



EMC® NetWorker®
Module for SAP with Oracle
Release 4.0

Installation Guide

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Preface

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

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

Audience

This document is part of the EMC NetWorker Module for SAP with Oracle (NMSAP) documentation set, and is intended for use by system administrators during the 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, Powerlink.EMC.com, including:

- ◆ The NetWorker Module for SAP with Oracle release 4.0 documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
- ◆ The NetWorker documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
 - Disaster recovery guide
 - NetWorker Licensing Process 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 special notices.

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

**CAUTION**

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

**IMPORTANT**

An important notice contains information essential to software or hardware operation.

Typographical conventions

EMC uses the following type style conventions in this document:

Normal	Used in running (nonprocedural) text for: <ul style="list-style-type: none"> Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus) Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, utilities URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, notifications
Bold	Used in running (nonprocedural) text for: <ul style="list-style-type: none"> Names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, man pages Used in procedures for: <ul style="list-style-type: none"> Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus) What 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** Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Please send your opinion of this document to:
- techpubcomments@EMC.com
- If you have issues, comments, or questions about specific information or procedures, please include the title and, if available, the part number, the revision (for example, A01), the page numbers, and any other details that will help us locate the subject you are addressing.

This chapter includes the following sections:

- ◆ The NMSAP environment 10
- ◆ Installation roadmap 11
- ◆ Installation checklist 12
- ◆ Upgrading from a previous release 12

The NMSAP environment

The EMC® NetWorker® Module for SAP with Oracle (NMSAP) software works with the supported SAP BRTools software and the NetWorker software to provide backup and restore services for SAP Oracle data.

[Table 1 on page 10](#) lists the software required for a simple network environment that uses the NMSAP software for backup and recovery services.

Table 1 Typical NMSAP backup and recovery environment

Host	Required software
NetWorker Management Console (NMC) server	<ul style="list-style-type: none"> NetWorker client NMC
NetWorker storage management server	NetWorker server
Each SAP Oracle server	<ul style="list-style-type: none"> Oracle database server SAP BRTools NetWorker client NetWorker storage node (optional) NMSAP For snapshot operations, the compatible NetWorker Module for PowerSnap™ software must be installed on both the Oracle server and a proxy backup host For BRTools split mirror backups, a compatible version of Replication Manager must be installed.

Installation requirements

The *EMC Information Protection Software Compatibility Guide* on the EMC [Powerlink®](#) website, provides current details on operating systems, BRTools versions, and other software required to configure NMSAP backups.

The Support link on Powerlink provides details on patches required on a particular system.

Ensure that the appropriate requirements for installation are met, as described in the following sections.

SAP BRTools A supported SAP BRTools version must be installed. The SAP BRTools version must be certified to run on the operating system. The SAP documentation provides details on the supported operating systems.

NMC server A supported release of NetWorker Management Console (NMC) must be installed to provide a user interface with the NetWorker and NMSAP software.

NetWorker server A supported release of the NetWorker server must be installed on the NetWorker server host. The NetWorker server host is usually a separate host, but it can also be the NMSAP host.

Specific NetWorker server releases may be required to support specific NMSAP features, as described in the NMSAP release notes.

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

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

NetWorker client

A supported release of the NetWorker client software must be installed on the NMSAP host.

Note: The NetWorker client software must be installed and working on the NMSAP host *before* the NMSAP software is installed.

Specific NetWorker client releases may be required to support specific NMSAP features, as described in the NMSAP release notes.

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

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

PowerSnap

To enable PowerSnap snapshot backup features, the NetWorker PowerSnap Module that is designed for the primary storage system must be installed on *both* of the following hosts:

- ◆ NMSAP host
- ◆ A proxy client host (also called a data mover)

The NetWorker PowerSnap Module documentation provides installation information.

Replication Manager

To enable split-mirror backup features, EMC Replication Manager server software must work with Replication Manager agent software installed on *both* the following hosts:

- ◆ SAP Oracle server
- ◆ Mount host (data mover)

The EMC Replication Manager documentation provides installation information.

NMSAP

The NMSAP software must be installed on the SAP with Oracle server. NMSAP must be installed on a supported operating system version.

For split-mirror backups, NMSAP must also be installed on the mount host (data mover).

Installation roadmap

Use the following roadmap when installing the NMSAP software on each SAP Oracle server host that requires backup and recover services:

1. Review the [“Installation checklist” on page 12](#) and verify that you have the documentation, installation media, pathnames, and license information, as required.
2. Install the NMSAP software as appropriate for the host operating system:
 - [Chapter 2, “UNIX and Linux Installation”](#)
 - [Chapter 3, “Microsoft Windows Installation”](#)

Note: [“Upgrading from a previous release” on page 12](#) provides instructions on how to update from a previous NMSAP release.

3. Enable and register the NMSAP software.
[Chapter 4, “Licensing and Enabling the Software,”](#) provides instructions.
4. Configure NMSAP backups and restores as described in the *EMC NetWorker Module for SAP with Oracle Administration Guide*.

Installation checklist

Review the following checklist to ensure that you have the required materials for the installation and configuration procedures.

