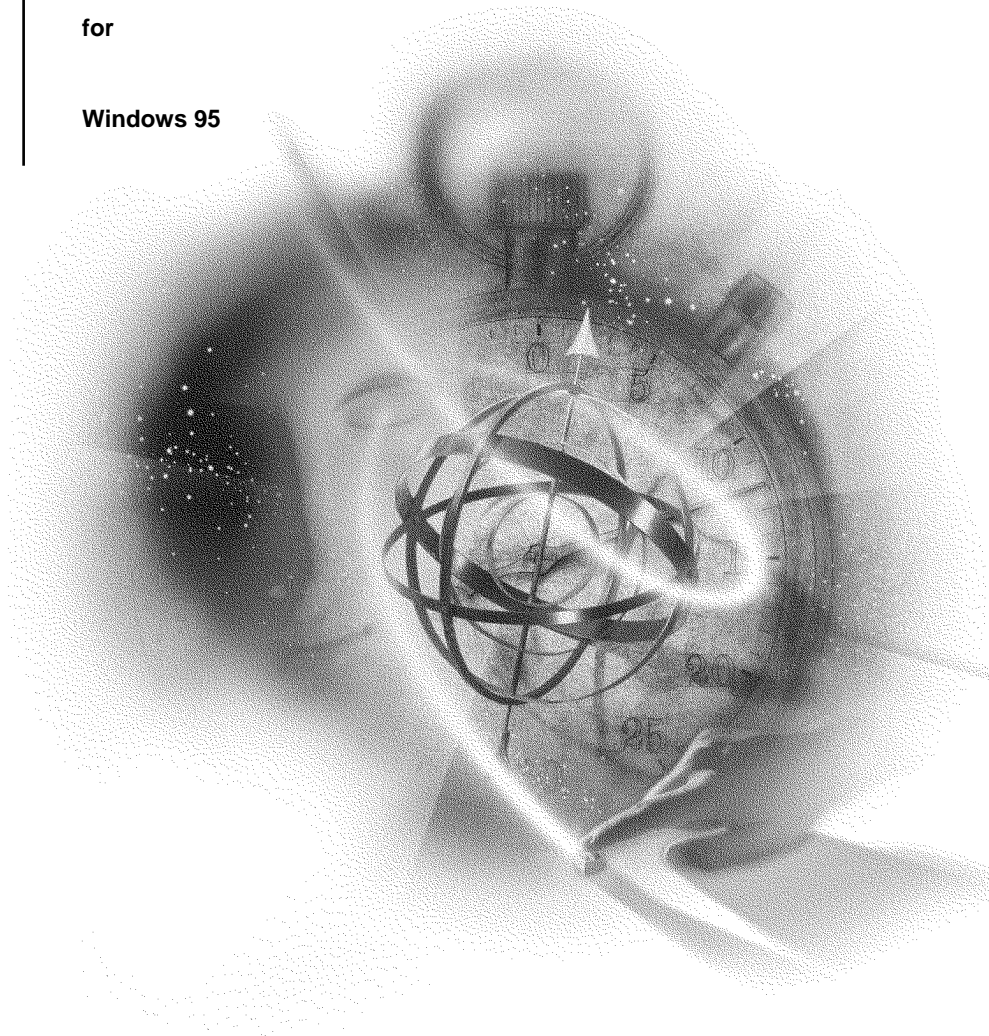


Novell Client

for

Windows 95



Novell Clients™

Novell®

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Novell Client for Windows 95 Overview

Novell® Client™ for Windows 95* is software you use to connect to a NetWare network from a Windows 95 workstation. The software also includes the utilities to configure the way the client works and optimize performance.

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chapter **1** *Understanding*

Novell® Client™ for Windows* 95 software enables you to log in to NDS™ and Windows, and to use the following NetWare® functions:

- ◆ Install pure Internet Protocol (IP) (NetWare 5™ only) as well as IPX™ applications and services
- ◆ List NetWare servers and trees
- ◆ Connect to and browse multiple Directory trees
- ◆ Log in to and out of NetWare servers and Directory trees
- ◆ Map drives
- ◆ Capture ports
- ◆ Change password and synchronize with other servers when the password expires
- ◆ Synchronize workstation password with NDS password for single-password login

You can use many of the NetWare DOS-based utilities with Windows 95.

Client Installation

You can use the following methods to install Novell Client for Windows* 95* software.

- ◆ Winsetup.exe

Use this option if you are installing Novell Client for Windows 95 for the first time on one or more workstations, or if you want to

upgrade a workstation. Winsetup.exe provides a graphical interface for an easy installation. For more information, see “CD Install” on page 26.

To further simplify installation, especially if you are installing Novell Client for Windows 95 on multiple workstations, you can set configuration options by using the nwsetup.ini file.

- ◆ Automatic Client Upgrade (ACU)

Novell’s Automatic Client Upgrade (ACU) provides a way for you to upgrade from earlier Novell Client software to the latest Novell Client for Windows* 95* software. This upgrade happens when users log in. ACU also upgrades the Microsoft* Client for NetWare Networks. For more information, see “ACU Install” on page 20.

- ◆ Z.E.N.works

Z.E.N.works™, or Zero Effort Networking, is an integrated set of products for managing workstations and user desktops while reducing the total cost of ownership. Z.E.N.works includes application management and distribution features and desktop configuration, management, and maintenance features.

Application Launcher, a component of Z.E.N.works, lets you distribute applications to workstations and manage those applications as objects in the NDS™ tree. Users do not need to worry about workstation configurations, drives, ports, command line parameters, application source directories, or whether they have the latest upgrade. You, as the administrator, manage such issues easily and centrally from NetWare Administrator. For more information, see *Z.E.N.works Overview*.

- ◆ MSBATCH

Use this option to install and configure Novell Client for Windows 95 without your having to be present. This process saves a great deal of time, especially if you need to install the software on multiple workstations. For more information, see “MSBATCH Install” on page 14.

Protocol Support

Novell Client for Windows 95 supports the Internet Protocol (IP) running natively on a NetWare 5 server. If you use the client with a version of NetWare other than NetWare 5, you can use NetWare/IP™ for IP connectivity. Novell Client for Windows 95 also supports the IPX™/SPX™ family of protocols. The client can coexist with other protocol stacks, such as NetBEUI protocols.

If NetWare 5 is running on your Novell network, Novell Client for Windows 95 can be installed with one of the following protocol options:

- ◆ IP Only

Installs the IP protocol stack, which allows the client to run in IP-only networks. If you choose this option, the workstation will not be able to communicate with IPX servers.

- ◆ IP with IPX Compatibility Mode

Installs IP and includes Compatibility mode, which allows IPX applications to run in IP-only networks by converting IPX packets into IP packets. IPX Compatibility mode also allows the client to communicate with services in IPX-only networks if the Migration Agent is installed on any NetWare 5 servers. IPX Compatibility mode is dependent on the Service Location Protocol (SLP)

- ◆ IP + IPX (Default)

Allows the client to run in both IP and IPX networks. The workstation uses the same protocol as the server it is communicating with.

- ◆ IPX Only

Allows the client to run in IPX-only networks. This option does not install IP.

Important: If your network is only running a version of NetWare prior to NetWare 5, install the Novell Client with the IPX Only option.

If you choose the Typical Install option, IP and IPX are both installed, unless you have installed the client before with a different option. If you've installed the client previously, the Typical Install option uses the same protocol option you selected the last time you installed.

The IPX/SPX family of protocols includes the following features under Novell Client for Windows 95:

- ◆ Dynamic number of IPX open sockets and SPX connections
- ◆ Automatic detection of frame type
- ◆ Dynamic binding to first network card

These features are supplied by the Microsoft* NWLINK stack. Novell Client for Windows NT requires the NWLink implementation of IPX/SPX.

Enabling SLP in IP Networks

Note: SLP and IP require that NetWare 5 is running on at least one NetWare server.

The Service Location Protocol (SLP) provides a method for registering and discovering network services dynamically in IP networks. The Novell Client for Windows 95 can use SLP to dynamically discover NDS™ trees and NetWare servers, providing similar plug-and-play capabilities that Novell customers have enjoyed for many years with their IPX networks. No client configuration is required to enable SLP.

SLP is not router-based. It uses standard UDP and TCP packets to register and discover network services. Network routers are not involved in maintaining SLP service information. This eliminates the need for constant router synchronization traffic (for example, once-a-minute SAP broadcasts in IPX networks).

If you do not use IPX Compatibility mode (in other words, if your network does not include any IPX applications or services), or you are not planning on using SLP for NDS tree or NetWare server discovery, then SLP does not need to be enabled for your IP network.

chapter **2** *Planning*

Before installing the Novell® Client™ for Windows 95 software, make sure your workstation and server are prepared for the installation. See “Preparing Workstations” on page 5 and “Preparing NetWare Servers” on page 7.

If you are planning to install multiple clients, you can preconfigure the client by modifying parameters in `admin.cfg` and `nwsetup.ini` before installation. See “Configuring before Installing” on page 7

Preparing Workstations

Recommended Hardware

- A PC with an Intel* (or compatible) 80486 (or higher) processor
- A hard disk with 14 MB minimum free storage space for a typical install or up to 28 MB free for a custom install where additional Novell services are added.
- 16 MB of RAM
- A network adapter installed in the workstation. (Keep a record of what kind it is, in case you later need to choose from a list.)
- A cable connection to the network

Required Software

If you are installing the Novell Client for Windows 95 on a new workstation, first prepare your workstation hardware, and then return to this section.

