

Linux Tips for NetWare® Administrators

Open Enterprise Server 11 SP2

January 2014

Novell.

Legal Notices

Novell, Inc., makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, Novell, Inc., makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to make changes to any and all parts of Novell software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classification to export, re-export or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in the U.S. export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical biological weaponry end uses. See the [Novell International Trade Services Web page \(http://www.novell.com/info/exports/\)](http://www.novell.com/info/exports/) for more information on exporting Novell software. Novell assumes no responsibility for your failure to obtain any necessary export approvals.

Copyright © 2005–2014 Novell, Inc. All rights reserved. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of the publisher.

Novell, Inc.
1800 South Novell Place
Provo, Utah 84606
U.S.A.
www.novell.com

Online Documentation: To access the latest online documentation for this and other Novell products, see the [Novell Documentation Web page \(http://www.novell.com/documentation/oes11\)](http://www.novell.com/documentation/oes11).

Novell Trademarks

For Novell trademarks, see [the Novell Trademark and Service Mark list \(http://www.novell.com/company/legal/trademarks/tmlist.html\)](http://www.novell.com/company/legal/trademarks/tmlist.html).

Third-Party Materials

All third-party trademarks are the property of their respective owners.

Contents

About This Guide	5
1 What's New	7
2 NetWare/Linux Command Map	9
3 Other Tips	47
3.1 Common Problems and Solutions	47
3.2 NCF vs. Shell Script Files	47
3.3 Encryption for Linux Traditional File Systems	47

About This Guide

We will expand the information in this guide as we receive new input and tips. However, it will never become a substitute for the formal, intensive training that is required to become an efficient and successful Linux administrator.

- ♦ [Chapter 1, “What's New,” on page 7](#)
- ♦ [Chapter 2, “NetWare/Linux Command Map,” on page 9](#)
- ♦ [Chapter 3, “Other Tips,” on page 47](#)

Audience

This guide is designed to help network administrators understand some of the similarities and differences between NetWare and Linux, and to begin working with OES.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with OES 11. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the latest version of this guide, refer to the [OES 11 Documentation Web site \(../..//oes11\)](#).

1 What's New

This guide has been updated for the OES 11 SP2 product release.

2 NetWare/Linux Command Map

NetWare administrators who are deploying OES are interested in finding Linux counterparts for their favorite NetWare commands.

[Table 2-1](#) lists mappings between many of the common NetWare commands and their Linux counterparts with the following limitations:

- ♦ Neither the list of NetWare commands nor the list of Linux counterparts is comprehensive. If you require more detailed information, you might consider purchasing a command reference from an industry publisher.
- ♦ NetWare and Linux are completely different operating systems. Some NetWare commands don't have a Linux counterpart. Where counterparts don't exist, we have attempted to provide explanations to help you. Ultimately, however, this section is only a tool to help you get started. It is not a substitute for the hands-on Linux training that all Linux administrators need.
- ♦ The NetWare and Linux commands listed are only available when the NLM (NetWare) or RPM (Linux) associated with the command is installed on the server where the command is attempted. For some listed commands, the associated NLM programs and RPMs are not installed by default.

For some NetWare commands, the Linux alternative is provided by functionality in either iManager or Novell Remote Manager (NRM). For information on Novell management utilities, see “[OES Utilities and Tools](#)” in the *OES 11 SP2: Planning and Implementation Guide*.

A substantial number of alternatives are also provided through YaST (Yet another Setup Tool). They are available in both GUI and text versions, and are accessed at a Linux command prompt by entering `yast`. For more information on YaST, see “[Manual Deployment \(http://www.suse.com/documentation/sles11/book_sle_deployment/data/part_mandeploy.html\)](#)” in the *SLES 11 Deployment Guide (http://www.suse.com/documentation/sles11/book_sle_deployment/data/pre_sle.html)*.

[Table 2-1](#) references man pages extensively. To access a man page, enter `man command` at the Linux command prompt, where *command* is the Linux counterpart. After reading about the command, type Shift+Q to return to the command prompt. Or alternatively, if you have the KDE desktop loaded, you can view formatted man pages in the Konqueror browser. In the location bar, enter `man : /` to view a list of categories, or enter `man : /command` to view the man page for a specific command.

