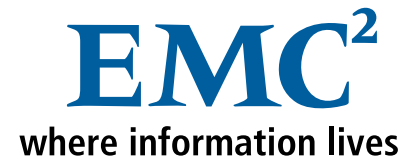


September 1, 2006



NetWorker™

Module for Oracle®

Release 4.2  
Multiplatform Version  
Installation Guide

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*Legato NetWorker Module for Oracle, Release 4.2, Multiplatform Version, Installation Guide*

September 1, 2006

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# Preface

This guide is part of the Legato NetWorker<sup>®</sup> Module for Oracle release 4.2 documentation set. For a complete list of documents related to the use of this product, see "[Related Documentation](#)" on page 8.

For the most up-to-date information on the features of NetWorker<sup>™</sup> Module for Oracle (NMO), refer to the Release Notes. This document is available at [www.Legato.com](http://www.Legato.com).

## Audience

The information in this guide is intended for 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 the Oracle database backups may also find this manual useful.

To use this guide effectively, a working knowledge of Oracle terminology and concepts (especially those related to Oracle database backup and recovery) is required.

## Organization

This guide is organized as follows:

- "[Chapter 1: Introduction](#)" on page 10 provides an overview of the procedures in this guide, and installation considerations for NMO release 4.2.
- "[Chapter 2: Update and Upgrade Procedures](#)" on page 14 provides information on how to update or upgrade to NMO release 4.2.
- "[Chapter 3: Installation Preparation](#)" on page 18 provides a roadmap and requirements for the installation of NMO release 4.2.
- "[Chapter 4: Install Procedures on UNIX](#)" on page 23 provides information on how to install NMO release 4.2 on a supported UNIX operating system.
- "[Chapter 5: Install Procedures on Windows](#)" on page 36 provides information on how to install NMO release 4.2 on a supported Microsoft Windows operating system.
- "[Chapter 6: Evaluating and Licensing Procedures](#)" on page 47 provides information on how to evaluate and license NMO release 4.2.

- "[Chapter 7: Uninstall Procedures](#)" on page 57 provides information on how to uninstall NMO release 4.2.
- "[Appendix A: Configuration Wizard Registration](#)" on page 62 provides information on registering the configuration wizard libraries on the NMO client host.

## Related Documentation

The information in this guide may be supplemented with the following resources:

- The appropriate versions of the following NetWorker documentation:
  - *NetWorker Module for Oracle Administrator's Guide*
  - *NetWorker Module for Oracle Release Notes*
  - *NetWorker PowerSnap™ Module Installation and Administrator's Guide*
  - *NetWorker Administrator's Guide*
  - *NetWorker Release Supplement*
  - NetWorker Administrator program Online Help
  - *NetWorker Command Reference Guide* (for NetWorker commands)
  - *NetWorker Module for Oracle Command Reference Guide* (for NMO commands)
- UNIX man pages (for NetWorker and NMO commands)
- Oracle backup and recovery documentation


The complete set of NetWorker documentation is provided in PDF form on the Legato Documentation Suite CD-ROM shipped with the software. The most up-to-date documentation is available at [www.Legato.com](http://www.Legato.com).

## Conventions Used in This Guide

This document uses the following typographic conventions and symbols to make information easier to access and understand.

Convention	Indicates	Example
<b>boldface</b>	Names of line commands, daemons, options, programs, or scripts	The <b>nsradmin</b> command starts the command line version of the NetWorker Administrator program.
<i>italic in text</i>	Pathnames, filenames, computer names, new terms defined in the Glossary or within the chapter, or emphasized words	Displayed messages are also written to <i>/nsr/logs/daemon.log</i> . The specifications are created, one for each swap file, in <i>c:\pagefile.sys</i> .
<i>italic in command line</i>	A variable that must be provided in the command line	<b>nwadmin -s</b> <i>server_name</i>
fixed-width	Examples and information displayed on the screen	media waiting: recover waiting for 8mm 5GB tape volume name



Convention	Indicates	Example
<b>fixed-width, boldface</b>	Commands and options that must be entered exactly as shown	<b>nsr_shutdown -a</b>
Menu_Name> Command	A path or an order to follow for making selections in the user interface	Volume>Change Mode>Appendable
<b>Important:</b>	Information that must be read and followed to ensure successful backup and recovery of data	 <hr/> <b>Important:</b> Use the <b>no_verify</b> option with extreme caution. <hr/>

## Where to Get Help

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

### Technical Support

For information about software patches, technical documentation, and support programs:

- Customers *with* an active support agreement, go to:  
<http://softwaresupport.EMC.com>
- Customers *without* an active support agreement, please contact Support Sales and Renewals.

### Support Sales, Renewals, and Licensing

- For additional information about EMC storage products and services, go to:  
<http://www.Legato.com/support/contact/index.htm>
- To license and register this product, go to:  
<http://www.Legato.com/support/licensing>

## Your Comments

Comments and suggestions about our product documentation are always welcome.

To provide feedback:

1. Go to:  
<http://softwaresupport.EMC.com>
2. Navigate to the Product Documentation page.
  - To comment on a particular guide, click the Comments link next to the guide's title.
  - To tell us how you prefer to use documentation, click Document Survey.

# Chapter 1: Introduction

This Installation Guide describes how to install and enable NetWorker Module for Oracle (NMO) release 4.2 on a supported UNIX or Microsoft Windows operating system that is running Oracle Server software.

**Note:** For details on the specific operating system versions that NMO supports, refer to the *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).

The NMO software is distributed in the following formats:

- On the NetWorker Modules CD-ROM, which is included in the Legato Media Kit that contains the software and online documentation for related products.
- In the downloadable file of the *evaluation* software, available from the Legato web site.

This chapter includes the following sections:

- ["Revision History" on page 10](#)
- ["Use of This Guide" on page 11](#)
- ["Installation Considerations" on page 12](#)

## Revision History

The following table summarizes the changes since the initial release of this document.

Date	Revision Description
September 1, 2006	<p>In the following sections, deleted the statement that proxy Oracle operations are <i>not</i> supported on Real Application Cluster (RAC) systems:</p> <ul style="list-style-type: none"><li>• <a href="#">"Considerations for Proxy Backups and Restores" on page 12.</a></li><li>• <a href="#">"Installation Requirements" on page 19.</a></li><li>• <a href="#">"Installing on a Cluster, OPS, or RAC System" on page 34.</a></li><li>• <a href="#">"Installing on a Cluster, OPS, or RAC System" on page 43.</a></li></ul>

Date	Revision Description
February 20, 2006	Add the following information: <ul style="list-style-type: none"> <li>• Information on Oracle patch 4061041 to <a href="#">"Oracle Server Requirements" on page 20</a>.</li> <li>• Information on Linux (AMD64/EM64T) to the following:               <ul style="list-style-type: none"> <li>- <a href="#">"How to Install on Linux" on page 29</a>.</li> <li>- <a href="#">Table 3 on page 34</a>.</li> <li>- <a href="#">Table 6 on page 58</a>.</li> </ul> </li> <li>• Information on uninstalling <i>both</i> NMO and the NetWorker client on Linux to <a href="#">Table 7 on page 59</a>.</li> </ul>
July 11, 2005	In the section <a href="#">"NetWorker Configuration Wizard Software" on page 21</a> , added step 4 about the <i>servers</i> file requirement for the NetWorker Configuration Wizard, which is used to configure scheduled NMO backups.
May 5, 2005	Initial release of this document.

## Use of This Guide

Use the information in this guide to:

- Update or upgrade to NMO release 4.2 from:
  - NMO release 3.x
  - NMO release 4.0
  - NMO release 4.1
  - Legato Storage Manager
  - Legato Single Server Version
 For more information, see ["Chapter 2: Update and Upgrade Procedures" on page 14](#).
- Prepare to install NMO release 4.2. For more information, see ["Chapter 3: Installation Preparation" on page 18](#).
- Install NMO release 4.2. For more information, see the following:
  - ["Chapter 4: Install Procedures on UNIX" on page 23](#).
  - ["Chapter 5: Install Procedures on Windows" on page 36](#)
- Enable the NMO software. For more information, see ["Chapter 6: Evaluating and Licensing Procedures" on page 47](#).
- Uninstall the NMO software. For more information, see ["Chapter 7: Uninstall Procedures" on page 57](#).
- Manually register the configuration wizard libraries, if required. For more information, see ["Appendix A: Configuration Wizard Registration" on page 62](#).

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

- NMO software
- NetWorker client software in those cases where the NetWorker server resides on a different (remote) host

After installation, the software components must be properly configured to enable regular or proxy Oracle backup and restore operations. For these configuration procedures, refer to the following:

- *NetWorker Module for Oracle Administrator's Guide*
- *NetWorker PowerSnap Module Installation and Administrator's Guide*  
(Refer to the PowerSnap Module version for the primary storage system.)




