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4D Client communicates with 4D Server by means of requests sent over the network. For instance, when 4D Client displays a record on the screen, it sends a request to 4D Server to obtain the contents of the record; 4D Server replies by sending back the requested data.

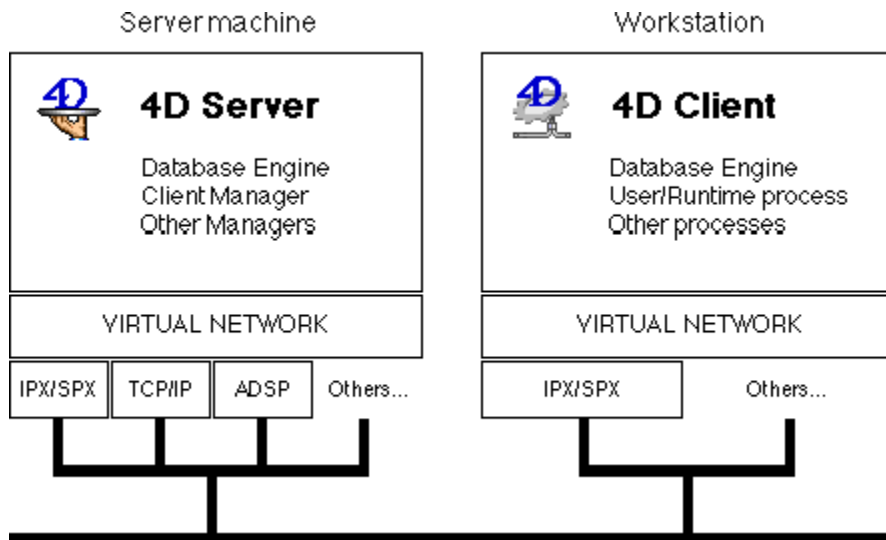
The communication between 4D Client and 4D Server is made possible by the use of a common network protocol, in other words, a network software interface that allows clients and server to "speak the same language" over the network.

Because there are multiple network protocols available on the market, 4D Server does not directly access the transport layer of a network protocol. The database engine of 4D Server, as well as its other managers, make virtual network calls that are then handled by specialized network components. Similarly, 4D Client sends its requests by making virtual network calls that are then handled by the appropriate network component. The network components perform the actual low-level network calls depending on the network protocol you are using.

This architecture provides the following advantages:

- 4D Server can concurrently answer requests emitted using different network protocols.
- Network components can be installed and removed from 4D Server or 4D Client without having to reinstall the whole program.
- The database functionality of both 4D Server and 4D Client is the same no matter which network protocol you are using.
- New network protocol support can be added to the architecture without redesigning the whole product line; maintenance and improvement of the core database engine is separate from those of the network components.

This architecture is summarized by the following diagram:



While 4D Server can concurrently reply to requests received via different protocols, each 4D Client uses only one protocol during a session. For each network protocol supported by 4D Server, there is a corresponding network component delivered with the 4D Server software.

To build a Client/Server architecture using 4D Server, you need to install, on both the server machine and the client machines (workstations):

- The network protocol(s) within your system configuration
- The corresponding network component(s)

The **network components** are included with the 4D Server software. The **network protocols**, however, are handled in several ways: some may be part of your machines's operating system, some are provided in the 4D Server package, and some may have to be purchased separately from third party vendors.

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On both Windows and Macintosh, the 4D Client/Server architecture supports the following network protocols:

- IPX/SPX (Internet Packet Exchange Protocol)
- TCP/IP (Transport Control Protocol/Internet Protocol)
- AppleTalk (the network protocol stack from Apple)
- ISDN or serial remote connections using 4D Remote (Macintosh only)

**Note:** Other protocols are currently being developed at ACI. We will inform you about the availability of new network components on bulletin boards and in mailings.

**Note:** The TCP/IP network component is also used from within 4th Dimension for handling the HTTP requests exchanged between the built-in Wbe Server and the Web browsers.

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The following sections list the software requirements for running each network protocol, as well as the availability of the network component for 4D Server.

### **Windows NT (Server or Workstation Versions)**

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- IPX: Part of the Windows NT operating system.
- TCP/IP: Part of the Windows NT operating system.
- AppleTalk: Part of the Windows NT operating system NT Server version only and requires the installation of the Macintosh Services.

**Note:** The network components for supporting IPX, TCP/IP and AppleTalk under Windows NT are provided with 4D Server version 6.0 or higher.

### **Windows 95**

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- IPX: Part of the Windows 95 operating system.
  - TCP/IP: Part of the Windows 95 operating system.
  - AppleTalk is available on Windows 95 from Miramar Systems, Inc.
- For pricing information and orders please contact:

Miramar Systems, Inc.  
121 Gray Avenue, Suite 200B  
Santa Barbara, California 93101  
FAX 805-965-1824  
Phone 805-966-2432

**Important:** Miramar's MacLAN Connect version 5.5.2 or later is required.

**Note:** The network components for supporting IPX, TCP/IP and AppleTalk under Windows 95 are provided with 4D Server version 6.0 or higher.

### **Macintosh**

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- IPX: Requires the MacIPX extension. The MacIPX installer is distributed by Novell, Inc. MacIPX, version 1.2.1 or later is required.
- TCP/IP: Requires the MacTCP extension or Open Transport, part of the Macintosh Operating system since System 7.5.
- AppleTalk: Part of the Macintosh operating system.

**Note:** The network components for supporting IPX, TCP/IP and AppleTalk on Macintosh are provided with 4D Server version 6.0 or higher.

**Tip:** The AppleTalk and TCP/IP network components run native on Power Macintosh, provided that Open Transport version 1.1 or later is installed on the machine. Running native enhances performance at the network communication level.

• 4D Remote, the network component for remote connection over serial phone lines or ISDN, is available only for the Macintosh platform. On Windows, use the Windows Remote Access Services.

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Choosing the protocols for your 4D Client/Server system depends on several parameters.

### **Current Hardware/Software Configurations at Your Site**

If you already have a Novell Netware server running in your organization, you probably have Netware Client for DOS/Windows already installed on your workstations. You can use the IPX protocol for your 4D Client/Server system with no additional cost for network support.

### **Maintenance and Reliability vs. Cost**

Windows NT provides easier maintenance and better reliability compared to Windows 95. For mission-critical client/server applications, we recommend using Windows NT as the server platform. In addition, when performance is a requirement regardless of cost, we recommend using Windows 95 as client stations, if not Windows NT.

### **Windows-based Systems**

If your 4D Client/Server system is Windows-based only, we recommend using IPX/SPX or TCP/IP, depending on your corporate standard.