Table 2-1 NetWare/Linux Command Map

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
#	Specify a line as a comment (used in NCF files).	# !	<p>Comments preceded by a pound sign (#) are not displayed as the shell script runs, but those preceded by an exclamation mark (!) are echoed.</p> <p>For information about shell script files, see Section 3.2, “NCF vs. Shell Script Files,” on page 47.</p>
;	Specify a line as a comment (used in NCF files).	# !	<p>Comments preceded by a pound sign (#) are not displayed as the script runs, but those preceded by an exclamation mark (!) are echoed.</p> <p>For information about script files, see Section 3.2, “NCF vs. Shell Script Files,” on page 47.</p>
ABORT REMIRROR	Stop remirroring a logical partition.	—	<p>This functionality is available through the nsscon utility on OES.</p> <p>The nsscon utility is installed with the Novell Storage Services RPMs and is documented in “NSS Console” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p>
ACTIVATEMODULE	Load or start modules that are preloaded by the startup.ncf file or modules that were loaded using the load -s command.	chkconfig	<p>By itself, chkconfig lists all the processes available to be loaded at startup and their current state.</p> <p>Including the name of a service (for example, chkconfig apache2) displays the current state: “on” means that the service starts with the system, “off” means the service doesn’t start with the system, and “unknown service” means that the service is not installed.</p> <p>For configuration options, see the <code>chkconfig</code> man page.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
ADD NAME SPACE	Add support for storing files for other file systems on a NetWare volume.	yast	<p>Access YaST > <i>Network Services</i></p> <p>CIFS (Samba) and other protocols are supported by specific RPMs. For more information, see the OES 11 SP2: Novell Samba Administration Guide</p> <p>NFS support is native to Linux volumes.</p> <p>If you create an NSS volume on Linux, the name space defaults to Long. This improves performance, especially if you plan to store millions of files on the volume. For more information, see “Configuring the Name Space for an NSS Volume” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
ADD SECONDARY IPADDRESS	Add a secondary IP address.	ip addr add	For more information, see the <code>ip</code> man page.
ALERT	Manage NetWare alerts.	—	KDE System Guard includes a Messages sensor you can add to the Worksheet. However, this requires that the KDE GUI is installed and running on the server, which consumes system resources.
ALIAS	Define an alias.	alias	For more information, see the <code>alias</code> man page.
APPLET or APPLETVIEWER	<p>JavaAppletViewer</p> <p>Usage: <code>appletviewer</code> options include: <code>-debug</code>, <code>-encoding</code>, and <code>-J</code> (runtime flag)</p> <p>The <code>-J</code> option is non-standard and subject to change without notice.</p>	appletviewer	For more information, see the <code>appletviewer</code> man page.
ARP	Display and modify the ARP table.	arp	For more information, see the <code>arp</code> man page.
BASH	Use a BASH shell, including a variety of useful system utilities, on NetWare.	/bin/bash	The Bourne Again Shell is the default command line interface on most Linux systems.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
BIND	Link a communication protocol to a network board and its LAN driver.	ethtool mii-tool ip	'For more information, see the man page associated with each command.
BINDERY	Add or remove a bindery context to or from the list of all bindery contexts for this server.	—	The NetWare Bindery was obsolete in NDS/eDirectory starting with NetWare 4 and is not available on OES.
BROADCAST	Send messages to NCP users by username or connection number.	ncpcon send	<p>The send command only sends messages to connections (stations), not to usernames.</p> <p>Also keep in mind that send functionality applies to NCP connections only. Users attached through Samba/CIFS or some other protocol do not receive messages unless they also have an NCP (Novell Client) connection.</p>
CDDVD	Allow a CD or DVD disk to function as a Novell Storage Services (NSS) volume.	—	<p>Support for CDs and DVDs is loaded automatically on Linux, and disks are often automatically mounted under /media when inserted.</p> <p>Removable media cannot be accessed as NSS volumes on OES.</p>
CHARSET	Change the code page currently used by the NetWare server.	yast	<p>Similar functionality is available in YaST > <i>System</i> > <i>Language and System</i> > <i>Keyboard Layout</i> options.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
CLEAR STATION	Clear a workstation connection to a NetWare server.	ncpcon connection list ncpcon connection clear station ncpcon connection station	<p>You can clear NCP (Novell Client) connections using the <code>ncpcon connection clear</code> command.</p> <p>The <code>ncpcon</code> utility is installed with the NCP Server RPMs and is documented in “NCP Server Console (NCPCON) Utility” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>Novell Remote Manager for Linux also provides this. For more information, see “Using Novell Remote Manager to Clear NCP Connections” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>NOTE: For standard Linux (non-NCP) connections, there is no single command to do this.</p> <p>You must discover how users are connected to the server and then stop the processes associated with those connections.</p> <p>For example, use the <code>ps</code> command with the <code>U</code> option to list processes for the user, and then use <code>kill</code> to stop the root process for the user.</p> <p>You can view how a user is connected on Linux using the <code>finger</code> command.</p> <p>For more information, see the man pages for the commands mentioned above.</p>
CLS	Clear the console screen and move the console prompt to the top of the screen.	clear Ctrl+I	For more information, see the <code>clear</code> man page.
CLUSTER ...	Manage clusters.	—	<p>Similar commands are provided for functionality that is currently supported on OES.</p> <p>For details, see “Console Commands for Novell Cluster Services” in the <i>OES 11 SP2: Novell Cluster Services for Linux Administration Guide</i>.</p>
COMPFIX	Repair compressed volumes.	compfix	For more information, see the <code>compfix</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
CONFIG	View the system information in the following rows.	sitar siga	<p>Although not functionally the same as CONFIG, both <code>sitar</code> and <code>siga</code> produce very detailed system reports in multiple formats, including HTML and text.</p> <p>For more information, see the <code>siga</code> and <code>sitar</code> man pages.</p> <p>For the NCP server, you can use <code>ncpcon config</code> to display the NCP server configuration information.</p> <p>Linux server information is also available through specific Linux commands. For example, the <code>env</code> command displays all current environment variables and their values.</p> <p>There is also a GPL utility named <code>supportconfig</code> that collects system troubleshooting information. For more information, visit the Cool Solutions Web site (http://www.novell.com/cool solutions/tools/16106.html).</p>
	♦ NetWare server name	hostname cat /etc/hostname	<p>For more information, see the man pages associated with the <code>hostname</code> and <code>cat</code> commands.</p> <p>The server name also appears at the command prompt by default.</p>
	♦ Internal network number (server ID)	—	<p>This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES host server.</p>
	♦ Server up time	uptime	<p>For more information, see the <code>uptime</code> man page.</p>
	♦ Loaded LAN drivers	lsmod ip	<p><code>lsmod</code> lists modules loaded in memory, but not the module versions.</p> <p><code>ip</code> shows the network card configuration.</p>
	♦ Driver version numbers	modinfo dmesg /var/log/boot.msg	<p>For more information, see the man pages associated with each command.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
	♦ Hardware settings	lsmod ip	lsmod lists modules loaded in memory, but not the version. ip shows the network card configuration.
	♦ Node (station) addresses	ip	For more information, see the ip man page.
	♦ External network number of the cabling scheme	—	This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES host server.
	♦ Board name	yast	This information is available in YaST > <i>Hardware</i> > <i>Hardware Information</i> . For help with YaST, enter <code>yast -h</code> at the command prompt.
	♦ Frame type	—	This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES host server.
	♦ Networking protocol for each network board	—	This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES host server.
	♦ Server's eDirectory tree and bindery context	ndsstat rcnlds status	For more information, see the ndsstat man page. To view more rcnlds options, enter <code>rcnlds -help</code> at the command prompt.
CONLOG	Capture and log console messages.	cat /var/log/messages	Ctrl+F10 shows the console log in real time.
CONSOLESAVE	Save the System Console screen buffer to the default file <code>console [n] .txt</code> in the default path, or to the path specified with the <code>loggerpath</code> command.	—	Closely related commands are: <code>script</code> : makes a typescript of the terminal session. <code>tee</code> : reads from standard input and writes to standard output <code>screen</code> : a screen manager with VT100/ANSI terminal emulation. For more information, see the respective man pages.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
CPUCHECK	Display processor information.	cat /proc/cpuinfo	For more information, see the <code>cat</code> and <code>cpuinfo</code> man pages.
CSET	View or set SET parameters by category.	—	See “SET” on page 40 .
CX	View or change the eDirectory context.	—	Use iManager to view the tree.
DELETE SECONDARY IPADDRESS	Delete a secondary IP address.	ip addr del	For more information, see the <code>ip</code> man page.
DHCPSRV	Manage the Novell DHCP server.	dhcpcd	For more information, see “Administering and Managing DHCP” in the <i>OES 11 SP2: Novell DNS/DHCP Services for Linux Administration Guide</i> .
