APPENDIX B

Troubleshooting IPeXchange Gateways and Clients

Once the IPeXchange gateway is running and the IPeXchange client is installed, you can run WinSock-based applications from the IPeXchange client. If problems occur, use this appendix to troubleshoot the problem. If an IPeXchange error message appears, refer to the appendix "Error Messages."

IPeXchange Gateway NLM Version

While installing the IPeXchange NLM version with the Setup Program, you are unable to copy the files to the server.

Step 1 Make sure that the user ID you used to log on to the NetWare server has Supervisor, Admin, or equivalent privileges. Also check that a drive is mapped to the SYS volume.

If you have to fix either of these items, try the install again.

Step 2 Make sure that the server has enough disk space.

If you did not have enough disk space, free some disk space and try the install again.

Step 3 Try to install the software manually, as described in the section "Manually Installing the Software" in the chapter "Installing the IPeXchange Gateway NLM Version."

You are not sure that TCP/IP is loaded and bound to the card.

Remember that IPeXchange uses the Novell native TCP/IP stack.

To check TCP/IP functionality, if you have the ping NLM, enter **load ping** *IP_address*.

If the ping command is successful, TCP/IP is installed correctly.

If you do not have ping, you can perform these tests:

Step 1 At the console prompt, enter **config**.

A complete list of all physical and logical drivers, and the protocol bound to each board, appears.

- Make sure that TCP/IP is bound with the correct frame type to the correct board. For example, LAN protocol IP is bound with the ETHERNET_II frame type.
- Check that the IP address and the subnet mask are correct. If they are not, TCP/IP cannot be operational.

Step 2 Load TCPCON.NLM and in the initial screen check if any IP packets are being received or sent.

If you have multiple boards, check each one.

If there are packets received and sent, TCP/IP is installed correctly.

You enter a ping command with a domain name, and the ping fails.

You can use ping with names only if the IP address is associated with the name in your local HOSTS file. Otherwise, you need to use an IP address with ping.

You are not sure if your Internet connection is operational.

Try to ping a well-known Internet address. For example:

load ping 192.31.7.130

where 192.31.7.130 is the address of www.cisco.com.

Here is another example:

load ping 198.95.251.30

where 198.95.251.30 is the address of www.netscape.com.

If you can successfully ping a well-known Internet address, your Internet connection is operational.

IPeXchange Gateway NT Version

The IPeXchange gateway is not working, and you are not sure why.

Step 1 Make sure that the IPeXchange gateway is running.

At the IPeXchange gateway, open the Cisco IPeXchange Internet Gateway window and select the Status menu item. Check that the outgoing broadcast count is greater than zero. A nonzero outgoing broadcast count indicates that the gateway is correctly sending SAP messages to the client. If the broadcast count is zero, check the server's IPX connectivity.

Step 2 Make sure that TCP/IP is configured correctly.

Enter the PING command from the MS-DOS prompt, specifying the gateway's own IP address or the standard loopback address, 127.0.0.1. If the command fails, the computer's TCP/IP service is incorrectly configured, and you need to reconfigure it.

Step 3 Ensure that the computer can connect to the external TCP/IP network.

Enter the PING command, specifying a remote IP address or host name. If the command fails, check the modems, routers, and other hardware that connect your site with the Internet service provider.

Step 4 Check that TCP/IP name-to-address resolution is working.

Enter the PING command, specifying a domain name such as cisco.com. If PING fails to return status information, check the following:

- Check that the TCP/IP configuration at the gateway correctly specifies the IP address of the Domain Name Server (DNS).
- Make sure that the Domain Name Server is running and functioning correctly. Remember that you can specify multiple Domain Name Servers in case one server becomes unavailable.

IPeXchange Client

The IPeXchange client and the gateway are not communicating.

Follow these steps.

Step 1 Check that the client is receiving SAP messages from gateways.

Open the Cisco IPeXchange Internet Gateway window and pull down the Gateways menu. The menu should display names of IPeXchange gateways. If one or more gateways are missing, check that the IPX configuration at the IPeXchange client and gateway use the same frame type, as described in the chapter "Installing the IPeXchange Client Software."

Step 2 Ensure that the client has current versions of IPX components.

The chapter "Installing the IPeXchange Client Software" lists versions of IPX components that IPeXchange client software requires. If you did not check IPX component versions at installation, do it now.

Step 3 Make sure that the configuration files are correct.

The Setup program modifies WIN.INI and SYSTEM.INI files on the IPeXchange client. Refer to the section "Running the Setup Program" in the chapter "Installing the IPeXchange Client Software" and make sure that all changes described there have been made correctly.