---

**Important:** For NetWorker server release 7.x, ensure that the required privileges are set in the appropriate NetWorker user groups. For more information, refer to the *NetWorker Module for Oracle Administrator's Guide*.

---

## 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. For a complete list of supported PowerSnap Modules, refer to the current *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).
- The proxy operations use the particular PowerSnap Module software designed for the primary storage.

**Note:** Proxy Oracle backups and restores are *not* supported on an Oracle Parallel Server (OPS) system.

For proxy Oracle operations, the 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

For more information, refer to the appropriate *NetWorker PowerSnap Module Installation and Administrator's Guide*.

## Considerations for NetWorker Configuration Wizard Operations

The NetWorker Configuration Wizard on Solaris or 32-bit Windows can be used to configure scheduled Oracle backups of the NMO client, where the client can be *either* on the same Solaris or Windows system *or* on a remote system.

To enable the configuration wizard to configure scheduled NMO backups:

- The required NetWorker server and client software must be installed.
- The NetWorker Configuration Wizard (packaged with NetWorker) must be installed on the Solaris or 32-bit Windows system where the configuration wizard is run.
- The required configuration wizard libraries (packaged with NMO) must be installed:
  - On the Solaris or Windows system where the configuration wizard is run.
  - On the NMO client.

For more information, see "[NetWorker Configuration Wizard Software](#)" on page 21.

## Chapter 2: Update and Upgrade Procedures

---

To update or upgrade to NetWorker Module for Oracle (NMO) release 4.2, see the appropriate section:

- ["Updating from NMO Release 3.x or 4.x" on page 14](#)
- ["Upgrading from LSM or LSSV Release 6.1" on page 15](#)

**Note:** To enable proxy Oracle operations, you must 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 appropriate *NetWorker PowerSnap Module Installation and Administrator's Guide*.

### Updating from NMO Release 3.x or 4.x

The release 4.2 module software *cannot* coexist on the same system with any of the following earlier NMO releases:

- Release 3.x
- Release 4.0
- Release 4.1

To update from NMO release 3.x or 4.x:

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 4.2 on the Oracle Server host by using the instructions in ["Chapter 3: Installation Preparation" on page 18](#).

## 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, see the appropriate section:

- ["How to Upgrade without Keeping the Backups" on page 15](#)
- ["How to Upgrade while Keeping the Backups" on page 15](#)

### 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 referring to 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. Refer to the client installation procedures in the *NetWorker Installation Guide*.
  4. Install and enable NMO release 4.2 on the Oracle Server host by using the instructions in ["Chapter 3: Installation Preparation" on page 18](#).

### 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:** For more information on the *<NetWorker\_install\_path>* directory, see ["Software Installation Path on Windows" on page 36](#).

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.  
For instructions, refer to the *NetWorker Installation Guide*.
      - 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 entering the following command:  
**nsrccap -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.  
For more information, refer to the following:
      - *NetWorker Administrator's 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.

For more information, refer to the *NetWorker Administrator's Guide* or *NetWorker Disaster Recovery Guide*.

- 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.

For more information, refer to the *NetWorker Administrator's Guide* or *NetWorker Disaster Recovery Guide*.

- d. Install and enable the NetWorker client software on the Oracle Server host by referring to the client installation procedures in the *NetWorker Installation Guide*.
5. Install and enable NMO release 4.2 on the Oracle Server host by using the instructions in "[Chapter 3: Installation Preparation](#)" on page 18.

## Chapter 3: Installation Preparation

---

This chapter provides a roadmap for installing the NetWorker Module for Oracle (NMO) release 4.2 software on a supported operating system that does *not* have a previous release of the software installed.



---

**Important:** If the NMO software is downloaded from the Legato web site, an enabler code is *not* included. The software downloaded from the web site can only be *evaluated*. For more information on enabling NMO, see ["Chapter 6: Evaluating and Licensing Procedures" on page 47](#).

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.

---

For information on how to update from a previous release of NMO, see ["Chapter 2: Update and Upgrade Procedures" on page 14](#).

This chapter includes the following sections:

- ["Installation Roadmap" on page 19](#)
- ["Installation Requirements" on page 19](#)

## Installation Roadmap

This section provides a roadmap for the NMO installation. Read through this roadmap and the referenced sections before installing the software.

To install the NMO software, perform the following:

1. Ensure that all the installation requirements are met. For more information, see ["Installation Requirements" on page 19](#).
2. Install the NMO software on *either* a single Oracle Server host *or* a cluster, Oracle Parallel Server (OPS), or Real Application Cluster (RAC) system.

For more information, see the appropriate chapter:

- ["Chapter 4: Install Procedures on UNIX" on page 23](#)
- ["Chapter 5: Install Procedures on Windows" on page 36](#)

After the NMO software is installed, it must be properly configured for Oracle backup and restore operations. For more information, refer to the following:

- *NetWorker Module for Oracle Administrator's Guide*
- *NetWorker PowerSnap Module Installation and Administrator's Guide*  
(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 20](#)
- ["Oracle Server Requirements" on page 20](#)
- ["NetWorker Software Requirements" on page 20](#)
- ["NMO Requirements" on page 22](#)

### Notes:

- A cluster system must be running cluster software that supports clustered Oracle, OPS, or RAC.
- Proxy Oracle backups and restores are *not* supported on an OPS system.
- To enable proxy Oracle backups and restores, install the required NetWorker PowerSnap Module. For more information, refer to the appropriate *NetWorker PowerSnap Module Installation and Administrator's Guide*.
- To enable the NetWorker Configuration Wizard on Solaris or 32-bit Windows to configure scheduled backups of the NMO 4.2 client, install the required configuration wizard libraries. For more information, see ["NetWorker Configuration Wizard Software" on page 21](#).

## Operating System Requirements

Before the NMO software is installed, one of the supported operating systems must be installed. For a complete list of the operating systems that NMO supports, refer to the *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).

### Notes:

- On AIX 5.1, the IBM patch IY36925 must be installed.
- On 64-bit Solaris only, 32-bit and 64-bit NMO can coexist.
- NetWorker Configuration Wizard release 1.0 supports Solaris and 32-bit Windows only. The wizard can be used to configure scheduled Oracle backups of the NMO client.

## 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 20.
- A supported Oracle Server release is installed:
  - For UNIX, the supported Oracle Server releases are listed in [Table 3, "Linking Commands for Oracle Library File Installation on UNIX,"](#) on page 34.
  - For Windows, the supported Oracle Server releases are 9.0.1, 9.2, 10.1.

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

- 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

For Oracle backups, ensure that the NetWorker software requirements in the following sections are met:

- "[NetWorker Server Software](#)" on page 20
- "[NetWorker Client Software](#)" on page 21
- "[NetWorker Configuration Wizard Software](#)" on page 21

To ensure that the existing computer hardware is compatible with the NetWorker software, refer to the *Hardware Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).

## NetWorker Server Software

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

- For regular Oracle backups, install server release 7.0 or later.
- For proxy Oracle backups, install server release 7.1 or later.
- If the NetWorker Configuration Wizard is to be used on Solaris or 32-bit Windows to configure scheduled NMO backups, install server release 7.2 or later.

**Note:** The NetWorker Configuration Wizard software must be installed *after* the NetWorker 7.2 server or client is installed on the same system.

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

For more information, refer to the following sources:

- For details on the supported server releases and operating systems, refer to the *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).
- For details on how to install the NetWorker server software, refer to the *NetWorker Installation Guide*.

### NetWorker Client Software

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

- For regular Oracle backups, install client release 7.0 or later.
- For proxy Oracle backups, install client release 7.1 or later.
- If the NetWorker Configuration Wizard is used on Solaris or 32-bit Windows to configure scheduled NMO backups, install client release 7.2 or later.

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

**Note:** The NetWorker Configuration Wizard software must be installed *after* the NetWorker 7.2 server or client is installed on the same system.

For more information, refer to the following sources:

- For details on the supported client releases and operating systems, refer to the *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).
- For details on how to install the NetWorker client software, refer to the *NetWorker Installation Guide*.

### NetWorker Configuration Wizard Software

The NetWorker Configuration Wizard can be used on Solaris or 32-bit Windows to configure scheduled Oracle backups of the NMO client, where the client can be *either* on the same system *or* on a remote system.

To enable the configuration wizard to configure scheduled NMO backups:

1. Install the required NetWorker server and client software:
  - NetWorker server release 7.2 or later on the server.
  - NetWorker client release 7.2 or later on the NMO client.

For details on how to install the NetWorker software, refer to the *NetWorker Installation Guide*.

2. Install the NetWorker Configuration Wizard release 1.0 (packaged with NetWorker 7.2) on the system where the configuration wizard is run.

For details on the configuration wizard, refer to the *NetWorker Release Supplement*.

3. Install the required configuration wizard libraries (packaged with NMO 4.2) on the following:
  - On the system where the configuration wizard is run.
  - On the NMO client.For details, see the appropriate chapter:
  - ["Chapter 4: Install Procedures on UNIX" on page 23](#)
  - ["Chapter 5: Install Procedures on Windows" on page 36](#)
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.