DISABLE LOGIN	Prevent users from logging in.	ncpcon disable login	<p>You can disable login for NCP file service access using the <code>ncpcon disable login</code> command.</p> <p>The <code>ncpcon</code> utility is installed with the NCP Server RPMs and is documented in “NCP Server Console (NCPCON) Utility” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>IMPORTANT: You can’t disable the general login function for externally defined (eDirectory) users. For local users, this is commonly done by changing the login shell indicated in <code>/etc/passwd</code> to <code>/bin/false</code>.</p> <p>Some Linux administrators habitually switch to single-user mode (<code>init 1</code>) to accomplish this. This causes eDirectory and other OES services to shut down, which is probably not desirable in most cases, and is certainly not equivalent to <code>DISABLE LOGIN</code> on NetWare, which allows services to continue to run even though logging in is disabled.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DISABLE TTS	Manually disable the NetWare Transaction Tracking System (TTS). Primarily used only by application developers for testing purposes.	—	<p>TTS is not available for NSS volumes on OES.</p> <p>Journalized Linux file systems, such as Ext3, are capable of providing similar functionality. For example, the <code>Journal</code> mode of Ext3 journaling provides a service similar to TTS. For a brief summary of which file systems support journaling, see “Converting an Ext2 File System into Ext3” in the <i>SLES 11 SP2: Storage Administration Guide</i>.</p> <p>For more information, search the Web for the file systems you are using.</p>
DISMOUNT	Make a volume unavailable to users.	ncpcon umount	<p>For NCP volumes, use <code>ncpcon</code>.</p> <p>The <code>ncpcon</code> utility is installed with the NCP Server RPMs and is documented in “NCP Server Console (NCPCON) Utility” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p> <p><code>umount</code> lets you unmount Linux volume mount points.</p> <p>You can also use the <code>nlvm volume unmount volumename</code> command to deactivate and dismount an NSS volume.</p>
DISPLAY DEVICE STATS	Display I/O statistics for individual devices.	iostat	<p>For more information, see the <code>iostat</code> man page.</p> <p>Novell Remote Manager for Linux also provides I/O memory and port information from the Manage Hardware page.</p>
DISPLAY ENVIRONMENT	Display current search paths and current values of settable server parameters.	env echo \$PATH	For more information, see the <code>env</code> and <code>echo</code> man pages.
DISPLAY INTERRUPTS	Display hardware interrupt information.	yast	<p>Hardware information for each component is available in YaST > <i>Hardware</i> > <i>Hardware Information</i>.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DISPLAY IPX NETWORKS	Display IPX network information.	—	IPX is a legacy NetWare protocol that will not be ported to OES. However, it is available on a NetWare virtual machine running on an OES host server.
DISPLAY IPX SERVERS	Display IPX server information.	—	IPX is a legacy NetWare protocol that will not be ported to OES. However, it is available on a NetWare virtual machine running on an OES host server.
DISPLAY MODIFIED ENVIRONMENT	Display all non-default server parameter settings.	—	Similar functionality is not available on OES.
DISPLAY MM STATS	Display Media Manager statistics.	—	<p>There are no MM commands for managing multipath I/O and snapshots on OES.</p> <p>Multipath I/O for NSS is not supported on OES. For information about multipath I/O for Linux POSIX file systems on SLES 11, see “Managing Multipath I/O for Devices” in the SLES 11 SP2: Storage Administration Guide.</p> <p>NSS Snapshots on OES are managed through iManager, NSSMU, or NLVM.</p> <p>You can use NLVM commands to create, delete, and list NSS snapshots as follows:</p> <pre>nlvm create snap nlvm delete snap nlvm list snap <i>snap_name</i> nlvm list snaps</pre>
DISPLAY PARTITION LABEL	Display the label of the specified partition.	<code>fdisk -l</code>	<p>For more information, see the <code>fdisk</code> man page.</p> <p>You can use the NSSMU or the Storage plug-in to view details about a partition, including its label.</p> <p>You can also use these NLVM commands:</p> <pre>nlvm list partition <i>partition_name</i> nlvm list partitions</pre>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DISPLAY PROCESSORS	Display the status of available server processors.	cat /proc/cpuinfo	For more information, see the <code>cat</code> man page. You can also see information about processors in Novell Remote Manager. See “ Viewing Processors ” in the <i>OES 11 SP2: Novell Remote Manager Administration Guide</i> .
DISPLAY SECONDARY IPADDRESS	Display the secondary IP addresses.	ip addr show	For more information, see the <code>ip</code> man page.
DISPLAY SLP ...	Display SLP information.	slptool ...	For example, <code>slptool findsrvs smb</code> . For more information, enter <code>slptool -help</code> at the command prompt.
DOWN	Execute an orderly shutdown.	init 0 init 6 shutdown now	<code>init 0</code> halts the system, <code>init 6</code> reboots the server. For more information, see the respective man pages.
DSDIAG	Document eDirectory; check tree health; diagnose problems.	—	This functionality is provided through IMONITOR .
DSLOG	Manage eDirectory error logs.	—	Use the <code>n4u.server.log-levels</code> and <code>n4u.server.log-file</code> parameters in the <code>/etc/opt/novell/eDirectory/conf/nds.conf</code> configuration file.
DSMERGE	Merge and rename eDirectory trees; display time synchronization information for all servers in a tree.	ndsmerge	For more information, see the <code>ndsmerge</code> man page. See also IMONITOR .
DSREPAIR	Maintain and repair the database of a NetIQ eDirectory tree.	ndsrepair	For more information, see the <code>ndsrepair</code> man page. See also IMONITOR .
DTRACE	A menu-driven trace utility for U.S. Robotics ISDN Allegra adapters.	—	This is not DSTRACE.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
ECHO ...	Enable (ECHO ON) or disable (ECHO OFF) the displaying of commands executed from an NCF file.	—	<p>In shell script files, the echo command causes the comment that follows it to be displayed, as does preceding the comment with an exclamation mark (!).</p> <p>Comments preceded by a pound sign (#) are not displayed as the script runs.</p> <p>For information about script files, see Section 3.2, “NCF vs. Shell Script Files,” on page 47.</p>
EDIRUTIL	Access all of the eDirectory back-end utilities remotely as well as on the server.	edirutil	For more information, enter <code>edirutil -h</code> .
EDIT	Create or modify a text file on a boot, DOS, USB, or NetWare partition.	vi vim	For help, enter <code>vi -h</code> , or man <code>vim</code> .
ENABLE LOGIN	Reenable the login function after using DISABLE LOGIN. Enable the supervisor account (bindery only) when the account has been locked by the intruder detection function.	ncpcon enable login	See “DISABLE LOGIN” on page 16 for additional important information.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
ENABLE TTS	<p>Manually enable the NetWare Transaction Tracking System (TTS).</p> <p>This is primarily used only by application developers for testing purposes.</p>	—	<p>TTS is not available for NSS volumes on OES.</p> <p>Journalized Linux file systems, such as Ext3, are capable of providing similar functionality. For example, the Journal mode of Ext3 journaling provides a content-level transaction tracking service that journals both data and metadata similar to TTS.</p> <p>For a brief summary on journaling for the Linux file systems, see “Converting an Ext2 File System into Ext3” in the <i>SLES 11 SP2: Storage Administration Guide</i>.</p> <p>For more information, search the Web for the file systems you are using.</p> <p>If you also need to control access to data with trustees, you can create NCP volumes on the Linux file systems. For information, see “Managing NCP Volumes” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p>
ENV	Display or set C Library environment variables.	env	For more information, enter <code>info env</code> at the command prompt, or see the <code>env</code> man page.
ENVSET	Display or set Java environment variables.	—	You can use the <code>export</code> command to set environment variables. For more information, see the <code>export</code> man page.
EXTCHECK	Check a jar file for title and version conflicts with any installed extensions.	extcheck	For more information, see the <code>extcheck</code> man page.
FILE SERVER NAME	Set the file server name in <code>autoexec.ncf</code> .	—	<p><code>Autoexec.ncf</code> is a NetWare file, so this command has no direct counterpart.</p> <p>However, <code>hostname</code> lets you set the system's host name. For more information, see the <code>hostname</code> man page.</p>
FILER (In DOS from a Novell Client)	Manage files and directories in the file system.	—	Filer is a legacy DOS-based tool. There are numerous shell commands for managing (copying, deleting, moving, etc.) files.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
FIXNAMES	Verify that files in the specified path on an NSS volume have legal names for the current code page.	—	<p>This command has not been ported to Linux for NSS.</p> <p>For Linux traditional file systems, you can use the <code>convmv</code> utility to convert filenames from one language code to another. For more information, see the <code>convmv</code> man page.</p>
FLAG (In DOS from a Novell Client)	View or modify file and directory attributes, owner, etc.	<p><code>chmod</code> (Linux only)</p> <p><code>attrib</code> (NSS only)</p> <p><code>nssmu</code> (NSS only)</p>	<p>You can also use iManager for this.</p> <p>Understanding and working with Linux file attributes and ownership mechanisms requires training beyond the scope of this guide. For an introduction, see Access Control Lists in Linux (http://www.suse.com/documentation/sles11/book_security/data/cha_acls.html) in the SLES 11: Security Guide (http://www.suse.com/documentation/sles11/book_security/data/book_security.html).</p>
