EMC®NetWorker™

Installation Guide

EMC²

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REVISION HISTORY

Email your clarifications or suggestions for this document to:

BRSdocumentation@emc.com

The following table lists the revision history of this document.

Revision	Date	Description of added or changed sections
05	Oct 22, 2013	Updated the Linux chapter to include a step to specify a more generic example when setting the LD_LIBRARY_PATH environment variable when you change the default installation location. "Changing the software installation directory" on page 94.
04	Sept 30, 2013	Updated the Linux chapter to include a step to set the LD_LIBRARY_PATH environment variable when you change the default installation location. "Changing the software installation directory" on page 94.
03	Aug 27, 2013	Updated supported NMM version in "Interoperability and backward compatibility considerations" on page 35.
02	July 29, 2013	Updated RHEL package requirements in Table 10 on page 90.
01	Dec 14, 2012	First release of this document for Directed Availability (DA) of *EMC NetWorker Release 8.0. SP1*

PREFACE

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

Contact your EMC representative if a product does not function properly or does not function as described in this document.

Note: This document was accurate at publication time. New versions of this document might be released on the EMC online support website. Check the EMC online support website to ensure that you are using the latest version of this document.

Audience

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

NetWorker product documentation

The following EMC publications provide additional information:

◆ *NetWorker Administration Guide* — Describes how to configure and maintain the NetWorker software.

◆ *EMC NetWorker Cluster Installation Guide* — Describes how to install and administer the NetWorker software on cluster servers and clients.

◆ *EMC NetWorker Release Notes*
Contain information on new features and changes, fixed problems, known limitations, environment and system requirements for the latest NetWorker software release.

◆ *EMC NetWorker and EMC Data Domain Deduplication Devices Integration Guide*
Provides planning and configuration information on the use of Data Domain devices for data deduplication backup and storage in a NetWorker environment.

◆ *EMC NetWorker and VMware Integration Guide*
Provides planning and configuration information on the use of VMware in a NetWorker environment.

◆ *EMC NetWorker and EMC Avamar Integration Guide*
Provides planning and configuration information on the use of Avamar in a NetWorker environment.

◆ *EMC NetWorker Error Message Guide*
Provides information on common NetWorker error messages.

◆ *EMC NetWorker Performance Optimization Planning Guide*
Contains basic performance tuning information for NetWorker.

◆ *EMC NetWorker Server Disaster Recovery and Availability Best Practices Guide*
Describes how to design and plan for a NetWorker disaster recovery. However, it does not provide detailed disaster recovery instructions. The Disaster Recovery section of the NetWorker Procedure Generator (NPG) provides step-by-step disaster recovery instructions.

◆ *EMC NetWorker Command Reference Guide*
Provides reference information for NetWorker commands and options.

◆ *EMC NetWorker Licensing Guide*
Provides information about licensing NetWorker products and features.

◆ *EMC NetWorker License Manager 9th Edition Installation and Administration Guide*
Provides installation, setup, and configuration information for the NetWorker License Manager product.

◆ *EMC NetWorker Software Compatibility Guide* lists supported client, server, and storage node operating systems for NetWorker, NetWorker Modules, and options.

◆ EMC NetWorker Management Console Online Help
Describes the day-to-day administration tasks performed in the NetWorker Management Console and the NetWorker Administration window. To view Help, click Help in the main menu.

◆ EMC NetWorker User Online Help
The NetWorker User program is the Windows client interface. The NetWorker User Online Help describes how to use the NetWorker User program, which is the Windows client interface connect to a NetWorker server to back up, recover, archive, and retrieve files over a network.

◆ EMC NetWorker Procedure Generator
The NetWorker Procedure Generator (NPG) is a stand-alone Windows application used to generate precise user driven steps for high demand tasks carried out by customers, support, and the field. With the NPG, each procedure is tailored and generated based on user-selectable prompts. This generated procedure gathers the most critical parts of NetWorker product guides and combines experts' advice into a single document with a standardized format.

To access the NetWorker Procedure Generator, log on to:
http://support.emc.com
You must have a valid service agreement to use this site.

◆ Technical Notes and White Papers — Provide an in-depth technical perspective of a product or products as they apply to critical business issues or requirements. Technical notes and white papers include:

  • Technology and business considerations

  • Applied technologies

  • Detailed review

  • Best practices planning

Conventions used in this document

EMC uses the following conventions for special notices:

NOTICE

NOTICE is used to address practices not related to personal injury.

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

IMPORTANT

An important notice contains information essential to software or hardware operation.

Typographical conventions

EMC uses the following type style conventions in this document:

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, functions, and utilities • URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, and notifications
Bold	Used in running (nonprocedural) text for names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, and man pages Used in procedures for: • Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus • What the 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 the 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 enclose content that the user must specify, such as 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 information about EMC products, licensing, and service, go to the EMC online support website (registration required) at:

http://support.emc.com

Technical support — For technical support, go to EMC Online Support Site and select **Support** › **Request Support**. On the Support page, you will see several options, including one to Live Chat with a support technician. Note to request support, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to:

BRSdocumentation@emc.com

CHAPTER 2
Introduction

This chapter includes these sections:

About the NetWorker product

The EMC® NetWorker® product is a storage management software suite that provides backup, recovery, and other services to hosts 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 Online Support Site web site.

The NetWorker product has these components:

◆ NetWorker client

◆ NetWorker storage node

◆ NetWorker server

◆ NetWorker management console server

◆ NetWorker language packs

◆ NetWorker license manager

NetWorker client

The NetWorker client software communicates with the NetWorker server and provides client initiated backup and recover functionality. The NetWorker client software is installed on all hosts that are backed up to the NetWorker server.

NetWorker storage node

Data is backed up directly to devices local to a NetWorker server or remotely to a NetWorker storage node. A storage node controls storage devices such as tape drives, disk devices, autochangers, and silos. The NetWorker server is a local storage node.

A remote NetWorker storage node:

◆ Off-loads most of the data movement involved in a backup or recovery operation from the NetWorker server

◆ Improves performance.

◆ Requires high I/O bandwidth to manage the transfer of data transfer from local clients, or network clients to target devices.

◆ Can be a different operating system from the NetWorker server.

NetWorker server

The NetWorker server provides services to back up and recover data for the NetWorker client hosts in a datazone. The NetWorker server can also act as a storage node and control multiple remote storage nodes.

Index and media management operations are some of the primary processes of the NetWorker server:

◆ The client file index tracks the files that belong to a save set. There is one client file index for each client.

◆ The media database tracks:

 • The volume name.

 • The location of each save set fragment on the physical media (file number/file record).

 • The backup dates of the save sets on the volume.

 • The file systems in each save set.

◆ Unlike the client file indexes, there is only one media database per server.

◆ The client file indexes and media database can grow to become prohibitively large over time and will negatively impact backup performance.

◆ The NetWorker server schedules and queues all backup operations, tracks real-time backup and restore related activities, and all Console server communication.

  This information is stored for a limited amount of time in the jobsdb database which for real-time operations, has the most critical backup server performance impact. The data stored in the jobsdb database is not required for restore operations.

NetWorker Management Console server

The NetWorker Management Console (NMC) server or Console server, is a Java based web application server that provides centralized:

◆ Management of multiple NetWorker servers across multiple datazones.

◆ Monitoring of multiple NetWorker servers across multiple datazones.

◆ Backup reporting of multiple NetWorker servers across multiple datazones.

The Console server:

◆ Is installed on an AIX, Linux, Solaris, or Microsoft Windows host.

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

  Multiple users can access the Console server concurrently from different browser sessions. A host that hosts the web-enabled browser can also be a NetWorker client, server, or storage node.

◆ Embeds the Apache server 2.2.21 software.

The apache software is used to:

- Download of the Console jar files.

- Startup of the Console server daemon or service.

◆ Embeds the Sybase SQL Anywhere software.

The Console server database is a Sybase SQL Anywhere database.

NetWorker datazone

A NetWorker datazone is a single NetWorker server and its client and storage node hosts.

NetWorker daemons

The NetWorker software requires processes on Windows or daemons on UNIX to run on the system and facilitate NetWorker operations in the datazone.

Table 1 on page 16 lists the NetWorker daemons for each of the software components.

Table 1 NetWorker daemons

NetWorker packages	NetWorker daemons
NetWorker server	nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd, nsrlogd, nsrcpd
NetWorker client	nsrexecd
NetWorker storage node	nsrexecd, nsrmmd, nsrlcpd, nsrsnmd
NetWorker Management Console server	gstd, httpd, dbsrv12, gstsnmptrapd (optional)

Consider the following:

◆ The nsrmmd process or daemon is present when one or more devices are enabled.

◆ The nsrmmgd process or daemon is present on the NetWorker server when a library is enabled.

◆ The nsrlcpd process or daemon is present on a NetWorker server and storage nodes with an attached library.

◆ The nsrcpd process or daemon is present on the NetWorker server during a client push software upgrade.

◆ The Console server daemon, gstd starts these additional processes:

- dbsrv12 — the SQL Anywhere database process.

- httpd — there will be 2 or more httpd processes.

- gstsnmptrapd — an optional process that is present on the Console server when SNMP Trap monitoring is configured for a Data Domain system.

Supported storage devices

Storage devices are attached to a NetWorker server or to a designated storage node.

The NetWorker software supports a variety of media types and devices including:

◆ Disk devices

◆ Stand-alone tape devices

◆ Tape devices in an autochanger or silo tape library

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

   • Autoloader

   • Carousel

   • Datawheel

   • Jukebox

   • Library

   • Near-line storage

The *NetWorker 7.3 (and Later) Hardware Compatibility Guide* provides the most up-to-date list of supported devices.

Enabler codes

Enabler codes or licenses activate the functionality of the NetWorker software and are generally sold separately. The *NetWorker 8.0 License Guide* provides more information.

CHAPTER 3
Getting Started

This chapter provides a summary roadmap of the NetWorker software installation and update process:

Installation roadmap

Use this roadmap to install the NetWorker software, on a host that does not have a previous version of the NetWorker software installed.

1. "Software Requirements" on page 23 provides the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. Review the operating system specific chapter to install the NetWorker server, storage node, Console server, and client software:

   - "AIX Installation" on page 65 describes how to install the NetWorker software on the supported AIX operating systems.

   - "HP-UX Installation" on page 79 describes how to install the NetWorker software on the supported HP-UX operating systems.

   - "Linux Installation" on page 87 describes how to install the NetWorker software on the supported Linux operating systems.

   - "Mac OS-X Client Installation" on page 109 describes how to install the NetWorker software on the supported Mac OS-X operating systems.

   - "Solaris Installation" on page 113 describes how to install the NetWorker software on the supported Solaris operating systems.

   - "Microsoft Windows Installation" on page 127 describes how to install the NetWorker software on the supported Windows operating systems.

3. "Verifying the Installation" on page 151 describes how to test the NetWorker software functionality.

4. Enable and register the NetWorker products. The *NetWorker 8.0 Licensing Guide* provides information.

Update roadmap

Use this roadmap to update the NetWorker software from a previous release.

1. "Software Requirements" on page 23 provides the general requirements and considerations that are applicable to all of the supported Windows and UNIX operating systems.

2. "Updating from a previous release" on page 33 describes how to update the NetWorker software on all of the supported operating systems in three different scenarios:

   - "Update the NetWorker software from 8.0" on page 34 describes how to update the NetWorker software from NetWorker 8.0.

   - "Update the NetWorker software from 7.6.x" on page 39 describes how to update the NetWorker software from NetWorker 7.6.x.

   - "Update the NetWorker software with the client push feature" on page 53 describes how to use Software Distribution feature to update the NetWorker client and storage nodes.

   - "Update from a different bit version of NetWorker (32-bit, 64-bit)" on page 63 describes how to update a NetWorker server from a 32-bit operating systems to a 64-bit operating system, before updating the NetWorker software.

3. Review the operating system specific chapter to install the NetWorker server, the storage node, the Console server, or the client software:

   - "AIX Installation" on page 65 describes how to install the NetWorker software on the supported AIX operating systems.

   - "HP-UX Installation" on page 79 describes how to install the NetWorker software on the supported HP-UX operating systems.

   - "Linux Installation" on page 87 describes how to install the NetWorker software on supported the Linux operating systems.

   - "Mac OS-X Client Installation" on page 109 describes how to install the NetWorker software on the supported Mac OS-X operating systems.

   - "Solaris Installation" on page 113 describes how to install the NetWorker software on the supported Solaris operating systems.

   - "Microsoft Windows Installation" on page 127 describes how to install the NetWorker software on the supported Windows operating systems.

4. "Verifying the Installation" on page 151 describes on how to test the NetWorker software functionality.

5. Enable and register the NetWorker products. The *NetWorker 8.0 Licensing Guide* provides more information.

CHAPTER 4
Software Requirements

This chapter provides the general software requirements and considerations for the NetWorker software:

Package disk space requirements

This section provides information about the available NetWorker software packages for each supported operating system.

Download the NetWorker software package from the EMC Online Support Site and extract the packages to a temporary location on the target host.

Ensure that there is sufficient disk space on the host to contain both the compressed NetWorker software package and the fully uncompressed files.

Table 2 on page 24 provides a list of NetWorker packages and the compressed and uncompressed file sizes.

Table 2 Size of compressed and uncompressed files

Operating system	Compressed file	Uncompressed file
AIX 32-bit	245 MB	663 MB
AIX 64-bit	151 MB	414 MB
HP-UX	156 MB	453 MB
HP-UX itanium	321 MB	1.22 GB
Linux s390	22 MB	22 MB
Linux IBM PowerPC	20 MB	20 MB
Linux x86	275 MB	270 MB
Linux x86-64	295 MB	289 MB
Linux Itanium	240 MB	235 MB
Mac OS X	104 MB	102 MB
Solaris x86	74 MB	373 MB
Solaris x86-64	316 MB	903 MB
Solaris AMD	251 MB	1.14 GB
Windows x64	193 MB	201 MB
Windows x86	171 MB	176 MB

Multi-locale datazone requirements

This section provides information to consider, when using the NetWorker software in a multi-locale datazone.

In a multi-locale datazone you can configure hosts to run in different locales. The NetWorker software supports a multi-locale datazone.

The NetWorker command line interface (CLI), the Console server graphical user interface (NMC GUI) and the NetWorker client GUIs, including the NetWorker User program and the **nwrecover** program are I18N compliant.

In a multi-locale datazone, users can display data and remotely manage their NetWorker environment in the locale defined on their local host. Different locales on the local host, the NetWorker server, and the Console server are supported.

The NetWorker software includes language pack support for the French, the Japanese, the Simplified Chinese, the Korean and the English locales.

The NetWorker software supports:

◆ The languages and character sets that the underlying OS support.

◆ UTF-8 encoded input and output files.

◆ Non-English scheduled backup and archive requests.

◆ Non-English mounts on UNIX hosts.

   The NetWorker software detects these mounts during a "All" save set backup.

◆ A directed recover to a non-English relocation directory.

◆ A save set recover of a non-English save set, independent of the locale of the source host.

◆ The *NetWorker 8.0 SP1 Administration Guide* describes how to perform NetWorker tasks in a multi-locale datazone.

Before you configure the NetWorker software in a multi-locale datazone, review these considerations:

◆ "General multi-locale considerations" on page 25

◆ "Windows requirements" on page 26

◆ "UNIX requirements" on page 26

General multi-locale considerations

This section describes general considerations to review before installing the NetWorker software in a multi-locale datazone.

Consider the following:

◆ To view localized textual elements such as radio buttons and menu options, the dates, the times, and the numbers in the CLI, the NMC GUI, and the NetWorker client GUIs, ensure that you:

   • Install the required language font on the operating system of the host that is accessing the application interface.

   • Enable the corresponding language locale on the operating system of the host that accesses the application interface.

   • Enable the corresponding language locale on the Console server.

   • Install the corresponding language pack included with the NetWorker software package on the NetWorker client, server, storage node and Console server.

◆ The NetWorker software does not support locales defined by the operating system or code sets that remap characters that have a special meaning for file systems, such as De_DE.646. Depending on the file system, these special characters might include the forward slash (/), the backward slash (\), the colon (:), or the period(.).

◆ If the appropriate non-English font is not available on the Console client, the localized textual elements might be rendered in English or appear as illegible.

◆ The CLI displays the data correctly when the current locale supports the characters and the encoding. However, when the user and system locales do not match on a Windows host, characters might display incorrectly.

◆ The NetWorker software provides a command line log viewer, the **nsr_render_log** program to render English log file messages into the locale of the user running the program.

◆ Message files that support localization include:

  • daemon.raw file

  • nsrcpd.raw file — the client push log

  • gstd.raw file — the Console server log file

  • networkr.raw file — the Windows recover y log file

  The *NetWorker 8.0 SP1 Administration Guide* on EMC Online Support Site provides detailed information to view raw log files.

  The *NetWorker 8.0 SP1 Command Reference Guide* or the UNIX man pages provides detailed information to use the **nsr_render_log** program.

Windows requirements

This section provides general locale requirements, when using a Windows Console client or the NetWorker User program in a multi-locale NetWorker datazone.

When non-UTF8 data from a UNIX host uses encoding that Windows does not support natively, for example euc-jp, the UNIX host data will not appear correctly on the Windows host.

The textual elements, the dates, the times, and the numbers that appear in the NMC GUI and the NetWorker User program are based on the language and the time values defined in the Regional and Language Options settings in control panel.

UNIX requirements

This section provides general locale requirements when using a UNIX Console client or the **nwrecover** program in a multi-locale NetWorker datazone.

Consider the following:

◆ A non-ASCII installation directory for the NetWorker software is not supported. Create a symbolic link of the /nsr folder to a non-ASCII directory.

◆ How the data appears in the **nwrecover** program depends on:

  • The locale setting of the UNIX host.

  • Correct X Windows configuration.

◆ To display non-English textual elements, the dates, the times, and the numbers in the NMC GUI and **nwrecover** program ensure that:

- The appropriate NetWorker language package is installed on the client.

- The locale values defined by the LC_ALL and LANG environment variables match the NetWorker language pack installed.

    For example, on Solaris:

    – To use the French NetWorker language pack, type:

        ```
        setenv LANG fr
        setenv LC_ALL fr
        ```

    – To use the Japanese NetWorker language pack, type:

        ```
        setenv LANG ja
        setenv LC_ALL ja
        ```

    – To use the Simplified Chinese NetWorker language pack, type:

        ```
        setenv LANG zh
        setenv LC_ALL zh
        ```

    – To use the Korean NetWorker language pack, type:

        ```
        setenv LANG ko
        setenv LC_ALL ko
        ```

TCP/IP requirements

This section describes the TCP/IP network communication requirements for the NetWorker software.

Consider the following:

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

◆ Ensure that the clients in the datazone:

- Can resolve the longname, the shortname, and the IP address of the NetWorker server and storage nodes that the client is configured to send the data to.

    Use the **nslookup** command to confirm name resolution is correct.

- Can resolve its own longname, shortname and IP address.

    Use the **nslookup** command to confirm name resolution is correct.

- Can successfully ping the NetWorker server by longname, shortname and IP address.

- Have a route to the NetWorker server and storage node that the client is configured to send the data to.

    Use the **tracert** command on Windows and the **traceroute** command on UNIX to confirm route paths.

◆ Ensure that the NetWorker server:

  • Can resolve the longname, shortname, and IP address of each NetWorker client and storage node host in the datazone.

    Use the **nslookup** command to confirm name resolution is correct.

  • Can resolve its own longname, shortname, and IP address.

    Use the **nslookup** command to confirm name resolution is correct.

  • Can successfully ping all of the NetWorker clients and storage nodes in the datazone by longname, shortname, and IP address.

  • Has a route to the all of the NetWorker clients and storage nodes in the datazone.

    Use the **tracert** command on Windows and the **traceroute** command on UNIX to confirm the route paths.

◆ Ensure that the NetWorker storage nodes in the datazone:

  • Can resolve the longname, shortname, and IP address of the NetWorker server.

    Use the **nslookup** command to confirm name resolution is correct.

  • Can resolve the longname, shortname and IP address of the clients that configured to send backup data to the storage node.

    Use the **nslookup** command to confirm name resolution is correct.

  • Can resolve its own longname, shortname, and IP address.

    Use the **nslookup** command to confirm name resolution is correct.

  • Can successfully ping all of the NetWorker clients and storage nodes in the datazone by longname, shortname, and IP address.

  • Has a route to the NetWorker server and the NetWorker clients that it receives data from.

    Use the **tracert** command on Windows and the **traceroute** command on UNIX to confirm route paths.

◆ The /etc/hosts file on each Solaris and Linux NetWorker client, server and storage node must contain an entry for the IPv4 loopback address:

```
127.0.0.1          localhost.localdomain localhost
```

◆ If the NetWorker server is a Dynamic Host Configuration Protocol (DHCP) client, the NetWorker server must use a reserved address that is synchronized with DNS.

◆ The TCP/IP hostname must be identical to the host name.

◆ The NetWorker software does not support hosts with an underscore character (_) in the host name.

◆ The *Configuring TCP Networks and Network Firewalls for EMC NetWorker* Technical Note on EMC Online Support Site provides:

- Best practices information for a TCP network configuration.

- How to identify and configure the required ports for the NetWorker hosts that communicate across a packet filtering or statefull inspection firewall.

- How to troubleshoot communication issues between the NetWorker hosts.

- How to configure TCPKeepAlive parameters for the supported operating systems.

IPv6 protocol considerations

This section describes the information to consider when using the IPv6 protocol in a NetWorker datazone.

Internet Protocol version 6 (IPv6) is a next generation internet protocol that is used concurrently with IPv4 or in a pure IPv6 environment.

IPv6 increases the number of available IP addresses and adds improvements the areas of routing and network autoconfiguration.

IPv6 addresses are represented by 8 groups of 16-bit hexadecimal values separated by colons (:).

For example:

```
2001:0db8:85a3:0000:0000:8a2e:0370:7334
```

When using IPv6, consider the following:

◆ Most newer operating systems configure the IPv6 loopback interface, by default.

To determine if the IPv6 loopback interface is configured on the host, use operating system tools such as **ifconfig** on UNIX and **ipconfig** on Windows.

On UNIX systems, the device name of the loopback interface is usually lo or lo0.

◆ When the IPv6 loopback interface is configured, the /etc/hosts file on all Linux and UNIX operating must have an entry that associates the IPv6 loopback interface (::1) with the localhost.

The IPv6 loopback interface entry is in addition to, and must be added before, the IPv4 loopback entry (127.0.0.1 localhost).

For example:

```
::1 localhost
127.0.0.1          localhost.localdomain localhost
```

◆ When the IPv6 loopback interface is configured, the IPv6 loopback entry must remain in the /etc/hosts file. This is required when the host is operating in a pure IPv4, pure IPv6, or dual stack configuration.

◆ The NetWorker software does not support temporary or link-local IPv6 addresses.

The client backup fails when the IPv6 address for a client:

- Is not stored in DNS or in the hosts file.

- Is not added to the client resource.

Client software requirements

Before installing NetWorker software on your client system, ensure that the specific client operating system and hardware configuration is supported.

The *EMC NetWorker Software Compatibility Guide* provides the most up-to-date information about compatibility.

When configuring Avamar deduplication backups, consider the following cache file size requirements:

◆ Caches require additional disk space. The number of caches vary depending on the number of backup paths included in the Save set attribute of the Client resource.

◆ Each backup path in the Save set attribute requires two caches:

- a file cache

- a cache for hash tables

You can configure a file cache up to 1/8 of the RAM on the host, and the hash cache up to 1/16 of the RAM. The maximum size of each cache however, cannot exceed 2 GB.

The maximum disk space required for caching is the sum of the maximum size of the file and hash caches, multiplied by the number of backup paths.

Storage node and device requirements

Before you install the NetWorker software on a storage node, ensure that the operating system recognizes the devices.

To avoid potential data loss when using tape devices:

◆ Ensure that the block-size mode for the tape devices is variable. Otherwise, the data recover might fail. The procedure to setup the device block size varies depending on the operating system.

◆ Use a nonrewinding tape device for NetWorker backups. The NetWorker software writes a filemark on the volume at the end of each backup. When the next backup occurs, the NetWorker software appends the 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. The data is unrecoverable.

Configuring Tape Devices for EMC NetWorker Technical Note on EMC Online Support Site provides best practices on how to configure tape devices for use by NetWorker server and storage nodes.

Server requirements

Before installing the NetWorker server software, review:

◆ *NetWorker 8.0 SP1 Performance Optimization and Planning Guide* describes how to plan, test, and optimize the NetWorker environment.

◆ *Configuring Tape Devices for EMC NetWorker Technical Note* describes how to configure tape devices in the NetWorker datazone.

◆ *Configuring TCP Networks and Network Firewalls for EMC NetWorker* describes how to identify and configure the ports required for NetWorker host communication across a packet filtering or stateful inspection firewall.

◆ The *EMC NetWorker Software Compatibility Guide* for the most up-to-date information about compatibility.

Console server requirements

Before installing the Console server software:

◆ Install Java Runtime Environment (JRE) 1.6.x or 1.7 on the Console server to:

 • Enable the command line reporting feature.

 • Download and display the console client GUI on the Console server host.

◆ JRE is not packaged with NetWorker 8.0 SP1. If JRE is not installed on the host, downloaded the software from http://java.com/en/download/manual.jsp.

◆ The Console server software requires the NetWorker client software to be installed on the system.

◆ The Console server software can be installed on the NetWorker server but it is not recommended when:

 • The NetWorker server manages 50 or more clients.

 • The Console server will monitor multiple datazones.

◆ The minimum system requirements for a Console server host is 1 GHz with 512 MB of RAM.

 To monitor:

 • 50 servers: Use a Console server with at least Dual 1 GHz processors and no less than 2 GB of RAM.

 • 100 servers: Use a Console server with at least Dual 1 GHz processors and no less than 4 GB of RAM.

 • 200 servers: Use a Console server with at least Dual 1 GHz processors and no less than 8 GB of RAM.

◆ Configure the Console server as a client of the NetWorker server. This is required to backup the Console server database.

 The *NetWorker 8.0 SP1 Administration Guide* describes how to configure an Console server database backup.

CHAPTER 5
Updating from a previous release

This chapter includes these sections:

Introduction

When you update the NetWorker server or Console server software from 8.0 to 8.0 SP1, you can revert to the NetWorker 8.0 software without additional steps.

After you update the NetWorker server or Console server to version 8.0 SP1, you cannot revert to a 7.6.x or earlier version of the NetWorker software without additional steps.

These changes prevent a direct downgrade to NetWorker 7.6.x or earlier:

◆ On the NetWorker server:

- The update process performs a database conversion of the jobsdb database.

- The update process modifies the resource database, nsrdb.

  Modifications include:

  – The removal of all read-only devices. For example, the update process removes the read-only device for AFTD and Data Domain devices.

  – A new backup level, synthetic full replaces the consolidate backup level. Group resources that use the consolidate backup level before an update, will not have a backup level after you update the NetWorker server software to version 8.0.

    The *NetWorker 8.0 SP1 Administration Guide* describes how to perform a synthetic full backup.

  – For an AFTD only, the update process automatically adds the name of a NetWorker device to the Device Access Information attribute for the device.

◆ On the Console server, the update process converts the SQL Anywhere 9.0 database to a SQL Anywhere 12 format.

Update the NetWorker software from 8.0

When updating the NetWorker software from 8.0, remove the previous version of the NetWorker software, then install the newer version.

Perform the following tasks to update the NetWorker server, the storage node, the client, and the Console server software:

> **NOTICE**
>
> You do not require an update enabler code when you update the NetWorker server from 8.0 to 8.0 SP1.

Task 1: Prepare the NetWorker server

This section describes how to prepare the NetWorker server for a software update.

