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6700-A2-GB22-00  
Issue 1  
September 1994

**COMSPHERE**  
6700 Series  
Network Management System  
Network Configuration Guide



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# COMSPHERE

## 6700 Series Network Management System

Network Configuration Guide

6700-A2-GB22-00

Issue 1 (September 1994)

Changes and enhancements to the product and to the information herein will be documented and issued as a new release.

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# Preface

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This guide describes how to use the COMSPHERE® 6700 Series Network Management System (NMS) Network Configuration Guide.

This manual assumes you have a basic understanding of LAN, networks and their adapters, modems and their operation, are knowledgeable about data communications, and are familiar with **Windows**™ terminology and conventions. You or your LAN administrator should also have knowledge of TCP/IP.

## Related Documents

---

- |              |   |
|--------------|---|
| 3510-A2-GA31 | <i>COMSPHERE 3000 Series Carrier, Installation Manual</i>   |
| 3610-A2-GB41 | <i>COMSPHERE 3600 Series Data Service Units, Models 3610 and 3611, Time Division Multiplexer, Multichannel Multipoint, and Digital Bridge Options, Applications Guide</i> |
| 3610-A2-GB91 | <i>COMSPHERE 3600 Series Data Service Units, Models 3610 and 3611, Operator's Guide (with Reference Card insert)</i>  |
| 3610-A2-GN32 | <i>COMSPHERE 3600 Series Data Service Units, Models 3610 and 3611, Dial Backup Module and SNA Diagnostic Interface Options, Applications Guide</i>                        |
| 3810-A2-GB91 | <i>COMSPHERE 3800 Series Modems, Models 3810, 3811, and 3820, User's Guide</i>  |

- 3910-A2-GN32 *COMSPHERE 3900 Series Modems, Models 3910 and 3911, Point-to-Point/Multipoint, Installation and Operation Manual*
- 6700-A2-GB20 *COMSPHERE 6700 Series Network Management System SNMP Proxy Agent Feature User's Guide*
- 6700-A2-GB41 *COMSPHERE 6700 Series Network Management System Security Manager Feature Supplement*
- 6700-A2-GY31 *COMSPHERE 6700 Series Network Management System User's Guide*
- 1001-40-1940 *NEWT TCP/IP for Windows Installation and User's Guide*

### **Ordering Information**

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To order AT&T Paradyne documentation, please call 1-800-545-2354.

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## Overview

# 1

---

This chapter describes the Network Configuration feature, explains how to access this feature, and provides a diagram of its menu structure.

### **What is the Network Configuration Feature?**

---

The Network Configuration feature allows you to customize your COMSPHERE 6700 Series NMS base software, client, and/or SNMP Proxy Agent features.

### **Preparing for Network Configuration**

---

Before network configuration, you need some system and network information. Use the following form to collect the necessary information before you start the installation process. Retain this form as a record of this information. Examples are shown in parentheses.

<b>Network Configuration Information</b>
<p><b>General</b></p> <p>Where to install the software (c:\pcnms): _____</p> <p>Location of network drivers (c:\pcnms): _____</p> <p>Software Serial Number (1493018): _____</p> <p>Software Key Number (dkjslmo): _____</p> <p>Network Interface Name (Ethernet0): _____</p> <p>Network Interface Type (Ethernet): _____</p>
<p><b>Workstation</b></p> <p>Internet Address of Workstation (192.0.2.2): _____</p> <p>Unique Node Name (Largo Bld. J): _____</p> <p>NMS Server(s) IP Address (192.0.2.1): _____</p>
<p><b>LAN/Hardware Interface</b></p> <p>Adapter Vendor Name (Western Digital): _____</p> <p>Board Type (Ether Card Plus): _____</p> <p>Interrupt Level (5): _____</p> <p>I/O Base Address (0x300): _____</p>
<p><b>SLIP Interface</b></p> <p>Baud Rate (9600): _____</p> <p>Flow Control (Hardware): _____</p> <p>Modem Type (Hayes® compatible): _____</p> <p>Port (COM 1): _____</p> <p>Telephone Number (9,1,813-530-2671): _____</p>
<p><b>Optional</b></p> <p>Subnet Mask (255.255.255.0): _____</p> <p>Default Gateway (192.0.2.254): _____</p>

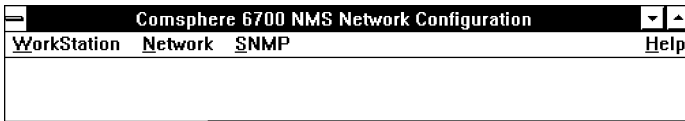
## Accessing the Network Configuration Feature

---

To access the Network Configuration feature, access the Windows Program Manager and choose the icon shown below from the COMSPHERE 6700 Program Group.



The Network Configuration Main Menu appears, as shown in Figure 1-1.



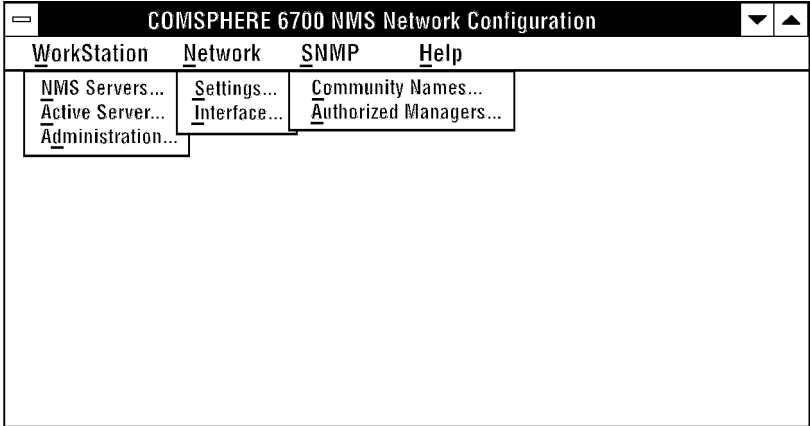
---

**Figure 1-1. Network Configuration Main Menu**

## Main Menu Options

---

Figure 1-2 shows the menu options available from the Main Menu.



