EMC® NetWorker®
Release 7.4
Multiplatform Version

Installation Guide

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Appendix A Sample stinit.def File and Man Page

As part of an effort to improve and enhance the performance and capabilities of its product lines, EMC periodically releases revisions of its hardware and software. Therefore, some functions described in this document may not be supported by all versions of the software or hardware currently in use. For the most up-to-date information on product features, refer to your product release notes.

If a product does not function properly or does not function as described in this document, please contact your EMC representative.

Audience
This document is part of the NetWorker documentation set, and is intended for use by system administrators during the installation and setup of NetWorker software .

Related documentation
For more information about NetWorker software, refer to this documentation:

◆ *EMC NetWorker Release 7.4, Administration Guide*

◆ *EMC NetWorker Release 7.4, Release 7.4, Multiplatform Version, Cluster Installation Guide*

◆ *EMC NetWorker Release 7.4, Release 7.4, Multiplatform Version, Release Notes*

◆ *EMC Information Protection Software Compatibility Guide*

Conventions used in this guide

EMC uses the following conventions for notes, cautions, and important notices.

Note: A note presents information that is important, but not hazard-related.

⚠ **CAUTION**

A caution contains information essential to avoid data loss or damage to the system or equipment.

⚠ **IMPORTANT**

An important notice contains information essential to operation of the software.

Typographical conventions

EMC uses the following style conventions in this guide:

Normal	Used in running (nonprocedural) text for:
	• Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus)
	• Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, filenames, functions, utilities
	• URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, notifications
Bold:	Used in running (nonprocedural) text for:
	• Names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system call, man pages
	Used in procedures for:
	• Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus)
	• What user specifically selects, clicks, presses, or types
Italic:	Used in all text (including procedures) for:
	• Full titles of publications referenced in text
	• Emphasis (for example a new term)
	• Variables
`Courier:`	Used for:
	• System output, such as an error message or script
	• URLs, complete paths, filenames, prompts, and syntax when shown outside of running text
`Courier bold:`	Used for:
	• Specific user input (such as commands)
`Courier italic:`	Used in procedures for:
	• Variables on command line
	• User input variables
< >	Angle brackets enclose parameter or variable values supplied by the user
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections - the bar means "or"
{ }	Braces indicate content that you must specify (that is, x or y or z)
...	Ellipses indicate nonessential information omitted from the example

Where to get help

EMC support, product, and licensing information can be obtained as follows.

Product information — For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to the EMC Powerlink website (registration required) at:

http://Powerlink.EMC.com

Technical support — For technical support, go to EMC Customer Service on Powerlink. To open a service request through Powerlink, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.

Your comments

Comments and suggestions about our product documentation are always welcome.

To provide feedback:

1. Go to:

   http://Powerlink.EMC.com

2. Click the **Feedback** link.

Introduction

This chapter includes these sections:

About the NetWorker product

The EMC® NetWorker® product is a suite of storage management software that provides backup, recovery, and other services to computers with a wide variety of operating systems and data types. NetWorker products for different operating systems are interoperable. This provides the flexibility to design a storage management system that works best with the current computing environment.

The NetWorker software is distributed in these formats:

◆ In a media kit that contains the software and electronic documentation for several related NetWorker products.

◆ As a downloadable archive file from the EMC website.

The NetWorker product has five major components:

◆ NetWorker client

◆ NetWorker storage node

◆ NetWorker server

◆ NetWorker Management Console

◆ NetWorker License Manager

NetWorker client

The NetWorker client software communicates with the NetWorker server and provides recover and ad hoc (manual) backup functionality. The NetWorker client software is installed on all computers that are backed up to the NetWorker server.

NetWorker clients do not have to be running the same operating system as the NetWorker server. However, to back up clients that are running other operating systems, the NetWorker server must have a NetWorker ClientPak® enabler for that client. For example, in order for the NetWorker server for IRIX to back up NetWorker clients that are running another operating system, a separate ClientPak enabler must be purchased and entered for that operating system.

NetWorker storage node

Data can be backed up directly to devices that are attached to a NetWorker server, or to a NetWorker storage node. A storage node controls storage devices such as tape drivers, autochangers, and silos.

Storage nodes depend on the NetWorker server for these functions:

◆ Control over which clients use the storage node's devices for backups

◆ License management

◆ Management of the client file indexes that track each client's data

◆ Management of the media database that tracks the data on each volume

NetWorker storage nodes and the NetWorker server can use different operating systems. To use a NetWorker storage node on a Linux operating system with a NetWorker server that is running another operating system, the storage node's enabler on the server must be of the same edition as the base enabler for the NetWorker server.

NetWorker server

The NetWorker server software provides control and scheduling for NetWorker operations. It enables you to:

◆ Enter the enabler licenses for the NetWorker server and all the functions the NetWorker server controls, such as autochanger modules, additional client connections, and ClientPak licenses.

◆ Define the clients, devices, and media that the NetWorker server controls.

◆ Define the schedules for backups and other operations.

◆ Monitor the results of backups and other operations.

◆ Manage the client file indexes that track each client's data.

◆ Manage the media database that tracks the data contained on each volume.

NetWorker Management Console

All NetWorker servers and clients are managed from the NetWorker Management Console. The Console replaces the NetWorker Administration program (**nwadmin**) which is no longer available.

To administer NetWorker servers, the Console must be:

◆ Installed on an AIX, HP-UX, Linux, Solaris, or Microsoft Windows host.

◆ Accessed through a graphical user interface on the host with a web-enabled browser that has the specified version of Java Runtime configured.

The Console provides reporting, managing, and monitoring capabilities for all NetWorker servers and clients. Multiple users can access the Console server concurrently from different browser sessions. A computer that hosts the web-enabled browser can also be a NetWorker client, server, or storage node.

You must install the Console software on one computer in your datazone to manage and monitor the NetWorker server. Only one installation of the Console is required to manage multiple NetWorker servers and to take full advantage of the Console's consolidated reporting feature.

NetWorker License Manager

The NetWorker License Manager provides a central location for managing the licenses of all the NetWorker clients and servers. Instead of managing licenses separately, all NetWorker licenses can be maintained from a single computer. Installation of the NetWorker License Manager software is an option when installing the NetWorker software.

The NetWorker License Manager Installation and Administration Guide and the NetWorker License Manager Release Notes provides information about the NetWorker License Manager.

Mac OS X ClientPak software

If the NetWorker clients use a different operating system than the NetWorker server, for example if Mac OS X clients are being backed up to an AIX NetWorker server, then you need to purchase the license enabler code that is appropriate for the Mac OS X ClientPak, and enter the enabler code on the NetWorker server.

Note: Currently, only the NetWorker client software is available for the Mac OS X operating system. You must use the Mac OS X client in conjunction with a supported UNIX, Linux, or Windows version of the NetWorker server.

The ClientPak software provides the following features:

◆ Full compatibility with NetWorker server and storage nodes on UNIX, Linux and Windows platforms, for NetWorker release 6.1.2 or later.

◆ HFS/HFS+ metadata awareness. This compatibility ensures the proper backup and restore of Mac OS X field metadata including resource forks, catalog information and 10.4 extended file attributes and access control files.

The following limitations apply to the ClientPak software:

◆ There is no graphical user interface (GUI) for this release, however there is full support of the command line interface (CLI).

◆ NetWorker software does *not* support recovery of Mac OS X save sets to non-Mac OS X clients.

◆ NetWorker software does *not* support recovery of Mac OS X 10.4 save sets to Mac OS X 10.3 clients.

Supported devices

NetWorker software supports a variety of media types and devices, either stand-alone or in an autochanger or silo tape library. Devices can be attached to a NetWorker server or designated storage node.

The term *autochanger* refers to a variety of backup devices:

◆ Autoloader

◆ Carousel

◆ Datawheel

◆ Jukebox

◆ Library

◆ Near-line storage

The EMC Information Protection Software Compatibility Guide provides the latest list of supported devices.

Enabler codes

Enabler codes (licenses), which activate the functionality of NetWorker software are sold separately. The section "Licensing and Enabling the Software" on page 115 provides information.

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Getting Started

This chapter includes these sections:

Installation roadmap

Use the following roadmap when installing the NetWorker software:

1. Review "Software Requirements" on page 23 and note the default directory location and space requirements.

   Mac OS X requirements are provided in the section "On Mac OS X: NetWorker client support" on page 25.

2. If there is an earlier release of NetWorker software installed, update the software:

   • For Microsoft Windows instructions, see "Updating the NetWorker software on Microsoft Windows" on page 40.

   • For UNIX instructions, see "Updating the NetWorker Software on UNIX" on page 42.

3. Access the NetWorker software:

   • For Microsoft Windows instructions, see "Microsoft Windows" on page 17.

   • For UNIX instructions, see "UNIX" on page 18.

4. Install the required NetWorker software:

   • For Microsoft Windows installation information, see "Microsoft Windows Installation" on page 93.

   • For UNIX installation instructions, refer to the appropriate chapters:

     – "AIX Installation" on page 51
     – "HP-UX Installation" on page 61
     – "HP Tru64 UNIX Installation" on page 69
     – "IRIX Installation" on page 75
     – "Linux Installation" on page 83
     – "Mac OS X ClientPak Installation" on page 79
     – "Solaris Installation" on page 99

   Note: You must install the Console server software on one computer in your data zone to manage the NetWorker server. Only one installation of the Console server is required to manage multiple NetWorker servers.

5. Test the NetWorker software. "Verifying the Installation" on page 109 provides information.

6. Enable and register all NetWorker products. "Licensing and Enabling the Software" on page 115 provides information.

Accessing the software

The procedure for accessing the installation files differs for Microsoft Windows and UNIX environments. Refer to the appropriate section for instructions.

Microsoft Windows

Access the installation files from one of either a local DVD drive or from the Powerlink® website at *http://Powerlink.EMC.com*.

From a local DVD drive

To access NetWorker installation files on a local CD-ROM:

1. Log in with administrator privileges where the NetWorker software is being installed.

2. Insert the NetWorker software media into the DVD drive.

3. If Autorun is enabled, the NetWorker software installation screen appears automatically. Perform the following:

   a. Select **Install NetWorker Release 7.4 software**.

   b. In the **File Download** dialog box select **Run this program from its current location**.

   c. If a security warning appears, click **Yes** to continue.

4. If Autorun is disabled, change directories to the appropriate location:

   • win_x86 (to install on a 32-bit computer)
   • win_x64 (to install on a 64-bit computer)
   • win_ia64 (to install on a 64-bit computer)

From the website

To access the installation software from the *http://Powerlink.EMC.com* website:

1. Log in with administrator privileges where the NetWorker software is being installed.

2. Create a temporary folder to download and extract the evaluation software.

3. Go to the *http://Powerlink.EMC.com* website, select **Support** > **Downloads and Patches > Downloads D-R > NetWorker**.

4. Download the evaluation software to the temporary folder and change to that folder.

5. Extract the downloaded file.

UNIX

Access the installation files from one of either a local DVD or the EMC website.

From a local DVD drive

To access the NetWorker software from a local DVD drive:

1. Log in as root on the computer where the NetWorker software is being installed.

2. Mount the media and locate the appropriate installation directory.

3. For UNIX platforms:

   a. Ensure that the PATH environment variable for the user root on the NetWorker server and the user on each NetWorker client contain the directory where the NetWorker executables reside.

   b. For IRIX only, add a symbolic link from the source directory to the target directory. For example:

   ```
   ln -s /dvd/irix/networkr.tar /tmp/sgi.tardist
   ```

   Table 1 on page 18 provides a listing of the NetWorker installation directories.

Table 1   NetWorker installation directories

Operating system	NetWorker installation directory
AIX	/usr/bin
HP-UX	/opt/networker/bin
HP Tru64 UNIX	/usr/opt/networker/bin
IRIX	/usr/etc
Linux	/usr/sbin
Mac OS X	/usr/sbin
Solaris	/usr/sbin

4. Install the software by using the instructions in the appropriate chapters:

   - "AIX Installation" on page 51
   - "HP-UX Installation" on page 61
   - "HP Tru64 UNIX Installation" on page 69
   - "IRIX Installation" on page 75
   - "Linux Installation" on page 83
   - "Mac OS X ClientPak Installation" on page 79
   - "Solaris Installation" on page 99

From the website

To access the installation software from the EMC website:

1. Log in as root on the computer where the NetWorker software is being installed.

2. Create a temporary folder to download and extract the evaluation software.

3. Go to the http://Powerlink.EMC.com website, select **Support** > **Downloads and Patches > Downloads D-R > NetWorker**, and navigate to the appropriate content management download site.

4. Ensure that there is enough disk space to contain both the compressed download NetWorker software file and the fully uncompressed files as listed in Table 2 on page 19.

Table 2　　Size of compressed and uncompressed files

Operating system	Compressed file	Uncompressed file
AIX	55 MB	715 MB
HP-UX	45 MB	740 MB
HP Tru64 UNIX	105 MB	275 MB
IRIX	105 MB	105 MB
Linux for IBM PowerPC	20 MB	20 MB
Linux for Intel x86	35 MB	350 MB
Linux for Intel x86-64	350 MB	350 MB
Linux Itanium	105 MB	105 MB
Mac OS X	`not applicable`	`not applicable`
Solaris for Intel x86	20 MB	355 MB
Solaris for Intel x86-64	70 MB	195 MB

5. Download the NetWorker evaluation software to a temporary directory.

6. Uncompress the downloaded software. Table 3 on page 19 provides details.

Table 3　　Uncompress the downloaded software file (1 of 2)

Operating system	Command to uncompress and download the software
AIX	`gunzip nw74_aix.tar.gz`
HP-UX 11.x	`gunzip nw74_hpux11_64.pkg.gz`
HP-UX 11i on the Itanium Processor Family (IPF)	`gunzip nw74_hpux11_ia64.pkg.gz`
HP Tru64 UNIX	`gunzip nw74_tru64.tar.gz`
IRIX	`gunzip nw74_sgi.tar.gz`
Linux for IBM PowerPC	`gunzip nw74_linux_ppc64.tar.gz`
Linux for Intel x86	`gunzip nw74_linux_x86.tar.gz`
Linux for Intel x86-64	`gunzip nw74_linux_x86_64.tar.gz`
Linux Itanium	`gunzip nw74_linux_ia64`

Table 3   Uncompress the downloaded software file (2 of 2)

Operating system	Command to uncompress and download the software
Mac OS X	not applicable
Solaris for Intel x86	**gunzip nw74_solaris_x86.tar.gz**
Solaris for Intel x86-64	**gunzip nw74_solaris_amd64.tar.gz**

7. For IRIX only, add a symbolic link from the source directory to the target directory. For example:

    ln -s targetdir/nw74_irix_tar /tmp/sgi.tardist

8. Extract the uncompressed file by using these commands as listed in Table 4 on page 20.

Table 4   Commands to extract the software

Operating system	Command to extract the software
AIX	**tar -xvpf nw74_aix.tar**
HP-UX 11.x	**tar -xvpf nw74_hpux11_64.tar**
HP-UX 11i on the Itanium Processor Family (IPF)	**tar -xvpf nw74_hpux11_ia64.tar**
HP Tru64 UNIX	**tar -xvpf nw74_tru64.tar**
IRIX	**tar -xvpf nw74_sgi.tar**
Linux Itanium	**tar -xvpf nw74_linux_ia64**
Linux for Intel x86	**tar -xvpf nw74_linux_x86.tar**
Linux for Intel x86-64	**tar -xvpf nw74_linux_x86_64.tar**
Linux for IBM PowerPC	**tar -xvpf nw74_linux_ppc64.tar**
Mac OS X	not applicable
Solaris for Intel x86	**tar -xvpf nw74_solaris_x86.tar**
Solaris for Intel x86-64	**tar -xvpf nw74_solaris_amd64.tar**

The NetWorker distribution software directories and files are listed on the screen as the extraction proceeds.

9. Ensure that the PATH environment variable for the user root on the NetWorker server and the user on each NetWorker client contain the directory where the NetWorker executables reside. Table 5 on page 20 provides details.

Table 5   NetWorker installation directories (1 of 2)

Operating system	NetWorker installation directory
AIX	/usr/bin
HP-UX	/opt/networker/bin
HP Tru64 UNIX	/usr/opt/networker/bin
IRIX	/usr/etc

Table 5   NetWorker installation directories (2 of 2)

Operating system	NetWorker installation directory
Linux	/usr/sbin
Mac OS X	/usr/sbin
Solaris	/usr/sbin

10. Install the software by using the instructions in the appropriate chapters:

   - "AIX Installation" on page 51
   - "HP-UX Installation" on page 61
   - "HP Tru64 UNIX Installation" on page 69
   - "IRIX Installation" on page 75
   - "Linux Installation" on page 83
   - "Mac OS X ClientPak Installation" on page 79
   - "Solaris Installation" on page 99

3

Software Requirements

This chapter includes these sections:

General requirements

These requirements apply to Microsoft Windows and UNIX platforms.

Microsoft Windows requirements

These are general NetWorker for Windows software installation requirements:

◆ Do *not* include an underscore character (_) in Windows computer names.

◆ If NetWorker software is installed on a File Allocation Table (FAT) partition, do *not* disable long name support.

◆ Microsoft Windows Installer 2.0 (msiexec.exe) was included with the NetWorker release 7.3 software. If the target computer has an older version of the Windows Installer, it will be updated and a reboot will be required during the NetWorker software installation or update. Refer to the Microsoft Windows documentation for instructions on how to determine the Windows Installer version and to update the version if required.

◆ InstallShield requires that the entire installation program must be put into memory, even if you only intend to install a single NetWorker software component.

◆ Ensure that the latest Microsoft Windows update or critical patch has been installed.

UNIX requirements

For UNIX software installation, ensure that the latest patches for your operating system have been installed.

Note: NetWorker software does not support locales (defined by the operating system) or code sets that remap characters that have special meaning for file systems. Depending on the file system, these special characters may include the slash (/), the backslash (\), the colon (:), or the period(.). For example, De_DE.646 is an unsupported locale. The NetWorker Administration Guide provides the latest information.

Language Support

To view non-English data, ensure that the operating system is installed with the required language support software and that the corresponding language locale is enabled.

TCP/IP requirements

These are the TCP/IP network communication requirements:

◆ All NetWorker server, storage nodes, and client host computers must have TCP/IP installed, configured, and networked.

◆ The NetWorker server hostname must be added to the Domain Name System (DNS) database for the network, or to the local hosts file located in:

• On Microsoft Windows:

`%SystemRoot%\system32\drivers\etc`

- ON UNIX:

  /etc/hosts

  Note: If DNS is used, reverse lookup must be correctly configured.

◆ If the NetWorker server host is a Dynamic Host Configuration Protocol (DHCP) client, it must have a reserved address.

◆ The TCP/IP hostname must be identical to the computer name. Do *not* include an underscore character (_) in the computer name.

◆ If DHCP with dynamic addresses is used, DHCP must be synchronized with DNS.

◆ The NetWorker server's TCP/IP hostname and computer name must be the same.

Client software requirements

For NetWorker clients on the same hardware platform as the NetWorker server, use the same installation files to install the clients and server. For NetWorker clients on other hardware platforms, you must purchase a separate ClientPak license. For information, contact EMC or an Authorized EMC Reseller.

The client software can be installed either on a remote network file system-mounted directory or a local drive.

The EMC Information Protection Software Compatibility Guide provides a list of supported operating systems.

On Mac OS X: NetWorker client support

The ClientPak installation requires the following:

◆ A supported Mac OS X system:

  - Mac OS X Client version 10.3.x, 10.4.x for Intel

  - Mac OS X Server 10.3.x, 10.4.x for Intel

◆ NetWorker products:

  - NetWorker server software, release 7.4, 7.3.x, 7.2.x and 7.1.x, on a supported UNIX, Linux, or Microsoft Windows platform.

  - ClientPak software.

  - A license enabler code appropriate for the number of NetWorker client connections.

  - Appropriate storage devices installed and properly configured. The EMC Information Protection Software Compatibility Guide provides a list of supported devices.

◆ These supported file systems:

  - HFS+ (including journaled)

  - HFS

  - UFS

Table 6 on page 26 and lists the space requirements for installing the ClientPak software.

Table 6   **NetWorker ClientPak default locations and space requirements**

Software and documentation files	NetWorker default location	Space required
NetWorker client program files	/usr/bin	9 MB
NetWorker client system binaries	/usr/sbin	12 MB
NetWorker client executables	/usr/lib/nsr	1 MB
NetWorker man pages	/usr/share/man	1 MB
PDF files	optional	varies

On HP Tru64 UNIX

To install NetWorker software on an HP Tru64 UNIX client system, the following requirements must be met:

◆ HP Tru64 UNIX Version 5.1B or later must be installed.

◆ Motif version 2.1 or later software must be installed.