Review the following sections before you update the NetWorker data zone:

◆ "Interoperability and backward compatibility considerations" on page 35

◆ "Prepare the NetWorker server" on page 35

Interoperability and backward compatibility considerations

This section provides important information about the interoperability and backwards compatibility of the NetWorker 8.0 SP1 software. Before updating any host in the data zone to NetWorker 8.0 SP1, review these interoperability considerations:

◆ NetWorker 8.0 SP1 Server supports NetWorker 8.0.x storage nodes only.

◆ NetWorker 7.6.x and 8.0.x server supports a NetWorker 8.0 SP1 storage node.

◆ NetWorker 7.5.x, 7.6.x and 8.0.x server s and storage nodes support NetWorker 8.0 SP1 clients.

◆ NetWorker 8.0 SP1 Console server supports NetWorker 7.5.x, 7.6.x and 8.0.x servers.

Prepare the NetWorker server

Before updating the NetWorker server, ensure that:

◆ The media database and client file indexes are in a consistent state.

◆ You record the database locations.

◆ You perform a back up of the NetWorker server databases.

To prepare the NetWorker server:

1. Log in to the NetWorker server as root on UNIX or administrator on Windows.

2. Put the NetWorker databases in a consistent state:

   ```
   nsrim -X
   nsrck -m
   nsrck -L6
   ```

3. Record the current location of the NetWorker media database:

   ```
   nsrls -m
   ```

4. Record the current location of the NetWorker client file indexes:

   ```
   nsrls
   ```

5. Record the range of ports the NetWorker software uses:

   ```
   nsrports
   ```

6. Perform a back up of the bootstrap, the client file indexes, and the resource database on the NetWorker server.

   For example:

   `savegrp -O` *`group`*

   To back up all client file indexes, specify a group that contain all the NetWorker clients in the data zone.

   If a group that contains all the clients does not exist, run multiple **savegrp** commands, specifying a different group each time, until you back up all clients indexes.

   > **NOTICE**
   >
   > Ensure the media pool associated with the group has appendable media available.

7. Record the latest bootstrap save set ID (ssid) including the file number, the record number, and the associated volume label.

   For example:

   `mminfo -B`

date	time	level	ssid	file	record	volume
10/11/11	16:29:40	full	4254377781	0	0	bootstrap_vol.001

   In this example:

   • The save set ID (ssid) is 4254377781.

   • The file number is 0.

   • The record number is 0.

   • The label of the volume which contains the bootstrap save set is bootstrap_vol.001.

Task 2: Prepare the Console server

Before updating the Console server, perform a level Full backup of the Console server database.

"Backing up NetWorker Console Management data" in the *NetWorker 8.0 SP1 Administration Guide* provides more information.

Task 3: Uninstall the previous version of the NetWorker software

Uninstall the previous version of the NetWorker software. Remove the NetWorker module software including the NetWorker Module for Microsoft Applications and the NetWorker Module for Databases and Applications before removing of the NetWorker software. The appropriate module installation guide describes how to uninstall the module software.

The following sections describe how to uninstall the NetWorker software:

◆ "Uninstall the NetWorker and Console server software on AIX" on page 75

◆ "Uninstall the NetWorker software on HP-UX" on page 85

◆ "Uninstall NetWorker and Console server software on Linux" on page 106

◆ "Uninstall the NetWorker software on Mac OS-X" on page 112

◆ "Uninstall the NetWorker and Console server software on Solaris" on page 123

◆ "Uninstall the NetWorker and Console server on Windows" on page 146

NOTICE

After you remove the NetWorker software, delete the NetWorker tmp directory:

On Windows: C:\Program Files\Legato\nsr\tmp or C:\Program Files\EMC NetWorker\nsr\tmp

On UNIX: /nsr/tmp

Task 4: Install the NetWorker software

After you remove the previous version of the NetWorker software, install the NetWorker 8.0 SP1 software.

The following sections describe how to install the NetWorker 8.0 SP1 software:

◆ "NetWorker software installation on AIX" on page 66

◆ "NetWorker software installation on HP-UX" on page 80

◆ "NetWorker software installation on Linux" on page 88

◆ "NetWorker software installation on Mac-OSX" on page 110

◆ "NetWorker software package installation on Solaris" on page 114

◆ "NetWorker and Console software installation on Windows" on page 128

Task 5: Clear the Java Cache

After a Console server software update, the gconsole.jnlp file in the Java Web Start cache is different from the previous gconsole.jnlp file. As a result, the Console client fails to Start the NMC GUI with the following error message:

```
Unable to launch NetWorker Management Console
```

To resolve this issue, on each host that you use as a Console client, clear the java cache.

The procedure is different for UNIX and Windows:

UNIX Console client

To clear the java cache on a UNIX Console client:

1. Run the **Java Web Start** program.

2. Move or delete the $HOME/.java directory:

   ```
   cd $HOME
   mv .java .java_orig
   ```

3. Run the **javaws -viewer** command. This creates a new **$HOME/.java** directory and start the **Java Cache Viewer**.

4. Reconfigure Java Web Start preferences if required and exit the **Java Cache Viewer**.

Windows Console client

To clear the java cache on a Windows Console client:

1. Run the command **javaws.exe -viewer** to open the **Java Cache Viewer**.

2. In the **Show** menu, select **Applications**.

3. Delete the **NetWorker Management Console** entry.

4. Close the **Java Cache Viewer** window.

Task 6: Install the NetWorker Module software

If you removed NetWorker module software before you updated the NetWorker software, reinstall the NetWorker Module software. The appropriate module install guide describes how to install the module software packages.

Update the NetWorker software from 7.6.x

When updating the NetWorker software, remove the previous version of the NetWorker software, then install the newer version.

Perform the following tasks to update the NetWorker server, the storage node, the client, and the Console server software:

Task 1: Prepare to update the NetWorker software

This section provides information to help you prepare for an update of the NetWorker software.

Review the following sections before you update the NetWorker data zone:

◆ "Interoperability and backward compatibility considerations" on page 40

◆ "Determine the NetWorker version on the storage nodes" on page 41

◆ "Prepare the NetWorker server" on page 42

◆ "Prepare the Console server" on page 43

Interoperability and backward compatibility considerations

This section provides important information about the interoperability and backwards compatibility of the NetWorker 8.0 SP1 software. Before updating any host in the data zone to NetWorker 8.0 SP1, review these interoperability considerations:

◆ A NetWorker 8.0 SP1 server is not compatible with a NetWorker 7.6.x or earlier storage node.

Update all the NetWorker storage nodes to version 8.0 SP1 before updating the NetWorker server.

A NetWorker 8.0 SP1 server disables NetWorker 7.6.x and earlier storage nodes.

◆ You cannot directly update a NetWorker 7.5.x server to NetWorker 8.0 SP1. Use the following method to update the hosts in a NetWorker 7.5.x data zone:

  • Update the NetWorker 7.5.x server to version 7.6.x.

  • Update each NetWorker storage node to version 8.0 SP1.

  • Update the NetWorker 7.6.x server software to version 8.0 SP1.

  • Update the NetWorker clients to version 8.0 SP1.

◆ You can directly update a NetWorker 7.5.x Console server to NetWorker 8.0 SP1 when the Console server is not the NetWorker server.

◆ When the Console server is not the NetWorker server, update the Console server before you update the NetWorker server.

◆ A NetWorker 7.6.x server supports NetWorker 8.0 SP1 storage node.

◆ A NetWorker 7.5.x and 7.6.x server supports aNetWorker 8.0 SP1 client.

◆ A NetWorker 8.0 SP1 server supports NetWorker 7.5.x and 7.6.x clients. To use the Client Configuration Wizard in NetWorker 8.0 SP1, the NetWorker client must run a minimum NetWorker version of 7.6 SP4.

◆ When also updating the host operating system of a NetWorker server, a storage node, or a client, update the operating system first, then update the NetWorker software.

◆ The NetWorker 8.0 SP1 software does not support NetWorker Module for Microsoft Applications (NMM) 2.3 versions before build 130. Before you update the NetWorker server and storage nodes to NetWorker 8.0 SP1, update the NMM software to NMM 2.3 build 130 or NMM 2.4. Both NMM versions are available at EMC Online Support: http://support.emc.com.

Determine the NetWorker version on the storage nodes

This section describes how to determine the NetWorker software version that is running on storage nodes in the data zone.

Before updating the NetWorker server software, update each NetWorker storage node to the NetWorker 8.0 SP1 software version.

A NetWorker 8.0 SP1 server disables NetWorker 7.6.x and earlier storage nodes.

Use the **nsradmin** program to determine the NetWorker version installed on the storage nodes in a data zone:

1. Log in to the NetWorker server as root on UNIX or as administrator on Windows.

2. From a command prompt, type:

   nsradmin

3. Set the attribute type to **nsr storage node**:

   nsradmin> . type: nsr storage node

4. Display the hostname of the storage node and the NetWorker software version:

   nsradmin> show name;version

5. Display a list of every storage node in the data zone and the corresponding version of the NetWorker software:

   nsradmin> print

6. Close the **nsradmin** program:

   nsradmin> quit

   For example:

   ```
   nsradmin> . type: nsr storage node
   Current query set
   nsradmin> show name;version
   nsradmin> print
           name: mystoragenode.domain.com;
           version: 7.6.3;
   nsradmin> quit
   ```

Prepare the NetWorker server

This section describes how to prepare the NetWorker server for a software update.

Before updating the NetWorker server, ensure that:

◆ The media database and client file indexes are in a consistent state.

◆ You record the database locations.

◆ You perform a back up of the NetWorker server databases.

To prepare the NetWorker server:

1. Log in to the NetWorker server as root on UNIX or administrator on Windows.

2. Put the NetWorker databases in a consistent state:

   nsrim -X
   nsrck -m
   nsrck -L6

3. Record the current location of the NetWorker media database:

   nsrls -m

4. Record the current location of the NetWorker client file indexes:

   nsrls

5. Record the range of ports the NetWorker software uses:

   nsrports

6. Perform a back up of the bootstrap, the client file indexes, and the resource database on the NetWorker server.

   For example:

   savegrp -O *group*

   To back up all client file indexes, specify a group that contain all the NetWorker clients in the data zone.

   If a group that contains all the clients does not exist, run multiple **savegrp** commands, specifying a different group each time, until you back up all clients indexes.

   > **NOTICE**
   >
   > Ensure the media pool associated with the group has appendable media available.

7. Record the latest bootstrap save set ID (ssid) including the file number, the record number, and the associated volume label.

   For example:

   mminfo -B

date	time	level	ssid	file	record	volume
10/11/11	16:29:40	full	4254377781	0	0	bootstrap_vol.001

In this example:

- The save set ID (ssid) is 4254377781.

- The file number is 0.

- The record number is 0.

- The label of the volume which contains the bootstrap save set is bootstrap_vol.001.

Prepare the Console server

Before updating the Console server to NetWorker version 8.0, perform a level Full backup of the Console server database.

"Backing up NetWorker Console Management data" in the *NetWorker 8.0 SP1 Administration Guide* provides more information.

Task 2: Review Console server considerations

When you update the Console server software, the installation process automatically converts the SQLAnywhere database to a newer version. A special migration utility, gstdbupgrade.sh on UNIX and gstdbupgrade.exe on Windows performs the conversion process.

During the database conversion process, the migration utility:

- Automatically records the progress of the conversion in the gstdbupgrade.log.

- Displays the progress of the database conversion process to the console.

provides more information about the migration process.

Before you update the Console server to version 8.0, consider the following:

- The Console server software does not support the following previously supported operating systems:

  - HP-UX 11iv2, HP-UX 11iv3

  - Windows 2003, 2003 SP1, 2003 R2

  - AIX 5.2, AIX 5.3

  - Solaris 9

If you previously installed the Console server on one of these operating systems, you cannot update the Console server software version 8.0.

Consider one of the following resolutions:

- Install a new Console server in the data zone on a supported operating system. To provide historical reports, keep the old Console server at the previous NetWorker version.

- Install a new Console server in the data zone on a supported operating system and move the Console server database and configuration files to the new Console server. provides more information.

- Update the operating system to a supported version before updating the Console servers software to version 8.0. The *EMC NetWorker Software Compatibility Guide EMC NetWorker Software Compatibility Guide* on EMC Online Support Site provides more information about supported Console server operating systems.

◆ The conversion of a large Console server database:

- Can take several hours.

  For example, it takes approximately 3 hours to migrate a 4.5 GB database on a dual core system with 16 GB RAM.

- Can be I/O and CPU intensive.

  Avoid performing other resource intensive processes during a Console server database conversion.

◆ The file system that contains the Console server database directory must have available space that is equal to double the size of the current database.

Task 3: UNIX only, back up the configuration files

The NetWorker software installation process overwrites the existing NetWorker startup script files. Back up the configuration files before you install the NetWorker software.

To back up the NetWorker configuration files:

1. Log in to the target host as root.

2. Create a backup copy of the original files.

   For example:

   cp *original_file backup_file*

   provides a list of the names and locations of the configuration files on each operating system.

Table 3 Configuration files on UNIX

Operating System	Original files
AIX	/etc/inittab /etc/rpc /etc/rc.nsr
HP-UX	/sbin/init.d/networker
Linux	/etc/init.d/networker /etc/rc3.d/S95networker /etc/rc5.d/S95networker /etc/ rc0.d/K05networker
Solaris	/etc/init.d/networker

Task 4: Uninstall the previous version of the NetWorker software

Uninstall the previous version of the NetWorker software. Remove the NetWorker module software including the NetWorker Module for Microsoft Applications and the NetWorker Module for Databases and Applications before removing of the NetWorker software. The appropriate module installation guide describes how to uninstall the module software.

Optionally on UNIX only, before you update the NetWorker software to 8.0 from a previous release, back up the syslog.conf file. The uninstall process removes entries made to this file.

In NetWorker 8.0 SP1 and later, the installation process does not modify the syslog.conf file. It is not necessary to backup this file when you update from 8.0 to a later version.

The following sections describe how to uninstall the NetWorker software:

◆ "Uninstall the NetWorker and Console server software on AIX" on page 75

◆ "Uninstall the NetWorker software on HP-UX" on page 85

◆ "Uninstall NetWorker and Console server software on Linux" on page 106

◆ "Uninstall the NetWorker software on Mac OS-X" on page 112

◆ "Uninstall the NetWorker and Console server software on Solaris" on page 123

◆ "Uninstall the NetWorker and Console server on Windows" on page 146

NOTICE

After you remove the NetWorker software, delete the NetWorker tmp directory:

On Windows: C:\Program Files\Legato\nsr\tmp or C:\Program Files\EMC -NetWorker\nsr\tmp

-On UNIX: /nsr/tmp

Task 5: RHEL Linux only, enable SELinux

The NetWorker 8.0 SP1 and later software supports SELinux.

To enable SELinux:

◆ On RHEL 5:

    a. Run **system-config-securitylevel**.

    b. In the window that appears, select the **SELinux** tab.

    c. Select **Enable SELinux** and restart the system.

◆ On RHEL 6:

    a. Ensure the operating system contains these packages:

      – selinux-policy-targeted-3.7.19

      – policycoreutils-gui-2.0.83

      – selinux-policy-3.7.19

    b. Use the **sestatus** command to determine the state of SELinux:

    For example:

```
/usr/sbin/sestatus
```

```
SELinux status:              disabled
SELinuxfs mount:              /selinux
Current mode:                enforcing
Mode from config file:       enforcing
```

    When the SELinux status value is disabled:

    – In the /usr/bin directory, open the SELinux program and configure the SELinux status:

```
system-config-selinux
```

    – Change the **SELinux status** to **Enabled**.

    – Restart the system.

    – Use the **getenforce** command to confirm the status of SELinux.

Task 6: Install the NetWorker software

After you remove the previous version of the NetWorker software, install the NetWorker 8.0 SP1 software.

Install the NetWorker 8.0 SP1 software on all NetWorker storage nodes before installing the NetWorker 8.0 SP1 software on the NetWorker server.

The following sections describe how to install the NetWorker 8.0 SP1 software:

◆ "NetWorker software installation on AIX" on page 66

◆ "NetWorker software installation on HP-UX" on page 80

◆ "NetWorker software installation on Linux" on page 88

◆ "NetWorker software installation on Mac-OSX" on page 110

◆ "NetWorker software package installation on Solaris" on page 114

◆ "NetWorker and Console software installation on Windows" on page 128

> **NOTICE**
>
> After you update the NetWorker server, it is important to restart the NetWorker services.

Task 7: UNIX only, retain startup script customizations

This section describes how to add startup script customizations made in previous versions of the NetWorker software, to the new **nsrrc** file.

The NetWorker 8.0 and later software introduces support for a new environment variable file. This file, **nsrrc,** is sourced before starting the nsrexecd and nsrd processes. Subsequent NetWorker 8.0.x software updates do not overwrite this new file.

Add environment variables previously defined in the NetWorker startup files to this new file:

1. Review the configuration files you copied in "Task 3: UNIX only, back up the configuration files" on page 44 for a list of defined environment variables.

   > **NOTICE**
   >
   > Do not overwrite the new startup files with the contents of the .orig files. Add the old customizations to the new environment variable file.

2. Create a Bourne shell script file called **nsrrc** in the **/nsr** directory.

3. Add the required environment variables and the **export** command to the **nsrrc** file.

   For example:

   ```
   ENV_VAR_NAME=value
   export ENV_VAR_NAME
   ```

4. Save the file.

5. Stop the NetWorker daemons:

   `nsr_shutdown`

6. Start the NetWorker daemons:

   - On Solaris and Linux, type:

     `/etc/init.d/networker start`

   - On AIX, type:

     `/etc/rc.nsr`

   - On HP-UX, type:

     `/sbin/init.d/networker start`

Task 8: NetWorker server only, update the Clone Storage Node attribute

When you update the NetWorker server software to NetWorker 8.0 SP1 and later, the NetWorker software automatically creates a new Clone Storage Node attribute for each existing Storage Node resource. The value in this attribute determines which storage node to use when writing clone data.

In the NetWorker 7.6.x and earlier software, the Clone Storage Node attribute was present in each NetWorker client resource. After a NetWorker server software update, the Clone Storage Node attribute is still present in each client resource but the attribute is read-only. The NetWorker 8.0 SP1 server does not use this attribute to determine which storage node to use when the writing clone data for the client.

By default, the Clone Storage Node attribute for each storage node resource does not contain any values. If required, after updating the NetWorker server software, modify the Clone Storage Node attribute for each storage node. The section *Directing clones to a special storage node* in the *NetWorker 8.0 SP1 Administration Guide* provides more information.

Task 9: Optional, move the Console server files to a new Console server

If you replaced the Console server in the data zone, move the NMC database and configuration files to the new Console server before installing the Console server software.

To move the Console server database and configuration files:

1. On the original Console server, stop the gstd process on UNIX or service on Windows:

   - On AIX, type: **/etc/rc.gst stop**

   - On Linux and Solaris, type: **/etc/init.d/gst stop**

   - On HP-UX, type: **/sbin/init.d/gst stop**

   - On Windows: Stop the EMC GST service.

2. Ensure the httpd, gstd, and dbsrv9 processes are not running. Use the **kill -TERM** to stop the processes. Do not use the **kill -9** command to stop the dbsrv9 process.

3. Copy the contents of the Console server database directory from the original Console server to a new directory on the new Console server.

The Console server database directory is in the following default locations:

- AIX, HP-UX, and Linux: **/opt/lgtonmc/lgto_gstb**

- Solaris: **/opt/LGTOnmc/lgto_gstb**

- Windows: *installation_dir***Management****lgto_gstb**

> **NOTICE**
>
> The lgto_gstdb and lgto_gst.log files are binary files and gstd_db.conf is an ASCII file.

Task 10: Install the Console server software

This section describes how to install the Console server software.

On UNIX, if the Console server is also the NetWorker server:

- Ensure that the httpd, gstd, and dbsrv9 processes are not running.

  - If gstd is running, then remove the Console server software.

  - If the httpd and dbsrv9 processes are running and you removed the Console software, then use the **kill -TERM** to stop the processes. Do not use the **kill -9** command to stop the dbsrv9 process.

- Install the NetWorker 8.0 SP1 Console server software after you successfully install the NetWorker software.

On Windows, a NetWorker software update automatically updates the Console server software, extra installation steps are not required. "NetWorker and Console software installation on Windows" on page 128 provides more information.

The following sections describe how to install the Console server software on the supported UNIX operating systems:

- "Console server installation on AIX" on page 71

- "Console server installation on Linux" on page 101

- "Console server installation on Solaris" on page 120

Task 11: Review the status of the Console server database conversion

This section describes how to determine the status of the Console server database conversion and how to attempt another database conversion if the conversion failed.

To confirm that the conversion is successful:

- Review the gstd_db.conf file, located in the following directory by default:

  - Windows: *NMC_installation_directory*\Management\lgto_gstdb

  - AIX and Linux: /opt/lgtonmc/lgto_gstdb

  - Solaris: /opt/LGTOnmc/lgto_gstdb

◆ Search for the following line that denotes a successful database conversion:

`db_format_12=yes`

When the Console server database conversion fails, a message similar to the following appears:

```
Install failed to upgrade the database <full path>. Check the install
log <full path> for details. Please fix any environment related errors
mentioned in the log and then run the script <full path to script>
manually to upgrade the database after the install is complete.
```

If you see this message, then:

1. Review the gstdbupgrade.log file and correct the errors.

   The gstdbupgrade.log appears in the following directories, by default:

   • Solaris: /opt/LGTOnmc/logs

   • AIX and Linux: /opt/lgtonmc/logs

   • Windows: *NMC_installation_directory*\Management\GST\logs

2. Start the database conversion manually:

   a. On UNIX:

   `gstdbupgrade.sh –p` *NMC_Database_dir* **`-o`** *log_file_directory* **`–b`**
   Backup_NMC_database_dir

   where:

   – **gstdbupgrade.sh** appears in the /opt/lgtonmc/sybasa/bin directory on AIX and Linux by default.

   – **gstdbupgrade.sh** appears in the /opt/LGTOnmc/sybasa/bin directory on Solaris by default.

   – *NMC_database_dir* is the location of the Console server database. On Aix and Linux the directory is /opt/lgtonmc/lgto_gstdb. On Solaris the directory is /opt/LGTOnmc/lgto_gstdb.

   – **-o** *log_file_directory* is optional. Use this option to direct the database conversion log file to an alternate location.

   – **–b** *Backup_NMC_database_dir* is optional. Use this option to specify an alternate location or path for the backup copy of the original NMC database. By default, the conversion process stores the backup copy in the same location as the original database.

   NOTICE

   On UNIX, the Console server 8.0 software completes when a database conversion fails.

   b. On Windows, the installation process prompts you to continue or cancel the installation when the conversion fails. After you correct the errors in the gstdbupgrade.log file, try to convert the database in one of the following ways:

      – If you cancelled the installation of the NetWorker and Console server software then install the software again to convert the Console server database.

   – If you completed the installation of the NetWorker and Console server software
   then run **gstdbupgrade.exe** located in
   NMC_installation_directory\Management\GST\sybasa\bin to manually convert
   the database.

Task 12: For NetWorker 7.5.x Console server updates only, reconfigure LDAP

When a NetWorker 7.5.x Console server uses Lightweight Directory Access Protocol (LDAP)
authentication, attempts to log in to the Console server after an update may fail with the
error: **Problem contacting server** *Servername***: Connection refused:connect** and the EMC
GST daemon stops.

When you see this error and the gstd process is not running:

1. From a command prompt change to the
   NMC_installation_directory\management\logs directory on Windows or
   NMC_installation_directory/management/logs directory on UNIX.

2. Render the gstd.raw log file and save the output to a text file:

   nsr_render_log -pathmey gstd.raw 1>*output.txt* **2>&1**

3. Review the output.txt file. If you see the error: **acm: External directory library
   initialization failed,** reconfigure LDAP authentication to correct the issue.

   To reconfigure LDAP authentication:

   a. Move the following files from the *NMC_installation_directory*\gst\cst directory on
      Windows or the *NMC_installation_directory*/cst on UNIX to a temporary location:

      – Config.xml

      – csp.clb

      – csp.clb.bak

      – csp.cred

      – upgrade_cst.tag, if present

   b. Rename the **Config.xml.template** file to **Config.xml**. The Console server starts in
      native authentication mode. Log in with the NMC Administrator user and the
      password that you defined before you configured NMC to use LDAP.

      If you do not remember this password:

      a. Set the Environment Variable **GST_RESET_PW** to a value of 1.

      b. Start the **EMC GST** service.

      c. Connect to the Console server by using a browser.

      d. Log in to the Console server with the administrator username and the password
         administrator. If prompted, create a new password for the administrator user.

   c. Reconfigure the Console server to use LDAP authentication. "An external
      authentication authority" in the *NetWorker 8.0 SP1 Administration Guide*
      describes how to reconfigure LDAP authentication.

   d. If set, delete the **GST_RESET_PW** environment variable. This step prevents a
      password reset at each Console server login attempt.

Task 13: Clear the Java Cache

After a Console server software update, the gconsole.jnlp file in the Java Web Start cache is different from the previous gconsole.jnlp file. As a result, the Console client fails to Start the NMC GUI with the following error message:

```
Unable to launch NetWorker Management Console
```

To resolve this issue, on each host that you use as a Console client, clear the java cache.

The procedure is different for UNIX and Windows:

UNIX Console client

To clear the java cache on a UNIX Console client:

1. Run the **Java Web Start** program.

2. Move or delete the $HOME/.java directory:

   ```
   cd $HOME
   mv .java .java_orig
   ```

3. Run the **javaws -viewer** command. This creates a new **$HOME/.java** directory and start the **Java Cache Viewer**.

4. Reconfigure Java Web Start preferences if required and exit the **Java Cache Viewer**.

Windows Console client

To clear the java cache on a Windows Console client:

1. Run the command **javaws.exe -viewer** to open the **Java Cache Viewer**.

2. In the **Show** menu, select **Applications**.

3. Delete the **NetWorker Management Console** entry.

4. Close the **Java Cache Viewer** window.

Task 14: Optional, convert VCB client backups to VADP

The NetWorker 7.6 SP2 software and later supports a backup and recovery of VMware clients that uses the vStorage APIs for Data Protection (VADP) program. The NetWorker 7.6 SP2 and earlier software uses the VMware Consolidated Backups (VCB) program to protect VMware clients.

If you update the NetWorker server and the VM Proxy server from a version before NetWorker 7.6 SP2, use the **nsrvadpserv_tool** tool to convert virtual clients from VCB to VADP backups. The *NetWorker 8.0 VMware Integration Guide* provides more information.

Task 15: Install the NetWorker Module software

If you removed NetWorker module software before you updated the NetWorker software, reinstall the NetWorker Module software. The appropriate module install guide describes how to install the module software packages.

Task 16: Confirm the update of all storage nodes

The NetWorker 8.0 SP1 server does not support a NetWorker 7.6.x and earlier storage node. Ensure that each NetWorker storage node in the data zone runs the NetWorker 8.0 SP1 software. "Determine the NetWorker version on the storage nodes" on page 41 describes how to determine the NetWorker version running on all storage nodes in the data zone.

Task 17: Authorize the NetWorker server

The NetWorker software adds a required update enabler code to the NetWorker server configuration. You cannot delete this enabler code. The update enabler code expires 45 days after the NetWorker server update, unless you use capacity-based licensing.

Contact EMC Licensing within 45 days of upgrading the NetWorker server to permanently authorize the update enabler. The *NetWorker 8.0 SP1 Licensing Guide* describes how to authorize an update enabler and how to use the capacity-based license model.

> **NOTICE**
>
> If the update enabler expires or you do not apply the authorization code, the NetWorker software will not function at the new release level.