Documents

Required information may be found the the following documents:

- ◆ *EMC NetWorker Module for SAP with Oracle Installation Guide* for the existing release, if a previous release of NMSAP must be uninstalled before NMSAP 4.0 can be installed
- ◆ *EMC NetWorker Module for SAP with Oracle Release 4.0 Release Notes*
- ◆ *EMC NetWorker Module for SAP with Oracle Release 4.0 Administration Guide*
- ◆ *EMC NetWorker Administration Guide* for the supported NetWorker release
- ◆ The latest *EMC Information Protection Software Compatibility Guide*

Installation media

One of the following installation media is required:

- ◆ DVD from the EMC Media Kit
- ◆ Link to the EMC website if downloading the software.

License information

Required license enablers:

- ◆ Evaluation enabler
- ◆ Enabler certificate

NMSAP release 4.0 has separate license enablers for UNIX, Linux, and Microsoft Windows platforms.

[Chapter 4, “Licensing and Enabling the Software,”](#) provides more information on licensing.

Upgrading from a previous release

To upgrade to NMSAP release 4.0 from a previous release:

Note: To upgrade 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 the supported release.
The NMSAP release notes and the *EMC Information Protection Software Compatibility Guide* provide details.
2. Ensure that no backups or restores are running on the SAP with Oracle server.

3. Uninstall the previous release of the NMSAP software.

The appropriate release of the *EMC NetWorker Module for SAP with Oracle Installation Guide* provides details.

4. If NetWorker 7.5 or later client software is installed, start the NetWorker client service before the NMSAP installation. Otherwise, automatic registration of the NMSAP configuration wizard might not occur and the wizard fails to run.

If the automatic wizard registration fails, the wizard may be manually registered.

- “[Register the wizard manually](#)” on page 24 provides details for UNIX systems.
- “[Register the wizard manually](#)” on page 32 provides details for Windows systems.

5. Install the NMSAP software.

The following chapters, appropriate for the operating system, provide details:

- [Chapter 2, “UNIX and Linux Installation”](#)
- [Chapter 3, “Microsoft Windows Installation”](#)

6. Enable and register the NMSAP software.

[Chapter 4, “Licensing and Enabling the Software,”](#) gives details.

Upgrading remotely with the software distribution feature

Use the software distribution feature (push install) to remotely upgrade the NMSAP software from a centralized NetWorker server to one or more NMSAP clients.

Note: Push installation is *not* supported on cluster environments.

1. Ensure that the following requirements are met:

- NMSAP 3.5 is installed on the remote NMSAP clients on operating systems that support push install. Remote upgrade of earlier NMSAP releases is not supported.

The *EMC NetWorker Installation Guide* gives details on supported operating systems.

- A supported NetWorker 7.4.1 or later release is installed on the remote server hosts.
- A supported release of NetWorker client is installed on the remote NMSAP client hosts.

The *EMC Information Protection Software Compatibility Guide* provides details.

- The NetWorker Console server includes administrative privileges for the user who performs the upgrade.

2. Use the Software Administration Wizard or **nsrpush** command on the NetWorker server to perform the NMSAP update.

The server transfers and installs the NMSAP software to the client host.

The *EMC NetWorker Installation Guide* and *EMC NetWorker Release Notes* provide more information.

This chapter includes the following sections:

- ◆ Perform the preinstall tasks on UNIX or Linux..... 16
- ◆ Install the NMSAP software on UNIX or Linux (single host) 18
- ◆ Perform the postinstall tasks on UNIX or Linux 23
- ◆ Installing in a cluster on UNIX or Linux 25
- ◆ Uninstalling on UNIX and Linux..... 25

Perform the preinstall tasks on UNIX or Linux

Perform the following preinstall tasks:

- ◆ “Preinstall tasks for relocated NetWorker client on Linux” on page 16
- ◆ “Preinstall tasks for relocated NetWorker client on Solaris” on page 16
- ◆ “Run the NetWorker client program” on page 16
- ◆ “Access the software on UNIX or Linux” on page 17

Preinstall tasks for relocated NetWorker client on Linux

If the NetWorker client software is relocated (installed in a nondefault directory) on Linux, ensure that the NMSAP software is relocated in the same nondefault directory as the NetWorker client software.

Additionally, for supported NetWorker client releases earlier than 7.5 *only*, if the NetWorker client is relocated on a Linux system, perform *one* of the following options before you install the NMSAP software:

- ◆ Create the required symbolic link:
 - On Linux AMD64/EM64T or Linux Itanium 64:


```
# mkdir -p /usr/lib/nsr/apps/nmsap/lib64
# ln -s relocation_dir/lib/nsr/apps/nmsap/lib64/libcommonssl.so
/usr/lib/nsr/apps/nmsap/lib64/libcommonssl.so
```
 - On Linux PowerPC:


```
# mkdir -p /usr/lib/nsr/apps/nmsap
# ln -s relocation_dir/lib/nsr/apps/nmsap/libcommonssl.so
/usr/lib/nsr/apps/nmsap/libcommonssl.so
```
- ◆ Or alternatively, change the system default library search path with the /etc/ld.so.conf file and the `ldconfig` command to include the additional directory as follows:
 - On Linux AMD64/EM64T or Linux Itanium 64:


```
relocation_dir/lib/nsr/apps/nmsap/lib64
```
 - On Linux PowerPC:


```
relocation_dir/lib/nsr/apps/nmsap
```

The appropriate Linux documentation on the runtime linking environment provides more details.