### **Macintosh-based Systems**

If your 4D Client/Server system is Macintosh-based only, we recommend using AppleTalk.

### **Platform-independent Systems**

If your 4D Client/Server system is composed of both PCs and Macintoshes, we recommend running 4D Server on Windows NT or Power Macintosh, and using TCP/IP and AppleTalk for cross-platform network support, because these two protocols run native on Power Macintosh.

### **Testing**

The performance of your 4D Client/Server system also depends on the number of users you plan to have, the nature of the operations performed by the database, and the size and configuration of your network. There are no specific recommendations for determining the best protocol for your system, other than doing some initial testing as you put it into production.

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**Preliminary Note:** This section refers to Windows NT version 3.5.x. If you use version 4.0 or higher of Windows NT, refer to the section [All network protocols under Windows 95](#). The Windows NT 4.0 user interface is similar to that of Windows 95.

To install and configure any network protocol under Windows NT, proceed as follows:

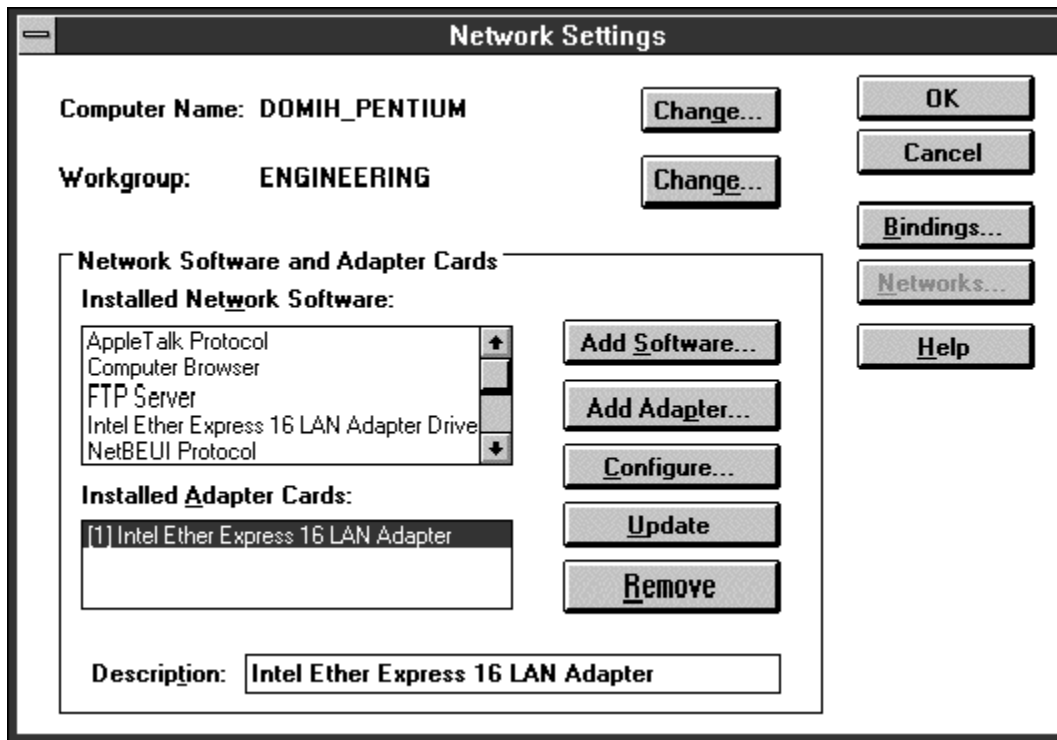
1. Open the Control Panel from the Main program group at the Program Manager level.



Control Panel

2. Open the Network Control Panel.

The Network Settings dialog box appears:



3. Click the Add Software button to add the network protocol you wish. Then follow the instructions you are given.

**Note:** Usually, network protocols are installed during the initial setup of the NT operating system. The other sections in this theme provide basic installation guidelines. If you have problems while installing or configuring a particular network protocol, please refer to your Windows NT documentation.

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**Preliminary Note:** This section refers to Windows NT version 3.5.x. If you use version 4.0 or higher of Windows NT, refer to the section [IPX/SPX under Windows 95](#). The Windows NT 4.0 user interface is similar to that of Windows 95.

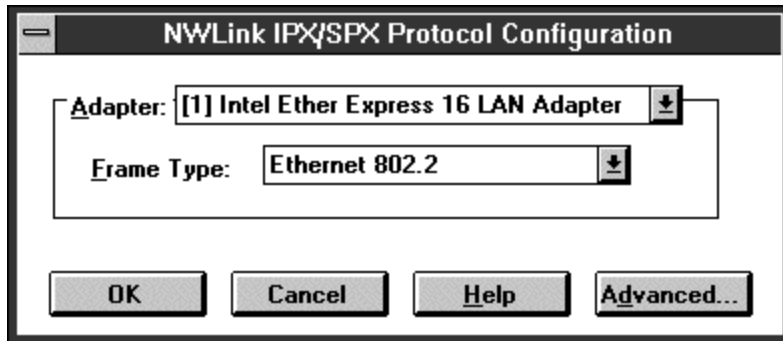
To install and configure the IPX/SPX protocol under Windows NT, proceed as follows:

1. At the Program Manager level, open the Control Panel from the Main program group.
2. Open the Network Control Panel.

The Network Settings dialog box appears.

3. Click the Add Software button.
4. Select NWLink IPX/SPX Compatible Transport and proceed with the installation.

The NWLink IPX/SPX Protocol Configuration window appears:



5. Set the options according to your hardware and network configurations. You may need the assistance of a network administrator to perform this task.

**Warning:** If you do not have a Novell Netware server on your network and if you plan to work with a Windows and Macintosh 4D Client/Server system, select Ethernet 802.3 as Frame Type on you server as well as all your client machines. Otherwise, select Auto-detected.

Although 4D Server and 4D Client include broadcasting capabilities over the network using IPX/SPX, it is useful to know how to manually obtain the IPX address of your server machine. To do so, you need to find the Internal Network Number and the Adapter Card Number (also called Node Address) of your server machine.