FORMAT	Format a local FAT volume.	<code>makefs</code>	<p>For NSS volumes, you can use NSSMU, the iManager Storage plug-in, or the <code>nlvm create pool</code> and <code>nlvm create volume</code> commands.</p> <p>For Linux POSIX volumes, you can use the <code>Linux Volumes</code> option in NSSMU, or the <code>nlvm create linux volume</code> option. You can also use the YaST Partitioner.</p>
HEALTH	<p>View the status of a server's overall health as determined through iManager.</p> <p>The <code>ALL</code> option displays the health of individual components.</p>	—	Use Novell Remote Manager > <i>Diagnose</i> > <i>Health Monitor</i> to monitor the status of an OES server.
HELP	View descriptions and syntax for commands.	<code>man command</code>	For more information on using <code>man</code> pages, see the <code>man man</code> page.
HIDESCREEN	Hide a screen for a utility that is running at the server console.	—	You can redirect output from the utility to null. However, this is not recommended.
HTTPBIND	Set an IP address, port, etc. for HTTPSTK to open.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
HTTPCLOSEPORT	Close a port on all IP addresses bound to HTTPSTK.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
HTTPOPENPORT	Open a port on all IP addresses bound to HTTPSTK and optionally enable SSL on the port.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
HTTTPUNBIND	Remove an IP address:port that HTTPSTK has open. If no port is specified, all ports are closed.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
ICAPTURE (In DOS on a Novell Client)	Capture LPT ports and redirect the output to iPrint printers.	—	This command applies to legacy NetWare printing, which is no longer supported. iPrint is the OES printing solution.
ICE	Import/Export LDIF files; migrate LDAP data; compare and update schemas; use a template to load information into eDirectory.	<code>ice</code>	For more information, see the <code>ice</code> man page.
IDLJ	Generate Java bindings from an IDL file.	<code>idlj</code>	For more information, see the <code>idlj</code> man page.
IFCONFIG	Configure network interface parameters.	<code>ip</code> <code>ethtool</code> <code>mii-tool</code> <code>yast</code>	The <code>ip</code> command performs some configuration of network cards, but the changes are not permanent. Instead, use <code>ethtool</code> for modifications on the fly, or <code>mii-tool</code> for older cards. Or use YaST to configure network cards permanently.
IMONITOR	Monitor eDirectory and the servers it contains using a Web browser.	—	In a Web browser go to <code>http://server_name:8008</code> . iMonitor is also accessible through iManager > <i>Roles and Tasks</i> icon > <i>eDirectory Maintenance</i> > <i>Repair via iMonitor</i>
INETCFG	Set up and customize your internetworking configuration for IPX, IP, and AppleTalk.	<code>yast</code> <code>ethtool</code> <code>mii-tool</code>	For more information, see the respective man pages.
INITIALIZE SYSTEM	Enable the multiprotocol router configuration (execute the system <code>netinfo.cfg</code> file).	<code>rcnetwork</code> <code>start</code> <code>yast</code>	For help, enter <code>rcnetwork -h</code> . Routing is configured through YaST. For help with YaST, enter <code>yast -h</code> at the command prompt.
INVENTORY	Generate a volume inventory for use by NRM.	—	In Novell Remote Manager, click <i>Volume Inventory</i> and select the volume name.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
IPCRM	Remove System V IPC semaphore or shared memory.	ipc_rmld	For more information, see the <code>ipc</code> man page.
IPCS	View allocated System V semaphores and shared memory segments.	ipc_stat	For more information, see the <code>ipc</code> man page.
IPRNTCMD (DOS workstation)	Install, remove, or set a printer as the default printer.	—	This is a DOS printing command. iPrint is the OES printing solution.
IPTRACE	Display the route that IP packets take across the network.	tracert	For more information, see the <code>tracert</code> man page.
IPX INTERNAL NET	View the server's internal IPX network address.	—	IPX is a legacy NetWare protocol and will not be ported to OES. However, it is available on a NetWare virtual machine running on an OES host server.
IPXCON, IPXPING, IPXS	Manage IPX.	—	IPX is a legacy NetWare protocol and will not be ported to OES. However, it is available on a NetWare virtual machine running on an OES host server.
JAVA	Start the Novell JVM for NetWare product. .	java	For more information, see the <code>java</code> man page.
JAR	Manage Java archives.	jar	For more information, see the <code>jar</code> man page.
JARSIGNER	Sign and verify jar files.	jarsigner	For more information, see the <code>jarsigner</code> man page.
JAVA	Start the Novell JVM for NetWare product.	java	For more information, see the <code>java</code> man page.
JAVAC	Compile Java source code into Java bytecodes.	javac	For more information, see the <code>javac</code> man page.
JAVADOC	Generate API documentation from Java source code.	javadoc	For more information, see the <code>javadoc</code> man page.
JAVAH	Produce C header files and C source files from a Java class.	javah	For more information, see the <code>javah</code> man page.
JAVAP	Disassemble a Java class file.	javap	For more information, see the <code>javap</code> man page.
JDB	Debug Java.	jdb	For more information, see the <code>jdb</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
KEYB	Change the console keyboard type.	yast	<p>You can change keyboard and language settings in YaST.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
KEYTOOL	Manage keys and certificates for Java.	keytool	For more information, see the <code>keytool man</code> page.
KF8	Enable or disables pausing between commands executed from NCF files.	—	<p>There is no simple command or switch to enable pausing in script file execution.</p> <p>To enable manual confirmation of steps in the boot process, edit <code>/etc/sysconfig/boot</code> and change the <code>PROMPT_FOR_CONFIRM</code> parameter to "yes".</p> <p>For information about script files, see Section 3.2, "NCF vs. Shell Script Files," on page 47.</p>
LANGUAGE	Set the language for subsequently loaded modules.	yast	<p>All language settings are managed using YaST.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
LFVMOUNT	Mount all local FAT volumes not recognized by DOS and assign them a local drive letter.	mount	<p>Parameters specified with the <code>mount</code> command determine the file systems mounted and attributes associated with the file systems.</p> <p>Drive letters are not used on Linux.</p> <p>For more information, see the <code>mount man</code> page.</p>
LFVOLUMES	List the local FAT volumes currently mounted.	mount	Used alone, the <code>mount</code> command shows the currently mounted volumes.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
LIST DEVICES	List the storage devices on the server and register new devices with the server's Media Manager database.	cat /dev/ device ls /dev yast	<p>Linux has many devices, each of which contains information you can view by "walking the /proc file system."</p> <p>Understanding Linux devices and the information displayed requires training beyond of the scope of this guide. For more information, see the SLES 11 Documentation on the Web (http://www.suse.com/documentation/sles11/book_security/data/book_security.html).</p> <p>To display the currently mounted file systems, enter the <code>mount</code> command with no arguments.</p> <p>You can display partitions in YaST > <i>System > Partitioner</i>, but be careful to exit without making changes.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p> <p>You can also use NSSMU and the Storage plug-in to iManager to view a list of devices. You can initialize devices and mark them as shareable/not shareable.</p> <p>And you can use the following NLVM commands:</p> <pre>nlvm list device device_name nlvm list devices nlvm init device device_name nlvm share device_name</pre>
LIST FAILOVER DEVICES	List the multipath devices and their paths.	—	<p>NSS multipath I/O is not supported on OES.</p> <p>For information about multipath I/O on SLES 11, see "Managing Multipath I/O for Devices" in the <i>SLES 11 SP2: Storage Administration Guide</i>.</p>
LIST PARTITIONS	List the partitions on all mounted storage devices.	<code>fdisk -l</code>	For more information, see the <code>fdisk</code> man page.
LIST STORAGE ADAPTERS	List the registered storage adapters.	<code>hwinfo --storage-ctrl</code>	The same comments apply as for LIST DEVICES above.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
LIST STORAGE DEVICE BINDINGS	List all Custom Device Modules (CDMs) bound to a particular device.	—	CDM drivers are unique to the NetWare architecture.
LOAD	Link NetWare loadable modules to the operating system.	—	<p>Load and run commands are not used on Linux. Generally, to execute files, you simply enter the filename or path/filename.</p> <p>Most services are run from the <code>/etc/init.d</code> directory.</p> <p>OES services have <code>start</code>, <code>stop</code>, and <code>restart</code> options. For example, to restart eDirectory, enter <code>/etc/init.d/ndsd restart</code> at the command prompt.</p>
LOGGERCLEAR	Clear the logger screen.	—	<p>The log path is hard-coded in Linux to <code>/var/log/messages</code>.</p> <p>However, some service configuration files include configuration settings that let you change the log path.</p>
LOGGERPATH	Change the directory where the <code>logger.txt</code> file is saved.	—	<p>The log path is hardcoded in Linux to <code>/var/log/messages</code>.</p> <p>However, some service configuration files include configuration settings that let you change the log path.</p>
LOGGERSAVE	Save the logger screen buffer to the <code>logger.txt</code> file.	—	Everything gets written to <code>/var/log/messages</code> , unless a specific service configuration file dictates otherwise.
LOGIN (DOS workstation)	Access the network by logging in to a server and running a login script.	—	Login on Linux is a different concept than on NetWare. You log in to a shell session with the server, which is analagous to accessing the console prompt on a NetWare server.
LOGOUT (DOS workstation)	Exit the network or log out of servers.	—	The same comments apply as for LOGIN above.
MAGAZINE ...	Respond to the screen prompts Insert Magazine and Remove Magazine.	—	There is no directly corresponding utility

