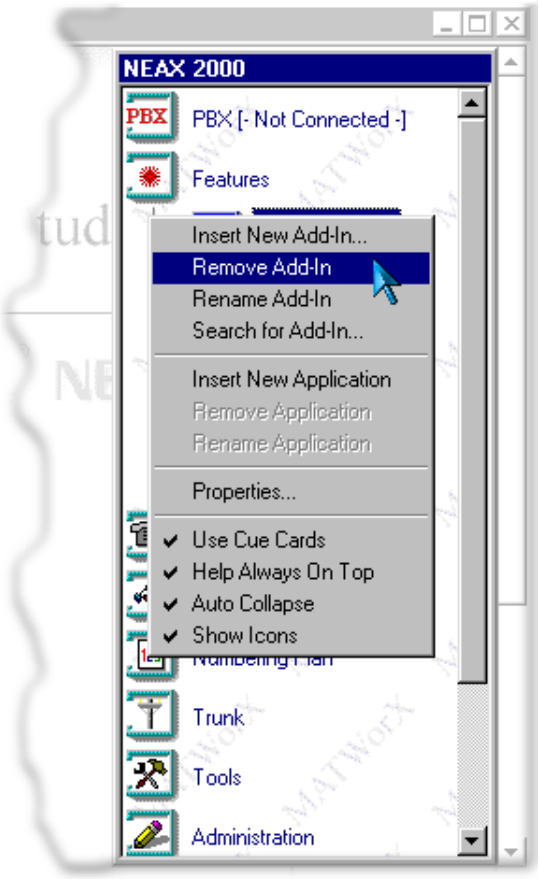
Step 2 Click the item in the Toolbar representing your PBX or other device. The Toolbox window displays (Figure 7-10).

Figure 7-10 *Studio Toolbox Window*



Step 3 Right-click on the add-in you wish to remove to display the pop-up menu (Figure 7-11), then select **Remove Add-In**. The Remove Add-In confirmation dialog appears (Figure 7-12).

Figure 7-11 *Toolbox Pop-up Menu*



Step 4 Click the **Yes** button to confirm you want to remove the add-in.

Figure 7-12 *Remove Add-in Confirmation Dialog*

You have now successfully removed an add-in.

Add-in Online Help

This guide provides a simple overview to the features and capabilities of add-ins. For more detailed information, including procedures and descriptions, press **F1** to access the online Help for each individual add-in.

Help for add-in dialogs is included in the MATWorX Studio online Help system. Refer to Chapter 11 “MATWorX Studio Online Help” for features and ways to access and print Help topics.

8

MACH Script Editor

The MACH Script Editor lets users create scripts, or groups of NEAX 2000 commands, to perform multiple maintenance tasks. You can configure a script to run at any time, giving you extensive control over when and how you administer your PBX. In this chapter you learn about the following:

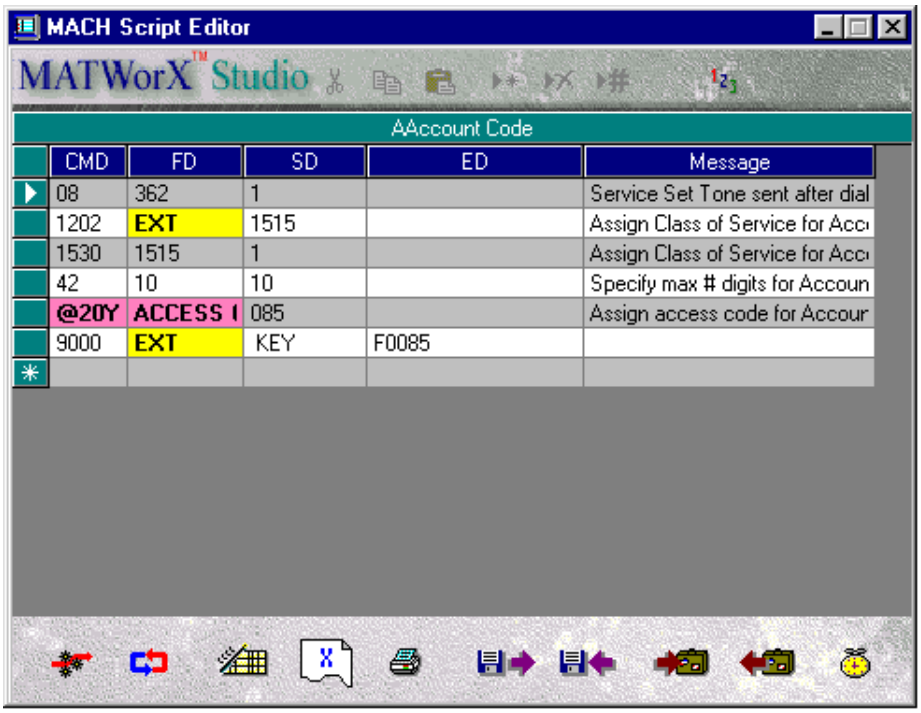
Chapter Topics

What is the MACH Script Editor?