494-14492

---

**Figure 1-2. Network Configuration Main Menu Options**

Use the procedures in the following chapters to customize your configuration using these menu options.

---

# Workstation Settings

# 2

---

This chapter provides procedures for configuring a workstation's server-related settings.



## Designating NMS Server Names and IP Addresses

---

For each NMS multiuser client, you must designate a server, and each NMS server must have a name and Internet Protocol (IP) address.

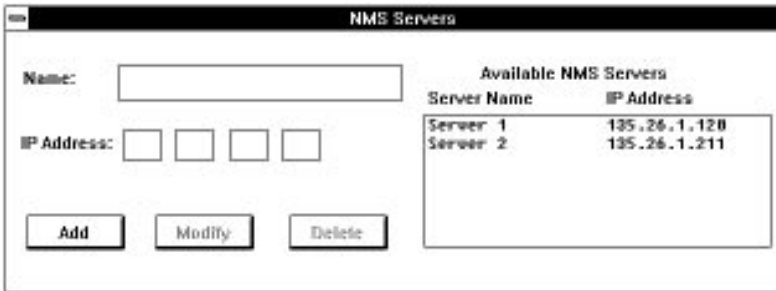
### Adding Names and IP Addresses

---

Use **NMS Servers...** to build a database of NMS server names and IP addresses. You can then use this database to select the NMS server for a multiuser client.

#### Procedure

1. Select **Workstation** from the Main Menu.
2. Choose **NMS Servers....** The NMS Servers dialog box appears, as shown in Figure 2-1.



---

**Figure 2-1. NMS Server Dialog Box**

3. In the **Name** field, enter the name of the NMS server (maximum 15 characters).
4. In the **IP Address** field, enter the NMS server IP address.
5. Choose **Add**. The new name and IP address appear in the Available NMS Servers list box.

6. Repeat Steps 3–5 for each IP address you need to add.
7. Choose **Close** from the Control menu to return to the Main Menu.

## **Modifying or Deleting Names and IP Addresses**

---

Use **NMS Servers...** to maintain the NMS server name and IP address database.



### **Procedure**

1. Select **Workstation** from the Main Menu.
2. Choose **NMS Servers...** The NMS Servers dialog box appears, as shown in Figure 2-1.
3. Choose the name of the server you wish to modify or delete from the Available NMS Servers list box. That name and address appears in the **Name** and **IP Address** fields.
4. Change the name and/or IP address and choose **Modify** or **Delete**, as appropriate.
5. Repeat Steps 3 and 4 for each server name and IP address you need to modify or delete.
6. Choose **Close** from the Control menu to return to the Main Menu.

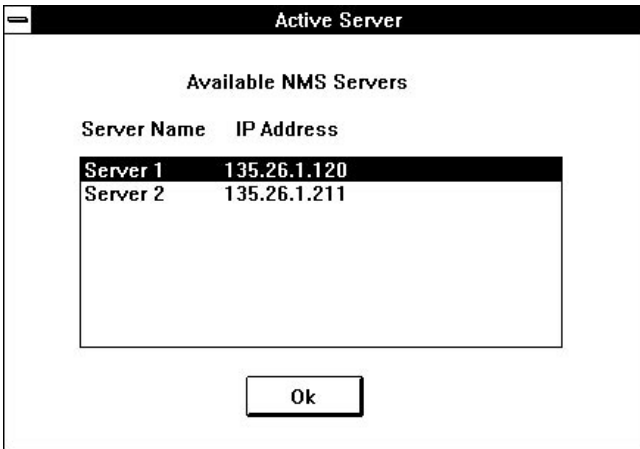
## Choosing the Active Server

---

Use **Active Server...** to choose the active server for the NMS client. After you choose an active server with this command, the NMS client uses the IP address you set up using **NMS Servers...** to communicate with that server.

 **Procedure**

1. Select **Workstation** from the Main Menu.
2. Choose **Active Server...** The Active Server dialog box appears, as shown in Figure 2-2.



---

**Figure 2-2. Active Server Dialog Box**

3. Select a server from the Available NMS Servers listbox.
4. Choose **OK**. The Main Menu appears.

 **NOTE:**

If you change the NMS server while the NMS is active, you must restart NMS.

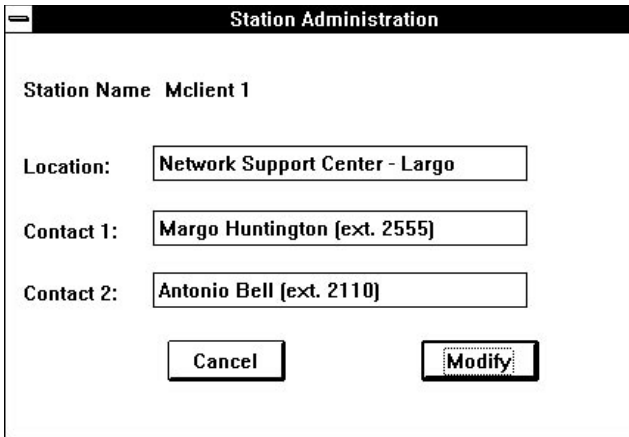
## Entering Administrative Data

---

Use **Administration** to enter information about who to contact should the workstation require human interaction.

### Procedure

1. Select **Workstation** from the Main Menu.
2. Choose **Administration**. The Station Administration dialog box appears, as shown in Figure 2-3.



**Station Administration**

Station Name Mclient 1

Location: Network Support Center - Largo

Contact 1: Margo Huntington [ext. 2555]

Contact 2: Antonio Bell [ext. 2110]

Cancel Modify

---

**Figure 2-3. Station Administration Dialog Box**

The Station Name appears at the top of the dialog box. This is the name entered for this workstation during the installation process.

