



EMC® NetWorker®
Module for SAP with Oracle

Release 3.5
Multiplatform Version

INSTALLATION GUIDE

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

Audience This guide is part of the EMC NetWorker® Module for SAP with Oracle (NMSAP) documentation set, and is intended for use by system administrators during installation and system configuration of the NMSAP software.

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

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

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

- ◆ The NetWorker Module for SAP with Oracle release 3.5 documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
- ◆ The NetWorker documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
 - Disaster recovery guide
- ◆ Other EMC documentation:
 - NetWorker PowerSnap Module documentation
 - Software compatibility guide
 - UNIX man pages

Conventions used in this document

EMC uses the following conventions for notes, cautions and typography.

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

**CAUTION**

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

**IMPORTANT**

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

Typographical conventions

EMC uses the following type style conventions in this document:

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

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

This chapter describes how to install the EMC NetWorker Module for SAP with Oracle (NMSAP) software on a supported UNIX or Linux computer.

This chapter includes the following sections:

- ◆ [Installation requirements](#) 10
- ◆ [How to update from an earlier release](#)..... 11
- ◆ [How to install the software](#)..... 11
- ◆ [How to install the backup configuration wizard](#)..... 14
- ◆ [How to enable the RMAN utility](#)..... 14

Installation requirements

For both regular and snapshot NMSAP backup operations, as well as the use of the NMSAP scheduled backup configuration wizard, the appropriate software must be installed on the following hosts:

- ◆ SAP server host
 - Oracle database server.
 - Oracle BRTools.
 - EMC NetWorker release 7.4 or later client software.
 - NMSAP software.
 - For snapshot operations, the required NetWorker Module for PowerSnap™ software must be installed on *both* the Oracle server and a separate secondary backup host.
- ◆ NMSAP wizard host (Solaris platforms only)
 - NetWorker release 7.4 or later client software.
 - NMSAP wizard package (includes the backup configuration wizard GUI component).

After installation, the software components must be properly configured to enable regular or snapshot backup and restore operations. The following guides provide configuration procedures:

- ◆ *EMC NetWorker Module for SAP with Oracle Release 3.5 Multiplatform Version Administration Guide.*
- ◆ *EMC NetWorker Module for PowerSnap Installation and Administration Guide* (Refer to the appropriate PowerSnap module version for the primary storage system).

Files installed

On UNIX systems NMSAP components are installed by three different packages.

- ◆ [Table 1 on page 10](#) lists the files that are installed by the main NMSAP installation package.
- ◆ The front-end binary file for the backup configuration wizard, `libnmsapwiz.xx`, supported for Solaris systems only, is installed by a separate package.
- ◆ Localized operation of NMSAP and translated man pages are provided by the installation of language packs.

Table 1 NMSAP software files (1 of 2)

File	Description
<code>backint</code>	Backup, restore, and inquire program
<code>sapclone</code>	Saveset cloning program
<code>nsrsapsv</code>	Scheduled backup program
<code>nsrsapadm</code>	Username and password encryption program
<code>init.utl</code> (English)	Parameter file that specifies the variables used by the backint program
<code>nsrsapsv.cfg</code> (English)	Example configuration file for the nsrsapsv program. This file is installed in the <code>/etc</code> directory.

Table 1 NMSAP software files (2 of 2)

File	Description
man pages (English)	UNIX command reference for backint , sapclone , nsrsapsv , and nsrsapadm
libnworasap.xx	RMAN component.
libnmsapdc.xx nsrsapce	Backup configuration wizard (back-end component).

How to update from an earlier release

To update from an earlier release of the NMSAP software or a UNIX or Linux host:

Note: To update the NMSAP software in a cluster environment, perform this procedure on each cluster node.

1. Ensure that the NetWorker client on the host is updated to release 7.4 or later.
2. Ensure that no backups or restores are running on the SAP with Oracle server.
3. Uninstall the previous release of the NMSAP software. [“How to uninstall on UNIX or Linux operating systems” on page 34](#) provides instructions.
4. Install the NMSAP 3.5 software on the SAP with Oracle server. [“How to install the software” on page 11](#) provides instructions.
5. Enable and license the NMSAP software. [Chapter 3, “Licensing and Enabling the Software,”](#) provides instructions.