- Make sure your workstation uses Microsoft Windows 95 version A or later. If it does not, you can get Service Pack 1 from Microsoft. To check the version number, click Start > Settings > Control Panel > System.
- If you are installing the client software on a workstation that already has Windows 95 installed, have Windows 95 running.
- Have the Z.E.N.works™ CD-ROM ready.
- If you are upgrading from the NetWare DOS Requester™ (VLM™) Client or if you don't have any network client software installed, have the Windows 95 CD-ROM or the Windows .cab files ready.

Incompatible Software

The following components are not compatible with Novell Client for Windows 95:

- ◆ Microsoft Client for NetWare networks
- ◆ Microsoft file and printer sharing for NetWare networks
- ◆ Microsoft Service for Novell Directory Services™ (NDS™)
- ◆ Novell NetWare workstation shell 3.x (NETX)
- ◆ Novell NetWare workstation shell 4.0 and later (VLM)
- ◆ Novell IPX™ ODI™ protocol

This is the 16-bit module for the NETX and VLM clients. The Novell Client for Windows 95 uses the IPX 32-bit protocol.

These network components conflict with the Novell Client for Windows 95. If any of these network components are installed, the Client installation program detects the conflict and removes the conflicting network components.

Preparing NetWare Servers

The only preparation required on NetWare[®] servers is to make sure that the servers support long filenames. NetWare 5[™] automatically supports long filenames. However, if you are using the Novell Client with other versions of NetWare, you must install long filename support.

To support long filenames on servers that do not run NetWare 5, load long.nam on each NetWare server and on each volume. For versions of NetWare earlier than NetWare 4.11, use the OS/2* name space instead of long.nam. Refer to the server documentation for the version of NetWare on that server for more instruction on adding the name space.

Each name space uses up to 252 KB of disk space. Each name space added to a volume requires additional server memory. If you add name space support to a volume and do not have enough memory, the server cannot mount that volume.

Once you add a name space to a volume, you cannot remove that name space unless you delete the volume and re-create it or use VREPAIR.

Os2opnfx.nlm from 311ptd.exe is required for long filenames on NetWare 3.11 servers. 311ptd.exe is available on Novell's Electronic Services Worldwide.

Also, for NetWare 3[™] and NetWare 4[™] (except NetWare 4.11) servers, make sure the patches shipped with the Client are installed.

Configuring before Installing

Novell Client for Windows 95 software minimizes the need for configuration, adjusting many settings dynamically.

Most settings have default values that work well in most environments. The Novell Client uses some settings as a guide or as an initial value and then dynamically adjusts their run-time equivalents for optimum performance. Therefore, you should not have to spend much time configuring.

Before installing the Client, you can use two time-saving options that help install configured workstations:

- ◆ admin.cfg
- ◆ nwsetup.ini

Editing Admin.cfg

Admin.cfg is an Administrator Defaults file. By specifying default values for configuration settings in an admin.cfg file, you can simplify the installation of the Client software. This configuration method is useful for network supervisors who are familiar with the net.cfg syntax, want to install and configure the Client at the same time, and need to configure settings that can't be configured using the System Policy Editor.

By installing from a NetWare server, you can configure multiple workstations using the same admin.cfg file. You should set critical defaults in admin.cfg, as described below, before running any of the network installations.

The admin.cfg file uses the same syntax as a net.cfg file. However, you should be familiar with the settings that the Client supports.

1. Open admin.cfg in a text editor.

Admin.cfg is in the products\win95\ibm_enu folder of the Z.E.N.works™ CD-ROM. You need to copy this file to a network install directory and edit it from there.

The first line of the file must have the words "Admin Defaults." The valid parameters for this option are OVERWRITE and VERSION.

2. On the Overwrite= line, enter True or False.

- ◆ True means that all configuration settings in the admin.cfg file are written to the registry.
- ◆ False means that the configuration settings in the admin.cfg file are written to the registry only if they aren't already there.

- 3. On the Version= line, enter the parameters and values you want to set as default.**

The following lines illustrate the OVERWRITE and VERSION parameters:

```
Admin Defaults
  Overwrite = false
  Version = 0
```

The VERSION parameter can be set to any number from 0 through 4,294,967,295. If this number is greater than the version number stored in the registry, the configuration settings in the admin.cfg file are written to the registry and this number is stored as the new version number. For example, if the previously installed Client version was set to three, then the number in the version field must be greater than three for the new settings to take effect.

The first time the Novell Client software is installed, no version number is in the registry. In this case, the Administrator Defaults are written to the registry, including the version number.

- 4. Below the Version= line, enter any parameters and values you want to set as default.**

Use the syntax for a net.cfg file. Make sure you include the group name for the parameters you set.

For example, if you want to include settings for a preferred tree, you can add the following lines to admin.cfg after the "Version=" line:

```
netware dos requester
  preferred tree=<tree_name>
```

For details about the configuration settings that you can specify in the admin.cfg file, see Administrator Defaults Parameters in the prop.hlp file located in the products\win95\ibm_*language* directory.

- 5. Save your changes and exit the editor.**

Editing Nwsetup.ini

Novell Client supports 16-bit drivers. But for increased performance and stability, you should use a 32-bit driver when one is available for your LAN adapter.

In addition, you can change the default installation settings for protocols and custom installation options by editing the nwsetup.ini file.

Installing NDIS LAN Drivers

If you want to switch from an ODI LAN driver to an NDIS* LAN driver, you need to remove the ODI information in the nwsetup.ini file before installing the Novell Client.

1. **Change to the network install folder and open nwsetup.ini in a text editor.**

For example, change to sys:\public\clients\w95.

If the file isn't already in the folder, copy it from the Z.E.N.works CD-ROM (products\win95\ibm_ *language*).

2. **In the [INF Files] section, add a semicolon (;) to the front of each line containing an ODI setup information file (odi*.inf).**

Record each filename. You will need this information for Step 6.

3. **Add a semicolon to the front of each line that lists a Novell ODI setup information file (ne*.inf).**

Record each filename. You will need this information for Step 6.

4. **Add a semicolon to the front of the line containing ntr2000.inf.**

5. **Save your changes and exit the editor.**

6. **Rename or delete the .inf files you commented out of nwsetup.ini in Steps 2, 3, and 4 from the client workstation's windows\inf folder.**

7. **Reinstall the Novell Client software.**

Changing the Default Protocol

You can change the default protocol of the Client at installation by commenting out with a semicolon the protocols you don't want to use and removing the semicolon from the protocol you do want to use. Only one protocol should be uncommented. For example, to use only IPX, uncomment (remove the semicolon from) `DefaultProtocol=IPX` under `[ProtocolOptions]`.

For information about the available protocol options, see "Protocol Support" on page 3.

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chapter **3** *Setting Up*

Before installing the Novell® Client™ for Windows 95 software, you should prepare your servers and workstations. For information about preparing for installations, see “Preparing Workstations” on page 5 and “Preparing NetWare Servers” on page 7.

You can use one of the following methods to install the Novell Client for Windows 95:

◆ Z.E.N.works

Z.E.N.works™, or Zero Effort Networking, is an integrated set of products for managing workstations and user desktops while reducing the total cost of ownership. Z.E.N.works includes application management and distribution features and desktop configuration, management, and maintenance features. Application Launcher, a component of Z.E.N.works, lets you distribute applications to workstations and manage those applications as objects in the NDS™ tree. Users do not need to worry about workstation configurations, drives, ports, command line parameters, application source directories, or whether they have the latest upgrade. You, as the administrator, manage such issues easily and centrally from NetWare® Administrator. For more information, see *Z.E.N.works Overview*.

◆ Automatic Client Upgrade (ACU)

Use this option to automatically upgrade multiple workstations from the Microsoft* Client for NetWare Networks to Novell Client for Windows 95. For more information, see “ACU Install” on page 20.

◆ Winsetup.exe

Use this option if you are installing Novell Client for Windows 95 for the first time on one or more workstations, or if you want to upgrade a workstation. Winsetup.exe provides a graphical

interface for an easy installation. For more information, see “CD Install” on page 26.

To further simplify installation, especially if you are installing Novell Client for Windows 95 on multiple workstations, you can set configuration options by using the nwsetup.ini file. See “Configuring before Installing” on page 7 .

◆ **MSBATCH**

Use this option to install and configure Novell Client for Windows 95 without your having to be present. This process saves a great deal of time, especially if you need to install the software on multiple workstations. For more information, see “MSBATCH Install” on page 14.

MSBATCH Install

MSBATCH requires some preparation but can simplify the installation on each workstation. This process minimizes user interaction for installing Windows 95 and eliminates user interaction for installing the Novell Client for Windows 95 software.

This process uses some Windows 95 utility programs. They are on the Windows 95 Upgrade CD-ROM; they are not on the Windows 95 diskettes. These programs prepare the Windows 95 and Novell Client for Windows 95 files on a file server, so you can install both Windows 95 and the Client at the same time. Installation then copies the files from the server to the workstation.

Complete the procedures in the following sections, in the order presented.

Prerequisites

- A workstation running Windows 95 and Novell Client for Windows 95
- Windows 95 Upgrade CD-ROM

Important: The CD-ROM must have the admin\nettools folder and .cab files. Your CD's path to these files might differ from the paths documented here. OSR2 and Service Pak files might not work.
- Enough available disk space (approximately 115 MB on the server).

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Install Files onto the Server

Install Windows 95 Files

1. **While logged in to the NetWare server, map a network drive to a volume.**

This is the volume you want users to copy Windows 95 and Novell Client for Windows 95 files from.

For example, map drive G: to volume Sys:.

2. **Create two folders.**

One folder is for Windows 95 files. For example, g:\win95.

The second folder is for Novell Client files. Although you don't copy Client files right now, you can create the folder. For example, g:\win95.

3. **Run netsetup.exe under Windows 95.**

Netsetup.exe is in the admin\nettools\netsetup folder on the Windows 95 Upgrade CD. It opens the Server Based Setup dialog box.