3. Use the **Location**, **Contact 1**, and **Contact 2** fields to enter administrative information about this workstation. Each field contains a maximum of 40 characters.
4. Choose **Modify**.

---

## Configuration Files and Interfaces

# 3

---

This chapter provides procedures for configuration file and interface manipulation.

## Configuration Files

Use the **File** menu on the Custom window menu bar to save and exit a configuration file. To access the Custom window (shown in Figure 3-1), choose **Settings...** from the Network menu.

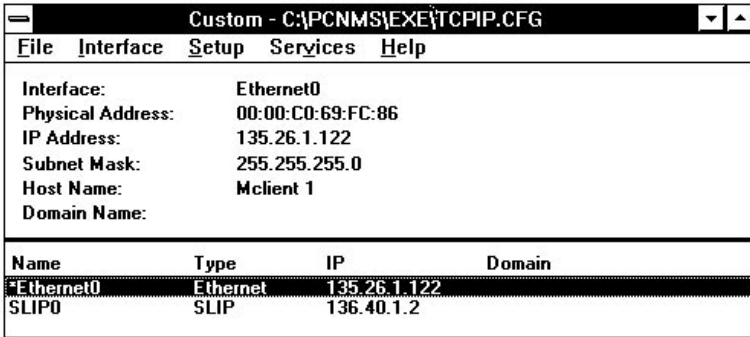


Figure 3-1. Custom Window

### Saving a Configuration File

To save a configuration file, choose **Save** from the File menu on the Custom window menu bar.

### Exiting a Configuration File

To exit a configuration file, choose **Exit** on the File menu on the Custom window menu bar. This closes the configuration file and exits the Custom window.

## Interfaces

---

Use the **Interface** menu on the Custom window to add, duplicate, or delete an interface. You must configure at least one interface.

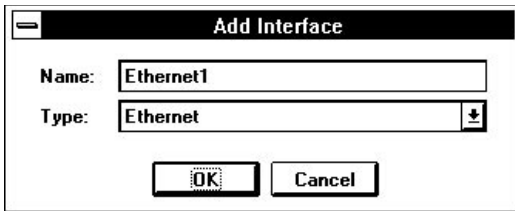
### Adding an Interface

---

Use **Add** on the Custom window's Interface menu to add an interface to a configuration file.

#### Procedure

1. Choose **Settings** from the Network menu. The Custom window appears, as shown in Figure 3-1.
2. Choose **Interface** from the Custom window menu bar.
3. Choose **Add** from the Interface menu. The Add Interface window appears, as shown in Figure 3-2.



---

**Figure 3-2. Add Interface Window**

4. Select the type of interface using the selection list button to the right of the **Type** field.
5. Enter the name of the interface in the **Name** field. The default is **Ethernet0**.
6. Choose **OK**.

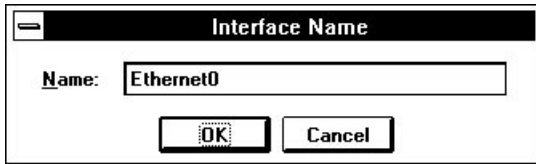
## Duplicating an Interface

---

Use **Duplicate** on the Custom window's Interface menu to create copies of an interface that differ only slightly. For example, use **Duplicate** for the same IP, subnet, and port where each interface has its own telephone number.

### Procedure

1. Choose **Settings** from the Network menu. The Custom window appears, as shown in Figure 3-1.
2. Select the interface from the bottom of the Custom window.
3. Choose **Interface** from the Custom window menu bar.
4. Choose **Duplicate** from the Interface menu. The Interface Name dialog box appears, as shown in Figure 3-3.



---

**Figure 3-3. Interface Name Dialog Box**

5. Enter a unique name for the interface in the **Name** field.
6. Choose **OK**.



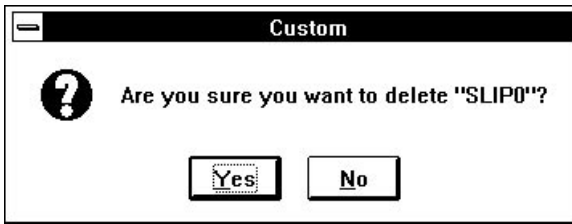
## Deleting an Interface

---

Use **Delete** on the Custom window's Interface menu to delete an interface.

### Procedure

1. Choose **Settings** from the Network menu. The Custom window appears, as shown in Figure 3-1.
2. Select the interface from the bottom of the Custom window.
3. Choose **Interface** from the Custom window menu bar.
4. Choose **Delete** from the Interface menu. The Delete Interface dialog box appears, as shown in Figure 3-4.



---

**Figure 3-4. Delete Interface Dialog Box**

5. Choose **Yes**. This closes the dialog box.

## Automatically Connecting Interfaces

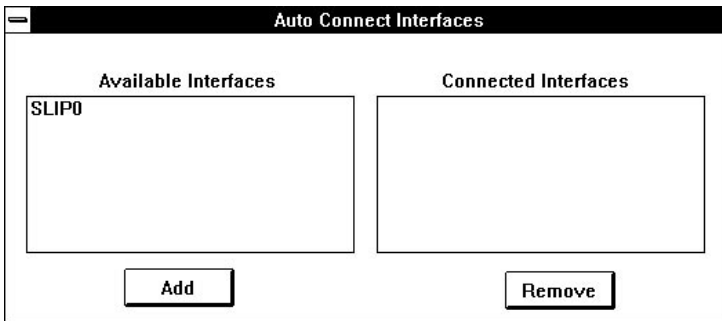
---

Use **Interface** on the Network Configuration main menu to set up serial interfaces to automatically connect at system startup. Also use this command to remove interfaces from the automatic connection list.