Update the NetWorker software with the client push feature

Use the software distribution feature, client push, to remotely distribute and update the NetWorker software on NetWorker clients and storage nodes in the data zone from a centralized repository on the NetWorker server.

The following sections describe the client push feature:

◆ "Advantages of the client push feature" on page 53

◆ "Client push considerations" on page 54

◆ "Client push configuration requirements" on page 54

◆ "Prepare the Media Kit Location" on page 56

◆ "Prepare the software repository and update the NetWorker software" on page 57

Advantages of the client push feature

The client push feature has the following advantages:

◆ There is no requirement to log in to each host and manually uninstall the old NetWorker software version and install the new NetWorker software version.

◆ Client push performs an inventory of supported hosts to determine current version of the NetWorker software and NetWorker Module for Databases and Applications software.

◆ Client push monitors each update and inventory operation in real-time.

◆ There is a restart mechanism for cancelled or failed client inventories and software updates.

◆ The **nsrpush** command provides the ability to script and schedule the software updates.

Client push considerations

Consider the following before using the client push feature:

◆ The target host must have an NetWorker 7.3 or later installed.

◆ The nsrexecd daemon on UNIX or the NetWorker Remote Exec service on Windows must be running on the target host.

◆ Complete all backup and restore operations, before updating the target host.

◆ The following NetWorker software packages support the client push feature:

• Client

• Storage Node

• Language packs

• Man pages

• NetWorker Module for Databases and Applications (NMDA)

◆ The client push feature cannot update the NetWorker software on:

• The NetWorker server

• The EMC License Manager server

• The Console server

• Clustered hosts

• PowerSnap clients

• NetWorker Module for Microsoft Applications (NMM) clients

• A Windows client where you did not install the NetWorker software on the same drive as the operating system.

• An AIX client with the NMDA module installed, unless you update both the NetWorker and NMDA software simultaneously.

Client push configuration requirements

Review the following sections before using client push:

◆ "Permission and authentication requirements" on page 55

◆ "Supported NetWorker server operating systems" on page 55

◆ "Supported target operating systems" on page 55

Permission and authentication requirements

This section describes the permission and authentication requirements for client push.

◆ On Windows 2008 NetWorker servers only, the Administrator and SYSTEM users require write access to the temp folders defined by the TEMP and TMP environment variables.

Software updates, additions to the repository, and inventory operations require write access.

◆ The NetWorker software must use nsrauth authentication on the NetWorker server, client or storage node, and the Console server. The *NetWorker 8.0 SP1 Administration Guide* provides more information about nsrauth authentication.

Supported NetWorker server operating systems

Client push supports the following NetWorker server operating systems:

◆ Windows — x86, x64, and Itanium 64-bit

◆ AIX — 32-bit and 64-bit

◆ Linux — x86 and x64

◆ Solaris 64-bit

◆ HP UX — 64-bit and Itanium 64-bit

NOTICE

Client push does not support a Linux Itanium 64-bit NetWorker server.

Supported target operating systems

You cannot use Client push to update the NetWorker software on the following operating systems:

◆ Windows — x86, x64, and Itanium 64-bit

◆ AIX — 32-bit and 64-bit

◆ Linux — x86 and x64

◆ Solaris — 64-bit

◆ HP-UX — 64-bit and Itanium 64-bit

NOTICE

Client push cannot update Linux Itanium 64-bit, Linux PPC, Solaris x86, Mac OS-X, and Open VMS hosts.

Prepare the Media Kit Location

During a client push operation, the NetWorker server obtains the source NetWorker software packages from the software repository, located on the NetWorker server, and pushes the software installation to the target host.

The software repository or Media Kit Location contains the source NetWorker 8.0 SP1 software packages used to update the NetWorker target hosts. The Media Kit Location can be the NetWorker software DVD or a directory that contains the software packages.

There are two different scenarios to consider when preparing the software repository to update the NetWorker software using client push:

◆ "The NetWorker server is the same operating system as the target hosts" on page 56

◆ "The NetWorker server and target host operating systems differ" on page 56

The NetWorker server is the same operating system as the target hosts

When the targets hosts are the same operating system as the server, extract all the software packages to the Media Kit Location. The media kit location must reside on a file system local to the NetWorker server.

The NetWorker server and target host operating systems differ

If the target hosts are not the same operating system as the NetWorker server, for example, when a Windows NetWorker server updates a UNIX client, you must configure a proxy host to store the cross platform packages. The Proxy Media Kit Location is a directory on the proxy host that contains the cross platform software packages. The directory name cannot contain spaces.

Before choosing a proxy host, consider the following:

◆ The proxy host must run on the same platform as the cross platform packages.

For example, if the NetWorker server is a Linux host, use a Windows proxy host to update Windows x86, Windows x64, and Windows ia64 clients.

◆ The proxy host must have the NetWorker 7.6 or later client software installed.

◆ The proxy host must be a client of the NetWorker server.

◆ The proxy media kit location must reside on a file system local to the proxy host.

To prepare the proxy media kit location:

1. On the NetWorker server, extract all the compressed software packages to the Media Kit Location.

2. On the proxy host:

   a. Create a directory for the Proxy Media Kit Location.

   b. Extract a copy of the cross platform software packages to the Proxy Media Kit Location.

      For example:

      When a Linux NetWorker server updates Windows x86, Windows x64, and Windows ia64 NetWorker clients, you must extract the Windows x86, Windows x64, and Windows ia64 packages to the Proxy Media Kit Location.

   c. Ensure that the NetWorker server can access Proxy Media Kit Location. For example, if the proxy host is a Windows NetWorker client, ensure that the Proxy Media Kit Location is a network accessible share.

Prepare the software repository and update the NetWorker software

There are two methods to access the client push feature:

◆ describes how to use the GUI interface to update the NetWorker software.

◆ describes how to use command line to update the NetWorker software.

Use the Software Administration Wizard

To use the Software Administration Wizard, perform the following tasks:

◆

◆

◆

Task 1: Add the software to the repository

1. Login to the NMC console with an user that is both an NMC administrator and a member of the Application Administrators user group on the NetWorker server.

2. In the NetWorker Management Console window, connect to the NetWorker server.

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

4. On the **Welcome to the Software Administration Wizard** window, click **Next**.

5. On the **Select Operation** window, select **Add or remove products from my software repository,** click **Next**.

6. On the **Software Repository Operations** window, select **Add software products to the repository** value, click **Next**.

7. On the **Create Software Repository** window, click **Yes** then click **Next**.

8. If this is the first time you are creating the repository, specify the Repository location, click **Next.**

9. On the **Select platform type** window, select the platform type of the software to add to the repository, click **Next.**

10. On the **Add software products to repository** window, select **Yes**, click **Next.**

11. On the **Media Kit Location** window, specify the path to the **Media Kit** location, click **Next.**

   For example:

   When the Media Kit Location on a UNIX NetWorker server is /mediakit and you add the Solaris 64-bit software package to the repository, the path is:

   `/mediakit/solaris_64`

12. The **Select Products** window displays a list of detected software packages in the repository. Select the products to add to the repository, click **Next.**

   If the **Select Product** window does not contain all products in the Media Kit Location, review the client push log file, nsrcpd.raw on the NetWork server, for error messages.

   • On UNIX, the /nsr/logs directory contains the nsrcpd.raw file.

   • On Windows, the C:\Program Files\EMC NetWorker\nsr\logs directory contains the nsrcpd.raw file.

13. When you select cross platform products, the **Host and Media Kit location** window appears.

   a. Specify the name of the Proxy host and the location of extracted software packages on the proxy.

      Ensure the cross-platform path you specify includes the subdirectory that contains the metafile. For example, if the directory on the proxy client that contains the metafiles is **C:\media\win_x64**, specify this complete path.

   b. Click **Next.**

   > **NOTICE**
   >
   > Client push uses a special mechanism to copy the package from the Proxy host to the software repository on the NetWorker server.

14. In the **Message** window, click **OK.**

   If a **usam** error appears, review the **nsrcpd.raw** for error messages.

Task 2: Inventory the clients for installed products

Determine the NetWorker software version installed on each target host:

1. Start the Software Administration Wizard and click **Next.**

2. In the **Select Operation** window, select **Discover the currently installed software products on my NetWorker clients,** click **Next.**

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

3. In the **Select Clients for Inventory** window, select the required clients and click **Next**.

4. In the client **Inventory Started** window, accept the default **option, Yes.**

5. Click **Next** to monitor the inventory operation.

   The **Monitor Activity** window appears and provides the status of client inventory operations.

   If the inventory operation fails, review to the **nsrcpd.raw** file on the NetWorker server. Optionally, select the failed operation and click **Retry client job** to reattempt the inventory.

6. Click **Finish**.

Task 3: Update the client software packages

The Software Administration Wizard provides two ways to perform software updates:

◆ "Update by client" on page 59

◆ "Update by product and version" on page 60

Update by client

To update the client software packages on user specified clients:

1. Start the Software Administration Wizard and click **Next.**

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

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

4. Select the appropriate clients, and click **Next.**

5. A list of clients and installed products appears. Select the clients and products, and click **Next**.

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

   If a required software package is not in the software repository, the following message appears:

   ```
   No available products were found for the selected client(s) in the
   software repository
   ```

   "Task 1: Add the software to the repository" on page 57 describes how to prepare the source product directory and add the required software packages to the repository on the NetWorker server.

6. Monitor the status of the upgrade operation. If the update operation fails, review the nsrcpd.raw file on the NetWorker server. Optionally, select the failed operation and click **Retry client job** to reattempt the update.

7. Click **Finish**.

Update by product and version

To update the software packages on all hosts that match a user specified product and version:

1. Start the Software Administration Wizard, click **Next**.

2. Select **Upgrade the software on my NetWorker clients**, click **Next**.

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

4. Select one or more products to update and click **Next**. A list of clients and products appears, one client and product per line.

5. Select one or more of the client/product combinations to update, click **Next**.

   If a required software package is not in the software repository, the following message appears:

   ```
   No available products were found for the selected client(s) in the
   software repository
   ```

   "Task 1: Add the software to the repository" on page 57 describes how to prepare the source product directory and add the required software packages to the repository on the NetWorker server.

6. In **Monitor Activity** window, monitor the status of the upgrade operation.

   If the update operation fails, review to the nsrcpd.raw file on the NetWorker server or nw_install.*‹server_name›*.log in the tmp directory on the target host for error messages.

   Optionally, select the failed operation and click **Retry client job** to reattempt the update.

7. Click **Finish**.

Use the nsrpush command

Use the **nsrpush** command on the NetWorker server to perform client push operations from the command line.

To update the target host, log in to the NetWorker server with the root user on UNIX or the administrator user on Windows, and perform these steps:

◆ "Task 1: Review the products in the source package location" on page 61

◆ "Task 2: Add products to the repository" on page 61

◆ "Task 3: Inventory currently installed products" on page 62

◆ "Task 4: Update client software packages" on page 62

◆ "Task 5: Monitor the software updates" on page 63

Task 1: Review the products in the source package location

Review the list of extracted products in the source packages location. The command to view the Windows and UNIX products differ:

◆ For UNIX software packages, run:

nsrpush -L -U -m *media_kit_location*

◆ For Windows software packages, run:

nsrpush -L -W -m *media_kit_location*

Task 2: Add products to the repository

Use the **nsrpush** command to add packages, one at time to the repository. The **nsrpush** command differs when you add cross platform products to the repository.

    a. To add same platform products to the repository:

      – On UNIX, type:

      nsrpush -a -p *Product_Name* **-v** *version* **-P** *platform* **-U -m**
      media_kit_location

      – On Windows, type:

      nsrpush -a -p *Product Name* **-v** *version* **-P** *platform* **-W -m**
      media_kit_location

    b. To add cross-platform products to the repository:

      – On UNIX, type:

      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 UNIX server with the media kit located in /tmp/prod, and at D:\temp\downloads on the cross-platform client named unixhost, type:

      nsrpush -a -p *NetWorker* **-v** *8.0* **-P** *solaris_64* **-U -m** */tmp/prod* **-c**
      "unixhost" **-C** *"D:\\temp\\downloads"*

      – On Windows, type:

      nsrpush -a -p *Product_Name* **-v** *versions* **-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 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, type:

      nsrpush -a -p *NetWorker* **-v** *8.0* **-P** *solaris_64* **-W -m**
      "D:\temp\downloads" **-c** *"solaris_host"* **-C** */tmp/prod*

The **nsrpush** man page or running the **nsrpush** without specifying any options provides more information.

Task 3: Inventory currently installed products

Use the **nsrpush** command to generate an inventory of the NetWorker software installed on the target hosts.

◆ To inventory specific clients configured on the NetWorker server, type:

nsrpush -i *client_list*

where *client_list* is a list of the clients, separated by spaces.

◆ To inventory all clients configured on the NetWorker server, type:

nsrpush -i -all

If the required software package for the client(s) selected have not been added to the repository, the following message will appear:

```
No available products were found for the selected client(s) in the
software repository
```

"Task 1: Add the software to the repository" on page 57 provides information on how to prepare the source product directory and add the required software packages to the repository on the NetWorker server.

Task 4: Update client software packages

Use the **nsrpush** command to update all clients or selected clients of the NetWorker server.

◆ To update all clients:

nsrpush -u -p *product* **-v** *version* **-all**

◆ To update selected clients:

nsrpush -u -p *product* **-v** *version client_list*

where:

- *product* is the name of the product to update.

- *version* is the version of the product to update.

- *client_list* is a list of the clients, separated by spaces.

For example:

To update two client hosts, client1.emc.com and client2.emc.com to NetWorker 8.0 SP1, type:

```
nsrpush -u -p NetWorker -v 8.0 client1.emc.com client2.emc.com
```

For more information about the **nsrpush** command, review the nsrpush man page, or run the **nsrpush** command without specifying any options.

Task 5: Monitor the software updates

To monitor the status of the software updates:

1. Connect to the NetWorker server from the **NetWorker Management Console**.

2. In the **Configuration** menu, select **Software Administration Wizard...**

3. Click **Next** in the **Welcome to the Software Administration Wizard** page.

4. In the **Select Operation** window, accept the default **Add or remove products from my software repository**, then click **Next**.

5. In the **Software Repository Operations** window, select **Monitor current upgrade and inventory activities**. The **Monitor Activity** window appears.

    If the update operation fails, review to the nsrcpd.raw file on the NetWorker server or nw_install.*<server_name>*.log in the tmp directory on the target host for error messages.

    Optionally, select the failed operation and click **Retry client job** to reattempt the update.

6. Click **Finish**.

> **NOTICE**
>
> You cannot monitor the status of the software update from the command line.

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

Before updating a 32-bit installation of NetWorker software to a 64-bit of the NetWorker software, consider the following:

◆ If a 64-bit NetWorker storage node or client software has the 32-bit version of NetWorker installed, then you can update to NetWorker software to the 64-bit version.

   Use the appropriate operating system sections of this guide to remove the 32-bit version of the NetWorker software and install the 64-bit version of the NetWorker software.

◆ If a 64-bit Windows NetWorker server has the 32-bit version of NetWorker installed, then you can update the NetWorker software to the 64-bit version.

   Use the appropriate operating system sections of this guide to remove the 32-bit version of the NetWorker software and install the 64-bit version of the NetWorker software.

◆ If a 64-bit UNIX NetWorker server has the 32-bit version of the NetWorker software installed, you cannot update to the 64-bit version of the NetWorker software. EMC Professional Services or a certified EMC partner must perform this update.

CHAPTER 6
AIX Installation

This chapter includes these sections:

NetWorker software installation on AIX

Before installing the NetWorker software, review the following sections:

Complete these tasks to install the NetWorker software:

Task 1: Review the NetWorker software considerations for AIX

This section describes the NetWorker software considerations for the AIX operating system.

In NetWorker 8.0 and later the NetWorker software does not support AIX 5.2 and 5.3.

Before installing the NetWorker software, review the operating system and IPv4 considerations:

AIX 6.1 considerations

On AIX 6.1, system limits or memory management issues can cause core dumps and performance degradation during NetWorker operations.

To prevent these issues on AIX 6.1 TL04, install the hot fix for AIX APAR IZ65501.

IPV4 considerations

The default behavior of the AIX name resolver is to look up both the IPv4 and the IPv6 addresses for a host. If either address fails to resolve locally, the operating system requests the address from the DNS Server. If you did not configure IPv6 addressing, the DNS Server request will time out and return a failure message. If the time out wait time is too long, some NetWorker commands can have a delayed response and time out.

To prevent the time out of NetWorker commands, change the default name resolution lookup behavior to prevent IPv6 lookups.

AIX uses three methods to configure the name resolution mechanism. Ensure each method does not try to perform IPv6 lookups:

◆ **NSORDER** environment variable.

From the system prompt, type:

env

If the **NSORDER** variable is not **NSORDER=local,bind4**, type:

```
export NSORDER=local,bind4
```

◆ **/etc/irs.conf** file.

Ensure the **hosts** entries are:

```
hosts local
hosts dns4
```

◆ **/etc/netsvc.conf** file.

Ensure the **hosts** entry is:

```
hosts=local, bind4
```

Task 2: Consider the installation directory

This section describes the installation location of the NetWorker software and the disk space requirements.

The AIX **installp** utility installs the NetWorker software. This utility does not enable you to change installation location of NetWorker binaries.

The NetWorker software installs the binaries in the **/usr/bin** directory. If there is insufficient disk space to install the NetWorker software, the AIX **installp** utility allocates more disk space, to successfully complete the software installation.

The **/nsr** directory contains the NetWorker configuration, logs, and database files. To change this location create a symbolic link from the new directory to the **/nsr** directory.

For example:

1. Create another nsr directory on a disk with sufficient space:

   mkdir */disk2/nsr*

2. Link the new directory to the **/nsr** directory:

   ln -s */disk2/nsr /nsr*

Before you install the NetWorker software, ensure that:

◆ The **PATH** variable for the root and user accounts contains the **/usr/bin** directory.

◆ There is sufficient disk space to install the NetWorker software. specifies the default location and space requirements for the NetWorker software.

Table 4 AIX default file locations and space requirements

NetWorker package	Location	Space
Client (lgtoclnt)	/opt/nsr /usr/bin /usr/lib /usr/lpp	11 MB 156 MB 87 MB 40 KB
Storage node (lgtonode)	/usr/bin /usr/lib /usr/lpp	91 MB 18 MB 28 KB
Server (lgtoserv)	/usr/bin /usr/lpp	101 MB 12 KB
Man pages (lgtoman)	/usr/lpp /usr/share	36 KB 2 MB
French Language Pack (lgtofr)	/opt/nsr /usr/bin /usr/lib /usr/lpp /usr/share	5 MB 4 KB 32 KB 44 KB 2 MB
Japanese Language Pack (lgtoja)	/opt/nsr /usr/bin /usr/lib /usr/lpp /usr/share	7 MB 4 KB 40 KB 44 KB 2 MB
Korean Language Pack (lgtoko)	/opt/nsr /usr/bin /usr/lib /usr/lpp /usr/share	6 MB 4 KB 28 KB 44 KB 2 MB
Simplified Chinese Language Pack (lgtozh)	/opt/nsr /usr/bin /usr/lib /usr/lpp /usr/share	6 MB 4 KB 24 KB 40 KB 1 MB
Client file index, media database, resource database, and log files	/nsr	varies

Task 3: Install the NetWorker software

This section describes how to install the client, the storage node, and the server software and optional software such as the man pages and language packs.

The NetWorker software ships in a 32-bit version. Install this version on both the 32-bit and the 64-bit versions of the AIX operating system.

To install the NetWorker software:

1. Log in to the target host as root.

2. Create a backup copy of the operating system configuration files:

```
cp /etc/rpc /etc/rpc.orig
cp /etc/inittab /etc/inittab.orig
```

3. Install the NetWorker software in one of two ways:

Use installp

Use the **installp** program to install the NetWorker software from the system prompt.

For example:

installp -a -d */dir_pathname package [package]...*

where:

◆ */dir_pathname* is the complete pathname of the directory that contains the installation software.

For example, if you extract the NetWorker software packages to the **/software** directory, the dir_pathname is **/software/aix**.

◆ *package [package]...* is a list of the software package required for the installation type. Table 5 on page 69 provide a list of the software packages required for each installation type.

Table 5 List of NetWorker packages required for each installation type

Installation type:	Packages:
Client software	LGTOnw.clnt.rte
Storage Node software	LGTOnw.clnt.rte LGTOnw.node.rte
Server software	LGTOnw.clnt.rte LGTOnw.node.rte LGTOnw.serv.rte
Man pages	LGTOnw.man.rte
Simplified Chinese language support	LGTOnw.zh.rte
French language support	LGTOnw.fr.rte
Japanese language support	LGTOnw.ja.rte
Korean language support	LGTOnw.ko.rte

For example:

To install the NetWorker server software, the man pages and the Japanese language pack, type:

```
installp -a -d /nw_packages LGTOnw.clnt.rte LGTOnw.node.rte
   LGTOnw.serv.rte LGTOnw.man.rte LGTOnw.ja.rte
```

To confirm that the required packages successfully installed for each installation type, type:

```
lslpp -L all | grep -i lgto*
```

Use smitty

Use the **smitty** program to install the NetWorker software from a GUI.

To install the NetWorker software:

1. Set the emulation mode to an appropriate display mode for the **smitty** program:

   For example:

   set display=vt100

2. To start the NetWorker software installation, type:

   smitty install_latest

3. In the **Input device / directory for software** field, type the location of the NetWorker software packages.

   For example, if you extract the NetWorker software to the **/software** directory, the _dir_pathname_ is **/software/aix**.

4. Select **SOFTWARE to install.**

5. To display the list of available packages, press the **Esc+4**.

6. Highlight the package to install.

   To select the software, press **Esc+7**.

   Repeat this for each NetWorker package.

   Table 5 on page 69 provides a list of the required NetWorker packages for each installation type.

7. To return to the **Install Software** window, press **Enter.**

8. To begin the installation, press **Enter.**

9. To continue with the installation, press **Enter.**

10. When the installation is complete, exit **smitty.**

Task 4: Change the NetWorker servers with access to the host

By default, any NetWorker server can:

◆ Back up this host.

◆ Perform a directed recover to this host.

To specify the NetWorker servers that can perform backups and directed recoveries on this host:

1. Shut down the NetWorker daemons:

   nsr_shutdown

2. Edit or create the **/nsr/res/servers** file. Specify the NetWorker servers, one per line, that require access to the host.

    Consider the following:

    - When you do not specify a server, you enable any NetWorker server to:
        – Backup this host.
        – Perform a directed recovery to this host.

    - When you add the NetWorker servers, specify both the short name and FQDN for each NetWorker server.

    - The first entry in this file becomes the default NetWorker server.

Task 5: Start the NetWorker daemons

Start the NetWorker daemons and confirm that they start successfully.

◆ To start the NetWorker daemons, type:

   /etc/rc.nsr

◆ To confirm that the NetWorker daemons start successfully, type:

   ps -ef | grep nsr

   "NetWorker daemons" on page 16 provides a list of the daemons that start for each installation type.

> **NOTICE**
>
> If you did not stop the NetWorker daemons in Task 4, you must stop the NetWorker daemons on the NetWorker server after an update to the NetWorker 8.0 software. Stopping the daemons completes the update process.

Console server installation on AIX

To manage the NetWorker server, install the Console server software on one host in the NetWorker datazone.

Complete these tasks to install the Console server software:

◆ "Task 1: Review the Console server software requirements" on page 72

◆ "Task 2: Install the Console server software" on page 72

◆ "Task 3: Configure the Console server software" on page 74

Task 1: Review the Console server software requirements

This section describes the Console server requirements.

Before installing the Console server software package, review the following requirements:

◆ If you did not install the NetWorker client software on the target host, install the NetWorker client software when you install the Console server software.

◆ A NetWorker 8.0 and later Console server software does not support AIX 5.2 and AIX 5.3. The *EMC NetWorker Software Compatibility Guide* on the EMC Online Support Site provides the most up to date information on supported Console server operating systems.

describes how to migrate a Console server from a previously supported operating system to a new Console server.

◆ Ensure that there is sufficient disk space to install the Console server software files. specifies the default location and space requirements for the Console server software on an AIX host.

Table 6 AIX Console server default file locations and space requirements

NetWorker package	Location	Size
LGTOnmc.rte	/opt/lgtonmc /usr/lpp	189 MB 76 KB

Task 2: Install the Console server software

This section describes how to install the Console server software.

To install the Console server software:

1. Log in to the target host as root.

2. Rename the **.toc** file in the directory that contains the NetWorker software packages.

3. If you installed NetWorker client software on the host:

   • Confirm that the **NetWorker Remote Exec** daemon, **nsrexecd** is started:

     ps -ef | grep nsr

   • If the **nsrexecd** daemon is not started, type:

     /etc/rc.nsr

4. Install the Console server software in one of two ways:

   •

   •

Use installp

Use the **installp** program to install the Console server software from the system prompt.

To install the Console server software, type:

installp -a -d */dir_pathname LGTOnw.clnt.rte* **LGTOnmc.rte** *[packages]...*

where:

◆ */dir_pathname* is the complete pathname of the directory that contains the installation software.

For example, if you extracted the NetWorker software packages to the **/software** directory, the dir_pathname is **/software/aix**.

◆ *Specify the LGTOnw.clnt.rte* only if you did not previously install the NetWorker client package.

◆ *[packages]...* is a list of the optional software packages.

For example, to install the Console server software with the French language pack and the NetWorker client software package, type:

installp -a -d /nw_packages **LGTOnw.clnt.rte LGTOnmc.rte LGTOnw.fr.rte**

To confirm that the required package installation completed successfully, type:

lslpp -L all | grep -i lgto*

Use smitty

Use the **smitty** program to install the Console server software from a GUI.

To install the Console server software:

1. Set the emulation mode to an appropriate display mode for the **smitty** program:

   For example:

   set display=vt100

2. To start the NetWorker software installation, type **smitty install_latest**.

3. In the **Input device / directory for software** field, type the location of the Console server software package.

4. Select the software packages to install:

   • If you already installed the NetWorker client software, in the **Software to install** field, type:

     LGTOnmc.rte

   • If you did not previously install the NetWorker client software:

     – To display a list of the available software packages, press the **Esc+4**.

     – Highlight the **LGTOnw.clnt.rte** and the **LGTOnmc.rte** packages.

       To select the software, press the **Esc+7**.

     – To return to the **Install Software** window, select **Enter**.

5. To begin the installation, select **Enter**.

6. To confirm the installation, select **Enter**.

7. When the installation is complete, exit **smitty**.

Task 3: Configure the Console server software

Use the **nmc_config** command to configure the Console server software program.

To configure the console server software:

1. From a system prompt, type:

   /opt/lgtonmc/bin/nmc_config

2. Specify a non-root user/group with limited privileges. The Console server uses this user/group to run the web server. For example, use the default user/group [nobody/nobody].

3. 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**.

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

   > **NOTICE**
   >
   > Do *not* use port numbers that are already in use. For example: The Console server uses port **2638** for TDS protocol communications with the Console database. The preferred port for EMC Data Protection Advisor product is **9002**.

5. Specify the directory to use for the **lgtonmc** database.

   For example:

   /opt/lgtonmc/lgto_gstdb

6. If the installation process detects an existing database, type **y** to retain the existing database when prompted.

7. If the installation process detects a NetWorker 7.6.x Console server database:

   a. To proceed with the installation and Console server database conversion, type **y.**

   b. Specify the directory location for the database backup file.

      For example:

      ```
      /opt/lgtonmc/lgto_gstdb
      ```

   If the conversion fails the following error message appears:

   ```
   Install failed to upgrade the database full_path_and_database name.
   Check the upgrade log full_path_and_log_name_file for details.
   Please, fix any environment related errors mentioned in the log and
   then run the  script <full path to gstdbupgrade.sh>
   manually to upgrade the database after the install is complete.
   ```

8. Specify the location of the NetWorker binaries. For example: /usr/bin.

9. When prompted to start the Console server daemons:

- If the database conversion is successful, type **y**.