4. **Specify where NETSETUP places files.**

- 4a. **Click Set Path.**

- 4b. **Enter the path (g:\win95).**

If this folder isn't already on the server, netsetup.exe creates it for you.

This folder eventually will contain the Windows 95 files and directories, including setup.exe and the setup script (msbatch.inf). These files simultaneously install Windows 95 and the Client.

- 4c. **Click OK.**

5. **Install the Windows 95 source files.**

- 5a. **Click Install > Local Hard Drive.**

Novell Client for Windows 95 does not support running Windows 95 with shared files on a server.

5b. Enter the path that has the Windows 95 .cab files as the Path to Install From.

The files are on the Microsoft* Windows 95 Upgrade CD. For example, d:\win95.

5c. Click OK > Don't Create Default.**5d. Click OK to bypass the Product Identification Number box.**

NETSETUP copies files to g:\win95. This might take 15 to 45 minutes.

6. Exit Server Based Setup by clicking OK and then Exit.**7. Change msbatch.inf and netdet.ini to Read/Write.****7a. From a command prompt, go to g:\win95.****7b. Using the FLAG command, change the two files' attributes to Read/Write.**

For example:

```
flag msbatch.inf +rw -ri -di
```

Be sure to change both files. They are overwritten later.

Copy and Prepare the Client Files**1. Copy Novell Client files to the server (g:\win95).**

The Client files are on the Z.E.N.works™ CD-ROM in the products\win95\ibm_ *language* folder.

Important: Do not copy the files from the products\adm32\ibm_ *language* \batch95\nls\ *language* folder of the Z.E.N.works CD-ROM.

2. Remove or rename the .inf files from the win95 folder.**3. Copy the .inf files from the Z.E.N.works CD-ROM to g:\win95.**

- ◆ The files are in the products\win95\ibm_ *language* \ folder.
- ◆ Always copy three files: nwclient.inf, nwtrans.inf, and nwlayout.inf.
- ◆ For NDPS™ support, also copy nwndps.inf.

- ◆ For NetWare/IP™ support, also copy nwip.inf.
 - ◆ For SNMP support, also copy nwserv.inf.
 - ◆ For Workstation Manager Support, also copy nwsmgr.inf.
4. **(Optional) Edit nwclient.inf if you want to integrate the Client help with Windows 95 System help.**

Remove the semicolon (;) at the beginning of the line that contains oem.cnt.

Create a New Msbatch.inf File

1. Run batch.exe.

The file is on the Microsoft Windows 95 Upgrade CD, in the admin\nettools\netsetup folder.

You can run batch.exe under Windows 3.x or Windows 95.

2. (Optional) Fill in Setup Information.

For an unattended install, enter general information in all fields.

3. Remove options.

3a. Click Network Options.

3b. Uncheck any protocols, services, clients, or other options that are checked.

3c. Check IPX/SPX Compatible Protocol.

If you are setting up TCP/IP, check that box, click TCP/IP Settings, enter required data, and exit that dialog box.

3d. Click OK.

4. Click Installation Options.

Completing this step allows users to have minimal interaction while MSBATCH updates workstations.

4a. Select all options except Search Source Folder for Devices and Prompt for Startup Disk.

4b. Set Type of Installation to Typical.

Typical is the recommended option.

- 4c. Enter Installation Directory as c:\windows.
- 4d. Set the time zone.
- 4e. Click Printers > Don't Prompt to Install Printers during Setup.
- 4f. Exit the Printer Setup dialog box by clicking OK.
- 4g. Return to the Untitled dialog box by again clicking OK.
Skip Optional Components. Choosing this negates the Typical settings you selected earlier.
- 5. Click Done.
- 6. Save the file as msbatch.inf to the g:\win95 folder.
Enter msbatch.inf in the FileName box. Using the Drives box and the Folders box, choose the path to g:\win95.
This file overwrites the one that NETSETUP copied.
- 7. Click OK.

Add the Client to Msbatch.inf

- 1. Run the INF Installer (infinst.exe).
Infinst.exe is in the admin\nettools\netsetup folder of the Windows 95 Upgrade CD.
- 2. Specify where Installer places files.
 - 2a. Click Set Path.
 - 2b. Enter the server path.
Specify the drive and folder. For example:
g:\win95
 - 2c. Click OK.
- 3. Install .inf files.
 - 3a. Click Install INF.

3b. Click Nwclient.inf.

Use the Drives and Folders boxes to select g:\win95. Then you can click Nwclient.inf.

You must use the nwclient.inf file in this folder, which contains the Client files to be installed. Once you select nwclient.inf, the Installer integrates the Client files into the msbatch.inf file.

4. Click OK.

During this process, the Installer copies a number of files. Doing this might take a few minutes. If the workstation appears to hang, be patient. This pause is typical. Don't click the Exit button until after you select OK from a small INF Installer dialog box.

Do not keep the existing netware.driv file even if it is newer than the netware.driv file that shipped with this Novell Client for Windows 95 software. Click No in response to the Version Conflict message.

Important: We strongly recommend that you not skip files. If the INF Installer cannot find a file, specify the path where you think the file is. For example, first try g:\win95.

5. Click OK at the small INF Installer dialog box and then click Exit at the main INF Installer dialog box.**Check the Msbatch.inf File**

Review the sample msbatch.inf file in the products\adm32\ibm_*language*\batch95\nls*language* folder of the Z.E.N.works CD-ROM.

This sample file illustrates three items:

- ◆ The settings necessary to install the Client
- ◆ Which client settings you can directly configure
- ◆ Valid values for the settings

1. **(Optional) Compare the registry keys shown in the sample msbatch.inf file with the ones generated by the inf Installer.**
2. **(Optional) Adjust as necessary.**

You can set the values of the Client properties automatically during installation by placing values in the admin.cfg file.

Simultaneously Install Windows 95 and Novell Client for Windows 95

1. **At a workstation to be upgraded, log in to the NetWare server from the command line.**
2. **Map a network drive to the folder containing msbatch.inf.**

For example:

```
map g:=sys:\win95
```

3. **Run setup.exe with msbatch.inf as the first parameter.**

To avoid having Windows 95 query for accepting the license agreement, use the /IW (in capital letters) command line option, with the path to the file as the first parameter. For example:

```
setup /IW g:\win95\msbatch.inf
```

ACU Install

Novell's Automatic Client Upgrade (ACU) provides a way for you to upgrade from earlier Novell Client software to the latest Novell Client for Windows 95 software. This upgrade happens when users log in. ACU also upgrades the Microsoft* Client for NetWare Networks.

ACU is the name of a process; it isn't a specific utility. The process requires five tasks:

- ◆ Create a folder on the NetWare server.
- ◆ Copy Novell Client files and Windows 95 installation .cab files into the folder. (Workstations can then read the files during logins.)

The .cab files require a lot of disk space. If you do not copy the .cab files, you'll be prompted to enter the path to the files. Therefore, to

conserve space, you can keep the .cab files on the CD or the network.

- ◆ Grant rights to the new folder.
- ◆ Update the nwsetup.ini file.
- ◆ Modify the appropriate login script.

Let users know in advance about the upgrade so they understand what is happening and why their working environment is changing.

Create a Folder

1. **Log in to a server as Admin or a user with Admin equivalence.**

You need sufficient rights to copy files to a folder that all users can access. You also need rights to modify login scripts.

2. **Create a folder.**

For example:

```
sys:\public\client\win95
```

Copy Files

1. **Copy the Client files to the new folder.**

They are on the Z.E.N.works CD-ROM in the products\win95\ibm_ *language* folder.

2. **Copy Windows 95 .cab files to the new folder.**

They are on the Microsoft Windows 95 CD (and Upgrade CD) in the win95 folder.

Grant Rights

1. **Create a group called ACU.**
2. **Place into that group users whose workstations need to be upgraded.**
3. **Grant group ACU Read and File Scan rights to the new folder.**

You can grant rights by using NetWare Administrator.

Update Nwsetup.ini

To get information (such as where to copy drivers during installation), setup.exe reads a configuration file named nwsetup.ini. This file is in the same folder (win95) as setup.exe. To determine whether a workstation should be upgraded, ACU uses the Client Version section of nwsetup.ini. For example:

```
[Client Version]
```

```
Version=3.0.0.0
```

As you see, the Version= line contains four fields: 3.0.0.0. These fields refer to the version of client software. The first two fields are the version of the Novell Client and should not be edited. The first field (3) is the MajorVersion field. The second field (0) is the MinorVersion field. The third and fourth fields (0.0) are the Revision and Level fields.

You can view the version number on the Novell Client property page of the Network control panel. Each new version of Novell Client has updated fields.

You can define the Revision and Level fields. Although Novell initially sets these to 0, you can set them to any number from 0 to 65000. You can change the fields to cause updates for other changes you want, even if the Client software has not changed.

The upgrade takes place if any part of the version number is greater than the number stored in the registry. For example, 2.2.1.1 is greater than 2.2.1.0, and 2.2.2.0 is greater than 2.2.1.999.

To have ACU show the user a dialog box stating that there are more recent files, you can set options in [AcuOptions]. Doing this allows users to continue or cancel the upgrade.

- ◆ To allow the user to choose whether to upgrade, set DisplayFirstScreen=Yes. Otherwise, the upgrade starts automatically.

With this setting in place, the user sees a dialog box before the upgrade begins and can then choose to upgrade or cancel the upgrade. Until the user upgrades, that user encounters the dialog box at every subsequent login.

- ◆ To allow the user to choose whether to restart the workstation, set DisplayLastScreen=Yes. Otherwise, the workstation restarts automatically.

With this setting in place, the user sees a dialog box after the upgrade completes and can choose whether to restart the workstation. The workstation must be restarted to activate the upgraded Client files.

