C H A P T E R 4

Installing the IPeXchange Client Software

This chapter describes how to install the IPeXchange client software on a PC. This chapter contains the following sections:

- Requirements for Installation
- Running the Setup Program
- Testing Connectivity to the Gateway
- Using the IPeXchange Client
- Performing Advanced Configuration Tasks

Requirements for Installation

To install the IPeXchange client software, you need the following:

- 80x86-based personal computer running one of the following operating systems:
    — Windows 3.1 running in Enhanced mode
    — Windows for Workgroups 3.11
    — Windows 95
- IPX/SPX driver software

In addition, to ensure smooth installation and startup on a Windows for Workgroups operating system, check the IPX/SPX version numbers and compatibility of configured frame types before installing the IPeXchange client software.

> **Note** You can run 32-bit applications on Windows 3.1 by using a Microsoft 32-bit subsystem. Obtain the WIN32S subsystem from Microsoft.

Check IPX/SPX Version Numbers

The IPeXchange client relies on the Novell IPX/SPX components and versions listed in Table 4-1.

Table 4-1   Required Versions of IPX/SPX Components

Component	Version	Applicable Operating System	Where Located
IPXODI	3.0 or later	Windows 3.1	Typically installed in \nwclient
LSL	2.12 or later	Windows 3.1	Typically installed in \nwclient
NWIPXSPX.DLL	4.10 or later	Windows 3.1 Windows 95	Typically installed in \windows or \windows\system
NWCALLS.DLL	4.10 or later	Windows 3.1 Windows 95	Typically installed in \windows or \windows\system
VIPX.386	1.19 or later	Windows 3.1	Windows installed in \windows or \windows\system

To determine the version numbers of your files, you can download the Novell Technical Support (NTS) Windows Diagnostics tool, NTSWD.EXE. This tool is in a self-extracting file named WINDR3.EXE that is located at Novell's FTP site, ftp.novell.com/pub/netwire/novfiles/. You can also find it by searching http://support.novell.com/ with your web browser.

If your installed Novell files are outdated, you can download new files from NetWire, CompuServe, or ftp.novell.com. In addition, NWIPXSPX.DLL and NWCALLS.DLL are provided in the NETWARE.DLL subdirectory of the IPeXchange client diskette.

Checking Windows for Workgroups Frame Types

On Windows for Workgroups computers, the NWLINK component supplied by Microsoft must interoperate with the IPX/SPX component supplied by Novell. These components use different configuration files, but both configuration files must specify the same frame type. Mismatched frame types are a common source of problems.

To ensure that the IPX/SPX frame type and the NWLINK frame type are set to the same value, follow these steps:

Step 1 Use a text editor to open the NET.CFG file.

Step 2 Find one or more of the following lines, which configure the IPX/SPX frame type. If there are no similar lines, type the line that specifies the Ethernet frame type used on your network.

```
Frame Ethernet_802.3
Frame Ethernet_802.2
Frame Ethernet_II
Frame Ethernet_SNAP
```

Step 3 Immediately below the lines displayed in Step 2, find one or more of the following lines. If the line is missing, type the line that specifies the IPX frame type used on your network:

```
Protocol IPX 0 Ethernet_802.3
Protocol IPX E0 Ethernet_802.2
Protocol IPX 8137 Ethernet_II
Protocol IPX 8137 Ethernet_SNAP
```

Step 4 Note the values you typed in Step 2 and Step 3, and close the file.

Step 5 Open the PROTOCOL.INI file. This is the file in which NWLINK is configured. If this file does not exist, create it in the Windows directory.

Step 6 Find the section labeled [NWLINK]. If there is no NWLINK section, create this section header.

Step 7 If there is a line in the NWLINK section starting with FRAME=, make sure that it specifies the same frame type that you noted in the NET.CFG file in Step 2. (Note that the format of the lines differs slightly, as shown in Table 4-2.) If the frame types are the same, close the file, exit the text editor, and proceed to the next section, "Running the Setup Program."

Step 8 If there is no line starting with FRAME=, or if the frame type specified does not match the frame type NET.CFG, add the frame type to PROTOCOL.INI using the format shown in Table 4-2.

Step 9 Close the PROTOCOL.INI file and exit the text editor.

Table 4-2   NET.CFG and PROTOCOL.INI Frame Formats

NET.CFG Format	PROTOCOL.INI Format
Protocol IPX 0 Ethernet_802.3	FRAME=ETHERNET_802.3
Protocol IPX E0 Ethernet_802.2	FRAME=ETHERNET_802.2
Protocol IPX 8137 Ethernet_II	FRAME=ETHERNET_II
Protocol IPX 8137 Ethernet_SNAP	FRAME=ETHERNET_SNAP

Checking Windows 95 Frame Types

To ensure that the IPX/SPX-compatible protocol is set to the appropriate frame type, follow these steps:

Step 1 Navigate to Network in the Control Panel by clicking Start, selecting Settings, clicking Control Panel, then double-clicking Network.

A list of installed network components appears.

