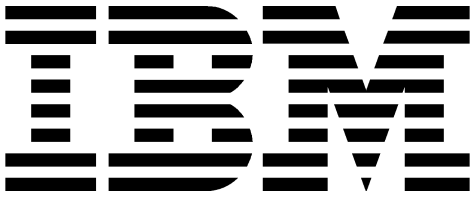
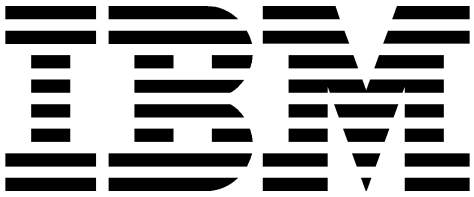


IBM Network Station Manager for Windows NT Server 4.0

6th Edition

To view or print the latest update, go to http://www.as400.ibm.com/networkstation/pc

WINAB103.PDF



IBM Network Station Manager for Windows NT Server 4.0

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WINAB103.PDF

Note: Before using this information and the product it supports, be sure to read the general information under Notices.

Sixth Edition - December 1997

This edition applies to the licensed program IBM Network Station Manager for Windows NT Server 4.0, Version 1, and to all subsequent releases and modifications until otherwise indicated in new editions.

Make sure that you are using the proper edition for the level of the product.

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About Network Station Manager for Windows NT.

Who Should use this Guide

This information is intended for the person installing and administering the IBM Network Station Manager for Microsoft Windows NT. In this guide you are referred to as the IBM Network Station administrator.

Accessing this Guide and Obtaining Further Information on the World Wide Web

More information is available on the World Wide Web. You can access this information from the Network Station page.

To view or print the latest update, go to
http://www.as400.ibm.com/networkstation/pc

Chapter 1 . Introduction to the IBM Network Station Manager

The IBM Network Station is a desktop network computer that provides:

- Low cost of ownership
- Central management of software and data
- Access to the Internet and corporate intranets
- Simplicity in installation and administration
- Graphical interface with browser-based administration features

About Names

The name of this manual is the IBM Network Station Manager for Windows NT. This manual documents the licensed program of the same name.
Also discussed in this manual is a program used to administer IBM Network Stations. This program is called the IBM Network Station Manager program. The name of the licensed program and the name of this administering program are very similar. When discussing the program used for administering IBM Network Stations, the text will read *IBM Network Station Manager program*.
See Chapter 5 . Using the IBM Network Station Manager Program on page 5-1 for specific information.

What Does an IBM Network Station Look Like?

The following diagram shows the components of the IBM Network Stations:

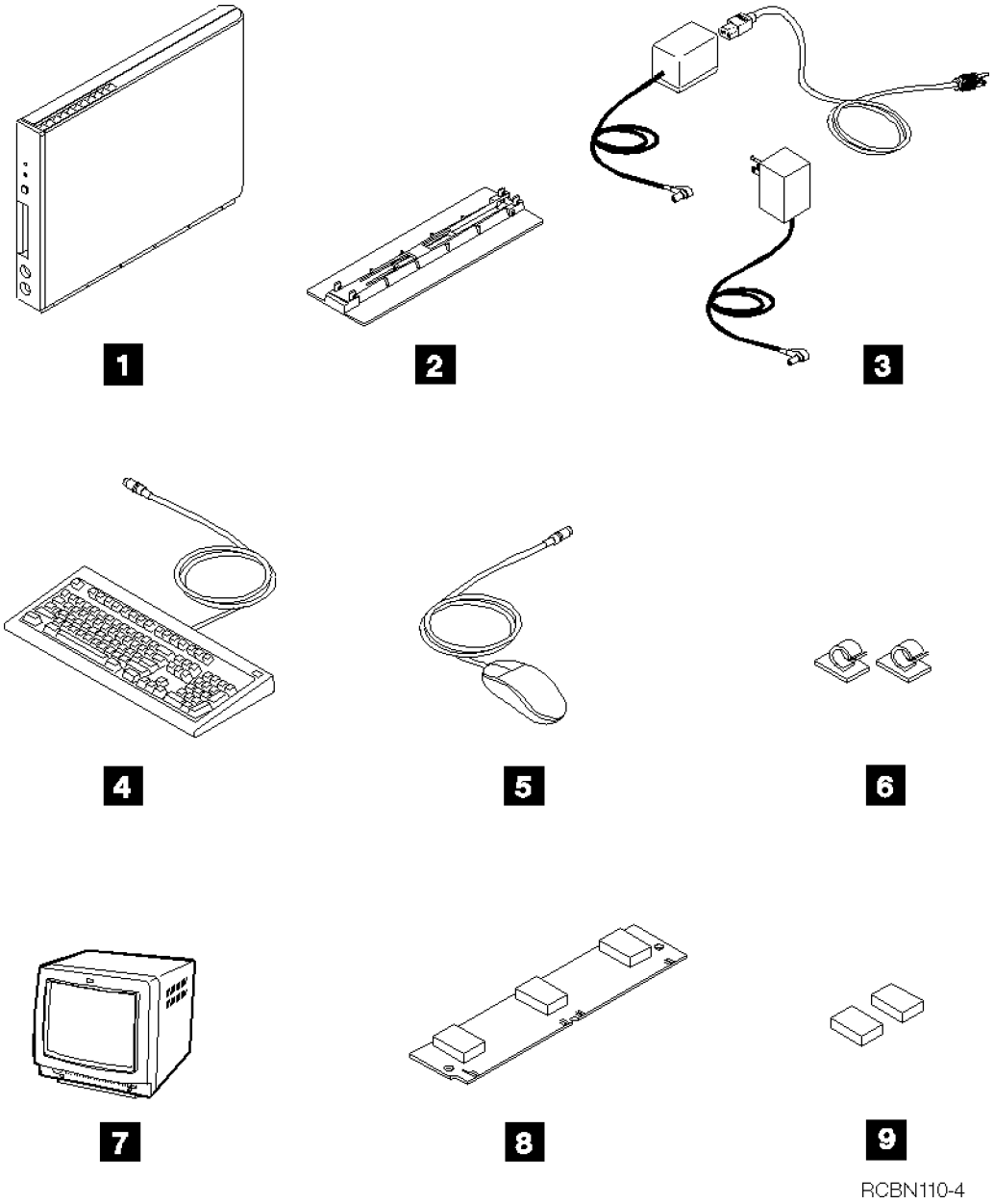


Figure 1-1. Network Station Components.

1. Logic unit
2. Logic unit base
3. Power module
4. Keyboard
5. Mouse
6. Cable clamps
7. Monitor
8. Memory SIMM
9. Video memory modules

How Does the IBM Network Station Communicate with the Network?

The IBM Network Station Uses:

- DHCP (Dynamic Host Configuration Protocol)
- TFTP (Trivial File Transfer Protocol)

What is DHCP?

DHCP is a TCP/IP protocol used to allow a diskless client (IBM Network Station) to request an IP address and the name of the load file. DHCP provides a safe, secure and reliable method of running a TCP/IP network.
IP addresses are centrally managed which prevents address conflicts and conserves unused IP addresses.

When an IBM Network Station boot request is received by the DHCP server, the server looks up the MAC address defined for the IBM Network Station in the main IBM DHCP Configuration file \ibmtcpip\etc\dhcpsd.cfg. DHCP then returns a reply with the IP address and the name and path of the load file that was requested. (The load file is the file that contains the operating system kernel for the IBM Network Station.) The IBM Network Station then initiates a TFTP request to the server for the load file.

Note: The IP address of the IBM Network Station and the name of the load file are stored in the text file *\ibmtcpip\etc\dhcpsd.cfg.* This configuration file is managed by the IBM DHCP Server service that is installed as part of the Network Station Manager package. The service is accessible from the *Services* icon in the *Control Panel*. See IBM DHCP Server Configuration on page 3-16 for more information.

What is TFTP?

TFTP is a TCP/IP protocol used to transfer files. TFTP can read or write files from or to a remote server. The necessary work to configure and start the TFTP server will be done when you install Network Station Manager. See Chapter 3 . Product Installation on page 3-1 for more information.

Where Do I Find Additional TCP/IP & DHCP Help?

After you have installed the Network Station product, by following the steps that are detailed in chapters 1 and 2, additional help will become available on DHCP and TCP/IP. To access this additional help, from you Windows NT Desktop, carry out the following:

Open: *Start* ➔ *Programs* ➔ *Network Station* TCPIP ➔ *Help*

How Do I Manage IBM Network Stations?

To manage the IBM Network Stations on a day-to-day basis, you should use the following:

- The IBM Network Station Manager Program
- The Network Station's Onboard Setup Utility
- User Services

What is the IBM Network Station Manager Program?

The IBM Network Station Manager is a browser-based application program that allows you to set and change settings for:

- All or specific IBM Network Station users
- All or specific IBM Network Station workstations

User settings can be for application programs (5250 emulation, 3270 emulation, browser sessions) or hardware settings such as mouse configuration or desktop background. See Chapter 5 . Using the IBM Network Station Manager Program on page 5-1 for a more detailed discussion.

What is the Network Station's Onboard Setup Utility?

The Onboard Setup Utility is available on each IBM Network Station. It allows you to View and then Set (change) configuration settings. For example, you can view or set the MAC address or monitor resolution settings of any IBM Network Station. The Setup Utility can be password protected by the system administrator.

The system administrator can access the IBM Network Station Setup Utility while the IBM Network Station is going through the boot-up process. See Chapter 7 . Working with the Network Station's Onboard Setup Utility on page 7-1 for a more detailed discussion.

What Are User Services?

User services are programs that provide the system administrator with tools to manage the IBM Network Station's operational environment.

Some of the services provided are:

- Monitoring messages applicable to a specific IBM Network Station
- Locking your screen (with password control)
- Monitoring statistics (for example, how much memory is available on a specific IBM Network Station).

See Chapter 6 . Working with User Services on page 6-1 for a more detailed discussion.

Chapter 2 . Planning for the IBM Network Station Manager

In this chapter there are tasks that need to be completed before you should move on to Chapter 3 . Product Installation on page 3-1. Carrying out the tasks in this chapter *will help you* install and configure your Network Stations quickly and easily!

As system administrator, you need to plan the integration of IBM Network Stations into your computing environment. The following are the planning chapter divisions:

- General planning
- TCP/IP planning
- IBM Network Station Planning

General Planning

The general planning information is mostly verification to ensure that your network and your IBM Network Stations are ready to receive the software and hardware associated with the IBM Network Stations.

1. Obtain the IBM Network Station Media Access Control (MAC) address.

The MAC address is used to create DHCP entries for assigning IP addresses. You need to do this step for each IBM Network Station that you will be adding. This address is on the box that the IBM Network Station system unit is packaged in. The following diagram shows the MAC address location on the box containing the system unit:

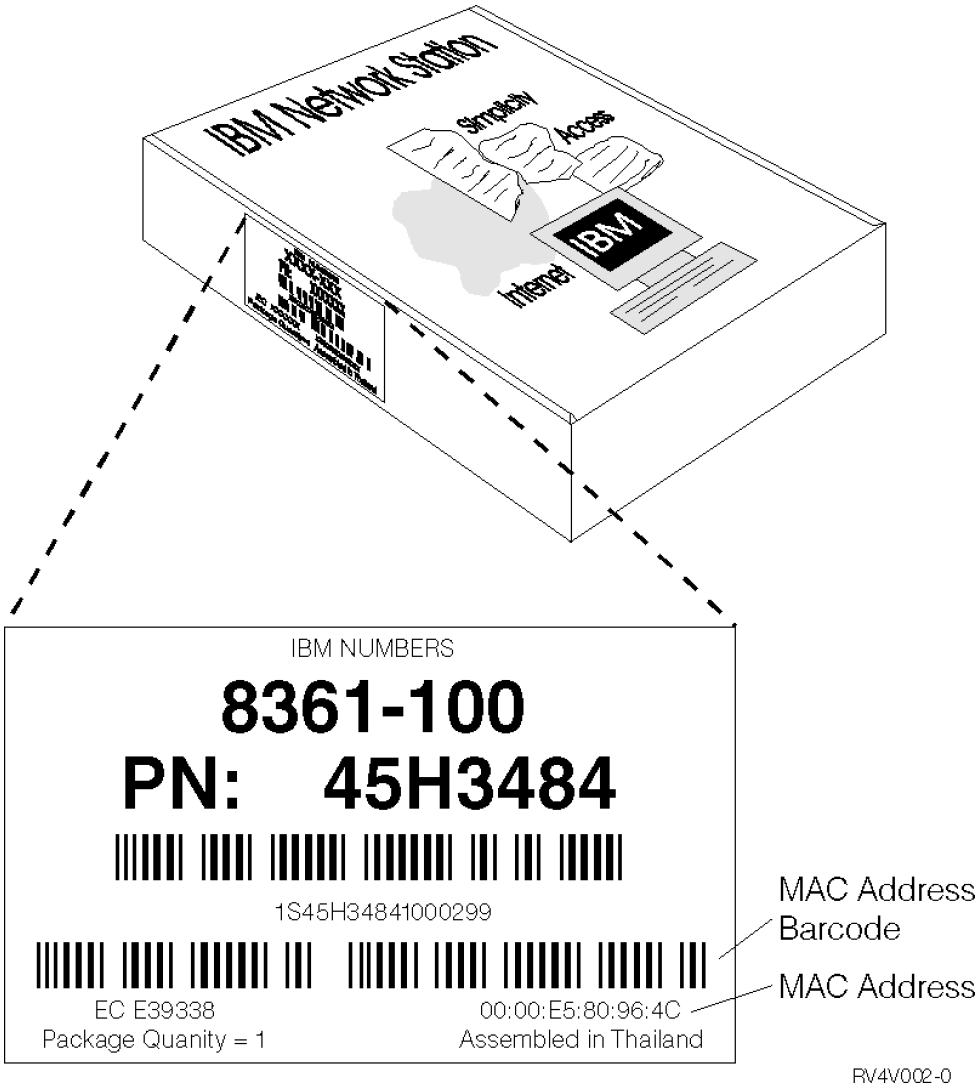


Figure 2-1. How to find the Network Station Media Access Address.

Note: If you no longer have the box that the IBM Network Station system unit is packaged in, you may also find the MAC address through the Setup Utility:

a) Boot the Network Station.

b) Press the Escape key after the DRAM memory is tested during the boot.

c) Press F4 to view the Hardware. You will find the MAC address here.

2. Obtain IP Addresses and a Domain Name for your organization.

Each node on a network is known as a host and has a unique address called an Internet Protocol (IP) address. This address is a 32-bit integer expressed in the form nnn.nnn.nnn.nnn. For the networks within your organization, you can assign your own addresses. However, if you want to connect to the Internet, the network addresses and domain names must be officially assigned by a central authority. The authority at the time of this writing is Network Solutions, Inc.. The address is:

Network Solutions
InterNIC Registration Services
505 Huntmar Park Drive
Herndon, VA 22070
1-703-742-4811
E-mail: hostmaster@internic.net
WWW: http://rs.internic.net/

Note: If your organization already has a range of IP addresses, you can use those instead of obtaining new IP addresses. For more information see the TCP/IP Configuration and Reference Manual, SC41-5420.

3. Verify your Licensed Program Software for the IBM Network Station Manager for Windows NT.

Verify that you have the correct licensed program software. This software will be installed during Chapter 3 . Product Installation on page 3-1. The latest release of Network Station Manager for Windows NT is available via the World Wide Web at the URL address printed on the front and inside covers of this guide.

4. Verify the IBM Browser Media.

There are two browsers available for use with your Network Staion Product.

You can use any Javascript enabled browser on your server console, however you must download either the *IBM Network Station Browser* or the *Navio NC Navigator for IBM Network Station* for use on your Network Stations.

A suitable Javascript enabled browser can be downloaded from the URL address shown in *Downloading the Network Station Product from the World Wide Web*.on page 3-6.

There are two versions of the IBM Browser licensed program. Licensed program 5648-B08 is a 40-bit RC4 encryption version and can be obtained free of charge. You can download it from an IBM web page or order it from your IBM marketing representative.

The other version, 5648-B18, is a 128-bit RC4 encryption version. This version offers advanced encryption features for secure transactions on the Internet. This version must be purchased and is only available in the United States and Canada. To order, contact your IBM marketing representative.

Instructions for obtaining and installing both versions are documented in Working with the IBM Browser on page 4-8.

5. Verify IBM Network Station Memory Requirements.

Verify that your IBM Network Stations have the amount of memory they will need to run the applications your users expect.

Each of the applications that are downloaded to the IBM Network Station requires memory. Use Table 2-1. IBM Network Station Memory Requirements for Downloaded Software on page 2-4 as a guide in determining how much memory each IBM Network Station should have.

Notes:

a. If some users require many different applications and if they will be using various IBM Network Stations, you will need to ensure each IBM Network Station has adequate memory to handle the projected applications.

b. Subsequent releases may have increased memory requirements.

Table 2-1. IBM Network Station Memory Requirements for Downloaded Software

Software	Memory requirements
Base system, includes the following: • Motif Library • Windows Manager • Fonts • IBM Login Utility	5.35MB
5250 Session (1st Session) • Additional Session • Help Viewer • Keyboard Remap • Color Remap • Miscellaneous Preferences	1.4MB • 0.3MB • 0.3MB • 0.55MB • 0.45MB • 0.35MB
3270 Session (non-graphic) • Additional Session (non-graphic)	0.7MB • 0.25 MB
3270 Session (graphic) • Additional Session (graphic)	1.4MB • 0.55MB
IBM Network Station Browser	5.6MB
Java VM Session	5.0MB default or 1.3MB in minimal configuration. Code size of each Java Applet must be added to either number. **Note:** If you want to run large Java applications, you should calculate memory requirements from the default size of 5.0MB.
Video Memory Guidelines (Resolution) • 800 x 600 • 1024 x 768 • 1280 x 1024 • 1360 x 1024 • 1600 x 1280	 • 1MB • 1MB • 2MB • 2MB • 2MB

TCP/IP Planning

One of the keys to success in a TCP/IP network is that each system in the network must have its own unique address. This address is known as the Internet Protocol address (or IP address) of your system. An IP address consists of four numbers (0-255) separated by periods. For example, 128.1.15.95 is a valid format for an IP address.

An additional part of TCP/IP addressing is the subnet mask. The subnet mask allows you to divide a single network into smaller networks called subnetworks.

For the planning steps that follow we assume that the IP address and subnet masks for your systems have been assigned by your network administrator. A complete discussion of TCP/IP addressing and subnet masks is beyond the scope of this book. If you are the network administrator and you need help defining the addressing scheme for your network, then you should consult your IBM representative for information on classes or workshops that may be available.

Note: The *Option Numbers* given on the form relate directly to the *IBM DHCP Server GUI* that is discussed in IBM DHCP Server Configuration on page 3-16.

Table 2-2 TCP/IP Information Chart

IBM DHCP Configuration Option:	Host Information	
Option 12	Host Name	
Option 15	Domain Name	
Option 6	DNS Address	
	TCP/IP Properties	
(Subnet address)	Subnet number	
Option 1	Subnet mask	
Option 3	Default Gateway (router)	
(IP Range From)	Start DHCP Pool Address	
(IP Range To)	Last DHCP Pool Address	

Host Information

Host Name:

The host name is the name that is used to uniquely identify this system in a TCP/IP domain. If you will be setting up your NT Server for the first time as described in Chapter 3 . Product Installation on page 3-1, then you will be able to assign your own host name during the Microsoft NT Server Setup process.

Local Domain Name:

The domain name is used by remote servers to identify the local host to other systems. Domain names consist of labels that are separated by periods (for example, NEWYORK.ACME.COM). Your local domain name should be descriptive of your organization. The last portion of the local domain name should follow Internet conventions; that is, use COM for commercial enterprises, GOV for government organizations, and EDU for educational institutions.

DNS Address:

The Domain Name System (DNS) address is an IP address that uniquely identifies this system to TCP/IP (for example, 199.5.10.48).

TCP/IP Properties

Subnet Number:

The Subnet number is the address that uniquely identifies the communication line that connects your server to the LAN. Each LAN should have a unique Subnet Number assigned. However, one of the directly attached LANs shouls share the same Subnet number that you have assigned to your server.

Subnet Mask:

A subnet mask is a configuration value that allows you to specify how your system determines what are the network and host parts of an IP address. For example, the subnet mask (255.255.255.0) indicates that the first 3 parts of the IP address are network related and the fourth part is used to identify unique hosts on this subnetwork.

Default Gateway (Router):

The default Gateway (router) is the network portion of the IP address of the remote LAN (for example, 199.5.12.1).

Start DHCP Pool Address:

The first IP address that will be available for use by the Network Stations connected to your LAN. The IBM DHCP Server Service will control this pool of addresses and assign them on a first-come, first-server basis.

Last DHCP Pool Address:

The last available IP address which, along with the Start DHCP Pool Address, will make up the DHCP pool of available IP addreses.

IBM Network Station Planning

This section will help you record the specific information needed to identify each IBM Network Station to your network environment. This information should be recorded in Table 2-3, below. The information that is contained on this form is LAN-specific. You should fill out a separate form for each LAN to which you will be attaching IBM Network Stations.

Note: The *Option Numbers* given on the form relate directly to the *IBM DHCP Server GUI* which is discussed in IBM DHCP Server Configuration on page 3-16.

Table 2-3 IBM Network Station Information Chart

IBM Network Stations General Information			
Option 67	Boot File Name:		/nstation/kernel
Option 3	Gateway (Router) IP Address for the IBM Network Station side:		
Option 1	Subnet Mask:		
IBM Network Station Unique Information			
Client Hardware Type	Client ID (Network Station MAC Address)	IP Address (Optional)	Host Name (Optional) (Option 12)

1. Client Types: Token Ring = 6. Version 2 (802.2) Ethernet = 1. IEEE (802.3) Ethernet = 6

IBM Network Stations General Information

Boot File Name:

The Boot File Name is the name of the file that will be downloaded to the IBM Network Station and be used to boot the remote device. This is a constant and is prefilled on your form as /nstation/*kernel*.

Gateway (Router) IP Address for the Network Station side:

If the LAN that you are attaching IBM Network Stations to is not directly attached to your server, it is referred to as a remote LAN. You will need to specify the IP Address of the IP Gateway (Router) that your IBM Network Station will use to reach the server.

Subnet Mask:

Specify the subnet mask used by the *Gateway (Router) IP Address for the Network Station side.*

IBM Network Station Unique Information

You will also need to complete the following tasks for each IBM Network Station that you will be adding to this LAN.

Client Type:

Your IBM Network Stations can either attach to a Token-ring or Ethernet LAN. Two hardware types (1 and 6) are used to describe which type of LAN the Network Stations are connected to. When you install a new Network Station you must assign the Client Hardware Type as shown below.

Table 2-4 LAN Adapter Type Settings

Network Station Attached to:	Then set DHCPSD.CFG Client Type:
Token-ring	**6**
Version 2 (802.2) Ethernet	**1**
IEEE (802.3) Ethernet	**6**

Client ID (Network Station MAC Address):

The Media Access Control Address (MAC) address is a hardware specific identifier that is unique to each IBM Network Station. You can find this address on the outside of the box that the IBM Network Station was shipped in. You should have captured this information in Step 1 of General Planning on page 2-1.

IP Address (Optional):

Each IBM Network Station has an IP address assigned to it automatically by the IBM DHCP Server Service each time the Network Station is switched on. This address comes from the DHCP pool of currently available addresses. You may override this automatic address assignment by entering a unique IP address for the Network Station within the DHCP Congiguration file. If you choose to do this ensure that the IP address is valid for your organization and that it is not already being used by any other device in the network. See Chapter 3 . Product Installation on page 3-1 for more information.

Host Name (Optional):

The host name identifies the IBM Network Station as a unique destination within a TCP/IP environment. The fully qualified host name is made up of two parts, the host name and the domain name. For example, IBMNSM.MYCOMPANY.STATE.COM is a qualifed host name, where IBMNSM is the host name and MYCOMPANY.STATE.COM is the domain name. The host name can be anything that is meaningful to you or the owner. The domain name should be obtained from your network administrator.

Chapter 3 . Product Installation

The following are the steps necessary to install and configure IBM Network Station Support on a Windows NT 4.0 server. This chapter will walk you through the following tasks:

- Minimum hardware and software requirements
- Performing a “clean” Install of Microsoft NT Server (recommended)
- Downloading Network Station Support and associated software from the World Wide Web
- Installing the Java Development Kit
- Installing the IBM DHCP Protocol Driver
- Installing IBM Network Station Support
- Installing IBM TCP/IP Services
- Editing the IBM DHCP Configuration file (you will require a completed *Table 2-2 TCP/IP Information Chart* and *Table 2-3 IBM Network Station Information Chart* for this)
- Creating Network Station User Accounts
- Using the Network Station
- Starting the Network Station Manager Program
- Uninstalling the Product Components

Prerequisites.

1. Complete the following tables, prior to installation:

Complete these Tables and have them available!	√
Table 2-2 TCP/IP Information Chart.	
Table 2-3 IBM Network Station Information Chart	

2. You must use Windows NT Server Version 4.0.

3. You must be able to create an NT Server Partition of at least 500 MB in size.

On this partition you will be installing the NT Server program (over 200MB) and the Network Station Product (130 MB).

