



**EMC® NetWorker®
Module for Oracle**

Release 5.0

Installation Guide

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REV A02

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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 5.0 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 software or hardware operation.

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.

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

<http://Powerlink.EMC.com>

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

Your comments Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Please send your opinion of this document to:

SSGdocumentation@EMC.com

If you have issues, comments, or questions about specific information or procedures, please include the title and, if available, the part number, the revision (for example, A01), the page numbers, and any other details that will help us locate the subject you are addressing.

This chapter includes the following sections:

- ◆ Overview of this guide 12
- ◆ Installation considerations 12
- ◆ Installation roadmap 14
- ◆ Installation requirements 15
- ◆ Updating from NMO release 4.x 18

Overview of this guide

This installation guide describes how to install and enable the EMC® NetWorker® Module for Oracle (NMO) release 5.0 on an Oracle Server host with a supported UNIX, Linux, or Microsoft Windows operating system.

Note: The *EMC Information Protection Software Compatibility Guide* on the EMC Powerlink® website, <http://Powerlink.EMC.com>, provides details on the operating system versions that NMO supports.

Use the information in this guide to:

- ◆ Prepare for the NMO 5.0 installation by reviewing the following:
 - “Installation considerations” on page 12
 - “Installation roadmap” on page 14
- ◆ Update from NMO release 4.x according to the instructions in “Updating from NMO release 4.x” on page 18.
- ◆ Install NMO 5.0 according to the instructions in the following:
 - Chapter 2, “Installing on UNIX and Linux”
 - Chapter 3, “Installing on Microsoft Windows”
- ◆ Enable NMO 5.0 according to the instructions in Chapter 4, “Licensing and Enabling the Software.”
- ◆ Uninstall NMO 5.0 according to the instructions in Chapter 5, “Uninstalling the Software.”

Note: Throughout this guide, references to *regular* backups and restores indicate backups and restores performed *without* the use of snapshot technologies through NetWorker PowerSnap™ Module software.

Installation considerations

The NMO software works with Oracle RMAN and NetWorker software to provide regular backup and restore services for Oracle data.

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

For both regular and Oracle proxy copy backups and restores, 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 Oracle proxy copy backup and restore operations. The following sources provide information on the configuration procedures:

- ◆ The *NetWorker Module for Oracle Release 5.0 Administration Guide* describes the configuration of both regular and Oracle proxy copy backups and restores.
- ◆ The NetWorker PowerSnap Module documentation (for the primary storage system) provides additional details on Oracle proxy copy backups and restores.



IMPORTANT

Ensure that the required privileges are set in the appropriate NetWorker user groups. The *NetWorker Module for Oracle Release 5.0 Administration Guide* provides more information.

Considerations for Oracle proxy copy backups and restores

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

- ◆ Oracle proxy copy backups create snapshots of Oracle data that reside on primary storage devices supported by the NetWorker PowerSnap Modules that work with NMO.

The current *EMC Information Protection Software Compatibility Guide* on Powerlink provides a complete list of supported PowerSnap Modules.

- ◆ Oracle proxy copy backups and restores use the particular PowerSnap Module software designed for the primary storage, with the PowerSnap Module installed and enabled on *both* of the following:
 - NMO host
 - A separate proxy client host or NetWorker storage node, as required

The NetWorker PowerSnap Module documentation provides more information.

The following sources provide details on any limitations in the Oracle proxy copy backups and restores and PowerSnap Module support:

- ◆ *NetWorker Module for Oracle Release 5.0 Administration Guide*
- ◆ *NetWorker Module for Oracle Release 5.0 Release Notes*
- ◆ NetWorker PowerSnap Module documentation
- ◆ *EMC Information Protection Software Compatibility Guide*

Considerations for NMO wizard operations

The NMO backup and recovery configuration wizards are integrated with the NetWorker Management Console (NMC) software. The configuration wizard from previous NMO releases is replaced by NMC-based wizards in NMO release 5.0.

During the NMO software installation:

- ◆ The wizard plug-in components are installed on the NMO client host.
- ◆ The wizard is automatically registered to the NetWorker Client resource database.

NMC loads the NMO wizard plug-in at run time. The NMO wizards are run from the NetWorker Console Administration window, which can be started on any supported host by using a web browser session and specifying the Console server URL.

[“NMO wizard requirements” on page 17](#) provides information on wizard setup requirements. The *NetWorker Module for Oracle Release 5.0 Administration Guide* and the wizard help provide more information on using the NMO wizards.

Installation roadmap

Before following the steps in the installation roadmap, review the information in [“Installation considerations” on page 12](#).

This section provides a roadmap for installing NMO release 5.0 on a supported operating system. Read through the roadmap and the referenced sections before installing the 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.

After the NMO installation, if the NetWorker software is uninstalled and reinstalled on the NMO host, 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, as described in [“Installation requirements” on page 15](#).
2. Update or install the NMO software on *one* of the following:
 - A single Oracle Server host
 - A cluster or Real Application Cluster (RAC) system

To update from a previous NMO release, follow the instructions in [“Updating from NMO release 4.x” on page 18](#).