The MOC Accelerated Command Heap (MACH) Script Editor (Figure 8-1) is a powerful time-saving tool integrated into MATWorX Studio for use with the NEAX EXPRESS and NEAX 2000 families of PBXs. It is similar to working with the Maintenance Operation Console (MOC), but provides much more functionality by enabling you to create a list of NEAX 2000 commands (a script) to perform tasks in the PBX. You can save, print, or run the script at any time.

You can find a table of the NEAX 2000 commands in the Appendix, "Extended Command Set".

Figure 8-1 *MACH Script Editor Dialog*

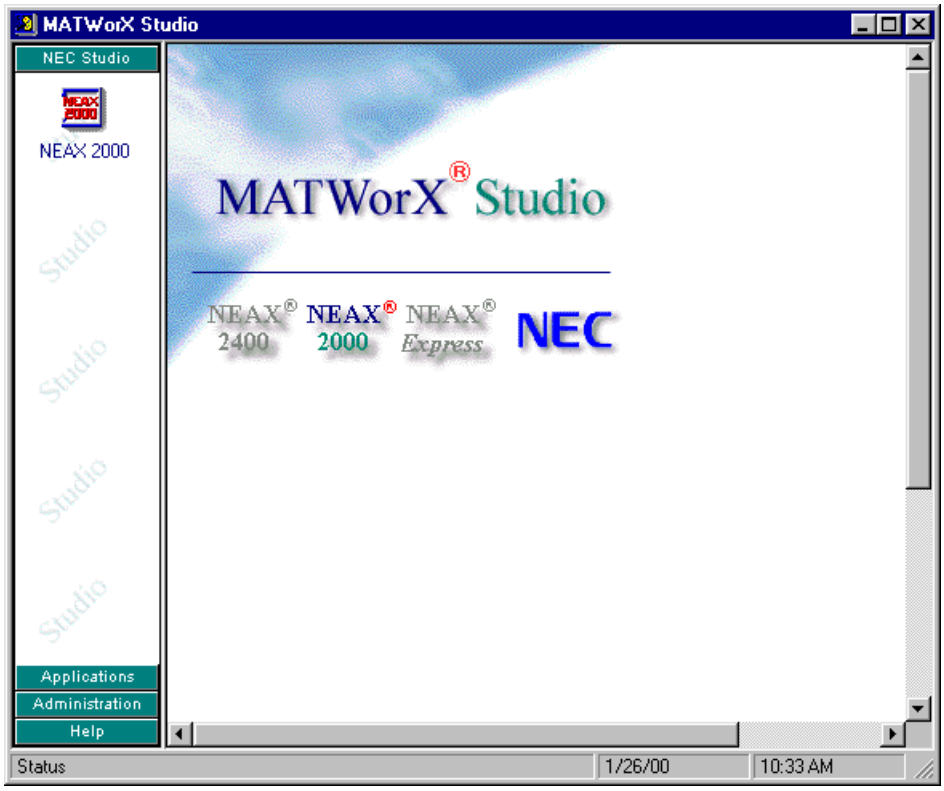


Starting the MACH Script Editor

The following procedure explains how to access and run the MACH Script Editor from MATWorX Studio.

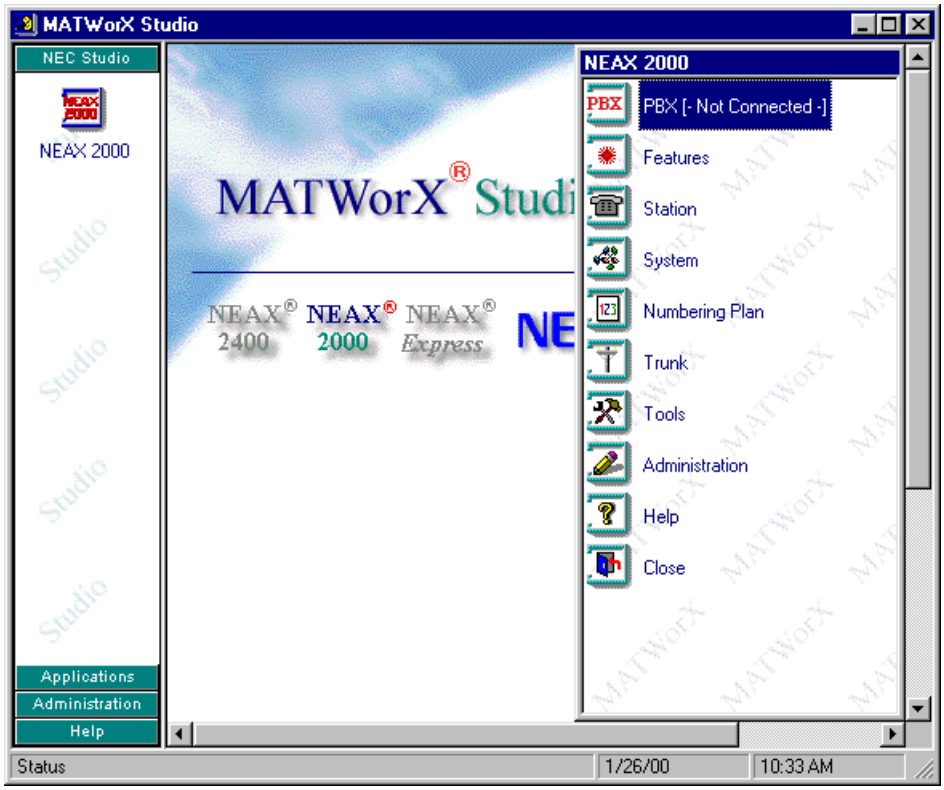
Step 1 Launch MATWorX Studio. The Toolbar and Work Area windows display (Figure 8-2).

