Microsoft® Windows NT™

NetWare® Workstation

Compatible Service

Beta 2
Microsoft Corporation

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NetWare Workstation Compatible Service

The NetWare® Workstation Compatible Service (NWCS) allows Microsoft® Windows NT™ workstations to access files, directories, and printers on Novell® NetWare servers. In addition, NWCS includes a file and a print gateway that allows Microsoft networking clients (computers running Windows NT, Windows for Workgroups, or LAN Manager 2.*x*) to access files on NetWare servers without having NetWare client software loaded.

Because NWCS uses the IPX protocol, the NetWare Link (NWLink) transport must be installed before you install NWCS. NWLink is the Microsoft implementation of the IPX/SPX protocol. For more information about the transport and its parameters, see "NetWare Link Transport" later in this document.

After NWCS is installed, you can start accessing NetWare directories, files, and print queues. For more information about accessing NetWare resoures, see "Using NetWare Resources" later in this document.
You can also customize NWCS features such as specifying preferred servers and printing options, as well as enabling and configuring the file gateway through Control Panel.

Installing NWCS

Before installing NWCS, you must do the following:

> Install the NWLink transport. For more information, see "Installing NWLink" later in this document.
> Remove any existing installation of NetWare Services for Windows NT from Novell and then restart your computer.

For more information about removing NetWare Services for Windows NT, see "Removing Existing Redirector Installations" later in this document.

When you install NWCS, you should have the name of your preferred NetWare server available.

Security Note: To install or configure NWCS, you must be logged on to Windows NT as a member of
the Administrators group.

To install NWCS
1. In Control Panel, choose the Network option.
2. In the Network Settings dialog box, choose the Add Software button.
3. In the Add Network Software dialog box, select <Other> Requires Disk From Manufacturer, and then choose the Continue button. If you have removed an existing installation of NWCS, be sure to always select <Other> Requires Disk From Manufacturer in the Add Network Software dialog box. When reinstalling NWCS, do not select NetWare(R) Workstation Compatible Service because NWCS will not reinstall properly. For more information, see "Removing Existing Redirector

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Installations" later in this document.

4. The Windows NT Setup dialog box prompts you to insert a disk containing the software and to specify the drive location of the disk.
   Or, if the software is located on the network, you can specify the full network path. Provide the location of NWCS files, and then choose the Continue button.

5. In the Select OEM Option dialog box, select NetWare Workstation Compatible Service, and then choose the OK button.
   Windows NT Setup copies the files to your computer.

6. Choose the OK button to close the Network Settings dialog box.
   Windows NT configures the network.

7. Windows NT prompts you to restart the computer so that the changes can take effect. Choose the Yes
   button to restart your computer.
   If you choose the No button, you can continue to work, but your changes will not take effect until the
   computer is restarted.

8. When you restart your computer and log on, Windows NT displays the Select Preferred Server For NetWare dialog box. Select the NetWare server you plan to use most often. You can select <None> if you do not have a server preference.

9. If your Windows NT password and the password on your NetWare server are not identical, Windows NT prompts you to enter your password for the NetWare server.

Note: By keeping your Windows NT and NetWare server passwords identical, you can access the NetWare server without having to enter another password after you log on to Windows NT.

Customizing NWCS
An icon labeled NWC is created in Control Panel when NWCS is installed.

Use this option to select your preferred NetWare server, to set printing options, or to enable and configure the file gateway. For more information about preferred servers, see "NetWare Authentication" later in this document. For more information about printing options, see "Setting Printing Options" later in this document. For more information about installing and configuring the gateway, see "Using Windows NT as a File Gateway" later in this document.

Removing Existing Redirector Installations

Note: If you have an existing installation of NWCS, you must first remove the existing installation and
    then restart your computer; otherwise, NWCS will not install correctly.

To reinstall NWCS
1. In Control Panel, choose the Network option.
2. In the Network Settings dialog box, select NetWare(R) Workstation Compatible Service in the

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Installed Network Software box.

NetWare(R) Workstation Compatible Service appears in the Description box.

If you are removing an installation of NetWare Services for Windows NT from Novell, select NetWare Services in the Installed Network Software box.

3. Choose the Remove button.

Windows NT reminds you that this action will permanently remove the component from the system and that you will have to reinstall the component from the installation disks.

4. Choose the Yes button.

Windows NT removes the files from your computer.

5. In the Network Settings dialog box, choose the OK button.

Windows NT configures the network.

6. Restart your computer.

You must restart your computer or the changes you requested will not take effect.

7. Follow the procedures in Installing NWCS preceding this section.

Running NWCS Without the Windows NT Workstation Service

In this release, if you want to run NWCS without the Windows NT Workstation Service, you must disable the Workstation, as well as the Alerter, Computer Browser, Messenger, and Net Logon services.

To disable services

1. In Control Panel, choose the Services option.
2. In the Services dialog box, select Alerter.
3. Choose the Startup button.

A dialog box with the services name appears.

4. In the Startup Type box, choose Disabled.
5. Choose the OK button.

Repeat this procedure for the Workstation, Computer Browser, Messenger, and Net Logon services.

6. Once the services have been disabled, choose the Close button.
7. Restart your computer.

NetWare Authentication

Before you can use a file, application, or print queue on a NetWare server, you must have an account on the server. The NetWare server account contains your credentials, which are your username and password.

By default, Windows NT supplies the username and password you used when you logged on to Windows NT as the credentials it sends to the NetWare server. It is best to keep your username and password on NetWare servers the same as those you use when logging on to Windows NT because this allows you to use NetWare servers without having to supply another username and password. It also makes it easier for network administrators to coordinate user accounts. You are prompted to supply your credentials only if your username and password on the NetWare server are not the same as your

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username and password in Windows NT.

Selecting a Preferred Server

Once NWCS has been installed and you have restarted your computer, you are prompted to select a preferred server. This is the NetWare server that is queried for information about available network resources. When you have NWCS installed and you log on to Windows NT, your Windows NT credentials will be used to create an authenticated connection to the preferred server.

You can select or change your preferred server at any time. If you do not want to set a preferred server, you can select the <None> option. In this case, when you browse resources, the closest available NetWare server is queried. In general, you should specify a preferred server to avoid using a connection on a server that may allow only a limited number of users to connect.

To select or change a preferred server
1. In Control Panel, choose the NWC option.
2. In the Select Preferred Server box, select the name of your preferred NetWare server, or select the
   <None> option.
3. Choose the OK button.

Windows NT sends your username and password to the NetWare server you selected for authentication.

Note: For ease of administration, each users username and password on Windows NT should be the same as those on the users preferred server so that the users credentials can be authenticated automatically.

