EMC® NetWorker®

Version 8.2

Installation Guide

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REV 02

EMC²

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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 technical support professional if a product does not function properly or does not function as described in this document.

Note

This document was accurate at publication time. Go to EMC Online Support (https://support.emc.com) to ensure that you are using the latest version of this document.

Purpose
This document describes how to uninstall and install the NetWorker software.

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.

Revision history
The following table presents the revision history of this document.

Table 1 Revision history

Revision	Date	Description
02	Sept 23, 2014	GA release of this document for EMC NetWorker 8.2. Includes new information about RHEL 7 support.
01	June 18, 2014	First release of this document for EMC NetWorker 8.2.

Related documentation
The following EMC publications provide additional information:

◆ *NetWorker Online Software Compatibility Guide*
  Provides a list of client, server, and storage node operating systems supported by the EMC information protection software versions. You can access the Online Software Compatibility Guide on the EMC Online Support site at support.emc.com. From the Support by Product pages, search for NetWorker using "Find a Product", and then select the **Install, License, and Configure** link.

◆ *EMC 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 Updating from a Previous Release Guide*
  Describes how to update the NetWorker software from a previously installed release.

◆ *EMC NetWorker Release Notes*

Contains information on new features and changes, fixed problems, known limitations, environment and system requirements for the latest NetWorker software release.

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

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

◆ *EMC NetWorker Cloning Integration Guide*
Contains planning, practices, and configuration information for using the NetWorker, NMM, and NMDA cloning feature.

◆ *EMC NetWorker 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 Disaster Recovery Guide*
Contains information about preparing for a disaster and recovering NetWorker servers, storage nodes, and clients.

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

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

◆ *EMC NetWorker Performance Optimization Planning Guide*
Contains basic performance sizing, planning, and optimizing information for NetWorker environments.

◆ *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. 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.

◆ *NetWorker VMware Release Integration Guide*
Describes how to plan and configure VMware and the vStorage API for Data Protection (VADP) within an integrated NetWorker environment.

◆ Technical Notes/White Papers
Technical Notes and White Papers provide an in-depth technical perspective of a product or products as applied to critical business issues or requirements. Technical Notes and White paper types include technology and business considerations, applied technologies, detailed reviews, and best practices planning.

Special notice conventions used in this document
EMC uses the following conventions for special notices:

NOTICE

Addresses practices not related to personal injury.

Note

Presents information that is important, but not hazard-related.

Typographical conventions

EMC uses the following type style conventions in this document:

Table 2 Typographical conventions

Bold	Use for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks)
Italic	Use for full titles of publications referenced in text
`Monospace`	Use for: • System code • System output, such as an error message or script • Pathnames, file names, prompts, and syntax • Commands and options
Monospace italic	Use for variables
`Monospace bold`	Use for user input
[ ]	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 non-essential 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, go to EMC Online Support at https://support.emc.com.

Technical support

Go to EMC Online Support and click Service Center. You will see several options for contacting EMC Technical Support. Note that to open a service request, 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.

Online communities

Visit EMC Community Network at https://community.emc.com for peer contacts, conversations, and content on product support and solutions. Interactively engage online with customers, partners, and certified professionals for all EMC products.

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 DPAD.Doc.Feedback@emc.com

Preface

PART 1

Introduction and Software Requirements

This section contains the following chapters:

Chapter 1, "Introduction"

Chapter 2, "Software Requirements"

CHAPTER 1

Introduction

This chapter includes the following 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. NetWorker 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 website.

The NetWorker product has these components:

◆ NetWorker client

◆ NetWorker storage node

◆ NetWorker server

◆ NetWorker Management Console server (NMC)

◆ NetWorker language packs

◆ NetWorker license manager

NetWorker datazone

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

NetWorker client

The NetWorker client software communicates with the NetWorker server and provides client initiated backup and recover functionality. Install the NetWorker client software on each host that you will back up on the NetWorker server.

Before you install the NetWorker client software, ensure that NetWorker supports the specific client operating system and hardware configuration.

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

NetWorker storage node

NetWorker can back up data to devices that are local to a NetWorker server or remotely to devices on a 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. You can use a remote storage node to offload most of the data movement involved in a backup or a recovery operation from the NetWorker server. A remote storage node improves performance, but requires high I/O bandwidth to manage the transfer of data from local clients, or network clients to target devices. The operating system of a remote storage node can differ from the NetWorker server.

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

To avoid potential data loss when using tape devices:

◆ Ensure that the block-size mode for the tape devices is variable, otherwise recoveries can fail. The procedure to set up the device block size varies depending on the operating system.

◆ Use a nonrewinding tape device. NetWorker writes a file mark on the volume at the end of each backup. When the next backup occurs, NetWorker appends the data to the volume based on the position of the file mark. When a device automatically rewinds the tape, the file mark position is lost and the next backup overwrites existing data. You cannot recover the data.

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.

NetWorker server

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

This table summarizes the different databases a NetWorker server uses to manage a datazone.

Table 3 NetWorker server database functions

Database	Function
Client File Index (CFI)	Tracks the files that belong to a save set. There is one client file index for each configured NetWorker client. The client file indexes can grow to become prohibitively large over time and negatively impact backup performance.
Media database (mm)	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 filesystems in each save set.

Table 3 NetWorker server database functions (continued)

Database	Function
	Note There is only one media database per server. The media database can grow to become prohibitively large over time and negatively impact backup performance.
Jobs (jobsdb)	Stores for a limited amount of time, information about NetWorker job operations, for example: • Scheduled and queued backup and recovery operations. • Real-time backup and restore related activities. • All Console server communication. Recovery operations do not require the data stored in the jobsdb database.
Resource (resdb)	Stores the configuration information for a NetWorker server, for example: • NetWorker client backup configurations. • Schedule recover configurations. • Pool configurations. • Device configurations.
Client push (cpdb)	Stores configuration information for the Client push application.
nsrla	Stores configuration information for the NetWorker nsrexecd service.

NetWorker Management Console server

The NetWorker Management Console (NMC) server or Console server is a Java-based web application and database server.

The NMC provides centralized:

◆ Management of multiple NetWorker servers across multiple datazones.

◆ Monitoring of multiple NetWorker servers across multiple datazones.

◆ Reporting for multiple NetWorker servers across multiple datazones.

The Console server uses the:

◆ Embedded Apache server software to download Console jar files and startup the Console server daemons or services.

◆ Embedded Sybase SQL Anywhere software to store reporting and the Console server configuration information.

You can install the Console server software package on an AIX, Linux, Solaris, or Microsoft Windows host. The Console server software requires the NetWorker client software.

You can install the Console server software on the NetWorker server. The minimum system requirements for a Console server host is 1 GHz with 512 MB of RAM. However, EMC does not recommend this configuration under the following scenario:

◆ When the NetWorker server manages 50 or more clients.

◆ When the Console server will monitor multiple datazones.

To monitor servers, use the following calculation:

◆ 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.

To ensure Console server database backups, configure the Console server as a client of the NetWorker server. The *NetWorker Administration Guide* describes how to configure a Console server database backup.

Console client

A Console client is any host in the environment that uses a web browser and Java Runtime Environment (JRE) to display the Console server GUI. Multiple users can access the Console server GUI concurrently from different browser sessions.

This table summarizes the JRE and browser requirements for a Console client.

Table 4 Console client requirements

Operating system	JRE and browser requirements
AIX 6.1, 7.1	• JRE 1.6.x • Mozilla Firefox
HP-UX 11iv1, 11iv2, 11iv3	• JRE 1.6.x • Mozilla Firefox
Linux x86 (32-bit) RHEL 5, 6	• JRE 1.6.x or JRE 1.7.x • Mozilla Firefox
Linux em64T & AMD64 (64-bit), RHEL 5, RHEL6, SLES 10, SLES 11	• JRE 1.6.x or JRE 1.7.x • Mozilla Firefox
Solaris 10 & 11 for Solaris SPARC, Solaris Opteron (64-bit)	• JRE 1.6.x or JRE 1.7.x • Mozilla Firefox
Windows 7, Vista, Windows 1008, Windows 2008 R2 for x86, em64T & AMD64 (64-bit)	• JRE 1.6.x or JRE 1.7.x • Microsoft Internet Explorer 7 • Microsoft Internet Explorer 8 • Mozilla Firefox
Windows 8 and Windows 2012	• JRE 1.7 only • Microsoft Internet Explorer 10 in Desktop mode only

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.

This table lists the NetWorker daemons for each of the software components.

Table 5 NetWorker daemons

NetWorker packages	NetWorker daemons
NetWorker server	nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd, nsrlogd, nsrsnmd, nsrcpd
NetWorker client	nsrexecd, nsrpsd
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.

Enabler codes

Enabler codes or licenses activate the functionality of the NetWorker software and are generally sold separately.

The *NetWorker License Guide* provides more information.

CHAPTER 2

Software Requirements

This chapter includes the following sections:

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

The NetWorker command line interface (CLI), the Console server graphical user interface (NMC GUI), and the NetWorker User 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. NetWorker supports different locales on the local host, the NetWorker server, and the Console server.

The NetWorker software supports:

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

◆ 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 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 the following considerations.

General multi-locale considerations

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

To view localized textual elements, for example, radio buttons and menu options, the dates, the times, and the numbers in the CLI, the Console server GUI, and the NetWorker User application, 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 that the operating system defines or code sets that remap characters that have a special meaning for file systems, for example De_DE.646. Depending on the file system, these special characters might include the forward slash (/), the backward slash (\), the colon (:), or the period(.).

When the appropriate non-English font is not available on the Console client, the Console GUI renders the localized textual elements in English or the elements might 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 `nsr_render_log` command enables you to render English log file messages into the locale of the user that runs `nsr_render_log` command. The *NetWorker Command Reference Guide* or the UNIX man pages describe how to use the `nsr_render_log` 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 recovery log file

The *NetWorker Administration Guide* on the EMC Online Support Site describes how to view raw log files.

Windows requirements

Consider these 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 **NetWorker User** program displays the textual elements, dates, times, and numbers based on the **Regional and Language Options** settings in the **Control Panel**.

UNIX requirements

Consider these general locale requirements when using a UNIX Console client in a multi-locale NetWorker datazone.

NetWorker does not support a non-ASCII installation directory. Create a symbolic link of the /nsr folder to a non-ASCII directory.

To display non-English textual elements, the dates, the times, and the numbers in the NMC GUI ensure that you:

◆ Install the appropriate NetWorker language package on the client.

◆ Define the LC_ALL and LANG environment variables to 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

The NetWorker software requires that you install and configure TCP/IP on each host.

Before you install the NetWorker software, ensure that:

◆ The `/etc/hosts` file on each Solaris and Linux NetWorker host contains an entry for the IPv4 loopback address:
```
127.0.0.1        localhost.localdomain localhost
```

◆ The NetWorker server, when configured as a DHCP client, uses a reserved address that is synchronized with DNS.

◆ The name of the host that the `hostname` command returns on the system must match the name that the IP address resolves to when using `nslookup`.

◆ When using OS tools, for example, `nslookup`, the IP address of the host must resolve to the same hostname defined for the NIC used by NetWorker.

◆ The hostname does not contain an underscore character (_).

IPv6 protocol

Internet Protocol version 6 (IPv6) is a next generation Internet protocol used concurrently with IPv4 or in a pure IPv6 environment. IPv6 increases the number of available IP addresses and adds improvements in the areas of routing and network autoconfiguration.