- If the database conversion encountered errors, type **n**. "Task 11: Review the status of the Console server database conversion" on page 49 describes how to determine the cause of the conversion failure and the steps to convert the database after the software install has completed.

10. Update the **MANPATH** variable for the Console server man pages.

For example:

```
MANPATH=$MANPATH:/opt/lgtonmc/man
export MANPATH
```

Use the console client to connect to the Console server

A console client is a system that connects to the Console server through a web browser, to display the Console server GUI.

An AIX console client:

◆ Requires JRE 1.6 or JRE 1.7.

◆ Does not require the NetWorker software.

◆ Supports the Mozilla 1.7 web browser on:

- AIX 5.3

- AIX 6.1

- AIX 7.1

- RS6000, RS64, and Power

"Task 1: Connect to the Console server console GUI for the first time" on page 152 describes on how connect to the Console server for the first time.

Uninstall the NetWorker and Console server software on AIX

Use **installp** or **smitty** to uninstall the NetWorker software.

To uninstall the NetWorker software:

1. Log in to the target host as root.

2. Uninstall the NetWorker software on AIX using one of the following methods:

- "Use installp" on page 73

- "Use smitty" on page 73

Use installp

Use the **installp** program to remove the NetWorker software from a system prompt.

To uninstall the NetWorker software:

1. Use the **lslpp** command to get a list of installed NetWorker software packages:

   ```
   lslpp -L all | grep -i lgto*
   ```

2. Use **installp -u** to remove the software packages:

   ```
   installp -u package [package]...
   ```

   Table 7 on page 76 provides a list of the installed packages for each installation type.

   For example, to uninstall the Console server software and the French language pack, type:

   ```
   installp -u LGTOnmc.rte LGTOnw.fr.rte LGTOnw.clnt.rte
   ```

   > **NOTICE**
   >
   > When removing multiple NetWorker software packages, specify the **LGTOnw.clnt.rte** package last.

Table 7 Select NetWorker software packages to uninstall

Installation type	Software packages
Client software	LGTOnw.clnt.rte
Storage Node software	LGTOnw.node.rte LGTOnw.clnt.rte
Server software	LGTOnw.serv.rte LGTOnw.node.rte LGTOnw.clnt.rte
Console server software	LGTOnmc.rte LGTOnw.clnt.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

3. To confirm the package removal, type:

   ```
   lslpp -L all | grep -i lgto*
   ```

Use smitty

To remove the NetWorker software from a GUI, you can use the **smitty** program.

To uninstall the NetWorker software:

1. Set the emulation mode to an appropriate display mode for the **smitty** program.

   For example:

   ```
   set display=vt100
   ```

2. Shut down the NetWorker daemons:

   ```
   nsr_shutdown
   ```

3. Confirm that the NetWorker daemons stop:

   ```
   ps -ef | grep nsr
   ```

4. To start the NetWorker software removal process, type:

   ```
   smitty remove
   ```

5. Press **Esc+4** to display a list of NetWorker software packages.

6. Press **/** and search for **LGTO.**

7. Highlight and select the NetWorker software package to uninstall. Press **Esc+ 7.**

   Repeat this for each NetWorker software package.

   provides the list of the available NetWorker software packages.

8. To return to the **Remove Installed Software** window, press **Enter.**

9. Ensure the **PREVIEW only? (remove operation will NOT occur)** option is **no.**

10. Press **Enter.**

11. To confirm the software uninstall, press **Enter.**

12. When the software uninstall process completes, exit the **smitty** program.

13. If there is no plan to update or reinstall the software packages:

    a. Remove the /nsr directory.

    b. Delete the Console server directory. By default, this directory is /opt/lgtonmc.

14. If JRE is no longer required, remove the JRE program.

CHAPTER 7
HP-UX Installation

This chapter includes these sections:

NetWorker software installation on HP-UX

Before installing the NetWorker software, review the following sections:

◆

◆

Complete these tasks to install the NetWorker software:

◆

◆

◆

◆

◆

Task 1: Review the NetWorker software considerations and requirements for HP-UX

This section outlines the software considerations and requirements for the NetWorker software on supported HP-UX operating systems.

◆

◆

◆

◆

◆

General considerations

Before installing of the NetWorker software on HP-UX, review the following considerations:

1. Ensure that the kernel parameter **maxfiles_lim** is a minimum value of **8192**.

2. Set the **nfile** value, according to the following formula:

   The **nfile** setting + (*number of expected concurrent save times*)

   The minimum value for the number of expected concurrent save times is 50.

   For example:

   ```
   nfile = 1 X 50
   ```

3. Ensure that the /etc/nsswitch.conf file contains an ipnodes policy:

```
ipnodes=files
```

If you do not specify an ipnodes policy, the NetWorker daemons fail to start with a message similar to the following:

```
lgtolmd: Failed to resolve the IPv6 localhost address ::1. Please
verify an entry for the IPv6 localhost address exists in your
/etc/hosts file and an "ipnodes" policy has been added to your
/etc/nsswitch.conf file.
```

HP-UX 11iv3 considerations

Before you install the NetWorker software on HP-UX 11iv3, review the following considerations:

◆ If you use stape on an HP-UX11iv3 NetWorker server or storage node, install patch PHKL_36312 or later.

This will enhance tape device compatibility.

◆ For HP-UX NetWorker servers and storage nodes that use tape devices, install PHKL_41474 or higher.

This is required for CDI support.

◆ If you backup the /dev directory to a local HP-UX 11iv3 storage node, the backup may fail, and the system may fail to respond.

To avoid this issue, implement one of these options:

- Do not back up the /dev directory.

- Do not specify ALL in the client Save Set attribute or use a directive to exclude the /dev directory from the backup.

- Do not specify save sets that include the /dev directory in the backup.

- Use a remote storage node.

HP-UX 11iv2 requirements

Before you install the NetWorker software on HP-UX 11iv2, ensure that the PHSS_37500 and PHSS_39101 patches are installed on the host.

HP-UX 11iv1 requirements

Before installing the NetWorker software on HP-UX 11iv1, install the IPv6NCF11i packages on the host.

If you do not install the IPv6NCF11i packages:

◆ NetWorker daemons may core dump.

◆ The error message: *Unable to find library libipv6.sl* may appear on the terminal console.

To install the packages:

1. Find the IPv6NCF11i packages on the HP web site and download both depot files.

2. To install the first depot, type:

   ```
   swinstall -x autoreboot=true -s

   $PWD/J4256AA_A.02.01.01_HP-UX_B.11.11_32_64.depot \*
   ```

3. To install the second depot, type:

   ```
   swinstall -x autoreboot=true -x enforce_dependencies=false -s

   $PWD/IPv6NCF11i_B.11.11.0705_HP-UX_B.11.11_32+64.depot
   ```

HP-UX on PA-RISC considerations

This section describes the software considerations for HP-UX on PA-RISC.

NetWorker 8.0 and later, only supports the NetWorker client software on an HP-UX PA-RISC host.

Before you install the NetWorker software on HP-UX RISC, install the following patches on the host:

◆ QPK1123(B.11.23.0712.070a) 1185010 Quality Pack Depot

◆ PHSS_37492

Task 2: Consider the installation directory

The NetWorker software installs the binaries in the /opt/networker/bin directory. The /nsr directory contains the NetWorker configuration, logs, and database files.

The location of the NetWorker binaries, configuration, log files and databases cannot be changed.

Before you install the NetWorker software, ensure that the PATH variable for the root and user account contains the /opt/networker/bin directory.

Task 3: Install the NetWorker software

Use the swinstall utility to install the NetWorker software on HP-UX 11.*x* or HP-UX 11i platforms on IPF.

The swinstall utility uses the character mode or the System Administration Manager (SAM) utility. The character mode swinstall screens contain the same information as the SAM utility. The same choices are made with both formats.

This section describes how to install the client, storage node, and server software packages and optional packages such as the man pages and language packs.

To install the NetWorker software:

1. Log in to the target host as root.

2. Create a backup copy of the rpc.org configuration file:

   ```
   cp /etc/rpc /etc/rpc.org
   ```

3. At the system prompt, type:

   `swinstall &`

   If you use the character interface, do not include the & symbol.

4. Press **Enter.**

5. On the **Specify Source** window, provide the location of the NetWorker installation files:

   a. In the **Source Depot Type** field, press **Enter** and select **Local Directory.**

   b. In the **Source Host Name** field, ensure that the hostname of the target host is selected.

   c. In the **Source Depot Path** field, type the full path of the **NetWorker.pkg** file.

      For example:

      `/tmp/hpux11_ia64/NetWorker.pkg`

6. Click **OK.**

7. On the **SD Install - Software Selection** window, select and mark the required software packages for the installation type. Table 8 on page 83 provides a summary of NetWorker software packages that are installed for each NetWorker component.

Table 8 HP-UX software packages

To install the:	Select these packages:
Client software	NWr-Client
Storage node software	NWr-Client NWr-Node
Server software	NWr-Client NWr-Node NWr-Server
Man pages	NWr-Man
French language support	NWr-FR
Japanese language support	NWr-JA
Korean language support	NWr-KO
Simplified Chinese language support	NWr-ZH

8. Press **Enter.**

9. On the **Actions** menu, click **Install.**

10. Verify the status of the install analysis.

    • To review the log file and verify that the **swinstall** program did not encounter errors, click **Logfile.**

    • Correct any problems before you continue the installation.

11. To continue with the installation, click **OK.**

12. To review the log file for error or warning messages generated during installation, click **Logfile**.

13. When the installation completes, click **Done**.

14. Exit **swinstall**.

Task 4: Change the NetWorker servers with access to the client

By default, any NetWorker server can back up this host and perform a directed recover to this host.

To specify the NetWorker servers that are allowed to perform backups and directed recoveries on this host:

1. Shut down the NetWorker daemons:

   `nsr_shutdown`

2. Edit or create the /nsr/res/servers file.

   Specify the NetWorker servers, one per line, that require access to the host.

   Consider the following:

   - When you do not specify a server, you enable any NetWorker server to:
     - Backup this host.
     - Perform a directed recovery to this host.

   - When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

   - The first entry in this file becomes the default NetWorker server.

Task 5: Start the NetWorker daemons

Start the NetWorker daemons and confirm that they start successfully.

◆ To start the NetWorker daemons, type:

   `/sbin/init.d/networker start`

◆ To confirm that the NetWorker daemons start successfully, type:

   `ps -ef | grep nsr`

   "NetWorker daemons" on page 16 provides a list of the daemons start for each installation type.

   | NOTICE |

   If you did not stop the NetWorker daemons in Task 4, you must stop the NetWorker daemons on the NetWorker server after an update to the NetWorker 8.0 software. The restart of the daemons complete the update process.

Use the Console client to connect to the Console server

A Console client is a system that connects to the Console server through a browser, to display the NetWorker Management Console (NMC) GUI.

Note: An HP-UX Console server is not supported. The *EMC NetWorker Software Compatibility Guide* provides a list of supported operating systems supported by the Console server software

An HP-UX console client:

◆ Requires JRE 1.6 or JRE 1.7.

◆ Does not require the NetWorker software.

◆ Supports the Mozilla 1.7 browser on:

   • HP-UX 11i ver 1 — HP-UX PA-RISC 64-bit, only.

   • HP-UX 11i ver 2 — HP-UX PA-RISC 64-bit and HP-UX IA-64, only.

   • HP-UX 11i ver 3 — HP-UX PA-RISC 64-bit, only.

describes how to launch the console client for the first time.

Uninstall the NetWorker software on HP-UX

Use the **swremove** utility to uninstall the NetWorker software.

To uninstall the NetWorker software packages:

1. Log in to the target host as root.

2. Shut down the NetWorker daemons:

   ```
   nsr_shutdown
   ```

3. Confirm that all of the NetWorker daemons stop:

   ```
   ps -ef | grep nsr
   ```

4. To start the NetWorker software removal process, type:

   ```
   swremove &
   ```

   NOTICE

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

5. On the **Software Selection** window, select the NetWorker software to remove.

6. On the **Actions** window, select **Remove**.

   This runs an analysis of the remove operation.

7. To confirm that the analysis did not detect any problems, click **Logfile**.

   Fix any reported problems before you continue with the operation.

8. On the **Remove Analysis** window, click **OK** to continue the remove operation.

9. On the **Remove** window, click **Done**.

10. On the **File** menu, select **Exit**.

11. Verify that all the files are removed from **/opt/networker** directory.

12. If there is no plan to update or reinstall the software packages, remove the **/nsr** directory.

CHAPTER 8
Linux Installation

This chapter includes these sections:

NetWorker software installation on Linux

Before installing the NetWorker software, review these sections:

◆ "Installation roadmap" on page 20

◆ "Software Requirements" on page 23

Complete these tasks to install the NetWorker software:

◆ "Task 1: Review the NetWorker software requirements for Linux" on page 88

◆ "Task 2: Consider the installation directory" on page 93

◆ "Task 3: Install the NetWorker packages" on page 95

◆ "Task 4: Change the NetWorker servers with access to the host" on page 99

◆ "Task 5: Post Installation consideration for st tape devices" on page 100

◆ "Task 6: Start the NetWorker daemons" on page 100

Task 1: Review the NetWorker software requirements for Linux

Before you install the NetWorker software, review the software requirements for each Linux host.

◆ "RHEL, Fedora, CentOS and RedFlag Asianux package dependencies" on page 88

◆ "Debian and Ubuntu Linux package dependencies" on page 91

◆ "SuSE package dependencies and requirements" on page 91

RHEL, Fedora, CentOS and RedFlag Asianux package dependencies

On Redhat Enterprise Linux (RHEL), CentOS, Fedora and RedFlag, use the **yum** program to install the NetWorker software and each required operating system packages automatically, as necessary. If you cannot install package dependencies with the **yum** program, then install any missing package dependencies, manually.

Table 9 on page 89provides a summary of the package dependencies for each Fedora operating system version.

Table 10 on page 90 provides a summary of the package dependencies for each RHEL operating system version.

Table 11 on page 90 provides a summary of the package dependencies for each CentOS and RedFlag Asianux operating system version.

Table 9 Fedora package requirements — minimum versions

Fedora 13	Fedora 14	Fedora 15	Fedora 16 & 17
bash-4.1.2 compat-libstdc++-33 cyrus-sasl-lib-2.1.23 glibc-2.12.2 libacl-2.2.49 libgcc-4.4.5 libX11-1.3.1 libXext-1.1 libxml2-2.7.7 libXp-1.0.0 libXt-1.0.7 ncurses-libs-5.7 pam-1.1.1 policycoreutils-python (if SELinux is used) zlib-1.2.3	bash-4.1.7 compat-libstdc++-33 cyrus-sasl-lib-2.1.23 glibc-2.13 libacl-2.2.49 libgcc-4.5.1 libX11-1.3.4 libXext-1.1.2 libxml2-2.7.7 libXp-1.0.0 libXt-1.0.7 ncurses-libs-5.7 libcap.so.1 pam-1.1.5 policycoreutils-python (if SELinux is used) zlib-1.2.5	bash-4.2.10 compat-libstdc++-33 cyrus-sasl-lib-2.1.23 glibc-2.14.1-6.i686 (64-bit only) glibc-2.14-6.x86_64 ksh libacl-2.2.49 libgcc-4.6.3 libX11-1.4.3 libXext-1.2.0 libxml2-2.7.8 libXp-1.0.0 libXpm-3.5.8 libXt-1.1.0 ncurses-lib-5.8.2 libcap.so.1 pam-1.1.5 policycoreutils-python (if SELinux is used) zlib-1.2.5	bash-4.2.37 compat-libstdc++-33 cyrus-sasl-lib-2.1.23 glibc-2.15-56.fc17.i686 (64-bit only) glibc-2.15-56.fc17.x86 _64 ksh libacl-2.2.51 libgcc-4.7.0 libX11-1.5.0 libXext-1.3.1 libxml2-2.7.8 libXp-1.0.0 libXpm-3.5.10 libXt-1.1.2 ncurses-libs-5.9 libcap.so.1 pam-1.1.5 zlib-1.2.5

NOTICE

For Fedora 16 only, install glibc-2.14.90-24.fc16.9.i686 manually.

Table 10 RHEL package requirements— minimum versions

RHEL 4	RHEL 5	RHEL 6
bash-3.0 compat-libstdc++-33 cyrus-sasl-2.1.19 (32-bit) glibc-2.3.4 libacl-2.2.23 libcap-1.10 libgcc-3.4.6 libxml2-2.6.16 ncurses-5.4 openmotif-2.2.3 pam-0.77 pdksh-5.2.14 xorg-x11-deprecated-libs-6.8.2 xorg-x11-libs-6.8.2 zlib-1.2.1.2	bash-3.1 compat-libstdc++-33 cyrus-sasl-lib-2.1.22 (32-bit) glibc-2.5 gsk7bas64-7.0-3.18 (zLinux only) gsk7bas-7.0-3.18 (zLinux only) ksh libacl-2.2.39 libcap-1.10 libgcc-4.1.1 libX11-1.0.3 libXext-1.0.1 libxml2-2.6.26 libXp-1.0.0 libXt-1.0.0 ncurses-5.5 openmotif openldap-2.3.43 pam-0.99.6.2 policycoreutils (if SELinux is used) zlib-1.2.3	bash-4.1.2 compat-libcap1-1.10 compat-libstdc++-33 compat-openldap-2.4.19_2.3.43 cyrus-sasl-lib-2.1.23 (32-bit) glibc-2.12 ksh libacl-2.2.49 libgcc-4.4.4 libX11-1.3 libXext-1.1 libxml2-2.7.6 libXp-1.0.0 libXt-1.0.7 ncurses-libs-5.7 openmotif pam-1.1.1 zlib-1.2.3 If SELinux is enabled: audit-libs-python-2.1 libsemanage-python-2.0.43 setools-libs-3.3.7 setools-libs-python-3.3 policycoreutils-python

Table 11 CentOS and RedFlag Asianux package requirements — minimum versions

CentOS 4	CentOS 5	CentOS 6	RedFlag Asianux 3
bash-3.0 compat-libstdc++-33 cyrus-sasl-2.1.19 (32 bit) glibc-2.3.4 libacl-2.2.23 libcap-1.10 libgcc-3.4.6 libxml2-2.6.16 ncurses-5.4 libXp-1.0.0 openmotif-2.2.3 pam-0.77 pdksh-5.2.14 xorg-x11-libs-6.8.2 zlib-1.2.1.2	bash-3.2 compat-libstdc++-33 cyrus-sasl-lib-2.1.22 glibc-2.5 ksh libacl-2.2.39 libcap-1.10 libgcc-4.1.2 libX11-1.0.3 libXext-1.0.1 libxml2-2.6.26 libXp-1.0.0 libXt-1.0.2 ncurses-5.5 openldap-2.3.43 openmotif-2.3.1 pam-0.99.6.2 policycoreutils-python (if using SELinux) zlib-1.2.3	bash-4.1.2 compat-libcap1-1.10 compat-libstdc++-33 cyrus-sasl-lib-2.1.23 glibc-2.12 ksh libacl-2.2.49 libgcc-4.1.6 libX11-1.3.2 libXext-1.1 libxml2-2.7.6 libXp-1.0.0 libXt-1.0.7 ncurses-5.7 openldap openmotif-2.3.3 pam-1.1.1 policycoreutils-python (if using SELinux) zlib-1.2.3	bash-3.1 compat-libstdc++-33 cyrus-sasl-lib-2.1.22 glibc-2.6 ksh-20060124 libX11-1.1.1 libXext-1.0.2 libXp-1.0.0 libXt-1.0.5 libacl-2.2.34 libcap-1.10 libgcc-4.2.1 libxml2-2.6.27 ncurses-5.6 openldap-2.3.34 openmotif-2.3.0 pam-0.99.3.0 zlib-1.2.3

Debian and Ubuntu Linux package dependencies

The NetWorker software requires Debian and Ubuntu operating system packages. Use **apt-get** command to automatically install missing operating system packages after the NetWorker software installation.

> **NOTICE**
>
> For Ubuntu 10 only, the Ubuntu software repository does not include the libstdc++5 package. Manually download and install the libstdc++5 package for Debian before installing the NetWorker client software. http://packages.debian.org/squeeze/libstdc++5 provides more information.

Table 12 on page 91 provides a summary of the operating system packages required by the NetWorker software.

Table 12 Linux Debian and Ubuntu package requirements

Debian 5 and 6	Ubuntu 10, 11, and 12
ksh pdksh libacl1 libc6 libexpat1 libgcc1 libpam0g libstdc++5 libx11-6 libxext6 libxml2 libxp6 libxt6 zlib1g	ksh pdksh (Ubuntu 11 and 12 only) libacl1 libc6 libexpat1 libgcc1 libpam0g libstdc++5 libx11-6 libxext6 libxml2 libxp6 libxt6 zlib1g

SuSE package dependencies and requirements

Before installing the NetWorker software on SuSE Linux, satisfy these operating system requirements:

◆ "SuSE package dependencies" on page 92

◆ "IPv6 requirements on SuSE 9.x" on page 92

SuSE package dependencies

Before installing the NetWorker software, install the required operating system packages. Table 13 on page 92 provides a summary of the operating system packages that are required by the NetWorker software.

Table 13 SuSE package requirements for NetWorker — minimum versions

SuSE 9	SuSE 10	SuSE 11
bash-2.05b glibc-2.3.3 glibc-32bit ksh93 libacl-2.2.21 libcap-1.92 libgcc-3.3.3 libstdc++-3.3.3 libxml2-2.6.7 ncurses-5.4 openmotif-2.2.2 openssl-0.9.7d pam-0.77 XFree86-libs-4.3.99.902 zlib-1.2.1	bash-3.0 compat-libstdc++-33 glibc-2.3.4 libacl-2.2.23 libcap-1.10 libgcc-3.4.6 libxml2-2.6.16 ncurses-5.4 openmotif-2.2.3 pam-0.77 pdksh-5.2.14 xorg-x11-deprecated-libs-6.8.2 xorg-x11-libs-6.8.2 zlib-1.2.1.2 gsk7bas-7.0 (zLinux only) gsk7bas64-7.0-3.18 (zLinux only) xorg-x11-libs-32bit-6.9.0 (zLinux only)	bash-3.2 glibc-2.9 glibc-32bit-2.9 ksh-93t libacl-2.2.47 libgcc43-4.3.3 libncurses5-5.6 libstdc++33-3.3.3 libxml2-2.7.1 libcap-1.10 (64bit) openmotif pam-1.0.2 xorg-x11-libX11-7.4 xorg-x11-libXext-7.4 xorg-x11-libXp-7.4 xorg-x11-libXpm-7.4 xorg-x11-libXt-7.4 zlib-1.2.3

IPv6 requirements on SuSE 9.x

If the scope link address is not referenced in the /etc/hosts file on a SuSE 9 server with IPv6 configured in either a single stack, or dual stack (IPv4/IPv6) environment, the NetWorker processes may experience startup delays.

To avoid startup delays, add the Scope:Link address for the NIC in the /etc/hosts file:

1. Run **ipconfig** to discover the Scope:Link address for the NIC.

   In this example, the host named geo1 has a network interface named eth0, which has a Scope:Link address of fe80::2c0:4ff:fe68:c24/64:

   ```
   geo1> ipconfig
   eth0 Link encap:Ethernet HWaddr 00:C0:4F:68:C2:4F
   inet addr:192.168.0.1 Bcast:10.5.163.255
   Mask:255.255.254.0
   inet6 addr: 3ffe:80c0:22c:74:2c0:4ff:fe68:c24/64
   Scope:Global
   inet6 addr: fe80::2c0:4ff:fe68:c24/64 Scope:Link
   inet6 addr: 2001:abcd:0:1001:2c0:4ff:fe68:c24/64
   .
   .
   ```

2. Edit the /etc/hosts file, and add an entry for the Scope:Link address followed by resolvable names for the NIC.

   In this example, the FQDN name for geo1 is geo1.emc.com

   ```
   # Scope:Link address
   fe80::2c0:4ff:fe68:c24 geo1.emc.com geo1
   ```

Task 2: Consider the installation directory

This section describes how to change the default installation location of the NetWorker software on the target host and the disk space requirements.

The NetWorkerNetWorker software installs the binaries in the /usr directory. The /nsr directory contains the NetWorker configuration, logs, and database files. You can change these directory locations on all supported Linux operating systems with the exception of Debian and Ubuntu.

◆ "Changing the software installation directory" on page 94 describes how to change the location of the binary directory.

◆ "Changing the configuration, log, and database files directory" on page 94 describes how to change the location of the configuration files, the log files, and the database files.

Before installing the NetWorker software, ensure that:

◆ The PATH variable for the root and user accounts contains the /usr/sbin directory.

◆ There is sufficient disk space to install the NetWorker files in the default location. Table 14 on page 93 specifies the default location and space requirements for the NetWorker software in a Linux environment.

Table 14 Linux default file locations and space requirements (page 1 of 2)

NetWorker Package	Location	Space				
		Linux ia64	Linux x86	Linux x64	Linux PPC64	Linux s390
Client (lgtoclnt)	/usr/lib /usr/sbin /usr/bin /opt/nsr	60 MB 204 MB 66 MB 21 MB	29 MB 55 MB 31 MB 16 MB	50 MB 78 MB 33 MB 21 MB	1.6 MB 37MB 16 MB 20.0 KB	1.6 MB 41 MB 18 MB 20.0 KB
Storage node (lgtonode)	/usr/lib /usr/sbin	21 MB 170 MB	9.3 MB 58 MB	11 MB 67 MB	n/a	n/a
Server (lgtoserv)	/usr/sbin	185 MB	52 MB	71 MB	n/a	n/a
Man pages (lgtoman)	/usr/share	1.7 MB	1.7 MB	1.8 MB	1.8 MB	n/a
French Language Pack (lgtofr)	/usr/lib /usr/sbin /usr/share /opt/nsr	44 KB 8.0KB 1.9 MB 5.2 MB	44 KB 8.0 KB 1.9 MB 6.9 MB	44 KB 8.0 KB 1.9 MB 8.2 MB	n/a	n/a
Japanese Language Pack (lgtoja)	/usr/lib /usr/sbin /usr/share /opt/nsr	52 KB 8.0 KB 1.8 MB 5.9 MB	52 KB 8.0 KB 1.8 MB 9.4 MB	52 KB 8.0 KB 1.8 MB 9.4 MB	n/a	n/a

Table 14 Linux default file locations and space requirements (page 2 of 2)

NetWorker Package	Location	Space				
		Linux ia64	Linux x86	Linux x64	Linux PPC64	Linux s390
Korean Language Pack (lgtoko)	/usr/lib /usr/sbin /usr/share /opt/nsr	40 KB 8.0 KB 1.7 MB 5.3 MB	40 KB 8.0 KB 1.7 MB 8.5 MB	40 KB 8.0 KB 1.7 MB 8.5 MB	n/a	n/a
Simplified Chinese Language Pack (lgtozh)	/usr/lib /usr/sbin /usr/share /opt/nsr	36 KB 8.0 KB 1.4 MB 4.4 MB	36 KB 8.0 KB 1.4 MB 8.0 MB	36 KB 8.0 KB 1.4 MB 6.9 MB	n/a	n/a
Client file index, media database, resource database	/nsr	varies	varies	varies	n/a	n/a

Changing the software installation directory

Use **rpm --relocate** to install the NetWorker software to a non default location.