**⇒ NOTE:**

You must configure the devices and the COMSPHERE 6700 Series NMS interfaces before you can use this procedure to automatically connect those interfaces. Also, the COMSPHERE 6700 NMS must be running.

To set up automatically connecting interfaces, choose **Interface** from the Network pull-down menu. The Auto Connect Interfaces dialog box appears, as shown in Figure 3-5.



---

**Figure 3-5. Auto Connect Interfaces Dialog Box**

This dialog box shows all available interfaces not set up for automatic connection in the left list box, and all interfaces previously set up for automatic connection in the right list box.

To *add an interface* to the auto connect list, highlight the desired interface in the Available Interfaces list box, then select **Add**.

To *remove an interface* from the auto connect list, highlight the desired interface in the Connected Interfaces list box, then select **Remove**.

---

## SNMP Settings

# 4

---

This chapter provides procedures for SNMP-specific settings.

## Configuring SNMP Community Names

---

Use **Community Names...** on the SNMP menu to configure SNMP community names for use by the COMSPHERE 6700 Series SNMP Proxy Agent.

### Uses

---

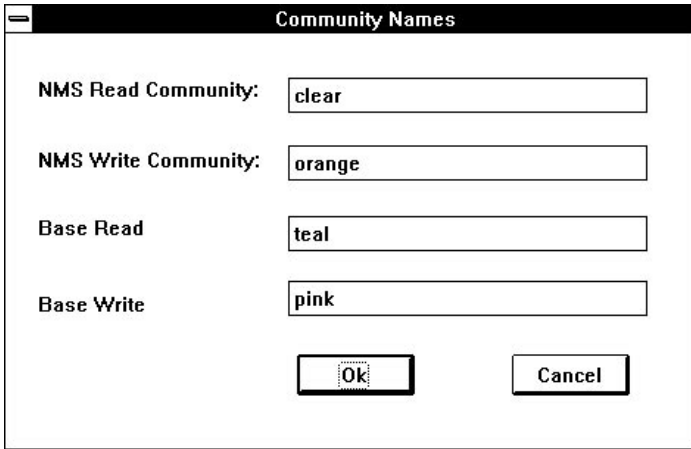
The SNMP Proxy Agent uses these names to:

- Determine which SNMP messages to process
- Determine how to identify itself when issuing SNMP Trap messages to an SNMP Manager
- Provide a limited security function, when used in conjunction with the Authorized Managers table

The NMS Read and Write Community names control access to the 6700 Series NMS MIB. The Base Read and Write Community names control access to the 6700 Series Device MIB.

 **Procedure**

1. Choose **Community Names...** from the SNMP menu. The Community Names dialog box appears, as shown in Figure 4-1.



---

**Figure 4-1. Community Names Dialog Box**

2. Make the required entries. Table 4-1 describes the fields in the Community Names dialog box.

**Table 4-1. Community Names Dialog Box Fields**

<b>Field</b>	<b>Character Length</b>	<b>Default</b>	<b>Description</b>
NMS Read Community	0–32	public	Name for issuing “Read” (GET) commands for NMS. A null entry causes the agent to accept any community name.
NMS Write Community	0–32	public	Name for issuing “Write” (SET) commands for NMS. A null entry causes the agent to accept any community name.
Base Read	0–16	(Blank)	Name for issuing “Read” (GET) commands for NMS devices. The device name (within 6700 Series NMS) is appended to this name to form the specific device read community name.
Base Write	0–16	(Blank)	Name for issuing “Write” (SET) commands for NMS devices. The device name (within 6700 Series NMS) is appended to this name to form the specific device write community name.

3. Choose **OK**. The Main Menu appears.

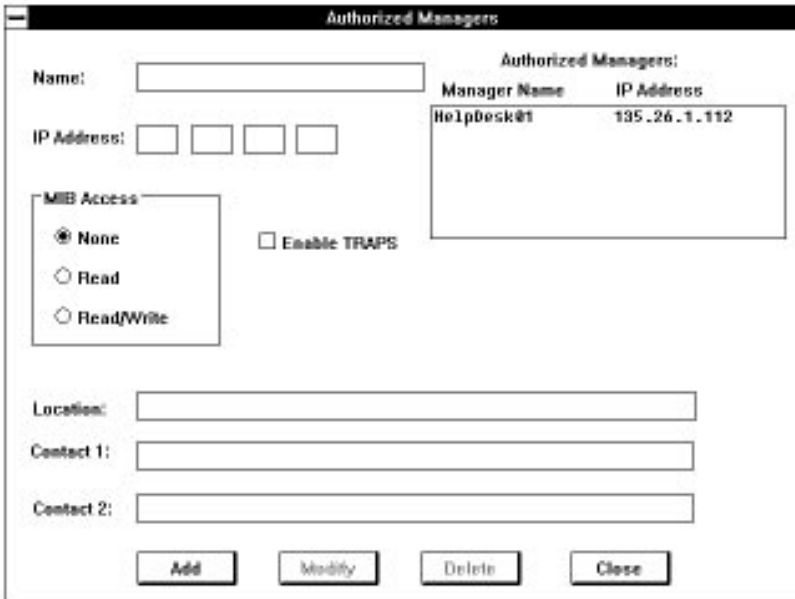
## Configuring Authorized SNMP Managers

Use **Authorized Managers...** in conjunction with **Community Names...** to determine which SNMP messages to process.

### Adding Authorized Manager Information

#### Procedure

1. Choose **Authorized Managers...** from the SNMP menu. The Authorized Managers dialog box appears, as shown in Figure 4-2.