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
MAP (DOS workstation)	View drive mappings; Create or change network or search drive mappings; Map a drive to a fake root directory (for applications that must use a root directory)	—	<p>The <code>mount</code> command used alone shows both local and remote mount points—the connections between file systems (either local or remote) and a directory on the server. You access the file system (local or remote) by accessing the local directory.</p> <p>Drive letters are not used on Linux. However, if you install the NCP server, Novell Clients can then map drives to NCP volumes on OES servers.</p>
MEDIA ...	Respond to the screen prompts <code>Insert Media</code> and <code>Remove Media</code> .	—	On Linux, all media connections, including remote connections and removable media, are handled through the <code>mount</code> command.
MEMORY	Display the total amount of installed memory that the operating system can address.	<code>free</code> <code>cat /proc/meminfo</code>	<p>There's no memory command per se on Linux. However, the <code>top</code> command gives a good start on what's installed, available, being used by buffers, etc.</p> <p>If you want to see a GUI display, you must be running the KDE graphical interface and use KDE System Guard.</p>
MEMORY MAP	Display the amount of memory (in bytes) allocated to DOS and to the server.	<code>top</code>	<p>You can also view memory information in Novell Remote Manager (NRM). To access NRM in your Web browser, go to <code>http://server_name:8008 > Manage Linux > View Memory Information</code>.</p> <p>There is, of course, no memory allocated to DOS when Linux is running, even if there's a separate DOS partition on the hard drive.</p>
MIRROR STATUS	View the status of mirrored disk partitions. View the percentage of mirrored data on each partition.	—	<p>This functionality is available through the <code>nsscon</code> utility on OES.</p> <p>The <code>nsscon</code> utility is installed with the Novell Storage Services RPMs and is documented in “NSS Console” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p>
MM ...	Manage storage media.	—	See the explanation for DISPLAY MM STATS .
MODULES	List the currently loaded NLM programs.	<code>ps -eaf</code>	<p>The <code>ps</code> command displays currently running processes and <code>ps -eaf</code> is roughly equivalent to <code>MODULES</code> on NetWare. For more information, see the <code>ps</code> man page or enter <code>ps -?</code>.</p> <p>Use <code>lsmod</code> to view kernel modules.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
MONITOR	View server statistics and activity under two categories: General Information Options, and Available Options, as listed below.	—	<p>Most of the information you traditionally get through MONITOR is available in Novell Remote Manager (NRM). To access NRM, browse to <code>http://server_name:8008</code> in your Web browser.</p> <p>For NCP server, you can display a number of statistics using <code>ncpcon</code>, including Server up time, Packets in, Packets dumped, etc. For more information, see “NCPCON” in the OES 11 SP2: NCP Server for Linux Administration Guide.</p>
General Information Options in Monitor:			
	♦ Operating system version and date	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Server name: <code>server_name</code> in Directory tree <code>tree_name</code>	<code>ndsstat</code>	<p>For more information, see the <code>ndsstat</code> man page.</p> <p>Also see the OES 11 SP2: Novell Remote Manager Administration Guide.</p>
	♦ Utilization	<code>top</code>	<p>For more information, see the <code>top</code> man page.</p> <p>See the OES 11 SP2: Novell Remote Manager Administration Guide.</p>
	♦ Server Up Time	<code>uptime</code> <code>top</code>	<p>For more information, see the <code>uptime</code> and <code>top</code> man pages.</p> <p>Also see the OES 11 SP2: Novell Remote Manager Administration Guide.</p>
	♦ Online Processors	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Original Cache Buffers	—	<p>See the OES 11 SP2: Novell Remote Manager Administration Guide.</p> <p>You can also enter <code>cat /proc/mem/meminfo</code> at the command prompt to get some of this information.</p>
	♦ Total Cache Buffers	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Dirty Cache Buffers	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Long Term Cache Hits	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
	♦ Current Disk Requests	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Packet Receive Buffers	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Directory Cache Buffers	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Maximum Service Processes	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Current Service Processes	—	See the OES 11 SP2: Novell Remote Manager Administration Guide . The information is presented differently on Linux, but it is there.
	♦ Current Connections	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Open Files	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	Available Options in Monitor:		
	♦ Connections	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Storage Devices	—	See the OES 11 SP2: Novell Remote Manager Administration Guide . You can see local, but not unallocated file systems.
	♦ Volumes	ncpcon df -h	The ncpcon utility is installed with the NCP Server RPMs and is documented in “NCPCON” in the OES 11 SP2: NCP Server for Linux Administration Guide . To view mounted volumes, use nsscon, ncpcon, or mount, depending on the volume types you are monitoring. To view the utilization of Linux partitions, enter df -h at the command prompt.
	♦ LAN/WAN Drivers	lsmod	For more information, see the lsmod man page.
	♦ Loaded Modules	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
	♦ File Open/Lock Activity	—	For NCP volumes only, see the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Disk Cache Utilization	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ System Resources	—	A NetWare concept that is not applicable to OES.
	♦ Virtual Memory	vmstat	For more information, see the vmstat man page.
	♦ Kernel	—	See the OES 11 SP2: Novell Remote Manager Administration Guide .
	♦ Server Parameters	—	Linux doesn't have server parameters.
MOUNT	Make a volume available to users.	<p>mount (for traditional Linux volumes)</p> <p>nsscon (use the mount option for NSS volumes)</p> <p>nssmu (for the first mount of encrypted NSS volumes after a reboot)</p>	<p>For NSS volumes, in nssmu, select volumes, then press F7.</p> <p>For encrypted NSS volumes, the nssmu utility is required for mounting the encrypted volume on the first mount following a system reboot, because you must enter the encryption password to activate the volume. Thereafter, you can use the mount command in nsscon.</p> <p>The nsscon utility is installed with the Novell Storage Services RPMs and is documented in “NSS Console” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p> <p>The nssmu utility is installed with the Novell Storage Services RPMs and is documented in “NSS Management Utility (NSSMU) Quick Reference” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p> <p>You can also use the nlvm volume mount volumename command to activate and mount an NSS volume. You can provide a password in the command line to mount an encrypted NSS volume.</p>
NAME	Display the server name.	hostname	<p>For more information, see the hostname man page.</p> <p>Also, the server name appears at the command prompt by default.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
NAMED	Manage Novell DNS services.	novell-named	<p>For more information, see “Administering and Managing a DNS Server” in the <i>OES 11 SP2: Novell DNS/DHCP Services for Linux Administration Guide</i>.</p> <p>IMPORTANT: The SLES 11 base includes named, but this is not integrated with eDirectory.</p>
NATIVE2ASCII	Convert text to Unicode Latin-1 for use by Java.	native2ascii	For more information, see the native2ascii man page.
NCMCON	Control and monitor PCI Hot Plug.	—	Hot Plug monitoring is available for only some hardware. Messages are commonly logged in /var/log/messages.
NCOPY	Specify your intention for copying a compressed file to a compressed volume or a non-compressed volume.	—	<p>This functionality for NSS on Linux is provided through the Novell Client, installed on either a client or the OES server.</p> <p>There is no equivalent for Linux POSIX file systems.</p>
NCS DEBUG	Save a record of all NCS port activity in an ASCII text file named ncstrace.log in the sys:system directory.	—	See “ Console Commands for Novell Cluster Services ” in the <i>OES 11 SP2: Novell Cluster Services for Linux Administration Guide</i> .
NDIR	View file attributes and compression information for all files in a directory.	ls	For more information, see the ls man page.
NETSTAT	Monitor the network status.	netstat	For more information, see the netstat man page.
NSLOOKUP	Diagnose DNS setup problems or DNS problems in an application.	dig	The nslookup command has been deprecated on Linux.
NSS	Manage NSS at the command line.	nsscon	The nsscon utility is installed with the Novell Storage Services RPMs and is documented in “ NSS Console ” in the <i>OES 11 SP2: NSS File System Administration Guide for Linux</i> .
NSSMU	Manage NSS storage media on a server.	nssmu	The nssmu utility is installed with the Novell Storage Services RPMs and is documented in “ NSS Management Utility (NSSMU) Quick Reference ” in the <i>OES 11 SP2: NSS File System Administration Guide for Linux</i> .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
NSWEB	Start and stop the NetWare Web Manager and NetWare Enterprise Web Server.	—	NetWare Web Manager is not available on Linux.
NVXADM	Start and stop the NetWare Web Manager.	—	NetWare Web Manager is not available on Linux.
NVXWEB	Start and stop the NetWare Web Manager.	—	NetWare Web Manager is not available on Linux.
NWBOOT	Change NetWare boot options to use DOS or boot directly to NetWare.	—	For information on SLES 11 booting, see “ Booting and Configuring a Linux System (http://www.suse.com/documentation/sles11/book_sle_admin/data/cha_boot.html) ” in the <i>SLE 11 Administration Guide</i> (http://www.suse.com/documentation/sles11/book_sle_admin/data/book_sle_admin_pre.html).
NWCONFIG	Manage the server and install additional products.	yast	YaST is the tool for installing OES and OES services. Many configuration parameters are similar to NetWare. For help with YaST, enter <code>yast -h</code> at the command prompt.
NWPING	Ping a remote host from a NetWare server.	ping	For more information, see the <code>ping</code> man page.
NWTRACE	Print the route that packets take to the network host.	traceroute	For more information, see the <code>traceroute</code> man page.
NWTRAP	Manage SNMP traps on NetWare.	net-snmp net-snmp- utils	For more information, see the respective man pages.
OFF	Clear the console screen.	clear Ctrl+I	For more information, see the <code>clear</code> man page.
ORBD	Enable clients to transparently locate and invoke persistent objects on servers in the CORBA environment.	orbd	For more information, see the <code>orbd</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
PAUSE	Cause NCF file execution to wait for a key to be pressed.	—	<p>There is no simple command or switch to enable pausing in shell script file execution.</p> <p>To enable manual confirmation of steps in the server boot process, edit <code>/etc/sysconfig/boot</code> and change the <code>PROMPT_FOR_CONFIRM</code> parameter to yes.</p> <p>For information about script files, see Section 3.2, “NCF vs. Shell Script Files,” on page 47.</p>
POLICYTOOL	Create a manage policy files for Java.	policytool	For more information, see the <code>policytool</code> man page.
PING	Send an Internet Control Message Protocol (ICMP) echo request packet to an IP node on your internetwork.	ping	For more information, see the <code>ping</code> man page.
