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What's New in NetWare 4.01

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This AppNote outlines the differences in NetWare 4.01, a maintenance release of the NetWare 4.0 operating system. It discusses enhancements to NetWare Directory Services, support for multiple languages, OS/2 Presentation Manager utilities, NetWare for Macintosh 5-user bundling, and the updated Virtual Loadable Modules (VLMs). It also summarizes changes to the NetWare 4.01 utilities and user documentation.

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Introduction

In July 1993, Novell began shipping NetWare 4.01, a maintenance release of the 4.0 operating system. NetWare 4.01 significantly enhances the NetWare 4.x product line for customers who need a solid, reliable platform on which to build global networks.

NetWare 4.01 is free to all registered NetWare 4.0 customers. For new customers, NetWare 4.01 is available in 5-, 10-, 25-, 50-, 100-, 250-, 500- and 1,000-user configurations with the same pricing as NetWare 4.0. Contact your Novell reseller for more information on pricing and availability.

Note: Customers who register their NetWare 4.01 purchase (be it a new purchase, upgrade, or OEM purchase) before Oct. 31, 1993, will receive all enhancements to the operating system--including all updates and revisions--at no charge through April 30, 1994. This promotion lets customers immediately reap the benefits of NetWare 4.01 while ensuring that their purchase remains up to date. (NetWare Premium customers also qualify for this promotion.)

New Features of NetWare 4.01

NetWare 4.01 is sometimes referred to as the international release of NetWare 4.0, because it includes numerous foreign language modules. It also features several underlying enhancements to NetWare Directory Services, the technology that enables users and administrators to see the network as a single cohesive entity rather than a series of individual servers.

Besides these two main enhancements, NetWare 4.01 fixes a number of bugs from NetWare 4.0 and adds:

- Graphical utilities for the OS/2 Presentation Manager platform
- A five-user stratification of NetWare for Macintosh
- Updated versions of the Virtual Loadable Modules (VLMs) for DOS and Microsoft Windows clients

These enhancements and additions are detailed in the sections that follow.

Enhancements to NetWare Directory Services (NDS)

In NetWare 4.01, NetWare Directory Services has been enhanced to make it even easier for customers to create large networks that span different geographic locations. These changes are all internal code modifications; nothing is different as far as how NDS appears to the user in the installation and administrative utilities.

Performance and Manageability Improvements. Based on customer input, Novell has enhanced NDS to provide:

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- Faster synchronization
- Greater scalability
- Self-repairing capabilities
- Better internetworking support

For example, if you follow a move with a re-move of the same object (because it was moved to the wrong container), it might take up to five minutes to clean up all of the references to the previous object. This represents a dramatic performance improvement over NetWare 4.0, in which the same operation could take as long as an hour to complete.

Novell still highly recommends that partition management and server move operations be performed at times when network utilization is at a minimum, due to the comprehensive and complex nature of these operations. When working with replica management, be patient for the work to complete. The larger the partition, the more servers that hold a replica of the partition; and the more changes that you make, the longer it takes for total synchronization within the network.

Enhancements for the Future. Besides these enhancements, several underlying mechanisms have been added to NDS that will enable Novell and third parties to provide powerful network administration tools in the future. For example, Novell will use the new capabilities built into NDS to provide tools that help network administrators easily modify their directory structure.

Novell also plans to provide bindery-directory synchronization software that will more tightly integrate NetWare 4.x with NetWare 3.x. This software will help companies phase NetWare 4.x into their production environments, allowing them to move step-by-step toward a higher level of network functionality without disrupting their current network or their employees' productivity. The software will also simplify network administration by allowing network supervisors to use the NetWare 4.x directory and utilities to administer NetWare 3.x networks.

No Backward Compatibility with NetWare 4.0. Some of the enhancements made to NDS in NetWare 4.01 are not backward-compatible with NetWare 4.0. Consequently, Novell recommends all NetWare 4.0 customers take advantage of the NetWare 4.01 upgrade. Customers who have purchased and registered NetWare 4.0 will receive NetWare 4.01 automatically and free of charge. Novell will continue to improve NDS to meet its customers needs, and all future enhancements will maintain backward compatibility with NetWare 4.01.

