



**EMC® NetWorker®
Module for Oracle**

**Release 4.5
Multiplatform Version**

Installation Guide

**P/N 300-003-564
REV A02**

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Published August, 2007

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

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

Audience

This document is part of the EMC NetWorker Module for Oracle (NMO) documentation set, and is intended for use by system administrators and Oracle database administrators (DBAs) who are responsible for installing software and maintaining the Oracle Server backup and recovery systems. Operators who monitor Oracle database backups may also find this document useful.

Readers of this document are expected to be familiar with the following topics:

- ◆ Oracle terminology and concepts, especially those related to Oracle database backup and recovery.
- ◆ Backup and recovery procedures on an Oracle Server.
- ◆ Disaster recovery procedures on an Oracle Server.

Related documentation

Documentation related to the use of this product can be found at the EMC website, <http://Powerlink.EMC.com>, including:

- ◆ The NetWorker Module for Oracle release 4.5 documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
- ◆ The NetWorker documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
 - Disaster recovery guide
- ◆ Other EMC documentation:
 - NetWorker PowerSnap Module documentation
 - Software compatibility guide
 - UNIX man pages

The following additional documentation may be useful:

- ◆ Oracle Server documentation
- ◆ Oracle database backup and recovery documentation

Conventions used in this document

EMC uses the following conventions for special notices.

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



CAUTION

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



IMPORTANT

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

Typographical conventions

EMC uses the following type style conventions in this document:

Normal:	Used in running (nonprocedural) text for: <ul style="list-style-type: none"> • Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus) • Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, utilities • URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, notifications
Bold:	Used in running (nonprocedural) text for: <ul style="list-style-type: none"> • Names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, man pages Used in procedures for: <ul style="list-style-type: none"> • Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus) • What the user specifically selects, clicks, presses, or types
<i>Italic:</i>	Used in all text (including procedures) for: <ul style="list-style-type: none"> • Full titles of publications referenced in text • Emphasis (for example, a new term) • Variables
Courier:	Used for: <ul style="list-style-type: none"> • System output, such as an error message or script • URLs, complete paths, filenames, prompts, and syntax when shown outside of running text
Courier bold:	Used for: <ul style="list-style-type: none"> • Specific user input (such as commands)
<i>Courier italic:</i>	Used in procedures for: <ul style="list-style-type: none"> • Variables on the command line • User input variables
< >	Angle brackets enclose parameter or variable values supplied by the user
[]	Square brackets enclose optional values
	Vertical bar indicates alternate selections - the bar means “or”
{ }	Braces indicate content that you must specify (that is, x or y or z)
...	Ellipses indicate nonessential information omitted from the example

- Where to get help** EMC support, product, and licensing information can be obtained as follows.
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- <http://Powerlink.EMC.com>
- Technical support** — For technical support, go to EMC Customer Service on Powerlink. To open a service request through Powerlink, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.
- Your comments** Comments and suggestions about our product documentation are always welcome. To provide feedback:
1. Go to:
<http://Powerlink.EMC.com>
 2. Click the **Feedback** link.

This chapter includes the following sections:

- ◆ [Overview of this guide](#) 14
- ◆ [Installation considerations](#) 14

Overview of this guide

This installation guide describes how to install and enable the EMC® NetWorker® Module for Oracle (NMO) release 4.5 on an Oracle Server host with a supported UNIX, Linux, or Microsoft Windows operating system.

Note: The Software Compatibility Guide on the EMC website at <http://Powerlink.EMC.com> provides details on the specific operating system versions that NMO supports.

Use the information in this guide to:

- ◆ Update or upgrade to NMO release 4.5 from:
 - NMO release 3.x
 - NMO release 4.x
 - Legato Storage Manager
 - Legato Single Server Version

[Chapter 2, "Updating and Upgrading the Software,"](#) provides instructions.
- ◆ Prepare to install NMO release 4.5 according to the instructions in [Chapter 3, "Preparing to Install."](#)
- ◆ Install NMO release 4.5 according to the instructions in the following:
 - [Chapter 4, "Installing on UNIX and Linux"](#)
 - [Chapter 5, "Installing on Microsoft Windows"](#)
- ◆ Enable the NMO software according to the instructions in [Chapter 6, "Licensing and Enabling the Software."](#)
- ◆ Uninstall the NMO software according to the instructions in [Chapter 7, "Uninstalling the Software."](#)
- ◆ If required, manually register the configuration wizard libraries according to the instructions in [Appendix A, "Registering the Configuration Wizard."](#)

Note: Throughout this guide, references to *regular* backups and restores indicate non-proxy backups and restores.

Installation considerations

The NMO software works with Oracle RMAN and NetWorker software to provide *regular* (non-proxy) backup and restore services for Oracle data.

For *proxy* Oracle backups and restores, the required NetWorker PowerSnap™ Module software must also be installed.

For both regular and proxy Oracle operations, the following software must be installed on the Oracle Server host:

- ◆ NMO software
- ◆ One of the following types of NetWorker software:
 - NetWorker server software
 - If the NetWorker server resides on a remote host, NetWorker storage node or client software, as required

After installation, the software components must be properly configured to enable regular or proxy Oracle backup and restore operations. The following sources provide information on the configuration procedures:

- ◆ NetWorker Module for Oracle Administration Guide
- ◆ NetWorker PowerSnap Module documentation
(Refer to the PowerSnap Module version for the primary storage system.)



IMPORTANT

Ensure that the required privileges are set in the appropriate NetWorker user groups. The NetWorker Module for Oracle Administration Guide provides more information.

Considerations for proxy backups and restores

The NMO software supports proxy backups and restores of Oracle data with the following requirements:

- ◆ The proxy backups create snapshots of Oracle data that reside on primary storage devices supported by the NetWorker PowerSnap Modules that work with NMO.
The current Software Compatibility Guide on the EMC Powerlink® website provides a complete list of supported PowerSnap Modules.
- ◆ The proxy operations use the particular PowerSnap Module software designed for the primary storage.

Note: Proxy Oracle backups and restores are *not* supported with Solaris 10 zones and non-English environments.

For proxy Oracle operations, the PowerSnap Module designed for the primary storage system must be installed and enabled on *both* of the following:

- ◆ Oracle Server host
- ◆ A separate proxy client host or NetWorker storage node, as required

The NetWorker PowerSnap Module documentation provides more information.

Considerations for NetWorker configuration wizard operations

The NetWorker configuration wizard on Solaris SPARC or Windows (*except* Itanium) can be used to configure the following backups and restores of the NMO client:

- ◆ Typical scheduled Oracle backups
- ◆ Customized scheduled Oracle backups
- ◆ Oracle data restores
- ◆ Oracle database duplication to either the local host or a remote host

The NMO client can be located on *either* of the following:

- ◆ On the same Solaris SPARC or Windows (*except* Itanium) host as the wizard
- ◆ On a remote host

The configuration wizard creates the following:

- ◆ For NMO backups, the wizard creates the required RMAN backup scripts, **nsrnm** scripts, and NetWorker Client and Group resources.
- ◆ For NMO restores and database duplication, the wizard creates the required RMAN restore scripts.

Note: The configuration of NMO parameters that are *not* available through the configuration wizard (for example, parameters for manual backups) must be performed manually by using a text editor, as is done with NMO 4.2.

[“NetWorker configuration wizard requirements” on page 26](#) provides information on how to set up the configuration wizard operations.

The NetWorker Module for Oracle Administration Guide and the wizard help provide information on using the configuration wizard.

This chapter includes the following sections:

- ◆ Updating from NMO release 3.x or 4.x 18
- ◆ Upgrading from LSM or LSSV release 6.1 19

Updating from NMO release 3.x or 4.x

The NetWorker Module for Oracle (NMO) release 4.5 software *cannot* coexist on the same system with any of the earlier NMO releases:

- ◆ NMO release 3.x
- ◆ NMO release 4.0, 4.1, 4.2

To update the NMO software, use the instructions in the appropriate section:

- ◆ [“How to update locally from NMO release 3.x or 4.x” on page 18](#)
- ◆ [“How to update remotely from NMO release 4.2” on page 18](#)

How to update locally from NMO release 3.x or 4.x

To update from NMO release 3.x or 4.x on the local NMO client host:

1. Verify that *no* Oracle database backups with NMO are running on the Oracle Server host.
2. Uninstall NMO release 3.x or 4.x by using the instructions in the NetWorker Module for Oracle Installation Guide for that software release.
3. Install and enable NMO release 4.5 on the Oracle Server host by using the instructions in [Chapter 3, “Preparing to Install.”](#)
4. To enable proxy Oracle operations, complete the update or upgrade by installing and enabling the required NetWorker PowerSnap Module on *both* of the following:
 - Oracle Server host
 - A separate proxy client host or NetWorker storage node, as required
 Follow the instructions in the NetWorker PowerSnap Module documentation.

How to update remotely from NMO release 4.2

To update from NMO release 4.2 by using the software distribution feature on a remote NetWorker server:

1. Ensure that the following requirements are met:
 - NetWorker server release 7.4 or later is installed on the remote NetWorker server host.
 - NetWorker client release 7.4 or later is installed on the NMO client host.
 - NMO release 4.2 is installed on the NMO client host.
 - The NMO client host is running a supported UNIX or Linux operating system, *not* Microsoft Windows.
 - The NetWorker Console server includes administrative privileges.
2. Use the Software Administration Wizard or **nsrpush** command on the remote NetWorker server to update from NMO release 4.2 to 4.5 on the NMO client host. The server transfers and installs the NMO release 4.5 software to the client host.

The Software Administration Wizard is *not* supported on specific platforms and cluster environments. The *EMC NetWorker, Release 7.4, Multiplatform Version, Installation Guide* provides more information.

Upgrading from LSM or LSSV release 6.1

The Legato Storage Manager (LSM) or Legato Single Server Version (LSSV) release 6.1 software can be upgraded to the latest release of the NetWorker server and NMO. This upgrade can be performed with or without retention of the existing LSM or LSSV backups.

To upgrade, use the instructions in the appropriate section:

- ◆ [“How to upgrade without keeping the backups” on page 19](#)
- ◆ [“How to upgrade while keeping the backups” on page 19](#)

How to upgrade without keeping the backups

To upgrade from LSM or LSSV release 6.1 *without* keeping the backups, perform the following:

1. Perform a *full* uninstall of the software.
 - Uninstall the LSM software by using the instructions in the Oracle Installation Guide.
 - Uninstall the LSSV software by using the instructions in the Legato Single Server Version Installation Guide.

Notes:

- On UNIX, ensure that the /nsr directory is removed.
 - On Windows, select the Complete Removal option during the uninstall.
2. Perform one of the following:
 - Use a NetWorker server already installed and enabled on a host other than the Oracle Server.
 - Install and enable the NetWorker server software on either the Oracle Server host or a different remote host by using the instructions in the NetWorker Installation Guide.
 3. If the NetWorker server is installed on a host other than the Oracle Server, install and enable the NetWorker client software on the Oracle Server host. The NetWorker Installation Guide provides client installation instructions.
 4. Install and enable NMO release 4.5 on the Oracle Server host by using the instructions in [Chapter 3, “Preparing to Install.”](#)

How to upgrade while keeping the backups

To upgrade from LSM or LSSV release 6.1 while keeping the backups, perform the following:

1. On the Oracle Server host, back up the required directory:
 - On UNIX, back up the /nsr directory.
 - On Windows, back up the *NetWorker_install_path* directory.

Note: [“Software installation path on Microsoft Windows” on page 44](#) provides more information on the *NetWorker_install_path* directory.

The index and configuration files in this directory can be restored later from the backup if problems occur during the upgrade.

2. Perform a *partial* uninstall of the software.
 - Uninstall the LSM software by using the instructions in the Oracle Installation Guide.
 - Uninstall the LSSV software by using the instructions in the Legato Single Server Version Installation Guide.

Notes:

- On UNIX, do *not* remove the `/nsr` directory.
 - On Windows, select the Partial Removal option during the uninstall.
3. Perform one of the following:
 - Use a NetWorker server already installed and enabled on a host other than the Oracle Server.
 - Install and enable the NetWorker server software:
 - a. Install the NetWorker server software on either the Oracle Server host or a different remote host.

The NetWorker Installation Guide provides instructions.

- b. Enable the NetWorker server:
 - If the NetWorker server is installed on a host other than the Oracle Server, enable the NetWorker server by using the instructions in the NetWorker Installation Guide.
 - If the NetWorker server is installed on the Oracle Server host, verify that the NetWorker services are running. Then install the *base* enabler code provided with the NetWorker server software by logging in as either root (UNIX) or administrator (Windows), and typing the following command:

```
nsrkap -u enabler_code
```

Register the NetWorker server software by using the instructions in the NetWorker Installation Guide.

4. Complete the upgrade of the indexes and configurations for the NetWorker server:
 - If the NetWorker server is installed on the Oracle Server host, the LSM or LSSV indexes might also need to be upgraded by using the **oldindexasm** or **nsrindexasm** command. The appropriate command depends on the particular releases of the various software involved.

The following sources provide more information:

- NetWorker Administration Guide
- NetWorker Command Reference Guide
- UNIX man pages
- If the NetWorker server is installed on a host other than the Oracle Server:
 - a. Move all the media used for the LSM or LSSV backups to the devices connected to the NetWorker server host.
 - b. In the NetWorker server, configure the same resources (devices, pools, and so on) as used previously in LSM or LSSV.

The resources can be configured manually in the NetWorker Administrator program. The configurations might also need to be restored from a previous LSM or LSSV backup by using the **mmrecov** or **scanner** command.

The NetWorker Administration Guide or NetWorker Disaster Recovery Guide provides more information.

- c. Migrate the LSM or LSSV indexes to the new host.

Depending on the operating system versions, and the particular software releases involved, the index files might need to be copied manually to the new host.

The NetWorker Administration Guide or NetWorker Disaster Recovery Guide provides more information.