## 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.

For the locations of the documentation files on the Documentation Suite CD-ROM, refer to the Legato Media Kit roadmap. The most up-to-date documents are also available on the web site at [www.legato.com](http://www.legato.com). To view or print the documents, use the Adobe Acrobat Reader.

For details on any patches required for the particular system, refer to the web site at [www.legato.com](http://www.legato.com).

## Chapter 4: Install Procedures on UNIX

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This chapter describes how to install NetWorker Module for Oracle (NMO) release 4.2 on a supported AIX, HP-UX, Linux, Solaris, or Tru64 UNIX operating system.

To install the software on *either* a single Oracle Server host *or* a cluster, OPS, or RAC system, see the appropriate section:

- ["Installing on a Single Oracle Server Host" on page 23](#)
- ["Installing on a Cluster, OPS, or RAC System" on page 34](#)



---

**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 ["Uninstall Procedures on UNIX" on page 57](#).
  2. Reinstalled according to the ["Installation Roadmap" on page 19](#).
- 

### Installing on a Single Oracle Server Host

To install and enable the NMO software on a single Oracle Server host that is running UNIX, perform the following tasks:

- ["Task 1: Access the Software" on page 24](#)
- ["Task 2: Install the Software" on page 27](#)
- ["Task 3: Link the NMO Library File" on page 32](#)
- ["Task 4: Enable the Software" on page 34](#)

**Notes:**

- On 64-bit Solaris only, 32-bit and 64-bit NMO can coexist.
- On Solaris, you can install *either* NMO *or* the configuration wizard library (packaged with NMO), or you can install *both* NMO and the wizard library.
  - If NMO is to run on the Solaris system *without* the NetWorker configuration wizard, install NMO only.
  - If the configuration wizard is to run on the Solaris system and NMO is to be on a *remote* system, install the configuration wizard library only.
  - If *both* NMO and the configuration wizard are to run on the Solaris system, install both NMO and the configuration wizard library.

**Task 1: Access the Software**

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

- ["From a Local CD-ROM" on page 24](#)
- ["From a Remote CD-ROM" on page 25](#)
- ["From the Legato Web Site" on page 26](#)

**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 24](#).

**Table 1. Accessing the Correct Directory on the Local CD-ROM (Part 1 of 2)**

<b>On this system:</b>	<b>Enter the following command:</b>
AIX	If installing 64-bit NMO on AIX 5.x: <b>cd /mount_point/oracle/aix51_64</b>
HP-UX	If installing 32-bit NMO on HP-UX (PA-RISC): <b>cd /mount_point/oracle/hpux11_32</b>
	If installing 64-bit NMO on HP-UX (PA-RISC): <b>cd /mount_point/oracle/hpux11_64</b>
	If installing 64-bit NMO on HP-UX (Itanium): <b>cd /mount_point/oracle/hpux11_ia64</b>
Linux	If installing on Linux (Intel): <b>cd /mount_point/oracle/linux_x86</b>
	If installing on Linux (Itanium): <b>cd /mount_point/oracle/linux_ia64</b>



**Table 1. Accessing the Correct Directory on the Local CD-ROM (Part 2 of 2)**

<b>On this system:</b>	<b>Enter the following command:</b>
Solaris	If installing 32-bit NMO: <b>cd /mount_point/volume_label/oracle/solaris_32</b>
	If installing 64-bit NMO: <b>cd /mount_point/volume_label/oracle/solaris_64</b>
Tru64 UNIX	<b>cd /mount_point/oracle/tru64</b>

4. Continue with "[Task 2: Install the Software](#)" on page 27.

### From a Remote CD-ROM

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

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

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

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

```
mkdir /tmpmntdir
```

5. NFS-mount the remote CD-ROM onto the local host, as described in [Table 2 on page 25](#).

**Table 2. NFS-Mounting the Remote CD-ROM (Part 1 of 2)**

<b>On this system:</b>	<b>Enter the following command:</b>
AIX	If installing 64-bit NMO on AIX 5.x: <b>mount remote_host:/mount_point/oracle/aix5L_64 /tmpmntdir</b>
HP-UX	If installing 32-bit NMO on HP-UX (PA-RISC): <b>mount remote_host:/mount_point/oracle/hpux11_32 /tmpmntdir</b>
	If installing 64-bit NMO on HP-UX (PA-RISC): <b>mount remote_host:/mount_point/oracle/hpux11_64 /tmpmntdir</b>
	If installing 64-bit NMO on HP-UX (Itanium): <b>mount remote_host:/mount_point/oracle/hpux11_ia64 /tmpmntdir</b>
Linux	If installing on Linux (Intel): <b>mount remote_host:/mount_point/oracle/linux_x86 /tmpmntdir</b>
	If installing on Linux (Itanium): <b>mount remote_host:/mount_point/oracle/linux_ia64 /tmpmntdir</b>

**Table 2. NFS-Mounting the Remote CD-ROM (Part 2 of 2)**

<b>On this system:</b>	<b>Enter the following command:</b>
Solaris	If installing 32-bit NMO: <b>mount remote_host:/mount_point/volume_label/oracle/solaris_32 /tmpmntdir</b>
	If installing 64-bit NMO: <b>mount remote_host:/mount_point/volume_label/oracle/solaris_64 /tmpmntdir</b>
Tru64 UNIX	<b>mount remote_host:/mount_point/oracle/tru64 /tmpmntdir</b>

6. Go to the mounted directory:

```
cd /tmpmntdir
```

7. Continue with "[Task 2: Install the Software](#)" on page 27.

### From the Legato Web Site

The *evaluation* release of NMO downloaded from the Legato web site contains tarred and compressed versions of the software files.



**Important:** Ensure that there is sufficient free disk space (10 MB) to contain *both* the compressed download file and the fully uncompressed and untarred files.

To access the software files from the Legato web site:

1. Request the NMO software.
  - a. Go to the web site at *www.legato.com*.
  - b. Click the Download link.
  - c. On the Evaluation Software Request page, select NetWorker Module for Oracle from the products list. In the resulting table of products, click release 4.2 for the particular UNIX platform.
  - d. Complete and submit the Evaluation Request Form with the contact information. A Legato Inside Sales Representative will send you an e-mail with a URL to the NMO download file on the Legato FTP site.
2. Access the software.
  - a. Log in as root on the Oracle Server host.
  - b. Create a temporary installation directory in a local file system with sufficient free disk space (10 MB) to contain and extract the downloaded software. For example:
 

```
mkdir /usr/nsr_extract_nmo
```
  - c. Click the URL received in [step 1](#) to download the NMO software to the temporary directory you created, for example, */usr/nsr\_extract\_nmo*.

- d. Go to the installation directory. For example:  

```
cd /usr/nsr_extract_nmo
```
  - e. Uncompress the downloaded file by entering the **gunzip** command, and replacing the *filename.tar.gz* name with the specific download filename:  

```
gunzip filename.tar.gz
```
  - f. Extract the uncompressed, tarred file:  

```
tar xvpf filename.tar
```

The distribution software files are listed as the extraction proceeds.
  - g. Remain in the installation directory created in [step b](#), for example, */usr/nsr\_extract\_nmo*.
3. Continue with "[Task 2: Install the Software](#)" on page 27.

## 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 system:

1. Ensure that all the installation requirements have been met, as described in "[Installation Requirements](#)" on page 19.
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 24.

### 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. Perform one of the following:
    - To install the software on a system that does *not* yet contain NMO 4.2, see "[How to Install on a System without the Software](#)" on page 28.
    - To install 32-bit NMO on a 64-bit Solaris system that already contains 64-bit NMO 4.2, see "[How to Install on 64-Bit Solaris with the 32-Bit or 64-Bit Software](#)" on page 32.
    - To install 64-bit NMO on a 64-bit Solaris system that already contains 32-bit NMO 4.2, see "[How to Install on 64-Bit Solaris with the 32-Bit or 64-Bit 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, to 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 the MANPATH environment variable includes the */usr/man* pathname.

## How to Install on a System without the Software

To install on a system that does *not* contain the NMO software, see the appropriate section:

- ["How to Install on AIX" on page 28](#)
- ["How to Install on HP-UX" on page 29](#)
- ["How to Install on Linux" on page 29](#)
- ["How to Install on Solaris" on page 30](#)
- ["How to Install on Tru64 UNIX" on page 32](#)

## 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, enter 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 24](#).

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

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

If the **lsllpp** command output includes *LGTONmo.rte 4.2.0.0*, the installation succeeded.

- To invoke the SMIT GUI program, perform the following:
  - a. Enter one of the following commands:
 

```
smit
```

```
smitty
```
  - b. In the System Management list of the main window, select Software Installation and Maintenance.
  - c. In the Software Installation and Maintenance list, select Install and Update Software.
  - d. In the Install and Update Software list, select Install Software.
  - e. In the "INPUT device/directory for software" field in the Install Software window, enter the complete pathname of the correct directory, as described in ["Task 1: Access the Software" on page 24](#).
 