Consider the following:

◆ IPv6 addresses are represented by 8 groups of 16-bit hexadecimal values that are separated by colons (:).
For example:
```
2001:0db8:85a3:0000:0000:8a2e:0370:7334
```

◆ 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`.

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

◆ The client backup fails when the IPv6 address for the client is not:

- Stored in DNS or in the hosts file.

- Added to the client resource.

When the operating system configures the IPv6 loopback interface, ensure that:

- The hosts file on each NetWorker host has an entry that associates the IPv6 loopback interface (::1) with the localhost. Add the IPv6 loopback interface entry before the IPv4 loopback entry (127.0.0.1 localhost)
For example:
```
::1 localhost
127.0.0.1        localhost.localdomain localhost
```

- The IPv6 loopback entry must remain in the hosts file when the host is operating in a pure IPv4, pure IPv6, or dual stack configuration.

PART 2

OS-X Client Installation

This section contains the following chapter:

CHAPTER 3

OS-X Client Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software on OS-X

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

1. Reviewing the OS-X requirements on page 32 outlines the software requirements to consider when installing NetWorker on the OS-X operating system.

2. Installing the NetWorker client software on page 32 describes how to install the NetWorker client software.

3. Verify the software installation on page 33 describes how to test the NetWorker software functionality.

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

Reviewing the OS-X requirements

This section outlines the software requirements to consider when installing NetWorker on the OS-X operating system.

The NetWorker software:

◆ Only supports the NetWorker client on OSX.

◆ Supports Mac OS Power PC and Mac OS Intel.

◆ Supports the following filesystems:

- HFS+ (including journaled)

- HFS

- UFS

◆ Requires 112 MB of free disk space for the software installation process.

Table 6 OSX Directory and space requirements

Directory	Space required
/applications	8 MB
/usr/bin	40 MB
/usr/sbin	58 MB
/usr/lib/nsr	4 MB
/usr/share/man	2 MB

Installing the NetWorker client software

You can install the NetWorker client software from the Mac Console or from a terminal window.

Installing the NetWorker client from the Mac Console

Use the following procedure to install the NetWorker client software from the Mac Console.

Procedure

1. Download the NetWorker software.

2. Double-click **NetWorker.dmg** file.

   This mounts the NetWorker software on a NetWorker volume.

3. Double-click **NetWorker.pkg** on the NetWorker volume to launch the NetWorker software.

4. In the **Welcome to the NetWorker Client Installer** window, click **Continue**.

5. In the **End User License and Basic Maintenance Agreement** window, click **Continue**.

6. Click **Agree** to agree to the terms of the software license agreement.

7. Click **Install** to install the NetWorker client on the default volume.

   Optionally, click **Change Install Location...** and select another volume.

8. Click **Close**.

Installing the NetWorker client from a terminal window

Use the following procedure to install the NetWorker client software from the terminal window.

Procedure

1. Download the NetWorker software.

2. 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
   ```

3. Change to the directory that contains the NetWorker installation package.

   For example:

   ```
   cd /Volumes/NetWorker-dev
   ```

4. 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.
   ```

Verify the software installation

To verify that the NetWorker client software installed correctly, ensure the `nsrexecd` daemon is running.

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
```

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
```

Uninstalling the NetWorker client software on OS-X

Use the following procedure to uninstall the NetWorker software from a system prompt.

Procedure

1. Ensure that the NetWorker Recovery application is not running.

2. From a terminal window, type the following command:

```
$sudo /usr/sbin/NetWorkerUninstall
```

PART 3

UNIX Installation

This section includes the following chapters:

CHAPTER 4

AIX Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software on AIX

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 lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. Reviewing the operating system requirements for AIX on page 38 outlines the software requirements to consider when installing NetWorker on the AIX operating system.

3. Install the NetWorker software:

   • Installing the NetWorker client, server, storage node software on page 41 describes how to install the NetWorker server, storage node, Console server, and client software.

   • Installing the Console server on page 42 describes how to install the NetWorker Console server.

4. Changing the default directory locations on page 39 lists the default directory locations.

5. Verify the Installation on page 135 describes how to test the NetWorker software functionality.

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

Reviewing the operating system requirements for AIX

Before installing the NetWorker software on AIX, review the operating system and IPv4 considerations.

In NetWorker 8.1 and later, the NetWorker software does not support AIX 5.x.

Packages disk space requirements for AIX

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. The compressed package is 235 MB and the uncompressed size is 663 MB.

AIX 6.1 requirements

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 hotfix for AIX APAR IZ65501.

IPV4 requirements

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, then 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 then 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 that 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
```

Changing the default directory locations

You can change 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 the installation location of the 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.
This table lists the default location and space requirements for the NetWorker software.

Table 7 AIX default file locations and space requirements

NetWorker package	Location	Space
Client (lgtoclnt)	/opt/nsr /usr/bin	11 MB 156 MB
	/usr/lib	87 MB
	/usr/lpp	40 KB
Storage node (lgtonode)	/usr/bin /usr/lib	91 MB 18 MB
	/usr/lpp	28 KB
Server (lgtoserv)	/usr/bin /usr/lpp	101 MB 12 KB
Man pages (lgtoman)	/usr/lpp /usr/share	36 KB 2 MB

Table 7 AIX default file locations and space requirements (continued)

NetWorker package	Location	Space

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

Follow these steps to change this location create a symbolic link from the new directory to the `/nsr` directory.

Procedure

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`

3. 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.

AIX: Installing the NetWorker client, server, storage node software

Use the procedure to install the client, the storage node, and the server software and optional software such as the man pages and language packs.

> **NOTICE**

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.

This table lists the software packages required for each installation type.

Table 8 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

Follow these steps to install the NetWorker client, server, and storage node software.

Procedure

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. 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/aixpower`.

   - *package [package]...* is a list of the software package required for the installation type.

For example, to install the NetWorker server software, the man pages and the Japanese language pack, type:

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

4. Confirm that the required packages are successfully installed for each installation type:

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

Installing the Console server

To manage the NetWorker server, complete the following tasks to install the Console server software on one host in the NetWorker datazone.

Reviewing 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, then 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.

◆ A NetWorker 8.1 Console server does not support AIX 32-bit NetWorker server.

◆ Ensure that there is sufficient disk space to install the Console server software files.

This table specifies the default location and space requirements for the Console server software on an AIX host.

Table 9 AIX Console server default file locations and space requirements

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

AIX: Installing the Console server software

This section describes how to install the Console server software.

Procedure

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

```
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/aixpower`.

- *[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 /software/aixpower LGTOnw.clnt.rte LGTOnmc.rte
  LGTOnw.fr.rte
  ```

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

6. Confirm that the required package installation completed successfully:

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

Configuring the Console server software

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

Procedure

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 either of the following:

   - The default port number (**9001**)

   - A custom port number

Note

Valid port numbers are between **1024** and **49151**. 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**.

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

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

Uninstalling the NetWorker and Console server software on AIX

Use the `installp` or the `smitty` utility to uninstall the NetWorker software.

This table lists of the installed packages for each installation type.

Table 10 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

Procedure

1. Log in to the target host as root.

2. Use the `lslpp` command to get a list of installed NetWorker software packages:

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

3. Use `installp -u` to remove the software packages:

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

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

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

Note

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

4. To confirm the package removal, type:

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

5. 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`.

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

AIX Installation

CHAPTER 5

HP-UX Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software on HP-UX

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

1. The Software Requirements chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. Reviewing NetWorker requirements for HP-UX on page 48 details HP specific requirements and considerations.

3. Changing default directory locations on page 50 lists the default directory locations.

4. Installing the NetWorker client, server, and storage node software on page 50 describes how to install the NetWorker server, storage node, Console server, and client software.

5. The Verify the Installation chapter describes how to test the NetWorker software functionality.

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

Reviewing NetWorker requirements for HP-UX

Review the following software considerations and requirements for the NetWorker software on supported HP-UX operating systems.

General requirements

Perform these tasks before you install the NetWorker software on HP-UX.

1. Review the Online Software Compatibility Guide for the latest information about supported HP-UX operating systems for each NetWorker installation type.

2. Ensure that the kernel parameter *maxfiles_lim* has a minimum value of **8192**.

3. 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
   ```