- d. Install and enable the NetWorker client software on the Oracle Server host by using the client installation instructions in the NetWorker Installation Guide.
5. Install and enable NMO release 4.5 on the Oracle Server host by using the instructions in [Chapter 3, "Preparing to Install."](#)

This chapter includes the following sections:

- ◆ [Installation roadmap](#)..... 24
- ◆ [Installation requirements](#) 24

Installation roadmap

This section provides a roadmap for installing the NetWorker Module for Oracle (NMO) release 4.5 software on a supported operating system that does *not* have a previous release of the software. Read through this roadmap and the referenced sections before installing the software.

[Chapter 2, "Updating and Upgrading the Software,"](#) provides information on how to update from a previous release of NMO software.



IMPORTANT

Before installing the NMO software in a production environment, perform the following tasks:

- Install, configure, and operate the software in a *test* database environment.
- Perform an offline backup of any production database.

If, after the NMO installation, the NetWorker software on the Oracle Server host is updated and the NetWorker client installation directory is changed to a different location, then the NMO software must be uninstalled and reinstalled by using the instructions in this Installation Guide.

To install the NMO software, perform the following:

1. Ensure that all the installation requirements are met. ["Installation requirements" on page 24](#) provides more information.
2. Install the NMO software on *one* of the following:
 - A single Oracle Server host
 - A cluster or Real Application Cluster (RAC) system
 The following chapters provide more information:
 - [Chapter 4, "Installing on UNIX and Linux"](#)
 - [Chapter 5, "Installing on Microsoft Windows"](#)

After the NMO software is installed, it must be properly configured for Oracle backup and restore operations. The following sources provide more information:

- ◆ NetWorker Module for Oracle, Release 4.5, Administration Guide
- ◆ NetWorker PowerSnap Module documentation
(Refer to the PowerSnap Module version for the primary storage system.)

Installation requirements

Before the NMO software is installed, ensure that *all* the following requirements are met:

- ◆ ["Operating system requirements" on page 25](#)
- ◆ ["Oracle Server requirements" on page 25](#)
- ◆ ["NetWorker software requirements" on page 25](#)
- ◆ ["NMO requirements" on page 28](#)
- ◆ ["Internationalization requirements" on page 28](#)

Operating system requirements

Before the NMO software is installed, one of the supported operating systems must be installed. The Software Compatibility Guide on the EMC Powerlink website provides a complete list of the operating systems that NMO supports.

Notes:

- ◆ The NetWorker configuration wizard supports only Solaris SPARC and Windows (*except* Itanium).
- ◆ Proxy Oracle backups and restores are *not* supported with Solaris 10 zones and non-English environments.
- ◆ A cluster system must be running cluster software that supports clustered Oracle or RAC.

Oracle Server requirements

Ensure that the following requirements are met on the Oracle Server host:

- ◆ A supported operating system is installed, as described in [“Operating system requirements” on page 25](#).
- ◆ A supported Oracle Server release is installed. The Software Compatibility Guide on the EMC website provides details on the Oracle Server releases supported on specific platforms.

The Oracle Server release must be certified to run on the operating system. The Oracle documentation provides details on the operating systems that the Oracle Server release supports.

- ◆ If Oracle release 10.1.0.3 is installed and the RMAN output contains many trace messages about the `kgllkdl()` function, contact Oracle to obtain and install the patch 4061041.

NetWorker software requirements

Ensure that the NetWorker software requirements in the following sections are met:

- ◆ [“NetWorker server requirements” on page 25](#)
- ◆ [“NetWorker client requirements” on page 26](#)
- ◆ [“NetWorker configuration wizard requirements” on page 26](#)
- ◆ [“NetWorker PowerSnap Module requirements” on page 27](#)

Use the information in the Hardware Compatibility Guide on the EMC website to ensure that the existing computer hardware is compatible with the NetWorker software.

NetWorker server requirements

A supported release of the NetWorker server (with all applicable patches) must be installed on *either* the Oracle Server host or a separate *remote* host.

- ◆ If the NetWorker server is on the Oracle Server host, install NetWorker server release 7.4 or later.
- ◆ If the NetWorker server is on a remote Solaris SPARC or Windows host where the NetWorker configuration wizard is run, install NetWorker server release 7.2 or later.

Note: If the NetWorker configuration wizard software is installed separately from the NetWorker software, the wizard must be installed *after* the NetWorker server or client is installed on the same host.

- ◆ If the NetWorker server is on a remote host *without* the NetWorker configuration wizard, install NetWorker server release 7.1 or later.

Specific NetWorker server releases are required for the support of specific features:

- ◆ NetWorker server 7.3 or later is required for AES encryption of NMO backups.
- ◆ NetWorker server 7.3.1 or later is required for display of scheduled NMO backup sessions in the NetWorker Management Console.
- ◆ NetWorker 7.4 or later is required for the following:
 - Remote updates of NMO release 4.2 to 4.5, as performed from a remote NetWorker server.
 - NMO operations on a Solaris 10 platform with Solaris zones.
 - Specific internationalization features in the NMO software.
 - Staging of NMO save set bundles by the NetWorker server.

The NetWorker server release must be certified to work with the NetWorker client release installed on the Oracle Server host, and it must be supported on the operating systems involved.

The following sources provide more information:

- ◆ The Software Compatibility Guide on the EMC website provides details on the supported server releases and operating systems.
- ◆ The NetWorker Installation Guide provides details on how to install the NetWorker server software.

NetWorker client requirements

If the NetWorker server is *not* installed on the Oracle Server host, NetWorker client release 7.4 or later (with all applicable patches) must be installed on the Oracle host.

On a Solaris system with Solaris zones, the NetWorker client software must be installed on the same zone as the NMO software.

The NetWorker client release must be certified to run on the operating system.

Note: If the NetWorker configuration wizard is located on the Oracle Server host and the wizard is installed separately from the NetWorker software, it must be installed *after* the NetWorker server or client is installed on the same host.

The following sources provide more information:

- ◆ The Software Compatibility Guide on the EMC website provides details on the supported client releases and operating systems.
- ◆ The NetWorker Installation Guide provides details on how to install the NetWorker client software.

NetWorker configuration wizard requirements

The NetWorker configuration wizard can be used on Solaris SPARC or Windows (*except* Itanium) to configure typical and customized scheduled Oracle backups, Oracle data restores, and data duplication operations. The NMO client can be located either on the same host as the wizard or on a remote host. [“Considerations for](#)

[NetWorker configuration wizard operations](#) on page 15 provides more information on features of the configuration wizard.

To enable NMO operations with the NetWorker configuration wizard:

1. Install the required NetWorker server and client software:
 - If the NetWorker server is on the NMO client host, install NetWorker server release 7.4 or later.
 - If the NetWorker server is *not* on the NMO client host:
 - Install NetWorker server release 7.2 or later on the remote server host.
 - Install NetWorker client release 7.4 or later on the NMO client host.

Note: With NetWorker release 7.3 and later, the wizard software is bundled with the NetWorker software and is installed automatically when you install NetWorker.

The NetWorker Installation Guide provides details on how to install the NetWorker software.

2. If NetWorker release 7.2 is installed on the Solaris SPARC or Windows host where the wizard is to run, install the NetWorker configuration wizard software separately on the same host. (With NetWorker release 7.2, the wizard software must be installed *separately* from the NetWorker software.)

Note: For the best results, the configuration wizard should be located on the same computer as the NetWorker server.

The appropriate NetWorker documentation provides more information on the packaged configuration wizard.

3. Install the required configuration wizard libraries (packaged with NMO) on the following:
 - On the Solaris SPARC or Windows (*except* Itanium) host where the wizard is to run.
 - On the NMO client host, if separate from the wizard host.

The following chapters provide more information:

- [Chapter 4, "Installing on UNIX and Linux"](#)
- [Chapter 5, "Installing on Microsoft Windows"](#)

4. Ensure that the hostname of the computer running the wizard is included in the `/nsr/res/servers` or `NetWorker_install_path\res\servers` file on the NMO client (or the servers file is empty). If the servers file is *not* empty, it must also include the hostnames of all the NetWorker servers authorized to back up the NMO client. The servers file is a text file, which can be modified by using a text editor.

NetWorker PowerSnap Module requirements

To enable proxy Oracle backups and restores, the required NetWorker PowerSnap Module that was designed for the primary storage system must be installed on *both* of the following:

- ◆ Oracle Server host
- ◆ A separate proxy client host or NetWorker storage node, as required

The NetWorker PowerSnap Module documentation provides more information.

NMO requirements

Ensure that there is sufficient disk space on the Oracle Server host for the NMO software and its documentation (PDF files).

- ◆ The software (including the configuration wizard libraries) requires 10 MB of disk space.
- ◆ The documentation requires 2 MB of disk space.

The roadmap in the EMC Information Protection Media Kit provides the locations of the documentation files on the Documentation Suite CD-ROM. The most up-to-date documents are also available on the EMC website. To view or print the documents, use the Adobe Acrobat Reader.

The EMC website provides details on any patches required for the particular system.

Internationalization requirements

Prior to installing NMO 4.5 in a non-English environment, ensure that the following requirements are met on the NMO client host:

- ◆ Ensure that a supported internationalized version of the operating system is installed.
- ◆ Ensure that the Oracle software provides the required National Language Support (NLS) or globalization support, and the Oracle database is configured with the required non-ASCII character set.
- ◆ Ensure that an internationalized version of NetWorker 7.4 or later (with the required language pack) is installed.

Note: Before an NMO language pack can be installed, the NMO software and the corresponding NetWorker language pack must both be installed.

This chapter includes the following sections:

- ◆ [Installing on a single Oracle Server host.....](#) 30
- ◆ [Installing on a cluster or RAC system.....](#) 42

Installing on a single Oracle Server host

To install and enable the NetWorker Module for Oracle (NMO) release 4.5 on a single Oracle Server host with a supported UNIX or Linux operating system, perform the following tasks:

- ◆ “Task 1: Access the software” on page 30
- ◆ “Task 2: Install the software” on page 33
- ◆ “Task 3: Link the NMO library file” on page 40
- ◆ “Task 4: Enable the software” on page 41



IMPORTANT

After the installation, if the NetWorker software on the Oracle Server host is updated and the NetWorker client installation directory is changed to a different location, the NMO software must be:

1. Uninstalled according to the instructions in [“Uninstalling on UNIX and Linux” on page 68](#).
2. Reinstalled according to the [“Installation roadmap” on page 24](#).

Task 1: Access the software

The NMO software is distributed in the following forms:

- ◆ On the NetWorker Modules CD, which is included in the EMC Information Protection Media Kit that contains the software and online documentation for related products.
- ◆ In the downloadable file of the *evaluation* software, available from the EMC website.

Access the NMO software files from any of the following sources:

- ◆ [“From a local CD-ROM” on page 30](#)
- ◆ [“From a remote CD-ROM” on page 31](#)
- ◆ [“From the EMC website” on page 32](#)

From a local CD-ROM

To access the software files on an Oracle Server host with a local CD-ROM drive:

1. Log in as root on the Oracle Server host.
2. Insert and mount the NetWorker Module CD-ROM in the CD-ROM drive:


```
mount /dev/cd_drivename /mount_point
```
3. Go to the appropriate directory on the CD-ROM, as described in [Table 1 on page 31](#).

Table 1 Accessing the correct directory on the local CD-ROM

On this system:	Type the following command:
AIX	<code>cd /mount_point/oracle/aix_64</code>
HP-UX	On Itanium: <code>cd /mount_point/oracle/hpux11_ia64</code>
	On PA-RISC: <code>cd /mount_point/oracle/hpux11_64</code>
Linux	On AMD64/EM64T: <code>cd /mount_point/oracle/linux_x86_64</code>
	On Intel: <code>cd /mount_point/oracle/linux_x86</code>
	On Itanium: <code>cd /mount_point/oracle/linux_ia64</code>
Solaris	For 32-bit NMO on SPARC: <code>cd /mount_point/volume_label/oracle/solaris_32</code>
	For 64-bit NMO on SPARC: <code>cd /mount_point/volume_label/oracle/solaris_64</code>
	For 64-bit NMO on AMD64/EM64T: <code>cd /mount_point/volume_label/oracle/solaris_amd64</code>
Tru64 UNIX	<code>cd /mount_point/oracle/tru64</code>

- Continue with [“Task 2: Install the software”](#) on page 33.

From a remote CD-ROM

To access the software files from a remote CD-ROM drive:

- Insert and mount the NetWorker Module CD-ROM in the CD-ROM drive on the remote UNIX or Linux computer:

```
mount /dev/cd_drivename /mount_point
```

- Make the mounted CD-ROM exportable through the network file system (NFS).
- Log in as root on the local Oracle Server host.
- Create a mount point on the local host. For example:

```
mkdir /tmpmntdir
```

- NFS-mount the remote CD-ROM onto the local host, as described in [Table 2](#) on page 31.

Table 2 NFS-mounting the remote CD-ROM (1 of 2)

On this system:	Type the following command:
AIX	<code>mount remote_host:/mount_point/oracle/aix_64 /tmpmntdir</code>
HP-UX	On Itanium: <code>mount remote_host:/mount_point/oracle/hpux11_ia64 /tmpmntdir</code>
	On PA-RISC: <code>mount remote_host:/mount_point/oracle/hpux11_64 /tmpmntdir</code>

Table 2 NFS-mounting the remote CD-ROM (2 of 2)

On this system:	Type the following command:
Linux	On AMD64/EM64T: mount remote_host:/mount_point/oracle/linux_x86_64 /tmpmntdir
	On Intel: mount remote_host:/mount_point/oracle/linux_x86 /tmpmntdir
	On Itanium: mount remote_host:/mount_point/oracle/linux_ia64 /tmpmntdir
Solaris	For 32-bit NMO on SPARC: mount remote_host:/mount_point/volume_label/oracle/solaris_32 /tmpmntdir
	For 64-bit NMO on SPARC: mount remote_host:/mount_point/volume_label/oracle/solaris_64 /tmpmntdir
	For 64-bit NMO on AMD64/EM64T: mount remote_host:/mount_point/volume_label/oracle/solaris_amd64 /tmpmntdir
Tru64 UNIX	mount remote_host:/mount_point/oracle/tru64 /tmpmntdir

6. Go to the mounted directory:

```
cd /tmpmntdir
```

7. Continue with [“Task 2: Install the software”](#) on page 33.

From the EMC website

The *evaluation* release of NMO downloaded from the EMC website contains tarred and compressed versions of the software files.