How to install the software

The NMSAP software is installed in *evaluation* mode and requires a license to run beyond the evaluation period. [Chapter 3, “Licensing and Enabling the Software,”](#) provides instructions. To install the NMSAP software, complete the following tasks in sequence:

Task 1: Access the NMSAP installation files

Access the installation files either from a local CD or from the EMC website:

Local CD To access the installation software from a local CD:

1. Log in as root on the SAP with Oracle server.
2. Mount the installation CD.
3. Change to the following directory:
`/mount_point/volume_label/sap/release_number/os_version/`

EMC website To access the installation software from the EMC website:

1. Log in as root on the SAP with Oracle server.
2. Create a temporary directory to download the evaluation software.

3. Go to <http://Powerlink.EMC.com>. Home > Support > Downloads and Patches > Downloads D-R > NetWorker Module. Download the evaluation software to the temporary directory and change to that directory.
4. Decompress and extract the downloaded file using the appropriate utilities (such as **uncompress**, **gunzip**, or **tar**).

Task 2: Install the NMSAP software

To install the NMSAP software on a UNIX or Linux host computer:

Note: To install the NMSAP software in a cluster environment, perform this procedure on each cluster node.

1. Ensure that the NetWorker client on the host is updated to release 7.4 or later.
2. Log in as root on the SAP with Oracle server.
3. Change to the directory that contains the installation files.
4. At a command prompt, type the appropriate installation command and package name, as listed in [Table 2 on page 12](#).

Note: The NMSAP software must be installed in the directory where the NetWorker client binaries are located. To install in a nondefault location, use the appropriate installation path options.

Table 2 Installation commands for the NMSAP software

Operating system	Install package command
AIX	<code>installp -a -d ./LGTONmsap.rte all</code>
HP-UX	<code>swinstall -s file_path/LGTONmsap.pkg</code>
Linux PowerPC	<code>rpm -i lgtonmsap-3.5-1.ppc64.rpm</code>
Linux Itanium	<code>rpm -i lgtonmsap-3.5-1.ia64.rpm</code>
Linux Intel or AMD	<code>rpm -i lgtonmsap-3.5-1.i686.rpm</code>
Solaris	<code>pkgadd -d . LGTONmsap</code>
Tru64 UNIX	<code>setid -i . LGTONMSAP350</code>

Note: If a Solaris systems has Solaris zones and NMSAP is to run on a sparse root zone, install NMSAP on both the global zone and the sparse root zone.

5. To localize NMSAP messages in a supported non-English environment, install the appropriate NMSAP language pack, by using the appropriate command or procedure as listed in [Table 3 on page 13](#).

Note: Localization of the NMSAP client software requires the corresponding localization of the NetWorker software.

Table 3 Installation commands or procedure for the NMSAP language packs

Operating system	Language Pack	Install procedure (for HP-UX) or install package command
AIX	French Japanese Korean Simplified Chinese	<code>installp -a -d ./LGTOnmsap.sapfr.rte</code> <code>installp -a -d ./LGTOnmsap.sapja.rte</code> <code>installp -a -d ./LGTOnmsap.sapko.rte</code> <code>installp -a -d ./LGTOnmsap.sapzh.rte</code>
HP-UX	French Japanese Korean Simplified Chinese	<ol style="list-style-type: none"> Invoke the swinstall GUI program: <code>swinstall -x mount_all_filesystems=false</code> <code>-i -s /LGTOnmsap.pkg NMSAP</code> Mark the appropriate language pack for installation: - LGTO-sapfr - LGTO-sapja - LGTO-sapko - LGTO-sapzh From the Actions menu select Install (analysis). When the analysis is complete, a "Ready with Warnings" message appears. This is normal. Click OK.
Linux	French Japanese Korean Simplified Chinese	<code>rpm -i lgtosapfr-3.5-1.i686.rpm</code> <code>rpm -i lgtosapja-3.5-1.i686.rpm</code> <code>rpm -i lgtosapko-3.5-1.i686.rpm</code> <code>rpm -i lgtosapzh-3.5-1.i686.rpm</code>
Solaris	French Japanese Korean Simplified Chinese	<code>pkgadd -d . LGTOsapfr</code> <code>pkgadd -d . LGTOsapja</code> <code>pkgadd -d . LGTOsapko</code> <code>pkgadd -d . LGTOsapzh</code>

- Copy the **backint** program to the directory where the SAP BRTools reside by typing, for example:

```
cp /usr/sbin/backint /usr/sap/<ORACLE_SID>/SYS/exe/run
```

- If you do *not* plan to use the NMSAP backup configuration wizard, do the following:



IMPORTANT

If you plan to use the NMSAP backup configuration wizard, skip this step. ["How to install the backup configuration wizard" on page 14](#) describes how to install the wizard.