Modify the Login Script

You need to modify login scripts for users whose workstations will be upgraded.

- ◆ To upgrade specific users' workstations, modify those users' login scripts. You can do this with FILER or NetWare Administrator.
- ◆ To upgrade workstations for users in a container, modify that container's login script. You can do this with NetWare Administrator.
- ◆ To upgrade workstations for users in a profile, modify that profile login script. You can do this with NetWare Administrator.
- ◆ To upgrade a workstation running bindery-based client software (such as Microsoft Client for NetWare Networks that ships with Windows 95), edit the system login script (sys:public\net\$log.dat).

You can use a Universal Naming Convention (UNC) path as shown below. Add the following line to the login script (where, after the volume name, all directories are separated by a backslash [\]):

```
@\\servername\volume\...\setup.exe /acu
```

For example:

```
@\\thor\sys\public\win95\setup.exe /acu
```

Both the Login Processor from Microsoft and Novell's GUI Login utility allow Windows programs to run using the @(external command) notation.

You can also map a drive to the folder (g:\win95) and call setup.exe from there.

Using Command Line Parameters with Setup.exe

When using setup.exe, you can use any of six command line parameters: /ACU, /NCF, /RB, and /U.

◆ ACU

To perform an Automatic Client Upgrade (ACU), use /ACU. When you use this parameter, no screens (by default) show during the installation.

◆ /NCF

To allow Windows 95 to copy some .cab files, use /NCF. Novell's setup.exe performs a CAB FIX, checking to see if .cab files exist on the workstation. If the files exist, CAB FIX disables this file copy. Not using CAB FIX means that the user has to insert the Win95 CD-ROM to complete the installation.

◆ /RB

Before the client is installed, Rollback (RB) backs up the current client configuration to the novell\client32\nwbackup directory.

After the client is installed and the workstation is rebooted, Rollback checks to see if the client was able to connect to the network. If installation and connection are successful, Rollback

deletes the backup. If installation and connection are not successful, Rollback reverts to the previous client using the backup.

◆ /U

Specifies the default parameters by using a configuration file. Novell Client Install Manager is located on the Z.E.N.works CD-ROM in the products\win95\ibm_language\admin directory.

For example:

```
SETUP /U:F:\PUBLIC\95CLIENT\NOVELL.TXT
```

specifies the default parameters set in the text file novell.txt. For more information on how to create a configuration file, see "Using Novell Client Install Manager to Create a Configuration File" on page 25 and the online documentation included with Novell Client Install Manager (nciman.hlp).

Using Novell Client Install Manager to Create a Configuration File

If you are using the /U command line parameter with setup.exe, you must create a configuration file using Novell Client Install Manager.

1. Start the Novell Client Install Manager.

Novell Client Install Manager is located on the Z.E.N.works CD-ROM in the products\win95\ibm_language\admin directory.

2. Click File > New File > Windows 95.

3. Modify the installation options as needed by doing the following:

3a. Double-click the configuration option you want to modify in the Installation options for Windows 95 list box.

3b. In the property pages, set the parameters, and then click OK.

The values you set appear in the right list box.

Hint: You can set up one workstation the way you want all of the workstation set up, then use Novell Client Install Manager to import the settings from that workstation's registry and save them to the

configuration file you use during the ACU install. Once you set up the workstation, click File > Open Registry to import the settings into Novell Client Install Manager. For information about setting properties on a single workstation, see "Setting Properties on a Single Workstation after Installation" on page 40.

4. Click File > Save.

You can save the file with any filename you want to use. For example, you could rename the file novell.txt.

You can use this file in conjunction with other command line parameters to customize the Client install. See "Using Command Line Parameters with Setup.exe" on page 24.

What Users See

If workstations have older software, ACU upgrades the client software when users log in and then restarts the workstation. Users see system messages as ACU upgrades their workstations.

If workstations already have the latest version of the client software, the client login continues and completes as usual.

CD Install

You can install the Novell Client for Windows 95 software directly from the Z.E.N.works CD-ROM. You can also put Novell Client files in a folder on a NetWare server, map a drive to it, and run Setup from the mapped drive.

In order to install the Client, Windows 95 must already be running on the workstation.

You can choose a Typical or Custom installation.

Typical Installation

Installing a New Client

To install the Client software on a workstation that does not have an earlier version of client software, complete the following steps.

To install Novell Client software on a workstation that has an earlier version, see “Upgrading a Previous Client” on page 28.

1. Run Winsetup.

Winsetup.exe is at the root of the Z.E.N.works CD-ROM. The file automatically loads when you insert the Z.E.N.works CD-ROM.

2. Click a language for the installation.

3. Click a set of components to install, such as Windows 95 Components.

4. Click Install Novell Client.

Winsetup.exe launches setup.exe, which is in the products\win95\ibm_ *language* folder.

5. Accept the Novell License Agreement by clicking Yes.

6. Click Typical > Install.

Setup installs default settings including native IP protocol only.

7. (Conditional) If prompted to select a network adapter, choose one that matches your hardware.

The Select Device dialog box displays a list. After you choose one, set the interrupt (IRQ) and I/O address range. Note that asterisks help you avoid settings that conflict.

8. (Conditional) If prompted to set a preferred server, preferred tree, name context, and first network drive, click Yes, enter the information, and then click OK.

For NetWare 3, set a Preferred Server. For NetWare 4, set a Preferred Server, Preferred Tree, Name Context, and First Network Drive. See “Configuring the Novell Client” on page 31.

9. Click one of the following:

- ◆ Reboot

The new client and settings do not take effect until you do this.

- ◆ Return to Windows

- ◆ Customize

This option takes you to the Network control panel and allows you to install optional components or configure your workstation. See “Customizing Workstations” on page 31.

Upgrading a Previous Client

If you have earlier versions of Novell’s 32-bit Client software, installation removes the old software and installs the new version.

1. Run Setup.

Winsetup.exe. is at the root of the Z.E.N.works CD-ROM. The file automatically loads when you insert the Z.E.N.works CD-ROM.

2. Click a language for the installation.**3. Click a set of components to install, such as Windows 95 Components.****4. Click Install the Novell Client for Windows 95.**

Winsetup.exe launches setup.exe, which is in the products\win95\ibm_*language* folder.

5. Accept the Novell License Agreement by clicking Yes.**6. Click Typical > Install.**

Setup removes existing client software but retains settings in the registry.

7. Click one of the following:

- ◆ Reboot

The new client and settings do not take effect until you do this.

- ◆ Return to Windows
- ◆ Customize

This option takes you to the Network control panel and allows you to install optional components or configure your workstation. See “Customizing Workstations” on page 31.

Custom Installation

You can add or remove services and protocols by using the Custom option in Setup.

1. Run Setup.

Setup refers to winsetup.exe or setup.exe.

Winsetup.exe is at the root of the Z.E.N.works CD-ROM. The file automatically loads when you insert the Z.E.N.works CD-ROM.

2. Click a language for the installation.

3. Click a set of components to install.

4. Click Install the Novell Client for Windows 95.

5. Accept the Novell License Agreement by clicking Yes.

6. Click Custom > Next.

7. Choose a protocol.

You can choose from the following protocols in NetWare 5™:

- ◆ IP Only

Installs the IP protocol stack, which allows the client to run in IP-only networks. If you choose this option, the workstation will not be able to communicate with IPX servers.

- ◆ IP with IPX Compatibility Mode

Installs IP and includes Compatibility mode, which allows IPX applications to run in IP-only networks by converting IPX packets into IP packets. IPX Compatibility mode also allows the client to communicate with services in IPX-only

networks if the Migration Agent is installed on any NetWare 5 servers. IPX Compatibility mode is dependent on the Service Location Protocol (SLP).

- ◆ IP + IPX (Default)
Allows the client to run in both IP and IPX networks. The workstation uses the same protocol as the server it is communicating with.
- ◆ IPX Only
Allows the client to run in IPX-only networks. This option does not install IP.

8. Add optional components.

You can add any of the following services:

- ◆ Novell Distributed Print Services™
- ◆ Novell IP Gateway
- ◆ Novell SNMP Agent
- ◆ Host Resources MIB
- ◆ Network Management Responder
- ◆ Novell Target Service Agent
- ◆ Novell Remote Access Dialer

You can also add the Novell NetWare/IP protocol.

8a. Check the check boxes in front of the components you want to install.

If some components are already installed on the workstation, Setup detects them and automatically checks the appropriate check boxes.

To install all the components, click Select All Components.

To refresh the screen and begin checking anew, click Reset Components. Setup then unchecks boxes that you checked and displays only the boxes that Setup automatically detected.

The Description box has information about optional components you can install. Text in the box changes as you click these components.

8b. Click Install.

Setup removes the existing client software and installs the Client and the selected components.

9. Click one of the following:

◆ **Reboot**

The new client and settings do not take effect until you do this.

◆ **Return to Windows**

◆ **Customize**

See next topic, "Customizing Workstations" on page 31.

Customizing Workstations

After either a Typical or Custom installation, Setup gives you the option to customize your workstation. After you click Customize, you can use the Network control panel to configure the Client and to add, modify, or remove network components (clients, adapters, protocols, and services).

Configuring the Novell Client

1. **At the Novell Client Installation screen, click Customize.**
2. **Click Configuration and then double-click Novell NetWare Client.**
3. **Specify a preferred server, preferred tree, name context, and first network drive.**
 - ◆ **Preferred Server**

Sets the NetWare server the workstation attaches to first and helps guarantee a connection to the network.

For a bindery connection to the network, specify the NetWare server you want the workstation to attach to first.

If the server specified has a connection available, the client workstation attaches to that server. Otherwise, it responds to the nearest broadcasting server.

◆ **Preferred Tree**

Specifies the Directory tree you first connect to in a NetWare network if you have multiple trees.