**Note:** Do *not* add *LGTONmo.rte* at the end of the directory pathname.
  - f. At the bottom of the list that appears in the Install Software window, click OK.
  - g. In the message box that prompts whether to continue, click OK.
  - h. When the installation is complete, click Done.

## How to Install on HP-UX

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

- To invoke the **swinstall** command line interface, enter 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 *LGTONmo.pkg* package, as described in "Task 1: Access the Software" on page 24.

- To invoke the **swinstall** GUI program, enter the following command:

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

- From the Actions menu, select Install (analysis).  
When the analysis is complete, a "Ready with Warnings" message appears. This is normal.
- 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, enter the appropriate **rpm** command:

- On Linux (AMD64/EM64T):
  - To install the software in the default directory:  
**rpm -i --nodeps lgtonmo-4.2-1.x86\_64.rpm**
  - To relocate the software to the same relocation path as the NetWorker client:  
**rpm -i --nodeps lgtonmo-4.2-1.x86\_64.rpm**  
**--relocate /usr=NetWorker\_base\_directory**
- On Linux (Intel):
  - To install the software in the default directory:  
**rpm -i lgtonmo-4.2-1.i686.rpm**
  - To relocate the software to the same relocation path as the NetWorker client:  
**rpm -i lgtonmo-4.2-1.i686.rpm**  
**--relocate /usr=NetWorker\_base\_directory**

- On Linux (Itanium):
  - To install the software in the default directory:
 

```
rpm -i --nodeps lgtonmo-4.2-1.ia64.rpm
```
  - To relocate the software to the same relocation path as the NetWorker client:
 

```
rpm -i --nodeps lgtonmo-4.2-1.ia64.rpm
--relocate /usr=NetWorker_base_directory
```

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

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

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

If the command output includes the following lines, the installation succeeded:

- On Linux (AMD64/EM64T):
 

```
lgtocInt-7.2-1
lgtonmo-4.2-1
```
- On Linux (Intel):
 

```
lgtocInt-7.2-1
lgtonmo-4.2-1-1.i686.rpm
```
- On Linux (Itanium):
 

```
lgtocInt-7.2-1
lgtonmo-4.2-1-1.ia64.rpm
```

**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.

## How to Install on Solaris

Install NMO and/or the configuration wizard library (packaged with NMO).

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

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. Enter one or both of the following **pkgadd** commands, as appropriate:

- To install the NMO software, enter this command:

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

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

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

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

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, enter **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. Enter the result of the **pkgparam LGTOclnt BASEDIR** command when prompted for the pathname of the base directory.

- b. Enter **y** when prompted whether to continue the installation.

The software is installed in the specified base directory.

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

- If *basedir=/dirpath* in the file, enter **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:

- a. Uninstall the software by entering the **pkgrm LGTONmo** command.

- b. Correct *basedir=/dirpath* in the */var/sadm/install/admin/default* file.

- c. 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. Enter the following `setld` command:  

```
setld -1 .
```
2. At the prompt, select to install the LGTONMO420 subset.
3. When the subset installation is complete and the prompt appears, enter `q` to exit.

### How to Install on 64-Bit Solaris with the 32-Bit or 64-Bit Software

To install NMO on a 64-bit Solaris system that *already* contains either 32-bit or 64-bit NMO release 4.2, perform one of the following:

- To install the 32-bit software on 64-bit Solaris that contains 64-bit software, perform the following:
  1. Uninstall the existing 64-bit NMO software according to the instructions in ["How to Uninstall the Software on UNIX" on page 57](#).
  2. Install the 32-bit NMO software according to the instructions in ["How to Install on Solaris" on page 30](#).
  3. Copy the library file `solaris_64/lib64/libnwor64.so` to `/usr/lib`. The library file is located either on the software release CD-ROM or in the web download of the 64-bit software, as appropriate.
- To install the 64-bit software on 64-bit Solaris that contains 32-bit software, copy the library file `solaris_64/lib64/libnwor64.so` to `/usr/lib`. The library file is located either on the software release CD-ROM or in the web download of the 64-bit software, as appropriate.

**Note:** To install both the 32-bit and 64-bit software from web download on the same computer, you must download *both* the 32-bit and 64-bit NMO packages from the web site.

### 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 Entering the Linking Commands

[Table 3 on page 34](#) lists the commands for linking the module library file. Refer to the following guidelines when entering the commands on the UNIX 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:** On Oracle9i or Oracle10g, 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. Enter the appropriate linking commands. See [Table 3 on page 34](#).

- If the software was installed by using the instructions in "How to Install on a System without the Software" on page 28:
  - If the software was *not* relocated during the installation, enter the appropriate commands.
  - If the software was relocated to the *relocation\_path* directory during the installation, do one of the following:
    - Copy the *libnwor\*.\** library file to the default directory */usr/lib* and enter the linking commands.
    - Enter the linking commands, replacing the default pathname */usr/lib/libnwor\*.\** with *relocation\_path/libnwor\*.\**
- On 64-bit Solaris, if the software was installed by copying the library file *libnwor32.so* or *libnwor64.so* to */usr/lib*, enter the appropriate command, replacing *libnwor.so* with either *libnwor32.so* or *libnwor64.so*, as appropriate.

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

**Table 3. Linking Commands for Oracle Library File Installation on UNIX**

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

#### Task 4: Enable the Software

After installation, enable the NMO software by using the instructions in ["Chapter 6: Evaluating and Licensing Procedures" on page 47](#).

If required, register the configuration wizard libraries, as described in ["Appendix A: Configuration Wizard Registration" on page 62](#).

After the software installation, NMO must be properly configured for Oracle data backup and restore operations. For more information, refer to the *NetWorker Module for Oracle Administrator's Guide*.

## Installing on a Cluster, OPS, or RAC System

NMO release 4.2 supports the following UNIX cluster, OPS, and RAC systems:

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

- Solaris with VERITAS Cluster
- Tru64 UNIX with TruCluster

**Note:** NMO release 4.2 does *not* support OPS systems with *proxy* backups. The software supports the following only:

- Cluster and RAC systems with regular and proxy backups
- OPS systems with regular backups

For details on the operating system and Oracle versions supported with cluster, OPS, and RAC systems, refer to the current *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).

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 19.
2. Follow the instructions in "[Installing on a Single Oracle Server Host](#)" on page 23.

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, OPS, 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 *init<oracle\_sid>.ora* that are not backed up or restored through RMAN scripts, use NetWorker client software that is certified for the cluster.

---

# Chapter 5: Install Procedures on Windows

---

This chapter describes how to install NetWorker Module for Oracle (NMO) release 4.2 on a supported Microsoft Windows operating system.

**Note:** For the convention used in this guide to refer to the NetWorker software installation path on Windows, see ["Software Installation Path on Windows" on page 36](#).

To install the software on *either* a single Oracle Server host *or* a cluster, OPS, or RAC system, see the appropriate section:

- ["Installing on a Single Oracle Server Host" on page 37](#)
- ["Installing on a Cluster, OPS, or RAC System" on page 43](#)



---

**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 ["Uninstall Procedures on Windows" on page 60](#).
  2. Reinstalled according to the ["Installation Roadmap" on page 19](#).
- 

## Software Installation Path on Windows

This guide refers to the root directory of the NetWorker installation path on 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 7.0 and later, 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 7.0 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.log* file is located in the *<NetWorker\_install\_path>\logs* directory.

**Note:** During a NetWorker installation, you can specify a nondefault location. For more information on NetWorker installation procedures, refer to the appropriate *NetWorker Installation Guide*.

## Installing on a Single Oracle Server Host

To install and enable the NMO software on a single Oracle Server host that is running Windows, perform the following tasks:

- ["Task 1: Access the Software" on page 37](#)
- ["Task 2: Install the Software" on page 38](#)
- ["Task 3: Enable the Software" on page 42](#)

### Task 1: Access the Software

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

- ["From a Local CD-ROM" on page 37](#)
- ["From a Remote CD-ROM" on page 37](#)
- ["From the Legato Web Site" on page 38](#)

#### From a Local CD-ROM

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

1. Log on 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 37](#).

**Table 4. Directory Containing the Software**

<b>On this system:</b>	<b>Go to this directory:</b>
Windows (Intel)	<code>oracle\win_x86\NETWORKR</code>
Windows (Itanium)	<code>oracle\win_ia64\NETWORKR</code>

5. Continue with ["Task 2: Install the Software" on page 38](#).

#### 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.

For information on how to mount and share volumes over a network, refer to your Windows documentation.

3. Log on 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 37](#).
6. Continue with "[Task 2: Install the Software](#)" on page 38.