IMPORTANT

The NMO software downloaded from the EMC website does *not* include an enabler code. The software can only be *evaluated*. [Chapter 6, “Licensing and Enabling the Software,”](#) provides more information on enabling NMO.

To access the *evaluation* release of the NMO software from the EMC website:

1. Log in as root on the Oracle Server host.
2. Create a temporary installation directory in a local file system with sufficient free disk space (10 MB) to contain and extract the downloaded software. The directory must have space for *both* the compressed download file and the uncompressed and untarred files. For example, create the following directory:

```
mkdir /usr/nsr_extract_nmo
```
3. Go to <http://Powerlink.EMC.com>.
4. Select **Support > Downloads and Patches > Downloads D-R > NetWorker Module**.
5. In the table of NetWorker Module Software Downloads, click the **NetWorker Module for Oracle Version 4.5** for the particular UNIX or Linux platform.
6. Download the NMO software file to the temporary directory you created, for example, /usr/nsr_extract_nmo.

7. Uncompress the downloaded file by typing the following **gunzip** command, and replacing the *filename.tar.gz* name with the specific download filename:

```
gunzip filename.tar.gz
```
8. Extract the software from the uncompressed, tarred file:

```
tar xvpBf filename.tar
```

The distribution software files are listed as the extraction proceeds.
9. Remain in the installation directory created in [Step 2](#), for example, `/usr/nsr_extract_nmo`.
10. Continue with [“Task 2: Install the software” on page 33](#).

Task 2: Install the software

Once you have accessed the software files, you are ready to begin the installation. To install the software on the UNIX or Linux system:

1. Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 24](#).
2. Ensure that you are logged in as the root user on the Oracle Server host.
3. Ensure that you are in the correct directory, as described in [“Task 1: Access the software” on page 30](#).

Notes:

- If the installation is *not* started from the correct directory, the installation might fail.
 - The Oracle database does *not* need to be shut down during the installation.
4. To install the software, follow the instructions in the appropriate section:
 - [“How to install on AIX” on page 34](#)
 - [“How to install on HP-UX” on page 35](#)
 - [“How to install on Linux” on page 36](#)
 - [“How to install on Solaris” on page 38](#)
 - [“How to install on Tru64 UNIX” on page 40](#)
 5. If the MANPATH environment variable does not include the pathname of the directory containing the NMO man pages, modify the variable to include the correct pathname and enable access to the man pages with the **man** command.

The module man pages are installed in the same location as NetWorker client man pages. For example, with the man pages in the default directory, ensure that MANPATH includes `/usr/share/man`.

If NMO language packs are installed, ensure that MANPATH includes the pathname of the translated man pages:

- `/usr/share/man/fr` for French man pages
- `/usr/share/man/ja` for Japanese man pages
- `/usr/share/man/ko` for Korean man pages
- `/usr/share/man/zh` for Simplified Chinese man pages

How to install on AIX

To install on an AIX system that does not contain the software, invoke either the **installp** command line interface or the AIX System Management Interface Tool (SMIT) GUI program:

- ◆ To invoke the command line interface, type the following command:

```
installp -a -d /dir_pathname LGTONmo.rte
```

where */dir_pathname* is the complete pathname of the correct directory, as described in [“Task 1: Access the software”](#) on page 30.

To verify that the installation succeeded, type the following command:

```
lsllpp -L all | grep -i lgtonmo
```

If the **lsllpp** command output includes LGTONmo.rte 4.5.0.0, the installation succeeded.

To have NMO generate non-English messages in a non-English environment, also install the appropriate NMO language pack:

- To install the French language pack, type the following command:

```
installp -a -d /dir_pathname LGTONmo.nmofr.rte
```

- To install the Japanese language pack, type the following command:

```
installp -a -d /dir_pathname LGTONmo.nmoja.rte
```

- To install the Korean language pack, type the following command:

```
installp -a -d /dir_pathname LGTONmo.nmoko.rte
```

- To install the Simplified Chinese language pack, type the following command:

```
installp -a -d /dir_pathname LGTONmo.nmozh.rte
```

Note: Before you install an NMO language pack, ensure that:

- The NMO software is installed.
- The corresponding NetWorker language pack is installed.

- ◆ To invoke the SMIT GUI program, perform the following:

- a. Type the following command:

```
smitty install_latest
```

- b. In the **Entry Field**, type the location of the NMO installation software as the complete pathname of the directory described in [“Task 1: Access the software”](#) on page 30.

- c. Select the option **SOFTWARE to install**.

- d. Type **yes** in response to the following prompts:

```
Accept new license agreements?
```

```
Preview new license agreements?
```

- e. Select **F4=List** to display the list of NMO software packages.

- f. Select **LGTONmo.rte** to install the NMO software.

To have NMO generate non-English messages in a non-English environment, also select the appropriate NMO language pack for installation:

- Select **LGTONmo.nmofr.rte** for the French language pack.
- Select **LGTONmo.nmoja.rte** for the Japanese language pack.

- Select **LGTONmo.nmoko.rte** for the Korean language pack.
- Select **LGTONmo.nmozh.rte** for the Simplified Chinese language pack.

Note: Before you install an NMO language pack, ensure that:

- The NMO software is installed.
- The corresponding NetWorker language pack is installed.

- g. Select **Install and Update Software**.
- h. Press **Enter** to begin the installation.

How to install on HP-UX

To have NMO generate non-English messages in a non-English environment, install the appropriate NMO language pack in addition to the English NMO software.

Note: Before you install an NMO language pack, ensure that the corresponding NetWorker language pack is installed. NMO 4.5 does *not* support language packs on HP-UX Itanium.

To install on an HP-UX system that does not contain the software, type the **swinstall** command to invoke either the command line interface or the GUI program:

- ◆ To invoke the **swinstall** command line interface, type the appropriate command:
 - To install the English NMO software and the Japanese language pack, type the following command:

```
swinstall -x mount_all_filesystems=false
-s /dir_pathname/LGTONmo.pkg NMO
```

where */dir_pathname* is the complete pathname of the directory containing the software package, as described in [“Task 1: Access the software”](#) on page 30.

- To install the English NMO software and the French, Japanese, Korean, and Simplified Chinese language packs, type both of the following commands:
- ```
swinstall -x mount_all_filesystems=false
-s /dir_pathname/LGTONmo.pkg NMO
swinstall -x mount_all_filesystems=false
-s /dir_pathname/LGTONmolp.pkg NMO
```
- ◆ To invoke the **swinstall** GUI program, type the appropriate command:
    - To install the English NMO software and the Japanese language pack, type the following command:

```
swinstall -x mount_all_filesystems=false -i
-s /dir_pathname/LGTONmo.pkg NMO
```

- a. From the **Actions** menu, select **Install (analysis)**.

When the analysis is complete, a “Ready with Warnings” message appears. This is normal.

- b. Click **OK**.

- To install the English NMO software and the French, Japanese, Korean, and Simplified Chinese language packs, type both of the following commands:

```
swinstall -x mount_all_filesystems=false -i
-s /dir_pathname/LGTONmo.pkg NMO
swinstall -x mount_all_filesystems=false -i
-s /dir_pathname/LGTONmolp.pkg NMO
```

For both commands, perform the following:

- a. From the **Actions** menu, select **Install (analysis)**.

When the analysis is complete, a “Ready with Warnings” message appears. This is normal.

- b. Click **OK**.

## How to install on Linux



### IMPORTANT

The software must be installed in the same base directory as the NetWorker client software. The software is *relocatable* during the installation on Linux, but *only* to the same relocation path as the NetWorker client. For example, if the NetWorker client software is installed in the /disk1 (nondefault) directory, NMO must also be installed in the /disk1 directory.

To install on a Linux system that does not contain the software, type the appropriate **rpm** commands:

- ◆ On Linux AMD64/EM64T:

- To install the NMO software in the default directory:

```
rpm -i --nodeps lgtonmo-4.5-1.x86_64.rpm
```

To have NMO generate non-English messages in a non-English environment, also install the appropriate NMO language pack:

- To install the French language pack:

```
rpm -i --nodeps --replacefiles lgtonmofr-4.5-1.x86_64.rpm
```

- To install the Japanese language pack:

```
rpm -i --nodeps --replacefiles lgtonmoja-4.5-1.x86_64.rpm
```

- To install the Korean language pack:

```
rpm -i --nodeps --replacefiles lgtonmoko-4.5-1.x86_64.rpm
```

- To install the Simplified Chinese language pack:

```
rpm -i --nodeps --replacefiles lgtonmozh-4.5-1.x86_64.rpm
```

**Note:** Before you install an NMO language pack, ensure that:

- The NMO software itself is installed.
- The corresponding NetWorker language pack is installed.

- To relocate the NMO software to the same relocation path as the NetWorker client:

```
rpm -i --nodeps lgtonmo-4.5-1.x86_64.rpm --relocate
/usr=NetWorker_base_directory
```

**Note:** To relocate the software during the installation, type the **--relocate** option for the /usr directory only, *not* for individual subdirectories.

◆ On Linux Intel:

- To install the NMO software in the default directory:

```
rpm -i lgtonmo-4.5-1.i686.rpm
```

To have NMO generate non-English messages in a non-English environment, also install the appropriate NMO language pack:

- To install the French language pack:

```
rpm -i --replacefiles lgtonmofr-4.5-1.i686.rpm
```

- To install the Japanese language pack:

```
rpm -i --replacefiles lgtonmoja-4.5-1.i686.rpm
```

- To install the Korean language pack:

```
rpm -i --replacefiles lgtonmoko-4.5-1.i686.rpm
```

- To install the Simplified Chinese language pack:

```
rpm -i --replacefiles lgtonmozh-4.5-1.i686.rpm
```

---

**Note:** Before you install an NMO language pack, ensure that:

- The NMO software itself is installed.
  - The corresponding NetWorker language pack is installed.
- 

- To relocate the NMO software to the same relocation path as the NetWorker client:

```
rpm -i lgtonmo-4.5-1.i686.rpm --relocate
/usr=NetWorker_base_directory
```

---

**Note:** To relocate the software during the installation, type the **--relocate** option for the **/usr** directory only, *not* for individual subdirectories.

---

◆ On Linux Itanium:

- To install the NMO software in the default directory:

```
rpm -i --nodeps lgtonmo-4.5-1.ia64.rpm
```

- To relocate the NMO software to the same relocation path as the NetWorker client:

```
rpm -i --nodeps lgtonmo-4.5-1.ia64.rpm --relocate
/usr=NetWorker_base_directory
```

---

**Note:** To relocate the software during the installation, type the **--relocate** option for the **/usr** directory only, *not* for individual subdirectories.

---

To verify that the installation succeeded, type the **rpm -aq** command:

```
rpm -aq | grep -i lgto
```

If the **rpm -aq** command output includes the appropriate lines, the installation succeeded:

- ◆ For the English NMO software:

```
lgtocInt-7.4-1
lgtonmo-4.5-1
```

---

**Note:** If NetWorker server software is also installed on the Linux system, the **rpm -aq** command produces other output lines in addition to these two lines.

---

- ◆ For the French language pack:
  - lgtofr-7.4-1
  - lgtonmofr-4.5-1
- ◆ For the Japanese language pack:
  - lgtoja-7.4-1
  - lgtonmoja-4.5-1
- ◆ For the Korean language pack:
  - lgtoko-7.4-1
  - lgtonmoko-4.5-1
- ◆ For the Simplified Chinese language pack:
  - lgtozh-7.4-1
  - lgtonmzh-4.5-1

### How to install on Solaris

On a Solaris system, you can install the NMO software (and NMO language packs, if required) and/or the configuration wizard library (packaged with NMO).

- ◆ If NMO is to run on Solaris *without* the configuration wizard, install NMO *without* the wizard library.
- ◆ If the configuration wizard is to run on Solaris and NMO is to run on a *remote* system, install the wizard library *only*.
- ◆ If *both* NMO and the configuration wizard are to run on Solaris, install *both* NMO and the wizard library.



#### IMPORTANT

If the Solaris system has Solaris zones and NMO 4.5 is to run on a sparse root zone, install NMO on *both* the global zone and the sparse root zone:

1. Install NMO on the global zone.
2. Install NMO on each required sparse root zone.

Perform all NMO installs by using the `pkgadd` command, as described in the following steps. [Table 8 on page 69](#) provides information on the NMO uninstall procedures on Solaris zones.

To install on a Solaris system that does not contain the software, perform the following:

1. Verify the `basedir` variable setting in the `/var/sadm/install/admin/default` file. The `basedir` variable in this file can be set to one of three possible values:
  - If `basedir=default`, the software will be installed in the same directory as the NetWorker client software.
  - If `basedir=ask`, you will be prompted for the name of the base directory where the software will be installed.
  - If `basedir=/dirpath`, the software will be installed in the `/dirpath` directory. The `/dirpath` must be the pathname of the NetWorker client software base directory, as determined by this `pkgparam` command:

```
pkgparam LGTOclnt BASEDIR
```



## IMPORTANT

The software must be installed in the same base directory as the NetWorker client software. The software is *relocatable* during the installation on Solaris, but *only* to the same relocation path as the NetWorker client. For example, if the NetWorker client software is installed in the /disk1 (nondefault) directory, NMO must also be installed in the /disk1 directory.

2. Type the following **pkgadd** commands, as appropriate:

- To install the NMO software, type this command:

```
pkgadd -d /dir_pathname LGTONmo
```

- To install the configuration wizard library, type this command:

```
pkgadd -d /dir_pathname LGTONmowz
```

where */dir\_pathname* is the complete pathname of the directory containing the LGTONmo or LGTONmowz package.

