HP 9000 Networking

NetWare® 4.1/9000 Utilities Reference

HP Part No. J2771-90013
Printed in U.S.A. 12/96

Edition 1

Notice

Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. This product is based in whole or in part on technology developed by Novell, Inc

Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard

Hewlett-Packard Co.
19420 Homestead Road
Cupertino, CA 95014 USA

Printing History

The manual printing date and part number indicate its current edition. The printing date will change when a new edition is printed. Minor changes may be made at reprint without changing the printing date. The manual part number will change when extensive changes are made.

Manual updates may be issued between editions to correct errors or document product changes. To ensure that you receive the updated or new editions, you should subscribe to the appropriate product support service. See your HP sales representative for details.

First Edition: December, 1996

How to Use this Manual

Purpose

This manual provides reference information about NetWare Services utilities. You should be familiar with the platform you are using and with NetWare terms and concepts (see *Concepts*).

For step-by-step instructions on completing tasks, use online help or refer to Supervising the Network and any other manuals that apply to your specific tasks.

Command Syntax

The command syntax shows what you must type to use the command. The following example demonstrates command syntax:

```
nwcommand [“message” [[TO] [username | group name | server name]]
```

The following table lists and explains the command syntax conventions.

Convention	Explanation
nwcommand	Type in the word. You can enter workstation commands in either uppercase or lowercase letters. For server commands, however, you must type in the command exactly as shown.
[ ]	Square brackets indicate that the enclosed item is optional. You can enter the command with or without the item. Options for each command are listed with the command. Options can often be abbreviated.
|	A vertical bar means “either, or.” You can use either the item to the left of the bar, or the item to the right, but not both.

Convention	Explanation
username	Words that appear in italics are variables. They should be replaced with the information pertinent to your task. In the nwcommand example, you would replace username with the name of the user you want to send a message to.
<Enter>	The angle brackets indicate that you should press the key whose name appears between them.
[[ ]]	Nested square brackets indicate that all enclosed items are optional. However, if you use the items within the innermost brackets, you must also use the items within the outer brackets.
...	Three dots indicate that you can enter one or more options.

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

1

Overview

Introduction

This chapter describes the following types of NetWare utilities and when to use them:

- Workstation utilities
- Server utilities

Before you use any NetWare utilities, you should understand basic information about NetWare Directory Services™ (NDS™). See "Understanding NetWare Directory Services" in *Introduction to NetWare Directory Services*.

Workstation Utilities

Use the workstation utilities on a Windows®,WIN 95, NT, or DOS client workstation. These utilities are described in Chapter 2.

NOTE: The utilities, or commands, you would use on a NetWare 4.1/9000 client are listed in Appendix B of this document.

Utilities for Windows

NetWare Administrator is a graphical utility that allows you to perform all NetWare workstation tasks (except logging in and drive mapping) through Windows 3.x.

Tasks you can perform with NetWare Administrator include the following:

- Viewing lists of files, directories, and objects
- Copying and printing files
- Creating and deleting objects
- Granting and revoking file system and object rights
- Managing partitions

NOTE: You can set up drive mappings using login scripts.

Utilities for DOS

The DOS utilities are available to all users who have necessary rights. Tasks you can perform with DOS utilities include the following:

- Viewing lists of files, directories, and objects
- Copying and printing files
- Creating and deleting objects
- Granting and revoking rights
- Logging in to and out of the network
- Mapping drives
- Managing partitions

Server Utilities

NetWare administrators use server utilities to maintain the network. These utilities are available from the server console or from a Remote Console™. The server utilities are described in Chapter 3.

Tasks you can perform with server utilities include the following:

- Configuring the server
- Starting and stopping the server
- Checking server status
- Installing and deleting Directory Services (DS)
- Installing and deleting NetWare server user licenses
- Creating and deleting NetWare volumes
- Displaying statistical information

2

Workstation Utilities

Introduction

This chapter describes command line and menu workstation utilities, as well as the NetWare Administrator graphical user interface (GUI) utility.

This manual does not provide step-by-step instructions. Each utility has online help that explains how to complete tasks:

- For menu utilities, press <F1> after you enter the utility.

For command line utilities, type the command name followed by /?. For example,

CAPTURE /?

All workstation utilities work with DOS.

ATOTAL

Purpose

Use at a workstation to total the accounting charges on your network.

Syntax

```
ATOTAL [/? | /VER]
```

Parameter	Use to
/?	View online help. (Other parameters are ignored).
/VER	View the version number of the utility and the list of files it uses to execute. (Other parameters are ignored.)

Additional Information

Topic	See
Accounting	"Accounting" in *Concepts*

CAPTURE

Purpose

Use at a workstation to set printer and printing parameters. CAPTURE allows you to

- Redirect screen displays to a network printer.
- Redirect DOS print jobs to a network printer from an application designed to print to workstation printer ports.
- Redirect data to a network file.
- Define how a job is printed.

Syntax

```
CAPTURE [P=printer | Q=queue] L=port number [option...] [/? | /
VER]
```

Parameter	Use to
P=printer	Specify which printer the print job should be sent to (specify a default in PRINTCON).
Q=queue	Specify which queue the print job should be sent to (specify the default at the NetWare server console or in PRINTCON).
L=port number	Specify the LPT port you want captured. You can specify LPT1: instead of L=1. A NET.CFG option allows up to nine LPT ports.
option	Specify one or more options from the “CAPTURE Options” table.
/?	View online help. (Other parameters are ignored).
/VER	View the version number of the utility and the list of files it uses to execute. (Other parameters are ignored.)

CAPTURE Options

Option	Use to
SH (Show)	View the current status of printer ports. Do not use with other options.
S=NetWare server	Specify which NetWare server the print job should be sent to. Default: current server (bindery server).
ECCA (Endcap Cancel)	End the capture of data to LPT ports and discard the data sent to the print queue. If the data was captured to a file and cancel is omitted, the file remains open and cannot be accessed.
CR=path	Create a file in which to store printed data. To create the file in your current directory, replace path with just the filename.
ALL	End the capture of all LPT ports when used with Endcap. View all online help screens when used with the “Help” option.
V (Verbose)	View more information about the printer, print queue, and print job configuration than is provided with the “Show” option.
K (Keep)	Keep captured data at the print queue if the workstation fails.
J=job name	Specify the PRINTCON job configuration to use; does not require other options.
NB	Print no banner page.
B=banner name	Specify the text that will appear in the lower half of the banner page. Limit: 12 characters.
NAM= username	Specify the text that will appear in the upper half of the banner page. Limit: 12 characters.

Option	Use to
F=form name or number	Specify the form name or number that the printer will use. CAPTURE will not function with an invalid form name. If you specify an invalid number, CAPTURE gives a warning message but still prints.
C=n	Specify the number of copies. Range: 1 to 255. NPRINT, PCONSOLE, PRINTCON print job configurations allow up to 65,000 copies.
T=number	Specify the number of spaces that replace each tab in a text print job. You do not need this option for byte-stream print jobs. Default: 1. Range: 1 to 18.
NT	Specify that no spaces be allocated to tabs in a text print job.
TI=n	Specify the number of seconds the operating system should wait after the last data is received before closing the print job. Range: 0 to 1000.
FF	Specify that the printer add blank paper at the end of the print job.
NFF	Specify that the printer not add blank paper at the end of the print job.
AU	Specify that the captured data be closed and sent to the printer after exiting an application.
NA	Specify that captured data not be closed and sent to the printer after exiting an application. This allows more information to be added to the print job.
NOTI	Specify that the user receive a message when the print job is printed.

Option	Use to
NNOTI	Specify that the user does not receive a message when the print job is printed.

Using CAPTURE

- Default options include Banner (B=banner name), Autoendcap (AU), No Tabs (NT), and Form Feed (FF).
- All options function with a preceding forward slash (/), but only the “Help” option requires it (/?).
- Because CAPTURE settings must be reset each time you reboot your computer, consider placing them in the system or individual login scripts.
- NetWare 4™ allows you to specify the printer name instead of a print queue. You can still capture to print queues.
- You can type CAPTURE without any options if a default print queue is specified at the NetWare server or in a default print job configuration.
- You do not need to use CAPTURE if you use a NetWare-aware application that can send print jobs to specified printers or print queues.
- CAPTURE redirects printing only with the LPT ports; you cannot specify a COM port.
- The NET.CFG file includes a “network printers=number” option. Replace number with the number of printers (0 to 9) you would like to access at the same time. Default: 3.

  If you specify a print job configuration that has a complex printer mode, you might need to increase the bytes (default: 64; range: 0 to 255) in the “printer header=number” option. See “NET.CFG Options Reference” in the NetWare Client for DOS and MS Windows Technical Reference.

Examples

To	Type
View current capture	CAPTURE SH
Capture to network printer P1	CAPTURE P=P1
Capture to print queue Q1	CAPTURE Q=Q1
End a capture	CAPTURE EC
Use print job configuration CHARTS	CAPTURE J=CHARTS
Print to a file that you name REPORT	CAPTURE CR=REPORT
Print to printer SALES without a banner	CAPTURE P=SALES NB
Redirect printer output to printer by Karl without a banner.	CAPTURE P=“PRINTER BY KARL” NB
View online help	CAPTURE /?

Additional Information

Topic	See
CAPTURE	“Using CAPTURE” in *Print Services*
Print queues	“Print queue” in *Concepts*
Print servers	“Print server” in *Concepts*
Printers	“Printer” in *Concepts*

COLORPAL

Purpose

Use at a workstation to change the color of menu elements. COLORPAL allows you to change the color for the following:

- Active Window border
- Active Window Text
- Alert Window Text and Border
- Background and Inactive Windows
- Error Window Text and Border
- Help Window Border
- Help Window Text
- Key Description
- Key Name
- Quick Help Area
- Screen Header
- Selection Bar

Syntax

```
COLORPAL
```

Using COLORPAL

- Unless you set your own color combinations with COLORPAL, the default colors (or colors set by the network supervisor) are displayed.
- Menu elements set with COLORPAL are saved to the IBM_RUN.OVL file. The following rules apply:
    - You must have the Write right to the IBM_RUN.OVL file.
    - The file must reside in the directory you run NetWare text utilities from (including the NMENU utility). By default, the IBM_RUN.OVL file is in

SYS:PUBLIC.

- The colors used by any NetWare text utility are determined by the copy of IBM_RUN.OVL found when the utility executes.
- You can have multiple copies of IBM_RUN.OVL in multiple directories. Each copy of the overlay file can have different menu element settings, providing different menus with varying color combinations.

CX

Purpose

Use at a workstation to view or change your context, or to view containers and leaf objects in your tree structure.

Syntax

```
CX [new context] [/R] [/T | /CONT | /A] [/C]
[/?| /VER]
```

Parameter	Use to
(no parameter)	View the current context.
new context	Move to a new context or specify the context you want for an option.
/R	List containers at the root level, or change context in relation to the root.
/T	List containers below the current context or a specified context in a tree structure.
/CONT	List containers at the current context or a specified context in a vertical list with no structure.
/A	Include all objects at or below the context. Use with /T or /CONT.
/C	Scroll continuously through output.
/?	View online help. (Other parameters are ignored).
/VER	View the version number of the utility and the list of files it uses to execute. (Other parameters are ignored.)

Using CX

- CX is similar to the DOS CD and DIR commands in that CX allows you to change contexts and view all objects below a given container.
- To set your new context from the root
  - Place a period in front of the new context you type; or
  - Enter the proper number of trailing periods to reach the root level; or
  - Use the “Root” option.
- CX doesn’t recognize spaces in object names. If you have spaces in container names, put quotation marks around the names or use underscores (_) in place of the spaces.

  For example, for container CORPORATE ADMIN, type “Corporate Admin” or Corporate_Admin.
- You might need to use CX before logging in to set your context to the same value as the name context specified in your NET.CFG file.

Examples

To	Type
Display the current context	CX
Back up one level in the Directory tree	CX .
From COMPANYB, move down two levels to make your context SYS.ENG.COMPANYB	CX SYS.ENG
Change your current context from TEST. COMPANYB.US to SYS.MKTG.COMPANYB.US	CX .SYS.MKTG.COMPANYB.US or CX . <Enter> CX SYSTEM
Change to the root when your context is TEST.COMPANYB	CX . . . or CX /R

To	Type
Change complete context from TEST. COMPANYB to TEST.COMPANYA	CX .TEST.COMPANYA
Show all containers in the current context	CX /CONT

Additional Information

Topic	See
Context	“Context” in *Concepts*
Root object	“Root object” in *Concepts*

FILER

Use at the workstation to manage files and directories. FILER works with the file system, not with NDS objects. FILER allows you to

- View and modify files.
- Change the current directory or server.
- View, modify, and add directories and subdirectories.
- View and modify rights for files and directories.
- View trustees for files and directories.
- Set confirmation defaults when modifying files.
- Set file attributes.
- Set notification if extended attributes are lost.
- Permanently remove deleted files from your system.
- Retrieve deleted files that have not been purged.

Syntax

```
FILER
```

Using FILER

The Browse Screen

The browse screen allows you to navigate the Directory tree, change your context, and view objects in the tree.

- To browse up the Directory tree to the parent container, choose ". (parent)."
- To view or edit the properties of the current container object, select ". (current)" and press <F10>.
- To browse down the Directory tree, choose objects with a plus (+) in front of them. When you choose a container object, you can see the objects in that container.
- To view or modify an object's properties, press <F10> on the object.

Managing File or Directory Information

You can manage each file and directory separately. For example, you can view or edit the attributes (DOS and NetWare), status fields, and lists.

Restoring Deleted Files or Directories

You can restore deleted files and directories by choosing “Salvage Deleted Files” from the initial menu. Note that you can only restore files for which you have you have Create right.

Examples

To	Do the following
Modify file or directory attributes	**1** Type FILER <Enter>. **2** Select “Manage Files and Directories.” **3** Highlight the file or directory whose attributes you want to modify. Press <F10>. **4** Select “View/Set File (Directory) Information.” **5** Press <Enter> on “Attributes.” **6** Press <F1> for help from here.
View volume information	**1** Type FILER <Enter>. **2** Select “Select Current Directory.” **3** Highlight the volume whose information you want to view. Press <F10>. **4** Select “View volume information.” **5** Press <F1> for help from here.

To	Do the following
View file or directory effective rights	**1** Type FILER <Enter>. **2** Select “Manage files and directories.” **3** Highlight the file or directory whose effective rights you want to view. Press <F10>. **4** Select “View/Set File (Directory) Information.” **5** Find “Current Effective Rights” on the form. **6** Press <F1> for help from here.
Copy a file or all files in a directory	**1** Type FILER <Enter>. **2** Select “Manage files and directories.” **3** Highlight the file or directory that you want to copy. Press <F10>. **4** Select “Copy File” (Subdirectory’s Files). **5** Enter the destination directory. **6** Press <F1> for help from here.
Purge deleted files	**1** Type FILER <Enter>. **2** Select “Purge deleted files.” **3** Press <F1> for help from here.
Salvage deleted files	**1** Type FILER <Enter>. **2** Select “Salvage deleted files.” **3** Press <F1> for help from here.

Additional Information

Topic	See
Directory attributes File attributes Hidden attribute	“Attributes” in *Concepts*

FLAG

Purpose

Use at a workstation to

- View or modify file and directory attributes to determine which operations can be performed with the file or directory.
- Modify the owner of a file or directory.
- View or modify the search mode of executable files to determine how the program uses search drives when looking for a file.

Syntax

```
FLAG path [[+ | -] attribute...] [/option...]
[/? | /VER]
```

Parameter	Use to
(no parameter)	View the status of all files in the directory.
path	Specify the path to the file or directory whose attributes or search modes you want to modify.
+ | -	Add attributes to a file or directory (with +). Remove attributes from a file or directory (with -). If neither + nor - is used, attributes are assigned to the file or directory as specified.When you add or delete multiple attributes, include a space between attribute abbreviations. If you add and remove attributes in the same command, group all + (plus) attributes together and all - (minus) attributes together.
attribute	Specify one or more file or directory attributes. See “Directory Attributes” and “File Attributes”.
/option	Specify an option from the “FLAG Options” table.
/?	View online help. (Other parameters are ignored.)

Parameter	Use to
/VER	View the version number of the utility and the list of files it uses to execute. (Other parameters are ignored.)

FLAG Options

Option	Use to
/NAME | GROUP = name	Change the owner of a file or directory.
/D	View details about a file or directory.
/DO	View or modify only directories in the specified path.
/FO	View or modify only files in the specified path.
/OWNER=name	View all files or directories owned by a user.
/M=mode	Specify search modes of executable files. (See “Search Modes for Executable Files”.)“
/S	Search the subdirectory in the specified path and any subdirectories below that level.
/C	Scroll continuously through output.

Directory Attributes

Option	Use to
ALL	Specify the Di, H, Ic, P, Ri, and Sy attributes as a group. Primarily used to assign directories these specific attributes.
Di (Delete Inhibit)	Prevent the directory from being deleted.
Dc (Don’t Compress)	Prevent the directory from being compressed (regardless of what the volume is set to).

Option	Use to
Dm (Don't Migrate)	Prevent the directory from being migrated to a secondary backup system (regardless of what the volume is set to).
H (Hidden)	Prevent the directory from being seen with a DOS DIR command.
Ic (Immediate Compress)	Compress the directory as soon as the operating system can.
N (Normal)	Specify no attributes.
P (Purge)	Purge the directory immediately when it is deleted.
Ri (Rename Inhibit)	Prevent the directory from being renamed.
Sy (System)	Prevent the directory from being seen with a DOS DIR command; also to prevent it from being copied or deleted.

File Attributes

Option	Use to
ALL	Specify the A, Ci, Di, H, Ic, P, Ri, Ro, Sh, Sy, and T attributes as a group. Primarily used to assign files these specific attributes.
A (Archive needed)	Indicate that the file has been modified since the last backup.
Ci (Copy Inhibit)	(Only for MAC files) Prevent files from being copied.
Dc (Don't Compress)	Prevent a file from being compressed (regardless of what the volume or directory is set to).
Di (Delete Inhibit)	Prevent a file from being deleted or copied over.
Dm (Don't Migrate)	Prevent a file from being migrated to a secondary backup system (regardless of what the volume or directory is set to).

Option	Use to
Ds (Don't Suballocate)	Prevent an individual file from being suballocated, even if suballocation is enabled for the system. Use on files that are enlarged or appended to frequently, such as database files.
H (Hidden)	Prevent a filename from being displayed with the DOS DIR command. The file cannot be copied or deleted.
Ic (Immediate compress)	Compress a file as soon as the operating system can.
N (Normal)	Specify the Rw attribute.
P (Purge)	Purge a file immediately if the file is deleted.
Ri (Rename Inhibit)	Prevent a file from being renamed.
Ro (Read Only)	Allow a file only to be read; it cannot be written to or deleted (in other words, Ro includes Ri and Di).
Rw (Read Write)	Allow a file to be read and written to.
Sh (Shareable)	Allow a file to be used by several users simultaneously.
Sy (System)	Prevent a filename from being displayed with the DOS DIR command. It cannot be copied or deleted.
T (Transactional)	Protect a file by using the Transaction Tracking System™.
X (Execute Only)	Prevent a file from being copied or copied over. This attribute can be assigned only to .EXE or .COM files. You cannot remove the Execute Only attribute. You must delete the file and then re-install it.

Search Modes for Executable Files

The syntax is Syntax: /M=mode Replace mode with a mode number from the following table.

Mode	Use to
0	Search for instructions in the NET.CFG file (the default mode).
1	Search the path specified in the file. If there is no path, the file searches the default directory, and then all search drives.
2	Search the path specified in the file. If there is no path, the file searches only the default directory.
3	Search the path specified in the file. If there is no path, the file searches the default directory; then if the open request is read only, the file searches the search drives.
4	Reserved; do not use.
5	Search the path specified and then all search drives. If there is no path, the file searches the default directory and then all search drives.
6	Reserved; do not use.
7	First search the path specified. If the open request is read only, the file searches the search drives. If there is no path, the file searches the default directory and then all search drives.

Status Flags

Status	Indicates (isn't modifiable by user)
Cc (Can't Compress)	The file cannot be compressed because of limited space savings.
Co (Compressed)	The file has been compressed.
M (Migrated)	The file has been migrated.

Using FLAG

You can use wildcard characters.

Examples

To	Type
Add Rw and Ic and remove Di and A from files in the directory	FLAG *.* +R W Ic -Di A
View attributes for file STUDENTS in directory SYS:\COURSE\WINTER	FLAG SYS:\COURSE\WINTER \STUDENTS
Give files in drive G: the Hidden attribute	FLAG G:*.* H /FO
Set the search mode to 7 for executable files in the directory	FLAG *.* /M=7
Set the search mode to 1 and assign files in the directory the Read Write attribute	FLAG *.* RW /M=1

Additional Information

Topic	See
Search modes	“Search modes” in *Concepts*
Directory attributes File attributes Hidden attribute System directory	“Attributes” in *Concepts*

LOGIN

Purpose

Use at a workstation to access the network by logging in to a server and running a login script.