### From the Legato Web Site

To access the software files from the Legato web site:

1. Request the NMO software.
  - a. Go to the web site at *www.legato.com*.
  - b. Click the Download link.
  - c. On the Evaluation Software Request page, select NetWorker Module for Oracle from the products list. In the resulting table of products, click release 4.2 for the Windows platform.
  - d. Complete and submit the Evaluation Request form with the contact information. A Legato Inside Sales Representative will send you an e-mail with a URL to the NMO download file on the Legato FTP site.
2. Access the software.
  - a. Log on as Administrator to the Oracle Server host.
  - b. 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**
  - c. Click the URL received in [step 1](#) to download the NMO software to the temporary directory you created, for example, *c:\instdir*.
3. Continue with "[Task 2: Install the Software](#)" on page 38.

### Task 2: Install 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 32-bit Windows to configure scheduled NMO backups, you must *first* install the NetWorker 7.2 server or client, and then install the configuration wizard. You can then install NMO. For more information on the configuration wizard, refer to the *NetWorker, Release 7.2, Release Supplement*.

To install the NMO software on Windows, see the appropriate section:

- ["How to Install on 32-Bit Windows" on page 39](#)
- ["How to Install on 64-Bit Windows" on page 41](#)

## How to Install on 32-Bit Windows

To install the NMO software on 32-bit Windows:

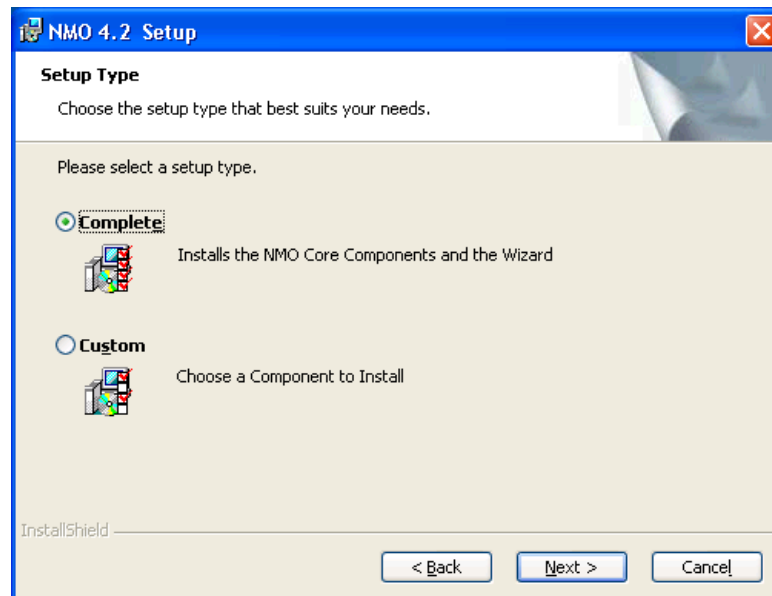
1. Ensure that all the installation requirements have been met, as described in ["Installation Requirements" on page 19](#).
2. Ensure that you are logged on as the Windows system administrator on the Oracle Server host.
3. Shut down the Oracle instances and services.
4. Ensure that you are in the correct directory containing the NMO installation files, as described in ["Task 1: Access the Software" on page 37](#).

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

5. Run the installation program.
  - If installing from the NetWorker Module CD-ROM, run the **setup.exe** program.
  - If installing from the web download, run the **nmo42\_win\_x86.exe** program.
6. In the Setup 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 Setup Type dialog box appears, as shown in [Figure 1 on page 39](#).

**Figure 1. Setup Type Dialog Box on 32-Bit Windows**



8. 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 10](#).
- Custom — Allows you to select either NMO or the configuration wizard library, or to select both 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 by following the instructions in "[Maintaining the Installation on 32-Bit Windows](#)" on page 43.

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

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.

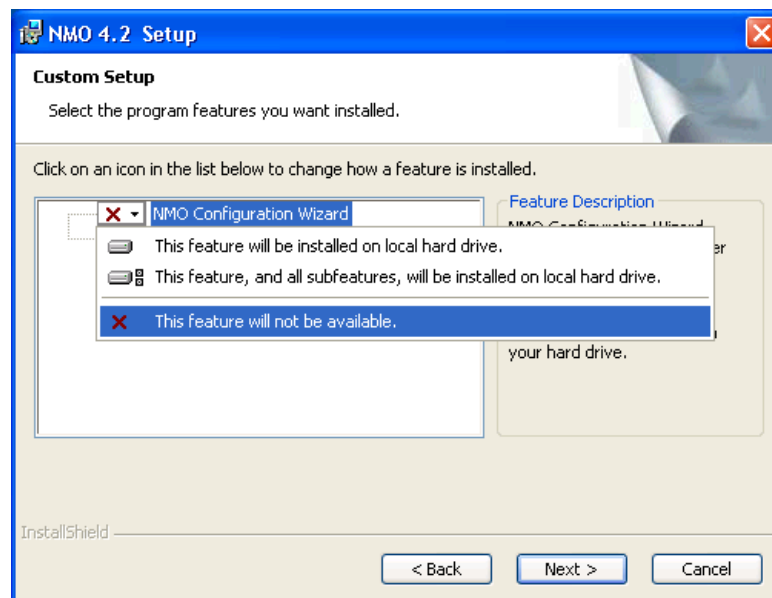
For example, to install NMO only *without* the configuration wizard library:

- 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 40](#).
- 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 on 32-Bit Windows — NMO Configuration Wizard Component**





10. In the Ready to Install 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.

**Notes:**

- For more information on the <NetWorker\_install\_path> directory, see ["Software Installation Path on Windows" on page 36](#).
  - If the Setup program detects *no* NetWorker client binaries, it displays an error message and exits *without* installing the NMO software.
11. In the Completing the NMO 4.2 Setup dialog box, click Finish to exit the wizard.
  12. 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:** 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.

**Note:** The NetWorker client directory pathname *itself* can contain spaces.

13. Reboot the Windows system, and verify that the Oracle instances and services were restarted.

## How to Install on 64-Bit Windows

To install the NMO software on 64-bit Windows:

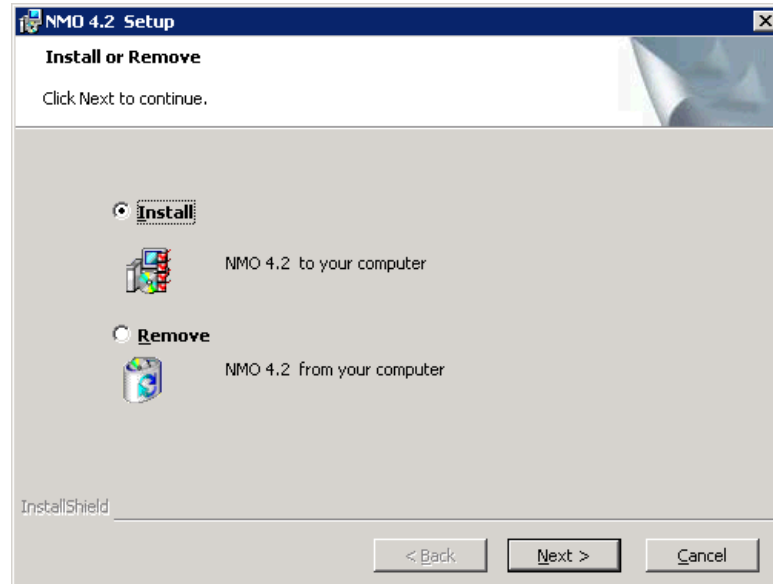
1. Ensure that all the installation requirements have been met, as described in ["Installation Requirements" on page 19](#).
2. Ensure that you are logged on as the Windows system administrator on the Oracle Server host.
3. Shut down the Oracle instances and services.
4. Ensure that you are in the correct directory containing the NMO installation files, as described in ["Task 1: Access the Software" on page 37](#).

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

5. Run the installation program.
  - If installing from the NetWorker Module CD-ROM, run the **setup.exe** program.
  - If installing from the web download, run the **nmo42\_win\_ia64.exe** program.
6. In the Setup 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 Install or Remove dialog box appears, as shown in [Figure 3 on page 42](#).

**Figure 3. Install or Remove Dialog Box on 64-Bit Windows**



8. Select Install, and click Next.
9. In the Ready to Install the Program dialog box, click Install.
10. In the Completing the NMO 4.2 Setup dialog box, click Finish to exit the wizard.
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:** 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.

**Note:** The NetWorker client directory pathname *itself* can contain spaces.

12. Reboot the Windows system, and verify that the Oracle instances and services were restarted.

### Task 3: Enable the Software

After installation, enable the NMO software by using the instructions in ["Chapter 6: Evaluating and Licensing Procedures" on page 47](#).

If required, register the configuration wizard libraries, as described in ["Appendix A: Configuration Wizard Registration" on page 62](#).