- Copy the `init.utl` file to the `$ORACLE_HOME/dbs` directory and rename this file to `init<ORACLE_SID>.utl`, where `<ORACLE_SID>` is the name of the Oracle system ID (defined in the environment variable `<$ORACLE_SID>`). For example on Solaris:

```
cp /etc/init.utl $ORACLE_HOME/dbs/init<ORACLE_SID>.utl
```

Note: If NMSAP is installed with a language pack, the localized `init.utl` file will have the format `init_xx.utl`, where `xx` is `ja`, `ko`, `fr`, or `zh`.

- b. Copy and rename the `nsrsapsv.cfg` scheduled backup configuration file, and preserve the original `nsrsapsv.cfg` file, which is installed in the `/etc` directory. Different copies of the `nsrsapsv.cfg` file can be used for different backup configurations.

Note: If NMSAP is installed with a language pack, the localized scheduled backup configuration file will have the format `nsrsapsv_xx.cfg`, where `xx` is `ja`, `ko`, `fr`, or `zh`.

The *NetWorker Module for SAP with Oracle Administration Guide* provides information on how to set parameters and encrypt usernames and passwords in the `nsrsapsv.cfg` file.

8. Set the `$PATH` environment variable to include the location of the NetWorker client binaries, typically `/usr/bin`.
9. If required, register the backup configuration wizard libraries, as described in [Appendix A, "Registering the Configuration Wizard."](#)

Task 3: Enable and license the NMSAP software

Enable and register the NMSAP software. [Chapter 3, "Licensing and Enabling the Software,"](#) provides instructions.

The *NetWorker Module for SAP with Oracle Administration Guide* provides information on how to configure the NMSAP software.

How to install the backup configuration wizard

The NMSAP backup configuration wizard is supported on UNIX for Solaris SPARC systems only. The wizard may be installed either on the NMSAP client host or on a different host computer.

1. Ensure that NetWorker 7.4 or later client software is installed on the Solaris host where the backup configuration wizard is to be installed.
2. Log in as root.
3. Change to the directory that contains the NMSAP installation files, see ["Task 1: Access the NMSAP installation files"](#) on page 11.

4. Type this command:

```
pkgadd -d LGTOsapwz
```

The wizard installs.

5. On the NMSAP client, open the `/nsr/res/servers` file and add the hostname of the computer where the NMSAP backup configuration wizard is installed.

How to enable the RMAN utility

To enable the Oracle RMAN backup and restore utility, create a symbolic link to the RMAN library file as follows:

Note: NMSAP does not support RMAN backups on Linux PowerPC platforms.

1. Log in on as the \$ORACLE_HOME owner. Type:

```
su ORACLE_HOME_owner
```
2. Type the appropriate command to link to the RMAN libnworasap.* library file. [Table 4 on page 15](#) lists the commands for the various operating systems and Oracle releases.

Note: The commands listed in [Table 4 on page 15](#) are examples that assume a default NMSAP installation, with the libnworasap.* library file installed in the default directory (for example, /usr/lib).

Table 4 Commands to link the RMAN library file

System	Oracle release	Commands to create the symbolic link
AIX	9.x 64-bit 10.x 64-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap.a libobk.a</code>
HP-UX Itanium	9.x 64-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap.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/libnworasap.sl libobk.sl</code>
Linux Intel	9.x 32-bit 10.x 32-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap.so libobk.so</code>
Linux AMD64/EM64T	9.x 64-bit 10.x 64-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap.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/libnworasap.so libobk.so</code>
Solaris	9.x 32-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap32.so libobk.so</code>
Solaris	9.x 64-bit 10.x 64-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap.so libobk.so</code>
Tru64 UNIX	9.x 64-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/shlib/libnworasap.so libobk.so</code>

This chapter describes how to install the NMSAP software on a supported Microsoft Windows computer.

This chapter includes the following sections:

- ◆ [Installation requirements](#) 18
- ◆ [How to update from an earlier release.....](#) 19
- ◆ [How to install the NMSAP software](#) 19
- ◆ [How to install the backup configuration wizard on a different host](#) 21
- ◆ [How to modify or repair the installation.....](#) 22

Installation requirements

For both regular and snapshot NMSAP backup operations, as well as the use of the NMSAP scheduled backup configuration wizard, the appropriate software must be installed on the following hosts:

- ◆ SAP server host
 - Oracle database server.
 - NetWorker release 7.4 or later client software.
 - NMSAP software.
 - For snapshot operations, the required NetWorker Module for PowerSnap software must be installed on *both* the Oracle server and a separate secondary backup host.
- ◆ NMSAP wizard GUI host
 - NetWorker release 7.4 or later client software.
 - NMSAP wizard package (includes the backup configuration wizard GUI component).