Syntax

```
LOGIN [server/ | tree/][user] [/option...] [/? | /VER]
```

Parameter	Use to
(no parameter)	Request a login prompt.
server	Specify the server you want to log in to.
tree	Specify the tree you want to log in to.
user	Specify the username you want to log in with.
/option	Specify an option from the “LOGIN Options” table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

LOGIN Options

Option	Use to
/NS	Prevent a login script from running and prevent yourself from being logged out of other servers you are logged in to.
/S path | object name	Specify a login script file. Replace path with the path to the script. Replace object name with the object whose script you want to run.

Option	Use to
/B	Specify a bindery login.
/PR=profile object name	Specify the Profile object script you want to run.
SWAP=path	Tell Login to swap to this path when external commands are executed. (DOS only.)
/TREE	Specify that you want to log in to a tree.

Using LOGIN

- Using LOGIN to access an additional server logs you out of all other servers. Use the “No Script” option to remain logged in to other servers
- To use a login script of another object, you need the Read property right to the Login Script property of the object you want to use. This login script replaces the profile script if one has been specified for the user.
- To set your context before you log in, use CX or set your context in the NET.CFG file using the following statement:

  Name Context = “complete name”
- If you attach to a NetWare 2 or 3 server from a workstation using VLMs and you are using an expired password that has remaining grace logins, the VLMs do not properly mark the connection as authenticated.

  This might prematurely use up grace logins because utilities that attempt to use the connection will prompt you for your user ID and password to re-authenticate the connection.

Examples

To	Type
Log in to server MOUSE as user RICK without logging out of other servers you are logged in to	LOGIN MOUSE/RICK /NS

To	Type
Log in to tree TERMINAL as user RICK	LOGIN TERMINAL/RICK /TR
Log in to the Directory tree as user SAM	LOGIN SAM
Log in as user SAM and specify a Profile object to use as a login script to run	LOGIN SAM / PR=WPGROUP.COMPANYB

Additional Information

Topic	See
Creating a NET.CFG file	*NetWare Client for DOS and MS Windows User Guide*
Login scripts	“Login scripts” in *Concepts*
NET.CFG options	“NET.CFG Options Reference” in *NetWare Client for DOS and MS Windows Technical Reference*

LOGOUT

Purpose

Use at a workstation to exit the network or to log out of servers.

Syntax

```
LOGOUT [server | /T] [/? | /VER]
```

Parameter	Use to
(no parameter)	Exit the network by logging out of all servers and NDS.
server	Specify the server you want to log out of if you want to log out of one server but remain logged in to other servers or to the Directory tree.
/TR	Log out of NDS and all servers in the Directory tree, but not out of bindery servers (NetWare 2 and 3 servers).
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

Using LOGOUT

- Use LOGOUT without parameters to log out of all servers and exit the network.
- Include the server name if you want to log out of one server but remain logged in to other servers or to the Directory tree.
- LOGOUT supports wildcard characters.

Examples

To	Type
Log out of all servers	LOGOUT
Log out of server EXODUS while remaining logged in to other servers	LOGOUT EXODUS
Log out of all servers that begin with TEST	LOGOUT TEST*
Get online help for LOGOUT	LOGOUT /?

MAP

Purpose

Use at a workstation to

- View drive mappings.
- Create or change network or search drive mappings.
- Map a drive to a fake root directory for applications that must use the root directory.

Syntax

```
MAP [P | NP] [option...] drive:= [drive: | path]
[/? | /VER]
```

Parameter	Use to
(no parameter)	View drive mappings.
P	Map to a physical volume. Must be listed first or second.
NP	Overwrite local or search drives without being prompted. Must be listed first or second.
option	Specify one or more options from the “MAP Options” table.
drive	Specify the drive you want to change.
path	Specify the path you want to map a drive to. To map to a physical volume on a server that is not your default server, specify the entire path (server/volume:directory\subdirectory).
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

MAP Options

Option	Use to
P	Map to a physical volume. Must be listed first or second.
Np	Overwrite local or search drives without being prompted. Must be listed first or second.
C	Change a regular drive to a search drive, or a search drive to a regular drive.
DEL	Delete a drive mapping.
INS	Insert a search drive mapping without replacing an existing mapping.
N	Map the next available drive to the specified path.
ROOT	Map a drive to a fake root directory for applications that require rights in a root directory.

Using MAP

- If you do not include drive mappings in your login script, they will have to be manually re-created each time you log in.
- You can have up to 26 mappings, including local drives.
- Search drive mappings begin with the letter Z and continue backward through the alphabet.
- To map a search drive, use S and a number.
- If you do not want to overwrite existing search drives, use the “INS” option.
- To map to the next available search drive, use S16:=.

Examples

To	Type
View mappings	MAP
Map drive G: to SYS:\HOME\GEORGE	MAP G:=SYS:\HOME\GEORGE
Extend the mapping for drive G: above to SYS:\HOME\GEORGE\PROJECTS	MAP G:=PROJECTS
Map search drive 4 to PRUFROCK\SYS:APP	MAP S4:=PRUFROCK\SYS:APP
Delete the mapping for drive G:	MAP DEL G:
Map drive F: to HOME\TERRY as a fake root	MAP ROOT F:=HOME\TERRY
Map the last possible search drive to WIZARD/SYS:PUBLIC	MAP S16:=WIZARD/ SYS:PUBLIC
Map the next available drive to BRUTUS/SYS:ACCT\OLD	MAP N BRUTUS/ SYS:ACCT\OLD
Insert COUNT/SYS:PUBLIC as a new search drive	MAP INS S4:=COUNT/ SYS:PUBLIC
Map to PUBLIC\RPTS under Volume object ACCT _SYS.ACCT.ACME.US from the root	Map H:=.ACCT_SYS.ACCT .ACME.US:PUBLIC\RPTS

Additional Information

Topic	See
Fake roots	“Fake root” in *Concepts*
Login scripts	“Login scripts” in *Concepts*“About Login Scripts” in *Supervising the Network*
Search drive mappings	“Drive mapping” and “Search drive” in *Concepts*

NCOPY

Purpose

Use at a workstation to

- Copy files from one location to another on the network.
- Copy directories from one location to another on the network.

Syntax

```
NCOPY [source path] filename [TO] target path [filename] [/
option...][/? | /VER]
```

Parameter	Use to
source path	Specify the path leading to the source file. (You can use a drive letter.) Include this if the file is not in your current directory.
filename	Specify the file you want to copy.
target path	Specify the path for the directory you are copying the file to. (You can use a drive letter.)
filename	Specify a new name for the file (if you want to rename the file.)
/option	Specify one or more options from the “NCOPY Options” table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

NCOPY Options

Option	Use to
A (Archive Bit Only)	Copy only those files that have the archive bit set. The attribute of the source file is not changed.
M (Archive Bit Set)	Copy files that have the archive bit set. Turns off the archive bit of the source file. This option allows NCOPY to be used in backup.
C (Copy)	Copy files without preserving extended attributes and name space information.
F (Force Sparse Files)	Force the operating system to copy sparse files.
I (Inform)	Notify you that extended attributes or name space information cannot be copied because the target volume doesn't support those features.
R (Retain Compression)	Keep compressed files compressed.
/R/U (Retain Unsupported Compression)	Keep compressed files compressed even when copied to media that do not support compression.
S (Subdirectories)	Copy subdirectories and files.
/S /E (Subdirectories Empty)	Copy empty subdirectories and files.
V (Verify)	Verify that the original and the new files are identical. For local DOS drives only.

Using NCOPY

- NCOPY allows you to specify how files are copied, whether subdirectories are copied, and whether the system verifies copies.
- You can use drive letters instead of directory paths to specify source and target

paths.

- The default is that only files are copied. Include /S or /S /E to copy subdirectories.
- You can use wildcard characters.

Examples

To	Type
Copy an empty subdirectory from the current drive to the subdirectory above your current drive	NCOPY WORK . . /S /E
Copy files that start with S and have a .TXT extension and have the archive bit set to a subdirectory named TEST below your current directory	NCOPY S*.TXT TO TEST /A
Copy .RPT files to SERVER/JOE/SYS:PUBLIC/SHARE on another volume and be notified if extended attributes or name space information cannot be copied	NCOPY *.RPT TO SERVER/JOESYS:PUBLIC\SHARE /I
Copy .DOC files to ACCT directory and verify that the original and the new files are identical	NCOPY *.DOC TO ACCT /V
Copy a file named MARCH.RPT to drive G:	NCOPY MARCH.RPT G:
Copy all files and subdirectories in the current directory to a subdirectory	NCOPY *.* .. \TEMP /S
Copy all .RPT files to PUBLIC\RPTS under Volume object ACCT\SYS.ACCTG.ACME.US from the root	NCOPY *.RPT .ACCT\SYS.ACCTG.ACME.US:PUBLIC\RPTS

Additional Information

Topic	See
Archive bit	“Attributes” in *Concepts*
Name space	“Name space” in *Concepts*

NCUPDATE

Purpose

Use at a workstation to automatically update users' NET.CFG files with a new name context after a container has been moved or renamed.

Syntax

```
NCUPDATE [/? | /VER] [/NP]
```

Parameter	Use to
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)
/NP	Avoid getting the prompt that asks whether to update the name context in the NET.CFG file.

Using NCUPDATE

- You can execute NCUPDATE at the command line, but it is designed to be run from a container login script.
- When you move or rename a container object using NetWare Administrator or NETADMIN, you can create an alias that points to the moved or renamed container.

  An alias allows users who do not know the container has been moved or renamed to continue seeing the container (and the objects in it) by its original name or in its original location.

  In addition, an alias allows users whose name context in their NET.CFG file refers to the moved or renamed container to continue to log in, even though their actual context in the Directory tree has changed.
- Because moving or renaming a container object changes the context of both the

container and any users below the container, users in and below that container must update their name context in their NET.CFG file.

- To automatically update user NET.CFG files, place a command to execute NCUPDATE in the login script of the moved or renamed container and every container in and below it.
- When users who are in or below the moved or renamed container log in, LOGIN recognizes that the context used to log in contains an alias. Then LOGIN sets the internal script variable LOGIN_ALIAS_CONTEXT to "Y."
- The network supervisor can place a command to run NCUPDATE in the login script of a container using NetWare Administrator or NETADMIN.

Example

The network supervisor—or a user with the Supervisor object right to the moved or renamed container—can place the following lines in the login script of the container and every container in and below the container:

```
IF LOGIN_ALIAS_CONTEXT = "Y" THEN BEGIN
  MAP INS S1:=<server name>/SYS:PUBLIC
  #NCUPDATE /NP
  MAP DEL S1:
END
```

When users log in to the server using an alias context, NCUPDATE updates each user's name context in the NET.CFG file.

NOTE: NCUDATE updates the NET.CFG file that the Virtual Loadable Module™ (VLM™) programs load from. The location of this NET.CFG file on users' workstations may vary, so the path to the NET.CFG file that will be updated is listed on the screen as NCUPDATE executes.

In the example login script, the supervisor maps a temporary search drive to SYS:PUBLIC so the container login script can locate NCUPDATE.EXE in the PUBLIC directory. Then the search drive is deleted.

The supervisor deletes the /NP in the example login script if he or she wants the users to be prompted to update their NET.CFG files.

Once all user NET.CFG files are updated, the supervisor deletes the alias that points to the moved or renamed container.

Additional Information

Topic	See
Alias objects	"Alias object" in *Concepts*
Login scripts	"About Login Scripts" in *Supervising the Network*
Moving container objects	"Moving Container Objects Using NetWare Administrator" and "Moving Container Objects Using NETADMIN" in *Supervising the Network*
Renaming container objects	"Renaming Leaf and Container Objects" in *Supervising the Network*

NDIR

Purpose

Use at a workstation to

- View information about files (date, size, owner, attributes, archive information).
- View information about directories (creation date, owner, subdirectories, Inherited Rights Filter, effective rights).
- View volume information.
- Sort information according to creation date, owner, file or directory attributes, and so forth.

Syntax

```
NDIR [path] [/option] [/? | /VER]
```

Parameter	Use to
path	Specify the path leading to the information you want to view. Include the volume, directory, or filename.
/option	Specify one or more options from any of the following tables: "NDIR Display Options" "NDIR Format Options" "NDIR Sort Options" "NDIR Attribute Options" "NDIR Restriction Options"
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

NDIR Display Options

Option	Use to
DO	Sort and view directories only.
FO	Sort and view files only.
FI	View every occurrence of the specified files within your current directory and your PATH environment.
SUB	Sort and view all subdirectories and their files.
VOL	View volume information for the specified volume.
SPA	View directory space limitation information for the specified directory.
C	Scroll continuously through a display.

NDIR Format Options

Option	Use to
DA	View dates when files were last updated, archived, accessed, created, and copied.
DE	View file details.
COMP	View file and compression sizes for NetWare 4 files.
LONG	View name space long filenames.
MAC	View Apple® Macintosh® files.
R	View file attributes, compression and migration status, effective rights, and rights that pass through the Inherited Rights Filter.

NDIR Sort Options

Option	Use to
REV	Reverse the direction of a sort. Put REV before SORT. Example: /REV SORT OW.
SORT CR	Sort by creation or copy date, from earliest to latest.
SORT UN	Suspend sorting.
SORT AC	Sort by date last accessed, from earliest to latest.
SORT AR	Sort by date last archived, from earliest to latest.
SORT UP	Sort by last update, from earliest to latest.
SORT OW	Sort alphabetically by file owner names.
SORT SI	Sort by file size, from smallest to largest.

NDIR Attribute Options

Option	Use to
NOT	NDIR *.* /NOT /DI View files that do not have a specified attribute. For example, to display all files in the current context that do not have the Di (Delete Inhibit) attribute, type
A (Archive Needed)	View files modified since the last backup.
Ci (Copy Inhibit)	Prevent the file from being copied. (Applies to MAC files only.)
Di (Delete Inhibit)	Prevent the file from being deleted.
Dc (Don’t Compress)	Prevent the file from being compressed (regardless of what the volume or directory is set to).
Dm (Do not Migrate)	Prevent the file from being migrated to a secondary backup (regardless of what the volume or directory is set to).

Option	Use to
X (Execute Only)	Prevent a file from being copied or copied over. This attribute can be given only to .EXE or .COM files, and cannot be removed.
H (Hidden)	Prevent a file from being seen with the DOS DIR command. The file cannot be copied or deleted.
IC (Immediate Compress)	Compress a file as soon as possible.
P ( )	Purge a file immediately if the file is deleted.
RI (Rename Inhibit)	Prevent a file from being renamed.
RO (Read Only)	Allow a file to only be read—it cannot be written to or deleted.
RW (Read Write)	Allow a file to be read and written to.
SH (Shareable)	Allow a file to be used by several users simultaneously.
SY (System)	Prevent a file from being seen with the DOS DIR command. The file cannot be copied or deleted.
T (Transactional)	Protect a file by using the Transaction Tracking System (TTS).

NDIR Status Flags

Flag	This flag means
Cc (Can't Compress)	The file will not be compressed because of limited space savings.
Co (Compressed)	The file is compressed.
M (Migrated)	The file has been migrated.

NDIR Restriction Options

Option	Use to
[NOT]	View all files except those the option specifies. Example: /CR [NOT] BEF | EQ | AFT mm-dd-yy
/CR BEF | EQ | AFT mm-dd-yy	View files created on, before, or after the date specified.
/AC BEF | EQ | AFT mm-dd-yy	View file last accessed before, on, or after the date specified.
/AR BEF | EQ | AFT mm-dd-yy	View files last archived on, before, or after the date specified.
/UP BEF | EQ | AFT mm-dd-yy	View files last updated on, before, or after the date specified.
/OW EQ user	View files created by a specific user.
/SI GR | EQ | LE number	View files with byte sizes greater than, equal to, or less than a specified number.

Using NDIR

- A forward slash (/) must precede the first option of the option list. Use backslashes (\) in path names.
- You can use several options, but you must separate the options with spaces.
- To view several files in your default directory, include a comma between filenames.
- You can use wildcard characters.

Examples

To	Type
View files in the current directory	NDIR *.*
View the version of .EXE files on drive Z:	NDIR Z:*.EXE /VER

To	Type
View only directories on drive F:	NDIR F:*.* /DO
View rights for files in the current directory	NDIR *.* /R
View the date of file RECORD.TXT	NDIR RECORD.TXT /DA
View detailed file information on RECORD.TXT	NDIR RECORD.TXT /D
View all Read Only files in SYS:PUBLIC	NDIR SYS:PUBLIC*.* /RO
Search for batch files on drive C:	NDIR C:*.BAT /SUB
View files that are not Read Only	NDIR *.* /NOT RO
View files from smallest to largest	NDIR *.* /SORT SI
View files in drive Z: by the most recent access date first	NDIR Z:*.* /REV SORT AC
View files updated before June 5, 1991	NDIR *.* /UP BEF 6-05-91
View files not owned by user PAT	NDIR *.* /OW NOT EQ PAT
Find where COMMAND.COM is	NDIR COMMAND.COM /FI

Additional Information

Topic	See
File and directory attributes	“Attributes” in *Concepts* “FLAG”
Transactional attribute	“Attributes” in *Concepts*

NETADMIN

Purpose

Use at a workstation to manage NetWare Directory Services (NDS) objects and properties. NETADMIN allows you to view, create, move, delete, and assign rights to any NDS objects under your jurisdiction.

Syntax

```
NETADMIN
```

Using NETADMIN

The Browse screen

The browse screen allows you to navigate the Directory tree, change your context, and view objects in the tree.

- To browse up the Directory tree to the parent container, choose ".. (parent)."
- To view or edit the properties of the current container object, select ". (current)" and press <F10>.
- To browse down the Directory tree, choose objects with a plus (+) in front of them. When you choose a container object, you can see the objects in that container.
- To view or modify an object's properties, press <F10> on the object.

Managing Object Properties

All objects have properties that define them. Some properties are mandatory, and must have values before the object can be created. Mandatory properties are listed on the screen where you create a new object.

Other properties are optional and help define the object or help in searches on the object.

Assigning Rights

After you select an object in NETADMIN, you can view or change access rights in two ways:

- You can change that object's rights to files on a volume.
- You can change who has rights to view or change the properties of that object.

Rights to Files and Directories After you select a Volume object and path on that volume, all of this object's trustee assignments in that directory are listed, and you can change the rights granted or add or remove other trustee assignments.

You must have the Access Control right to a file or directory to change an object's rights to it. Press <F1> for procedures to perform these tasks.

Rights to Objects If you select "View or Edit the Trustees of this Object," and then select "Trustees," a screen appears listing trustee assignments that grant rights to access this object and its properties.

You can change the rights that any trustee has to this object, or add and delete trustee assignments from the list. You can also view or change the Inherited Rights Filter of the object, if you have sufficient rights.

User Templates

If you need to create many users in the same area who need some of the same information in their properties, you can create a user template.

The user template is an object that contains default information that you can apply to new users when you create them. This makes creating a large number of users easier to manage.

You can create a user template in any Organization or Organizational Unit. When you create an Organization or Organizational Unit, you are asked whether you want to create a user template.

Examples

To	From the NETADMIN main menu, select
Create objects	**1** "Manage Objects"; browse the Directory tree and select the container object where the new object will be located. **2** Press <Ins> and select the object type. **3** Press <F1> for help from here.
Edit user password expiration date	**1** "Manage objects"; highlight the user object and press <F10>. **2** Select "View or Edit Properties of this Object; select "Account Restrictions"; then select "Password Restrictions" from the menu. **3** Press <F1> for help from here.
Manage directory and file rights for an object	**1** "Manage Objects"; highlight the object and press <F10>. **2** Select "View or Edit this Object's Rights to Files and Directories." **3** Press <F1> for help from here
Manage other objects' rights for an object	**1** "Manage Objects"; highlight the object and press <F10>. **2** Select "View or Edit Trustees of this Object." **3** Press <F1> for help from here.

To	From the NETADMIN main menu, select
Modify object properties (add users to groups, modify login scripts, modify account restrictions, etc.)	**1** "Manage Objects"; highlight the object whose properties you want to modify and press <F10>. **2** Select "View or Edit Properties of this Object"; select the property to modify, such as "Groups," "Login script," "Account restrictions," and so forth, from the menu. **3** Press <F1> for help from here.
Move objects to another location in the directory tree	**1** "Manage Objects"; highlight the object you want to move and press <F10>. **2** Select "Move" from the menu. **3** Press <F1> for help from here.