4. You must use a suitable Network Adapter.

See *Table 2-4 LAN Adapter Type Settings* for the adapter types supported. If you experience Network Adapter problems during installation this may be because the Network Adapter in your server is of an older type. These problems can often be corrected by obtaining an updated version of the adapter driver directly from the manufacturer. Very often you will be able to obtain updated drivers by searching the Internet for the manufacturers Web Site or by searching for the name of your network adapter card.

- If you are using a Madge 51-02 SmartToken Ring network adapter card, you must install Madge driver version 5.02.

5. You must have the Java Development Kit (JDK) version 1.02. Installed on your server.

You must install version 1.02. of the Java Development Kit, from Sun Microsystems Inc., to enable Java functionality within the Network Station manager Program. The Java Development Kit can be accessed from the URL address shown in *Downloading the Network Station Product from the World Wide Web.*on page 3-6.

6. You must have a JavaScript enabled browser.

The IBM Network Station Manager Program can only be used with a Javascript enabled browser, such as those mentioned in Table 3-1, below.

Table 3-1 Suitable JavaScript Enabled Browsers

Your Network Stations must use one of the following two Browsers:
Navio NC Navigator for IBM Network Station
IBM Network Station Browser
Your Server Console may use the following Browsers:
Microsoft Internet Explorer Version 3.0 (or higher)
Netscape Navigator Version 3.0 (or higher)

Note: You can use any Javascript enabled browser on your server console, however you must download either the *Navio NC Navigator for IBM Network Station* or the *IBM Network Station Browser* for use on your Network Stations.

A suitable Javascript enabled browser can be downloaded from the URL address shown in *Downloading the Network Station Product* from the World Wide Web.on page 3-6.

Installing Microsoft Windows NT® Server 4.0

Notes:

1. If you are installing on a stand-alone NT Server (an NT Server that is not connected directly to any other networks) and wish to get your Network Stations up and running as quickly as possible, you can use the default IBM DHCP Configuration file that is supplied with the Network Station Product. If you want to use this file without modification, set your NT Server's *IP Address* to: **10.0.0.1** and *subnet mask* to **255.255.255.0** as described in item 8, on page 3-4. See IBM DHCP Server Configuration on page 3-16 for more information.

2. If you are using a stand-alone NT server, you also do not have to set a *default gateway* or any *DNS Settings.*

3. If you wish to use the default configuration, but require to download the Network Station software components from the World Wide Web, use network addresses that will allow you to access your local network and the WWW first, then modify these addresses to those given above.

In this section we do not talk you through a complete Microsoft Windows NT Server Setup. Instead, we will describe NT Server Setup areas that must be installed for Network Station Manager to function correctly. You must reference the Microsoft documentation that covers NT Server Setup and use it in conjunction with this section.

Because the Network Station Product includes complex TCP/IP software that will interact closely with the NT Server you should only install the Network Station product on a known "clean" NT Server (a server which has not had any 3rd party software installed). If you are unsure about your existing NT Server we recommend that you re-install Microsoft Windows NT Server completely. While re-installing Windows NT Server on an existing system you will be given the following options:

- *To upgrade Windows NT in the directory shown above, press ENTER.*
- *To cancel upgrade and install a fresh copy of Windows NT, press N.*

Choose "N" to cancel the upgrade and install a fresh copy of Windows NT.

Microsoft NT Server Setup Checklist

Table 3-2. Microsoft NT Server Setup Checklist

Server Formatting Essentials	√
At the beginning of the Windows NT Server Setup process you must format the NT Server partition as *NTFS* with at least *500 MB* minimum partition size.	
Windows NT Server 4.0 Setup Essentials	**√**
1. The *Server Type* may be a *Primary Domain Controller* or a *Stand Alone Machine.*	
2. The *Microsoft Internet Information Server* must be installed.	

3. You must select a suitable *Network Adapter* that is installed in your server. Use either: Token Ring, version 2 (802.2) Ethernet, or IEEE (802.3) Ethernet.	
4. On the *Network Protocols* screen, make sure the *TCP/IP Protocol* is ticked. Other protocols are optional.	
5. On the *Network Services* screen, all the services should be displayed to you already ticked. Click on *Next* to install the selected components (you will be asked to confirm this by clicking on *Next* again).	
6. An *Adapter Card Setup* box will appear. Enter the appropriate details for the adapter card you are using. **Note:** Read the notice about suitable adapter card drivers in the Prerequisites. section on page 3-2. Some adapter cards may require an updated driver that will not be available from the Windows NT list.	
7. A *TCP/IP Setup* box will appear. Click on *No* in response to the question *"… Do you wish to use DHCP?"* . You will provide this information later, when you install the *IBM DHCP Service*.	
8. The *Microsoft TCP/IP Properties Notebook* will appear. On the *IP Address* page, enter the following (use table 2-2, TCP/IP Information Chart): a) *IP Address* b) *Subnet Mask* c) *Default Gateway* (**Note:** This is optional, depending upon your situation.)	
9. Still in the *Microsoft TCP/IP Properties Notebook*, click on the *DNS* tab and enter the following (use table 2-2, TCP/IP Information Chart) : **Note:** The following are optional, depending upon your situation. a) *Host Name* (this will already be filled in with the *Computer Name* that you chose earlier in the setup process. You may accept this name or alter it now). *b) Domain* *c) DNS Address (click on Add in the DNS Service Search Order box to add this address)* Now click on *OK*.	
10. The *Show Bindings* box will appear. Click on *Next*, then *Next* again.	

11. If you have chosen to setup this server as a *Primary Domain Controller*, you will be requested to enter a *Domain Name* for this server. Use table 2-2, TCP/IP Information Chart to locate the *Domain Name.* If you have setup this server as *Stand Alone*, you will be requested to enter the name of a *Domain* or *Workgroup* to join. If joining a Domain, the Domain must already exist and you will need to create a *Computer Account* for this server on the Domain that you wish to join. See your Domain Administrator to obtain a Computer Account.	
12. Click *Finish* and the *Microsoft Internet Information Server 2.0 Setup* will appear. Make sure the following are selected: *a) Internet Service Manager* *b) World Wide Web Service* The other services are optional. Now click on *OK* and *a*ccept the *default directories* that the setup process creates for these services.	
13. Check that the *Date & Time* are correct and select the local *Time Zone.* After clicking on *OK,* the setup process will ask you to select your desired *Display Properties.* The *Windows NT Setup* process will then copy all required files and configure your NT Server.	
14. Reboot the server and Login as Administrator.	

Downloading the Network Station Product from the World Wide Web.

1. Access the Network Station Web Page.

a) Ensure you have the latest UserGuide for this product. To view or print the latest update, go to http://www.as400.ibm.com/networkstation/pc

b) To download the Network Station product components, access the Network Computing Software Distribution Website at the URL address: http://www.as400.ibm.com/nc/swdist

2. Create a Target Download Directory.

On your server, create the following target directory for the software you are going to download:

a) From the *Windows NT Desktop*, double click on *My Computer*
b) Double click on the icon for your server's *C:*\ drive
c) Pulldown *File* ➔ *New* ➔ *Folder*. Create the folder *NS*
d) Pulldown *File* ➔ *New* ➔ *Folder*. Create the folder *NSBROWSE*

3. Download the Network Station Manager Product Components.

From the Network Station Manager Web page, download the following Network Station Product components:

Network Station Software Component	Save as…	√
1. IBM TCP/IP Services for Windows NT Server 4.0	*drive:*\NS\NSMTCPIP.EXE	
2. IBM Network Station Manager for Windows NT Server 4.0 (4 Components)	*drive:*\NS\SETUP.EXE	
	drive:\NS\SETUP.1	
	drive:\NS\SETUP.2	
	drive:\NS\SETUP.3	
3. The Network Station Browser of your choice: a) Navio NC Navigator for IBM Network Station *OR* b) IBM Network Station Browser **Note:** You can use any Javascript enabled browser on your server console, however you must download one of the above browsers for use by your Network Stations.	*drive:*\NSBROWSE\SETUP.EXE	

4. Download the Java ™ Development Kit (v 1.02.) from Sun Microsystems Inc.

From the Network Station Manager Web page, download the Java Development Kit (version 1.02.) file to the **root directory** of your server (C:\). Further information on Java can be found in JAVA VM on page 4-17, and *Where do I find Additional Information on Java?* on page 4-18.

Note: The instructions given in *Installing the Product Components on page* 3-8 assume that you have saved the downloaded Java Development Kit file as *JDK.EXE.*

Installing the Product Components

Install the Java ™ Development Kit (v1.02.)

You must install the Java Development Kit (version 1.02.) to enable Java functionality within the Network Station Manager program.

Note: In the instructions shown below, we have assumed that you have saved the downloaded Java Development Kit as *JDK.EXE.* The Java Development Kit you have obtained may be named differently, or require a different setup process. Please consult the documentation available with the Java Development Kit to ensure that this product is installed correctly.

To install Java, carry out the following:

JDK Software Component Installation	√
1. From the *Windows NT Desktop*, double click on *My Computer* , then double click on the icon for your server's *C:*\ drive. Double click on the *JDK.EXE* icon to begin the setup program. **Note:** You must run this program from the root directory so that the directory structure of the exploded JDK file is created in the correct place. This will create a *JAVA* sub-directory on your server.	
2. Add ***;drive :\JAVA\BIN*** to the startup path. From the Windows NT desktop, carry out the following: a) Open: *Start* ➔ *Settings* ➔ *Control Panel* ➔ *System* ➔ *Environment* b) Scroll down the *System Variables* box and select *Path* c) The current *Value* box should read: ***%SystemRoot%\system32;%SystemRoot%*** To the end of the above line, add the string: ***;drive:\JAVA\BIN*** where *drive:* is the server drive letter on to which you have installed the JDK.	
3. Click on *Set*, then *OK*	
4. *Shutdown and Restart Windows NT* and log back on as *Administrator.*	

Install the IBM DHCP Protocol Driver.

You must install the IBM DHCP Protocol driver to enable DHCP funtionality on your server.

To install the IBM DHCP Driver, carry out the following:

IBM DHCP Protocol Driver Component Installation	√
1. From the *Windows NT Desktop*, double click on *My Computer* and open the *NS* folder.	
2. Explode the zipped IBM TCP/IP component by double clicking the *NSMTCPIP* icon.	
3. From the Windows NT Desktop, install the *IBM DHCP Driver*, by carrying out the following: a) Open: *Start* ➔ *Settings* ➔ *Control Panel* ➔ *Network* ➔ *Protocols* b) Click on *Add* c) Click on *Have Disk…* d) In the *Insert Disk* box, enter *drive:\NS\WEDGE* e) The *Select OEM Option* box will appear and the *IBM DHCP Driver* will be highlighted. Install this driver by clicking on *OK.* f) When the *IBM DHCP Driver* has been installed you will be returned to the *Protocols* screen. Click on *Close* g) Windows NT Server will ask you if you want to "*shutdown and reboot".* Click on *No.*	

Install IBM Network Station Support

The IBM Network Station Support Component comprises all the required programs that make up the Network Station Manager program, including components accessible from the Network Station Manager program and on-line help.

NOTES:

1. You must ensure that you have access to the server that you intend to install the Network Station Manager program, using a user account with administrator privileges.
2. If you log onto a domain, your Username and Password must be the same as a administrator account on the local server where you intend to install the Network Station Manager program.
3. If you have a domain, you will find it easier to logon directly to the local server where you intend to install the product. This will simplify the installation. To do this, from the NT logon box, select your *local machine name* from the "*From*" pulldown list and logon as administrator.

To install Network Station Support, carry out the following:

IBM Network Station Support Component Installation	√
1. From the *Windows NT Desktop*, double click on *My Computer* and open the *NS* folder.	
2. Explode the zipped Network Station Support component by double clicking the *SETUP* icon. The *Setup program* will automatically begin.	
3. When you are prompted for the *NSM Destination directory*, click on *Next* to accept the displayed *Destination Directory*: *drive:\nstation* **Note:** By default, the IBM Network Station Support component will install to your NT Server drive (the C:\ drive). You may select a different drive, however the Network Station Support component must be installed onto the same drive as the IBM TCP/IP Services for Windows NT 4.0 component, that is discussed on page 3-12.	

In addition to installing the Network Station Manager program, the above *setup* process will carry out the following:

1. These files will be created:

   a) *\IBMTCPIP\ETC\EXPORTS*
   This file contains the directory path for the Network Station user data files.

   b) *\IBMTCPIP\ETC\DHCPSD.CFG*
   This is the DHCP Configuration file. We will discuss editing this file in the Configuring Your Server section that follows.

2. The local user groups *NSMAdmin* and *NSMUser* (case sensitive) will be created.

3. The Microsoft IIS WEB Server configuration will be updated.

Set Network Station Manager Directory Permissions

drive:\nstation\userdata

1. From *My Computer.*
2. Highlight the *drive:\nstation\userdata* folder, where *drive:* is the drive where you have installed the product.
3. Click the *right mouse button,* and select *Properties.*
4. Click on the *Security* tab.
5. Select *Permissions.* The *Permissions* box will appear.
6. Highlight *NSMUser*.
7. Change the *Type of Access* to *Full Control.*
8. Check the *Replace Permissions on Subdriectories* check box
   Note: Do not uncheck the *Replace Permissions on Existing Files* checkbox while you are doing this!
9. Click on *OK* to save the permissions.
10. You will be prompted, "*Do you want to replace security information on all existing subdirectories within drive:\nstation\userdata?*". Click on *Yes*.

drive:\nstation\userdata\sysdef

1. From *My Computer.*
2. Highlight the *drive:\nstation\userdata\sysdef* folder.
3. Click the *right mouse button,* and select *Properties.*
4. Click on the *Security* tab.
5. Select *Permissions.* The *Permissions* box will appear.
6. Highlight *NSMUser*.
7. Change the *Type of Access* to *Read.*
8. Check the *Replace Permissions on Subdriectories* check box
   Note: Do not uncheck the *Replace Permissions on Existing Files* checkbox while you are doing this!
9. Click on *OK* to save the permissions.
10. You will be prompted, "*Do you want to replace security information on all existing subdirectories within drive:\nstation\userdata?*". Click on *Yes*.

Install Your JavaScript Enabled Browser.

Notes:

1. *Navio NC Navigator for IBM Network Station* and the *IBM Network Station Browser* can only be installed after the *Network Station Support* component has been installed on your server.

2. Your Network Stations can only use the following browsers (these browsers have been designed especially for the IBM Network Station):

   - Navio NC Navigator for IBM Network Station

OR

- IBM Network Station Browser

3. Your Server Console can use any standard JavaScript enabled browser. See the list of recommended browsers on page 3-2.

*** NOTE**: Do not shutdown and restart windows at any point during this browser installation section. After you have run your browser's setup program, you will be asked to *shutdown and restart Windows* to allow the changes to take effect. As you have not yet installed IBM TCP/IP Services, shutting down and restarting windows at this stage will display an error message. (If you do accidentally shutdown and restart, do not worry, the error message will disappear after you install IBM TCP/IP Services).

To install your browser, carry out the following:

JavaScript Enabled Browser Component Installation	√
1. Install the browser that will be used by your Network Stations: Double click on the *SETUP* icon in the *drive:\nsbrowse* folder to install either the *IBM Network Station Browser* or the *Navio NC Navigator for IBM Network Station*. Follow the browser's own setup instructions to install the product. *** Do not shutdown and restart windows at this point.**	
2. Install the JavaScript enabled browser that you wish to use on your server console. *** Do not shutdown and restart windows at this point.**	
3. At your server console, enter the correct internet connection address, or proxy server address and port number for the browser. To do this, from the *Windows NT Desktop,* right-click on your *Browser's icon.* Select *Properties*, then *Connection*.	

Install IBM TCP/IP Services for Windows NT Server 4.0

Notes:

1. The IBM TCP/IP Services for Windows NT Server 4.0 must be installed on the same drive as the IBM Network Station Support component.

2. Once your IBM DHCP Driver has been installed, your Network Properties will become “locked”. If you require your Network Properties unlocked at a later time, please ensure you read Unlocking your Network Properties Notebook.3-14.

To install the IBM TCP/IP Services, carry out the following:

IBM TCP/IP Services for Windows NT Server 4.0 Component Installation	√
1. From the *Windows NT Desktop*, double click on *My Computer* and open the *NS* folder. Double click on the *INSTALL* icon. The *IBM TCP/IP Setup Program* will begin.	
2. Select *Install TCP/IP Applications* and click on *Next.*	
3. Accept *C*:, or substitute your own *drive:* letter as the *Target Directory.* You will then be warned that the target directory already exists. This is normal. Click on *Yes* to overwrite.	
4. Click on *Next* to install the components. After the TCP/IP components have installed the *IBM TCP/IP Application Configuration* notebook will appear.	
5. Click on the *TFTPD tab:* a) In the *Directories* area, click on *Add.* b) An *Add TFTPD Directory* box will appear; enter: *DRIVE:\nstation* In the *Add TFTPD Directory* box, click on *OK.*	

IBM TCP/IP Services for Windows NT Server 4.0 Component Installation	√
6. Click on the *NFSD tab:* a) Ensure that the *Use Windows NT Security* box is ticked. b) Ensure that the *Exported Directories* box reads: *drive:\nstation\userdata* *drive:\users* *drive*:*nstation* c) Ensure that the *Aliases* box reads: */netstation/userdata/* */users/* */netstation/*	
7. Click on the *TIMED tab:* Ensure that the *Adjust Local Time* box is ticked.	
8. Click on the *DHCP tab:* Ensure that the *DHCP Configuration File Name* is: *DHCPSD.CFG* This is the DHCP configuration file that is used to control your DHCP environment and your attached Network Stations. **IMPORTANT:** If you did not choose 10.0.0.1 as your server IP address during the Installing Microsoft Windows NT® Server 4.0 section on page 3-3, but you do wish to use the supplied default IBM DHCP configuration, go to the IBM DHCP Server Configuration section on page 3-16 now, before shutting down and restarting Windows NT.	
9. Click on *OK.* A *Warning* box will appear informing you that "*You must reboot to start the services".* Click on *OK.*	
10. Shutdown and restart Windows NT to allow these changes to take effect.	

Unlocking your Network Properties Notebook.

Once the IBM DHCP Protocol Driver has been installed you will be prevented from changing any *IBM DHCP Driver* or *TCP/IP Protocol Properties* (accessed from the *Protocols* tab of the *Network* notebook). If you have to change any *TCP/IP Protocol Properties* at a later time you must carry out the following:

1. Open a *Command Prompt* window and disable, then remove the IBM DHCP Driver by typing the following two commands:

   a) wejcfgex –disable

   b) wejcfgex –remove

2. From the Windows NT Desktop,select: Open: *Start* ➔ *Settings* ➔ *Control Panel* ➔ *Network* ➔ *Protocols*

3. Select *IBM DHCP Driver* and click on *Remove.*

4. You may then make any required changes to your *TCP/IP Protocol Properties.*

5. To re-install the IBM DHCP Driver, carry out the steps described in *Install the IBM DHCP Protocol Driver* on page 3-8.

Where Do I Find Additional TCP/IP & DHCP Information?

After you have installed the Network Station product, additional help will become available on DHCP and TCP/IP. To access this additional help, from you Windows NT Desktop, carry out the following:

Open: *Start* ➔ *Programs* ➔ *Network Station TCPIP* ➔ *Help*

We strongly advise you to read through this *Help* document before you edit your DHCP configuration file as discussed in the nect section, IBM DHCP Server Configuration. The *Network Station TCPIP Help* publication contains additional information which is beyond the scope of this document.

IBM DHCP Server Configuration

The *\IBMTCPIP\ETC\DHCPSD.CFG* file is the main configuration file for DHCP and your Network Stations. A Graphical User Interface (GUI) is supplied for configuring this file and is known as the *DHCP Server Configuration program*. The GUI is accessible from the *IBM TCP/IP Application Configuration notebook* (the same notebook you configured while installing the IBM TCP/IP Services component in the previous section).

To start the IBM DHCP Server Configuration Program:

1. From the Windows NT Desktop, open the *IBM TCP/IP Configuration notebook* by running the following program:

   drive:\IBMTCPIP\BIN\TCPCFG.EXE

2. Select the *DHCP tab.*

3. To start the *IBM DHCP Server Configuration Program*, click on the *Launch* button.

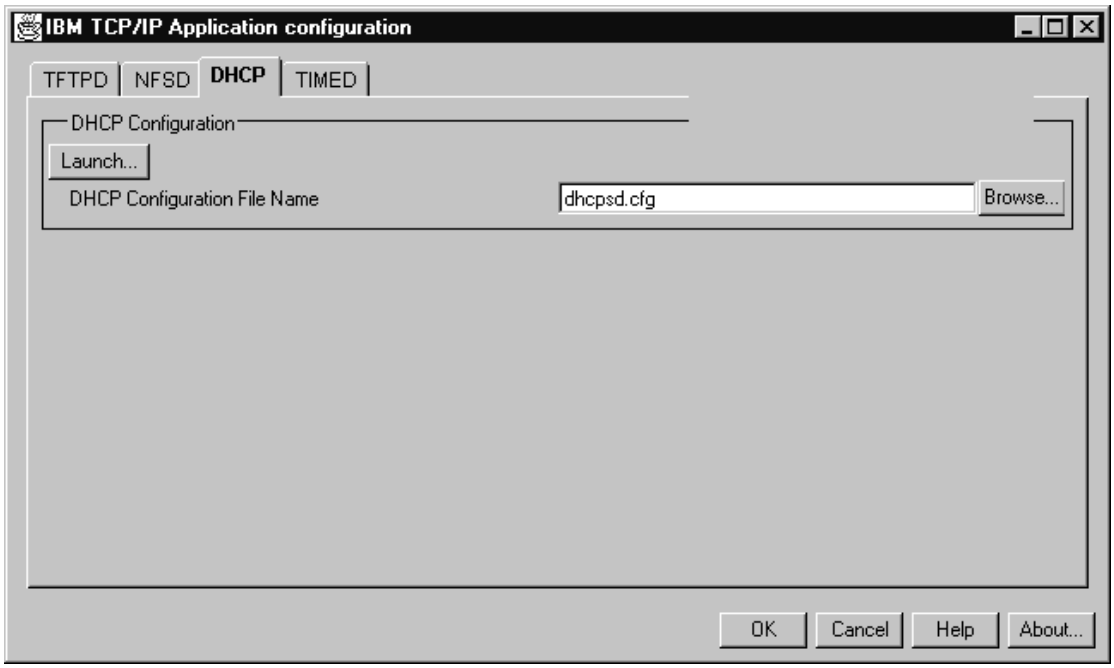


Figure 3-1 The IBM TCP/IP Application Configuration notebook.

Working with the IBM DHCP Server Configuration GUI.

The instructions that follow can be given only as a basic guideline to help you begin working with the *IBM DHCP Server Configuration GUI* . The GUI is, by necessity, a rather complex program. It has it's own detailed on-line help available. If you are unfamiliar with the principles of TCP/IP it is recommended that you familiarize yourself with these principles before continuing. Consult the bibliography at the end of this book for recommended further reading material or contact your IBM vendor for details of TCP/IP Education courses that are available in your area.

Familiarizing yourself with the IBM DHCP Server Configuration GUI.

As the easiest way to learn a program of this sort is by example, a fully detailed sample file is included for you to explore. This will help you quickly understand the GUI and show you how you should setup your own configuration file.

To load the sample file:

1. Pull down the *File* menu.
2. Select *Load Sample*.

The sample file (shown below) will load. You should explore this file and read the IBM DHCP Server Configuration on-line help before attempting to create your own configuration file.

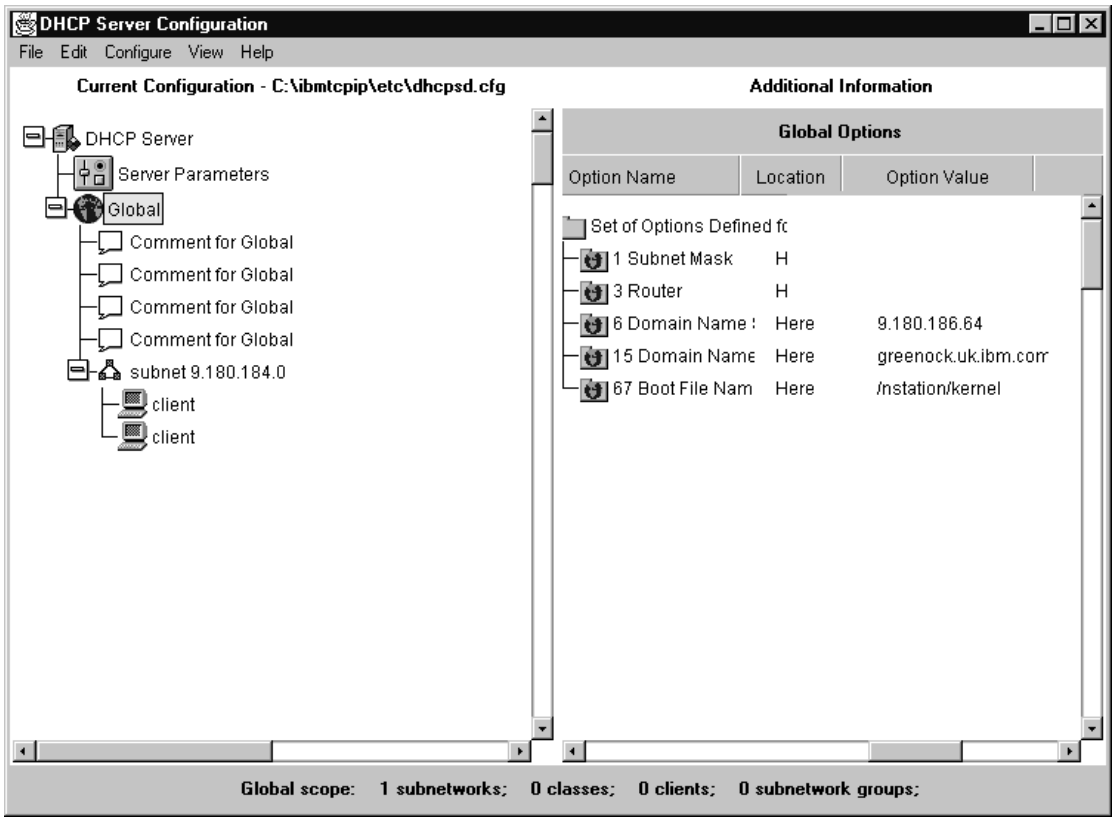


Figure 3-2. The DHCP GUI Sample File.