Using NetWare Resources

NWCS allows you to use resources on NetWare servers, including directories, files, and printers. NetWare server volumes, directories, and print queues are represented by their universal naming convention (UNC) names. However, NetWare syntax is also supported.

UNC names begin with two backslashes (\\) followed by the remote (in this case, NetWare) server name, and then the names of the volume or directory points on the server separated by single backslashes.

For example, if the file server NW4 contains the THOR volume on which there is a directory WINAPPS\WORD, the UNC name is \\nw4\thor\winapps\word.

You can connect to directories on NetWare file servers using File Manager or the **net** command at the command prompt. You can print to NetWare print queues by connecting to the print queue in Print Manager. Once you have connected to a print queue, you can also print to it using the **net** command. You can also display NetWare servers and volumes using the **net** command. For more information about the **net** command, see "Connecting to NetWare Resources Using the net Command" later in this

document.

Connecting to NetWare Resources Through File Manager

File Manager allows you to browse and connect to resources on both Microsoft and NetWare networks. Once you are connected to a NetWare volume, you can drag and drop directories and files between MS networking clients and NetWare servers.

The list of servers on the NetWare network is displayed automatically in the Shared Directories box. You can switch this off by clearing the Expand By Default check box.

On NetWare networks, the servers, volumes, and directories are organized in a tree structure. Both volumes and directories are represented by the shared directory icon. Choose an item to expand the list. For example, choose a directory to display its subdirectories.

When you select the name of a NetWare volume, the NetWare server authenticates you before allowing you to see directories. If the server cannot authenticate you, Windows NT displays the Enter Network Credential dialog box so that you can provide a username and a password for the server.

On a NetWare network, if you know the name of a server and need to see the names of its volumes, you can type the server name in the Path box and choose the OK button. Preface the server name with two backslashes (\\). Windows NT adds the name of the servers first volume directory to the Path box and displays all the servers volumes in the Shared Directories box.

You can type a network path in the Path box. On NetWare networks, you can type the name using either UNC or NetWare syntax.

To connect to a NetWare drive using File Manager
1. Choose Connect Network Drive from the Disk menu, or choose the Connect Drive button on the
    toolbar.
2. File Manager displays the first free drive letter in the Drive box. You can accept the displayed drive
    letter for the connection, or choose another in the Drive box.
3. Select or type a network path in the Path box.
    If you have connected to the volume or directory before, select the path from the list displayed by
the
    Path box. The Path box displays the previous 10 paths.
    Or, you can use the Shared Directories box to select a network path.
4. By default, you are connected under the username and password you used to log on. If you want to
    connect under a different username, type it in the Connect As box.
5. Choose the OK button. If a password is required, Windows NT displays the Enter Network
Password
   dialog box where you can type the password.

Using Windows NT as a File Gateway

The file gateway allows MS networking clients to access files that reside on NetWare servers without having to load additional NetWare connectivity components on the client.

MS networking clients use the server message block (SMB) protocol to perform remote requests to MS networking servers. Similarly, NetWare clients use the NetWare core protocol (NCP) to communicate with NetWare networking servers. The file gateway serves as a translator between the two protocols.

The file gateway uses a NetWare account to create an authenticated connection to the NetWare server from the Windows NT gateway computer. All file access will be done in the context of this connection. The NetWare account must be a member of the NetWare NTGATEWAY group. This allows the NetWare administrator to control which Windows NT computers can be gateways to the NetWare file server. Once the gateway connection is started, it will not be disconnected unless the computer is turned off, or unless the Windows NT administrator chooses to disconnect the share or disable the gateway. Logging off of the Windows NT computer will not cause the gateway connection to be disconnected.

The redirected drive you create on your Windows NT computer will appear to the MS networking client as a share on the Windows NT computer. For example, if the gateway share were called DATA and the Windows NT computer name was FILEGW, the MS networking client could access the computer using the **net use** command by typing **net use g: \\filegw\data**, or through File Manager, by choosing Connect Network Drive from the Disk menu.

To activate the file gateway on NetWare file servers, use the NetWare syscon utility to
1. Create the NTGATEWAY group account on the NetWare file server.
2. Add the gateway account to the NTGATEWAY group.
3. Establish trustee rights for the NTGATEWAY group.

To activate the file gateway on Windows NT workstations
1. In Control Panel, choose the NWC option.
   The NetWare Workstation Compatible Service dialog box appears.

2. Choose the Gateway button.
   The NWC Gateway dialog box appears.

3. Check the Enable Gateway box.
4. Type the name of your gateway account in the Gateway Account box. Type and confirm a password for the gateway account.
   The gateway will use the account information to create an authenticated connection to the NetWare file server. Effective file rights will be based on this account in the NTGATEWAY group.

5. Choose the Add button to create shares for MS networking clients.

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The gateway allows you to have flexibility in assigning gateway access. You can create multiple redirections to the same NetWare file server. On the Windows NT side of the gateway, multiple redirections allow the Windows NT administrator of the gateway better control of gateway access to the MS networking users and groups by limiting share permissions.

By associating different paths to the redirected volume, you can restrict directory and file access on the NetWare server. Also, if you maintain the same gateway account on multiple NetWare servers, the file gateway could have redirections to each NetWare server.

The New Share dialog box appears.

6. Type the information about the redirected share and choose the OK button.
   Windows NT creates a connection to the NetWare volume. Other users can now connect to the share and use NetWare resources.
   To users, NetWare resources appear to reside on your computer instead of on the NetWare server.
   If you want to control user access, set permissions for the share when you create it.
7. In the NWC Gateway dialog box, choose the Permissions button to limit access to the gateway to specific groups.
   The Access Through Share Permissions dialog box appears. You can use this dialog box to add groups and users, change the permissions for the listed groups and users, and remove a group or user from the permissions list.

8. Choose the Add button.
   The Add Users And Groups dialog box appears. It displays the groups on the computer or in the
   domain shown in the List Names From box.
   Local groups are shown for the computer or domain whose name is followed by an asterisk (*). You
   can select another domain by using the List Names From box. Domains appear only if your
computer
   is a member of a domain on a Windows NT network. The domains shown have a trust relationship.

9. You can use the options in the Add Users And Groups dialog box to display users, find the users in a
   group, or find the domain to which a group or user belongs.

   To display the names of users on the selected computer or domain, choose the Show Users button.

   To see a groups content, select the group and choose the Members button. Users are listed in a new
   dialog box. On a Windows NT Advanced Server network, global groups that are members of a local
   group appear in the list. To see a global groups see users, select the group and choose the Members
    button. To include the group in the Add Users And Groups dialog box, choose the Add button.