◆ At least 50 MB of disk space in /usr/opt.

The minimum software listed in Table 7 on page 26 is installed.

Note: The installation requirements differ, depending on whether or not the clients have the same operating system as the NetWorker server.

Table 7   **HP Tru64 UNIX: required client software**

Package identifier	Package name	Description
OSFBASE*xxx*	Tru64 UNIX Base System	Base operating system software
OSFCLINET*xxx*	Basic Networking Services	Network server communications
OSFNFS*xxx*	NFS Utilities	Network server communications

On Linux

To install NetWorker software on an Linux client system, the following requirements must be met

Table 8   **Linux: required client software**

Package identifier	Package name	Description
openmotif	Open Motif	Open Motif runtime libraries and executables

Storage node requirements

To install the NetWorker storage node software, the following requirements must be met:

◆ At least one supported storage device must be attached and installed. The device can either be a stand-alone device, autochanger, or silo tape library. The EMC Information Protection Software Compatibility Guide provides a list of supported devices.

◆ NetWorker software also supports the use of file type and advanced file type devices. The NetWorker Administration Guideprovides more details.

The EMC Information Protection Software Compatibility Guide provides a list of supported operating systems.

Storage device requirements

Install one or more storage devices installing the NetWorker server software. Ensure that you install the SCSI adapter, cabling, and termination. The NetWorker installation program assumes that the storage devices have been properly installed and configured, and that the operating system recognizes the devices. The EMC Information Protection Software Compatibility Guide provides a list of the supported devices.

Note: You must use a nonrewinding device for NetWorker backups. NetWorker software writes a filemark on the volume at the end of each backup. When the next backup occurs, NetWorker software appends data to the volume based on the position of the filemark. If a device automatically rewinds the tape, the filemark position is lost and the next backup overwrites existing data. In that case, you would not be able to recover the previous backup data.

Server software requirements

This section describes the default location and space requirements for NetWorker software.

Default location and space requirements

These pathnames and directories are required for installation:

◆ The directory on the server is large enough for the NetWorker resources, client, server indexes, and media database (usually /nsr).

◆ The system pathname of at least one storage device for use by the NetWorker server to back up and recover files.

◆ If a tape device is being used to back up data, use a valid pathname for that device. The tape device must be nonrewinding.

◆ A directory for the PDF documentation files and for Adobe Acrobat Reader (if it is not already installed).

  • If the default locations and space requirements are accepted during installation, the installation script creates the directories listed, see these sections for details:

  • "Microsoft Windows location and space requirements" on page 28

  • "Linux location and space requirements" on page 28

  • "UNIX location and space requirements" on page 29

Microsoft Windows location and space requirements

Table 9 on page 28 specifies the location and space requirements for the NetWorker software in a Microsoft Windows environment.

Table 9   Microsoft Windows location and space requirements

NetWorker files	Location	Space		
		x86	**x64**	**ia64**
Client files	Legato\nsr\bin	22 MB	28 MB	23 MB
Console	Legato\management	263 MB	263 MB	263 MB
Storage node	Legato\nsr\bin	27 MB	34 MB	32 MB
Server	Legato\nsr\bin	33 MB	39 MB	40 MB
Client file index, media database	Legato\nsr\index Legato\nsr\mm	varies	varies	varies
Daemons	Legato\nsr\bin	1.5 MB	2 MB	3.2 MB
NetWorker License Manager	Legato\nsr\bin	275 MB	275 MB	not supported

Linux location and space requirements

Table 10 on page 28 specifies the location and space requirements for the NetWorker software in a Linux environment

Table 10   Linux location and space requirements

NetWorker files	Linux Itanium Processor		Linux for x86	
	Location	**Space**	**Location**	**Space**
Client files	/usr/bin	35 MB	/usr/bin	23 MB
Console	/usr/bin	not applicable	/usr/bin	252 MB
Storage node	/usr/bin	72 MB	/usr/bin	48 MB
Server	/usr/bin	93 MB	/usr/bin	63 MB
Client file index, media database	/nsr	varies	/nsr	varies
Man pages	/usr/share/man	2 MB	/usr/share/man	2 MB
NetWorker License Manager	/usr/sbin /usr/nsr/lic/res /nsr/lic/res	2 MB 22 MB 21 MB	/usr/sbin /usr/nsr/lic/res /nsr/lic/res	2 MB 22 MB 21 MB

UNIX location and space requirements

Table 11 on page 29 specifies the location and space requirements.

Table 11   UNIX location and space requirements

NetWorker files	AIX	HPUX[a]	IRIX[b]	Solaris	HP Tru64 UNIX
Client					
In	**/usr/bin /usr/lib/nsr**	**/opt/networker/bin**	**/usr/etc**	**/usr/bin, /usr/lib/nsr /usr/sbin**	**usr/opt/networker/bin**
Size	82 MB	130 MB	69 MB	110 MB	80 MB
Console					
In	**/opt/LGTOnmc**	**/opt/networker/bin**	**not applicable**	**/opt/LGTOnmc**	not applicable
Size	297 MB	316 MB	not applicable	270 MB	not applicable
Storage node					
In	**/usr/bin /usr/lib**	**/opt/networker/bin**	**/usr/etc**	**usr/sbin, /usr/lib/nsr, /usr/kernel/drv**	**usr/opt/networker/bin**
Size	96 MB	109 MB	161 MB	92 MB	175 MB
Server					
In	**/usr/bin**	**/opt/networker/bin**	**/usr/etc**	**usr/lib/nsr /usr/sbin**	**usr/opt/networker/bin**
Size	146 MB	177 MB	208 MB	161 MB	220 MB
Client file index,media database					
In	**/nsr**	**/nsr**	**/nsr**	**/nsr**	**/nsr**
Size	varies	varies	varies	varies	varies
Man pages					
In	**/usr/share/man**	**/opt/networker/man**	**/usr/share/catman/p_man /usr/share/catman/a_man**	**/usr/bin**	**usr/opt/networker/man**
Size	1 MB	1 MB	1 MB	1 MB	1 MB
NetWorker License Manager					
In	**/usr/bin, /nsr/lic**	**/opt/networker/bin**	**/usr/etc**	**/usr/sbin**	**usr/opt/networker/bin**
Size	3.2 MB	5 MB	4 MB	3.7 MB	5 MB

a. HPUX installations also require 25 MB of space, located in /tmp, to temporarily accommodate the **swinstall** program.

b. IRIX installations require an additional 80 MB of space, located in /tmp/nsr_extract, to permit software extraction.

Required server software

This section lists the required server software for Microsoft Windows, Linux, and Tru64 UNIX Version 5.1B-3 or later distributions.

Linux requirements

Table 12 on page 30 lists the Linux distributions supported in NetWorker 7.4 server software along with package requirements for each of the installations.

Note: Ensure that the kernel is supported and that the required package is installed *before* beginning the NetWorker software installation. The Linux distribution software documentation provides information.

Table 12   **Required Linux software distributions**

Linux distribution	Linux Itanium Processor		Linux for x86	
	Kernel	**Additional modules, libraries, and upgrades**	**Kernel**	**Additional modules, libraries, and upgrades**
SuSE Linux Enterprise Server 8	2.4.18-1	pdksh-5.2.14-19.i386.rpm	2.4.19-4GB	pdksh-5.2.14-532.i386.rpm
SuSE Linux Enterprise Server 9	2.4.18-1	pdksh-5.2.14-19.i386.rpm	2.4.19-4GB	pdksh-5.2.14-532.i386.rpm
RedHat Advanced Server 2.1	2.4.9-e.3	pdksh-5.2.14-13.i386.rpm	2.4.9-e.3	pdksh-5.2.14-13.i386.rpm
Red Hat Enterprise Server 3	2.4.21-4.EL	dksh-5.2.14-21.i386.rpm	2.4.21-4.EL	pdksh-5.2.14-21.i386.rpm
Red Hat Enterprise Server 4	2.6.9-5.EL and higher	dksh-5.2.14-30.i386.rpm	2.6.9-5.EL and higher	pdksh-5.2.14-30.i386.rpm

Memory and storage requirements

Table 13 on page 30 lists the minimum memory and storage requirements for the NetWorker Server for Linux software. Additionally, because the client file index and media database that a NetWorker server generates can grow large over time, the NetWorker server needs enough free storage space to accommodate these indexes:

Table 13   **NetWorker server memory and storage requirements**

Requirements	Linux Itanium Processor	Linux for x86
Recommended RAM	64 MB	128 MB
Disk storage for software	100 MB	120 MB
Online indexes	5% of total backup data (allows for up to three times the index size during software update conversion)	5% of total backup data (allows for up to three times the index size during software update conversion)

HP Tru64 UNIX specific requirements

Table 14 on page 30 lists the required server software for HP Tru64 UNIX Version 5.1B-3 or later.

Table 14   **HP Tru64 UNIX required server software (1 of 2)**

Package identifier	Package name	Description
OSFBASE*xxx*	Tru64 UNIX Base System	Base operating system software
OSFCLINET*xxx*	Basic Networking Services	Network server communications
OSFNFS*xxx*	NFS Utilities	Network server communications

Table 14   HP Tru64 UNIX required server software (2 of 2)

Package identifier	Package name	Description
OSFPRINT*xxx*	Local Printer Support (Printing Environment)	Support needed to print the bootstrap file and information from NetWorker windows that appears in tabular format
IOSWWEURLOC540	Worldwide European Unicode Locales	Worldwide European Unicode Locales package is located in Worldwide Language support kit which is available on the Tru64 Associate Product CD 1
OSFMANOS*xxx* (Optional)	Ref Pages (Admin/User Reference pages)	Reference pages for the base operating system; a requirement for viewing the NetWorker man pages

Console

This section lists the Console server, client and database software requirements.

Console server

The general requirements for installing the Console server include the following:

◆ An installed and licensed network of NetWorker servers, clients, and storage nodes. The NetWorker License Manager software is optional.

◆ A Java Runtime Environment (JRE), which is required in order to:

• Support the command line reporting feature.

• Download the Console client and display the user interface.

Note: You must install the Console server software on one computer in your datazone to manage the NetWorker server. Only one installation of the NetWorker Console server is required to manage multiple NetWorker servers.

System requirements

Table 15 on page 31 lists the system requirements for the Console server and database.

Table 15   Console server and database requirements (1 of 3)

System features	Operating system	Requirement
Processor and RAM	AIX	Minimum: 500 MHz with 128 MB of RAM, 512 MB to run reports. As the number of NetWorker servers being monitored increases, increase the computer's capabilities. • For 50 servers: Dual 500 MHz with no less than 192 MB • For 100 servers: Dual 800 MHz with no less than 256 MB • For 200 servers: Dual 1.3 GHz with no less than 512 MB
	HP-UX	
	Microsoft Windows	
	Linux	
	Solaris	

Table 15   Console server and database requirements (2 of 3)

System features	Operating system	Requirement
Operating system	AIX	• AIX5L version 5.2 (32-bit, 64-bit) • AIX5L version 5.3 (32-bit, 64-bit)
	HP-UX	• HP 11i version 2
	Microsoft Windows	• Microsoft Windows 2000, with SP3 • Microsoft Windows 2000, with SP4 (Intel) • Microsoft Windows 2003, 32-bit • Microsoft Windows 2003, with SP1
	Linux	• Red Hat Enterprise Server 3 • Red Hat Enterprise Server 4 • Red Hat Enterprise Server 5 • SuSE Linux Enterprise Server 8 • SuSE Linux Enterprise Server 9 • SuSE Linux Enterprise Server 10 **Note:** SuSE Linux Enterprise Server version 9.2 is *not* supported.
	Solaris	Solaris 8, 9, 10
Software	AIX	The NetWorker client, release 7.4 or later software must already be installed and running.
	HP-UX	
	Linux	
	Microsoft Windows	The NetWorker client, release 7.4 or later software must already be installed and running. **Note:** NetWorker Remote Exec service must be installed and running. If the service is stopped, the Setup Wizard issues an error message.
	Solaris	The NetWorker client, release 7.4 or later software must already be installed and running.
Java Runtime Environment	AIX	JRE starting from version 1.4.2_11, 1.5_06 or later. This is required to run the command line reporting feature. **Note:** JRE version 1.6 is not supported.
	HP-UX	
	Linux	JRE starting from version 1.5.0_11. This is required to run the command line reporting feature. **Note:** JRE version 1.6 is not supported.
	Microsoft Windows	
	Solaris	

Table 15   Console server and database requirements (3 of 3)

System features	Operating system	Requirement
Browsers	AIX	• Mozilla 1.7 on the supported AIX platforms.
	HP-UX	• Mozilla 1.6 on the supported HP-UX platforms.
	Linux	• Netscape Communicator 7.2, on the supported Linux platforms. • Mozilla 1.7 on the supported Linux platforms.
	Microsoft Windows	• Microsoft Internet Explorer 6.*x* on the supported Microsoft Windows platforms. Microsoft Internet Explorer 7.*x* on supported Microsoft Windows Vista.
	Solaris	• Netscape Communicator 7, on the supported Solaris platforms. • Mozilla 1.7 on the supported Solaris platforms.
Available disk space	AIX	• 350 MB + x, where: x is a buffer of disk space for the Console database. • JRE with Web Start: 55 MB
	HP-UX	• 350 MB + x, where: x is a buffer of disk space for the Console database. • JRE with Web Start: 55 MB
	Linux Serve	• 60 MB + x, where: x is a buffer of disk space for the Console database.
	Microsoft Windows Server	• 220 MB + x, where: x is a buffer of disk space for the Console database. • JRE with Web Start: 55 MB
	Solaris Server	• 350 MB + x, where: x is a buffer of disk space for the Console database.

Console database

This section provides information on estimating the size and space requirements for the Console database.

Formula for estimating the size of the Console database

The Console server collects data from the NetWorker servers in the enterprise, and stores the data in its local Console database. By default, the database is installed on the local file system that can provide the most available space. Console integrates and processes this information to produce reports that facilitate trend analysis, capacity planning, and problem detection. The NetWorker Administration Guide provides information about reports.

To store the collected data, allocate sufficient disk space for the Console database. Several factors affect the amount of disk space required:

◆ The number of NetWorker servers monitored for the reports

◆ The number of savegroups run by each of those servers

◆ The frequency with which savegroups are run

◆ The length of time report data is saved (data retention policies)

Note: Since the amount of required disk space is directly related to the amount of historical data stored, the requirements can vary greatly, on average between 0.5 GB and several GB. Allow for this when planning hardware requirements.

Formula for estimating the space required for the Console database information

Use these formulas to estimate the space needed for different types of data and to estimate the total space required.

Save set media database

To estimate the space needed for the save set media database, multiply the weekly amount of save sets by the number of:

◆ NetWorker servers monitored by the Console

◆ Weeks in the Save Set Output policy

The result indicates the length of time that a save set took to run successfully. The results also identify the number of files that were backed up, and how much data was saved during the operation.

Save set output

To estimate the space needed for the save set media database, multiply the weekly amount of output messages by the number of:

◆ NetWorker servers monitored by the Console

◆ Save Set Output Retention policy

The result indicates how many groups and save sets were attempted and their success or failure.

Savegroup completion data

To estimate the space needed for the save set media database, multiply the weekly amount of savegroups by the number of:

◆ NetWorker servers monitored by the Console

◆ Weeks in the Completion Data Retention policy

The result can be used to troubleshoot backup problems

Console client

Although the Console client does not need to be installed separately, the JRE which includes Java Web Start must be installed in order to download and run the program properly. When connecting to the Console server for the first time, there is a prompt to download the JRE and the Console client application.

Table 16 on page 35 lists the system requirements for installing the Console client.

Table 16 **Console client system requirements (1 of 2)**

System features	Operating system	Requirement
Operating system	AIX	• AIX5L version 5.2 (32-bit, 64-bit) • AIX5L version 5.3 (32-bit, 64-bit)
	HP-UX	• HP 11i version 2
	Linux	• Red Hat Enterprise Server 3 • Red Hat Enterprise Server 4 • SuSE Linux Enterprise Server 8 • SuSE Linux Enterprise Server 9 • SuSE Linux Enterprise Server 10 **Note:** SuSE Linux Enterprise Server version 9.2 is *not* supported.
	Microsoft Windows	• Microsoft Windows 2000, with SP3 • Microsoft Windows 2000, with SP4 (Intel) • Microsoft Windows 2003, 32-bit • Microsoft Windows 2003, with SP1
	Solaris	• Solaris 8, 9, 10
Java Runtime Environment	AIX	JRE starting from version 1.4.2_11, 1.5_06 or later.
	HP-UX	**Note:** JRE version 1.6 is not supported.
	Linux	JRE 1.5_11
	Microsoft Windows	**Note:** JRE version 1.6 is not supported.
	Solaris	
Browsers	AIX	• Mozilla 1.7 on the supported AIX platforms.
	HP-UX	• Mozilla 1.6 on the supported HP-UX platforms.
	Linux	• Netscape Communicator 7.2, on the supported Linux platforms. • Mozilla 1.7 on the supported Linux platforms.
	Microsoft Windows	• Microsoft Internet Explorer 6.*x* on the supported Microsoft Windows platforms.
	Solaris	• Netscape Communicator 7, on the supported Solaris platforms. • Mozilla 1.7 on the supported Solaris platforms.

Table 16   Console client system requirements (2 of 2)

System features	Operating system	Requirement
Available disk space	AIX	• Console client: 10 MB • JRE with Web Start: 55 MB
	HP-UX	• Console client: 10 MB • JRE with Web Start: 55 MB
	Linux	• Console client: 10 MB • JRE with Web Start: 55 MB
	Microsoft Windows	• Console client: 5 MB • JRE with Web Start: 50 MB
	Solaris	• Console client: 10 MB • JRE with Web Start: 55 MB
RAM	AIX	A minimum of 512 MB to run reports.
	HP-UX	
	Linux Server	
	Microsoft Windows Server	
	Solaris Server	
Graphics card	AIX	Must support the display of the following: • At least 16-bit color (at least 65,000 colors) • Screen resolution of at least 1024 x 768
	HP-UX	
	Linux Server	
	Microsoft Windows Server	
	Solaris Server	

Using international fonts in UNIX non-US locale environments

The Console software can run (in English mode) on localized operating systems. It supports retrieval of double-byte characters from NetWorker data. If the appropriate non-English font is not available on the Console client, the retrieved data appears as illegible.

To use or view data from a localized, non-English NetWorker server:

1. Ensure that the appropriate language support package for NetWorkersoftware has been installed.

2. Ensure that the appropriate font is available to the Console client.

   Note: If the required font is not installed on the system, obtain it from the operating system vendor and install it on the system.

3. From the **Console** menu, select **View>Fonts** and perform one of these tasks:

   • Change the language locale to match that of the localized NetWorker language locale.

   • Choose a language font that is already loaded in the operating system and which matches the location of the localized NetWorker language locale.

Changing the language locale to match that of non-localized NetWorker data

There are two ways to change the language locale to match that of the localized NetWorker language locale. Choose one of the following:

◆ Before you log in to the host system:

  a. Select **Options** on the **Login** dialog box.

  b. Select **Options>Language**.

  c. Select a locale from one of three alphabetical lists.

◆ After you log in to the host system:

  a. Type the **setenv** command to change the locale.

  b. Depending on the language, select one of these:

    – To match the French NetWorker locale, type:

      setenv LANG fr

      setenv LC_ALL fr

    – To match the Japanese NetWorker locale, type:

      setenv LANG ja

      setenv LC_ALL ja

    – To match the Simplified Chinese NetWorker locale, type:

      setenv LANG zh

      setenv LC_ALL zh

Changing the language font to view localized NetWorker data
Instead of changing the language locale, you can change the Console font, so that localized NetWorker data can be viewed from the Console software. The appropriate font must be loaded in the operating system of the Console server and client.

To load a font:

1. To select a language font, select **Console>View>Font**. The **Change Font** dialog appears.

2. Select the appropriate font and font size, if the default size is inappropriate and click **OK**.

Using a non-US locale
When using Console software in a non-US environment, support for the language locale and various language character sets is derived from the host operating system. In order to display non-English characters, the host operating system must have installed a font (or fonts) that supports those characters.

The Console client, rather than the Console server, must have the appropriate language character sets supported in the client operating system. By default, Console software uses a non-UNICODE font that supports US English.

If the font is loaded in the operating system, a language locale that is supported by a localized version of NetWorker software automatically recognizes the font for the associated localized language. If the required font is loaded in the operating system, an appropriate language font can then be selected.

Updating from a Previous Release

This chapter includes the following sections:

Introduction

When updating to release 7.4 from NetWorker release 7.3 or earlier there is no way to revert to a previous release of the NetWorker software. It is a one-way conversion as the client file indexes are automatically reorganized into new directory structures. However, upgrades from NetWorker release 7.3.x can be downgraded back to the same release.