For example, to install the NetWorker server to the /nw directory:

1. Log in to the target host as root.

2. From the directory that contains the NetWorker packages, type:

   rpm -ivh --relocate */usr=/nw lgtoclnt*.rpm lgtonode*.rpm lgtoserv*.rpm*

3. Modify the root **PATH** variable to include the bin and sbin subdirectories of the new directory:

   `/nw/bin:/nw/sbin`

4. Modify the LD_LIBRARY_PATH variable to specify the path to the /lib/nsr directory:

   LD_LIBRARY_PATH=/nw**/lib/nsr**

5. Create a symbolic link for the cst folder:

   ln -s /nw**/opt/nsr/cst /opt/nsr/cst**

Changing the configuration, log, and database files directory

To change the default location of the configuration, logs, and database files, create a symbolic link from the new directory to the /nsr directory.

For example:

1. Create another nsr directory on a disk with sufficient space:

   mkdir */disk2/nsr*

2. Link the new directory to the /nsr directory:

   ln -s */disk2/nsr /nsr*

Task 3: Install the NetWorker packages

This section describes how to install the client, the storage node, and the server software and optional packages such as the man pages and the language packages on a Linux system.

Before you install the NetWorker software:

◆ Create a backup copy of the operating system configuration files:

```
cp /etc/rpc /etc/rpc.orig
cp /etc/ld.so.conf /etc/ld.so.conf.orig
```

Use the appropriate operating system program to install the NetWorker packages required for the installation type.

◆ If you enabled SELinux on your system, you must add file contexts and security contexts for the NetWorker software.

1. To add file contexts, type:

```
semanage fcontext -a -t textrel_shlib_t "/usr/lib/nsr/lib.*\.so"
```

2. To update the security contexts, type:

```
restorecon -R /usr/lib/nsr"
```

NOTICE

If **semanage** or **restorecon** file does not exist on the Linux system, install the policycoreutils-python package.

These sections describe how to install the NetWorker software:

◆ "RHEL, RedFlag, Oracle Enterprise Server, RedFlag Asianux, and CentOS" on page 95

◆ "SuSE" on page 96

◆ "Debian and Ubuntu" on page 97

◆ "Fedora" on page 98

RHEL, RedFlag, Oracle Enterprise Server, RedFlag Asianux, and CentOS

To install the NetWorker software packages, use the **yum** program.

1. Log in to the target host as root.

2. From the directory that contains the extracted NetWorker software packages, run the **yum** program:

```
yum localinstall --nogpgcheck package [package]...
```

where *package [package]...* is a list of the software package required for the installation type. Table 15 on page 96 provide a list of the software packages required for each installation type.

Table 15 List of NetWorker software packages required for each installation type

Installation type:	Packages:
Client software	lgtoclnt-nw*.rpm
Storage Node software	lgtoclnt-nw*.rpm lgtonode*.rpm
Server software	lgtoclnt-nw*.rpm lgtonode*.rpm lgtoserv*.rpm
Man pages	lgtoman*.rpm
Simplified Chinese language support	lgtozh*.rpm
French language support	lgtofr*.rpm
Japanese language support	lgtoja*.rpm
Korean language support	lgtoko*.rpm

For example:

To install the man pages during a NetWorker server install, type:

```
yum localinstall --nogpgcheck lgtoclnt-nw*.rpm lgtonode*.rpm
   lgtoserv*.rpm lgtoman*.rpm
```

NOTICE

Specify optional packages, such as language packs and man pages in the **yum** command after the required packages for the installation type.

If the **yum** program cannot install missing package dependencies, the **yum** command fails and provides a list of missing packages. Manually install the package dependencies and run the **yum** command again. "RHEL, Fedora, CentOS and RedFlag Asianux package dependencies" on page 88 provides a complete list of Linux package dependencies for each Linux version.

SuSE

Use the **rpm** program to install the NetWorker software from the system prompt.

To install the NetWorker packages:

1. Log in to the target host as root.

2. Run the **rpm** program from the directory that contains the extracted NetWorker software packages:

   ```
   rpm -ivh package [package]...
   ```

   where *package [package]...* is a list of the software package required for the installation type. Table 15 on page 96 provide a list of the software packages required for each installation type.

   For example, to install the man pages during a NetWorker server install, type:

   ```
   rpm -ivh lgtoclnt-nw*.rpm lgtonode*.rpm lgtoserv*.rpm lgtoman*.rpm
   ```

> **NOTICE**
>
> Specify optional packages such as language packs and man pages in **rpm** command after the required packages for the installation type.

Debian and Ubuntu

On Debian and Ubuntu systems, use the **dpkg** program to install the NetWorker client software. To install the operating system packages that the NetWorker client software requires, use the **apt-get** program.

> **NOTICE**
>
> Ubuntu 10 requires the libstdc++5 package but the Ubuntu software package repository does not include this package. Manually download and install the libstdc++5 package for Debian before installing the NetWorker client software. http://packages.debian.org/squeeze/libstdc++5 provides more information.

To install the NetWorker software:

1. From a system prompt, run the **dpkg** command. For example:

   dpkg -i *lgtoclnt_XXX.deb*

   where *lgtoclnt_XXX*.deb is the name of the NetWorker client software package.

   > **NOTICE**
   >
   > For Ubuntu, use **sudo** to run this command.

2. If required operating system packages are missing, dependency errors similar to the following appear:

   ```
   Unpacking lgtoclnt (from lgtoclnt_8.0_i386.deb) ...
   dpkg: dependency problems prevent configuration of lgtoclnt:
    lgtoclnt depends on ksh | pdksh; however:
     Package ksh is not installed.
     Package pdksh is not installed.
    lgtoclnt depends on libstdc++5; however:
     Package libstdc++5 is not installed.
    lgtoclnt depends on libxp6; however:
     Package libxp6 is not installed.
   dpkg: error processing lgtoclnt (--install):
    dependency problems - leaving unconfigured
   Errors were encountered while processing:
    lgtoclnt
   ```

   To resolve this issue:

   - On Ubuntu:

     1. Use the **apt-get** command to install the missing packages.

        sudo apt-get -f upgrade

        The **apt-get** command automatically completes the NetWorker software installation.

     2. Confirm the **nsrexecd** process starts:

        ps -ef | grep nsrexecd

3. Optionally, start the **nsrexecd** process:

   sudo nsrexecd

- On Debian:

   1. Use the **apt-get** command to install the missing operating system packages:
   2. The NetWorker installation continues automatically.

Fedora

To install the NetWorker software on the Fedora operating system, you must perform additional steps to resolve package dependencies.

To install the NetWorker software on Fedora:

1. Before installing the NetWorker software, manually install missing package dependencies with the exception of libcap.so.1.

   a. Use the **yum** command to identify missing dependencies.

      For example:

      ```
      # yum localinstall lgtoclnt*.rpm
      Packages skipped because of dependency problems:
          compat-libstdc++-33-3.2.3-68.1.x86_64 from fedora
          glibc-2.14.90-24.fc16.9.i686 from updates
          ksh-20120801-1.fc16.x86_64 from updates
          libXp-1.0.0-16.fc15.x86_64 from fedora
          nss-softokn-freebl-3.13.5-1.fc16.i686 from updates
      ```

      > **NOTICE**
      >
      > The **yum** command does not successfully install the NetWorker software.

   b. Use the **yum** program to manually install the missing package dependencies.

      For example:

      ```
      yum install compat-libstdc++-33 ksh libXp
      glibc-2.14.90-24.fc16.9.i686
      ```

      > **NOTICE**
      >
      > When you specify the glib package, use the full package name to ensure the correct glib package installs and not the glibc-2.14.90-24.fc16.9.x86_64 package.

2. Use the **rpm** command to confirm that you resolved all missing package dependencies, with the exception of libcap.so.1.

   For example:

   ```
   # rpm -ivh lgtoclnt*.rpm
   error: Failed dependencies:
   libcap.so.1 is needed by lgtoclnt-8.0-1.i686
   ```

3. Use the **rpm** command with the --nodeps option to install the NetWorker software and ignore the **libcap.so1** dependency:

   rpm -ivh --nodeps *package [package]...*

   where *package [package]...* is a list of the software package required for the installation type.

   provide a list of the available NetWorker software packages.

Table 16 List of NetWorker software packages

Installation type:	Packages:
Client software	lgtoclnt*.rpm
Man pages	lgtoman*.rpm
Simplified chinese language support	lgtozh*.rpm
French language support	lgtofr*.rpm
Japanese language support	lgtoja*.rpm
Korean language support	lgtoko*.rpm

For example, to install the man pages during a NetWorker client install, type:

rpm -ivh --nodeps *lgtoclnt*.rpm lgtoman*.rpm*

Task 4: Change the NetWorker servers with access to the host

By default, any NetWorker server can:

◆ Backup this host.

◆ Perform a directed recover to this host.

To define theNetWorker servers that can perform backups and directed recoveries on this host:

1. Shutdown the NetWorker daemons:

   nsr_shutdown

2. Edit or create the /nsr/res/servers file.

   Specify the NetWorker servers, one per line, that require access to the host.

   Consider the following:

   • When you do not specify a server, you enable any NetWorker server to:

     – Backup this host.

     – Perform a directed recovery to this host.

   • When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

   • The first entry in this file becomes the default NetWorker server.

Task 5: Post Installation consideration for st tape devices

By default, the Linux kernel configures up to a maximum of 128 st tape devices. As a result, the **inquire** command and Scan for Devices option in the NMC GUI, displays a maximum of 128 st devices.

To resolve this issue, modify the st module of the Linux kernel and recompile the kernel. This increases the maximum number of allowable st devices that the OS can create.

The Linux documentation describes how to change the ST_MAX_TAPES definition and perform a kernel reconfiguration, a kernel rebuild, and a kernel install.

Appendix E in the *NetWorker 8.0 Administration Guide* provides additional information.

Task 6: Start the NetWorker daemons

Start the NetWorker daemons and confirm that they started successfully.

◆ To start the NetWorker daemons, type:

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

◆ To confirm that the NetWorker daemons started successfully, type:

```
ps -ef | grep nsr
```

provides a list of the daemons that start for each installation type.

> **NOTICE**
>
> If you did not stop the NetWorker daemons in Task 4, you must stop the NetWorker daemons on the NetWorker server after an update to the NetWorker 8.0 software. You must restart the daemons to complete the update process.

Console server installation on Linux

To manage the NetWorker server, install the Console server software on one host in the data zone.

Task 1: Review the Console server software requirements

This section describes the Console server requirements.

Before you install the Console server software, consider the following:

◆ If you have not installed the NetWorker client software on the target host, install the NetWorker client software when you install the Console server software.

◆ You can install the Console server on:

  • RHEL 4, 5, and 6.

  • SuSE 9, 10, and 11.

  • Linux x86, em64T, and AMD64 architectures.

  The *EMC NetWorker Software Compatibility Guide* on EMC Online Support Site provides the most up to date information on supported Console server operating systems.

◆ You may require UTF-8 converters for the operating system.

◆ Ensure that there is sufficient disk space to install the Console server software files. Table 17 on page 101 specifies the default location and space requirements for the Console server software on a Linux host.

Table 17 Linux Console server default file locations and space requirements

NetWorker Package	Location	Space	
		Linux x86	Linux em64T and AMD64
Console server (LGTOnmc)	/opt/lgtonmc	167 MB	167 MB

RHEL Linux package requirements for the Console server

On RHEL, use the **yum** program to install the Console server software and each required operating system packages automatically, as necessary. If you cannot install package dependencies by using yum, install any missing package dependencies manually.

Table 18 on page 102 provides a summary of the operating system packages that the Consoles server software requires

Table 18 RHEL packages required for the Console server software

RHEL 4	RHEL 5	RHEL6
bash-3.0 compat-libstdc++-33 cyrus-sasl-2.1.19 (32-bit) e2fsprogs-1.35 expat-1.95.7 glibc-2.3.4 libgcc-3.4.6 pdksh-5.2.14	apr-1.2.7 apr-util-1.2.7 bash-3.2 compat-libstdc++-33 cyrus-sasl-lib-2.1.22 (32-bit) e2fsprogs-libs-1.39 expat-1.95.8 glibc-2.5 gsk7bas64-7.0 gsk7bas-7.0 ksh-20080202 libgcc-4.1.1 openldap-2.3.27	apr-1.3.9 apr-util-1.3.9 bash-4.1.2 compat-expat1 compat-libstdc++-33 compat-openldap-2.4.19_2.3.43 cyrus-sasl-lib-2.1.23 (32-bit) glibc-2.12 ksh-20100621 libgcc-4.4.4 libuuid-2.17.2

SuSE Linux package requirements for the Console server

Before you install the Console server software package, ensure that you have installed the required operating system packages. Table 19 on page 102 provides a summary of the operating system packages that the Consoles server software requires.

Table 19 SuSE packages requirements for the Console server software

SuSE 9	SuSE 10	SuSE 11
bash-2.05b cyrus-sasl-2.1.18 (32-bit) e2fsprogs-32bit-9-200505232206 expat-32bit-9 glibc-32bit-9 ksh-93-2000.10.31.0 libgcc-3.3.3 libstdc++-3.3.3	bash-3.1 compat-openssl097g cyrus-sasl-2.1.21 (32-bit) e2fsprogs-1.38 glibc-2.4 ksh-93s libgcc-4.1.2_20070115 libstdc++33 openldap2-client-2.3.32	bash-3.2 cyrus-sasl-2.1.22 (32-bit) glibc-29 ksh-93t libgcc43-4.3.3 libstdc++33-3.3.3 libuuid1-1.41.1

Task 2: Install the Console server software on Linux

To install the Console server software:

1. Log in as root.

2. If you have already installed the NetWorker client software on the host:

   • Confirm that the NetWorker Remote Exec daemon, nsrexecd, is started:

   `ps -ef | grep nsr`

   • If the nsrexecd daemon is not started, type:

   /etc/init.d/networker start

3. Change to the directory that contains the extracted NetWorker software packages.

- On RHEL, use the **yum** program to install the Console server software:

  yum localinstall --nogpgcheck *lgtoclnt*.rpm* **lgtonmc*.rpm**
  where you specify *lgtoclnt*.rpm* only if you did not previously install the NetWorker client software.

  | **NOTICE** |

  If **yum** cannot install missing package dependencies, the **yum** command fails and provides a list of missing packages. Manually install the package dependencies and run the **yum** command again. provides a complete list of RHEL package dependencies.

- For SuSE Linux system, use the **rpm -ivh** command:

  rpm -ivh *lgtoclnt*.rpm* **lgtonmc*.rpm**

  where you specify *lgtoclnt*.rpm* only if you did not previously install the NetWorker client software.

4. For yum only: Review the summary of disk space requirements and type **y** to continue the installation.

Task 3: Configure the Console server software

Use the **nmc_config** command to configure the Console server software program.

To configure the Console server software:

1. Start the configuration script:

   /opt/lgtonmc/bin/nmc_config

2. Specify a non-root user/group with limited privileges. The Console server uses this user/group to run the web server. For example, use the default user/group [nobody/nobody].

3. 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**.

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

   | **NOTICE** |

   Do *not* use port numbers that are already in use. For example: The Console server uses port **2638** for TDS protocol communications with the Console database. The preferred port for EMC Data Protection Advisor product is **9002**.

5. Specify the directory to use for the lgtonmc database, for example, /opt/lgtonmc/lgto_gstdb.

6. If the installation process detects an existing database, type **y** to retain the existing database, when prompted.

7. If the installation process detects a NetWorker 7.6.x Console server database:

   a. To proceed with the installation and Console server database conversion, type **y**.

b. Specify the location to store the database backup file, for example: /opt/lgtonmc/lgto_gstdb.

If the conversion fails, a message similar to the following appears:

```
Install failed to upgrade the database <full path and database
name>. Check the upgrade log <full path and log name file> for
details.
Please, fix any environment related errors mentioned in the log
and then run the script <full path to gstdbupgrade.sh>
manually to upgrade the database after the install is complete.
```

8. Specify the location of the NetWorker binaries.

For example:

```
/usr/sbin
```

9. When prompted to start the Console server daemons:

   - If the database conversion is successful, type **y**.

   - If the database conversion encountered errors, type **n**.

     "Task 11: Review the status of the Console server database conversion" on page 49 describes how to determine the cause of the conversion failure and the steps to convert the database after the software install has completed.

10. To proceed with the installation of the Console server package, type **y**.

11. Update the MANPATH variable for the Console server man pages.

For example:

```
MANPATH=$MANPATH:/opt/lgtonmc/man
export MANPATH
```

Use the Console client to connect to the Console server

A Console client is a system that connects to the Console server through a browser to display the NMC GUI.

A Linux Console client:

◆ Requires JRE 1.6 or JRE 1.7.

◆ Does not require the NetWorker software.

◆ Supports the Mozilla and Firefox browsers. Table 20 on page 105 provides a summary of the supported browsers on the supported Linux Console clients.

Table 20 Supported browsers for Linux NMC console clients

Architecture	Operating System	Browser
Linux for x86 (32 -bit)	• SuSE Linux Enterprise server (SLES) 9, 10, and 11 • Red Hat Enterprise Linux server (RHEL) 4 and5 • Redflag Asianux Server 3	• Mozilla 1.7 • Firefox 5.0
Linux for em64T and AMD64 (64-bit)	• SuSE Linux Enterprise server (SLES) 9, 10, and 11 • Red Hat Enterprise Linux server (RHEL) 4 and5	• Mozilla 1.7 • Firefox 5.0
	• Red Hat Enterprise Linux server (RHEL) 6	• Firefox 3.6

If you use Firefox to access the Console server GUI:

1. Remove the classic plugin file `libjavaplugin_oji.so` located in the Firefox plugins directory and any associated symbolic links.

2. Create a symbolic link to the Java Plugin libnpjp2.so file in the Firefox plugins directory:

   cd *Firefox*/plugins

   ln -s *JRE*/lib/*arch*/libnpjp2.so **.**

   where:

   • *Firefox* is the Firefox installation path.

   • *JRE* is the Java installation path.

   • *arch* is the directory appropriate to the computer architecture.

◆ Requires the following operating system packages on SuSE 11 only:

   • glibc-locale-2.11.1

   • glibc-locale-32bit-2.11.1

   Without these package, a message similar to the following message appears and you cannot log in to the Console server:

   ```
   Internal Server Error
   The server encountered an internal error or misconfiguration and was
   unable to complete your request.
   Please contact the server administrator, @@ServerAdmin@@ and inform
   them of the time the error occurred, and anything you might have done
   that may have caused the error. More information about this error may
   be available in the server error log.
   ```

"Task 1: Connect to the Console server console GUI for the first time" on page 152 describes how to connect to the Console server for the first time.

Uninstall NetWorker and Console server software on Linux

The procedure to remove the NetWorker software differs for Debian and Ubuntu Linux from all other Linux operating systems.

◆

◆

Uninstall the NetWorker software on Debian and Ubuntu

Use the **dpkg** command to uninstall the NetWorker client software from Debian and Ubuntu Linux systems.

To uninstall the NetWorker software package:

1. Log in as root.

2. Use the **dpkg** command to remove the software:

   ```
   dpkg -r lgtoclnt
   ```

   > **NOTICE**
   >
   > If there is no plan to update or reinstall the NetWorker software, use **dpkg -P lgtoclnt** to remove the NetWorker configuration files.

Uninstall the NetWorker software on other Linux operating systems

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

> **NOTICE**
>
> The NetWorker software packages have dependencies on each other, remove the packages in the following order: lgtolicm, lgtoserv, lgtonode, lgtonmc, lgtoclnt. The man pages, lgtoman, and language packages do not have any dependencies. You can remove these packages in any order.

To remove the NetWorker packages:

1. Log in to the target host as root.

2. Get a list of the installed NetWorker packages:

   ```
   rpm -qa | grep lgto
   ```

3. Use the **rpm -e** command to remove the NetWorker packages:

   ```
   rpm -e package_name package_name package_name
   ```

   For example, to remove the NetWorker packages from the Console server, type:

   ```
   rpm -e lgtonmc lgtoclnt
   ```

Table 21 on page 107 provides a list of the package names associated with the different NetWorker components.

Table 21 NetWorker package names on Linux

Component	Package name
Server	lgtoserv
Storage node	lgtonode
Console server	lgtonmc
NetWorker License Manager	lgtolicm
Client	lgtoclnt
Man pages	lgtoman
French language support	lgtofr
Japanese language support	lgtoja
Korean language support	lgtoko
Simplified chinese language support	lgtozh

4. If there is no plan to update or reinstall the packages:

   a. Remove the /nsr directory.

   b. Delete the Console server directory. By default, this directory is /opt/lgtonmc.

5. If the Java Runtime Environment is no longer required, remove the JRE application.

CHAPTER 9
Mac OS-X Client Installation

This chapter includes these sections:

NetWorker software installation on Mac-OSX

This section describes the requirements and tasks for installing the NetWorker client software on Mac-OSX.

Review this section before installing the NetWorker software:

◆ "Task1: Review the Mac OS-X requirements" on page 110

Complete these tasks to install the NetWorker software:

◆ "Task 2: Install the NetWorker software" on page 110

◆ "Task 3: Verify the software installation" on page 112

Task1: Review the Mac OS-X requirements

This section outlines the software requirements to consider when installing NetWorker on the Mac OS-X operating system.

The NetWorker software:

◆ Only supports the NetWorker client on Mac-OSX.

◆ Supports Mac OS Power PC and Mac OS Intel. The *EMC NetWorker Software Compatibility Guide* on the EMC Online Support Site provides more information on operating system versions supported.

◆ Supports the following filesystems:

   • HFS+ (including journaled)

   • HFS

   • UFS

◆ Requires 112 MB of free disk space for the software installation process:

/applications	8 MB
/usr/bin	40 MB
/usr/sbin	58 MB
/usr/lib/nsr	4 MB
/usr/share/man	2 MB

Task 2: Install the NetWorker software

The following section describes how to Install the NetWorker software.

Install NetWorker software in one of the following ways:

◆ "From the Mac Console" on page 111

◆ "From a terminal window" on page 111

From the Mac Console

To install the NetWorker software from the Mac Console:

1. Download the NetWorker software.

2. Use the Archive Utility to unzip the file.

    This extracts the installation file into a MacOSX sub folder.

3. Open the MacOSX sub folder and double-click NetWorker.dmg file.

    This mounts the NetWorker software on a NetWorker volume.

4. Double-click NetWorker.pkg on the NetWorker volume to launch the NetWorker software.

5. In the **Welcome to the NetWorker Client Installer** window, click **Continue.**

6. In the **End User License and Basic Maintenance Agreement** window, click **Continue**.

7. Click **Agree** to agree to the terms of the software license agreement.

8. Click **Install** to install the NetWorker client on the default volume.

    Optionally, click the **Change Install Location...** and select another MacOSX volume.

9. Click **Close.**

From a terminal window

To install the NetWorker software from the terminal window:

1. Download the NetWorker software.

2. Use the **gunzip** and **tar** programs to extract the file.

    For example:

    ```
    $ gunzip nw_macosx.tar.gz
    $ tar -xvf nw_macosx.tar
    ```

    The installation file extracts into a MacOSX sub folder.

3. Open the MacOSX sub folder.

4. Mount the volume that contains the NetWorker software.

    For example:

    ```
    >hdiutil mount path to NetWorker software/MacOSX/NetWorker-dev.dmg

    /dev/disk5    /Volumes/NetWorker-dev
    ```

5. Change to the directory that contains the NetWorker installation package.

    For example:

    ```
    cd /Volumes/NetWorker-dev
    ```

6. As a sudo user, use the **installer-pkg** program to install the NetWorker software.

For example:

```
$ sudo /usr/sbin/installer -pkg /Volumes/NetWorker-dev/NetWorker.pkg
-target / Password:********

installer: Package name is NetWorker Client
installer: Installing at base path /
installer: The install was successful.
```

Task 3: Verify the software installation

To verify that the NetWorker client software installed correctly, ensure the nsrexecd daemon is running.

1. Confirm the nsrexecd daemon starts, in one of the following ways:

◆ Use the **Mac OS X Activity Monitor** application to confirm that the NetWorker client daemon, **nsrexecd** is active on the host.

◆ From a terminal window, type:

```
ps -ef |grep -i nsr
```

2. If the **nsrexecd** daemon did not start, as a sudo user, start the daemon from a terminal window.

For example:

```
$sudo /bin/launchctl start com.emc.NetWorker
```

Uninstall the NetWorker software on Mac OS-X

Uninstall the NetWorker software from a system prompt.

To uninstall the NetWorker software:

1. Ensure that the NetWorker Recovery application is not running.

2. From a terminal window, type the following command:

```
$sudo /usr/sbin/NetWorkerUninstall
```

CHAPTER 10
Solaris Installation

This chapter includes these sections:

NetWorker software package installation on Solaris

Before installing the NetWorker software, review the following sections:

Complete these tasks to install the NetWorker software:

Task 1: Review the NetWorker software requirements and considerations for Solaris

Before installing the NetWorker software packages on Solaris, review the software requirements for Solaris 10 and the considerations for Solaris zone support:

Solaris 10 requirements

Review the requirements for the NetWorker software on Solaris 10:

◆ Disable **TCP Fusion** on each Solaris 10 NetWorker server and Solaris 10 storage nodes.

To disable TCP Fusion:

a. Add the following line, to the **/etc/system** file:

```
set ip:do_tcp_fusion = 0
```

b. Restart the host.

◆ If a storage node is configured in a Solaris 10 whole root zone, ensure that:

- All devices are in a single NetWorker datazone.

- All storage nodes are running Solaris 10 update 5 or later.

This provides shared SCSI command support.

The *Configuring Tape Devices for EMC NetWorker* Technical Note, available on the EMC Online Support Site describes how to configure devices in a whole root zone.

◆ Install the operating system patches required for each architecture.

Before installing the required operating system patches, consider the following:

- Some Sun patches might have dependencies on other Sun patches. Ensure that all dependencies are met before applying the patch.

- The Sun patches detailed below specify the patch version that first contained the fix. Over time, these Sun patches might become obsolete and replaced with a newer patch revision. In these instances, the latest patch revision should be installed. The SunSolve web site provides detailed information about patch dependencies and download information.

Table 22 on page 115 provides a summary of architecture specific patch requirements.

Table 22 Solaris 10 Sun patch requirements

Architecture	Required Patch	Reason
x86/Sparc	• Sun patch 142900-03 or later on Sparc. • Sun patch 142901-03 or later on x86.	To avoid shared memory corruption which can cause possible hangs or failures of the NetWorker daemons on a NetWorker server.
V240/Sparc	• Sun patch 119280-10 or later on Sparc. • Sun patch 119281-10 or later on x86.	Required for **nwrecover.**
Z86/Sparc	• Sun patch 102712-01 or later on Sparc. • Sun patch 102711-01 or later on x86.	Backups of large save sets may fail on Solaris 10 systems if an Intel Gigabit Ethernet card, e1000g driver is used.
AMD 64	• Solaris 10 Encryption kit for i386 architecture package, which includes the SUNWcryman, SUNWcry, and SUNWcryr packages.	The default OpenSSL library on Solaris for AMD 64 does not support AES key lengths greater than 128-bits. The NetWorker server requires 256-bit key lengths. When the default OpenSSL library is used, the nsrd daemon on the NetWorker server might fail to start.

Solaris zone considerations

The NetWorker software is supported in a global, a whole root, and a sparse root zone configuration.

Before installing the NetWorker software in a Solaris zone, review the considerations for each Solaris zone configuration:

◆ "Sparse root zone considerations" on page 115

◆ "Global zone considerations" on page 116

◆ "Whole root zone considerations" on page 116

Sparse root zone considerations

The NetWorker software supports sparse root zones on Solaris 10.

Consider the following:

◆ Only the NetWorker client software is supported in a sparse root zone.