For an NDS™ connection to the network, specify the Directory tree that you want to connect to.

If you specify both Preferred Tree (for NDS) and Preferred Server (for bindery services), then the first protocol to successfully build an attachment is used.

◆ **Name Context**

Sets your current position, or context, in the Directory tree structure. For example, ou=mngt.o=marketing specifies the MNGT organizational unit in the MARKETING organization as the context.

If duplicate usernames exist, use this setting to specify the context for the username you want.

This setting applies only to workstations connecting to a NetWare network.

The name context can be up to 256 characters long plus the NULL command, which indicates the root of the Directory tree.

You can also change your preferred server, preferred tree, and name context by using the System Policy Editor or the admin.cfg (Administrator Defaults) file.

◆ **First Network Drive**

Sets the first network drive letter. This setting defaults to F.

4. (Optional) At the Location Profiles tab, set up optional location profiles.

Location profiles allow you to create multiple profiles that store the server, context, login script, and other pertinent login information so that users do not have to input the information manually.

5. (Optional) At the Advanced Login tab, set options for login.

For example, you can show the location list, advanced button, variable button, or clear connection at login.

6. (Optional) At the Default Capture tab, set options for printing.

For example, you can specify whether print jobs include banners and form feeds.

7. (Optional) At the Advanced Settings tab, set parameters to optimize the client workstation.

You can optimize for speed, data integrity, or using memory.

7a. Click a parameter group.**7b. At the Settings box, select the setting that optimizes the client software.****8. Click OK and then restart the workstation.**

The new client settings do not take effect until you restart.

Viewing Settings for Installed Components**1. At the Novell Client Installation screen, click Customize.**

The Network control panel displays installed components, for example:

- ◆ Novell Client (a client)
- ◆ NE2000™ Compatible (an adapter)
- ◆ IPX 32-bit Protocol (a protocol)
- ◆ Novell Distributed Print Services (a service)

2. Scroll through the list of installed components and click a component you want to find out about.**3. Click Properties.**

The various tabs allow you to view default settings.

Adding Network Components

1. At the Novell Client Installation screen, click **Customize**.
2. At the Configuration tab of the Network window, click **Add**.
3. Double-click a component.
4. Click a manufacturer.
5. Click the product to install.
6. Click **OK** to return to the Network control panel, then **OK** to exit Setup, and then **OK** to copy files.
7. In the Copy Files From box, enter the path to the source files.
For example, enter d:\products\win95\ibm_language .
8. Click **OK** and restart the workstation.

Changing Settings for Network Adapters

1. At the Novell Client Installation screen, click **Customize**.
2. At the Configuration tab of the Network window, click a network adapter.
For example, click NE2000 Compatible.
3. Click **Properties**.
4. View the current settings.
To view the frame type, click the Advanced tab.
To view Interrupt and I/O Address Range, click the Resources tab.
To view settings for ODI drivers, click the ODI Driver tab.

5. Change settings.

Note that conflicting settings have an asterisk (*). You probably need to change these settings.

5a. From the Configuration Type box, select Basic Configuration.

5b. Select an available value for the Interrupt and I/O Address Range.

6. Click OK to return to the Network control panel, and then OK to exit Setup.

Uninstalling the Client

You can uninstall the Novell Client software by using either the Network control panel or the Uninstall utility (unc32.exe).

When you use the control panel, some client information remains in the registry. This information preserves your client configuration; when you reinstall the client software, your configuration settings are the same as they previously were.

However, when you use the Uninstall utility, all registry settings that were set when the Client was installed are removed.

Using the Control Panel

- 1. From the Network control panel, click Novell Client.**
- 2. Click Remove.**
- 3. Remove any other Client networking components in the same way.**

Examples of other networking components are Novell ODINSUP and IPX 32-bit Protocol for Novell Client.

- 4. Click OK > Yes, and then restart the workstation.**

Using the Uninstall Utility

Procedure

1. **Locate and open the unc32.exe file on the CD-ROM.**

The file is in the products\win95\ibm_language\admin folder.

2. **(Conditional) If you want to remove any ODI™ drivers installed on the workstation, check the Remove Novell 32-bit ODI Adapter check box.**

This check box appears only if a 32-bit ODI adapter has been installed on the workstation.

3. **Click Continue.**

The Uninstall process begins.

Warning: Once you click Continue, the Uninstall process cannot be canceled. Do not try to stop the Uninstall process by turning off the machine. Doing so could result in a corrupted registry. If the registry becomes corrupt, errors will occur the next time you start the workstation. Run unc32.exe again to finish uninstalling the client and to clean up the registry.

4. **Click Reboot when the Uninstall process is complete.**

What the Uninstall Utility Does

The Uninstall utility uses a seven-step process to remove Novell Client for Windows 95 from the workstation.

1. Restores netdef.inf.

The netdef.inf file contains three sections, called [TYPICAL], [COMPACT], and [PORTABLE]. Each of these sections includes three lines (NetClient, NetTrans, and NetService), which indicate default components to be added each time a network board (adapter) is detected.

The sections might contain other lines as well, but these three lines are the only lines that the Uninstall utility changes.

The Install utility changes the defaults to use the Novell Client, so the Uninstall utility resets the defaults back to the Microsoft* Client pieces.

2. Removes Novell components from the Network control panel.

The Uninstall utility removes the following components, listed in the unc32.ini file, from the Network control panel:

- ◆ Novell Client (novell32)
- ◆ IPX 32-bit protocol for Novell Client (novellipx32)
- ◆ Novell NetWare/IP™ (nwip)
- ◆ Novell SNMP Agent (nwsnmp)
- ◆ Network Management Responder for Novell Client (nwnmr)
- ◆ Host Resources MIB for Novell Client (nwnms)
- ◆ Target Services Agent (nwtasa)
- ◆ Novell IP Gateway (nwipxip)
- ◆ Novell Distributed Print Services™ (nwndps)
- ◆ If 32-bit ODI is installed and the user does not check the Remove Novell 32-bit ODI Adapter check box, Uninstall then deletes 27 registry keys.
- ◆ If 32-bit ODI is not installed, or if it is installed and the user checks the Remove Novell 32-bit ODI Adapter check box, then Uninstall deletes five registry keys.

3. Cleans up the HKLM\Enum section of the system registry by deleting nine registry keys. (See uninstal.hlp.)

4. Cleans up the HKLM\Class section of the system registry by removing subkeys. (See uninstal.hlp.)

5. Cleans up the HKLM\Network\Novell section of the system registry. (See uninstal.hlp.)

The keys that the Uninstall utility deletes from the HKLM\Network\Novell section of the registry are determined by whether Uninstall is removing 32-bit ODI.

In addition, Uninstall deletes the ODI driver and its .inf file.

6. Cleans up Install files.

What the Uninstall utility does to clean up the Install files depends on whether the ODI driver is being removed.

- ◆ If the ODI driver is not removed, the client- and services-specific Install files are removed.
- ◆ If the ODI driver is removed, all ODI LAN driver .inf files listed in the [odi.inf] section of the unc32.inf file are removed in addition to the client- and services-specific Install files.

7. Removes unc32.inf from the windows\inf directory.

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chapter **4** *Optimizing*

You can optimize Novell® Client™ for Windows 95 software for your networking environment by using settings on property pages. The property pages provide a method for configuring installation options and protocol support, optimizing performance, configuring optional client parameters, and a variety of other options.

By default, the client is configured for high speed with moderate use of memory and data protection. You can adjust the client to optimize its performance in any of these areas. However, you should be aware that optimizing the client in one area might mean performance cost in other areas.

Setting Properties

Novell Client for Windows 95 software uses property pages to set many of the client's parameters. These properties configure everything from the way the client looks to how it performs. For example, you can use the property pages to set your login defaults, such as your preferred server and tree, the NDS™ context you prefer to log in to, and which login script you use when you log in.

You can set properties for a single workstation, or you can set them for multiple workstations at once.

Setting Properties prior to Installation

You can use Novell Client Install Manager to set properties for one or more workstations prior to an ACU install. This method prevents you from having to set each workstation individually.

- 1. Start the Novell Client Install Manager.**

Novell Client Install Manager is located on the Z.E.N.works™ CD-ROM in the products>win95>ibm_ *language*>admin directory.

2. **Click File > New File > Windows 95.**
3. **Modify the installation options as needed by doing the following:**
 - 3a. **Double-click the configuration option you want to modify in the Installation options for Windows 95 list box.**
 - 3b. **In the property pages, set the parameters, and then click OK.**

The values you set appear in the right list box.

Hint: You can set up one workstation the way you want all of the workstation set up, then use Novell Client Install Manager to import the settings from that workstation's registry and save them to the configuration file you use during the ACU install. Once you set up the workstation, click File > Open Registry to import the settings into Novell Client Install Manager. For information about setting properties on a single workstation, see "Setting Properties on a Single Workstation after Installation" on page 40.

4. **Click File > Save.**

You can save the file with any file name you want to use. For example, you could rename the `filenovell.txt` and then use it in conjunction with the ACU. For more information, see "ACU Install" on page 20 and "Using Command Line Parameters with Setup.exe" on page 24.

Setting Properties on a Single Workstation after Installation

You can set the properties for the current workstation from two places:

- ◆ Network Neighborhood
- ◆ Network control panel

Setting Properties from Network Neighborhood

1. **Right-click Network Neighborhood.**
2. **Click Properties > Services > Novell Client for Windows 95 > Properties.**

3. Set the properties you want to change.
4. Close the property pages.

Setting Properties from Network Control Panel

1. From the Start menu, click Settings > Control Panel.
2. Double-click Network.
3. Click Services > Novell Client for Windows 95 > Properties.
4. Set the properties you want to change.
5. Close the property pages.