PPPCON	View Point-to-Point Protocol (PPP) interface configuration and statistical information.	yast	<p>Point-to-Point interfaces are configured in YaST > <i>Network Devices</i>.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
PPPTRACE	Debug PPP data link problems.	—	This is a NetWare utility that is not ported to Linux.
PROTECT	Load NLM programs into a protected address space.	—	Protected address space is a NetWare concept.
PROTECTION	List the protected address spaces, or add/remove/restart functionality from an existing address space.	—	Protected address space is a NetWare concept.
PROTOCOL	View the protocols registered.	ip	For more information, see the <code>ip</code> man page.
PROTOCOL REGISTER	Register additional protocols and frame types.	ip	For more information, see the <code>ip</code> man page.
PSEVER	Monitor and manage printers and print queues (legacy).	—	<p>This is for managing legacy NetWare printing.</p> <p>iPrint is the OES printing solution.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
PURGEVOLUME	Purge all deleted files from an NSS volume.	<code>ncpcon purge volume nss_volume_name</code>	<p>This functionality is available through the <code>ncpcon</code> utility for NSS volumes that have had the Salvage attribute enabled previously.</p> <p>The <code>ncpcon</code> utility is installed with the Novell Storage Services RPMs and is documented in “NCP Server Console (NCPCON) Utility” in the OES 11 SP2: NCP Server for Linux Administration Guide.</p> <p>Salvage and Purge are NSS file system features.</p>
PVER	View the version of OES-NetWare installed on the server.	<code>cat /etc/novell-release</code> <code>cat /etc/SUSE-release</code>	<p>Use SuSE SAM (<code>suse-sam</code> package).</p> <p>The <code>oes-SPident</code> and <code>SPident</code> commands are not authoritative because they can’t accommodate a variety of additional configurations that are beyond the scope of SL# support.</p>
RAID STATUS	View the status of the software RAID 0 RAID 1 and RAID 5 devices.	—	<p>The <code>nssmu</code> utility is used to manage software RAIDs for NSS volumes and is installed with the Novell Storage Services RPMs. It is documented in “NSS Management Utility (NSSMU) Quick Reference” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p>
RCONAG6	Allow remote console access to the server.	—	<p>Novell Remote Manager has a secure console.</p> <p>You can also use SSH (or VNC for GUI access).</p> <p>Telnet is not secure and therefore not recommended.</p>
RCONPRXY	Allow RConsoleJ to access target servers.	—	<p>Novell Remote Manager has a secure console.</p> <p>You can also use SSH (or VNC for GUI access).</p> <p>Telnet is not secure and therefore not recommended.</p>
RCONSOLEJ	Remotely control a NetWare server.	—	<p>Novell Remote Manager has a secure console.</p> <p>You can also use SSH (or VNC for GUI access).</p> <p>Telnet is not secure and therefore not recommended.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
REBUILD	Recover corrupted Novell Storage Services (NSS) pools.	ravsui ravview fsck	<p>The ravsui and ravview utilities are installed as part of Novell Storage Services NSS.</p> <p>Use ravsui to rebuild or verify an NSS pool on Linux that is in a maintenance state.</p> <p>Use ravview to dump specified NSS rebuild or verify files to a human-readable file format.</p> <p>For help with ravsui and ravview, use the <code>-h</code> option. For more information about fsck, see the <code>fsck</code> man page.</p>
RECORD	Record command sequences that you enter at the console over and over.	—	<p>Similar functionality is available through shell scripting, a topic that is beyond the scope of this guide but is treated extensively in industry publications.</p> <p>Also, bash includes a History Expansion capability that some find useful. For more information, see the “History Expansion” section of the <code>bash</code> man page.</p>
REGISTER MEMORY	Configure the operating system to recognize installed memory above the amount of memory that is automatically registered.	—	This is NetWare functionality that doesn't apply to Linux.
REINITIALIZE SYSTEM	Enable configuration changes made since the commands in the <code>netinfo.cfg</code> file were executed.	rcnetwork restart	For help, enter <code>rcnetwork -h</code> at the command prompt.
REM	Specify a line as a comment (used in NCF files).	# !	<p>Comments preceded by a pound sign (#) are not displayed as the script runs, but those preceded by an exclamation mark (!) are echoed.</p> <p>For information about script files, see Section 3.2, “NCF vs. Shell Script Files,” on page 47.</p>
REMIRROR PARTITION	Start the remirroring of a logical NSS partition.	—	<p>This functionality is available through the <code>nsscon</code> utility on OES.</p> <p>The <code>nsscon</code> utility is installed with the Novell Storage Services RPMs and is documented in “NSS Console” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
REMOVE NETWORK ADAPTER	Unload one LAN driver when the LAN driver has been loaded multiple times to support multiple boards.	—	On Linux it is common for drivers to support multiple instances of hardware. Loading is done only once and removal should not be necessary.
REMOVE NETWORK INTERFACE	Unload one frame type when there are multiple frame types loaded with one LAN driver.	ip	For more information, see the ip man page.
REMOVE STORAGE ADAPTER	Remove one instance of a storage driver.	—	Although <code>rmmod module_name</code> does unload a kernel module, this is not recommended. On Linux it is common for drivers to support multiple instances of hardware. Loading is done only once and removal should not be necessary.
REMOVEDMODULE	Remove modules that are preloaded by the <code>startup.ncf</code> file or modules that were loaded using the <code>load -s</code> command.	chkconfig	For more information, see the <code>chkconfig</code> man page.
REPLACE	Unload and reload a specific module in one step.	—	Performing an equivalent action on Linux can prevent the system from running. Not recommended.
REPLAY	Execute a list of commands that were recorded in and saved in a session using the <code>RECORD</code> command.	—	This is related to the comment for the <code>RECORD</code> utility. Using your chosen shell script methods, run the script you have created.
RESET ENVIRONMENT	Reset server parameters that have been modified to their default values.	—	This is NetWare functionality that is available for selected services in YaST but not at the command prompt.
RESET NETWORK ADAPTER	Reset a network adapter manually.	ifdown ifup	For more information, see the respective man pages.
RESET NETWORK INTERFACE	Restart a logical board that has been shut down using the <code>SHUTDOWN NETWORK INTERFACE</code> command.	ifdown ifup	For more information, see the respective man pages.
RESET ROUTER	Reset the router table in the server if the table becomes inaccurate or corrupted.	rcnetwork restart yast	For help with <code>rcnetwork</code> , enter <code>rcnetwork -h</code> at the command prompt. For help with YaST, enter <code>yast -h</code> at the command prompt.
RESET SERVER	Bring down the server and then restart it immediately.	init 6 shutdown -r now	For more information, see the respective man pages.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
RESTART SERVER	Bring down the server and then restart it immediately.	<code>init 6</code> <code>shutdown -r now</code>	For more information, see the respective man pages.
RIGHTS	View or modify user or group rights for files, directories, and volumes.	<code>rights</code>	<p>The <code>rights</code> command works only on NSS file systems.</p> <p>However, you can use the <code>ncpcon rights</code> command for NCP volumes on Linux file systems. For information, see “Managing File System Trustees and Trustee Rights for NCP Volumes” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p>
RMIC	Generate stub and skeleton class files (JRMF protocol) and stub and tie class files (IIOP protocol) for Java.	<code>rmic</code>	For more information, see the <code>rmic</code> man page.
RMID	Start the activation system daemon for Java.	<code>rmid</code>	For more information, see the <code>rmid</code> man page.
RMIREGISTRY	Create and start a remote object registry on the specified port on the current host.	<code>rmiregistry</code>	For more information, see the <code>rmiregistry</code> man page.
ROUTE	Pass frames (packets) from NetWare through IBM-compatible source route bridges.	<code>route</code>	For more information, see the <code>route</code> man page.
ROUTECON	Manipulate the routing tables manually.	<code>route</code>	For more information, see the <code>route</code> man page.
SCAN ALL	Scan all LUNs of all SCSI adapters in the server or all LUNs associated with a designated SCSI adapter.	<code>rescan-scsi-bus.sh</code>	<p>See “Scanning for Devices” in the <i>OES 11 SP2: NSS File System Administration Guide for Linux</i>.</p> <p>You can also use the <code>nlvm rescan</code> command.</p> <p>For information about installing and using the iSCSI initiator and target software on Linux, see “Mass Storage over IP Networks: iSCSI (https://www.suse.com/documentation/sles11/stor_admin/data/cha_inst_system_iscsi.html)” in the <i>SLES 11 SP2: Storage Administration Guide</i>.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SCAN FOR NEW DEVICES	Scan on LUN0 of SCSI adapters and to register new devices with the Media Manager so that they are available to the operating system.	<code>rescan-scsi-bus.sh</code>	<p>See “Scanning for Devices” in the <i>OES 11 SP2: NSS File System Administration Guide for Linux</i>.</p> <p>You can also use the <code>nlvm rescan</code> command.</p> <p>For information about installing and using the iSCSI initiator and target software on Linux, see “Mass Storage over IP Networks: iSCSI (https://www.suse.com/documentation/sles11/stor_admin/data/cha_inst_system_iscsi.html)” in the <i>SLES 11 SP2: Storage Administration Guide</i>.</p>
SCRSAVER	Lock the server console and activate a screen saver for the console display.	—	There are no screen savers associated with shell sessions on Linux. You should simply use the <code>exit</code> command to close any shell sessions you do not want to have open.
SEARCH	Specify search paths for NLM and <code>.ncf</code> files; add/delete search paths; view current search paths.	<code>export</code>	<p>Modify the <code>PATH</code> and <code>export</code> it.</p> <p>For more information, see the <code>export</code> man page.</p>
SECURE CONSOLE	Prevent NLM programs from being loaded from any directory other than the boot directories; prevent keyboard entry into the operating system debugger; prevent the server date and time from being changed	—	<p>The concept of securing the console through a command doesn't exist in Linux.</p> <p>You should always limit physical and remote access to the Linux console and never leave a root session open.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SEND	Send messages to NCP users by username or connection number.	<code>ncpcon send</code>	<p>For NCP connections, the <code>send</code> command only sends messages to connections (stations), not to usernames.</p> <p>Also keep in mind that users attached through Samba/CIFS or some other protocol do not receive messages unless they also have an NCP connection.</p> <p>For more information about sending messages using <code>ncpcon</code>, see “Sending Messages to Logged-In Users” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>For more information about sending messages using Novell Remote Manager, see “Sending Messages to Logged-In Users” in the <i>OES 11 SP2: NCP Server for Linux Administration Guide</i>.</p>
SERIALVER	Get the <code>serialVersionUID</code> for one or more classes in a form suitable for copying into an evolving class.	<code>serialver</code>	For more information, see the <code>serialver</code> man page.