### Finding the Internal Network Number and the Node Address

Under Windows NT, proceed as follows:

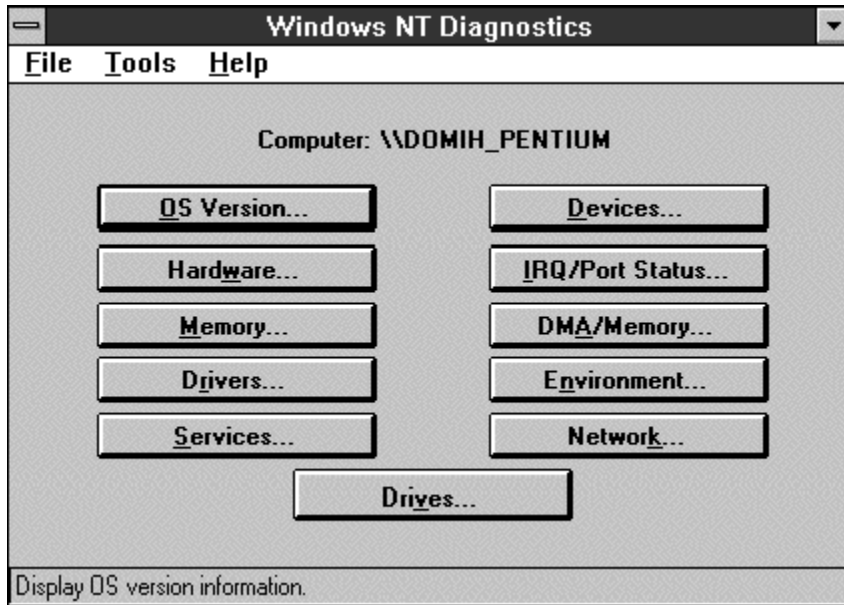
1. To obtain the network number, click the Advanced button in the NWLink IPX/SPX Protocol Configuration window. If you do not have a Novell Netware Server, it must be 00000000.
2. One way to obtain the adapter card number is to use the Windows Diagnostic utility program. Open the Windows NT Diagnostic utility program (its icon is located in the Administrative Tools program group at the Program Manager level).



Windows NT Diagnostics

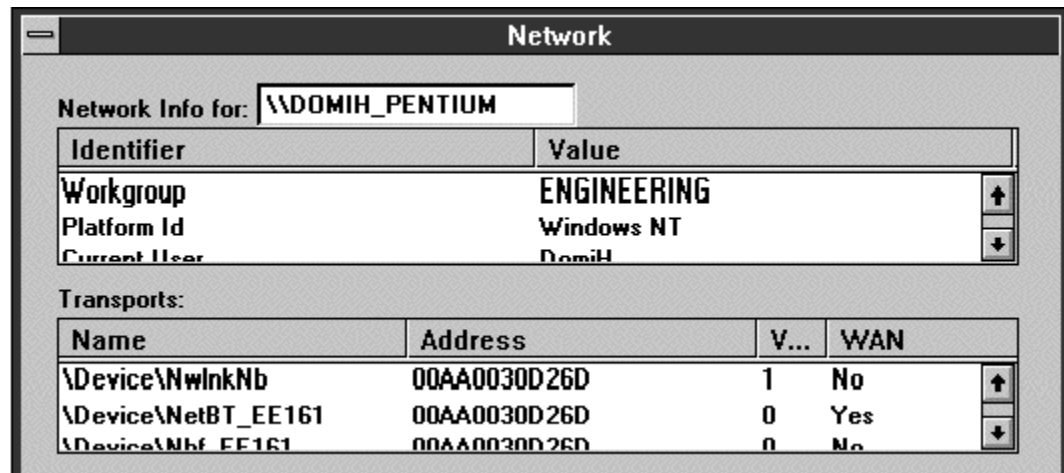
The Windows NT Diagnostics window appears:





3. Click the Network button.

The Network dialog box appears:



4. In the Transports table, find the line corresponding to the NWLink service. The Address column gives the hexadecimal adapter card number.

5. After you have the two numbers, concatenate them. This gives the IPX address of your server machine.

Using the example above, the address is 0000000000AA0030D26D.

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**Preliminary Note:** This section refers to Windows NT version 3.5.x. If you use version 4.0 or higher of Windows NT, refer to the section [TCP/IP under Windows 95](#). The user interface of these two types of Windows are similar.

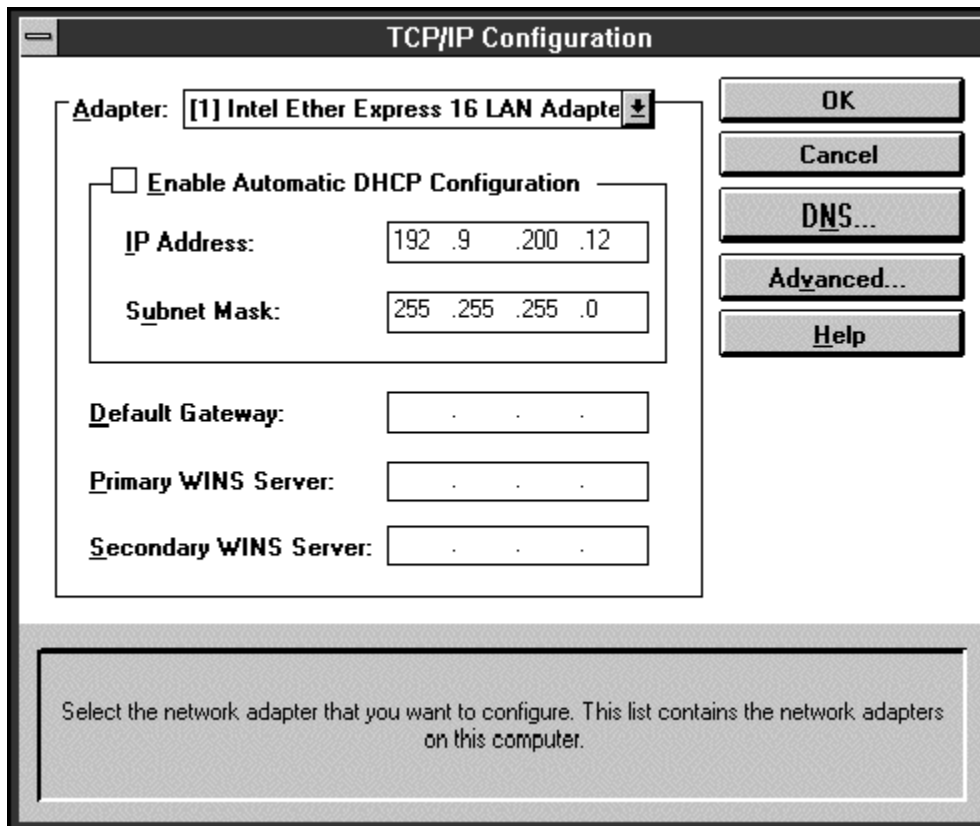
To install and configure the TCP/IP protocol under Windows NT, proceed as follows:

1. At the Program Manager level, open the Control Panel from the Main program group.
2. Open the Network Control Panel.

The Network Settings dialog box appears.