Additional Information

Topic	See
Container Objects	"Container object" in *Concepts*
Context	"Context" in *Concepts*
Leaf Objects	"Leaf object" in *Concepts*
Objects	"Object" in *Concepts*"; "NDS and Bindery Objects and Properties"
User Template	"User template" in *Concepts*

NETUSER

Purpose

Use at a workstation to manage network tasks. NETUSER allows you to

- Capture ports to printers or print queues.
- Send, modify, pause, and delete print jobs after capturing a port.
- Send messages to users or groups.
- Disable or enable incoming messages.
- Manage drive and search mappings.
- View your effective rights on selected drives.
- Manage network attachments.
- Change your password.
- View server information.
- Change your login script.
- Set your current context (if you are logged in to a Directory tree).

Syntax

```
NETUSER
```

Examples

To	From the NETUSER main menu, select
Capture a printer	**1** "Printing"; select the printer port from the available list; select "Change Printers."
	2 Press <F1> for help from here.
Print a job	**1** "Printing"; select "Print Jobs."
	2 Press <F1> for help from here.

To	From the NETUSER main menu, select
Send messages	**1** "Messages"; select "Send Messages to Users" or "Send Messages to Groups."
	2 Press <F1> for help from here.
Map a drive	**1** "Drives"; select "Drive Mappings" or "Search Mappings."
	2 Press <F1> for help from here.
Change a password	**1** "Attachments"; select "NetWare server" and the username for which you want to change the password.
	2 Select "Password."
	3 Press <F1> for help from here.
Attach to a NetWare server	**1** "Attachments"; press <Alt><F1> to display more options at the bottom of the screen.
	2 Press <Ins> to display a list of available servers.
	3 Press <F1> for help from here.

Additional Information

Topic	See
Objects	"Object" in *Concepts*

NetWare Administrator

Purpose

Use at a Windows workstation to perform the supervisory tasks you would perform using FILER, NETADMIN, PARTMGR, and PCONSOLE. You can do the following with NetWare Administrator:

- Create network users and groups
- Create and delete NDS objects
- Assign rights in the Directory tree and in the file system
- Set up printing services
- Set up and manage NDS partitions

NetWare Administrator has a graphical user interface (GUI) and runs as a multiple-document interface (MDI) application.

Using NetWare Administrator

Before you use NetWare Administrator, you must create a NetWare Administrator icon. (See Supervising the Network.)

Help

For help, choose the Help button on the screen, press <F1>, or use the pull-down Help menu.

The Menu Bar

The menu bar displays headings for several menus. To complete a task, select an object in the browser, select a menu heading, and then choose an option from the menu bar.

When you select an option, a message in the title bar explains what the option does. If an option is grayed, it is not available for the object you selected.

The Browser

NetWare Administrator's primary window is a browser that displays NDS container objects and leaf objects at your current context in the Directory tree.

You can open up to nine additional browsers. (You might want to open an additional browser to see a different context in the Directory tree.)

To open another browser, select a container object (this will be the root object in the browser window) and then from the "Tools" menu, select "Browser."

Working with Objects

- To view the file system of a server in your tree, double-click on the Volume object associated with that server

  For example, to see the file system in volume SYS: of server KATT, double-click on the Volume object KATT_SYS.

- To open a container object and view the objects in it,
  - Double-click anywhere on the container object's name or icon; or
  - Select the container object and from the "View" menu choose "Expand."
- To view the object dialog (object details) of a container object,
  - Select the container object and from the "Object" menu choose "Details"; or
  - Select the container object, right-click once, and choose "Details" from the menu.
- To view the object dialog (object details) of a leaf object
  - Select the leaf object and double-click; or
  - Select the leaf object and from the "Object" menu choose "Details"; or
  - Select the leaf object, right-click once, and choose "Details" from the menu.

The Object Dialog

The object dialog allows you to view and edit information about an object's properties.

To select information you want to see, choose a page button from the right side of the dialog. (The pages are part of one dialog. When you select a different page, you are still in the same dialog.)

Warning that You Are Out of Connections

You might receive this error in the following scenarios:

- An attempt is made to establish a connection to a server when the number of supported connections on the client side has already been reached.

  In this situation, run NWUSER to see which servers the client is connected to. Determine if there is a connections that is not being used and log out of that server. This frees up a connection, enabling you to proceed.

  However, if this is a recurring problem, you may need to edit the NET.CFG file to increase the number of network connections that the client will support.

- An attempt is made to establish a connection to a server when the number of available connections the server has to give has already been reached.

  In this situation, run NWUSER to see which servers the client is connected to. The client might already have one or more connections to the server. If so, log out of that server and then try to establish the connection again.

  If NWUSER does not show connections to that server, wait until that server has an available connection.

Additional Information

Topic	See
Creating container objects with NetWare Administrator	"Creating Container Objects" in *Supervising the Network*
Creating leaf objects with NetWare Administrator	"Creating Leaf Objects" in *Supervising the Network*
Moving objects with NetWare Administrator	"Moving Objects in the Directory Tree" in *Supervising the Network*
Printing in NetWare Administrator	"Managing Print Services with the NetWare Administrator Utility" in *Print Services*

Topic	See
Using Partition Manager in NetWare Administrator	"Creating and Managing Directory Services Partitions" in *Supervising the Network*

NLIST

Purpose

Use at a workstation to

- View information about objects such as users, groups, volumes, servers, and so forth
- Search on objects and object properties

Syntax

NLIST [class type [property search option]
[object name] [/basic option] [display option]] |
[/? | /VER]

Parameter	Use to
class type	Specify an object type, such as USER, SERVER, PRINTER, GROUP, VOLUME, and so forth. (see “NDS and Bindery Objects and Properties”). For bindery servers (NetWare 3), replace class type with USER, SERVER, QUEUE, GROUP, or VOLUME. These are the only objects available for NetWare 3.
property search option	Specify a search option. For online help on these options, type NLIST /? R.
object name	Specify the name of the object you want information about.
/basic option	Specify an option from the “NLIST Options” table.
display option	Select how data is displayed. For online help, type NLIST /? D.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

NLIST Options

Option	Use to
A	View users who are logged in.
B[=server]	View information stored in the bindery of the specified server (bindery servers only).
C	Scroll continuously through information.
CO[=context]	Set the context to be searched (NDS servers only).
D	View all object properties.
N	View object names.
S	Search all levels of the database, beginning at the current context.
SHOW [property]	View a specific property of an object.
TREE	View all tree names visible from this login.

Using NLIST

- Searching on objects and properties allows you to view specific groups of objects.

  For example, you can view all users whose passwords will expire on a certain date. Or you can view all groups that have a particular user as a member.

- You can use Property groups with only a bindery connection or with bindery services.
- USER, SERVER, QUEUE, GROUP, and VOLUME are the only objects you can search on in a bindery context.
- The following list shows syntax for frequently use NLIST operations. For information on the parameters in this table, see the online help.

To list	Use this syntax
Any information	NLIST [class type] [=object name] [/option…]
User information	NLIST user=[username] [WHERE [property] [operator] [value]] [SHOW [property]] [/option…] For bindery servers, use [property group] instead of [property]
Server information	NLIST server=[server] [WHERE [property] [operator] [value]] [SHOW [property]] [/option…] For bindery servers, use [property group] instead of [property]
Group information	NLIST group=[group] [WHERE [property] [operator] [value]] [SHOW [property]] [/option…] For bindery servers, use [property group] instead of [property]
Printer information	NLIST printer=[printer] [WHERE [property] [operator] [value]] [SHOW [property]] [/option…] For bindery servers, use [property group] instead of [property]
Print Queue information	NLIST queue=[queue] [WHERE [property] [operator] [value]] [SHOW [property]] [/option…]
Volume information	NLIST volume=[volume] [WHERE [property] [operator] [value]] [SHOW [property]] [/option…]
Object information	NLIST [class type] [=object name] [[WHERE name [operator] [value1] | WHERE object] [operator] [value2]] [/option…]
Bindery object information	NLIST /OT [=value] [WHERE name [operator] [value1] | WHERE object] [operator] [value2]] [/option…]

Examples

Users

To	Type
List users whose password length is less than 5	NLIST USER WHERE “PASSWORD MINIMUM LENGTH” LT 5
List users whose accounts will expire by June 30, 1995	NLIST USER WHERE “ACCOUNT EXPIRATION” LE 06-30-95
List users who are members of group MANAGERS	NLIST USER WHERE “GROUP MEMBERSHIP” = MANAGERS
List users logged in	NLIST USER /A
List users who have supervisor equivalence	NLIST USER WHERE “SECURITY EQUAL TO” = SUPERVISOR
List properties of user CINDY	NLIST USER=CINDY /D
List users managed by JOE (bindery users only)	NLIST USER WHERE MANAGERS=JOE
List users logged in to the database	NLIST USER /A /S
List properties of users in the current context	NLIST USER /D
List the login script of every user who has a login script in all contexts	NLIST USER SHOW “LOGIN SCRIPT” /S
List users whose telephone numbers begin with 4 (search subordinate containers)	NLIST USER WHERE “TELEPHONE NUMBER” = 4* /S
List users at a context	NLIST USER /CO <context>
List telephone numbers of users in the current context	NLIST USER SHOW “TELEPHONE NUMBER”

Servers

To	Type
Identify the version number of a server	NLIST SERVER SHOW VERSION
List the network address of server ACCT (search all subordinate containers) (NDS servers)	NLIST SERVER=ACCT SHOW “NETWORK ADDRESS” /S
List the network address of server ACCT (search all subordinate containers) (bindery servers)	NLIST SERVER=ACCT SHOW “ATTACHMENT INFORMATION”
List servers in the current context	NLIST SERVER
Search for servers in the Directory tree	NLIST SERVER /S
See if server ACCT is up	NLIST SERVER=ACCT /A
List servers whose name begins with L	NLIST SERVER = L*

Groups

To	Type
List members of group TEMPORARY	NLIST GROUP=TEMPORARY SHOW MEMBERS
List groups with MSMITH as a member	NLIST GROUP WHERE MEMBER EQ MSMITH
List the owner of group RECORDS	NLIST GROUP=RECORDS SHOW OWNER
List information about group RECORDS (bindery servers only)	NLIST GROUP=RECORDS SHOW MISC

Printers

To	Type
List operators for printer P1	NLIST PRINTER=Q1 SHOW OPERATOR
List users for printer P1	NLIST PRINTER=Q1 SHOW USER
List printers whose name begins with P	NLIST PRINTER WHERE NAME = P*
List printers in the current context and below	NLIST PRINTER /S

Print Queues (Bindery Servers)

To	Type
List operators for print queue Q1	NLIST QUEUE=Q1 SHOW OPERATORS
List users for print queue Q1	NLIST QUEUE=Q1 SHOW USERS
List print queue names	NLIST QUEUE /N

Volumes

To	Type
List host servers where volumes beginning with A reside	NLIST VOLUME=A* SHOW “HOST SERVER”
List the bindery server where VOL1: resides	NLIST VOLUME=VOL1 SHOW SERVER
List the NDS server where VOL1: resides	NLIST VOLUME=VOL1 SHOW “HOST SERVER”

Objects

To	Type
List objects named MYSERVER	NLIST * WHERE NAME = MYSERVER
List objects in the current context	NLIST *

Additional Information

Topic	See
Current Context	“Context” in *Concepts*
Properties	“Property” in *Concepts*

NMENU

Purpose

Use at a workstation to access customized menus.

Syntax

```
NMENU menu_name [/? | /VER]
```

Parameter	Use to
menu_name	Specify the name of the .DAT menu file.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

Using NMENU

- You can use NMENU only when a menu file already exists.
- You must know the name and location of the menu file and have Read and File Scan rights to the directory containing the menu file.

Additional Information

Topic	See
Creating menu files	"Creating a Menu File" in *Supervising the Network*

NPATH

Purpose

Use at a workstation to view the NetWare search sequence for a file.

This information helps you troubleshoot why your workstation cannot find a particular file, why it's finding an incorrect version of the file, or why it's displaying a foreign language.

Syntax

```
NPATH [utility][filename[,filename...]] [/option...]
[/? | /VER]
```

NOTE: When you view your workstation's search sequence for a file, include the name of the utility in the command. The search sequence depends on the drive and directory that the utility is executed from.

Parameter	Use to
utility	Specify the name of the utility you are trying to execute.
filename	Specify either the message or the Unicode® filename (and its extension) that your workstation either cannot find or cannot find the correct version of.
/option	Specify one or more options from the "NPATH Options" table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

Using NPATH

- Use NPATH when you try to execute a utility and have one of these problems:
  - You get a message that you're missing a message file (an .MSG, .HEP, .IDX, or .XLT file), or a Unicode file. This message identifies the file you're missing.
  - You get a message that you have an incorrect version of a message file (an .MSG, .HEP, .IDX, or .XLT file). This message shows the version of the file your workstation found, and the version you need.
  - You get a foreign language displayed on your screen.
  - Your workstation does not find a particular file in its search sequence.
- To find your workstation's file search sequence for message files, use NPATH with no parameters.
- If you include a filename in the command, NPATH displays the path to the first occurrence of the file in the search sequence.
- To search for multiple files at the same time, separate the filenames with commas.
- A Unicode file without an extension defaults to the country code.
- Unicode files are not required to run NPATH. NPATH runs without a message file if the correct file is not available.
- Because of the way the file search sequence is designed for NetWare utilities, the same path may be looked at more than once.

NPATH Options

Option	Use to
A (All)	List the path to all occurrences of the file you specify.
D (Details)	View the language, version number, date, and time of the file you specify.
/Uni /D (Unicode details)	View the code page and country code your workstation is set to, the Unicode files needed to run the NetWare utility, and the path to the first occurrence of each file. Does not require a filename.

Option	Use to
Uni (Unicode)	List all paths to Unicode files.

Troubleshooting with NPATH

If	Do the following
You get a message that you're missing a file but you know the file is located in a particular directory	**1** Map a search drive to the directory that the file is in. (To make the search drive permanent, add it to your login script.) **2** Use NPATH if you want to confirm that your workstation can now find the file in its search sequence.
You get a message that you are missing a file and you do not know where the file is located	**1** Check the PUBLIC/NLS\<language> directory. **2** Use NDIR to locate the directory that the file is in if it's not in the PUBLIC\NLS\<language> directory. **3** Use NWXTRACT to get the file from diskette or CD if the file isn't on any of your drives (if it's not in PUBLIC\NLS\<language> and NDIR cannot find it). **4** Map a search drive to the directory that the file is in. (To make the search drive permanent, add it to your login script.) **5** Use NPATH to confirm that your workstation can now find the file in its search sequence.

If	Do the following
You get a message that you have the incorrect version of a file	**1** Use NPATH to view the search sequence your workstation is using to find each occurrence and version number of the file. **2** Identify whether the version of the file you need is in the search sequence. If your workstation finds an older version of a file in the search sequence before it finds a newer version, the older version is the one your workstation loads. **3** Run the utility from the directory that the version you need is in if that version is displayed in the search sequence, or copy the file to your current directory. **4** Use NWXTRACT to get the file from diskette or CD if the version you need is not in the search sequence. **5** Use NPATH if you want to confirm that your workstation can now find the correct version (before any other versions) in its search sequence.
You get a foreign language displayed on your screen	**1** Change your NWLANGUAGE environment variable to your native language. **2** Use the SET NWLANGUAGE = command in the AUTOEXEC.BAT file. **3** Use NPATH to confirm that your workstation can now find your native language message files in its search sequence.

Examples

To	Type
To view your workstation's search sequence for message files	NPATH
To view the path to the first occurrence of NCOPY.MSG found in the search sequence	NPATH NCOPY NCOPY.MSG
To view the path to each occurrence of FILER.MSG found in the search sequence. Send file MARCH.PRJ to network printer P1	NPATH FILER FILER.MSG /A
To view the path to the first occurrence of SEND.HEP found in the search sequence, as well as its language, version number, date, and time	NPATH SEND SEND.HEP /D
To view the path to each occurrence of BIND.VLM in the search sequence	NPATH BIND.VLM / ANPATH
To view the path to each occurrence of TEXTUTIL.MSG (for NETADMIN) found in the search sequence, as well as each file's language, version number, date, and time, NPATH NETADMIN TEXTUTIL.MSG /A /D	NETADMIN TEXTUTIL.MSG /A /D
To view your workstation's search sequence for the Unicode files needed to execute	FLAGNPATH FLAG /Uni
To view which code page and country code your workstation is set to, the Unicode files needed to execute RIGHTS, and the path to the first occurrence of each Unicode file found in the search sequence	NPATH RIGHTS /Uni /D
To view the path to the first occurrence of UNI_MON.001 found in the search sequence	NPATH UNI_MON.001 / Uni

To	Type
To view the path to each occurrence of UNI_MON.001 found in the search sequence	NPATH UNI_MON.001 / Uni /A
To view the code page and country code your workstation is set to, the Unicode files your workstation needs to run NetWare utilities, and the path to each occurrence of each file	NPATH /Uni /D /A

Additional Information

Topic	See
Search drive mappings	“Drive mapping” in *Concepts;* “Search drive” in *Concepts*
Unicode	“Unicode” in *Concepts*

NPRINT

Purpose

Use at a workstation to

- Print an ASCII file.
- Print a file already formatted for a printer.

Syntax

```
NPRINT filename [option...] [/? | /VER]
```

Parameter	Use to
filename	Specify the name of the file you want to print. Include wildcard characters, drive letters, and directory paths if necessary.
option	Specify on or more options from the "NPRINT Options" table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

NPRINT Options

Option	Use to
S=NetWare server	Specify which NetWare server's bindery contains the print queue. Default: current tree or server.
P=printer name	Specify which printer the print job should be sent to. (Specify a default in PRINTCON.)

Option	Use to
Q=print queue name	Specify which print queue the print job should be sent to. (Specify a default at the NetWare server console or in PRINTCON.)
ALL	View all online help screens, when used with the “Help” option.
J=job name	Specify the PRINTCON job configuration to use; does not require other options.
NB	Print no banner page.
B=banner name	Specify the text that will appear in the lower half of the banner page. Limit: 12 characters.
NAM=text	Specify the text you would like to appear in the upper half of the banner page. Limit: 12 characters.
V	View more information about the printer, print queue, and print job configuration than is provided with the “Show” option.
/F=form name or number	Specify the form name or number that the printer will use. NPRINT does not function with an invalid form name. If you specify an invalid number, NPRINT gives a warning message but still prints.
/C=n	Specify the number of copies. Maximum: 65,000.
T=n	Specify the number of spaces to allocate each tab in a text print job. You do not need this option for byte-stream print jobs. Default: 1. Range: 1 to 18.
/NT	Specify that no spaces be allocated to tabs in a text print job. Use this option to fix problems printing graphics.
/FF	Specify that the printer add blank paper at the end of the print job.

Option	Use to
/NFF	Specify that the printer not add blank paper at the end of the print job.
/NOTI	Specify that the user receive a message when the print job is printed.
/NNOTI	Specify that the user not receive a message when the print job is printed.

Using NPRINT

- All options function with a slash (/), but only “Help” requires it (/?).
- You can specify the printer name instead of a print queue.
- Default options include Banner (B=banner name), No Tabs (NT), and Form Feed (FF).
- Specifying a default print job configuration in PRINTCON allows you to specify only the filename with NPRINT. You can override the default options by specifying options at the command line.
- NPRINT can be typed without specifying a printer or print queue if a default print queue is specified at the NetWare server.
- NPRINT is not needed if you use a NetWare-aware application that can send print jobs to specified printers or print queues.
- If you use an application that doesn’t format print jobs for your printer, NetWare supplies 58 printer definitions for print devices.

  Import one of these or create your own using NetWare Administrator or PRINTDEF. Each printer definition contain print device functions and modes for the printer.

  Printer definitions for print devices can only be referenced in print job configurations.

  To print a non-ASCII file that isn’t formatted for the printer, NPRINT must use the “J=name” option to specify the print job configuration that specifies the printer definition.
- If you specify a print job configuration that has a complex printer mode, you can increase the bytes (default 64, range 0 to 255) in the “printer header=number”option. See“NET.CFG Options Reference” in NetWare Client

for DOS and MS Windows Technical Reference.

- Unlike DOS PRINT, NPRINT is not a terminate-and-stay-resident (TSR) application.

Examples

To	Type
Print file MARCH.PRJ	NPRINT MARCH.PRJ
Print file MARCH.PRJ using print job configuration REPORTS.	NPRINT MARCH.PRJ J=REPORTS
Send file MARCH.PRJ to network printer P1	NPRINT MARCH.PRJ P=P1
Send file MARCH.PRJ to print queue Q1	NPRINT MARCH.PRJ Q=Q1
Print file MARCH.PRJ without a banner	NPRINT MARCH.PRJ NB
Print files beginning with MA with extension .PRJ.	NPRINT MA*.PRJ
Print five copies of file MARCH.PRJ with no banner.	NPRINT MARCH.PRJ P=P1 C=5 NB <Enter>
View all online help screens	NPRINT /? ALL
View specific help for the No Banner option	NPRINT /? NB

Additional Information

Topic	See
NET.CFG file	"NET.CFG Options Reference" in *NetWare Client for DOS and MS Windows Technical Reference*
NPRINT	"Using NPRINT" in *Print Services*

NVER

Purpose

Use at a workstation to

- View version information for the workstation and attached servers.
- View Requester version information for attached servers.