4. 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.
   ```

Package disk space requirements

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

This table lists the NetWorker packages and the compressed and uncompressed file sizes.

Table 11 Size of compressed and uncompressed files

Operating system	Compressed file	Uncompressed file
HP-UX	191 MB	575 MB
HP-UX itanium	393 MB	1.4 GB

HP-UX 11iv3 requirements

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, then 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.

◆ Do not 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, install the following patches on the host.

◆ PHSS_37500
◆ PHSS_39101

HP-UX on PA-RISC requirements

Before you install the NetWorker client software on HP-UX PA-RISC, install the following patches on the host.

◆ QPK1123(B.11.23.0712.070a) 1185010 Quality Pack Depot
◆ PHSS_37492

Changing default directory locations

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

You cannot change the location of the NetWorker binaries, configuration, log files and databases.

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

HP-UX: Installing the NetWorker client, server, and storage node software

Use *swinstall* to install the client, storage node, server software packages, and optional packages such as the man pages and language packs 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 table lists the required NetWorker software packages for each NetWorker component.

Table 12 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

Follow these steps to install the NetWorker client, server, and storage node software

Procedure

1. Log in to the target host as root.

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

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

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

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

5. At the system prompt, type:

   `swinstall &`

   Note

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

   ---

6. Press **Enter**.

7. 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`

8. Click **OK**.

9. On the **SD Install - Software Selection** window, select and mark the software packages required for the installation type.

10. Press **Enter**.

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

12. 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.

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

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

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

16. Exit `swinstall`.

Uninstalling the NetWorker software on HP-UX

As root, use the `swremove` utility to uninstall the NetWorker software.

Procedure

1. Shut down the NetWorker daemons:

   `nsr_shutdown`

2. Confirm that all of the NetWorker daemons stop:

   `ps -ef | grep nsr`

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

   `swremove &`

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

4. On the **Software Selection** window, select the NetWorker software that you want to remove.

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

   This runs an analysis of the remove operation.

6. To confirm that the analysis did not detect any problems:

   a. Click **Logfile**.

   b. Fix any reported problems before you continue with the operation.

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

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

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

10. Verify that all the files are removed from `/opt/networker` directory.

11. If there is no plan to update or reinstall the software packages, remove the `/nsr` directory.

CHAPTER 6

Solaris Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software on Solaris

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

1. The Software Requirements chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. Reviewing the NetWorker requirements for Solaris on page 54 details Solaris specific requirements.

3. Consider the NetWorker default directories on page 56 lists the default directory locations.

4. Install the NetWorker software:

   - Installing the NetWorker client, server, and storage node packages on page 57 describes how to install the NetWorker server, storage node, and client software.

   - Installing Console server on Solaris on page 59 describes how to install the NetWorker Console server.

5. The Verify the Installation chapter describes how to test the NetWorker software functionality.

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

Reviewing the NetWorker requirements for Solaris

Before you install NetWorker on Solaris, review the package disk space requirements, and software requirements for Solaris 10 and Solaris zone support.

Package disk space requirements

This table lists the NetWorker packages and the compressed and uncompressed file sizes.

Table 13 Size of compressed and uncompressed files

Operating system	Compressed file	Uncompressed file
Solaris x86	74 MB	362 MB
Solaris x86-64	406 MB	1.1 GB
Solaris AMD	287 MB	1.2 GB

Solaris 10 requirements

Review these requirements before you install NetWorker on Solaris 10.

◆ Disable TCP Fusion on each Solaris 10 NetWorker server and storage node.

   1. Add the following line, to the `/etc/system` file:
      ```
      set ip:do_tcp_fusion = 0
      ```

   2. Restart the host.

◆ For a storage node 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, to provide 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 the host meets all dependencies 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, install the latest patch revision. The SunSolve website provides detailed information about patch dependencies and download information.

This table provides a summary of architecture specific patch requirements.

Table 14 Solaris 10 Sun patch requirements

Architecture	Required patch	Reason
x86/Sparc	• Sun patch 142900-03 or later on Sparc.	To avoid shared memory corruption which can cause possible hangs or failures of the NetWorker daemons on a NetWorker server.
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. Solaris 10 update 4 and later includes this patch.

Solaris zone requirements

NetWorker supports global, whole root, and sparse root zone configurations. Before you install NetWorker in a Solaris zone, review the following information.

Table 15 Solaris 10 Sun patch requirements

Architecture	Required patch
Sparse root zone requirements	A NetWorker client supports sparse root zones on Solaris 10. Before you install the NetWorker client software in each sparse root zone, install the same version of the NetWorker software in the global zone. You must create a client instance for the global zone and each sparse root zone. The *NetWorker Administration Guide* describes how to create a NetWorker client.
Global zone requirements	The NetWorker server, storage node including a dedicated storage node, and client software support a Solaris global zone. Special ALL save sets are available to back up a global zone client when you install NetWorker in the global zone.

Table 15 Solaris 10 Sun patch requirements (continued)

Architecture	Required patch
	"Using the save set all to back up particular file systems" in the *NetWorker Administration Guide* describes when to use the special ALL save sets.
Whole root zone considerations	The NetWorker server, storage node including a dedicated storage node, and client software support a Solaris whole root zone. When you install NetWorker 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.

Consider the NetWorker default directories

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.

This table specifies the default location and space requirements for the NetWorker software on a Solaris host.

Table 16 Default file locations and space requirements for Solaris

NetWorker package	Location	Space for Solaris x86	Space for Solaris x64	Space for 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

Table 16 Default file locations and space requirements for Solaris (continued)

NetWorker package	Location	Space for Solaris x86	Space for Solaris x64	Space for Solaris AMD 64
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

Use the following procedure to change the location of the /nsr directory by creating a symbolic link from the new directory to the /nsr directory.

Procedure

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

3. 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.

Solaris: Installing the NetWorker client, server, and storage node packages

Follow this procedure to install the client, storage node and server software packages as well as optional packages. For example, you can install the man pages and language packs.

This table lists the NetWorker daemons for each of the software components.

Table 17 NetWorker daemons

NetWorker packages	NetWorker daemons
NetWorker server	nsrd, nsrexecd, nsrindexd, nsrmmdbd, nsrmmd, nsrjobd, nsrmmgd, nsrlcpd, nsrlogd, nsrsnmd, nsrcpd

Table 17 NetWorker daemons (continued)

NetWorker packages	NetWorker daemons
NetWorker client	`nsrexecd`, `nsrpsd`
NetWorker storage node	`nsrexecd`, `nsrmmd`, `nsrlcpd`, `nsrsnmd`
NetWorker Management Console server	`gstd`, `httpd`, `dbsrv12`, `gstsnmptrapd` (optional)

Use the following procedure to install the client, storage node, server software packages and the optional packages. For example, the man pages and language packs.

Procedure

1. Log in to the target host as root.

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

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

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

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

5. 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]:
   ```

6. Specify the package numbers that are required for the installation type.

   NOTICE

   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**

7. When prompted to change the data directory, choose one of the following:

   - Accept the default directory.
   - Specify the directory.

8. The installation prompts you to specify the NetWorker server that can access the host. To update the list:

   a. Type **y**.

   b. Specify the shortname and FDQN for each NetWorker server, one per line, that requires access to the NetWorker host. The first entry in this file becomes the default NetWorker server.

   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]:
   ```

   > **NOTICE**
   >
   > When no servers are specified, any NetWorker server can back up or perform a directed recovery to the host.

9. 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, then start the daemons when prompted during the LGTOserv package installation.
   - If the installation type is a NetWorker storage, then start the daemons when prompted during the LGTOnode package installation.

10. During a NetWorker server upgrade only, stop the NetWorker daemons and start the daemons again. For example:

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

11. To confirm that the NetWorker daemons started successfully, type:

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

Installing Console server on Solaris

To manage the NetWorker server, install the Console server software on one host in the datazone and follow these instructions.

Reviewing the Console server requirements

Review this section before you install the Console server package.

- The Console server software supports:
  - SolarisAMD64: Solaris 10 and 11
  - Solaris SPARC (64-bit): Solaris 10 and 11
- The Console server does not support non-global zones.
- For Solaris 11 only, the Console server requires the ucblib library. Ensure that the ucb package is installed on a Solaris 11 server.

To determine if the ucb package is installed, type:

`pkg info | grep ucb`

To install the ucb package, type:

`pkg install compatibility/ucb`

◆ When 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.
To determine if the patch is applied, type:

`showrev -p | grep 147440`

◆ Ensure that there is sufficient disk space to install the Console server software files.

This table specifies the default location and space requirements for the Console server software on a Solaris host.

Table 18 Solaris Console server default file locations and space requirements

NetWorker package	Location	Space for Solaris x86	Space for Solaris x64	Space for Solaris AMD 64
Console server (LGTOnmc)	`/opt/ LGTOnmc`	n/a	218 MB	230 MB

Solaris: Installing the NetWorker Console server software

Perform these steps as root to install the NetWorker Console software.

Procedure

1. For Solaris 10 and later, set the environment variable **NONABI_SCRIPTS** to **TRUE**:

```
NONABI_SCRIPTS=TRUE
export NONABI_SCRIPTS
```

2. 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
   ```

3. Navigate to the directory that contains the extracted Console server package and display the list of available NetWorker 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. At the **Select packages** prompt:

   • If the NetWorker client software was not previously installed, type: **1, 7**.

   • If the NetWorker client software is installed, type **7**.

5. Specify the directory to install the LGTOnmc package.

   For example:

   `/opt/LGTOnmc`

6. 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]`

7. For the web server port number, use the either of the following:

   • The default port number (**9000**).

   • A custom port number.

8. For the Console server, use the either of the following:

   • The default port number (**9001**).

   • A custom port number .

   > **NOTICE**
   >
   > Valid port numbers are between **1024** and **49151**. 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**.

9. Specify the directory to use for the LGTOnmc database. For example:

   `/opt/LGTOnmc/lgto_gstdb`

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

11. 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:

       If the conversion fails, the following error message appears:

       ```
       /opt/LGTOnmc/lgto_gstdb
       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.
       ```

12. Specify the location of the NetWorker binaries. For example:

    `/usr/sbin`

13. When prompted to start the Console server daemons:

    • If the database conversion succeeds, type **y**.

    • If the database conversion encountered errors, type **n**.

14. To proceed with the installation of the Console server package, type **y**.

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

For example:

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

Uninstalling the NetWorker and Console server on Solaris

Use the this procedure to uninstall the NetWorker and Console server software from a Solaris host.

This table lists the package names associated with the different NetWorker software packages.

Table 19 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

NOTICE

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.

Use the following procedure to uninstall the NetWorker and Console software.

Procedure

1. Shut down the NetWorker daemons when there are no backups and recoveries running. For example:

```
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:

```
pkgrm LGTOlicm LGTOserv LGTOnode LGTOnmc LGTOclnt LGTOman LGTOfr
LGTOja LGTOko LGTOzh
```

5. Exclude packages not listed in the `pkginfo` command.

6. Type **y** to confirm the package removal.

7. Type **y** to continue with the package removal.

8. Repeat these last three steps for each package.

   When removing the NetWorker client software package in a sparse root zone, the removal process might:

   - 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 to remove each failed package.

9. 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`.

10. If Java Runtime Environment is no longer required, uninstall the JRE software package.

Solaris Installation

64   EMC NetWorker 8.2 Installation Guide

PART 4

Linux Installation

This section contains the following chapters:

Linux Installation

CHAPTER 7

Linux Installation Requirements

This chapter includes the following sections:

Package disk space requirements

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

This table lists the NetWorker packages and the compressed and uncompressed file sizes.

Table 20 Size of compressed and uncompressed files

Operating system	Compressed file	Uncompressed file
Linux s390	22 MB	22 MB
Linux IBM PowerPC	20 MB	20 MB
Linux x86	179 MB	270 MB
Linux x86-64	395 MB	397 MB
Linux Itanium	115 MB	115 MB

NetWorker 8.1 does not support:

◆ NetWorker server on Linux 32-bit

◆ Networker server and storage node on Linux IA-64 bit

Default directory locations

This section lists the NetWorker default directory locations and space requirements for the binaries, the databases, and the log files on the target host.

◆ The NetWorker software installs the binaries in the `/usr` directory.

◆ The `/nsr` directory contains the NetWorker configuration, logs, and database files.

Review this table to ensure that you have sufficient disk space to install the NetWorker software.

Note

You can change these directory locations on all supported Linux operating systems with the exception of Debian and Ubuntu.

Table 21 Linux default file locations and space requirements

NetWorker package	Location	Space for Linux ia64	Space for Linux x86	Space for Linux x64	Space for Linux PPC64	Space for Linux s390
Client (lgtoclnt)	`/usr/lib` `/usr/sbin`	60 MB 204 MB	29 MB 55 MB	50 MB 78 MB	1.6 MB 37MB	1.6 MB 41 MB
	`/usr/bin`	66 MB	31 MB	33 MB	16 MB	18 MB
	`/opt/nsr`	21 MB	16 MB	21 MB	20.0 KB	20.0 KB

Table 21 Linux default file locations and space requirements (continued)

NetWorker package	Location	Space for Linux ia64	Space for Linux x86	Space for Linux x64	Space for Linux PPC64	Space for Linux s390
Storage node (lgtonode)	`/usr/lib` `/usr/sbin`	n/a	n/a	11 MB 67 MB	n/a	n/a
Server (lgtoserv)	`/usr/sbin`	n/a	n/a	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
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	varies	varies

CHAPTER 8

CentOS, OEL, and RHEL Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software

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

1. The Software Requirements chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. The CentOs, OEL, and RHEL Installation chapter lists the package disk space requirements and default package locations for the NetWorker software.

3. Preparing the Linux target host on page 72 describes how to create a backup of the operating system configuration file and configure the target host to support NetWorker.

4. Install the NetWorker software:

   • Installing the NetWorker packages on page 73 describes how to install the NetWorker server, storage node, and client software.

   • Installing Console server on page 75 describes how to install the NetWorker Console server.

5. The Verify the Installation chapter describes how to test the NetWorker software functionality.

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

Preparing the Linux target host

Before you install the NetWorker software, create a backup of the operating system configuration file and configure the target host to support NetWorker.

Procedure

1. 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
   ```

2. Ensure that the PATH variable for the root and user accounts contains the `/usr/sbin` directory.

3. If you enabled SELinux on your system, add the file contexts and the security contexts that the NetWorker software requires.