Preinstall tasks for relocated NetWorker client on Solaris

If the NetWorker client software is relocated (installed in a nondefault directory) on Solaris, ensure that the NMSAP software is relocated in the same nondefault directory as the NetWorker client software.

Run the NetWorker client program

Start the NetWorker client before you install the NMSAP software.

The *EMC NetWorker Installation Guide* provides instructions for each supported operating system.

Access the software on UNIX or Linux

The NMSAP software is distributed in the following formats:

- ◆ On the DVD for NMSAP, which is included in the EMC Information Protection and Availability Product Families Media Kit. The kit contains the software and online documentation for related products.
- ◆ As a downloadable file of the *evaluation* software that is available from the EMC website.



IMPORTANT

The NMSAP software obtained from the DVD or EMC website does *not* include an enabler code. The software can only be *evaluated*. [Chapter 4, “Licensing and Enabling the Software,”](#) provides more information on enabling NMSAP.

Access the NMSAP software files from either of the following sources:

- ◆ [“From a local DVD drive” on page 17](#)
- ◆ [“From the EMC website” on page 18](#)

From a local DVD drive

To access the NMSAP software files on a host with a local DVD drive:

1. Log in as root on the host.
2. Insert and mount the NMSAP DVD in the DVD drive:


```
mount /dev/DVD_drivename /mount_point
```
3. Go to the correct directory on the DVD, as shown in [Table 2 on page 17](#).

Note: The *EMC Information Protection Software Compatibility Guide* provides details on the operating systems supported for specific database and application software.

Table 2 Accessing the correct directory on the local DVD

Platform	Type the following command
AIX (64-bit)	<code>cd /mount_point/sap/aix_32</code>
HP-UX PA-RISC (64-bit)	<code>cd /mount_point/sap/hpux11_64</code>
HP-UX Itanium	<code>cd /mount_point/sap/hpux11_ia64</code>
Linux AMD64/EM64T	<code>cd /mount_point/sap/linux_x86_64</code>
Linux Itanium	<code>cd /mount_point/sap/linux_ia64</code>
Linux PowerPC	<code>cd /mount_point/sap/linux_ppc64</code>
Solaris SPARC (64-bit)	<code>cd /mount_point/volume_label/sap/solaris_64</code>
Solaris AMD64/EM64T	<code>cd /mount_point/volume_label/sap/solaris_amd64</code>

4. Continue with [“Install the NMSAP software on UNIX or Linux \(single host\)” on page 18](#).

From the EMC website

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

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

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

```
mkdir /usr/nsr_extract_nmsap
```

3. Go to Powerlink.EMC.com.
4. Select **Support > Software Downloads and Licensing > Downloads J-O > NetWorker Module**.
5. In the table of NetWorker Module Software Downloads, click the **NetWorker Module for SAP Release 4.0** for the particular UNIX or Linux platform.
6. Download the NMSAP software file to the temporary directory you created, for example, /usr/nsr_extract_nmsap.
7. Uncompress the downloaded file by typing the following **gunzip** command, and replacing the *filename.tar.gz* name with the specific download filename:

```
gunzip filename.tar.gz
```

8. Extract the software from the uncompressed, tarred file:

```
tar -xvpBf filename.tar
```

The distribution software files are listed on the screen as the extraction proceeds.

9. Remain in the installation directory created in [step 2](#), for example, /usr/nsr_extract_nmsap.
10. Continue with [“Install the NMSAP software on UNIX or Linux \(single host\)” on page 18](#).

Install the NMSAP software on UNIX or Linux (single host)

Once you have accessed the software files for UNIX or Linux, you are ready to begin the installation.

Installation procedure

To install NMSAP on a single host (non-cluster) UNIX or Linux system:

1. Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 10](#).
2. Ensure that you are logged in as the root user.
3. Ensure that you are in the correct directory, as described in [“Access the software on UNIX or Linux” on page 17](#).

Note:

- If the installation is *not* started from the correct directory, the installation might fail.
 - A database does *not* need to be shut down during the installation.
-

4. Install the software according to the instructions in the appropriate section:
 - [“Install on AIX” on page 19](#)
 - [“Install on HP-UX” on page 20](#)
 - [“Install on Linux” on page 20](#)
 - [“Install on Solaris” on page 21](#)

After the software installation completes, a message is displayed on how to start the NMSAP scheduled backup configuration wizard. The *EMC NetWorker Module for SAP Administration Guide* provides more information on the wizard.

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

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

6. Before you use NMSAP for backups, you must enable the software according to [“Enable the software” on page 24](#).
7. If the MANPATH environment variable does *not* include the pathname of the directory that contains the NMSAP man pages, modify the variable to include the correct pathname and enable access to the man pages with the **man** command.

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

Install on AIX

To install NMSAP on an AIX system:

1. Follow the first steps given in [“Installation procedure” on page 18](#).
2. Invoke either the **installp** command line interface (CLI) or the AIX System Management Interface Tool (SMIT) GUI program:

- To invoke the CLI, type the following command:

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

where `/dir_pathname` is the complete pathname of the correct directory, as described in [“Access the software on UNIX or Linux” on page 17](#).

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

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

If the **lsllpp** command output includes `LGTONmsap.rte 4.0.0.0`, the installation succeeded.