Syntax

```
NVER [/C] [/? | /VER]
```

Parameter	Use to
/C	Scroll continuously through information.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

PARTMGR

Purpose

Use at a workstation to manage partitions and their replicas. PARTMGR allows you to

- Create partitions.
- Merge partitions.
- Add replicas.
- Delete replicas.
- Modify replica types.
- Abort a partition operation.
- Synchronize replicas.
- Set your current context.

Syntax

```
PARTMGR
```

Using PARTMGR

- To browse up the Directory tree to the parent container, choose ".. (parent)."
- To view or edit the replicas of the current container object (if that container object is a partition) select ". (current)" and press <F10>.
- To browse down the Directory tree, choose objects with a plus (+) in front of them. When you choose a container object, you can see the objects in that container.
- To create a new partition with a container object as the root object of the partition, press <F10> on the container to be the root of the partition.
- To view or modify that partition's replicas, or to merge that partition with its parent partition, press <F10> on containers that are partitions.
- Objects that do not have a plus (+) sign are servers. To see a list of the replicas stored on a server, select a Server object and press <F10>.

Managing Replicas

Replicas are copies of the information in the partition. They are stored on servers in the Directory tree. There are four types of replicas: master, read/write, read-only, and subordinate.

Examples

To	From the PARTMGR main menu	
Merge partitions	**1**	Select “Manage Partitions” and browse the Directory tree to select the partition you want to merge with its parent.
	2	Press <F10>.
	3	Select “Merge with Parent Partition.”
	4	Press <F1> for help from here.
Create partitions	**1**	Select “Manage Partitions” and browse the Directory tree to select the container you want to be the root object for the partition.
	2	Press <F10>.
	3	Press <F1> for help from here.
View or manage replicas	**1**	Select “Manage Partitions” and browse the Directory tree to select the partition whose replicas you want to manage.
	2	Press <F10>. Select “View/Edit Replicas.”
	3	Press <F1> for help from here.

Additional Information

Topic	See
Partitions	“Partition” in *Concepts*
Replicas	“Replica” in *Concepts*

PCONSOLE

Purpose

Use at a workstation to administer NetWare print services. PCONSOLE allows you to do the following:

- Create, assign, modify, delete, and monitor print queues, print servers, and printers
- Send, monitor, modify, pause, resume, and delete print jobs
- Install basic print services using Quick Setup
- Enable and view the print server auditing log
- Change your NetWare Directory Services context

Syntax

```
PCONSOLE
```

Examples

To	From the PCONSOLE main menu
Create a print server, printer, or print queue	**1** Highlight an item, press <Enter>, then press <Ins>. **2** Press <F1> for help from here.
View, modify, or create print jobs	**1** Select “Print Queue”; select the print queue where you want to manage print jobs; select “Print Jobs.” **2** Press <F1> for help from here.
Monitor printer status (in bindery mode, printers are accessed under print servers).	**1** Choose “Printers”; choose the printer you want to view, and choose “Printer Status.” **2** Press <F1> for help from here.

Additional Information

Topic	See
PCONSOLE	"Managing Print Services with PCONSOLE" in *Print Services*

PRINTCON

Purpose

Use at a workstation to manage printer configuration. PRINTCON allows you to do the following:

- Create and modify print job configurations
- Specify options (such as a default printer) for users who use CAPTURE, NPRINT, NETUSER, and PCONSOLE
- Change your current User or container object (in NetWare Directory Services) or your NetWare server (in bindery mode)

Syntax

```
PRINTCON
```

Using PRINTCON

To change between NDS and Bindery modes, press <F4>. In Bindery mode, the last menu option changes to “Change Current NetWare Server.”

Examples

To	From the PRINTCON main menu
Copy print job configurations from another bindery-based NetWare server	**1** Choose “Edit Print Job Configurations.” **2** Press <F1> for help from here.
Specify a default print job configuration	**1** Choose “Select Default Print Job Configuration” and choose a print job configuration. **2** Press <F1> for help from here.

Additional Information

Topic	See
PRINTCON	"Creating and Managing Print Job Configurations" in *Print Services*

PRINTDEF

Purpose

Use at a workstation to manage print device definitions and printer forms. PRINTDEF allows you to

- View, modify, import, and export print device definitions.
- Monitor, modify, and create printer forms.

Syntax

```
PRINTDEF
```

Using PRINTDEF

To change between NDS and Bindery modes, press <F4>. In Bindery mode, the last menu option changes to "Change Current NetWare Server."

Examples

To	From the PRINTDEF main menu
Create or modify a printer form	**1** Choose "Printer Forms." **2** Press <F1> for help from here.
Create or modify a printer definition	**1** Choose "Print Devices," then choose "Edit Print Devices." **2** Press <F1> for help from here.
Import a printer definition	**1** Choose "Print Devices," then choose "Import Print Device." **2** Press <F1> for help from here.

Additional Information

Topic	See
Printer definitions and forms	"Working with Print Device Definitions and Printer Forms" in *Print Services*

PSC

Purpose

Use at a workstation to

- Control the print server.
- Control network printers.
- View network printer information.

Syntax

```
PSC PS=print server P=printer
S=NetWare bindery server [option...][/? | /VER]
```

Parameter	Use to
print server	Specify the name of the print server you want to manage.
printer	Specify the name of the printer you want to manage.
NetWare bindery server	Specify the name of the NetWare bindery server you want to manage
option	Specify one or more options from the “PSC Options” table.
/?	View online help. To view all help screens, use /? ALL. To view online help for a specific option, add the option after /?
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

PSC Options

Option	Use to
S=server	Specify a NetWare server. (Use to attach to a server with a bindery connection.)
AB	Stop the current print job and delete it from the queue.
CD	Cancel the “Going Down After Current Jobs” option. Use this option if you selected that command in PCONSOLE and want to cancel it.
FF	Advance the printer to the top of the next page. The printer must be paused or stopped.
M [character]	Print a line of whatever character you indicate so that you can see which line the printer will start printing on. Default character: *
MOF=number	Tell the printer that you mounted a new form on the printer. Replace number with the form number.
PAU	Stop the printer temporarily. Use STAR to continue printing from the point the print job was paused.
PRI	Remove the remote printer from the list of network printers. Use to prevent other users from printing on the printer.
SH	Remove the Private flag and make the remote printer available to the print servers
STAR	Restart the printer after you stop or pause it.
STAT	View the status of printers on a print server.
STO [K]	Stop the printer. To keep the print job first in the print queue, include K.

Using PSC

- All options function with a preceding forward slash (/), but only the /? (Help) option requires it.
- You can use PCONSOLE to accomplish the same tasks as PSC.

Examples

To	Type
Stop printer P1	PSC P=P1 STO <Enter>
Cancel downing of SALES PRINT SERVER	PSC PS=SALES_PRINT_SERVER CD <Enter>
View specific online help for the START option	PSC /? STAR <Enter>

Additional Information

Topic	See
Using PSC	“Using PSC” in *Print Services*

RENDIR

Purpose

Use at a workstation to rename a directory.

Syntax

```
RENDIR path [TO] directory name [/? | /VER]
```

Parameter	Use to
path	Specify the path leading to and including the directory you want to rename.
directory name	Specify the new name of the directory.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

Using RENDIR

- If you rename a directory, you should change drive mappings that include the directory to reflect the new name.
- You can use a period to represent your default directory; you can use :/ to represent your current drive and volume.

Examples

To	Type
Rename your current directory to PROGRAMS	RENDIR . PROGRAMS
Rename the directory where drive G: is mapped to PROGRAMS	RENDIR G: PROGRAMS

To	Type
Rename directory TOOL to TOOLKIT on your current drive and volume	RENDIR :/TOOL TOOLKIT

Additional Information

Topic	See
Drive mapping	“Drive mapping” in *Concepts*

RIGHTS

Purpose

Use at a workstation to

- View or modify user or group rights for files.
- View or modify user or group rights for directories and volumes.

Syntax

```
RIGHTS path [[ + | - ] rights] [/option...]
[/? | /VER]
```

Parameter	Use to
path	Specify the path to the file, directory, or volume you want to modify or view rights to (you must always specify a path).
+ | -	Add or delete rights. If you use + (plus) to add rights, the rights are added to existing rights. If you use - (minus) to remove rights, the rights are deleted from existing rights. If you add and delete rights in the same command, group all added rights together and all deleted rights together.
rights	Specify one or more file or directory rights. (See “File and Directory Rights”).
/option	Specify one or more options from the “RIGHTS Options” table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

RIGHTS Options

Option	Use to
/C	Scroll continuously through output.
/F	View the Inherited Rights Filter (IRF).
/Inherited	View the trustee and group rights that created the inherited rights, and view where the inherited rights came from.
/NAME=username	View or modify rights for the user or group listed. Replace username with the name of the user or group whose rights you want to view or modify.
/Sub	View or modify subdirectories below the current level.
/Trustee	View trustee assignments in a directory.

File and Directory Rights

Right	Use to
S (Supervisor)	Grant all rights to the file or directory.
R (Read)	Allow user or group to open and read files in the directory.
W (Write)	Allow user or group to open and write to files in the directory.
C (Create)	Allow user or group to create files and subdirectories.
E (Erase)	Allow user or group to erase files and directories.
M (Modify)	Allow user or group to rename files and directories, and change file attributes.
F (File Scan)	Allow user or group to view and search on file and directory names in the file system structure.
A (Access Control)	Allow user or group to add and remove trustees and change trustee rights to files and directories.

Right	Use to
N (No Rights)	Remove all rights.
REM (Remove)	Remove the user or group as a trustee of the specified file or directory.
ALL	Add all rights except Supervisor.

Using RIGHTS

- If you list rights without using + or -, the rights you list replace existing rights.
- You must specify a path. You can use a period to represent your current directory.
- You can use wildcard characters.

Examples

To	Type
Set the trustee rights for user JANICE in the current directory to Read, Write, and File Scan	RIGHTS . R W F /NAME=JANICE
Remove user JACIE from ALICE/SYS:USERS	RIGHTS ALICE/SYS:USERS -TRUSTEE /NAME=JACIE
See where user PAT's inherited rights came from for SYS:USERS/HOME	RIGHTS SYS:USERS/HOME /NAME=PAT /I
View online help for RIGHTS	RIGHTS /?

Additional Information

Topic	See
Inherited rights	"Rights Needed to Create and Manage Objects" in *Supervising the Network*

Topic	See
Rights	"Setting Up and Managing NetWare Directory Services Objects" in *Supervising the Network*

SEND

Purpose

Use at a workstation to

- Send messages.
- Set your machine to receive all messages, only system messages, or no messages, or to poll for messages.
- Poll for messages.
- View broadcast mode.

Syntax

For NetWare Directory Services (NDS):

```
SEND [“message” [TO] [username | groupname | servername]] [/A=[A
| N | C | P]] [/P] [/S]
[/? | /VER]
```

For bindery (NetWare 3 and 2):

```
SEND “message” [TO] [servername/ [username | groupname | station
number]] [servername/ [CONSOLE | EVERYONE]] [/B]
```

Parameter	Use to
message	Type in the message you want to send.
servername, groupname, username	Specify the recipient of the message.
station number	Specify the connection number used by the server to identify the workstation.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

SEND NDS Options

Option	Use to
/A=A or /A	Set your workstation to accept all messages.
/A=C	Set your workstation to accept messages only from the server.
/A=N	Set your workstation to accept no messages.
/A=P	Set your workstation to poll. The server stores the last message sent until you poll to receive it.
/P	Poll the server for the last stored message
/S	Display the current broadcast mode

SEND Bindery Options

Option	Description
EVERYONE	Set your workstation to accept all messages.
CONSOLE	Set your workstation to accept messages only from the server.
/B	Display the server as a bindery server.

Using SEND

- If no user or connection number is specified, the message is sent to all attached users.
- Separate multiple users or connection numbers with a comma, a space, or and.
- All users except the following receive messages:
  - Users who have used SEND with the Accept None (A=N) option.
  - Those logged in using ACS or NACS.
  - Those logged in on remote workstations.
  - Those using some graphics applications.
- Messages do not interfere with the workstation’s screen display; however, the user cannot make entries on the screen until messages are cleared.

Examples

To	Type
Send the message “Meeting time” to users Bob, Sue, and Jeff.	SEND “MEETING TIME” BOB, SUE, JEFF
Send the message “Meeting time” to Bob using a complete name	SEND “MEETING TIME” .CN=BOB.O=MARKETING
Send the message “Meeting time” to KELLEY on bindery server FRIENDLY	SEND “MEETING TIME” FRIENDLY/KELLEY /B
Set your workstation to receive only console or system messages	SEND /A=C

Additional Information

Topic	See
Bindery server	“Bindery” in *Concepts*

SETPASS

Purpose

Use at a workstation to change your password.

Syntax

For NetWare Directory Services (NDS):

```
SETPASS [username] [/B] [/? | /VER]
```

For bindery (NetWare 3 and 2):

```
SETPASS [server[/username]] [/? | /VER]
```

Parameter	Use to
username	Specify the user whose password you want to change.
server	Specify the server where you want to change the user's password (if you are setting a password on a bindery server). On an NDS server, you do not need to include a server name.
/B	Change the password for a bindery server.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

Example

To	Type
Change the password of user PAT on server FRIENDLY	SETPASS PAT /B=FRIENDLY

SYSTIME

Purpose

Use at a workstation to synchronize the date and time set on your workstation with those of the server.

Syntax

```
SYSTIME [server] [/? | /VER]
```

Parameter	Use to
server	Specify the server you want to synchronize with.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

Examples

To synchronize your workstation's	Type
Date and time with those of the default server	SYSTIME
Date and time with those of server SCOTTY	SYSTIME SCOTTY
Date and time with those of server SCOTTY in another context	SYSTIME .SCOTTY.COMPANYB.US

Additional Information

Topic	See
Managing time synchronization	"Managing Network Time Synchronization" in Supervising the Network
Synchronization	"Time synchronization" in *Concepts*

UIMPORT

Purpose

Use at a workstation to add user objects into the Directory tree from an ASCII import file.

Syntax

```
UIMPORT [control file] [data file]
```

Parameter	Use to
control file	Specify the file that gives UIMPORT information on how to load data into the directory.
data file	Specify the comma-separated ASCII file that is made up of records containing attribute values.

Using UIMPORT

- If all users have home directories on the same volume, place the home directory information in the control file. Otherwise, place home directory information in the data file.
- If you specify home directories in both the control section and the import section of the control file, the Volume object name and path given in the control section are used.

WHOAMI

Purpose

Use at a workstation to view connection information.

Syntax

```
WHOAMI [server] [/option...] [/? | /VER]
```

Parameter	Use to
server	Specify the server whose connection information you want.
/option	Specify one or more options from the “WHOAMI NDS Options” or “WHOAMI Bindery Options” tables.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

WHOAMI NDS Options

Option	Use to
/B	View additional information.
/C	Scroll continuously through output.

WHOAMI Bindery Options

Option	Use to
/ALL	View all information.
/G	View the groups you belong to.
/O	View the supervisor of the object.
/R	View effective rights.

Option	Use to
/S	View security equivalences of the object.
/W	View the workgroup manager of the object.
/C	Scroll continuously through output.

Additional Information

Topic	See
Security	“Server Security” in *Supervising the Network*; “Security” in *Concepts*

WSUPDATE

Purpose

Use at a workstation to update a file on multiple drives and subdirectories.

Syntax

```
WSUPDATE [<source path> [drive letter: | volume name:]
[path\filename] [/option...]] | [/? | /VER]
```

Parameter	Use to
source path	Specify the path of the file you are updating from, including the filename. You cannot use wildcard characters.
drive letter	Specify a directory to search for outdated files. To search all mapped drives, use the /ALL option. To search all local drives, use the /Local option.
volume name	Specify an NDS Volume object. To search an NDS volume for outdated files, enter the full Volume object name relative to your current context. To search all mapped drives, use the /ALL option. To search all local drives, use the /Local option.
path \ filename	Specify a path, including the filename, so the search does not begin at the root.
/option	Specify one or more options from the “WSUPDATE Options” table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

WSUPDATE Options

Option	Use to
/ALL	Search all mapped drives. You cannot specify a drive or volume with this option.
/C	Copy the new file over the old one, with no backup.
/CON	Continuously scroll the output.
/E	Erase the existing log file. Use with the /L option.
/F=[path\file]	Specify a file where the commands to update the workstation are stored. (Other options are ignored.)
/LOCAL	Search all local drives. You cannot specify a drive or volume with this option.
/L=[path\file]	Specify the location and filename of a log file where WSUPDATE can store information. (Erase the log file using /E or a DOS delete command.)
/P	Get a prompt asking you whether to proceed. If there are no files to be updated, this option allows you to stop the session before it begins.
/O	Update all files, even those flagged Read Only.
/R	Rename the old file with an .OLD extension before copying the new file. (Use if you update a file but want to keep a copy of the old one.)
/S	Specify a search for outdated files in all subdirectories of the destination path.

Using WSUPDATE

- WSUPDATE compares the date and time of the source and destination files. If the source file is more current, WSUPDATE updates the destination file.
- WSUPDATE can be run from a batch file. In that case, you may want to use options such as File (F) and Proceed (P).

Examples

To	Type
Search all mapped drives and copy over old files	WSUPDATE VOL:SYSTEM\NET5.COM / ALL /C
Search local drives and rename the old file	WSUPDATE VOL:SYSTEM\NET5.COM / LOCAL /R
Specify file location	WSUPDATE /F=C:\NET3.COM

Additional Information

Topic	See
Drive mapping	“Drive mapping” in *Concepts*

WSUPGRD

Purpose

Use at a workstation to upgrade the IPX LAN driver on the workstation to the corresponding Open Data-Link Interface™ (ODI™) driver.

Syntax

```
WSUPGRD [path] [/option...] [/? | /VER]
```

Parameter	Use to
path	Specify the complete path to the driver, including the driver name.
/option	Specify one or more options from the "WSUPGRD Options" table.
/?	View online help. (Other parameters are ignored.)
/VER	View the version number of the utility and the files it uses to execute. (Other parameters are ignored.)

WSUPGRD Options

Option	Use to
/C	Cause utility to exit with error level 1 if no upgrade is performed. By default, the utility exits with no error code whether or not an upgrade is performed. This allows a batch file to conditionally perform other upgrade actions. If an error occurs, the utility exits with an error level 3, whether or not /C is specified

Option	Use to
/N	Cause the utility to not delete the IPX driver. By default the old driver is deleted before the ODI driver is installed. Note: If this switch is specified and the ODI driver has the same name as the IPX driver, the former will overwrite the latter—thereby deleting it even if /N is specified.
/E0 | 1 | 2	Control changes that the utility makes to the AUTOEXEC.BAT file.
E0	Specify that no changes be made to the AUTOEXEC.BAT file.
E1	Specify that the line which loads the IPX driver is to be deleted, if present, from the AUTOEXEC.BAT file and replaced by lines to load the LSL, ODI driver, and the IPX.
E2	Specify that the line which loads the IPX driver is to be deleted, if present, from the AUTOEXEC.BAT file and replaced by a call to a new batch file called NWSTART.BAT, which is to be created to load the LSL, the ODI driver, and IPX. Default: E2.
/S	Suppress the generation of a NET.CFG file from the information in the IPX driver's configuration table. Note: A NET.CFG file may be generated even if this switch is present if an LDC file is present with the ODI driver.
/I	Cause the utility to print out the hardware ID in the master configuration table of the ODI driver. You cannot use this option with any other. If this switch is specified, no upgrade is performed.
path	Specify the path to and the name of the existing IPX driver. Default: \IPX.COM.

Examples

To	Type
Save the IPX driver and update the AUTOEXEC.BAT file	WSUPGRD NE2000 /N /E1

To	Type
Print out the hardware ID	WSUPGRD NE2000 /I
Specify the location of the IPX driver for upgrading	WSUPGRD NE2000 C:\NE2000.COM

Additional Information

Topic	See
Using WSUPGRD in login scripts	Appendix B, “Using the WSUPGRD Utility” in *NetWare Client for DOS and MS Windows User Guide*

3

Server Utilities

Introduction

This chapter describes the utilities you can use to administer your NetWare server. You will find two types of utilities in this chapter:

- Command line utilities that you enter at the HP 9000 prompt. To run these utilities, you must
  - Log in as root; or
  - Become a user with superuser permission.
- Graphical User Interface (GUI) utilities that you access from the HP 9000 server console command line . You must have superuser permission to run these utilities.

  We do not describe how to use the GUI utilities in detail in this manual. Click on the Help button when you are in a utility for step-by-step instructions.

conndata

Purpose

Use at the HP-UX prompt to view the server connection table information for only valid entries in the server connection table.