   • To add file contexts, type:

   ```
   semanage fcontext -a -t textrel_shlib_t "/usr/lib/nsr/lib.*\.so"
   ```

   • To update the security contexts, type:

   ```
   restorecon -R /usr/lib/nsr
   ```

4. If the `semanage` or the `restorecon` file does not exist on the Linux system, install the policycoreutils-python package.

RHEL 7 package requirements

The NetWorker installation process requires three RHEL 7 packages that the default OS installation may not include.

Ensure that you can manually download and install the following Linux OS packages. The NetWorker installation process fails when these dependency packages do not exist on the host:

◆ ksh

◆ glibc.i686 0:2.17-55.el7 or later

◆ nss-softokn-freebl.i686 0:3.15.4-2.el7 or later

◆ compat-libstdc++-33-3.2.3-68.1.x86_64.rpm or later

Installing the NetWorker packages

You can use either the `yum` or the `rpm` installation application to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages.

Installing the NetWorker software by using the yum command

Use this procedure to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages. Using the `yum` program allows you to install the required operating system packages automatically.

This table provides a list of the software packages required for each installation type. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

Table 22 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

Procedure

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

2. From the directory that contains the extracted NetWorker software packages, use the **yum** installer application to install NetWorker.

For example, type:

```
yum localinstall --nogpgcheck package [package]...
```

where package*[package]...* is a list of the software packages required for the installation type.

> **NOTICE**
>
> When 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.

3. Optionally, use `yum` to install the man pages during a NetWorker server install. For example, type:

```
yum localinstall --nogpgcheck lgtoclnt-nw*.rpm lgtonode*.rpm
lgtoserv*.rpm lgtoman*.rpm
```

4. Specify optional packages, such as the language packs and the man pages in the `yum` command after the required packages for the installation type.

Installing the NetWorker software by using the rpm command

Use this procedure to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages.

This table provides a list of the software packages required for each installation type. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

Table 23 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

Procedure

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

2. From the directory that contains the extracted NetWorker software packages, use the appropriate installer application to install NetWorker.

3. Use the `rpm` command to install the NetWorker software. For example, type:

```
rpm -ivh package [package]...
```

where package*[package]...*is a list of the software packages required for the installation type.

4. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

5. Optionally, use the `rpm` command to install the man pages during a NetWorker server install, type:

```
rpm -ivh lgtoclnt-nw*.rpm lgtonode*.rpm lgtoserv*.rpm lgtoman*.rpm
```

NOTICE

When the operating system packages that NetWorker requires are missing, the `rpm` command provides a list of missing packages and does not install the NetWorker software. Manually install missing package dependencies then run the `rpm` command again.

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 the `Scan for Devices` option in the NMC GUI display a maximum of 128 st devices.

To resolve this issue and increase the maximum number of allowable st devices that the OS can create:

1. Modify the st module of the Linux kernel.

2. Recompile the kernel.

The *NetWorker Administration Guide* provides additional information.

The Linux documentation describes how to change the ST_MAX_TAPES definition and how to perform a kernel reconfiguration, kernel rebuild, and kernel installation.

Installing the Console server

To manage the NetWorker server, install the Console server software on one host in the data zone and complete the following tasks.

Reviewing the Console server requirements

Review these requirements before you install the Console server software.

This table lists the default file locations.

Table 24 Linux Console server default file locations and space requirements

NetWorker package	Location	Space for Linux x86	Space for Linux em64T and AMD64
Console server (LGTOnmc)	`/opt/lgtonmc`	167 MB	167 MB

Consider the following requirements before installing the Consol server software.

◆ You can install the Console server on:

- RHEL 5 and 6 (64-bit)

- SuSE 10 and 11 (64-bit)

- CentOSW 5 and 6 (64-bit)

- • OEL 5 (64-bit)

◆ You might require UTF-8 converters for the operating system.

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

The *Online Software Compatibility Guide* provides the latest information on supported Console server operating systems.

Installing the Console server software

Perform these steps on the target host as root to install the console server software.

Procedure

1. If you have already installed the NetWorker client software on the host:

   a. Confirm that the NetWorker Remote Exec daemon, `nsrexecd`, is started:

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

   b. Start `nsrexecd`, if required:

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

2. Install NetWorker from the directory that contains the extracted NetWorker software packages by using the `yum` utility.

   ```
   yum localinstall --nogpgcheck lgtoclnt*.rpmlgtonmc*.rpm
   ```

   where you specify *lgtoclnt*.rpm* only if you did not previously install the NetWorker client software.

3. If `yum` cannot install missing package dependencies, `yum` fails and provides a list of missing packages. Manually install the package dependencies and then run the `yum` command again.

Configuring the Console server software

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

Procedure

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 either of the following:

   - • The default port number (**9000**).

   - • A custom port number.

     Note

     Valid port numbers are between **1024** and **49151**.

     ---

4. For the Console server, use one of the following:

   - • The default port number (**9001**)

   - • A custom port number. Valid port numbers are between **1024** and **49151**.

Note

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, then type **y** to retain the existing database.

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

   a. To continue 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, then 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**.

10. To continue 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
    ```

12. If there is no plan to update or reinstall the NetWorker software, use the following command to remove the NetWorker configuration files:

    `dpkg-P lgtoclnt`

Installing NetWorker to a non-default location

Use the `rpm --relocate as root` command to install the NetWorker binaries in a non-default location. For example, the `/nw` directory.

Procedure

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:

   `/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 default directory locations

Use the following procedure to change the default location of the configuration, logs, and database files.

Procedure

1. Create a symbolic link from the new directory to the `/nsr` directory.

2. Create another `/nsr` directory on a disk with sufficient space:

   `mkdir /disk2/nsr`

3. Link the new directory to the `/nsr` directory:

   `ln -s /disk2/nsr /nsr`

Uninstalling the NetWorker software

As root, use the `rpm -e` *package_name* command to remove individual NetWorker software packages or all 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.

Procedure

1. Get a list of the installed NetWorker packages:

   `rpm -qa | grep lgto`

2. 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 -elgtonmc lgtoclnt`

   This table lists the package names associated with the different NetWorker components.

   Table 25 NetWorker package names on Linux

Component	Package name
Server	lgtoserv
Storage node	lgtonode
Console server	lgtonmc

Table 25 NetWorker package names on Linux (continued)

Component	Package name
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

3. If you will not update or reinstall the packages:

   a. Remove the `/nsr` directory.

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

CHAPTER 9

Redflag Asianux Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software

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

1. The Software Requirements chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. The Linux Installation Requirements chapter lists the package disk space requirements and default package locations for the NetWorker software.

3. Preparing the Linux Target Host on page 72 describes how to create a backup of the operating system configuration file and configure the target host to support NetWorker.

4. Installing the NetWorker software on page 73 describes how to install the NetWorker server, storage node, and client software.

5. The Verify the NetWorker software installation chapter describes how to test the NetWorker software functionality.

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

Preparing the Linux target host

Before you install the NetWorker software, create a backup of the operating system configuration file and configure the target host to support NetWorker.

Procedure

1. 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
   ```

2. Ensure that the PATH variable for the root and user accounts contains the `/usr/sbin` directory.

3. If you enabled SELinux on your system, add the file contexts and the security contexts that the NetWorker software requires.

   - To add file contexts, type:

     ```
     semanage fcontext -a -t textrel_shlib_t "/usr/lib/nsr/lib.*\.so"
     ```

   - To update the security contexts, type:

     ```
     restorecon -R /usr/lib/nsr
     ```

4. If the `semanage` or the `restorecon` file does not exist on the Linux system, install the policycoreutils-python package.

Installing the NetWorker packages

You can use either the `yum` or the `rpm` installation application to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages.

Installing the NetWorker software by using the yum command

Use this procedure to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages. Using the `yum` program allows you to install the required operating system packages automatically.

This table provides a list of the software packages required for each installation type. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

Table 26 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

Procedure

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

2. From the directory that contains the extracted NetWorker software packages, use the **yum** installer application to install NetWorker.

   For example, type:

   ```
   yum localinstall --nogpgcheck package [package]...
   ```

   where package*[package]...* is a list of the software packages required for the installation type.

   > **NOTICE**

   When 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.

3. Optionally, use `yum` to install the man pages during a NetWorker server install. For example, type:

   ```
   yum localinstall --nogpgcheck lgtoclnt-nw*.rpm lgtonode*.rpm
   lgtoserv*.rpm lgtoman*.rpm
   ```

4. Specify optional packages, such as the language packs and the man pages in the `yum` command after the required packages for the installation type.

Installing the NetWorker software by using the rpm command

Use this procedure to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages.

This table provides a list of the software packages required for each installation type. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

Table 27 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

Procedure

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

2. From the directory that contains the extracted NetWorker software packages, use the appropriate installer application to install NetWorker.

3. Use the `rpm` command to install the NetWorker software. For example, type:

   ```
   rpm -ivh package [package]...
   ```

   where package*[package]...*is a list of the software packages required for the installation type.

4. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

5. Optionally, use the `rpm` command to install the man pages during a NetWorker server install, type:

   ```
   rpm -ivh lgtoclnt-nw*.rpm lgtonode*.rpm lgtoserv*.rpm lgtoman*.rpm
   ```

   NOTICE

   When the operating system packages that NetWorker requires are missing, the `rpm` command provides a list of missing packages and does not install the NetWorker software. Manually install missing package dependencies then run the `rpm` command again.

Changing the default directory locations

Use the following procedure to change the default location of the configuration, logs, and database files.

Procedure

1. Create a symbolic link from the new directory to the `/nsr` directory.

2. Create another `/nsr` directory on a disk with sufficient space:

   ```
   mkdir /disk2/nsr
   ```

3. Link the new directory to the `/nsr` directory:

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

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 the `Scan for Devices` option in the NMC GUI display a maximum of 128 st devices.

To resolve this issue and increase the maximum number of allowable st devices that the OS can create:

1. Modify the st module of the Linux kernel.

2. Recompile the kernel.

The *NetWorker Administration Guide* provides additional information.

The Linux documentation describes how to change the ST_MAX_TAPES definition and how to perform a kernel reconfiguration, kernel rebuild, and kernel installation.

Uninstalling the NetWorker software

As root, use the `rpm -e package_name` command to remove individual NetWorker software packages or all 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.

Procedure

1. Get a list of the installed NetWorker packages:

   ```
   rpm -qa | grep lgto
   ```

2. 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 -elgtonmc lgtoclnt
   ```

This table lists the package names associated with the different NetWorker components.

Table 28 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

3. If you will not update or reinstall the packages:

a. Remove the `/nsr` directory.

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

CHAPTER 10

SuSE Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker software

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

1. The SuSe Installation chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. The Linux Installation Requirements chapter lists the package disk space requirements and default package locations for the NetWorker software.

3. Preparing the Linux target host on page 72 describes how to create a backup of the operating system configuration file and configure the target host to support NetWorker.

4. Installing the Console server software on page 90 describes how to create a backup of the operating system configuration file and configure the target host to support NetWorker.

5. Install the NetWorker software:

    *   Installing the NetWorker software by using the rpm command on page 74 describes how to install the NetWorker server, storage node, and client software.

    *   Installing the Console server software on page 90 describes how to install the NetWorker Console server.

6. The SuSe Installation chapter describes how to test the NetWorker software functionality.

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

Preparing the Linux target host

Before you install the NetWorker software, create a backup of the operating system configuration file and configure the target host to support NetWorker.