Figure 8-2 *Toolbar and Work Area Windows*



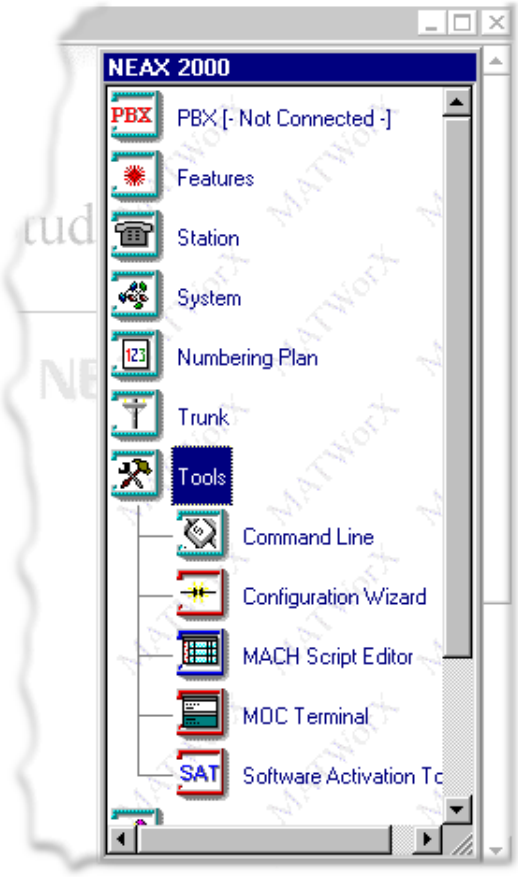
Step 2 Click the item in the Toolbar representing your PBX or other device. The Toolbox window displays (Figure 8-3).

Figure 8-3 *Toolbox Window*



Step 3 Click the **Tools** item in the Toolbox. A list of installed tools applications displays (Figure 8-4).

Figure 8-4 *Toolbox Window and Tools Items*



Step 4 Click the **MACH Script Editor** item to start the application. MATWorX Studio displays the **Connect?** dialog if you are not connected to the PBX.

Step 5 (Optional) Click **Yes** to connect or **No** to work with the MACH Script Editor offline.

You have now successfully launched the MACH Script Editor dialog.

MACH Script Editor Online Help

This guide provides a simple overview to the features and capabilities of the MACH Script Editor. For more detailed information, including procedures and descriptions, press **F1** to access the online Help for the MACH Script Editor.

Help for the MACH Script Editor is included in the MATWorX Studio online Help system. Refer to Chapter 11, “MATWorX Studio Online Help” for features and ways to access and print Help topics.

9

NEC Scheduler

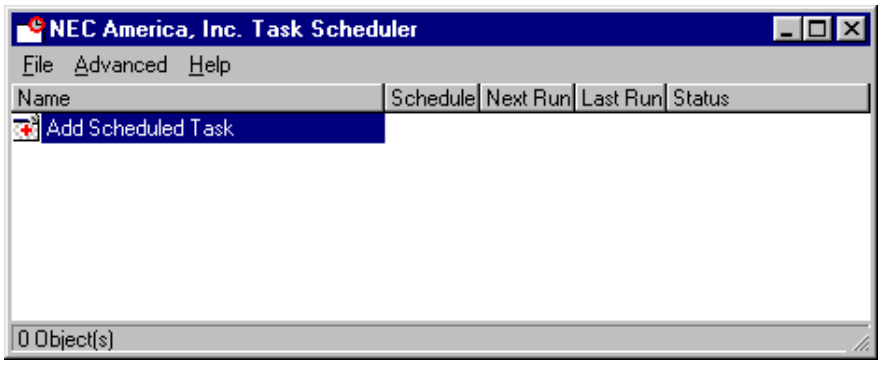
The NEC Scheduler helps you maintain and administer your PBX by specifying common tasks and deciding when they should be performed. In this chapter you learn about the following:

Chapter Topics

What is the NEC Scheduler?

The NEC Scheduler (Figure 9-1) is a versatile application that can be used stand-alone or in conjunction with the MACH Script Editor. You can build and schedule scripts (a series of NEAX 2000 commands) within the MACH Script Editor and then schedule them to run using the NEC Scheduler. You can schedule the script to run at certain times during a day, week, or month. You can build simple or complex scripts that will modify PBX behavior at scheduled times.

Figure 9-1 *NEC Scheduler Dialog*



For example, you can use the NEC Scheduler to:

- Log in to a PBX or other device.
- Schedule MATWorX Studio add-ins to run.
- Schedule MACH scripts to run.
- Schedule other programs outside of MATWorX Studio to run.
- Schedule PBX or other device system backups.
- View the results of a script or command operation.
- Print a script or command operation.