Setting Properties on Multiple Workstations after Installation

Beginning with Z.E.N.works and NetWare 5, you can use NetWare Administrator to configure client properties for multiple workstations. The properties you set in NetWare Administrator are pushed down to the client workstations at scheduled times or when specified events occur, such as when a user logs in.

Note: The information in this section is an outline of the steps required to set properties on multiple workstation using NetWare Administrator. For additional details, see the Z.E.N.works online help included with NetWare Administrator.

1. **(Conditional) If you have not yet done so, open NetWare Administrator.**
2. **(Conditional) If you have not already done so, use NetWare Administrator to create a container, user, or workstation package and associate that package with an object in the tree.**
3. **Open the container, user, or workstation package for which you want to set properties.**
4. **Click Page Options.**
5. **Set the properties you want to change.**
6. **Close the property pages.**

7. Schedule the time or event when the properties will be pushed down to the workstations.

For instructions on using the Scheduler, see the Z.E.N.works online help included with NetWare Administrator.

The workstations do not need to be logged in to the network for the update to take place. However; they do need to be powered on. You can use the Scheduler to specify what to do if a workstation is not on when the update takes place. See the online help for more information.

Configuring a Network Adapter Card

If you install a new adapter card, you should configure it for optimal performance on your network. If your adapter card performance is satisfactory, there is no need to configure it.

1. **Click Start > Settings > Control Panel > Network > Adapters.**
2. **From the Network Adapters list, select the adapter card.**
3. **Click Properties and change the adapter card settings as desired.**

Click Help for information on these settings.

4. **Click OK to save changes.**

Restart the workstation for the changes to take effect.

Setting Printer Properties

1. **Click Start > Settings > Printers.**
2. **Select a printer.**
3. **Click File > Properties.**
4. **To display a property page (such as Printer Settings), click its corresponding page.**

Setting Up Point and Print

- 1. Get the printer driver files.**

Get the Windows 95 CD-ROM or the Windows 95 printer driver files supplied by the printer's manufacturer.

- 2. Log in as ADMIN or a user with ADMIN equivalent rights for the printer or print queue.**

- 3. Select a printer or print queue in the Windows Explorer or Network Network Neighborhood.**

- 4. Click File > Properties > Setup Point and Print.**

- 5. Specify the path for the printer driver files.**

You must be logged in to the tree or server where the path is located. You must also have sufficient rights for the specified directory to copy the files there. Users need Read and File Scan rights for the specified directory.

- 6. Click Select Printer Model.**

- 7. Select the manufacturer of the printer.**

- 8. Select the model of the printer.**

- 9. Click OK.**

The printer driver files are copied to the path specified in Step 7.

- 10. Click OK again.**

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chapter **5** *Managing*

Managing Novell® Client™ for Windows 95 software requires you to manage the way client users access the network and use the resources available on the network. This means you should manage such things as how users connect to the network, passwords, rights and other security issues, etc.

Common Networking Tasks

Novell Client for Windows 95 software is integrated with Windows 95. Features that were available in earlier Novell clients through User Tools are integrated into Windows 95 standard interfaces such as My Computer, Network Neighborhood, Control Panel, and the N icon in the system tray.

The following table lists common networking tasks and how to perform them in Windows 95.

Task	Procedure
Log in to a server or tree	<ol style="list-style-type: none"> 1. Right-click the N icon in the system tray. 2. Click NetWare Login.
Attach to a server or tree	<ol style="list-style-type: none"> 1. In Network Neighborhood, right-click a file server or tree. 2. Click Authenticate.
Log out of a server or tree	<ol style="list-style-type: none"> 1. In Network Neighborhood, right-click a server or tree. 2. Click Logout.

Task	Procedure
Get NetWare user information (WhoAml)	<ol style="list-style-type: none"> 1. In Network Neighborhood, right-click a server or tree. 2. Click WhoAml.
Change your context	<ol style="list-style-type: none"> 1. In Network Neighborhood, right-click a tree. 2. Click Change Context.
Change your password	<ol style="list-style-type: none"> 1. Double-click Passwords in Control Panel. 2. Click Change Windows Passwords > OK on the Change Passwords page. 3. Enter the password information. 4. Click OK.
Map a drive	<ol style="list-style-type: none"> 1. Right-click the N icon in the system tray. 2. Click Novell Map Network Drive.
Set a permanent mapping	When mapping a drive, check Reconnect at Logon.
Capture a port	<ol style="list-style-type: none"> 1. Right-click the N icon in the system tray. 2. Click Novell Capture Printer Port.
Set a permanent capture	When capturing a printer port, check Reconnect at Logon.
Send a message	<ol style="list-style-type: none"> 1. Right-click the N icon in the system tray. 2. Click Send Message. 3. Enter the message under Send Message to the Selected User. 4. Click the users or groups. 5. Click Send.

Task	Procedure
Set file and folder attributes	<ol style="list-style-type: none"> 1. In Network Neighborhood, right-click a file or folder. 2. Click Properties. 3. Use the NetWare Info page to make changes to the attributes. 4. Click OK.
Set file and folder access rights	<ol style="list-style-type: none"> 1. In Network Neighborhood, right-click a file or folder. 2. Click Properties. 3. Use the NetWare Rights page to make changes to access rights. 4. Click OK.

Finding NetWare Functions

You can find NetWare functions on Windows 95 in the following programs:

- ◆ Novell N icon is the system tray
- ◆ Network Neighborhood
- ◆ Network control panel
- ◆ Start menu

The Programs menu in the Start menu contains a program group for Novell. You can start a NetWare login from this group.

Setting Current Tree and Current Server

The current tree is the Directory tree that applications use if they do not take advantage of multiple-tree support. You need to close applications that do not support multiple trees before changing the current tree. Otherwise, the application continues to support only the resources in the former tree.

Also, using NDS™ commands such as CX from a command prompt always affects the current tree only.

The current server is the server that Novell Client for Windows 95 uses to get lists of servers and trees. If you can't see a server you want in the list of servers in Network Neighborhood or Windows 95 Explorer, try changing your current server.

To display Current NetWare Resources in order to change the current server or current tree, right-click Network Neighborhood and then click NetWare Connections. The current server and the current tree are identified in the Current NetWare Resources dialog box by an asterisk (*).

If you change your current tree or server, the change is effective immediately but lasts only until you shut down or restart your computer.

Setting the Current Tree

You can select Set Current Tree only if you have authenticated or logged in to the tree.

1. **In Network Neighborhood, right-click the tree you want to become the current tree.**
2. **Click Set Current Tree.**

Setting the Current Server

The current server is used to get lists of servers and trees. If you can't see a server you want in the list of servers in the Network Neighborhood or Windows Explorer, you might try changing your current server.

1. **Right-click Network Neighborhood.**
2. **Click NetWare Connections.**
3. **Click the server that you want to be the current server.**
4. **Click Set Primary.**

Running Programs from the Network

You can run programs from the network by installing the programs to a network drive instead of a local drive. This enables you to run many software programs on your computer without using your computer's disk space, and it can also increase the software's performance. It is also the best way to run network programs, such as e-mail and calendaring.

After installing the software on a network drive, you can map a drive to the program's location on the network and run the program.

Installing a Program to the Network

1. **Check the software's installation guide for information on installing the software to the network.**
2. **Make sure you have Read, Write, Create, and File Scan rights for the directory where you are installing the software.**
3. **Create a persistent connection to the network directory where you are installing the software.**
4. **Run the software's setup program, following the manufacturer's instructions.**

Creating a Shortcut for a Network Program

1. **Create a permanent drive mapping to the program's location on the network.**
2. **Make sure you have a program group in Program Manager where you want to place the icon.**
3. **On the desktop or in the folder where you want to create the shortcut, right-click in the space where you want to place the shortcut.**
4. **Click New > Shortcut.**
5. **Enter the network path and the executable filename for the program you want to run.**
6. **Click Next.**
7. **(Optional) Enter a name for the shortcut.**
8. **Click Finish.**

Running a Program

1. **(Conditional) Map a drive to the program's working directory if you have not already done so.**
2. **(Optional) Create a shortcut for the program.**
3. **Double-click the program's icon or shortcut.**

Running a Program from a Command Prompt

1. **Map a drive to the program's working directory.**
2. **At a command prompt, change to the network drive that contains the program.**
3. **Enter the name of the executable file.**

Connecting to Network Drives

For easy reference to network resources, you can assign or “map” a drive letter to a directory on the network. You can then use files and directories from the network drive. For example, you can assign the drive letter G: to the apps\wp directory on the Software volume.

This is called “mapping” a network drive. When you map a network drive, you can access files from a network drive from Windows* 95* Explorer, a DOS prompt, and from applications in the same way that you access files from your computer’s hard drive.

There are several ways to map drives in Windows 95. Network Neighborhood provides a graphic interface for mapping drives.

1. **Browse Network Neighborhood for the volume or directory you want to map to.**
2. **Right-click the volume or directory and then click Novell Map Network Drive.**
3. **In the Device box, select a drive letter to represent the network path.**

The network path appears in the Path box.

4. **(Optional) Check Map Root to make the drive a root mapping.**
5. **(Optional) Check Map Search Drive to make the drive a search drive mapping.**
6. **(Optional) Check Reconnect At Logon to restore this connection each time you log in to Windows 95.**

If you run a NetWare login script that connects this drive for you, uncheck this check box.

7. **Click Map.**
8. **(Conditional) If you are prompted to enter a password, type your password and click OK.**

Disconnecting Network Drives

1. From My Computer, right-click the drive you want to disconnect.
2. Click Disconnect.

Printing from a Network Printer

Connecting to network printers enables you to use specialized network printers without having them directly attached to your computer. For example, if your company uses laser printers and color printers, you can connect to the printers and use both printers.