Time Synchronization. The TIMESYNC.NLM does not ship as a separate module with NetWare 4.01. This prevents it from being inadvertently unloaded, as was possible in NetWare 4.0. NDS requires time synchronization in order to function properly.

Support for Multiple Languages

The NetWare 4.01 CD now includes language modules that provide NetWare in five languages: French, Italian, German, Spanish and English. This international language support makes it easier and more practical for companies to use NetWare in their offices worldwide. Users and administrators can quickly and easily select the language in which they see NetWare utilities, help screens, messages, and online documentation. Users on the same network can select different languages.

Note: In addition to the five languages provided in NetWare 4.01, Novell plans to release language modules for Japanese, followed by Korean, Portuguese, and Chinese. In the future, third parties will be able to use Language Development Kits (LDKs) to provide NetWare language modules not offered by Novell.

NetWare 4.x servers can also be configured for locale specific formats of date and time, currency, sorting

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tables, upper case tables, and legal filename characters. This configuration is done during the installation process.

Graphical Utilities for OS/2 Presentation Manager

NetWare 4.01 includes graphical utilities for the OS/2 Presentation Manager platform. Now, whether they're using Microsoft Windows or OS/2, administrators and users have graphical tools that make it much simpler to use and administer network resources. (This includes the PM Administrator referred to in the NetWare 4.0 documentation as not being available yet.)

Five-User Version of NetWare for Macintosh

NetWare 4.01 includes a five-user version of NetWare for Macintosh 4.0, which allows any Macintosh user to log in to a NetWare server and enjoy the same NetWare benefits as DOS, Microsoft Windows, UNIX, and OS/2 users. (An unlimited-user version of NetWare for Macintosh 4.01 is available separately.)

New features of NetWare for Macintosh 4.01 include:

- CD-ROM access

  A separate NLM is included to provide network access to CD-ROM drives that use the Macintosh-specific file system.

- DOS-to-Macintosh application mapping

  An Extension Mapper utility allows Macintosh users to create and configure their own lists of mappings between filename extensions and Macintosh applications. Different Macintosh users will then be able to see the same file with different icons, which they can double-click on and launch different applications. For example, a file created with WordPerfect on a DOS PC can be viewed as a Word file by one Macintosh user, or as a MacWrite file by another, depending on each user's list of mappings.

- Enhanced print services

  New NetWare for Macintosh 4.01 print services features include a new server utility, ATPSCON.NLM, with which administrators can set operational parameters for AppleTalk print services on NetWare; a new printing module that allows PSERVER.NLM to print to AppleTalk network printers; enhanced PostScript printer emulation, Laser Prep support for non-binary communication channels, font handling, and printer accounting; and more.

- Optional routing services

  NetWare for Macintosh 4.01 operates by default in a no-router mode. If routing services are desired, the administrator can configure and start the router. Numerous other AppleTalk network services have been enhanced as well.

- New administrative utilities and user tools

  NetWare for Macintosh 4.01 is configurable through a new server utility, INETCFG.NLM, which administrators can use to set operational parameters for AppleTalk networking on NetWare. The product also includes a new set of Macintosh workstation utilities functionally similar to those provided with previous releases of NetWare for Macintosh.

Updated Versions of the Virtual Loadable Modules (VLMs)

NetWare 4.01 contains version 1.02 of the NetWare VLMs for DOS and Microsoft Windows clients. (These updated VLMs can also be downloaded from NetWire, Novell's forum on CompuServe, at no additional charge.)

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If you use NetWare 4.0 utilities (those that you received with NetWare 4.0) with the new NetWare 4.01 VLMs (version 1.02), add the following line to the NetWare DOS Requester section of NET.CFG:

LOAD CONN TABLE LOW = ON

This guarantees that connection table information is loaded into conventional memory.

Novell highly recommends that you upgrade the NetWare 4.0 utilities to NetWare 4.01 utilities as soon as possible. You can upgrade the utilities either while upgrading the operating system or afterwards. To upgrade the utilities later, load the INSTALL.NLM, choose the Maintenance/Selective Install option, and then choose the Copy Files option.