Procedure

1. 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
    ```

2. Ensure that the PATH variable for the root and user accounts contains the `/usr/sbin` directory.

3. If you enabled SELinux on your system, add the file contexts and the security contexts that the NetWorker software requires.

    *   To add file contexts, type:

        ```
        semanage fcontext -a -t textrel_shlib_t "/usr/lib/nsr/lib.*\.so"
        ```

    *   To update the security contexts, type:

        ```
        restorecon -R /usr/lib/nsr
        ```

4. If the `semanage` or the `restorecon` file does not exist on the Linux system, install the policycoreutils-python package.

Installing the NetWorker software by using the rpm command

Use this procedure to install the client, the storage node, the server software, and optional packages such as the man pages and the language packages.

This table provides a list of the software packages required for each installation type. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

Table 29 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

Procedure

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

2. From the directory that contains the extracted NetWorker software packages, use the appropriate installer application to install NetWorker.

3. Use the `rpm` command to install the NetWorker software. For example, type:

   ```
   rpm -ivh package [package]...
   ```

   where package*[package]...*is a list of the software packages required for the installation type.

4. Specify optional packages such as language packs and man pages in the `rpm` command after the required packages for the installation type.

5. Optionally, use the `rpm` command to install the man pages during a NetWorker server install, type:

   ```
   rpm -ivh lgtoclnt-nw*.rpm lgtonode*.rpm lgtoserv*.rpm lgtoman*.rpm
   ```

   NOTICE

   When the operating system packages that NetWorker requires are missing, the `rpm` command provides a list of missing packages and does not install the NetWorker software. Manually install missing package dependencies then run the `rpm` command again.

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 the `Scan for Devices` option in the NMC GUI display a maximum of 128 st devices.

To resolve this issue and increase the maximum number of allowable st devices that the OS can create:

1. Modify the st module of the Linux kernel.

2. Recompile the kernel.

The *NetWorker Administration Guide* provides additional information.

The Linux documentation describes how to change the ST_MAX_TAPES definition and how to perform a kernel reconfiguration, kernel rebuild, and kernel installation.

Installing the Console server

To manage the NetWorker server, install the Console server software on one host in the data zone and complete the following tasks.

Reviewing the Console server requirements

Review these requirements before you install the Console server software.

This table lists the default file locations.

Table 30 Linux Console server default file locations and space requirements

NetWorker package	Location	Space for Linux x86	Space for Linux em64T and AMD64
Console server (LGTOnmc)	`/opt/lgtonmc`	167 MB	167 MB

Consider the following requirements before installing the Consol server software.

◆ You can install the Console server on:

- RHEL 5 and 6 (64-bit)
- SuSE 10 and 11 (64-bit)
- CentOSW 5 and 6 (64-bit)
- OEL 5 (64-bit)

◆ You might require UTF-8 converters for the operating system.

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

The *Online Software Compatibility Guide* provides the latest information on supported Console server operating systems.

Installing the Console server software

To install the Console server, perform these steps on the target host, as root.

Procedure

1. If you have already installed the NetWorker client software on the host:

   a. Confirm that the NetWorker Remote Exec daemon, `nsrexecd`, is started:

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

   b. Start `nsrexecd`, if required:

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

2. Install NetWorker from the directory that contains the extracted NetWorker software packages by using the `rpm` utility.

   To use `rpm`, type:

   ```
   rpm -ivh lgtoclnt*.rpmlgtonmc*.rpm
   ```

   where you specify *lgtoclnt*.rpm* only if you did not install the NetWorker client software previously.

3. When the operating system packages that NetWorker requires are missing, the `rpm` command provides a list of missing packages and does not install the NetWorker software. Manually install missing package dependencies, and then run the `rpm` command again.

Configuring the Console server software

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

Procedure

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 either of the following:

   - The default port number (**9000**).
   - A custom port number.

   Note

   Valid port numbers are between **1024** and **49151**.

   ---

4. For the Console server, use one of the following:

   - The default port number (**9001**)
   - A custom port number. Valid port numbers are between **1024** and **49151**.

   Note

   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, then type **y** to retain the existing database.

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

   a. To continue 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, then 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**.

10. To continue 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
   ```

12. If there is no plan to update or reinstall the NetWorker software, use the following command to remove the NetWorker configuration files:

   ```
   dpkg-P lgtoclnt
   ```

Installing NetWorker to a non-default location

Use the `rpm --relocate as root` command to install the NetWorker binaries in a non-default location. For example, the `/nw` directory.

Procedure

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:

   ```
   /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 default directory locations

Use the following procedure to change the default location of the configuration, logs, and database files.

Procedure

1. Create a symbolic link from the new directory to the `/nsr` directory.

2. Create another `/nsr` directory on a disk with sufficient space:

   `mkdir /disk2/nsr`

3. Link the new directory to the `/nsr` directory:

   `ln -s /disk2/nsr /nsr`

Uninstalling the NetWorker software

As root, use the `rpm -e package_name` command to remove individual NetWorker software packages or all 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.

Procedure

1. Get a list of the installed NetWorker packages:

   `rpm -qa | grep lgto`

2. 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 -elgtonmc lgtoclnt`

   This table lists the package names associated with the different NetWorker components.

   Table 31 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

SuSE Installation

Table 31 NetWorker package names on Linux (continued)

Component	Package name
French language support	lgtofr
Japanese language support	lgtoja
Korean language support	lgtoko
Simplified Chinese language support	lgtozh

3. If you will not update or reinstall the packages:

   a. Remove the `/nsr` directory.

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

CHAPTER 11

Debian and Ubuntu Client Installation

This chapter includes these sections:

Roadmap for installing the NetWorker client software

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

1. The Software Requirements chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. The Linux Installation Requirements chapter lists the package disk space requirements and default package locations for the NetWorker software.

3. Preparing the Linux target host on page 72 describes how to create a backup of the operating system configuration file and configure the target host to support NetWorker.

4. Installing the NetWorker client packages on page 97 describes how to install the NetWorker client software.

5. Post installation considerations for st tape devices on page 75 describes how to configure st tape devices.

6. The Verify the Installation chapter describes how to test the NetWorker software functionality.

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

Preparing the Linux target host

Before you install the NetWorker software, create a backup of the operating system configuration file and configure the target host to support NetWorker.

Procedure

1. 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
```

2. Ensure that the PATH variable for the root and user accounts contains the `/usr/sbin` directory.

3. If you enabled SELinux on your system, add the file contexts and the security contexts that the NetWorker software requires.

   • To add file contexts, type:

   ```
   semanage fcontext -a -t textrel_shlib_t "/usr/lib/nsr/lib.*\.so"
   ```

   • To update the security contexts, type:

   ```
   restorecon -R /usr/lib/nsr
   ```

4. If the `semanage` or the `restorecon` file does not exist on the Linux system, install the policycoreutils-python package.

Installing the NetWorker client packages

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.

Procedure

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

2. 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.

3. If the required operating system packages are missing, then dependency errors similar to the following appear:

   ```
   Unpacking lgtoclnt (from lgtoclnt_8.1_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
   ```

4. 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.

5. Confirm that the `nsrexecd` process starts:

   ```
   ps -ef | grep nsrexecd
   ```

6. Optionally, start the `nsrexecd` process:

   ```
   sudo nsrexecd
   ```

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 the `Scan for Devices` option in the NMC GUI display a maximum of 128 st devices.

To resolve this issue and increase the maximum number of allowable st devices that the OS can create:

1. Modify the st module of the Linux kernel.

2. Recompile the kernel.

The *NetWorker Administration Guide* provides additional information.

The Linux documentation describes how to change the ST_MAX_TAPES definition and how to perform a kernel reconfiguration, kernel rebuild, and kernel installation.

Uninstalling NetWorker software

As the root user, use the `dpkg` command to uninstall the NetWorker client software.

```
dpkg -r lgtoclnt
```

If there is no plan to update or reinstall the NetWorker software, use the `dpkg -P lgtoclnt` command to remove the NetWorker configuration files.

CHAPTER 12

Fedora Client Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker client software

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

1. The Software Requirements chapter lists the general requirements and considerations relevant to each supported Windows and UNIX operating systems.

2. The Linux Installation Requirements chapter lists the package disk space requirements and default package locations for the NetWorker software.

3. describes how to create a backup of the operating system configuration file and configure the target host to support NetWorker.

4. describes how to install the NetWorker client software.

5. The Verify the Installation chapter describes how to test the NetWorker software functionality.

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

Preparing the Linux target host

Before you install the NetWorker software, create a backup of the operating system configuration file and configure the target host to support NetWorker.

Procedure

1. 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
```

2. Ensure that the PATH variable for the root and user accounts contains the `/usr/sbin` directory.

3. If you enabled SELinux on your system, add the file contexts and the security contexts that the NetWorker software requires.

   - To add file contexts, type:

     ```
     semanage fcontext -a -t textrel_shlib_t "/usr/lib/nsr/lib.*\.so"
     ```

   - To update the security contexts, type:

     ```
     restorecon -R /usr/lib/nsr
     ```

4. If the `semanage` or the `restorecon` file does not exist on the Linux system, install the policycoreutils-python package.

Installing the NetWorker client packages

Use the following procedure to install the NetWorker software on the Fedora operating system. You must perform additional steps to resolve package dependencies issues.

This table lists the available NetWorker software packages.

Table 32 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

Procedure

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

2. Before you install the NetWorker software, manually install the 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
      ```

      The `yum` command does not successfully install the NetWorker software.

   b. Use the `yum` command to manually install the missing package dependencies.
      For example:

      ```
      yum install compat-libstdc++-33 ksh libXp
      glibc-2.14.90-24.fc16.9.i686
      ```

      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.