Syntax

`conndata`

Example

The output of *conndata* is as follows:

```
:conndata

Conn  User Name     Net       Node      Sock  State     Login Time
---   -----------  --------  ------------ ----  --------   --------
  0   CONNDATA    00111120  000000000001 4045  ATTACHED  10/18/96  10:00
  4   PSERVER     00111120  000000000001 4044  LOGGED_IN 10/16/96   2:00
```

Directory Services Install

Purpose

Use at the HP-UX prompt to install and remove NetWare Directory Services (NDS).

Syntax

```
dsinstall
```

Additional Information

Topic	See
General information on NDS	*Introduction to NetWare Directory Services*
Installing NDS	"Installing NetWare Directory Services" in the *NetWare Services Installation Handbook*

Directory Services Repair

Purpose

Use at the HP-UX prompt to repair and correct problems with records, schema, bindery objects, external references, and so forth, in the NetWare Directory Services (NDS) database.

Syntax

```
dsrepair
```

Additional Information

Topic	See
General information on NDS	*Introduction to NetWare Directory Services*
Repairing NDS	"Repairing the NetWare Directory Database" in *Supervising the Network*

drouter

Purpose

Use at the HP-UX prompt to list

- Networks known to the router (NETWORK column).
- Number of routers that must be crossed to reach the network (HOPS column), estimated number of ticks (1/18th of a second) that a packet takes to reach the network (TIME column).
- Node number of the router with the best route to the network (NODE column).

Syntax

```
drouter [-1 | -C | -h]
```

Option	Use to
-1	Specify one column mode. The output from drouter is listed in one column without a header.
-C	Specify multi-column mode. The output from drouter is listed in multiple columns with the following header line: NETWORK HOPS TIME NODE
-h	View help for drouter. (You can also use -?.)

Additional Information

Topic	See
Listing NetWare servers	“nwsapinfo” on page 3-84

dsadmin

Purpose

Use at the HP-UX prompt to:

- Display or temporarily set the values for the nwcm parameter ds_bindery_context (to make permanent changes, use nwcm).
- Abort Directory Services client requests.
- Display the active Directory Services tree.

Syntax

```
dsadmin [-a count] [-b minutes]
[-B bindery_context [;bindery_context]]
[-d ON|OFF|value] [-e ON|OFF][-f [ON] [OFF]]
[-F file name][-i minutes][-j minutes]
[-r ON, nds-version[nds-version|off]
[-s up|down][-t] [-U][-x hours]
[-z]
```

Option	Use to
-a	Abort DS client requests that exceed the specified count of "request being processed" (RBP) retries. Any outstanding DS client requests that have RBP counters greater than the value you specify for count are cancelled. You may need to use this option if a client request is in a loop. To determine if a client request is looping, use the nwetcinfo utility. The last parameter reported by nwetcinfo, "Highest Request Being Processed count current in request table," indicates the highest number of consecutive RBP packets outstanding for any client request. If this number is large (for example, 10 or more), the request is probably in a loop.
-b	Set the interval, in minutes, at which NDS backlink consistency checking is performed.
-B	Sets the NDS container(s) where bindery services are provided. Multiple contexts are separated by the semicolon character.

Option	Use to
-d	On or a dstrace value enables NDS tracing to the screen, off disables it.
-e	Enforce checking of the “Equivalent to Me” attribute on authentication
-f	Trace DS events to the specified NDS trace file on the SYS volume.
-F	Set the path and name of the specified NDS trace file on the SYS volume.
-i	Specify the interval, in minutes, after which synchronization of replicas is performed following a period of no change to the information held in NDS on the server.
-j	Set the interval, in minutes, at which the NDS janitor process is executed.
-r	Restrict NDS synchronization. OFF allows synchronization with any version of DS. ON restricts synchronization to version numbers you specify as parameters. For example, ON, 420 421.
-s	Mark the status of all server objects in the local namebase as UP or DOWN.
-t	Display the name of the Directory Services tree that is active on the NetWare server.
-U	Forces the NWS server ro unregister the DSInstall or DSRepair utility from NDS. If the utility exited abnormally, this option will allow you to invoke the utility again or shut the NWS server down.
-x	Specify the number of hours that unused external references will be allowed to exist before they are removed.
-z	Clear the NDS trace file (sets the trace file length to zero).

Examples

To	Type
Reset ds_bindery_context to O=Marketing	dsadmin -B binderycontext=O=Marketing
Display the value for ds_bindery_context	dsadmin -B
Abort a request for a DS client that has received 36 consecutive RBP packets from a remote server	dsadmin -a 35
Display the name of the DS tree on the server	dsadmin -t

Using dsadmin

Any option which requires a value will print the current value if the question mark character is substituted for the value. For example, **`dsadmin -b ?`** will print out the current value.

Additional Information

Topic	See
The nwcm utility	“npsd”

ipxinfo

Purpose

Use at the HP-UX prompt to display the IPX™ socket and LAN statistics kept by the IPX driver.

Syntax

```
ipxinfo
```

Using ipxinfo

- The indention level and plus symbols in the following figures determine which statistics can be added to form a total.

  For example, in Figure 3-1 on page 3-10, Line 17 displays a total. The statistics that form that total are displayed below it and are indented further than the total (lines 18 through 21).

- Lines that don't have a plus symbol are informational. They can't be added to form a total.
- Numbers are limited to 10 digits.
- The following figures show examples of ipxinfo information:
  - Figure 3-1 on page 3-10 displays IPX LAN Router Statistics.
  - Figure 3-2 on page 3-11 displays information about packets sent to the LAN router.
  - Figure 3-3 on page 3-11 displays IOCTL statistics.
  - Figure 3-4 on page 3-12 displays IPX Socket Multiplexor (ISM) statistics.

```
Line
   1  IPX Socket Multiplexor (ISM) Version:  4.01
   2  IPX LAN Router Version:  4.01

   3     1:15:25 Time IPX driver active

   4  IPX LAN Router Statistics:
   5           Information about packets received from the LAN(s)
   6            0 Packets with DLPI header too small, dropped
   7            0 Packets not DLPI data type, dropped
   8         1423 Data IPX packets coalesced
   9            0 IPX/NETBIOS packets routed to other LAN(s)
  10            0 IPX/NETBIOS packets that have reached route limit, not routed

  11       234176 Total IPX data packets received from the LAN(s)
  12              0 +Packets smaller than IPX header size, dropped

  13           1423 +Broadcast packets echoed back by DLPI driver, dropped
  14           8475 +IPX/RIP packets
  15              8475 +IPX/RIP processed by router and dropped
  16                   0 +IPX/RIP processed by router and routed to ISM

  17          29692 +IPX/SAP packets
  18                 0 +IPX/SAP packets invalid, dropped
  19             29692 +IPX/SAP packets routed to ISM
  20                 0 +IPX/SAP packets no ISM, routed to sapd
  21                 0 +IPX/SAP packets no ISM, no sapd, dropped

  22              0 +IPX/DIAGNOSTIC packets addressed to my net
  23                 0 +IPX/DIAGNOSTIC packets addressed to my net, routed to ISM
  24                 0 +IPX/DIAGNOSTIC packets addressed to NIC
  25                   0 +IPX/DIAGNOSTIC packets routed to ISM
  26                   0 +IPX/DIAGNOSTIC packets, no ISM, LAN router responded
  27              0 +Packets, addressed to NIC, not IPX/DIAGNOSTIC, dropped

  28              3 +Broadcast packets
  29                 0 +Broadcast packets addressed to my net
  30                 3 +Broadcast packets addressed to NIC
  31                    0 +IPX/DIAGNOSTIC broadcast packets addressed to NIC
  32                       0  IPX/DIAGNOSTIC packets forwarded to LAN(s)
  33                       0 +IPX/DIAGNOSTIC packets ISM not present, LAN router
                              responded
  34                    3 +Broadcast Packets addressed to NIC, dropped

  35              0 +Packets destination not my net, forwarded to next router
  36              0 +Packets routed to a node on a connected net
  37         194583 +Packets routed to the ISM
```

Figure 3-1 IPX LAN Router Statistics Display

```
Line
  38  Information about packets sent to the LAN router
  39        0  IPX/NETBIOS packets from an application routed to LAN(s)
  40    72124  Total IPX data packets received from the ISM

  41    72590  Total IPX data packets sent to a LAN or ISM
  42          0  Packets destination net/node filled with my net/node
  43          1 +Packets from ISM destination/source sockets same, dropped
  44          0 +Packets router error, bad LAN, dropped
  45          0 +Packets with size greater than the LAN max SDU size, dropped
  46          0 +Packets sent to a LAN that is no longer connected, dropped
  47          0 +Packets routed to ISM
  48      72160 +Packets routed to LAN
  49        429 +Packets queued to a LANs paced packet queue
```

Figure 3-2 Packets Sent To LAN Router Display

```
Line
  50    16  Ioctl packets total
  51       1 +Set Configured LANs
  52       1 +Get Configured LANs
  53       0 +Set SAP Queue
  54       2 +Set LAN Info
  55       2 +Get LAN Info
  56       0 +Get Node Addr
  57       0 +Get Net Addr
  58       9 +Get Statistics
  59       1 +Link
  60       0 +Unlink
  61       0 +Unknown type
```

Figure 3-3 Total IOCTL Packets Display

```
Line
  62  IPX Socket Multiplexor (ISM) Statistics:

  63          12  Sockets Bound
  64          13  Non TLI Bind Socket Requests
  65           5  TLI Bind Socket Requests
  66           0  TLI Option Management Requests
  67           0  TLI Unknown Requests

  68       72124  Total IPX data packets received from applications
  69              0  Checksum generated
  70              0 +Failure to generate checksum, packet dropped
  71          15479  Packets padded to an even number of bytes
  72              0  Packets padded by allocating more space
  73              0 +Could not allocate block for padding, packet dropped
  74              0 +BIND_SOCKET user sent packet with socket value of zero,
                     dropped
  75          35233 +Non TLI data packets
  76                 0 +Packets with length less than IPX header size, dropped
  77             35233 +Packets sent to LAN router
  78          36892 +TLI data packets
  79                 0 +Bad TLI state, packet dropped
  80                 0 +Bad IPX address size, packet dropped
  81                 0 +Bad TLI option size, packet dropped
  82                 0 +Allocation of IPX header failed, packet dropped
  83             36892 +Sent to the LAN router

  84      224275  Total packets received by the ISM
  85              0  Data size trimmed to match IPX data size
  86                 0 +Packets with length less than IPX header size, dropped
  87           8735 +Packets dropped because upper stream full
  88              0 +Allocation of TLI header failed, packet dropped
  89          10811 +Packets dropped, destination socket not bound
  90         204729 +Total data packets routed by the ISM
  91             63881 +Packets sent to non TLI socket
  92            140848 +Packets sent to TLI socket

  93
  94          33  Total Ioctls processed
  95              1 +Ioctl requests SET_WATER
  96             13 +Ioctl requests SET_SOCKET or BIND_SOCKET
  97              3 +Ioctl requests UNBIND_SOCKET
  98              9 +Ioctl requests STATS
                  7 +Ioctl requests Unknown, sent to LAN router
```

Figure 3-4 IPX Socket Multiplexor Display

ndsbackup

Purpose

Use as at the HP-UX prompt to back up the master replicas on a NetWare server.

This is a disaster-recover utility and should not be used as the primary backup for your master replicas. You should use this utility only as a precaution in case your system experiences a major catastrophe that destroys all replicas.

For your primary backup procedure, we recommend that you create at least two replicas of each master and store them on other servers.

Syntax

```
ndsbackup [-l] -o filename [-v]
```

Option	Use to
-l	List all the master replicas on the server.
-o filename	Back up all the master replicas on the server to the file or device specified with filename.
-v	Print out the objects that are backed up (verbose).

Using ndsbackup

This command does not back up all NetWare Directory Services (NDS) information. For example, it cannot back up the following:

- System, schema, bindery, and external reference partitions
- Read/Write and Read Only replicas
- The entire Directory tree (unless it resides on the NetWare server as master replicas)

Additional Information

Topic	See
The ndsrestore utility	“ndsrestore”
Backing up and restoring NDS	“Emergency Recovery” in the *NetWare Services Installation Handbook*

ndsrestore

Purpose

Use at the HP-UX prompt to restore the master replicas on a NetWare server that were backed up with ndsbackup.

WARNING: **You should use this utility only as a last resort for restoring master replicas. Keep sufficient backup copies of your master replicas on other servers so you need to use this utility only as a disaster-recovery tool.**

Note that you can change a non-master replica into a master and then create a replica on the system. For more information, see "Changing a Replica's Type" in *Supervising the Network*.

Syntax

```
ndsrestore -i filename [-v]
```

Option	Use to
-i filename	Restore all the master replicas to the server from the file or device specified with filename.
-v	Print out the objects that are backed up (verbose).

Using ndsrestore

This command does not restore all NetWare Directory Services (NDS) information. For example, it does not restore the following:

- System, schema, bindery, and external reference partitions
- Read/Write and Read Only replicas
- The entire Directory tree (unless it resides on the NetWare server as master replicas)

Additional Information

Topic	See
The ndsbackup utility	“ndsbackup”
Backing up and restoring NDS	“Emergency Recovery” in the *NetWare Services Installation Handbook*

nlist

Purpose

Use at the HP-UX prompt to:

- View information about the following objects: users, groups, queues, volumes, and servers.
- Search on objects and object property groups.

Syntax

Refer to *nlist* under Workstation Utilities.

Using nlist

Differences between *nlist* on the server side and *nlist* on the client side.

- Only class types listed under “Purpose” above can be listed by *nlist* on the server side.
- The search can be done on object property groups and not on properties.
- Refer to the online help for command syntax and typical examples.

npfsview

Purpose

Use at the HP-UX prompt to view the information in the NetWare inodes files.

Syntax

```
npfsview
```

Using npfsview

You must have superuser permission to run *npfsview*. When you execute the command, the following occurs:

1 npfsview displays the existing NetWare volumes.

2 npfsview prompts you to enter a NetWare volume number.

3 npfsview prompts you for one of the following commands:

Option	Use to
<enter>	Displays the next inode.
<block>	Go to specified block.
-b <block>	Go to specified block.
-i <inode>	Go to specified inode
-f <name>	Find the specified directory or file name.
-n	Find next file name.
-h	Display command help.
-q	Quit

nprinter

Purpose

Use at the HP-UX prompt to allow NetWare servers to use a local HP-UX printer.

Syntax

```
nprinter [-v]
```

Use the -v option for detailed information output to the console. Otherwise, only the nprinter starting and nprinter going down messages are displayed.

Using nprinter

When you start nprinter, the daemon is executed and nprinter polls the following configuration files:

- /etc/opt/netware4/nprinter/ RPConfig
- /etc/opt/netware4/nprinter/RPControl
- /etc/opt/netware4/nprinter/PRTConfig

To stop nprinter, use the stopnp command.

npsd

Purpose

Used by startnps to

- Start the IPX protocol stack and include SPXII driver.
- Start various other drivers and daemons.

To start npsd, use startnps. The startnps command checks to see if npsd is running before it attempts to start the NetWare protocol stack.

Syntax

```
npsd [-v]
```

For more detailed output, use the -v option.

Using npsd

- Some daemons, such as npsd protocol stack, should not be unloaded under normal circumstances. However, if you reconfigure the stack you must stop and restart npsd.
- Several daemons and drivers are autoloaded when you load npsd:

Daemon or Driver	Explanation
IPX	This driver provides IPX protocol services. IPX is a connectionless, unreliable protocol. The device name for this driver is /dev/ipx.
RIPX (IPX Router)	This driver provides IPX routing information by creating and managing a router information table, including distance to the network (ticks), number of routers to traverse (hops), and the router on the local network used to send packets to the network. RIPX can be a participant or can be set to only listen to routing information (using nwcm router_type). The device name for the driver is in nwcm router_driver_name. Default: /dev/ripx.
SPXII (Enhanced Sequenced Packet Exchange)	This driver provides a connection-oriented, reliable protocol. It functions on top of IPX and adds session services. In addition to the services provided by SPX™, SPXII supports true protocol windows and negotiation of packet size upon the establishment of a connection. SPXII is a message or session protocol whereas SPX is primarily a packet sequencing protocol. The device name for this driver is /dev/nspx2. Enable SPXII with the nwcm spx parameter.
nwumpsd	This daemon monitors the NetWare protocol stack statistics and passes them on to the SNMP agent. Network Management Consoles can access and display NetWare protocol stack statistics from the SNMP agent. Enable nwumpsd using nwcm nwumps.

Daemon or Driver	Explanation
nwdiagd	This daemon provides support for the IPX diagnostic protocol and is required if nwumps is enabled. Enable nwdiagd using nwcm diagnostics.
sapd (Service Advertising Protocol Daemon)	This daemon is initialized if the nwcm parameter router_type is set to “full.” The sapd daemon performs those functions of the SAP agent that are independent of NetWare Services, such as building and maintaining the Server Information Table. This daemon is only needed if services on the local machine are advertised, such as NVT, Install Server, Application Sharing, and NetWare services; or if an internal LAN is configured. The nwcm router_type parameter controls whether or not sapd is started.
nvtd (NetWare Virtual Terminal Daemon)	This daemon is used by Novell Virtual Terminal clients to establish their connection. Enable nvtd using nwcm spx_network_rlogin.

Additional Information

Topic	See
Updating NetWare services configuration	“nwcm” on page 3-25

nwcm

Purpose

CAUTION: This command should only be used to configure parameters that are not configurable using the System Administration Manager (SAM).

Use at the HP-UX prompt to

- View and configure NetWare Services system parameters.
- Update NetWare Services parameters in the startup files.
- View and change IPX/SPX configuration information.
- View adapter and device information.
- View default settings for NetWare Services volumes.
- View NetWare Services network information.

Syntax

```
nwcm [option...]
```

Option	Use to
-s param=value	Set the parameter to the indicated value. Replace param with a parameter from the “nwcm Parameters Tables.”
-v param	View the value of the parameter. Replace param with a parameter from the “nwcm Parameters Tables.”
-V folder	View the values of parameters in a folder. To view values for all parameters, specify folder number 0.
-r param	Reset the value of the parameter to its default as specified in the configuration schema. Replace param with a parameter from the “nwcm Parameters Tables.”