- To invoke the SMIT GUI program, perform the following:
 - a. Type the following command:


```
smitty install_latest
```
 - b. In the **Entry Field**, type the location of the NMSAP installation software as the complete pathname of the directory described in [“Access the software on UNIX or Linux” on page 17](#).
 - c. Select the option **SOFTWARE to install**.
 - d. Type **yes** in response to the following prompts:


```
Accept new license agreements?
Preview new license agreements?
```
 - e. Select **F4=List** to display the list of NMSAP software packages.

- f. Select **LGTONmsap.rte** to install the NMSAP software.
 - g. Ensure that the **Preview Only** option is set to **No**.
 - h. Select **Install and Update Software**.
 - i. Press **Enter** to begin the installation.
3. Continue the installation as described in [step 5 on page 19](#).

Install on HP-UX

To install NMSAP on an HP-UX system:

1. Follow the general steps given in [“Installation procedure” on page 18](#).
2. Type the **swinstall** command to invoke either the command line interface (CLI) or the graphical user interface (GUI) program:

- To invoke the **swinstall** CLI program, type the following command:

```
swinstall -x mount_all_filesystems=false  
-s /dir_pathname/LGTONmsap.pkg NMSAP
```

where */dir_pathname* is the complete pathname of the directory containing the software package, as described in [“Access the software on UNIX or Linux” on page 17](#).

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

```
swinstall -x mount_all_filesystems=false -i  
-s /dir_pathname/LGTONmsap.pkg NMSAP
```

where */dir_pathname* is the complete pathname of the directory containing the software package, as described in [“Access the software on UNIX or Linux” on page 17](#).

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

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

- b. Click **OK** to continue the installation.

The NMSAP installation on HP-UX stores informational messages including installation errors in the `/var/adm/sw/swagent.log` file. If an error occurs during the installation, check this file to obtain details on the error.

3. Continue the installation as described in [step 5 on page 19](#).

Install on Linux

To install the NMSAP software on a Linux system:

1. Follow the general steps given in [“Installation procedure” on page 18](#).
2. Type the appropriate **rpm** command as follows:

Note: If the NetWorker client release is earlier than 7.5, you must also use the **--nodeps** option with the **rpm** command to install NMSAP.



IMPORTANT

On Linux systems, the NMSAP software must be installed in the same directory as the NetWorker client software. The NMSAP software may be *relocated* during the installation, but *only* to the same path as the relocated NetWorker client by typing the **--relocate option for the `/usr` directory only, *not* for individual subdirectories.**

- Linux AMD64/EM64T
 - To install the NMSAP software in the default directory:


```
rpm -i lgtonmsap-4.0-1.x86_64.rpm
```
 - To relocate the NMSAP software installation:


```
rpm -i lgtonmsap-4.0-1.x86_64.rpm --relocate /usr=NetWorker_base_dir
```
 - Linux Itanium
 - To install the NMSAP software in the default directory:


```
rpm -i lgtonmsap-4.0-1.ia64.rpm
```
 - To relocate the NMSAP software installation:


```
rpm -i lgtonmsap-4.0-1.ia64.rpm --relocate /usr=NetWorker_base_dir
```
 - Linux PowerPC:
 - To install the NMSAP software in the default directory:


```
rpm -i lgtonmsap-4.0-1.ppc64.rpm
```
 - To relocate the NMSAP software installation:


```
rpm -i lgtonmsap-4.0-1.ppc64.rpm --relocate /usr=NetWorker_base_dir
```
3. To verify that the installation was successful, type the `rpm -aq` command:
- ```
rpm -aq | grep -i lgto
```
- The command output should include the appropriate lines, for example:
- ```
lgtocInt-7.5-1
lgtonmsap-4.0-1
```
4. Continue the installation as described in [step 5 on page 19](#).

Install on Solaris

To install NMSAP on a Solaris system:

Note: If the Solaris system has Solaris zones and NMSAP 4.0 is to run on a sparse root zone, install NMSAP on the global zone and on each required sparse root zone. Perform all Solaris zone installations of NMSAP by using the `pkgadd` command, as described in the following steps. [Table 4 on page 25](#) provides information on the NMSAP uninstall procedures on Solaris zones.

1. Follow the general steps given in [“Installation procedure” on page 18](#).
2. 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 LGTOcInt BASEDIR
```



IMPORTANT

The NMSAP software must be installed in the same base directory as the NetWorker client software. The NMSAP software may be *relocated* 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, NMSAP must also be installed in the /disk1 directory.

3. Type the appropriate **pkgadd** command:

```
pkgadd -d /dir_pathname LGTONmsap
```

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

4. Complete the NMSAP installation, depending on the basedir variable setting in the /var/sadm/install/admin/default file:

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

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

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

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

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

The software is installed in the specified base directory.

Note: If an incorrect pathname is typed at the prompt, the installation displays an error and the software is installed in the incorrect directory. In this case:

a. Uninstall the software by typing the **pkgrm LGTONmsap** command.

b. Reinstall the software by typing the correct pathname at the first **pkgadd** prompt.

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

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

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

a. Uninstall the software by typing the **pkgrm LGTONmsap** command.

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

c. Reinstall the software.

5. Continue the installation as described in [step 5 on page 19](#).

Perform the postinstall tasks on UNIX or Linux

Perform the following tasks, if required, after NMSAP installation on UNIX or Linux servers.

- ◆ [“Enable the RMAN utility” on page 23](#)
- ◆ [“Register NMSAP product information with the SAP SLD repository” on page 23](#)
- ◆ [“Register the wizard manually” on page 24](#)
- ◆ [“Enable the software” on page 24](#)

Enable the RMAN utility

To enable the Oracle RMAN backup and restore utility, create a symbolic link to the NMSAP 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 3 on page 23](#) lists the commands for the various operating systems and Oracle releases.

Note: The commands listed in [Table 3 on page 23](#) are examples that assume a default NMSAP installation, with the libnworasap.* library file installed in the default directory (for example, /usr/lib).

Table 3 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 10.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 AMD64/EM64T 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 AMD64 Solaris SPARC	9.x 64-bit 10.x 64-bit	<code>cd \$ORACLE_HOME/lib</code> <code>ln -s /usr/lib/libnworasap.so libobk.so</code>

Register NMSAP product information with the SAP SLD repository

As part of NMSAP installation, it is recommended by SAP to register the NMSAP product information for your installation with the SAP System Landscape Directory (SLD).

To register the NMSAP product information:

1. Locate the `nwsldreg.xml` file, and open it in a text editor, such as `vi`. Do *not* use a word processor.

A copy of this file, which has been preconfigured with the NMSAP information, except for your computer hostname, is installed as part of the NMSAP installation in the following location:

```
/etc/nwsldreg.xml
```

2. Change all occurrences of the word “ComputerName” to the hostname of the computer on which you have installed NMSAP.
3. Save the file.
4. Ensure that the SAP SLD server is running.
5. From a command line, send the edited file to your SLD server with the `sldreg` command as follows:

```
sldreg -user username -pass password -host sld_server  
-port http_port -file nwsldreg.xml
```

where:

- `username` and `password` are your login credentials on the SLD host.
- `sld_server` is the name of the SLD host.
- `http_port` is the port configured for HTTP connections on the SLD host.

Note: If you have configured the HTTP server to use HTTPS, you must add the option `-usehttps`.

- `nwsldreg.xml` is the XML file to send to the SLD host.

The `sldreg` command, run without options, gives more information. The SAP web site also provides more information.

Register the wizard manually

If the NMSAP scheduled backup configuration wizard fails to automatically register during installation, register the wizard manually as follows:

1. Log in as the root user.
2. Type the following command:

```
nsrsapra -i
```

Note: To manually unregister the wizard, type the following command: `nsrsapra -u`

Enable the software

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

[Chapter 4, “Licensing and Enabling the Software,”](#) provides enabling information.

The *EMC NetWorker Module for SAP Administration Guide* provides configuration information.

Installing in a cluster on UNIX or Linux

NMSAP release 4.0 supports cluster configurations.

Install NetWorker client and NMSAP software on *each* cluster node to be used for backup and restore operations as follows:

1. Meet all the requirements in “[Installation requirements](#)” on page 10.
2. Follow the instructions in “[Install the NMSAP software on UNIX or Linux \(single host\)](#)” on page 18.

The current *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the operating system and the database or application versions that are supported with cluster configurations.

The *EMC NetWorker Module for SAP Release 4.0 Administration Guide* provides information on how to configure the NMSAP software on a cluster system.

Uninstalling on UNIX and Linux

To uninstall NMSAP release 4.0 on UNIX or Linux:

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

1. Ensure that no database or application backups are running.
2. Log in as the root user on the NMSAP host.
3. Remove the **backint** program from the directory where the SAP BRTools reside, for example, /usr/sap/<DBSID>/SYS/exe/run.
4. Uninstall the NMSAP software by using the instructions from [Table 4 on page 25](#) for the operating system.

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

Table 4 Procedures for uninstalling NMSAP on UNIX and Linux (page 1 of 2)

On this system	Perform the following to uninstall the NMSAP software	And complete the uninstall as follows
AIX	Perform one of the following: <ul style="list-style-type: none"> • Invoke the installp command line interface by typing the appropriate command: installp -u LGTONmsap.rte • Invoke the SMIT GUI program by typing the following command: smitty remove 	If using the SMIT GUI program, perform the following after typing the smitty remove command: <ol style="list-style-type: none"> 1. Select F4=List to display a list of the installed software packages. 2. Select the packages to be uninstalled: LGTONmsap.rte 3. Ensure that the PREVIEW Only option is set to No. 4. Press Enter to uninstall the NMSAP software. 5. Exit the SMIT program.
HP-UX	Perform one of the following: <ul style="list-style-type: none"> • To invoke the swremove command line interface, type this command: swremove NMSAP • To invoke the swremove GUI program, type this command: swremove -i NMSAP 	If using the swremove GUI program: <ol style="list-style-type: none"> 1. Select Actions > Remove (analysis). 2. When the system analysis is complete, click OK to complete the uninstall. 3. To confirm the uninstall, click Yes.

Table 4 Procedures for uninstalling NMSAP on UNIX and Linux (page 2 of 2)

On this system	Perform the following to uninstall the NMSAP software	And complete the uninstall as follows
Linux	Type the appropriate command: <code>rpm -e lgtonmsap-4.0-1</code> <hr/> Note: On Linux, the NetWorker client software must be uninstalled <i>after</i> the NMSAP software.	To uninstall <i>both</i> NMSAP and the NetWorker client on Linux, perform <i>one</i> of the following: <ul style="list-style-type: none"> • Type this command: <code>rpm -e lgtonmsap-4.0-1 lgtocInt</code> • Type these separate commands, in this order <i>only</i>: <code>rpm -e lgtonmsap-4.0-1</code> <code>rpm -e lgtocInt</code>
Solaris	Type the appropriate commands, depending on the packages installed: <code>pkgrm LGTONmsap</code> <hr/> Note: To uninstall NMSAP on Solaris zones: <ol style="list-style-type: none"> 1. Uninstall NMSAP on the global zone. 2. Uninstall NMSAP on each required sparse root zone. 	Perform the following according to the basedir variable setting in the <code>/var/sadm/install/admin/default</code> file: <ul style="list-style-type: none"> • If <code>basedir=default</code> in the file, type y when prompted. The software is uninstalled from the directory that contains the NetWorker client software. • If <code>basedir=ask</code> in the file, type the result of the <code>pkgparam LGTONmsap BASEDIR</code> command when prompted for the pathname of the base directory. The software is uninstalled from the specified base directory. • If <code>basedir=/dirpath</code> in the file, type y when prompted. The software is uninstalled from the specified <code>/dirpath</code> directory.

This chapter includes the following sections:

- ◆ Software installation path on Microsoft Windows..... 28
- ◆ Perform the preinstall tasks on Microsoft Windows..... 28
- ◆ Install the NMSAP software on Microsoft Windows (single host) 30
- ◆ Perform the postinstall tasks on Microsoft Windows 31
- ◆ Installing in a cluster on Microsoft Windows 32
- ◆ Maintaining the installation on Microsoft Windows 32
- ◆ Uninstalling on Microsoft Windows 33

Software installation path on Microsoft Windows

This guide refers to the root directory of the NetWorker installation path on Microsoft Windows by using the variable *NetWorker_install_directory*. The actual location represented by this variable depends on where the NetWorker software was installed on the Windows platform.

The default installation location is: `%SystemDrive%\Program Files\Legato`

In NMSAP documentation, references to locations under the installation root use the *NetWorker_install_directory* variable in the path statement. For example, the NMSAP logs are located in the *NetWorker_install_directory\nsr\appllogs* directory.

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

Perform the preinstall tasks on Microsoft Windows

Perform the following preinstall tasks.

- ◆ [“Run the NetWorker client program” on page 28](#)
- ◆ [“Access the software for Microsoft Windows” on page 28](#)

Run the NetWorker client program

Start the NetWorker client program before installing the NMSAP software.

The *EMC NetWorker Installation Guide* provides instructions for each supported platform.

Access the software for Microsoft Windows

The NMSAP software is distributed in the following forms:

- ◆ On the DVD for NMSAP, which is included in the EMC Information Protection and Availability Product Families Media Kit. The kit contains the software and online documentation for related products.
- ◆ In the downloadable file of the *evaluation* software that is available from the EMC website.



IMPORTANT

The NMSAP software obtained from the DVD or EMC website does *not* include an enabler code. The software can only be *evaluated*. [Chapter 4, “Licensing and Enabling the Software,”](#) provides more information on enabling NMSAP.

Access the NMSAP software files from either of the following sources:

- ◆ [“From a local DVD drive” on page 29](#)
- ◆ [“From the EMC website” on page 29](#)

From a local DVD drive

To access the NMSAP software files on a host with a local DVD drive:

1. Log in as the Windows system administrator on the host.
2. Insert the NMSAP DVD into the DVD drive.
3. Select the DVD drive in Windows Explorer.
4. Go to the correct directory on the DVD, as shown in [Table 5 on page 29](#).

Note: The *EMC Information Protection Software Guide* provides details on the operating systems supported for specific database and application software.

Table 5 Directory that contains the software

On this platform	Go to this directory
Windows AMD64/EM64T	sap\win_x64
Windows Itanium	sap\win_ia64

5. Continue with “[Install the NMSAP software on Microsoft Windows \(single host\)](#)” on page 30.

From the EMC website

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

1. Log in as the Windows system administrator.
2. Create a temporary installation directory in a local file system with sufficient free disk space to contain the downloaded software file. For example:


```
mkdir C:\instdir
```
3. Go to Powerlink.EMC.com.
4. Select **Support > Software Downloads and Licensing > Downloads J-O > NetWorker Module**.
5. In the table of NetWorker Module Software Downloads, click the **NetWorker Module for SAP Release 4.0** for the particular Windows platform.
6. Download the NMSAP software file to the temporary directory you created, for example, C:\instdir.
7. Unzip the downloaded software file, as shown in [Table 6 on page 29](#).
8. Go to the correct directory, as shown in [Table 6 on page 29](#).

Table 6 Zipped download file and correct directory for install

On this platform	Unzip this downloaded file	Then go to this directory
Windows AMD64/EM64T	nmsap40_win_x64.zip	win_x64
Windows Itanium	nmsap40_win_ia64.zip	win_ia64

9. Continue with “[Install the NMSAP software on Microsoft Windows \(single host\)](#)” on page 30.

Install the NMSAP software on Microsoft Windows (single host)

Once you have accessed the NMSAP software files, install the NMSAP software on a single host with a supported Microsoft Windows operating system as follows:

1. Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 10](#).
2. Ensure that you are logged in as the Windows system administrator.
3. Ensure that no database or application backups are running.
4. Ensure that you are in the correct directory that contains the NMSAP installation files, as described in [“Access the software for Microsoft Windows” on page 28](#).

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

5. Run the NMSAP installer program, **networkr\setup.exe**, either from the NMSAP DVD or from the temporary installation directory created during the software download from the EMC website.
6. In the **Welcome** dialog box, click **Next**.
7. In the **License Agreement** dialog box, scroll down to read the license agreement. If you accept the terms, select the appropriate option and click **Next**.
8. In the **Ready to Install the Program** dialog box, click **Install**.

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

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

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.

At the end of the NMSAP install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the NetWorker Client Configuration Wizard. The *EMC NetWorker Module for SAP Administration Guide* provides more information on the wizard.

9. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the installation program.
10. Copy the NetWorker **backint.exe** file to the folder where the SAP BRTools reside. The **backint.exe** file is located in the *NetWorker_install_directory\usr\bin* folder.
11. Verify that the system PATH environment variable includes the NetWorker client installation directory. If required, add the NetWorker client installation directory to the system PATH variable.



IMPORTANT

The NetWorker client directory pathname may include spaces. Do not include any spaces before or after the NetWorker client directory pathname in the system PATH environment variable.

12. If you changed the system PATH variable, reboot the Windows system, and verify that any required database instances and services were restarted.
13. Enable the NMSAP software according to [Chapter 4, “Licensing and Enabling the Software.”](#)

After NMSAP is installed and enabled, the software must be properly configured for backup and restore operations. The *EMC NetWorker Module for SAP Release 4.0 Administration Guide* provides information on how to configure and use the software.

Perform the postinstall tasks on Microsoft Windows

Perform the following tasks, if required, after NMSAP installation on Microsoft Windows SAP servers.

- ◆ [“Register the NMSAP product information with the SAP SLD repository” on page 31](#)
- ◆ [“Register the wizard manually” on page 32](#)
- ◆ [“Enable the software” on page 32](#)

Register the NMSAP product information with the SAP SLD repository

As part of NMSAP installation, it is recommended by SAP to register the NMSAP product information for your installation with the SAP System Landscape Directory (SLD).

To register the NMSAP product information:

1. Locate the `nwsldreg.xml` file, and open it in a simple text editor, such as Notepad. Do *not* use a word processor.

A copy of this file, which has been preconfigured with the NMSAP information, except for your computer hostname, is installed as part of the NMSAP installation in the following location:

```
NetWorker_install_directory\nsr\bin\nwsldreg.xml
```

2. Change all occurrences of the word “ComputerName” to the hostname of the computer on which you have installed NMSAP.
3. Save the file.
4. Ensure that the SAP SLD server is running.
5. From a command line, send the edited file to your SLD server with the `sldreg` command as follows:

```
sldreg -user username -pass password -host sld_server  
-port http_port -file nwsldreg.xml
```

where:

- `username` and `password` are your login credentials on the SLD host.
- `sld_server` is the name of the SLD host.
- `http_port` is the port configured for HTTP connections on the SLD host.

Note: If you have configured the HTTP server to use HTTPS, you must add the option `-usehttps`.

- `nwsldreg.xml` is the XML file to send to the SLD host.

The `sldreg` command, run without options, gives more information. The SAP website also provides more information.

Register the wizard manually

If the NMSAP scheduled backup configuration wizard fails to automatically register during installation, register the wizard manually as follows:

1. Log in as administrator.
2. Type the following:

```
nsrsapra.exe -i
```

Note: To manually unregister the wizard, type the following command: `nsrsapra.exe -u`

Enable the software

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

[Chapter 4, "Licensing and Enabling the Software,"](#) provides details.

The *EMC NetWorker Module for SAP Administration Guide* provides information on how to configure and use the software.

Installing in a cluster on Microsoft Windows

NMSAP 4.0 supports cluster configurations.

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

1. Meet all the requirements in ["Installation requirements"](#) on page 10.
2. Follow the instructions in ["Perform the preinstall tasks on Microsoft Windows"](#) on page 28.

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

The *EMC NetWorker Module for SAP Administration Guide* provides information on how to configure the NMSAP software on a cluster system.

Maintaining the installation on Microsoft Windows

The following sections describe how to modify, repair, or remove an existing NMSAP installation on Microsoft Windows:

Run the Setup program in maintenance mode

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

1. Ensure that you are logged in as the Windows system administrator.
2. Ensure that no database or application backups are running.

3. Go to the directory that contains the NMSAP installation files, as described in [“Access the software for Microsoft Windows” on page 28](#), and run the `networkr\setup.exe` program.
4. In the **Welcome** dialog box, click **Next**.
5. In the **Program Maintenance** dialog box, select the maintenance task to perform, and click **Next** to proceed:
 - **Repair** — Allows you to replace missing or corrupted files in the NMSAP installation. [“Repair an NMSAP installation” on page 33](#) provides details.
 - **Remove** — Allows you to remove the NMSAP software.

You can also use **Add or Remove Programs** in the Windows Control Panel to remove the components. [“Uninstalling on Microsoft Windows” on page 33](#) provides details.

Repair an NMSAP installation

To repair an NMSAP installation:

1. Start the **Setup** program in maintenance mode. [“Run the Setup program in maintenance mode” on page 32](#) provides details.
2. In the **Program Maintenance** dialog box, select **Repair** and click **Next**.
3. In the **Ready to Repair the Program** dialog box, click **Install** to begin the installation. The **Setup** program reinstalls the NMSAP files as required.

At the end of the install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the NetWorker Client Backup Configuration wizard. The *EMC NetWorker Module for SAP Administration Guide* provides more information on the configuration wizard.

4. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the wizard.
5. If you changed the system PATH variable, reboot the Windows system, and verify that any required database instances and services were restarted.

Uninstalling on Microsoft Windows

To uninstall NMSAP release 4.0 on a supported Microsoft Windows operating system, perform one of the following procedures:

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

Uninstall NMSAP by using the Setup program

To uninstall NMSAP release 4.0 by using the **Setup** program:

1. Log in as the Windows system administrator.
2. Ensure that no database or application backups are running.
3. Remove the `backint.exe` program file from the folder where the SAP BRTools reside.

4. Uninstall the NMSAP software:
 - a. Run the **networkr\setup.exe** program, as described in [“Run the Setup program in maintenance mode”](#) on page 32.
 - b. In the **Program Maintenance** dialog box, select **Remove** and click **Next**.
 - c. In the **Remove the Program** dialog box, click **Remove** to uninstall the NMSAP software.

Uninstall NMSAP by using the Control Panel

To uninstall NMSAP release 4.0 by using Add or Remove Programs in the Control Panel:

1. Log in as the Windows system administrator.
2. Ensure that no database or application backups are running.
3. Remove the **backint.exe** program file from the folder where the SAP BRTools reside.
4. In the **Windows Control Panel**, select **Add or Remove Programs**. (On Windows 2008 or Vista, select **Programs and Features**.)
5. In the **Control Panel Add or Remove Programs** window, select **NetWorker Module for SAP** and click **Remove**.

The chapter includes these sections:

◆ Software licensing	36
◆ The evaluation process	36
◆ The licensing process	37
◆ Client connection licenses	38
◆ NMSAP license	38
◆ Using nsrlic to gather license information.....	38
◆ Managing licenses	41

Software licensing

Software and added features, such as modules, are installed in evaluation mode with all of the features enabled for a period of 30 days. software is licensed by the 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 in 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.

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

To view the license alert:

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

By the end of the evaluation period, you must purchase, install, and authorize the corresponding license enablers to continue to use modules or features you have evaluated. [“The licensing process” on page 37](#) provides instructions.

Entering a temporary enabler code

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. (Optional) In the **Comment** attribute, type a description of the license.
8. 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. More instructions for purchasing, enabling, and authorizing the NetWorker software are provided in [“The evaluation process” on page 36](#).



IMPORTANT

Automatically importing and installing the NetWorker license enablers and authorization codes from EMC Powerlink is the recommended way to obtain and install license enablers and authorization codes. Do not manually enter and authorize license enablers unless you cannot import and install automatically. The NetWorker installation guide provides details on the procedures for the NetWorker license enablers, authorization codes, and update enablers.

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

Client connection licenses

Every computer to be backed up in a 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. An NDMP data server requires a special type of client connection license.

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

NMSAP license

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

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

Using nsrlic to gather license information

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

Querying the local server

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

- ◆ On UNIX:

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

- ◆ On Windows:

```
NetWorker_install_directory\bin\nsrlic
```

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

Example 1 Report from the nsrlic command

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

```
STANDARD CLIENT LICENSES
Available: 12
Used: 3
Loaned to Virtual: 2
Remaining: 7
Connected Clients
```

```
VIRTUAL CLIENT LICENSES
```

```

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

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

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

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

Defined Clients          PRE-5.0 CLIENT TYPES

APPLICATION LICENSES

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

NetWorker Module for Microsoft Exchange Server
Available: 4
Used: 3
Remaining: 1

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

```

Determining the number of available client licenses

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

In the report in [Example 1 on page 38](#), "sv=12" means that the particular server has 12 licenses available. Also, in the STANDARD CLIENT LICENSES section, "Available: 12" indicates the number of available client licenses.

Querying a server

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

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

where **bacoor** is the server name being queried.

Querying a server for all information

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

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

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

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

A verbose report is produced with various quantities indicated.

Example 2 Verbose report from the nsrlic command

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

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

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

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

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



```

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

Defined Clients          PRE-5.0 CLIENT TYPES

APPLICATION LICENSES

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

NetWorker Module for Microsoft Exchange Server
Available: 4
Used: 3
Remaining: 1
Connected Clients: Exch1, Exch17, Exch18

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

```

Managing licenses

The NetWorker License Manager software provides centralized license management, which enables you to maintain all of an enterprise's 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 from Powerlink.EMC.com
2. Install the NetWorker License Manager software.
3. Configure the NetWorker License Manager software.
4. Configure the NetWorker servers to access the NetWorker License Manager for their licenses.

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