The NetWorker software does not support direct upgrade, which means the previous installed version must be removed before the new version can be installed.

Updating the NetWorker software on Microsoft Windows

To upgrade the operating system on a NetWorker server, storage node, or client host (for example, to update from Windows NT 4.0 to Windows 2000), first upgrade Windows, then update the NetWorker software.

A NetWorker storage node release 7.4 and later is not compatible with a NetWorker server earlier than release 7.4. Update the NetWorker servers before updating a storage node.

When you update from a previous release, the NetWorker software is automatically installed in the same location. "Supported devices" on page 14 lists the default installation location.

The following options are not supported during an upgrade:

◆ Changing the installation type (for example, from client to server)

◆ Editing the list of NetWorker servers that are allowed to access the computer

◆ Installing NetWorker License Manager

You can, however, make any of these changes after the upgrade. "Maintaining a NetWorker software installation" on page 42 provides details.

Updating NetWorker software

Note: If updating from NetWorker 7.3.x, and the Console software is installed, you must uninstall the Console software before updating the NetWorker software. You can select a partial remove option to leave the Console database on the computer for database upgrade. Once the NetWorker software is updated the Console software will be installed.

To update the NetWorker software to release 7.4:

1. Before updating, make notes of the previous database location and port numbers used before removing the previous installation.

2. Verify that the target computer satisfies the requirements. "Software Requirements" on page 23 provides details.

3. Log in with administrator privileges to the target computer.

4. Ensure that all NetWorker programs are stopped.

5. Ensure that all NetWorker scheduled backups have been stopped before starting the upgrades.

6. Access the installation files. "Accessing the software" on page 17 provides details.

7. Double-click the **setup.exe** file. Skip this step if Autorun started the installation automatically.

   The Setup program detects the existing installation and automatically runs in update mode.

8. In the **Choose Setup Language** page, select a language type.

9. In the **Feature Selection** page, select a language pack.

10. In the **Ready to Update** page, click **Update** to start the installation.

11. In the **Welcome to NetWorker Installation** page, select **Install NetWorker**.

12. In the **Welcome to NetWorker Update** dialog box, click **Next**.

13. In the **Ready to Update** dialog box, click **Update**.

14. In the **NetWorker Server Selection** page, select the NetWorker servers that can perform backups and directed recoveries for this client:

    • To add a NetWorker server that is *not* listed in the **Available Servers** list, type the name of the server in the **Enter a server name** text box and click **Add**.

    • To browse for available NetWorker servers, click **Update List**. You can select a NetWorker server from the **Available Servers** list.

    • To add or remove NetWorker servers from the **Available Servers** list to the **Selected Servers** list, use the arrow buttons.

    Note: If the **Selected Servers** list remains empty, any NetWorker server can perform backups and directed recoveries of this computer's data. This might affect the security of your data.

15. Click **Finish** when the upgrade is complete.

16. At the command prompt, enter the following command:

    nsrck –L 2

17. Enable and register the NetWorker software. "Licensing and Enabling the Software" on page 115 provides instructions.

Note: If you are updating NetWorker software on a computer that is running Windows XP Professional, Windows 2000 or 2003, at the end of the setup process you are prompted to run the Change Journal Manager. The NetWorker Administration Guide provides information about configuring NetWorker software to use the Windows Change Journal.

Java Web Start jnlp file caching issue after updating the NetWorker Management Console

After the NetWorker Management Console (NMC) is updated or a client locale is changed, the **gconsole.jnlp** file will be different than the original **gconsole.jnlp** file in the Java Web Start cache. NMC will fail to launch.

Workaround
Remove the **NetWorker Management Console Application and Language Pack** from the Java Application Cache Viewer:

1. Select **Java Web Start** from the Programs menu.

2. Run the Java Application Cache Viewer.

3. Select **NetWorker Management Console Application and Language Pack**.

4. Click **Remove Selected Application**.

Updating NetWorker Modules from a previous release

After updating to NetWorker release 7.4 from a release 6.*x*, NetWorker Modules must be reinstalled. Additionally, you may have to make minor changes to the Users attribute of the User Group resource (within the Users group) to ensure successful backups.

Note: If updating to NetWorker release 7.4 from release 7.*x* NetWorker Modules do not need to be reinstalled.

The NetWorker Module documentation provides more information.

Updating from a different bit version of NetWorker (32-bit, 64-bit)

The following procedure is required only if updating from a 32-bit installation of NetWorker software to a 64-bit version or vice-versa.

To update the NetWorker software:

1. Use the NetWorker software to back up the client file index and the media database. The NetWorker Administration Guide provides instructions.

2. Ensure that all NetWorker scheduled backups have been stopped before starting the upgrades.

3. Uninstall NetWorker software. "Uninstalling the NetWorker software" on page 97 provides instructions.

4. Delete the existing client file index and the media database.

5. Install the new version NetWorker software. "Task 1: Install the NetWorker software" on page 94 provides instructions.

6. Perform a bootstrap recovery of the saved NetWorker client file index and the media database. The NetWorker Administration Guide provides instructions.

Maintaining a NetWorker software installation

After NetWorker software is installed, you can run the Setup program to perform the following maintenance tasks:

◆ Change the setup language type for the NetWorker installation.

◆ Change the installation type (for example, from client to server), edit the servers list, add the NetWorker License Manager, add or remove the NetWorker Console software.

◆ Replace missing or corrupted program files.

◆ Remove the NetWorker software from the computer.

Updating the NetWorker Software on UNIX

This section explains how to complete the update process and convert the indexes:

◆ "Task 1: Prepare to update the software" on page 43

◆ "Task 2: Update the NetWorker software" on page 43

Task 1: Prepare to update the software

To prepare to update the NetWorker software:

1. Determine whether all criteria to complete the index conversion is met.

2. Make notes of the previous database location and port numbers used before removing the previous installation.

3. Back up all client file indexes and generate a bootstrap for the server.

   If no current bootstrap exists, nor a backup of all client file indexes, perform scheduled backups on all clients before updating to the next NetWorker release.

   For example, to save the bootstrap information, type this command:

   ```
   savegrp -O group
   ```

   Note: Ensure that all clients are included in the groups to be backed up.

4. Record the latest bootstrap save set ID and its associated volume label.

   To obtain this information, type this command:

   ```
   mminfo -B
   ```

5. If the NetWorker software is not currently installed in the default location, record the location of the client file indexes.

Task 2: Update the NetWorker software

Note: A NetWorker storage node release 7.4 is not compatible with a NetWorker server earlier than release 7.4. Update the NetWorker servers to version 7.4 before updating a storage node.

To update the software on the NetWorker client, storage node, and server:

1. Ensure that all NetWorker scheduled backups have been stopped before starting the upgrades.

2. Keep a copy of the current configuration.

3. Type this command to shut down the NetWorker software:

   ```
   nsr_shutdown
   ```

4. Remove the earlier NetWorker release, but do *not* remove the client file indexes, the resource files, and the media database.

5. Install the new release of the NetWorker software.

   Note: Do *not* start the NetWorker daemons. If client computers have a previous release of the NetWorker ClientPak for Linux installed, update those clients to the latest NetWorker release to fully exercise all the features in the software. When the installation identifies an existing NetWorker client package for Linux, it prompts for permission to update the client. The update process removes the existing NetWorker client and man pages and it installs the new version of the NetWorker client software.

6. Apply any required NetWorker software patches.

7. Restart the software by running the NetWorker startup script:

   ```
   /etc/init.d/networker start
   ```

8. At the command prompt, enter the following command:

```
nsrck -L 2
```

9. Enable and register the NetWorker software. "Licensing and Enabling the Software" on page 115 provides instructions.

Updating NetWorker clients by using the software distribution feature

Use the software distribution feature to remotely distribute and update the NetWorker software from a centralized NetWorker server to one or more NetWorker clients.

You can update these NetWorker software packages on computers that have the NetWorker release 7.3 or later client software already installed:

◆ Client

◆ Storage node

◆ Man pages

◆ NMO, NMSQL and NMExch NetWorker Application Modules

Note: The software distribution feature is not supported on HP Tru64 UNIX, IRIX, Mac OS X, NetWare, Open VMS platforms, and cluster environments.

The software distribution feature can be used to:

◆ Manage the software repository.

◆ Inventory NetWorker software installed on NetWorker clients.

◆ Update NetWorker software packages on existing NetWorker clients.

◆ Monitor software distribution inventory and upgrade operations (only available from the Software Administration Wizard).

Software distribution can be performed on the NetWorker client software using either the Software Administration Wizard or the **nsrpush** command. The following sections provide instructions on how to perform these operations.

Software requirements

The following software and administrative privileges are required:

◆ NetWorker server release 7.4 software is installed on the NetWorker server.

◆ NetWorker client package release 7.3 or later software has been installed on the NetWorker client computer involved in the update operation.

◆ Administrative privileges on the NetWorker Console server.

◆ Administrator privileges on the NetWorker server or Software Administration server.

Repository operations using the Software Administration Wizard

To start the Software Administration Wizard:

1. Start the **NetWorker Management Console** software.

2. Launch the **Administration** window and click **Configuration**.

3. From the **Configuration** menu, select **Software Administration Wizard**.

   The **Software Administration Wizard** launches.

Follow the prompts to manage the sotware repository (add or remove install packages), inventory, update, or monitor NetWorker client update operations.

Manage the software repository

The software repository is a centralized database that contains the NetWorker software packages that can be pushed to NetWorker clients from the NetWorker server. NetWorker software packages can be added to, or removed from the software repository.

When you add products to the repository, the product can be added in one of the following ways:

◆ On the same platform as the server (for example, a Windows product to a Windows server, or a UNIX product to a UNIX server)

◆ As a cross-platform product (for example, a UNIX product to a Windows server)

Adding same platform products to the repository

To add products to the repository that are on the same platform as the server:

1. Prepare the source of the product:

   • If using a software distribution disk, insert the disk. If using UNIX, it may also be necessary to mount the disk.

   • If using a downloaded installation package, unzip the package (gunzip for UNIX). If using UNIX, also untar it.

2. Launch the **Software Administration Wizard** and click **Next** to navigate to the **Software Repository Operations** page.

3. Select **Add or remove products from my software repository**, then click **Next**.

   Note: When products are added to the repository for the first time, you must confirm the default repository location (for example, *<NetWorker Install Dir>*/repository, where *<NetWorker Install Dir>* is the directory location of the installed software), or specify another location for the repository.

   Also, when you specify a repository location, ensure that this location has enough available space to hold all of the products that will be in the repository at any time.

4. Navigate through the Wizard to select the platform type and enter the path or directory location on the server of the product source (the source that contains the installation files and the metafile for the product).

   Note: The product source could also be a directory containing multiple subdirectories with products and metafiles.

5. Select the products to be added to the repository, then click **Next**.

Adding cross-platform products to the repository

To add cross-platform products to the repository (for example, a UNIX product to a Windows server):

1. Prepare the source of the product:

   • If using a software distribution disk, insert the disk. If using UNIX, it may also be necessary to mount the disk.

   • If using a downloaded installation package:

     a. Copy the installation package to the NetWorker server (the server where the products will be added to the repository) and to the client where the product will be added from.

     b. Extract (unzip) the contents of the package to local directories on both the server and the client. If using UNIX, gunzip, then untar to separate subdirectories.

2. Launch the **Software Administration Wizard** and click **Next** to navigate to the **Software Repository Operations** page.

3. Select **Add or remove products from my software repository**, then click **Next**.

4. Navigate through the Wizard to select the platform type and enter the path or directory location on the server of the product source (the source that contains the installation files and the metafiles for the products).

   Note: The product source could also be a directory containing multiple subdirectories with products and metafiles.

5. Select the products to be added to the repository and click **Next**.

   The last page of the Wizard prompts you for the cross-platform client host name and client Media Kit Location (the location of the installation files).

6. If using a CD or DVD as the source, move the software distribution disk to the client machine, and mount the disk if necessary.

   Once the local machine is scanned for metafiles, the disk must be on the client to add the product to the repository.

7. Specify the client host name and the location of the media kit on the client, then click **Next**.

   IMPORTANT

   Ensure the cross-platform path entered here is at the same level of the directory structure that you specified for the path of the product source on the server. For example, if the product source containing the metafiles is located at /tmp/prod/nw74_solaris64 on UNIX, and at C:\temp\prod\nw74_solaris64 on Windows, enter these paths when prompted.

   If the product source is a directory containing multiple products (and their associated metafiles) in subdirectories, specify the directory path for the Media Kit Location, not the subdirectory path. For example, if using a product distribution disk mounted to /cdrom0 on UNIX and D:\ on Windows, and the disk contains subdirectories for solaris_64 and win_ia64, type /cdrom0 or D:\ when prompted for the media kit location. You will then be prompted to choose one or more products to add, based on the subdirectories found in the media kit location. After doing so, type the hostname of the client where the product files need to be added, and then the pathname (for example, /cdrom0) for the media kit location on the cross-platform client. Do not specify the path name with the subdirectory (for example, D:\solaris_64), or an error will occur.

Inventory currently installed products

Before upgrading NetWorker clients using the Software Distribution feature, it is necessary to inventory the clients to determine their currently installed NetWorker software. To inventory the clients:

1. Launch the **Software Administration Wizard** and click **Next** to navigate to the **Software Repository Operations** page.

2. Select **Discover the currently installed software products on my NetWorker clients**, then click **Next**.

   A list of the clients configured on the NetWorker server appears.

3. Select some or all of the clients (use the Ctrl or Shift key when selecting multiple clients), then click **Next**.

4. Select **Yes** and click **Next** to monitor the inventory operation, or select **No** to return to the main window of the **Software Administration Wizard**.

Updating client software packages

You can update NetWorker software packages on NetWorker clients for one client, or for many NetWorker clients at the same time. The Software Administration Wizard provides two ways to perform client updates:

◆ By client

◆ By product and version

Updating by client   To update the client software packages by client:

1. Ensure that all NetWorker scheduled backups have been stopped before starting any upgrades.

2. Inventory the clients to be updated (refer to the section "Inventory currently installed products" on page 47).

3. Launch the **Software Administration Wizard** and click **Next** to navigate to the **Software Repository Operations** page.

4. Select **Upgrade the software on my NetWorker clients** and click **Next**.

5. Select the option **By Client, will upgrade on the clients that you choose** and click **Next**.

   A list of clients available clients appears.

6. Select the appropriate clients (use the Ctrl or Shift key to make multiple selections), then click **Next**.

   A list of clients and products appears, showing one client/product per line.

7. Select one or more of the client/product combinations to upgrade, and click **Next**. The **Monitor Activity** window appears.

Updating by product and version   To update the client software packages by product and version:

1. Ensure that all NetWorker scheduled backups have been stopped before starting any upgrades.

2. Inventory the clients to be updated (refer to the section "Inventory currently installed products" on page 47).

3. Launch the **Software Administration Wizard** and click **Next** to navigate to the **Software Repository Operations** page.

4. Select **Upgrade the software on my NetWorker clients** and click **Next**.

5. Select the option **By Product and Version, will upgrade all clients to a new software version** and click **Next**.

6. Select one or more products to update clients to (use the Ctrl or Shift key to make multiple selections), then click **Next**.

   A list of clients and products appears, showing one client/product per line.

7. Select one or more of the client/product combinations to update, then click **Next**. The **Monitor Activity** window appears.

Monitoring the inventory and update activity of the software

You can monitor the progress of the NetWorker client operations and restart those that have failed from the Console server. The **Monitor Activity** window automatically appears after starting update operations from the Software Administration Wizard, and can be shown after initiating an inventory operation. The monitor operation can also be started manually at any time.

1. Launch the **Software Administration Wizard** and click **Next** to navigate to the Software Repository Operations page.

2. Select the option **Monitor current upgrade and inventory activities**. The **Monitor Activity** window appears.

Repository operations using the nsrpush command

Repository operations can also be performed by using the **nsrpush** command from the command line.

Manage the software repository

To view the products available on provided media kits (for example, on software distribution disks or downloaded installation packages):

♦ For UNIX products, run:

```
nsrpush -L -U -m media kit location
```

♦ For Windows products, run:

```
nsrpush -L -W -m media kit location
```

Adding same platform products to the repository

To add same platforms products to the repository, run the following commands:

♦ On UNIX:

```
nsrpush -a -p Product Name -v version -P platform -U -m media kit
location
```

♦ On Windows:

```
nsrpush -a -p Product Name -v versions -P platform -W -m media kit
location
```

Note: You can only add one product at a time to the repository using this method.

Adding cross-platform products to the repository

To add cross-platform products to the repository:

♦ On UNIX, run the following:

```
nsrpush -a -p <Product Name> -v <version> -P <platform> -W -m
<media kit location> -c <cross-platform client> -C <cross-platform
media kit location>
```

For example, to add a 64-bit Solaris product to a UNIX server with the media kit located in /tmp/prod, and at D:\\temp\downloads on the cross-platform client named "unixhost", run:

```
nsrpush -a -p NetWorker -v 7.4 -P solaris_64 -U -m /tmp/prod -c
"unixhost" -C "D:\\temp\downloads"
```

♦ On Windows, run the following:

```
nsrpush -a -p <Product Name> -v <versions> -P <platform> -U -m
<media kit location> -c <cross-platform client> -C <cross-platform
media kit location>
```

For example, to add a 64-bit Solaris product to a Windows server with the media kit located at D:\temp\downloads on the server, and at /tmp/prod on the cross-platform client named "solaris_host":

```
nsrpush -a -p NetWorker -v 7.4 -P solaris_64 -U -m
"D:\temp\downloads" -c "solaris_host" -C /tmp/prod
```

More details on the **nsrpush** command are provided on the **nsrpush** man page, or from **nsrpush** usage (running **nsrpush** with no options).

Inventory currently installed products

To inventory clients using the **nsrpush** command:

1. Enter the following command from the command line to view the list of clients to be inventoried:

```
nsrpush -i <client list>
```

where *<client list>* is a list of clients to be inventoried, separated by spaces.

2. Type the following command from the command line to inventory all configured clients:

```
nsrpush -i -all
```

Updating client software packages

You can update NetWorker software packages on existing NetWorker clients for one client, or for many clients, by using the **nsrpush** command.

To update the client software packages:

1. Ensure that all NetWorker scheduled backups have been stopped before starting any upgrades.

2. Ensure that the clients to be upgraded have been inventoried.

3. Initiate the update by using the **nsrpush** command:

   • To update all clients:

   ```
   nsrpush -u -p <Product> -v <version> -all
   ```

   • To update selected clients:

   ```
   nsrpush -u -p <Product> -v <version> <Client list>
   ```

Note: When using the **nsrpush** command, multiple clients on different platform types can be updated at the same time if the product and version is the same. For example, if you wanted to update clients to the same version of a product (NetWorker release 7.4) for Windows and Linux, type **nsrpush –u –p NetWorker –v 7.4 Windows Linux**. However, if you want to update clients for different versions, only one product at a time can be updated.

More details on the **nsrpush** command are provided on the **nsrpush** man page, or from **nsrpush** usage (running **nsrpush** with no options).

AIX Installation

This chapter includes these sections:

Installing the NetWorker software

Complete these tasks to install the NetWorker software.

Task 1: Prepare to install the NetWorker software

If you plan to install the NetWorker Server, make and retain a copy of the current configuration. The NetWorker installation process modifies several of the configuration files.

1. Run this command for each of the files that get modified:

   cp *filename filename.old*

   where *filename* is one of these files:

   - /etc/inittab
   - /etc/rc.nsr
   - /etc/rpc
   - /etc/syslog.conf

   You can, change the default location for NetWorker configuration files. To put these files somewhere other than the default location, which is /nsr, create another nsr directory. For example:

   mkdir /disk2/nsr

   ln -s /disk2/nsr /nsr

2. Ensure that you have enough space in the /usr/bin file system for the NetWorker binaries.

   If more space is required and you have enough unallocated disk space, the AIX **installp** utility allocates more space to the /usr/bin file system so that the installation completes successfully. Table 11, "UNIX location and space requirements," on page 29 provides information about the space required for NetWorker binaries.

   ⚠️ **IMPORTANT**

   The AIX installp utility does not enable you to change the default installation location of packages. NetWorker binaries are installed to the /usr/bin file system.

Task 2: Install the client, storage node, and server software

This section describes how to install the software for the NetWorker client, storage node, and server.

Note: The NetWorker software is shipped in a 32-bit version. This 32-bit version can be installed on both the 32-bit and the 64-bit version of the AIX operating system. You might need to install the UTF-8 converters available with your operating system.