SERVER	Start and run NetWare on the server.	—	<p>This is roughly equivalent to the running the Linux kernel. There is no direct equivalent.</p> <p>OES boots using the GRUB boot manager. There is no direct connection between Linux and a bootable DOS partition (if present)</p>
SERVERTOOL	Register, unregister, start up, and shut down a persistent server.	<code>servertool</code>	For more information, see the <code>servertool</code> man page.
SET	View and configure operating system parameters.	—	<p>There is no direct equivalent of the concept of SET parameters in Linux.</p> <p>You can set environment variables using the <code>export</code> command. For more information, see the <code>export</code> man page.</p> <p>To make configurations persistent, you must edit the configuration file associated with the service.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SET TIME	Set the date and time on the server.	—	<p>eDirectory requires a synchronized date and time on all OES servers in the same tree.</p> <p>For more information, see “Time Services” in the <i>OES 11 SP2: Planning and Implementation Guide</i>.</p>
SET TIME ZONE	Set the time zone on the server.	—	<p>eDirectory requires a synchronized date and time on all OES servers in the same tree.</p> <p>For more information, see “Time Services” in the <i>OES 11 SP2: Planning and Implementation Guide</i>.</p>
SETENV	Set C Library environment variables.	—	<p>You can set environment variables using the <code>export</code> command <code>export variable=value</code>.</p> <p>For more information, see the <code>export</code> man page.</p>
SHOWSCREEN	Restore a screen that has been hidden by the HIDESCREEEN command..	—	As with Hidescreen, there is no Linux equivalent.
SHUTDOWN	With the ACPI power-management driver loaded, force the server to shut down and power off.	<code>shutdown -h</code>	For more information, see the documentation on the Web (http://docs.hp.com/en/A5201-96043-en/apcs08.html) .
SHUTDOWN NETWORK INTERFACE	Shut down a logical board without removing its resources.	<code>ifdown</code>	For more information, see the <code>ifdown</code> man page.
SLP ...	Manage and monitor SLP.	<code>slptool ...</code>	<p>For example, <code>slptool findsrvs smb</code>.</p> <p>For more information, enter <code>slptool -help</code> at the command prompt.</p>
SMDR ...	Manage the Storage Management Data Requester, a Storage Management Services (SMS) component.	<code>smdrd ...</code>	For more information, see the <code>smdrd</code> man page.
SPEED	Display the speed at which the processor is running.	<code>cat /proc/cpuinfo</code>	<p>For more information, see the <code>cat</code> man page.</p> <p>You can also see information about processors in Novell Remote Manager. See “Viewing Processors” in the <i>OES 11 SP2: Novell Remote Manager Administration Guide</i>.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SPFCON, SPXCONFIG, SPXS		—	SPX is a legacy protocol for NetWare only, including NetWare running in a virtual machine on an OES host server.
SPOOL	Create, change or display spooler mappings. IMPORTANT: This applies to NetWare legacy printing and is no longer supported.	—	Legacy NetWare printing has been replaced by iPrint on both OES platforms.
START PROCESSORS	Start one or more secondary processors when the server is running on a multiprocessor computer.	—	Control of individual processors is not available as part of OES.
STOP PROCESSORS	Stop one or more secondary processors in a multiprocessor computer.	—	Control of individual processors is not available as part of OES.
SWAP	Display information about swap files, add or delete swap files, and specify the parameters of swap files.	mkswap swapon swapoff	For more information, see the respective man pages.
_TCP	Monitor TCP/IP activity and connection status.	tcpdump	For more information, see the tcpdump man page. To watch failovers and errors on bonded interfaces, use <code>tail -f /var/log/messages</code> .
TCPCON	Monitor TCP/IP activity, configuration and statistics information, known routes, trap log. Use SNMP to access TCP/IP information in any remote protocol stack supporting the TCP/IP Management Information Base (MIB).	netstat	For more information, see the netstat man page.
TECHWALK	Record NetWare configuration information.	—	Techwalk is not available for OES. However, there is a GPL utility named supportconfig that collects system troubleshooting information. For more information, visit the Cool Solutions Web site (http://www.novell.com/cool solutions/tools/16106.html) .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
TIME	Display date and time, daylight saving time status, and time synchronization information	date	For more information, see the <code>date</code> man page.
TIMESYNC		—	Timesync is a NetWare time protocol that is compatible with and being replaced by NTP on NetWare. NTP is also the time protocol for Linux.
TLI	Provide Transport Level Interface (TLI) communication services.	—	This command is not ported to OES.
TNAMESERV	Start the Java IDL name server.	tnameserv	For more information, see the <code>tnameserv</code> man page.
TPING	Send an ICMP echo request packet to an IP node on your internetwork.	ping	For more information, see the <code>ping</code> man page.
TRACK OFF	Prevent the server from displaying the RIP tracking screen.	—	RIP tracking is a NetWare concept that is not relevant to OES.
TRACK ON	View the RIP tracking screen and make it the active screen.	—	RIP tracking is a NetWare concept that is not relevant to OES.
TSAFS ...	Manage the SMS Target Service Agent for the file system.	tsafs	For more information, see the <code>tsafs</code> man page.
UNBIND	Remove a communication protocol from the LAN driver of a network board; disable communication on a specific board	ifdown	For more information, see the <code>ifdown</code> man page.
UNLOAD	Unload a module that was previously loaded with the LOAD command	—	For OES services, use the service's stop script: <code>/etc/init.d/service stop</code> . Most OES services have <code>start</code> , <code>stop</code> , and <code>restart</code> options. For example, to stop eDirectory, enter <code>/etc/init.d/ndsd stop</code> at the command prompt.
UPS_AIO	Provide the software link between your server and the UPS.	—	Support is hardware-specific. See <code>man apcupsd</code> in the <code>apcupsd</code> package.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
VERIFY	Validate all blocks in an NSS pool.	ravsui verify <i>poolname</i> ravview	<p>The ravsui and ravview utilities are installed as part of Novell Storage Services NSS.</p> <p>Use the ravsui utility to find out whether you need to rebuild a pool to correct NSS volume problems.</p> <p>Use ravview to view the output.</p> <p>For help, enter one of the commands with the -h option.</p>
VERSION	View the file server version, license information, and copyright notice from the System prompt.	uname -a ncpcon version ndsstat	<p>For more information on the uname command, see the uname man page.</p> <p>For more information about ncpcon, see “NCPCON” in the OES 11 SP2: NCP Server for Linux Administration Guide.</p> <p>For help with ndsstat, enter the command with the -h option.</p>
VIEW	View a file from the NetWare server console.	less <i>filename</i> cat <i>filename</i>	<p>These commands are basically equivalent, but less allows for better scrolling and paging.</p> <p>For more information, see the less and cat man pages.</p>
VMDISMOUNT	Make a volume unavailable to users so it can be repaired.	—	<p>The umount command makes a traditional Linux volume unavailable so it can be repaired.</p> <p>Equivalent functionality for NSS volumes is available in the nssmu utility, which is installed with the Novell Storage Services RPMs and is documented in “NSS Management Utility (NSSMU) Quick Reference” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p>
VMMOUNT	Make a volume available to users.	—	<p>The mount command makes local and remote Linux POSIX file systems available.</p> <p>Equivalent functionality for NSS volumes is available in the nssmu utility, which is installed with the Novell Storage Services RPMs and is documented in “NSS Management Utility (NSSMU) Quick Reference” in the OES 11 SP2: NSS File System Administration Guide for Linux.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
VMVOLUMES	List mounted volumes, including number, status and name.	—	<p>The <code>mount</code> command displays a list of all available file systems, both local and remote.</p> <p>The <code>nlvm list volumes</code> command displays a list of all available NSS and Linux POSIX file systems.</p> <p>The <code>nlvm list volume volumename</code> command displays details about a specified volume.</p> <p>Equivalent functionality for NSS volumes is available in the <code>nssmu</code> utility, which is installed with the Novell Storage Services RPMs and is documented in “NSS Management Utility (NSSMU) Quick Reference” in the <i>OES 11 SP2: NSS File System Administration Guide for Linux</i>.</p>
VOLUME	List mounted volumes or information about a specific volume.	—	<p>The <code>mount</code> command displays a list of all available file systems, both local and remote.</p> <p>Equivalent functionality for NSS volumes is available in the <code>nssmu</code> utility, which is installed with the Novell Storage Services RPMs and is documented in “NSS Management Utility (NSSMU) Quick Reference” in the <i>OES 11 SP2: NSS File System Administration Guide for Linux</i>.</p>
VREPAIR	Correct volume problems on NetWare Traditional volumes; remove name space entries from directory entry tables.	<code>fsck</code>	For more information, see the <code>fsck</code> man page.
WHOIS	Display information about either the DNS name or the IP address, depending on which is entered.	<code>whois</code>	For more information, see the <code>whois</code> man page.
WS2_32	Manage Winsock 32.	—	Does not apply.
XIDEV	Manage mouse support for the X Windows interface.	—	Mouse support on OES is managed in YaST > <i>Hardware</i> (via <code>sax2</code>).
XLOG	Diagnose ISDN-related connection problems with Eicon Technology ISDN adapters.	—	This command is not ported to OES.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
XNFS SHARE	List all shared paths.	<code>exportfs -v</code>	When executed without any options, <code>exportfs</code> displays only the exported path and the host that it is allowed to access. With the <code>-v</code> option, it displays the export options. For more information, see the <code>exportfs</code> man page.
XNFS SHARE REFRESH	Refresh the share list from the exports file.	<code>exportfs -r</code>	For more information, see the <code>exportfs</code> man page.
XNFS SHARE /PATH EXPORT_OPTIONS	Share a path dynamically.	<code>exportfs -o options host:/path</code>	For more information, see the <code>exportfs</code> man page.
XNFS UNSHARE /PATH	Unshare a path.	<code>exportfs -u host:/path</code>	For more information, see the <code>exportfs</code> man page.
XNFS NFS STATS	Display NFS protocol statistics.	<code>nfsstat -n</code>	For more information, see the <code>nfsstat</code> man page.
XNFS MOUNT STATS	Display MOUNT protocol statistics.	—	Similar functionality is not available on OES.
XNFS LOCKD STATS	Display LOCK protocol statistics.	—	Similar functionality is not available on OES.
XNFS TRACE ON/OFF	Turn the NFS Trace screen on or off.	<code>tcpdump</code>	XNFS TRACE provides a minimal trace; <code>tcpdump</code> captures all packets. For more information, see the <code>tcpdump</code> man page.
XNFS LOGSCREEN ON/OFF	Turn the NFS Log screen on or off.	—	Log messages are captured in <code>/var/log/messages</code> file.
XNTPD	Synchronize time with servers that are NTPv3 compliant.	<code>ntpd</code>	For more information, see the <code>ntpd</code> man page.
YPCAT, YPWHICH, YPSET, YPPASSWD, etc.	NIS related operations.	Equivalent commands are available with the same names.	For more information, see the respective man pages.

