

3.2 Release Notes:

Novell® NetWare®

This file contains information about the NetWare client software for NEXTSTEP Release 3.2. The NetWare client is substantially unchanged from Release 3.1. It allows NEXTSTEP users to access files and printers on NetWare servers.

- Files on the NetWare server appear in the Workspace Manager's File Viewer in **/Net/NetWare**.
- Printers on the NetWare server appear in the Print panel.

New features for Release 3.2

This release includes a NetWare UNIX Client NetWare Loadable Module (NUC.NLM) that provides UNIX file name support for both NetWare 3.11 and 4.01 servers. This NLM and related support files give NEXTSTEP clients access to volumes configured with the NFS (UNIX) namespace. Volumes configured only with the default (DOS) namespace are always available regardless of whether or not this NUC.NLM is loaded.

This release also includes two separate NFS (UNIX) namespace modules (NFS.NAM) for 3.11 and 4.01 servers. Done for each version of server. Adding the NFS (UNIX) namespace to a NetWare volume allows an authenticated user using a NEXTSTEP

client to use a NetWare volume very much like a standard UNIX volume with the associated directory and file permissions and UNIX file names.

To help fix any problems that might occur in the NFS (UNIX) namespace, a new NetWare Loadable Module V_NFS.NLM is also provided with this release. Load this NLM before running VREPAIR to repair a corrupted NetWare volume that the NFS namespace is installed on. The standard VREPAIR.NLM doesn't repair problems in the NFS namespace.

Instructions for installing the NUC.NLM and NFS (UNIX) namespace modules on a NetWare server are given below.

Installing the new NLM and namespace modules on NetWare servers

Follow these instructions instead of those given in Chapter 11 of the *Network and System Administration* book under "Configuring the Netware Servers."

Overview

This process first copies information onto a DOS floppy disk from the **/netware/lib/nuc** directory of the *NEXTSTEP Release 3.2 CD-ROM*. Information from the floppy disk is then installed on the NetWare server using the server's INSTALL.NLM, which installs or updates the necessary files on the server's DOS boot device (for example, C:\SERVER.40) and on the SYS: volume. Finally, the NFS namespace is added to volumes that require UNIX file name support.

Before starting

Make sure that the NetWare server you're using is running NetWare release 3.11, 4.01, or later. Installing these NLMs on other incompatible servers, including Release 4.00 servers, can crash and/or corrupt the servers.

Your NetWare server is easier to maintain if you don't add the NFS (UNIX) namespace to the SYS: volume. Since the SYS: volume is the boot volume for NetWare, adding the NFS namespace to the volume complicates the VREPAIR process should the volume ever become corrupted. Add the NFS namespace to separate non-boot volumes, instead.

Building the floppy disk

1. Format a 1.44 megabyte floppy disk with a DOS file system, and name the disk **NUC**. The procedure doesn't work if the disk doesn't have this name.
2. Insert the *NEXTSTEP Release 3.2 CD-ROM* in the CD-ROM drive. In the File Viewer, open the **/NEXTSTEP_3.2/usr/netware/lib/nuc** directory on the CD-ROM.
3. Select all the files and directories in **/NEXTSTEP_3.2/usr/netware/lib/nuc**, and copy them to the DOS floppy disk.
4. Select the floppy disk and choose Eject from the Workspace Manager's Disk menu. When prompted, remove the floppy disk from the disk drive.

Installing and upgrading the NLM

The following steps should be performed only by an experienced NetWare system administrator.

1. Insert the DOS floppy disk you just built in the NetWare server's floppy disk drive.
2. Type **LOAD INSTALL** at the server's console prompt.
3. Select "Product Options" in the menu.
4. Press the Insert key. When prompted for a pathname, give the name of the disk drive that the disk is in (for example, **A:**).
5. A message names the files that the Install program is copying. If a file already exists—for example, an older NLM—Install asks for confirmation before replacing the file. Answer **yes** to install the new version.
6. When prompted with the Install/Update/Exit option, select *Update->File Transfer* to install the remainder of the update files (NUC.NLM, NFSUSERS, NFSGROUP, NFSPARAM, and so on).
7. If the AUTOEXEC.NCF file isn't already loading NUC.NLM, choose the *Update->Configuration Setup* option to have this operation added automatically, or choose AUTOEXEC.NCF from *Update->Edit Config Files* to add the necessary command manually.
8. To make any necessary changes to NFSUSERS, NFSPARAM, NFSGROUP files, choose *Update->Edit Config Files*.

Installing the NFS namespace on a NetWare volume

The Install program installs the appropriate namespace module in the server's SYS:/system directory and on its DOS boot partition. It also installs the appropriate

version of V_NFS.NLM.