Client installation

To install the NetWorker software on a client computer:

1. Type this command to begin the NetWorker software installation:

   smitty install_latest

2. Type the location of the NetWorker installation software in the **Entry Field**.

3. Select the option, **SOFTWARE** to install.

4. When installing the Java5.sdk package for the first time, two license prompts appear.

   Type **yes** in response to the following prompt:

   Accept new license agreements?

   Type **no** in response to the following prompt:

   Preview new license agreements?

5. Select **F4=List** to display the list of NetWorker software packages.

   The following NetWorker installation packages appear:

   - **LGTOnw.clnt.rte** (client software package)
   - **LGTOnw.node.rte** (storage node software package)
   - **LGTOnw.serv.rte** (server software package)
   - **LGTOnw.man.rte** (optional man pages)
   - **LGTOnw.licm.rte** (optional NetWorker License Manager software package)
   - **LGTOnw.fr.rte** (optional French language support package)
   - **LGTOnw.ja.rte** (optional Japanese language support package)
   - **LGTOnw.ko.rte** (optional Korean language support package)
   - **LGTOnw.zh.rte** (optional Simplified Chinese language support package)

6. Select **LGTOnw.clnt.rte** to install the NetWorker client software.

7. If required, install one of the following language support packages:

   - **LGTOnw.fr.rte**
   - **LGTOnw.ja.rte**
   - **LGTOnw.ko.rte**
   - **LGTOnw.zh.rte**

8. If required, select **LGTOnw.man.rte** to install the optional NetWorker man pages.

9. Press **Enter** to begin the installation.

Storage node installation

To install the NetWorker software on a storage node:

1. Type this command to begin the NetWorker software installation:

   smitty install_latest

2. Type the location of the NetWorker installation software in the [**Entry Field**].

3. Select the option, **SOFTWARE** to install.

4. When installing the Java5.sdk package for the first time, two license prompts appear.

   Type **yes** in response to the following prompt:

   Accept new license agreements?

   Type **no** in response to the following prompt:

```
Preview new license agreements?
```

5. Select **F4=List** to display the list of NetWorker software packages.

   The following NetWorker installation packages appear:

   • **LGTOnw.clnt.rte** (client software package)
   • **LGTOnw.node.rte** (storage node software package)
   • **LGTOnw.serv.rte** (server software package)
   • **LGTOnw.man.rte** (optional man pages)
   • **LGTOnw.licm.rte** (optional NetWorker License Manager software package)
   • **LGTOnw.fr.rte** (optional French language support package)
   • **LGTOnw.ja.rte** (optional Japanese language support package)
   • **LGTOnw.ko.rte** (optional Korean language support package)
   • **LGTOnw.zh.rte** (optional Simplified Chinese language support package)

6. Select these packages to install the NetWorker client software.

   • **LGTOnw.clnt.rte**
   • **LGTOnw.node.rte**

7. Select **Install** and **Update Software**.

8. If required, install one of the following language support packages:

   • **LGTOnw.fr.rte**
   • **LGTOnw.ja.rte**
   • **LGTOnw.ko.rte**
   • **LGTOnw.zh.rte**

9. If required, select **LGTOnw.man.rte** to install the optional NetWorker man pages.

10. Press **Enter** to begin the installation.

Server installation

To install the NetWorker software on the computer that is designated as the NetWorker server:

1. Type this command to begin the NetWorker software installation:

   smitty install_latest

2. Type the location of the NetWorker installation software in the [**Entry Field**].

3. Select the option, **SOFTWARE** to install.

4. When installing the Java5.sdk package for the first time, two license prompts appear.

   Type **yes** in response to the following prompt:

   ```
   Accept new license agreements?
   ```

   Type **no** in response to the following prompt:

   ```
   Preview new license agreements?
   ```

5. Select **F4=List** to display the list of NetWorker software packages.

   The following NetWorker installation packages appear:

   • **LGTOnw.clnt.rte** (client software package)
   • **LGTOnw.node.rte** (storage node software package)

- **LGTOnw.serv.rte** (server software package)
- **LGTOnw.man.rte** (optional man pages)
- **LGTOnw.licm.rte** (optional NetWorker License Manager software package)
- **LGTOnw.fr.rte** (optional French language support package)
- **LGTOnw.ja.rte** (optional Japanese language support package)
- **LGTOnw.ko.rte** (optional Korean language support package)
- **LGTOnw.zh.rte** (optional Simplified Chinese language support package)

6. Select these packages to install the NetWorker server software:

   - **LGTOnw.clnt.rte**
   - **LGTOnw.node.rte**
   - **LGTOnw.serv.rte**

7. If required, install these optional NetWorker software packages:

   - To install the NetWorker License Manager software, select **LGTOnw.licm.rte**
   - To install the NetWorker man pages, select **LGTOnw.man.rte**

8. If required, install one of the following for language support:

   - **LGTOnw.fr.rte**
   - **LGTOnw.ja.rte**
   - **LGTOnw.ko.rte**
   - **LGTOnw.zh.rte**

9. Press **Enter** to begin the installation.

Note: You must install the Console server software on one computer in your datazone to manage and monitor the NetWorker server. Only one installation of the Console server is required to manage multiple NetWorker servers and to take full advantage of the Console's consolidated reporting feature.

Task 3: Change the NetWorker servers with access to a client

To limit the servers authorized to access a client, specify a list of trusted NetWorker servers for a client in the /nsr/res/servers file. After installing the client, storage node, and server software, you must change the NetWorker servers that are authorized to access a client.

To change which NetWorker servers can access a client:

1. Shut down the NetWorker daemons:

   ```
   nsr_shutdown
   ```

2. Edit or create the /nsr/res/servers file and add the set of NetWorker servers, one per line, that requires access to the client. The first entry in this file becomes the default NetWorker server.

   Note: If the /nsr/res/servers file is empty or does not exist, any NetWorker server is authorized to:
   - Access and back up the client.
   - Perform a directed recovery to the client.

3. If necessary, remove the **-s** option from the **nsrexecd** command that is invoked by the boot-time startup file. Running **nsrexecd** with the **-s** option supersedes the /nsr/res/servers file:

   a. Check the NetWorker boot-time startup file to see whether **nsrexecd** is being run with the **-s** option. The boot-time startup file for the AIX platform is /etc/rc.nsr.

   b. If the **-s** option exists in the boot-time startup file, remove all occurrences of the following in the startup file:

      -s *server_name*

Task 4: Start the NetWorker daemons

The NetWorker daemons must be started after the installation procedure.

1. Start the NetWorker daemons:

   /etc/rc.nsr

2. Type this command at the system prompt:

   ps -ef | grep nsr

   Table 17 on page 56 lists the NetWorker daemons.

Table 17   **NetWorker daemons**

NetWorker packages	NetWorker daemons
NetWorker server	**nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd** Note: **nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker client	**nsrexecd**
NetWorker storage node	**nsrexecd, nsrmmd, nsrlcpd** Note: **nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker license manager	**lgtolmd**

Note: The NetWorker **nsrmmd** daemon is only present if one or more devices are enabled. The **nsrmmgd** and **nsrlcpd** daemons start only if the library has been configured.

Task 5: Install the Console server

You must install the Console server software on one computer in your datazone to manage and monitor the NetWorker server. Only one installation of the Console server is required to manage multiple NetWorker servers and to take full advantage of the Console's consolidated reporting feature.

To manage the NetWorker server, install the Console and the NetWorker client software on one computer in the datazone. The Console server installation relies on the existence of several other components. Ensure that all installation prerequisites are met. The section "Console" on page 31 provides details.

To install software on the computer that is designated as the Console server:

1. Ensure that JRE version 1.4.2 is installed. This enables the command line reporting feature.

2. If not already installed, install the NetWorker client software. "Client installation" on page 53 provides instructions.

3. To begin the NetWorker software installation, type:

   smitty install_latest

4. Type the following in the **Entry Field**:

   LGTOnmc.rte

5. When installing the Java5.sdk package for the first time, two license prompts appear.

   Type **yes** in response to the following prompt:

   Accept new license agreements?

   Type **no** in response to the following prompt:

   Preview new license agreements?

6. If required, install one of the following language support packages:

   • **LGTOnw.fr.rte**
   • **LGTOnw.ja.rte**
   • **LGTOnw.ko.rte**
   • **LGTOnw.zh.rte**

7. Press **Enter** to begin the installation. When the installation is complete, exit the **SMIT** program.

8. Type this command:

   /opt/lgtonmc/bin/nmc_config.sh

9. Follow the prompts to install the software. For example:

   • For the web server port number, use the default port number (**9000**) or use a custom port number. Valid port numbers are between **1024** and **49151**.

   • For the Console server, use the default port number (**9001**) or use a custom port number. Valid port numbers are between **1024** and **49151**.

   > **Note:** Do *not* use port numbers that are already in use. Port **2638** is reserved by the Console server as it uses Tabular Data Stream (TDS) protocol to communicate with the database.

10. Start the Console daemon:

    /etc/rc.gst start

    The NetWorker Management Console daemon starts these processes:

    • **gstd**
    • **dbsrv9**
    • **gsttclsh**

11. If the Console server and the NetWorker server are installed on separate hosts, you must add the Console administrator to the administrator lists of the monitored NetWorker server. This enables the Console administrator to administer and monitor the target NetWorker server.

    On the NetWorker server:

    a. Specify the process owner of the Console daemon process (**gstd**) depending on which host contains the Console server:

– If on a Microsoft Windows host, type:

nsraddadmin -u "user=SYSTEM, host=*console_host***"**

– If on a AIX, HP-UX, Linux or Solaris only host, type:

nsraddadmin -u "user=root, host=*console_host***"**

b. Specify the Console administrator user:

nsraddadmin -u "user=administrator, host=*console_host***"**

Where *console_host* is the Console server hostname.

Note: Ensure the **gstd** process has been stopped when applying these changes.

Uninstalling the NetWorker software

Use SMIT to uninstall individual NetWorker software packages or all of the NetWorker packages simultaneously.

To uninstall the NetWorker software:

1. Log in as root on the computer where the software is being removed.

2. Type this command to shut down the NetWorker daemons:

nsr_shutdown

3. Type this command to remove the NetWorker software:

smitty remove

4. Select **F4=List** to display a list of NetWorker software packages.

5. Select the NetWorker software packages to remove.

Table 18   Select NetWorker files to remove

To remove this NetWorker package	Select these files for removal
Client software	**LGTOnw.clnt.rte**
Storage Node software	**LGTOnw.node.rte**
Server software	**LGTOnw.serv.rte**
Console	**LGTO.nmc.rte**
Man pages	**LGTOnw.man.rte**
NetWorker License Manager	**LGTOnw.licm.rte**
French language support	**LGTOnw.fr.rte**
Japanese language support	**LGTOnw.ja.rte**
Korean language support	**LGTOnw.ko.rte**
Simplified Chinese language support	**LGTOnw.zh.rte**

6. Press **Enter** to uninstall the NetWorker software.

7. Exit the **SMIT** program.

8. If you no longer to plan to update or reinstall the NetWorker software:

a. Remove the /nsr directory.

      b. Delete the NMC directory. By default, NMC is installed at /opt/lgtonmc.

      c. Delete the directory containing the NMC database files **lgto_gst.db** and **lgto_gst.log**.

9. If you no longer require the Java run time environment, uninstall the JRE.

HP-UX Installation

This chapter includes these sections:

Installing the NetWorker software

Complete these tasks to install the NetWorker software.

Task 1: Prepare to install the NetWorker software

Install the NetWorker software on HP-UX 11.*x*, or HP-UX 11i on IPF by using the **swinstall** utility. The **swinstall** utility uses the terminal format or the **System Administration Manager** (**SAM**) utility. The terminal format **swinstall** screens contain the same types of information as the **SAM** utility. The same choices are made with both formats.

Note: There are different versions of the NetWorker software binaries for different versions of HP-UX:
- For HP-UX 11.*x*, install the binaries that are located in the hpux11_64 directory.
- For HP-UX 11i on IPF, install the binaries that are located in the hpux11_ia64 directory.

To install the NetWorker software:

1. Log in as root on the computer that the NetWorker software is to be installed.

2. Ensure that the latest HP-UX patches have been installed.

3. Use the **SAM** utility to set the **nfile** parameter according to the following formula:

   ```
   new_NFILE setting = current_NFILE setting + (y *55)
   ```

   where *y* is the number of concurrent saves.

   For example:

   ```
   Minimum: 14

   Maximum: Memory limited

   Default: (16*(Nproc+16+MaxUsers)/10)+32+2*(Npty+Nstrpty)
   ```

   Note: If a file table overflow error is reported, the HP-UX operating system has reached the configured limit for the **nfile** kernel parameter.

   For details on the **nfile** parameter, refer to the **nfile** man page.

4. To start the installation, type the following command:

   swinstall &

   Note: If you are using the character interface, omit the **&** symbol.

5. Check the **Source Host Name** attribute to ensure that the correct hostname is selected. The correct hostname is the computer where the NetWorker software is to be installed.

6. Select the installation media:

   • If installing from a CD-ROM, select local CD-ROM.

   • If installing from a downloaded package, select local directory.

7. In the **Source Depot Path** attribute, type the appropriate path and package name.

    • To install the NetWorker software from a CD-ROM, complete this step as follows:

        – If on a HP-UX 11.*x* system, install the binaries from the hpux11_64 directory. For example:

        `'absolute path'/Networker.pkg`

        – If on a HP-UX 11i on IPF system, install the binaries from the hpux11_ia64 directory. For example:

        `'absolute path'/Networker.pkg`

        The *'absolute path'* represents the complete path of the CD-ROM and appropriate subdirectory.

    • To install the NetWorker software from a local directory, complete this step as follows:

        – If on a HP-UX 11.*x* system, install the binaries from the download directory. For example:

        `/var/spool/sw/nw74_hpux11_64.pkg`

        – If on a HP-UX 11i on IPF system, install the binaries from the download directory. For example:

        `/var/spool/sw/nw74_hpux11_ia64.pkg`

8. Click **OK**.

9. In the **Software Selection** window, double-click software.

Task 2: Install the client, storage node, and server software

Installing all the NetWorker software and all the language packages

To install all the NetWorker software (client, storage node, and server) including all the language packages (French, Japanese, Korean, Traditional Chinese):

1. In the **Software Selection** window, mark **NetWorker 7.4**.

2. From the **Actions** menu, select **Install**.

Installing only the NetWorker software, not the language packages

To install only the NetWorker software (client, storage node, and server):

1. In the **Software Selection** window, mark **NetWorker 7.4** and press **Enter**.

2. Mark the appropriate NetWorker software packages in Table 19 on page 63 for installation.

3. From the **Actions** menu, select **Install**.

Table 19   **Selecting NetWorker files for installation**

To install this NetWorker package	Select these files	Select these optional packages
Client software	NWr-Client	NWr-Man
Storage node software	NWr-Client NWr-Node	NWr-Man
Server software	NWr-Client NWr-Node NWr-Server	NWr-Man NWr-Lic

Installing only the NetWorker language packages, not the software packages

To install only the language support packages:

1. In the **Software Selection** window, mark **NetWorker 7.4** and press **Enter**.

2. Mark the appropriate NetWorker language support package in Table 20 on page 64 for installation. For example, NWr-JA.

3. From the **Actions** menu, select **Install**

Table 20　　**Installing all the language packages**

To install this NetWorker package	Select these optional packages
French language support	NWr-FR
Japanese language support	NWr-JA
Korean language support	NWr-KO
Simplified Chinese language support	NWr-ZH

Task 3: Continue with the installation

1. To run an install analysis, select **Install** from the **Actions** menu.

   To verify the status of the install analysis:

   a. Click **Logfile** to check the log file to verify that **swinstall** did not find errors.

   b. If there were errors, correct the problems before proceeding with the installation.

2. In the **Install Analysis** window, click **OK** to proceed with the installation.

3. In the **Install** window, click **Logfile** to check the log file for error or warning messages generated during installation.

4. Click **Done**, and then exit **swinstall**.

5. Type this command to start the daemons.

   `/sbin/init.d/networker start`

6. Ensure that the PATH environment variable for the user root is updated to contain the directory where the NetWorker binaries reside (/opt/networker/bin).

   Table 11, "UNIX location and space requirements," on page 29 provides information about this directory. This update takes effect the next time you log in.

Note: You might need to install the UTF-8 converters available with your operating system.

After installation, the list of trusted servers that can access the client's data can be changed by editing the /nsr/res/servers file. "Task 4: Change the NetWorker servers that can access the client" on page 64 provides instructions on changing the list of trusted servers.

Task 4: Change the NetWorker servers that can access the client

To limit the servers authorized to access a client, specify a list of trusted NetWorker servers for a client in the /nsr/res/servers file. After installing the client, storage

node, and server software, use the following procedure to change the NetWorker servers that are authorized to access a client.

To change which NetWorker servers can access a client:

1. Log in as root on the NetWorker computer.

2. Type this command to shut down the NetWorker daemons:

   nsr_shutdown

3. Edit or create the /nsr/res/servers file and add the set of NetWorker servers, one per line, that require access to the client. The first entry in this file becomes the default NetWorker server.

   Note: If the /nsr/res/servers file is empty or does not exist, any NetWorker server is authorized to:
   - Access and back up the client.
   - Perform a directed recovery to the client.

4. If necessary, remove the **-s** option from the **nsrexecd** command that is invoked by the boot-time startup file. The running of **nsrexecd** with the **-s** option supersedes the /nsr/res/servers file:

   a. Check the NetWorker boot-time startup file to see whether **nsrexecd** is being run with the **-s** option. The boot-time startup file is /sbin/init.d/networker.

   b. If the **-s** option exists in the boot-time startup file, remove all occurrences of the following in the startup file:

      -s *server_name*

Task 5: Start the NetWorker daemons

The NetWorker daemons must be started after the installation procedure.

1. Start the NetWorker daemons:

   /sbin/init.d/networker start

2. Type this command to verify that the NetWorker daemons shown in Table 21 on page 65 are running:

   ps -ef | grep -E "nsr|lgto"

Table 21   NetWorker daemons (1 of 2)

NetWorker packages	NetWorker daemons
NetWorker server	**nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.

Table 21   NetWorker daemons (2 of 2)

NetWorker packages	NetWorker daemons
NetWorker client	**nsrexecd**
NetWorker storage node	**nsrexecd, nsrmmd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker license manager	**lgtolmd**

Note: The NetWorker **nsrmmd** daemon is present only if one or more devices are enabled.

3. If the daemons are not running, use the NetWorker startup script to start the NetWorker daemons:

   /sbin/init.d/networker start

Task 6: Install NetWorker Management Console software

To manage the NetWorker server, install the Console and NetWorker client software on one computer in the datazone. The Console server installation relies on the existence of several other components. Ensure that all installation prerequisites are met. The section "Console" on page 31 provides details.

Note: Only one installation of the Console server is required to manage multiple NetWorker servers and to take full advantage of the Console's consolidated reporting feature.

To install software on the computer that is designated as the Console server:

1. Ensure that the following JRE .depot file for JRE version 1.4.2_11 and later or 1.5.0_6 and later software has been installed (this enables the command line reporting feature):

   jre15_15006_pa.depot

   Install the recommended JRE package or download the latest 1.5.x version.

2. Install these patches that are available from HP:

   • PHSS_33035
   • GOLDBASE11i

   These patches are required to run the Console server.

3. If not already installed, install the NetWorker client software. "Task 2: Install the client, storage node, and server software" on page 63 provides detailed instructions.

   Note: The Console server software is dependent upon the installation of the NetWorker client software.

4. Locate the NMC.pkg file and select it as the source for the installation.

5. Select the **NWr-NMC** file for install.

6. If required, select one of the following language support packages for install:

    • **NWr-FR** (French language support)

    • **NWr-JA** (Japanese language support)

    • **NWr-KO** (Korean language support)

    • **NWr-ZH** (Simplified Chinese language support)

7. From the **Actions** window, select **Install** to run an install analysis:

    a. Click **Logfile** to check the log file to verify that **swinstall** did not find errors.

    b. Correct any errors before proceeding with the installation.

8. Click **OK** in the **Install Analysis** window to proceed with the installation, and then click **Yes** in the **Confirmation** dialog box.

9. In the **Install** windows, click **Logfile** to check the log file for error or warning messages generated during installation.

10. Click **Done**, and then exit **swinstall**.

11. Run this script from the command line:

    `/opt/lgtonmc/bin/nmc_config.sh`

12. Follow the prompts to install the software. For example:

    • For the web server port number, use the default port number (**9000**) or use a custom port number. Valid port numbers are between **1024** and **49151**.

    • For the Console server, use the default port number (**9001**) or use a custom port number. Valid port numbers are between **1024** and **49151**.

    Note: Do not use port numbers that are already in use. Port **2638** is reserved by the Console server. The Console server uses the Tabular Data Stream (TDS) protocol to communicate with the database. Port **9002** is the preferred port for EMC Backup Advisor product.