Modifying the DHCP Configuration File to Your Own Specifications.

The installation steps you have undertaken in this chapter will already have created the main configuration file. This generic file will allow you to run a stand-alone NT Server 4.0 Network with a number of attached Network Stations immediately. You must modify this file if you are attaching to an existing network.

When you have *Launched* the GUI, open the main configuration file by clicking on *File* then *Open* and select the file:

drive:\IBMTCPIP\ETC\DHCPSD.CFG

You must build a complete graphical description of your TCP/IP network. To help carry this out, please ensure you have the following two information charts available – *Table 2-2 TCP/IP Information Chart* and *Table 2-3 IBM Network Station Information Chart.*

Notice that the *Option numbers* (or the given *Option names*) shown on these charts correspond to the *Options* that you will define for each item of your TCP/IP network, as shown in the examples below:

Subnet Definition.

You must define your subnet configuration. Your subnet information can be taken from *Table 2-2. TCP/IP Information Chart.*

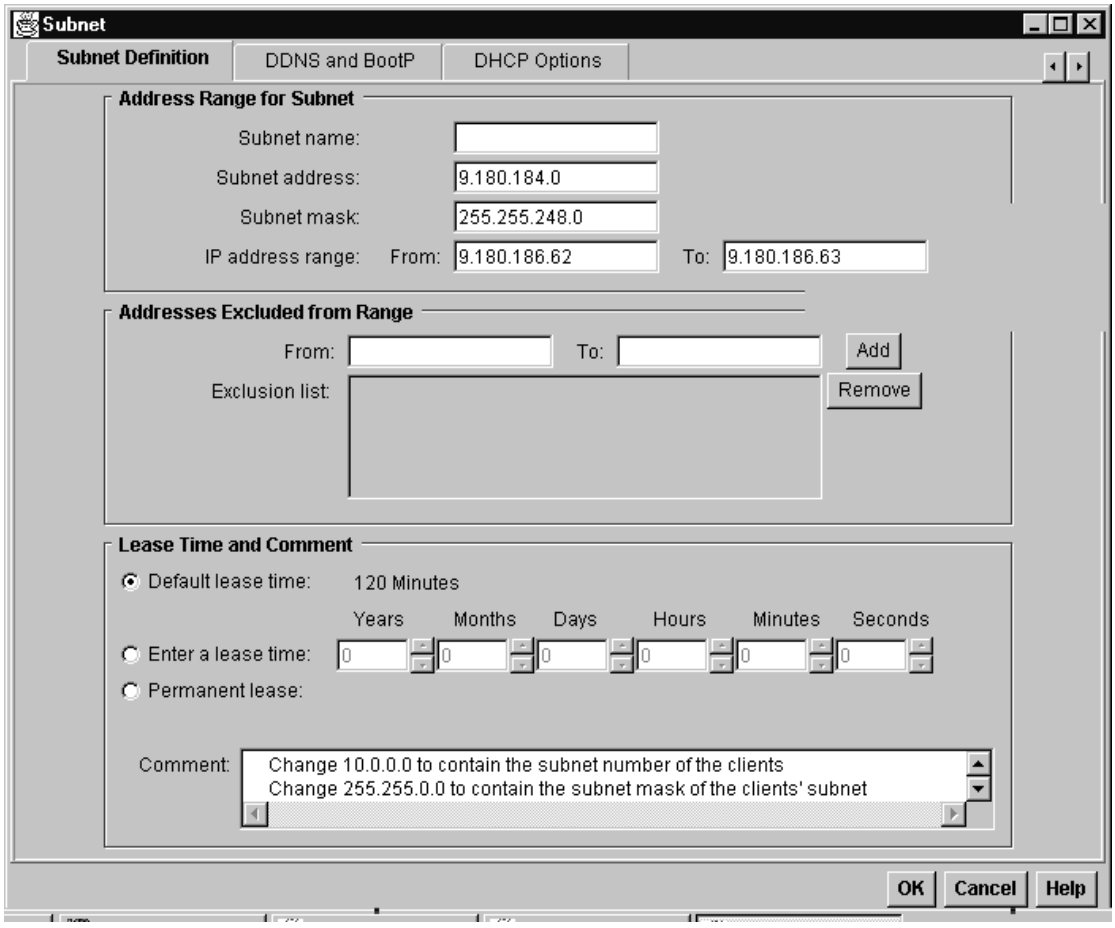


Figure 3-3. Subnet Definition Page.

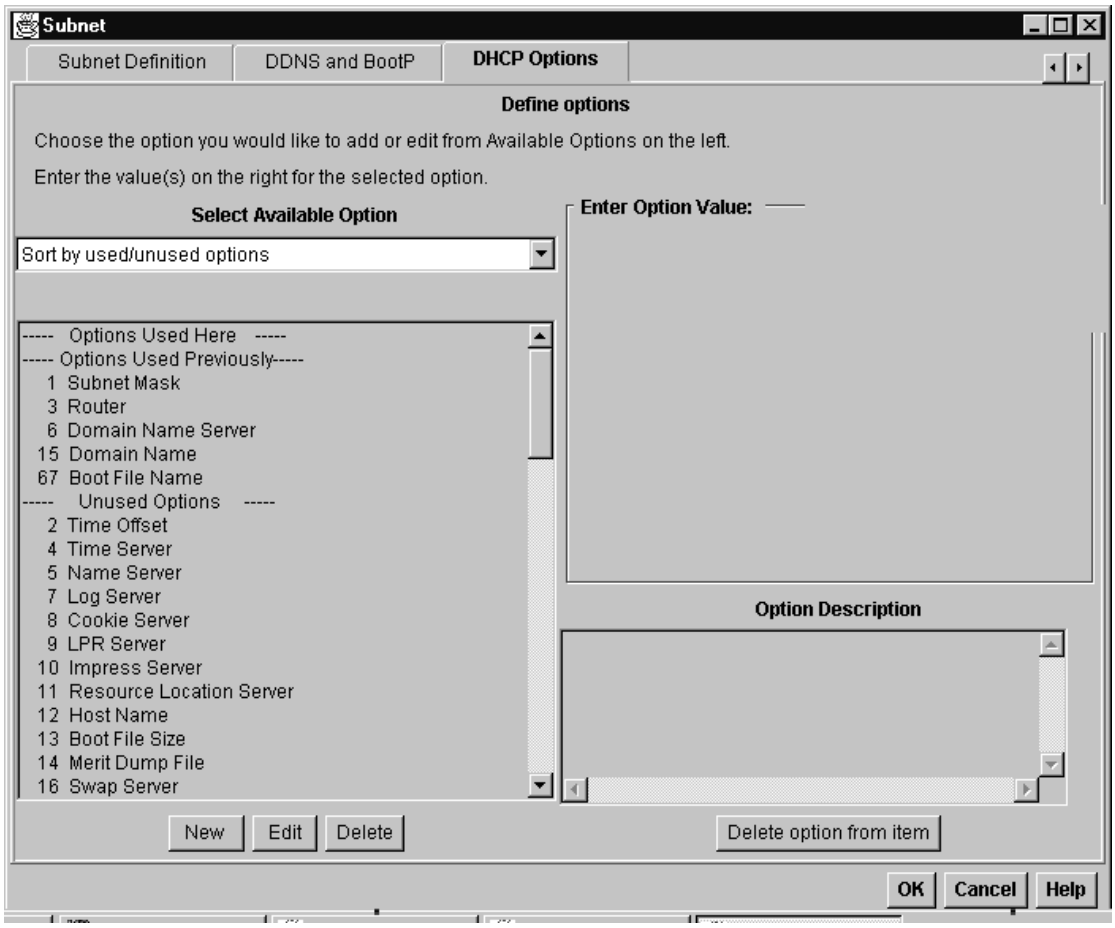


Figure 3-4. Subnet DHCP Options Page.

Client Definition.

You must define each Network Station Client that is connected to your server. Use *Table 2-3 IBM Network Station Information Chart* to help you enter your client definitions. On the *Client Definition* page you can select to either assign unique IP addresses for some, or all of your clients, or you can select *Assign any Address* to allow IBM DHCP to control the address assignment for you.

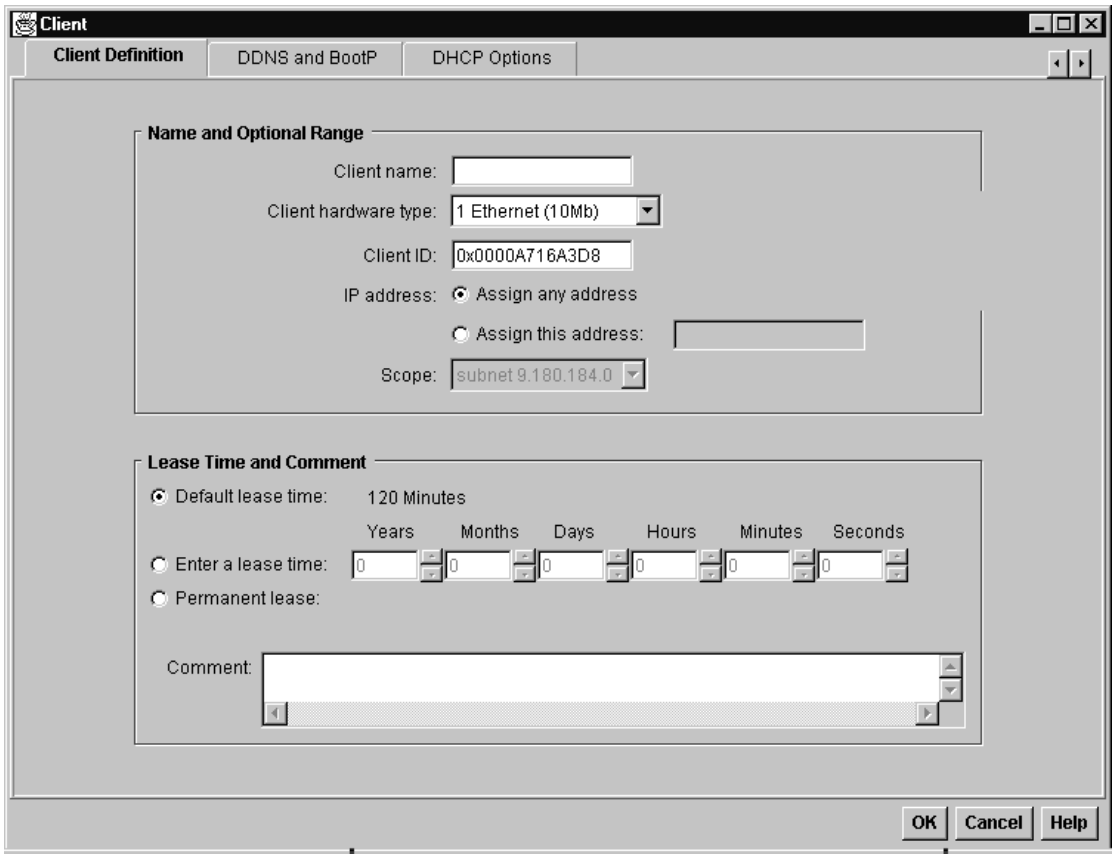


Figure 3-5. The Client Definition page.

When you have created a map of your own TCP/IP environment by using the DHCP Server Configuration GUI, save configuration and exit the program.

You will be returned to the *IBM TCP/IP Application Configuration* notebook.

1. Click on *OK*. A *Warning* box will appear informing you that "*You must reboot to start the services".*

2. Click on *OK* again.

3. Shutdown and restart Windows NT to allow these changes to take affect.

Creating User Accounts on your NT Server

During the *Network Station Support Component Installation* the following local Windows NT User Groups will have been created:

- NSMAdmin

  This Administrator Group will allow rights to use the Network Station Manager Program and allow a user in this group to change Network Station Manager Program settings for <u>any</u> Network Station user.

- NSMUser

  A Network Station User assigned to this group will be able to logon and work from any Network Station. They will be able to access the Network Station manager Program at a User Level and be allowed to change basic settings for their <u>own</u> logon environment.

See Chapter 4 . Logging on and Working with IBM Network Station Manager Applications on page 4-2 for more information.

Adding a new User to Windows NT.

To create Network Station Users and Administrators, from the Windows NT Desktop, carry out the following:

Add the New User:

1. Click on *Start* ➔ *Programs* ➔ *Administrative Tools (Common)* ➔ *User Manager for Domains.*

> **IMPORTANT:** If you are logged onto a domain, and the server where you have installed IBM Network Station Manager, **<u>is a Stand Alone Machine</u>**, carry out the instructions given in step 2. otherwise skip to step 3.

2. *If you are logged onto a domain*, then the user and group lists will be for that domain, not the local machine. All users *must* be added to the local machine list. To do this, carry out the following: Pulldown ➔ *User* ➔ *Select Domain*. In the Domain field type: "\\<local-machine-name>", where <local-machine-name> is replaced by the name of the machine onto which you have installed the Network Station Manager program. This will bring up the user and group list for that machine.

3. Pull down the *User* menu and click on *New User*.

4. The *New User* screen will appear. Enter all the details for this user.

Assign the New User to their Network Station Group(s):

1. Click on the *Groups* button. The *Group Memberships* notebook will appear.

2. *Add* the new user to the *NSMUser* group.

3. Optionally *Add* the new user to the *NSMAdmin* group (only if this user is to be allowed to configure other Network Station users).

4. Click on *OK* to exit *Group Memberships* and return to the *New User* screen.

Save the New User to the NT Security Database:

1. Click on *Add* to add this user to the *NT Security Database*.
2. Repeat these steps for any other users you wish to create.
3. Click on *Close* to exit *New User* creation.
4. *Exit* the User Manager application.

Your Network Station users will now be able to log on and begin working with their Network Stations.

Starting the Network Station Manager Program

From the server console, start your JavaScript enabled browser and enter the URL:

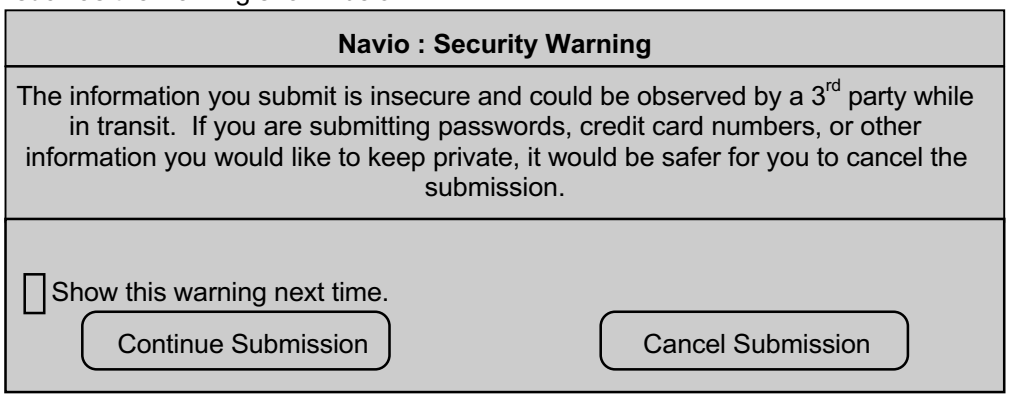
http://127.0.0.1/nstation/html/admin.htm

Note: If you have configured a *Proxy server* when you installed the JavaScript enabled browser, or you wish to run the Network Station Manager Program from anywhere other than your server console, replace *127.0.0.1* with the *IP address* of your NT server.

This will begin the Network Station Manager Program. You may wish to further configure your Network Station Users by customizing their Network Station Startup environment, or by adding additional applications to their startup menu bar. For more information on carrying out these procedures, see Chapter 5 . Using the IBM Network Station Manager Program on page 5-1.

Browser Security Warnings

When you attempt to alter a user's default settings using the Network Station Manager Program, your browser will issue a standard browser security warning such as the warning shown below:



To allow the changes to be made, select *Continue Submission*. If you select *Cancel Submission* the changes will not be made.

Uninstalling the Product Components

If you wish to uninstall the Network Station Manager product components, from the Windows NT *Desktop*, carry out the following:

1. Open: Start ➔ Settings ➔ Control Panel ➔ Add/Remove Programs

2. Select the Network Station Manager component that you wish to uninstall and click on *Add/Remove*. Follow the directions given in the *Uninstall Shield*. As the Network Station Product components share some common files, in order to completely remove the components, they must be uninstalled in this given order:

    a) IBM TCP/IP Services
    b) JavaScript Enabled Browser
    c) IBM Network Station Support

Note: Once the IBM DHCP Protocol Driver has been installed you will be prevented from changing any IBM DHCP Driver or TCP/IP Protocol Properties. If you wish to change these properties, without uninstalling/reinstalling the components, carry out the instructions given in Unlocking your Network Properties Notebook.on page 3-14.

Chapter 4 . Logging on and Working with IBM Network Station Manager Applications

This chapter discusses how to logon to the IBM Network Station and work with various applications supported by the IBM Network Station. Topics are:

- Logging onto the IBM Network Station
- Working with applications such as:
    - 5250 Emulation sessions
    - 3270 Emulation sessions
    - Browser sessions
    - Java applications
    - Java applets

Login

After you power-on your IBM Network Station, the following Login screen appears:

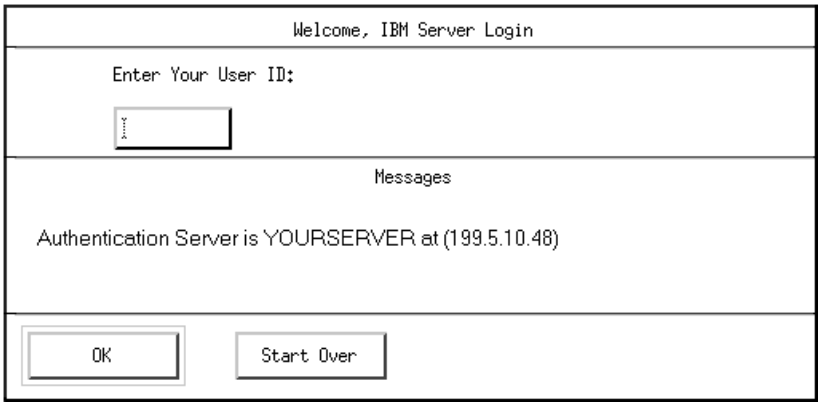


Figure 4-1. IBM Network Station Login Screen - Logon

Figure 4-1 shows the initial IBM Network Station login screen.

- Type your user profile name and press *Enter*.
- Type your password and press *Enter*.

Note: The mouse must be inside the window to make the window active.

Figure 4-2 shows the IBM Network Station menu bar, which contains the available applications to select. If any applications were specified to autostart by the IBM Network Station Manager (see Chapter 5 . Using the IBM Network

Station Manager Program for more information), they will appear on your screen. If no applications were set to autostart, select any applications that appear in your menu bar. Available default application buttons are: 5250, 3270, and the IBM Browser.

Figure 4-2. IBM Network Station Menu Bar – newmenu.

The buttons within the menu bar are:

- Log Out

Clicking Logout logs you off the IBM Network Station.

- Hide Menu or Show Menu.

Clicking Hide Menu makes the menu bar float out of view when you move the mouse pointer off the menu bar. To retrieve the Menu bar, move your mouse pointer to the very bottom or top of your screen. This is useful if the menu bar covers part of an application window. Clicking the Show Menu button to enable the menu bar to be displayed on the screen.

- Move to Top or Move to bottom

Clicking Move to Top moves the Menu bar to the top of the screen. The Move to Top button will change to read Move to Bottom after the menu bar moves to the top. Clicking the Move to Bottom button, once the Menu bar is located at the top, moves the Menu bar back to the bottom.

- Other buttons

Other buttons on the Menu bar will be applications available to select and use.

- Lock Screen

The Lock Screen button allows you to lock the screen when you leave the workstation. You will be prompted for a lock screen password.

Working with the 5250 Emulation Application

The 5250 application provides access to an AS/400 system. How each 5250 session is presented on the IBM Network Station depends on how you configured the session using the IBM Network Station Manager program.
If you used the Menu feature of the Startup function (within the IBM Network Station Manager program), and you added a new 5250 session labeled MY5250, that menu button (labeled MY5250) will appear within the Menu bar as shown in Figure 4-3.

Figure 4-3. Menu Bar with MY5250 Button – menu5250.

If, in the IBM Network Station Manager program, the 5250 session was set to autostart, a 5250 session will appear running on the screen of your IBM Network Station as shown in Figure 4-4.

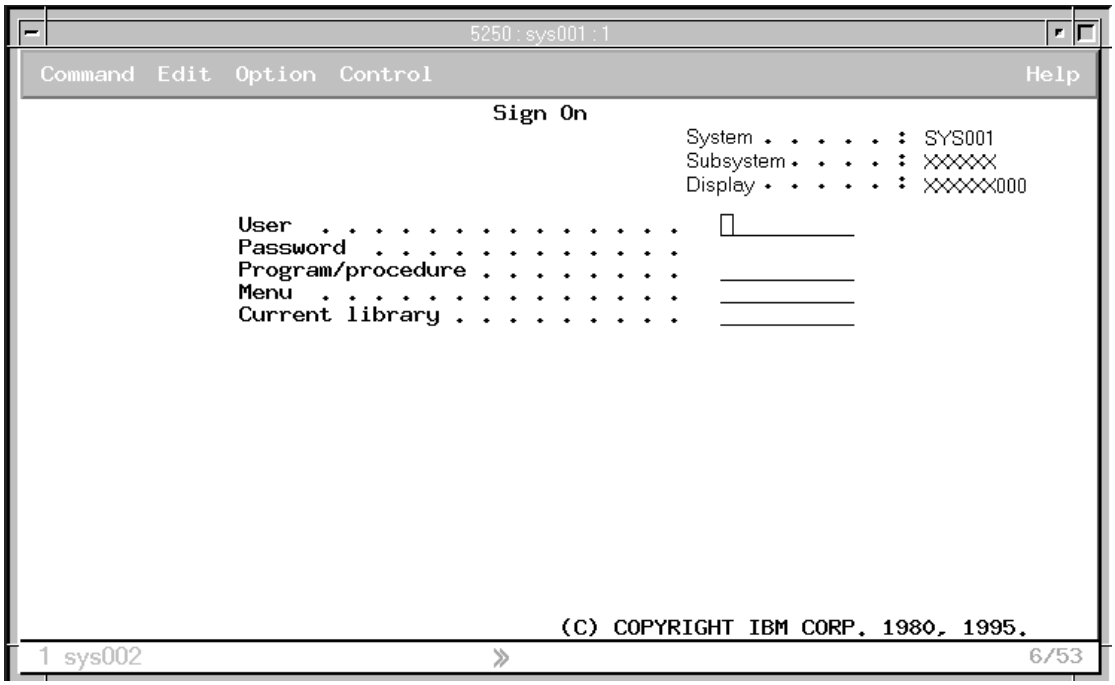


Figure 4-4. 5250 Session Display - 5250

If you click the 5250 button within the IBM Network Station Menu bar, a New 5250 Session window appears as shown in Figure 4-5.

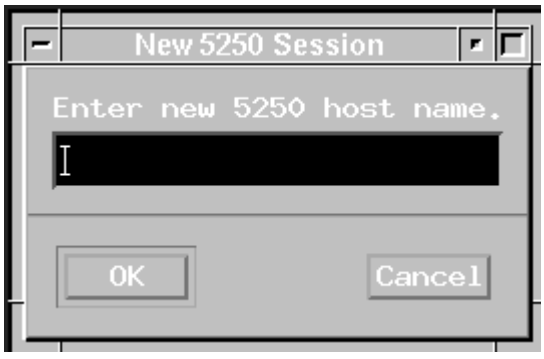


Figure 4-5. New 5250 Session Dialog Box - 5250

Note: You can use the name of the system or the IP address of the system to connect to or start a session. To use a system name, you must set up name

translation information in your TCP/IP configuration. Depending on the volume of network traffic, you can expect it to take from several seconds up to a minute to see the AS/400 sign-on display appear.