After the software installation, NMO must be properly configured for Oracle data backup and restore operations. For more information, refer to the *NetWorker Module for Oracle Administrator's Guide*.

## Installing on a Cluster, OPS, or RAC System

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

**Note:** NMO release 4.2 does *not* support OPS systems for *proxy* backups.

For details on the operating system and Oracle versions supported with cluster, OPS, and RAC systems, refer to the current *Software Compatibility Guide* on the web site at [www.legato.com](http://www.legato.com).

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 19.
2. Follow the instructions in "[Installing on a Single Oracle Server Host](#)" on page 37.

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, OPS, 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 *init<oracle\_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 32-Bit Windows

After the NMO software is installed on 32-bit 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

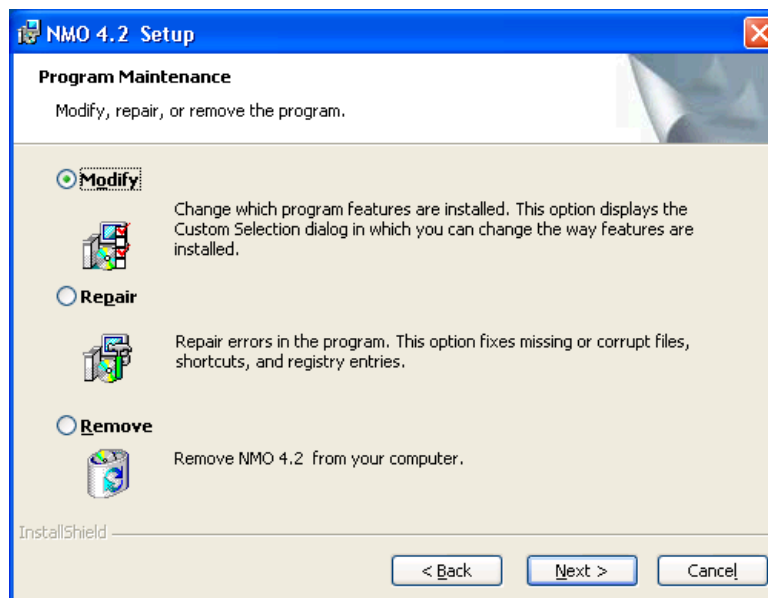
To run the Setup program in maintenance mode on 32-bit Windows:

1. Ensure that you are logged on as the Windows system administrator on the Oracle Server host.
2. Shut down the Oracle instances and services.
3. Go to the directory containing the NMO installation files, as described in "[Task 1: Access the Software](#)" on page 37, and run the program used to install NMO.

4. In the Welcome dialog box, click Next.

The Setup program detects the existing NMO installation and displays the Program Maintenance dialog box, as shown in [Figure 4 on page 44](#).

**Figure 4. Program Maintenance Dialog Box on 32-Bit Windows**



5. Select the maintenance task to perform, and click Next to proceed to the task:
  - **Modify** — Allows you to add and remove the NMO software components in the existing installation. For details, see ["How to Add and Remove NMO Components" on page 44](#).
  - **Repair** — Allows you to replace missing or corrupted files in the existing NMO installation. For details, see ["How to Repair an NMO Installation" on page 46](#).
  - **Remove** — Allows you to remove the entire NMO installation, including any installed configuration wizard libraries. You can also use the Windows Control Panel Add/Remove program to remove the NMO installation. For details, see ["Uninstall Procedures on Windows" on page 60](#).

## How to Add and Remove NMO Components

To add and remove components in the existing NMO installation on 32-bit Windows:

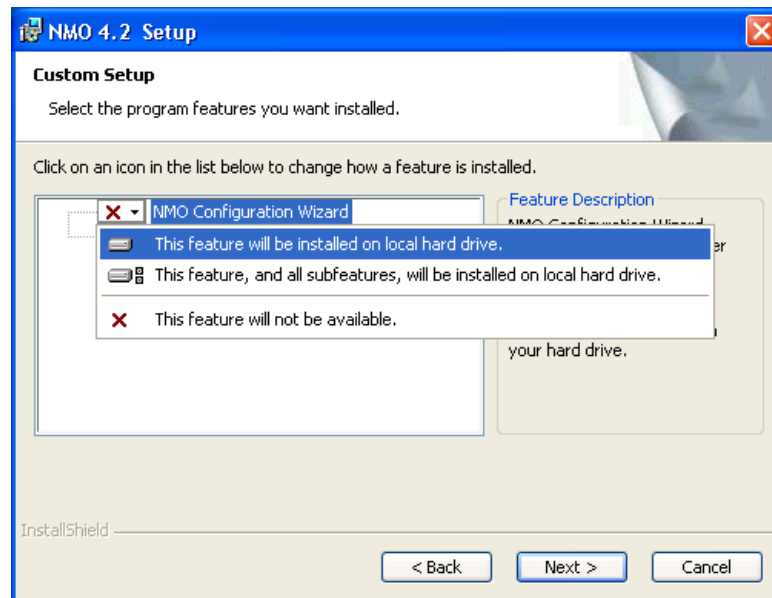
1. Start the the Setup program in maintenance mode. For details, see ["How to Run the Setup Program in Maintenance Mode" on page 43](#).
2. In the Program Maintenance dialog box, select Modify and click Next.

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."

For example, [Figure 5 on page 45](#) shows how to specify that the NMO configuration wizard library is to be installed.

**Note:** The NMO configuration wizard library is available for installation only if the NetWorker release 7.2 or later software has been installed. For more information about NMO support for the NetWorker Configuration wizard, refer to the *NetWorker Module for Oracle Administrator's Guide*.

**Figure 5. Custom Setup Dialog Box on 32-Bit Windows — Installing the NMO Configuration Wizard Library**



4. In the Ready to Install 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.

**Notes:**

- For more information on the `<NetWorker_install_path>` directory, see ["Software Installation Path on Windows" on page 36](#).
  - If the Setup program detects *no* NetWorker client binaries, it displays an error message and exits *without* installing the NMO software.
5. In the Completing the NMO 4.2 Setup dialog box, click Finish to exit the wizard.
  6. Reboot the Windows system, and verify that the Oracle instances and services were restarted.

## How to Repair an NMO Installation

To repair an existing NMO installation on 32-bit Windows:

1. Start the the Setup program in maintenance mode. For details, see "[How to Run the Setup Program in Maintenance Mode](#)" on page 43.
2. In the Program Maintenance dialog box, select Repair, and click Next.
3. In the Ready to Install dialog box, click Install to begin the installation. The Setup program re-installs the NMO software files as required.
4. Reboot the Windows system, and verify that the Oracle instances and services were restarted.

# Chapter 6: Evaluating and Licensing Procedures

When NetWorker software is installed, it is in a temporary evaluation mode with all of the features available. This chapter explains how to enable the NetWorker software and features for permanent use. The chapter also describes the NetWorker licensing model and provides a basic explanation of licensing for the different NetWorker editions, modules, and features. It does not, however, provide a comprehensive description of every possible licensing scenario. For specific licensing questions, contact a Legato Sales Representative.

The chapter includes the following sections:

- ["How NetWorker Software Is Licensed" on page 47](#)
- ["The Evaluation Process" on page 48](#)
- ["The Licensing Process" on page 50](#)
- ["NetWorker Licenses" on page 54](#)
- ["Managing Legato Licenses" on page 56](#)

## How NetWorker Software Is Licensed

Licensing NetWorker software means entering 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 which "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, and the server enforces the licensing.

Base enablers come in four editions:

- Power Edition
- Network Edition
- Workgroup Edition
- Business Edition

These four editions enable varying degrees of functionality. Add-on enablers allow a broader scope of features. For more information about the editions and different functionality, see ["NetWorker Licenses" on page 54](#).

## The Evaluation Process

Evaluating NetWorker software can take place in 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 obtain a base enabler, contact either Legato Sales or a Legato Reseller. For contact information, see ["Where to Get Help" on page 9](#). For more information about entering and authorizing the enabler, see ["The Licensing Process" on page 50](#).

To continue to use some of the modules and features that were available with the evaluation software, you may need to purchase add-on enablers. For more information about the different NetWorker editions and features, see ["NetWorker Licenses" on page 54](#).

### 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, you must enter a temporary enabler for each module or feature. The temporary enabler is valid for 45 days.

- To obtain a temporary enabler code, refer to the Contents documentation in the Legato Media Kit, or contact Legato Sales or a Legato Reseller.
- To enter the temporary enabler code, see ["How to Enter a Temporary Enabler Code" on page 49](#).
- For important information on temporary enabler code for NMO 3.x and 4.x on UNIX, see ["Temporary Enabler Code for NMO on UNIX" on page 49](#).

**Note:** If the Business, Network, or Workgroup Edition is already installed and enabled on a computer, and you want to evaluate Power Edition, use a different computer as a temporary NetWorker server for evaluation purposes.