13. Run the **NetWorker Management Console** server daemon:

    `/sbin/init.d/gst start`

    The NetWorker Management Console daemon starts these processes:

    • **gstd**

    • **dbsrv9**

    • **gsttclsh**

14. If the Console server and the NetWorker server are installed on separate hosts, you must add the Console administrator to the administrator lists of the monitored NetWorker server. This enables the Console administrator to administer and monitor the target NetWorker server.

    On the NetWorker server:

    a. Specify the process owner of the Console daemon process (**gstd**) depending on which host contains the Console server:

        – If on a Microsoft Windows host, type:

            `nsraddadmin -u "user=SYSTEM, host=`*console_host*`"`

        – If on a AIX, HP-UX, Linux or Solaris only host, type:

            `nsraddadmin -u "user=root, host=`*console_host*`"`

    b. Specify the Console administrator user:

Installing the NetWorker software

```
nsraddadmin -u "user=administrator, host=console_host"
```

Where *console_host* is the Console server hostname.

Note: Ensure the **gstd** process has been stopped when applying these changes.

Uninstalling the NetWorker software

Use the **swremove** utility command to uninstall individual NetWorker packages or all of the NetWorker packages simultaneously.

Note: Like **swinstall**, the **swremove** program can be run in either terminal mode or from the graphical user interface.

To uninstall the NetWorker software:

1. Log in as root on the NetWorker computer.

2. Type this command to shut down the NetWorker daemons:

   ```
   nsr_shutdown
   ```

3. Type this command at the shell prompt:

   ```
   swremove &
   ```

   Note: If you are using the character interface, do not include the **&** symbol.

4. Select the NetWorker software to be removed in the **Software Selection** window.

5. To run an analysis of the Remove operation, select **Remove** from the **Actions** window.

6. Click **Logfile** to check for any error or warning messages. Fix any problems before continuing with the operation.

7. Click **OK** in the **Remove Analysis** window to proceed with the remove operation.

8. To exit from the **swremove** utility, click **Done** in the **Remove** window, and then select **Exit** from the **File** menu in the **Software Selection** window.

9. To ensure that the NetWorker software has been completely uninstalled after the remove operation, verify that all the files have been uninstalled from these directories:

   • /opt/networker
   • /opt/lgtonmc

10. If you no longer to plan to update or reinstall the NetWorker software:

    a. Remove the /nsr directory.

    b. Delete the directory containing the NMC database files **lgto_gst.db** and **lgto_gst.log**.

11. If you no longer require the Java run time environment, uninstall the JRE.

HP Tru64 UNIX Installation

This chapter includes these sections:

Installing the NetWorker software

Complete these tasks to install the NetWorker software.

Task 1: Install the client, storage node, and sever software

The following sections describe how to install the software on the client, storage node, and server.

Client installation

To install NetWorker software on the computer that is designated as the client:

1. Change to the directory that contains the NetWorker software:

   `setld -l .`

2. Select and install the client package.

3. (Optional), select and install one of the following language support packages:

   - French
   - Japanese
   - Korean
   - Simplified Chinese

4. Respond to the prompts as required.

   Note: The PATH environment variable for the user root on the NetWorker server and the user on each NetWorker client *must* contain the directory where the NetWorker executables reside (/usr/opt/networker/bin).

Storage node installation

The storage node contains the device driver files, installed in /usr/opt/networker/bin.

To install NetWorker software on the computer that is designated as the NetWorker storage node and for which you have purchased an enabler code:

1. Change to the directory that contains the NetWorker software:

   `setld -l .`

2. Select and install these software packages:

   - Client
   - Storage node

3. (Optional), select and install one of the following language support packages:

   - French
   - Japanese
   - Korean
   - Simplified Chinese

4. Respond to the prompts as required.

Server installation

To install NetWorker software on the computer that is designated as the NetWorker server:

1. Keep a copy of the current configuration. The NetWorker software installation script modifies the following files during the installation process:

   - /etc/rpc
   - /etc/syslog.conf

2. Determine if the packages that are required to run the NetWorker software are installed on the computer. For example:

   setld -i | grep *package_identifier*

   If the package is not installed, load the missing package or patch before installing NetWorker software. The following tables provide a list of the package names:

   - Table 7, "HP Tru64 UNIX: required client software," on page 26
   - Table 14, "HP Tru64 UNIX required server software," on page 30

3. Ensure that there is enough free space to install these software packages:

   - Client
   - Storage node
   - Server

4. Change to the directory where the NetWorker software is installed, and type:

   setld -l .

   If the /nsr directory still exists, it will be reused. If not, there will be a prompt to provide a new location for the /nsr directory. The default location is /var/nsr.

5. At the prompt, choose option **5** to install all of the packages on the server. Install all of the NetWorker software on the server simultaneously.

   Software packages on the server must be installed in the following order:

   a. Client software

   b. Storage node software

   c. Server software

   d. NetWorker License Manager software

   e. (Optional) man pages or reference pages

6. (Optional), select and install one of the following language support packages:

   - French
   - Japanese
   - Korean
   - Simplified Chinese

Note: The PATH environment variable for the root user on the NetWorker server and the user on each NetWorker client must contain the directory where the NetWorker executables reside (/usr/opt/networker/bin).

Task 2: Change the NetWorker servers with access to a client

To limit the servers authorized to access a client, specify a list of trusted NetWorker servers for a client in the /nsr/res/servers file. After installing the client, storage node, and server software, use the following procedure to change the NetWorker servers that are authorized to access a client.

To change which NetWorker servers can access a client:

1. Type this command to shut down the NetWorker daemons:

   nsr_shutdown

2. Edit or create the /nsr/res/servers file and add the set of NetWorker servers, one per line, that require access to the client. The first entry in this file becomes the default NetWorker server.

   Note: If the /nsr/res/servers file is empty or does not exist, any NetWorker server is authorized to:
   - Access and back up the client.
   - Perform a directed recovery to the client.

3. If necessary, remove the **-s** option from the **nsrexecd** command that is invoked by the boot-time startup file. Running **nsrexecd** with the **-s** option supersedes the **/nsr/res/servers** file:

   a. Check the NetWorker boot-time startup file to see whether **nsrexecd** is being run with the **-s** option.

      The boot-time startup file is **/sbin/init.d/NSRstartstopstart**.

   b. If the **-s** option exists in the boot-time startup file, remove all occurrences of the following in the startup file:

      -s *server_name*

Task 3: Start the NetWorker daemons

The NetWorker daemons must be started after the installation procedure.

1. Start the NetWorker daemons:

   /sbin/init.d/NSRstartstop start

2. Type this command:

   ps -ef | grep nsr

   Table 22 on page 72 lists the NetWorker daemons.

Table 22   daemons (1 of 2)

NetWorker packages	NetWorker daemons
NetWorker server	**nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker client	**nsrexecd**

Table 22   daemons (2 of 2)

NetWorker packages	NetWorker daemons
NetWorker storage node	**nsrexecd, nsrmmd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.

Uninstalling the NetWorker software

Individual NetWorker packages or all of the NetWorker packages can be removed simultaneously.

To uninstall the NetWorker software packages:

1. Log in as root.

2. Type this command to shut down the NetWorker daemons:

   nsr_shutdown

   A list of NetWorker daemons to be shut down appears, along with a prompt that asks whether to continue with the **nsr_shutdown** command.

3. Determine the NetWorker packages installed on the computer:

   setld -i | grep LGTO

4. Type these commands to remove the software:

   • To uninstall *all* the packages, type:

     setld -d *LGTOSERVxxx LGTONODExxx LGTOLICMxxx LGTOCLNTxxx LGTOMANxxx*

     Where *xxx* represents the version of NetWorker software installed on the system.

     Note: The NetWorker software packages depend on each other. Remove them in the following order:
     1. Server
     2. Storage node
     3. NetWorker License Manager
     4. Client
     The man pages, language packages, and documentation files have no dependencies. They can be removed any time.

   • To remove *only* specific NetWorker packages, see .

Table 23   NetWorker packages to uninstall (1 of 2)

To uninstall these NetWorker packages	Type this command and package name
Server	**setld -d LGTOSERV***XXX*
Storage node	**setld -d LGTONODE***XXX*
NetWorker License Manager	**setld -d LGTOLICM***XXX*
Man pages	**setld -d LGTOMAN***XXX*

Table 23   NetWorker packages to uninstall (2 of 2)

To uninstall these NetWorker packages	Type this command and package name
Client	**setld -d** LGTOCLNT*xxx* **Note:** Always uninstall these software packages before uninstalling the client software: 1. Server 2. Storage node 3. NetWorker License Manager
French language support	**setld -d** LGTOFR*xxx*
Japanese language support	**setld -d** LGTOJP*xxx*
Korean language support	**setld -d** LGTOKO*xxx*
Simplified Chinese language support	**setld -d** LGTOZH*xxx*

IRIX Installation

This chapter includes these sections:

Installing the NetWorker software

Follow these tasks to install the NetWorker software.

Task 1: Install the software

The software can be installed by using the Software Manager.

If the /nsr directory must be on another disk, create /nsr as a symbolic link. For example, type this command to install the software on /disk2:

```
ln -s /disk2/nsr /nsr
```

Note: If installing from a downloaded .tar package, **tardist** will delete the original .tar package after installation. A copy should be made prior to installation if you want to keep it. You might need to install the UTF-8 converters available with your operating system.

To install the software by using the Software Manager:

1. Access the **Software Manager** window:

    ```
    tardist /tmp/sgi.tardist
    ```

    The **Software Manager** window opens.

2. Select **Customize** to install this software:

    *   NetWorker client
    *   NetWorker storage node
    *   NetWorker server
    *   NetWorker License Manager (optional)
    *   Man pages (optional)
    *   French language support package (optional)
    *   Japanese language support package (optional)
    *   Korean language support package (optional)
    *   Simplified Chinese language support package (optional)

3. Double-click the NetWorker product to display these components:

    ```
    NetWorker Client Software for IRIX

    NetWorker Storage Node Software for IRIX

    NetWorker Server Software for IRIX

    NetWorker License Manager for IRIX

    NetWorker Man Pages for IRIX

    NetWorker French language support for IRIX

    NetWorker Japanese language support for IRIX

    NetWorker Korean language support for IRIX

    NetWorker Simplified Chinese language support for IRIX
    ```

    The client and man pages are default options. The client must be selected to install the server or storage node software. Both client and storage node must be selected to install the server.

4. Select the components to install.

5. Click **Start** and then click **OK** when the installation process is complete.

6. Exit the **Software Manager** window.

7. To limit the servers that are authorized to access this client, see "Task 2: Change the NetWorker servers with access to a client" on page 77.

   Note: Ensure that the PATH environment variable for the user root is updated to contain the directory where the NetWorker binaries reside (/usr/etc).

8. To start the daemons, type:

   /etc/init.d/networker start

9. To verify that the daemons are running, type:

   ps -ef | grep nsr

   Table 24 on page 77 lists the daemons.

Table 24   **daemons**

NetWorker packages	NetWorker daemons
NetWorker server	**nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker client	**nsrexecd**
NetWorker storage node	**nsrexecd, nsrmmd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.

Task 2: Change the NetWorker servers with access to a client

To limit the servers authorized to access a client, specify a list of trusted NetWorker servers for a client in the/nsr/res/servers file. After installing the client, storage node, and server software, this procedure can be used to change the NetWorker servers that are authorized to access a client.

To change which NetWorker servers can access a client:

1. Shut down the NetWorker daemons by typing the following command:

   nsr_shutdown

2. Edit or create the /nsr/res/servers file and add the set of NetWorker servers, one per line, that require access to the client. The first entry in this file becomes the default NetWorker server.

   Note: If the /nsr/res/servers file is empty or does not exist, any NetWorker server is authorized to:
   - Access and back up the client.
   - Perform a directed recovery to the client.

3. If necessary, remove the **-s** option from the **nsrexecd** command that is invoked by the boot-time startup file.

   Running **nsrexecd** with the **-s** option supersedes the **/nsr/res/servers** file:

   a. Check the NetWorker boot-time startup file to see whether **nsrexecd** is being run with the **-s** option. This file is located in the /etc/init.d/networker directory.

   b. If the **-s** option exists in the boot-time startup file, remove all occurrences of the following in the startup file:

   -s *server_name*

Uninstalling the software

To uninstall the software by using the Software Manager:

1. In the **NetWorker Administrator** program, type the following command to shut down the daemons:

   /usr/etc/nsr_shutdown

2. To open the **Software Manager** window, type:

   swmgr

3. Select the **Manage Installed Software** option.

   The window displays a list of the installed components.

4. Select the components to remove.

5. Click **Start** to begin the uninstall.

6. Click **OK** when the uninstall is complete.

Mac OS X ClientPak Installation

This chapter includes these sections:

Introduction

The information in this chapter assumes that you have a basic knowledge of:

◆ Mac OS X terminal emulator

◆ UNIX command line tools using the Mac OS X Terminal application utility

For information on using the Mac OS X Terminal application, open the Mac Help database by pressing the **?** key combination within the Finder application, and then search for Terminal.

Installing the ClientPak software

To install the software:

1. Double-click the **NetWorker.dmg Disk Image** icon on your desktop to mount the NetWorker software.

2. Double-click the **NetWorker.pkg Disk Image** package on the NetWorker volume to launch the NetWorker software.

3. Follow the instructions to install the NetWorker software.

4. (Optional) Click **customize** to install the language packages as required.

Verifying the installation

Note: Before you test the Mac OS X client, ensure that the NetWorker server software has been properly installed. Review the NetWorker Installation Guide for the platform of the NetWorker server that will back up the Mac OS X client.

To verify that the NetWorker client software is correctly installed:

1. Use the Mac OS X **Activity Monitor** application to check that the NetWorker client daemon (**nsrexecd**) is active on the host computer. For example:

   nsrexecd

   Note: By default, the **nsrexecd** daemon is automatically started after installation.

2. If the **nsrexecd** daemon is *not* listed, type this command:

   $ **sudo /sbin/SystemStarter start NetWorker**

To verify that the NetWorker language packages are correctly installed:

1. Open the /nsr folder and review the individual language folders.

2. Verify that the networkr.cat catalog files are present in each of the specified folders.

Uninstalling the ClientPak software

To uninstall the NetWorker software, run the appropriate uninstall script. Table 25 on page 81 provides details.

Table 25   **NetWorker ClientPak uninstall scripts**

To remove this NetWorker package	Uninstall script
Clientpak software	$ **sudo /Library/Receipts/NetWorkerClient.pkg/Contents /Resources/NetWorkerUninstall**
French language support	$ **sudo /Library/Receipts/NetWorkerFrenchLanguagePack.pkg /Contents/Resources/NetWorkerUninstall**
Japanese language support	$ **sudo /Library/Receipts/NetWorkerJapaneseLanguagePack.pkg /Contents/Resources/NetWorkerUninstall**
Korean language support	$ **sudo /Library/Receipts/NetWorkerKoreanLanguagePack.pkg /Contents/Resources/NetWorkerUninstall**
Simplified Chinese language support	$ **sudo /Library/Receipts/NetWorkerChineseLanguagePack.pkg /Contents/Resources/NetWorkerUninstall**

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Linux Installation

This chapter includes these sections:

Installing the NetWorker software

Follow these tasks to install the NetWorker software.

Task 1: Install the NetWorker software

By default, the NetWorker software is installed in the /usr directory; however, the software can be installed in a different directory. If you have insufficient disk space on the /usr partition, choose another location to install the software.

Follow the instructions in one of the following sections to install the software:

◆

◆

Installing to the default location

To install the client, storage node, and server software to the default location, see the following sections:

◆

◆

◆

◆

Note: You might need to install the UTF-8 converters available with your operating system. NetWorker Management Console (Console) server software is supported on the Linux x86 platform. The Console server software is not supported on the Linux Itanium platform.

Client installation

Note: The NetWorker software uses the **rpm** utility for installation. For information about using **rpm**, refer to the Linux **rpm** man page.

To install the NetWorker software on the computer designated as the NetWorker client:

1. Log in to the NetWorker Linux client.

2. Change to the directory containing the NetWorker software.

3. Type the appropriate command:

   • For Itanium:

     `rpm -ivh lgtoclnt-7.4-1.ia64.rpm`

   • For Intel x86:

     `rpm -ivh lgtoclnt-7.4-1.x86.rpm`

4. (Optional) To install the man pages and the appropriate language support packages, type the commands in Table 26 on page 85.

Table 26   Optional Software packages

Software Package	Linux Itanium Processor	Intel x86
man pages	`rpm -ivh lgtoman-7.4-1.ia64.rpm`	`rpm -ivh lgtoman-7.4-1.x86.rpm`
French	`rpm -ivh lgtofr-7.4-1.ia64.rpm`	`rpm -ivh lgtofr-7.4-1.x86.rpm`
Japanese	`rpm -ivh lgtoja-7.4-1.ia64.rpm`	`rpm -ivh lgtoja-7.4-1.x86.rpm`
Korean	`rpm -ivh lgtoko-7.4-1.ia64.rpm`	`rpm -ivh lgtoko-7.4-1.x86.rpm`
Simplified Chinese	`rpm -ivh lgtozh-7.4-1.ia64.rpm`	`rpm -ivh lgtozh-7.4-1.x86.rpm`

Storage node installation

On the computers designated as storage nodes, install the NetWorker client and storage node software. The storage node package must be installed on the NetWorker server, regardless of whether separate systems are used as designated storage nodes.

Note: The NetWorker software uses the **rpm** utility for installation. For information about using **rpm**, refer to the Linux **rpm** man page.

To install the storage node software:

1. Change to the directory containing the NetWorker software.

2. Type this command to install the client and storage node packages:

   • For Itanium:

     `rpm -ivh lgtoclnt-7.4-1.ia64.rpm lgtonode-7.4-1.ia64.rpm`

   • For Intel for x86:

     `rpm -ivh lgtoclnt-7.4-1.x86.rpm lgtonode-7.4-1.x86.rpm`

3. (Optional) To install the man pages and the appropriate language support packages, type the commands in Table 27 on page 85.

Table 27   Optional Software packages

Software Package	Linux Itanium Processor	Intel x86
man pages	`rpm -ivh lgtoman-7.4-1.ia64.rpm`	`rpm -ivh lgtoman-7.4-1.x86.rpm`
French	`rpm -ivh lgtofr-7.4-1.ia64.rpm`	`rpm -ivh lgtofr-7.4-1.x86.rpm`
Japanese	`rpm -ivh lgtoja-7.4-1.ia64.rpm`	`rpm -ivh lgtoja-7.4-1.x86.rpm`
Korean	`rpm -ivh lgtoko-7.4-1.ia64.rpm`	`rpm -ivh lgtoko-7.4-1.x86.rpm`
Simplified Chinese	`rpm -ivh lgtozh-7.4-1.ia64.rpm`	`rpm -ivh lgtozh-7.4-1.x86.rpm`

Server installation

On the computer designated as the NetWorker server, install all the NetWorker software packages in the following order: client, storage node, server. The NetWorker License Manager software can be installed at any point in this sequence after the client package is installed.

Note: The NetWorker software uses the **rpm** utility for installation. For information about using **rpm**, refer to the Linux **rpm** man page.

To install the server software:

1. Change to the directory containing the NetWorker software.

2. Type the appropriate commands to install the client, storage node, server, and NetWorker License Manager software:

   - For Itanium:

     ```
     rpm -ivh lgtoclnt-7.4-1.ia64.rpm lgtonode-7.4-1.ia64.rpm
     lgtoserv-7.4-1.ia64.rpm lgtolicm-7.4-1.ia64.rpm
     ```

   - For Intel for x86:

     ```
     rpm -ivh lgtoclnt-7.4-1.x86.rpm lgtonode-7.4-1.x86.rpm
     lgtoserv-7.4-1.x86.rpm lgtolicm-7.4-1.x86.rpm
     ```

   Note: Installing the NetWorker License Manager software is optional. It can be installed any time after the client software.

3. (Optional) To install the man pages and the appropriate language support packages, type the commands in .

Table 28   Optional Software packages

Software Package	Linux Itanium Processor	Intel x86
man pages	`rpm -ivh lgtoman-7.4-1.ia64.rpm`	`rpm -ivh lgtoman-7.4-1.x86.rpm`
French	`rpm -ivh lgtofr-7.4-1.ia64.rpm`	`rpm -ivh lgtofr-7.4-1.x86.rpm`
Japanese	`rpm -ivh lgtoja-7.4-1.ia64.rpm`	`rpm -ivh lgtoja-7.4-1.x86.rpm`
Korean	`rpm -ivh lgtoko-7.4-1.ia64.rpm`	`rpm -ivh lgtoko-7.4-1.x86.rpm`
Simplified Chinese	`rpm -ivh lgtozh-7.4-1.ia64.rpm`	`rpm -ivh lgtozh-7.4-1.x86.rpm`

The NetWorker software installation modifies these system files during installation. To keep a copy of the current configuration, save the following original files:

◆ /etc/rpc

◆ /etc/syslog.conf

◆ /etc/ld.so.conf

The following files are added during the installation process:

◆ /etc/init.d/networker

◆ /etc/init.d/rc3.d/S95networker

◆ /etc/init.d/rc5.d/S95networker

◆ /etc/init.d/rc0.d/K05networker

Console software

To manage the NetWorker server, install the NetWorker Console and client software on one machine in the datazone.