You can use the Windows 95 Add Printer Wizard to inform the computer of the network printers you want to use. You also need to install a printer driver for each type of printer you use. The printer driver prepares your print job to be printed on a specific printer.

A network administrator can automate printer setup for users, so the computer attaches to network printers users use each time you log in to the network. In this case, users can use the network printers without worrying about the attachments.

After connecting to a network printer, you can select the printer from any application you are using. See the application's documentation for information on using printers.

Attaching to a Network Printer

You set up network printing by specifying to the computer the name of the printer you want to use. You can do this by using the Windows 95 Add Printer Wizard.

The following methods automate your printer connections, so the computer connects to network printers each time you log in:

- ◆ NetWare Login Script
- ◆ Windows 95 Restore Connections

Note: Windows 95 does not require you to capture printer ports to network print queues. The Add Printer Wizard connects the computer to a network printer and reconnects you to the printer each time you log on.

Setting Up Printing from the Network

1. **Open the Printers folder and then double-click Add Printer.**

You can also start the Add Printer wizard by right-clicking a printer in Network Neighborhood and then clicking Install. You can then skip to Step 5.

2. **Click Next > Network Printer > Next.**

3. **Enter the network path or the queue name of the printer or click Browse to locate the available printers.**

For NetWare 3™ and bindery networks, double-click NetWare Servers. Double-click the name of the server that supports the queues you want to use, and then select the queue.

4. **Click Next.**

5. **(Conditional) If a dialog box prompts you to install a driver for the printer, click OK and install the driver.**

- 5a. **Select the name of the printer manufacturer from the Manufacturers box.**

- 5b. **Select the name of the printer from the Printers box.**

- 5c. **Click OK.**

6. **Click Next.**

7. **Run the application and select the network printer when you print.**

Viewing a Document Waiting to Be Printed

1. **Click Start > Settings > Printers.**

2. **Double-click the icon for the printer you want to look at.**

The print queue with all of the print jobs listed appears.

Hint: In the printer window, you can find information such as the status of print jobs and the owner of a document. If you want to cancel or pause the printing of any of the documents you have sent, click the document, and then use the commands on the Document menu.

Viewing Printer Properties

1. Click a printer or print queue in Network Neighborhood.
2. Click File > Properties.
3. To display a property page (NetWare Queue, Setup Point and Print), click its corresponding page.

Using NetWare Login Scripts

Login scripts can be used to automate some of the initialization tasks for your computer. For example, a login script can connect your computer to the network drives and printers you need to use. Login scripts can also run other programs, such as a virus scan program.

You can control your login script to some degree from the Novell Client for Windows 95 property page and from the advanced pages in the Novell NetWare Login dialog box. For example, you can do the following:

- ◆ Turn off all login scripts
- ◆ Enter values for login script variables
- ◆ Specify a login script to run

You can use NetWare login scripts to set up your network connections each time you log in to the network. This enables you to get the same network connections at any computer you use to log in to the network.

If you have rights to do so, you can edit your login script using NetWare Administrator (nwadmin.exe). You can also control login script processing from the Scripts page of the Login dialog box. Or, you can right-click the N icon in the system tray, click User Administration for *tree name*, and click Edit Login Script.

Defining Login Script Variables

You can define up to four variables to be used by the login scripts. For example, you might define one variable as MAIL. Your login script might use the MAIL variable to map drives to the mail server.

NetWare File Security

NetWare networks restrict access to network files and folders based on user accounts. For example, a user connected to the network using the administrator user account might be able to delete or rename a file that other users can only open and edit.

The NetWare file system keeps track of the rights you have to files and directories on the network. When you access any file on a NetWare network, NetWare makes sure you have the rights to do so.

Rights are granted and revoked by creating trustee assignments. For more information, see “Changing Trustee Assignments” on page 57.

File rights apply only to the file they are assigned to. The rights can be inherited from the folder that contains the file. Folder rights apply not only to the folder but also to the files and folders it contains.

NetWare uses the following rights to determine what actions you can perform on network files and folders:

- ◆ Supervisor

Grants all rights to the folder or file. The Supervisor right can't be blocked by an Inherited Rights Filter. Users with this right can grant or deny other users rights to the folder or file.

- ◆ Read

For a folder, grants the right to open files in the folder and read the contents or run the programs. For a file, grants the right to open and read the file.

- ◆ Write

For a folder, grants the right to open and change the contents of files in the folder. For a file, grants the right to open and write to the file.

- ◆ Create

For a folder, grants the right to create new files and folders in the folder. For a file, grants the right to create a file and to salvage a file after it has been deleted.

- ◆ Erase
Grants the right to delete the folder or file.
- ◆ Modify
Grants the right to change the attributes or name of the folder or file, but does not grant the right to change its contents. (Changing the contents requires the Write right.)
- ◆ File Scan
Grants the right to see the folder or file in Windows* Explorer or Network Neighborhood.
- ◆ Access Control
Grants the right to change the trustee assignments and the Inherited Rights Filter of the folder or file.

You can view the rights you have to a file or folder from its property page. Right-click a field and then click What's This? for information on the field.

Checking Your Rights to a Network File or Folder

1. In **Network Neighborhood**, right-click the file or folder that you want to check your rights for.
2. Click **Properties > NetWare Rights**.
3. In the **Trustees** box, find your user account and look to the right to find the rights you have to the file or folder.

For information on fields in this dialog box, right-click the field and click What's This?

Changing Trustee Assignments

1. **Right-click the file or folder in Windows 95 Explorer or in Network Neighborhood.**
2. **Click Properties > NetWare Rights.**
3. **Add trustees, remove trustees, or change the rights granted to trustees as needed.**

Note: Trustee assignments override inherited rights. To change an Inherited Rights Filter, use the NetWare Administrator utility. To change an Inherited Rights Mask (NetWare 3), use the FILER utility. You can also change trustee assignments with the RIGHTS or NetWare Administrator utility.

Combining Multiple Trustees

To apply the same trustee assignments to all the selected files, check the Combine Multiple Trustees check box. This check box is available only if you're viewing the NetWare rights for multiple files or folders. Additionally, at least one of the files or folders must have at least one trustee assignment. The trustees and rights shown are the combined trustees and rights for all the files.

If you check Combine Multiple Trustees, the trustee assignments that are shown will apply to all the selected files after you click OK or Apply.

For example, Kim is a trustee of FILEA and FILEB. Kim has Read, File Scan, and Access Control rights for FILEA and Read and File Scan rights for FILEB. If you select FILEA and FILEB and view their properties, Kim is shown as a trustee with Read, File Scan, and Access Control rights. If you check Combine Multiple Trustees and then click OK, Kim is given the Access Control right for FILEB. Therefore, Kim now has Read, File Scan, and Access Control rights for both FILEA and FILEB.

Sending Messages

Use Send NetWare Message to send a simple message to users on the network. You can send the message a single user or group or to multiple users or multiple groups of users.

The message appears on the receiver's screen to an NetWare Broadcast Message dialog box. On your screen, the Send NetWare Message Results dialog box shows the results.

Users can turn off message reception. Also, only users who are logged in at the time you send the message will receive the message.

The maximum message length varies depending on the length of your username. Usually, the maximum message length is between 200 and 250 characters. The NetWare Broadcast Message dialog box displays up to 250 characters, but this includes the characters used to show who the message is from. For example, "From: GUEST[39]" is 16 characters long, which allows up to 234 characters for the actual message.

1. **Right-click the N icon in the system tray.**
2. **Click Send Message.**
3. **Enter the message under Send Message to the Selected User(s):.**

The users shown are those that have a connection to the server.
The groups shown are those that are listed in the server's bindery.

4. **Select the users or groups.**
5. **Click Send.**

The Send NetWare Message Results dialog box shows which users or groups the message was sent to.

chapter **6** *Troubleshooting*

Generally, Novell® Client™ for Windows 95 software works well in Windows 95 workstations. If you do happen to have a problem, search through the troubleshooting information provided in this documentation to see if you can identify the cause and fix for the problem.

Also, read the Novell Client readme for more troubleshooting information.

If the problem you're having is one that is documented, there is usually a solution or a workaround. Often, the solution is quite simple.

- ◆ “Applications and Protocols” on page 60
- ◆ “ATM LAN Emulation” on page 61
- ◆ “Drivers” on page 62
- ◆ “Files and Directories” on page 64
- ◆ “Installation” on page 65
- ◆ “Logging In to the Network” on page 67
- ◆ “Printing” on page 68
- ◆ “Files Missing or Misplaced” on page 69

Applications and Protocols

Problem

IPX™/SPX™ applications are not functioning properly.

Cause

IPX could not detect the primary logical board.

Solution

1. **Determine the frame type used for IPX communications at your site by examining a net.cfg file on another workstation.**
2. **From the Control Panel, double-click Network, and then double-click IPX 32-bit Protocol for the Novell NetWare® Client.**
3. **Click Advanced IPX.**
4. **Check Primary Logical Board.**
5. **Select a frame type to match the frame type used on your network.**
Enter a frame type name if the one you need is not listed.
6. **Click OK until you exit the Network dialog box.**
7. **Restart your workstation and try running the application again.**

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ATM LAN Emulation

Problem

ATM LAN emulation doesn't work.

Solution

1. **Start Windows 95 in Safe Mode and remove all the network information in the Network control panel.**
2. **Install Novell Client for Windows 95.**
3. **Run c:\windows\regedit.exe.**
4. **Expand the tree to My Computer \HKEY_LOCAL_MACHINE\Enum.**
5. **Under Enum, find information about the ATM board you have installed, either EISA or PCI. Delete the ID corresponding to your board.**
6. **Shut down the computer and insert the ATM board into the system.**
7. **Reboot the system.**
8. **(Conditional) If you are prompted to insert diskettes for Novell Client for Windows 95, enter the path you used to install the Client (for example, e:\products\win95\ibm_enu).**

You also need the Windows 95 CD-ROM and a diskette with the ATM ODI™ driver. For references for the Windows 95 CD-ROM, specify the \win95 folder on your CD-ROM drive (for example, e:\win95).