Authorized Managers:	
Manager Name	IP Address
HelpDesk@t	135.26.1.112

Figure 4-2. Authorized Managers Dialog Box



2. Make the required entries. Table 4-2 describes the fields on the Authorized Managers dialog box.

**Table 4-2. Authorized Managers Dialog Box Fields**

<b>Field</b>	<b>Character Length</b>	<b>Description</b>
Name	1–15	SNMP manager's name
IP Address	–	SNMP manager's Internet Protocol address
MIB Access	–	SNMP manager's access to MIBs
Enable TRAPS	–	Enable trap forwarding to the SNMP manager
Location	0–40	SNMP manager's location
Contact 1	0–40	Contact person's name
Contact 2	0–40	Contact person's name

3. Choose **Add**. The name of the new authorized manager appears in the Authorized Managers list box.
4. Repeat Steps 2 and 3 for each authorized manager you need to add.
5. Choose **Close** to return to the Main Menu.

## Modifying or Deleting Authorized Manager Information

---

### Procedure

1. Choose **Authorized Managers...** from the SNMP menu. The Authorized Managers dialog box appears, as shown in Figure 4-2.
2. Choose the name of the authorized manager you wish to modify or delete in the Authorized Managers list box. The settings for that manager appear in the fields of the dialog box.
3. Press **<TAB>** to move to the fields you need to change and make changes as appropriate. The field descriptions are listed in the *Adding Authorized Manager Information* procedure.
4. Choose **Modify** or **Delete**, as appropriate.
5. Repeat Steps 2–4 for each manager you need to modify or delete.
6. Choose **Close** to return to the Main Menu.

### NOTE:

To change the IP address of a manager, you must delete and then add.

---

## Custom Network Interface Settings

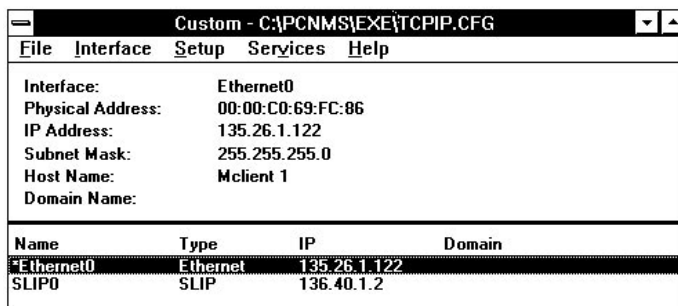
# 5

---

This chapter provides procedures for required interface-specific settings. Refer to the *NEWT TCP/IP for Windows Installation and User's Guide* for details about other configuration options.

## Viewing Network Settings

Use **Settings...** on the Network menu to view or customize your communications environment. Choosing **Settings...** accesses the Custom window, shown in Figure 5-1.



**Figure 5-1. Custom Window**

Table 5-1 describes the fields on the Custom window.

**Table 5-1. Custom Window Fields (1 of 2)**

Field	Description
Interface	The name of the interface.
Physical Address	The physical address of the workstation.
IP Address	Internet Protocol address (home address) for the workstation.
Subnet Mask	Subnet mask bits. Used to partition IP addresses into network and host portions.
Host Name	Not required.
Domain Name	Not required.
Name	Name of the interface.
Type	Ethernet, Token Ring, FDDI, SLIP, or PPP

**Table 5-1. Custom Window Fields (2 of 2)**

Field	Description
IP	Internet Protocol address (home address) for the workstation.
Domain	Not required.

## Configuring LAN Hardware Parameters

---

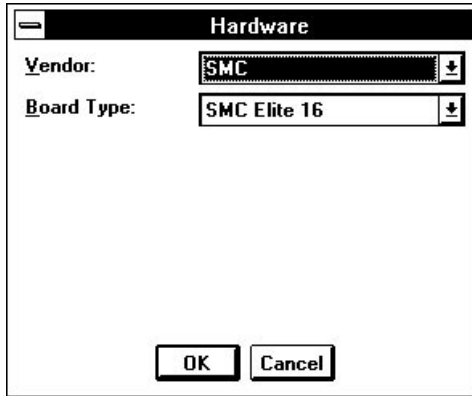
Use **Hardware...** to select and configure the following hardware-related parameters for Ethernet, Token Ring, or FDDI networks:

- Vendor
- Board Type



### Procedure

1. Choose **Settings...** from the Network menu. The Custom window appears, as shown in Figure 5-1.
2. Choose **Setup** from the Custom window menu bar.
3. Choose **Hardware...** from the Setup menu. The Hardware dialog box appears, as shown in Figure 5-2.



**Figure 5-2. Hardware Dialog Box**

4. Use the drop-down list boxes to select and configure the hardware parameters as needed. Table 5-2 describes the fields in the Hardware dialog box.
5. Choose **OK**.

**Table 5-2. Hardware Dialog Box Fields**

Field	Description
Vendor	Supplier of the LAN card.
Board Type	Model. Defaults to one of chosen vendor's cards.

**⇒ NOTE:**

If the network driver is not installed in the C:\PCNMS.EXE directory, you are prompted to enter the directory where the driver resides.

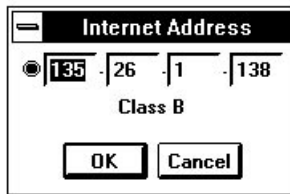
## Selecting the IP Address of a Workstation

---

Use **IP Address...** to select the Internet Protocol (home) address of a workstation.

### Procedure

1. Choose **Settings...** from the Network menu. The Custom window appears, as shown in Figure 5-1.
2. Choose **Setup** from the Custom window menu bar.
3. Choose **IP Address...** from the Setup menu. The Internet Address dialog box appears, as shown in Figure 5-3.



---

**Figure 5-3. Internet Address Dialog Box**

4. Enter the IP address. Click on the radial button to reset the fields to zero.
5. Choose **OK**.

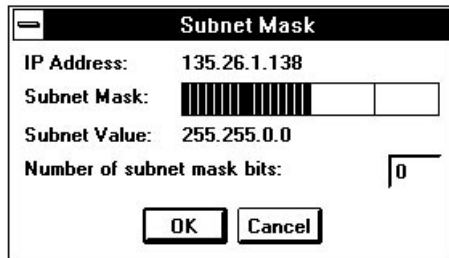
## Setting the Number of Subnet Mask Bits

---

Use **Subnet Mask...** to specify the number of subnet mask bits. These bits are used to partition IP addresses into a network and host portion, if needed.