- To have NMO generate non-English messages in a non-English environment, also install the appropriate NMO language pack:

- To install the French language pack, type this command:

```
pkgadd -d /dir_pathname LGTONmofr
```

- To install the Japanese language pack, type this command:

```
pkgadd -d /dir_pathname LGTONmoja
```

- To install the Korean language pack, type this command:

```
pkgadd -d /dir_pathname LGTONmoko
```

- To install the Simplified Chinese language pack, type this command:

```
pkgadd -d /dir_pathname LGTONmozh
```

---

**Note:** Before you install an NMO language pack, ensure that:

- The NMO software is installed.
  - The corresponding NetWorker language pack is installed.
- 

3. Complete the NMO installation, depending on the basedir variable setting in the /var/sadm/install/admin/default file.

- If basedir=default in the file, type **y** when prompted whether to continue the installation.

The software is installed in the same directory as the NetWorker client software.

- If basedir=ask in the file, perform the following:

a. Type the result of the **pkgparam LGTOclnt BASEDIR** command when prompted for the pathname of the base directory.

b. Type **y** when prompted whether to continue the installation.

The software is installed in the specified base directory.

---

**Note:** If an incorrect pathname is typed at the prompt, the installation displays an error and the software is installed in the incorrect directory. In this case, uninstall the software by typing the **pkgrm LGTONmo** command and reinstall it by typing the correct pathname at the first **pkgadd** prompt.

---

- If `basedir=/dirpath` in the file, type **y** when prompted whether to continue the installation.

The software is installed in the specified `/dirpath` directory.

---

**Note:** If `/dirpath` is *not* the base directory where the NetWorker client software is installed, the installation displays an error and the software is installed in the incorrect directory. In this case:

- Uninstall the software by using the `pkgrm LGTONmo` command.
  - Correct `basedir=/dirpath` in the `/var/sadm/install/admin/default` file.
  - Reinstall the software.
- 

### How to install on Tru64 UNIX

To install on a Tru64 UNIX system that does not contain the software, perform the following:

1. Type the following `setld` command:
 

```
setld -1 .
```
2. At the prompt, select to install the LGTONMO450 subset.
3. When the subset installation is complete and the prompt appears, type **q** to exit.

---

### Task 3: Link the NMO library file

After installing the NMO software, you need to link the module library file with the Oracle Server for *each* Oracle installation that will use the module software for its backups. Depending on the operating system and Oracle Server release, the commands to link the library perform one or both of the following:

- ◆ Replace a symbolic link to the NMO library.
- ◆ Relink the library with the Oracle libraries.

### Guidelines for using the linking commands

[Table 3 on page 41](#) lists the commands for linking the module library file. Use the following guidelines for the commands on a UNIX or Linux system:

- ◆ A default NMO installation is assumed, with the NMO library file installed in the default directory, `/usr/lib`.
- ◆ The commands apply only to Oracle *base* releases (if available). Link instructions might vary with patched releases of the Oracle Server.
- ◆ The Oracle Server release is assumed to be 32-bit unless stated otherwise.

### How to link the NMO library file

Perform this procedure for *each* Oracle installation that will use the module software for its backups.

---

**Note:** You are *not* required to shut down and restart Oracle instances that use the `ORACLE_HOME` when linking the library file.

---

To link the module library file with the Oracle Server:

1. Log in as the `ORACLE_HOME` owner:

```
su ORACLE_HOME_owner
```



2. Type the appropriate linking commands from [Table 3 on page 41](#).
  - If the software was *not* relocated during the installation, type the linking commands from the table.
  - If the software was relocated to the *relocation\_path* directory during the installation, do one of the following:
    - Copy the *libnwora.\** library file to the default directory */usr/lib*, and type the linking commands from the table.
    - Type the linking commands, replacing the default pathname */usr/lib/libnwora.\** with *relocation\_path/libnwora.\**.

---

**Note:** On HP-UX Itanium, the linking command includes the *libnwora.so* and *libobk.so* files, which have a different filename extension from the *libnwora.sl* and *libobk.sl* files on HP-UX PA-RISC.

---

**Table 3** Linking commands for Oracle library file installation on UNIX or Linux

| On this system:   | With these Oracle releases:      | Type these commands to change the symbolic link:                                             |
|-------------------|----------------------------------|----------------------------------------------------------------------------------------------|
| AIX               | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.a libobk.a</code>     |
| HP-UX Itanium     | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.so libobk.so</code>   |
| HP-UX PA-RISC     | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.sl libobk.sl</code>   |
| Linux AMD64/EM64T | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.so libobk.so</code>   |
| Linux Intel       | 9.x<br>10.x                      | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.so libobk.so</code>   |
| Linux Itanium     | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.so libobk.so</code>   |
| Solaris           | 9.x<br>9.x 64-bit<br>10.x 64-bit | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/lib/libnwora.so libobk.so</code>   |
| Tru64 UNIX        | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>ln -s /usr/shlib/libnwora.so libobk.so</code> |

#### Task 4: Enable the software

After installation, enable the NMO software by using the instructions in [Chapter 6, "Licensing and Enabling the Software."](#)

If required, register the configuration wizard libraries, as described in [Appendix A, "Registering the Configuration Wizard."](#)

After the software installation, NMO must be properly configured for Oracle data backup and restore operations. The NetWorker Module for Oracle Administration Guide provides more information.

## Installing on a cluster or RAC system

NMO release 4.5 supports the following UNIX cluster and RAC systems:

- ◆ AIX with IBM's High Availability Cluster Multiprocessing (HACMP)
- ◆ HP-UX with MC/ServiceGuard (for cluster) and MC/Lock Manager (for RAC)
- ◆ Solaris with Sun Cluster
- ◆ Solaris with VERITAS Cluster
- ◆ Tru64 UNIX with TruCluster

The current Software Compatibility Guide on the EMC website provides details on the operating system and Oracle versions supported with cluster and RAC systems.

Install NMO on *each* required node of a cluster to be used for backup and restore operations:

1. Meet all the requirements in ["Installation requirements"](#) on page 24.
2. Follow the instructions in ["Installing on a single Oracle Server host"](#) on page 30.

The NetWorker client software for a supported cluster platform might not be certified to run in the cluster environment. This will *not*, however, affect the functionality of NMO on the cluster or RAC system.

The NetWorker client software (certified or not) on the cluster platform can:

- ◆ Be installed and configured along with NMO on each node of the cluster.
- ◆ Work with NMO to perform Oracle backups and restores through Recovery Manager (RMAN) scripts.



### **IMPORTANT**

**To back up and restore important Oracle files, such as `initoracle_sid.ora`, that are not backed up or restored through RMAN scripts, use NetWorker client software that is certified for the cluster.**

---

This chapter includes the following sections:

- ◆ [Installing on a single Oracle Server host.....](#) 44
- ◆ [Installing on a cluster or RAC system.....](#) 52
- ◆ [Maintaining the installation on Microsoft Windows .....](#) 53

## Software installation path on Microsoft Windows

This guide refers to the root directory of the NetWorker installation path on Microsoft Windows by using the variable *NetWorker\_install\_path*. The actual location represented by this variable depends on when and how the NetWorker software was installed on the Windows platform.

For new installations of NetWorker release 7.x, the default location is *%SystemDrive%\Program Files\Legato\nsr*.

The installation path is not changed during a NetWorker update. For example, an installation of NetWorker release 6.x software that has been updated to release 7.x has the default installation path *%SystemDrive%\Program Files\nsr*.

In NetWorker documentation, references to locations under the installation root use the *NetWorker\_install\_path* variable in the path statement. For example, the *daemon.raw* file is located in the *NetWorker\_install\_path\logs* directory.

**Note:** During a NetWorker installation, you can specify a nondefault location. The appropriate NetWorker Installation Guide provides more information on NetWorker installation procedures.

## Installing on a single Oracle Server host

To install and enable the NetWorker Module for Oracle (NMO) release 4.5 on a single Oracle Server host with a supported Microsoft Windows operating system, perform the following tasks:

- ◆ [“Task 1: Access the software” on page 44](#)
- ◆ [“Task 2: Install and enable the software” on page 46](#)



### IMPORTANT

**After the installation, if the NetWorker software on the Oracle Server host is updated and the NetWorker client installation directory is changed to a different location, the NMO software must be:**

1. Uninstalled according to the instructions in [“Uninstalling on Microsoft Windows” on page 70](#).
2. Reinstalled according to the [“Installation roadmap” on page 24](#).

### Task 1: Access the software

The NMO software is distributed in the following forms:

- ◆ On the NetWorker Modules CD-ROM, which is included in the EMC Information Protection Media Kit that contains the software and online documentation for related products
- ◆ In the downloadable file of the *evaluation* software, available from the EMC website

Access the NMO software files from any of the following sources:

- ◆ [“From a local CD-ROM” on page 45](#)
- ◆ [“From a remote CD-ROM” on page 45](#)
- ◆ [“From the EMC website” on page 45](#)

## From a local CD-ROM

To access the software files on an Oracle Server host with a local CD-ROM drive:

1. Log in as administrator on the Oracle Server host.
2. Insert the NetWorker Module CD-ROM into the CD-ROM drive.
3. Select the CD-ROM drive in Windows Explorer.
4. Go to the correct directory on the CD-ROM, as described in [Table 4 on page 45](#).

**Table 4** Directory that contains the software

| On this system:     | Go to this directory: |
|---------------------|-----------------------|
| Windows AMD64/EM64T | oracle\win_x64        |
| Windows Intel       | oracle\win_x86        |
| Windows Itanium     | oracle\win_ia64       |

5. Continue with [“Task 2: Install and enable the software” on page 46](#).

## From a remote CD-ROM

To access the software files from a remote CD-ROM drive:

1. Insert the NetWorker Module CD-ROM into the CD-ROM drive on the remote Windows computer.
2. Mount the CD-ROM drive as a shared network volume.  
Your Microsoft Windows documentation provides information on how to mount and share volumes over a network.
3. Log in as administrator on the local Oracle Server host.
4. Map a drive to the shared volume that was created on the remote computer.



### **IMPORTANT**

**The use of other methods to access the shared volume, such as navigating to the volume by using the Network Neighborhood, produces an error message during the software installation.**

5. On the mapped drive, go to the correct directory, as described in [Table 4 on page 45](#).
6. Continue with [“Task 2: Install and enable the software” on page 46](#).

## From the EMC website



### **IMPORTANT**

**The NMO software downloaded from the EMC website does *not* include an enabler code. The software can only be *evaluated*. [Chapter 6, “Licensing and Enabling the Software,”](#) provides more information on enabling NMO.**

To access the *evaluation* release of the NMO software from the EMC website:

1. Log in as administrator on the Oracle Server host.

2. Create a temporary installation directory in a local file system with sufficient free disk space (6 MB) to contain the downloaded software file. For example:
 

```
mkdir c:\instdir
```
3. Go to <http://Powerlink.EMC.com>.
4. Select **Support > Downloads and Patches > Downloads D-R > NetWorker Module**.
5. In the table of NetWorker Module Software Downloads, click the **NetWorker Module for Oracle Version 4.5** for the particular Windows platform.
6. Download the NMO software file to the temporary directory you created, for example, C:\instdir.
7. Unzip the downloaded software file, as shown in [Table 5 on page 46](#).
8. Go to the correct directory, as shown in [Table 5 on page 46](#).

**Table 5** Zipped download file and correct directory for install

| On this system:     | Unzip this downloaded file: | Then go to this directory: |
|---------------------|-----------------------------|----------------------------|
| Windows AMD64/EM64T | nmo45_win_x64.zip           | win_x64                    |
| Windows Intel       | nmo45_win_x86.zip           | win_x86                    |
| Windows Itanium     | nmo45_win_ia64.zip          | win_ia64                   |

9. Continue with [“Task 2: Install and enable the software” on page 46](#).

## Task 2: Install and enable the software

Once you have accessed the NMO software files, you are ready to begin the installation.

**Note:** If you plan to use the NetWorker configuration wizard on Windows (*except* Itanium), you must *first* install the NetWorker 7.2 or later server or client (install NetWorker 7.4 if NMO will be on the *same* system as the wizard), and then install the configuration wizard. You can then install NMO. The appropriate NetWorker documentation provides more information on the configuration wizard.

Follow the appropriate instructions to install and enable the NMO software on Windows:

- ◆ [“How to install on all Windows platforms except Itanium” on page 46](#)
- ◆ [“How to install on a Windows Itanium platform” on page 51](#)

### How to install on all Windows platforms except Itanium

To install the NMO software on all Windows platforms *except* Itanium:

1. Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 24](#).
2. Ensure that you are logged in as the Windows system administrator on the Oracle Server host.
3. Ensure that no Oracle backups are running.

4. Ensure that you are in the correct directory containing the NMO installation files, as described in [“Task 1: Access the software” on page 44](#).

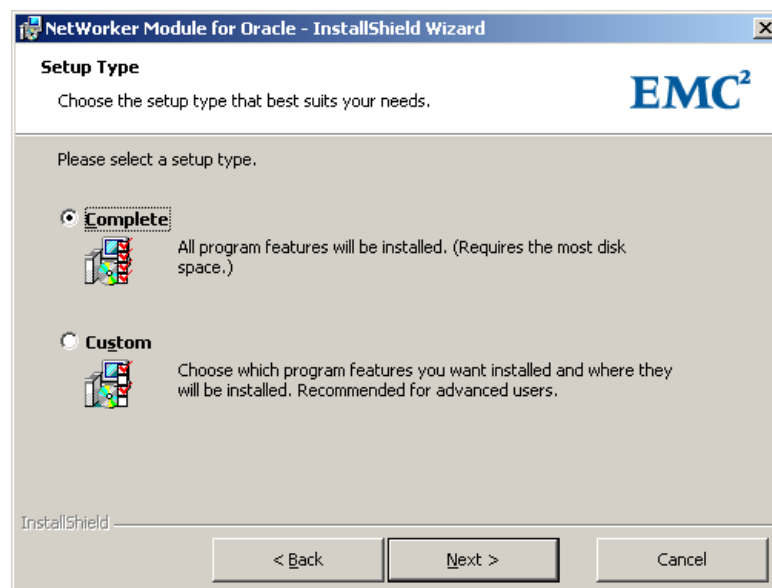
**Note:** If the installation is *not* started from the correct directory, the installation might fail.