◆ Install the NetWorker software packages in the global zone, before installing the NetWorker client software package in each sparse root zone.

◆ Create a client instance for the global zone and each sparse root zone. The *NetWorker 8.0 Administration Guide* describes how to create a NetWorker client.

◆ Install the same version of the NetWorker software in the global zone and each sparse root zone.

Global zone considerations

The NetWorker server, the storage node and the client software is supported in a Solaris global zone.

Consider the following:

◆ When the NetWorker software package is installed in the global zone, special ALL save sets are available to back up a global zone client. "Using the save set all to back up particular file systems" in the *NetWorker 8.0 Administration Guide* describes when to use the special ALL save sets.

◆ A Dedicated storage node is supported in a global zone.

Whole root zone considerations

The NetWorker server, the storage node, and the client software is supported in a Solaris whole root zone.

Consider the following:

◆ When the NetWorker software is installed in a whole root zone, the NetWorker software is not required in the global zone.

◆ The NetWorker server software is not supported in a clustered Solaris whole root zone.

◆ A Dedicated storage node is supported in a whole root zone.

Task 2: Consider the installation directory

This section describes the installation location of the NetWorker software and the disk space requirements.

The NetWorker binaries are installed in the **/usr/sbin** directory and cannot be relocated.

The NetWorker configuration, logs, and database files are located in the **/nsr** directory. To change this location, create a symbolic link from the new directory to the **/nsr** directory.

For example:

1. Create another directory, on a disk with sufficient space:

   mkdir /disk2/nsr

2. Link this directory to the **/nsr** directory:

   ln -s /disk2/nsr **/nsr**

Before installing the NetWorker software, ensure that:

◆ The **PATH** variable for the root and user accounts contains the **/usr/sbin** directory.

◆ There is sufficient disk space to install the NetWorker files in the default location. Table 23 on page 117 specifies the default location and space requirements for the NetWorker software on a Solaris host host.

Table 23 Default file locations and space requirements for Solaris

NetWorker Package	Location	Space		
		Solaris x86	Solaris x64	Solaris AMD 64
Client (LGTOclnt)	/opt/nsr /usr/openwin /usr/bin /usr/sbin /usr/lib/nsr	11 MB 8 KB 30 MB 74 MB 12 MB	11 MB 8 KB 66 MB 143 MB 87 MB	11 MB 8 KB 50 MB 122 MB 79 MB
Storage node (LGTOnode)	/usr/sbin /usr/lib/nsr	n/a	135 MB 21 MB	102 MB 15 MB
Server (LGTOserv)	/usr/sbin /usr/lib/nsr	n/a	135 MB 72 KB	103 MB 72 KB
Man pages (LGTOman)	/share/man	2.3 MB	2.2 MB	2.2 MB
French Language Pack (LGTOfr)	/opt/nsr /usr/lib /usr/sbin /share/man	2.7 MB 32 KB 8 KB 2.3 MB	5.7 MB 32 KB 8 KB 2.3 MB	5.7 MB 32 KB 8 KB 2.3 MB
Japanese Language Pack (LGTOja)	/opt/nsr /usr/lib /usr/sbin /share/man	3.2 MB 40 KB 8 KB 2.2 MB	6.8 MB 40 KB 8 KB 2.2 MB	6.8 MB 40 KB 8 KB 2.2 MB
Korean Language Pack (LGTOko)	/opt/nsr /usr/lib /usr/sbin /share/man	2.8 MB 32 KB 8 KB 2.1 MB	6.0 MB 32 KB 8 KB 2.1 MB	6.0 MB 32 KB 8 KB 2.1 MB
Simplified Chinese Language Pack (LGTOzh)	/opt/nsr /usr/lib /usr/sbin /share/man	2.1 MB 24 KB 8 KB 1.9 MB	5.7 MB 24 KB 8 KB 1.9 MB	5.7 MB 24 KB 8 KB 1.9 MB
Client file index, media database, resource database	/nsr	varies	varies	varies

Task 3: Install the NetWorker packages

This section describes how to install the client, storage node and server software packages as well as optional packages, for example, the man pages and language packs.

To install the NetWorker software on a Solaris host:

1. Log in to the target host as root.

2. Create a backup copy of the **rpc.org** configuration file:

   cp /etc/rpc /etc/rpc.org

3. Display the list of available installation packages:

   pkgadd -d *path_to_install_files*

   The following packages are available:

   ```
   1 LGTOclnt      NetWorker Client
   2 LGTOfr        NetWorker French Language Pack
   3 LGTOja        NetWorker Japanese Language Pack
   4 LGTOko        NetWorker Korean Language Pack
   5 LGTOlicm      NetWorker License Manager
   6 LGTOman       NetWorker Man Pages
   7 LGTOnmc       NetWorker Management Console
   8 LGTOnode      NetWorker Storage Node
   9 LGTOserv      NetWorker Server
   10 LGTOzh        NetWorker Chinese Language Pack
   Select package(s) you wish to process (or 'all' to process all
   packages). (default: all) [?,??,q]:
   ```

4. Specify the package numbers that are required for the installation type. When installing the NetWorker server and storage node software, the package order is important.

   For example:

   - For a NetWorker Client installation, type: 1

   - For a NetWorker Storage node installation, type: 1,8

   - For a NetWorker server installation, type: 1, 8, 9

   Optional packages including the language packs and the man pages are specified in the **Select package** prompt by adding the associated package number after the minimum packages required for the installation type.

   For example:

   To install the man pages during a NetWorker server install, type: 1, 8, 9, 6

5. When prompted to change the data directory, choose one of the following:

   - Accept the default directory.

   - Specify the directory created in "Task 2: Consider the installation directory" on page 116

6. The installation prompts you to specify the NetWorker server that can access the host.

   To update the list, type **y**.

   Consider the following:

   • When you do not specify a server, you enable any NetWorker server to:

     – Backup this host.

     – Perform a directed recovery to this host.

   • Specify the shortname and FQDN for each NetWorker server.

   • The first name that is specified becomes the default NetWorker server for the host.

   To modify the NetWorker server access list:

     – Specify the name of the NetWorker server at the **Enter a NetWorker server hostname** prompt.

     – Type one NetWorker server name for each prompt.

     – When all of the NetWorker servers are specified, press **Enter** without specifying a NetWorker server name, to complete the process.

       For example:

       ```
       Enter a NetWorker server hostname [no more]: mynwserver
       Enter a NetWorker server hostname [no more]: mynwserver.emc.com
       Enter a NetWorker server hostname [no more]:
       ```

7. After the client package installation completes, additional packages are installed automatically. It is not necessary to start the daemons after each package install:

   • If the installation type is a NetWorker server, start the daemons when prompted during the LGTOserv package installation.

   • If the installation type is a NetWorker storage, start the daemons when prompted during the LGTOnode package installation.

8. During a NetWorker server upgrade only, stop the NetWorker daemons and start them again.

   For example:

   nsr_shutdown
   /etc/init.d/networker start

9. To confirm that the NetWorker daemons started successfully, type:

   ps -ef | grep nsr

   "NetWorker daemons" on page 16 provides a list of the daemons that start for each installation type.

Console server installation on Solaris

To manage the NetWorker server, install the Console server software on one host in the datazone.

Task 1: Review the Console server considerations

This section describes the Console server considerations.

Before installing the Console server package consider the following:

◆ The Console server software is supported on:

  • Solaris x86 & AMD64: Solaris 10 & 11

  • Solaris SPARC (64-bit): Solaris 10 & 11

  The EMC NetWorker Software Compatibility Guide on the EMC Online Support Site provides the most up to date information on supported Console server operating systems.

◆ If a Solaris 10 Console server is also the NetWorker server, the **nsrexecd** daemon might fail to restart with a socket binding error.

  To resolve this issue, install patch **147440-04** or later for SPARC, or **147441-04** or later for x86.

  To determine if the patch is applied:

  • On Solaris SPARC servers, type:

    ```
    showrev -p | grep 147440
    ```

  • On Solaris x86 servers, type:

    ```
    showrev -p | grep 147441
    ```

◆ If the NetWorker client software is not installed on the target host, the NetWorker client software must be installed when the Console server software is installed.

◆ Ensure that there is sufficient disk space to install the Console server software files. Table 24 on page 120 specifies the default location and space requirements for the Console server software on a Solaris host host.

Table 24 Solaris Console server default file locations and space requirements

NetWorker Package	Location	Space		
		Solaris x86	Solaris x64	Solaris AMD 64
Console server (LGTOnmc)	/opt/LGTOnmc	n/a	218 MB	230 MB

Task 2: Install the Console server software

To install the Console server software:

1. Log in to the target host as root.

2. For Solaris 10 and later, set the environment variable **NONABI_SCRIPTS** to **TRUE**:

   ```
   NONABI_SCRIPTS=TRUE
   export NONABI_SCRIPTS
   ```

3. If the NetWorker client software is installed on the host:

   • Confirm that the **nsrexecd** daemon is running:

   ```
   ps -ef | grep nsr
   ```

   • If the **nsrexecd** daemon is not running, type:

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

4. Navigate to the directory that contains the extracted Console server package and display the list of packages that can be installed:

   ```
   pkgadd -d path_to_install_files
   ```

   The following packages are available:

   ```
   1 LGTOclnt      NetWorker Client
   2 LGTOfr        NetWorker French Language Pack
   3 LGTOja        NetWorker Japanese Language Pack
   4 LGTOko        NetWorker Korean Language Pack
   5 LGTOlicm      NetWorker License Manager
   6 LGTOman       NetWorker Man Pages
   7 LGTOnmc       NetWorker Management Console
   8 LGTOnode      NetWorker Storage Node
   9 LGTOserv      NetWorker Server
   10 LGTOzh        NetWorker Chinese Language Pack
   Select package(s) you wish to process (or 'all' to process all
   packages). (default: all) [?,??,q]:
   ```

5. At the **Select packages** prompt:

   • If the NetWorker client software is not previously installed, type: **1, 7**.

   • If the NetWorker client software is installed, type **7**.

6. Specify the directory to install the **LGTOnmc** package.

   For example:

   /opt/LGTOnmc

7. Specify a non-root user/group with limited privileges. The Console server uses this user/group to run the web server. For example, use the default user/group [nobody/nobody].

   For example, use the default user/group **[nobody/nobody]**.

8. 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**.

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

> **NOTICE**
>
> Do *not* use port numbers that are already in use. For example: The Console server uses port **2638** for TDS protocol communications with the Console database. The preferred port for EMC Data Protection Advisor product is **9002**.

10. Specify the directory to use for the **LGTOnmc** database.

   For example:

   /opt/LGTOnmc/lgto_gstdb

11. If the installation process detects an existing database, type **y** to retain the existing database when prompted.

12. If the installation process detects a NetWorker 7.6.x Console server database:

   a. To proceed with the installation and Console server database conversion, type **y**.

   b. Specify the location to store the database backup file, for example:

   /opt/LGTOnmc/lgto_gstdb

   If the conversion fails, the following error message appears:

   ```
   Install failed to upgrade the database <full path and database
   name>. Check the upgrade log <full path and log name file> for
   details.

   Please, fix any environment related errors mentioned in the log
   and then run the script <full path to gstdbupgrade.sh>

   manually to upgrade the database after the install is complete.
   ```

13. Specify the location of the NetWorker binaries.

   For example:

   /usr/sbin

14. When prompted to start the Console server daemons:

   • If the database conversion is successful, type **y**.

   • If the database conversion encountered errors, type **n**.

   "Task 11: Review the status of the Console server database conversion" on page 49 describes how to determine the cause of the conversion failure and the steps to convert the database.

15. To proceed with the installation of the Console server package, type **y**.

16. Update the **MANPATH** variable for the Console server man pages.

   For example:

   ```
   MANPATH=$MANPATH:/opt/LGTOnmc/man
   export MANPATH
   ```

Use the Console client to connect to an Console server

A Console client is a system that connects to the Console server through a web browser to display the Console server GUI.

A Solaris Console client:

◆ Requires JRE 1.6 or JRE 1.7.

◆ Does not require the NetWorker software.

◆ Supports the Mozilla 1.7 web browser on:

   • Solaris 10 and 11

   • Solaris x86 and AMD64

   • Solaris SPARC 64-bit

If you use Firefox to access the Console server GUI:

1. Remove the classic plug in file **libjavaplugin_oji.so** located in the Firefox plug ins folder and any associated symbolic links.

2. Create a symbolic link to the Java Plug in **libnpjp2.so** file in the Firefox plug ins directory:

   ```
   cd Firefox/plugins
   ln -s JRE/lib/arch/libnpjp2.so .
   ```

   where:

   • *Firefox* is the Firefox installation path.

   • *JRE* is the Java installation path.

   • *arch* is the directory appropriate to the computer architecture.

   describes how to connect to the Console server for the first time.

Uninstall the NetWorker and Console server software on Solaris

The following section describes how to uninstall the NetWorker and Console server software from a Solaris host.

When removing the NetWorker software packages in a sparse root zone, remove the NetWorker software packages from all sparse root zones first, then remove the NetWorker software packages from the global zone.

To uninstall the NetWorker software:

1. Shutdown the NetWorker daemons when there are no backups and recoveries running:

   ```
   nsr_shutdown
   /etc/init.d/gst stop
   ```

2. Confirm that the NetWorker and Console server daemons stopped:

   ```
   ps -ef | grep nsr
   ps -ef | grep gst
   ```

3. Determine which packages to remove:

   pkginfo -i | grep LGTO

4. Remove each LGTO packages listed in the **pkginfo** output, in the following order. Exclude packages not listed in the **pkginfo** command:

   pkgrm LGTOlicm LGTOserv LGTOnode LGTOnmc LGTOclnt LGTOman LGTOfr LGTOja LGTOko LGTOzh

   Table 25 on page 124 provides a list of the package names associated with the different NetWorker software packages.

Table 25 NetWorker packages on Solaris

Component	Package name
Server	LGTOserv
Storage node	LGTOnode
Console server	LGTOnmc
NetWorker License Manager	LGTOlicm
Client	LGTOclnt
Man pages	LGTOman
French language support	LGTOfr
Japanese language support	LGTOja
Korean	LGTOko
Simplified Chinese language support	LGTOzh

5. Type **y** to confirm the package removal.

6. Type **y** to continue with the package removal.

7. Repeat these last two steps for each package.

   When removing the NetWorker client software package in a sparse root zone, the removal process may:

   • Report that the uninstall cannot remove files, for example:

   ```
   pkgrm: ERROR: unable to remove </usr/lib/nsr/product.res>
   ```

   • Report a partial failure, for example:

   ```
   Removal of <LGTOclnt> partially failed.
   ```

   To completely remove the NetWorker client software packages in a sparse root zone, use the **pkgrm** program a second time on remove each failed package.

8. If there is no plan to update or reinstall the software packages:

   a. Remove the **/nsr** directory.

   b. Delete the Console server directory. By default, this directory is **/opt/LGTOnmc**.

9. If Java Runtime Environment is no longer required, uninstall the JRE software package.

Solaris Installation

CHAPTER 11
Microsoft Windows Installation

This chapter includes these sections:

NetWorker and Console software installation on Windows

This section describes the requirements and tasks for installing the NetWorker and the Console server software on Windows. The installer provides the ability to install both applications at the same time.

Before installing the NetWorker software, review the following sections:

◆ "Installation roadmap" on page 20

◆ "Software Requirements" on page 23

Complete these tasks to install the NetWorker software:

◆ "Task 1: Review the NetWorker software requirements and considerations" on page 128

◆ "Task 2: Review the Console server package requirements" on page 130

◆ "Task 3: Install the NetWorker software" on page 131

◆ "Task 4: Adjust antivirus software settings" on page 136

Task 1: Review the NetWorker software requirements and considerations

This section outlines the software requirements and considerations when installing NetWorker on the on either the Windows 2008 or the Windows 2003 operating systems.

◆ "General considerations" on page 128

◆ "Location and disk space requirements" on page 129

◆ "Windows 2012 and Windows 8 considerations" on page 129

◆ "Windows 2008 considerations" on page 129

◆ "Windows 2003 Considerations" on page 130

◆ "NetWorker server and storage node tape device requirements" on page 130

General considerations

Consider the following before installing the NetWorker 8.0 SP1 software on a Windows host:

◆ Backups created for a NetWorker 8.0 SP1 and higher client cannot be recovered to a pre-NetWorker 8.0 SP1 client.

◆ Install the License Manager server software and the NetWorker server software on separate hosts.

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

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

◆ InstallShield stores the entire installation program in memory, even to install a single NetWorker software component.

◆ Install the latest Microsoft Windows update and critical patches.

Location and disk space requirements

Before installing the NetWorker software, review the disk space and location requirements. Table 26 on page 129 specifies the default location and space requirements for the NetWorker software in a Microsoft Windows environment.

Table 26 Microsoft Windows default file locations and space requirements

NetWorker files	Location	Space	
		x86	x64
Client files	Program Files\EMC NetWorker\nsr	264 MB	309 MB
Console	Program Files\EMC NetWorker\Management	101 MB	133 MB
Storage node	Program Files\EMC NetWorker\nsr	271 MB	319 MB
Server	Program Files\EMC NetWorker\nsr	332 MB	330 MB
Client file index, media database and resource database files	Program Files\EMC NetWorker\nsr\index Program Files\EMC NetWorker\nsr\mm Program Files\EMC NetWorker\nsr\res	varies	varies

Windows 2012 and Windows 8 considerations

Before you install the NetWorker 8.0 SP1 software on a Windows 2012, consider the following:

◆ NetWorker client supports Windows 8 x86 and x64, Standard and Professional Editions

◆ NetWorker client supports Windows Server 2012 x64 and Windows Storage Server 2012 x64

◆ NetWorker server and storage node supports Windows Server 2012 x64

The *EMC NetWorker Software Compatibility Guide* on the EMC Online Support Site provides the most up to date information on supported operating systems.

Windows 2008 considerations

Before you install the NetWorker 8.0 SP1 software on a Windows 2008 and Windows 2008 R2 server, consider the following:

◆ The minimum recommend service pack version is SP2 or later.

◆ Hyper-V is not supported.

◆ Enable Windows Error Reporting (WER).

WER replaces the Dr Watson user dumps used in earlier releases of Windows and provides the ability to collect full User-Mode Dumps after an application crash. MSDN describes how to configure WER to collect User-Mode Dumps.

◆ The Microsoft Visual C++ 2005 Redistributable software (vcredist_x64.exe and vcredist_x86.exe) is included with the x64 and x86 NetWorker packages. During the NetWorker software installation process, the Microsoft Visual C++ 2005 Redistributable software is installed. Do not remove the Microsoft Visual C++ 2005 Redistributable software.

◆ Enable Data Execution Prevention to protect essential Windows programs and services.

To enable Data Execution Prevention to protect essential Windows programs and services, type:

a. Navigate to **Start** › **Control Panel** › **System and Security** › **System** › **Advanced system settings**.

b. Select **Advanced** › **Performance** › **Settings** › **Data Execution Prevention**.

c. Select **Turn on DEP for essential Windows programs and services only**.

d. Click **OK**.

Windows 2003 Considerations

Review the following considerations and recommendations before installing the NetWorker 8.0 SP1 software on Windows 2003:

● In the NetWorker 8.0 SP1 and later, Windows 2003 is only supported as a NetWorker client.

The *EMC NetWorker Software Compatibility Guide* on the EMC Online Support Site provides the most up to date information on supported operating systems.

● The minimum recommended service pack version on Windows 2003 is SP2.

● Install the VSS roll up package.

This package prevents some VSS snapshot issues. Microsoft kb article 940349 provides detailed information.

● During parallel backups of a client, VSS backups might fail. Microsoft kb article 975928 provides detailed information.

● When VSS tracing is enabled on Windows 2003 backups might fail in some situations. Microsoft kb article 951568 provides detailed information.

● Windows 2003 x64 servers require a Microsoft hot fix to support the backup and restore of MSDE VSS writers. Microsoft kb article 913100 provides detailed information.

NetWorker server and storage node tape device requirements

When SAN tape devices are configured on a Windows NetWorker server or a storage node, disable Test Unit Ready (TUR). Microsoft kb article 842411 describes how to disable TUR.

Task 2: Review the Console server package requirements

Before installing the Console server package consider the following:

◆ The Console server software is supported on:

● Windows 2008

● Windows 2008 R2

● Windows 2012 x64

◆ The Console server software is not supported on:

- Windows 2003

- Windows 2003 SP1

- Windows 2003 R2

- Windows 8

"Task 9: Optional, move the Console server files to a new Console server" on page 48 describes how to migrate a Console server from a previously supported operating system to a new Console server.

The *EMC NetWorker Software Compatibility Guide* on the EMC Online Support Site provides the most up to date information on supported Console server operating systems.

Task 3: Install the NetWorker software

This section explains how to install the client, the storage node, and the server software as well as the optional NetWorker software packages such as the Console server software and the language packages.

To install the NetWorker software packages and the optional NetWorker software packages on a Microsoft Windows host:

1. Log in to the target host with a user that has administrator privileges.

2. In the directory that contains the extracted NetWorker software, click **autorun.exe**.

    a. Select **Install EMC NetWorker 8.0 SP1 software**.

    b. If a Windows security warning appears, click **Run**.

3. On the **Choose Setup Language** window, select a language and click **OK**.

4. If you receive a warning message asking you trust running EMC components, click **Yes**.

5. On the **Welcome to NetWorker Installation** window, click **Next**.

6. On the **Customer Information** window, fill in the appropriate information, click **Next**.

7. On the **Windows Firewall** window, select **Configure the Windows firewall**.

    ┌─────────────┐
    │   *NOTICE*   │
    └─────────────┘

    If the firewall is not configured to allow inbound and outbound NetWorker software traffic, scheduled backups might fail.

8. On the **Installation Type and location** window, select the NetWorker software packages you want to install. Table 27 on page 132 provides a description of the NetWorker software that is installed with each selection.

Table 27 Available NetWorker software packages on Windows

Selection	Description
Client	Installs the NetWorker client software package. Choose this component when the target host is a NetWorker client.
Storage Node	Installs the NetWorker client and the storage node software packages. Choose this component when the target host is a NetWorker storage node.
Server and Client	Installs the NetWorker server, the storage node and the client software packages. Choose this installation type when the target host is a NetWorker server.
NetWorker Management Console	Installs the Console server software. Choose this component to install the Console server software. Console server software is installed automatically after the NetWorker software is installed.
Language Packs	Install additional language packs. During the NetWorker software installation, optional language packs are selected and installed.
NetWorker License Manager	Installs the License Manager server software. Choose this option when the target host is the License Manager server. During the NetWorker software installation, the License Manager software is installed. The *NetWorker License Manager 9th Edition Installation and Administration Guide*, available on http://support.emc.com describes how to install and configure the NetWorker License manager software.

9. To install the NetWorker software in a location other than the default location, click **Change** and specify the installation path.

10. Click **Next.**

11. On a Windows x86 system only, the ConnectEMC Installation window is displayed. ConnectEMC is a console program that once a month, polls the NetWorker server for information from the RAP database, such as server errors, and system configuration. The information is stored in an xml file that is sent to EMC Customer Service. The ConnectEMC software only queries one NetWorker server.

Consider the following before installing ConnectEMC:

- Do not install the ConnectEMC software on an existing Windows NetWorker server or storage node. Folder permissions might not allow for the creation of the data files required by ConnectEMC installations.

- The ConnectEMC software supports a NetWorker 7.6 and later server. Previous versions of the NetWorker server software cannot launch the **nsrconnect** program.

- The ConnectEMC software is only supported on a 32-bit Windows NetWorker client.

- Install the Connect EMC software on only one NetWorker client in the NetWorker datazone.

- The ConnectEMC software is installed in C:\Program Files. The installation location cannot be changed.

- The NetWorker server daemons must be running during the ConnectEMC installation. When the NetWorker server is not running, the ConnectEMC installation fails.

    a. To install the ConnectEMC software, select **Install ConnectEMC.**

    b. Type the Name or IP address of the NetWorker server in the appropriate field, then click **Next.**

    Post-installation instructions for configuring ConnectEMC are provided in the *NetWorker 8.0 Administrators Guide.*

12. If the optional **Language Packs** component was selected previously, the **Feature Selection** window appears.

    On the **Feature Selection** window:

    a. Select the required language packs.

    b. Select **This feature will be installed on local hard drive**, and click **Next.**

    > **NOTICE**
    >
    > The English language pack is required and you cannot clear the selection.

13. On the **Ready to Install the Program** window, review the settings and click **Install.**

14. If the NetWorker server and client installation type was selected previously, the **License Agreement** window appears.

    On the **License Agreement** window:

    a. Review the license agreement.

    b. Select **I accept the terms in this license agreement**, and click **Next.**

15. On the **NetWorker Server Selection** window, specify the NetWorker servers that will perform backups and directed recoveries on this host.

    Consider the following:

    - When you do not specify a server, you enable any NetWorker server to:

        – Backup this host.

        – Perform a directed recovery to this host.

    - When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

    - The first name specified in the servers file becomes the default NetWorker server for the host.

    - The NetWorker software stores the list of trusted NetWorker servers in the *NetWorker_installation_directory*\res\servers file.

- 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, click **Add**.

- To browse for available NetWorker servers, click **Update List**. 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.

16. Click **Next**.

17. If the Console server software component was selected previously, the Console server installation launches. If the Console server component was not selected previously, proceed to step 25 .

    To install the Console server software:

    a. On the **Welcome to NetWorker Management Console Installation** window, and click **Next**.

    b. On the **Customer Information** window, fill in the appropriate information, and click **Next**.

    c. On the **Product Setup** window, click **Next** to install the Console server software in the default directory.

    To install the software in a different directory, click **Change** and specify a new location.

    If the Console server database and configuration files were moved from a different Console server to this host, specify the location of the database and configuration files. "Task 9: Optional, move the Console server files to a new Console server" on page 48 describes how to move the Console server database and configuration files to a new Console server.

NOTICE

    If the **Setup** wizard detects that there is insufficient disk space to install the NetWorker software, another dialog box appears listing the local drives, and highlights the drive with insufficient disk space. The list also displays disk size, available space, and required space. Use this information to select an appropriate drive on which to install the software.

18. On the **Configuration Options** window, type the **Database Destination path,** the **IP port numbers** to use for the embedded HTTP server, and the **Client Service port**.

When doing this, consider the following:

- To change the default **Database Destination Folder,** 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**).

> **NOTICE**
>
> Do *not* use port numbers that are already in use. For example: The Console server uses port **2638** for TDS protocol communications with the Console database. The preferred port for EMC Data Protection Advisor product is **9002**.

19. Click **Next**.

20. If the installation process detects an existing Console server database, the **Customer Database Maintenance** window appears.

In the **Customer Database Maintenance** window, leave the default option **Keep the database** selected and click **Next**.

21. If the installation process detects a NetWorker 7.6.x Console server database the **Database Migration** window appears.

In the **Database Migration** window:

a. Optionally, type a new directory in which to save a copy of the Console server database.

b. Click **Next**.

22. Review the information in the **Product Configuration** window and click **Next**.

23. In the **Ready to Install the Program** window, click **Install**.

When the Console server software is updated from a version prior to 8.0 and the database conversion fails, a message similar to the following appears:

```
Database upgrade failed. Please see C:\Program Files
(x86)\Legato\Management\GST\logs\gstdbupgrade.log for details. You
can continue finishing installation, then convert the database
manually, or exit installation now. Do you want to continue with the
installation?
```

- If you select **Yes,** the NetWorker and Console server software installation continues.

- If you select **No,** the NetWorker and Console server software installation fails. The software is rolled back to the previous version of the NetWorker and Console server software.

"Task 11: Review the status of the Console server database conversion" on page 49 describes how to determine the cause of the conversion failure and the steps to convert the database after the software install has completed.