Starting the NEC Scheduler

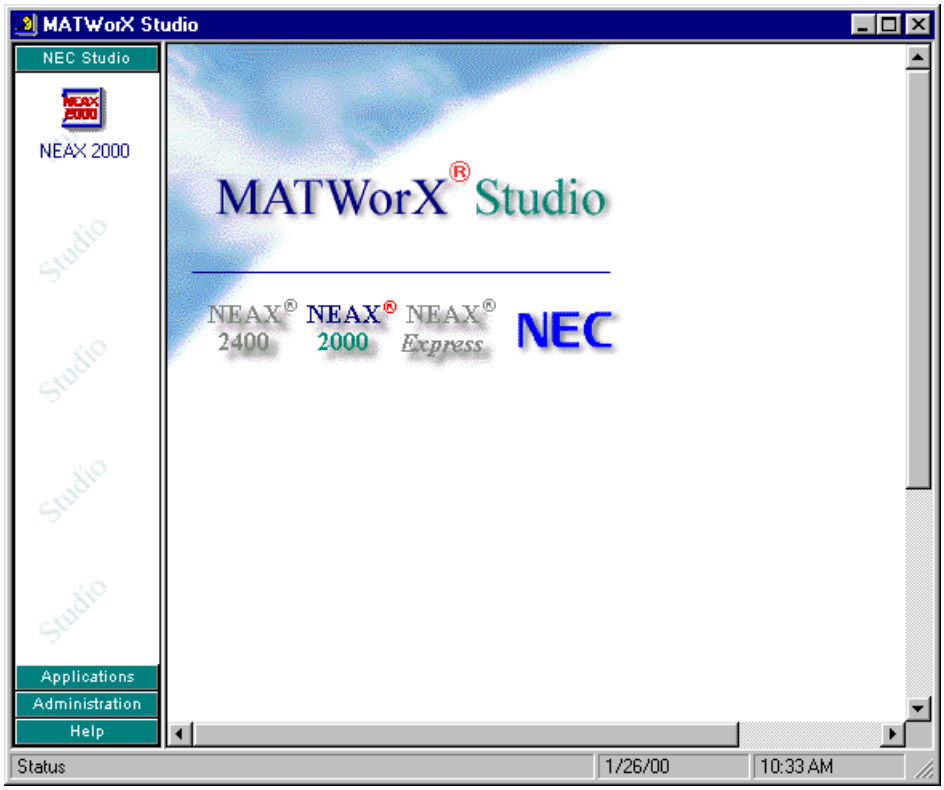
While it is running, an NEC Scheduler icon displays in the Windows System Tray.

Perform the following procedure to access and run the NEC Scheduler from MATWorX Studio.

You can also start the NEC Scheduler by selecting Programs / NEC / MATWorX Studio / NEC Scheduler from the Windows Start button.

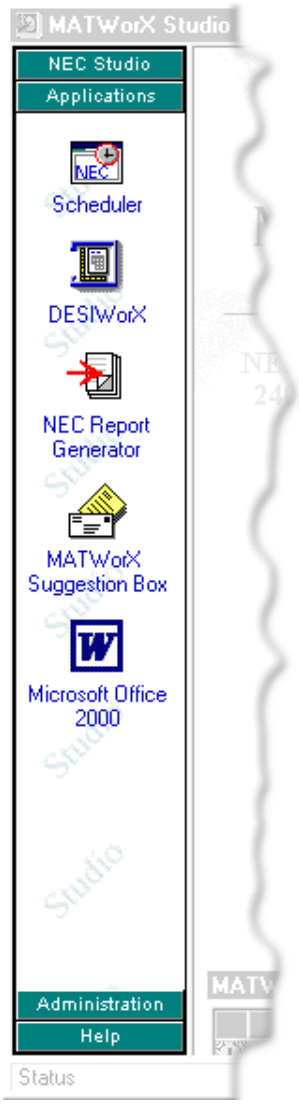
Step 1 Launch MATWorX Studio. The Toolbar and Work Area windows display (Figure 9-2).

Figure 9-2 *Toolbar and Work Area Window*



Step 2 Click the **Applications** group item in the Toolbar (Figure 9-2). The Applications group window displays (Figure 9-3).

Figure 9-3 *Applications Group Window*



Step 3 Click the **Scheduler** item to launch the application. The Scheduler window displays. You have now successgully launched the NEC Scheduler.

NEC Scheduler Online Help

The NEC Scheduler application contains its own context-sensitive online Help system. This guide provides a simple overview to the features and capabilities of the NEC Scheduler. For more detailed information, including procedures, descriptions, tools, and tips, access the NEC Scheduler online Help system.

Accessing NEC Scheduler Online Help

To display Help for the current NEC Scheduler dialog, press **F1**. Refer to Chapter 11, "MATWorX Studio Online Help" for more information about features and ways to access and print Help topics.

What's This? Help

What's This? Help displays pop-up information about a particular field or button within a dialog. To display What's This? Help for a field or button, do the following:

Step 1 Click the Help item from the Toolbox to display a list of Help resources. Then, click the What's This Help item. The cursor changes to a question mark.

Step 2 Position your cursor over a field or button and click it to display a pop-up window containing information about that item.