5. Run the NMO installer program, `nmo\networkr\setup.exe`, either from the NetWorker Module CD-ROM or from the temporary installation directory created during the software download from the EMC website.

When first invoked, the NMO installer displays messages in the language used by the NetWorker client installer, as determined from the Windows registry.

6. In the **Choose Setup Language** dialog box, select a language to use on the installer screens. All subsequent messages in the installer are displayed in the chosen language.
7. In the **Welcome** dialog box, click **Next**.
8. In the **License Agreement** dialog box, scroll down to read the license agreement. If you accept the terms, select the appropriate option and click **Next**.

The **Setup Type** dialog box appears, as shown in [Figure 1 on page 47](#).



**Figure 1** Setup Type dialog box

9. In the **Setup Type** dialog box, select one of the following and click **Next**.
  - **Complete** — Allows you to install both NMO and the configuration wizard library. If you select this option, continue to [Step 11](#).
  - **Custom** — Allows you to select NMO, the configuration wizard library, and the Japanese language pack (or combinations of these components) for installation. If you select this option, the **Custom Setup** dialog box appears.

**Note:** If you use the **Custom** option to install NMO *only*, you can rerun the **Setup** program later in maintenance mode to install the configuration wizard library and/or Japanese language pack by following the instructions in [“Maintaining the installation on Microsoft Windows” on page 53](#).

10. If you selected **Complete** in the previous step, continue to [Step 11](#).

If you selected **Custom** in the previous step, specify each NMO component to be installed by clicking each icon and selecting the appropriate menu option. Click **Next**.

**Note:** Do *not* install the Japanese language pack without also installing the NMO software.

For example, to install NMO only *without* the configuration wizard library or Japanese language pack:

- Click the **NMO Module** icon, and select **This feature will be installed on local hard drive**.
- Click the **NMO Configuration Wizard** icon, and select **This feature will not be available**, as shown in [Figure 2](#) on page 48.
- Click the **Japanese Language Pack** icon, and select **This feature will not be available**.

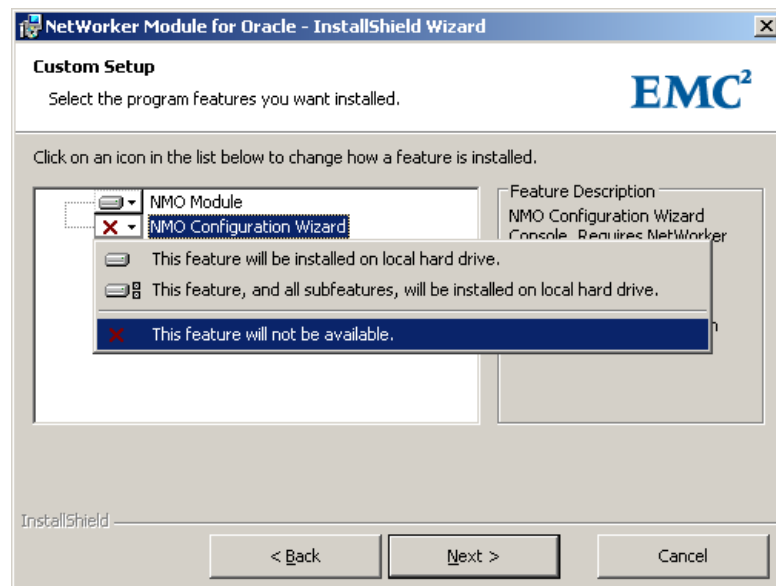
**Note:** You *cannot* unselect the English language pack for installation.

- Click **Next**.



### IMPORTANT

**If the NetWorker configuration wizard is located on a separate computer, install NMO only on the Oracle Server. Install the NMO configuration wizard component on the computer that contains the configuration wizard.**



**Figure 2** Custom Setup dialog box: Installing NMO only

11. In the **Ready to Install the Program** dialog box, click **Install**.

The **Setup** program installs the NMO binaries in the same directory as the NetWorker client binaries (the `NetWorker_install_path\bin` directory) by default.



**Note:** If the **Setup** program detects *no* NetWorker client binaries, it displays an error message and exits *without* installing the NMO software.

12. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the installation program.
13. To install the French, Korean, and Simplified Chinese language packs, follow the instructions in [“How to install French, Korean, and Simplified Chinese language packs”](#) on page 49.
14. Verify that the system PATH environment variable includes the NetWorker client installation directory. If required, add the NetWorker client installation directory to the system PATH variable.



### **IMPORTANT**

The NetWorker client directory pathname may include spaces. Do *not* include any spaces *before* or *after* the NetWorker client directory pathname in the system PATH environment variable. If there are any spaces before or after the pathname in the variable, the Oracle software cannot locate the NMO library file, `orasbt.dll`, during backup and restore operations.

15. Reboot the Windows system, and verify that the Oracle instances and services were restarted.
16. Enable and register the NMO software according to [Chapter 6, “Licensing and Enabling the Software.”](#)
17. Ensure that the hostname of the computer running the wizard is included in the file `NetWorker_install_path\res\servers` on the NMO client (or the `servers` file is empty). If the `servers` file is *not* empty, it must also include the hostnames of all the NetWorker servers authorized to back up the NMO client. The `servers` file is a text file, which can be modified by using a text editor.
18. If required, register the configuration wizard libraries, as described in [Appendix A, “Registering the Configuration Wizard.”](#)

After the software installation, NMO must be properly configured for Oracle data backup and restore operations. The NetWorker Module for Oracle Administration Guide provides more information.

### **How to install French, Korean, and Simplified Chinese language packs**



### **IMPORTANT**

Before you can install the French, Korean, and Simplified Chinese language packs, the NMO software must be installed according to the instructions in [“How to install on all Windows platforms except Itanium”](#) on page 46.

To install the French, Korean, and Simplified Chinese language packs on all Windows platforms *except* Itanium:

1. Run the language pack installer program, `nmolp\networkr\setup.exe`, either from the NetWorker Module CD-ROM or from the temporary installation directory created during the software download from the EMC website.
2. In the **Choose Setup Language** dialog box, select a language (English, French, Korean, or Simplified Chinese) to use on the installer screens. All subsequent messages in the installer are displayed in the chosen language.
3. In the **Welcome** dialog box, click **Next**.

4. In the **License Agreement** dialog box, scroll down to read the license agreement. If you accept the terms, select the appropriate option and click **Next**.

The **Setup Type** dialog box appears.

5. In the **Setup Type** dialog box, select one of the following and click **Next**.
  - **Complete** — Allows you to install the default language pack *only*, which corresponds to the current operating system language. If you select this option, continue to [Step 7](#).
  - **Custom** — Allows you to select the French, Korean, or Simplified Chinese language pack (or any combination of these language packs) for installation. If you select this option, the **Custom Setup** dialog box appears.

**Note:** If you use the **Custom** option to install a language pack, you can rerun the **Setup** program later in maintenance mode to install another language pack by following the instructions in [“Maintaining the installation on Microsoft Windows”](#) on page 53.

6. If you selected **Complete** in the previous step, continue to [Step 7](#).

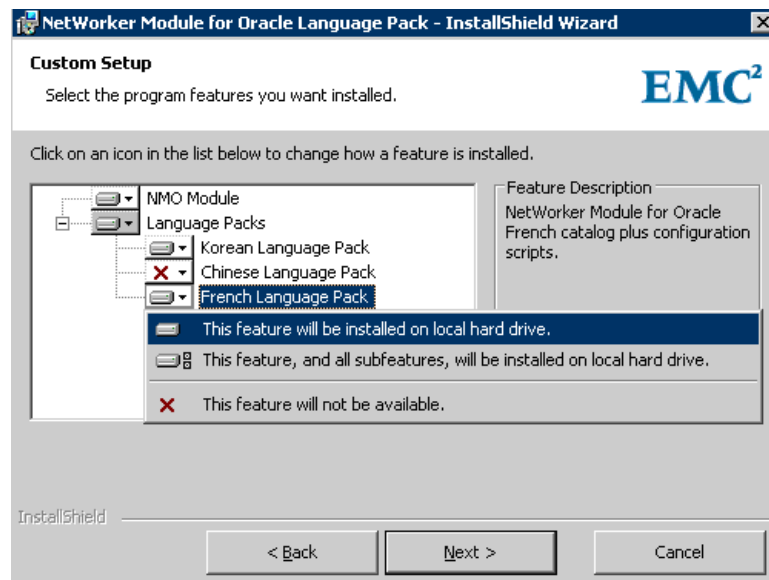
If you selected **Custom** in the previous step, specify each language pack to be installed by clicking each icon and selecting the appropriate menu option. Click **Next**.

For example, to install both the French and Korean language packs:

- a. Click the **Korean Language Pack** icon, and select **This feature will be installed on local hard drive**.
- b. Click the **Chinese Language Pack** icon, and select **This feature will not be available**.
- c. Click the **French Language Pack** icon, and select **This feature will be installed on local hard drive**, as shown in [Figure 3](#) on page 50.

**Note:** You *cannot* unselect the English language pack.

- d. Click **Next**.



**Figure 3** Custom Setup dialog box: Installing French and Korean language packs

7. In the **Ready to Install the Program** dialog box, click **Install**.

**Note:** After you have installed one or more of the French, Korean, and Simplified Chinese language packs, you can install and uninstall any of the language packs, as described in [“How to add and remove NMO components” on page 54](#).

8. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the installation program.

### How to install on a Windows Itanium platform

To install the NMO software on a Windows Itanium platform:

1. Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 24](#).
2. Ensure that you are logged in as the Windows system administrator on the Oracle Server host.
3. Ensure that no Oracle backups are running.
4. Ensure that you are in the correct directory containing the NMO installation files, as described in [“Task 1: Access the software” on page 44](#).

**Note:** If the installation is *not* started from the correct directory, the installation might fail.

5. Run the NMO installer program, **win\_ia64\networkr\setup.exe**, either from the NetWorker Module CD-ROM or from the temporary installation directory created during the software download from the EMC website.
6. In the **Welcome** dialog box, click **Next**.
7. In the **License Agreement** dialog box, scroll down to read the license agreement. If you accept the terms, select the appropriate option and click **Next**.

The **Ready to Install the Program** dialog box appears, as shown in [Figure 4 on page 51](#).

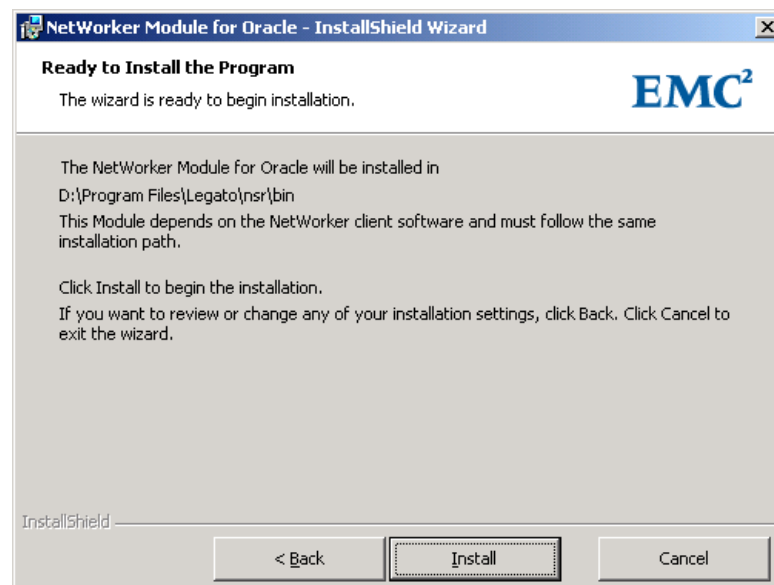


Figure 4 Ready to Install the Program dialog box

8. In the **Ready to Install the Program** dialog box, click **Install**.
9. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the installation program.
10. Verify that the system PATH environment variable includes the NetWorker client installation directory. If required, add the NetWorker client installation directory to the system PATH variable.



### **IMPORTANT**

**The NetWorker client directory pathname may include spaces. Do *not* include any spaces *before* or *after* the NetWorker client directory pathname in the system PATH environment variable. If there are any spaces before or after the pathname in the variable, the Oracle software cannot locate the NMO library file, `orasbt.dll`, during backup and restore operations.**

11. Reboot the Windows system, and verify that the Oracle instances and services were restarted.
12. Enable and register the NMO software according to [Chapter 6, "Licensing and Enabling the Software."](#)
13. Ensure that the hostname of the computer running the wizard is included in the file `NetWorker_install_path\res\servers` on the NMO client (or the `servers` file is empty). If the `servers` file is *not* empty, it must also include the hostnames of all the NetWorker servers authorized to back up the NMO client. The `servers` file is a text file, which can be modified by using a text editor.
14. If required, register the configuration wizard libraries, as described in [Appendix A, "Registering the Configuration Wizard."](#)

After the software installation, NMO must be properly configured for Oracle data backup and restore operations. The NetWorker Module for Oracle Administration Guide provides more information.

## **Installing on a cluster or RAC system**

On a Windows cluster or RAC system, NMO supports any clustering software that Oracle supports.

The current Software Compatibility Guide on the EMC website provides details on the operating system and Oracle versions supported with cluster and RAC systems.

Install NMO on *each* required node of a cluster to be used for backup and restore operations:

1. Meet all the requirements in ["Installation requirements"](#) on page 24.
2. Follow the instructions in ["Installing on a single Oracle Server host"](#) on page 44.

The NetWorker client software for a supported cluster platform might not be certified to run in the cluster environment. This will *not*, however, affect the functionality of NMO on the cluster or RAC system.

The NetWorker client software (certified or not) on the cluster platform can:

- ◆ Be installed and configured along with NMO on each node of the cluster.
- ◆ Work with NMO to perform Oracle backups and restores through RMAN scripts.