Step 2 Click IPX/SPX-compatible Protocol under the Installed Network Components list, then click Properties. Select the Advanced tab and click Frame Type in the Property list. Select Frame Type, and its current value is displayed in the Value box. Click the down arrow and select the appropriate frame type for your network. (Do not select Auto.) Click OK. Restart your computer for the new changes to take effect.

Running the Setup Program

From the Windows File Manager, start the installation of the IPeXchange client software:

a:setup

The setup program asks you to select the setup program you want to use:

- Running Express Setup
- Running Custom Setup

Timesaver   To avoid installing the IPeXchange client files on every computer, install them on the NetWare file server. Place the files in a public folder that is on the search path, such as F:\PUBLIC.

Running Express Setup

If you choose Express Setup, the Setup program takes the following actions:

- Searches the directories in the search path for existing files named WINSOCK.DLL, WSOCK32.DLL, or WS16.DLL and displays the name of each file found.

  Because the IPeXchange client software requires a customized WINSOCK.DLL, WSOCK32.DLL, and WS16.DLL file, there must be only one file with these names. Allow the Setup program to back up the existing files, or exit from Setup.

  For the 32-bit client library, all copies of WSOCK32.DLL found in the path are renamed to WSOCK32.SAV. Also the copy, if any, in WINDOWS/SYSTEM32 (or wherever the Windows 95 32-bit libraries were installed) is renamed to WSOCK32.SAV. The C:\IPEXCHNG directory is created (by the client install) and prepended to the path, and the IPeXchange version of WSOCK32.DLL is installed there, along with the other components of the IPeXchange client.

- Updates the SYSTEM.INI file on Windows 3.1 and Windows for Workgroups systems. (This step is unnecessary in Windows 95.)

  — Adds the following lines to the [386Enh] section:

    ```
    device=vipx.386
    TimerCriticalSection=10000
    ```

— Adds the following section to the file:

```
[vipx]
VipxMappingPages=20
VipxFailOverSizedPackets=ON
```

- Updates the WIN.INI file with the following lines:

```
[IPeXchange Client]
Preferred Gateway=Any
```

The IPeXchange client software first tries to connect the client to the preferred gateway. The default value, Any, allows the software to automatically pick a gateway from among those available. You can change this value later, as described in the section "Performing Advanced Configuration Tasks."

- Copies the IPeXchange client files from the diskette to the Windows directory.

- Creates an IPeXchange program group and icons.

- Asks you to reboot the computer so that configuration file changes can take effect.

Running Custom Setup

If you choose Custom Setup, the Setup program takes the following actions:

- Searches the directories named in the PATH variable for existing files named WINSOCK.DLL, WSOCK32.DLL, or WS16.DLL and displays the name of each file found.

  Because the IPeXchange client software requires a customized WINSOCK.DLL, WSOCK32.DLL, or WS16.DLL file, there must be only one file with these names. Allow the Setup program to back up the existing files, or exit from Setup.

  For the 32-bit client library, all copies of WSOCK32.DLL found in the path are renamed to WSOCK32.SAV. Also the copy, if any, in WINDOWS/SYSTEM32 (or wherever the Windows NT 32-bit libraries were installed) is renamed to WSOCK32.SAV. The C:\IPEXCHNG directory is created (by the client install) and prepended to the path, and the IPeXchange version of WSOCK32.DLL is installed there, along with the other components of the IPeXchange client.

- Updates the SYSTEM.INI file on Windows 3.1 and Windows for Workgroups systems. (This step is unnecessary on Windows 95.)

  — Adds the following lines to the [386Enh] section:

    ```
    device=vipx.386
    TimerCriticalSection=10000
    ```

  — Adds the following section to the file:

    ```
    [vipx]
    VipxMappingPages=20
    VipxFailOverSizedPackets=ON
    ```

- Allows you to change the target directory for IPeXchange client files.

- Allows you to specify the client's preferred gateway.

  The IPeXchange client software first tries to connect the client to the preferred gateway. The default value, Any, allows the software to automatically pick a gateway from among those available. You can change this value later, as described in the section "Performing Advanced Configuration Tasks."

- Updates the WIN.INI file with the following lines:

  ```
  [IPeXchange Client]
  Preferred Gateway=gateway-name
  ```

- Copies the IPeXchange client files from the diskette to the Windows directory.

- Creates an IPeXchange program group and icons.

- Asks you to reboot the computer so that configuration file changes can take effect.

Testing Connectivity to the Gateway

After your computer has rebooted, start the IPeXchange client by double-clicking its icon.

The window shown in Figure 4-1 appears, displaying diagnostic information.