Option	Use to
-d param	View the description strings (or name of the parameters in the current locale) for the parameter from the message catalog. Replace param with a parameter from the “nwcm Parameters Tables.”
-h param	View the input-help string for the specified parameter from the message catalog. Replace param with a parameter from the “nwcm Parameters Tables.”

nwcm Parameters Tables

The following tables list the nwcm parameters and describe when to use them:

- “General Server Parameters”
- “NDS Parameter”
- “System Tunable Parameters”
- “Miscellaneous Parameters”
- “Localization Parameters”
- “IPX/SPX Parameters”
- “SAP Parameters”
- “NetWare Management Parameters”
- “Printing (PSERVER) Parameters”
- “Printing (NPRINTER) Parameters”
- “NVT Parameter”
- “Time Synchronization Parameters”

Table 3-1 **General Server Parameters**

Parameter	Use to
alert_notify_string= value	Specify a list of users who are to receive alert messages in addition to ADMIN. Enclose the list of usernames within single quotation marks. A semicolon should immediately follow each username. For example, to send alert messages to users Larry and Judy, the alert list should contain 'Judy;Larry;'. Maximum length: 127 Default: Not Configured
burst_mode_clients= number	Limit the number of clients that can use the Packet Burst protocol. The server allocates a buffer in shared memory for the private use of each Packet Burst client. If you allow all clients to use Packet Burst, you may need to increase the size of shared memory. When this parameter is set to zero, all clients can use the Packet Burst protocol. Supported values: 0 to 1000 Default: 0
burst_mode_protocol= value	Determine whether NetWare clients can use the Packet Burst protocol. The Packet Burst protocol reduces traffic by allowing a burst of packets to be acknowledged with one packet (rather than acknowledging each packet.) If set to Yes, Packet Burst is enabled. Use the burst_mode_clients parameter to specify how many clients can use the protocol. Supported values: Yes, No Default: Yes

Table 3-1 General Server Parameters

Parameter	Use to
console_device=value	Default: “/dev/console” Specify which device receives the server messages. The default allows you to view the file server messages from the desktop using Message Monitor. Maximum length: 127
console_display_ watchdog_logouts= value	Control whether a message is sent to the server display device when the watchdog logs out a connection. If set to Yes, messages are sent. Supported values: Yes, No Default: No
enable_ipx_checksums =number	Determine whether the server validates the data integrity of IPX packets. Supported values: Disabled (0)–server will not check or generate checksums, Enabled–(1) server will check and generate checksums if requested, but does not require them, Required (2)–server requires checksums Default: Enabled (1)
err_log_file_size= number	Supported values: 65536 bytes to 4294967294 bytes Specify the maximum size in bytes of the error log file SYS$LOG.ERR. When the maximum size is reached, the error log file is copied to a backup file, and the error log file is started over. At any given time, only one backup file will be kept. Default: 1048576

Table 3-1 General Server Parameters

Parameter	Use to
file_access_control= value	Specify the file access mode for NetWare users. This parameter is used only if the access control mode is not specified for the volume in the voltab file. Supported values: netware–NetWare rights determine access, unix–HP-UX permissions determine access, both–Both NetWare rights and HP-UX permissions determine access, none–No access control policy is enabled and files are accessible to all NetWare clients. Default: netware
file_default_umask= value	Specify the umask that is used to assign HP-UX permissions on files created by NetWare users. Supported values: octal 0000 to octal 0777 Default: 0002
hybrid_allow_default_user =value	Determine whether all NetWare users must also be hybrid users. If set to No, NetWare users who do not have a mapping in the /etc/netware4/nwusers file use the nwuser account. If set to Yes, all NetWare users must have a mapping or else they cannot log in. This parameter is used only when the hybrid_users_enabled parameter is set to Yes. Supported values: Yes, No Default: No

Table 3-1 General Server Parameters

Parameter	Use to
hybrid_users_enabled =value	Determine whether hybrid user mapping is activated. If set to Yes, the server checks the /etc/netware4/nwusers file when a NetWare user logs in. If a HP-UX username has been assigned to the NetWare user, all files and directories created by the NetWare user will be owned by the assigned NetWare 4.1/9000 user. Supported values: Yes, No Default: Yes
hybrid_setuid_ enabled=value	Determine whether the NetWare processes assume the UID and GID of the hybrid user when processing an NCP request. If set to Yes, HP-UX auditing accurately reflects the UID of the NetWare user accessing the file. Hybrid users will also be able to create files on NFS-mounted NetWare volumes when permitted by their HP-UX permissions. Supported values: Yes, No Default: No
log_watchdog_logouts=va lue	Control whether log entries are created whenever a client is logged out by the watchdog. If set to Yes, a log entry is made in the SYS$LOG.ERR error log file whenever this event occurs. Supported values: Yes, No Default: Yes

Table 3-1 **General Server Parameters**

Parameter	Use to
login=value	Supported values: Yes, No Specify whether NetWare logins are allowed. If set to Yes, NetWare users may log in. If set to No, only ADMIN is allowed to log in. Default: Yes
max_connections= number	Specify the size of the Connection Table. Because both licensed connections and Directory Services connections use this table, configure the table for at least 10 more than your maximum number of licensed connections. Increase the number if you have a large Directory tree or you receive messages that the Connection Table is full. Supported values: 12 to 1000 Default: 50
max_open_files= number	Specify the maximum number of unique files that can be opened simultaneously for all NetWare users. Because the NetWare server employs shared file descriptor technology, multiple opens of the same file by one or more NetWare users are counted as only one true open file. If this parameter is set to zero, then the formula (max_connections x 4) + 10 is used to calculate this value. Supported values: 0 to 49000 Default: 0

Table 3-1 General Server Parameters

Parameter	Use to
max_search_contexts=number	Specify the maximum number of NCP directory searches that can be processed simultaneously. Normally, only one NCP directory search occurs at a time. Increase the default if you are using applications that support multiple outstanding directory searches or if you are having problems with corrupt or invalid directory information. Supported values: 16 to 100 Default: 16
max_volumes=number	Specify the maximum number of volumes that the NetWare server can mount. Supported values: 1 to 64 Default: 10
native_locks=value	Specify whether NetWare byte range locks are reflected onto the HP-UX file system. If set to Yes, any NetWare byte range lock within a file will be reflected as a HP-UX byte range lock on the entire file. If set to No, NetWare byte range locks will not be reflected on the HP-UX file system. Note that when set to Yes, the HP-UX lock is an advisory lock and a HP-UX process may ignore the lock and proceed with the read or write of the file. When NetWare/HP-UX file sharing is required, HP-UX processes must yield to existing NetWare byte range locks. Performance is affected somewhat when this parameter is set to Yes. Supported values: Yes, No Default: No

Table 3-1 General Server Parameters

Parameter	Use to
ncp_packet_signature option=number	Determine whether the server generates signatures for NCP packets. Supported values: Disabled (0)–server will not respond to signature requests, Enabled (1)–server responds to signature requests, but does not request them, Preferred (2)–server requests signatures, but does not require them, Required (3)-–server requires signatures Default: Enabled (1)
npfs_directory_ mandatory_sync_ interval=number	Determine the maximum length of time in seconds that can elapse between directory synchronization operations. You can override this value on a volume-by-volume basis by specifying the parameter in the voltab file. If this value is smaller than the value set for the npfs_directory_min_sync_interval parameter for any volume, then the npfs_directory_min_sync_interval parameter is ignored, and synchronization will occur as specified by this value Supported values 0 to 3600 Default: 900
npfs_directory_min_ sync_interval=number	Specify the minimum number of seconds that must elapse between directory synchronization operations upon directory access. You can override this value on a volume-by-volume basis by specifying the parameter in the voltab file. Supported values: 0 to 900 Default: 10

Table 3-1 General Server Parameters

Parameter	Use to
npfs_directory_purge_threshold=number	Specify the number of deleted file entries that must exist within a directory before they are purged from the NetWare usinodes file. You can override this value on a volume-by-volume basis by specifying the parameter in the voltab file. Setting this parameter to a very small value (such as 1) will cause deleted file entries to be purged frequently. Setting this parameter to a very large value (such as 1000000) will cause deleted file entries to be purged only when the volume usinodes file becomes full. Supported values: 1 to 4294967294 Default: 32
number_of_watchdog_packets=number	Specify the number of watchdog packets that the server sends to a workstation before logging the client out. Any packet from the client resets the count. Supported values: 5 to 100 Default: 10

Table 3-2 **System Tunable Parameters**

Parameter	Use to
burst_mode_buffer_ size=number	Specify the size in bytes of the Packet Burst buffer which in turn determines the maximum size burst the server can handle. Each client using the Packet Burst protocol receives a buffer of this size to store Packet Burst data. Changing the parameter may require a change in the size of shared memory. Supported values: 3072 to 65535 Default: 24576
burst_mode_packet_ delay_threshold= number	Control requests from the client to NetWare Services for interpacket delay between bursts packets. Requests are ignored if the requested delay is less than this parameter. Set this value at least to the system clock's resolution, typically 10000 microseconds (10 milliseconds). Supported values: 0 to 999999 Default: 10000
max_ncp_engines= number	Specify the maximum number of NCP engines that can run simultaneously. Supported values: 5 to 50 Default: 10

Table 3-2 System Tunable Parameters

Parameter	Use to
ncp_engines_to_start=number	Specify the number of NCP engines that run when the NetWare server starts. Increase the number if the nxinfo utility reports an excessive number of packets dropped due to server busy. Use the nwengine utility to change the number of engines after the server is up. Supported values: 2 to 50 Default: 2
read_ahead_cache=value	Activate a read-ahead cache buffer. When a NetWare user opens an executable file, the file is read into this buffer before receiving the request to download the file. Clients using Packet Burst do not use this buffer. If set to Yes, you may need to adjust the value of the read_ahead_cache_buffer_size parameter. Supported values: Yes, No Default: Yes
read_ahead_cache_buffer_size=number	Set the buffer size in bytes of the read-ahead cache. For optimal performance, the buffer size should be set to a multiple of the block size of the HP-UX file system. Changing the parameter may require a change in the size of shared memory. Supported values: 4096 to 32768 Default: 8192

Table 3-2 **System Tunable Parameters**

Parameter	Use to
shm_access=number	Specify the HP-UX permissions of the shared memory segment used by the NetWare server. The default value allows only system processes to access the shared memory segment. Supported values: 0600 to 0777 Default: 0600
shm_key=number	Specify a unique key for the NetWare shared memory segment. When NetWare is started, this key is registered with HP-UX to ensure that no other processes use the same key for a shared memory segment. Change this parameter if HP-UX has already assigned this number to another segment. Supported values: 0x1 to 0xFFFFFFFE Default: 0x600d400
shm_size=number	Specify the size of the shared memory segment in bytes. This value should be increased as connections, trustee assignments, and record locks increase. Supported values: 4194304 (4MB) to the maximum virtual memory available on your system Default: 4194304

Localization Parameters

Table 3-3 IPX/SPX Parameters

Parameter	Use to
diagnostics=value	Specify if the diagnostics daemon (diagnostics_daemon) is started by the NPS daemon. Set this parameter to Yes if Network Management is enabled. Supported values: Yes, No Default: No
diagnostics_log_file=value	Default: “diag.log” Specify the name of the log file for diagnostic messages. The location of the log file is log_directory. To prevent the diagnostics daemon from logging messages to the file, set this parameter to /dev/null. Maximum length: 127
ipx_max_hops=number	Specify the maximum number of routers that can be traversed while searching for a destination network. When the limit is reached, the packet is discarded. Supported values: 2 to 16 Default: 16
lan_x_trsr=value	Controls whether or not this machine uses Token Ring source routing. When set to “Yes,” other machines can be accessed across a Token Ring bridge. *x* can be a value between 1 and 16. Supported values: Yes, No Default: Yes

Table 3-3 IPX/SPX Parameters

Parameter	Use to
spx=value	Specify if the SPX driver is started by the NPS daemon (npsd). SPX works with the IPX transport to guarantee successful delivery of data packets. IPX is a datagram service and SPX is a connection-based service. Some NetWare services, such as printing and NVT, require SPX. Supported values: Yes, No Default: Yes
spx_max_connections= number	Specify the maximum number of connections the SPX can support. Small systems might want to decrease this parameter to conserve memory resources. Increase this parameter if connections are failing because no more devices or sockets are available. If the system is using NetWare print services, allow enough connections for the print server, the printers, and other NetWare servers serviced by the print server. Systems configured for NVT services probably need to increase this parameter because NVT uses SPXII for its underlying protocol. Supported values: 5 to 1010 Default: 1010

Table 3-3 IPX/SPX Parameters

Parameter	Use to
spx_max_sockets= number	Specify how many sockets SPX can use simultaneously for listening for connect requests from other end points. You can set this parameter so that small systems can efficiently use allocated memory for optimal system performance. Increase the value if applications are failing because listening sockets cannot be opened. Supported values: 5 to 1010 Default: 1010

Table 3-4 SAP Parameters

Parameter	Use to
sap_dump_file=value	Specify the name of the file that receives the output when the SAP daemon dumps the SAP tables. The dump is initiated by sending the SAP daemon a SIGPIPE and is generally used for debug. Values are any valid HP-UX filename (created in the directory log_directory), a valid path and filename, or /dev/null (disables logging). Maximum length: 127 Default: “sap.dump”

Table 3-4 SAP Parameters

Parameter	Use to
sap_file_ compatibility= value	Enable or disable /var/spool/sap in,out file compatibility (provides backwards compatibility for HP-UX 10.10). Supported values: Yes, No Default: No
sap_install_server= value	Control if this machine is advertised as an install server so others can install software from it. If set to No, the machine is not advertised as an install server. Supported values: Yes, No Default: No
sap_log_file=value	Specify the name of the file that saves the messages generated during the normal operation of the SAP daemon, such as messages relating to start and stop times or any unusual situations encountered. Values are any valid HP-UX filename (created in the directory log_directory), a valid path and filename, or /dev/null (disables logging). Maximum length: 127 Default: “sap.log”
sap_remote_apps= value	Control if NetWare Services advertises remote application sharing. If set to Yes, NetWare Services advertises that it has applications to share. If set to No, application sharing is not advertised. Supported values: Yes, No Default: No

Table 3-4 SAP Parameters

Parameter	Use to
sap_servers=number	Specify the maximum number of servers of all types that are seen on networks recognized by SAP. This parameter determines the size of the shared memory region used by SAP. If this parameter is too small, new servers that don't fit in the table are ignored. Supported values: 0 to 4294967294 Default: 3000
sap_track_file=value	Specify the device that displays tracking messages showing SAP packets when the track on command is invoked. Values are any valid HP-UX filename (created in the directory log_directory), a valid path and filename, the console, or /dev/null (disables logging). Maximum length: 127 Default: "/dev/console"

Table 3-5 NetWare Management Parameters

Parameter	Use to
nwum_trap_time= number	Specify, in seconds, how often the Network Management daemon checks for error conditions. A value of "-1" means disable traps Supported values: -1 to 300 Default: 5

Table 3-6 **Printing (PSERVER) Parameters (Continued)**

Parameter	Use to
pserver_console_ verbosity=value	Determine the type and quantity of messages that the print server displays. A low number minimizes the number of messages displayed; a high number increases the number of messages displayed. Supported values: 0 to 5 Default: 1
pserver_directory =value	Specify the name of the print server subdirectory created in the pserver log directory This directory contains log files and the process identification file. Maximum length: 127 Default: “pserver”
pserver_log_ directory=value	Specify the path where the print server directory is located. If you do not configure this parameter, the value defined by log_directory is used. Maximum length: 127 Default: Not Configured
pserver_password_ file=value	Specify the name of the file containing the print server password. Maximum length: 127 Default: “password”

Table 3-7 Printing (NPRINTER) Parameters (Continued)

Parameter	Use to
nprinter_console_ device=value	Specify where NPRINTER error and console messages are sent. Maximum length: 127 Default: Not Configured

Table 3-8 Time Synchronization Parameters

Parameter	Use to
ts_add_time_source= value	Specify a NetWare server to be added to the end of the configured time source list specified with the ts_time_source parameter. Maximum length: 48 Default: Not Configured
ts_debug=number	Enable debug trace output at various points in the code. Supported values: 0 to 7 Default: 0
ts_polling_interval= number	Determine how often (in seconds) the server checks to see if it is time synchronized with the network. All servers in the same NDS tree should use the same value. Maximum setting: 31 days. Supported values: 0 to 2678400 Default: 600

Table 3-8 **Time Synchronization Parameters**

Parameter	Use to
ts_remove_time_ source=value	Specify a NetWare server to be removed from the configured time source list specified by the ts_time_source parameter. Maximum length: 48 Default: Not Configured
ts_short_interval= number	Specify how often time synchronization polling occurs (in seconds) when a server discovers it is not synchronized with network time. After the server is synchronized, the polling interval increases until the server is using the value specified by the ts_polling_interval parameter. Supported values: 0 to 600 Default: 10

Using nwcm

If you use spaces before or after the equal sign, surround the parameter with quotation marks. For example:

```
nwcm -s burst_mode_protocol=on
```

or

```
nwcm -s “burst_mode_protocol = on”
```

To view all the parameters available with this command, use the *-v* parameter. For example:

```
nwcm -V*
```

Additional Information

Topic	See
NetWare Setup	“NetWare Setup”
	“Maintaining the NetWare Server” in *Supervising the Network*

nwdiscover

Purpose

Use at the HP-UX prompt to discover IPX network characteristics.

Syntax

```
nwdiscover [-a] [-f frame_type]
[-r retry_count] [-t timeout] [-d pathname] [-v] [-e frame_type]
```

Parameter	Use to
-a	Check all frame types and device types, even if there is a response from a NetWare server.
-f frame_type	Query the network to see if a NetWare server is responding to messages of the specified frame type. Default: Try all frame types.
-r retry_count	Specify the retry count when there is no response from the network. Default: 2.
-t timeout	Specify the number of seconds for a timeout. Default: 3. A value of zero indicates 1/2 second.
-d pathname	Specify a pathname to the network device driver. Default: The value of the first network returned by the HP-UX netinfo command.
-v	View in verbose mode. Information is sent to stdout.
-e frame_type	Exclude searching the specified frame type. This option can be used multiple times.

Using nwdiscover

- You must be the root user to use nwdiscover.
- The nwdiscover command discovers the network number, frame type, and device of connected IPX networks. It does this by generating two Service Access Protocol (SAP) Get Nearest Server (GNS) requests to the network, and

evaluating the results.

The first message is a service request message for NetWare servers; the second is a service request message for UnixWare servers.

If there is no response to the server request messages, an IPX Router Information Protocol (RIP) message is sent requesting information on all networks.

If a response is received to any of the messages, nwdiscover extracts the network and frame type from the reply.

The network information is sent to stdout.

- If an IPX network is already configured via nwcm, it is discovered first by nwdiscover.
- If no reply is received to any of the request messages, nwdiscover uses the information already configured, or if nothing is configured, it invents a network number, configures the specified frame type, and configures the specified device.

Examples

To	Type
Check all frame types, update configuration files, and turn off boot-up auto-discovery	nwdiscover -au
Try discovery using the specified device /dev/NE2000_0	nwdiscover -d /dev/NE2000_0
Configure an Ethernet II network, even if it is not used on your network	nwdiscover -f ETHERNET_II -u
Determine what networks are connected to your platform	nwdiscover -av

nwdump

Purpose

Use at the HP-UX prompt to view NEMUX device status information.

Syntax

Examples

The following figures display the information generated by nwdump. The output normally shows statistics for 13 devices. The sample output shows statistics for one device (Device 0).

```
Line
   1      0:12:56 Time NEMUX driver active
   2   0x00000000 Multiplexor state
   3   0x00000034 Multiplexor mask
   4            3 Streams linked
   5            3 Streams dumped

   6           13 Devices allocated
   7              13  Devices dumped
   8              13 +Devices open
   9               0 +Devices closed

  10               2 +Devices are non-NWU processes
  11              11 +Devices NWU processes
  12                  1 +Device NWU daemon
  13                  5 +Devices engines
  14                  5 +Devices non-engines

  15                 10  Max engines allowed
  16                  5  Engines requested
  17                  0  Engines idle
  18                  0  Abnormal engine deaths
  19                  0  Abnormal non-engine deaths
  20                  0  Abnormal NWU daemon deaths
  21                  0  Engine start failures

  22         2592 Messages from the LANs
  23               0+ Client messages sent
  24            1962+ Server messages sent without queueing
  25             626+ Server messages queued then sent
  26               1  Server messages currently queued
  27               4+ Upstream ioctl response messages sent
  28               0+ Upstream messages dropped

  29         2608 Messages from the stream head
  30               0+ Client messages sent to the LAN
  31            2582 +Server messages sent to the LAN without queueing
  32               0 +Server messages queued then sent to the LAN
  33               0 +Server messages currently queued
  34              25 +Ioctl requests
  35               0 +Messages dropped
```

Figure 3-5 NEMUX Device Statistics

```
Line
  36    /dev/ncpipx is stream linked to stream -1 1
  37            1962 +Messages sent without queueing
  38             626 +Messages queued then sent
  39               1  Messages currently queued
  40               0 +Ioctl responses upstream
  41               0 +Messages dropped
  42         2582 Messages from the stream head
  43            2582 +Messages sent without queueing
  44               0 +Messages queued then sent
  45               0  Downnstream messages currently queued
  46               0 +Ioctl requests
  47               2  Device that sent the last message
  48      0x00000000  Last ioctl command


  49    /dev/pkbipx is stream linked to stream -1 2
  50               0 +Messages sent without queueing
  51               0 +Messages queued then sent
  52               0  Messages currently queued
  53               0 +Ioctl responses upstream
  54               0 +Messages dropped
  55            0 Messages from the stream head
  56               0 +Messages sent without queueing
  57               0 +Messages queued then sent
  58               0  Downstream messages currently queued
  59               0 +Ioctl requests
  60               0  Device that sent the last message
  61      0x00000000  Last ioctl command
```

Figure 3-6 NEMUX Device Statistics

```
Line
  62   /dev/nwetc is stream linked to stream -1 3
  63              0 +Messages sent without queueing
  64              0 +Messages queued then sent
  65              0  Messages currently queued
  66              4 +Ioctl responses upstream
  67              0 +Messages dropped
  68            4 Messages from the stream head
  69              0 +Messages sent without queueing
  70              0 +Messages queued then sent
  71              0  Downstream messages currently queued
  72              4 +Ioctl requests
  73              0  Device that sent the last message
  74     0x00006DFB  Last ioctl command


  75            0 Device number
  76         2974 Process PID
  77   0x00000003 Process state
  78            0 Last stream index
  79   0x0000000E Last downstream message type
  80           12 Messages sent from the stream head
  81              12 +Number of ioctl requests
  82               0 +Messages sent to the LANs
  83            0 Messages received from the LANs
  84            0 Messages received from the LANs
  85               0 +Messages dequeued & sent
  86              12  Ioctl responses
  87               0 +Messages dropped
  88     0xACCE5501  Last ioctl command
```

Figure 3-7 NEMUX Device Statistics

nwengine

Purpose

Use at the HP-UX prompt to set the total number of currently running NetWare engines.

Syntax

```
nwengine num
```

Replace num with the number of NetWare engines to be running. The number of engines must be at least one.

Using nwengine

- If more engines are running than the number specified, the number of engines is decreased.
- If fewer engines are running than the number specified, new engines are started.
- The number of engines specified must be less than or equal to the value specified by the nwcm parameter max_ncp_engines. You cannot start more engines than what is specified by this parameter.