After installation, the software components must be properly configured to enable regular or snapshot backup and restore operations. The following guides provide configuration procedures:

- ◆ *EMC NetWorker Module for SAP with Oracle Release 3.5 Multiplatform Version Administration Guide*
- ◆ *EMC NetWorker Module for PowerSnap Installation and Administration Guide* (Refer to the appropriate PowerSnap module version for the primary storage system).

Files installed

[Table 5 on page 18](#) lists the main files that are installed by the NMSAP installation. These files are installed in the same directory as the NetWorker client programs.

Table 5 Files installed with NMSAP software

File	Description
backint.exe	Backup, restore, and inquire program
sapclone.exe	Save set cloning program
nsrsapsv.exe	Scheduled backup program
nsrsapadm.exe	Username and password encryption program
init.utl	Parameter file that specifies the variables used by the backint program
nsrsapsv.cfg	Example configuration file for the nsrsapsv program
orasbt.dll nsrsbtconsap.exe	RMAN utility (optional)
libnmsapdc.dll nsrsapce.dll	Backup configuration wizard (optional)
libnmsapwiz.dll	Backup configuration wizard user interface (optional)

How to update from an earlier release

To update from an earlier release of the NMSAP software:

Note: To update the NMSAP software in a cluster environment, perform this procedure on each cluster node.

1. Ensure that no backups or restores are running on the SAP server.
2. Install the NMSAP release 3.5 software on the SAP with Oracle server. [“How to install the NMSAP software” on page 19](#) provides instructions.

If a previous NMSAP release is installed, use the upgrade option in the installation program to safely remove the previous release.

3. Enable and license the NMSAP 3.5 software. [Chapter 3, “Licensing and Enabling the Software,”](#) provides instructions.

How to install the NMSAP software

The NMSAP software is installed in *evaluation* mode and requires a license to run beyond the evaluation period. [Chapter 3, “Licensing and Enabling the Software,”](#) provides more information. To access the NMSAP software, complete the following tasks in sequence.

Task 1: Access the NMSAP installation files

Access the installation files from one of the sources as described in these sections:

- ◆ [“Local CD” on page 19](#)
- ◆ [“EMC website” on page 19](#)

Local CD

To access the installation software from a local CD:

1. Log in as administrator on the SAP with the Oracle server.
2. Load the installation CD into the CD drive.
3. Select the CD drive from the File Manager or Windows Explorer.
4. On the CD, change to the folder appropriate for your platform:
 - SAP\3.5\win_x86
 - SAP\3.5\win_x64
 - SAP\3.5\win_ia64

EMC website

To access the installation software from the EMC website:

1. Log in as administrator on the SAP with Oracle server.
2. Create a temporary folder to download and extract the evaluation software.
3. Go to <http://Powerlink.EMC.com>. Home > Support > Downloads and Patches > Downloads D-R > NetWorker Module. Download the evaluation software to the temporary directory and change to that directory.
4. Download the evaluation software to the temporary folder and change to that folder.

Task 2: Install the NMSAP software

Successful installation of the NMSAP client software requires the following prerequisites.

- ◆ Ensure that the NetWorker client on that host is updated to release 7.4. Otherwise the NMSAP backup wizard libraries will not be registered.
- ◆ Localization of the NMSAP software requires the corresponding localization of the NetWorker software.

To install the NMSAP software on a Microsoft Windows computer:

1. Log in as administrator on the SAP with Oracle server and change to the win_x86 win_x64, or win_ia64 installation folder.
2. Run the **setup.exe** program to launch the NMSAP installation wizard.
3. Follow the instructions shown by the installation wizard. Complete installation installs:
 - NMSAP executables
 - All language packs
 - Backup configuration wizard font-end.

Note: To install the RMAN component, select Custom installation and select RMAN. If NetWorker Module for Oracle (NMO) software is already installed on the host, do *not* install the RMAN component.

4. After the message appears that the NMSAP was successfully installed, click **OK**.
5. Copy the NetWorker **backint.exe** file to the folder where the SAP BRTools reside. Typically, the **backint.exe** file is located in the %SYSTEMDRIVE%\Program Files\Legato\nsr\bin folder.
6. If you do *not* plan to use the NMSAP backup configuration wizard, do the following:



IMPORTANT

If you plan to use the NMSAP backup configuration wizard, then skip this step.