3. Click the Add Software button.
4. Select TCP/IP Protocol and related components and proceed with the installation.

The TCP/IP Configuration window appears:



5. Set the options according to your hardware and network configurations. You may need the assistance of a network administrator to perform this task, especially for obtaining a unique IP address. This address is used by 4D Server for publishing its name over the network, and by two to 12 4D Clients for retrieving the available databases present on the network.

**Warning:** If two machines use the same IP address, your 4D Client/Server session won't perform correctly via TCP/IP.

After you have correctly set up your Windows machines for TCP/IP, if you cannot establish a 4D Client/Server session via this protocol, it is a good idea to check if the machines can at least "see each other" over the network. A small DOS utility called PING enables you to do so.

### Using the PING Utility

1. Launch the MS-DOS Command prompt task for the client machine.



Command Prompt

2. At the DOS prompt, type PING IP\_Address\_of\_server, then press Enter.

If the two machine can reach other, the utility program tells you how long it took; otherwise, a time-out error is returned.

For example, in the window shown, the machine at the IP Address 192.9.200.198 could not be reached and the machine at the IP Address 192.9.200.11 was successfully reached.

A screenshot of a Windows NT Command Prompt window. The title bar reads "Command Prompt". The text inside the window shows the following sequence of commands and outputs:

```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1995 Microsoft Corp.

C:\users\default>ping 192.9.200.198

Pinging 192.9.200.198 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

C:\users\default>ping 192.9.200.11

Pinging 192.9.200.11 with 32 bytes of data:

Reply from 192.9.200.11: bytes=32 time<10ms TTL=60
Reply from 192.9.200.11: bytes=32 time<10ms TTL=60
Reply from 192.9.200.11: bytes=32 time<10ms TTL=60
Reply from 192.9.200.11: bytes=32 time<10ms TTL=60

C:\users\default>
```

**Note:** The server machine you are trying to reach can be a Windows or Macintosh platform.

If two machines cannot communicate via TCP/IP, you will not be able to run a 4D Client/Server using this protocol between these two machines.

If the PING utility successfully finds the server machine and if you cannot establish a 4D Client connection, check if the TCP/IP network component is correctly installed on both the server and the client machines.

**Tip:** If you have the option Enable Automatic DHCP Configuration set on the server machine, the TCP/IP configuration dialog box does not display the IP address of the machine. In order to obtain this address, use the MS-DOS utility program IPCONFIG. Once you obtain the address, you can test your network with PING.

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To install and configure the ADSP protocol under Windows NT, proceed as follows:

### On Windows NT 3.5.x

1. Open the Control Panel from the Main program group at the Program Manager level.
2. Open the Network Control Panel.

The Network Settings dialog box appears.

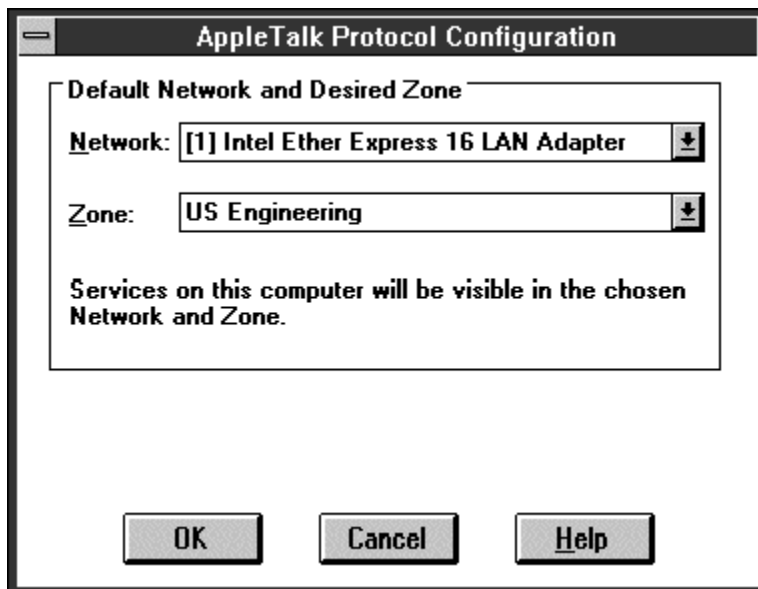
3. Click the Add Software button.
4. If you are using a Server version of NT, select Services for Macintosh.  
If you are using a Workstation version of NT, select AppleTalk protocol.

Both versions of Windows NT allow you to install the minimum AppleTalk stack necessary to run a 4D Client/Server session over the ADSP protocol. The Server version of Windows NT also integrates file sharing services for sharing NTFS volumes with your Macintoshes. If you work with both Windows and Macintosh (and do not have a Novell Netware server) you might want to use a Server version of Windows NT to share your volumes and files between your Windows and Macintosh stations.

4D Server does not require the additional services provided by the Server version of Windows NT. 4D Server can serve databases via ADSP on both the Workstation and Server versions of Windows NT.

5. Proceed with the installation.

The AppleTalk protocol configuration window appears.



**Note:** The Workstation version of the window is shown here.

6. Using the Zone drop-down list, choose the AppleTalk zone on which to publish your Windows NT machine.

This zone is also where 4D Server will be published, provided the ADSP network component is present.

### On Windows NT 4.0

1. Open the Control Panel using the Start menu of Windows NT.

2. Open the Network Control Panel.
3. Select the Protocols tab in the Network window.
4. If the AppleTalk Protocol is not listed, install it using the Add button.
5. Click on Properties to choose the AppleTalk zone on which to publish your Windows NT machine.

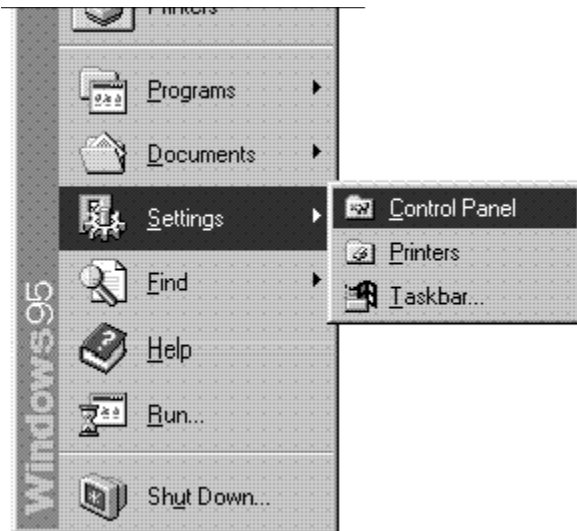
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To install and configure network protocols provided by the Windows 95 installer, proceed as follows:

1. Open the Control Panel using the Start menu of Windows 95.

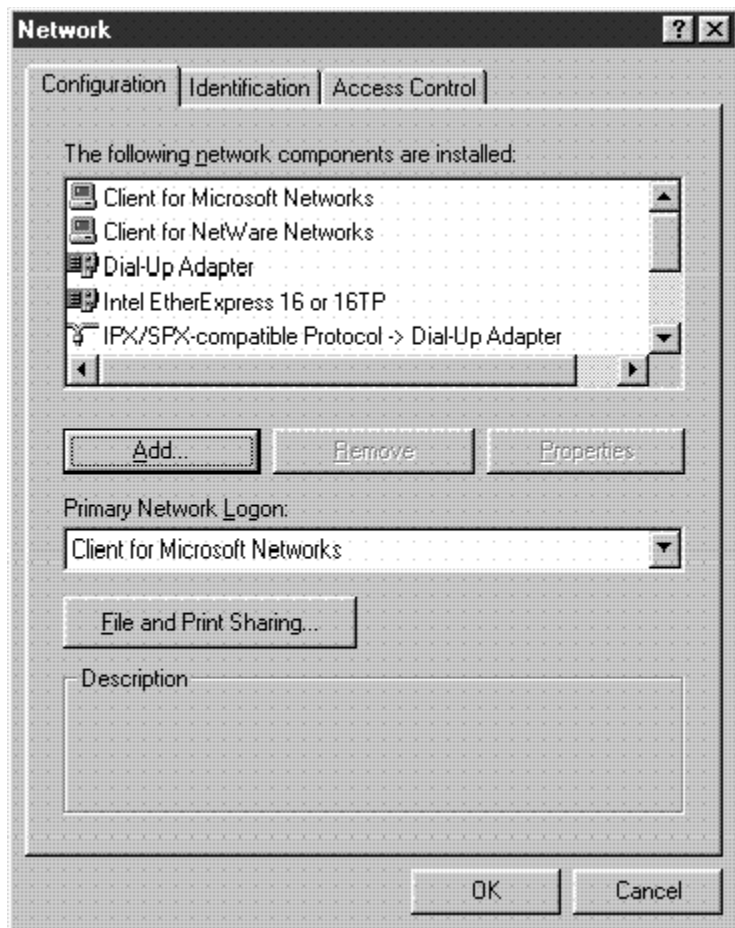


2. Open the Network Control Panel.



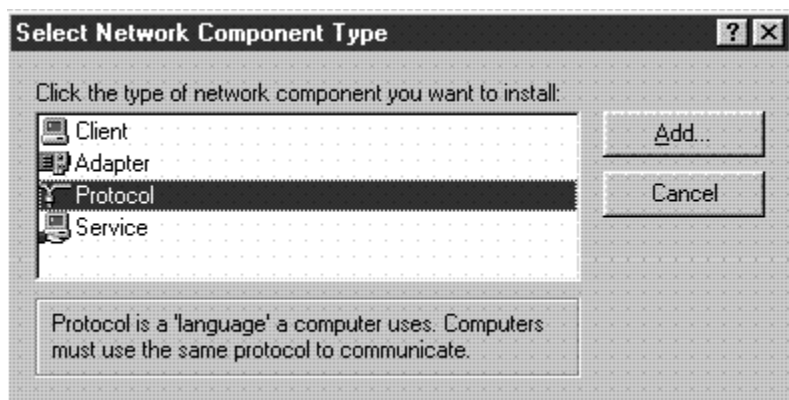
Network

The Network window appears:



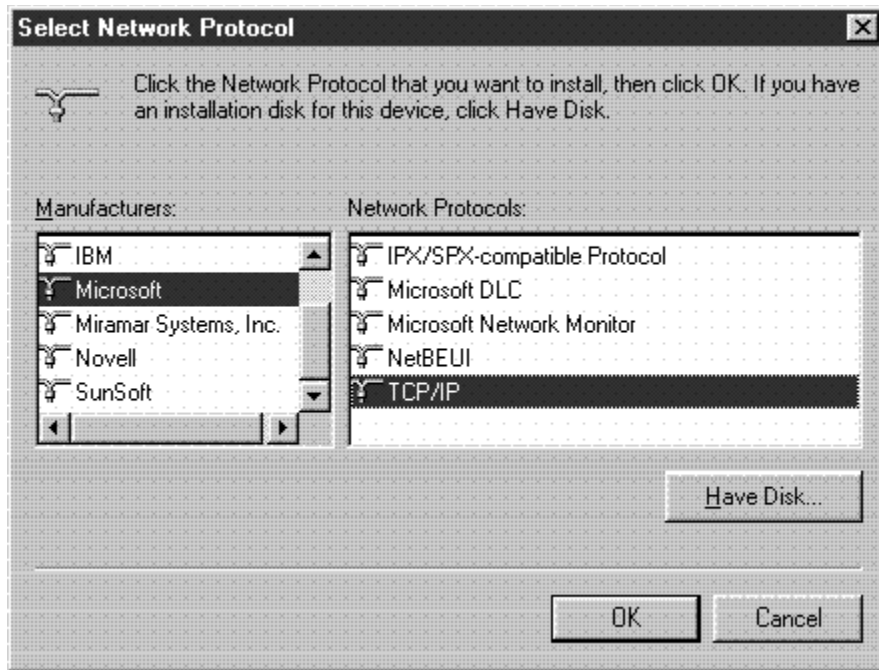
3. Click the Add button to add the network component you want.

The Select Network Component Type dialog box appears:



4. Select Protocol, then click the Add button.

The Select Network Protocol dialog box appears:



5. Select the manufacturer and the network protocol you want to install. Then follow the instructions you are given.

**Note:** Usually, network protocols are installed during the initial setup of the Windows 95 operating system. The other sections in this theme provide basic installation guidelines. If you have problems while installing or configuring a particular network protocol, please refer to your Windows 95 documentation.

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To install and configure the IPX/SPX protocol under Windows 95, proceed as follows:

### **Installing the Protocol**

1. Open the Control Panel using the Start menu of Windows 95.
2. Open the Network Control Panel.
3. The Network window appears.
4. Click the Add button to add the network component you want.

The Select Network Component Type dialog box appears.

5. Select Protocol, then click the Add button.

The Select Network Protocol dialog box appears.