Learning About the 5250 Emulation Function

5250 emulation provides AS/400 system users with greater function than they normally receive if they just use a non-programmable workstation (NWS) to access the system. This additional function is available by clicking various pulldown options from the 5250 Menu bar as shown in Figure 4-6:

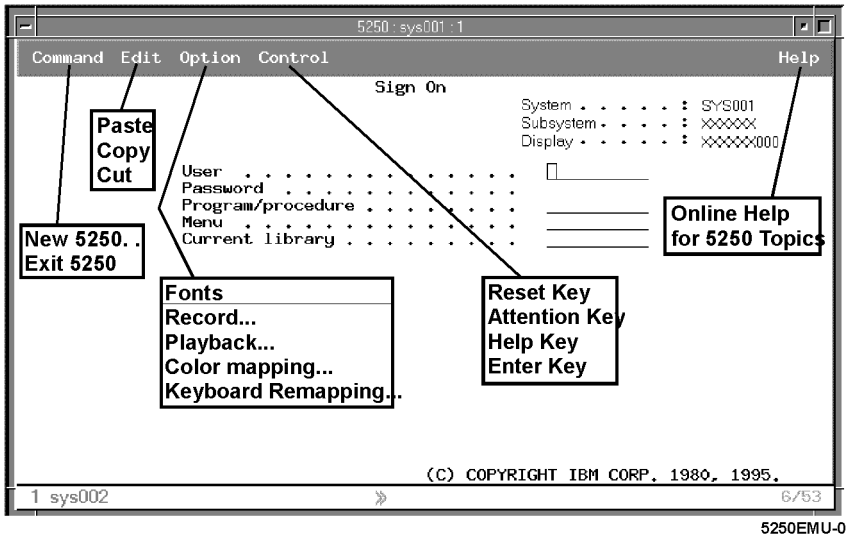


Figure 4-6. 5250 Emulation Session with Expanded Pulldowns – 5250EMU

As shown in Figure 4-6, pulldowns are available to allow you to quickly access 5250 emulation functions such as multi-session support (Command pulldown), font selection by session (Option pulldown), and online help (Help).

The following list contains additional 5250 emulation support:

- Keyboard remapping *
- Color mapping (basic and advanced) *
- Record/playback capability *
- Autostart of playback file (from the Record/playback function) *
- Auto-logon
- Enter key location (you can specify your choice of key to be used for the Enter key)
- Multiple screen size support (for example: 24 X 80, 27 X 132)
- OV/400 controller text assist
- Cut, copy, paste function *
- Hotspot support
- Cursor style options (for example, block or underscore)
- Rule line support
- Row and column indicator
- Customizable window title *
- Column separator function

* The IBM Network Station Manager program controls these 5250 Emulation functions. See Chapter 5, “Using the IBM Network Station Manager Program” for more information. Also, the online help in the IBM Network Station Manager program provides more information along with all 5250 emulation default settings.

All the 5250 emulation functions have shipped defaults. Those functions that are managed by the IBM Network Station Manager program also have IBM-supplied defaults. See Appendix C, “IBM Network Station Manager Program Shipped Default Settings” on page C-1 for a listing of all 5250 emulation defaults controlled by the IBM Network Station Manager program.

Accessing the online 5250 Emulation Help (by clicking the Help button) will provide more information on how to make each of these 5250 Emulation functions work.

Accessing Help

Help can be accessed for the 5250 Emulator or your AS/400 session.

For the 5250 emulator, place your mouse pointer in the emulator's Menu bar and click Help. To access help for AS/400, sign on to the AS/400, place your mouse pointer in the AS/400 session window and press F1.

Working with the 3270 Application

The 3270 application provides access to a System/390. How a 3270 session is pre-sented on the IBM Network Station depends on how you configured the session using the IBM Network Station Manager program.

Note: You can only have one open 3270 session on an IBM Network Station at a time.

If you used the Menu feature of the Startup function (within the IBM Network Station Manager program) and you added a new 3270 session labeled MY3270, that Menu button (labeled MY3270) will appear within the Menu bar as shown in Figure 4-7.

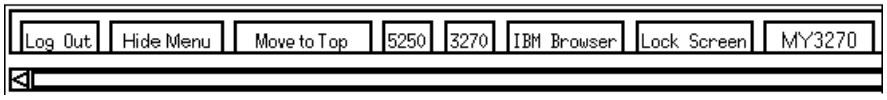


Figure 4-7. IBM Network Station Menu Bar with MY3270 Button – menu3270.

If the 3270 session was set to autostart, a 3270 session will appear on the screen of your IBM Network Station as shown in Figure 4-8.

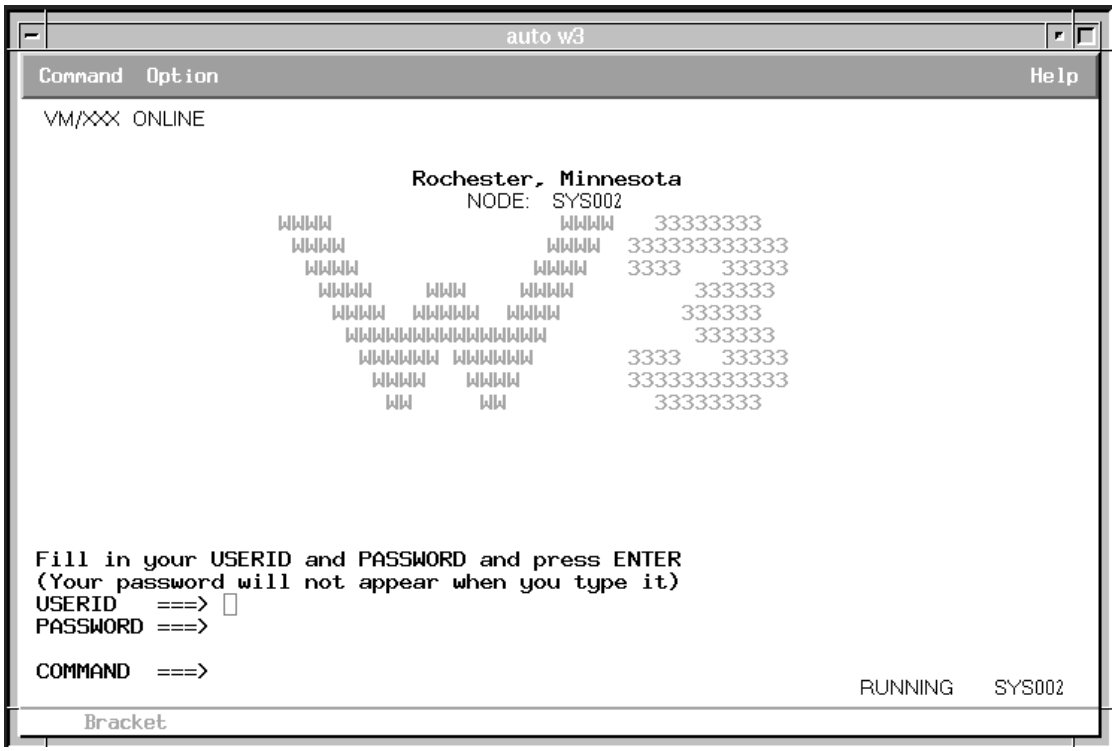


Figure 4-8. 3270 Session Display – 3270.

If autostart was not specified, and you click the 3270 button within the IBM Network Station Menu bar, a New 3270 Session window appears as shown in Figure 4-9.

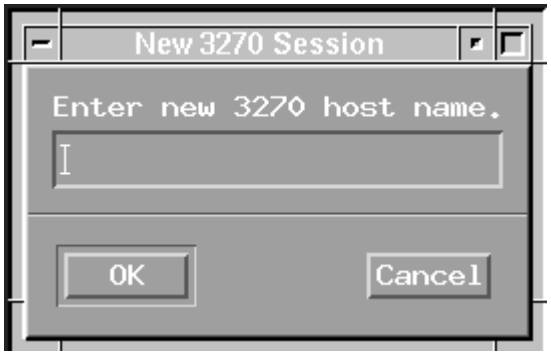


Figure 4-9. New 3270 Session Dialog Box – 3270 dia.

Note: You can use the name of the system or the IP address of the system to log on. To use a system name, you must set up name translation information in your TCP/IP configuration.

Depending on the volume of network traffic, you can expect it to take from several seconds up to a minute to see the Host Login Session screen appear.

Learning About the 3270 Emulation Function

3270 emulation provides AS/400 system users with greater function than they normally receive if they just use a 3270 non-programmable workstation(NWS) to

access a System/390. This additional function is available by clicking various pulldown options from the 3270 Menu bar as shown in Figure 4-10:

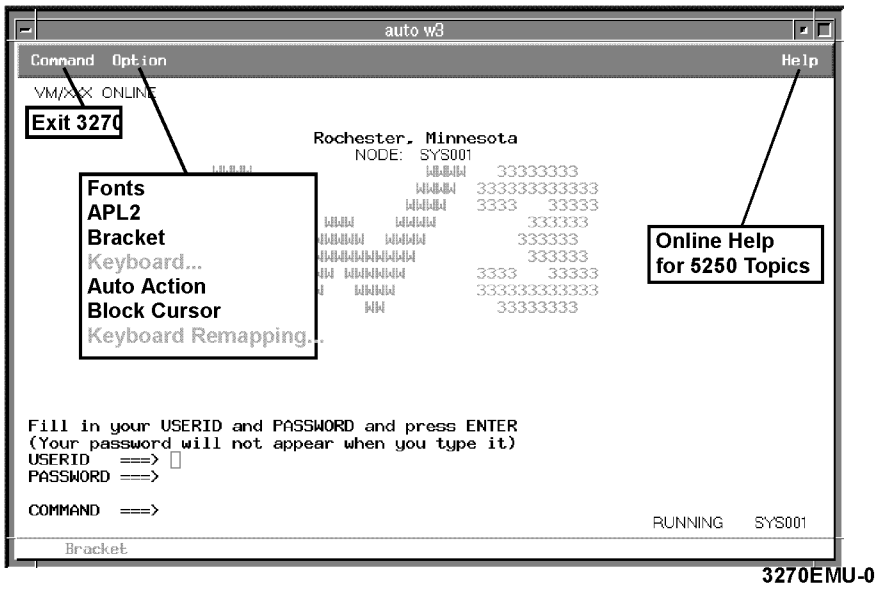


Figure 4-10. Emulation Session with Expanded Pulldowns. - 3270emu.

As shown in Figure 4-10, pulldowns are available to allow you to quickly access 3270 emulation functions such as font selection by session (Option pulldown) and online help (Help).

The following list contains some of the 3270 emulation support:

- Keyboard remapping *
- Graphics support *
- Choosing an Enter key location *
- Screen size support (for example: 24 x 80, 32 x 80, 43 x 80, and 27 x 132) *
- APL character mode support
- Pop-up keypad support *
- Copy and paste functions
- Auto action *
- Cursor style options (for example: underscore, block)
- Customizable window title *

* The IBM Network Station Manager program controls these 3270 emulation functions. See Chapter 5, “Using the IBM Network Station Manager Program” for more information. Also, the online help in the IBM Network Station Manager program provides more information along with all 3270 emulation default settings.

All the 3270 emulation functions have shipped defaults. Those functions that are managed by the IBM Network Station Manager program also have IBM-supplied defaults. See Appendix C, “IBM Network Station Manager Program Shipped Default Settings” on page C-1 for a listing of all 3270 emulation defaults controlled by the IBM Network Station Manager program.

Accessing the 3270 emulation Help (clicking the Help button) will provide more information on how to make each of these 3270 emulation functions work.

Accessing Help

Help can be accessed for the 3270 Emulator or your Host session.

For the 3270 emulator, place your mouse pointer in the emulator's Menu bar and click Help. Generally, to access help for the 3270 application, place your mouse pointer inside the Host session window and press F1.

Working with the IBM Browser

The IBM Browser can provide access to the Internet. It is also used to access the IBM Network Station Manager program, which is used to manage IBM Network Station users and workstations. See Chapter 5, “Using the IBM Network Station Manager Program” for more information.

If you used the Menu feature of the Startup function (within the IBM Network Station Manager program) and you added a new IBM Network Station Browser session labeled MYBROWSER, that Menu button (labeled MYBROWSER) will appear within the Menu
bar as shown in Figure 4-11.

Figure 4-11. IBM Network Station Menu Bar with IBM Browser Button - menu

If the IBM Browser session was set to autostart, an IBM Browser session will appear on the screen of your IBM Network Station as shown in Figure 4-12.

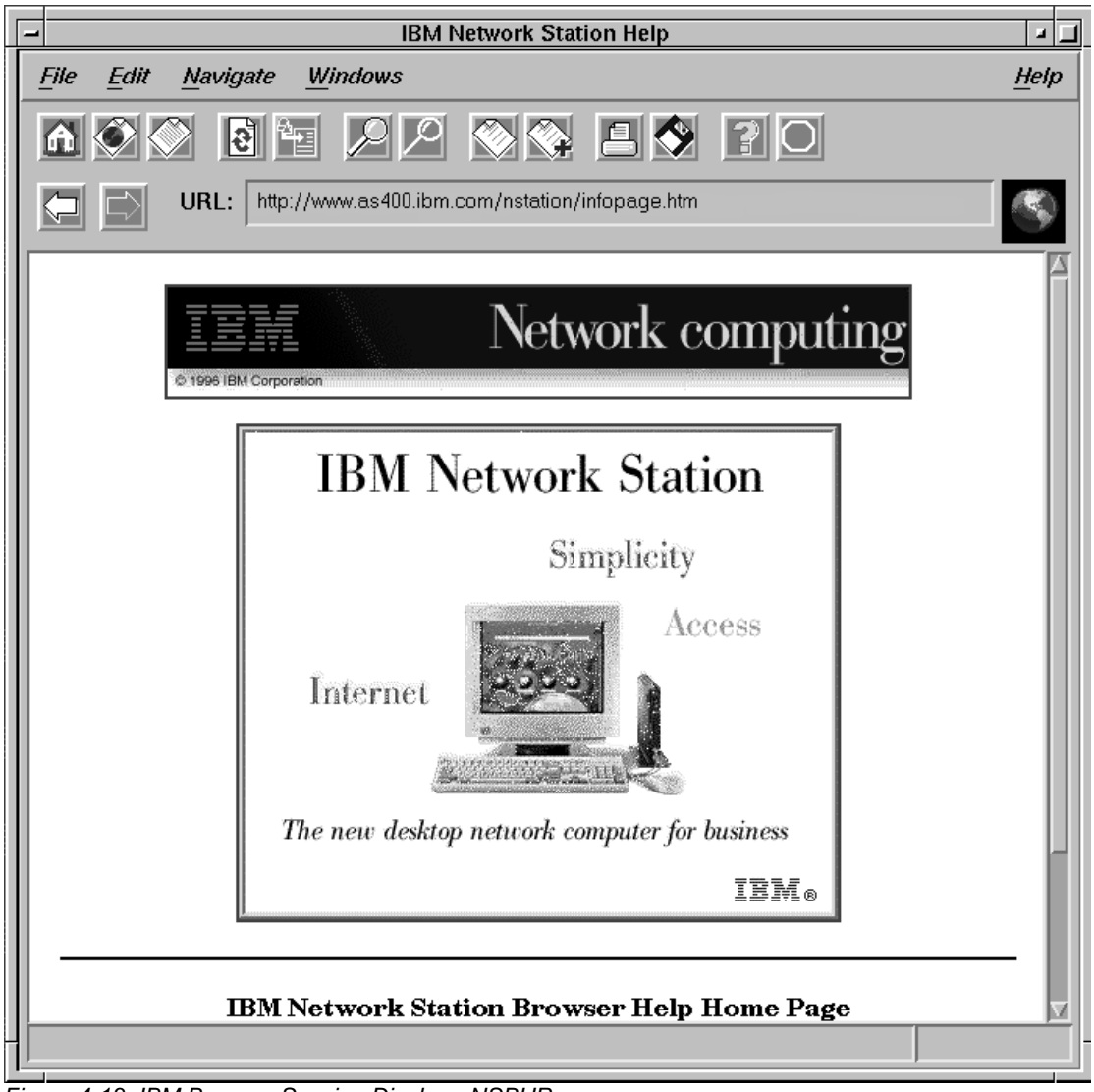


Figure 4-12. IBM Browser Session Display - NSBHP

If autostart was not specified, and you click the IBM Browser button within the Menu bar, an instance of the IBM Browser appears. Depending on the volume of network traffic, you can expect it to take from several seconds up to a minute to see the new IBM Browser screen appear.

IBM Browser News - What is the Latest?

To find out the latest information about IBM Browser features and what is new with this level of the IBM Browser product, click Help on the IBM Browser main page.

Select the HELP option from the Help pulldown.

In the Contents frame, scroll to Frequently Asked Questions (FAQ) or the README items. Either of these items provide late-breaking information about the IBM Browser.

IBM Browser Capabilities

Key IBM Browser features that are available in the first release of the browser include the following:

- Ability to display Web pages that contain text, HTML, GIF images (including ani-mated GIFs), and JPEG images
- Javascript 1.1 or compatible
- HTML 3.2
- Frames
- SSL 2 at 128 or 40 bit levels (in separate versions of the product, for US and Canada, or for export, respectively)
- Java applets can be run by the IBM Network Station Java VM

IBM Browser MIME Types

Table 4-1. IBM Browser MIME Types.

TYPE/SUBTYPE	USAGE
Text/plain	plain text with no HTML tags
Text/HTML	text with HTML markup tags
Image/gif	GIF images, including animated GIFs
Image/jpeg	JPEG images

Note:
No other MIME types are supported (because they require plug-ins or helper applications).

IBM Browser URL Types Supported

The IBM Browser can handle the following URL types:

Table 4-2. IBM Browser URL Types Supported.

URL TYPE	USAGE
HTTP	Display content using HTTP protocol, such as any web page with HTML, and so forth
HTTPS	Same as HTTP, but using SSL security
MAILTO	Start the e-mail editor to create and send an e-mail message
ABOUT	Display copyright information about the browser
FTP	Open an FTP session
JAVASCRIPT	Run JavaScript
VIEW SOURCE	Display Source File.

Learning About IBM Network Station Browser Functions

The IBM Network Station Browser licensed program has many capabilities to help you manage Internet access and quick connection the IBM Network Station Manager program.

These functions, and others, are available by clicking various pulldown options from the IBM Browser Menu bar as shown in Figure 4-13:

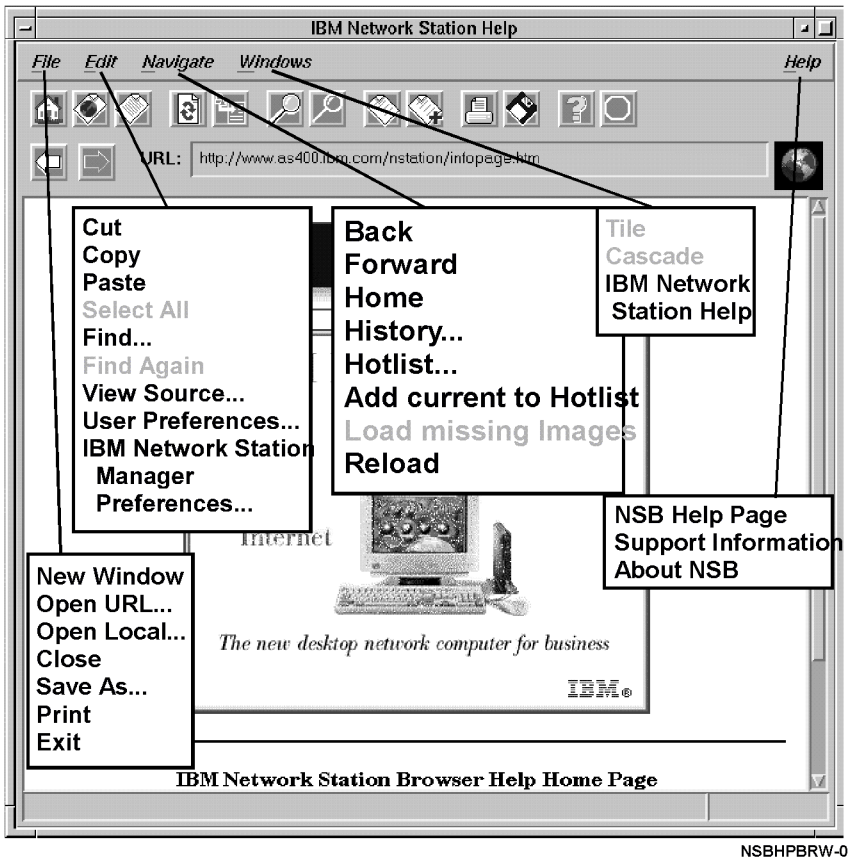


Figure 4-13. IBM Network Station Browser With Extended Pulldowns

As shown in Figure 4-13, pulldowns are available to allow you to quickly access IBM Browser functions such as multiple IBM Browser session support (New Window in the File pulldown), font selection by user (User Preferences in the Edit pulldown), and online help (Help).

The following list contains some of the IBM Network Station Browser support:

- Open URL. . .

- Open Local. . .

Opens an ASCII or HTML file.

- Close

- Save As. . .

Saves a file with user-specified name and file extension.

- Print *

View Source. . .
Views the program source for the file in the current IBM Browser session.

- User Preferences *

Allows configuration of fonts, colors, printing, caching and so on.

- IBM Network Station Manager program preferences. . .

Provides a direct link to the IBM Network Station Manager program.

- History. . .

Provides a list of web pages that were visited during the current IBM Browser session.

- Hotlist

A list of frequently visited web pages. Access the web page by clicking the Hotlist entry.

- Tile

Tile allows you to manage how multiple IBM Browser sessions will be presented on the display screen. For example, assume that you want four sessions. You can use the Tile function to specify two side-by-side sessions at the top of the display followed by two side-by-side sessions at the bottom of the display.

- Cascade

Cascade allows you to manage multiple IBM Browser sessions on the display screen by layering one over the other. Each new session is slightly lower that the previous session, thus allowing a user to work with all active IBM Browser sessions.

- Help

Allows a user to access Help for the IBM Browser through a Contents listing on this page. Key topics are the README and the Frequently Asked Questions (FAQ).

- Support Information

Allows a user to view and save IBM Browser support information to a file.

Many of the IBM Browser functions have shipped defaults. Those functions that are managed by the IBM Network Station Manager program also have IBM-supplied defaults. See Appendix C, “IBM Network Station Manager Program Shipped Default Settings” on page C-1 for a listing of all IBM Browser defaults controlled by the IBM Network Station Manager program.

Note: The IBM Network Station Manager program controls these IBM Browser functions. See Chapter 5, “Using the IBM Network Station Manager Program” for more information. Also, the online help in the IBM Network Station Manager program provides more information along with all IBM Browser default settings.

Accessing Help

You can access help for the IBM Browser using the Help menu option. The help includes a Frequently Asked Questions (FAQ) section, and an addendum for last-minute changes.

For IBM Browser help, place your mouse pointer in the IBM Browser Menu bar and click Help.

Changing the IBM Browser Encryption Level for Improved Transaction Security

To change the IBM Browser encryption capability, use the IBM Network Station Manager program. You will need to work with the Internet Setup Task and select Network. See Chapter 5, “Using the IBM Network Station Manager Program” for further information.

Working with the Navio NC Navigator Browser

Navio NC Navigator can provide access to the Internet. It is also used to access the IBM Network Station Manager program, which is used to manage IBM Network Station users and workstations. See Chapter 5 . Using the IBM Network Station Manager Program on page 5-1 for more information.

If you used the Menu feature of the Startup function (within the IBM Network Station Manager program) and you added
a new Navio NC Navigator Browser session labeled NAVIO2, that Menu button (labeled NAVIO2) will appear within the
Menu bar as shown in Figure 4-14.

Figure 4-14. IBM Network Station Menu Bar with Navio Button - navio

If the Navio NC Navigator session was set to autostart, an Navio NC Navigator browser session will appear on the screen
of your IBM Network Station as shown in Figure 5-15.

Figure 4-15. Navio NC Navigator Browser Session Display - NAVSPL

If autostart was not specified, and you click the Navio Browser button within the Menu bar, an instance of the Navio NC Navigator browser appears.

Depending on the volume of network traffic, you can expect it to take from several seconds up to a minute for the Navio NC Navigator screen appear.

Navio NC Navigator Browser News - What is the Latest?

To find the latest information about Navio NC Navigator features and what is new with this level of Navio NC Navigator, click Help on the Navio NC Navigator main page.

Select the HELP for Navio NC Navigator option from the Help pulldown.

In the Contents frame, scroll to Frequently Asked Questions (FAQ) or the README items. Either of these items provide late-breaking information about the Navio NC Navigator browser.

Navio NC Navigator Browser Capabilities

In general, Navio NC Navigator is a compatible subset of the popular Netscape Navigator 3.01 browser (UNIX version).

Key features that are available include the following:

- Ability to display Web pages that contain text, HTML, GIF images (including animated GIFs), and JPEG images
- Javascript
- HTML Compatible with Navigator 3.01
- Frames
- SSL 2 and 3 at 128 or 40 bit levels

With server and client certificates, there are separate versions of the product, for US and Canada, or for export.

Java applets can be run by the IBM Network Station Java Virtual Machine (VM)

Navio NC Navigator MIME Types:

Table 4-3. Navio NC Navigator MIME Types

TYPE/SUBTYPE	USAGE
Text/plain	plain text with no HTML tags
Text/HTML	text with HTML markup tags
Image/gif	GIF images, including animated GIFs
Image/jpeg	JPEG images
Note: No other MIME types are supported (because they require plug-ins or helper applications).	