By the end of the evaluation period, you must purchase, enter, and authorize the corresponding license enablers to continue to use modules or features you have evaluated. For instructions, see ["The Licensing Process" on page 50](#). For more information about the different NetWorker editions and features, see ["NetWorker Licenses" on page 54](#).



## How to Enter a Temporary Enabler Code

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. In the Registration window, click the Create button.
5. Enter the enabler code in the Enabler Code attribute.  
Filling in the Comment attribute is optional.
6. Click Apply.

### On Windows:

1. Log on as administrator or NetWorker administrator on the NetWorker server.
2. Start the NetWorker Administrator program.
3. In the Configure tab, click Registration.  
The Registration window opens.
4. In the Registration window, right-click Registration and select Create.
5. Enter the enabler code in the Enabler Code attribute.
6. Click OK.




---

**Important:** 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.

---

## Temporary Enabler Code for NMO on UNIX

In the Media Kit Contents document included with Legato 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 both NMO releases 3.x and 4.x.

The correct temporary enabler code for NMO releases 3.x and 4.x on UNIX is available either from the updated Legato Media Kit Contents document (dated February 2004 or later) or from Legato Sales.

## 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. To purchase the license enabler, contact a Legato Sales Representative.

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 50](#)
- ["Task 2: Obtain an Authorization Code" on page 51](#)
- ["Task 3: Enter the Authorization Code" on page 53](#)

### Task 1: Enter the License Enabler Code

License enabler codes are included in either the letter announcing the updated or upgraded software, or on the Enabler Certificate you receive when you purchase a software license. This depends on whether the software purchased is a first-time purchase, or an updated or upgraded version.

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

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, highlight the enabler and click the Delete button.

5. In the Registration window, click the Create button.

6. Enter the enabler code in the Enabler Code attribute.

Filling in the Comment attribute is optional.

7. Click Apply.

#### On Windows:

1. Log on as administrator or NetWorker administrator on the NetWorker server.
2. Start the NetWorker Administrator program.

3. In the Configure tab, click Registration.  
The Registration window opens.
4. If the Registration list displays a temporary enabler for the product or feature being licensed:
  - a. Right-click the enabler.
  - b. Select Delete.
  - c. Click yes.
5. Enter the enabler code:
  - a. In the Registration window, right-click Registration.
  - b. Select Create.
  - c. Enter the enabler code in the Enabler Code attribute.
  - d. Click OK.

After you enter the 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 takes place by obtaining an authorization code. Obtain a unique authorization code through one of the following methods:

- ["By Using the Legato Web Site" on page 51](#)
- ["By Fax or E-mail" on page 52](#)



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**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.

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### By Using the Legato Web Site

Register Legato products and obtain authorization codes online by completing a registration form on the web site at [www.legato.com](http://www.legato.com). Web registration takes just a few minutes and is available 24 hours a day, 7 days a week.

An authorization code that permanently enables the NetWorker license will be sent by e-mail.

If you have any questions regarding software updates, contact Legato Licensing. For contact information, see ["Where to Get Help" on page 9](#).

## By Fax or E-mail

To register the software and obtain an authorization code by fax or e-mail:

### On UNIX:

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

```
nwadmin &
```
3. Complete your contact information:
  - a. From the Server menu, select Server Setup.
  - b. Complete the contact name, company, address, phone, and e-mail information requested and click Apply.
4. Print the registration information sheet.
  - a. From the Server menu, select Registration.
  - b. From the View menu, select Tabular.
  - c. From the File menu, select Print.
5. Send your contact information to Legato Licensing by one of these methods:
  - Fax the printed registration information sheet.
  - E-mail the registration information.

For contact information, see ["Where to Get Help" on page 9](#).

### On Windows:

1. Log on as administrator or NetWorker administrator on the NetWorker server.
2. Start the NetWorker Administrator program.
3. Complete your contact information:
  - a. In the Configure tab, click Set Up Server.
  - b. In the Company Information tab, complete the contact name, company, address, phone, and e-mail information requested and click OK.
4. Print the registration information sheet.
  - a. In the Configure tab, select Registration.
  - b. Double-click the icon of the product for which the license enabler code was purchased.
  - c. Click Print.
  - d. Click OK.
  - e. In the Windows Print dialog box that appears, select the server and print quality.
5. Send your contact information to Legato Licensing by one of these methods:
  - Fax the printed registration information sheet.
  - E-mail the registration information.

For contact information, see ["Where to Get Help" on page 9](#).

An authorization code that permanently enables the updated NetWorker software will be sent to you.

### 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.

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. In the Registration window, highlight the appropriate license.
5. In the Auth Code text box, enter the authorization code.
6. Click Apply.

#### On Windows:

1. Log on as administrator or NetWorker administrator on the NetWorker server.
2. Start the NetWorker Administrator program.
3. In the Configure tab, click Registration.

The Registration window opens.

4. In the Registration window, double-click the icon of the product for which the license enabler code was purchased.
5. Enter the authorization code in the Auth Code attribute.
6. Click OK.

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 Legato Support. For more information, see ["Where to Get Help" on page 9](#).



**Important:** 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, you must either:

- Contact Legato Licensing to obtain a new authorization code. Legato requires the host ID of the original server as well as the new server. The host ID is displayed in the server's Registration window.

For contact information, see ["Where to Get Help" on page 9](#).

- Install and configure the Legato License Manager software. For more information on using the License Manager, see ["Managing Legato Licenses" on page 56](#); also refer to the latest *Legato License Manager Installation and Administrator's Guide*.

## NetWorker Licenses

There are four different levels, or editions, of base enabler:

- NetWorker Power Edition — For high-demand data centers and large, complex environments
- NetWorker Network Edition — For high-volume, enterprise-level environments
- NetWorker Workgroup Edition — For branch offices and small departmental environments
- NetWorker Business Edition — For businesses that require a full-function, entry-level backup software that includes a bundled library module.

Each of these editions permits you to use the software for a specified number of clients and devices. These four editions also enable different degrees of parallelism and support different add-on modules, including extra client connections, devices, or features.



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**Important:** An HP Superdome computer requires a separate enabler for each partition on which a NetWorker server or storage node runs.

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## Multiplatform Licensing

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

- The client connections accompanying a NetWorker server for Windows can be used for Windows client computers only.
- The client connections accompanying 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 the NetWorker Server for Solaris. The ClientPak for UNIX supports all UNIX platforms. The UNIX ClientPak 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: Multiplatform Licensing Schemes

A company was using a Linux server to back up Solaris, Linux, and Windows NT clients. It needed two ClientPak licenses, one for Solaris and one for 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 Windows NT and subsequent Windows 2000 clients without requiring a ClientPak. The company also made the Solaris computer a NetWorker server 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 (one that introduces important new features), an update enabler is necessary. Update enablers are required for any major NetWorker software update from release 4.0 and later, including NetWorker release 7.x. To use the Legato 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.

### Required Update Enablers

[Table 5 on page 55](#) lists the NetWorker releases that require update enablers for updating to release 7.x.

**Table 5. NetWorker Releases Requiring Update Enablers**

From release prior to 5.0	From 5.0	From 5.5	From 5.5.x	From 5.6	From 5.7	From 6.x
yes	yes	yes	yes	yes	yes	yes
<b>Note:</b> Release 5.6 is UNIX only, and Release 5.7 is Windows only.						

## Additional Licenses

This section describes a few of the additional licenses required to operate some of the NetWorker features. For a complete list, contact a Legato Sales Representative.

### 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 supplied with the base enabler or purchased separately. A cluster client or NDMP data server requires a special type of client connection license, as described in "[Cluster Clients](#)" or "[NDMP Licensing](#)" on [page 56](#).

### 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. To place a NetWorker server in a cluster, you must have Power Edition. For more information on licensing computers in a cluster, refer to the *NetWorker Administrator's Guide*.

### 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 Legato Licenses

The Legato License Manager provides centralized license management, allowing you to maintain all of an enterprise's NetWorker licenses from a single computer. With the 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 License Manager can be installed as an option during NetWorker software installation.

To begin to implement the License Manager:

1. Contact Legato Licensing to obtain bulk enabler codes. For contact information, see "[Where to Get Help](#)" on [page 9](#).
2. Install the License Manager software.
3. Configure the License Manager and configure the NetWorker servers to access the License Manager for their licenses.

For details on installing and using the License Manager, refer to the latest *Legato License Manager Installation and Administrator's Guide*.



# Chapter 7: Uninstall Procedures

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This chapter describes how to uninstall NetWorker Module for Oracle (NMO) release 4.2 on a supported UNIX or Windows operating system.

To uninstall NMO, see the appropriate section:

- ["Uninstall Procedures on UNIX" on page 57](#)
- ["Uninstall Procedures on Windows" on page 60](#)

## Uninstall Procedures on UNIX



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**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.