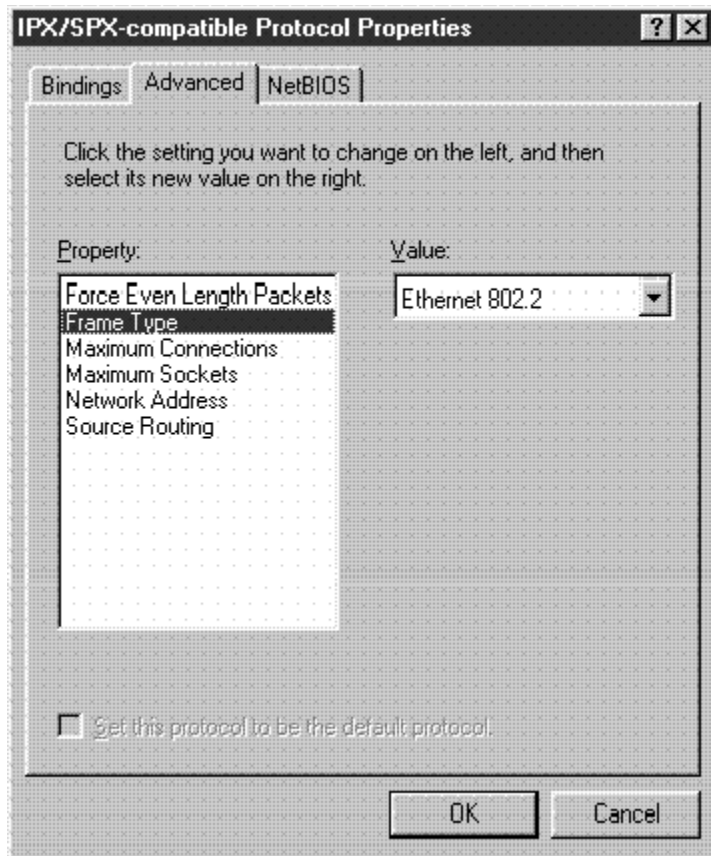
6. Select Microsoft as Manufacturer and IPX/SPX-Compatible Protocol as Network.
7. Click OK and proceed with the installation.

### **Configuring the Protocol**

After the installation is complete (you may need to restart your machine), you can configure the protocol.

1. Go back to the Network Control Panel window and select the IPX/SPX-Compatible Protocol line showing the binding to your network adapter.
2. Double-click on this line or click the Properties button.

The IPX/SPX-Compatible Protocol Properties window appears:



3. Set the different options depending on your hardware and network configurations. You may need the assistance of a network administrator to perform this task.

**Warning:** If you do not have a Novell Netware server on your network and if you plan to work with a Windows and Macintosh 4D Client/Server system, select Ethernet 802.3 as Frame Type on your server and on all your client machines. Otherwise, select Auto-detected.

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To install and configure the TCP/IP protocol under Windows 95, proceed as follows:

### **Installing the Protocol**

1. Open the Control Panel using the Start menu of Windows 95.
2. Open the Network Control Panel.
3. The Network window appears.
4. Click the Add button to add the network component you want.

The Select Network Component Type dialog box appears.

5. Select Protocol, then click the Add button.

The Select Network Protocol dialog box appears.

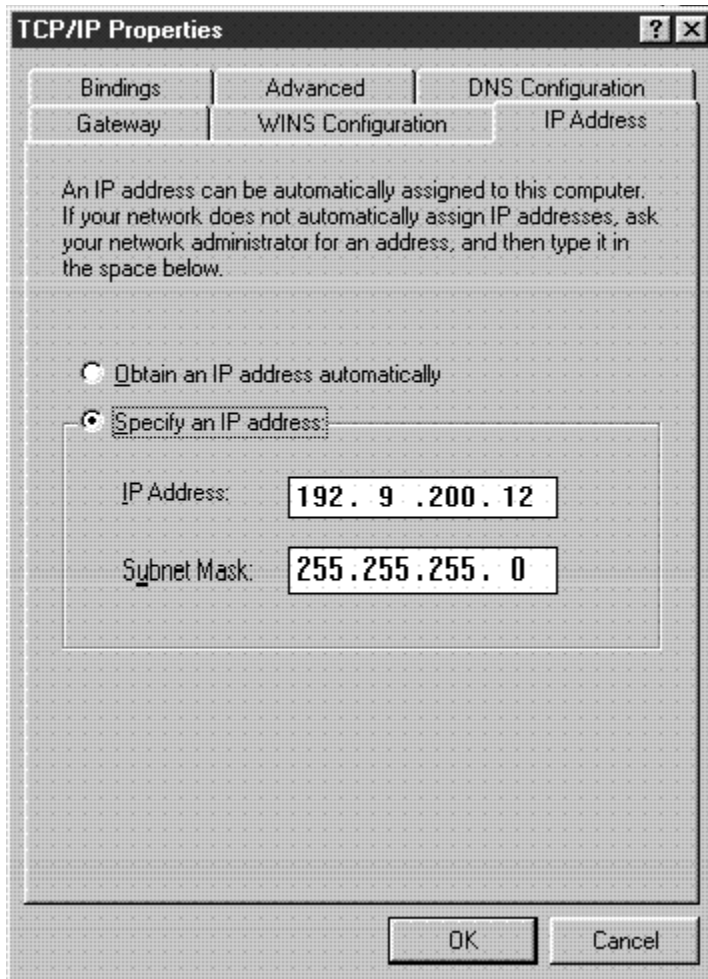
6. Select Microsoft as Manufacturer and TCP/IP as Network.
7. Click OK and proceed with the installation.

### **Configuring the Protocol**

After the installation is complete (you may need to restart your machine), you can configure the protocol.

1. Return to the Network Control Panel window.
2. Select the TCP/IP line showing the binding to your network adapter. Double-click on this line or click the Properties button.

The TCP/IP Properties window appears:



3. Set the options according to your hardware and network configurations.

You may need the assistance of a network administrator to perform this task, especially for obtaining a unique IP address. This address is used by 4D Server for publishing its name over the network, and by 4D Client for retrieving the available databases present on the network.

**Warning:** If two machines use the same IP address, your 4D Client/Server session won't perform correctly via TCP/IP.

#### **Checking the Network Using the PING Utility**

After you have correctly set up your Windows machines for TCP/IP, if you cannot establish a 4D Client/Server session via this protocol, it is a good idea to check if the machines can at least "see each other" over the network. A small DOS utility called PING allows you to do so.

Under Windows 95, launch the MS-DOS Prompt (from the Programs hierarchical menu of the Start menu), and proceed as described in the section *TCP/IP under Windows NT*.

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## AppleTalk under Windows 95

Topics for Configuring your protocol on Windows 95

version 6.0.2

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Miramar's MacLAN Connect is provided with its own installation program. For more information, please refer to the documentation of this product.