1. At the NetWare console prompt, type **VOLUMES** to see the namespaces currently installed on the server's mounted volumes.
2. If NFS.NAM isn't already loaded (typically you set up your server to load it from STARTUP.NCF), type **LOAD NFS.NAM** to load the NFS namespace module on the server's context.
3. To add the NFS namespace to a mounted NetWare volume, enter the following command from the NetWare console. Replace *volume_name* with the name of the volume to be modified.

```
ADD NAME SPACE NFS TO VOLUME volume_name
```

4. Make sure each NEXTSTEP user who will access the server has a corresponding NetWare user account. Then edit the file SYS:/etc/nfsusers to list NEXTSTEP user IDs with the corresponding NetWare user names, like this:

```
101 CARLA
```

5. Make sure that NEXTSTEP user groups have corresponding NetWare user groups. At a minimum, create a NetWare user group for the default group for each NEXTSTEP user who will access the NetWare server. Then edit the file **SYS:/etc/nfsgroup** to map a list of NeXT group IDs with the corresponding NetWare group names, like this:

```
20 EVERYONE
```

Changes made to nfsusers and nfsgroup will take effect the next time the server

boots.

Important: When you create a directory on the NetWare server to be accessed by NeXT users, log into a NEXTSTEP computer and, in the Terminal application, use the **chgrp** command to change the group associated with the directory. By default, NetWare directories are assigned the group **nogroup**, and all files and directories created under the directory inherit this group. By changing the group on the parent directory, you make sure that any subdirectories created on a NEXTSTEP computer inherit an appropriate group. If you don't change the group associated with the directory, users may not be granted permissions to rename or delete any files they create.

Known problems with installing the NLM and namespace modules

- The NetWare INSTALL utility's *Update->configuration setup* option adds the line LOAD NUC.NLM to AUTOEXEC.NCF whether or not it's already there. Remove any redundant copies of this command to avoid warning messages during server startup.
- After running Install, you must select the UPDATE utility to install NUC.NLM on the server's SYS:/SYSTEM volume as well as the NFSUSERS, NFSGROUP, or NFSPARAM files.
- The NUC.NLM loaded on a 4.x server generates the following warning on the server console during the install process: "SERVER-4.00-1587: This module is using 1 outdated API call. You should upgrade to a newer module when it becomes available."
This warning appears because NetWare is using one NLM that works for both 4.x and 3.11. You can ignore this message.
- Server can not read the NLM from the floppy disk: Problems have been reported

reading floppy disks with some revisions of server software. An alternative procedure is to down the server, use XCOPY to copy all of the files into a directory on the DOS partition of the server's boot disk (for example, C:\NEWNUC), bring the server back up, and proceed as before. When prompted for a pathname, however, give the pathname to the directory on the DOS partition. Note that it does *not* work to copy the files to a NetWare partition such as the SYS: volume. The installation procedure can only read floppy disks and DOS partitions.

- Though the Install program advertises that help is available at any time by pressing F1, some menus don't have corresponding help entries.

Characterstics of this release

This version of NetWare software has the following characteristics:

- Authentication: Before accessing files or printers, the user must log in to each NetWare server. When the user clicks an entry in Workspace Manager's File View that represents a NetWare server to which he or she is not logged-in, a panel pops up prompting for login. The user can also use the NetWareManager application, located in **/NextAdmin**. Launch it, double-click on the server of interest, then enter your *NetWare* (not NEXTSTEP) user name and password. From the command line you can use

```
/usr/netware/bin/nwlogin servername/username
```

and

```
/usr/netware/bin/nwlogout servername
```

- Installation: By default, NetWare is not installed. To install it, run NetWareManager, and click Enable on the panel that comes up. The next time you reboot, NetWare will be loaded. To de-install NetWare, run NetWareManager, use the Disable NetWare menu item (under Configuration), then reboot. To enable printing, use the

configuration menu option in NetWareManager. Only PostScript printers are recommended. Non-PostScript printers can be configured, although they can only print jobs which are generated outside of NEXTSTEP applications. This can be done from the command line, or from PC applications running under SoftPC.

- Print server selection: When configuring a NetWare printer, you will use a browser to select the file server, print queue and print server. Usually, ^aany^o is the best choice for the print server. Choose a specific print server only when the print queue is served by multiple print servers and you need to direct your print jobs to only one of those print servers. Users of NetWare 286 who are using both core printing and PSERVER.VAP are advised not to choose names for their PSERVER.VAP print servers which are the same as names of file servers. Print jobs sent to printers whose print server configuration has one of these conflicting names selected will always be sent to the PSERVER.VAP print server, and never to the core printing printer.
- Server list restriction: If the administrator configures a netinfo directory **/locations/NetWare**, and adds a property **VisibleServers** to that directory, he or she can then add a list of server names as values for that property. Only those servers will appear in the file viewer. This is useful for networks that are so large that having all of the servers appear in the file viewer degrades system performance. In a multi-level netinfo system, all of the servers which are listed in any domain between the local and **root** domains (inclusive) will appear in the browser. If no servers are listed in **/localconfig/NetWare** or the directory does not exist, all servers will appear.
- NetWare broadcast messages: These do not appear on the NetWare client by default. They are handled as syslog messages from facility ^alocal6^o at level ^anotice^o. Adding the line

```
local6.notice *
```

to **/etc/syslog.conf** will make these messages appear on all terminal screens and on the console. See the man page for **syslogd(8)** for more information on **/etc/syslog.conf**.