Tool Tips

To display Tool Tips for a button, place your cursor over the button for one or two seconds, then a small pop-up window displays with the button's description.

10

DESIWorX

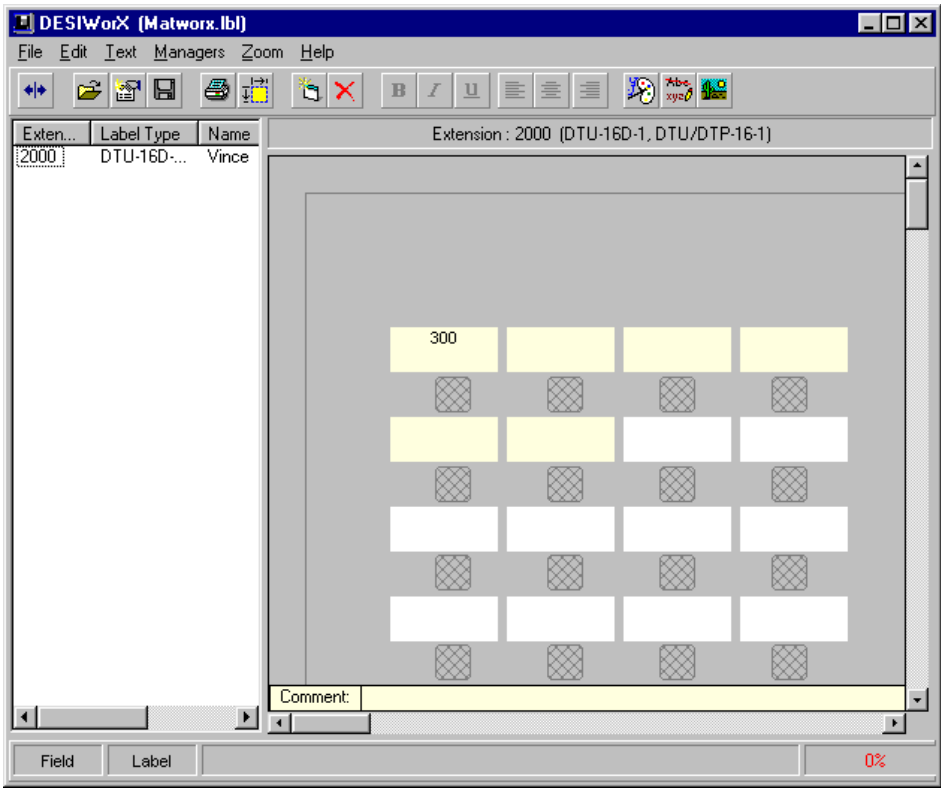
DESIWorX is a unique application that lets you provide your users with key labels for your Dterm telephones. In this chapter you learn about the following:

Chapter Topics

What is DESIWorX?

You use DESIWorX (Figure 10-1) to create and print function key labels for Dterm telephones. Because DESIWorX saves the labels in a database, you can modify and print them whenever your configuration changes or you add new user features to your PBX.

Figure 10-1 *DESIWorX Dialog*



You can use the DESIWorX to:

- Create a label database, including label design.
- Add a bitmap to a label.
- Create, modify, and delete label macros.
- Print labels.

Starting DESIWorX

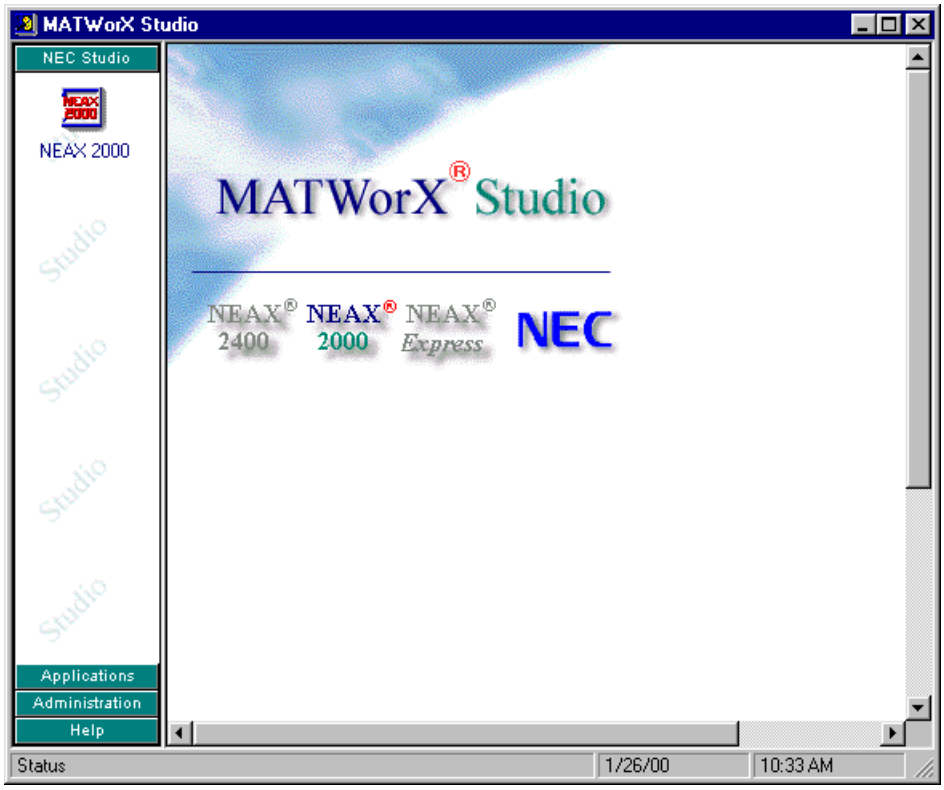
The following procedure explains how to access and run DESIWorX from MATWorX Studio.