To install NMO 5.0 on a platform that does *not* have a previous NMO release, follow the appropriate instructions:

- [Chapter 2, “Installing on UNIX and Linux”](#)
- [Chapter 3, “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 information on the configuration procedures:

- ◆ The *NetWorker Module for Oracle Release 5.0 Administration Guide* describes the configuration of both regular and Oracle proxy copy backups and restores.
- ◆ The NetWorker PowerSnap Module documentation (for the primary storage system) provides additional details on Oracle proxy copy backups and restores.

Installation requirements

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

- ◆ [“Operating system requirements” on page 15](#)
- ◆ [“Cluster and RAC requirements” on page 15](#)
- ◆ [“Oracle Server requirements” on page 15](#)
- ◆ [“NetWorker software requirements” on page 16](#)
- ◆ [“NMO requirements” on page 17](#)
- ◆ [“Internationalization requirements” on page 18](#)

Operating system requirements

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

Cluster and RAC requirements

Supported cluster software must be installed for an active-passive cluster configuration or RAC configuration. RAC systems do *not* have any additional installation requirements. The *EMC Information Protection Software Compatibility Guide on Powerlink* provides more details on cluster and RAC requirements.

The following software must be installed on each required RAC node:

- ◆ Supported NetWorker client or storage node software
- ◆ NMO software

The following sections provide installation information for cluster and RAC systems:

- ◆ [“Installing on a cluster or RAC system” on page 32](#) (UNIX and Linux)
- ◆ [“Installing on a cluster or RAC system” on page 41](#) (Microsoft Windows)

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 15](#).
- ◆ A supported Oracle Server release is installed. The *EMC Information Protection Software Compatibility Guide on Powerlink* 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.



IMPORTANT

After an NMO installation on UNIX or Linux, if the Oracle software is reinstalled, the NMO library file must be relinked with the Oracle Server according to [“Link the NMO library file” on page 31](#). However, the NMO software does *not* need to be reinstalled.

NetWorker software requirements

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

- ◆ [“NetWorker server requirements” on page 16](#)
- ◆ [“NetWorker client requirements” on page 17](#)
- ◆ [“NMC requirements” on page 17](#)
- ◆ [“NMO wizard requirements” on page 17](#)
- ◆ [“NetWorker PowerSnap Module requirements” on page 17](#)

Use the information in the *EMC NetWorker Hardware Compatibility Guide on Powerlink* 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 NMO host or a separate NetWorker server host.

Specific NetWorker server releases are required to support specific features:

- ◆ NetWorker server 7.5 or later is required for the following:
 - Deduplication of NMO backups
 - Internet Protocol version 6 or IPv6
 - NMO wizard operations, including the use of migration tools
 - Probe-based scheduled backups
 - VMware VMotion and DRS operations
- ◆ For all other NMO operations, NetWorker server 7.4 or later is required.

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

The following sources provide more information:

- ◆ The *EMC Information Protection Software Compatibility Guide on Powerlink* 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 NMO host, NetWorker client release 7.4 or later (with all applicable patches) must be installed on the NMO host.

Specific NetWorker client releases are required to support specific features:

- ◆ NetWorker client 7.5 or later is required for the following:
 - Deduplication of NMO backups
 - Internet Protocol version 6 (IPv6) support
 - NMO wizard operations
- ◆ For all other NMO operations, NetWorker client 7.4 or later is required.

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.

The following sources provide more information:

- ◆ The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the supported client releases and operating systems.
- ◆ The NetWorker installation guide provides details on how to install the NetWorker client software.

NMC requirements

NMO wizard operations require NMC release 7.5 or later to be installed on a supported operating system. The *EMC Information Protection Software Compatibility Guide* provides details.

NMO wizard requirements

NMO wizard operations require release 7.5 or later of the NetWorker server, client, and NMC software to be installed on a supported operating system.

NetWorker PowerSnap Module requirements

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

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

The NetWorker PowerSnap Module documentation provides more information.

The following sources provide details on limitations in the Oracle proxy copy backups and restores and PowerSnap Module support:

- ◆ *NetWorker Module for Oracle Release 5.0 Release Notes*
- ◆ NetWorker PowerSnap Module documentation
- ◆ *EMC Information Protection Software Compatibility Guide*

NMO requirements

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

The roadmap in the EMC Information Protection and Availability Product Families Media Kit provides the locations of the documentation files on the Documentation

Suite DVD. 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 5.0 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.

Updating from NMO release 4.x

The NetWorker Module for Oracle (NMO) release 5.0 software *cannot* coexist on the same system with NMO release 4.x.

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

- ◆ [“Update locally from NMO release 4.x” on page 18](#)
- ◆ [“Update remotely from NMO release 4.x” on page 19](#)

Update locally from NMO release 4.x

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

1. Verify that *no* Oracle database backups with NMO are running on the NMO host.
2. Update the NMO software by one of the following methods:
 - If you do *not* want to use the Windows installation upgrade process:
 - a. Uninstall NMO release 4.x according to the instructions in the *NetWorker Module for Oracle Release 5.0 Installation Guide* for that software release.
 - b. Ensure that all the installation requirements are met, as described in [“Installation requirements” on page 15](#).
 - c. Install and enable NMO release 5.0 on the NMO host according to the appropriate instructions:
 - [Chapter 2, “Installing on UNIX and Linux”](#)
 - [Chapter 3, “Installing on Microsoft Windows”](#)

- If you want to use the Windows installation upgrade process to update from NMO release 4.5:



IMPORTANT

The Windows installation upgrade process *overwrites* an existing `nsrnmo.bat` script (used for scheduled Oracle backups). Save a copy of an existing `nsrnmo.bat` script before you use the upgrade process. After the process is complete, restore the saved `nsrnmo.bat` script.