3 Other Tips

Table 3-1 discusses problems that are common when NetWare administrators first begin working with Linux systems:

3.1 Common Problems and Solutions

Table 3-1 *Common Problems and Solutions*

Topic	Problem	Solution
Shell Scripts	Scripts won't run after changes are made on a Windows machine. Because DOS uses different ASCII characters to indicate a line ending (CR,LF) than Linux/UNIX (LF only), shell script files that were created or modified on a Windows system do not run on Linux until they are converted to UNIX format.	The quickest solution is usually to enter the following command at a command prompt: <code>dos2unix filename</code> where <i>filename</i> is the name of the text file needing to be converted. Also, many text editors have an option to save files in UNIX format.

3.2 NCF vs. Shell Script Files

NCF files provide scripting on NetWare only and are not used with OES.

Shell scripts provide equivalent functionality on Linux, and most Linux administrators use them extensively. To learn about shell scripting, we recommend that you search for resources on the Web and consider investing in one or more of the excellent industry publications that address the subject.

3.3 Encryption for Linux Traditional File Systems

If you are interested in encrypting Linux traditional partitions and files, see “[Encrypting Partitions and Files](http://www.suse.com/documentation/sles11/book_security/data/cha_security_cryptofs.html) (http://www.suse.com/documentation/sles11/book_security/data/cha_security_cryptofs.html)” in the *SLES 11 Security Guide* (http://www.suse.com/documentation/sles11/book_security/data/book_security.html).