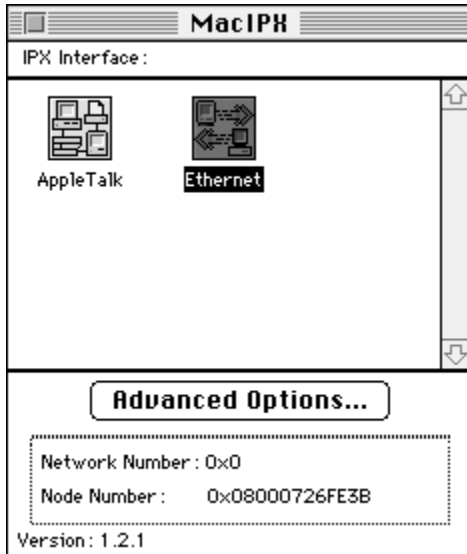
**Important:** Miramar's MacLAN connect version 5.5.2 or later is required.

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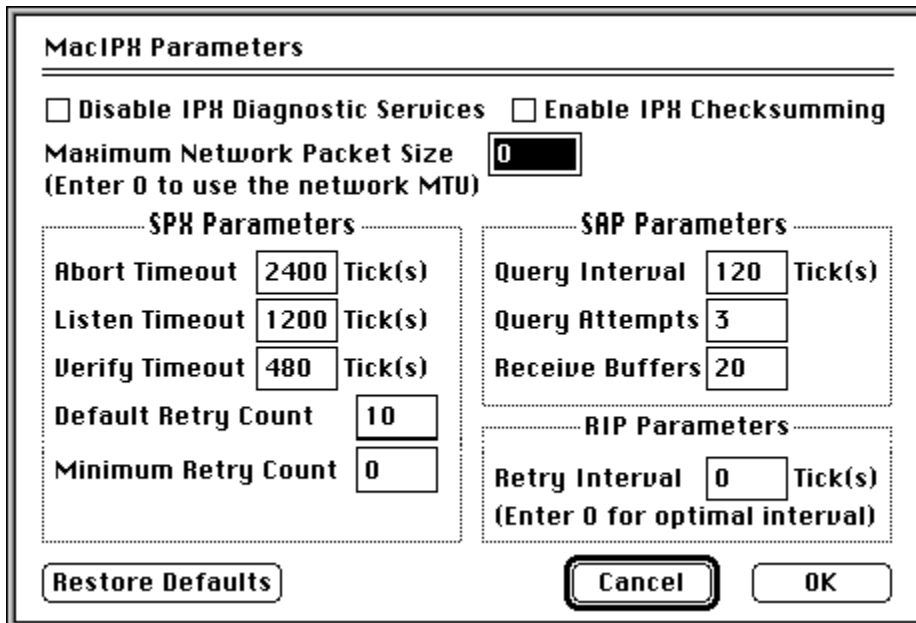
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The IPX/SPX protocol is not part of the standard Macintosh operating system. If you plan to establish 4D Client/Server connections on Macintosh using this protocol, you must install MacIPX on your machines. To do so, use the MacIPX™ Workstation installer that you can obtain from Novell, Inc. If you plan to also distribute this installer as part of a 4D Client/Server custom application, you must obtain redistribution rights from Novell, Inc. After you have installed MacIPX and restarted your Macintosh, the MacIPX Control Panel is available.



To access the secondary dialog box, click the Advanced Options button.



Set the options according to your hardware and network configurations. You may need the assistance of a network administrator to do so.

Although 4D Server and 4D Client include broadcasting capabilities over the network using IPX/SPX, it is useful to know how to obtain the IPX address of your server machine manually. To do so, you must concatenate the Network

Number and the Node Number of your server machine. These numbers are displayed in the bottom part of the MacIPX Control Panel window.

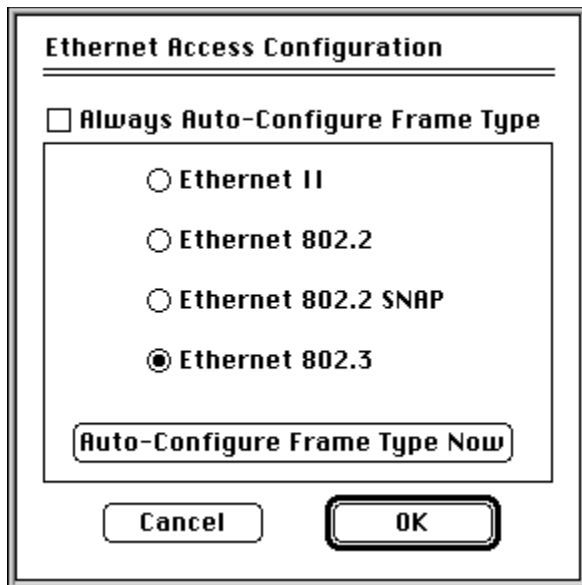
In the example above, the IPX address of the machine is: *000000008000726FE3B*.

**Note:** If you do not have a Novell Netware Server, the Network Number must be *00000000*.

If you do not have a Novell Netware server on your network and if you plan to work with a Windows and Macintosh 4D Client/Server system, choose Ethernet 802.3 as the Frame Type on your server as well as on all your client machines.

To do so on Macintosh:

1. Click on the Ethernet icon in the MacIPX Control Panel Window. This opens the Ethernet Access Configuration dialog box.



2. Deselect the Always Auto-Configure Frame Type check box.
3. Select the Ethernet 802.3. 3 radio button.
4. Click OK to validate your choice.

For more information about configuring MacIPX, please refer to the MacIPX documentation and the Macintosh User Guide.

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The TCP/IP protocol is included in the Macintosh operating system with System 7.5 or later:

- If you are using a previous version of Mac™ OS, you must install TCP/IP on your machine to establish 4D Client/Server connections via this protocol. In this case, read the section **Using MacTCP**.
- If TCP/IP is built-in to your system, read the section **Using Open Transport**.

### Using MacTCP

---

To install MacTCP, use the MacTCP Installer utility program. This installer is not provided with 4D Server. You can obtain it from Apple Computer, Inc.

After you have installed MacTCP and restarted your Macintosh, the MacTCP Control Panel is available:



To access the secondary dialog box, click the More button.



Set the options according to your hardware and network configurations. You may need the assistance of a network administrator to perform this task, especially for obtaining a unique IP address. This address is used by 4D Server for publishing its name over the network, and by 4D Client for retrieving the available databases present on the network.

**WARNING:** If two machines use the same IP address, your 4D Client/Server session will not perform correctly via TCP/IP.

For more information about configuring MacTCP, please refer to the MacTCP documentation and the Macintosh User Guide.

### Using Open Transport

---

Open the TCP/IP Control Panel, shown here.