- a. Start the NMO 5.0 installer program, **setup.exe**, by following the instructions in [“Installing on a single Oracle Server host” on page 36](#).
- b. When the **Welcome to the Upgrade** dialog box appears, click **Upgrade**, and follow the instructions in the subsequent screens.
- c. Perform *one* of the following to verify the PATH variable, reboot, enable the NMO 5.0 software, and so on:
 - Final steps from [page 38](#) (end of the section [“Install on all Windows platforms except Itanium” on page 38](#))
 - Final steps from [page 41](#) (end of the section [“Install on a Windows Itanium platform” on page 40](#))
3. To enable Oracle proxy copy backups and restores, complete the update by installing and enabling the required NetWorker PowerSnap Module on *both* of the following:
 - NMO host
 - A separate proxy client host or NetWorker storage node, as required
 Follow the instructions in the NetWorker PowerSnap Module documentation.

Update remotely from NMO release 4.x

Note: The NetWorker software distribution feature is *not* supported for updating remotely from NMO 4.x on Linux Itanium and Solaris AMD64/EM64T.

To update from NMO release 4.x by using the software distribution feature on a remote NetWorker server:

1. Ensure that the following requirements are met:
 - The NMO client host has a supported operating system:
 - To update from NMO 4.2, the NMO client host has a supported UNIX or Linux operating system. A remote update of NMO 4.2 on Windows is *not* supported.
 - To update from NMO 4.5, the NMO client host has a supported UNIX, Linux, or Windows operating system.
 - NetWorker client 7.4 or later is installed on the NMO client host.

- The required NetWorker server release is installed on the remote NetWorker server host:
 - To update NMO *without* language packs, NetWorker server 7.4 or later is installed.
 - To update NMO with any single language pack on all supported platforms *except* HP-UX, NetWorker server 7.4.1 or later is installed.
 - To update NMO with any single language pack on HP-UX, NetWorker server 7.4.2 or later is installed.
 - 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 or 4.5 to NMO release 5.0 on the NMO client host. The server transfers and installs the NMO software to the client host.

The Software Administration feature is *not* supported on specific platforms and cluster environments. The NetWorker installation guide and release notes provide more information.

This chapter includes the following sections:

- ◆ Installing on a single Oracle Server host..... 22
- ◆ Installing on a cluster or RAC system..... 32

Installing on a single Oracle Server host

To install and enable the NetWorker Module for Oracle (NMO) release 5.0 on a single Oracle Server host with a supported UNIX or Linux operating system, perform the following tasks:

1. [“Access the software” on page 22](#)
2. [“Install the software” on page 24](#)
3. [“Link the NMO library file” on page 31](#)
4. [“Enable the software” on page 32](#)



IMPORTANT

After an NMO installation, if the NetWorker software on the NMO host is uninstalled and reinstalled, the NMO software must be:

1. Uninstalled according to the instructions in [“Uninstalling on UNIX and Linux” on page 54](#).
2. Reinstalled according to the [“Installation roadmap” on page 14](#).

Also, after an NMO installation on UNIX or Linux, if the Oracle software is reinstalled, the NMO library file must be relinked with the Oracle Server according to [“Link the NMO library file” on page 31](#). However, the NMO software does *not* need to be reinstalled.

Access the software

The NMO software is distributed in the following forms:

- ◆ On the NetWorker Modules DVD, which is included in the EMC Information Protection and Availability Product Families 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 either of the following sources:

- ◆ [“From a local DVD drive” on page 22](#)
- ◆ [“From the EMC website” on page 23](#)

From a local DVD drive

To access the software files on an Oracle Server host with a local DVD drive:

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


```
mount /dev/DVD_drivename /mount_point
```
3. Go to the appropriate directory on the DVD, as described in [Table 1 on page 23](#).

Table 1 Accessing the correct directory on the local DVD

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 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>

- Continue with “Install the software” on page 24.

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 4, “Licensing and Enabling the Software,”](#) provides more information on enabling NMO.

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

- Log in as root on the Oracle Server host.
- Create a temporary installation directory in a local file system with sufficient free disk space 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
```
- Go to <http://Powerlink.EMC.com>.
- Select **Support > Software Downloads and Licensing > Downloads J-O > NetWorker Module**.
- In the table of NetWorker Module Software Downloads, click the **NetWorker Module for Oracle Version 5.0** for the particular UNIX or Linux platform.
- 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 on the screen as the extraction proceeds.
9. Remain in the installation directory created in [step 2](#), for example, `/usr/nsr_extract_nmo`.
10. Continue with [“Install the software” on page 24](#).

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 15](#).
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 [“Access the software” on page 22](#).

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:
 - [“Install on AIX” on page 25](#)
 - [“Install on HP-UX” on page 26](#)
 - [“Install on Linux” on page 27](#)
 - [“Install on Solaris” on page 29](#)

After the software installation completes, a message is displayed on how to start the NMO wizard for configuring backups. [“Considerations for NMO wizard operations” on page 13](#) provides more information on the NMO wizard.

Before you use NMO for backups, you must enable the software according to [“Enable the software” on page 32](#).

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

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 [“Access the software” on page 22](#).

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

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

If the **lslpp** command output includes LGTONmo.rte 5.0.0.0, the installation succeeded.

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

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

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

- 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
```

- ◆ 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 [“Access the software” on page 22](#).