- a. Copy the init.utl file from the Legato\nsr\bin folder to the %ORACLE_HOME%\DATABASE folder and rename this file init<ORACLE_SID>.utl, where <ORACLE_SID> is the name of the Oracle system ID (as defined in the environment variable <%ORACLE_SID%>).

Note: If NMSAP is installed with a language pack, the localized init.utl file will have the format init_xx.utl, where xx is ja, ko, fr, or zh.

- b. Copy and rename the nsrsapsv.cfg scheduled backup configuration file, and preserve the original nsrsapsv.cfg file, which is installed in the Legato\nsr\bin folder. Place the copy in a different folder, for example: %SystemDrive%\Program Files\nsr\res.

Different copies of the nsrsapsv.cfg file may be used for different backup configurations.

Note: If NMSAP is installed with a language pack, the localized scheduled backup configuration file will have the format `nrsapsv_XX.cfg`, where `XX` is `ja`, `ko`, `fr`, or `zh`.

The *EMC NetWorker Module for SAP with Oracle Administration Guide* provides information on how to set parameters and encrypt usernames and passwords in the `nrsapsv.cfg` file.

7. Enable and register the NMSAP software. [Chapter 3, "Licensing and Enabling the Software,"](#) provides instructions.
8. Edit the `init<ORACLE_SID>.sap` and `init<ORACLE_SID>.utl` files, as described in the *EMC NetWorker Module for SAP with Oracle Administration Guide*.
9. Ensure that the location for the `nrsapsv.exe` file is specified early in the system's path environment variable. By default installation, this file is located as follows:


```
%SystemDrive%\Program Files\Legato\nsr\bin
```
10. If required, register the backup configuration wizard libraries, as described in [Chapter 4, "Uninstalling the Software."](#)

The *EMC NetWorker Module for SAP with Oracle Administration Guide* provides instructions on how to configure the NMSAP software.

Installing the NMSAP software in a Microsoft cluster environment

A cluster client shares resources mapped to another node in the cluster. You must have a Cluster Client Connection license to back up a Microsoft Cluster Server (MSCS) client.

To install the NMSAP software in a Microsoft cluster environment:

1. Install the NMSAP software on all physical nodes of the cluster environment. ["Task 2: Install the NMSAP software"](#) on page 20 provides instructions.
2. Copy the `backint` program into the directory where the SAP BRTools utilities reside, for example:

```
copy C:\Program Files\Legato\nsr\bin\backint.exe C:\usr\sap\  
<ORACLE_SID>\SYS\exe\run
```

How to install the backup configuration wizard on a different host

The user interface for the NMSAP backup configuration wizard may be installed on a different host computer than where the NMSAP software is installed.

1. Ensure that NetWorker 7.4 or later client software is installed on the host where the backup configuration wizard is to be installed.
2. Log in as administrator on the computer where the wizard is to be installed and change to the `win_x86` or `win_ia64` installation folder, which contains the NMSAP installation files, see ["Task 1: Access the NMSAP installation files"](#) on page 19.
3. Run the `setup.exe` program to launch the NMSAP installation wizard.
4. Select Custom installation and follow the instructions to install the backup configuration wizard.
5. On the NMSAP client, open the `<NetWorker_install_path>\res\servers` file and add the hostname of the computer where the NMSAP backup configuration wizard is installed.

How to modify or repair the installation

After the NMSAP software is installed on Windows, you can modify or repair the existing installation, for example to change the language locale, by running the **Setup** program in maintenance mode.

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

1. Log in as system administrator.
2. Ensure that no Oracle database backups or restores are running.
3. Open the directory that contains the NMSAP software.
4. Run **setup.exe** to launch the NMSAP installation wizard.

The wizard detects the existing NMSAP installation and displays the **Program Maintenance** dialog box.

5. Select the task to perform, and click **Next** to proceed to the task:
 - **Modify** — Allows you to add and remove NMSAP software components in the existing installation. For example, you can change the localization language to French, Japanese, Korean, or Simplified Chinese.

Note: Localization of the NMSAP software requires the corresponding localization of the NetWorker software.