NOTE

You can also start DESIWorX by selecting Programs / NEC / DESIWorX from the Start taskbar in Windows.

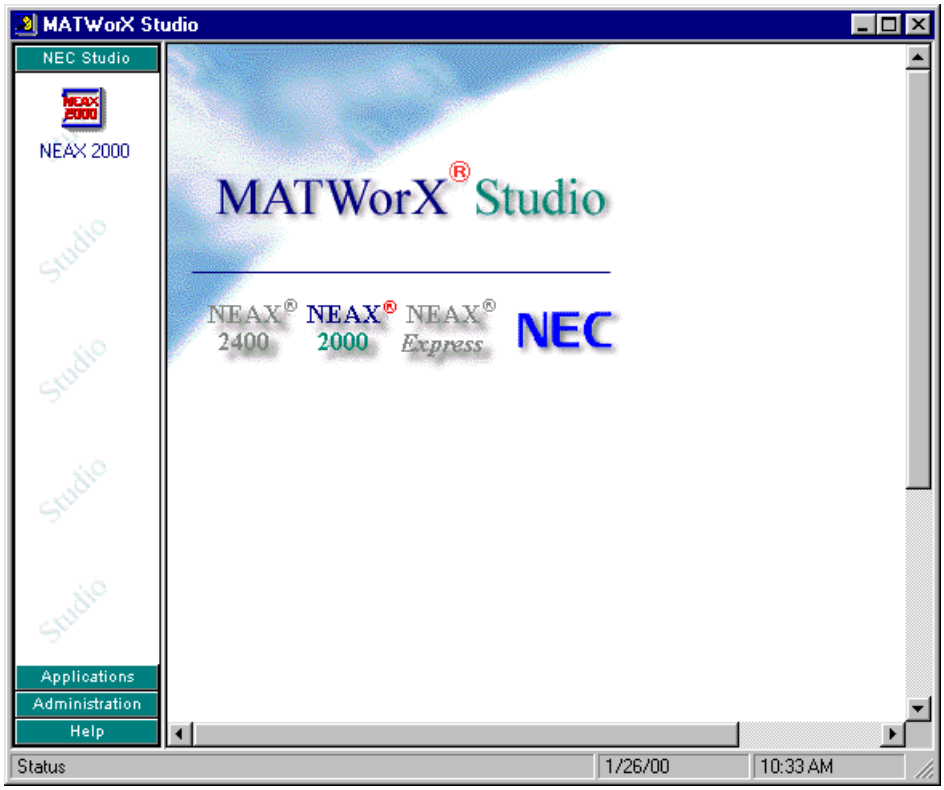
Step 1 Launch MATWorX Studio. The Toolbar and Work Area windows display (Figure 10-2).

Figure 10-2 *Studio Toolbar Window*



Step 2 Click the item in the Toolbar representing your PBX or device (Figure 10-2). The Toolbox window displays (Figure 10-3).

Figure 10-3 *Toolbar and Work Area Windows*



Step 3 Click the **Applications** group item in the Toolbox to display a list of installed applications. The Applications Group window displays (

Figure 10-4 *Applications Group Window*

Step 4 Click the **DESIWorX** item to launch the application.

You have now successfully launched the DESIWorX application.

DESIWorX Online Help

The DESIWorX application contains its own context-sensitive online Help system. This guide provides a simple overview to the features and capabilities of DESIWorX. For more detailed information, including procedures and descriptions, access the DESIWorX online Help system.

Accessing DESIWorX Online Help

To display Help for the current DESIWorX dialog, press **F1**. Refer to Chapter 11, "MATWorX Studio Online Help" for more information about features and ways to access and print Help topics.

What's This? Help

What's This? Help displays pop-up information about a particular field or button within a dialog. To display What's This? Help for a field or button, do the following:

Step 1 Click the Help item from the Toolbox to display a list of Help resources. Then, click the What's This Help item. The cursor changes to a question mark.

Step 2 Position your cursor over a field or button and click it to display a pop-up window containing information about that item.

Tool Tips

Tool Tips, sometimes referred to as "Balloon Help", provide a brief (one- or two-word) description of an active button on a dialog or menu. To display Tool Tips for a button, place your cursor over the button for one or two seconds, then a small pop-up window displays with the button's description.