- 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:

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

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

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

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 5.0 does *not* provide 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, 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 [“Access the software” on page 22](#).

- 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, 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:

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

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

- Click **OK**.

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 lgtonmo-5.0-1.x86_64.rpm
```

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

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

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

- To install the French language pack:

```
rpm -i --replacefiles lgtonmofr-5.0-1.x86_64.rpm
```

- To install the Japanese language pack:

```
rpm -i --replacefiles lgtonmoja-5.0-1.x86_64.rpm
```

- To install the Korean language pack:

```
rpm -i --replacefiles lgtonmoko-5.0-1.x86_64.rpm
```

- To install the Simplified Chinese language pack:

```
rpm -i --replacefiles lgtonmozh-5.0-1.x86_64.rpm
```

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

```
rpm -i lgtonmo-5.0-1.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-5.0-1.i686.rpm
```

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

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

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

- To install the French language pack:

```
rpm -i --replacefiles lgtonmofr-5.0-1.i686.rpm
```

- To install the Japanese language pack:

```
rpm -i --replacefiles lgtonmoja-5.0-1.i686.rpm
```

- To install the Korean language pack:

```
rpm -i --replacefiles lgtonmoko-5.0-1.i686.rpm
```

- To install the Simplified Chinese language pack:

```
rpm -i --replacefiles lgtonmozh-5.0-1.i686.rpm
```

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

```
rpm -i lgtonmo-5.0-1.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:

Note: NMO 5.0 does *not* provide language packs on Linux Itanium.

- To install the NMO software in the default directory:

```
rpm -i lgtonmo-5.0-1.ia64.rpm
```

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

```
rpm -i lgtonmo-5.0-1.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:

```
lgtoclnt-7.4-1
lgtonmo-5.0-1
```

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-5.0-1
```

- ◆ For the Japanese language pack:

```
lgtoja-7.4-1
lgtonmoja-5.0-1
```

- ◆ For the Korean language pack:

```
lgtoko-7.4-1
lgtonmoko-5.0-1
```

- ◆ For the Simplified Chinese language pack:

```
lgtozh-7.4-1
lgtonmozh-5.0-1
```

Install on Solaris



IMPORTANT

If the Solaris system has Solaris zones and NMO 5.0 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 6 on page 55](#) 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 appropriate **pkgadd** command:

- To install the NMO software, type this command:

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

where */dir_pathname* is the complete pathname of the directory containing the LGTONmo package.

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

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

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

– 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
```

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.
-

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 2 on page 32](#) 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.

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:

- Log in as the `ORACLE_HOME` owner:


```
su ORACLE_HOME_owner
```
- Type the appropriate linking commands from [Table 2 on page 32](#).
 - 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 2 Linking commands for Oracle library file installation on UNIX and Linux

On this system	With these Oracle releases	Use these commands to change the symbolic link
AIX	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.a libobk.a
HP-UX Itanium	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.so libobk.so
HP-UX PA-RISC	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.sl libobk.sl
Linux AMD64/EM64T	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.so libobk.so
Linux Intel	10.x 32-bit 11.x 32-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.so libobk.so
Linux Itanium	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.so libobk.so
Solaris	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % ln -s /usr/lib/libnwora.so libobk.so

Enable the software

Before you use NMO for Oracle backup and restore operations, you must properly enable and configure the software.

Enable the NMO software according to [Chapter 4, “Licensing and Enabling the Software.”](#)

The *NetWorker Module for Oracle Release 5.0 Administration Guide* provides information on how to configure and use the software.

Installing on a cluster or RAC system

NMO release 5.0 supports active-passive cluster and RAC configurations on all clusters supported by both Oracle and the NetWorker client installed on the NMO host. NMO also supports RAC configurations on all Oracle OSD clusterware versions supported by Oracle.

For example, NMO supports the following:

- ◆ 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

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

Install NetWorker client and NMO software on *each* cluster node or RAC node to be used for backup and restore operations:

1. Meet all the requirements in [“Installation requirements”](#) on page 15.
2. Follow the instructions in [“Installing on a single Oracle Server host”](#) on page 22.

This chapter includes the following sections:

- ◆ Software installation path on Microsoft Windows..... 36
- ◆ Installing on a single Oracle Server host..... 36
- ◆ Installing on a cluster or RAC system..... 41
- ◆ Maintaining the installation on Microsoft Windows 42

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 5.0 on a single Oracle Server host with a supported Microsoft Windows operating system, perform the following tasks:

1. [“Access the software” on page 36](#)
2. [“Install and enable the software” on page 38](#)



IMPORTANT

After an NMO installation, if the NetWorker software on the NMO host is uninstalled and reinstalled, the NMO software must be:

1. Uninstalled according to the instructions in [“Uninstalling on Microsoft Windows” on page 56](#).
2. Reinstalled according to the [“Installation roadmap” on page 14](#).

Access the software

The NMO software is distributed in the following forms:

- ◆ On the NetWorker Modules DVD, which is included in the EMC Information Protection and Availability Product Families 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 either of the following sources:

- ◆ [“From a local DVD drive” on page 37](#)
- ◆ [“From the EMC website” on page 37](#)

From a local DVD drive

To access the software files on an Oracle Server host with a local DVD drive:

1. Log in as administrator on the Oracle Server host.
2. Insert the NetWorker Module DVD into the DVD drive.
3. Select the DVD drive in Windows Explorer.
4. Go to the correct directory on the DVD, as described in [Table 3 on page 37](#).

Table 3 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 [“Install and enable the software” on page 38](#).

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 4, “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 to contain the downloaded software file. For example:


```
mkdir C:\instdir
```
3. Go to <http://Powerlink.EMC.com>.
4. Select **Support > Software Downloads and Licensing > Downloads J-O > NetWorker Module**.
5. In the table of NetWorker Module Software Downloads, click the **NetWorker Module for Oracle Version 5.0** 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 4 on page 37](#).
8. Go to the correct directory, as shown in [Table 4 on page 37](#).

Table 4 Zipped download file and correct directory for install

On this system	Unzip this downloaded file	Then go to this directory
Windows AMD64/EM64T	nmo50_win_x64.zip	win_x64
Windows Intel	nmo50_win_x86.zip	win_x86
Windows Itanium	nmo50_win_ia64.zip	win_ia64

9. Continue with [“Install and enable the software” on page 38](#).

Install and enable the software

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

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

- ◆ [“Install on all Windows platforms except Itanium” on page 38](#)
- ◆ [“Install on a Windows Itanium platform” on page 40](#)

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 15](#).
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 [“Access the software” on page 36](#).

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 DVD 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 **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**.
8. 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.

At the end of the NMO install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard.

[“Considerations for NMO wizard operations” on page 13](#) provides more information on the configuration wizard.

9. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the installation program.
10. To install the French, Japanese, Korean, and Simplified Chinese language packs, follow the instructions in [“Install the NMO language packs” on page 39](#).
11. 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.

12. Reboot the Windows system, and verify that the Oracle instances and services were restarted.
13. Enable the NMO software according to [Chapter 4, “Licensing and Enabling the Software.”](#)
14. Ensure that the file `NetWorker_install_path\res\servers` on the NMO client is either empty or includes 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.

After NMO is installed and enabled, the software must be properly configured for Oracle data backup and restore operations. The *NetWorker Module for Oracle Release 5.0 Administration Guide* provides information on how to configure and use the software.

Install the NMO language packs



IMPORTANT

Before you can install the French, Japanese, Korean, and Simplified Chinese language packs:

- The NMO software must be installed according to the instructions in [“Install on all Windows platforms except Itanium” on page 38.](#)
- The corresponding NetWorker language pack must be installed according to the instructions in the NetWorker installation guide.

To install the French, Japanese, 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 DVD 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 (Chinese (Simplified), English, French, Japanese, or Korean) 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**.
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 Chinese (Simplified), French, Japanese, or Korean 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 one or more language packs, you can later rerun the **Setup** program in maintenance mode to install and uninstall any of the language packs by following the instructions in [“Maintaining the installation on Microsoft Windows” on page 42.](#)

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

In the **Custom Setup** dialog box, specify the language packs to be installed by clicking each icon and selecting the appropriate menu option. Click **Next**.

- To specify that a language pack is to be installed, click its icon and select **This feature will be installed on local hard drive**.
- To specify that a language pack is *not* to be installed, click its icon and select **This feature will not be available**.

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

- a. Click the **Chinese Language Pack** icon, and select **This feature will not be available**.
 - b. Click the **French Language Pack** icon, and select **This feature will be installed on local hard drive**.
 - c. Click the **Japanese Language Pack** icon, and select **This feature will not be available**.
 - d. Click the **Korean Language Pack** icon, and select **This feature will be installed on local hard drive**.
 - e. Click **Next**.
7. In the **Ready to Install the Program** dialog box, click **Install**.

At the end of the language pack install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard. [“Considerations for NMO wizard operations” on page 13](#) provides more information on the configuration wizard.

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

Install on a Windows Itanium platform

Note: NMO 5.0 does *not* provide language packs on Windows Itanium.

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 15](#).
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 [“Access the software” on page 36](#).

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

5. Run the NMO installer program, `networkr\setup.exe`, either from the NetWorker Module DVD 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**.
8. In the **Ready to Install the Program** dialog box, click **Install**.

At the end of the NMO install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard. [“Considerations for NMO wizard operations” on page 13](#) provides more information on the configuration wizard.

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 the NMO software according to [Chapter 4, “Licensing and Enabling the Software.”](#)
13. Ensure that the file `NetWorker_install_path\res\servers` on the NMO client is either empty or includes 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.

After NMO is installed and enabled, the software must be properly configured for Oracle data backup and restore operations. The *NetWorker Module for Oracle Release 5.0 Administration Guide* provides information on how to configure and use the software.

Installing on a cluster or RAC system

NMO release 5.0 supports active-passive cluster and RAC configurations on all clusters supported by both Oracle and the NetWorker client installed on the NMO host. NMO also supports RAC configurations on all Oracle OSD clusterware versions supported by Oracle.

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

Install NetWorker client and NMO software on *each* cluster node or RAC node to be used for backup and restore operations:

1. Meet all the requirements in [“Installation requirements” on page 15](#).
2. Follow the instructions in [“Installing on a single Oracle Server host” on page 36](#).

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 (language packs *only*), repair, or remove the existing installation.