3. 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-8.1-1.i686
   ```

4. Use the `rpm` command with the `--nodeps` option to install the NetWorker software and ignore the `libcap.so.1` dependency:

   ```
   rpm -ivh --nodeps package [package]...
   ```

   where *package [package]...*is a list of the software package required for the installation type.

   For example, to install the man pages during a NetWorker client install, type:

   ```
   rpm -ivh --nodeps lgtoclnt*.rpm lgtoman*.rpm
   ```

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 the `Scan for Devices` option in the NMC GUI display a maximum of 128 st devices.

To resolve this issue and increase the maximum number of allowable st devices that the OS can create:

1. Modify the st module of the Linux kernel.

2. Recompile the kernel.

The *NetWorker Administration Guide* provides additional information.

The Linux documentation describes how to change the ST_MAX_TAPES definition and how to perform a kernel reconfiguration, kernel rebuild, and kernel installation.

Uninstalling the NetWorker software

As a root user, use the `rpm -e package_name` command to remove individual NetWorker software packages or all NetWorker software packages simultaneously. For information about using `rpm`, refer to the `rpm` man page.

Procedure

1. Get the list of the installed NetWorker packages:

   ```
   rpm -qa | grep lgto
   ```

2. Use the `rpm -e` command to remove the NetWorker packages:

   ```
   rpm -e package_name package_name package_name
   ```

   For example, to remove the NetWorker client packages, type:

   ```
   rpm -elgtoclnt
   ```

   This table lists the package names associated with the different NetWorker components.

   Table 33 NetWorker package names on Linux

Component	Package name
Client	lgtoclnt
Man pages	lgtoman
French language support	lgtofr
Japanese language support	lgtoja
Korean language support	lgtoko
Simplified Chinese language support	lgtozh

3. If you will not update or reinstall the packages, remove the `/nsr` directory.

PART 5

Windows Installation

This section contains the following chapters:

Windows Installation

CHAPTER 13

Microsoft Windows Installation

This chapter includes the following sections:

Roadmap for installing the NetWorker and NMC software on Windows

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

Procedure

1. The Software Requirements chapter provides the general requirements and considerations relevant to each supported Windows operating systems.

2. Reviewing the NetWorker requirements for Windows on page 106 details the NetWorker software requirements.

3. Install the NetWorker software:

   - Installing NetWorker client, server, and storage node software on page 108 describes how to install the NetWorker server, storage node, and client software.

   - Installing the NMC server software on page 111 describes how to install the NMC server software.

4. The Verify the Installation chapter describes how to test the NetWorker software functionality.

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

Reviewing the NetWorker requirements for Windows

Review the information in this section before you install NetWorker on the Windows 2008, or the Windows 2012 operating systems.

General considerations

Review the following requirements before you install the NetWorker 8.1.x software on a Windows host.

- You cannot recover backups performed by using NetWorker 8.1.x to a pre-NetWorker 8.1 client.

- 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.

Package disk space requirements

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

This table lists the NetWorker packages and the compressed and uncompressed file sizes.

Table 34 Size of compressed and uncompressed files

Operating system	Compressed file	Uncompressed file
Windows x64	212 MB	213 MB
Windows x86	101 MB	102 MB

Location and disk space requirements

Before you install the NetWorker software, review the disk space and location requirements.

This table specifies the default location and space requirements for the NetWorker software in a Microsoft Windows environment.

Table 35 Microsoft Windows default file locations and space requirements

NetWorker files	Location	Space for x86	Space for x64
Client files	`Program Files\EMC NetWorker \nsr`	264 MB	383 MB
Console	`Program Files\EMC NetWorker \Management`	n/a	148 MB
Storage node	`Program Files\EMC NetWorker \nsr`	n/a	319 MB
Server	`Program Files\EMC NetWorker \nsr`	n/a	439 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

The *Online Software Compatibility Guide* on the EMC Online Support Site, provides the most up to date information on supported operating systems.

Windows 2012 requirements

The NetWorker server, storage node, and client software does not support Windows 2012 R2 Foundation Edition as a guest operating system on Hyper-V.

http://technet.microsoft.com/en-us/library/jj679892.aspx provides more information.

Windows 2008 requirements

Review these requirements before you install the NetWorker 8.1 and later software on a Windows 2008 and Windows 2008 R2 server:

◆ NetWorker 8.1 and later supports Windows 2008 64-bit and Windows 2008 R2 64-bit as a NetWorker server, storage node, and client. NetWorker 8.1 and later supports a Windows 2008 32-bit storage node and client.

◆ Use NetWorker Module for Microsoft Applications to backup Hyper-V hosts.

◆ 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:

1. Navigate to **Start** › **Control Panel** › **System and Security** › **System** › **Advanced system settings**.
2. Select **Advanced** › **Performance** › **Settings** › **Data Execution Prevention**.
3. Select **Turn on DEP for essential Windows programs and services only**.
4. Click **OK**.

NetWorker server and storage node tape device requirements

When you configure a SAN tape device on a Windows NetWorker server or a storage node, disable Test Unit Ready (TUR). Microsoft kb article 842411 describes how to disable TUR.

Installing the NetWorker client, server, and storage node software

This section describes how to install the client, the storage node, and the server software as well as the optional NetWorker software packages such as the language packages on Windows 2008 or Windows 2008 Server Core server.

Installing the software

Follow these steps to install the NetWorker software.

Procedure

1. Log on to the target host with a user that has administrator privileges by using the setup installation process.
2. Download the NetWorker software package from the EMC Online Support Site.
3. Extract the NetWorker packages to a temporary location on the target host.
4. The procedure to install the NetWorker software on a Microsoft Windows host differs from the installation on a Windows 2008 Server Core host:

- For a Windows Microsoft host, in the directory that contains the extracted NetWorker software:

  a. Click **autorun.exe**.

  b. Select **Install EMC NetWorker 8.1.1 software**.

  c. If a Windows security warning appears, click **Run**.

  d. If you receive a warning message asking you trust running EMC components, click **Yes**.

- For a Windows 2008 Server Core host, 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

  Note

  Do not use `autorun.exe` to install NetWorker on a Windows 2008 Server Core host. The `autorun.exe` program requires Windows Explorer, which is not available with a Windows core installation.

5. On the **Choose Setup Language** window, select a language and click **OK**.

6. On the **Welcome to NetWorker › Installation** window, click **Next**.

7. On the **Customer Information** window, fill in the appropriate information, click **Next**.

8. On the **Windows Firewall** window, select **Configure the Windows firewall**, click**Next**.

   NOTICE

   If you do not configure the firewall to allow inbound and outbound NetWorker software traffic, scheduled backups might fail.

9. On the **Installation Type** window, select the NetWorker software packages that you want to install.

   This table provides a description of the NetWorker software that is installed with each selection.

   Table 36 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. The Console server software installation process starts automatically, after the NetWorker software installation completes.

Table 36 Available NetWorker software packages on Windows (continued)

Selection	Description
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. Do not install NetWorker License Manager on a NetWorker server. During the NetWorker software installation, the License Manager software is installed. The *NetWorker License Manager Installation and Administration Guide* describes how to install and configure the NetWorker License Manager software.

10. Click **Next** to accept the default installation location.

    NOTICE

    To install the NetWorker software in a location other than the default location, click **Change**, and then specify the installation path.

11. 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 the selection cannot be cleared.

12. On the **Ready to Install the Program** window, review the settings and click **Install**.

13. 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**.

    c. Click **Next**.

Specifying the list of trusted servers

Follow these steps to specify the list of trusted servers and to complete the installation.

Procedure

1. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

   • To add a NetWorker server that is not listed in the **Available Servers** list:

      a. Type the name of the server in the **Enter a server name** text box.

      b. Click **Add.**

- To browse for available NetWorker servers:

      a. Click **Update List.**

      b. Select a NetWorker server from the **Available Servers** list.

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

Note

The list of trusted NetWorker servers is stored in the `NetWorker_installation_directory\res\servers` file. When no servers are specified, any NetWorker server can backup or perform a directed recovery to the host.

---

2. Click **Next.**

3. Click **OK** to complete the install.

4. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

   The NetWorker daemons chapter provides a list of the NetWorker daemons.

Adjusting antivirus software settings

Undesirable behavior might occur if you do not tune the antivirus software installed on a Windows host for backup environments.

Configure the antivirus software to:

- Avoid scanning files that the backup software opens for backup.
  For example:

  - Clear the `Opened for Backup in the Advanced Auto-Protect` option for Norton Antivirus.

  - Clear the **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`

- Not monitor AFTD directories.

Installing the NMC server software

Install the NMC server software package and the optional NetWorker software packages on a Microsoft Windows host or Windows Server Core host.

> **NOTICE**
>
> The Console client GUI is not supported on the Windows 2008 Server Core. You can install the NMC server on a Windows 2008 Server Core host, but you cannot launch the Console client to connect to the NMC server.

Installing the software

Follow these steps to install the NetWorker software.

Procedure

1. Log on to the target host with a user that has administrator privileges by using the setup installation process.
2. Download the NetWorker software package from the EMC Online Support Site.
3. Extract the NetWorker packages to a temporary location on the target host.
4. The procedure to install the NetWorker software on a Microsoft Windows host differs from the installation on a Windows 2008 Server Core host:
   - For a Windows Microsoft host, in the directory that contains the extracted NetWorker software:
     a. Click **autorun.exe**.
     b. Select **Install EMC NetWorker 8.1.1 software**.
     c. If a Windows security warning appears, click **Run**.
     d. If you receive a warning message asking you trust running EMC components, click **Yes**.
   - For a Windows 2008 Server Core host, 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

     > **Note**
     >
     > Do not use `autorun.exe` to install NetWorker on a Windows 2008 Server Core host. The `autorun.exe` program requires Windows Explorer, which is not available with a Windows core installation.

5. On the **Choose Setup Language** window, select a language and click **OK**.
6. On the **Welcome to NetWorker › Installation** window, click **Next**.
7. On the **Customer Information** window, fill in the appropriate information, click **Next**.
8. On the **Windows Firewall** window, select **Configure the Windows firewall**, click**Next**.

   > **NOTICE**
   >
   > If you do not configure the firewall to allow inbound and outbound NetWorker software traffic, scheduled backups might fail.

9. On the **Installation Type** window, select the NetWorker software packages that you want to install.

   This table provides a description of the NetWorker software that is installed with each selection.

Table 37 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. The Console server software installation process starts automatically, after the NetWorker software installation completes.
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. Do not install NetWorker License Manager on a NetWorker server. During the NetWorker software installation, the License Manager software is installed. The *NetWorker License Manager Installation and Administration Guide* describes how to install and configure the NetWorker License Manager software.

10. Click **Next** to accept the default installation location.

    NOTICE

    To install the NetWorker software in a location other than the default location, click **Change,** and then specify the installation path.

11. 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 the selection cannot be cleared.

12. On the **Ready to Install the Program** window, review the settings and click **Install.**

13. 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**.

c. Click **Next**.

Specifying the list of trusted servers and configuring the Console

Follow this procedure to specify the list of trusted servers and to complete the installation.

Procedure

1. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

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

   Note

   The list of trusted NetWorker servers is stored in the
   `NetWorker_installation_directory\res\servers` file. When no servers are specified, any NetWorker server can back up or perform a directed recovery to the host.

2. On the **Welcome to NetWorker Management Console Installation** window, click **Next**.

3. On the **Customer Information** window, fill in the appropriate information, and click **Next**.

4. 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.

   - 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.

5. On the **Configuration Options** window, type the following:

   - **Database Destination path**
   - **IP port numbers** to use for the embedded HTTP server
   - **Client Service port**

   When doing this, consider the following:

   - To change the default **Database Destination path**, select **Change**.
   - To use the default port numbers, type **9000** for the HTTP server and **9001** for the Client Service port.

- To use different port numbers, type the new port numbers (between **1024** and **49151**).

> **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**.

6. Click **Next**.

7. If the installation process detects an existing Console server database, the **Customer Database Maintenance** window appears.

   In the **Customer Database Maintenance** window:

   a. Leave the default option **Keep the database** selected.

   b. Click **Next**.

8. On the **NetWorker Management Console Setup Completed** window:

   a. Clear **Launch the console client in the default browser immediately after exiting the InstallShield Wizard**.

   b. Click **Next**.

9. Click **OK** to complete the install.

10. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

    The NetWorker daemons chapter provides a list of the NetWorker daemons.

Adjusting antivirus software settings

Undesirable behavior might occur if you do not tune the antivirus software installed on a Windows host for backup environments.

Configure the antivirus software to:

- Avoid scanning files that the backup software opens for backup.
  For example:

  - Clear the `Opened for Backup in the Advanced Auto-Protect` option for Norton Antivirus.

  - Clear the **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`

- Not monitor AFTD directories.

Uninstalling the software on Windows

Use Control Panel to uninstall the NetWorker software, NMC server software, and language pack software on a Windows host.

As the local administrator on the Windows host, following this procedure to uninstall the NetWorker software packages.

Procedure

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 8.1, 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 NMC server, uninstall the NMC server software package before the NetWorker software package:

     - Select **NetWorker Management Console** and click **Uninstall**.

     - Select **NetWorker Management NMC 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 Client application running, click **Ignore**.

   Figure 1 NetWorker Setup
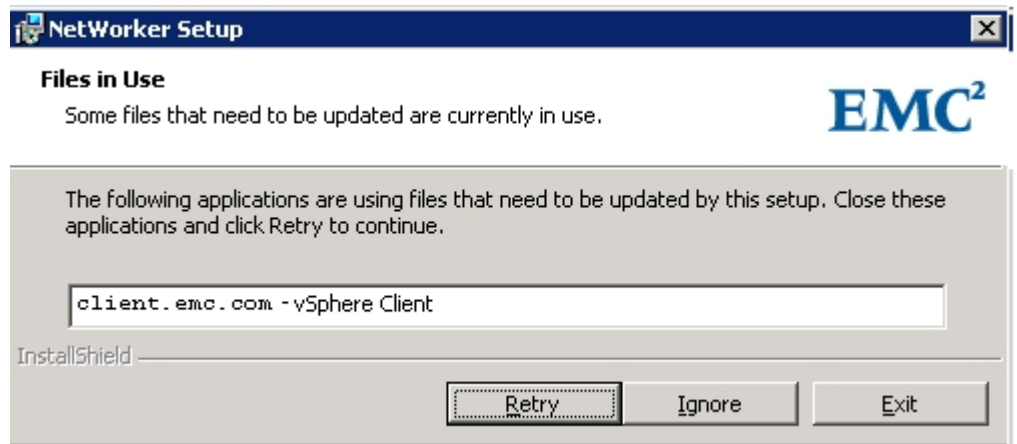
3. Optionally, remove the `NetWorker_install_path` directory. Do not remove the directory if the NetWorker or NMC server software packages will be updated or reinstalled.

4. On all NetWorker console clients, delete the NetWorker Management Console desktop shortcut.

Uninstalling the software on Windows 2008 Core Server

Use one of the following methods to uninstall the NetWorker software from a Windows 2008 Server Core host.

Uninstalling the software by using setup.exe

This procedure describes how to remove the NetWorker and NMC server software when the NetWorker installation package is available.

Procedure

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›Next**.

   When Maintenance Mode is used to uninstall the NetWorker software on a system that has the NMC server software installed, the NMC server software is removed first, and then the NetWorker software is removed.

5. In the **Ready to Remove** window, do not select the `Remove NetWorker Metadata` option.

   The Remove NetWorker Metadata option should not be used under the following scenarios:

   - During a NetWorker or NMC server software update.

   - When reinstalling the NetWorker software.

   By default, the **Remove NetWorker Metadata** checkbox is clear. This ensures 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   directory

   - All files in the debug directory

6. Click **Remove**, and then click **Finish**.

Uninstalling the software by using wmic

Use the Windows Management Instrumentation command-line utility, `wmic.exe` to uninstall the NetWorker and NMC server software when the extracted NetWorker software package is not available on the Windows system.

Procedure

1. Log in to the Windows computer with a local administrator user and open a command prompt window.

2. When the host is an NMC server, uninstall the NMC server software before the NetWorker software:

   ```
   c:\>wmic product where name="NetWorker Management NMC 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-160C-4FFD-890A-
   F4877066B679}",Name="NetWorker Management
    NMC server",Version="8.1.1")->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-98DB-46F5-
   B634-5BE07C7FC85A}",Name="NetWorker",Version="
   8.1.1")->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.