11

MATWorX Studio Online Help

MATWorX Studio contains an extensive online Help system that contains detailed information about its capabilities, as well as procedures for configuring and installing add-ins. In this chapter you learn about the following:

Chapter Topics

MATWorX Studio Online Help Features

Within the online Help system, you will find a wealth of useful information pertaining to the MATWorX Studio program and its tools and applications. MATWorX Studio is a modular program that can be customized to suit your hardware configuration and personal preferences. Therefore, you will find individual Help systems for the MATWorX Studio environment and each of the tools and applications. Some features include:

- Help for each dialog, including a description and purpose of the dialog and its buttons
- Context-sensitive “What’s This?” Help for every control (field and button) within a dialog
- Tool Tips when your cursor is positioned over active buttons
- Step-by-step procedures for configuring and programming an NEC PBX or other device

Accessing the Online Help System

There are several ways to access and use the online Help system within MATWorX Studio. You can display Help and work in your current MATWorX Studio dialog while a Help window is open. You can also resize and move the MATWorX Studio dialog or the Help window to make it easier to display and follow the Help procedures while you work in MATWorX Studio.

MATWorX Studio provides four types of Help. These include Main Help Contents, Dialog-level Help, What's This? Help, and Tool Tips.

Main Help Contents

To access the main Help contents for MATWorX Studio, click the Help group in the Toolbar. Then, click the Help item. The MATWorX Studio Help appears.

To access the main Help contents for a MATWorX Studio Toolbox, click the item in the Toolbar representing your PBX or other device. The Toolbox window appears. Click the Help item in the Toolbox to expand it. Then, click the Help item. The Toolbox Help appears.

Dialog-level Help

To display Help for the current MATWorX Studio dialog or add-in, press **F1**.

What's This? Help

What's This? Help displays pop-up information about a particular field or button within a dialog. To display What's This? Help for a field or button, do the following:

Step 1 Click the **Help** item from the Toolbox to display a list of Help resources. Then, click the What's This Help item. The cursor changes to a question mark.

Step 2 Position your cursor over a field or button in the program and click it to display a pop-up window containing information about that item.

Tool Tips

Tool Tips, sometimes referred to as "Balloon Help," provide a brief (one- or two-word) description of an active button on a dialog or menu. To display Tool Tips for a button, place your cursor over the button for one or two seconds, then a small pop-up window displays with the button's description.

Printing Help Topics

To print any Help topic displayed on your screen, do the following:

Step 1 Access the Help topic you want to print.

Step 2 Click the **Print** button or select Print Topic from the File menu. The Print dialog displays.

Step 3 Click **OK**.


TIP

You can use your right mouse button to click inside the Help window, then click Print Topic. You can also use this method to print the contents of a pop-up window.

Appendix

Extended Command Set

The Extended Command Set is a set of custom commands you can use in the MACH Script Editor. These extended commands provide enhanced functionality to many of the existing NEAX 2000 Commands for the NEAX EXPRESS, NEAX 2000 IVS and IVS^2. The extended commands let you quickly and easily perform complicated tasks within a script by reducing the number of commands needed.

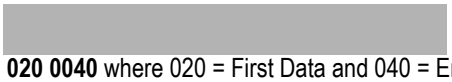
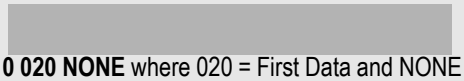
The NEAX EXPRESS and NEAX 2000 IVS Command Sets consist of the commands used with a MAT Terminal, as specified in the "NEAX 2000 IVS Command Manual." (The commands look like: CM12 YY=03.)

The Extended Command Set characters are modifiers you type in front of the NEAX 2000 command in the MACH Script Editor window. The following table displays the Extended Command Set.

Table Appendix-1 *Extended Command Set Definitions*

Command	Definition
@10	Finds the LEN assigned to the station in the First Data field and displays the LEN in the Second Data field.
~10	Swaps the LEN assignments of the stations indicated in the First and Second Data fields.
>10	Moves the station in the First Data field to the LEN indicated in the Second Data field.
&10	Assigns an Add-On Module to the station in the First Data field.
%10	Finds the Line Equipment Card type (MP) associated with the LEN in the First Data field and then displays it in the Second Data field.
@11	Find the virtual LEN assigned to the station in the First Data field and display the LEN in the Second Data field.
^12	Copies the Class-1 Feature assignments from the station in the First Data field to the station in the Second Data field.
^13	Copies the Class-2 Feature assignments from the station in the First Data field to the station in the Second Data field.
@20X	(where X represents the Numbering Plan Group 0 - 3) Finds the Access Codes assigned to the Feature Code displayed in the First Data field. The first returned Access Code is displayed in the SD field. Additional Access Codes are displayed in the ED field.
^90	Copies the Programmable Key assignments from the station in the First Data field to the station in the Second Data field.