- **RESTRICT.NLM:** Users of Novell's Netware Loadable Module **RESTRICT.NLM** for version 3.11 servers may need to specify which local server should be used as the reference for finding the list of 'all' servers. They can do so by editing **/etc/rc** to pass in a command line argument to **sapd**. For example to specify **GALAXY** as the reference server, replace the line

```
/usr/netware/etc/sapd && (echo ...
```

by

```
/usr/netware/etc/sapd -s GALAXY && (echo ...
```

NetWare version 3.11 and 4.01 compatibility

This release includes a new NetWare Loadable Module (NUC.NLM), version 1.10b that is compatible with both NetWare release 3.11 (or newer) and release 4.01 (or newer) servers. Also included in this release are NFS namespace modules (NFS.NAM) for those servers.

File name compatibility

NetWare 286 supports only DOS-type file names (^axxxxxxx.yyy^o). The NEXTSTEP NetWare client will reject file operations using longer UNIX file names. Some operations on names which look OK will fail because the applications performing the operation simultaneously try to create files with longer file names (like backup files whose names end in ^a~^o).

Both NetWare 3.11 and 4.01 servers are capable of supporting full UNIX file names, provided that the server is running NUC.NLM and NFS.NAM and the NFS namespace has been added to the appropriate volume(s). The files **etc/nfsusers**, **etc/nfsgroup** and **etc/nfsparam** on the file server's SYS volume must also be set up. The system

administrator can configure each volume on the server for DOS names or for NFS (UNIX) names, so the behavior of different volumes on the same server may differ.

Known problems

The following are known problems in NetWare.

- In NetWare, the concept of read-only files is enforced more strictly than in UNIX. In some cases where in NFS the superuser can overwrite a file, in NetWare the file mode must first be changed to allow writing.
- In order for a setuid program (for example, **lpr**, owned by **root**) to gain access to files on a NetWare server, you must use NetWareManager to authenticate the user under whose uid the program runs.
- Portable NetWare rev. 3.11 for machines with Intel-type byte ordering responds incorrectly to some queries about file sizes (the byte order in the file length is reversed). This can give rise to a variety of strange effects, including not being able to execute a file which resides on such a server. The next release of Portable NetWare from Novell (release 3.11a) will correct this problem.
- With NetWare 2.2 servers, sometimes the UNIX access permissions associated with a directory's parent directory are returned to the client, rather than those of the directory itself. This can result in users occasionally not being able to write or delete files in NetWare directories.
- In a Terminal window, when the current directory is on a NetWare server, you can't **su** to another NEXTSTEP user name (such as **root**) unless that NEXTSTEP user is already authenticated to the NetWare server. You don't get an error message—the **su** just doesn't happen.
- The NEXTSTEP client will plug-and-play with NetWare 2.15c, 2.2, 3.11, and 4.01 servers exporting DOS only volumes which do not have the NFS namespace

installed. If the server is running Novell's NFS product, the NEXTSTEP client will only work properly if the NFS namespace NLM (NFS.NAM) is upgraded to version 1.2 or newer and if NUC.NLM rev 0.89a or later is installed. You should upgrade to the versions of these NLMs provided with this release of NEXTSTEP—that is, NUC.NLM rev 1.10b and NFS.NAM rev 1.20b for NetWare release 3.x, and NFS.NAM rev. 1.27b for NetWare release 4.x. As Novell releases future updates of these NLMs, information on how to obtain them will be provided in NextAnswers.

- Printer configuration: Assigning two printers the same name with the NetWareManager application will corrupt the printcaps information in the Netinfo database and disable printer support.
- Macintosh interoperability: Problems using the NFS and Macintosh namespaces on the same NetWare volume have been reported and investigation into the problem is ongoing. As more information is available, it will be provided in NextAnswers.
- When you rename a file that's accessible by more than one name (due to hard links added to the file), it may look like the file has disappeared entirely. This is a caching problem on the client. After the cache times out, usually in a minute or so, the file will reappear with its new name.
- If any volume on a NetWare server is linked against an NFS namespace (NFS.NAM), you may need to edit a time zone value in the NFSPARAM file. This file is located in the /ETC directory on the server's SYS: volume. The time zone value appears like this:

TIME_ZONE 8

The integer is the number of hours deviation from Greenwich Mean Time. The value can range from -12 to 12 hours, where locations east of England and west of Hawaii are represented by negative values. For example, the initial setting of 8 represents

Pacific Standard Time (PST), 0 is Greenwich time, 5 is Eastern Standard Time (EST), and Moscow is -4. After editing the file, reboot the server for the new time zone to take effect.