NetWare 4.01 Utilities

Several of the NetWare 4.0 utilities have been enhanced or modified in NetWare 4.01. The following sections summarize some of these changes. Refer to the NetWare 4.01 Read Me file for more detailed information.

Installation

We have found that some DOS drivers do not function properly when installing a server over the network when you use the driver in combination with a VLM requester. For example, if you use the Novell NE3200.COM driver in combination with VLMs, the driver hangs when copying server files. However, the driver does work properly when used in combination with a NETX shell.

To solve this problem, use a NETX shell if you have one available, or try a different LAN adapter/driver.

2XUPGRDE.NLM

NetWare 4.01 ships with version 1.10 of the In-Place Upgrade NLM. Numerous enhancements have been made since the previously released version 1.00. These are listed below:

- Fixed all problems listed in the README file for version 1.00.
- Made some text changes on the screens and added color.
- Added the /BATCH2 option to not pause on non-critical errors.
- Added the /BINDERY option which allows you to restart the upgrade if the SYS volume won't mount (which causes the 2.1x bindery to not get upgraded). Using this option, you can restart the upgrade and skip directly to the Bindery phase.
- Added several new error messages.
- Added a command-line error locator.
- Added the ability to easily exit the upgrade whenever the screen pauses.
- Enhanced the NLM to work with the NetWare 3.1x operating system.
- Enhanced the NLM to quickly estimate the memory needed to upgrade during System Analysis.
- Enhanced the NLM to detect if the MAC.NAM module needs to be loaded during System Analysis.
- Made more efficient use of memory, thus reducing the size of the NLM.
- Enhanced the NLM to rename the server object in the bindery if the server is renamed.

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- Enhanced the NLM to no longer upgrade dynamic bindery objects, such as advertising servers.
- Enhanced the NLM to format the random password file (NEW.PWD) better and shorten random passwords to their original length.

The following files are available in the self-extracting 2XTO3X.EXE file that can be found on NetWire in NOVLIB Library 6. Future updates to the 2XUPGRDE.NLM will be uploaded to NetWire.

2XUPGRDE.NLM	In-Place Upgrade NLM version 1.10
2XUPGRDE.DOC	In-Place Upgrade manual in ASCII
ERRORS.DOC	In-Place Upgrade system messages in ASCII
README.UPG	Readme file detailing latest changes

It is strongly recommended that you read the detailed readme file prior to attempting the in-place upgrade.

Updated disk drivers included on the NetWare 4.01 UPGRADE diskette are listed below:

DCB.DSK 02-02-93
IDE.DSK 04-08-93
ISADISK.DSK 02-09-93
PS2ESDI.DSK 02-09-93
PS2SCSI.DSK 02-04-93 (this driver is the same as PS2OPT.DSK used in NetWare 3.1x, but with 4.0x function calls)

UIMPORT

The UIMPORT utility for NetWare 4.01 correctly imports a user's home directory information from the data file. This means that you can specify a home directory volume and path in the control section of the control file, as in NetWare 4.0, or you may import it from the data file. See the UIMPORT section of the NetWare 4.01 Read Me document for more information.

Backup

NetWare 4.01 supports tape drive technologies including 1/4-inch, 4mm, and 8mm storage devices. While most tape drives will work with the device drivers and the SBACKUP backup/restore utility provided in NetWare 4.01, Novell does not precertify any tape drives for use with NetWare.

Novell's internal system of qualification and testing exercises tape storage devices to a reasonable extent. However, Novell encourages all users to contact Novell Labs for a lsit of tape drives that have been certified as Yes, Tested and Approved with NetWare 4.01 to ensure reliable operation.

Documentation

The NetWare 4.01 online documentation is unchanged from NetWare 4.0. The only difference is that NetWare 4.01 comes with a new Read Me document that is available online as the Release Notes book in ElectroText format. We suggest you print this document and read it carefully before installing or upgrading to NetWare 4.01.

The NetWare 4.01 CD also contains online versions of the April 1993 special NetWare 4.0 edition of the NetWare Application Notes, as well as the Integrating NetWare and Windows 3.1 Research Report and the Communication Basics and Open Data-Link Technology AppNote from the November 1992 issue.

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