Note: You must get an ATM ODI-compliant driver from a third-party vendor.

9. **Load ATMELEC STATUS (or load ATMTRLEC STATUS) to check connections to the LANE service components and other LAN emulation products.**

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Once LES and BUS VCCs are established, you can use the NetWare login. (This icon for logging in should appear at boot time.) From then on, you can log in and use the system as though you were on an Ethernet (or token-ring) network.

10. **From the Network control panel, click Novell Client for Windows 95 and verify that you have specified Preferred Server, Preferred Tree, and Name Context.**
11. **Check to make sure that the following files have been updated:**
 - ◆ Atmlec.lan, atmrlc.lan, atmtsm.nlm, and parser.nlm (in \novell\client32)
 - ◆ Odiload, odipage.dll, and atmlec.dll (in \windows\system)
 - ◆ Nllayout.inf and atmlec.inf (in \windows\inf)

Drivers

Problem

Slow performance and driver errors after installing the Novell Client for Windows 95 software.

Cause

The LAN driver is not functioning properly.

Solution

Contact the manufacturer of the LAN board and request the latest ODI or NDIS driver.

For an ODI driver, request the latest 32-bit server driver for NetWare servers (for example, ne2000.lan). If the new driver continues to have problems, switch to the adapter's most recent 16-bit ODI driver.

To switch from a 32-bit ODI driver to a 16-bit ODI driver, do the following:

1. **Double-click the Network icon in Control Panel.**
2. **Click the adapter.**
3. **Click Properties > 16-Bit ODI Driver > OK.**

To load the most recent 16-bit ODI driver, do the following:

1. **If the adapter is already installed, copy the newer driver over the top of the old driver. Otherwise, copy the new driver to the novell\client32 folder.**
2. **Double-click the Network icon in Control Panel.**
3. **Click Add > Adapter > Add.**
4. **Click the name of the manufacturer of the desired driver.**
5. **Click the adapter matching the one installed.**
6. **Click OK.**
7. **Remove the old adapter.**
8. **Add the following lines to the autoexec.bat file:**

lsl.com
n16odi.com
nesl.com
driver name.com
9. **Click Properties > 16-bit ODI Driver.**
10. **(Conditional) If necessary, click Resources and set the adapter's resources.**
11. **Click OK.**

Problem

TSRs required for LAN drivers in Windows 95 won't load.

Cause

TSRs that need to be loaded after a network connection is established or after IPX™ loads should be loaded from the winstart.bat file.

Solution

Load the TSRs from the winstart.bat file. If the file does not already exist, you can create it in the subfolder where Windows is installed.

Files and Directories

Note: For more information concerning files, see also "Files Missing or Misplaced" on page 69.

Problem

Some files and directories on my NetWare 3.11 server do not appear in Explorer or in a DOS box.

Cause

Shortafx.nlm and os2opnfx.nlm must be loaded on all NetWare 3.11 servers.

Solution

Load shortafx.nlm and os2opnfx.nlm from the products\adm32\ibm_enu\patches\nw311\short folder.

Installation

Problem

Installation fails.

Cause

The folder that contains the Novell Client for Windows 95 installation, setup.exe, and all parent directories must conform to the standard DOS 11-character (8.3) naming convention. The Client supports long filenames, but setup.exe does not.

Solution

Run setup.exe from a folder using DOS naming conventions.

Problem

The Client won't run in a shared Windows 95 environment.

Cause

Novell Client for Windows 95 does not support shared Windows environments.

Solution

None.

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Problem

After installation, an error message reports “The NetWare-compatible shell is not available.”

Cause

An error occurred during the installation of the new Novell Client software. Likely causes:

- ◆ A corrupt file
- ◆ An error in the registry
- ◆ An attempt to install from a folder with a long filename

Solution

- 1. Double-click the Network icon in Control Panel.**
- 2. Click the adapter.**
- 3. Click Remove > OK.**
All protocols and clients are removed.
- 4. Reinstall the Novell Client software.**

Problem

No TCP/IP support for Windows 95 prior to NetWare 5™.

Cause

Novell Client does not provide its own TCP/IP protocol stack. In NetWare 5, it accesses the TCP/IP stack through tcpip.nlm.

Solution

NetWare 5 provides pure IP support to NetWare networks. If you are not running NetWare 5, do one of the following:

- ◆ Use the Microsoft TCP/IP protocol if you need TCP/IP or NetWare/IP™ support.
- ◆ Install NetWare/IP if you have applications that require IPX™ but you want to use only IP on the wire.

Logging In to the Network

Problem

After the Novell Client for Windows 95 software installation, the splash screen displays but a login screen doesn't. No error message is displayed. Network Neighborhood is empty.

Cause

A file server could not be found.

Solution

- ◆ Make sure that the frame type conforms to your particular LAN.
- ◆ Check the Preferred Server and Preferred Tree settings in the Novell Client Properties pages.
- ◆ Make sure the GUI login utility (loginw95.exe) is located on the local drive on the client workstation. Loginw95.exe cannot be run from the network.

Problem

During capture of printer ports from a login script, the DOS box does not close after the login script completes.

Cause

This is an issue with the way Windows 95 handles DOS boxes called from a GUI interface. If an error occurs in the login script, the Login Results window does not close so that the user can view the error.

Solution

Make sure the login script does not include commands to capture ports on Windows 95 computers.

Printing

Problem

Print capture doesn't work.

Cause

Windows 95 does not require the Client to redirect hardware ports to enable network printing.

Solution

Set up network printing using the Add Printer Wizard in Windows 95.

- 1. Click My Computer > Printers > Add Printer.**

Problem

The client workstation's clock is out of sync with the network.

Cause

The Set Station Time parameter is not set to On.

Solution

Set the parameter to On.

Files Missing or Misplaced

Setup.exe creates several folders on a workstation's local drive and modifies existing files and folders. You can use this section to troubleshoot a client for missing or misplaced files.

File Locations

The following files are copied into the following folders (folder names are the default names).

\novell\client32 Folder

client32.nlm
cmsm.nlm
cne2000.lan
cne3200.lan
ethertsm.nlm
fdditsm.nlm
ipx.nlm
loginw95.exe
lslc32.nlm
nios.log
nmr.nlm (if nmris installed)
nwip95.nlm (if NetWare/IP™ is installed)
nwpopup.exe
nwsipx32.nlm

pc32mlid.lan
phasers.wav
readme.txt
setupnw.cnt
setupnw.hlp
spx_skts.nlm
sroute.nlm
tokentsm.nlm
vmlid.nlm

\novell\client32\install Folder

admin.cfg
net2reg.log (created during install)
nwlinks.exe
nwsetup.ini

\windows\i18n\language Folder

Note: The name of this folder varies depending on the language being used. For example, for English, the folder name is English.

login.dat
login.msg

\novell\nwclient Folder

Setup adds the following files to the Nwclient folder on workstations that use 16-bit ODI™ LAN drivers.

driver.com
lsl.com
n16odi.com
nesl.com
net.cfg
route.com (if a token-ring driver)

\windows\help Folder

loginw95.hlp
nwuse95.hlp
setupnw.hlp

Note: Each of these help files might also have files with the following file types associated with them: *.cnt, *.fts, *.gid.

\windows\inf Folder

ne1000.inf
ne15_21.inf
ne2.inf
ne2_32.inf
ne2000.inf
ne3200.inf
netdef.inf
ntr2000.inf
nwclient.inf
nwip.inf
nwlayout.inf
nwserv.inf
nwtrans.inf
odinsup.inf

\windows\i18n\language Folder

Note: The name of the language folder varies depending on the language being used. For example, for English, the folder name is English.

novelnpr.dll

\windows\system Folder

calwin16.dll
calwin32.dll
clnwin16.dll
clnwin32.dll

clnwinth.dll
clxwin16.dll
clxwin32.dll
lgnw9532.dll
locwin16.dll
locwin32.dll
ncpwin16.dll
ncpwin32.dll
netware.driv
netwin16.dll
netwin32.dll
nios.vxd
nioslib.dll
novellnp.dll
novpp32.dll
nwcalls.dll
nwdrvlg0.bmp
nwgdi.dll
nwipxspx.dll
nwlink2.vxd
nwlocale.dll
nwnet.dll
nwpasswd.dll
nwpsrv.dll
nwrrnsp.dll
nwsetup.dll
nwshellx.dll
nwsipx32.dll
odiload.vxd
odinsup.sys
odipage.dll
prtwin16.dll
prtwin32.dll
tli_spx.dll
tli_win.dll

Changes to System Files

Autoexec.bat File

Setup removes lines from autoexec.bat that reference the following:

IP
NETX
SERVER
STARTNET
VLM

Setup also removes the nwclient folder from the SET PATH statement.

Config.sys File

Setup removes the following line from config.sys:

`LASTDRIVE=drive letter`

System.ini File

Setup adds the following lines to the [386Enh] section of system.ini:

`NWHOMEDIR=[drive]\novell\client32`
`FileSysChange=Off`

Note: NWEnableLogging is a feature that logs status messages from the Novell Client. You can set the path and filename for the log from the Log File parameter in the Network control panel Advanced Settings page.

Netdef.inf File

Setup sets the `NetClient=` line to `NOVELL32`.

Changes to the Windows Registry

The Novell Client for Windows 95 makes several changes to the Windows registry. You can reverse these changes by removing the Novell Client software. The .inf files document all changes Setup makes to the registry. For information on .inf file syntax, see Microsoft's Driver Development Kit.

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