### Procedure

1. Choose **Settings...** from the Network menu. The Custom window appears, as shown in Figure 5-1.
2. Choose **Setup** from the Custom window menu bar.
3. Choose **Subnet Mask...** from the Setup menu. The Subnet Mask dialog box appears, as shown in Figure 5-4.



---

**Figure 5-4. Subnet Mask Dialog Box**

4. Click and drag the Subnet Mask slide bar to the correct location, or type the number of subnet mask bits.
5. Choose **OK**.



## Choosing Port Settings

Use **Port...** to specify communications port settings for SLIP, CSLIP, or PPP interfaces.



### CAUTION:

*Perform changes to port settings other than baud rate and connector settings with caution. Hardware flow control is the default setting due to binary communication requirements.*



### Procedure

1. Choose **Settings...** from the Network menu. The Custom window appears, as shown in Figure 5-1.
2. Choose **Setup** from the Custom window menu bar.
3. Choose **Port...** from the Setup menu. The Port Settings dialog box appears, as shown in Figure 5-5.

Table 5-3 describes the fields on the Port Settings dialog box.

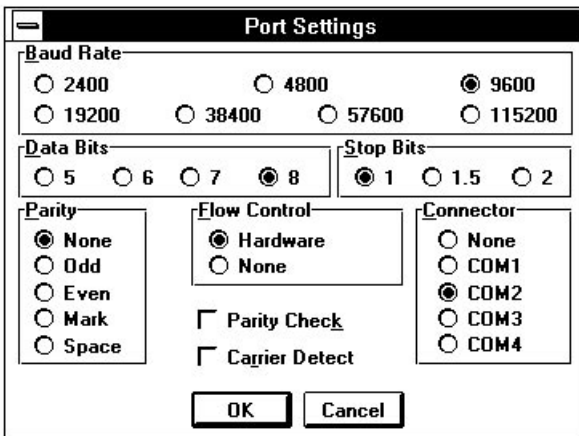


Figure 5-5. Port Settings Dialog Box

**⇒ NOTE:**

SLIP, CSLIP, and PPP are 8 bit protocols and must have the following settings: 8 Data Bits, 1 Stop Bit, and None Parity.

4. Change the port settings, as needed.
5. Choose **OK**.

**Table 5-3. Port Settings Dialog Box Fields**

<b>Field</b>	<b>Description</b>
Baud Rate	Transfer data rate.
Data Bits	Number of data bits per byte.
Stop Bits	Number of stop bits.
Parity	Parity.
Flow Control	Flow control for data transmission.
Connector	Communications port to use.
Parity Check	Enables indication of byte where parity error exists.
Carrier Detect	Indicates modem signal should be used.

## Choosing Modem Settings

Use **Modem...** to specify modem interaction commands and modes for SLIP interfaces.

### Procedure

1. Choose **Settings...** from the Network menu. The Custom window appears, as shown in Figure 5-1.
2. Choose **Setup** from the Custom window menu bar.
3. Choose **Modem...** from the Setup menu. The Modem Settings dialog box appears, as shown in Figure 5-6.

Table 5-4 describes the fields on the Modem Settings dialog box.

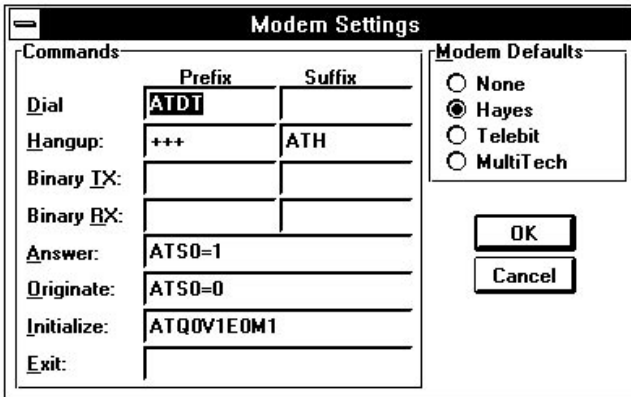


Figure 5-6. Modem Settings Dialog Box

4. Select the appropriate modem from those listed under Modem Defaults. The Network Configuration feature then uses default commands based on your choice.

If your modem is not listed, select Hayes® which works across almost all modem types. Select None to indicate a direct null-modem connection, which does not require any dial.

**⇒ NOTE:**

If your modem requires special settings, refer to Table 5-4 and the manual provided by your modem vendor.

- 5. Choose **OK**.

**Table 5-4. Modem Settings Dialog Box Fields**

<b>Field</b>	<b>Description</b>
Dial	Dial commands (prefix and suffix).
Hangup	Hangup commands (prefix and suffix).
Binary TX	Binary transmission commands (prefix and suffix).
Binary RX	Binary receive commands (prefix and suffix).
Answer	Answer on number of rings.
Originate	Set originate state.
Initialize	Set initial state.
Exit	Exit AT command set.
Modem Defaults	Set all fields to selected default (none, Hayes compatible, Telebit, or MultiTech).

## Specifying Dial Settings

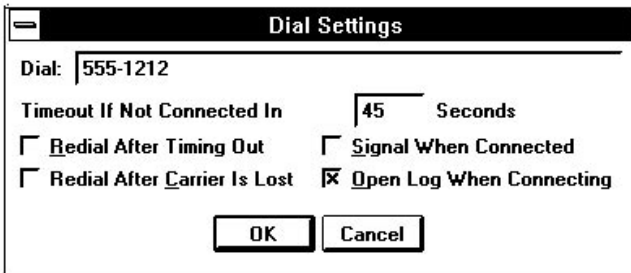
---

Use **Dial...** to specify dial parameters for SLIP interfaces.