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

## How to Uninstall the Software on UNIX

To uninstall the software:

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. Refer to [Table 6 on page 58](#) and enter the appropriate commands.  
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 6 on page 58](#) restore the Oracle software to its state prior to the NMO installation. If the installation commands from "[Chapter 4: Install Procedures on UNIX](#)" on page 23 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 6 on page 58](#) apply only to Oracle *base* releases (if available). Link instructions might vary with patched releases of the Oracle Server.

**Table 6. Commands for the Library File Removal on UNIX**

On this system:	With these Oracle releases:	Use these commands to remove the symbolic link:
AIX	9.x 64-bit 10.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.a</code>
HP-UX (Itanium)	9.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
HP-UX (PA-RISC)	9.x 64-bit 10.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.sl</code>
Linux (AMD64/ EM64T)	9.x 64-bit 10.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Linux (Intel)	9.x 10.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Linux (Itanium)	9.x 64-bit 10.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Solaris	9.x 9.x 64-bit 10.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Tru64 UNIX	9.x 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <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 7 on page 59](#) for the operating system.

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

Table 7. Procedures for Uninstalling NMO on UNIX (Part 1 of 2)

On this system:	Perform the following to uninstall the NMO software:	And complete the uninstall as follows:
AIX	Perform one of the following: <ul style="list-style-type: none"> <li>• To invoke the <b>installp</b> command line interface, enter this command: <b>installp -u LGTONmo.rte</b></li> <li>• To invoke the SMIT GUI program, enter one of the following commands: <b>smit remove</b> <b>smitty remove</b></li> </ul>	If using the SMIT GUI program, perform the following after entering the <b>smit remove</b> or <b>smitty remove</b> command: <ol style="list-style-type: none"> <li>1. Select F4=List to display a list of the installed software packages.</li> <li>2. Select the <i>LGTONmo.rte</i> package to be uninstalled.</li> <li>3. Ensure that the PREVIEW Only option is set to no.</li> <li>4. Press Enter to uninstall the NMO software.</li> <li>5. Exit the SMIT program.</li> </ol>
HP-UX	Perform one of the following: <ul style="list-style-type: none"> <li>• To invoke the <b>swremove</b> command line interface, enter this command: <b>swremove NMO</b></li> <li>• To invoke the <b>swremove</b> GUI program, enter this command: <b>swremove -i NMO</b></li> </ul>	If using the <b>swremove</b> GUI program, select Actions>Remove (analysis). When the system analysis is complete, click OK to complete the uninstall. To confirm the uninstall, click Yes.
Linux	Enter the following command: <b>rpm -e lgtonmo-4.2-1</b>  To uninstall <i>both</i> NMO and the NetWorker client on Linux, perform <i>one</i> of the following: <ul style="list-style-type: none"> <li>• Enter this command: <b>rpm -e lgtonmo-4.2-1 lgtoclnt</b></li> <li>• Enter these separate commands, in this order <i>only</i>: <b>rpm -e lgtonmo-4.2-1</b> <b>rpm -e lgtoclnt</b></li> </ul> Note: On Linux, you must <i>not</i> uninstall both NMO and the NetWorker client with the following command: <b>rpm -e lgtoclnt lgtonmo-4.2-1</b>	

Table 7. Procedures for Uninstalling NMO on UNIX (Part 2 of 2)

On this system:	Perform the following to uninstall the NMO software:	And complete the uninstall as follows:
Solaris	<p>If the 64-bit software was installed by copying the <i>libnwor64.so</i> file to <i>/usr/lib</i>, delete the <i>libnwor64.so</i> file.</p> <p>If the software was installed with the <b>pkgadd</b> command, enter one or both of the following commands, depending on the packages installed:  <b>pkgrm LGTONmo</b>  <b>pkgrm LGTONmowz</b></p> <p><b>Note:</b> On 64-bit Solaris, if the 32-bit software is uninstalled with the <b>pkgrm LGTONmo</b> command, and a <i>libnwor64.so</i> file remains in <i>/usr/lib</i>, perform the following:</p> <ol style="list-style-type: none"> <li>1. Delete the <i>libnwor64.so</i> file.</li> <li>2. Install and enable the 64-bit software by using the instructions in <a href="#">"Chapter 4: Install Procedures on UNIX" on page 23.</a></li> </ol>	<p>If using the <b>pkgm</b> program, perform the following according to the <i>basedir</i> variable setting in the <i>/var/sadm/install/admin/default</i> file:</p> <ul style="list-style-type: none"> <li>• If <i>basedir</i>=default in the file, enter <b>y</b> when prompted. The software is uninstalled from the directory containing the NetWorker client software.</li> <li>• If <i>basedir</i>=ask in the file, enter 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 <i>basedir</i>=/dirpath in the file, enter <b>y</b> when prompted. The software is uninstalled from the specified <i>/dirpath</i> directory.</li> </ul>
Tru64 UNIX	<p>Enter the following command:  <b>setld -d LGTONMO420</b></p>	

## Uninstall Procedures on Windows



**Important:** The uninstall procedure removes the **nsrnmo.bat** script used for scheduled Oracle backups. To save customizations made to the script, save a copy of the script before uninstalling the software.

You can uninstall the NetWorker Module software by using either the Setup program or the Add/Remove Programs tool in the Windows Control Panel.

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

### How to Uninstall the Software by Using the Setup Program on 32-Bit Windows

To uninstall the software by using the Setup program on 32-bit Windows:

1. Log on as the Windows system administrator.
2. Ensure that no Oracle database backups are running.
3. Shut down the Oracle instances and services.

4. Start the the Setup program in maintenance mode. For details, see "[How to Run the Setup Program in Maintenance Mode](#)" on page 43.
5. In the Program Maintenance dialog box, select Remove and click Next.
6. In the Ready to Remove dialog box, click Remove to start the uninstall process.
7. When NMO is uninstalled, restart the Oracle instances and services.

## How to Uninstall the Software by Using the Setup Program on 64-Bit Windows

To uninstall the software by using the Setup program on 64-bit Windows:

1. Log on as the Windows system administrator.
2. Ensure that no Oracle database backups are running.
3. Shut down the Oracle instances and services.
4. Ensure that you are in the correct directory containing the NMO installation files, as described in "[Task 1: Access the Software](#)" on page 37.
5. Run the `nmo42_win_ia64.exe` program.
6. In the Install or Remove dialog box, select Remove and click Next.
7. In the Remove the Program dialog box, click Remove.
8. In the Completing the NMO 4.2 Setup dialog box, click Finish to start the uninstall process.
9. When NMO is uninstalled, restart the Oracle instances and services.

## How to Uninstall the Software by Using the Control Panel

To uninstall the software by using Add/Remove Programs in the Control Panel:

1. Log on as the Windows system administrator.
2. Ensure that no Oracle database backups are running.
3. Shut down the Oracle instances and services.
4. In the Windows Start menu, select Settings>Control Panel.
5. In the Control Panel window, double-click Add/Remove Programs.
6. In the Add/Remove Programs window, select NetWorker Module for Oracle and then click the Add/Remove button.
7. In the Setup dialog box, select the Remove option to start the uninstall process.
8. When NMO is uninstalled, restart the Oracle instances and services.

# Appendix A: Configuration Wizard Registration

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This appendix describes the registration requirements for the configuration wizard libraries on the NMO client host. It contains the following sections:

- ["Registering the Wizard Libraries on UNIX" on page 62](#)
- ["Registering the Wizard Libraries on Windows" on page 63](#)

## Registering the Wizard Libraries on UNIX

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

**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 software, the libraries were registered *automatically* during the install, and no further action is required.

To enable the configuration wizard on Solaris to configure scheduled NMO backups, 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*.



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**Important:** If the NMO client is on 64-bit HP or Solaris 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.

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- On the Solaris system where the configuration wizard is run, the library *libnmowiz.so*. This library is installed with the *LGTONmowiz* 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 plugin type NMO (showing the version as 4.2), then the corresponding library is properly registered:

```
Library versions: 4.2;
```

If 4.2 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 to configure scheduled NMO backups.

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 4.2 -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 4.2 -f nsrwizcon.res -a
```

For more information on the `nsrwizreg` command, refer to the following:

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

## Registering the Wizard Libraries on Windows

The configuration wizard libraries must be registered *only* if the NetWorker Configuration Wizard is to be used on 32-bit Windows to configure scheduled Oracle backups of the NMO client. The client can be either on the same Windows system or on a remote 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.

**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 software, the libraries were registered *automatically* during the install, and no further action is required.

To enable the configuration wizard on 32-bit Windows to configure scheduled NMO backups, the following libraries must be registered:

- On the NMO client, the library `libnmodc.dll`.
- On the 32-bit 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 plugin type NMO (showing the version as 4.2), then the corresponding library is properly registered:

```
Library versions: 4.2;
```

If 4.2 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 to configure scheduled NMO backups.

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 4.2 -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 4.2 -f nsrwizcon.res -a
```

For more information on the `nsrwizreg` command, refer to the `nsrwizreg` entry in the *NetWorker Command Reference Guide*.