- **Repair** — Allows you to replace missing or corrupted files in the existing NMSAP installation.
- **Remove** — Allows you to remove the entire NMSAP installation, including any installed configuration wizard libraries. You can also use the Windows Control Panel Add or Remove program to remove the NMSAP installation. For information on uninstalling the NMSAP software, see [Chapter 4, "Uninstalling the Software."](#)

The chapter includes these sections:

- ◆ How software is licensed 24
- ◆ The evaluation process 24
- ◆ The licensing process 26
- ◆ Multiplatform licensing 29
- ◆ Managing licenses 30

How software is licensed

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

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

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

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

The evaluation process

You can evaluate software two ways:

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

Evaluating a new installation

When you first install the 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 software to back up data. The base enabler is the license that enables the edition purchased.

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

Evaluating features on an existing installation

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

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

- ◆ “The licensing process” on page 26 provides instructions.
- ◆ “Multiplatform licensing” on page 29 provides information on the different features.

Entering a temporary enabler code



CAUTION

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

NetWorker server release 7.2.x or earlier

To enter the temporary enabler code:

On UNIX

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


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

On Windows

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

NetWorker server release 7.3 or later

To enter the temporary enabler code:

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

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

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

The licensing process

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

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

These sections explain how to enter and authorize the license enabler:

- ◆ [“Task 1: Enter the license enabler code” on page 26](#)
- ◆ [“Task 2: Obtain an authorization code” on page 28](#)
- ◆ [“Task 3: Enter the authorization code” on page 28](#)

Task 1: Enter the license enabler code

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

NetWorker server release 7.2.x or earlier

To enter the license enabler code:

On UNIX

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

```
nwadmin &
```

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

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

On Windows

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

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

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

NetWorker server release 7.3 or later

To enter the license enabler code:

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

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

3. In the **Administration** window, click **Configuration**.
4. In the left pane, select **Registrations**.
5. From the **File** menu, select **New**.
The **Create Registration** dialog box appears.
6. In the **Enabler Code** attribute, type the enabler code.
7. In the **Name** attribute, type the name of the license.

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

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

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

Task 2: Obtain an authorization code



IMPORTANT

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

Task 3: Enter the authorization code

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

If the authorization process is successful, the expiration date for the license displays “Authorized - No expiration date.” If the authorization is not verified in this way, contact the .

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

- ◆ Obtain a new authorization code. You need the host ID of the original server as well as the new server. The host ID appears in the server’s Registration window.
- ◆ Install and configure the NetWorker License Manager software. [“Managing licenses” on page 30](#) provides information on use of the NetWorker License Manager, and the latest NetWorker License Manager Installation and Administration Guide.

NetWorker server release 7.2.x or earlier

To enter the authorization code:

On UNIX

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


```
nwadmin &
```
3. From the **Server** menu, select **Registration**.

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

On Windows

1. Log in with administrator privileges to the NetWorker server.
 2. Start the **NetWorker Administrator** program.
 3. On the **Configure** tab, click **Registration**.
- The **Registration** window opens.
4. Right-click the appropriate license and select **Edit**.
 5. In the **Auth Code** field, enter the authorization code.
 6. Click **OK**.

The license is now permanently enabled.

NetWorker server release 7.3 or later

To enter the authorization code:

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

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

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

The license is now permanently enabled.

Multiplatform licensing

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

- ◆ Windows: The client connections that accompany a NetWorker server for Microsoft Windows can be used for Windows client computers only.
- ◆ Solaris: The client connections that accompany a server for Solaris can be used for Solaris clients only.
- ◆ With a ClientPak for UNIX, other UNIX platforms can be enabled for use with a server for Solaris. The ClientPak for UNIX supports all UNIX platforms. The ClientPak for UNIX is sufficient for all UNIX clients (backed up by a UNIX or Windows server).

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

Example 1 **Multiplatform licensing scenarios**

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

As the company grew and needed to add a server, it added a Windows 2000 server, which backed up the existing Windows clients and subsequent Windows 2000 clients without requiring a ClientPak. The company assigned the NetWorker server to a Solaris computer to back up the HP-UX, Solaris, and AIX clients by using a single ClientPak for UNIX.

Additional licenses

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

Client connection licenses

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

Storage nodes

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

NetWorker Application Modules

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

Cluster clients

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

NDMP licensing

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

Managing licenses

The NetWorker License Manager software provides centralized license management, which enables you to maintain all of an enterprise's licenses from a single computer.

With the NetWorker License Manager, you can move software from one computer to another, or change the IP address on an existing server without having to reauthorize the software. The NetWorker License Manager can be installed as an option during the software installation.