The NetWorker Console installation relies on the existence of several other components. Ensure that all installation prerequisites are met. The section "Console client" on page 34 provides details.

Note: NetWorker Management Console server software is supported on the Linux x86 platform. The NetWorker Management Console server software is not supported on the Linux Itanium platform.

To install NetWorker software on the computer that is designated as the NetWorker Console server:

1. Download and install JRE version 1.5.0_11.

   a. Remove the following Mozilla file from /usr/lib/mozilla-1.7.12/plugins.

      libnullplugin.so

   b. Create a symbolic link within the Mozilla plugins directory to the libjavaplugin_oji.so file. For example:

      ln -s /usr/local/jre1.5.0_11/plugin/i386/ns7/libjavaplugin_oji.so

2. If the NetWorker software has been downloaded from the web:

   a. Type the following command to verify that execute permissions are applied to the JRE file. For example:

      chmod +x j2re-1_5_0_11linux-i586.bin

   b. Change to the directory where the JRE is to be installed.

   c. Run this executable:

      j2re-1_5_0_09-linux-i586.bin

   d. Accept the Java licensing agreement.

3. Change to the directory containing the NetWorker software.

4. Type this command to install the NetWorker client software, if not already installed:

   rpm -ivh lgtoclnt-7.4-1.x86.rpm

5. Start the NetWorker daemons, if not already started. "Task 3: Start the NetWorker daemons" on page 90 provides information on how to start the NetWorker daemons.

6. To install the NetWorker Console software, type:

   `rpm -ivh lgtonmc-7.4-1.x86.rpm`

   By default, the software is installed in /opt.

7. (Optional) To install the man pages and the appropriate language support packages, type the commands in Table 29 on page 88.

Table 29   Optional Software packages

Software Package	Linux Itanium Processor	Intel x86
man pages	`rpm -ivh lgtoman-7.4-1.ia64.rpm`	`rpm -ivh lgtoman-7.4-1.x86.rpm`
French	`rpm -ivh lgtofr-7.4-1.ia64.rpm`	`rpm -ivh lgtofr-7.4-1.x86.rpm`
Japanese	`rpm -ivh lgtoja-7.4-1.ia64.rpm`	`rpm -ivh lgtoja-7.4-1.x86.rpm`
Korean	`rpm -ivh lgtoko-7.4-1.ia64.rpm`	`rpm -ivh lgtoko-7.4-1.x86.rpm`
Simplified Chinese	`rpm -ivh lgtozh-7.4-1.ia64.rpm`	`rpm -ivh lgtozh-7.4-1.x86.rpm`

8. Run this configuration script:

   `/opt/lgtonmc/bin/nmc_config`

9. Follow the prompts to install the software. For example:

   - For the web server port number, use the default IP port number (**9000**) or use a custom IP port number. Valid IP port numbers are between **1024** and **49151**.

   - For the NetWorker Console server, use the default IP port number (**9001**) or use a custom IP port number. Valid IP port numbers are between **1024** and **49151**.

   Note: Do *not* use IP port numbers that are already in use. Port **2638** is reserved by the NetWorker Console software by using the Tabular Data Stream (TDS) protocol to communicate with the database. Port **9002** is the preferred port for EMC Backup Advisor product.

10. Start the NetWorker Console daemons if not already started:

    `/etc/init.d/gst start`

    The NetWorker Console daemons include the following:

    - **gstd**
    - **dbsrv9**
    - **gsttclsh**

11. For Red Hat Enterprise Server 4 only, from the client machine with more than one JRE installed, you may want to reconfigure the usage of the JRE as follows:

    a. Run the **Java Web Start** application named **javaws**. This application is located in the same directory where the JRE 1.5.0_06 software was installed.

    b. From the **Java Application Runtime Settings** window:

       – Check the JRE 1.4.2_11 version software. This forces the **Java Web Start** application to use JRE version 1.4.2_11 to run applications.

       – Uncheck the other versions of the JRE software, for example JRE version 1.5.0_06.

    c. Start the NetWorker Console server. The **Console** launch page appears.

    d. Specify that you want to run the Console using the Java Web Start version 1.5 software. You must type the path to the Java Web Start executable.

Note: There are two libraries, **libXp.so.6** and **libXm.so.3** (open motiff lib), that are required on Red Hat Enterprise Linux 4 and 5 to launch the nwrecover program. By default, these libraries are not part of the operating system.
On Red Hat Linux 4, libXp.so.6 is installed with the xorg-x11-deprecated-libs rpm. Install this package, then launch nwrecover.
The missing packages are contained on Red Hat Linux 5, however, the packages are not selected by default. To select these packages, when installing Red Hat 5, go to the Optional Packages in X Software Development Packages and individually select libXp.so.6 and libXm.so.3.

12. If the Console server and the NetWorker server are installed on separate hosts, you must add the Console administrator to the administrator lists of the monitored NetWorker server. This enables the Console administrator to administer and monitor the target NetWorker server.

    On the NetWorker server:

    a. Specify the process owner of the Console daemon process depending on which host contains the Console server:

       – If on a Microsoft Windows host, type:

          nsraddadmin -u "user=SYSTEM, host=*console_host***"**

       – If on a AIX, HP-UX, Linux or Solaris only host, type:

          nsraddadmin -u "user=root, host=*console_host***"**

    b. Specify the Console administrator user:

       nsraddadmin -u "user=administrator, host=*console_host***"**

       Where *console_host* is the Console server hostname.

Installing to a nondefault location

By default, the NetWorker software is installed in the /usr directory. If there is insufficient disk space on the /usr partition, relocate the NetWorker packages to a specified directory on another partition. Table 11, "UNIX location and space requirements," on page 29 provides information about directories and space requirements.

To install the NetWorker software to a nondefault location:

1. Change to the directory containing the NetWorker software.

2. Type the appropriate command to install the NetWorker client, storage node, server, and NetWorker License Manager software:

   • For Itanium:

      rpm -ivh --relocate old path=new path lgtoclnt-7.4-1.ia64.rpm
      lgtonode-7.4-1.ia64.rpm lgtoserv-7.4-1.ia64.rpm
      lgtolicm-7.4-1.ia64.rpm

   • For Intel x86:

      rpm -ivh --relocate old path=new path lgtoclnt-7.4-1.x86.rpm
      lgtonode-7.4-1.x86.rpm lgtoserv-7.4-1.x86.rpm

   Note: The storage node software can be installed any time after the client software is installed. Installing the NetWorker License Manager software is optional. It can be installed any time after the client software is installed.

3. (Optional) To install the man pages and the appropriate language support packages, type the commands in Table 30 on page 90.

Table 30   Optional Software packages

Software Package	Linux Itanium Processor	Intel x86
man pages	`rpm -ivh` `lgtoman-7.4-1.ia64.rpm`	`rpm -ivh` `lgtoman-7.4-1.x86.rpm`
French	`rpm -ivh` `lgtofr-7.4-1.ia64.rpm`	`rpm -ivh` `lgtofr-7.4-1.x86.rpm`
Japanese	`rpm -ivh` `lgtoja-7.4-1.ia64.rpm`	`rpm -ivh` `lgtoja-7.4-1.x86.rpm`
Korean	`rpm -ivh` `lgtoko-7.4-1.ia64.rpm`	`rpm -ivh` `lgtoko-7.4-1.x86.rpm`
Simplified Chinese	`rpm -ivh` `lgtozh-7.4-1.ia64.rpm`	`rpm -ivh` `lgtozh-7.4-1.x86.rpm`

4. Modify the root PATH variable to designate the bin, /usr/sbin, and /usr/lib/nsr subdirectories of the directory just created.

   For example, if the /usr/bin directory was relocated to a new directory called /backup, type this command to relocate the /usr/sbin subdirectory:

   ```
   /backup:/usr/sbin
   ```

   Note: Installation to a nondefault location is not supported on Red Hat Linux 8.

Task 2: Change the NetWorker servers with access to a client

To limit the servers that are authorized to access a client, a list of trusted NetWorker servers can be specified for a client in the **/nsr/res/servers** file. After installing the client, storage node, and server software, use the following procedure to change the NetWorker servers that are authorized to access a client.

To change the NetWorker servers that can access a client:

1. Edit or create the **/nsr/res/servers** file and add the NetWorker servers, one per line, that require access to the client. The first entry in this file becomes the default NetWorker server.

   Note: If the **/nsr/res/servers** file is empty or does not exist, any NetWorker server is authorized to:
   - Access and back up the client.
   - Perform a directed recovery to the client.

2. If necessary, delete the **-s** option from the **nsrexecd** command that is invoked by the boot-time startup file. Running **nsrexecd** with the **-s** option supersedes the **/nsr/res/servers** file.

Task 3: Start the NetWorker daemons

Upon startup, the NetWorker software creates the /nsr directory on the root partition. To change the default location of the nsr directory, do so before starting the NetWorker daemons.

The NetWorker daemons must be started after the installation procedure:

1. Type this command to start the NetWorker daemons:

    /etc/init.d/networker start

2. Type this command to determine if the NetWorker daemons are started:

    ps -ef | grep nsr

Table 31 lists the NetWorker daemons for each of the software components.

Table 31   **NetWorker daemons**

NetWorker packages	NetWorker daemons
NetWorker server	**nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker client	**nsrexecd**
NetWorker storage node	**nsrexecd, nsrmmd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.

Note: The NetWorker daemon **nsrmmd** is only present if one or more devices are enabled.

Uninstalling the NetWorker software

Use the **rpm -e** *package_name* command to uninstall individual NetWorker packages or all of the NetWorker packages simultaneously. For information about using **rpm**, refer to the **rpm** man page.

Note: The NetWorker software packages have dependencies on each other and must be uninstalled in the following order: **lgtolicm**, **lgtoserv**, **lgtonode**, **lgtoclnt**. The man pages (**lgtoman**) and document files have no dependencies and can be uninstalled any time.

The **lgtonmc** package must be uninstalled before the **lgtoclnt** package. The NetWorker Administration Guide provides more information on the NetWorker Console server.

To uninstall the NetWorker software packages:

1. Log in as root to the computer from which the software is being uninstalled.

2. Run a query to see which packages are installed:

    rpm -qa | grep lgto

3. Type these commands to uninstall the software:

    *   To uninstall all the packages, type:

        rpm -e lgtolicm lgtoserv lgtonode lgtonmc lgtoclnt lgtoman

    *   To uninstall packages individually, type:

```
rpm -e package_name
```

Table 32   NetWorker packages to uninstall

To uninstall these package	Type this package name
Server	**lgtoserv-7.4**
Storage node	**lgtonode-7.4**
Console server	**lgtonmc-7.4**
NetWorker License Manager	**lgtolicm-7.4**
Client	**lgtoclnt-7.4**
Man pages	**lgtoman-7.4**
French language support	**lgtofr-7.4**
Japanese language support	**lgtoja-7.4**
Korean	**lgtoko-7.4**
Simplified Chinese language support	**lgtozh-7.4**

Example 1   **Uninstalling the software**

4. If you no longer to plan to update or reinstall the NetWorker software:

    a. Remove the /nsr directory.

    b. Delete the NMC directory. By default, NMC is installed at /opt/lgtonmc.

    c. Delete the directory containing the NMC database files **lgto_gst.db** and **lgto_gst.log**.

5. If you no longer require the Java run time environment, uninstall the JRE.

If NetWorker release 7.3 is installed and an update to NetWorker release 7.4 is required, type this command to uninstall all NetWorker packages:

```
rpm -e lgtolicm-7.3 lgtoserv-7.3 lgtonode-7.3 lgtoclnt-7.3 lgtoman-7.3
```

11

Microsoft Windows Installation

This chapter includes these sections:

Installing the NetWorker software

Complete these tasks to install the NetWorker software.

Task 1: Install the NetWorker software

This section provides instructions for installing the following NetWorker software:

- Client
- Storage node
- Server
- NetWorker language pack support
- NetWorker License Manager

Note: You must install the Console server software on one computer in your data zone to manage the NetWorker server. Only one installation of the NetWorker Console server is required to manage multiple NetWorker servers. "Task 2: Install the Console software" on page 95 provides details.
You can install the NetWorker License Manager with any of the NetWorker software components. The NetWorker client must be installed before the NetWorker Management Console software.

To install NetWorker software:

1. Verify that the target computer satisfies the requirements. The section "Console" on page 31 provides details.

2. Log in with administrator privileges to the target computer for the NetWorker software installation.

3. If Autorun did not automatically start the installation, double-click the **setup.exe** file.

4. In the **Choose Setup Language** page, select a language type. The **Welcome to NetWorker Installation** page appears.

   Note: You cannot de-select the English language package.

5. In the **Customer Information** page, fill in the appropriate information and click **Next**.

6. In the **Windows XP Firewall** page, select **Configure the Windows XP client-side firewall**.

   Note: If the firewall is not configured for NetWorker, scheduled backups will no longer function.

7. In the **Installation Type and Location** page, make the following selections and click **Next**:

   - Select the **Client, Storage Node, or Server and Client** option.
   - To install the NetWorker software in a location other than the default location, click **Change** and specify the installation path.
   - To install the NetWorker License Manager software, select the check box.

- To install the NetWorker Management Console software, select the check box.
- To install the Language Packs software, select the check box.

Note: Only one installation of the NetWorker License Manager and the Console software is required on a network. Do *not* install the NetWorker License Manager on any computer other than a primary or backup license server. The NetWorker License Manager Installation and Administration Guide provides information.

8. If required, in the **Feature Selection** page, select a language pack.

9. If the server is installed, the License Agreement page appears. Review the license agreement, select **I accept the terms in this license agreement**, and then click **Next**.

10. The installation program is ready to install. Review the settings and click **Install**.

11. In the **NetWorker Server Selection** page, select the NetWorker servers that can perform backups and directed recoveries for this client:

- To add a NetWorker server that is *not* listed in the **Available Servers** list, type the name of the server in the **Enter a server name** text box and click **Add**.
- To browse for available NetWorker servers, click **Update List**. You can select a NetWorker server from the **Available Servers** list.
- To add or remove NetWorker servers from the **Available Servers** list to the **Selected Servers** list, use the arrow buttons.

Note: If the **Selected Servers** list is left empty, any NetWorker server can perform backups and directed recoveries of this computer's data. This might affect the security of your data. describes how to change the **Selected Servers** list after installation.

If you are installing NetWorker software on a computer that is running Windows Server 2003, Windows XP Professional, or Windows 2000, at the end of the setup process you are prompted to run the Change Journal Manager. The NetWorker Administration Guide provides information about configuring NetWorker software to use the Windows Change Journal.

Task 2: Install the Console software

You must install the Console server software on one computer in your datazone to manage the NetWorker server. Only one installation of the Console server is required to manage multiple NetWorker servers.

Note: If the NetWorker Management Console software installation option was selected in the **Installation Type and Location** page; the Console software will be installed after the NetWorker software. The Console installation relies on the existence of several other components. Ensure that all of the installation prerequisites are met. The section provides details.

To install the Console:

1. In the **Welcome to NetWorker Management Console Installation** page, click **Next**.

2. In the **Customer Information** page, fill in the appropriate information and click **Next**.

3. In the **Installation Required JRE** page, if you have not installed the JRE version 1.4.2 or 1.5.0 software, install it now and then click **Next**. The JRE is required to run the Console reporting function:

   • Select **Install Java 2 Runtime Environment, SE v1.5.0_11** to install the JRE version 1.5 software.

   • Select **Skip JRE installation** to continue the installation without installing the JRE. You are prompted to install the JRE when you first access the Console interface. This disables the command line reporting feature.

4. In the **Product Setup** page:

   a. To install the software in the default directory, click **Next**.

   b. To install the software in a different directory, click **Change** and navigate to or type a new destination.

   Note: The estimated disk space required for the Console components is 270 MB.

   If the **Setup** wizard detects that there is insufficient disk space to install the software, another dialog box appears listing the system's local drives, and highlighting the drive with insufficient disk space. The list also displays disk size, available space, and required space, which allows the selection of an appropriate drive on which to continue the installation.

5. In the **Configuration Options** page, indicate the Database Destination path, the IP port numbers to use for the embedded HTTP server, and the Client Service port:

   • To change the default database path, select **Change**.

   • To use the default port numbers, type **9000** for the HTTP server and **9001** for the Client Service port.

   • To use different port numbers, type the new port numbers (between **1024** and **49151**).

   Note: Port **2638** is reserved by the Console software as it uses the TDS protocol to communicate with the database. Port **9002** is the preferred port for EMC Backup Advisor product.

6. Review the information in the **Product Configuration Summary** page and click **Next**.

7. In the **Ready to Install the Program** page, click **Install**.

   a. Click the check box (the default is selected) to launch the client in the default browser immediately after exiting the **InstallShield Wizard**.

   b. Click **Finish** to exit the **InstallShield Wizard**.

   When the installation is complete, the **NetWorker Management Console Setup Completed** page appears. The box shows where the **install.log** file and **gstd.log** file can be viewed. It also gives the browser URL to use to start the Console software from any desktop.

8. If the Console server and the NetWorker server are installed on separate hosts, you must add the Console administrator to the administrator lists of the monitored NetWorker server. This enables the Console administrator to administer and monitor the target NetWorker server.

On the NetWorker server:

a. Specify the process owner of the Console daemon process depending on which host contains the Console server:

– If on a Microsoft Windows host, type:

nsraddadmin -u "user=SYSTEM, host=*console_host***"**

– If on a AIX, HP-UX, Linux or Solaris only host, type:

nsraddadmin -u "user=root, host=*console_host***"**

b. Specify the Console administrator user:

nsraddadmin -u "user=administrator, host=*console_host***"**

Where *console_host* is the Console server hostname.

Uninstalling the NetWorker software

Note: Uninstall the Console before uninstalling the rest of the NetWorker software. If NetWorker License Manager is installed, it will be removed along with the NetWorker software components. To remove *only* the NetWorker License Manager and leave the other NetWorker components intact, skip this procedure. provides details.

To uninstall the NetWorker software and the language packages from a host computer:

1. Log in with administrator privileges to the target computer.

2. Stop all **NetWorker** programs and ensure that no other program, such as **Windows Explorer**, is accessing directories or files under NetWorker_install_path.

3. In the **Windows Control Panel**, select **Add/Remove Programs**.

4. In the **Add/Remove Programs** page, select **NetWorker Management Console Server** and click **Remove**.

All of the NetWorker Management Console Server is removed *except* for the JRE Java Web Start programs on which the Console is dependant. You can remove the Java programs through the **Add/Remove Programs** window separately.

Note: On x-64 bit Windows, if you select **NetWorker Management Console** to remove the NMC server, the error message "An error occurred while trying to remove NetWorker Management Console..." appears, but the uninstallation process is unaffected.

5. In the **Add/Remove Programs** page:

a. Select **NetWorker**.

b. Select one of the following options:

– **Change** — Launches the Setup program in Maintenance mode. You can remove all the language packages except English in Maintenance mode.

– **Remove** — Performs a partial uninstallation of the NetWorker software, leaving the NetWorker metadata.

To perform a complete uninstallation select the **Change** option. If you select **Remove**, you are prompted to confirm. Click **Yes** to perform the uninstallation.

6. In the **Maintenance Type** dialog box, select **Remove**, and then click **Next**.

> **Note:** If the NetWorker software is uninstalled from Maintenance Mode and the Console is also installed, the Console will be uninstalled first, then the NetWorker will be uninstalled.

7. In the **Ready to Remove** dialog box, ensure that the **Remove NetWorker Metadata** option is set the way you want it, and then click **Remove**.

> **Note:** For a complete uninstallation of the NetWorker software, select **Remove NetWorker Metadata**. By default, the **Remove NetWorker Metadata** check box is cleared to ensure that all of the NetWorker configuration files (such as client file indexes, media database, logs, and resource files) are retained for a future installation of the NetWorker software. This has the same effect as Partial Uninstallation in NetWorker releases prior to 7.0.

8. In the **Ready to Remove** dialog box, click **Remove**.

9. In the **NetWorker Setup Complete** dialog box, click **Finish**.

10. Remove the **NetWorker Management Console** shortcut icon from your desktop. Uninstalling the NetWorker software does not remove the **NetWorker Management Console** shortcut icon from your desktop, it must be removed manually.