### IMPORTANT

To back up and restore important Oracle files, such as `initoracle_sid.ora` that are not backed up or restored through RMAN scripts, use NetWorker client software that is certified for the cluster.

## Maintaining the installation on Microsoft Windows

After the NMO software is installed on Windows, you can run the **Setup** program in maintenance mode to modify, repair, or remove the existing installation.

### How to run the Setup program in maintenance mode

To run the **Setup** program in maintenance mode:

1. Ensure that you are logged in as the Windows system administrator on the Oracle Server host.
2. Ensure that no Oracle backups are running.
3. Go to the directory containing the NMO installation files, as described in [“Task 1: Access the software” on page 44](#), and run the program for the specific software:
  - Run `nmo\networkr\setup.exe` for the NMO software, configuration wizard, and Japanese language pack.
  - Run `nmolp\networkr\setup.exe` for the French, Korean, and Simplified Chinese language packs.
4. In the **Welcome** dialog box, click **Next**.

Depending on which `setup.exe` program was run in [Step 3](#), one of the following **Program Maintenance** dialog boxes appears, as shown in [Figure 5 on page 53](#) and [Figure 6 on page 54](#).

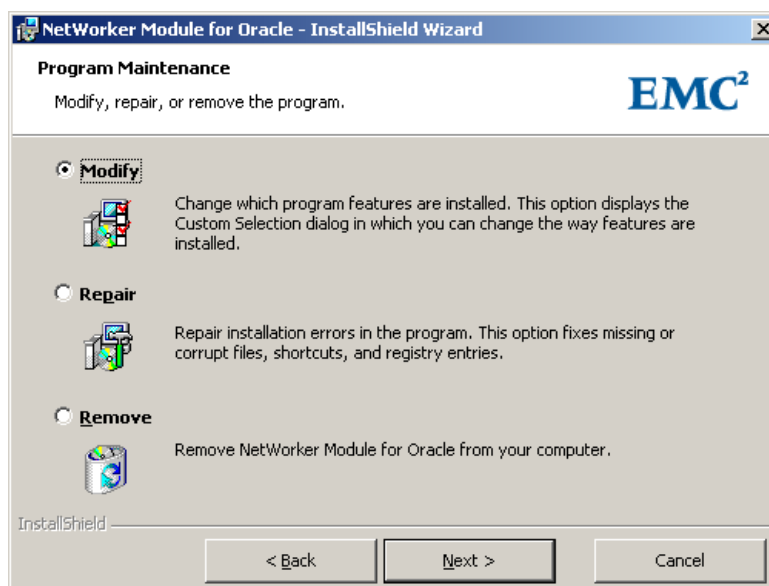
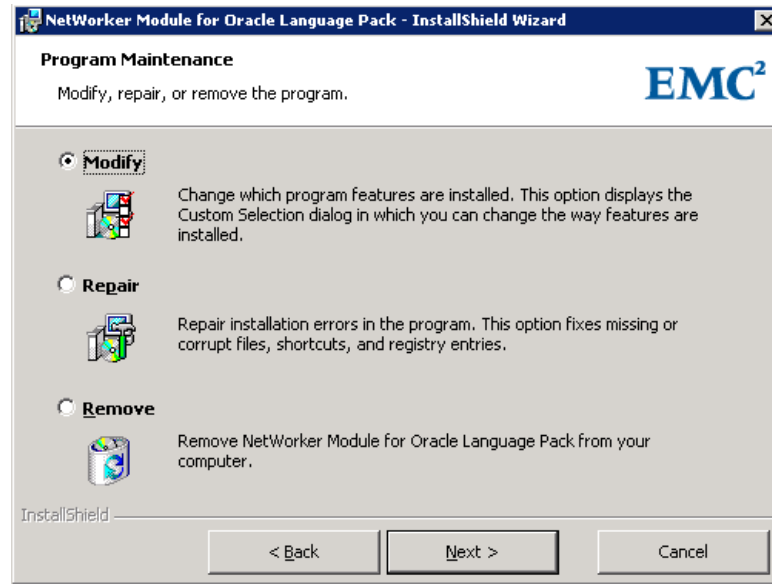


Figure 5 Program Maintenance dialog box for the NMO software



**Figure 6** Program Maintenance dialog box for additional language packs

5. Select the maintenance task to perform, and click **Next** to proceed to the task:
  - **Modify** — Allows you to add and remove the software components in the existing installation. [“How to add and remove NMO components” on page 54](#) provides details.
  - **Repair** — Allows you to replace missing or corrupted files in the existing installation. [“How to repair an NMO installation” on page 56](#) provides details.
  - **Remove** — Depending on which **setup.exe** program was run in [Step 3](#), allows you to remove the following:
    - With the **nmo\networkr\setup.exe** program, remove the NMO software, configuration wizard, and Japanese language pack.
    - With the **nmolp\networkr\setup.exe** program, remove the French, Korean, and Simplified Chinese language packs.
 You can also use the **Windows Control Panel Add or Remove** program to remove these components. [“Uninstalling on Microsoft Windows” on page 70](#) provides details.

## How to add and remove NMO components

To add and remove components in the existing NMO installation:

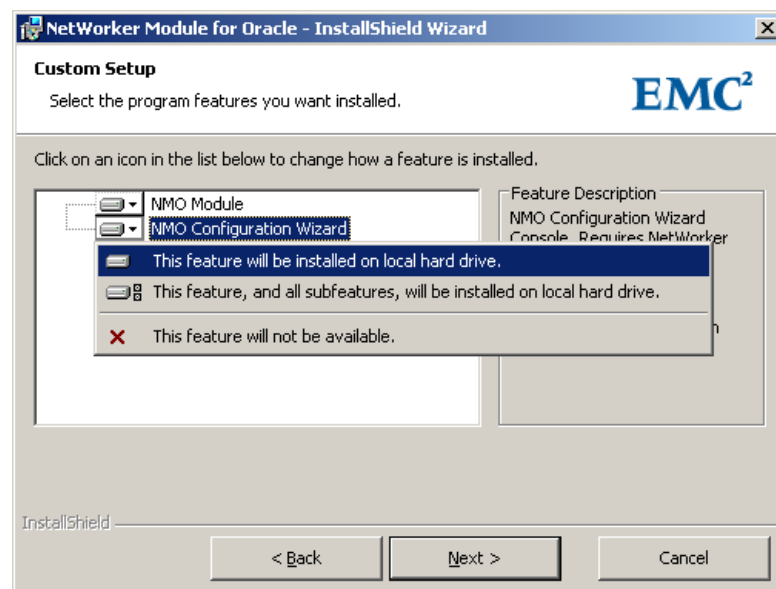
1. Start the the **Setup** program in maintenance mode. [“How to run the Setup program in maintenance mode” on page 53](#) provides details.
2. In the **Program Maintenance** dialog box, select **Modify** and click **Next**.
3. In the **Custom Setup** dialog box, click the icon of each NMO component and select the appropriate menu option. Click **Next**.
  - To specify that a component is to be installed, click its icon and select **This feature will be installed on local hard drive**.
  - To specify that a component is to be uninstalled, click its icon and select **This feature will not be available**.

In this dialog box, you can select specific language packs to be installed or uninstalled (*except* on Windows Itanium), as required.

**Note:** Before you install an NMO language pack, ensure that the NMO software and corresponding NetWorker language pack are installed.

Uninstall an NMO language pack *before* you uninstall the NMO software and corresponding NetWorker language pack.

For example, [Figure 7 on page 55](#) shows how to specify that the NMO configuration wizard library is to be installed. The NMO configuration wizard library is available for installation (*except* on Itanium) only if the NetWorker release 7.2 or later software has been installed. The NetWorker Module for Oracle Administration Guide provides more information about NMO support for the configuration wizard.



**Figure 7** Custom Setup dialog box: Installing the NMO configuration wizard library

4. In the **Ready to Modify the Program** dialog box, click **Install**.

The **Setup** program installs NMO binaries in the same directory as the NetWorker client binaries (the `NetWorker_install_path\bin` directory) by default. If the **Setup** program detects *no* NetWorker client binaries, it displays an error message and exits *without* installing the NMO software.

5. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the wizard.
6. After installing the NMO software:
  - a. Reboot the Windows system, and verify that the Oracle instances and services were restarted.
  - b. Enable and register the NMO software according to [Chapter 6, "Licensing and Enabling the Software."](#)

- c. Ensure that the hostname of the computer running the wizard is included in the file `NetWorker_install_path\res\servers` on the NMO client (or the servers file is empty). If the servers file is *not* empty, it must also include the hostnames of all the NetWorker servers authorized to back up the NMO client. The servers file is a text file, which can be modified by using a text editor.
- d. If required, register the configuration wizard libraries, as described in [Appendix A, "Registering the Configuration Wizard."](#)

---

## How to repair an NMO installation

To repair an existing NMO installation:

1. Start the **Setup** program in maintenance mode. ["How to run the Setup program in maintenance mode"](#) on page 53 provides details.
2. In the **Program Maintenance** dialog box, select **Repair**, and click **Next**.
3. In the **Ready to Repair the Program** dialog box, click **Install** to begin the installation. The **Setup** program reinstalls the NMO software files as required.
4. Reboot the Windows system, and verify that the Oracle instances and services were restarted.



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The chapter includes the following sections:

- ◆ How NetWorker software is licensed..... 58
- ◆ The evaluation process ..... 58
- ◆ The licensing process ..... 60
- ◆ Multiplatform licensing..... 64
- ◆ Managing licenses ..... 66

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## How NetWorker software is licensed

NetWorker software and added features, such as modules, are installed in evaluation mode with all of the features enabled. NetWorker software is licensed by the entry of enabler and authorization codes on the server for the NetWorker environment. Without these codes, the software or added features will *not* run beyond the evaluation period.

Each installation of NetWorker server software must be licensed with a base enabler. This enabler “turns on” the software and allows you to use a particular bundle of features, such as a specified number of clients and devices. All licensing takes place on the server. The licenses are entered and stored on the server. The server enforces the licensing.

Base enablers come in different editions, which enable varying degrees of functionality. Add-on enablers allow a broader scope of features.

The steps in this chapter assume that the NetWorker software is installed and that all of the software and hardware requirements have been met on the computer that will access the NetWorker Management Console.

---

## The evaluation process

You can evaluate NetWorker software two ways:

- ◆ By evaluating a new installation of the software on a NetWorker server
- ◆ By evaluating NetWorker features on an existing NetWorker installation

---

### Evaluating a new installation

When you first install the NetWorker software, you can evaluate it with all the modules and features for 30 days free without entering any codes.

By the end of the evaluation period, you must purchase, enter, and authorize a base enabler to continue to use the NetWorker software to back up data. The base enabler is the license that enables the edition purchased.

To continue to use some of the modules and features that were available with the evaluation software, you might need to purchase add-on enablers, depending on the edition of the base enabler.

---

### Evaluating features on an existing installation

If you are evaluating one or more NetWorker Modules or features on an edition of NetWorker software that has already been installed and enabled, enter a temporary enabler for each module or feature. The temporary enabler is valid for 45 days.

To obtain a temporary enabler code, do one of the following:

- ◆ Go to the <http://Powerlink.EMC.com> website, select **Support > Product Registration and License Keys**, and then follow the instructions for your product.
- ◆ Refer to the EMC Information Protection Media Kit.

“Temporary enabler code for NMO on UNIX” on page 60 provides important information on the temporary enabler code for NetWorker Module for Oracle (NMO) on UNIX.

By the end of the evaluation period, you must purchase, install, and authorize the corresponding license enablers to continue to use modules or features you have evaluated.

- ◆ “The licensing process” on page 60 provides instructions.
- ◆ “Multiplatform licensing” on page 64 provides information on the different NetWorker features.

## Entering a temporary enabler code



### CAUTION

The temporary enabler code is valid on only one computer in a network. If you enter the same code on more than one computer in a network, a copy protection violation error occurs and the NetWorker server software is disabled on all NetWorker servers with duplicate enablers.

## NetWorker server release 7.2.x or earlier

To enter the temporary enabler code:

### On UNIX

1. Log in as root or as NetWorker administrator on the NetWorker server.
2. Start the **NetWorker Administrator** program:
 

```
nwadmin &
```
3. From the **Server** menu, select **Registration**.  
The **Registration** window opens.
4. Click **Create**.
5. In the **Enabler Code** attribute, enter the enabler code.
6. (Optional) In the **Comment** attribute, enter a description of the license.
7. Click **Apply**.

### On Windows

1. Log in with administrator privileges to the NetWorker server.
2. Start the **NetWorker Administrator** program.
3. On the **Configure** tab, click **Registration**.  
The **Registration** window opens.
4. Right-click **Registration** and select **Create**.
5. In the **Create Registration** window, enter the enabler code in the **Enabler Code** attribute.
6. (Optional) In the **Comment** attribute, enter a description of the license.
7. Click **OK**.

## NetWorker server release 7.3 or later

To enter the temporary enabler code:

1. Start the **NetWorker Management Console** software.
2. Open the **Administration** window:
  - a. In the **Console** window, click **Enterprise**.
  - b. In the left pane, select a NetWorker server in the **Enterprise** list.
  - c. In the right pane, select the application.
  - d. From the **Enterprise** menu, click **Launch Application**.

The **Administration** window is launched as a separate application.
3. From the **Administration** window, click **Configuration**.
4. In the left pane, select **Registration**.
5. From the **File** menu, select **New**.
6. In the **Enabler Code** attribute, type the enabler code.
7. In the **Name** attribute, type the name of the license.
8. (Optional) In the **Comment** attribute, type a description of the license.
9. Click **OK**.

## Temporary enabler code for NMO on UNIX

In the Media Kit Contents document included with EMC media kits prior to February 2004, the temporary enabler code listed for NMO release 3.x on UNIX is incorrect.