Navio NC Navigator URL Types Supported

The Navio NC Navigator browser can handle the following URL types:

Table 4-4. Navio NC Navigator URL Types Supported

URL TYPE	USAGE
HTTP	Display content using HTTP protocol, such as any web page with HTML, and so forth
HTTPS	Same as HTTP, but using SSL security
MAILTO	Start the E-mail editor to create and send an E-mail message
ABOUT	Display copyright information about the browser
FTP	Open an FTP session
JAVASCRIPT	Run JavaScript
VIEW SOURCE	Display source file

Learning About Navio NC Navigator Browser Functions

The Navio NC Navigator browser licensed program has many capabilities to help you manage Internet access and quick connection to the IBM Network Station Manager program. These functions, and others, are available by clicking various

pulldown options from the Navio NC Navigator browser Menu bar as shown in Figure 4-16:

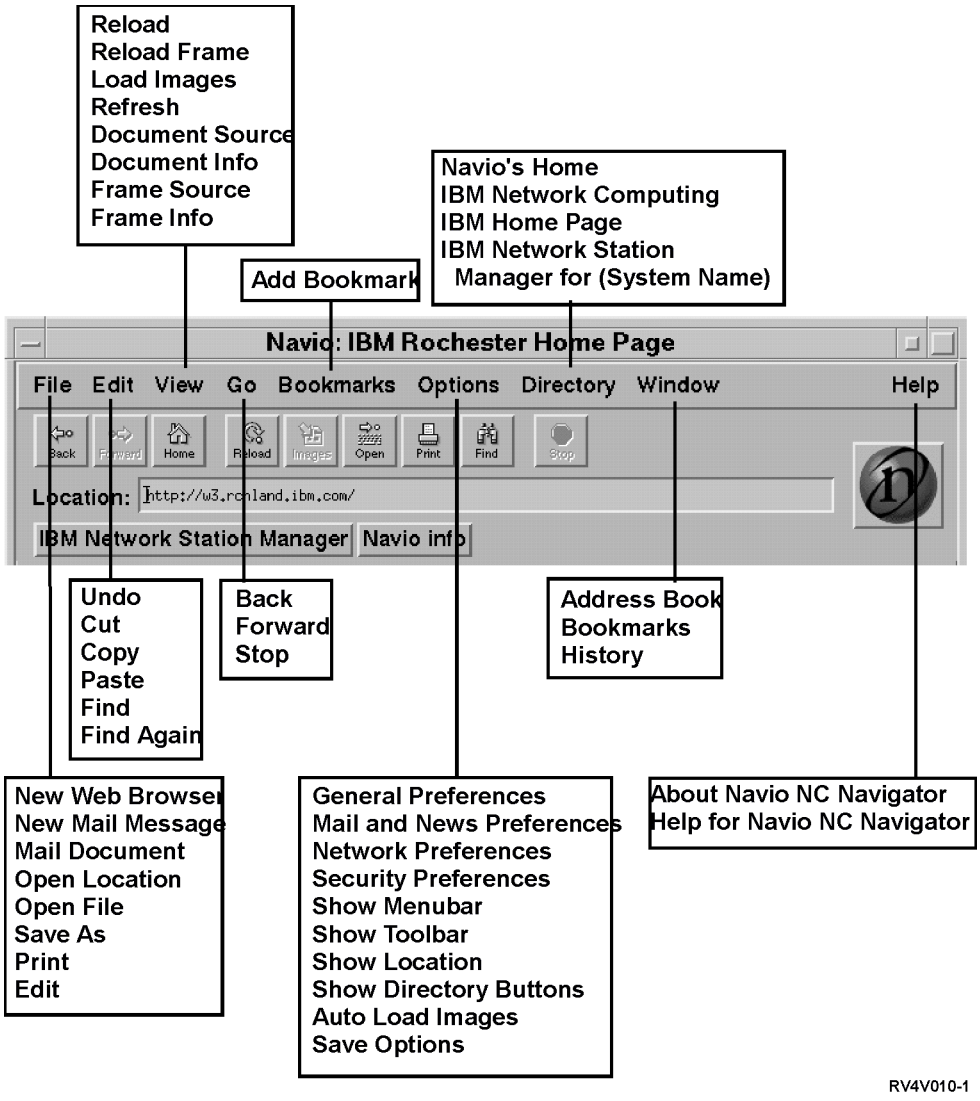


Figure 4-16. Navio NC Navigator Browser with Extended Pulldowns

As shown in Figure 4-16, pulldowns are available to allow you to quickly access Navio NC Navigator functions. For example, Multiple Navio NC Navigator session support (New Web Browser in the File pulldown)

Accessing Help

You can access help for the Navio NC Navigator browser using the Help menu option. The help includes a Frequently
Asked Questions (FAQ) section, and an addendum for last-minute changes.

For Navio NC Navigator browser help, place your mouse pointer in the Navio NC Navigator browser Menu bar and click Help.

JAVA VM

You can set up Java applets and applications by using the IBM Network Station Manager. The applets and applications can be set to either autostart (they appear running on your workstation when you login) or set as menu items (they appear as buttons in the menu bar).

Note: Only a single Java application can run within the IBM Network Station and, if running, also precludes applets from running in both the desktop and in the browser.

The Java Virtual Machine (JVM) and the supporting class packages that were installed with the product together provide an environment for programs that were written and compiled in the Java programming language. The current level of Java that is sup-ported by the IBM Network Station is equivalent to the 1.0.2 level distribution of the Java Development Kit (JDK) from JavaSoft. You can start and configure Java programs through the IBM Network Station Manager program.

What Is Java?

Java is an object-oriented programming language. Java is compiled into a byte code stream which JVM interprets at runtime. Java programs are portable and, in general, may be run on any computer that supports a JVM. This is one of the primary attractions of the Java language.

What do I do with Java?

In order to use Java, you must first obtain a program that was written in Java. This may be a program that you have purchased, downloaded from the Internet, or written and compiled by yourself. In general, the IBM Network Station is not geared towards being a development platform; therefore any significant program should be developed on another platform before loading it on the IBM Network Station.

What are Java Applications and Applets?

There are two kinds of Java programs: those which are intended to be transferred and run across the Internet (applets), and those which run as programs from the local file system (applications). The first variety, applets, are designed so that they utilize a browser to provide windows and graphical layout for the applet. In general, these applets are not trusted by the browser since they are downloaded across the Internet and there is no way of knowing the intent of the author. Therefore, the browser has the ability to restrict applets from reading or writing to local files and from connecting to
machines other than the machine from which they are downloaded. These restrictions are intended to protect the user from malicious programs and provide a safe environment to examine programs on the Internet.

Starting an Application

An application must be installed on the file system of the server.

Notes:
1. Only a single Java application can run within the IBM Network Station and, if running, also precludes applets from running in both the desktop and in the browser.

2. In order to run a Java application, the IBM Network Station Manager program must be used to either autostart the application or create a button on the IBM Network Station Menu bar.

Starting an Applet

Applets can be installed on the file system of the server that is your boot host, or down-loaded from a remote system by using a Universal Resource Locator (URL). The applet to load is specified through tags on an HTML page.

Applets can be run three different ways:

- By creating a button on the IBM Network Station menu bar for an applet
- By creating a button for a browser URL
- By starting a browser then loading an HTML page which contains an applet

Configuration of the applet is managed through parameter tags within the HTML file (the specific parameter names are determined by the applet vendor). Applets that load from the file system of your boot host should be well-known and trusted applets (the source of the applets is reliable). There are no security restrictions placed on applets that run from the local file system, so the applet may write to files and communicate with other machines (which may be desirable if you are saving your spreadsheet, but it
would be a problem if a malicious applet decided to erase your files).

Where do I find Additional Information on Java?

You can find additional information at the following web sites.

JavaSoft home page:

- `http://www.javasoft.com`

IBM Java home page:

- `http://www.ibm.com/java`

Chapter 5 . Using the IBM Network Station Manager Program

The IBM Network Station Manager program is a browser-based application program. This application program allows you to perform the setup and management tasks that are associated with one or all of your IBM Network Stations and IBM Network Station users. Setup Tasks are:

- Hardware configuration:

Examples of configurable Hardware settings are: specifying primary mouse buttons (left or right-handed), mouse pointer speeds, screen savers, desktop background, and more.

- Startup application and program selection

– Programs and menus

Examples of configurable Startup settings are 5250 sessions, 3270 sessions, remote program sessions, Java application or applets, and IBM Network Station Browser sessions.

– Environment variables

Environment variable settings are also configured under Startup. Environment variables can be used with Startup programs, menus, or any applications that are running on the IBM Network Station.

- Desktop Management

Examples of configurable Desktop settings are screen colors for window frames, Icon placement, Font selection, and specifying how windows on the workstation are made active.

- 5250 Session configuration

Examples of configurable settings for 5250 sessions are screen size, key remapping capability, color customization (basic and advanced), record/playback, and edit/copy/paste functions.

- 3270 Session configuration

Examples of configurable settings for 3270 sessions are screen size, key remapping capability, color customization, and 3270 sessions with graphics support.

- Internet configuration

– Network

Examples of configurable Network settings are E-Mail address, default home page, proxy settings, and encrypted or non-encrypted version of the IBM Network Station Browser.

– IBM Browser

Examples of configurable IBM Browser settings are disk caching, auto loading of images, print headers and footers, and print margins.

– Java Applet Viewer

Examples of configurable Java applet viewer settings are message style, heap and stack size settings, and defining properties.

This chapter discusses the following IBM Network Station Manager program topics:

- IBM Network Station Manager program overview

– Who can use the IBM Network Station Manager program

– Working with IBM Network Station Manager defaults

– Working with settings

- Starting the IBM Network Station Manager program. This section discusses:

– Starting the IBM Network Station Manager from a web browser

– Signing onto the IBM Network Station Manager program

- Working with the IBM Network Station Manager program - Examples

IBM Network Station Manager Program - an Overview

Figure 5-1 provides a graphical view of the IBM Network Station Manager program flow. Take a moment to study Figure 5-1; it highlights the differences between the defaults and setup tasks that a system administrator and end user can work with.

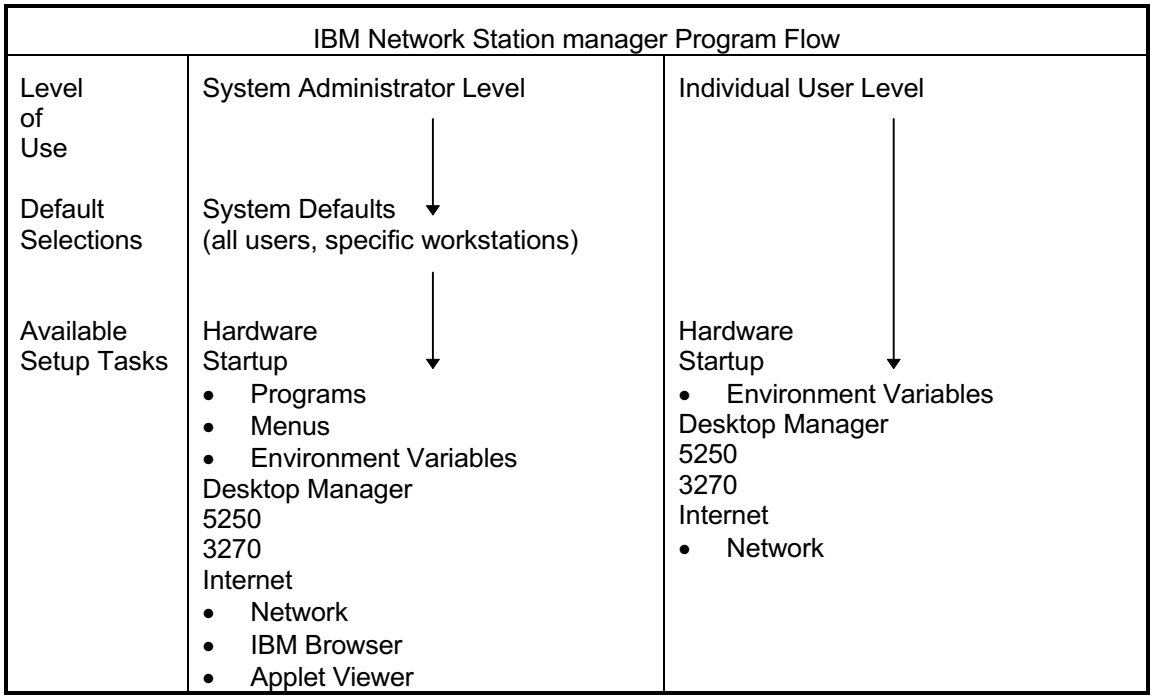


Figure 5-1. IBM Network Station Manager Program Flow.

Who can use the IBM Network Station Manager Program?

As shown in Figure 5-1, both system administrators and individual end users can access and use the program.

The level of function a user can access is determined by the special authorities defined in each user's user profile.

- System administrators must have NSMAdmin Group Membership within the Windows NT Security Database.

- Other users should have a NSMUser Group Membership within the Windows NT Security Database.

System Administrators

System administrators have full use of the program and can work at a level that is either system-wide or specifically for one user or one workstation. For example, an administrator could specify that all IBM Network Station users will have one 5250 emlation session available and that one particular user could have an additional 5250 emulation session.

For information on how to sign on to the IBM Network Station Manager program, see “Starting the IBM Network Station Manager Program using a Browser” .

Figure 5-2 shows the screen a system administrator sees after signing onto the IBM Network Station Manager program. Notice that the range of functions presented in the Setup Tasks frame.

Note: This screen can vary in how it appears depending on the web browser you are using.

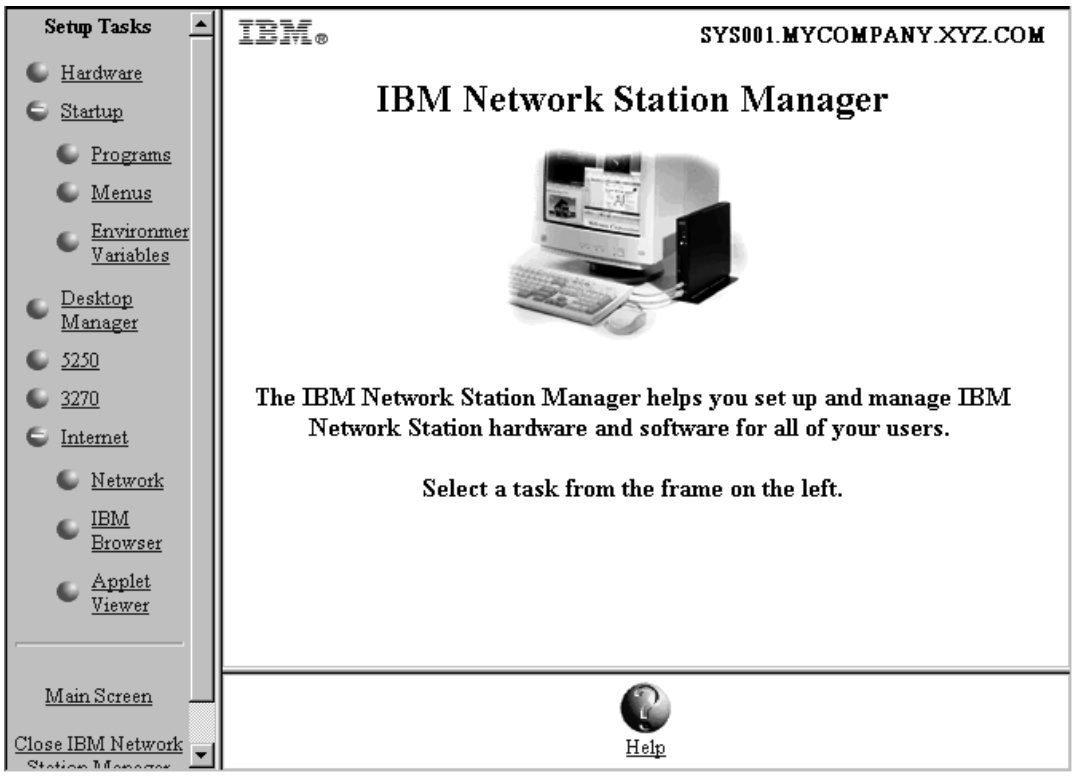


Figure 5-2. System Administrator level – NETS003

Compare these functions to the range of functions that are available to individual end users as shown in Figure 5-3.

Individual End Users

End users also have access to the IBM Network Station Manager program. However, the functions that an end user can work with are limited to settings that pertain only to themselves.

The following screen shot shows the screen that an end user would see after signing onto the IBM Network Station Manager program. Notice the range of functions presented in the Setup Tasks frame.

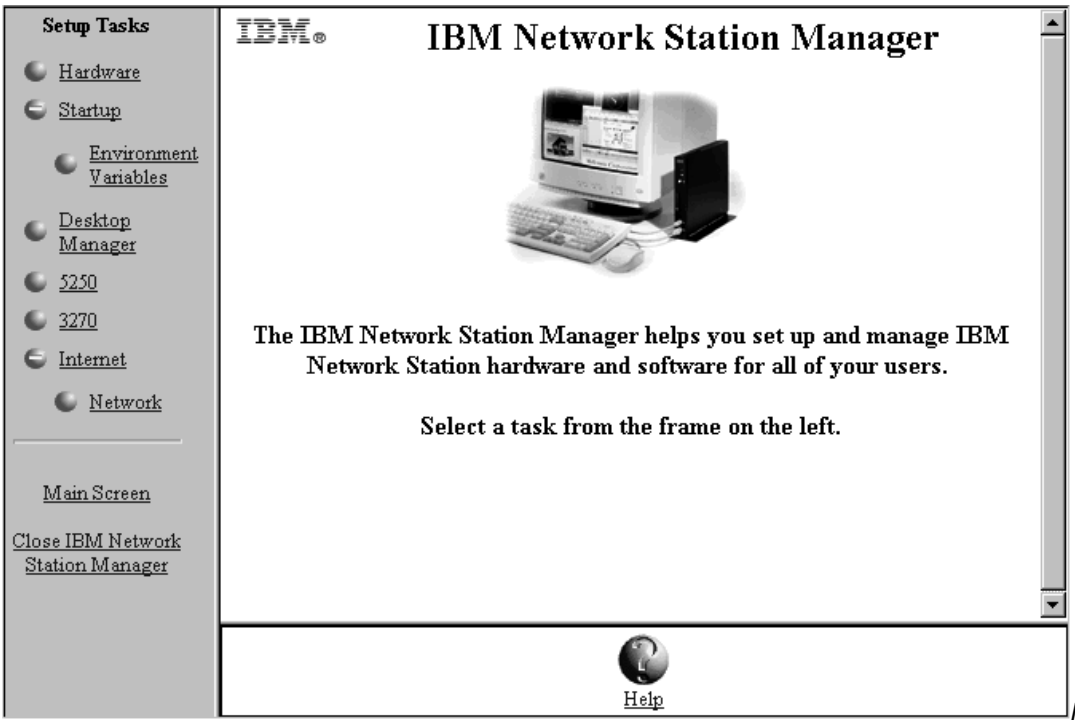


Figure 5-3. End-user Level – NSM007

As you can see, the program's flexibility allows broad system-wide settings management by the administrator and individual settings management by the end user.

The example displays in this chapter are representative of the displays a system administrator would see.

Working with IBM Network Station Manager Program Defaults

There are three levels of defaults. They are:

- IBM-supplied defaults

IBM-supplied defaults are provided for all settings that are supported by the IBM Network Station Manager program.

The IBM-supplied defaults can not be changed. They can be overridden using the IBM Network Station Manager program feature of System defaults or User level defaults.

See Appendix C, “IBM Network Station Manager Program Shipped Default Settings” on page C-1 for a complete list of all IBM-supplied default values for the IBM Network Station Manager program.

- System defaults

System defaults are used to change settings for all users or all workstations. System defaults take precedence over IBM-supplied defaults.

- User defaults

User defaults are used to change settings for an individual user or individual workstation.

User defaults take precedence over IBM-supplied defaults and system defaults.

Note: Settings work differently in the Startup function of Setup Tasks. For Programs, Menus, and Environment Variables, the IBM-supplied, System-specified, and User-specified, are additive. However, for the same environment variable, the value set at the user level takes precedence over the value set at the system or IBM-supplied levels. (The values for a given environment variable are not additive.) Any settings that are specified at the system or user level are added to those that are specified in the IBM-supplied default settings.

For example, every IBM Network Station user has one 5250 session specified as the IBM-supplied default. If the administrator used the System defaults function to assign all users an additional 5250 session, then all users would have two 5250 sessions available. If the administrator then used the User level default function to assign USERXYZ another 5250 session, then USERXYZ would have three 5250 sessions. The origin of these sessions would be one each from IBM-supplied defaults, System defaults, and User defaults.

IBM Network Station Manager Program Defaults - Example

This example uses the Desktop background setting that is in the Hardware function of Setup Tasks.

The IBM-supplied setting for Desktop background is the IBM bitmap.

At this point, the administrator determines that all Desktop backgrounds will be set to dark red. Using the IBM Network Station Manager program, the administrator applies the change by working through the System Defaults level. This change, to the color dark red, overrides the IBM-supplied value of the IBM bitmap for Desktop background.

After viewing the new desktop background color of dark red, a user determines it is too difficult to look at for long periods of time and requests his Desktop background color be changed to green. The user can either change the Desktop background color or request the administrator to do it.

The administrator can make the change by selecting the Hardware Setup Task, User defaults and specify the user profile of the person who is requesting the change. Scroll to the Desktop background field and specify green. Click Finish to apply the change. This change, to a User default setting, overrides the IBM-supplied default and the administrator-set System Default value of dark red.

Notes:

1. If the user changed the Desktop setting, they would go directly to the Hardware settings panel, bypassing the Default selection panel.

2. To view this change in Desktop settings you would have to log off and then log on to the workstation.

Working with System-Wide Defaults

Figure 5-4 is representative of the panel that appears when a selection is made from the Setup Tasks frame. In this example, the Hardware Defaults panel is used.

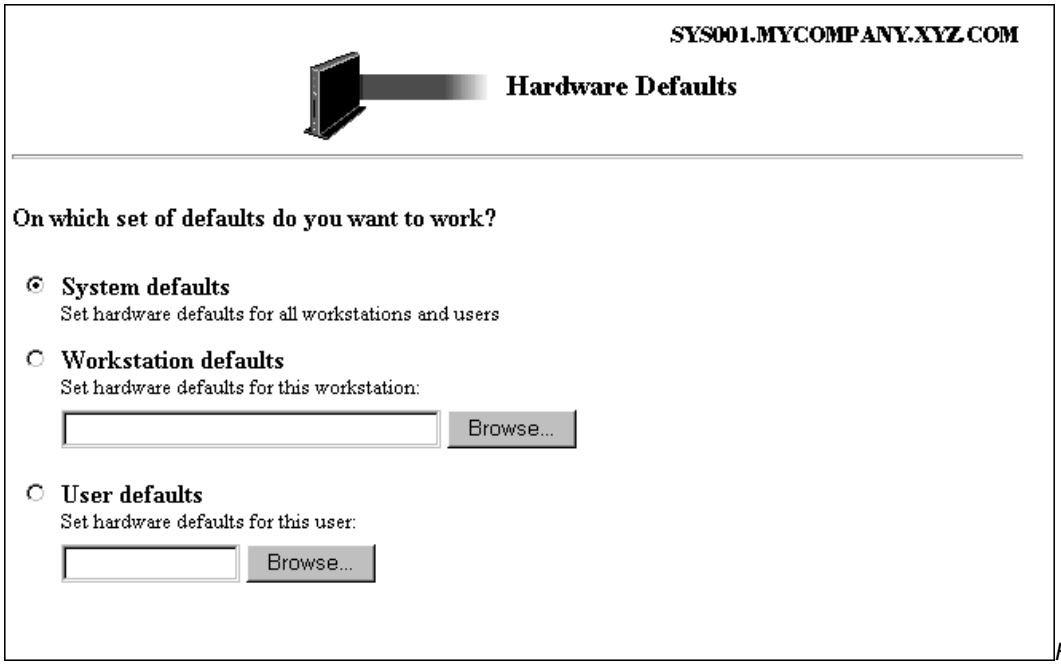


Figure 5-4. Hardware Defaults - NSM010

As you can see, the Hardware Defaults panel allows you to work with System defaults for all workstations and users, Workstation defaults for a particular workstation, or User defaults for a particular user. The Hardware Defaults panel is unique in that it allows you to specify settings for workstations in addition to specific users.

System defaults have settings that are not available when working with an individual user or workstation.

Working with Individual User Defaults

User defaults are designed to change settings on a user-by-user basis, one user at a time. This gives you flexibility in custom tailoring individual sessions.

From any of the Default panels, select User defaults, enter the user profile name, and press the Next button.

Note: If you don't know a user profile name or a workstation name, you can press the Browse button and a list of users or workstations is presented for you to choose from.

Working with Settings

Settings are fields that you see after you have selected which defaults (System or User) you want to work with. For example, Figure 6-5 shows the Desktop Manager Settings fields for Screen colors, Icon preferences, Fonts, and Window focus.