12

Solaris Installation

This chapter includes these sections:

Installing the software

Complete these tasks to install the NetWorker software.

Task 1: Install the NetWorker software

By default, the NetWorker software is installed in the /usr directory.

The NetWorker software can be installed in a default or nondefault location.

Installing to a default location

This section explains how to install the client, storage node, server, and Console server:

Client

To install the NetWorker software on the computer that is designated as the NetWorker client:

1. Type this command:

   ```
   pkgadd -d /cdrom/cdrom1/solaris
   ```

   Note: Do *not* press **Enter** for the default response **All**. Accepting the default installs the server.

2. Type the number of the option to install the client package (**LGTOclnt**). The client package temporarily requires 35 MB of free space on the client computer.

3. (Option) Type the number of the option to install a language support package.

4. Type the number of the option to install a language support package. For example:

   - **LGTOfr** (French)
   - **LGTOja** (Japanese)
   - **LGTOko**(Korean)
   - **LGTOzh** (Simplified Chinese)

5. (Optional) Type the a number of the option to install the man pages (**LGTOman**).

   Note: If installing additional NetWorker software packages (storage node, server) to a NetWorker client that has processes running (for example, the **nsrexecd** process), an RPC error is reported. Before each software package is installed, the NetWorker software requires all NetWorker processes be shutdown. The RPC error is generated because the **nsr_shutdown** process attempts to stop NetWorker server processes when in fact no NetWorker server is running. This error message can be ignored and the installation process completes successfully.

During the **pkgadd** process, ensure that no NetWorker processes are running. Do *not* start the NetWorker daemons until the final package is installed.

Storage node

To install the NetWorker software on the computer that is designated as the NetWorker storage node and for which you have purchased an enabler code:

1. Type the following command:

   ```
   pkgadd -d /cdrom/cdrom1/solaris
   ```

2. Type the appropriate options to install the following packages.

   Software packages on the storage node must be installed in this order:

   a. **LGTOclnt** (client software package)

   b. **LGTOnode** (storage node software package)

   c. **LGTOman** (optional man pages)

3. Type the number of the option to install a language support package. For example:

   • **LGTOfr** (French)

   • **LGTOja** (Japanese)

   • **LGTOko**(Korean)

   • **LGTOzh** (Simplified Chinese)

Server

To install the NetWorker software on the computer that is designated as the NetWorker server:

1. Keep a copy of the current configuration. The NetWorker software installation script modifies the /etc/rpc and /etc/syslog.conf files during the installation process.

   Type these commands:

   ```
   cp /etc/rpc /etc/rpc.old
   ```

   ```
   cp /etc/syslog.conf /etc/syslog.conf.old
   ```

2. Type this command:

   ```
   pkgadd -d /cdrom/cdrom1/solaris
   ```

3. Type the appropriate options to install the following packages.

   Software packages on the server must be installed in the following order:

   a. **LGTOclnt** (client software package)

   b. **LGTOnode** (storage node software package)

   c. **LGTOserv** (server software package)

   d. **LGTOman** (optional man pages)

   e. **LGTOlicm** (optional NetWorker License Manager software package)

   The NetWorker License Manager Installation and Administration Guide provides information about the NetWorker License Manager software.

4. Type the number of the option to install a language support package. For example:

   • **LGTOfr** (French)
   • **LGTOja** (Japanese)
   • **LGTOko**(Korean)
   • **LGTOzh** (Simplified Chinese)

Console server

To manage the NetWorker server, install the NetWorker Console and NetWorker client software on one machine in the datazone. The Console server installation relies

on the existence of several other components. Ensure that all installation prerequisites are met. The section "Console" on page 31 provides details.

To install NetWorker software on the computer that is designated as the NetWorker Console server:

1. Ensure that JRE version 1.4.2 or 1.5.0 is installed. This enables the command line reporting feature:

   a. If the NetWorker software had been downloaded from the web, type the following command to verify that execute permissions are applied to the JRE file.

   For example:

   chmod +x /tmpdir/jre-1_5_0_11-solaris-sparc.sh

   The **jre-1_5_0_11-solaris-sparc.sh** creates an install directory in the working directory where it is run.

   b. Change to the directory where the JRE is to be installed.

   c. Run the following script:

   pkgadd -d /_tmpdir_**/jre-1_5_0_11-solaris-sparc.sh**

   d. Accept the Java licensing agreement.

2. Start the NetWorker software installation:

   pkgadd -d /cdrom/cdrom1/solaris

   Note: Do *not* press **Enter** for the default response **All**. Accepting the default installs the server.

3. Type the appropriate option number to install the client package (**LGTOclnt**), if not already installed.

   The client package temporarily requires 35 MB of free space on the client computer.

4. Type the appropriate option number to install the Console server package (**LGTOnmc**).

5. (Optional) Type the appropriate option number to install the man pages (**LGTOman**).

   - **LGTOfr** (French)
   - **LGTOja** (Japanese)
   - **LGTOko**(Korean)
   - **LGTOzh** (Simplified Chinese)

6. Follow the prompts to install the software. For example:

   - For the web server port number, use the default port number (**9000**) or use a custom port number. Valid port numbers are between **1024** and **49151**.

   - For the Console server, use the default port number (**9001**) or use a custom port number. Valid port numbers are between **1024** and **49151**.

   Note: Do not use port numbers that are already in use. Port **2638** is reserved by the Console server, as it uses Tabular Data Stream (TDS) protocol to communicate with the database. Port **9002** is the preferred port for the EMC Backup Advisor product.

7. Start the NetWorker Console daemons:

```
/etc/init.d/gst start
```

The NetWorker Console daemons include the following:

- **gstd**
- **dbsrv9**
- **gsttclsh**

8. If the Console server and the NetWorker server are installed on separate hosts, you must add the Console administrator to the administrator lists of the monitored NetWorker server. This enables the Console administrator to administer and monitor the target NetWorker server.

   On the NetWorker server:

   a. Specify the process owner of the Console daemon process depending on which host contains the Console server:

      – If on a Microsoft Windows host, type:

         ```
         nsraddadmin -u "user=SYSTEM, host=console_host"
         ```

      – If on a AIX, HP-UX, Linux or Solaris only host, type:

         ```
         nsraddadmin -u "user=root, host=console_host"
         ```

   b. Specify the Console administrator user:

      ```
      nsraddadmin -u "user=administrator, host=console_host"
      ```

      Where *console_host* is the Console server hostname.

Installing to a nondefault location

By default, the following NetWorker software is installed in the /usr directory. If there is insufficient disk space on the /usr partition, the following NetWorker packages can be relocated to a specified directory on another partition:

- **LGTOclnt** (client software package)
- **LGTOnode** (storage node software package)
- **LGTOserv** (server software package)
- **LGTOfr** (French)
- **LGTOja** (Japanese)
- **LGTOko** (Korean)
- **LGTOzh** (Simplified Chinese)

By default, the NetWorker Console server software is installed in the /opt directory. If there is insufficient disk space on the /opt partition, the NetWorker Console server package, LGTOnmc can be relocated to a specified directory on another partition.

The NetWorker man pages package (LGTOman) must always be installed in the default location. provides a listing of the default locations and size requirements.

Note: Do *not* relocate any of the packages if NetWorker Module software is already installed on the computer.

To install the NetWorker packages to a nondefault location:

1. Copy the /var/sadm/install/admin/default file, as shown:

   ```
   cp /var/sadm/install/admin/default /tmp/default.tmp
   ```

2. Edit the /var/sadm/install/admin/default file and change the value assigned to the *basedir* variable from **default** to **ask**, as shown:

   `basedir=ask`

3. Create a directory and the bin and sbin subdirectories to install the NetWorker packages, for example:

   mkdir -p /my_path/sbin

   mkdir -p /my_path/bin

4. Modify the root PATH variable to include the bin and sbin subdirectories of the directory just created, for example:

   /my_path/bin:/my_path/sbin

5. Type this command:

   pkgadd -d /cdrom/cdrom1/solaris

   When this prompt appears in the script, type the same base directory for all the relocated packages:

   ```
   Enter path to package base directory (default: /usr) [?,q] /my_path
   Using /my_path as the package base directory.
   ```

6. When all the applicable packages are added and the prompt appears, press [**q**] to exit.

7. Copy the /tmp/default.tmp file to the following location. For example:

   cp /tmp/default.tmp /var/sadm/install/admin/default

   If **pkgrm** is used to remove the packages at a later date, specify the base directory.

Task 2: Change the NetWorker servers with access to a client

To limit the servers authorized to access a client, specify a list of trusted NetWorker servers for a client in the **/nsr/res/servers** file. After installing the client, storage node, and server software, use the following procedure to change the NetWorker servers that are authorized to access a client.

To change which NetWorker servers can access a client:

1. Type this command to shut down the NetWorker daemons:

   nsr_shutdown

2. Edit or create the **/nsr/res/servers** file and add the set of NetWorker servers, one per line, that require access to the client. The first entry in this file becomes the default NetWorker server.

   Note: If the **/nsr/res/servers** file is empty or does not exist, any NetWorker server is authorized to:
   - Access and back up the client.
   - Perform a directed recovery to the client.

3. If necessary, remove the **-s** option from the **nsrexecd** command that is invoked by the boot-time startup file. Running **nsrexecd** with the **-s** option supersedes the **/nsr/res/servers** file:

   a. Check the NetWorker boot-time startup file to see whether **nsrexecd** is being run with the **-s** option. The boot-time startup file for the Solaris environment is **/etc/init.d/networker**.

b. If the **-s** option exists in the boot-time startup file, remove all occurrences of the following in the startup file:

    -s *server_name*

Task 3: Start the NetWorker daemons

The NetWorker daemons must be started after the installation procedure.

1. Start the NetWorker daemons by using this command:

    /etc/init.d/networker start

2. Verify that the NetWorker daemons are running:

    ps -ef | grep nsr

3. If the output does not list **nsrd** and **nsrexecd** as current processes, run the following command to start the NetWorker daemons on the NetWorker server:

    /etc/init.d/networker start

    The NetWorker daemon **nsrmmd** is only present if one or more devices are enabled.

Note: You might need to install the UTF-8 converters available with your operating system.

Table 33 on page 105 lists the NetWorker daemons that should be running.

Table 33   **NetWorker daemons**

NetWorker installation packages	NetWorker daemons
server	**nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.
client	**nsrexecd**
storage node	**nsrexecd, nsrmmd, nsrlcpd** **Note: nsrlcpd** is present only if the server has already been configured for a autochanger.
NetWorker License Manager	**lgtolmd**

Uninstalling the NetWorker software

Use the **pkgrm** command to uninstall individual NetWorker packages or all of the NetWorker packages simultaneously.

Software dependencies

The NetWorker software packages depend on each other. Uninstall them in this order:

1. **LGTOserv**

2. **LGTOnode**

3. **LGTOnmc**

   If the Console server software is installed (**LGTOnmc**), there is a dependency on the NetWorker client software and the Console server software must be uninstalled first.

4. **LGTOlicm**

   If the NetWorker License Manager software is installed, there is a dependency on the NetWorker client software and the NetWorker License Manager software must be uninstalled first.

5. **LGTOclnt**

6. **LGTOman**

7. **LGTOfr** (French language support package)

8. **LGTOja** (Japanese language support package)

9. **LGTOko** (Korean language support package)

10. **LGTOzh** (Simplified Chinese language support package)

   Note: The man pages and document files have no dependencies and can be uninstalled at any time.

Uninstalling the NetWorker software

To remove the NetWorker software packages:

1. Log in as root on the system where the software is being removed.

2. Type this command to shut down the NetWorker daemons:

   `nsr_shutdown`

   A list of NetWorker daemons that will be shut down appears, along with a prompt that asks whether to continue with the **nsr_shutdown** command.

3. Type this command to shut down the Console server:

   `/etc/init.d/gst stop`

4. Remove the software:

   • To remove all the packages, type this command:

     `pkgrm LGTOserv LGTOnode LGTOnmc LGTOlicm LGTOclnt LGTOman`

     Note: Do *not* choose the default option **All** to remove the NetWorker software packages. Choosing this option removes all the software packages (*not* just NetWorker software) that were installed on the computer by using the **pkgadd** utility.

- To remove only select the NetWorker packages, see Table 34 on page 107.

Table 34   **NetWorker packages to uninstall**

To uninstall these NetWorker packages	Type this command and package name
Server	**pkgrm LGTOserv**
Storage node	**pkgrm LGTOnode**
Console server	**pkgrm LGTOnmc** **Note:** The **LGTOnmc** package must be uninstalled before the **LGTOclnt** package.
NetWorker License Manager	**pkgrm LGTOlicm**
Client software	**pkgrm LGTOclnt**
Man pages	**pkgrm LGTOman** **Note:** This removes the **LGTOman** package from the server, storage node, or client where the man pages are installed.
French language support	**pkgrm LGTOfr**
Japanese language support	**pkgrm LGTOja**
Korean language support	**pkgrm LGTOko**
Simplified Chinese language support	**pkgrm LGTOzh**

5. If you no longer to plan to update or reinstall the NetWorkersoftware:

    a. Remove the /nsr directory.

    b. Delete the NMC directory. By default, NMC is installed at /opt/LGTOnmc.

    c. Delete the directory containing the NMC database files **lgto_gst.db** and **lgto_gst.log**.

6. If you no longer require the Java run time environment, uninstall the JRE.

Verifying the Installation

This chapter includes these sections:

Introduction

This chapter provides information about testing and verifying the NetWorker software installation. To verify that the NetWorker software was installed properly, you must first connect to a NetWorker server, configure a device, and then test the software on the device.

Task 1: Start the Console for the first time

To run the Console, ensure that the Console server has been installed on a Solaris, Microsoft Windows or Linux host. You can not initiate a browser session from an Irix or HP Tru64 UNIX server. You can however, open a browser session with the Console from a Linux, Solaris, Microsoft Windows, HP-UX, or an AIX host.

These steps assume that the NetWorker software is installed and that all of the software and hardware requirements have been met on the computer that will access the Console. "NetWorker Management Console" on page 13 provides information about the Console.

To start the Console server software for the first time:

1. Verify that the console processes **gstd**, **dbsrv9** and **gsttclsh** are running on the NetWorker **Management Console** server.

2. Start a web browser session.

3. Type the URL of the Console server:

   http://server_name:http_service_port

   where:

   • *server_name* is the name of the computer where the Console server component was installed.

   • *http_service_port* is the port for the embedded HTTP server. The HTTP port is specified during installation. The default HTTP port is **9000**.

   For example: **http://houston:9000**

4. From the **Welcome** page, click **Start**.

5. From the **Security Warning** screen, click **Start** to install and run NetWorker **Console**.

6. For UNIX platforms only, type this command to start the Console server:

   /etc/init.d/gst start

7. If JRE 1.5 was *not* already installed on the system, a prompt to install it appears. Follow the onscreen instructions to install JRE.

8. In the NetWorker **Management Console Login** dialog box, type the username and password.

   On Windows only, once the JRE has been installed, the **Java Web Start Desktop Integration** dialog box appears.

9. For the Windows platform only, complete the **Java Web Start Desktop Integration** dialog box by selecting one of the following options:

   • To place a shortcut on the desktop, click **yes**.

   • To decline having a shortcut placed on the desktop, click **No**.

- To have the option to decide later, click **Ask Later**.

Note: The default user is administrator and the default password for the administrator is "administrator". For security purposes, this password should be changed during the first login session.

10. Click **OK**. The **Console** window and the **Getting Started** page appears.

How to start the Console after the first time

After the Console has been started the first time, start it later by using one of the following methods:

- Point the browser to the same URL as in .

- Double-click **NetWorker Console** in the **Java Web Start Application Manager**.

- On Microsoft Windows, double-click the desktop icon, if one was set up through the **Java Web Start Application Manager**.

Task 2: Add a NetWorker server to the NetWorker Console server

To add and select a NetWorker server:

1. Start the NetWorker **Console** software.

2. From the **Console** window, click **Enterprise**.

3. From the left pane, select the **Enterprise** icon.

4. From the **File** menu, select **New>Host**.

5. Type a hostname and alias for the NetWorker server.

   The NetWorker server appears in the right pane and left pane.

6. From the left pane, select the NetWorker server.

7. From the right pane, select the NetWorker application.

8. From the **Enterprise** menu, select **Launch Application**.

   The **NetWorker Administration** window is launched.

If the server connection fails, refer to the server connectivity information in the NetWorker Administration Guide to troubleshoot the problem.

Task 3: Configure a stand-alone device

Devices must be configured before testing the NetWorker software.

You can configure one of these devices:

-
-
-

The NetWorker Administration Guide provides information about configuring a device.

Stand-alone tape device

To configure a stand-alone tape device:

1. In the server's NetWorker Administration interface, click **Devices**.
2. From the left pane, select **Devices**.
3. From the left pane, select **Storage Nodes**.
4. Right-click the storage node for the device.
5. Select **Scan for devices**.

   The **Scan for Devices** window appears.
6. From the list, select the storage node to be scanned.
7. Click **Start Scan** after filling in the requested information.

   The new device appears in the right pane.
8. From the right pane, select the new device.
9. From the Devices menu, select **Devices>Device Operations>Label**.

   The **Label** window appears.
10. Verify the information in the **Label** window and click **OK**.

Stand-alone file or advanced file device

To configure a stand-alone file or advanced files device:

1. In the server's NetWorker Administration interface, click **Devices**.
2. From the left pane, select **Devices**.
3. From the **File** menu, select **New**.

   The **Create Devices** window appears.
4. For the **Name** attribute, type the device path.
5. For the **Media type** attribute, select **file** or **adv_file**.
6. Click **OK**. The new device appears in the right pane.
7. From the right pane, select the new device.
8. From the **Devices** menu, select **Devices>Device Operations>Label**.
9. Verify the information in the **Label** window and click **OK**.

Autochanger or silo

To configure a new library resource (autochanger or silo) to a storage node:

1. In the server's NetWorker Administration interface, click **Devices**.
2. From the left pane, select **Storage Nodes**.
3. Right-click the storage node for the device.
4. Select **Configure All Libraries**.
5. Click **Start Configuration** after filling in the requested information.
6. Click **Finish** on the **Configuration** window, when the configuration is complete.

Task 4: Test the NetWorker software installation

Test a NetWorker installation by performing an ad hoc (manual) backup of a file or folder. You can also use the NetWorker Client Configuration Wizard to configure a scheduled backup. The NetWorker Administration Guide provides information about the wizard.

The procedure to test the installation differs for Windows and UNIX.

On Microsoft Windows

To test the NetWorker software on a stand-alone tape device:

1. Start the **NetWorker Console** software and then start the start the **NetWorker User** program.

   To start the **NetWorker User** program:

   a. From the **Administration** window, click **Monitoring**.

   b. From the **Monitoring** menu, select Launch NetWorker User Application.

2. In the **NetWorker User** program, click **Backup**.

   The **NetWorker User** program provides a graphical interface through which to perform adhoc backups. The NetWorker Administration Guide provides information about the **NetWorker User** program.

3. In the left pane of the **Backup** window, click the appropriate directory folder.

4. Select each directory and/or file for the adhoc backup by performing one of the following:

   • Select the directory or file and click **Mark**. To clear an item, click **Unmark**.

   • Right-click the directory or file.

   When you mark a directory or file for backup, a check mark appears next to that item.

5. Click **Start** to begin the adhoc backup.

   The **Backup Status** dialog box displays the progress of the backup. When the NetWorker server has successfully finished the backup, the following message appears:

   ```
   Backup completion time: 2-15-07 3:27p
   ```

Note: If the backup fails, an error message appears. Use the **Windows Event Viewer** to examine the event logs for additional information. Error messages are also written to the NetWorker log file. If the test backup was not successfully completed, refer to the troubleshooting information in the NetWorker Administration Guide to determine the cause.

On UNIX

To test the NetWorker software on a stand-alone device, you can perform an adhoc backup from the command-prompt by using the **save** command.

For example, to back up C:\myfile to the server jupiter, type:

save -s *jupiter /tmp/myfile.txt*

The UNIX man pages provides more information.

Licensing and Enabling the Software

The chapter includes these sections:

How NetWorker software is licensed

NetWorker software and added features, such as modules, are installed in evaluation mode with all of the features enabled. The licensing of NetWorker software means entry of enabler and authorization codes on the server for the NetWorker environment. Without these codes, the software or added features will *not* run beyond the evaluation period.

Each installation of NetWorker server software must be licensed with a base enabler. This enabler "turns on" the software and allows you to use a particular bundle of features, such as a specified number of clients and devices. All licensing takes place on the server. The licenses are entered and stored on the server. The server enforces the licensing.