   To add a group or user, you must know the domain that contains the groups or users account. On a
   Windows NT Advanced Server network, choose the Search button to find the domain of a group or
   user. In the Find Account dialog box, type the name of the group or user in the Find User Or Group
   box, and specify the domains you want to search. Then choose the Search button. To include the
   groups or users in the Add Users and Groups dialog box, select them in the Search Results box and
   choose the Add button.

10. To add groups or users to the list, select them in the Names box and choose the Add button, or
    double-click the name of the group or user. Or you can type the names of groups and users in the
    Add Names box. Separate names using a semicolon.
    If the account of the group or user is not located on the computer or domain shown by the List
    Names From box, you must specify the location. Type the computer or domain name followed
    by the group or user name, and separate the names using a backslash, for example **sales\anniep**.
    You can type the name without waiting for Windows NT to list groups in the Names box.

11. If you are adding users or groups to a permissions list, select the permission for the groups or users
    shown in the Add Names box using the Type Of Access box.

12. Choose the OK button.

13. In the NWC Gateway dialog box, choose the OK button.

14. In the NetWare Workstation Compatible Service dialog box, choose the OK button.

For additional information about setting permissions, see "Setting Permissions Through Shared

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Directories" in Chapter 4 of the *Windows NT System Guide*, or see NWCS online Help.

Commonly Asked Questions

Is the gateway turned on by default?

No, you must use the NWC option in Control Panel to activate the gateway (see the procedure "To activate the file gateway" earlier in this document).

How secure is the gateway feature?

The NetWare administrator has total control of whether the gateway allows access to files on the NetWare file server.

Access to files can be controlled at two levels:

1. On the Windows NT computer acting as a gateway, the administrator can restrict access through the gateway by limiting which MS networking users or groups have access. The administrator can restrict access using the Permissions button in the NWC Gateway dialog box (see step 7 in the preceding section). Using multiple share restrictions through a gateway allows the Windows NT administrator to control which MS networking users and groups can access files through the gateway.

2. On the NetWare file server, the NetWare administrator must create a special gateway group, NTGATEWAY. Using NTGATEWAY, the administrator can set trustee rights on the directories and files that users and groups are allowed access through the gateway (see steps to activate the gateway in the preceding section). There is no auditing of gateway access.

How many connections are taken up on my NetWare file server to support the gateway?

One authenticated connection. All file access is done in the context of the gateway connection to the NetWare file server.

Will the gateway be unavailable/disconnected if I log off the Windows NT computer acting as the gateway?

No. The only time the gateway connection will be terminated is if you use the NWC option in Control Panel to disable the gateway, or you turn off your computer.

I understand this feature was already available in a previous beta of NWCS.

This feature was available in the original alpha release of NWCS, which went out to approximately 50 large accounts for initial customer feedback. Based on their feedback, we felt it was necessary to redesign how the file gateway works. The old mechanism of modifying a Registry parameter and then using the **net share** command will not work with this beta. You must use the implementation described earlier.

Does NWCS support a printing gateway?

Although a printing gateway is also a feature, this discussion is restricted to the file gateway. The printing gateway is handled through the Print Manager. For more information, see "Using Windows NT as a Printing Gateway" later in this document.

How are file attributes mapped between Windows NT and a NetWare file server?
    When a NetWare file is opened by NWCS, the following file rights mappings will be applied:

Windows NT file attributes	NetWare file attributes
RO (Read Only)	RO, DI (Delete Inhibit), RI (Rename Inhibit)
A (Archive)	A
Sy (System)	Sy
H (Hidden)	H
RW (Read/Write)	RW

NWCS does not support mapping to the following NetWare file attributes: S (Sharable), T (Transactional), P (Purge), RA (Read Audit), WA (Write Audit), and CI (Copy Inhibit).
For example, when you copy a file from an MS networking client to the NetWare file server via the gateway, the RO, A, Sy, H, and RW file attributes will be preserved.

Note that you can use the 16-bit utilities such as **filer** and **rights** from a Windows NT client running NWCS in order to set attributes that are not supported by the Windows NT to NetWare file rights mapping. For more information about other supported 16-bit utilities, see "Supported 16-bit Utilities and NetWare-Aware Applications" later in this document.

Connecting to NetWare Resources Using the net Command

You can use the **net view** command to display file servers and volumes on a NetWare network. Then you can use the **net use** command to connect to NetWare file servers and volumes as well as to NetWare print queues on a NetWare network.

Using the net view Command

To display a list of NetWare file servers, use the following syntax at the command prompt: **net view /network:nw**

To display volumes on a specific NetWare file server, type: **net view** *nwserver_name* **/network:nw,** where *nwserver_name* is the name of the NetWare file server. Be sure to precede the server name with two backslashes (\\).

If the **net view** command is used without the **/network:nw** switch, the servers and shares on your Windows NT or LAN Manager network are displayed by default.

Using the net use Command

You can use the **net use** command from the command prompt to connect to NetWare file servers and print queues. To connect, you can use the same command syntax you use to connect to shares on a Microsoft Windows-based network.

You cannot use the **net use** command to create gateway shares because redirections made using this command, or File Manager, are properties of the user who was logged on at the time of creation. If the user logs off, the connection would be terminated. The file gateway connection is disconnected only if the computer is turned off or if an administrator disables the gateway.

Connecting to NetWare Volumes

The **net** command for connecting to NetWare file servers is equivalent to the **map** NetWare command on MS-DOS® based NetWare workstations. The syntax for the **net use** command is: **net use** *drive***:** *UNC_name* or *NetWare_name*

For example, to connect to the directory \DATA\MYDATA within the THOR volume on a server called NW4 using the G drive, type:
net use g: \\nw4\thor\data\mydata

To use the next available drive letter when connecting to the volume, replace the drive letter with an asterisk (*).

If you receive the error message, The password is invalid for \\s*erver_name\volume_ name*[\ *directory_name...*], the username and password you supplied when you logged on to Windows NT were not authenticated by your preferred server. To connect under a valid username and password, use the **net use** command with the switch and syntax shown below:
/user: *username password*

For example, to connect as **anniep** with the password **marshmallow** to the directory \DATA\ MYDATA within the THOR volume on a server called NW4 using the G drive, type: **net use g: \\ nw4\thor\data\mydata /user:anniep marshmallow**

If you prefer to be prompted for a password, replace the password with an asterisk (*). When you type your password at the prompt, it is not displayed on the screen.

Displaying Current Network Connections

By executing the **net use** command without any parameters, you can list the current network connections shown below. The Z drive is a gateway share.

Status	Local	Remote	Network
--	E:	\\nw4\sys	Novell
OK	F:	\\win_nt\droot	Microsoft Windows

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| -- | H: | \\netware40\thor\apps | Novell |
| -- | Z: | \\nw4\sys\data | Novell |

Printing to a NetWare Print Queue Through Print Manager

To print to a NetWare print queue, connect to it using Print Manager. Once you have connected to a NetWare print queue, you can share it through a Windows NT gateway so that workstations not running NWCS can print to it as well. For more information about sharing print queues, see "Using Windows NT as a Printing Gateway" later in this document.