---

**Note:** The same temporary enabler code (with part number 2154) applies to NMO releases 3.x and 4.x.

---

For the correct temporary enabler code for NMO releases 3.x and 4.x on UNIX, refer to one of the following:

- ◆ The updated Media Kit Contents document, dated February 2004 or later
- ◆ The Powerlink website (<http://Powerlink.EMC.com>)

---

## The licensing process

To permanently use NetWorker software, you must purchase and enter a license enabler code, and then authorize it. This licensing process is the same for all editions of NetWorker software as well as for individual modules and features.

The license enabler code that you purchase is valid for 45 days, as a registration period. During the registration period, you must obtain and enter a corresponding authorization code.

The following sections explain how to enter and authorize the license enabler:

- ◆ [“Task 1: Enter the license enabler code” on page 61](#)
- ◆ [“Task 2: Obtain an authorization code” on page 62](#)
- ◆ [“Task 3: Enter the authorization code” on page 63](#)

## Task 1: Enter the license enabler code

**Note:** To save time when entering multiple licenses, enter the base enabler last. Otherwise, once a base enabler is entered, devices that do not yet have licenses entered could become disabled. Those devices would have to be re-enabled manually after their licenses are installed.

### NetWorker server release 7.2.x or earlier

To enter the license enabler code:

#### On UNIX

1. Log in as root or as NetWorker administrator on the NetWorker server.
2. Start the **NetWorker Administrator** program:

```
nwadmin &
```

3. From the **Server** menu, select **Registration**.

The **Registration** window opens.

4. If the **Registration** list displays a temporary enabler for the product or feature being licensed, select the enabler and click **Delete**.
5. In the **Registration** window, click **Create**.
6. In the **Enabler Code** attribute, enter the enabler code.
7. (Optional) In the **Comment** attribute, enter a description of the license.
8. Click **Apply**.

Repeat [Step 1](#) to [Step 8](#) to add any additional enabler codes.

#### On Windows

1. Log in with administrator privileges to the NetWorker server.
2. Start the **NetWorker Administrator** program.
3. On the **Configure** tab, click **Registration**.  
The **Registration** window opens.
4. If a temporary enabler is listed, right-click the enabler and select **Delete**.
5. In the **Registration** window, right-click **Registration** and select **Create**.
6. In the **Create Registration** window, enter the enabler code in the **Enabler Code** attribute.
7. (Optional) In the **Comment** attribute, enter a description of the license.
8. Click **OK**.

Repeat [Step 1](#) to [Step 8](#) to add any additional enabler codes.

After you enter a license enabler code, you have 45 days as a registration period to authorize the NetWorker software.

## NetWorker server release 7.3 or later

To enter the license enabler code:

1. Start the **NetWorker Management Console** software.
2. Open the **Administration** window:
  - a. In the **Console** window, click **Enterprise**.
  - b. In the left pane, click a NetWorker server in the **Enterprise** list.
  - c. In the right pane, click the application.
  - d. From the **Enterprise** menu, select **Launch Application**.

The **Administration** window is launched as a separate application.

3. In the **Administration** window, click **Configuration**.
4. In the left pane, select **Registrations**.
5. From the **File** menu, select **New**.

The **Create Registration** dialog box appears.
6. In the **Enabler Code** attribute, type the enabler code.
7. In the **Name** attribute, type the name of the license.
8. (Optional) In the **Comment** attribute, type a description of the license.
9. Click **OK**.

The new license is added and appears in the right pane. Repeat [Step 1](#) to [Step 9](#) to add any additional enabler codes.

After you type a license enabler code, you have 45 days as a registration period to authorize the NetWorker software.

---

## Task 2: Obtain an authorization code

Registration of NetWorker software occurs by obtaining an authorization code.

To obtain a unique authorization code:

1. Go to the <http://Powerlink.EMC.com> website.
2. Select **Support > Product Registration and License Keys** and follow the instructions for your product.



### IMPORTANT

If the software or feature is *not* authorized by the end of the 45-day registration period, the NetWorker backup function or feature is disabled. However, data that was backed up during the registration period can still be recovered from local devices.

---

### Task 3: Enter the authorization code

To complete the licensing process, you must enter the unique authorization code on the NetWorker server within 45 days of entering the license enabler code.

If the authorization process is successful, the expiration date for the license displays “Authorized - No expiration date.” If the authorization is not verified in this way, contact the Powerlink website (<http://Powerlink.EMC.com>).

To avoid an interruption in scheduled backups if you move the NetWorker software from one computer to another, or to change the network address of a computer after the software is installed, perform one of the following:

- ◆ Obtain a new authorization code. You need the host ID of the original server as well as the new server. The host ID appears in the server’s Registration window.
- ◆ Install and configure the NetWorker License Manager software. “[Managing licenses](#)” on page 66 provides information on use of the NetWorker License Manager, and the latest NetWorker License Manager Installation and Administration Guide.

#### NetWorker server release 7.2.x or earlier

To enter the authorization code:

##### On UNIX

1. Log in as root or as NetWorker administrator on the NetWorker server.
2. Start the **NetWorker Administrator** program:

```
nwadmin &
```

3. From the **Server** menu, select **Registration**.

The **Registration** window opens.

4. Select the appropriate license.
5. In the **Auth Code** field, enter the authorization code.
6. Click **Apply**.

##### On Windows

1. Log in with administrator privileges to the NetWorker server.
2. Start the **NetWorker Administrator** program.

3. On the **Configure** tab, click **Registration**.

The **Registration** window opens.

4. Right-click the appropriate license and select **Edit**.
5. In the **Auth Code** field, enter the authorization code.
6. Click **OK**.

The license is now permanently enabled.

## NetWorker server release 7.3 or later

To enter the authorization code:

1. Start the **NetWorker Management Console** software.
2. Open the **Administration** window:
  - a. In the **Console** window, click **Enterprise**.
  - b. In the left pane, select a NetWorker server in the **Enterprise** list.
  - c. In the right pane, click the application.
  - d. From the **Enterprise** menu, select **Launch Application**.

The **Administration** window is launched as a separate application.
3. In the **Administration** window, click **Configuration**.
4. In the left pane, select **Registration**.
5. In the right pane, select a license.
6. From the **File** menu, select **Properties**.
7. In the **Auth Code** attribute, type the authorization code for the product. The authorization code is the code assigned to the specified permanent enabler or update enabler code.
8. Click **OK**.

The license is now permanently enabled.

## Multiplatform licensing

The client connections that come with a NetWorker server can be used for only that server platform. A NetWorker ClientPak<sup>®</sup> license allows the NetWorker server to back up clients of different platforms. For example:

- ◆ The client connections that accompany a NetWorker server for Microsoft Windows can be used for Windows client computers only.
- ◆ The client connections that accompany a NetWorker server for Solaris can be used for Solaris clients only.

With a ClientPak for UNIX, other UNIX platforms can be enabled for use with a NetWorker server for Solaris. The ClientPak for UNIX supports all UNIX platforms. The ClientPak for UNIX is sufficient for all UNIX clients (backed up by a UNIX or Windows server).

---

**Note:** The NetWorker software treats Linux as a separate operating system. A ClientPak for Linux is necessary to back up Linux clients by either UNIX or Windows servers.

---

### Example 1 Multiplatform licensing scenarios

A company was using a Linux server to back up Solaris, Linux, and Microsoft Windows clients. It needed two ClientPak licenses, one for Solaris and one for Microsoft Windows. The company added HP-UX and AIX clients, which required the addition of a ClientPak license for UNIX.

As the company grew and needed to add a server, it added a Windows 2000 server, which backed up the existing Windows clients and subsequent Windows 2000 clients without requiring a ClientPak. The company assigned the NetWorker server to a



Solaris computer to back up the HP-UX, Solaris, and AIX clients by using a single ClientPak for UNIX.

## Update enablers

To update existing NetWorker software to a major release, an update enabler is necessary. Update enablers are required for any major NetWorker software upgrade from release 4.0 and later, including the current NetWorker release. To use the NetWorker License Manager, the NetWorker server must be release 5.0 or later.

With a first-time purchase of NetWorker software, a one-year update agreement may be included. After a year, an update enabler may be acquired with a new update agreement purchase.

[Table 6 on page 65](#) lists the NetWorker releases that require update enablers.

**Table 6** NetWorker update enablers

| Upgrade from             | to 5.0 | to 5.5 | to 5.5.x | to 5.6          | to 5.7        | to 6.x | to 7.0 | to 7.1 | to 7.2 | to 7.3 | to 7.4 |
|--------------------------|--------|--------|----------|-----------------|---------------|--------|--------|--------|--------|--------|--------|
| Any release prior to 5.0 | yes    | yes    | yes      | yes             | yes           | yes    | yes    | yes    | yes    | yes    | yes    |
| 5.0                      |        | yes    | yes      | yes             | yes           | yes    | yes    | yes    | yes    | yes    | yes    |
| 5.5                      |        |        | yes      | yes (UNIX only) | yes (NT only) | yes    | yes    | yes    | yes    | yes    | yes    |
| 5.5.x                    |        |        |          | yes (UNIX only) | yes (NT only) | yes    | yes    | yes    | yes    | yes    | yes    |
| 5.6                      |        |        |          |                 | NA*           | yes    | yes    | yes    | yes    | yes    | yes    |
| 5.7                      |        |        |          |                 |               | yes    | yes    | yes    | yes    | yes    | yes    |
| 6.0                      |        |        |          |                 |               | no     | yes    | yes    | yes    | yes    | yes    |
| 7.0                      |        |        |          |                 |               |        |        | yes    | yes    | yes    | yes    |
| 7.1                      |        |        |          |                 |               |        |        |        | yes    | yes    | yes    |
| 7.2                      |        |        |          |                 |               |        |        |        |        | yes    | yes    |
| 7.3                      |        |        |          |                 |               |        |        |        |        |        | yes    |

**Note:** \* Release 5.6 is UNIX only, and release 5.7 is Microsoft Windows only. NT refers to Microsoft Windows NT.

## Additional licenses

This section describes a few of the additional licenses that are required to operate some of the NetWorker features.

### Client connection licenses

Every computer to be backed up in a NetWorker datazone requires a client connection license, even the NetWorker server. The client connection license may be one of the licenses that is supplied with the base enabler or purchased separately. A cluster client or NDMP data server requires a special type of client connection license.

## Storage nodes

Each storage node requires a storage node license, in addition to its client connection license. A dedicated storage node, which allows the storage node to back up only itself, is licensed separately.

## NetWorker Application Modules

NetWorker Application Modules are licensed on the basis of one enabler per database type host. For example, to back up the Oracle database on two hosts, two NetWorker Module for Oracle enablers are required, even if the two hosts are backed up by the same server. However, if multiple database instances are running on a NetWorker client host, only one NetWorker Module enabler is required for that one host.

## Cluster clients

For each physical node in a cluster, you must purchase a Cluster Client Connection, which takes the place of one standard client connection. The NetWorker Administration Guide provides information on how to license computers in a cluster.

## NDMP licensing

NDMP licensing requires one NDMP Client Connection per NDMP data server. The NDMP Client Connection is valid for any supported NDMP data server. The NDMP data server does not require a standard client connection.

---

## Managing licenses

The NetWorker License Manager software provides centralized license management, which enables you to maintain all of an enterprise's NetWorker licenses from a single computer. With the NetWorker License Manager, you can move NetWorker software from one computer to another, or change the IP address on an existing NetWorker server without having to reauthorize the software. The NetWorker License Manager can be installed as an option during the NetWorker software installation.

To begin to implement the NetWorker License Manager:

1. Obtain bulk enabler codes. For contact information, go to <http://Powerlink.EMC.com>.
2. Install the NetWorker License Manager software.
3. Configure the NetWorker License Manager software.
4. Configure the NetWorker servers to access the NetWorker License Manager for their licenses.

The latest NetWorker License Manager Installation and Administration Guide provides more information on how to install and use the NetWorker License Manager.

---

This chapter includes the following sections:

- ◆ [Uninstalling on UNIX and Linux.....](#) 68
- ◆ [Uninstalling on Microsoft Windows .....](#) 70

## Uninstalling on UNIX and Linux



### IMPORTANT

The uninstall procedure removes the `nsrnmno` script used for scheduled Oracle backups. To save any customizations made to the `nsrnmno` script, save a copy of the script before uninstalling the software.

**Note:** If uninstalling the software from a cluster, you must perform the uninstall procedure on *each* required node of the cluster.

To uninstall NetWorker Module for Oracle (NMO) release 4.5 on a supported UNIX or Linux operating system:

1. Ensure that no Oracle database backups are running.
2. Follow these steps for *each* Oracle installation that uses the NMO software for its backups:
  - a. Log in as the `ORACLE_HOME` owner:
 

```
su ORACLE_HOME_owner
```
  - b. Use the appropriate commands from [Table 7 on page 68](#).

Depending on the operating system and Oracle Server release, the commands replace or remove a symbolic link to the Oracle System Backup to Tape (SBT) implementation library and/or relink the Oracle Server.



### IMPORTANT

The commands in [Table 7 on page 68](#) restore the Oracle software to its state prior to the NMO installation. If the installation commands from [Chapter 4, "Installing on UNIX and Linux,"](#) were *not* followed exactly, the Oracle software might not be restored to its state prior to the installation. This might affect RMAN backups to disk. The commands in [Table 7 on page 68](#) apply only to Oracle *base* releases (if available). Link instructions might vary with patched releases of the Oracle Server.