### Procedure

1. Choose **Settings...** from the Network menu. The Custom window appears, as shown in Figure 5-1.
2. Choose **Setup** from the Custom window menu bar.
3. Choose **Dial...** from the Setup menu. The Dial Settings dialog box appears, as shown in Figure 5-7.

Table 5-5 describes the fields on the Dial Settings dialog box.



---

Figure 5-7. Dial Settings Dialog Box

4. Enter the appropriate dial settings.

### NOTE:

Leave the **Dial** field blank to indicate Answer mode when connected.

5. Choose **OK**.

**Table 5-5. Dial Settings Dialog Box Fields**

<b>Field</b>	<b>Description</b>
Dial	Telephone number to use when dialing.
Timeout If Not Connected In	Number of seconds to wait for connection before timing out.
Redial After Timing Out	Redial after a timeout occurs.
Redial After Carrier Is Lost	Redial after the carrier is lost.
Signal When Connected	Signal when connected.
Open Log When Connecting	Open a log when connecting.

## **Designating the Default Gateway**

---

Use **Default Gateway...** to specify which gateway (router) should receive communication destined for addresses in an unknown subnet. Refer to the *NEWT TCP/IP for Windows Installation and User's Guide*.

---

# Glossary

---

## A

### **address mask**

A bit mask used to select bits from an IP address for subnet addressing. The mask is 32 bits long and selects the network portion of the IP address and one or more bits of the local portion.

### **agent**

A software program housed within a managed network device, such as a host, gateway, or terminal server. An agent stores management data and responds to the manager's data requests.

### **ANSI**

The American National Standards Institute sets standards for the US computer industry. ANSI participates in defining network protocol standards.

### **ARP**

Address Resolution Protocol. The TCP/IP protocol used to dynamically bind a high-level IP address to a low-level physical hardware address. ARP is only across a single physical network and is limited to networks that support hardware broadcast.

### **ASCII**

The American Standard Code for Information Interchange, widely accepted code for representing alphanumeric information.

---

## **B**

### **backup**

Backup is the process of preserving copies of files on a different drive, directory or media to protect against the destruction or loss of the original files in the event of hardware or system failure.

### **baud**

A unit of signaling speed that is equal to the number of symbols per second. This is not necessarily the same as bits per second, although the terms are frequently interchanged.

### **BOOTP**

The Bootstrap Protocol, described in RFCs 951 and 1084, is used for booting diskless nodes.

### **buffer**

A temporary storage area for data during the transfer of that data between the computer and a peripheral, or between parts of a computer to prevent loss of information.

---

## **C**

### **client**

A client is a computer system that uses resources provided by another machine on the network.



---

## D

### **daemon**

An agent program that runs continuously on a server system in a UNIX® environment and provides resources to client systems on the network.

### **dial-up**

A temporary, as opposed to dedicated, connection between machines established over a standard phone line.

### **DLL**

Dynamic Link Library contrasts Terminate and Stay Resident (TSR). Windows automatically loads the applications into memory when required and unloads it when space is needed for other applications.

### **default**

A value supplied by the system when a user does not specify a required command, parameter or qualifier.

### **device name**

Identification of a physical device, for example LPT1 for a printer. Can also be a logical name equated to a physical device name.

### **domain**

A named group of machines on the network. A domain name consists of a sequence of names (labels) separated by periods (dots).

### **DNS**

Domain Name System. An online distributed database that maps machine names into IP addresses.

### **driver**

A software module that controls an input/output port or external device such as a keyboard or a monitor. TCP/IP uses a driver to control the network interface cards.

### **DSU**

Data Service Unit. A device that replaces a modem on a digital data service line. The data service unit regenerates the digital signals for transmission over digital facilities.

---

## **E**

### **EIA**

Electronic Industries Association. This organization provides standards for the data communications industry to ensure uniformity of interface between DTEs and DCEs.

### **Ethernet**

Ethernet® is a type of network that supports high-speed communication among systems. It is a 10-Mb/s standard for LANs. All hosts are connected to a coaxial cable where they contend for network access using a Carrier Sense Multiple Access with Collision Detection (CSMA/CD) paradigm.

### **Ethernet address**

An Ethernet address is a six-part hexadecimal number in which a colon separates each part (for example, 8:0:20:1:2f:0). This number identifies the Ethernet communications board installed in a PC and is used to identify the PC as a member of the network.

### **export**

Export is the process that makes a file available so that other systems can access it.

---

## **F**

### **file access**

File access allows users to work with a remote file as if the file is local.

### **FTP**

File Transfer Protocol. A protocol that allows a user on one host to access, and transfer files to and from, another host over a network. The FTP application is used to provide file transfer services across a wide variety of systems through the use of the File Transfer Protocol (FTP). Usually implemented as application level programs, FTP uses the TELNET and TCP protocols. The server side requires a client to supply a login identifier and password before it will honor requests.

### **file server**

A process running on a computer that provides access to files on that computer to programs running on remote machines.

---

## **G**

### **gateway**

A communications device/program that passes data between networks having similar functions but dissimilar implementations.

### **group id**

A unique number associated with each group name on the server.

---

## H

### **host**

Any end-user computer system that connects to a network. Hosts range in size from personal computers to supercomputers.

### **host table**

An ASCII text file where each line is an entry consisting of one numeric address and one or more names associated with that address.

---

## I

### **ICMP**

Internet Control Message protocol. The ICMP delivers error and control messages from hosts to requesters. An ICMP test can determine whether a destination is reachable and responding.

### **internet**

While an internet is a network, internet is usually used to refer to a collection of networks interconnected with routers.

### **Internet**

The largest internet in the world. The Internet is a three level hierarchy composed of backbone networks, mid-level networks, and stub networks. This is a multiprotocol internet.

### **internet address**

An internet protocol address that uniquely identifies a node on an internet. An Internet address uniquely identifies a node on the Internet.