If the NetWare network is first in the network search order for print providers, the list of servers on the NetWare network is displayed automatically in the Shared Printers box. You can switch this off by clearing the Expand By Default check box.

To connect to a NetWare print queue
1. From the Printer menu, choose Connect To Printer. Or choose the Connect Printer button on the toolbar.
2. In the Connect To Printer dialog box, select a printer from the Shared Printers box, or type the name of a computer and print queue in the Printer box.
   For NetWare networks, the Shared Printers box shows servers and print queues. Double-click an item to expand the display. For example, double-click a server name to display print queues. When you select a print queue in the Shared Printers box, Print Manager fills in the Printer box.
   For information about accessing printing queues from MS networking clients, see "Using Windows NT as a Printing Gateway" later in this document.
   When typing a name, precede the computer name with two backslashes (\\) and separate the computer
   name from the print queues name with a single backslash (\). NetWare syntax cannot be used because
   there is no syntax for print queues.
3. Choose the OK button.
4. If a printer driver is not available locally for a NetWare print queue, Print Manager prompts you to install a printer driver. Choose the OK button to continue.
5. In the Select Driver dialog box, select the appropriate driver for the printer in the Driver box.
6. In the Windows NT Setup dialog box, type the directory and path where Windows NT printer drivers
   are stored, and then choose the Continue button.
   Windows NT installs the driver and displays a printer window for the connected print queue.

Make sure to set the correct printer options once the appropriate driver has been loaded. You can now print to the NetWare print queue just as you would to a Windows NT printer.

Using a NetWare Print Queue

If you are running an application that writes directly to a predefined port, you can use the **net use** command as you would use the NetWare **capture** utility to associate the NetWare print queue with the port. For example, to redirect output from LPT1 to the NetWare print queue called MEMOS on the server NW4, type: **net use lpt1 \\nw4\memos**

This is equivalent to the NetWare **capture** command, where the syntax would be:
capture Q=memos S=nw4 L=1

After you have redirected output using the **net use** command, you can use the **copy** command to send files that dont require formatting to LPT1, as shown below.
copy myfile.txt lpt1

You can also copy the file directly to the print queue. For example: **copy myfile.txt \\nw4\memos**

Setting Printing Options

The printing options that you can set for NetWare print queues include settings for form feeds, print notification, and banner pages. These options can be changed using the NWC icon in Control Panel.

By default, the form feed is suppressed. Also by default, a banner (blank) page is printed before your document, and you are notified when your document is finished printing. If the form feed option is selected, the printer will eject a page after the document is printed. If the banner page box is cleared, a page will not be ejected between your document and others at the printer. If you do not want to be reminded that your document has been printed, clear the notification option.

Printing options are set for the user who is logged on to Windows NT. Settings affect all NetWare print queues you are using from your Windows NT computer. The options are equivalent to those available through the NetWare **capture** utility.

To set printing options
  1. In Control Panel, choose the NWC option.
  2. In the Print Options box:
      Clear the Add Form Feed check box to instruct the printer not to eject a page after printing a document.
      Clear the Notify When Printed check box to stop notification when your document has been printed.
      Clear the Print Banner check box to stop printing a banner page before your document prints.
  3. Choose the OK button.

Using Windows NT as a Printing Gateway

The printing gateway functions much like the file gateway, except the printing gateway is enabled through Print Manager. For more information about the file gateway, see "Using Windows NT as a

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File Gateway" earlier in this document.

From your Windows NT computer, connect to a NetWare print queue using Print Manager. Then share the print queue using these steps:

To share a NetWare print queue through Windows NT
1. In Print Manager, select the printer icon or window for the print queue.
2. From the Printer menu, choose Properties. Or choose the Properties button on the toolbar.
3. In the Printer Properties dialog box, select the Share This Printer On The Network check box.
   In the Share Name box, Print Manager creates a share name for the printer that conforms to MS-DOS naming conventions. This allows MS-DOS--based computers to connect to the printer. If you edit the share name, follow MS-DOS naming conventions.
4. In the Location box, type a description of the printers location to let network users know where their
   documents will be printed.
5. Choose the OK button.

Once the queue is shared, MS networking clients can access the print queue.

MS networking clients can connect to the shared NetWare print queue as they would to any Windows NT print queue. For example, if the print queue is shared on a Windows NT workstation called WIN_NT under the share name HP4SI, users can specify **win_nt\hp4si** in the Connect To Printer dialog box. Users can also browse for the printer. The printer is listed by its UNC name in the Shared Printers box.

Printing Rights
If the file gateway and the printing gateway from a Windows NT computer are on the same NetWare server, the file gateway connection is used when sending print jobs. If the file gateway is not enabled, the printing gateway supplies the credentials GUEST without a password to establish a connection to the NetWare server.

Changing Your NetWare Password
You can change your password on one or several NetWare servers. If you want to change your password on more than one server, connect to all affected servers before running the **setpass** command. For a complete list of supported 16-bit utilities, see "Supported 16-Bit Utilities and NetWare-Aware Applications" later in this document.

To change your password on a NetWare server
1. From the Main Program group, start the command prompt, and use the **net use** command to connect to the NetWare servers SYS volume.
   Or, from the Disk menu in File Manager, choose Connect Network Drive command, and connect to the NetWare servers SYS volume.

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2. At the command prompt, change to the drive for the NetWare server, and make the PUBLIC directory
   the current directory.
   For example, type **n:\public**.
3. At the command prompt, type the command **setpass** followed by the name of the NetWare server
   where you want to change your password.
   For example, to change your password on the server named NWSERVER, type: **setpass nwserver**
4. When you are prompted, type your old password.
5. When you are prompted, type a new password.
6. When you are prompted, retype your new password to confirm it.
   The server confirms that you have successfully changed your password.
7. If you are connected to other NetWare servers that also use your old password, they are listed, and
   the server asks whether you want to change your password on these servers as well.
   Type **y** and press Enter to change the additional passwords. Type **n** and press Enter to leave the
   passwords as they are.

Managing User Environments

You can enhance users workstation environments with logon scripts and user profiles. Logon scripts
are run whenever a user logs on to any Windows NT workstation. The scripts tell Windows NT which
network connections to reestablish or which applications to start when users log on.

User profiles serve as a snapshot of the desktop environment for each workstation user. The profile
defines Program Manager groups and items within the groups, printer connections, screen colors, and
window size and positioning.

This section presents the procedures used to assign users logon scripts. User logon scripts and profiles
allow you to customize user environments and set up persistent connections.