CHAPTER 14

Microsoft Windows Silent and SMS Installations

This chapter includes the following sections:

Performing an unattended install of the storage node and client software

You can use the **setup.exe** program to perform a silent or unattended installation of the NetWorker storage node and client software.

Installing the software

Follow these steps to install the software.

Procedure

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 NW_INSTALLLEVEL=Type_of_Install
   INSTALLDIR=directory NW_FIREWALL_CONFIG=[0/1] STARTSVC=[0/1]
   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* specifies 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
     - 300 is the install level for a server

   - *directory* specifies 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`.

   - **NW_FIREWALL_CONFIG=***[0/1]* determines whether or not the installation process configures firewall rules for NetWorker.

     - To configure firewall rules, specify a value of 1.
     - To instruct the installation process to not configure firewall rules, specify a value of 0.
     - When you do not specify this option, the installation process defaults to a value of 0.

3. To start the NetWorker services, specify a value of 1.

   STARTSVC=*[0/1]* determines whether or not the installation process starts the NetWorker services after the installation completes.

4. To instruct the installation process to not start the NetWorker services, specify a value of 0.

If you do not specify this option, the installation process defaults to a value of 0.

Specifying the list of trusted servers

Follow these steps to specify the list of trusted servers and to complete the installation.

Procedure

1. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

   - To add a NetWorker server that is not listed in the **Available Servers** list:

     a. Type the name of the server in the **Enter a server name** text box.

     b. Click **Add**.

   - To browse for available NetWorker servers:

     a. Click **Update List**.

     b. Select a NetWorker server from the **Available Servers** list.

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

     Note

     The list of trusted NetWorker servers is stored in the `NetWorker_installation_directory\res\servers` file. When no servers are specified, any NetWorker server can backup or perform a directed recovery to the host.

     ---

2. Click **Next**.

3. Click **OK** to complete the install.

4. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

   The NetWorker daemons chapter provides a list of the NetWorker daemons.

Adjusting antivirus software settings

Undesirable behavior might occur if you do not tune the antivirus software installed on a Windows host for backup environments.

Configure the antivirus software to:

◆ Avoid scanning files that the backup software opens for backup.
  For example:

  - Clear the `Opened for Backup in the Advanced Auto-Protect` option for Norton Antivirus.

  - Clear the **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`

◆ Not monitor AFTD directories.

Specifying the list of trusted servers and configuring the Console

Follow this procedure to specify the list of trusted servers and to complete the installation.

Procedure

1. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

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

   > **Note**
   >
   > The list of trusted NetWorker servers is stored in the *NetWorker_installation_directory*`\res\servers` file. When no servers are specified, any NetWorker server can back up or perform a directed recovery to the host.

2. On the **Welcome to NetWorker Management Console Installation** window, click **Next**.

3. On the **Customer Information** window, fill in the appropriate information, and click **Next**.

4. 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.

   - 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.

5. On the **Configuration Options** window, type the following:

   - **Database Destination path**
   - **IP port numbers** to use for the embedded HTTP server
   - **Client Service port**

   When doing this, consider the following:

   - To change the default **Database Destination path**, select **Change**.

   - To use the default port numbers, type **9000** for the HTTP server and **9001** for the Client Service port.

- To use different port numbers, type the new port numbers (between **1024** and **49151**).

  > **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**.

6. Click **Next**.

7. If the installation process detects an existing Console server database, the **Customer Database Maintenance** window appears.

   In the **Customer Database Maintenance** window:

   a. Leave the default option **Keep the database** selected.

   b. Click **Next**.

8. On the **NetWorker Management Console Setup Completed** window:

   a. Clear **Launch the console client in the default browser immediately after exiting the InstallShield Wizard**.

   b. Click **Next**.

9. Click **OK** to complete the install.

10. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

    The NetWorker daemons chapter provides a list of the NetWorker daemons.

Uninstalling the NetWorker software by using a silent uninstall

Use the `msiexec.exe` program to perform a silent or unattended uninstall of the NetWorker client and storage node software.

Procedure

1. From a command prompt, navigate to the folder that contains the `NetWorker.msi` file.

   > **NOTICE**
   >
   > The `NetWorker.msi` file is in the networkr subfolder in the folder where you extracted the NetWorker installation software.

2. Use the `msiexec.exe` command to uninstall the software:

   ```
   msiexec /quiet /uninstall "NetWorker"
   ```

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.

> **NOTICE**
>
> 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. 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.

Follow this procedure to use the SMS software to install or remove the NetWorker software.

Procedure

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 the previous step.

   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 a starting point for a package definition. The Microsoft SMS documentation provides complete instructions on how to customize 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 the previous step.

5. Deploy the installation or uninstallation job created in the previous step.

CHAPTER 15

Modifying the Microsoft Windows Installation

This chapter includes the following sections:

Installing the NMC server software on an existing NetWorker host

After you install the NetWorker software on a host, you can add the NMC server software.

Installing the software

Follow this procedure to install the NMC software.

Procedure

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:

   a. Click **Configure the Windows firewall.**

   b. Click **Next.**

5. On the **Install Type** window:

   a. Click **NetWorker Management Console.**

   b. Click **Next.**

6. On the **Ready to Change** window, click **Change.**

Specifying the list of trusted servers

Follow these steps to specify the list of trusted servers and to complete the installation.

Procedure

1. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

   - To add a NetWorker server that is not listed in the **Available Servers** list:

     a. Type the name of the server in the **Enter a server name** text box.

     b. Click **Add.**

   - To browse for available NetWorker servers:

     a. Click **Update List.**

     b. Select a NetWorker server from the **Available Servers** list.

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

     Note

     The list of trusted NetWorker servers is stored in the `NetWorker_installation_directory\res\servers` file. When no servers are specified, any NetWorker server can backup or perform a directed recovery to the host.

     ---

2. Click **Next.**

3. Click **OK** to complete the install.

4. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

   The NetWorker daemons chapter provides a list of the NetWorker daemons.

Specifying the list of trusted servers and configuring the Console

Follow this procedure to specify the list of trusted servers and to complete the installation.

Procedure

1. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

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

   Note

   The list of trusted NetWorker servers is stored in the `NetWorker_installation_directory\res\servers` file. When no servers are specified, any NetWorker server can back up or perform a directed recovery to the host.

   ---

2. On the **Welcome to NetWorker Management Console Installation** window, click **Next**.

3. On the **Customer Information** window, fill in the appropriate information, and click **Next**.

4. 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.

   - 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.

5. On the **Configuration Options** window, type the following:

   - **Database Destination path**

   - **IP port numbers** to use for the embedded HTTP server

   - **Client Service port**

   When doing this, consider the following:

   - To change the default **Database Destination path**, select **Change**.

   - To use the default port numbers, type **9000** for the HTTP server and **9001** for the Client Service port.

- To use different port numbers, type the new port numbers (between **1024** and **49151**).

    > **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**.

6. Click **Next**.

7. If the installation process detects an existing Console server database, the **Customer Database Maintenance** window appears.

    In the **Customer Database Maintenance** window:

    a. Leave the default option **Keep the database** selected.

    b. Click **Next**.

8. On the **NetWorker Management Console Setup Completed** window:

    a. Clear **Launch the console client in the default browser immediately after exiting the InstallShield Wizard**.

    b. Click **Next**.

9. Click **OK** to complete the install.

10. Open **Task Manager** and ensure that the appropriate NetWorker daemons are started.

    The NetWorker daemons chapter provides a list of the NetWorker daemons.

Installing additional language packs

Use the following procedure to install the additional language packs.

Procedure

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. On the **Welcome to NetWorker Maintenance** window, click **Next**.

5. On the **Maintenance Type** window:

    a. Select **Change**.

    b. Click **Next**.

6. Click **Configure the Windows firewall** and then click **Next**.

7. Click **Language Packs** and then click **Next**.

8. On the **Feature Selection** window:

    a. Select the required language packs, select **This feature will be installed on a local hard drive**.

    b. Click **Next**.