Examples

To	Type
Run seven NetWare engines	nwengine 7
Decrease the number of running NetWare engines from seven to four	nwengine 4

Additional Information

Topic	See
System tunable parameters for nwcm	“System Tunable Parameters”

nwetcinfo

Purpose

Use at the HP-UX prompt to view NWetc driver statistics.

Syntax

```
nwetcinfo
```

Example

The following figures display the information generated by *nwetcinfo*.

```
# ./nwetcinfo


NWetc Driver Statistics
  259:54:25 Time NWetc driver active

     12817 Total messages sent downstreamR
     11795 Ioctls sent to NWetc
         0 Downstream messages dropped
         0 Downstream messages dropped not PS_TYPE_CLIENT

     27016 Total upstream messages received
         0 Unknown upstream messages received and dropped
        0 Unknown upstream M_DATA messages received and dropped

  Server Statistics
     15392 Messages received on server socket
         0 Messages dropped received on server socket
     15267 Server watchdog replies sent directly upstream
       125 Server watchdog replies queued due to engine busy
         0 Server watchdog replies dropped due to flow control
       125 Server watchdog replies chained by service routine
   124 Server watchdog replies chains sent up by service routine
         0 Server watchdog replies chains put back on queue

       10938 Total server ioctls received
           0 Bad server ioctls received
       15434 Server watchdogs sent
           0 Server watchdogs dropped
          11 Server broadcast messages sent
           0 Server broadcast messages dropped

  Client Statistics
        7992 Messages received on client watchdog socket
           0 Messages dropped from client watchdog socket
        7992 Replies sent to client watchdog socket
```

```
           3 Default retry count for a client message
           3 Seconds between retries for client messages
          15 Maximum client requests at one time

        1011 Downstream client message sent
           0 Downstream client message returning error
           1 Maximum retries sent on a client message
         122 Number of times a client message was retransmitted
        1129 Messages received on client message socket
           0 Messages dropped from client message socket
           0 Client message dropped (no corresponding request)
        1010 Messages sent upstream from client message socketro

 9 Messages received on client broadcast socket
           9 Client broadcast messages sent directly upstream
           0 Client broadcast messages dropped
           0  Client  broadcast  messages  queued  for  service
             routine
           0 Client broadcast messages sent upstream by service
             routine
           0  Client  broadcast  messages  re-queued  by  service
              routine

  IPX Echo Statistics
        1500 Maximum IPX echo packet size
         208 Messages received on IPX echo socket
           0 Messages dropped from IPX echo socket
         208 IPX echo messages sent

  Request Table Statistics
          15 Request Table Size
           1 Length of longest successful search for reques
           0 Highest Request Being Processed count currently in
             request table

#
```

nwmonitor

Purpose

Use at the HP-UX prompt to view the file server connection table information and NDS client connection table information.

Syntax

```
nwmonitor [-admsw] [-c num]
```

Options	Use to
-a	Shows authenticated ID information.
-d	Shows only NDS client connection table.
-m	Dumps only NDS_POOL headers.
-s	Shows session key information.
-w	Shows connection watchdog information.
-c num	Only shows information for this server connection number.

Using nwmonitor:

The NetWare server must be up and you must be a root user to use nwmonitor.

nwprint

Purpose

Use at the HP-UX prompt to print a file on HP-UX to a NetWare printer queue.

Syntax

```
cat <file> | nwprint [options]
```

or

```
nwprint { [options] file }
```

Options	
-a	Start codes
-b	(No banner page)
-c	Copies
-d	Descriptor
-e	(No extra page)
-f	Control file
-h	Hex codes.
-n	Banner name
-p	Password
-q	Print queue
-s	Server name
-t	Tab size
-u	User name
-z	End codes

Example

The following figures display the information generated by *nwstats*.

```
nwprint -uADMIN -ppag -sMalibu_server -q Malibu_pqueue report
```

Using nwprint

<user_name> must be a valid user on <server_name> and must be on the list of users on <print_queue> who can submit jobs to the queue.

nwsapinfo

Purpose

Use at the HP-UX prompt to view information maintained in the server information tables.

Syntax

```
nwsapinfo [-adfFilLtxz] [-c num] [-C num] [-n num]
[-s name] [-T num]
```

Parameter	Use to
-a	Include the -dfLtx options.
-d	Dump the Service Advertising Protocol (SAP) tables.
-f	Print 12 characters of the name in the first column (default).
-F	Print the full name in the last column.
-i	Display SAP information (default).
-l	Display a list of NetWare servers local to this machine.
-L	Display LAN information.
-t	Display a list of NetWare servers types found on the network
-x	Display the IPX address of SAP daemon.
-z	Print values without labels.
-c num	Display NetWare servers changed since the specified revision number
-C num	Display NetWare servers changed since the specified revision number; waits for additional changes until interrupted.
-n num	Display nearest NetWare server of the specified type.

Parameter	Use to
-s name	Display NetWare server information about the specified server name; may be followed by the -T option. This option supports wildcards.
-T num	Specify a NetWare server type. Can be used with one or more of the -d, -f, -t, -c, -C, -s options.

Using nwsapinfo

Figure 1-8 displays the information in the Server Information tables.

```
Line
   1      0:17:07 Time SAP daemon active
   2       413 is the SAP PID, SAP is active
   3      1759 Total known servers
   4      1241 Total unused server entries
   5         2 Total LANs known to SAP
   6       327 Current revision stamp value

   7     10020 Total SAP packets received
   8            0 GSQ packets received
   9         5006 GSR packets received
  10            2 NSQ packets received
  11            2 Local requests to advertise a server received
  12            0 Local requests to notify of changes received
  13            0 Local requests to get shared memory ID received
  14            0 Packets received, source not on our LAN
  15            0 Packets received & dropped, echo of packet sent by SAP daemon
  16            0 Packets received, bad size SAP packets
  17          928 Invalid SAP source detected

  18       54 Total SAP packets sent
  19            0 Nearest server replies sent
  20           51 General server replies sent
  21            1 General server queries sent
  22            2 ACK responses to advertise a local server sent
  23            0 NACK responses to advertise a local server sent
  24            0 ACK responses to notify local process of changes sent
  25            0 NACK responses to notify local process of changes sent
  26            0 ACK responses to get shared memory ID sent
  27            0 Packets where destination net not a local net
  28            0 Server structure allocation request failures (shared memory)
  29            0 Source structure allocation request failures (malloc)

  30       88 Total network down packets received from RIP
  31            0 Bad packets received from RIP
  32           22 Services set to DOWN from RIP packets received
  33        0 Local processes requesting notification of changes
  34            0 Notifications of change sent to local processes
```

Figure 3-8 Server Information Table Display

Examples

To	Type
Display information about NetWare servers that begin with the letters “BA” (the -s option supports wildcards)	nwsapinfo -f -s “BA*” The wildcard * can only be used once, and only as the last character of the name. For example, “A*” and “ABCD*” are valid uses of *.
Display information about NetWare servers that have changed since the specified revision stamp	nwsapinfo -C10000
Display all statistical information about SAPD	nwsapinfo
Display NetWare servers of a specific type	nwsapinfo -d -T 0x247
Display information about the networks on the computer on which the SAP daemon is running	nwsapinfo -L

Additional Information

Topic	See
Listing networks	“drouter”

nwsaputil

Purpose

Use at the HP-UX prompt to stop or start advertising a local server, or to query the contents of the sapouts file (which contains information about servers advertised with the “permanent” option).

Syntax

```
nwsaputil [-a | -d | -q] [-t type] [-s socket]
[-n name]
```

Option	Use to
-a	Advertise a specified server and add it to the sapouts file. You must use -t and -s with this option. You can also use -n to specify the server name. If you don’t use -n, the configured HP-UX workstation name is used as the server name. You must be the root user to use this option. You cannot use -d or -q with this option.
-d	Stop advertising a specified server and delete it from the sapouts file. You must use -t with this option. You can also use -n to specify the server name. If you don’t use -n, the configured HP-UX workstation name is used as the server name. You must be the root user to use this option. You cannot use -d or -q with this option.
-q	Query contents of the sapouts file. You can use -t, -s, and -n individually or together as a filter of the responses. You cannot use -a or -d with this option.

Option	Use to
-t type	Specify server type. Replace type with the type of server. The type can be specified in hexadecimal (0xn), octal (0n), or decimal (n).
-s socket	Specify server socket number. Replace socket with the socket number. The socket number can be specified in hexadecimal (0xn), octal (0n), or decimal (n).
-n name	Specify server name. Replace name with the server name. The server name is not case sensitive (you can use either uppercase or lowercase characters).

Example

To	Type
Advertise print server BOB with socket number 0x4068 and add it to the sapouts file	nwsaputil -a -s0x4068 -t0x0047 -nbob
Advertise the workstation as type 6754 with socket number octal 467 and add it to the sapouts file	nwsaputil -a -s0467 -t6754
Stop advertising a server called WORK_SERVER with type 345 and remove it from the sapouts file	nwsaputil -d -t345 -nwork_server
Query all contents of the sapouts file	nwsaputil -q
Query all contents with server name LOCAL_SERVER	nwsaputil -q -nlocal_server

Additional Information

Topic	See
Local SAP information	The -l option for “nwsapinfo”

nwserverstatus

Purpose

Use at the HP-UX prompt to check the status of your NetWare server.

Syntax

```
nwserverstatus
```

Using nwserverstatus

A one or two line description showing the status of the NetWare server will be displayed.

Additional Information

Topic	See
Managing the NetWare server	"Maintaining the NetWare Server" in *Supervising the Network*

nwstats

Purpose

Use at the HP-UX prompt to view statistical information about NetWare Services.

Syntax

```
nwstats [abcdefghijklmnpsyz]
```

Parameter	Use to display
-a	NCP engine statistics
-b	Connection statistics
-c	File I/O statistics
-d	NPFS volume statistics
-e	Miscellaneous statistics
-f	Lock Manager statistics
-g	Packet security statistics
-h	Message and event statistics
-i	Packet burst protocol statistics
-j	Packet burst system packet statistics
-k	Packet burst write fragment statistics
-l	Packet burst missing fragment statistics
-m	Packet burst read statistics
-n	Packet burst write statistics
-p	Fast path statistics

Parameter	Use to display
-s	Fast path summary
-y	Clear all Netware statistics
-z	Clear all fastpath statistics

Example

The following figures display the information generated by *nwstats*.

```
nwstats

NetWare File Server Statistics
Information from the running server at Mon Jun 10 13:21:12 1996


NCPEngine statistics:
           2  NCPEngines started
           0  NCPEnginesTerminated
           2  NCPEnginesRunning
        8458  TotalPacketsProcessed

Connection statistics:
         268  CreateConnectionRequests
         261  DestroyConnectionRequests
           0  MaxSimultaneousConnections

File I/O statistics:
           6  CreateFileRequests
         124  OpenFileRequests
     1921527  ReadFileRequests
      860506  WriteFileRequests
          17  NumOpenFiles
           0  MaxSimultaneousOpens
   343440534  Bytes read
   115860903  Bytes written
         128  MaxSubdirTreeDepth
           1  Number of mounted volumes
           0  Number of shared file system hash buckets



NetWare Portable File System statistics:
           0  Number of purges performed on NPFS volumes
           0  Number directory purges on NPFS volumes
         219  Number of directory synchronizations on
               NPFS volumes

Miscellaneous statistics:
           0  RetransmittedResponse
```

```
          0  ReadAHeadCacheHits
       2288  ReadAHeadCacheMisses
          0  PrintRequests
          3  MessageRequests
         66  DirectoryRequests
        400  BinderyAndMiscRequests
          0  AFPRequests
          0  NWUSpecificRequests
          0  ExtendedAttributeRequests
          0  EnhancedNCPRequests
          0  NotSupportedRequests
          0  UnknownRequests
          0  BadPacketAcks

Lock Manager Statistics:
          0  LogicalLockRequests
          0  NumLogicalLocks
          0  MaxSimultaneousLogLocks
          0  FileLockRequests
          0  NumFileLocks
          0  MaxSimultaneousFileLocks
          0  PhysLockRequests
          0  NumPhysLocks
          0  MaxSimultaneousPhysLocks
          0  SemaphoreRequests
          0  NumSemaphores
          0  MaxSimultaneousSemaphores

Packet Secutiry Statistics:
          0  Forged
          0  PacketsWithInvalidSignature

Message and Event Statistics:
          0  MessagesSent
         14  Informs
      10015  EventsEntered
      26534  EventsServiced
          0  WatchdogPacketsSent
          1  NumClientsWatchdogged
          0  NumClientsKilledLoginRestrict
          0  LoginFailures
          0  NoAvailConnections
          0  ClearTextPasswordLogins
          0  NumCurrentDirHandles



Burst Protocol Statistics:
          0  BlastPacketsReceived
          0  UnknownBlastPacketType
          0  InvalidBlastPacket

    Burst System Packet Statistics:
          0  SystemPacketsReceived
          0  MissingFragmentListReceived
          0  MissingFragmentListInvalid
          0  AreYouAlivePacketsReceived
```

```
        0  HoldOffPacketsSent
        0  SystemPacketInvalid
        0  SystemPacketInvalidBlastNumber
        0  SystemPacketTooLate
        0  SystemPacketUnknown

Burst Write Statistics:
        0  WriteFragmentsReceived
        0  LateWriteFragmentDropped
        0  TardyWriteFragmentDropped
        0  WriteFragmentInvalidBlastNumber
        0  DuplicateWriteFragment
        0  WriteFragmentInvalidLengths
        0  WriteFragmentNotNeeded
        0  LastFragmentIsFirstToBeProcessed
        0  BurstWriteSuccessRetransmitted

Burst Missing Fragment Statistics:
        0  MissingFragmentListSent
        0  SendMissingFragmentListNoneMissing
        0  WriteRequestFragmentMissing

Burst Read Statistics:
        0  ReadRequestsReceived
        0  DuplicateBurstReadRequest
        0  ReadRequestInvalidBlastNumber
        0  InvalidSignatureOnReadRequest
        0  ReadPacketsHeldForInterval
        0  BlastReadAheadMisses
        0  BlastReadAheadHits
        0  BlastReadsCompleted

Burst Write Statistics:
        0  WriteRequestsReceived
        0  WriteBurstAborts
        0  WriteOutOfOrderFragment
        0  WriteRequestInvalidBurstNumber
        0  WriteRequestNotInWriteMode
        0  WriteRequestRequiredAck
        0  WriteRequestFragmentInvalidLengths
        0  InvalidSignatureOnWriteRequest
        0  DuplicateWriteRequest
        0  IllegalDuplicateWriteRequest
        0  WriteCompleteWithFragsInProcess
        0  BlastWritesCompleted
```

Additional Information

Topic	See
Local SAP information	The -l option for “nwsapinfo”

nwvm

Purpose

Modifies information from the *voltab* file and repairs/optimizes the NetWare inodes file. The NetWare server must be down for you to use the *nwvm* utility.

Syntax

`nwvm [-B|-M] volname [-o option]`

Parameter	Use to
-B	Can be used to rebuild an existing usinodes file for a volume if this usinodes file is suspected of being corrupted. Before doing the rebuild, the following three files have to exist in the control directory/path for the volume:usinodes, extendedNames and trustee.sys. This option will save the old file in the control directory as usinodes.old and will save the old extended names file as extendedNames.old. To preserve the trustee information when rebuilding the usinodes file, it will also create a file in the same control directory called ChangeTrustees. At NetWare startup time, this file will be used to resynchronize the trustee file trustee.sys with the newly created usinodes file.

Parameter	Use to
-M	Modifies the volume information for the selected item. If either the control path (-c) or the mount path (-p) are modified, the information is changed only in the *voltab* file. The utility does not move the files in the old directories to the new directories. You must manually move the files to the new locations. If the files in the control directory are not moved to the new location, NetWare server will create new control files.
volname	Specifies the name of the volume to be modified or created. Volume names must be unique and contain 2 to 15 characters.
option	Sets the volume options. Replace *option* with one or more of the following. Use commas as delimiters between options.

nwvm Options

Option	Use to
ro	Permits read-only access to the volume
max_open_files= value	Specifies the maximum number of open files. Replace *value* with an integer from 0 to 49,000. If this option is set to 0, an internal formula, based on the maximum number of connections, is used to calculate the value.
file_access_control=value	Specifies the type of file security. Replace *value* with one of the following: netware, unix, both, none.
cdrom	Makes the volume a CD-ROM volume and forces the volume to be *ro* and use UNIX for file access control.

Option	Use to
npfs_directory_min_sync _interval=value	Specifies the minimum interval for synchronization. Replace *value* with an integer from 0 to 900. The default is ten seconds.
npfs_directory_mandatory_ sync_interval=value	Forces a synchronization on directories that still appear to be synchronized. After the specified time elapses since the last synchronization of a directory, a synchronization will be performed even though the directory appears to be unchanged. Replace value with an integer from 0 to 3600. The default is 900 seconds.
npfs_directory_purge_ threshold=value	Controls how often purges of deleted entries are performed by specifying how many deleted entries must exist before a purge takes place. Replace *value* with an integer from 0 to 0xFFFFFFFF. The default is 32.
npfs_no_sync_at_mount	Determines whether the NetWare volume is synchronized with the UNIX file system when the NetWare volume is mounted. This controls only mount-time synchronization; the periodic synchronizations will take place according to the volume's configuration. This option is designed to be used with remotely mounted volumes or volumes which include files from remotely mounted systems.

Option	Use to
nfiles=*value*	Controls the size of the NetWare inodes file. When a volumeis created, this value determines the initial size of the NetWare inodes file. It needs to be large enough to include all the files that currently exist in the volume's path. Replace *value* with the maximum number of files you expect to support in the volume. Default is 10000.

Example

Modifies the attributes of volumes in the voltab file:

```
nwum -M volname -o “max_open_files=50,nfiles=100”
```

nxinfo

Purpose

Use at the HP-UX prompt to view `ncpipx` statistics.

Syntax

`nxinfo`

Example

The following example displays the information generated by *nxinfo*.

```
# nxinfo
 259:38:58 Time NCPIPX module active
         32 Entries in hash tableR
          5 Maximum number of clients ever active at one time
          0 Clients now active

     76342 Total messages sent down stream
        76259 +Response messages, with data, end of message
           0 +Response messages, with data, message to continue
          15 +Response messages, no data, end of message
           0 +Unsolicited messages
          68 +Ioctl messages received
           0 +Messages dropped

     77953 Total up stream messages received
        76274 +NCP messages sent
           0 +Packet burst system messages sent
           0 +Packet burst read requests sent
           0 +Packet burst write requests sent
           0 +Packet burst write fragments sent
           0  Packet burst messages expedited
           0 +Number of packet burst write requests dropped
         107 +NCP messages dropped
           0 +Packet burst messages dropped
        1551 +Server busy replys due to client already busy
           0 +Packets dropped because server busy

     76286 Hash entries inserted in hash table
           0 Hash entries inserted more than one level deep

#
```

pmonitor

Purpose

Use at the HP-UX prompt to view the status of NetWare printers.

Syntax

```
pmonitor [options] <print_server_name>
```

Option	
-u	<user_name>
-p	<password>
-r	<NetWare_Server_Name>
-h	print this help screen

Example

```
pmonitor -uADMIN -ppas -rMalibu_pserver
eted
```

Using pmonitor

<user_name> must be a valid user or <NetWare_server_name> and must be on the list of valid users on <print_server_name>/.

pserver

Purpose

Use at the HP-UX prompt to load the print server and establish print services for the network.

NOTE: Before you load the print server, use PCONSOLE or Nwadmin to set up a print server and SAM to set up configuration files.

Syntax

```
pserver [options] <printserver>
```

Option	Use to
-f server	Authenticate through the bindery to the specified server.
-c context	Specify the context.
-s server	Specify the preferred server.
-t tree	Specify the preferred tree.
-v n	Set the console verbosity level between 0 and 5, where 5 is the highest level of verbosity, and 0 is the lowest.
-l n	Set the system log verbosity level between 0 and 5, where 5 is the highest level of verbosity, and 0 is the lowest.
-q	Run pserver without any messages on the console (quiet mode).
-b	Authenticate through the bindery.
-n	Enable Network Management.
-p	Password

Using pserver

When you run pserver, any options you use override any option set with nwcm.

Additional Information

Topic	See
Using pserver	“Setting Up and Servicing Print Servers” in *Print Services*
Printer server parameters for nwcm	“npsd”
PCONSOLE	“PCONSOLE”

pslist

Purpose

Use at the HP-UX prompt to view advertised list of print servers.

Syntax

```
pslist
```

Additional Information

Topic	See
Starting pserver	“pserver”

ripinfo

Purpose

Use at the HP-UX prompt to view router driver statistics from the protocol stack.

Syntax

```
ripinfo
```

Using ripinfo

Figure 1-9 on 6 displays RIP driver statistics. The indention level and plus symbols determine which statistics can be added together to form a total.