User profiles can perform many of the functions of logon scripts; however, if you permit user profiles
to be modified by users, the profiles give users more flexibility. Logon scripts give administrators
more control of user workstations.

Setting Windows NT Logon Scripts

Typically, logon scripts are batch (.BAT or .CMD) files that you set to run each time a user logs on to
Windows NT. Logon scripts can reestablish users network connections or start applications upon
authentication by a Windows NT server. Without logon scripts, users might reestablish network
connections with the **net use** command or with File Manager. Logon scripts can automatically
reestablish network connections to NetWare servers or to gateway shares.

You can specify which logon scripts to run from User Manager (User Manager for Domains in
Windows NT Advanced Server). However, a logon script is executed from its directory location.
When a user logs on, the server authenticating the logon locates the logon script by following the

servers logon script path.

You cannot set logon scripts for groups, but you can select all the users in a group and assign them the same logon script using User Manager.
For more information about User Manager and logon scripts, see Chapter 13, "User Manager" in the *Windows NT System Guide*.

To set logon scripts
1. In the Administrative Tools group, choose User Manager.
   The User Manager dialog box appears.
2. From the User menu, choose Select Users.
   The Select Users dialog box appears. Select Users enables you to select and deselect the user account
    membership of a group.
3. Choose the group name of users you want to run logon scripts.
4. Choose the Select button.
   The names of the users in the group are highlighted in the User Manager dialog box.
5. Choose the Close button.
6. From the User menu in the User Manager dialog box, choose Properties.
7. In the User Properties dialog box, choose the Profile button.
   You don't need to make any other entries in this dialog box.
8. In the User Environment Profile dialog box, type a filename of a logon script in the Logon Script Name box.
   If the logon script is stored in a subdirectory of the logon script path, precede the filename with that relative path. For example, you might type **sales\anniep.cmd**.

Note: If no home directory is specified, the system will use the default local home directory (USERS\DEFAULT on the drive where Windows NT is installed) for each of the user accounts being administered. For more information, see "Managing Profiles" in Chapter 13 of the *Windows NT System Guide*.

9. Choose the OK button.

Implementing User Profiles

User profiles represent the state of the desktop for the user. User profiles can include information about Program Manager groups and items within the groups, network connections, window placement, and so on. Connections made with user profiles are independent of any connections made by Windows NT logon scripts.

You can set each user to have either a mandatory or a personal user profile. Mandatory user profiles can be changed from one logon session to the next. Personal user profiles can be changed from one session to the next, depending on the permissions specified in the user profile itself.

User profiles can be created and edited using User Profile Editor in Windows NT Advanced Server.

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Once you have created the profile, save the profile as a .USR file, for user-modifiable profile, or as a .MAN file, for a mandatory read-only profile. For more information about creating user profiles, see "Creating and Editing a User Profile" in Chapter 14 of the *Windows NT Advanced Server System Guide*.

Note: Only Windows NT Advanced Server has User Profile Editor.

From User Manager in the Administrative Tools group, set the profiles for the users. As with logon scripts, you cannot set user profiles for a group, but you can set user profiles for all members in a group using User Manager.

If you do not specify a named profile for a user, the default scenario is that any workstation the user logs on to will execute the users profile. Any of the users persistent network connections specified in the users profile will be established at each workstation the user logs on to.

Reestablishing Network Connections

In order for a users profile to establish network connections, you must indicate that the connections be reestablished when you create them.

To make connections persistent, check the Restore At Logon box when making connections from File Manager. Or if you are creating the connection from the command line, be sure to use the **persistent** switch with the **net use** command. For example, type **net use /persistent:yes**.

Administrator-defined logon scripts can also be used in addition to the **net use** command with the **persistent** switch.

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Supported 16-Bit Utilities and NetWare-Aware Applications

The MS-DOS 16-bit NetWare utilities and MS-DOS NetWare-aware applications that are supported in Beta 2 are listed below.

Note: Only the utilites and applications listed in the following tables are supported. Some of the utilities have known issues, but they are not major impediments to using the utilities.

MS-DOS 16-Bit NetWare Utilities

Utility	Issue
chkvol	None
colorpal	None
dspace	None
flag	None
flagdir	None
fconsole	File server status returns bad year and time.
filer	None
grant	None
help	None
listdir	None
ncopy	None
ndir	None
pconsole	Can't add a job to the print queue.
psc	None
pstat	None
rconsole	Servers don't show if **rconsole** is run from a 4.*x* server.
remove	None
revoke	None
rights	None
security	None
send	None
session	Search mapping option not supported will always map as root.
setpass	None
settts	None
slist	None
syscon	None
tlist	None
userlist	None
volinfo	If update interval = 5, command executes very slowly.
whoami	None

Note: If you run a utility (such as **rconsole** on 3.1*x* NetWare servers) outside of the SYS:PUBLIC directory, the utility may ask for the SYS$MSG.DAT file. The SYS$MSG.DAT file is located in the SYS:PUBLIC directory. You can avoid this message by adding SYS:PUBLIC to your path.

The Windows NT **net use** command or File Manager can be used to perform the same functions as the NetWare **attach**, **map**, **login**, and **logout** utilities. The Windows NT **net view** command can be used to perform the same function as the NetWare **slist** utility. For more information about the **net use** and **net view** commands and File Manager, see "Using NetWare Resources" earlier in this document. The **net use** command also supplies similar functionality to the **capture** command for printing when MS-DOS and Windows applications require printing to a specific port. In addition, Print Manager can be used to connect to NetWare print queues. For more information about printing, see "Printing to a NetWare Print Queue Through Print Manager" earlier in this document.

MS-DOS NetWare-Aware Applications

The NetWare-aware applications shown in the table below are supported. The applications were tested on Intel®, MIPS®, and Alpha AXP™ platforms.