Figure 4-1   Client Status Window
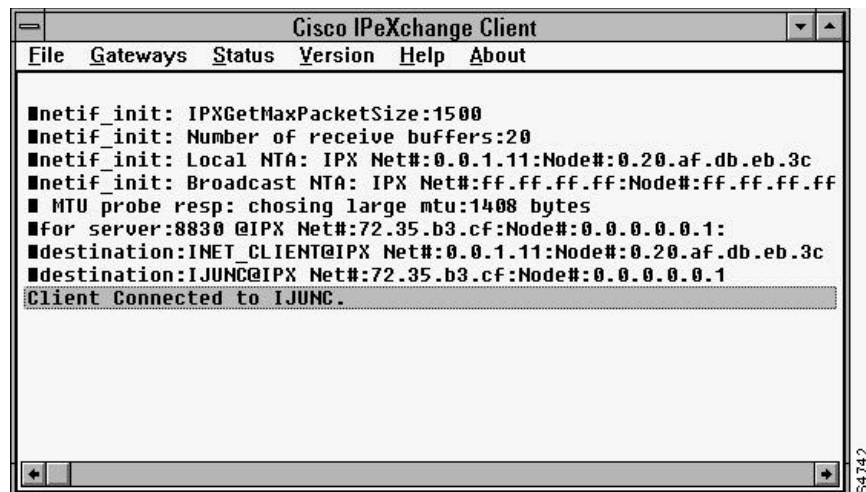
When the client connects to the IPeXchange Internet gateway, a message is displayed identifying the gateway. For example, if the client connects to the gateway named, IPeX-gateway, the following message is displayed:

```
Client Connected to IPeX-gateway
```

Using the IPeXchange Client

Once you have installed the IPeXchange client software and confirmed that the IPeXchange client and gateway work together successfully, you can install and run any of the applications listed in the appendix "Applications Certified for Use with the IPeXchange Gateway," or other WinSock 1.1–compliant applications.

Once the IPeXchange client software is running, you do not usually need to start or stop it explicitly. When any WinSock 1.1–compatible application starts, the IPeXchange client automatically starts and connects to an IPeXchange gateway on behalf of the application. When applications shut down and the client is idle, the IPeXchange client automatically exits.

The section "Performing Advanced Configuration Tasks" describes additional software features.

Performing Advanced Configuration Tasks

This section describes the following advanced configuration procedures for the IPeXchange client. You do not need to perform these procedures unless you have multiple gateways.

- Changing the Preferred Gateway
- Changing the Current Gateway
- Displaying the Status of an IPeXchange Client

Changing the Preferred Gateway

If your site has multiple IPeXchange gateways, the IPeXchange client software performs load sharing by picking an IPeXchange gateway from among those available. However, you can specify a client's preferred gateway—the IPeXchange gateway to which the client tries to connect at startup. Specifying preferred gateways can be useful for dividing the user community—for example, for administrative or accounting purposes. If the preferred gateway is unavailable, the client connects to any available IPeXchange gateway.

To specify a preferred gateway, do one of the following:

- Editing the WIN.INI File
- Modifying the Command Line or Target Property

Editing the WIN.INI File

To edit the WIN.INI file, perform the following steps:

Step 1   Use a text editor to open the WIN.INI file.

Step 2   Look for a section like the following:

```
[IPeXchange Client]
Preferred Gateway = Any
```

To specify an IPeXchange gateway, change the value after the equal sign (=) to the name of the IPeXchange gateway.

Step 3   Close the file and reboot the computer.

Modifying the Command Line or Target Property

If a Windows icon represents an executable program, its Properties window includes information that tells Windows how to start the program. This information is called the command line property in Windows 3.1 and Windows for Workgroups and the target property in Windows 95.

The following command line or target property starts IPEXCLNT.EXE:

ipexclnt [**-g** *gateway-name*]

gateway-name specifies the client's preferred IPeXchange gateway.

For example, the following property causes the client to try to connect with the gateway boojum:

```
ipexclnt -g boojum
```

If boojum is unavailable, the client connects to any available gateway.

To change the preferred gateway, edit the properties of the IPeXchange item. When the IPeXchange client starts, it writes *gateway-name* into the WIN.INI file as the new value for the preferred gateway.

Changing the Current Gateway

Sometimes a client might want to disconnect from one IPeXchange gateway and connect to another. For instance, your network could be configured so that one IPeXchange gateway provides Internet access and another provides internal TCP/IP access, and a client might want to switch between the two.

The Gateways menu in the IPeXchange client window displays a list of known IPeXchange gateways. A check mark indicates the gateway to which the client is currently connected. The client software periodically refreshes the list, adding names as gateway SAP messages arrive, and removing the names of servers that stop sending SAP messages.

To change a client's current gateway, perform the following steps:

Step 1   Close any Internet or TCP/IP client applications that are running.

Step 2   Open the IPeXchange window by double-clicking its icon.

Step 3   Pull down the Gateways menu and click the name of the gateway to which you want to connect.

When a client changes the current gateway, the new gateway automatically becomes the preferred gateway. The client software writes the IPeXchange gateway name into the WIN.INI file and attempts to connect to that gateway the next time it starts.

Displaying the Status of an IPeXchange Client

The IPeXchange window for the IPeXchange client includes a Status menu item. This option provides information about the IPeXchange client or gateway software and its current connections.

When you first select the Status menu item, the display is static—status appears on the screen once and does not refresh itself.

Select the Status menu item again to start a low-level tracing program that shows the transmission of SAP messages and routing information packet (RIP) messages. Generating a trace can be helpful if you need to troubleshoot a problem.

To stop the trace program, select the Status menu item again. An updated static display appears.