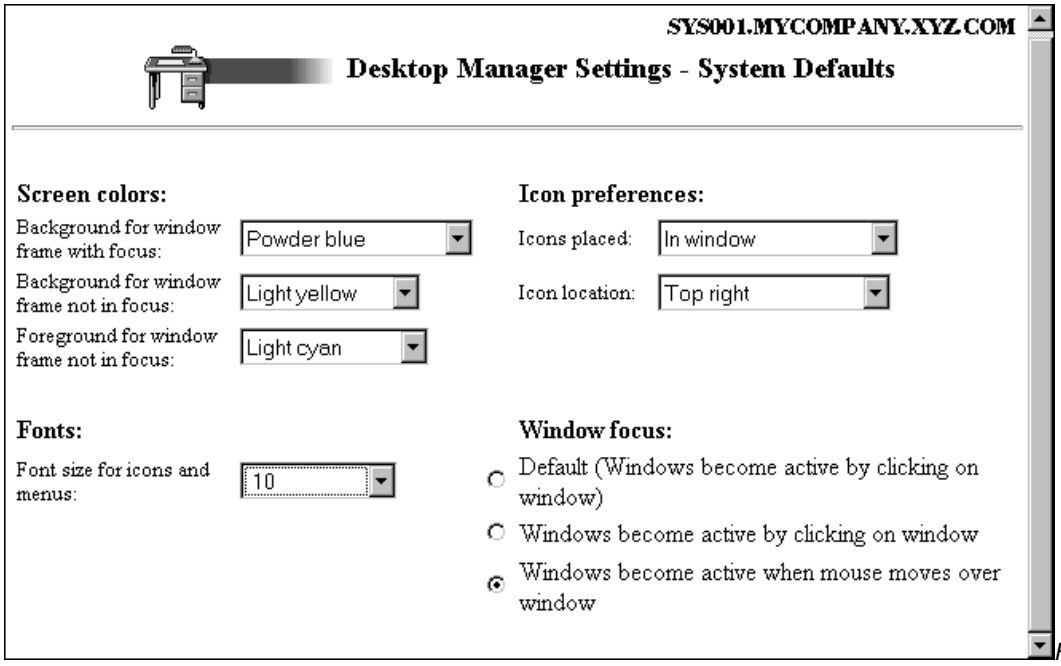


Figure 5-5. Desktop Manager Settings Fields - NSM014

In this example, Figure 5-5 represents Desktop settings that are being worked with from the System Defaults level. That means that any changes to the settings would be applied to **ALL** users.

Note: Settings in the Startup function of Setup Tasks work differently than the settings in other Setup Tasks. The difference is that any changes that are made at the system default level and user default level are added to the settings that are shipped with the IBM-supplied default settings.

For example, the IBM-supplied default is that all users have one 5250 session. Then, in Setup Tasks, the administrator selects Startup, Menus, System defaults, 5250 and applies this setting. The result is that all users would now have two 5250 sessions available to them.

Starting the IBM Network Station Manager Program using a Browser

To best understand and learn how the IBM Network Station Manager program works, we recommend that you now sign on and follow the examples in this chapter.

To start working with the IBM Network Station Manager, power-on your IBM Network Station and click **IBM Browser** from the Menu bar on your IBM Network Station as shown in Figure 5-6.

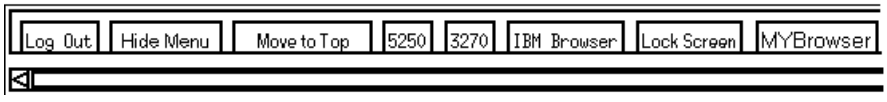


Figure 5-6. IBM Network Station Menu Bar -Menu

Note: If you do not have, or have not installed, the IBM Network Station Browser licensed program, you can use the following web browsers to sign on to the IBM Network Station Manager program:

- Netscape** 3.01 for:
  - Windows 95
  - Windows NT
  - AIX
- Microsoft Internet Explorer** 3.01

The IBM Network Station Browser appears as shown in Figure 5-7.

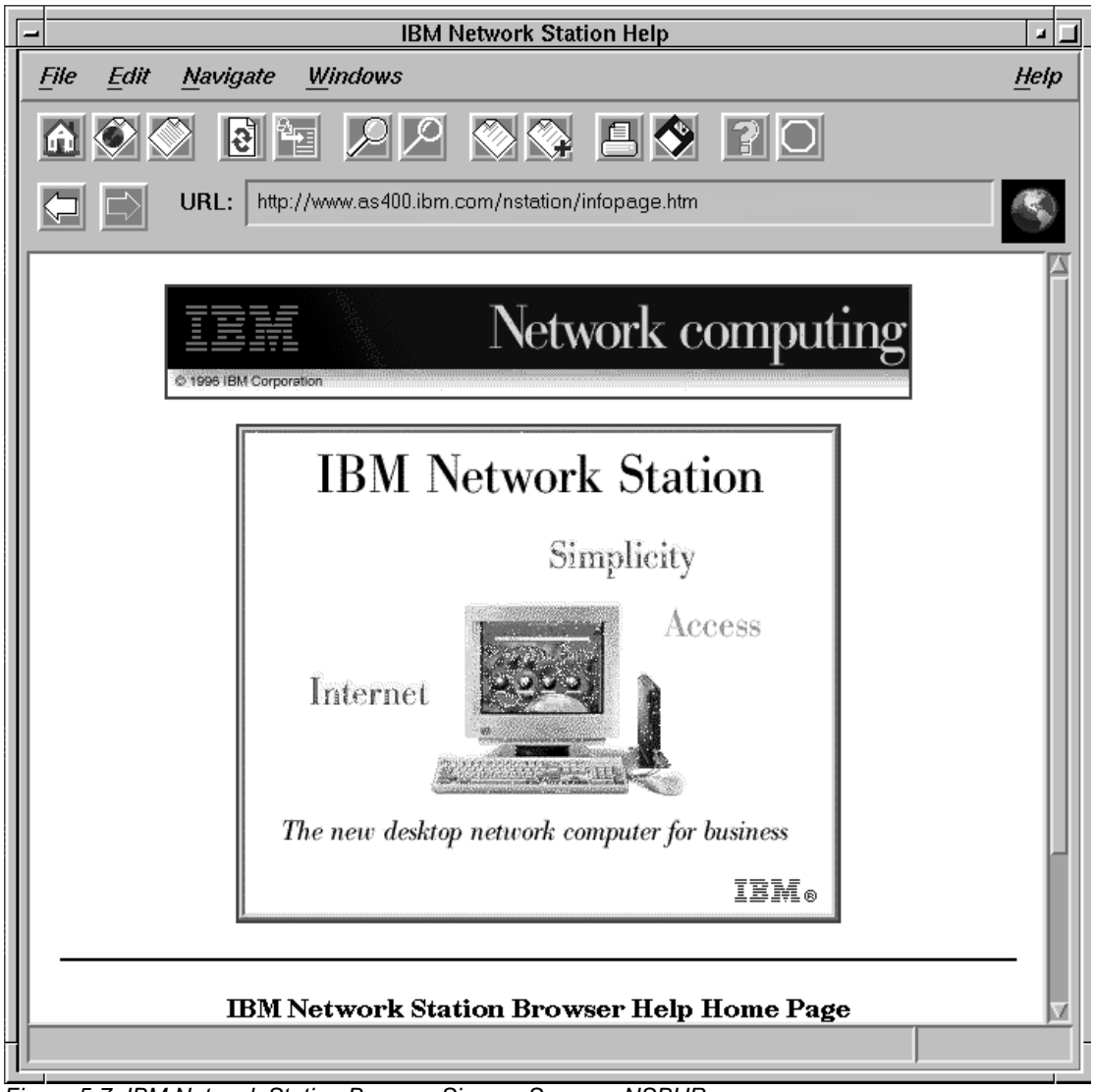


Figure 5-7. IBM Network Station Browser Sign on Screen - NSBHP

Click the Edit pulldown and select IBM Network Station Manager Preferences as shown in Figure 5-8:

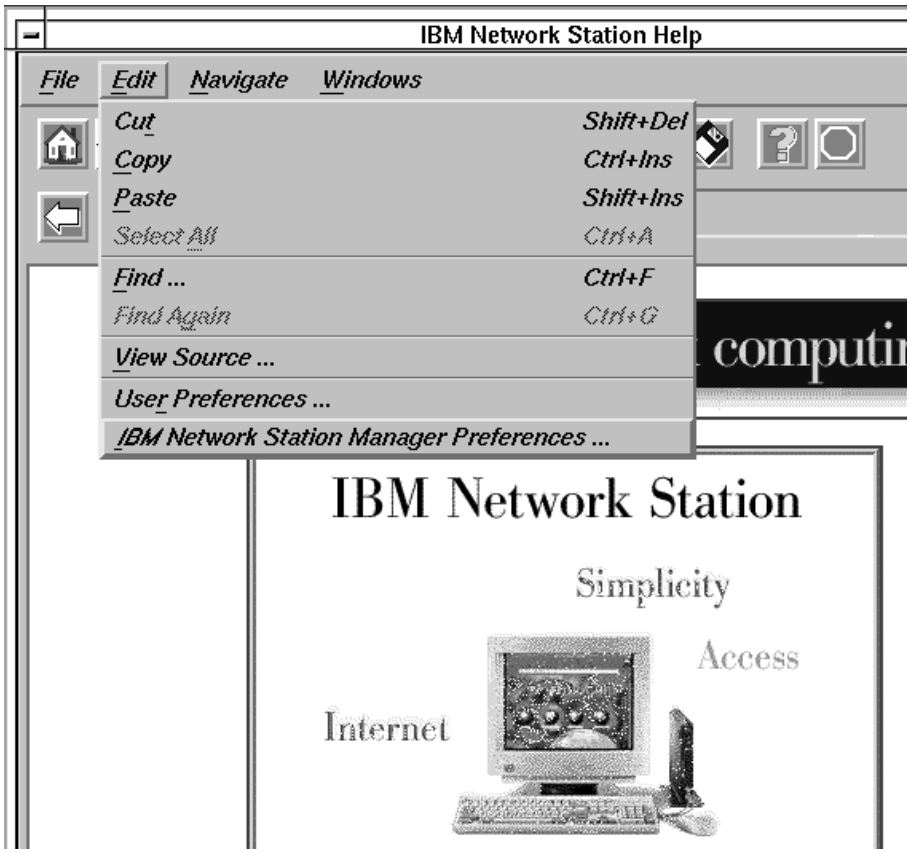


Figure 5-8. IBM Network Station Browser Sign on Screen with Edit Pulldown – NSBEDIT

The IBM Network Station Manager sign-on screen appears:

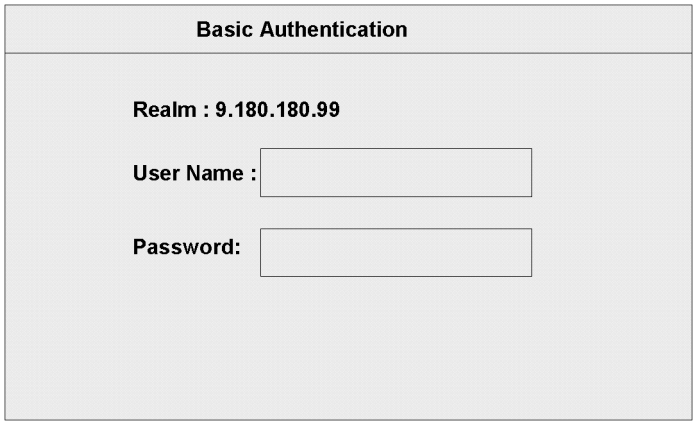


Figure 5-9. Sign on Screen - NETS002

Note: An alternative way to reach the IBM Network Station Manager sign-on screen is to enter the following case-sensitive URL in the IBM Browser's URL field:

http://127.0.0.1/nstation/html/admin.htm

Type your user profile and password, then click **Sign on**.

The Main Screen of the IBM Network Station Manager appears:

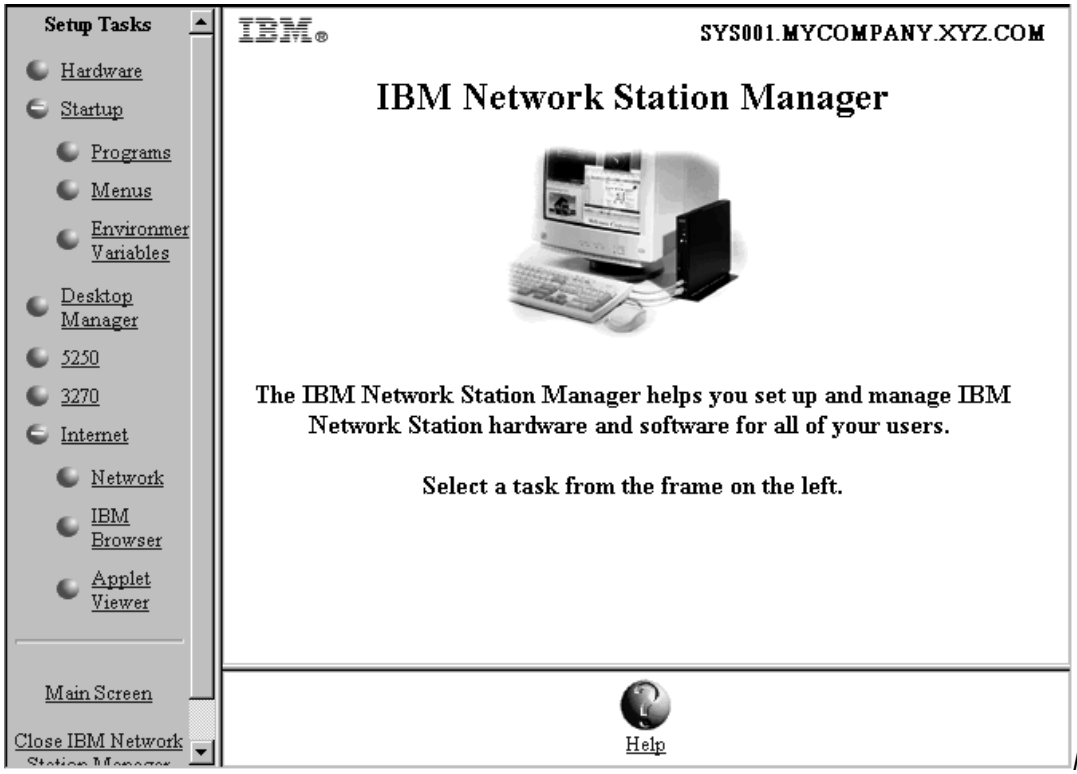


Figure 5-10. System Administrator Level - NETS003

Working with the IBM Network Station Manager Program Setup Tasks - Examples

Note: You must be a system administrator to work with these examples.

As shown in Figure 5-10, setup tasks are represented by icons in the left-most frame of the screen.

Clicking on any icon presents a panel where you select which set of Defaults you want to work with.

When working with these examples, select User defaults and use your own user profile. Then, when you are done going through the examples, you will be able to see the results on your workstation.

In order to see the changes you make using the IBM Network Station Manager program, you will have to log off and then log on to your workstation. Do not do this until we have gone through all of the examples that are presented here.

Notes:

1. When going through the examples, the Main panel and the Default selection panel will not be presented every time.

2. See “Additional IBM Network Station Manager Program Examples” for information on working with remote programs such as AIX sessions and WinCenter Pro for PC applications.

Hardware Settings Example

From the Setup Tasks frame, click Hardware. Select User defaults, and type in your user profile (USER001 in this example) as shown in Figure 5-11.

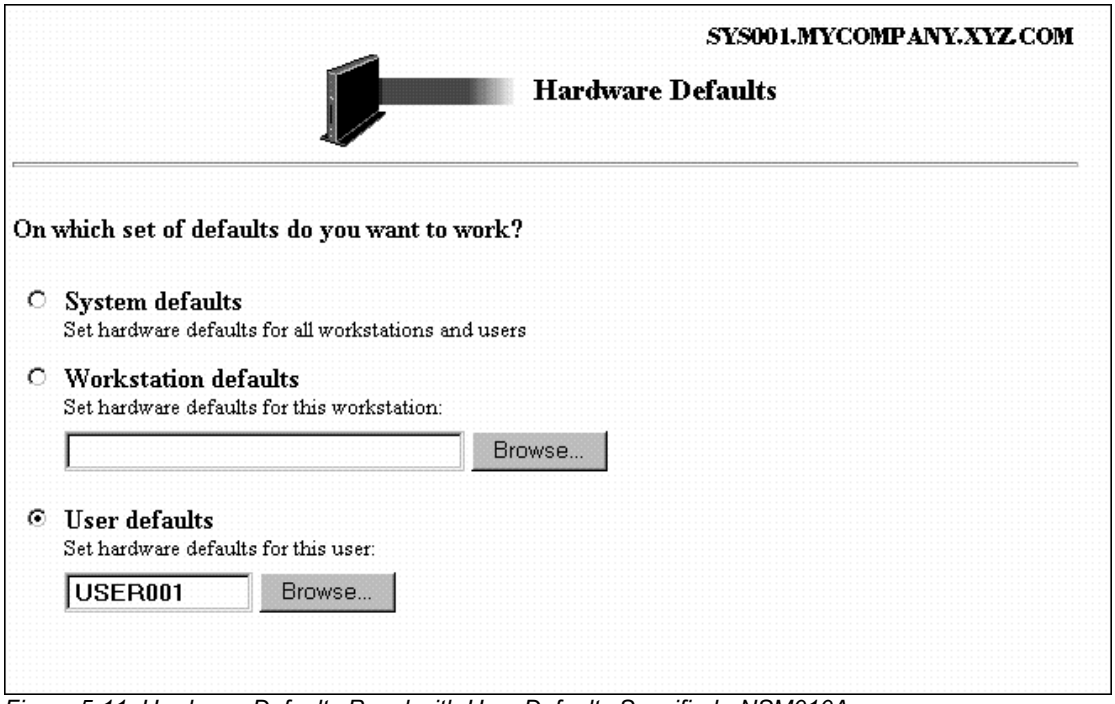


Figure 5-11. Hardware Defaults Panel with User Defaults Specified - NSM010A

In the bottom frame click Next to continue. The Hardware Settings frame appears as shown (scrolled-down) in Figure 5-12.

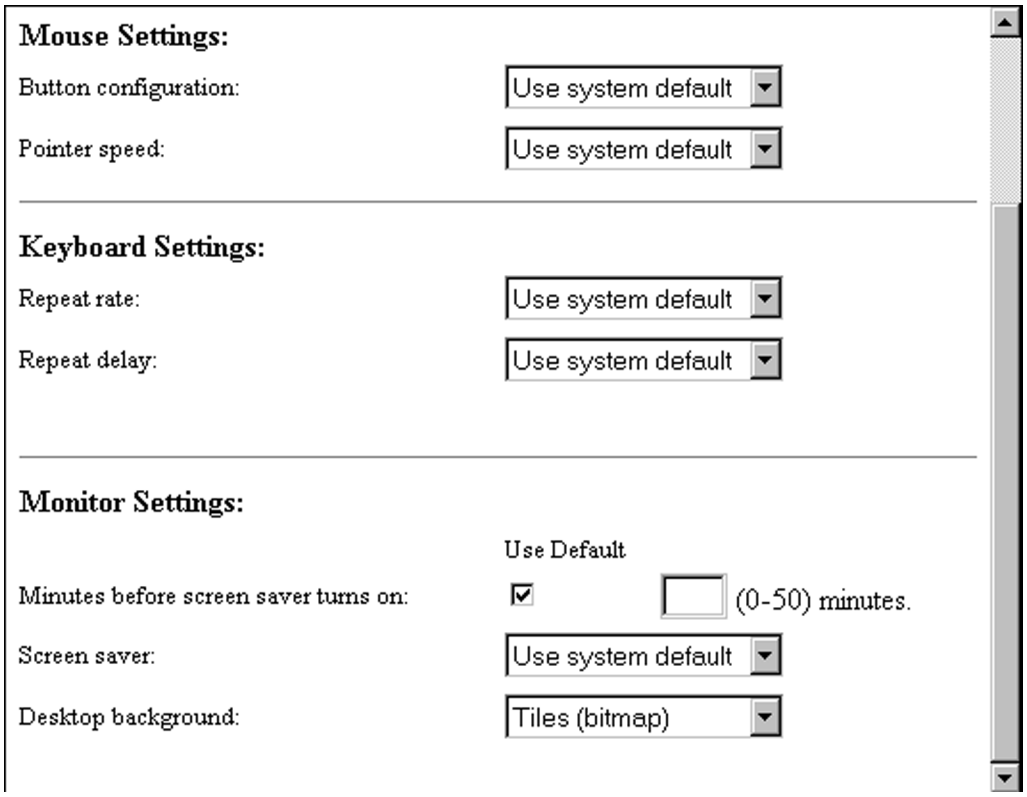


Figure 5-12. Hardware Settings Example - NETS004

Scroll to Desktop background and select the Tiles bitmap.

Click Finish to apply the change. Go to the next example.

Startup Settings Example

From the Setup Tasks frame, click Startup, click Programs, and select User defaults. In the bottom frame click Next to continue.

The Programs Settings frame appears as shown in Figure 5-13.

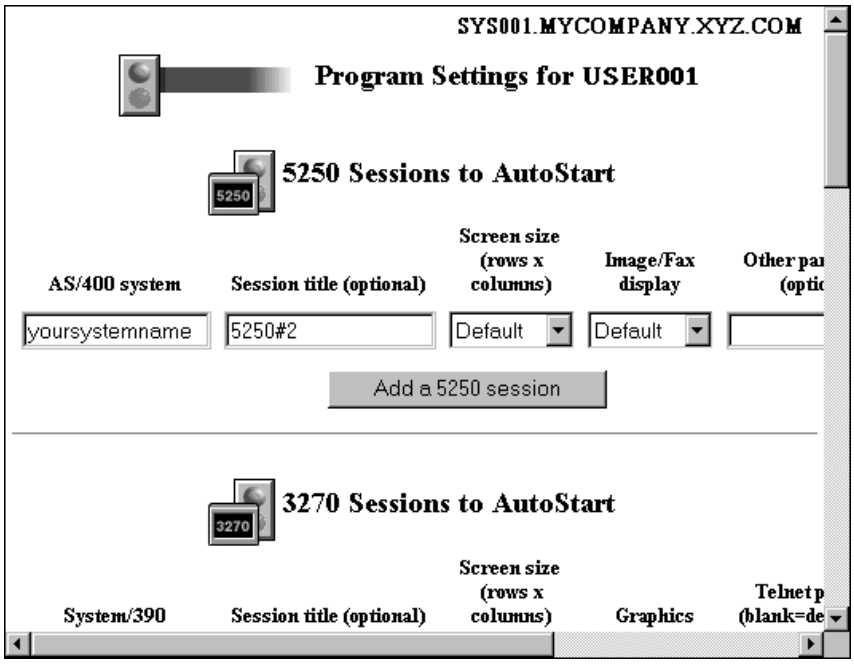


Figure 5-13. Startup Settings Example - NETS005

Scroll to 5250 Sessions to Autostart. This setting, when completed, will automatically start a 5250 session for you when you sign on to your workstation. Complete the following fields:

- AS/400 system - Type the name or TCP/IP address of the AS/400 your workstation boots from.
- Session title - Type in a text string that represents your 5250 session. For example, 5250#2. This text string will appear in the Title bar of your 5250 session. This field is optional and you do not need a value. However, in this example you might want to try a name (5250#2) so you can see it when we verify the examples.
- For the other settings fields, use the defaults.

Click Finish to apply the change. Go to the next example.

Desktop Manager Example

From the Setup Tasks frame, click Desktop Manager and select User defaults. In the bottom frame click Next to continue.

The Desktop Manager Settings frame appears as shown in Figure 5-14.

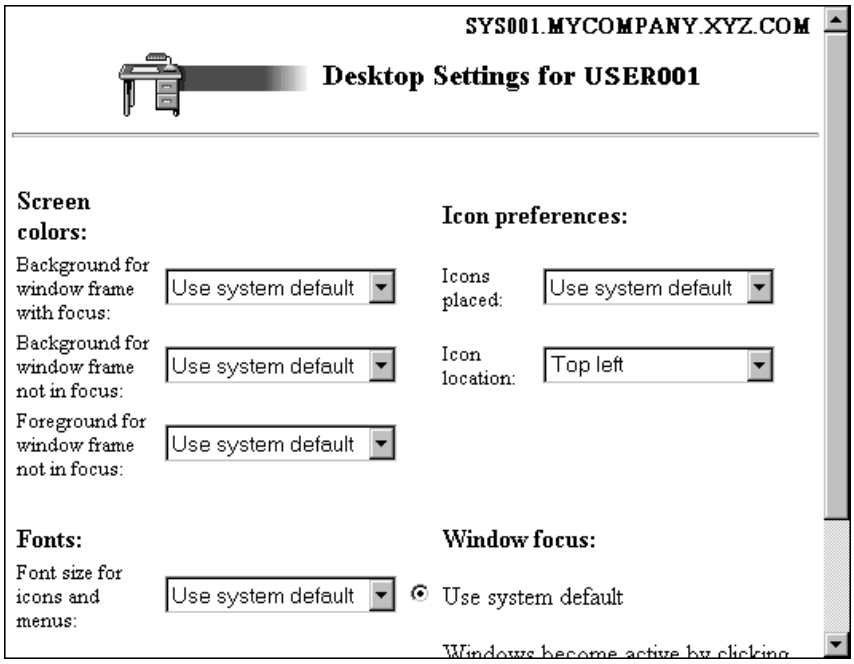


Figure 5-14. Desktop Manager Settings Example - NETS006

Scroll to Icon preferences. In the Icon location field, select Top left.