Application	Version	Issues
Lotus Notes®, SPX connectivity option	3.0	Requires NWIPXSPX.DLL, NETWARE.DRV, NETWARE.DRV, and NWNETAPI.DLL (see below) Requires a connection to a NetWare server prior to loading (see below) Requires TBMI2 on MIPS and Alpha AXP (see below)
NetWare 3270 LAN Workstation for MS-DOS	3.0	None
NetWare 3270 LAN Workstation for Windows	1.2	Requires Windows Enhanced mode, hence runs on Intel platforms only
Attachmate Extra! for MS-DOS to the NetWare SAA™ Gateway	3.1	Batch files (see below)
Attachmate Extra! for MS-DOS to the Attachmate 3270 Gateway	3.1	Batch files (see below)
Attachmate Extra! for Windows to the NetWare SAA Gateway	3.5	Requires TSR (see below)
Attachmate Extra! for	3.5	Requires TSR (see below)

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Windows to the Attachmate 3270 Gateway		
DCA IRMA® LAN for MS-DOS to Novell's SAA	2.1.0	None
Btrieve® requester (BREQUEST.EXE)	6.10a	Requires TSR (see below)
Gupta SQLBase® for NetWare systems	5.1.3	Requires Btrieve support (see below)
		Requires NWIPXSPX.DLL, NETWARE.DRV, and NWNETAPI.DLL (see below)
		Requires TBMI2 on MIPS and Alpha AXP (see below) Requires a connection to a NetWare server prior to loading (see below)

NWIPXSPX.DLL

Many applications that are written for 16-bit Windows and are NetWare-aware require Novell's NWIPXSPX.DLL. If you have previously used the application under Windows and are using the same computer for Windows NT, NWIPXSPX.DLL exists on your system. If you start the application and the application cannot find this DLL, check your path by going to a command prompt and typing **path**. Verify that a copy of the NWIPXSPX.DLL can be found. If not, obtain a copy of NWIPXSPX.DLL from Novell and copy it to the <winnt>\system32 directory.

The version used for Beta 2 testing was dated 5/18/93 (1:00 PM) and has a file size of 37968 bytes. Other versions should also work. However, if you experience any problems, please complete and submit a bug report as described in the Support Notes that accompanied this documentation.

If you are running these applications on either the MIPS or Alpha AXP platforms, you will need to obtain NWIPXSPX.DLL from Novell. Copy NWIPXSPX.DLL to the <winnt>\system32 directory.

If you need to copy NWIPXSPX.DLL to your workstation or modify your path statement, you must log off and then log back on to your workstation.

MIPS and Alpha AXP Platforms

If the NetWare-aware application requires NWIPXSPX.DLL, you must have a copy of TBMI2.COM in <winnt>\system32 to run the application on the MIPS and Alpha AXP platforms.

In AUTOEXEC.NT, insert the line shown below after the line referencing **vwipxspx**.

lh <winnt>\system32\tbmi2.com

Then log off and log back on to your workstation.

NETWARE.DRV and NWNETAPI.DLL

NetWare-aware applications that use the NetWare application programming interface (API) to send and receive NetWare core protocol (NCP) packets might require NETWARE.DRV and NWNETAPI.DLL.

If you have previously used the application under Windows and are using the same computer for Windows NT, NETWARE.DRV and NWNETAPI.DLL already exist on your system. If you start the application and the application cannot locate NETWARE.DRV, check your path by going to a

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command prompt and typing **path**. Verify that copies of NETWARE.DRV and NWNETAPI.DLL can be located. If you cant locate the files, contact Novell to obtain copies. Then copy the files to your <winnt>\system32 directory.
The version of NETWARE.DRV used for Beta 2 testing was dated 10/27/92
(7:38 AM) and has a file size of 126144 bytes. The version of NWNETAPI.DLL used for Beta 2 testing was dated 1/23/92 (4:36 PM) and has a file size of 106047 bytes. Other versions of these files should also work. However, if you experience any problems, please complete and submit a bug report as described in the Support Notes that accompanied this documentation.
If you are running these applications on either the MIPS or Alpha AXP platforms, you will need to obtain copies of these files from Novell. Copy NETWARE.DRV and NWNETAPI.DLL to your <winnt>\system32 directory.
If you copied any of these files to your workstation or modifed your path statement, you must log off and then log back on to your workstation.

Connection to a NetWare Server

If you do not have a preferred server and you have not connected to any NetWare server, you must first create a connection to a NetWare server. For more information about connecting to NetWare servers, see "Using NetWare Resources" earlier in this document.

BTRIEVE

If you are running MS-DOS or 16-bit Windows applications that require the Btrieve requester, BREQUEST.EXE, you must modify the AUTOEXEC.NT file located in <winnt>\system32 so the applications can find the Btrieve requester. Find the location of BREQUEST.EXE on your computer and append location information in the AUTOEXEC.NT file.
For example, if BREQUEST.EXE is located within the c:\btrieve directory, append the line shown below to AUTOEXEC.NT. Then log off and log back on to your workstation.
lh c:\btrieve\brequest.exe

Attachmate Extra! Extended for MS-DOS

Preface Extra! batch files that are run from a console window with **command /c** so that the Extra! hotkeys work after Extra! has initialized.

Attachmate Extra! for Windows IPX/SPX Connectivity

Attachmate Extra! for Windows requires the TSR, IPXINTFC. This TSR must be loaded by AUTOEXEC.NT prior to the DOSX TSR being loaded.
For example, if Attachmate Extra! for Windows has been installed in the c:\extrawin subdirectory. In AUTOEXEC.NT, make sure the following three lines are in the order shown below:
lh c:\extrawin\ipxintfc
REM Install DPMI support
lh <winnt>\system32\dosx
Log off and log back on to the workstation.

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NetWare Link Transport

The NetWare Link (NWLink) transport is an implementation of the IPX and SPX protocols used in Novell NetWare networks.

NWLink provides communication between a Windows NT computer and either another Windows NT computer or a NetWare workstation. NWLink is also used by NWCS to support access of files and print queues that reside on NetWare servers.

Although the default settings are optimized for most environments, you can fine-tune NWLink parameters after installation. Performance counters that allow you to see how NWLink is performing in your environment are also available.

Similar to the Windows NT TCP/IP implementation, NWLink is a STREAMS®-based transport. Because the STREAMS environment on Windows NT supports the transport driver interface (TDI) at the top and the network driver interface specification (NDIS) on the bottom, NWLink can seamlessly coexist with other transports on the same network adapter card.

Windows Sockets and NetBIOS

Windows Sockets and NetBIOS are the two networking application programming interfaces (APIs) that are supported to allow communication between two Windows NT computers or between a Windows NT computer and a NetWare workstation.

The Windows Sockets interface is ideal for supporting existing NetWare applications written to comply with the NetWare IPX/SPX Sockets interface. The Windows NT computer acts as an application server responding to the IPX or SPX packets sent to or received from NetWare workstations based on MS-DOS, Windows, or OS/2. For example, Microsoft SQL Server running on Windows NT takes advantage of the Windows Sockets interface to allow existing NetWare SQL Server clients using the NetWare redirector and IPX transport to communicate with the server that is listening to requests using the Windows Sockets interface.

The NetBIOS support can be used to send and receive Novell NetBIOS packets between a NetWare workstation and a Windows NT computer, or between two Windows NT computers. There are significant performance gains where all computers are Windows NT computers because of Microsofts enhancements to the Novell NetBIOS protocol.