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 [“Access the software” on page 36](#), and run the program for the specific software:
 - Run `nmo\networkr\setup.exe` for the NMO software.
 - Run `nmolp\networkr\setup.exe` for the NMO language packs (Chinese (Simplified), French, Japanese, and Korean) on all Windows platforms *except* Itanium.

Note: The NMO software and corresponding NetWorker language pack must be installed *before* you install an NMO language pack.
An NMO language pack must be uninstalled *before* you uninstall the NMO software and corresponding NetWorker language pack.

4. If the **Choose Setup Language** dialog box appears, select a language (Chinese (Simplified), English, French, Japanese, or Korean) to use on the program screens. All subsequent messages in the **Setup** program are displayed in the chosen language.
5. In the **Welcome** dialog box, click **Next**.
6. In the **Program Maintenance** dialog box, select the maintenance task to perform, and click **Next** to proceed:
 - **Modify** — Allows you to add and remove the language packs *only*. [“Add and remove language packs” on page 43](#) provides details.
 - **Repair** — Allows you to replace missing or corrupted files in the existing installation. [“Repair an NMO installation” on page 43](#) provides details.
 - **Remove** — Depending on the `setup.exe` program run in [step 3](#), allows you to remove the following:
 - With the `nmo\networkr\setup.exe` program, remove the NMO software.
 - With the `nmolp\networkr\setup.exe` program, remove the Chinese (Simplified), French, Japanese, and Korean language packs.

You can also use the **Windows Control Panel Add or Remove** program to remove the components. [“Uninstalling on Microsoft Windows” on page 56](#) provides details.

Add and remove language packs

To add and remove the language packs in the existing NMO installation on Windows platforms *except* Itanium:

1. Start the **Setup** program in maintenance mode. [“Run the Setup program in maintenance mode” on page 42](#) 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 language pack and select the appropriate menu option. Click **Next**.
 - To specify that a language pack is to be installed, click its icon and select **This feature will be installed on local hard drive**.
 - To specify that a language pack is to be uninstalled, click its icon and select **This feature will not be available**.
4. In the **Ready to Modify the Program** dialog box, click **Install**.

After language packs are installed or uninstalled, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard. [“Considerations for NMO wizard operations” on page 13](#) provides more information on the configuration wizard.

5. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the wizard.

Repair an NMO installation

To repair an existing NMO installation:

1. Start the **Setup** program in maintenance mode. [“Run the Setup program in maintenance mode” on page 42](#) 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 files as required.

At the end of the install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard. [“Considerations for NMO wizard operations” on page 13](#) provides more information on the configuration wizard.

4. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the wizard.
5. Reboot the Windows system, and verify that the Oracle instances and services were restarted.

The chapter includes the following sections:

◆ How NetWorker software is licensed.....	46
◆ The evaluation process	46
◆ The licensing process	47
◆ Client connection licenses	48
◆ NMO license	48
◆ Using nsrlic to gather license information.....	48
◆ Managing licenses	51

How NetWorker software is licensed

NetWorker software and added features, such as modules, are installed in evaluation mode with all of the features enabled for a period of 30 days. 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 > Software Downloads and Licensing > License Management**, and then follow the instructions for your product.
- ◆ Refer to the EMC Information Protection and Availability Product Families Media Kit.

Note: Evaluation enablers and licenses from NMO release 4.5 and earlier are valid for NMO release 5.0.

An alert message is generated 15 days before a NetWorker license is about to expire. The alert remains until the NetWorker license is authorized or deleted.

To view the license alert:

- ◆ From the **NetWorker Administration** window, click **Monitoring** and click **Alert**.
- ◆ From the **Console** window, click **Events**.

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 47](#) provides instructions.

Entering a temporary enabler code

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. (Optional) In the **Comment** attribute, type a description of the license.
8. Click **OK**.

The licensing process

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

The license enabler code that you purchase is valid for 45 days, as a registration period. During the registration period, you must obtain and enter a corresponding authorization code. More instructions for purchasing, enabling, and authorizing the NetWorker software are provided in the section [“The evaluation process” on page 46](#).



IMPORTANT

Automatically importing and installing the NetWorker license enablers and authorization codes from EMC Powerlink is the recommended way to obtain and install NetWorker license enablers and authorization codes. Do not manually enter

and authorize license enablers unless you *cannot* import and install automatically. The NetWorker installation guide provides details on the procedures for the NetWorker license enablers, authorization codes, and update enablers.

The NetWorker documentation provides details on a simplified licensing model for virtualized environments. The *EMC Information Protection Software Compatibility Guide* provides a detailed list of supported server virtualization environments.

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. An NDMP data server requires a special type of client connection license.

Note: ClientPak® enablers are no longer required. Client licensing is now based solely on the client connection enablers.

NMO license

The NMO client host requires an NMO license in addition to the client connection license.

Detailed information on the licensing requirements for NetWorker Application Modules is available in the EMC pricing guide.

Using nsrlic to gather license information

The **nsrlic** command is installed as part of the server installation and is not available on machines that only have the client software installed. There are a number of ways that a customer can obtain license information from a server or servers.

Querying the local server

To query the local server (the server where **nsrlic** is stored), type **nsrlic** at the command line. For example:

- ◆ On UNIX:

```
/usr/sbin/nsrlic
```

- ◆ On Windows:

```
NetWorker_install_dir\bin\nsrlic
```

A report is produced with various quantities and servers indicated. The following is an example report.

Example 1 Report from the nsrlic command

```

12116:nsrlic: License Summary:
66441:nsrlic: Available: sv=12, virt=1, ndmp=0
64047:nsrlic: Borrowed: sv_borrowed=2
66442:nsrlic: Remaining: sv=7, virt=3, ndmp=0
nsrlic: Connected Clients: (4)
nsrlic: witt bride pasay frankenstein
nsrlic: Connected Virtual Client Physical hosts: (3)
nsrlic: esx-11 esx-38 sol-zone-jupiter

```

STANDARD CLIENT LICENSES

```

Available: 12
Used: 3
Loaned to Virtual: 2
Remaining: 7
Connected Clients

```

VIRTUAL CLIENT LICENSES

```

Available: 1
Borrowed from Server: 2
Used: 3
Remaining: 0
Connected Clients

```

NDMP CLIENT LICENSES

```

Available: 0
Used: 0
Remaining: 0
Connected Clients

```

SERVER/CLUSTER CLIENT TYPES

```

AIX: 0
Digital UNIX: 0
HP UX: 0
HP MPE: 0
Linux: 0
NetWare: 0
Network Appliance: 0
IBM DYNIX/ptx: 0
SGI: 0
Solaris: 2
SunOS: 0
UnixWare: 0
Windows NT Server: 8

```

WORKSTATION CLIENT TYPES

```

DOS: 0
Macintosh: 0
OS/2: 0
OS/2: 0
Windows 3.1x: 0
Windows 95: 0
Windows NT Workstation: 1
UX/4800: 0
Others: 0

```

Defined Clients

PRE-5.0 CLIENT TYPES

APPLICATION LICENSES

```

NetWorker Module for Microsoft SQL Server
Available: 1
Used: 1
Remaining: 0

```

NetWorker Module for Microsoft Exchange Server

```

Available: 4
Used: 3
Remaining: 1

```

```

NetWorker Module for Oracle, Unix Client/1
Available: 2
Used: 0
Remaining: 2

```

Determining the number of available client licenses

To determine the number of available client licenses, look at the "nsrlic: Remaining" line in the **nsrlic** report.

In the report in [Example 1 on page 49](#), "sv=12" means that the particular server has 12 licenses available. Also, in the STANDARD CLIENT LICENSES section, "Available: 12" indicates the number of available client licenses.

Querying a server

To query a specific server, type the **-s server** option at the command line. For example:

```
/usr/sbin/nsrlic -s bacoor
```

where bacoor is the server name being queried.

Querying a server for all information

To query a specific server for all information, type the **-v server** option at the command line. For example:

```
/usr/sbin/nsrlic -v bacoor
```

where **-v** is for a verbose query for bacoor.

Note: This query may be helpful in troubleshooting license issues.

A verbose report is produced with various quantities indicated.

Example 2 Verbose report from the nsrlic command

```

12116:nsrlic: License Summary:
66441:nsrlic: Available: sv=12, virt=1, ndmp=0
64047:nsrlic: Borrowed: sv_borrowed=2
66442:nsrlic: Remaining: sv=7, virt=3, ndmp=0
nsrlic: Connected Clients: (4)
nsrlic: witt bride pasay frankenstein
nsrlic: Connected Virtual Client Physical hosts: (3)
nsrlic: esx-11 esx-38 sol-zone-jupiter

STANDARD CLIENT LICENSES
Available: 12
Used: 3
Loaned to Virtual: 2
Remaining: 7
Connected Clients: witt, bride, pasay, frankenstein

VIRTUAL CLIENT LICENSES
Available: 1
Borrowed from Server: 2
Used: 3
Remaining: 0
Connected Virtual Client Physical: esx-11, esx-38, sol-zone-jupiter

NDMP CLIENT LICENSES
Available: 0
Used: 0
Remaining: 0
Connected Clients

```

```

SERVER/CLUSTER CLIENT TYPES
AIX: 0
Digital UNIX: 0
HP UX: 0
HP MPE: 0
Linux: 0
NetWare: 0
Network Appliance: 0
IBM DYNIX/ptx: 0
SGI: 0
Solaris: 2
SunOS: 0
UnixWare: 0
Windows NT Server: 8

WORKSTATION CLIENT TYPES
DOS: 0
Macintosh: 0
OS/2: 0
OS/2: 0
Windows 3.1x: 0
Windows 95: 0
Windows NT Workstation: 1
UX/4800: 0
Others: 0

Defined Clients          PRE-5.0 CLIENT TYPES

APPLICATION LICENSES

NetWorker Module for Microsoft SQL Server
Available: 1
Used: 1
Remaining: 0
Connected Clients: SQLhost_7