Table 7 Commands for the library file removal on UNIX and Linux (1 of 2)

| On this system:   | With these Oracle releases: | Use these commands to remove the symbolic link: |
|-------------------|-----------------------------|-------------------------------------------------|
| AIX               | 9.x 64-bit<br>10.x 64-bit   | % cd \$ORACLE_HOME/lib<br>% rm libobk.a         |
| HP-UX Itanium     | 9.x 64-bit                  | % cd \$ORACLE_HOME/lib<br>% rm libobk.so        |
| HPUX PA-RISC      | 9.x 64-bit<br>10.x 64-bit   | % cd \$ORACLE_HOME/lib<br>% rm libobk.sl        |
| Linux AMD64/EM64T | 9.x 64-bit<br>10.x 64-bit   | % cd \$ORACLE_HOME/lib<br>% rm libobk.so        |
| Linux Intel       | 9.x<br>10.x                 | % cd \$ORACLE_HOME/lib<br>% rm libobk.so        |

Table 7 Commands for the library file removal on UNIX and Linux (2 of 2)

| On this system: | With these Oracle releases:      | Use these commands to remove the symbolic link:                    |
|-----------------|----------------------------------|--------------------------------------------------------------------|
| Linux Itanium   | 9.x 64-bit<br>10.x 64-bit        | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>rm libobk.so</code> |
| Solaris         | 9.x<br>9.x 64-bit<br>10.x 64-bit | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>rm libobk.so</code> |
| Tru64 UNIX      | 9.x 64-bit                       | % <code>cd \$ORACLE_HOME/lib</code><br>% <code>rm libobk.so</code> |

3. Log in as the root user on the Oracle Server host.
4. Uninstall the NMO software by using the instructions from [Table 8 on page 69](#) for the operating system.

**Note:** The Oracle database does *not* need to be shut down in order to uninstall the software.

Table 8 Procedures for uninstalling NMO on UNIX and Linux (1 of 2)

| On this system: | Perform the following to uninstall the NMO software:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | And complete the uninstall as follows:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AIX             | <p>Perform one of the following:</p> <ul style="list-style-type: none"> <li>• Invoke the <b>installp</b> command line interface by typing the appropriate command:<br/> <b>installp -u LGTONmo.nmofr.rte</b> (French language pack)<br/> <b>installp -u LGTONmo.nmoja.rte</b> (Japanese language pack)<br/> <b>installp -u LGTONmo.nmoko.rte</b> (Korean language pack)<br/> <b>installp -u LGTONmo.nmozh.rte</b> (Chinese language pack)<br/> <b>installp -u LGTONmo.rte</b> (NMO software)</li> </ul> <p><b>Note:</b> Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p> <ul style="list-style-type: none"> <li>• Invoke the SMIT GUI program by typing the following command:<br/> <b>smitty remove</b></li> </ul> | <p>If using the SMIT GUI program, perform the following after typing the <b>smitty remove</b> command:</p> <ol style="list-style-type: none"> <li>1. Select <b>F4=List</b> to display a list of the installed software packages.</li> <li>2. Select the packages to be uninstalled:<br/> LGTONmo.nmofr.rte (French language pack)<br/> LGTONmo.nmoja.rte (Japanese language pack)<br/> LGTONmo.nmoko.rte (Korean language pack)<br/> LGTONmo.nmozh.rte (Chinese language pack)<br/> LGTONmo.rte (NMO software)</li> </ol> <p><b>Note:</b> Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p> <ol style="list-style-type: none"> <li>3. Ensure that the PREVIEW Only option is set to no.</li> <li>4. Press <b>Enter</b> to uninstall the NMO software.</li> <li>5. Exit the SMIT program.</li> </ol> |
| HP-UX           | <p>Perform one of the following:</p> <ul style="list-style-type: none"> <li>• To invoke the <b>swremove</b> command line interface, type this command:<br/> <b>swremove NMO</b></li> <li>• To invoke the <b>swremove</b> GUI program, type this command:<br/> <b>swremove -i NMO</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>If using the <b>swremove</b> GUI program:</p> <ol style="list-style-type: none"> <li>1. Select <b>Actions &gt; Remove (analysis)</b>.</li> <li>2. When the system analysis is complete, click <b>OK</b> to complete the uninstall.</li> <li>3. To confirm the uninstall, click <b>Yes</b>.</li> </ol> <p><b>Note:</b> Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |

Table 8 Procedures for uninstalling NMO on UNIX and Linux (2 of 2)

| On this system: | Perform the following to uninstall the NMO software:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | And complete the uninstall as follows:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Linux           | <p>Type the appropriate command:</p> <p><b>rpm -e lgtonmofr-4.5-1</b> (French language pack)<br/> <b>rpm -e lgtonmoja-4.5-1</b> (Japanese language pack)<br/> <b>rpm -e lgtonmoko-4.5-1</b> (Korean language pack)<br/> <b>rpm -e lgtonmozh-4.5-1</b> (Chinese language pack)<br/> <b>rpm -e lgtonmo-4.5-1</b> (NMO software)</p> <hr/> <p><b>Note:</b> Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p> <hr/> <p>To uninstall <i>both</i> NMO and the NetWorker client on Linux, perform <i>one</i> of the following:</p> <ul style="list-style-type: none"> <li>Type this command:<br/> <b>rpm -e lgtonmo-4.5-1 lgtocltnt</b></li> <li>Type these separate commands, in this order <i>only</i>:<br/> <b>rpm -e lgtonmo-4.5-1</b><br/> <b>rpm -e lgtocltnt</b></li> </ul> <hr/> <p><b>Note:</b> On Linux, the NetWorker client software must be installed <i>after</i> the NMO software. You must <i>not</i> uninstall both NMO and the NetWorker client with the following command:<br/> <b>rpm -e lgtocltnt lgtonmo-4.5-1</b></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Solaris         | <p>Type the appropriate commands, depending on the packages installed:</p> <p><b>pkgrm LGTONmofr</b> (French language pack)<br/> <b>pkgrm LGTONmoja</b> (Japanese language pack)<br/> <b>pkgrm LGTONmoko</b> (Korean language pack)<br/> <b>pkgrm LGTONmozh</b> (Chinese language pack)<br/> <b>pkgrm LGTONmo</b> (NMO software)<br/> <b>pkgrm LGTONmowz</b> (Configuration wizard)</p> <hr/> <p><b>Note:</b> Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p> <p>To uninstall NMO on Solaris zones:</p> <ol style="list-style-type: none"> <li>Uninstall NMO on the global zone.</li> <li>Uninstall NMO on each required sparse root zone.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                               | <p>Perform the following according to the basedir variable setting in the <code>/var/sadm/install/admin/default</code> file:</p> <ul style="list-style-type: none"> <li>If <code>basedir=default</code> in the file, type <b>y</b> when prompted. The software is uninstalled from the directory containing the NetWorker client software.</li> <li>If <code>basedir=ask</code> in the file, type the result of the <b>pkgparam LGTONmo BASEDIR</b> command when prompted for the pathname of the base directory. The software is uninstalled from the specified base directory.</li> <li>If <code>basedir=/dirpath</code> in the file, type <b>y</b> when prompted. The software is uninstalled from the specified <code>/dirpath</code> directory.</li> </ul> |
| Tru64 UNIX      | <p>Type the following command:</p> <p><b>setid -d LGTONMO450</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Uninstalling on Microsoft Windows



### IMPORTANT

The uninstall procedure removes the `nsrnmobat` script used for scheduled Oracle backups. To save customizations made to the script, save a copy of the script before uninstalling the software.

**Note:** If uninstalling the software from a cluster, you must perform the uninstall procedure on *each* required node of the cluster.

To uninstall NMO release 4.5 on a supported Microsoft Windows operating system, follow the appropriate instructions:

- ◆ [“How to uninstall by using the Setup program” on page 71](#)
- ◆ [“How to uninstall by using the Control Panel” on page 71](#)

---

## How to uninstall by using the Setup program

To uninstall the NMO software by using the **Setup** program:

1. Log in as the Windows system administrator.
2. Ensure that no Oracle database backups are running.
3. If any French, Korean, or Simplified Chinese language packs are installed:
  - a. Run the `nmolp\networkr\setup.exe` program, as described in [“How to run the Setup program in maintenance mode” on page 53](#).
  - b. In the **Program Maintenance** dialog box, select **Remove** and click **Next**.
  - c. In the **Remove the Program** dialog box, click **Remove** to uninstall any French, Korean, and Simplified Chinese language packs.
4. Completely remove the NMO software:
  - a. Run the `nmo\networkr\setup.exe` program, as described in [“How to run the Setup program in maintenance mode” on page 53](#).
  - b. In the **Program Maintenance** dialog box, select **Remove** and click **Next**.
  - c. In the **Remove the Program** dialog box, click **Remove** to uninstall the NMO software, along with any configuration wizard libraries and Japanese language pack.

---

## How to uninstall by using the Control Panel

To uninstall the NMO software by using **Add or Remove Programs** in the **Control Panel**:

1. Log in as the Windows system administrator.
2. Ensure that no Oracle database backups are running.
3. In the Windows **Start** menu, select the **Control Panel**.
4. In the **Control Panel**, select **Add or Remove Programs**.
5. In the **Add or Remove Programs** window:
  - a. Select **NetWorker Module for Oracle Language Pack**, if available, and click **Remove**.
  - b. Select **NetWorker Module for Oracle** and click **Remove**.





---

This appendix contains the following sections:

- ◆ Registering the wizard libraries on UNIX and Linux ..... 74
- ◆ Registering the wizard libraries on Microsoft Windows..... 75

## Registering the wizard libraries on UNIX and Linux

This section describes the registration requirements for the configuration wizard libraries on an NMO release 4.5 client host running Unix or Linux.

The configuration wizard libraries must be registered *only* if the NetWorker configuration wizard is to be used on Solaris SPARC to configure scheduled NMO backups or restores. The NMO client can be either on the same Solaris SPARC system or on a remote UNIX or Linux system.

- ◆ If the wizard libraries were installed on a system containing NetWorker release 7.1.x or earlier, the libraries were *not* registered automatically during the install. They must be registered *manually* after the NetWorker software has been updated to release 7.2 or later.

**Note:** The configuration wizard supports only NetWorker release 7.2 and later.

- ◆ If the wizard libraries were installed on a system containing NetWorker release 7.2 or later, the libraries were registered *automatically* during the install, and no further action is required.

To enable the configuration wizard on Solaris SPARC, the following libraries must be registered:

- ◆ On the NMO client, the library libnmodc.x or libnmodc32.x, where x is o, sl, or so (depending on the operating system). This library is installed with the NMO software package LGTONmo.



### IMPORTANT

**If the NMO client is on 64-bit HP or Solaris SPARC and 32-bit NetWorker software is installed on the same computer, register libnmodc32.x on the NMO client. Otherwise, in all other cases, register libnmodc.x on the NMO client.**

- ◆ On the Solaris SPARC system where the configuration wizard is run, the library libnmowiz.so. This library is installed with the LGTONmowz package.

To confirm that a library is registered, review the contents of the corresponding resource files in /nsr/res.

- ◆ The file /nsr/res/nsrwizclnt.res corresponds to the library libnmodc.x or libnmodc32.x.
- ◆ The file /nsr/res/nsrwizcon.res corresponds to the library libnmowiz.so.

If the resource file contains the following line for the plug-in type NMO (showing the version as 4.5), then the corresponding library is properly registered:

```
Library versions: 4.5;
```

If 4.5 is missing from this line in the resource file, the corresponding library is *not* registered. The library must be registered *manually* before the configuration wizard can be used.

## How to register the wizard libraries on UNIX and Linux

To manually register a library file, enter the appropriate command:

- ◆ To register the library `libnmodc.x` or `libnmodc32.x`, enter this command:

```
"NetWorker_install_path/nsrwizreg" -t NMO -n "NetWorker Module for
Oracle" -p "complete_library_path/libnmodc[32].x" -v 4.5
-f nsrwizclnt.res -a
```

- ◆ To register the library `libnmowiz.so`, enter this command:

```
"NetWorker_install_path/nsrwizreg" -t NMO -n "NetWorker Module for
Oracle" -p "complete_library_path/libnmowiz.so" -v 4.5
-f nsrwizcon.res -a
```

The following sources provide more information on the `nsrwizreg` command:

- ◆ The `nsrwizreg` entry in the NetWorker Command Reference Guide
- ◆ The `nsrwizreg` man page on UNIX

## Registering the wizard libraries on Microsoft Windows

This section describes the registration requirements for the configuration wizard libraries on an NMO release 4.5 client host running Microsoft Windows.

The configuration wizard libraries must be registered *only* if the NetWorker configuration wizard is to be used on Windows to configure scheduled NMO backups or restores. The NMO client can be either on the same Windows system or on a remote Windows system.

- ◆ If the wizard libraries were installed on a system containing NetWorker release 7.1.x or earlier, the libraries were *not* registered automatically during the install. They must be registered *manually* after the NetWorker software has been updated to release 7.2 or later.

**Note:** The configuration wizard supports only NetWorker release 7.2 and later.

- ◆ If the wizard libraries were installed on a system containing NetWorker release 7.2 or later, the libraries were registered *automatically* during the install, and no further action is required.

To enable the configuration wizard on Windows, the following libraries must be registered:

- ◆ On the NMO client, the library `libnmodc.dll`
- ◆ On the Windows system where the configuration wizard is run, the library `libnmowiz.dll`

To confirm that a library is registered, review the contents of the corresponding resource files in `NetWorker_install_path\nsr\res`.

- ◆ The file `NetWorker_install_path\nsr\res\nsrwizclnt.res` corresponds to the library `libnmodc.dll`.
- ◆ The file `NetWorker_install_path\nsr\res\nsrwizcon.res` corresponds to the library `libnmowiz.dll`.

If the resource file contains the following line for the plug-in type NMO (showing the version as 4.5), then the corresponding library is properly registered:

```
Library versions: 4.5;
```

If 4.5 is missing from this line in the resource file, the corresponding library is *not* registered. The library must be registered *manually* before the configuration wizard can be used.

---

## How to register the wizard libraries on Microsoft Windows

To manually register a library file, enter the appropriate command:

- ◆ To register the library `libnmodc.dll`, enter this command:

```
"NetWorker_install_path\nsrwizreg" -t NMO -n "NetWorker Module for
Oracle" -p "complete_library_path\libnmodc.dll" -v 4.5
-f nsrwizclnt.res -a
```

- ◆ To register the library `libnmowiz.dll`, enter this command:

```
"NetWorker_install_path\nsrwizreg" -t NMO -n "NetWorker Module for
Oracle" -p "complete_library_path\libnmowiz.dll" -v 4.5
-f nsrwizcon.res -a
```

The `nsrwizreg` entry in the NetWorker Command Reference Guide provides more information on the `nsrwizreg` command.