Set the options according to your hardware and network configurations. You may need the assistance of a network administrator to do so, especially to obtain a unique IP address. This address is used by 4D Server for publishing its name over the network, and by 4D Client for retrieving the available databases present on the network.

**WARNING:** If two machines use the same IP address, your 4D Client/Server session will not perform correctly via TCP/IP.

For more information about configuring Open Transport TCP/IP, please refer to the Open Transport documentation and the Macintosh User Guide.

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AppleTalk is part of the Macintosh operating system; no additional installation is required. This protocol configures itself (auto-configures).

There are three settings to check:

1. If you use Open Transport, select your AppleTalk zone and the connection port, using the AppleTalk Control Panel.



2. Make sure that AppleTalk is active on your machine. To do so, open the Chooser and check whether the AppleTalk Active radio button is selected.



3. Enter the Owner Name information in the Sharing Setup Control Panel. The Owner Name is displayed in the main window of the 4D Server to which you connect.



For more information about configuring your AppleTalk network settings on Macintosh, please refer to your Macintosh User Guide.

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The IPX/SPX, TCP/IP and AppleTalk network components are installed automatically on your Windows machine during the installation of 4D Server or 4D Client. Usually, you will not need to manually intervene with this automatic installation. However, it is useful to know where the network components are installed so that you can:

- Remove components you do not want to use
- Troubleshoot problems
- Check the versions you are using when new updates become available

### File Organization

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The network component libraries are installed in the `\ACI\Network` subdirectory located in your active Windows directory. The file organization (assuming `C:\WINDOWS` is your active Windows directory) is as follows:



- `4DNCADSP.DLL` is the 4D Client/Server network component for the AppleTalk protocol.
- `4DNCIPX.DLL` is the 4D Client/Server network component for the IPX/SPX protocol.
- `4DNCADSP.DLL` is the 4D Client/Server network component for TCP/IP protocol.

These three libraries are installed in the `C:\WINDOWS\ACI\Network` directory.

**WARNING:** Do not rename, delete or change the location of these files, UNLESS you are certain of what you are doing.

**Important note:** If you are running several Windows configurations (NT and 95) installed in different directories, you may have to install the network components several times, depending on the operating system version launched when you start your computer.

### Updates

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ACI may release future updates of the network components. To check if you are using the latest update, go to the Desktop and display the Properties for the library in question.

### Preferences

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In addition to the libraries described in the preceding sections, each network component stores its settings and preferences in an `.OPT` file created in the `\ACI` subdirectory within the active Windows directory. The `.OPT` files (one per network component) are binary files that can be customized using the Customizer Plus utility program.

- `ADSP.OPT` contains the setting of the AppleTalk network component.
- `IPX.OPT` contains the setting of the IPX/SPX network component.
- `TCP.OPT` contains the setting of the TCP/IP network component.

**WARNING:** Do not directly edit the `.OPT` files using a text editor, such as Windows Note Pad.

For more information on customizing network components, please refer to the section Network Components of the Customizer Plus electronic documentation.

**Tip:** When you update a network component with a more recent version and if the new version does not work as expected, delete the *.OPT* file for that network component; a new *.OPT* file will be created automatically.

## **Access to the Server**

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To prevent a Windows 4D Client from connecting to any 4D Server using a given protocol, remove the corresponding files from the *Network* subdirectory on the client machine.

To prevent any 4D Client machines from connecting to a particular Windows 4D Server using a given protocol, remove the corresponding files from the *Network* subdirectory on the server machine.

**WARNING:** Be careful when removing networking files. If a 4D Server or 4D Client does not find any network component available in the *Network* subdirectory, the program displays an error message similar to the alert shown below, and then exits.



You then need to reinstall the network component(s).

To selectively prevent access to a particular 4D Server, you can use Customizer Plus to customize the network components for 4D Server and 4D Client so that access is limited. For more information, please refer to the section Network Components of the Customizer Plus electronic documentation.

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The IPX/SPX, TCP/IP and AppleTalk network components are pre-installed in the Macintosh version of 4D Server and 4D Client 6.0 or higher. In addition, an installer program for each component is provided.

Although network components are pre-installed, you may need to use installers to:

- Remove components you do not want to use
- Troubleshoot problems
- Check the versions you are using when new updates become available

The network component installers are identical in terms of functionality and user interface.

The TCP/IP Network Component Installer window looks like this:



### Using the Installer

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1. Click the Open button to select the 4D Server or 4D Client application with which you want to work. Once you have opened an application, the Information area shows the version number of the currently installed network component.
2. Click Install or Delete, depending on what you want to do next.
3. Click Quit when you are done.

### Preferences

---

Each network component stores its settings and preferences in an *.OPT* file created in the *ACI* folder (located in the System Preferences folder). The *.OPT* files (one per network component) are used for storing the information set by the Customizer Plus utility program.

For more information on customizing network components, please refer to the section Network Components of the Customizer Plus electronic documentation.

- *ADSP.OPT* contains the setting of the AppleTalk network component.
- *IPX.OPT* contains the setting of the IPX/SPX network component.
- *TCP.OPT* contains the setting of the TCP/IP network component.

**WARNING:** Do not directly modify the contents of an *.OPT* file.

**Tip:** When you update a network component with a more recent version and if the new version does not work as expected, delete the *.OPT* file for that network component; a new *.OPT* file will be created automatically.

### Access to the Server

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To prevent a Macintosh 4D Client from connecting to any 4D Server using a given protocol, remove the corresponding network component from the 4D Client application.

To prevent any 4D Client machines from connecting to a given Macintosh 4D Server using a particular protocol,

remove the corresponding network component from the 4D Server application.

**WARNING:** Be careful when removing networking files. If a 4D Server or 4D Client application does not contain any network component, the program displays an error message similar to the alert shown below, and then exits.



To selectively prevent access to a particular 4D Server, you can use Customizer Plus to customize the network components for 4D Server and 4D Client so that access is limited. For more information, please refer to the section Network Components of the Customizer Plus electronic documentation.

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The following table lists the errors that can be returned by a network component.

<b>Code</b>	<b>Description</b>
-10001	The actual connection to the database has been disrupted.
-10002	The connection for this process has been disrupted.
-10003	Bad connection parameters.
-10020	No server was selected while using <a href="#">OP Select 4D Server</a> .
-10021	No server was found while using <a href="#">OP Find 4D Server</a> .
-10050	Unknown option in <i>Get/SetOption</i> .
-10051	Incorrect value in <i>Get/SetOption</i> .
-10130	The state of the connection does not allow you to continue this session.
-10131	The connection has been aborted.
-10132	Some connection parameters are invalid.
2	The user clicked the Other button while using <a href="#">OP Select 4D Server</a> .

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