NetWorker Module for Microsoft Exchange Server

Available: 4
Used: 3
Remaining: 1
Connected Clients: Exch1, Exch17, Exch18

NetWorker Module for Oracle, Unix Client/1
Available: 2
Used: 0
Remaining: 2
Connected Clients:

```

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..... 54
- ◆ Uninstalling on Microsoft Windows 56

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 5.0 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 5 on page 54](#).

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 or relink the Oracle Server.



IMPORTANT

The commands in [Table 5 on page 54](#) restore the Oracle software to its state prior to the NMO installation. If the installation commands from [Chapter 2, "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 5 on page 54](#) apply only to Oracle *base* releases (if available). Link instructions might vary with patched releases of the Oracle Server.

Table 5 Commands for the library file removal on UNIX and Linux (page 1 of 2)

On this system	With these Oracle releases	Use these commands to remove the symbolic link
AIX	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % rm libobk.a
HP-UX Itanium	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % rm libobk.so
HPUX PA-RISC	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % rm libobk.sl
Linux AMD64/EM64T	10.x 64-bit 11.x 64-bit	% cd \$ORACLE_HOME/lib % rm libobk.so

Table 5 Commands for the library file removal on UNIX and Linux (page 2 of 2)

On this system	With these Oracle releases	Use these commands to remove the symbolic link
Linux Intel	10.x 32-bit 11.x 32-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Linux Itanium	10.x 64-bit 11.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Solaris	10.x 64-bit 11.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>

- Log in as the root user on the Oracle Server host.
- Uninstall the NMO software by using the instructions from [Table 6 on page 55](#) for the operating system.

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

Table 6 Procedures for uninstalling NMO on UNIX and Linux (page 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"> Invoke the installp command line interface by typing the appropriate command: installp -u LGTONmo.nmofr.rte (French language pack) installp -u LGTONmo.nmoja.rte (Japanese language pack) installp -u LGTONmo.nmoko.rte (Korean language pack) installp -u LGTONmo.nmozh.rte (Chinese language pack) installp -u LGTONmo.rte (NMO software) <p>Note: 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"> Invoke the SMIT GUI program by typing the following command: smitty remove 	<p>If using the SMIT GUI program, perform the following after typing the smitty remove command:</p> <ol style="list-style-type: none"> Select F4=List to display a list of the installed software packages. Select the packages to be uninstalled: LGTONmo.nmofr.rte (French language pack) LGTONmo.nmoja.rte (Japanese language pack) LGTONmo.nmoko.rte (Korean language pack) LGTONmo.nmozh.rte (Chinese language pack) LGTONmo.rte (NMO software) <p>Note: 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"> Ensure that the PREVIEW Only option is set to no. Press Enter to uninstall the NMO software. Exit the SMIT program.
HP-UX	<p>Perform one of the following:</p> <ul style="list-style-type: none"> To invoke the swremove command line interface, type this command: swremove NMO To invoke the swremove GUI program, type this command: swremove -i NMO 	<p>If using the swremove GUI program:</p> <ol style="list-style-type: none"> Select Actions > Remove (analysis). When the system analysis is complete, click OK to complete the uninstall. To confirm the uninstall, click Yes. <p>Note: Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p>

Table 6 Procedures for uninstalling NMO on UNIX and Linux (page 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>rpm -e lgtonmofr-5.0-1 (French language pack) rpm -e lgtonmoja-5.0-1 (Japanese language pack) rpm -e lgtonmoko-5.0-1 (Korean language pack) rpm -e lgtonmozh-5.0-1 (Chinese language pack) rpm -e lgtonmo-5.0-1 (NMO software)</p> <p>Note: Uninstall an NMO language pack <i>before</i> you uninstall the NMO software and corresponding NetWorker language pack.</p> <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"> Type this command: rpm -e lgtonmo-5.0-1 lgtoclnt Type these separate commands, in this order <i>only</i>: rpm -e lgtonmo-5.0-1 rpm -e lgtoclnt <p>Note: 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: rpm -e lgtoclnt lgtonmo-5.0-1</p>	
Solaris	<p>Type the appropriate commands, depending on the packages installed:</p> <p>pkgrm LGTONmofr (French language pack) pkgrm LGTONmoja (Japanese language pack) pkgrm LGTONmoko (Korean language pack) pkgrm LGTONmozh (Chinese language pack) pkgrm LGTONmo (NMO software)</p> <p>Note: 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"> Uninstall NMO on the global zone. Uninstall NMO on each required sparse root zone. 	<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"> If <code>basedir=default</code> in the file, type y when prompted. The software is uninstalled from the directory containing the NetWorker client software. If <code>basedir=ask</code> in the file, type the result of the pkgparam LGTONmo BASEDIR command when prompted for the pathname of the base directory. The software is uninstalled from the specified base directory. If <code>basedir=/dirpath</code> in the file, type y when prompted. The software is uninstalled from the specified <code>/dirpath</code> directory.

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 5.0 on a supported Microsoft Windows operating system, follow the appropriate instructions:

- ◆ [“Uninstall by using the Setup program” on page 57](#)
- ◆ [“Uninstall by using the Control Panel” on page 57](#)

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 backups are running.
3. If any language packs are installed, uninstall all the language packs:
 - a. Run the `nmolp\networkr\setup.exe` program, as described in [“Run the Setup program in maintenance mode” on page 42](#).
 - b. In the **Program Maintenance** dialog box, select **Remove** and click **Next**.
 - c. In the **Remove the Program** dialog box, click **Remove** to uninstall all the language packs.
4. Uninstall the NMO software:
 - a. Run the `nmo\networkr\setup.exe` program, as described in [“Run the Setup program in maintenance mode” on page 42](#).
 - 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.

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 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**.