The Microsoft-enhanced Novell NetBIOS protocol not only conforms to the standard single request/reply implementation, but also automatically takes advantage of the knowledge that it is conversing with another computer that understands the enhancements. The enhancements improve efficiency by allowing multiple NetBIOS packets to be sent before receiving an acknowledgment (a

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sliding window) as well as supporting the piggybacking of NetBIOS acknowledgments. The receiver sends NetBIOS acknowledgments after receiving the last packet of a NetBIOS message.

In the common scenario in which the sender and receiver are participating in two-way traffic, allowing piggybacking of acknowledgments saves network bandwidth as well as processing time on the computers, since a separate acknowledgment frame need not be processed and sent.

Installing NWLink

Security Note: To install or configure NWLink, you must be logged on to Windows NT as a member of
             the Administrators group.

To install NWLink
1. In Control Panel, choose the Network option.
2. In the Network Settings dialog box, choose the Add Software button.
3. In the Add Network Software dialog box, select NWLink IPX/SPX Compatible Transport, and then choose the Continue button.
4. The Windows NT Setup dialog box prompts you for the full path to the Windows NT distribution files. Provide the appropriate location, and then choose the Continue button.
5. NWLink software is copied to your computer, and the Network Setting dialog box reappears. Choose
   the OK button to return to the NWLink Configuration dialog box.

After the NWLink transport software is installed on your computer, you can configure it with a network number and frame type to work with your network. Typically, the defaults do not need to be changed.

Configuring NWLink

The NWLink Configuration dialog box appears automatically when you install NWLink on your computer. The dialog box allows you to select the adapter to which the NWLink transport will be bound, its network number, and the frame type to use. Typically, you can use the default values. The procedure shown below can be used to reconfigure NWLink after installation.

To configure NWLink
1. In Control Panel, choose the Network option.
2. In the Installed Network Software box, select NWLink Transport, and then choose the Configure button.
3. In the Adapter Name box, select the name of the adapter card to which you want to bind the transport.
4. In most cases, because NWLink can determine the network number automatically, you can leave the number in the Network Number box set to the default, 0. Or, you can type the IPX network number to assign to the binding. The network number is a 4-byte hexadecimal value, for example, fe3dba9d. Your network administrator should provide the correct value for this parameter.

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5. Use the Frame Type box to specify the frame format for NWLink packets by setting the PktType parameter.
6. Choose the OK button to close the NWLink Configuration dialog box.
7. Choose the OK button to close the Network Settings dialog box.
8. Windows NT prompts you to restart the computer so that the changes take effect. Choose the Yes button to restart the computer.

   If you choose the No button, you can continue to work, but your changes will not take effect until the

   computer is restarted.

Additional tunable parameters for NWLink are stored in the Registry. In the majority of situations, you should not have to modify the defaults.

If your workstations and servers are on a token ring topology, you can use the **ipxroute** utility to further configure your computer. For more information, see "Tuning Routing on a Token Ring Network" next.

Tuning Routing on a Token Ring Network

Parameters that affect routing in a token ring environment can be modified with the command line utility **ipxroute**. This utility provides the same functionality as the **route** command line utility supplied by Novell for MS-DOS-based clients.

Ipxroute manages the source routing variables of NWLink on a token ring network. It is installed with the NWLink transport. **Ipxroute** parameters are equivalent to the ROUTE.EXE utility parameters supplied by Novell.

The complete **Ipxroute** syntax is described below and in Command Reference online Help, which is found in Windows NT Help in the Main program group.

   ipxroute board = *n* [**clear**] [**def**] [**gbr**] [**mbr**] [**remove**=*xxxxx*]

   Parameter   **Definition**
   ----

   board=*n*   Specifies the network adapter card for which to query or set parameters.
   clear   Clears the source routing table.
   def   Sends packets to the ALL ROUTES broadcast. If a packet is transmitted to a unique
                          MAC address that is not in the source routing table, the default is to send the packet to
                          the SINGLE ROUTES broadcast.
   gbr   Sends packets to the ALL ROUTES broadcast. If a packet is transmitted to the broadcast
                          address (FFFFFFFFFFFF), the default is to send the packet to the SINGLE ROUTES
                          broadcast.
   mbr   Sends packets to the ALL ROUTES broadcast. If a packet is transmitted to a multicast
                          address (C000xxxxxxxx), the default is to send the packet to the SINGLE ROUTES
                          broadcast.

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remove=*xxxxx*   Removes the given node address from the source routing table.

Monitoring Performance

You can use Performance Monitor, located in the Administrative Tools program group, to monitor the objects NWLink IPX, NWLink SPX, and NWLink NetBIOS. Each of these objects can return information on packets sent and received. Which one you use depends on the application that is using NWLink. For example, if you are interested in data relevant to Windows NT networking, use the NWLink NetBIOS object. NWCS uses NWLink IPX. SQL Server uses NWLink SPX.

Relevant Counters for NWLink

Counter	IPX	SPX	NetBIOS
Datagram Bytes Received/sec	X		X
Datagram Bytes Sent/sec	X		X
Datagram Bytes/sec	X		X
Datagrams Received/sec	X		X
Datagrams Sent/sec	X		X
Datagrams/sec	X		X
Connections Canceled		X	X
Connections Open		X	X
Disconnects Local		X	X
Disconnects Remote		X	X
Failures No Listen		X	X
Failures Resource Local		X	X
Frame Bytes Received/sec		X	X
Frame Bytes Sent/sec		X	X
Frame Bytes/sec		X	X
Bytes Total/sec			X

Troubleshooting NWCS

This section discusses some common problems that might occur while installing, configuring, or using NWCS.

If any of the solutions provided here do not work, complete and submit a bug report. For more information about filing bug reports, see the Support Notes that came with this documentation.

Problem: NWCS won't start.

Below are the actions you should have performed before installing NWCS.

Did you:
   Install NWLink (IPX/SPX compatible transport)?

Remove any existing installations of NWCS or Novells NetWare Services for Windows NT?

To remedy any of these situations, use the Network option in Control Panel. You can use this option to configure network settings. Then, install NWCS. For more information, see the topic "Installed Network Software" in Control Panel online Help. Also see "Installing NWCS" at the beginning of this document for more information about removing existing installations of NWCS and NetWare Services for Windows NT.

Is NWLink started?

If you have installed NWLink and you have removed any other NetWare redirector installations, verify that NWLink is started. NWCS uses NWLink to communicate with NetWare file and print servers.

To verify that NWLink has started
At the command prompt, type **net start**.
A list of started services appears. If NWLink is started, see the question "Did NWLink start but NWCS did not?" later in this document.

If NWLink is not in the list, check the System Log in Event Viewer in the Administrative Tools group for errors whose sources are either Service Control Manager, or NWLinksys.