Click Finish to apply the change. Go to the next example.

5250 Example

From the Setup Tasks frame, click 5250 and select User defaults. In the bottom frame click Next to continue.

The 5250 Settings appear as shown in Figure 5-15.

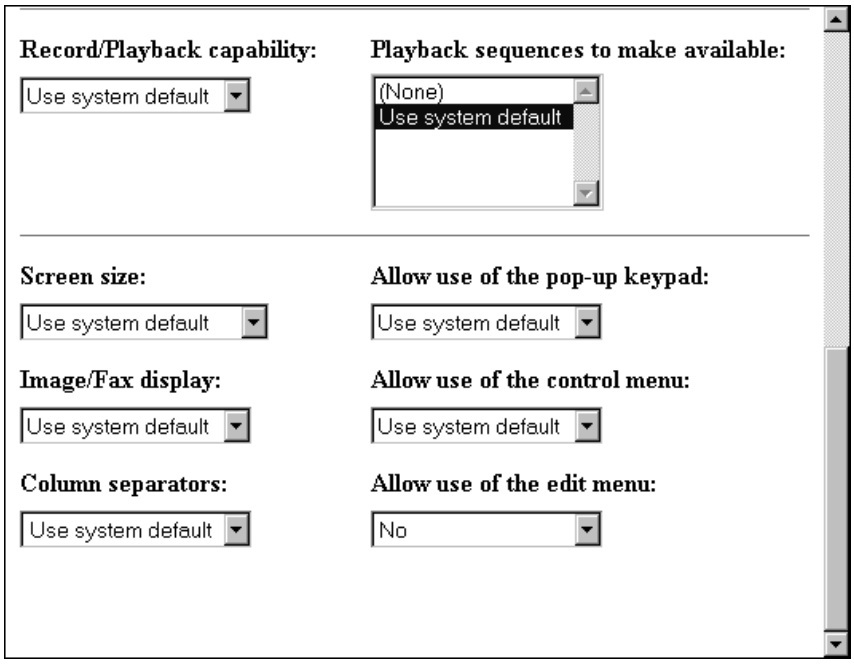


Figure 5-15. 5250 Setting Example -NETS007

Scroll to the Allow use of the edit menu field and select No to disable the edit menu. (The default is Yes, meaning that you can use the edit menu).

By disabling Allow use of the edit menu, your 5250 sessions will not have the Edit pulldown displayed for use.

Click Finish to apply the change. Go to the next example.

3270 Example

From the Setup Tasks frame, click 3270 and select User defaults. In the bottom frame click Next to continue.

The 3270 Settings panel appears as shown in Figure 5-16.

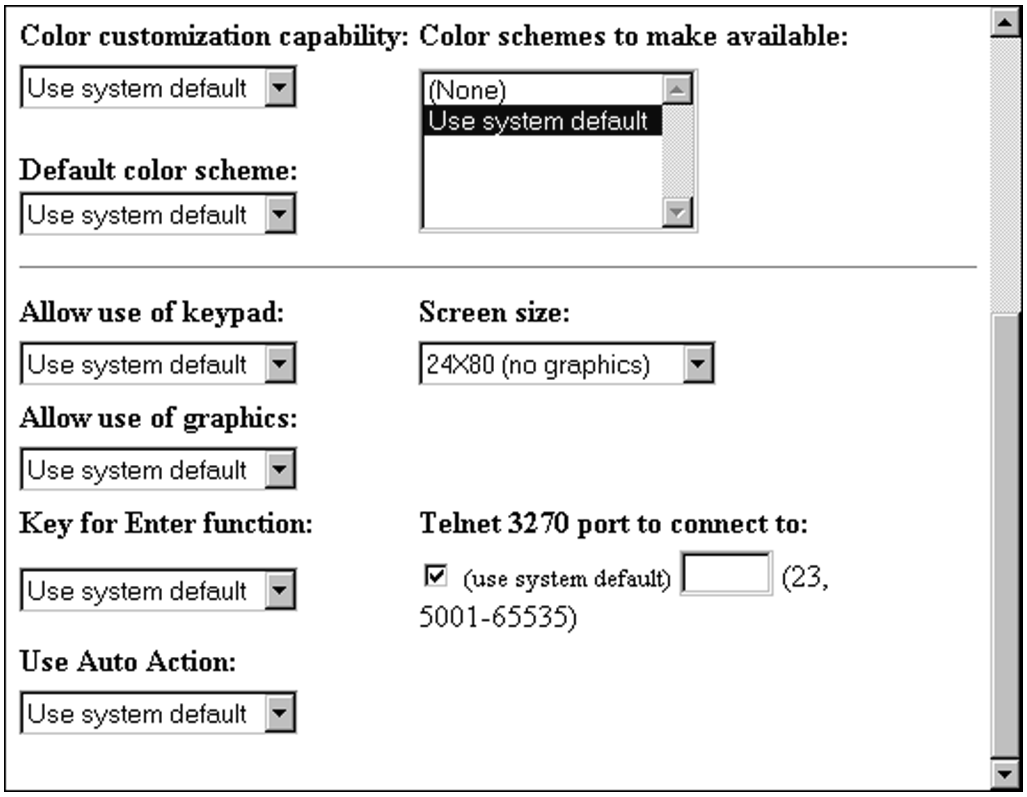


Figure 5-16. 3270 Settings Example - NETS008

Scroll to the Screen size field. Select 24 x 80.

This will change your 3270 session screen size from 32 x 80 (the default) to 24 x 80.

Click Finish to apply the change. Go to the next example.

Internet

From the Setup Tasks frame, click Internet, click IBM Browser, and select User defaults. In the bottom frame click Next to continue.

The IBM Network Station Browser Settings frame appears as shown in Figure 5-17.

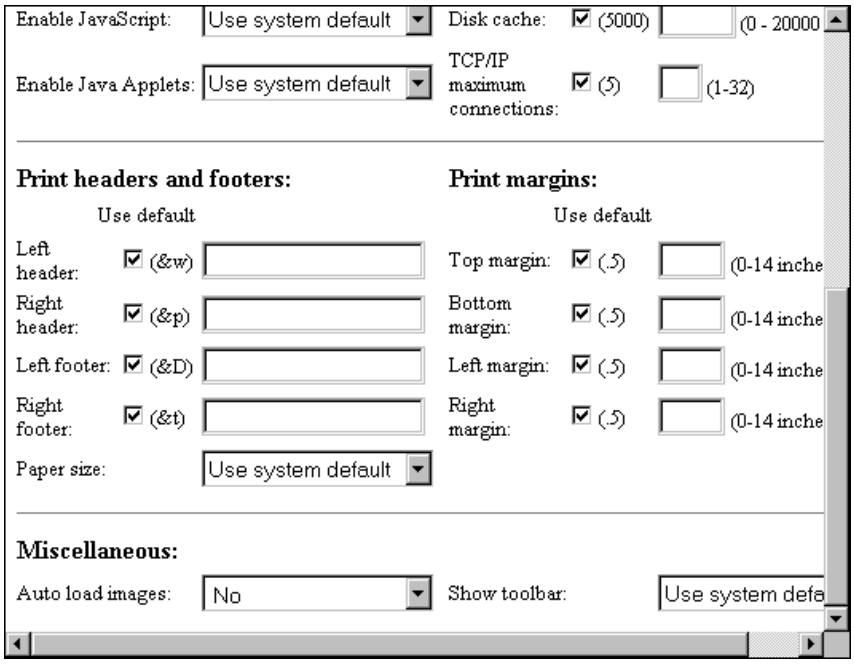


Figure 5-17. IBM Network Station Browser Settings Example - NETS009

Scroll to the Miscellaneous heading and select No in the Auto load images field.

Note: Remember that if you apply this change, no images will display when you are using a browser. After a page loads the text, you can use the browser's Navigate pulldown menu to load the images. Select the Navigate pulldown, and then select Load Missing Images.

Click Finish to apply the change. Click Main Screen in the Setup Tasks frame.

Verifying your Setting Changes

After completing the examples, you can verify the settings you specified.

You will need to log off and then log on for the settings to be applied.

You should notice the following:

- After you log on, your background will be Tiles instead of whatever the system default was.
- You should have a 5250 session automatically appear on your screen.
- Your Icons will now be placed in the top left portion of your window instead of the bottom left.
- When you select your 5250 sessions, the Edit pulldown will not be present.
- If you log onto a 3270 session, your screen size will be 24 x 80.
- If you access the IBM Browser, no graphic images will be played in your session.

Do not forget: If you do not want any of the settings specified in the example exercises to remain, you will have to use the IBM Network Station Manager program to return them to the original settings or some other settings of your choice.

IBM Network Station Manager Program Education

It is recommended that you provide some hands-on education, similar to what you just experienced going through the above examples, for your users of the IBM Network Stations.

Practice choosing and applying settings within the various Setup Tasks to build skills among your users.

Additional IBM Network Station Manager Program Examples

Following is a list of additional examples that use the IBM Network Station Manager program:

- Setting up an AIX session on your IBM Network Station by using Remote Program support
- Setting up a Windows NT session on your IBM Network Station by using Remote Program support

Setting up an AIX Session using the IBM Network Station Manager Program

Complete the following steps to setup an AIX session by using the IBM Network Station Manager program:

1. Verify that the user profile and password on your NT server match the user profile and password on the AIX server.
2. You must create a .rhosts file on the AIX server. This file must contain the IBM Network Station's name and the name that the user logs into AIX with. This file resides on the AIX server under the user's directory. An example for a userid or user001:

Contents of File

```
Directory Structure: /home/user001
File name: .rhosts
IBM Network Station name MYNWS.mycompany.ABC.com
Name user signs on with: user001
```

This file can contain multiple lines. Each line should have one IBM Network Station name and one user name on it. If a user will be working from more than one IBM Network Station, create an entry for each IBM Network Station.

1. Sign on to the IBM Network Station Manager program.
2. From Setup Tasks, click Startup.
3. Under Startup, click Menu.

4. From Program Defaults, click User defaults. (If you are setting this up for someone else, type their user profile or click Browse to select their user profile if you do not know it).

5. Click Next to continue.

6. Scroll ahead to Remote Programs. Type in the information as shown in Figure 5-18.

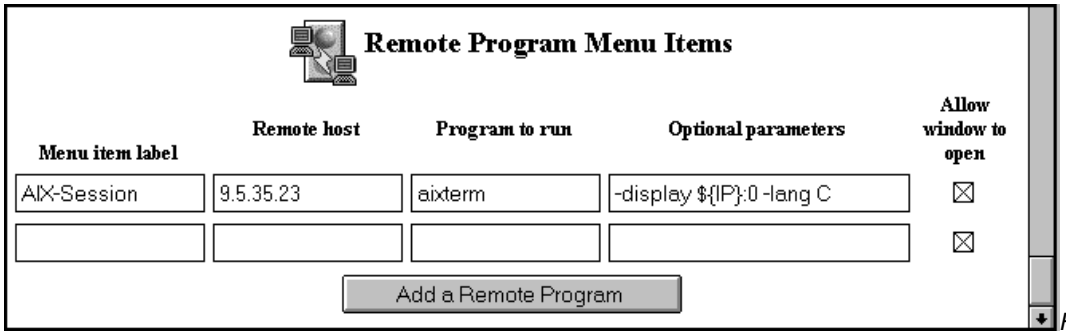


Figure 5-18. Remote Program Example for AIX - AIX

Where:

Menu item label
This text string will appear in the Menu bar on the IBM Network Station.

Remote host
The name or IP address of the AIX server.

Program to run
This identifies the program to run on the AIX server.

Optional parameters
-display is an AIX requirement that causes the program to display on the IBM Network Station rather than on the remote host. ${IP} is an IBM-supplied environment variable that gets replaced with the IP address of the IBM Network Station. -lang C is an AIX requirement that is used by programs such as Netscape on AIX.

The required parameters for AIX-Session are: -display and ${IP}:0.

7. Click Finish to apply the AIX remote program setting.

8. Log off and then log on your IBM Network Station. In the Menu bar there will be a button that is labeled AIX-Session, as shown in Figure 5-19.

Figure 5-19. Menu Button for Remote Program Example for AIX - EDBAR

9. Click AIX-Session and a window will open with your X-station session.

From the Aixterm window, you can run additional programs.

Setting up a Windows NT Session using the IBM Network Station Manager Program

Complete the following steps to setup a Windows NT session by using the IBM Network Station Manager program:

1. Verify that you have a Windows NT machine in your network that has the WinCenter Pro** application loaded on it.

2. Verify that the user has a valid user profile and password on the Windows NT server. When the session from the Windows NT server is requested on the IBM Network Station, the user will have to sign on.

3. Sign on to the IBM Network Station Manager program.

4. From Setup Tasks, click Startup.

5. Under Startup, click Menu.

6. From Program Defaults, click User defaults. (If you are setting this up for someone else, type their user profile or click Browse to select their user profile if you do not know it).

7. Click Next to continue.

8. Scroll ahead to Remote Programs. Type in the information as shown in Figure 5-20.

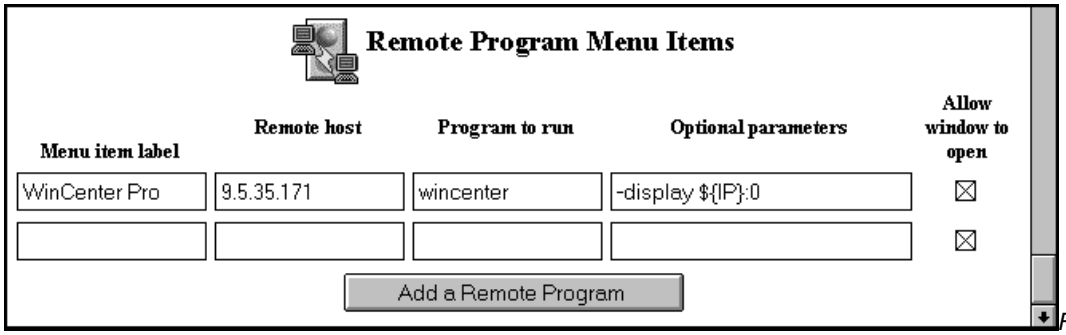


Figure 5-20. Remote Program Example for Windows NT - WIN

Where:

Menu item label
This text string will appear in the Menu bar on the IBM Network Station.

Remote host
The name or IP address of the Windows NT server.

Program to run
This identifies the program to run on the Windows NT server.

Optional parameters

-display is a WinCenter Pro requirement that causes the program to display on the IBM Network Station rather than on the remote host. ${IP} is an IBM-supplied environment variable that gets replaced with the IP address of the IBM Network Station.

The required parameters for WinCenter Pro are: -display and ${IP}:0.

9. Click Finish to apply the WinCenter Pro remote program setting.

10. Log off and then log on your IBM Network Station. In the Menu bar there will be a button that is labeled WinCenter Pro, as shown in Figure 5-21.

Figure 5-21. Menu Button for Remote Program Example for NT - EDBAR

11. Click WinCenter Pro and a window will open with your WinCenter session.

Chapter 6 . Working with User Services

User services are programs that provide users with tools to manage the IBM Network Station's environment. You can work with User Services whenever you want, including when an application is running. Following are a list of User Services (not all User Services are enabled):

- Console
- Login (not enabled)
- Terminals (not enabled)
- WindowMgr
- Utilities
- Setup (not enabled)
- Statistics

Accessing User Services

Access User Services by pressing the Shift, Alt, and Home keys all at the same time. Figure 6-1 shows the User Services window with all the service programs that are displayed within the menu bar:

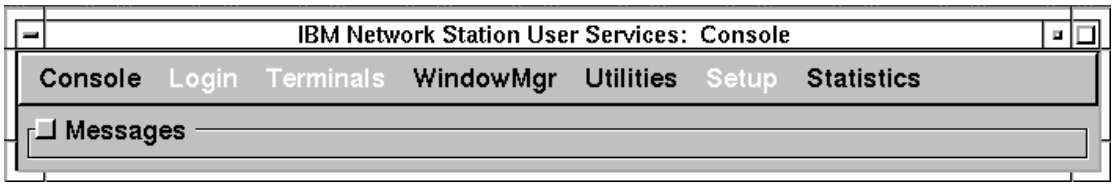


Figure 6-1. User Services Window - console

Console

This function provides a menu bar option (Console) for handling messages. Figure 6-2 shows the tools available through the Console services option:

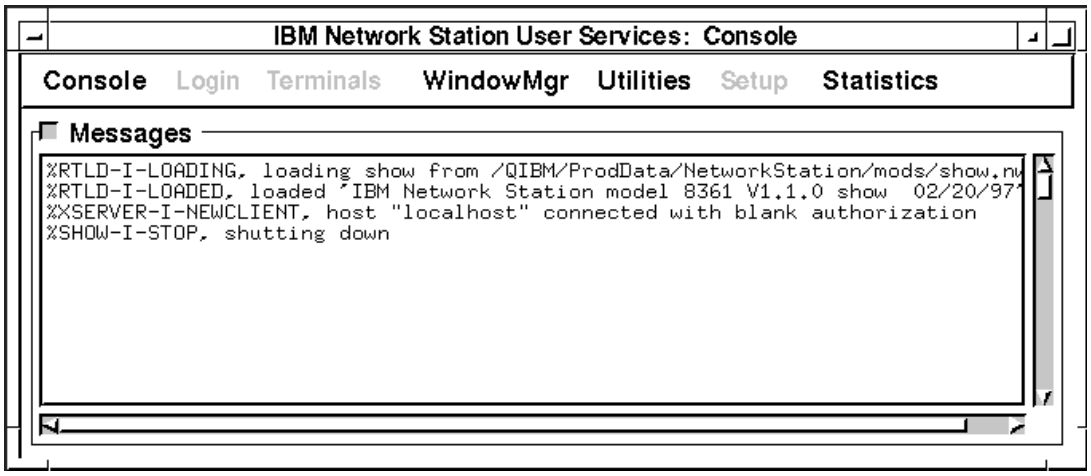


Figure 6-2. User Services: Console View - messages

Click the button by Messages to display messages that record IBM Network Station activity.

The list below contains the name of the tool and a description of its function:

Clear Messages
Selecting this option clears all the current messages from the console display.

Rescan Messages
Selecting this option refreshes the console display with any current messages that are not presently being displayed.

Close
Selecting this option closes the console function of User Services.

Login

The Login services option is disabled. The IBM Network Station Manager licensed program provides a login capability.

Terminals

The Terminal services option is disabled. The IBM Network Station Manager Program provides terminal or workstation management.

WindowMgr

Figure 6-3 shows the tools available through the WindowMgr services option:

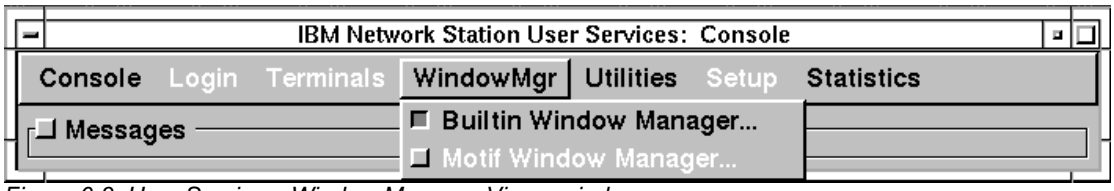


Figure 6-3. User Services: Window Manager View - window

The list below contains the name of the tool and a description of its function:

Built-in Window Manager
Selecting this option starts the Builtin Window Manager (an OSF or Motif-style). Deselecting this option ends the Builtin Window Manager.

The Built-in Window Manager function provides you with the ability to size, move, and make active (clicking) all the windows open on your monitor.

Utilities

Figure 6-4 shows the tools available through the Utilities services option:

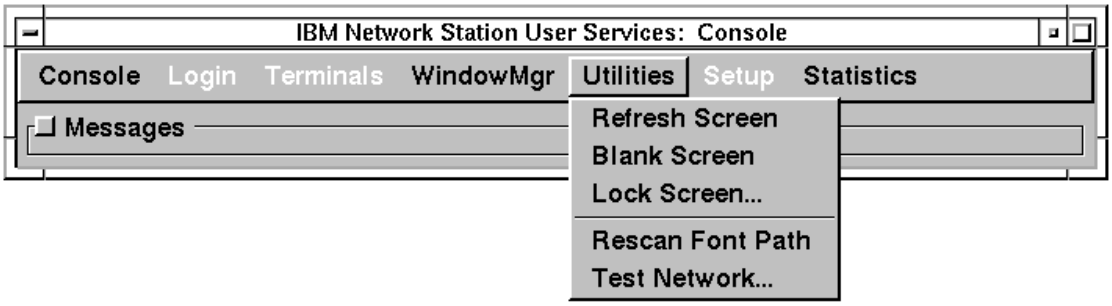


Figure 6-4. User Services: Utilities View - utility

The list below contains the name of the tool and a description of its function:

Refresh Screen
Selecting this option refreshes the active window.

Blank Screen
Selecting this option starts the screen-saver program.

Lock Screen
Selecting this option locks the screen after prompting for a password. The Lock Screen function keeps anyone without the password from using the workstation.

Rescan Font Path
Selecting this option refreshes any font changes that are provided by the system administrator.

For example, if the font currently being used is so large you can't display an entire 5250 session, you might have the administrator make available a smaller font. When this is done, you can then select the font by clicking on the Option pull-down within the tool bar and selecting fonts.

Another use of fonts would be to make your windows smaller, therefore

enabling several full windows to be displayed at the same time.

Test Network
Selecting this option runs the network test. This would be similar to the TCP/IP command "PING".

Setup

The Setup services option is disabled.

Statistics

Figure 6-5 shows the tools available through the Statistics services option:

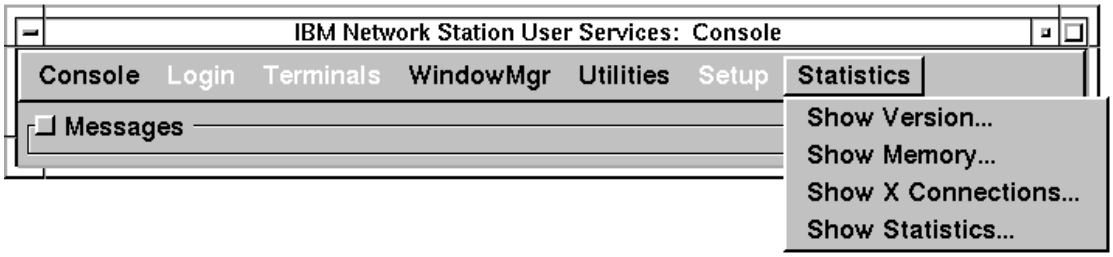


Figure 6-5. User Services: Statistics View - stat

The list below contains the name of the tool and a description of its function within the statistics services function:

Show version
Selecting this option displays version numbers and other information about the current state of the IBM Network Station.

Show Memory
Selecting this option displays information about free and installed memory in the IBM Network Station.

Show Connections
Selecting this option displays information about all the current X clients that are connected to the IBM Network Station.

Show Statistics
Selecting this option displays statistics that pertain to the IBM Network Station.

Chapter 7 . Working with the Network Station's Onboard Setup Utility

The system administrator can access the IBM Network Station Onboard Setup Utility while the IBM Network Station is going through the boot-up process.

The primary purpose of the Setup Utility is to allow you to **View** and then **Set** (change) configuration settings on a particular IBM Network Station. The following is a list that contains the names of configuration settings that can be viewed or set (changed):

- View:
  - Network Parameters
  - Boot Parameters
  - Hardware Configuration
- Set (change):
  - Network Parameters
  - Boot Parameters
  - Monitor Parameters
  - Language Parameters
  - Verbose Diagnostic Messages (Enabled or Disabled)

Accessing the IBM Network Station Setup Utility

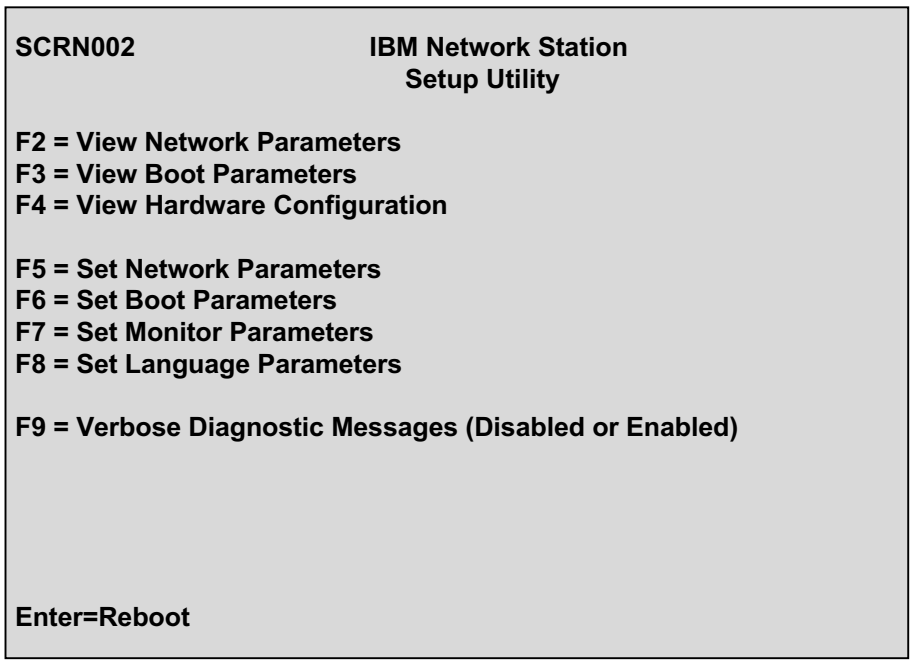
While the IBM Network Station is booting (downloading the file from the boot Host), press the Escape key.