## **IP**

Internet Protocol. The TCP/IP standard protocol that defines the IP as a unit of information passed across an Internet and provides the basis for packet delivery service. IP includes the ICMP control and error message protocol as an integral part. The entire protocol suite is often referred to as TCP/IP because TCP and IP are the two most fundamental protocols.

## **IP address**

Internet protocol address. This is a 32-bit address assigned to host on a TCP/IP Internet. The IP address has a host component and a network component.

---

## **L**

### **LAN**

Local Area Network. A data network intended to serve an area of only a few square kilometers or less. Because the network is known to cover only a small area, optimizations can be made in the network signal protocols that permit data rates up to 100 Mb/s.

### **log in**

To perform a sequence of actions at a terminal that establishes a user's communication with the operating system and sets up default characteristics for the user's terminal session.

### **log out**

To terminate interactive communication with the operating system, and end a terminal session.

---

## M

### **manager**

A software program housed within a network management station. The manager has the ability to query agents, receive agent responses, and set specific variables using various SNMP commands.

### **MIB**

Management Information Base. The set of variables a gateway running SNMP maintains. Standard, minimal MIBs have been defined, and vendors often have private enterprise MIBs. In theory, any SNMP manager can talk to any SNMP agent with a properly defined MIB. MIB-II refers to an extended management database that contains variables not shared by SNMP.

---

## N

### **NDIS**

Network Device Interface Specification. The NDIS specification is used for all communication with network adapters. The specification was developed by Microsoft® and 3COM to provide a common programming interface for MAC drivers and transport drivers. NDIS works primarily with LAN manager and allows multiple protocol stacks to share a single network interface card.

### **network address**

A unique number associated with a host that identifies it to other hosts during network transactions. This is the network portion of an IP address. For a class A network, the network address is the first byte of the IP address. For a class B network, the network address is the first two bytes of the IP address. For a class C network, the network address is the first three bytes of the IP address. In each case, the remainder is the host address. In the Internet, assigned network addresses are globally unique.

## **NEWT**

NEWT is a TCP/IP communication stack for Microsoft Windows. NEWT provides users a degree of network access previously only available to workstation and mainframe users.

## **NFS**

Network File System. A protocol developed by SUN® Microsystems that uses IP to allow a set of computers to access each other's file systems as if they were local. Originally designed for UNIX systems, this protocol has been implemented on many other operating systems, including DOS and Windows.

## **NIC**

Network Information Center. The NIC at SRI international in Menlo Park, California, assigns IP addresses and network numbers per request submitted by an organization. The number assigned is appropriate to the number of host devices on the network.

---

## **P**

### **PING**

The Packet Internet Groper is a program that is useful for testing and debugging networks. It sends an Echo packet to the specified host, and waits for a response. It reports success or failure and statistics about its operation.

### **PPP**

The Point-to-Point Protocol, defined in RFC 1171, provides a method for transmitting packets over serial point-to-point links.

### **prompt**

Word or words used by the system to assist a user's response. Such messages generally ask the user to respond by typing some information in the following field.

**protocol stack**

A layered set of protocols that work together to provide a set of network functions.

---

**R**

**RAM**

RAM is a Random Access Memory.

**RFC**

Request for comment. The RFC documents describe all aspects and issues associated with the Internet protocols.

**remote**

Files, devices, and users not attached to your local machine.

**remote host**

The computer receiving the network command.

**remote printer**

IN LPR/LPD, a printer with a special network card, or a PC or workstation.

**router**

A router has two or more network interfaces to different networks. The primary function of a router is to direct packets between these networks, delivering them to their final destination or to another router. When used with TCP/IP, the term refers to an IP gateway that routes data using IP destination addresses.



## **S**

### **script**

A sequence of ASCII text lines stored in a file. You can create a script to automate various tasks.

### **server**

A computer that provides services to a network.

### **SLIP**

Serial Link Internet Protocol. Protocol for serial operation in an Internet network.

### **SMI**

Structure of Management Information. SMI presents a prefix tree with defined object identifiers.

### **SNMP**

Simple Network Management Protocol. A standard protocol used to monitor network activity on "agent" nodes from management stations, defined in STD 15, RFC 1157.

### **stack**

A group of drives that work together to span the layers in the network protocol hierarchy.

### **STD**

A subseries of RFCs that specify Internet standards. The official list of Internet standards is in STD 1.

### **Structure of Management Information (SMI)**

The rules used to define the objects that can be accessed via a network management protocol. This protocol is defined in STD 16, RFC 1155.

**subnet**

A portion of a network, which may be a physically independent network segment, that shares a network address with other portions of the network and is distinguished by a subnet number. A subnet is to a network what a network is to an internet.

**subnet address**

The subnet portion of an IP address. In a subnetted network, the host portion of an IP address is split into a subnet portion and a host portion using an address (subnet) mask. This allows a site to use a single IP network address for multiple physical networks.

**subnet mask**

A subnet mask identifies the subnet field of a network address. The subnet mask is a 32-bit Internet address written in dotted-decimal notation with all the 1s in the network and subnet portions of the address.

---

**T**

**TCP**

Transmission Control Protocol. An Internet standard transport layer protocol defined in STD 7, RFC 793. It is connection-oriented and stream-oriented.

**TCP/IP**

Transmission Control Protocol/Internet Protocol. TCP allows a process on one machine to send data to a process on another machine using the IP protocol. TCP can be used as a full-duplex or one-way simplex connection.

**TFTP**

The Trivial File Transfer application is a standard TCP/IP protocol that allows simple file transfer to and from a remote system without directory or file listing. TFTP is used where FTP is not available.

**token ring**

A type of ring-shaped network that supports high-speed communications between computers.

---

**U**

**user id**

A unique number, created by your system, associated with each user name on a server system.

**user name**

A character string, usually assigned by the system administrator that identifies a user on the system.

---

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