24. On the **NetWorker Management Console Setup Completed** window, clear **Launch the client in default browser after exiting the Wizard**, and click **Next**.

    The **NetWorker Management Console Setup Completed** window provides:

    • The location of the **install.log** file.

    • The location of the **gstd.raw** file.

    • The browser URL to specify in a browser window to access the Console server GUI from any desktop.

25. Optionally, on the **NetWorker setup complete** window, select **Run Change Journal Manager on exit**. The *NetWorker 8.0 Administration Guide* describes how to configure the NetWorker software to use the **Windows Change Journal**.

26. Click **OK** to complete the install.

27. For a NetWorker server update only, from Control Panel, stop the **NetWorker Remote Exec** service. This will also stop the **NetWorker Backup and Recover** service and **EMC gstd** service.

28. For a NetWorker server update only, from Control Panel, start the **NetWorker Backup and Recover** service. This will also start the **NetWorker Remote Exec** service. If the host is also the Console server, start the **EMC gstd** service.

29. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

    Table 1 on page 16 provides a list of the NetWorker daemons.

Task 4: Adjust antivirus software settings

Undesirable behavior might occur if the antivirus software installed on a Windows host is not tuned for backup environments.

Configure the antivirus software to:

◆ Avoid scanning files that are opened for backup.

   For example:

   • Clear Opened for Backup in the Advanced Auto-Protect option for Norton Antivirus.

   • Clear Opened for Backup in the Scan Items tab of McAfee's On-Access Scan Properties window.

◆ Not monitor the following directories:

   • C:\Program Files\EMC or C:\Program files\Legato

   • C:\Program Files\EMC NetWorker\nsr\res or C:\Program Files\Legato\nsr\res

   • C:\Program Files\EMC NetWorker\nsr\mm or C:\Program Files\Legato\nsr\mm

   • C:\Program Files\EMC NetWorker\nsr\Index or C:\Program Files\Legato\nsr\index

   • AFTD directories

Refer to the antivirus documentation for detailed information.

Using the Console client to connect to the Console server

A Console client is any host that uses an internet browser to connect to the Console server and display the NetWorker Management Console (NMC) GUI.

A Windows console client:

◆ Requires JRE 1.6 or JRE 1.7.

> **Note:** Windows 2012 and Windows 8 support JRE 1.7 only.

◆ Requires the correct JRE program for the installed Internet Explorer version.

   Install 32-bit JRE when 32-bit Internet Explorer is used and 64-bit JRE when 64-bit Internet Explorer is used.

   To determine the version of Internet Explorer:

   1. Right-mouse click the **Internet Explorer** shortcut and select **Properties**.

   2. Review the **Target Path** field.

      The **Target Path** is:

      – C:\Program Files (x86)\Internet Explorer\ when the 32-bit version of Internet Explorer is installed.

      – C:\Program Files\Internet Explorer\ when the 64-bit version of Internet Explorer is installed.

◆ Does not require the NetWorker software.

◆ Supports the use of the following web browser and operating system combinations:

   • Microsoft Internet Explorer 7 on Windows XP and Windows 2003.

   • Microsoft Internet Explorer 8 on Windows XP, Windows 2003, Windows 7, Windows Vista, Windows 2008, Windows 2008 R2.

   • Microsoft Internet Explorer 9 on Windows 7, Windows Vista, Windows 2008, Windows 2008 R2.

   • Firefox 5.0 on Windows XP and Windows 2003.

   • Microsoft Internet Explorer 10 on Windows 8 and Windows 2012, in Desktop mode only

   NOTICE

   You cannot use Windows 2008 Server Core as a Console client.

"Task 1: Connect to the Console server console GUI for the first time" on page 152 describes how to launch the console client for the first time.

Installing the NetWorker and Console server on Windows 2008 Server Core

This section describes how to install the NetWorker and Console server software on a Windows Server Core host.

To install the NetWorker software:

1. Run **setup.exe** from the appropriate subdirectory to which the NetWorker installation software was extracted:

   • On 32-bit hosts: **...\win_x86\networkr**

   • On 64-bit hosts: **...\win_x64\networkr**

   • On 64-bit Itanium hosts: **...\win_ia64\networkr**

   > **NOTICE**
   >
   > Do not use **autorun.exe** to install NetWorker. The **autorun.exe** program requires **Windows Explorer** which is not available with a Windows core installation.

2. Following the installation steps beginning at .

The Console client GUI is not supported on the Windows 2008 Server Core.

You can install the Console server on a Windows 2008 Server Core host but you cannot launch the Console client to connect to the Console server.

Installing additional software

This section describes the optional software that can be installed after the initial NetWorker software installation:

◆

◆

◆

◆

Installing the Console server software on Windows

To install the Console server software:

1. Log in to the target host with a local administrator user.

2. From **Control Panel**, select the appropriate program to install application software.

3. Select **NetWorker** and click **Change**.

4. On the **Windows Firewall** window, click **Configure the Windows firewall**, and click **Next.**

5. On the **Install Type** window, click **NetWorker Management Console**, and click **Next.**

6. On the **Ready to Change** window, click **Change.**

7. On the **NetWorker Server Selection** window, specify the NetWorker servers that will perform backups and directed recoveries on this host:

   - 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, click **Add**.

   - To browse for available NetWorker servers, click **Update List**. 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.

   Consider the following:

   - When no servers are specified, any NetWorker server can back up this host.

   - When no servers are specified, any NetWorker server can perform a directed recovery to this host.

   - When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

   - The first name specified in the **servers** file becomes the default NetWorker server for the client.

   - The list of trusted NetWorker servers is stored in the *NetWorker_installation_directory*\res\servers file.

8. On the **Welcome to NetWorker Management Console Installation** window, click **Next**.

9. On the **Customer Information** window, fill in the appropriate information, and click **Next**.

10. On the **Product Setup** window, click **Next** to install the Console server software in the default directory.

   To install the software in a different directory, click **Change** and specify a new location.

   If the Console server database and configuration files were moved from a different Console server to this host, specify the location of the database and configuration files. "Task 9: Optional, move the Console server files to a new Console server" on page 48 describes how to move the Console server database and configuration files to a new Console server.

   > **NOTICE**
   >
   > If the **Setup** wizard detects that there is insufficient disk space to install the NetWorker software, another dialog box appears listing the local drives, and highlights the drive with insufficient disk space. The list also displays disk size, available space, and required space. Use this information to select an appropriate drive on which to install the software.

11. On the **Configuration Options** window, type the **Database Destination path,** the IP port numbers to use for the embedded HTTP server, and the **Client Service** port.

   When doing this, consider the following:

   - To change the default database path, select **Change.** If the Console server database was migrated to this host from another Console server, ensure that the default database path matches the location the files were copied to.

   - 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**).

   > | **NOTICE** |
   >
   > Port **2638** is reserved by the Console server software for TDS protocol communications with the Console server database. Port **9002** is the preferred port for EMC Data Protection Advisor product.

12. Click **Next.**

13. Review the information in the **Product Configuration Summary** window and click **Next.**

14. On the **Ready to Install the Program** window, click **Install.**

   When the Console server software is updated from a version prior to 8.0 and the database conversion fails:

   - The following error message is displayed:

     ```
     Install failed to upgrade the database full path and database
     name. Check the upgrade log full path and log name file for
     details.
     Please, fix any environment related errors mentioned in the log
     and then run the script full path to gstdbupgrade.sh
     manually to upgrade the database after the install is complete.
     ```

   - The NetWorker and Console server software installation fails. The software is rolled back to the previous version of the NetWorker and Console server software.

     "Task 11: Review the status of the Console server database conversion" on page 49 describes how to determine the cause of the conversion failure and the steps to convert the database after the software install has completed.

15. On the **NetWorker Management Console Setup Completed** window, clear **Launch the console client in the default browser immediately after exiting the InstallShield Wizard,** and click **Next.**

   The **NetWorker Management Console Setup Completed** window provides:

   - The location of the install.log file.

   - The location of the gstd.raw file.

   - The browser URL to specify in a browser window to access the Console server GUI from any desktop.

16. Optionally, on the **NetWorker setup complete** window, select **Run Change Journal Manager on exit**. The *NetWorker 8.0 Administration Guide* describes how to configure the NetWorker software to use the Windows Change Journal.

17. Click **OK** to complete the install.

18. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

    provides a list of the NetWorker daemons.

Installing additional language packs

1. Log in to the target host with a local administrator user.

2. From **Control Panel,** select the appropriate program to install the application software.

3. Select **NetWorker** and click **Change**.

4. Click **Configure the Windows firewall** and click **Next.**

5. Click **Language Packs** and click **Next.**

6. On the **Feature Selection** window, select the required language packs, select **This feature will be installed on local hard drive** and click **Next.**

   The English language pack is required and cannot be unselected

7. In the **Ready to Change** window, review the settings and click **Change**.

8. On the **NetWorker Server Selection** window, specify the NetWorker servers that will perform backups and directed recoveries on this host:

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

   • To browse for available NetWorker servers, click **Update List**. 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.

   Consider the following:

   • When no servers are specified, any NetWorker server can back up this host.

   • When no servers are specified, any NetWorker server can perform a directed recovery to this host.

   • When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

   • The first name specified in the servers file becomes the default NetWorker server for the client.

9. The list of trusted NetWorker servers is stored in the *NetWorker_installation_directory*\res\servers file. Click **Next.**

10. Click **OK** to complete the install.

Installing ConnectEMC

ConnectEMC is a console program that once a month, polls the NetWorker server for information from the RAP database, such as server errors, and system configuration. The information is stored in an xml file that is sent to EMC Customer Service. The ConnectEMC software only queries one NetWorker server.

Consider the following before installing ConnectEMC:

◆ Do not install the ConnectEMC software on an existing Windows NetWorker server or storage node. Folder permissions might not allow for the creation of the data files required by ConnectEMC installations.

◆ The ConnectEMC software supports a NetWorker 7.6 and later server. Previous versions of the NetWorker server software cannot launch the **nsrconnect** program.

◆ The ConnectEMC software is only supported on a 32-bit x86 Windows NetWorker client.

◆ Install the Connect EMC software on only one NetWorker client in the NetWorker datazone.

◆ The ConnectEMC software is installed in C:\Program Files. The installation location cannot be changed.

◆ The NetWorker server daemons must be running during the ConnectEMC installation. When the NetWorker server is not running, the ConnectEMC installation fails.

To install ConnectEMC:

1. Log in to the host with a local administrator user.

2. From **Control Panel,** select the appropriate program to install application software.

3. Select **NetWorker** and click **Change.**

4. On the **Welcome to NetWorker Maintenance** window, click **Next.**

5. On the **Maintenance Type** window, select **Change,** and click **Next.**

6. On the **Windows Firewall** windows, click **Configure the Windows firewall** and click **Next.**

7. On the **Installation Type** windows, leave the default **Client** option select and click **Next.**

8. On the **ConnectEMC Software** window, select **Install ConnectEMC.**

9. Specify the NetWorker server in the **NetWorker server Name or IP Address** field.

   Consider the following:

   • The hostname specified must be resolvable by the client.

   • The IP address specified must be reachable.

   • The host specified must already have the NetWorker server software installed on it and the daemons must be started.

   When these requirements are not met the Connect EMC software installation will fail.

10. On the **Ready to Change** window, click **Change.**

11. On the **NetWorker Server Selection** window, specify the NetWorker servers that will perform backups and directed recoveries on this host:

- 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, click **Add**.

- To browse for available NetWorker servers, click **Update List**. 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.

Consider the following:

- When no servers are specified, any NetWorker server can back up this host.

- When no servers are specified, any NetWorker server can perform a directed recovery to this host.

- When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

- The first name specified in the **servers** file becomes the default NetWorker server for the client.

- The list of trusted NetWorker servers is stored in the *NetWorker_installation_directory***\res\servers** file.

12. Click **Next**.

13. Click **Finish** to complete the install.

When ConnectEMC is installed, an icon for ConnectEMC Console is placed on the desktop. Post-installation instructions for configuring ConnectEMC are provided in the *NetWorker 8.0 Administration Guide*.

Changing the installation type

A host set up as a NetWorker client, NetWorker server, or NetWorker storage node can be changed to another type.

This section describes how to change the installation type from:

◆ A NetWorker client to a NetWorker storage node.

◆ A NetWorker client to a NetWorker server.

◆ A NetWorker server to a NetWorker client.

◆ A NetWorker server to a NetWorker storage node.

◆ A NetWorker storage node to a NetWorker server.

◆ A NetWorker storage node to a NetWorker client.

Changing the installation type

1. Log in to the target host with a local administrator user.

2. From **Control Panel**, select the appropriate program to install application software.

3. Select **NetWorker** and click **Change**.

4. On the **Welcome to NetWorker Maintenance** window and click **Next**.

5. On the **Maintenance Type** window, select **Change** and click **Next**.

6. On the **Windows Firewall** windows, click **Configure the Windows firewall** and click **Next.**

7. On the **Installation Type** windows, choose an **Installation Type** and click **Next.**

8. On the **Ready to Change** window, click **Change.**

9. On the **NetWorker Server Selection** window, specify the NetWorker servers that will perform backups and directed recoveries on this host:

   • 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, click **Add**.

   • To browse for available NetWorker servers, click **Update List**. 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.

   Consider the following:

   • When no servers are specified, any NetWorker server can back up this host.

   • When no servers are specified, any NetWorker server can perform a directed recovery to this host.

   • When adding NetWorker servers, specify both the short name and FQDN for each NetWorker server.

   • The first name specified in the **servers** file becomes the default NetWorker server for the client.

   • The list of trusted NetWorker servers is stored in the *NetWorker_installation_directory*\res\servers file.

10. Click **Next**.

11. Click **OK** to complete the install.

Installation Type Considerations:

After changing the installation type, complete the following tasks:

◆ When a NetWorker client or storage node is changed to a NetWorker server, ensure that the servers file for all of the NetWorker clients that will be backed up by the new NetWorker server is updated to reflect the new NetWorker server. The *NetWorker 8.0 SP1 Administration Guide* provides information on how to modify the servers file.

◆ When a NetWorker server is changed to a NetWorker client or storage node:

   • In the **Client Properties** window under the **Globals (1 of 2)** tab, update the **Server network Interface** attribute for each client configuration, as required, with the network interface of the new NetWorker server.

- Manually remove the following directories:

  - C: \Program Files\EMC NetWorker\nsr\mm

  - C:\Program Files\EMC NetWorker\nsr\index

  - C:\Program Files\EMC NetWorker\nsr\res\resdb

◆ When a NetWorker storage node is changed to a NetWorker client, modify the following resource attributes on the NetWorker server:

- Remove the Media Pool device restrictions that are defined for devices on the storage node.

- On the Devices window of NMC, remove all of the storage node devices.

- On the Client Properties window, under the Globals (2 of 2) tab, update the following attributes for each client, as required:

  - Storage nodes

  - Recover storage nodes

- On the Storage node properties window under the Configuration tab, update the Clone storage nodes attribute for all of the storage nodes, as required.

Performing a silent install

You can use the **setup.exe** program to perform a silent or unattended installation of the NetWorker storage node and client software.

1. From a command prompt, navigate to the **setup.exe** program in the directory where you extracted the NetWorker installation software.

2. Use the **setup.exe** command to install the software:

   setup.exe /S /v" /qn /l*v *filename.log* **INSTALLLEVEL=***Type_of_Install*
   INSTALLDIR=*directory* **NW_FIREWALL_CONFIG=1 setuptype=Install"**

   where:

   - *filename.log* is the name of the file to log installation messages. The installation process creates the log file in the same directory that you run **setup.exe**. When you omit **/l*v** *filename.log*, the installation process does not log messages.

   - *Type_of_install* is the level associated with the NetWorker installation type:

     - 100 is the install level for a client
     - 200 is the install level for a storage node
   - *directory* is the location to install the NetWorker software. Create this directory location before you run the silent install. When you omit **INSTALLDIR=***directory*, the NetWorker software uses the default installation directory: C:\Program Files\EMC NetWorker\nsr.

     For example, to install the NetWorker client software in the E:\nsr directory, type:

     ```
     setup.exe /S /v" /qn /l*v setup.log INSTALLLEVEL=100
     INSTALLDIR=E:\nsr NW_FIREWALL_CONFIG=1 setuptype=Install"
     ```

Uninstall the NetWorker and Console server on Windows

This section describes how to uninstall the NetWorker and Console server software on supported Windows operating systems. It also provides instructions about how to uninstall the ConnectEMC software on Windows x86 hosts without removing the NetWorker client software:

◆ "Uninstall the NetWorker software" on page 146 describes how to uninstall the NetWorker and the Console server software.

◆ "Performing a silent uninstall" on page 147 describes how to perform an unattended uninstall of the NetWorker client or storage node software.

◆ "Uninstall the ConnectEMC software" on page 147 describes how to uninstall the Connect EMC software on Windows x86 systems without removing the NetWorker client software.

◆ "Uninstall the NetWorker software on Windows 2008 Server Core" on page 147 describes how to uninstall the NetWorker software on Windows 2008 Server Core systems.
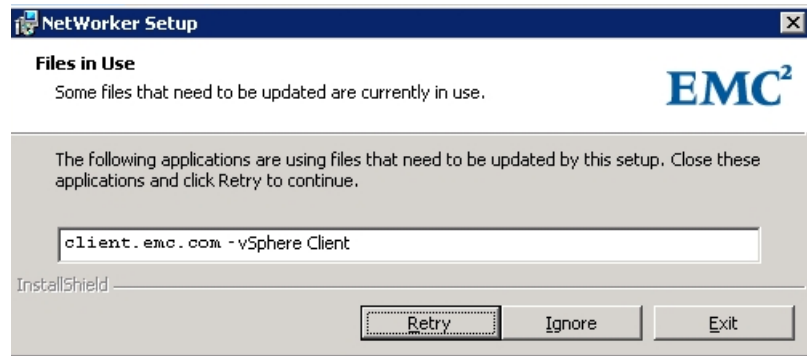
Uninstall the NetWorker software

Use Control Panel to uninstall the NetWorker software, Console server software, and language pack software on a Windows host.

As the local administrator on the Windows host, perform the following steps to uninstall the NetWorker software packages:

1. Ensure that there are no programs, such as Windows Explorer, accessing the directories or the files in *NetWorker_install_path* directory. Prior to NetWorker 8.0 SP1, the default *NetWorker_install_path* is C:\Program Files\Legato.

2. From the Control Panel, select the appropriate program to uninstall application software.

   • When the host is the Console server, uninstall the Console server software package before the NetWorker software package:

      – Select **NetWorker Management Console** and click **Uninstall**.

      – Select **NetWorker Management Console Server** and click **Uninstall**.

   • Select **NetWorker** and click **Uninstall.** This will remove the NetWorker software and on x86 hosts, the ConnectEMC software.

- When the following window appears on a Windows systems with the vClient application running, click **Ignore**.

Figure 1 Files in Use

3. Optionally, remove the *NetWorker_install_path* directory. Do not remove the directory if the NetWorker or Console server software packages will be updated or reinstalled.

4. On all NetWorker console clients, delete the NetWorker Management Console desktop shortcut.

Performing a silent uninstall

Use the **msiexec.exe** program to perform a silent or unattended uninstall of the NetWorker client and storage node software.

1. From a command prompt, navigate to the folder that contains the **NetWorker.msi** file.

> **NOTICE**
>
> The **NetWorker.msi** file is in the networkr sub folder in the folder where you extracted the NetWorker installation software.

2. Use the **msiexec.exe** command to uninstall the software:

```
msiexec /quiet /uninstall "NetWorker"
```

Uninstall the ConnectEMC software

The ConnectEMC software uninstalls automatically when you remove the NetWorker software on a Windows x86 system.

To uninstall the ConnectEMC software without removing the NetWorker client software, run the **uninst_connect.cmd** script from one of the following locations:

◆ The networkr subdirectory on the installation media dvd.

◆ The networkr subdirectory in which the NetWorker software was extracted.

Uninstall the NetWorker software on Windows 2008 Server Core

Use one of the following methods to uninstall the NetWorker software from a Windows 2008 Server Core host:

◆ **"Uninstall the NetWorker and Console server software by using setup.exe" on page 148** describes how to remove the NetWorker software when the NetWorker installation package is available.

◆ **"Uninstall the NetWorker and Console server software by using wmic" on page 149** describes how to remove the NetWorker software when the NetWorker installation package is available.

Uninstall the NetWorker and Console server software by using setup.exe

To uninstall the NetWorker and Console server software by using **setup.exe**:

1. From the networkr subdirectory in the temporary NetWorker installation directory, run **setup.exe**:

   • On 32-bit hosts: **...**\win_x86\networkr

   • On 64-bit hosts: ...\win_x64\networkr

   • On 64-bit Itanium hosts: ...\win_ia64\networkr

2. On the **Choose Setup Language** window, select a language and click **OK**.

3. On the **Welcome to NetWorker Maintenance** window, click **Next**.

4. On the **Maintenance Type** window, click **Remove** and click **Next**.

5. In the **Maintenance Type** window, click **Remove** and click **Next**.

   When **Maintenance Mode** is used to uninstall the NetWorker software on a system that has the Console server software installed, the Console server software is removed first, then the NetWorker software is removed.

6. In the **Ready to Remove** window, do not select the **Remove NetWorker Metadata** option.

   During a NetWorker or Console server software update or a reinstallation of the software, this option should not be used.

   By default, the **Remove NetWorker Metadata** checkbox is clear 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 package. When the **Remove NetWorker Metadata** checkbox is cleared, the following NetWorker files remain in the *NetWorker_installation_dir*\nsr directory after the software is uninstalled:

   • All log files

   • All deduplication data

   • All index entries

   • All **mm** entries

   • All **res** files

   • All files in the **tmp** directory

   • All files in the **debug** directory

7. Click **Remove**.

8. In the **NetWorker Setup Complete** window, click **Finish**.

Uninstall the NetWorker and Console server software by using wmic

Use the Windows Management Instrumentation command-line utility, **wmic.exe** to uninstall the NetWorker software when the extracted NetWorker software package is not available on the Windows system.

To uninstall the NetWorker software by using the **wmic.exe** utility:

1. Log in to the Windows computer with a local administrator user and open a command prompt window.

2. When the host is a Console server, uninstall the Console server software before the NetWorker software:

   ```
   c:\>wmic product where name="NetWorker Management Console Server"
   uninstall
   ```

3. Review the output to confirm the uninstall is successful. The message **Method execution successful** indicates a successful uninstall.

   For example:

   ```
   Executing
   (\\NW-host\ROOT\CIMV2:Win32_Product.IdentifyingNumber="{980A983E-16
   0C-4FFD-890A-F4877066B679}",Name="NetWorker Management
    Console Server",Version="8.0")->Uninstall()
   Method execution successful.
   Out Parameters:
   instance of __PARAMETERS
   {
           ReturnValue = 0;
   };
   ```

4. Uninstall the NetWorker software:

   ```
   c:\>wmic product where name="NetWorker" uninstall
   ```

5. Review the output to confirm the uninstall is successful. The message **Method execution successful** indicates a successful uninstall.

   For example:

   ```
   Executing
   (\\BV-TLCSC\ROOT\CIMV2:Win32_Product.IdentifyingNumber="{74B15CCE-9
   8DB-46F5-B634-5BE07C7FC85A}",Name="NetWorker",Version="
   8.0.0")->Uninstall()
   Method execution successful.
   Out Parameters:
   instance of __PARAMETERS
   {
           ReturnValue = 0;
   };
   ```

Detailed information about the **wmic.exe** utility is available in the Microsoft kb article 290216.

Using SMS to install or uninstall the NetWorker software

Use the Microsoft Systems Management Server (SMS) to perform a push installation and removal of the NetWorker software.

For best results, do not use a computer that is running the NetWorker server software as the SMS server host. Configure the SMS server software on a NetWorker client.

NOTICE

Refer to the Microsoft SMS documentation for detail information about how to perform SMS procedures, such as creating an installation package or deploying an installation job.

To use the SMS software to install or remove the NetWorker software:

1. Create a shared directory on a local disk on the SMS server.

    For example, create a shared directory called networkr.

2. Copy all of the files from the appropriate directory on the NetWorker CD-ROM to the directory created in step 1 .

    For example, copy all of the files from \win_x86\networkr on the CD-ROM to the networkr directory on the SMS server.

3. Use the SMS Administrator Console to create an installation package from the NetWorker.sms package definition file. The definition file is located in the networkr directory.

    NOTICE

    The NetWorker.sms file is intended to be used as starting point for a package definition. The Microsoft SMS documentation provides complete instructions on customizing the package definition for a specific environment.

4. Use the SMS Administrator Console to create an installation or uninstallation job for the package you created in step 3 .

5. Deploy the installation or uninstallation job created in step 4 .

CHAPTER 12
Verifying the Installation

This chapter provides information about testing and verifying the NetWorker software installation. This chapter contains this section:

Test the Installation

This section describes how to verify that the NetWorker software can perform management and backup tasks.

To test the software:

Task 1: Connect to the Console server console GUI for the first time

The Console server console, a Java web-based application manages NetWorker server operations. The host used to connect to the NMC console, called the Console client.

To connect to the NMC console for the first time:

1. If the Console server and the NetWorker server are on separate hosts, add the owner of the gstd process and the NMC administrator user to the administrators list on the NetWorker server.

    This allows the NMC administrator user to administer and monitor the NetWorker server.

    This is not required when the Console server and the NetWorker server are the same host. The NetWorker server install automatically adds the owner of the gstd process and the NMC administrator user to the administrators list of the NetWorker server.

    To update the administrators list:

    a. Log in to the NetWorker server as an administrator on Windows or as root on UNIX.

    b. From a command prompt, use the **nsraddadmin** command to add the gstd process owner to the administrators list of the NetWorker server.

       By default, the process owner is the SYSTEM user on Windows and is the root user on UNIX.

       For example:

       – On a Windows NetWorker server, type:

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

       – On a UNIX NetWorker server, type:

          nsraddadmin -u "user=root, host=_console_host_

    c. Add the NMC administrator user to the administrators list on the NetWorker server:

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

       where _console_host_ is the Console server hostname.

2. Enable the Temporary internet file caching attribute in the Java Control Panel of the console client. When you do not enable this option in JRE, Java WebStart fails to start.

   For Windows console clients:

   a. Browse to **Control Panel** › **Java** › **General** › **Temporary Internet Files** › **Settings**

   b. Select **Keep temporary files on my computer**.

   For UNIX console clients:

   a. Start the Java Web Start Application Manager, javaws.

   b. Select **Enable temporary internet file caching**.

3. Ensure that the console processes gstd, dbsrv12, and httpd are running on the Console server.

   - For UNIX Console servers:

     a. Confirm the daemons start:

     ```
     ps -ef | grep gstd
     ps -ef | grep dbsrv12
     ps -ef | grep httpd
     ```

     On UNIX, two or more httpd processes run. The parent httpd process runs as root and the child process(es) run as the username specified during the installation.

     b. Start the gstd daemon, if it is not started. This will also start the dbsrv12 and httpd processes:

     On Solaris and Linux: /etc/init.d/gst start

     On AIX: /etc/rc.gst start

     If the /etc/init.d/gst file on Linux or /etc/rc.gst file on AIX does not exist, run the /opt/lgtonmc/bin/nmc_config script.

   - For Windows Console servers:

     a. In **Task Manager,** confirm the gstd, httpd, and dbsrv12 processes are running.

     On Windows, the Console server software registers the httpd as the EMC GST Web Service. There are always two httpd processes running when the Console server is active.

     b. Start the EMC GST Service service if the gstd process is not started.

     This will also start the dbsrv12 and httpd processes.

     provides more information is the gstd process does not start.