Base enablers come in different editions, which enable varying degrees of functionality. Add-on enablers allow a broader scope of features.

The steps in this chapter assume that the NetWorker software is installed and that all of the software and hardware requirements have been met on the computer that will access the NetWorker Management Console.

The evaluation process

You can evaluate NetWorker software two ways:

◆ By evaluating a new installation of the software on a NetWorker server.

◆ By evaluating NetWorker features on an existing NetWorker installation.

Evaluating a new installation

When you first install the NetWorker software, you can evaluate it with all the modules and features for 30 days free without entering any codes.

By the end of the evaluation period, you must purchase, enter, and authorize a base enabler to continue to use the NetWorker software to back up data. The base enabler is the license that enables the edition purchased.

To continue to use some of the modules and features that were available with the evaluation software, you might need to purchase add-on enablers, depending on the edition of the base enabler.

Evaluating features on an existing installation

If you are evaluating one or more NetWorker Modules or features on an edition of NetWorker software that has already been installed and enabled, enter a temporary enabler for each module or feature. The temporary enabler is valid for 45 days.

To obtain a temporary enabler code, do one of the following:

◆ Go to the http://Powerlink.EMC.com website, select **Support** > **Product Registration and License Keys**, and then follow the instructions for your product.

◆ Refer to the EMC Information Protection Media Kit.

By the end of the evaluation period, you must purchase, install, and authorize the corresponding license enablers to continue to use modules or features you have evaluated.

◆ "The licensing process" on page 117 provides instructions.

◆ "Multiplatform licensing" on page 119 provides information on the different NetWorker features.

How to enter a temporary enabler code

⚠️ **CAUTION**

The temporary enabler code is valid on only one computer in a network. If you enter the same code on more than one computer in a network, a copy protection violation error occurs and the NetWorker server software is disabled on all NetWorker servers with duplicate enablers.

To enter the temporary enabler code:

1. Start the **NetWorker Management Console** software.

2. Open the **Administration** window:

   a. In the **Console** window, click **Enterprise**.

   b. In the left pane, select a NetWorker server in the **Enterprise** list.

   c. In the right pane, select the application.

   d. From the **Enterprise** menu, click **Launch Application**.

   The **Administration** window is launched as a separate application.

3. From the **Administration** window, click **Configuration**.

4. In the left pane, select **Registration**.

5. From the **File** menu, select **New**.

6. In the **Enabler Code** attribute, type the enabler code.

7. In the **Name** attribute, type the name of the license.

8. (Optional) In the **Comment** attribute, type a description of the license.

9. Click **OK**.

The licensing process

To permanently use NetWorker software, you must purchase and enter a license enabler code, and then authorize it. This licensing process is the same for all editions of NetWorker software as well as for individual modules and features.

The license enabler code that you purchase is valid for 45 days, as a registration period. During the registration period, you must obtain and enter a corresponding authorization code.

These sections explain how to enter and authorize the license enabler:

◆ "Task 1: Enter the license enabler code" on page 118

◆ "Task 2: Obtain an authorization code" on page 118

◆ "Task 3: Enter the authorization code" on page 119

Task 1: Enter the license enabler code

> **Note:** To save time when entering multiple licenses, enter the base enabler last. Otherwise, once a base enabler is entered, devices that do not yet have licenses entered may be disabled. Those devices would have to be reenabled manually after their licenses are installed.

To enter the license enabler code:

1. Start the **NetWorker Management Console** software.

2. Open the **Administration** window:

   a. In the **Console** window, click **Enterprise**.

   b. In the left pane, click a NetWorker server in the **Enterprise** list.

   c. In the right pane, click the application.

   d. From the **Enterprise** menu, select **Launch Application**.

   The **Administration** window is launched as a separate application.

3. In the **Administration** window, click **Configuration**.

4. In the left pane, select **Registrations**.

5. From the **File** menu, select **New**.

   The **Create Registration** dialog box appears.

6. In the **Enabler Code** attribute, type the enabler code.

7. In the **Name** attribute, type the name of the license.

8. (Optional) In the **Comment** attribute, type a description of the license.

9. Click **OK**.

The new license is added and appears in the right pane. Repeat Step 1 to Step 9 to add any additional enabler codes.

After you type a license enabler code, you have 45 days as a registration period to authorize the NetWorker software.

Task 2: Obtain an authorization code

Registration of NetWorker software occurs by obtaining an authorization code.

To obtain a unique authorization code:

1. Go to the http://Powerlink.EMC.com website.

2. Select **Support** > **Product Registration and License Keys** and follow the instructions for your product.

⚠ **IMPORTANT**

If the software or feature is *not* authorized by the end of the 45-day registration period, the NetWorker backup function or feature is disabled. However, data that was backed up during the registration period can still be recovered from local devices.

Task 3: Enter the authorization code

To complete the licensing process, you must enter the unique authorization code on the NetWorker server within 45 days of entering the license enabler code.

If the authorization process is successful, the expiration date for the license displays:

`Authorized - No expiration date.`

If the authorization is not verified in this way, contact the http://Powerlink.EMC.com website.

To avoid an interruption in scheduled backups if you move the NetWorker software from one computer to another, or to change the network address of a computer after the software is installed, perform one of the following:

◆ Obtain a new authorization code. You need the host ID of the original server as well as the new server. The host ID appears in the server's Registration window.

◆ Install and configure the NetWorker License Manager software. "Managing licenses" on page 122 provides information on use of the NetWorker License Manager, and the latest NetWorker License Manager Installation and Administration Guide.

To enter the authorization code:

1. Start the **NetWorker Management Console** software.

2. Open the **Administration** window:

    a. In the **Console** window, click **Enterprise**.

    b. In the left pane, select a NetWorker server in the **Enterprise** list.

    c. In the right pane, click the application.

    d. From the **Enterprise** menu, select **Launch Application**.

    The **Administration** window is launched as a separate application.

3. In the **Administration** window, click **Configuration**.

4. In the left pane, select **Registration.**

5. In the right pane, select a license.

6. From the **File** menu, select **Properties**.

7. In the **Auth Code** attribute, type the authorization code for the product. The authorization code is the code assigned to the specified permanent enabler or update enabler code.

8. Click **OK**.

The license is now permanently enabled.

Multiplatform licensing

The client connections that come with a NetWorker server can be used for only that server platform. A NetWorker ClientPak license allows the NetWorker server to back up clients of different platforms. For example:

◆ The client connections that accompany a NetWorker server for Microsoft Windows can be used for Windows client computers only.

◆ The client connections that accompany a NetWorker server for Solaris can be used for Solaris clients only.

With a ClientPak for UNIX, other UNIX platforms can be enabled for use with a NetWorker server for Solaris. The ClientPak for UNIX supports all UNIX platforms. The ClientPak for UNIX is sufficient for all UNIX clients (backed up by a UNIX or Windows server).

Note: The NetWorker software treats Linux as a separate operating system. A ClientPak for Linux is necessary to back up Linux clients by either UNIX or Windows servers.

Example 2   **Multiplatform licensing scenarios**

A company was using a Linux server to back up Solaris, Linux, and Microsoft Windows clients. It needed two ClientPak licenses, one for Solaris and one for Microsoft Windows. The company added HP-UX and AIX clients, which required the addition of a ClientPak license for UNIX.

As the company grew and needed to add a server, it added a Windows 2000 server, which backed up the existing Windows clients and subsequent Windows 2000 clients without requiring a ClientPak. The company assigned the NetWorker server to a Solaris computer to back up the HP-UX, Solaris, and AIX clients by using a single ClientPak for UNIX.

Update enablers

To update existing NetWorker software to a major release, an update enabler is necessary. Update enablers are required for any major NetWorker software upgrade from release 4.0 and later, including the current NetWorker release. To use the NetWorker License Manager, the NetWorker server must be release 5.0 or later.

With a first-time purchase of NetWorker software, a one-year update agreement may be included. After a year, an update enabler may be acquired with a new update agreement purchase.

Table 35 on page 121 lists the NetWorker releases that require update enablers.

Table 35   NetWorker update enablers

Upgrade from	to 5.0	to 5.5	to 5.5.x	to 5.6	to 5.7	to 6.x	to 7.0	to 7.1	to 7.2	to 7.3	to 7.4
Any release prior to 5.0	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
5.0		yes	yes	yes	yes	yes	yes	yes	yes	yes	no
5.5			yes	yes (UNIX only)	yes (NT only)	yes	yes	yes	yes	yes	no
5.5.x				yes (UNIX only)	yes (NT only)	yes	yes	yes	yes	yes	no
5.6					NA*	yes	yes	yes	yes	yes	no
5.7						yes	yes	yes	yes	yes	no
6.0						no	yes	yes	yes	yes	no
7.0								yes	yes	yes	no
7.1									yes	yes	no
7.2										yes	no
7.3										yes	no

Note: * Release 5.6 is UNIX only, and release 5.7 is Microsoft Windows only. NT refers to Microsoft Windows NT.

Additional licenses

This section describes a few of the additional licenses required to operate some of the NetWorker features.

Client connection licenses

Every computer to be backed up in a NetWorker datazone requires a client connection license, even the NetWorker server. The client connection license may be one of the licenses that is supplied with the base enabler or purchased separately. A cluster client or NDMP data server requires a special type of client connection license.

Storage nodes

Each storage node requires a storage node license, in addition to its client connection license. A dedicated storage node, which allows the storage node to back up only itself, is licensed separately.

NetWorker Application Modules

NetWorker Application Modules are licensed on the basis of one enabler per database type host. For example, to back up the Oracle database on two hosts, two NetWorker Module for Oracle enablers are required, even if the two hosts are backed up by the same server. However, if multiple database instances are running on a NetWorker client host, only one NetWorker Module enabler is required for that one host.

Cluster clients

For each physical node in a cluster, you must purchase a Cluster Client Connection. The NetWorker Administration Guide provides information on how to license computers in a cluster.

NDMP licensing

NDMP licensing requires one NDMP Client Connection per NAS array.

Managing licenses

The NetWorker License Manager software provides centralized license management, which enables you to maintain all of an enterprise's NetWorker licenses from a single computer. With the NetWorker License Manager, you can move NetWorker software from one computer to another, or change the IP address on an existing NetWorker server without having to reauthorize the software. The NetWorker License Manager can be installed as an option during the NetWorker software installation.

To begin to implement the NetWorker License Manager:

1. Obtain bulk enabler codes. For contact information, go to http://Powerlink.EMC.com.

2. Install the NetWorker License Manager software.

3. Configure the NetWorker License Manager software.

4. Configure the NetWorker servers to access the NetWorker License Manager for their licenses.

The latest NetWorker License Manager Installation and Administration Guide provides more information on how to install and use the NetWorker License Manager.

A

Sample stinit.def File and Man Page

This appendix includes these sections:

Sample stinit.def file

For optimal tape device performance, and to ensure that all NetWorker tape operations function properly, EMC recommends that you modify the stinit.def file in the /etc directory, as appropriate for your device.

Note: The package that provides the **stinit** binary is **mt-st**.

Each stinit.def file definition is specific to the manufacturer and model of the tape device being configured for NetWorker operations, and is based on the requirements defined in the **stinit(8)** Linux man page. For further information about **stinit(8)**, **stinit**(8), **st**(4), **mt**(1) in the Linux kernel source tree.

Usage

The examples in this appendix are intended only to be used as guidelines and should be installed as /etc/stinit.def after necessary modifications have been made for the tape device model and manufacturer. Once installed, reboot the system to ensure that the settings in this file will be used.

To ensure you have accurate and current stinit.def file information, refer to the tape device manufacturer's requirements for the specific device and model being used. In addition, the EMC Information Protection Software Compatibility Guide provide **stinit** file definition information to which you can refer.

Examples of the stinit file

The following definitions are a few examples for devices supported by the NetWorker software, and are based on the instructions in the **stinit**(8) manual page released with Linux 7.0 and later.

Device requirements might be different than the parameters specified in these examples. Users can change these sample definitions to specify the manufacturer and model fields in the /etc/stinit.def file to correspond to the actual tape device being defined, and modify the suboptions as necessary.

Note: The manufacturer, model, and revision strings can be obtained from the file /proc/scsi/scsi by using the **cat /proc/scsi/scsi** command. Replace the *XYZ* and *UVWx* strings that are displayed in the following examples with the manufacturer and model of your drive.

Common definitions to all devices in the examples:

```
{buffer-writes read-ahead async-writes }
```

SONY AIT-3

```
manufacturer=SONY model = "SDX-700C" {
can-bsr scsi2logical drive-buffering
timeout=800
long-timeout=14400
mode1 blocksize=0 density=0x00  # as close as possible to st.conf
   entry }
```

Noncompressing DAT (DDS-1)

```
manufacturer=XYZ model = "UVW1" {
scsi2logical=1 can-bsr can-partitions auto-lock
mode1 blocksize=0
mode2 blocksize=1024 }
```

Compressing DAT (DDS-1-DC or DDS-(234))

```
manufacturer=XYZ model = "UVW2" {
scsi2logical=1 can-bsr can-partitions auto-lock
mode1 blocksize=0 compression=1
mode2 blocksize=1024 compression=1
mode3 blocksize=0 compression=0
mode4 blocksize = 1024 compression=0 }
```

QIC-150 drive

```
manufacturer=XYZ model="UVW3" {
mode1  # blocksize=512 defined by drive }
```

QIC-320/525 drive

```
manufacturer=XYZ model="UVW4" {
defs-for-writes
mode1 blocksize=0 density=0x11     # QIC-320
mode2 blocksize=1024 density=0x11  # QIC-320
mode3 blocksize=512 density=0x10   # QIC-150 }
```

Exabyte 8505 and other similar 8 mm helical scan drivers

```
manufacturer=XYZ model = "UVW5" {
scsi2logical=1 can-bsr auto-lock
mode1 blocksize=0 density=0x8c  # 8500 density, compressing
mode2 blocksize=0 density=0x15  # 8500 density, no compression
mode3 blocksize=0 density=0x90  # 8200 density, compressing
mode4 blocksize=0 density=0x14  # 8200 density, no compression }
```

Reel-to-Reel tape with 6250/1600/800 bpi densities

```
manufacturer=XYZ model = "UVW6" {
can-bsr two-fms
mode1 blocksize=0 density=3   # 6250 bpi
mode2 blocksize=0 density=11  # 1600 bpi
mode3 blocksize=0 density=1   #  800 bpi }
```

The stinit(8) man page

This section provides the **stinit(8)** man page contents. The program and the manual page are copyrighted by Kai Makisara, 1998-2001. They can be distributed according to the GNU Copyleft. EMC expressly disclaims any rights in or responsibility for the contents of this appendix. This man page may be obtained from www.fifi.org/cgi-bin/man2html?stinit+8.

stinit [-f conf_file] [-h] [-p] [-r] [-v] [devices...]

Description

This man page documents the tape control program **stinit** that can be used to initialize SCSI tape drive modes at system startup, after loading the tape driver as module, or after introducing a new device to the SCSI subsystem at runtime. The initialization is performed by sending **ioctl** commands to the drive.

The commands are defined in a text file that is indexed using the inquiry data the drive returns (manufacturer, device, revision). Values for all of the general and mode-specific SCSI tape parameters up to Linux version 2.4.15 can be initialized.

Options

Table 36 on page 126 lists the options for the **stinit(8)** man page.

Table 36   **stinit(8) Man Page Options**

Option	Description
-f	Specifies the name of the text file containing the definitions for different tape drive types. By default **stinit** tries to find the definition file *stinit.def* or */etc/stinit.def* (in this order).
-h	Print the usage information.
-p	The definition file is parsed but no tape drive initialization is attempted. This option can be used for testing the integrity of a definition file after changes have been made.
-r	Rewind every device being initialized.
-v	The more **-v** options (currently up to two), the more verbose output.
--version	Print the program version.

The devices being initiated

If the program is started without arguments, it tries to find all accessible SCSI tape devices and the device files for the different modes of the devices. The tape drives are searched in the scanning order of the kernel, and searching stops at the first nonexisting tape. All of the found devices are initialized if a matching description is found from the parameter file. Note that a mode for a device is not initialized if the corresponding device file is not found, even if a matching description for the mode exists. The nonrewind device is preferred over the auto-rewind device for each mode. If the directory /dev/tapes is found, the devfs file system is assumed. The configuration file is a simple text file that contains descriptions of tape drives and the corresponding initialization parameters. The parameter definition blocks are delimited by braces [{ }]. Specification of the drive description is restarted after each parameter definition block.

The drive descriptions and the parameter definitions consist of name = value pairs. The value is either a numeric parameter, a string with no blanks, or a quoted string. If =value is omitted, the value "1" is used. If the number sign [#] is found in an input line, the rest of the line is discarded. This allows use of comments in the definition file.

The following example contains definitions for one type of tape drives:

```
# The XY dat
  manufacturer=XY-COMPANY model = "UVW DRIVE" {
  scsi2logical=1 # Common definitions for all modes
  can-bsr can-partitions auto-lock
  # Definition of modes
  mode1 blocksize=0 compression=1
  mode2 blocksize=1024 compression=1
  mode3 blocksize=0 compression=0
  mode4 blocksize = 1024 compression=0 }
```

The devices are identified by using the following keywords corresponding to the data the tape device returns in response to the SCSI **inquiry** command. The matches are case-sensitive and performed up to the length defined in the configuration file (permitting use of partial matches).

Table 37 on page 127 lists device identification.

Table 37　**Device identification**

Keyword	Description
manufacturer=	This keyword specifies the string that must match the vendor identification returned by the device.
model=	This keyword defines the string that must match the product identification returned by the device.
revision=	This keyword matched the string that must match the product revision level returned by the device.

All of the matching initializations are collected in the order they are defined in the file. This means that common parameters can be defined for all devices using zero keywords for a definition block. Another consequence is that, for instance, some parameters can be easily given different values for a specific firmware revision without repeating the parameters common to all revisions.

The tape parameters are defined using the following keywords. More thorough descriptions of the parameters can be found in the **st(4)** man page or in the drivers/scsi/README.st file in the Linux kernel source tree. The keywords are matched using only the first characters. The part of the keywords not used in matching is enclosed in brackets. The numeric values may be specified either in decimal notation or hexadecimal notation (using the prefix 0x).

Return Value

The program exits with value of one if the command line is incorrect, the definition file is not found, or the **-p** option is given and parsing the definition file fails. In all other cases, the return value is zero (that is, failing of initialization is not currently signaled by the return value).

Table 38 on page 127 lists tape parameter information.

Table 38　**Tape parameter information (1 of 2)**

Value	Description
no-w[ait]	The immediate mode is used with commands like rewind if value is non-zero (that is, the driver does not wait for the command to finish).
mode=_value_	This keyword starts the definition of the tape mode value. The value of this mode must be between 1 and 4.
disab[led]=_value_	This mode is disabled for this device if value is non-zero. Can be used if some mode defined in a more general definition should be disabled by a more specific definition for some device (for example, for a device with buggy firmware level).
block[size]=_value_	The default tape block size is set to value bytes. The block-size zero means variable block mode.
dens[ity]=_value_	The tape density code is set to value.

Table 38   Tape parameter information (2 of 2)

Value	Description
buff[ering]=_value_	The buffered writes by the driver in fixed block mode are enabled if value is non-zero.
async[-writes]=_value_	Asynchronous writes by the driver are enabled if value is non-zero.
read[-ahead]=_value_	Read-ahead by the driver in fixed block mode is allowed if value is non-zero.
two[-fms]=_value_	Two filemarks are written when a file being written to is closed if value is non-zero. By default, one filemark is written.
comp[ression]=_value_	Compression of the data by the drive is enabled if value is non-zero. Note that the tape driver cannot enable compression for all drives that can compress data. Note also that some drives define compression by using density codes.
auto[-lock]=_value_	The tape drive door is locked automatically when the device file is opened and if the value is non-zero.
noblk[limits]=_value_	The tape driver does not use the READ BLOCK LIMITS SCSI command when the device is being opened if value is non-zero. This is for the drives that do not support this SCSI command.
can-p[artitions]=_value_	The support for tape partitions is enabled if value is non-zero.
scsi2[logical]=_value_	Logical block addresses are used in the MTSEEK and MTIOCPOS commands if value is non-zero. The default is to use the device-specific addresses.
defs-for-w[rites]=_value_	The parameters defining the tape format (density, block size) are forced when writing starts at the beginning of a tape if value is non-zero. The default is to change these parameters each time the device is opened at the beginning of a tape (or the mode is changed in the middle of a tape).
timeout	The normal timeout for the device is set to _value_ seconds.
long-time[out]	The long timeout for the device is set to _value_ seconds.

Restrictions

With the exception of the **-p** option, only the superuser can use the **stinit** program. This is because the program uses **ioctls** that are allowed only for the superuser.