Command	Definition
@980	Determines whether an Add-On exists for the station in the First Data field.
?1X	(where X represents any command from the NEAX 2000 IVS Command Set) Uses the First Data specified in the previous command as the First Data in this command. (Leave this Second Data field blank.)
?2X	(where X represents any command from the NEAX 2000 IVS Command Set) Uses the Second Data, that was specified or returned as a result of the previous command, as the First Data in this command. (Leave this Second Data field blank.)
***X**	(where X represents any command from the NEAX 2000 IVS Command Set) Performs a PBX System Reset after executing the specified command. This operation will drop all calls, and should not be used with modem connections—only with direct connections.
!	Performs a PBX System Reset. This operation will drop all calls, and should not be used with modem connections—only with direct connections.
LX	(where X represents any command from the NEAX 2000 IVS Command Set) Performs a lookup and listing of all Second Data. (For example, L10 retrieves all LEN assignments.) **This Extended Command cannot be used with any other Extended Commands in a script; it must be the only command line in a script.**
LFX	(where X represents any command from the NEAX 2000 IVS Command Set) Performs a filtered lookup and listing of all existing Second Data. (For example, LF10 retrieves all existing LEN assignment data, but leaves out data for the unassigned LENs.) **This Extended Command cannot be used with any other Extended Commands in a script; it must be the only command line in a script.**
MZT	Monitor zone transceiver download process. This should be used immediately after command AE YY=00 returns an "OK" once the download is complete, or returns a "User Cancelled" if the download was cancelled by the user.
LZT	Performs a lookup for a specified range of zone transceivers. Returns data for commands 10, E5 YY=00, AD YY=19, and 06 YY=10.
LMEM	Performs a lookup of all members of a group (hunt, pickup, ACD/UCD) when given a station number that belongs to a group. First Data = station = group, Second Data = 0 = pickup, 1 = UCD, 2 = hunting.
LUCD	Performs a lookup of stations that are not in a group (hunt, pickup, ACD/UCD), potential pilot numbers, and unused group numbers. Command = NGRP, PLT, GRP, First Data = station number or group number. Potential pilot is a single line station that is not in another group, nor is a phantom.
LPLT	Performs a lookup of all pilot numbers that are currently in use or belong to existing groups (hunt, pickup, ACD/UCD).
LGRP	Performs a lookup of all stations that are currently members of a group (hunt, pickup, ACD/UCD).

Command	Definition
LSTN	Performs a lookup of all stations in a system. First Data = LEN range 0 - 511.
LNGRP	Performs a lookup of all stations that are not in a group (hunt, pickup, ACD/UCD). First Data = LEN range 0 - 511.
LMP	Performs a lookup of all MP cards in a system. First Data = LEN range 0 - 511, Second Data = Time Slots.
@LEN	Finds first unused LEN. First Data = starting LEN in which to count down.
@VLEN	Find first unused virtual LEN, beginning at 255 and counting down. First Data = starting LEN in which to count down.
I	Iterate option. Typing an I in front of a command (such as CMD10) uses the **Start Value** (First Data) and **Stop Value** (End Data) you specify in order to return the results for each value from the PBX.  For example, **I10 020 0040** where 020 = First Data and 040 = End Data will return all LENs between 20 and 40, inclusive. You can also go backwards, such that I10 040 020 will return all LENs between 40 and 20, inclusive. ** See Note below.*
R	Repeat Until option. Typing an R in front of a command (such as CMD10) uses the **Start Value** (First Data) and **Stop Value** (End Data) you specify in order to return the results for each value from the PBX.  For example, **R10 020 NONE** where 020 = First Data and NONE = End Data will return the CMD10 results for each value from 020 until it hits invalid data or it finds a result equal to "NONE." That is, the first empty LEN greater or equal to 20; and all LENs between it and LEN 20. ** See Note below.*
X	Exclude Results option. This option is used in conjunction with options **I** and **R** described above. When multiple options are used, the parameters of the subsequent options are appended to the current End Data which are separated by a tab. The parameters are in the same order as the options.  For example, **XI10 020 NONE & vbTAB & 040** where 020 = First Data, NONE & vbTAB & 040 = Parameters and End Data. This iterates CMD10 from 020 to 040 excluding "NONE," which will return the CMD10 results for each value from 020 to 040 if the result is not equal to "NONE." That is, all used LENs between 20 and 40, inclusive. ** See Note below.*

Command	Definition
!	NOT Parameter Flag. This parameter is used in conjunction with options **R** and **X** described above. For example, **R10 020 !NONE** where 020 = First Data, NONE = End Data, ! = NOT Parameter, which will repeat CMD10 starting with 020 and increasing by 1 until the result equals NOT "NONE." This will return the CMD10 results for each value from 020 until it hits invalid data or it finds a result NOT equal to "NONE." That is, all unassigned LENs between 20 and the first assigned LEN greater than or equal to 20. ** See Note below.*

NOTE

You can use multiple options (I, R, X described above) to prefix a NEAX 2000 command. When multiple options are used, the additional parameters are added to the End Data. These additional parameters are in the same order as the options and are separated by a tab.

*For example, **XIR10 040 !NONE & vbTAB & 020 & vbTAB & 345** where XIR = Options, 10 = CMD, 040 = First Data, !NONE & vbTAB & 200 & vbTAB & 345 = Parameters and End Data. This will iterate CMD10 from 020 to 040 increasing by 1, excluding NOT "NONE," which will return CMD10 results for each value from 020 to 040 if the result is equal to "NONE," which will stop when station 345 is found. That is, all unassigned LENs between 20 and 40, inclusive, or all unassigned LENs unless between 20 and the LEN that has station 345 assigned to it. When used together, the Repeat (R) option takes precedence over the Iterate (I) option.*

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

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