    The English language pack is required and cannot be unselected.

9. In the **Ready to Change** window:

    a. Review the settings.

    b. Click **Change**.

10. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

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

Note

The list of trusted NetWorker servers is stored in the *NetWorker_installation_directory*\res\servers file. When no servers are specified, any NetWorker server can back up or perform a directed recovery to the host.

11. Click **Next**.

12. Click **OK** to complete the install.

Changing the installation type

You can change a host set up as a NetWorker client, NetWorker server, or NetWorker storage node to another type.

For example, you can change the installation type from the following options:

◆ 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

Use the following procedure to change the installation type:

Procedure

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, click **Next**.

5. On the **Maintenance Type** window:

    a. Select **Change.**

    b. Click **Next**.

6. On the **Windows Firewall** windows:

    a. Click **Configure the Windows firewall.**

    b. Click **Next**.

7. On the **Installation Type** windows:

   a. Choose an **Installation Type.**

   b. Click **Next.**

8. On the **Ready to Change** window, click **Change.**

9. On the **NetWorker Server Selection** window, specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry becomes the default NetWorker server.

   • 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.

   Note

   The list of trusted NetWorker servers is stored in the `NetWorker_installation_directory\res\servers` file. When no servers are specified, any NetWorker server can back up or perform a directed recovery to the host.

10. Click **Next**.

11. Click **OK** to complete the install.

Post Installation steps

After changing the installation type, complete the following procedure.

◆ 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 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.

PART 6

Verifying and Troubleshooting the Installation

This section contains the following chapters:

Verifying and Troubleshooting the Installation

CHAPTER 16

Verify the Installation

This chapter contains the following sections:

Roadmap for using NetWorker for the first time

Follow these procedures to connect to configure the Console server GUI, configure the Console server to manage a NetWorker server, to verify that the NetWorker software can perform management and backup tasks, and to start the console client after the fist time.

Starting the Console server GUI for the first time

The Console server is a Java web-based application that manages NetWorker server operations. A Console client is a host that connects to the Console server through a supported web browser, to display the Console server GUI.

These sections outline how to prepare the Console client and how to connect to the Console server GUI.

Configuring the Administrators list

When 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. The owner of the `gstd` process is the user that starts the `gstd` daemon on UNIX or the EMC GST service on Windows.

Note

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.

Use the following procedure to update the Administrators list.

Procedure

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

2. 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
     ```

3. 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.

Enabling temporary internet file caching

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:

1. Browse to **Control Panel** › **Java** › **General** › **Temporary Internet Files** › **Settings**

2. Select **Keep temporary files on my computer**.

For UNIX Console clients:

1. Start the Java Web Start Application Manager, `javaws`.

2. Select **Enable temporary internet file caching**.

Ensuring required daemons are running

Ensure that the console processes `gstd`, `dbsrv12`, and `httpd` are running on the Console server.

For UNIX Console servers, follow this procedure to ensure that the Console is running.

Procedure

1. Type the following command:

   ps -ef | grep gstd ps -ef | grep dbsrv12 ps -ef | grep httpd

   Note

   Two or more `httpd` processes appear. The parent `httpd` process runs as root and the child process(es) run as the username specified during the installation.

2. 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`

     NOTICE

     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.

3. 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. Two `httpd` processes start 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.

Windows only, confirming JRE version

For Windows hosts only, ensure that you install the correct JRE program for the installed version of Microsoft Internet Explorer.

◆ For the 32-bit version of Microsoft Internet Explorer, install the 32-bit version of JRE.

◆ For the 64-bit version of Microsoft Internet Explorer, install the 64-bit version of JRE.

Use the following procedure to determine the Microsoft Internet Explorer version on the Windows Console client.

Procedure

1. Right-mouse click the Microsoft 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 Microsoft Internet Explorer.

   - `C:\Program Files\Internet Explorer\` for the 64-bit version of Microsoft Internet Explorer.

Connecting to the Console server GUI

Use this procedure to connect to the Console server GUI from a Console client.

Note

The Console server can also be a Console client.

Procedure

1. From a supported 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 default HTTP port is 9000.

     For example: **http://houston:9000**

2. On the **Welcome** window, click **Start**.

3. On the **Security Warning** window, click **Start** to install and run **NetWorker Console**.

4. On the **Licensing Agreement** window, select **Accept**.

5. 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.

6. On the **Welcome to the Console Configuration Wizard** window, click **Next**.

7. On the **Set Administrator password** window:

   a. Type the NMC password.

   b. Click **Next**.

8. On the **Set Database Backup Server** window:

   a. Specify the name of the NetWorker server that will backup the Console server database.

b. Click **Next**.

9. On the **Add NetWorker servers** window:

   a. Specify the names of the NetWorker server that the Console server will manage, one name per line.

   b. 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.

10. Click **Finish**. The **Console** window and the **Getting Started** window appear.

11. In the **Enterprise** window:

   a. Right click the NetWorker server.

   b. Select **Launch Application**.

   The *NetWorker Administration Guide* describes how to perform common NetWorker tasks.

Changing the NetWorker servers with access to the host

Use this procedure to define the NetWorker servers that can perform backups and directed recoveries on this host for the listed platforms.

- ◆ AIX
- ◆ HP-UX
- ◆ Linux

By default, any NetWorker server can:

- ◆ Backup this host.
- ◆ Perform a directed recover to this host.

Use the following procedure to change the NetWorker servers that can access the host.

Procedure

1. Shutdown the NetWorker daemons:

   nsr_shutdown

2. Edit or create the following file:

   /nsr/res/servers

3. Specify the shortname and FDQN for each NetWorker server, one per line, that require access to the NetWorker host. The first entry in this file becomes the default NetWorker server.

   > **NOTICE**

   When you do not specify any servers, any NetWorker server can backup or perform a directed recovery to the host.

4. Start the NetWorker daemons:

- AIX: `/etc/rc.nsr`
- HP-UX: `/sbin/init.d/networker start`
- Linux: `/etc/init.d/networker start`

5. For AIX and HP-UX only, confirm that the NetWorker daemons started:

   `ps -ef | grep nsr`

Starting 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.

Procedure

◆ Point the browser to the following url:

   `http://`*`server_name`*`:`*`http_service_port`*

◆ Double-click **NetWorker Console** in the Java Web Start Application Manager.

◆ On Windows Console clients, double-click the **NetWorker Management Console** desktop icon.

CHAPTER 17

Troubleshooting Console Client Connection Issues

This chapter includes the following sections:

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, use the following procedure.

Procedure

1. Verify that the `gstd`, `dbsrv12`, and `httpd` processes start on the Console server.

2. Confirm that you specified the correct port number to connect to the Console server. The default port number that you use to connect to the Console server is **9000**, but the installation process allows you to specify a different port number.

    To determine the service port:

    a. Review the NMC configuration file on the Console server:

        – Solaris: `/opt/LGTOnmc/gstd.conf`

        – AIX and Linux: `/opt/lgtonmc/etc/gstd.conf`

        – Windows: `C:\Program Files\EMC NetWorker\Management\GST\etc\gstd.conf`

    b. Confirm the port numbers defined for the Console server:

        ```
        db_svc_port=port_number
        http_svc_port=9000
        ```

    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, then 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 on how to determine the required ports for NetWorker hosts.

Unable to connect to the Console server

An attempt to connect to the Console server from the web page can fail with the following error messages.

Error: Could not authenticate this username and password

If the login attempt fails with this error message, follow this procedure.

- Ensure that you specify 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 and you do not reconfigure the `.jnlp` file on the Console server.

Use the following procedure to reconfigure the `.jnlp` file.

Procedure

1. Log in to the Console server as root on Linux and UNIX or administrator on Windows.

2. On Linux and 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.

Unable to launch NetWorker Management Console

This message appears on a Console client the Java Cache was not cleared after an update to the Console server software.

To resolve this issue, clear the Java Cache on the Console client.

Error: error while loading shared libraries: libsasl2.so.2: wrong ELF class: ELFCLASS64

This message occurs on 64-bit Linux systems, when you do not install the 32-bit version of the `cyrus-sasl` package.

Follow this procedure to resolve this issue.

Procedure

1. Log in to the Console server, as root.

2. Install the 32-bit operating system `cyrus-sasl` package.

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
```

Follow this procedure to resolve this issue.

◆ Ensure that the NetWorker daemons start on the NetWorker server.

◆ For HP-UX Console clients:

1. In the NMC console, select **Setup › Setup System Options**.

2. Clear **RPC ping by using UDP when connecting to NetWorker** checkbox.

3. Click **OK**.

4. 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 `gstd` process will not start.

When the `gstd` daemon does not start on the Console server, review the following log files to obtain the exact error message:

◆ `gstd.raw`

◆ `web_ouput`

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 start-up errors include the following errors.

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 the following.

◆ 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`.

    Note

    Do not use `kill -9`.

  • On Windows, end the `dbsrv12` process in **Task Manager**.

◆ The Console server is running an unsupported version of JRE.

Error: 'Web server exited unexpectedly.'

The following error appears when the httpd process is not running on the Console server.

```
This error appears "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."
```

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.

Use the following procedure to enable the delayed start option for the EMC gstd process.

Procedure

1. In the **Services** applet:

   a. Right-mouse click the **EMC gstd** service.

   b. Select **Properties**.

2. On the **General** tab, change the **Startup type** to **Automatic (delayed start)**.

3. Click **Ok**.

4. Stop the **EMC gstd** service.

5. Start the **EMC gstd** service.

6. 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. Use the following procedure to resolve this issue.

Procedure

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 the JRE is not installed on the Console client.

For Windows only, the JRE version installed on the Console client does not match the Microsoft Internet Explorer version.

This message appears on 64-bit Windows systems when you use:

◆ 64-bit version of Microsoft Internet Explorer to connect to the Console server, but the 32-bit version of JRE is installed.

◆ 32-bit version of Microsoft Internet Explorer to connect to the Console server, but the 64-bit version of JRE is installed.

◆ To resolve this issue:

- Install JRE on the Console client.

- For Windows only, install the correct JRE program for the installed Microsoft Internet Explorer version.

  – For the 32-bit version of Microsoft Internet Explorer, install the 32-bit version of JRE.

  – For the 64-bit version of Microsoft Internet Explorer, install the 64-bit version of JRE.

Use the following procedure to determine the Microsoft Internet Explorer version on the Windows Console client.

Procedure

1. Right-mouse click the **Microsoft 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 Microsoft Internet Explorer.

   - `C:\Program Files\Internet Explorer\` for the 64-bit version of Microsoft Internet Explorer.

Cannot log in to the Console server with Firefox

On a Linux Console client, a message similar to the following can appear when you use Firefox 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.
```

Use the following procedure to resolve this issue.

Procedure

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 installation path.

   - *JRE* is the Java installation path.

   - *arch* is the directory appropriate to the computer architecture.

   - For SuSE11 only, install these operating system packages:

     – glibc-locale-2.11.1

— glibc-locale-32bit-2.11.1

Without these packages, a message similar to the following 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.
```

Cannot generate console reports after updating the Console server

After updating the Console server software, generating Console server reports might fail with the following error.

```
com.sybase.jdbc3.jdbc.SybDriver. To resolve this issue, delete the
Java Cache on the Console client used to generate the reports.
```

This error message appears when the Java Cache on the Console client is not deleted after a Console server update.