For example, Line 3 displays a total. The statistics that form that total are displayed below it and are indented further than the total (lines 4 through 10).

Lines that don’t have a plus symbol are informational and cannot be added to form a total. Numbers are limited to 10 digits.

```
Line
   1  RIPX Version:  4.01

   2     1:15:53 Time RIP driver active
   3        8711 Total router packets received
   4             0 +Could not generate LAN key, dropped
   5             0 +Invalid router structure size, dropped
   6             0  Multiple message blocks coalesced
   7             0 +Coalesce Failure, dropped
   8            40 +Router request packets
   9          8671 +Router response packets
  10             0 +Unknown request packets

  11           482 Total router packets sent
  12             0 +Could not allocate buffer for packet, ignored
  13             0 +Could not match destination with a net, ignored
  14             2 +Router request packets sent
  15           480 +Router response packets sent

  16             0 Total requests to build packets for the local net, ignored
  17             0 Total router packets built for the local net, routed to IPX

  18       17046 Ioctl requests processed
  19             1 +Ioctl RIPX_INITIALIZE
  20             0 +Ioctl RIPX_GET_HASH_SIZE
  21             0 +Ioctl RIPX_GET_HASH_STATS
  22             0 +Ioctl RIPX_DUMP_HASH_TABLE
  23             0 +Ioctl RIPX_GET_ROUTER_TABLE
  24          1948 +Ioctl RIPX_GET_NET_INFO
  25         15095 +Ioctl RIPX_CHECK_SAP_SOURCE
  26             0 +Ioctl RIPX_RESET_ROUTER
  27             0 +Ioctl RIPX_DOWN_ROUTER
  28             2 +Ioctl RIPX_STATS
  29             0 +Unknown ioctls
```

Figure 3-9 RIP Driver Statistics Display

rrouter

Purpose

Use at the HP-UX prompt to reset and rebuild the IPX Router table in NetWare services by requesting route information from all neighboring routers.

Syntax

```
rrouter
```

Using rrouter

- You must be the root user to use rrouter.
- This command is normally not needed during the operation of the IPX protocol stack.

  However, if a router has crashed, it might take several minutes before its routes are removed from the routing table. Running rrouter could speed up the process.
- Running rrouter might cause a momentary increase in the amount of RIP traffic on the network.

spxinfo

Purpose

Use at the HP-UXhp-ux prompt to view statistics for the SPX driver.

Syntax

```
spxinfo [minor_number]
```

Replace minor_number with a minor number (in decimal).

Using spxinfo

- If spxinfo is used without a minor number, the general statistics are displayed along with statistics for every minor number.
- If a minor number is specified, then the general statistics are displayed along with the statistics only for the minor number specified.
- The following examples display information that spxinfo generates. Figure 1-10 on shows general statistics displayed for the SPX driver. Figure 1-11 shows connection statistics.

  In the example, statistics are for minor number 2. Lines 36 through 40 and lines 44 through 53 are only displayed if there is a connection to a remote endpoint.

```
Line
   1  SPXII General Statistics:
   2   SPXII Version:  4.01

   3     6:56:17 Time SPX driver active
   4           100 Maximum configured SPX connections
   5             5 Current SPX connections
   6             6 Maximum simultaneous SPX connections
   7             0 Stream message allocation failures
   8             0 Opens of SPX failed
   9           212 Ioctls received from applications

  10        284456 Stream messages sent to SPX from applications
  11                 1 Unknown messages sent to SPX from applications
  12                 0 Bad messages sent to SPX from applications
  13                 2 Connect requests received from applications
  14                     0 Connect requests from applications failed
  15                 6 Listens posted by applications
  16                     0 Listens posted by applications failed
  17            3396032 SPX data packets sent to IPX
  18                  3712 SPX packets retransmitted due to timeouts
  19                    26 SPX packets retransmitted due to NAKs received

  20       1423201 Packets received from IPX
  21                 0 Bad SPX packets received from IPX
  22                 0 Bad SPX data packets received from IPX
  23               199 Duplicate SPX data packets received
  24            572453 Packets received that were sent up to applications
  25                 2 Connect request packets received from IPX
  26                     0 Connect request received from IPX with no listeners
  27                     0 Connections aborted
  28                     0 Connections aborted due to max retries exceeded
```

Figure 3-10 SPX General Statistics Display

```
Line
  29  SPX Connection Statistics for minor # 2:
  30     0:00:45 Time SPX connection active
  31           Address of this endpoint:
  32               0x89413100      NET
  33               0x00001B1E6508  NODE
  34               0x400F          SOCKET
  35               64514           SPX Connection Number

  36           Address of other Endpoint:
  37               0x89413100      NET
  38               0x00001B379E2D  NODE
  39               0x0BED          SOCKET
  40               46082           SPX Connection Number

  41             9 TLI state of SPX connection
  42            10 Maximum retries before disconnecting
  43           310 Milliseconds minimum between retries

  44               Connection is in a DATA TRANSFER State
  45               Connected with a SPXII endpoint
  46               Connection is NOT using IPX checksums
  47                    8 Current receive window size
  48                    8 Current transmit window size
  49                 1500 Current transmit packet size
  50                 1500 Current receive packet size
  51                   30 Milliseconds was last round trip time
  52                    0 Times transmit window was closed
  53                 1606 Times SPX could not transmit data due to flow control

  54            534 Messages sent to SPX from application
  55                  0 Unknown messages sent to SPX from application
  56                  0 Bad messages sent to SPX from application

  57           6397 Data packets sent to IPX from SPX
  58                  6 Data packets re-sent to IPX due to timeout
  59                  0 Data packets re-sent to IPX due to NAK received
  60             1 ACK packets sent to IPX
  61             0 NAK packets sent to IPX
  62             0 Watchdog packets sent to IPX

  63           1603 SPX packets received from IPX
  64                  0 Watchdog packets received from IPX
  65               1601 SPX ACKs received from IPX
  66                  0 SPX NAKs received from IPX
  67                  0 Bad SPX packets received from IPX
  68                  0 Bad SPX data packets received from IPX
  69                  0 Duplicate SPX packets received
  70                  0 Out of sequence packets received
  71                  0 SPX packets sent up to application
  72                      0 Packets queued due to flow control upstream
```

Figure 3-11 SPX Connection Statistics Display

Additional Information

Topic	See
spx	SPXII in “npsd”

startnps

Purpose

Use at the HP-UX prompt to start npsd, which initializes the NetWare protocol stack.

Syntax

```
startnps [-v]
```

For more detailed output, use the -v option.

Using startnps

- To determine whether the stack is loaded, create a script using the statnps command and check the return value.
- If the stack is loaded, statnps returns a value of 1. If the stack is not loaded, statnps returns a value of 0.

Additional Information

Topic	See
Stopping the protocol stack	“stopnps”
npsd	“stopnps”

statnps

Purpose

Use in a script to check the status of the NetWare protocol stack.

Syntax

```
statnps
```

Using statnps

- You must be the root user to use statnps.
- If the protocol stack is up, statnps returns 1. If the protocol stack is down, it returns 0.

startnw

Purpose

Use at the HP-UX prompt to bring up the NetWare server. The *startnw* utility

- Boots NetWare Services on your HP 9000 system.
- Reads the NetWare Services configuration from the configuration file.
- Mounts all volumes listed in the voltab file.
- Starts all other NetWare Services processes.
- Processes asynchronous events.

Syntax

```
startnw
```

Using startnw

Load the npsd protocol stack before using the *startnw* command.

Additional Information

Topic	See
NetWare Server Status	“NetWare Server Status”
The stopnw utility	“stopnw”

stopnp

Purpose

Use at the HP-UX prompt to stop nprinter.

Syntax

```
stopnp
```

Additional Information

Topic	See
Starting nprinter	“nprinter”

stopnps

Purpose

Use at the HP-UX prompt to stop the NetWare protocol stack.

Syntax

```
stopnps
```

Using stopnps

- You must be the root user to run the stopnps command and the system must be at run level 1 (by typing init 1 at the command line).
- The stopnps command kills the npsd process, which unloads the IPX protocol stack.

  The stopnps command waits up to 60 seconds for IPX clone devices to be closed before proceeding. New requests to open /dev/ipx are disallowed until the stack is restarted.

  To determine whether the stack is loaded, create a script using the statnps command and check the return value. If the stack is loaded, statnps returns a value of 0. If the stack is not loaded, statnps returns a value of 1.

Additional Information

Topic	See
Starting the protocol stack	“startnps”
Checking the status of the protocol stack	“statnps”

stopnw

Purpose

Use at the HP-UX prompt to bring down the NetWare server.

Syntax

```
stopnw [-g seconds] [-h] [-?] [-b] [Message]
```

Option	Use to
-g seconds	Specify a grace period in seconds to wait before bringing down, or stopping, NetWare Services
-h or -?	Print a help message for using this utility (usage string).
-b	Execute the shutdown in the background.
Message	Specify the message you want to send to users before shutting down the server.

Using stopnw

- Once stopnw starts, you can stop it by pressing <Enter>.
- When stopnw is executed, broadcast messages are sent to clients informing them of the shutdown. Afterward, messages are sent according to the following schedule:

Time Remaining to Shutdown	Message Frequency
less than 30 seconds	No message
30 seconds to 1 minute	30 seconds
1 to 5 minutes	1 minute
5 to 30 minutes	5 minutes
30 minutes to 2 hours	30 minutes
more than 2 hours	1 hour

- If the grace period is more than 30 minutes (1800 seconds), stopnw disables new NetWare logins 30 minutes before shutdown. If the grace period is less than 30 minutes, stopnw disable NetWare logins immediately.
- If stopnw is cancelled, a cancellation message is sent to each client.

Additional Information

Topic	See
NetWare Server Status	“NetWare Server Status”
The startnw utility	“startnw”

stopprint

Purpose

Use at the HP-UX prompt to stop pserver.

Syntax

```
stopprint
```

Additional Information

Topic	See
Starting pserver	“pserver”

track

Purpose

Use at the HP-UX prompt to

- Display the incoming and outgoing SAP packets.
- Stop the displaying of incoming and outgoing SAP packets.

Syntax

```
track on | off | tables
```

Parameter	Use to
on	Signal sapd to display NetWare servers advertising packets received or sent. Information is displayed on the console, and is formatted according to whether the NetWare server is receiving the information (IN), broadcasting the information (OUT), or receiving a SAP request. The information is sent to the device or file specified in the nwcm sap_track_file configuration parameter. Default: /dev/console.
off	Stop the router from displaying incoming and outgoing SAP packets.
tables	Signal the SAP daemon to dump the contents of its server table. The information is sent to the file specified in the nwcm sap_dump_file configuration parameter. Default: sap.dump. This file is found in the directory specified by the nwcm log_directory parameter. Default: /var/opt/netware4/log.

Using track

You must be the root user to use the track command.

Examples

Incoming information looks similar to the following:

```
IN [00D0C200:00001B026C09] 10:53:01am BILLYBOB 5
```

IN indicates that the message is incoming. [00D0C200:00001B026C09] is the node address. NetWare server information follows the node address, as shown in the following table.

BILLYBOB	Indicates the name of a NetWare server known by the sending NetWare server.
5	Indicates the number of hops from the sending NetWare server to this NetWare server.

Outgoing information looks similar to the following:

```
OUT [1986DAD0:FFFFFFFFFFFF] 10:53:01am 00001EEE 3
5300DEEF 4 00001EF0 5
FADE2401 3 FEED00BB 5
```

```
OUT [00D0C200:FFFFFFFFFFFF] 10:53:01am
UTIL 2 DEV0 3 HIKER 3 MUTT 2
```

OUT indicates that the message is outgoing. [1986DAD0:FFFFFFFFFFFF] and [00D0C200:FFFFFFFFFFFF] are node addresses.

Either NetWare server or network information follows the node address, followed by hops to server.

Additional Information

Topic	See
Displaying the network	“drouter”
Displaying the NetWare servers	“nwsapinfo”
Resetting routers	“rrouter”

tsadmin

Purpose

Use at the HP-UX prompt to do the following:

- Display time synchronization information.
- Display date and time kept by NetWare Services' clock.
- Restart time synchronization.

Syntax

```
tsadmin -s | -r
```

Option	Use to
-s	View the status of NetWare Services. The information shows if time synchronization services are running on NetWare Services, if NetWare Services has synchronized its time with other serves, and the current time relative to UTC and your local time zone.
-r	Restart NetWare Services' time synchronization process. This option causes the time synchronization parameter daemon to reinitialize all of its configuration parameters (set with "npsd" or "NetWare Setup") and synchronize its time as if the server had been rebooted. Reference, Primary, and Secondary servers set their time to network time.

A

NDS and Bindery Objects and Properties

Contents

NDS Object Classes

Table A-1 Object classes

Object class	What this object is used for	What objects can contain this object
AFP Server		Organization Organizational Unit
Alias	Redirects the path of a branch or leaf of the Directory tree in another location for more convenient access	Organization Organizational Unit Root level
Bindery Object	Represents an object that was upgraded from a bindery-based server, but that cannot be identified	Organization Organizational Unit
Bindery Queue		
Computer	Represents computers on the network that are not file or print servers, such as gateways, routers, and sometimes workstations	No containment restrictions at the root level
Country	Defines countries in the Directory tree to help organize objects	Must be at root level
Directory Map	Specifies a path on a volume that points to a frequently used directory for an application	Organization Organizational Unit
Group	Defines an unordered list of users that comprise a group for purposes of assigning access rights	Organization Organizational Unit
NetWare® Server	Represents a server that provides file and other services	Organization Organizational Unit

Table A-1 Object classes

Object class	What this object is used for	What objects can contain this object
Organization	Defines an organization within the network	Country or root level
Organizational Role	Defines a position or role within an organization for the purpose of assigning access rights	Organization Organizational Unit
Organizational Unit	Defines a subdivision within an organization to contain objects	Organization Organizational Unit
Print Server	Represents a network print server	Organization Organizational Unit
Printer	Represents a physical printing device on the network	Organization Organizational Unit
Profile	Specifies a login script that is used by several users not located in the same container	Organization Organizational Unit
Queue	Represents a batch processing queue for printing on the network	Organization Organizational Unit
User	Represents a user on the network	Organization Organizational Unit
Volume	Represents a physical volume within a NetWare file server	Organization Organizational Unit

NDS Object Classes and Their Properties

Table A-2 Object properties

Object	Properties	
AFP Server	CN	Public Key
	Object Class	Resource
	Serial Number	See Also
	Supported Connections	Status
	Descriptions	User
	Host Device	Version
	L	Network Address
	OU	ACL
	O	Back Link
	Private Key	Bindery Property
Alias	Aliased Object Name	Back Link
	Object Class	Bindery Property
	ACL	
Bindery Object	Bindery Object Restrictions	ACL
	Bindery Type	Back Link
	CN	Bindery Property
	Object Class	
Bindery Queue	CN	Volume
	Bindery Type	Description
	Queue Directory	Host Resource Name
	Host Server	L
	Object Class	OU
	Device	O
	Operator	See Also
	Server	ACL
	User	Back Link
	Network Address	Bindery Property

Table A-2 Object properties

Object	Properties	
Computer	CN	OU
	Object Class	O
	Operator	Owner
	Server	See Also
	Status	Serial Number
	Description	ACL
	L	Back Link
	Network Address	Bindery Property
Country	C	ACL
	Object Class	Back Link
	Description	Bindery Property
Directory Map	CN	OU
	Host Server	O
	Object Class	See Also
	Path	ACL
	Description	Back Link
	Host Resource Name	Bindery Property
	L	
Group	CN	Owner
	Object Class	See Also
	Description	GID
	L	ACL
	Member	Back Link
	OU	Bindery Property
	O	
NCP Server	CN	Public Key
	Object Class	Resource
	Operator	See Also
	Supported Services	Status
	Description	User
	Host Device	Version
	L	Network Address
	OU	ACL
	O	Back Link
	Private Key	Bindery Property

Table A-2 Object properties

Object	Properties	
Organization	O	See Also
	Object Class	S
	Description	SA
	Facsimile Telephone Number	Telephone Number
	L	Login Intruder Limit
	Login Script	Intruder Attempt Reset Interval
	EMail Address	Detect Intruder
	Physical Delivery Office Name	Lockout After Detection
	Postal Address	Intruder Lockout Reset Interval
	Postal Code	ACL
	Postal Office Box	Back Link
	Print Job Configuration	Bindery Property
	Printer Control	
Organizational Role	CN	Postal Office Box
	Object Class	Role Occupant
	Description	See Also
	Facsimile Telephone Number	S
	L	SA
	EMail Address	Telephone Number
	OU	ACL
	Physical Delivery Office Name	Back Link
	Postal Address	Bindery Properly
	Postal Code	
Organizational Unit	OU	See Also
	Object Class	S
	Description	SA
	Facsimile Telephone Number	Telephone Number
	L	Login Intruder Limit
	Login Script	Intruder Attempt Reset Interval
	EMail Address	Detect Intruder
	Physical Delivery Office Name	Lockout After Detection
	Postal Address	Intruder Lockout Reset Interval
	Postal Code	ACL
	Postal Office Box	Back Link
	Print Job Configuration	Bindery Property
	Printer Control	

Table A-2 Object properties

Object	Properties	
Print Server	CN	Public Key
	Object Class	Resource
	Operator	See Also
	Print	Status
	SAP Name	User
	Description	Version
	Host Device	Network Address
	L	ACL
	OU	Back Link
	O	Bindery Property
	Private Key	
Printer	CN	Status
	Object Class	Supported Typefaces
	Cartridge	Description
	Printer Configuration	L
	Default Queue	Network Address
	Host Device	OU
	Print Server	O
	Memory	Owner
	Network Address Restrictions	See Also
	Notify	Serial Number
	Operator	ACL
	Page Description Language	Back Link
	Queue	Bindery Property
Profile	CN	O
	Login Script	See Also
	Object Class	ACL
	Description	Back Link
	L	Bindery Property
	OU	

Table A-2 Object properties

Object	Properties	
Queue	Queue Directory	Description
	CN	Host Resource Name
	Host Server	L
	Object Class	OU
	Device	O
	Operator	See Also
	Server	ACL
	User	Back Link
	Network Address	Bindery Property
	Volume	
Unknown	Unknown Object Restriction	ACL
	Object Class	Back Link
		Bindery Property
User	CN	Account Balance
	Surname	Allow Unlimited Credit
	Object Class	Minimum Account Balance
	Group Membership	Message Server
	Home Directory	Language
	Login Allowed Time Map	UID
	Login Disabled	Locked By Intruder
	Login Expiration Time	Server Holds
	Login Grace Limit	Last Login Time
	Login Grace Remaining	Type Creator Map
	Login Intruder Address	Facsimile Telephone Number
	Login Intruder Attempts	L
	Login Maximum Simultaneous	EMail Address
	Login Script	OU
	Login Time	Physical Delivery Office Name
	Network Address Restrictions	Postal Address
	Network Address	Postal Code
	Passwords Used	Postal Office Box
	Password Allow Change	S
	Password Expiration Interval	SA
	Password Expiration Time	Title
	Password Minimum Length	Description

Table A-2 Object properties

Object	Properties	
User (continued)	Password Required	See Also
	Password Unique Required	Telephone Number
	Print Job Configuration	ACL
	Private Key	Back Link
	Public Key	Bindery Property
	Security Equals	
Volume	CN	OU
	Host Server	O
	Object Class	See Also
	Status	ACL
	Description	Back Link
	Host Resource Name	Bindery Property
	L	

Bindery Objects, Their Properties, and Property Groups

Table A-3 Bindery object properties

Object	Properties	Property Groups
Group	Name	(All Groups)
	Description	Misc
	Managers	Managers
	Member	Members
	Object ID	Misc
Queue	Name	(All Groups)
	Directory	Directory
	Object ID	Misc
	Operators	Operators
	Servers	Servers
	Users	Users
Server	Name	(All Groups)
	Attachment Status	Misc
	Object ID	Network
	Network	Network
	Node	Attachment Information
	Version	Attachment Information
	Accounting Installed	Attachment Information
	Maximum Volumes	Attachment Information
	Maximum Connections	Attachment Information
	Connections In Use	Attachment Information

Table A-3 Bindery object properties

Object	Properties	Property Groups
User	Name	Misc
	Network	Misc
	Node	Misc
	Connection Number	Misc
	Login Time	Misc
	Object ID	Misc
	Account Disabled	Login Control
	Account Expiration Date	Login Control
	Password Allow Change	Login Control
	Password Required	Login Control
	Password Force Change	Login Control
	Password Expiration Days	Login Control
	Password Expiration Date	Login Control
	Password Length	Login Control
	Unique Password	Login Control
	Grace Logins	Login Control
	Grace Logins Remaining	Login Control
	Maximum Connections	Login Control
	Last Login	Login Control
	Groups	Groups
	Managers	Managers
	Security Equals	Security Equals
Volume	Name	(All Groups)
	Server	Server

Index

Index

Index

Index

Index

Index