Step 4 If the client is running Windows for Workgroups, make sure that the frame type specified in NET.CFG matches the frame type specified in PROTOCOL.INI.

On Windows for Workgroups systems, problems often occur when NET.CFG and PROTOCOL.INI specify different frame types. If you did not check frame types at installation, refer to the section "Requirements for Installation" in the chapter "Installing the IPeXchange Client Software" and do so now.

The IPeXchange client is unable to connect to the IPeXchange gateway. The IPeXchange Client window appears, but it does not show that the client is connected.

Several problems can prevent the client from connecting. Follow these steps to troubleshoot the problem.

Procedure 1

Step 1 In the IPeXchange window, look at any items in the Gateways pull-down menu. If one or more gateways are listed, select Gateways multiple times to connect; otherwise, continue with Step 2.

Step 2 Make sure that an IPeXchange gateway is up and running.

Step 3 Ensure that the SAP agent is running on the gateway as follows:

- IPeXchange NT version

  From the Windows Main Program group, double-click Control Panel, Network, then Installed software. Check if the SAP Agent is installed. If not, install it.

  From the Windows Main Program group, double-click Control Panel then Services. Check if the SAP Agent is running. If not, start it.

- IPeXchange NLM version

  Enter **modules** at the console prompt and verify that IPeXchange is loaded. If not, load IPEXCHNG.

Procedure 2

If you receive an IPeXchange Network Status dialog with the message "Attempting to connect with the Cisco IPeXchange Gateway" and that remains on your screen but does not go away, follow these instructions.

Check for a frame type mismatch between the gateway and the client.

- Windows 3.1 client

  When the Windows client is coming up, look for the frame type that IPXODI is binding to. You can also put a pause command in the file which is calling IPXODI (STARTNET.BAT or AUTOEXEC.BAT). If the frame type is not correct, correct the frame type in the NET.CFG file and explicitly bind the frame type. Following are some possible entries:

```
FRAME=ETHERNET_II
FRAME=ETHERNET_802.3
FRAME=ETHERNET_802.2
FRAME=ETHERNET_SNAP
FRAME=TOKEN-RING
```

- Windows for Workgroups

  In addition to following the instructions for the NET.CFG file in the previous bullet, look for a file called PROTOCOL.INI in the c:\WINDOWS directory.

  Open the PROTCOL.INI file, where NWLINK is configured. If there is no PROTCOL.INI file, create one in the Windows directory. Find the section labeled [NWLINK]. If there is no NWLINK section, create this section header. In the NWLINK section starting with FRAME=, make sure that it specifies the same frame type that you noted in NET.CFG (the format is slightly different). If there is no entry, add a FRAME= entry. Following are some sample entries for Windows for Workgroups clients:

  ```
  Protocol IPX 0 Ethernet_802.3
  Protocol IPX E0 Ehernet_802.2
  Protocol IPX 8137 Ethernet_II
  Protocol IPX 8137 Ethernet_SNAP
  Protocol IPX 0 Token-Ring
  ```

- Windows 95 client

  From Start, choose Settings, click Control Panel, then double-click Network and Installed Components. Select IPX/SPX-compatible Protocols, then click Properties and Frame Type. Select a value then click OK. Click Advanced, then select the appropriate driver:

  Microsoft Client for NetWare — Use IPX/SPX compatible protocol.
  Novell NetWare (Workstation shell 4.0 & above) — Use IPXODI protocol.
  Novell NetWare Client 32 — Use IPX 32-bit protocol for NetWare Client32.

  Check the frame type. If it is Auto, select the appropriate frame type for your network.

- IPeXchange NT version

  From the Windows Main Program group, double-click Control Panel, then Network. From the Installed software window, double-click NWLINK IPX/SPX-compatible protocol, then click Configure. You should specify a frame type (do not leave frame=auto) if there is no NetWare server on the LAN or there is no router with an IPX binding.

- IPeXchange NLM version

  Enter **config** at the server prompt and check the IPX frame type.

When browsing the World Wide Web, it takes several minutes before the pages are downloaded.

Stop the browser and start the IPeXchange client. If this takes a lot of time, that means it is looking for the gateway. Open the WIN.INI file and under the IPeXchange client header specify a gateway name for the preferred server entry as follows:

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

The client screen appears, then immediately disappears. You do not know the name of other gateways.

The preferred gateway is running out of user licenses. The easiest solution is to edit the WIN.INI file and give any name to the Preferred Gateway entry. Next time the client starts, the screen would not disappear; instead, the client would try to find the preferred gateway. Then select another preferred gateway from the Gateways menu of the IPeXchange Client window.