4. From a supported a web browser session, type the URL of the Console server:

   `http://`*`server_name`*`:`*`http_service_port`*

   where:

   - *server_name* is the name of the Console server.

   - *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`**

5. On the **Welcome** window, click **Start**.

6. On the **Security Warning** window, click **Start** to install and run **NetWorker Console**.

7. If you did not install the appropriate JRE version on the system, a prompt to install JRE appears. Follow the onscreen instructions to install JRE.

8. On the **NetWorker Management Console Login** window, type the NMC username and password.

   The default user is administrator and the default password is administrator. For security purposes, change this password during the first login session.

9. In the **Security audit log server** window, leave the field blank, click **Next**.

10. For the Windows operating system only, select one of the following options in the **Java Web Start Desktop Integration** window:

    - 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**.

11. Click **OK**. The **Console** window and the **Getting Started** window appears.

Task 2: Add a NetWorker server to the NMC Enterprise

Add the NetWorker server that the Console server will monitor and administer to the Enterprise view.

1. From the **Console** window, click the **Enterprise** button.

2. From the left pane, select the **Enterprise** icon.

3. From the **File** menu, select **New › Host**.

4. In the **Host Name** attribute, specify the hostname, IP address, DNS name, or WINS name of the NetWorker server and click **Next**.

   > **NOTICE**
   >
   > Hostnames and aliases cannot exceed 80 characters.

5. In the **Select Managed Application** window, select **NetWorker** and click **Next**.

6. In the **Manage NetWorker** window, leave the default options **Capture Events** and **Gather Reporting Data** enabled.

   Consider the following:

   - Enable the **Capture Events** option to allow the Console server to monitor and record alerts for events that occur on the NetWorker server.

   - Enable the **Gather Reporting Data** option to allow the Console server to automatically collect data about the NetWorker server and generate reports. The *NetWorker Administration Guide* on the EMC Online Support Site describes on how to run reports and the reports that are available.

7. Click **Finish.**

8. In the **Managed Applications** window, select **NetWorker** to connect to the NetWorker server.

Task 3: Configure a stand-alone device

Configure one of the following devices to test the NetWorker software.

◆

◆

◆

Stand-alone tape device

To configure a stand-alone tape device:

1. Connect to the NetWorker server in the NMC console and 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 and select **Scan for devices**.

5. In the **Scan for Devices** window select the storage node to scan.

6. Fill in the requested information and click **Start Scan**.

7. From the right pane, select the new device.

8. From the **Devices** menu, select **Devices** > **Device Operations** > **Label**.

9. In the **Label** window, verify the information and click **OK**.

Stand-alone file or advanced file device

To configure a stand-alone file or advanced file device:

1. Connect to the NetWorker server in the NMC console and click **Devices**.

2. From the left pane, select **Devices**.

3. From the **File** menu, select **New**.

4. On the **Create Devices** window, type the device path in the **Name** attribute.

5. In the **Media type** attribute, select **file** or **adv_file**.

6. Click **OK**.

7. From the right pane, select the new device.

8. From the **Devices** menu, select **Devices** › **Device Operations** › **Label**.

9. In the **Label** window, verify the information and click **OK**.

Autochanger or silo

To configure a new library resource:

1. Connect to the NetWorker server in the NMC console and click **Devices**.

2. From the left pane, select **Storage Nodes**.

3. Right-click the storage node for the device and select **Configure All Libraries**.

4. Fill in the requested information and click **Start Configuration**

5. Click **Finish**.

The *NetWorker 8.0 Administrators Guide* provides describes how to configure a device in the NetWorker software.

Task 4: Test the NetWorker software installation

Perform a manual backup of a file or folder, to test the NetWorker installation.

The procedure to perform a manual backup is different on Windows and UNIX:

Perform a manual backup on Windows

Use the NetWorker User program to perform a manual backup Windows. The NetWorker User program provides a graphical interface to perform manual backups. The *NetWorker 8.0 Administration Guide* provides more information about the NetWorker User program.

1. On a NetWorker client, start the **NetWorker User** program.

2. In the **Change server** window, select or type the name of the NetWorker server

3. In the **Source** and **Destination client** windows, select the current NetWorker client.

4. Click **Backup**.

5. In the left pane of the **Backup** window, click the appropriate directory folder.

6. Select a file or directory file to back up in one of the following methods:

    •   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.

7. Click **Start**.

The **Backup Status** window displays the progress of the backup. When the NetWorker server has successfully finished the backup, this message appears:

```
Backup completion time: 2-15-07 3:27p
```

If the backup fails:

- Review the NetWorker daemon.raw log file on both the NetWorker server and client hosts. Use the **nsr_render_log** program to review the log file in a readable format. The *NetWorker 8.0 Command Reference Guide* on the EMC Online Support Site describes how to use the **nsr_render_log** program.

  The location of the **daemon.raw** is different on Windows and UNIX:

  - On Windows, the log file appears in the C:\Program Files\EMC NetWorker\nsr\logs directory.

  - On UNIX, the log file appears in the /nsr/logs directory.

- Use the Troubleshooting section in the *NetWorker 8.0 Administration Guide* to determine the cause.

- Review the operating system log files (Application event log on a Windows client) for additional information.

Perform a manual backup on UNIX

Use the **save** program to perform a manual backup from the system prompt.

For example, to back up /tmp/myfile.txt to a server called jupiter, type:

```
save -s jupiter /tmp/myfile.txt
```

The UNIX man pages describe how to use the **save** program.

Task 5: Start the console client after the first time

After the console client has connected to the Console server once, use one of the following methods to access the Console server again:

- Point the browser to the same URL as in .

- Double-click **NetWorker Console** in the **Java Web Start Application Manager.**

- On Microsoft Windows console clients, double-click the **NetWorker Console** desktop icon.

Troubleshooting Console client connection issues

This section provides a list of possible causes and resolutions for Console client connection issues:

◆ "Unable to display to Console server web page" on page 158

◆ "Unable to connect to the Console server" on page 159

◆ "Unable to connect to server: Failed to contact using UDP ping" on page 160

◆ "Unable to start gstd process on Console server" on page 160

◆ "Warning: unable to detect Java Runtime Environment" on page 162

◆ "Cannot log in to the Console server with SuSE 11" on page 162

Unable to display to Console server web page

If the Console server web page, for example **http://**_houston_**:9000** does not display on the console client:

1. Verify that the gstd dbsrv12 and httpd processes start on the Console server. "Unable to start gstd process on Console server" on page 160 provides more information if you cannot start the processes.

2. Confirm that you specified the correct port number to connect to the Console server. The default port number to connect to the Console server console is 9000 but might have been changed during the install process.

   To determine the service port specified during the installation:

   a. Review the NMC configuration file on the Console server:

      – Solaris: /opt/LGTOnmc/gstd.conf

      – AIX and Linux: /opt/lgtonmc/gstd.conf

      – Windows: C:\Program Files\EMC NetWorker\Management\GST\etc\gstd.conf

   b. Confirm the port number defined for the Console server:

      `db_svc_port=port_number`

   c. Try to connect to the Console server by using the defined port.

3. Review the gstd.raw file.

   If the gstd.raw file reports the error: **Aborting due to: Connection timed out**, confirm that the required ports are open on the firewall to enable the console client to connect to the Console server.

   By default, the required ports are:

   • 9000

   • 9001

   • 2638

The *Configuring TCP Networks and Network Firewalls for EMC NetWorker* technical note on the EMC Online Support Site provides more information to determine the required ports for NetWorker hosts.

Unable to connect to the Console server

Attempts to connect to the Console server from the web page might fail with the following error messages:

◆ "Error: Could not authenticate this username and password" on page 159

◆ "Error: Problem contacting server (ip_address): Connection timed out: connect" on page 159

◆ "Error: error while loading shared libraries: libsasl2.so.2: wrong ELF class: ELFCLASS64" on page 160

Error: Could not authenticate this username and password

If the login attempt fails with this error message:

◆ Ensure you specified the correct username and password.

◆ Clear the Java Temporary Internet files on the console client.

◆ Delete any existing desktop shortcuts used to connect to the Console server before an Console server update and recreate them.

Error: Problem contacting server (ip_address): Connection timed out: connect

This error occurs when the IP address or hostname of the Console server changes but the .jnlp file on the Console server is not reconfigured.

To reconfigure the .jnlp file:

1. Log in to the Console server as root on UNIX or administrator on Windows.

2. On UNIX Console servers only, configure the **LD_LIBRARY_PATH** environment variable:

   For Solaris, type:

   ```
   LD_LIBRARY_PATH=/opt/LGTOnmc/bin:/opt/LGTOnmc/sybase/lib
   export LD_LIBRARY_PATH
   ```

   For AIX and Linux, type:

   ```
   LD_LIBRARY_PATH=/opt/lgtonmc/bin:/opt/lgtonmc/sybase/lib
   export LD_LIBRARY_PATH
   ```

3. Run the **gstconfig** command from the following directory location:

   • Solaris: /opt/LGTOnmc/bin

   • AIX and Linux: /opt/lgtonmc/bin

   • Windows: C:\Program Files\EMC NetWorker\Management\GST\bin

4. Start the gstd daemon on the Console server.

Error: error while loading shared libraries: libsasl2.so.2: wrong ELF class: ELFCLASS64

This message occurs on 64-bit Linux systems, when the 32-bit version of the cyrus-sasl package is not installed.

To resolve this issue:

1. Log in to the Console server as root

2. Install the operating system package cyrus-sasl

3. Start the gstd daemon:

    ```
    /etc/init.d/gst start
    ```

Unable to connect to server: Failed to contact using UDP ping

If the NMC console fails to connect to the NetWorker server with the error:

```
Unable to connect to server: Failed to contact using UDP ping
```

To resolve this issue:

◆ Ensure that the NetWorker daemons start on the NetWorker server.

◆ For HP-UX Console clients:

   a. In the NMC console, select **Setup** › **Setup System Options**.

   b. Clear **RPC ping by using UDP when connecting to NetWorker** checkbox.

   c. Click **OK**.

   d. Try to connect to the NetWorker server in the NMC console.

Unable to start gstd process on Console server

This section describes how to troubleshoot when the Console client cannot connect to the Console server because the **g**std process will not start.

When the gstd daemon does not start on the Console server, review the gstd.raw, db_output.log and web_ouput log files to obtain the exact error message.

The following directories contain the Console server log files:

◆ Solaris: /opt/LGTOnmc/logs

◆ AIX and Linux: /opt/lgtonmc/logs

◆ Windows: C:\Program Files\EMC NetWorker\Management\GST\logs

Common Console server startup errors include:

◆ "Error: 'gstd: Internal error: could not get database handle.'" on page 161

◆ "Web server exited unexpectedly. Possible reasons include: previous instance of %s is still running. Please see 'web_output' file in this product's logs directory for the web server's output messages" on page 161

◆ "Error: Problem contacting server (ip_address): Connection timed out: connect" on page 159

◆ "Error: error while loading shared libraries: libsasl2.so.2: wrong ELF class: ELFCLASS64" on page 161

Error: 'gstd: Internal error: could not get database handle.'

This error appears when the dbsrv12 process cannot start. Review the db_output.log file for specific errors.

Common reasons for this error include:

◆ Insufficient disk space in the file system that contains the NMC database directory.

◆ An orphaned dbsrv12 process is running on the Console server.

- On UNIX, end the process by sending the SIGTERM signal, **kill -TERM**.

  Do not use **kill -9.**

- On Windows, end the dbsrv12 process in **Task Manager.**

◆ The Console server is running an unsupported version of JRE.

Web server exited unexpectedly. Possible reasons include: previous instance of %s is still running. Please see 'web_output' file in this product's logs directory for the web server's output messages

This error appears when the httpd process is not running on the Console server.

Common reasons for httpd start-up failures include:

◆ The httpd web service port, 9000 by default is in use by another process.

◆ On UNIX, an orphaned httpd process is running on the console server. End the process by sending the SIGTERM signal, **kill -TERM**.

  Do not use the **kill -9** command.

◆ On Windows, another application is using the Apache server and the httpd daemon requires more time to start up.

  To resolve this issue, enable the delayed start option for the EMC gstd process:

  1. In the **Services** applet, right-mouse click the **EMC gstd** service and select **Properties**.

  2. On the **General** tab, change the **Startup type** to **Automatic (delayed start).**

  3. Click **Ok**.

  4. Stop the EMC gstd service, then start the EMC gstd service.

  > **NOTICE**

  When you update the NetWorker software, enable the **delayed start** setting again.

Error: error while loading shared libraries: libsasl2.so.2: wrong ELF class: ELFCLASS64

This message appears on 64-bit Linux systems when the 32-bit version of the cyrus-sasl package is not installed.

To resolve this issue:

1. Install the 32-bit version of the cyrus-sasl package.

2. Start the gstd daemon:

   ```
   /etc/init.d/gst start
   ```

Warning: unable to detect Java Runtime Environment

This message appears when:

◆ JRE is not installed on the Console client.

◆ Window only, the JRE version installed on the Console client does not match the Internet Explorer version.

This message appears on 64-bit Windows systems when:

• The 64-bit version of Internet Explorer is installed but the Console client uses the 32-bit version of JRE to the NMC Console.

• The 32-bit version of Internet Explorer is installed but the Console client uses the 64-bit version of JRE to connect to the NMC Console.

To resolve this issue in one of the following ways:

◆ Install JRE on the Console client.

◆ Windows only, install the correct JRE program for the installed Internet Explorer version.

• For the 32-bit version of Internet Explorer, install the 32-bit version of JRE

• For the 64-bit version of Internet Explorer, install the 64-bit version of JRE

To determine the Internet Explorer version on the Windows Console client:

1. Right-mouse click the Internet Explorer shortcut and select **Properties**.

2. Review the **Target Path** field.

   The **Target Path** is:

   – C:\Program Files (x86)\Internet Explorer\ for the 32-bit version of Internet Explorer.

   – C:\Program Files\Internet Explorer\ for the 64-bit version of Internet Explorer.

   –

Cannot log in to the Console server with SuSE 11

On SuSE 11 a message similar to the following might appear when you try to log in to the Console server:

```
Internal Server Error

The server encountered an internal error or misconfiguration and was
unable to complete your request. Please contact the server
administrator, @@ServerAdmin@@ and inform them of the time the error
occurred, and anything you might have done that may have caused the
error. More information about this error may be available in the server
error log.
```

To resolve this issue, install the glibc-locale-2.11.1 and glibc-locale-32bit-2.11.1 operating system packages.

CHAPTER 13
Downgrading to a Previous Release

The procedure to downgrade the NetWorker 8.0 SP1 software differs depending on the installation type:

Downgrading a NetWorker server to NetWorker 8.0

To revert the NetWorker server to NetWorker 8.0, perform the following tasks:

- "Task 1: Uninstall the NetWorker software" on page 164
- "Task 2: Delete the NetWorker tmp directory" on page 164
- "Task 3: Install the NetWorker software" on page 164

Task 1: Uninstall the NetWorker software

The following sections describe how to uninstall the NetWorker software:

- "Uninstall the NetWorker and Console server software on AIX" on page 75
- "Uninstall the NetWorker software on HP-UX" on page 85
- "Uninstall NetWorker and Console server software on Linux" on page 106
- "Uninstall the NetWorker and Console server software on Solaris" on page 123
- "Uninstall the NetWorker and Console server on Windows" on page 146

Task 2: Delete the NetWorker tmp directory

The location of the NetWorker tmp directory differs for Windows and UNIX:

- On Windows: C:\Program Files\Legato\nsr\tmp or C:\Program Files\EMC NetWorker\nsr\tmp
- On UNIX: /nsr/tmp

Task 3: Install the NetWorker software

Install the NetWorker 8.0 version of the NetWorker server software. The following sections describe how to install the NetWorker software:

- "AIX Installation" on page 65
- "HP-UX Installation" on page 79
- "Linux Installation" on page 87
- "Solaris Installation" on page 113
- "Microsoft Windows Installation" on page 127

Downgrading a NetWorker server to NetWorker 7.6.x or earlier

To revert the NetWorker server to the point-in-time immediately before a NetWorker 8.0 SP1 software update from 7.6.x or earlier, perform the following tasks:

Task 1: Uninstall the NetWorker software

The following sections describe how to uninstall the NetWorker software:

> **NOTICE**
>
> If the NetWorker server is also the Console server, the Console server database must return to a point-in-time before the NetWorker 8.0 SP1 software update. describes how to downgrade the Console server.

Task 2: Delete the NetWorker tmp directory

The location of the NetWorker tmp directory differs for Windows and UNIX:

- On Windows: C:\Program Files\Legato\nsr\tmp or C:\Program Files\EMC NetWorker\nsr\tmp

- On UNIX: /nsr/tmp

Task 3: Restore the pre-NetWorker 8.0 SP1 resources files

During the update, the NetWorker server update created a backup copy of the pre-NetWorker 8.0 SP1 resource files. Restore the pre-NetWorker 8.0 SP1 resource files:

1. Rename the current resource database directories.

   For example:

   • On UNIX, type:

   ```
   mv /nsr/res/nsrdb /nsr/res/nsrdb.old
   mv /nsr/res/nsrlabdb /nsr/res/nsrladb.old
   ```

   • On Windows, rename:

   C:\Program Files\Legato\nsr\res\nsrdb to C:\Program Files\Legato\nsr\res\nsrdb.old

   C:\Program Files\Legato\nsr\res\nsrladb to C:\Program Files\Legato\nsr\res\nsrladb.old

2. Rename the pre-NetWorker 8.0 SP1 resource database directories.

   For example:

   • On UNIX, type:

   ```
   mv /nsr/res/nsrdb.p80 /nsr/res/nsrdb
   mv /nsr/res/nsrlabdb.p80 /nsr/res/nsrladb
   ```

   • On Windows, rename:

   – C:\Program Files\Legato\nsr\res\nsrdb.p80 to

   C:\Program Files\Legato\nsr\res\nsrdb

   – C:\Program Files\Legato\nsr\res\nsrladb.p80 to

   C:\Program Files\Legato\nsr\res\nsrladb

3. Optionally, rename the current **servers** file and restore the pre-NetWorker 8.0 SP1 servers file.

   For example:

   • On UNIX, type:

   ```
   mv /nsr/res/servers /nsr/res/servers.old
   mv /nsr/res/servers.p80 /nsr/res/servers
   ```

   • On Windows, rename:

   – C:\Program Files\Legato\nsr\res\servers to

   C:\Program Files\Legato\nsr\res\servers.old

   – C:\Program Files\Legato\nsr\res\servers.p80 to

   C:\Program Files\Legato\nsr\res\servers

Task 4: Install the NetWorker software

Install the previous version of the NetWorker server software. The *NetWorker 7.6 Installation Guide* provides describes how to install the NetWorker software and the pre-installation considerations.

Task 5: UNIX only, retain start-up script customizations

The pre-NetWorker 8.0 SP1 software does not load the **/nsr/nsrrc** file before starting the nsrexecd and nsrd daemons.

If you defined environment variables in this file, perform one of the following tasks to retain start-up script customizations:

◆ "Restore backup copies of the start-up script files" on page 167

◆ "Modify the start-up script files" on page 168

Table 28 on page 167 provides a list of the NetWorker startup files for each operating system.

Table 28 NetWorker startup script files

Operating System	Startup files
AIX	/etc/rc.nsr
HP-UX	/sbin/init.d/networker
Linux	/etc/init.d/networker
Solaris	/etc/init.d/networker

Restore backup copies of the start-up script files

Before updating the NetWorker software to version 8.0, the update process recommended that you create a backup copy of the NetWorker start-up script files. Use these files to replace the current start-up script files.

To restore backup copies of the start-up script files:

1. Create a backup copy of the current version of the NetWorker start-up script file.

2. Rename the pre-NetWorker 8.0 SP1 copy of the start-up script file to the appropriate file name.

3. Stop the NetWorker daemons.

4. Start the NetWorker daemons.

Modify the start-up script files

If a copy of the original pre-NetWorker 8.0 SP1 start-up script files does not exist, modify the startup script files and add the environment variables defined in **/nsr/nsrrc** file.

To modify the start-up script files:

1. Edit the start-up script file for the operating system.

2. Before this line: **echo 'starting NetWorker daemons:') > /dev/console,** add the required environment variables, including the **export** command:

   For example:

   ```
   ENV_VAR_NAME=value
   export ENV_VAR_NAME
   ```

3. Stop the NetWorker daemons.

4. Start the NetWorker daemons.

Task 6: Scan the AFTD and Data Domain devices

Use the **scanner -i** command to re-create media database entries for the read-only device of each AFTD and Data Domain device. The UNIX man page and the *NetWorker 8.0 SP1 Command Reference Guide* describe how to use the **scanner** command.

Downgrading a NetWorker storage node or client

Perform the following tasks to downgrade the NetWorker software:

◆ "Task 1: Uninstall the NetWorker software" on page 169

◆ "Task 2: Delete the NetWorker tmp directory:" on page 169

◆ "Task 3: Install the NetWorker software" on page 169

◆ "Task 4: UNIX only, retain start-up script customizations" on page 169

> **NOTICE**
>
> A NetWorker 8.0 SP1 server does not support NetWorker 7.6.x storage nodes. Downgrade the NetWorker server before downgrading any storage nodes in the data zone.

Task 1: Uninstall the NetWorker software

Uninstall the NetWorker server software. Remove any NetWorker module software including NetWorker Module for Microsoft Applications and NetWorker Module for Database Applications on the host before removing NetWorker and Console server software. The appropriate module installation guide describes how to remove the module software.

The following sections describe how to uninstall the NetWorker software:

◆ "Uninstall the NetWorker and Console server software on AIX" on page 75

◆ "Uninstall the NetWorker software on HP-UX" on page 85

◆ "Uninstall NetWorker and Console server software on Linux" on page 106

◆ "Uninstall the NetWorker software on Mac OS-X" on page 112

◆ "Uninstall the NetWorker and Console server software on Solaris" on page 123

◆ "Uninstall the NetWorker and Console server on Windows" on page 146

NOTICE

If the NetWorker storage node or client is also the Console server, the Console server database must return to a point-in-time before the NetWorker 8.0 SP1 software update. "Downgrading the Console server" on page 171 describes how to downgrade the Console server.

Task 2: Delete the NetWorker tmp directory:

The location of the NetWorker tmp directory is different on Windows and UNIX hosts:

◆ On Windows: C:\Program Files\Legato\nsr\tmp or C:\Program Files\EMC NetWorker\nsr\tmp

◆ On UNIX: /nsr/tmp

Task 3: Install the NetWorker software

Install the previous version of the NetWorker and Console server software. The *NetWorker 7.6 Installation Guide* provides detailed information.

Task 4: UNIX only, retain start-up script customizations

The pre-NetWorker 8.0 SP1 software does not load the **/nsr/nsrrc** file before starting the nsrexecd and nsrd daemons.

If you defined environment variables in this file, perform one of the following tasks to retain start-up script customizations:

◆ "Restore backup copies of the start-up script files" on page 170

◆ "Modify the start-up script files" on page 170

Table 29 on page 170 provides a list of NetWorker start-up files for each operating system.

Table 29 NetWorker startup script files

Operating System	Startup files
AIX	/etc/rc.nsr
HP-UX	/sbin/init.d/networker
Linux	/etc/init.d/networker
Solaris	/etc/init.d/networker

Restore backup copies of the start-up script files

Before updating the NetWorker software to version 8.0, the update process recommended that you create a backup copy of the NetWorker start-up script files. Use these files to replace the current start-up script files.

To restore backup copies of the start-up script files:

1. Create a backup copy of the current version of the NetWorker start-up script file.

2. Rename the pre-NetWorker 8.0 SP1 copy of the start-up script file to the appropriate file name.

3. Stop the NetWorker daemons.

4. Start the NetWorker daemons.

Modify the start-up script files

If a copy of the original pre-NetWorker 8.0 SP1 start-up script files does not exist, modify the start-up script files and add the environment variables defined in **/nsr/nsrrc** file.

To modify the start-up script files:

1. Edit the start-up script file for the operating system.

2. Before this line: **echo 'starting NetWorker daemons:') > /dev/console**, add the required environment variables, including the **export** command:

   For example:

   ```
   ENV_VAR_NAME=value
   export ENV_VAR_NAME
   ```

3. Stop the NetWorker daemons.

4. Start the NetWorker daemons.

Downgrading the Console server

To revert the Console server to the point-in-time immediately before the NetWorker 8.0 SP1 software update, perform the following tasks:

- ◆ "Task 1: Uninstall the Console server software" on page 171
- ◆ "Task 2: Install the Console server software" on page 171
- ◆ "Task 3: Recover the previous version of the Console server database" on page 172
- ◆ "Task 4: Configure the Console clients to connect to the Console server" on page 173

Task 1: Uninstall the Console server software

Uninstall the NetWorker and Console server software. Remove any NetWorker module software including NetWorker Module for Microsoft Applications and NetWorker Module for Database Applications on the host before removing NetWorker and Console server software. The appropriate module installation guide describes how to remove the module software.

The following sections describe how to uninstall the NetWorker and Console software:

- ◆ "Uninstall the NetWorker and Console server software on AIX" on page 75
- ◆ "Uninstall NetWorker and Console server software on Linux" on page 106
- ◆ "Uninstall the NetWorker and Console server software on Solaris" on page 123
- ◆ "Uninstall the NetWorker and Console server on Windows" on page 146

Task 2: Install the Console server software

Install the previous version of the NetWorker and Console server software. The *NetWorker 7.6 Installation Guide* provides detailed information.

> **NOTICE**
>
> During the installation process, when prompted:
> -To retain or overwrite the existing Console server database, you must overwrite the existing database.
> -To remove the existing database on UNIX, type: **y**

Task 3: Recover the previous version of the Console server database

Restore the Console server database to a point-in-time before the Console server update in one of the following ways:

◆

◆

Restore the database conversion backup files

Before the Console server database conversion, the update process created a backup copy of the pre-NetWorker 8.0 SP1 Console server database files.

Use the backup copy of the Console server database files to restore the Console server to the point-in-time before the update:

1. Stop the **EMC gstd** daemon.

2. In the Console server database directory, rename the current Console server database files.

   For example, rename:

   lgto_gst.db to **lgto_gst.db.old**

   gstd_db.conf to **gstd_db.conf.old**

   lgto_gst.log to **lgto_gst.log.old**

   By default, the Console database directory is:

   • C:\Program Files\EMC NetWorker\Management\lgto_gstdb on Windows

   • opt/lgtonmc/lgto_gstdb on AIX and Linux

   • /opt/LGTOnmc/lgto_gstdb on Solaris.

3. Rename the Console server database backup files in the Console database directory.

   For example, rename:

   • **gstd_db_bk.conf** to **gstd_db.conf**

   • **lgto_gst_bk.db -** to **lgto_gst.db**

   • **lgto_gst_bk.log** to **lgto_gst.log**

4. Start the **EMC gstd** daemon.

Recover the Console server database from a backup

To recover the Console server database from a backup:

1. From a command prompt on the Console server, type:

   recoverpsm -s *NetWorker_server* **-t** *date* **-f**

   where:

   • *NetWorker_server* specifies the name of the NetWorker server that performed the Console server database backup.

   • *date* specifies a date when you backed up the Console server before the upgrade.

> **NOTICE**
>
> If you did not stop the EMC gstd daemon before the recover, the recoverpsm command fails with an error message similar to the following: "recoverpsm: FAILED 08001[Sybase][ODBC Driver][SQL Anywhere]Database name not unique -77 "

2. Start the **EMC gstd** daemon.

Task 4: Configure the Console clients to connect to the Console server

Before connecting to the Console server, on each Console client:

◆ Delete the existing Console desktop shortcut that you use to connect to the Console server.

◆ Clear the Java cache. "Task 13: Clear the Java Cache" on page 52 provides more information.