Then, type in the Administrator password if password control is active. (The password is case sensitive). The administrator password is specified through the IBM Network Station Manager program in the Hardware setup tasks. Once the password is accepted, the following display appears:

Notes:
1. If the password has not been set using the IBM Network Station Manager program,any user can use the configuration settings in the IBM Setup Utility.

2. If you attempt the password three times without success, only the viewing capability of the IBM Network Station Setup Utility is available to you.

3. If you changed the Administrator password using the IBM Network Station Manager program, you will have to boot the IBM Network Station system unit up to the Login window in order for the new Administrator password to be enabled at the system unit.



F2 = View Network Parameters

This option lets you view the following Network Parameters for an IBM Network Station.

- IP Addressed from
- Whether the IBM Network Station is booted from the Network setting (DHCP is normal operation for the IBM Network Station), or if the IBM Network Station is booted from specific parameters stored on the IBM Network Station (NVRAM setting)
- Network Station IP Address
- First Boot Host IP Address
- Second Boot Host IP Address
- Third Boot Host IP Address
- Gateway IP Address
- Subnet Mask
- Broadcast IP Address

F3 = View Boot Parameters

This option lets you view the following Boot Parameters for an IBM Network Station:

- Boot File
- TFTP Boot Directory
- NFS Boot Directory
- Configuration File
- Configuration Directory
- TFTP Order
- NFS Order
- MOP Order
- LOCAL Order

F4 = View Hardware Configuration

This option lets you view the following Hardware Configuration parameters for an IBM Network Station:

- Video Memory
- DRAM Memory Total
  – Slot 1
  – Slot 2
- Boot Monitor Version

Specifies the level of initial program that runs when the IBM Network Station is powered on.

- Keyboard Controller
- Keyboard ID
- Keyboard Language
- Startup Language
- Processor Version
- Boot Resolution

This indicates the monitor resolution when the IBM Network Station is powered on.

- Server Resolution

This indicates the monitor resolution when applications are loaded on the IBM Network Station.

- Monitor ID
- Token Ring/Ethernet
  – MAC Address

This indicates the address of the communication adapter.

– Manufacturer
– Product
– Microcode Version
– Information

F5 = Set Network Parameters

This option lets you **Set or Change** how this IBM Network Station will determine its network parameters. It also identifies whether this IBM Network Station is booted from the Network (normal) setting, or if it is booting from the following specified parameters which are stored in the NVRAM settings of this IBM Network Station:

- IP Addressed from
- Network Station IP Address
- First Boot Host IP Address
- Second Boot Host IP Address
- Third Boot Host IP Address
- Gateway IP Address
- Subnet Mask
- Broadcast IP Address

If the IBM Network Station is booting from the Network setting, the following Network Parameters are available:

Using a Token Ring Connection	**Using an Ethernet Connection**

IP Addressed from	IP Addressed from
DHCP IP Address order	DHCP IP Address order
BOOTP IP Address order	BOOTP IP Address order
RARP IP Address order	RARP IP Address order
	Version 2 IEEE 802.3

The main use of the Set Network Parameters function is to allow you to select specific TCP/IP parameters for connection to boot hosts to isolate network connection problems.

Note: Using NVRAM networking settings may affect your IBM Network Station's ability to successfully load all required boot files in a busy network. For more information, refer to Appendix A, “Trouble Shooting and Problem Solving” on page A-1.

F6 = Set Boot Parameters

The main use of this function is to monitor or change the files and location of files that are used for booting this IBM Network Station.

This parameter lets you **Set or Change** the following Boot Parameters for an IBM Network Station:

- Boot File
- TFTP Boot Directory (path on the boot server to the Boot File)

When using TFTP (see below on this screen), this is the path name the server uses to locate and download the operating system.

- NFS Boot Directory

When using NFS (see below on this screen), this is the path name the server uses to locate and download the operating system.

- Configuration File

The configuration file contains the settings that are used by this IBM Network Station. You can configure these settings by using the Hardware function of Setup Tasks through the IBM Network Station Manager. See Chapter 6, “Using the IBM Network Station Manager Program” , for a high-level description of the Hardware Setup Tasks. The online help of the IBM Network Station Manager provides the details about using the Hardware function of Setup Tasks.

- Configuration Directory

This is the path name the server uses to locate the configuration file.

- Protocol Order

You can use the following protocols (that are located near the bottom of the screen) to perform the software download to the IBM Network Station. You can assign an order (first, second, and so on) that the system follows when performing the software download.

– TFTP Order

Trivial File Transfer Protocol (TFTP).

– NFS Order

Network File System (NFS).

– MOP Order

This protocol order is not supported.

– LOCAL Order

This indicates that you have installed, in the IBM Network Station system unit,a flash card with the operating system on it.

F7 = Set Monitor Parameters

F2 = Set Monitor Resolution
The main use of this function is to select a resolution to use with the monitor that is attached to this IBM Network Station.

We recommended that you test the resolution (pressing Enter allows you to test the resolution) before selecting and exiting this screen to ensure the resolution is supported by this monitor. If the grid size fits your display screen, and the font resolution is acceptable, the resolution that is selected will work.

CAUTION:
Setting a resolution that is not supported by your monitor can cause permanent damage to the monitor.

F3 = Monitor Power Management Disabled
The main use of this function is to enable or disable the power management function of the monitor that is attached to this IBM Network Station system unit.

CAUTION:
Enabling power management for a monitor that does not support this feature can cause permanent damage to the monitor.

F8 = Set Language Parameters

F2 = Select Keyboard Language
The main use of this function is to select a keyboard language to use with this IBM Network Station. Selecting a different language will change the mapping of keys. For example, if the current mapping results in a $ sign being put on the display when the $ sign key is pressed, changing the keyboard language may result in a different character being put on the display.

Note: If you change your keyboard language by using the IBM Network Station Setup Utility, you could have a different keyboard language than what is specified in the IBM Network Station Manager program. We recommended that you use the IBM Network Station Manager program to change keyboard languages.

F3 = Select Startup Language
The main use of this function is to select your language type.
Note: For release 1, English is the only supported language type.

F9 = Verbose Diagnostic Messages (Enabled or Disabled)

The main use of this function is to monitor boot activity from the boot Host. As the files are loaded, messages are written to a message log or displayed on the monitor. The default is Verbose disabled. When the boot process is in progress, a series of periods appears on the monitor.

If Verbose is enabled, all the file loading activity and any error messages are displayed.

Appendix A . Trouble Shooting and Problem Solving

This appendix contains information to help you recover from error situations such as:

- PANIC mode at an IBM Network Station
- Problems with monitors
- Cursor problems
- Java problems
- Printer problems

Troubleshooting

The Problem Determination Chart contains potential problem situations, a symptom description, and possible recovery actions you should try.

Table A-1. Problem Determination Chart

Symptom	What you should do
	Monitor Problems
Display image too large to fit on monitor.	IBM Network Station may be set to automatically detect which monitor you are using. For autodetect to work correctly, you must have the monitor turned on before you boot the IBM Network Station System unit.
	TCP/IP Configuration Utility Program Problems
The TCP/IP Configuration Utility fails to start, giving the error message: *Configuration is already running. Multiple instances are not supported.*	You should not try to run more than one session of the TCP/IP Configuration Utility at one time. If you are SURE that the configuration utility is not already running, but you still get the error message, carry out the following: Open a DOS Command Prompt window and enter *TCPCFG -F* This will reset the NT registry flag and the TCP/IP Configuration Utility should now work normally.
	DHCP Problems
IBM Network Station does not boot to login screen	Ensure that you are booting from the "Network" setting in the Setup Utility. Use of NVRAM may result in a timeout condition when downloading boot files to the IBM Network Station.

Symptom	What you should do
	Monitor Problems
	No Login Window
No Login window on monitor - User Services window appears instead	The most likely cause is an incorrect entry for this IBM Network Station in the DHCP configuration file. See IBM DHCP Server Configuration on page 3-16 to display the information about this IBM Network Station.

Java Problems	
Java error messages: Can't find class, too many copies, out of memory, IO exception.	See the “Problem Analysis when Running Java” on page A-9 for more information about recovery when these messages occur.
Text does not appear or is a different style.	Check the font sizes and styles. They may need to be changed to a different setting. Not all fonts are available on all JVMs.
Data written to a file does not appear in the file.	Make sure the Java applet or application closes the file to force all data to be written to the file.
Applet cannot read Properties or get a Security Exception while trying to read the System Properties	Applets may only read properties which are explicitly allowed by the system configuration. A property can be configured to be accessible by defining a new property of the form .applet and assigning it a value of true. This may be done through the Network Station Manager in the AppletViewer configuration section. The default properties which may be read by an applet are: • java.vendor • java.version • java.vendor.url • java.class • os.name • os.version • os.arch • file.separator • path.separator • line.separator If the class sun.applet.AppletViewer is used to view applets, the accessible Property list will differ from above and depend on the property file defined within the users' home directory.

Java Problems	
Cursor does not appear in TextField or Window layout (for example, button positions) appears different from the way it appears when the applet is run on another platform.	The Java Abstract Window Toolkit (AWT) is designed to create a development environment independent of the underlying windowing mechanisms. These classes utilize the native window calls to do the work, but provide a uniform interface to programmers. However, Java Abstract Window Toolkit cannot hide all the differences. Thus appearances may change from one Java Virtual Machine on one platform to another Java Virtual Machine on a different platform.
Can not close Java error message box	Scroll to the end of the error message box and click OK.

Enviroment Variables - Java Applet Viewer	
Environment variable not replaced	Environment variables cannot be used when working with properties in the Java Applet Viewer section of the IBM Network Station Manager. The property value does not get replaced with the Environment Variable value. For example, if you declared name=$IP in the properties box, you might expect to get the IP address of workstation user. Instead, you get $IP.

Panic Appears on your workstation	
P A N I C appears on your workstation	See “PANIC Mode at an IBM Network Station” on page A-6 for more information on recovering from a PANIC situation.

Cursor Problems	
3270 cursor will not reposition using mouse	To reposition the cursor using the mouse, you must first use the mouse to position the mouse pointer. Then, press the Shift key and click the left mouse button. The cursor will move to that position.
Busy cursor (cursor seems busy trying to perform a task)	The first time you open an application from the workstation menu bar the cursor stays busy until the application opens. Additional requests for another session of the same application will show the cursor only being busy for 3 seconds. Depending on network traffic, the application may take longer than 3 seconds to appear.

Cursor in wrong position within an application	When you leave one application to go to another application using the mouse, the cursor may not be at the same position when you return. The cursor probably repositioned itself to the place where you clicked the mouse to re-enter the application. You can reposition the cursor using the directional arrow keys.

Color Problems	
Colors appear incorrectly in applications	Color capabilities are fixed at 256 available colors. Some applications will use as many colors as possible, thus leaving no colors for additional applications. Try to start other applications before starting an application that uses a large number of colors. Applications that do not use 256 colors may have to be changed to use 256 color support.

3270 Problems	
3270 session will not open.	You can only have one active 3270 session at a time. If you already have a 3270 sesssion open, you will need to close it first before opening another session.

Keystrokes	
Unwanted keystrokes appearing in applications	If the screen saver comes on while you are in an application and you press a key to end the screen saver, that keystroke will appear in your application. Remove the unwanted keystroke.

	Host Unknown or Unknown Host Message
Host Unknown message appears on workstation	This message could appear if: • a wrong system name or IP address was specified while using the program or menu functions of Startup Tasks in the IBM Network Station Manager program • a wrong system name or IP address was specified when opening a 3270 or 5250 session • TCP/IP name resolution is not occurring while using the program or menu functions of Startup Tasks in the IBM Network Station Manager program You should validate the system name or IP address. Also, you should access the Hardware Setup Task and specify to use the Update host table and DNS configuration from server field. Updating this field refreshes your TCP/IP name resolution information for the IBM Network Station. Therefore, if new systems were integrated into your network, their IP address or system names would be known. You must log off and log on for the name information to become available.

	Screen Flashes
Screen flashing or crackling sound	Screen flashes, along with some crackling sounds, can occur when you are logging out of the workstation. The flashing will not harm any hardware or applications.

	IBM Network Station Manager Program
Changed Hardware workstation settings not being applied	Some changes require the IBM Network Station to be rebooted before they take effect. If you have rebooted the IBM Network Station and the changes are still not applied, use the IBM Setup Utility, Select F5 (Set Network Parameters) and make sure the IP Addressed from parameter value is Network. If the IP Addressed from parameter value is NVRAM, the IBM Network Station will not be able to use DHCP to determine the name of its workstation-specific settings file. It is recommended that the IP Addressed from parameter be set to Network to use DHCP. See Chapter 7, “Working with the IBM Network Station Setup Utility” on page 7-1 for more information.

Inactive Navigational buttons in Help	In Help text, the navigational buttons (Back and Next) will not become active until you have linked to other topics. Once you have moved, by linking other topics, you establish a history of that movement. The buttons use this history to determine if the Back and Next buttons can be used.
Pulldown box won't stay open to accept Hardware setting changes.	If you are running a browser in a Windows environment, change the screen size to something other than 640 X 480. You can also try resizing your current window and then try to open the pulldown again. Try scrolling the window to change the position of the pulldown. This may give pulldowns that contain many items space to display the pulldown items.
Resizing the Netscape window causes problems	If you resize the Netscape window while the IBM Network Station Manager program is being loaded into it, Netscape may stop the load and you will not get a sign-on screen. You will have to close the IBM Network Station Manager browser window and restart the program; wait until after the logon screen is displayed before you resize the window. After signing on, resizing the Netscape window may cause the server name or name of the user whose defaults you are displaying to disappear. This will not affect the operation of the IBM Network Station Manager program.
Microsoft Internet Explorer windows are displayed behind the main window	In the IBM Network Station Manager program, if you request help or a list of users or terminals, a popup window is opened to contain the requested information. Internet Explorer may open the popup window behind the larger main window from which you made the request. To find the popup, you may need to move or minimize the larger window.
Changed keyboard setting has not been applied	Reboot your IBM Network Station in order for the changed keyboard setting to take effect.
Update of boot monitor has not been installed.	Reboot your IBM Network Station in order for the updated boot monitor to take effect.
Changes made to Hardware settings (other than keyboard and boot monitor), Startup Programs, Menus or Environment Variables, Desktop Manager, or Internet Network settings have not been applied.	Logoff the IBM Network Station, then logon to the IBM Network Station in order for the changes to take effect.
Changes made to 5250, 3270, or IBM Browser have not been applied.	End your application session and restart a new application session in order for the changes to take effect.

Changes made to the Applet Viewer have not been applied.	Logoff the IBM Network Station, then logon to the IBM Network Station in order for the changes to take effect.

Browser Problems	
The IBM Network Station Browser will not start.	This could be because you deleted the IBM Network Station Manager for program and then reinstalled it. In deleting the licensed program, some of the files that support the IBM Network Station Browser were also deleted. Reinstall the IBM Network Station Browser licensed program.
Error message 404 - file not found	Verify the spelling and case sensitivity of the URL you used to access the IBM Network Station Manager program. If the spelling and case of the URL are correct, you can check the directives specified in the HTTP server configuration section of your browser.

PANIC Mode at an IBM Network Station

A panic is an unrecoverable error condition that causes the Network Station operating system to stop running.

To recover from a PANIC switch the Network Station off and then back on again.

File Transmission and Maximum Transmission Units

The Token-Ring Network Station is shipped with a Token-Ring Maximum Transmission Unit (MTU) of 1492 bytes. This value is used to determine the size of an MTU or frame of data when the IBM Network Station is sending data to a host. This value should work well for most network configurations.

Note: Other components in your network such as routers and bridges may support, or be configured to support, a smaller MTU value. The MTU value set in the IBM Network Station should not exceed the MTU (MAXFRAME) value of any network component which is part of the communications path between the IBM Network Station and the server.

1. Reboot your IBM Network Station.

2. When you see the message NS0500 Search for host system, or while the status bar is displayed showing the progress of loading the IBM Network Station kernel, press the Escape key.

3. Press the Ctrl-Alt-Shift-F1 key combination.

4. Enter "NF xxxxx", where xxxxx is the new MTU value (in bytes).

5. Reboot your IBM Network Station.

Problem Determination when Running Java

If the Java applet or application does not start, examine the messages that are displayed in the User Services' console. These should give an indication of any problems that are found by the JVM in running the program. In addition, you can determine whether the JVM is loaded by noting a change in the amount of memory currently being used as found in User Services' Statistics. See Chapter 6, “Working with User Services” for more information.

Examples of some Java error messages follow:

Cannot find class or class not found

The JVM cannot find the class file requested by the Java applet or application. If the error is returned while running a Java application, inspect the class path that is specified in the IBM Network Station Manager Startup programs or menus. Confirm that the directories which include class files that are associated with the program are contained within the class path and that they have the correct format. Also, ensure that the name in the Application (Class) Name field does not contain the .class file name extension.

If the classes are provided in a zip file, the fully qualified zip file name must explicitly appear within the class path. In addition, due to differences in file systems, the classes may not be found since they are referred to in a case-sensitive manner. It may be possible to rename the class to the name that is indicated in the console messages.

For an applet, the codebase portion of the applet tag within the HTML file lists the locations where classes are found.

Also, check the file access permissions on the directories and files to make sure that users are allowed to read the files.

Too many copies are already running

If you already have a Java application that is running, you cannot start another a Java applet.

If you have one or more Java applets running (including applets within a browser), you cannot start a Java application.

Out of memory

The IBM Network Station system unit may not have enough memory to run the application or applet. Possible causes include:

- Other applications are using memory, and not enough memory is left for the Java application or applet to run.
- The stack size and heap size parameters need to be adjusted. The stack and heap sizes can be set using the IBM Network Station Manager. For applications, the parameters are set in the Startup Tasks (programs or menus) section. For an applet, the parameters are set in the Network Tasks (Applet Viewer section).

IO exception while reading: (a remote server name)

An HTTP address rather than a file location was passed to the applet viewer. AppletViewer is essentially a browser that needs to have a defined proxy server and port before it can load HTTP files. To do this, you need to set the HTTP proxy or Socks Host parameter by using the IBM Network Station Manager program. Select the Internet Setup Task and then the Network section.

If you are loading the applet from your host server, you do not need to use an HTTP address. Instead, you can simply fill in the local path and HTML file name.

IO exception while reading: (a file name)

Ensure that you specified a valid HTML file name as the startup programs or menus URL name in the IBM Network Station Manager program. Also, ensure that the file is readable by the user.

Launcher Shutdown Monitor

If your applet does not start and the next message in the console is Launcher Shutdown Monitor, ensure that you specified a valid HTML file name as the startup programs or menus URL name in the IBM Network Station Manager program. Also ensure that the file is readable by the user.

Unusable class name: (name)

Check the name in the field Application (Class) Name field in the startup programs or menus section in the IBM Network Station Manager program. Do not include a path or the .class file name extension in this field.

Other

If you do not see any messages in the User Services Console window that explain your problem, set Verbose messages on using the IBM Network Station Manager program. For applications, Verbose messages can be set in the Startup Tasks (programs or menus) section. For an applet, Verbose messages can be set in the Network Tasks (Applet Viewer section). Additional messages will now be displayed when your application or applet is run.

Appendix B . National Language Support

Only selected national languages are supported at this time. The following list contains the software feature number and the language.

```
2922  Portuguese
2923  Dutch
2924  U.S. English
2925  Finnish
2926  Danish
2928  French
2929  German
2931  Spanish
2932  Italian
2933  Norwegian
2937  Swedish
2939 German MNCS (multinational character set)
2940  French MNCS
2942  Italian MNCS
2958  Icelandic
2963  Belgian Dutch
2966  Belgian French
2980  Brazilian Portuguese
2981  Canadian French
2996  Portuguese MNCS
```

Notes:

1. IBM Network Station NLV support is ASCII code page 819 (ISO equivalent of code page 850).

2. Code Page 819 supports all languages supported by the 5250 emulator of the IBM Network Station by using the configured language that is supplied by IBM Network Station Manager (or its equivalent function).

3. Software will be NLV-enabled, not translated (U.S. English MRI only).

Appendix C . IBM Network Station Manager Program Shipped Default Settings

The following table contains all the IBM Network Station Manager Program shipped default settings. The settings are presented in the same order that is found in the Setup Tasks frame when you open the IBM Network Station Manager program.

Table C-1. IBM Network Station Hardware Default Settings.

Hardware Default Settings	
Item:	**Default Value:**
Mouse settings:	
Mouse button configuration	Right-handed
Mouse pointer speed	Medium
Keyboard settings:	
Keyboard Repeat rate	Medium
Keyboard Repeat delay	Medium delay
Keyboard mapping language	Default from terminal
Monitor settings:	
Minutes before screen saver turns on	**10**
Screen saver	IBM bitmap
Minutes before monitor standby	20
Minutes before monitor suspend	40
Minutes before monitor power down	60
Desktop background	IBM bitmap
Miscellaneous settings:	
Parallel printer port	On
Allocate memory to speed window refresh	No
Update boot monitor from the hardware settings file	No Update

Table C-2. IBM Network Station Desktop Manager Default Settings.

Desktop Manager Default Settings	
Item:	**Default Value:**
Screen colors:	
Background color for window frame in focus	Mint green
Background color for window frame not in focus	Gray
Foreground color for window frame not in focus	Black
Icon preferences:	
Icons placed	on desktop
Icon location	bottom left
Fonts:	
Font size for icons and menus	12
Window focus	Windows become active by clicking on the window

Table C-3. 5250 Default Settings.

5250 Default Settings	
Item:	**Default Value:**
Key remapping capability	Disabled
Default keyboard file for:	
PC Keyboard (101 keys)	None
PC Keyboard (102 keys)	None
5250 Keyboard (122 keys)	None
Color Settings:	
Color customization capability	Basic
Default color scheme	None
Additional color schemes to make available	None

Record/Playback Settings:	
Record/Playback capability	Enabled
Playback sequences to make available	None
Miscellaneous Settings:	
Screen size	27 rows, 132 columns
Image/Fax display	Disabled
Column separators	Disabled
Allow use of the pop-up keypad	No
Allow use of the control menu	Yes
Allow use of the edit menu	Yes

Table C-4. 3270 Default Settings

3270 Default Settings	
Item:	**Default Value:**
Key remapping capability	Disabled
Default keyboard file for:	
PC Keyboard (101 keys)	None
PC Keyboard (102 keys)	None
Color Settings:	
Color customization capability	Basic
Default color scheme	None
Additional color schemes to make available	None
Miscellaneous Settings:	
Screen size	32 rows, 80 columns
Allow use of keypad	No
Allow use of graphics	No
Key for Enter function	Control key

Table C-5. Internet Network Default Values

Internet Network Default Settings	
Item:	**Default Value:**
Web server port on the boot host AS/400	80
Applet launcher port	5555
IBM Network Station browser version	Non-encrypted

Table C-6. IBM Network Station Browser Defaults.

IBM Network Station Browser Defaults	
Item:	**Default Value:**
Allow user to override settings	No
Security Settings:	
Enable JavaScript	Yes
Enable Java Applets	Yes
Network Settings:	
Disk cache	5000 KB
TCP/IP maximum connections	5
Print headers and footers:	
Left header	&w
Right header	&p
Left footer	&D
Right footer	&t
Print margins	
Top margin	.5 inches
Bottom margin	.5 inches
Left margin	.5 inches
Right margin	.5 inches
Paper Size	Letter
Miscellaneous:	
Auto load images	Yes
Show toolbar	Yes

Table C-7. Java Applet Viewer Settings.

Java Applet Viewer Settings	
Item:	**Default Value:**
Verbose mode	off
Verify classes	remote only
Maximum heap size	3 MB
JAVA stack size	256 KB
Native code stack size	32 KB
Garbage collection:	
Verbose	Off
Only when needed	Off. Garbage collection runs as an asynchronous thread in parallel with other threads.
NOTE: The Java Applet Viewer setting defaults are also the defaults for the Java Applications found on the Startup Programs and Menus screens.	

Appendix D . IBM Network Station Manager Program Shipped Environment Variables

The following are environment variables whose values cannot be altered. These values are set when a user logs onto the IBM Network Station.

PATH
\nstation\mods

HOME
\user\(user name)

Note: (user name) is the identity of the person that is logged onto the IBM Network Station.

DISPLAY
:0.0

HOSTNAME
Name of the IBM Network Station terminal

BOOTHOST
The server from which the IBM Network Station was booted

BOOTPATH
\nstation

USER
User ID of the person logged onto the IBM Network Station

PASSWORD
Password of the person logged onto the IBM Network Station

NSM_ADMIN_SYSDEFAULTS
\nstation\userdata\sysdef

NSM_PROD_SYSDEFAULTS
\nstation\proddata\sysdef

NSM_USER_PREFS
\nstation\userdata\(user name)

Note: (user name) is the identity of the person that is signed onto the IBM Network Station.

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