To begin to implement the NetWorker License Manager:

1. Obtain bulk enabler codes.
2. Install the NetWorker License Manager software.
3. Configure the NetWorker License Manager software.
4. Configure the NetWorker servers to access the NetWorker License Manager for their licenses.

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

This chapter describes how to uninstall the EMC NetWorker Module for SAP with Oracle (NMSAP) software on a supported UNIX, Linux, or Microsoft Windows operating system. It contains the following sections:

- ◆ [How to uninstall on UNIX or Linux operating systems 34](#)
- ◆ [How to uninstall on Windows operating systems 35](#)

How to uninstall on UNIX or Linux operating systems

To uninstall the NMSAP software on UNIX systems, and the symbolic link to RMAN libraries if they were enabled, use the following procedure.



CAUTION

The uninstall procedure removes the nsrsapsv configuration file used for scheduled backups. To save any customizations made to the nsrsapsv configuration file, save a copy of the file before you uninstall.

Note: To uninstall the NMSAP software in a cluster environment, perform this procedure on each cluster node.

1. Ensure that no Oracle database backups or restores are running.
2. Log in as root.


```
# su root
```
3. Change to the directory that contains the NetWorker client binaries and the NMSAP software.
4. If the RMAN utility was enabled, type the appropriate command to remove the symbolic link to the RMAN library file. [Table 6 on page 34](#) lists the commands.

Table 6 Commands to remove the link to the RMAN library

On this system:	With these Oracle releases:	Use these commands:
AIX	9.x 10.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.a</code>
HP-UX (Itanium)	9.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
HPUX (PA-RISC)	9.x 10.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.sl</code>
Linux (AMD64/EM64T)	9.x 10.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Linux (Intel)	9.x 32-bit 10.x 32-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Linux (Itanium)	9.x 10.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Solaris	9.x 32-bit 9.x 10.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>
Tru64 UNIX	9.x	% <code>cd \$ORACLE_HOME/lib</code> % <code>rm libobk.so</code>

5. Type the appropriate commands for your operating system to uninstall the language packs and the NMSAP software. [Table 7 on page 35](#) lists the commands.

Note: Uninstall language packs first before uninstalling the NMSAP software.

Table 7 Commands to remove NMSAP language packs and software

Operating system	Uninstall commands
AIX	<code>installp -u LGTONmsapfr.rte</code> (French language pack) <code>installp -u LGTONmsapja.rte</code> (Japanese language pack) <code>installp -u LGTONmsapko.rte</code> (Korean language pack) <code>installp -u LGTONmsapzh.rte</code> (Simplified Chinese language pack) <code>installp -u LGTONmsap.rte</code> (NMSAP software)
HP-UX	<ul style="list-style-type: none"> To uninstall with the swremove command-line interface, type: swremove NMSAP To uninstall with the swremove GUI program: <ol style="list-style-type: none"> type swremove -i NMSAP Select Actions > Remove (analysis) When the system analysis is complete, click OK. Click Yes to confirm the uninstall.
Linux	<code>rpm -e lgtonmsapfr-3.5</code> (French language pack) <code>rpm -e lgtonmsapja-3.5</code> (Japanese language pack) <code>rpm -e lgtonmsapko-3.5</code> (Korean language pack) <code>rpm -e lgtonmsapzh-3.5</code> (Simplified Chinese language pack) <code>rpm -e lgtonmsap-3.5</code> (NMSAP software)
Solaris	<code>pkgrm LGTONmsapwz</code> (configuration wizard) <code>pkgrm LGTONmsapfr</code> (French language pack) <code>pkgrm LGTONmsapja</code> (Japanese language pack) <code>pkgrm LGTONmsapko</code> (Korean language pack) <code>pkgrm LGTONmsapzh</code> (Simplified Chinese language pack) <code>pkgrm LGTONmsap</code> (NMSAP software)
Tru64 UNIX	<code>setld -d LGTONMSAPFR305</code> (French language pack) <code>setld -d LGTONMSAPJA305</code> (Japanese language pack) <code>setld -d LGTONMSAPKO305</code> (Korean language pack) <code>setld -d LGTONMSAPZH305</code> (Simplified Chinese language pack) <code>setld -d LGTONMSAP305</code> (NMSAP software)

How to uninstall on Windows operating systems

To uninstall the NMSAP software on Microsoft Windows systems, use either the NMSAP Setup program or the Windows Control Panel, as described in the following sections.



CAUTION

This procedure removes the `nsrsapsv` configuration file used for scheduled backups. To save any customizations made to the `nsrsapsv` configuration file, save a copy of the file before you uninstall.