To check the System Log
   1. In the Administrative Tools group, choose Event Viewer.
   The Event Viewer System Log dialog box appears.
  2. In the Source column, look for Service Control Manager or NWLinksys.
   3. Double-click the component for more details about the event.
  4. In the Event Details dialog box, look for one of the system log error message descriptions shown
      below.
  5. Choose the Close button.
  6. In the Event Viewer System Log dialog box, choose the Log menu.
  7. Choose Exit.

System Log Error Message: Service Control Manager

If the event detail for Service Control Manager reads "The NWLink service depends on the NWLinksys services which failed to start because of the following error: The system cannot find the file specified," NWLink did not install properly.
Use the Network option in Control Panel to reinstall NWLink from your Beta 2 installation disks. For more information about installing transports, see the topic "Add Software" in Control Panel online Help.

System Log Error Message: NWLinksys

If the event detail for NWLinksys reads "Error binding to adapter card *adapter card name*," your adapter card may be malfunctioning, or its settings may be incorrect.

If your adapter card is not malfunctioning (check the documentation that came with your adapter

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card), use the Network option in Control Panel to verify the adapter card settings. The correct adapter card might not be bound to NWLink. Or the adapter card may be bound to an ODI driver if NetWare Services for Windows NT was installed on your computer. In this case, the adapter card must be unbound from the ODI driver and bound to the NDIS driver. For more information about bindings, see the topic "Network Bindings" in Control Panel online Help.

Did NWLink start but NWCS did not?

If you have found that NWLink was started, at the command prompt type **net start nwcworkstation** to start NWCS. If NWCS is already started, check the System Log in Event Viewer for an event from Service Control Manager.

System Log Error Message: Service Control Manager

If the event detail for Service Control Manager is "The NetWare(R) Workstation Compatible Service terminated with the following error: The system cannot find the specified file," NWCS did not install properly.

Use the Network option in Control Panel to remove and reinstall NWCS. Be sure to restart your computer between removing and reinstalling NWCS. For more information about the procedures to remove and reinstall NWCS, see "Installing NWCS" at the beginning of this document.

If after reinstalling NWCS, you continue to experience problems, submit a bug report. For more information about submitting bug reports, see the Support Notes that accompanied this documentation.

Problem: NWCS starts but servers can't be found.

You may not be able to see NetWare servers because you may be using an incorrect frame type for the servers. Or you may not be able to see servers because their service access protocol (SAP) requests are not on.

Frame Types

View the network adapter load line and the bind line in the servers AUTOEXEC.NCF file to verify that you are using the correct frame type for the server.

For example, if a servers AUTOEXEC.NCF file network adapter load and bind lines are the following:

```
load 3C503 FRAME=ETHERNET_802.3 NAME=ETH
BIND IPX TO ETHERNET=52
```

where the server is bound to a 3Com® 503 ethernet adapter that will accept the raw 802.3 frame format. The net number is 52.

You can use the Network option in Control Panel to see the frame type you have set for your adapter

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card. However, you can also set the frame type in the Windows NT Registry.

SAP Requests

You also may not be able to see any NetWare servers because the servers SAP requests are not on. On the NetWare server, in Communications Set, set the **set** parameter Reply to Get Nearest Server to ON.

Problem: NWCS starts, but NetWare 4.*x* servers can't be seen.

NWCS supports NetWare 4.*x* bindery emulation. Be sure that the bindery context you have set for your 4.*x* server directory includes the users you want to have access to the servers.

You can view and set your bindery context on NetWare 4.*x* servers either by loading the SERVMAN NLM and then viewing and setting the SET BINDERY CONTEXT parameter. Or you can type **set** at the console and view the Miscellaneous SET parameters. For more information, see your NetWare 4.*x* server documentation.

Problem: NWCS prompts you for a password each time you log on.

NWCS prompts you for a password for your preferred server after you have entered your credentials to log on to Windows NT because your password for your NetWare preferred server differs from your Windows NT password.

If you don't want to be prompted for your preferred server password, make your NetWare preferred server and Windows NT passwords the same. You can change your password using the **setpass** command at the command prompt. For more information about **setpass**, see "Changing Your NetWare Password" earlier in this document.

Problem: File Manager denies directory access, but you can see NetWare servers.

NWCS uses the same credentials to access servers that are used for preferred server authentication.

In order to see files on NetWare servers for which you have access, synchronize your credentials on all the NetWare servers. You can synchronize your credentials using the **setpass** command at the command prompt. For more information about the **setpass** command, see "Changing Your NetWare Password" earlier in this document.

However, if you do not want to use the same credentials for each NetWare server, type your username

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for the NetWare server in the Connect As box in the Connect Network Drive dialog box in File Manager. You will be prompted for your password for the server.

Problem: Denied access to NetWare servers using net use command.

NWCS uses the same credentials to access file servers that are used for preferred server authentication.

In order to see files on NetWare servers for which you have access, synchronize your credentials on all the NetWare servers. You can synchronize your credentials using the **setpass** command at the command prompt. For more information about the **setpass** command, see "Changing Your NetWare Password" earlier in this document.

If you do not want to synchronize your NetWare file server credentials with your preferred server credentials, at the command prompt type:

net use *drive***: ***nwserver_name******volume_name* /**user**:*username password*

Problem: Print queues are not shown in Print Manager.

In Print Manager, when you click the NetWare server where your print queues are located, no queues are shown because your credentials on the server do not match those on your preferred server. NWCS uses your preferred server credentials to access the print queue server.

If you do not see any print queues, verify that you can see NetWare servers in File Manager. If not, verify that NWCS is started. For more information, see "Problem: NWCS wont start earlier in this section."

In order to see the print queues on NetWare servers to which you have access, you must create an authenticated connection with the server. Synchronize your credentials on all the NetWare servers using the **setpass** command at the command prompt. For more information about the **setpass** command, see "Changing Your NetWare Password" earlier in this document.

If you do not want to synchronize your NetWare file server credentials with your preferred server credentials, at the command prompt type:

net use *port***: ***nwserver_name******volume_name* /**user**:*username password*

For more information about printing, see "Printing to a NetWare Print Queue Through Print Manager"

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earlier in this document.

Problem: Applications are not working correctly.

To make sure the application is supported in this release, see the list in "Supported 16-Bit Utilities and NetWare-Aware Applications" earlier in this document. Supported applications include some MS-DOS and Windows 16-bit NetWare-aware applications. Some of the 16-bit utilities that ship with NetWare 2.2, 3.11, or 3.12 are also supported.

If the application youre running is not in the list, complete a bug report as shown in the Support Notes that came with this documentation.

Problem: NetWare login scripts are not running.

NWCS does not support the NetWare scripting language. However, Windows NT does have its own logon scripts. For more information, see "Managing User Environments" earlier in this document.