Uninstall with the Setup program

To uninstall the NMSAP software by using the Setup program:

Note: To uninstall the NMSAP software in a cluster environment, perform this procedure on each cluster node.

1. Log in as system administrator.
2. Ensure that no Oracle database backups or restores are running.
3. Open the networkr directory from which you installed the NMSAP software. For example, on the CD-ROM, the directory might be one of the following:

```
SAP\3.5\win_x86
SAP\3.5\win_x64
SAP\3.5\win_ia64
```

4. Run **setup.exe** to launch the NMSAP installation wizard.
5. Click **Uninstall**, and then click **Next** and follow the instructions.
6. Delete the **backint.exe** file from the BRTools folder.

Uninstall with the Control Panel

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

Note: To uninstall the NMSAP software in a cluster environment, perform this procedure on each cluster node.

1. Log on as the system administrator.
2. Ensure that no Oracle database backups or restores are running.
3. In the **Start** menu, select **Settings > Control Panel**.
4. In the **Control Panel** window, double-click **Add/Remove Programs**.
5. In the **Add/Remove Programs** window, select NetWorker Module for SAP with Oracle, and then click **Remove**.
6. In the **Setup** dialog box, select the **Remove** option.
7. Delete the **backint.exe** file from the **BRTools** folder.

This appendix contains the following.

- ◆ [Registering the wizard libraries](#) 38

Registering the wizard libraries

In some situations, the libraries for the NMSAP scheduled backup configuration wizard may not be properly registered during installation.

How to verify if the wizard libraries are registered on UNIX

To verify whether the backup configuration wizard libraries are registered on a UNIX system:

- ◆ On the NMSAP client, review the `/nsr/res/nsrwizclnt.res` file.
 - An entry should exist for the `libnmsapdc` library.
 - The library version should be 3.5.
- ◆ On the Solaris host where the NMSAP wizard user interface is to be run, review the `/nsr/res/nsrwizcon.res` file.
 - An entry should exist for the `libnmsapwiz` library.
 - The library version should be 3.5.

If the library version is incorrect, then the libraries must be manually registered before the backup wizard can be used.

How to register the wizard libraries on UNIX

To manually register the library files on a UNIX system, enter the appropriate command:

- ◆ To register the NMSAP client-side wizard library, type this command:


```
"NetWorker_install_path/nsrwizreg" -t NMSAP -n "NetWorker Module for
SAP with Oracle" -p "complete_library_path/libnmsapdc[32].x" -v
3.5 -f nsrwizclnt.res -a
```

where 32 should be added if NetWorker 32-bit software is used and x is o, sl, or so, depending on the operating system.

- ◆ To register the library on the Solaris host where the wizard user interface is to be run, type this command:

```
"NetWorker_install_path/nsrwizreg" -t NMSAP -n "NetWorker Module for
SAP with Oracle" -p "complete_library_path/libnmsapwiz.so" -v 3.5
-f nsrwizcon.res -a
```

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

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

How to verify if the wizard libraries are registered on Windows

To verify whether the wizard libraries are registered on a Microsoft Windows system:

- ◆ On the NMSAP client, review the `NetWorker_install_path\nsr\res\nsrwizclnt.res` file.
 - An entry should exist for the `libnmsapdc.dll` library.
 - The library version should be 3.5.

- ◆ On the Windows system where the NMSAP backup wizard user interface is to be run, review the *NetWorker_install_path\nsr\res\nsrwizcon.res* file.
 - An entry should exist for the *libnmsapwiz.dll* library.
 - The library version should be 3.5.

If the library version is incorrect, then the libraries must be manually registered before the backup wizard can be used.

How to register the wizard libraries on Windows

To manually register the library files on a Microsoft Windows system, enter the appropriate command:

- ◆ To register the NMSAP client-side *libnmsapdc.dll* library, enter this command:

```
"NetWorker_install_path\nsrwizreg" -t NMSAP -n "NetWorker Module for Oracle" -p "complete_library_path\libnmsapdc.dll" -v 3.5 -f nsrwizclnt.res -a
```
- ◆ To register the wizard user interface *libnmsapwiz.dll* library, enter this command:

```
"NetWorker_install_path\nsrwizreg" -t NMSAP -n "NetWorker Module for Oracle" -p "complete_library_path\libnmsapwiz.dll" -v 3.5 -f nsrwizcon.res -a
```

The NetWorker Command Reference Guide provides more information on the *nsrwizreg* command.

