

EMC[®] NetWorker[®]
Module for Informix
Release 3.0
UNIX and Windows Version

Installation Guide

P/N 300-004-711
REV A02

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Published June, 2007

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

Audience This guide is part of the NetWorker Module for Informix (NMI) documentation set, and is intended for use by system administrators during configuration of the NMI software.

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

- ◆ EMC NetWorker software
- ◆ Informix software

Organization Here is a list of where information is located in this document.

- ◆ [Chapter 1, "Introduction,"](#) introduces the product.
- ◆ [Chapter 2, "Installation Requirements,"](#) describes installation requirements.
- ◆ [Chapter 3, "Installation on UNIX,"](#) describes installation on UNIX systems.
- ◆ [Chapter 4, "Installation on Windows,"](#) describes installation on Windows systems.
- ◆ [Chapter 5, "Enabling and Licensing the Software,"](#) describes enabling and licensing of the software.

Related documentation The EMC documentation is available at:

<http://Powerlink.EMC.com>

Related documents include:

- ◆ *EMC NetWorker Module for Informix, Release 3.0, UNIX and Microsoft Windows Version, Administration Guide*
- ◆ *EMC NetWorker Module for Informix Release 3.0, UNIX and Microsoft Windows Version, Release Notes*
- ◆ *EMC NetWorker Multiplatform Version Administration Guide*
- ◆ *EMC NetWorker Release Notes*
- ◆ UNIX man pages
- ◆ *EMC Software Compatibility Guide*

Conventions used in this document

EMC uses the following conventions for notes and cautions.

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 configuration.

**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 font

In running text:

- Interface elements (for example, button names, dialog box names) outside of procedures
- Items that user selects outside of procedures
- Java classes and interface names
- Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, filenames, functions, menu names, utilities
- Pathnames, URLs, filenames, directory names, computer names, links, groups, service keys, file systems, environment variables (for example, command line and text), notifications

Bold

In procedures:

- Names of dialog boxes, buttons, icons, menus, fields
- Selections from the user interface, including menu items and field entries
- Key names
- Window names

In running text:

- Command names, daemons, options, programs, processes, notifications, system calls, man pages, services, applications, utilities, kernels.

Italic

Used for:

- Full publications titles referenced in text
- Unique word usage in text

Bold Italic

Anything requiring extra emphasis

Courier

Used for:

- System output
- Filenames
- Complete paths
- command-line entries
- URLs

Courier, bold

Used for:

- User entry
- Options in command-line syntax

Courier, italic

Used for:

- Arguments used in examples of command-line syntax
- Variables in examples of screen or file output
- Variables in path names

Courier, bold, italic

Variables used in a command-line sample

< >	Angle brackets enclose parameter or variable values supplied by the user
[]	Square brackets indicate 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 provides a brief description of the NetWorker software and how it works with an Informix database server. It contains the following sections.

- ◆ [About NetWorker Module for Informix](#) 10
- ◆ [About Informix OnBar](#) 11
- ◆ [About NetWorker software.....](#) 12

About NetWorker Module for Informix

EMC® NetWorker® Module for Informix is an add-on module for NetWorker software that provides:

- ◆ Automated backup media management.
- ◆ Scheduling for OnBar, the Informix backup and restore utility.

NetWorker Module for Informix provides:

- ◆ The ability to integrate both database and system file backups, thereby relieving the burden of backup from the database administrator while allowing the administrator to retain control of the restore process.
- ◆ True “lights out” database storage management through automated scheduling, autochanger support, electronic tape labeling, and tracking.
- ◆ Support for local or distributed backup to a centralized backup server.
- ◆ High performance through support for multiple, concurrent high-speed devices, such as digital linear tape (DLT) drives.
- ◆ Cluster support for high availability.
- ◆ Support for 64-bit Informix servers.

NetWorker Module for Informix, together with EMC NetWorker software, provides reliable, high-performance data protection for local or distributed Informix Dynamic Server (IDS) databases. NetWorker Module for Informix integrates backup and restore procedures for Informix databases with the network wide data protection solutions that NetWorker software provides.

NetWorker software, in combination with the NetWorker Module for Informix, provides a storage management solution that addresses the need for cross-platform support of enterprise applications running on Windows, UNIX, and Linux operating systems.

About Informix OnBar

OnBar is a utility included with IDS that provides:

- ◆ Online, concurrent backups and restores of database objects (dbspaces, blobspaces, and logical log files).
- ◆ Automated, continuous logical log backup (recommended) or on-demand logical log backups.
- ◆ An interface to popular storage management software through the X/Open Backup Services Application Programming Interface (XBSA).

About NetWorker software

EMC NetWorker is a network data storage management solution that protects and helps manage data across an entire network. NetWorker software simplifies the storage management process and reduces the administrative burden by automating and centralizing data storage operations. As a network expands or as the amount of data grows, NetWorker software provides the capacity and performance to handle the load.

With NetWorker software, you can:

- ◆ Perform automated backups during nonpeak hours.
- ◆ Administer, configure, monitor, and control NetWorker functions from any system on a network.
- ◆ Centralize and automate data management tasks.
- ◆ Increase backup performance by simultaneously sending more than one savestream to the same device.
- ◆ Optimize performance using parallel savestreams to a single device, or to multiple devices or storage nodes.

NetWorker client/server technology uses the network protocol remote procedure call (RPC) to back up data. The NetWorker server software consists of several server-side services and programs that oversee backup and recover processes. The NetWorker client software consists of client-side services and user interface programs.

The server-side services and programs perform the following functions:

- ◆ Oversee backup and restore processes
- ◆ Maintain client configuration files
- ◆ Maintain an online client index
- ◆ Maintain an online media database

The following sections describe the requirements for installing the NetWorker Module for Informix.

- ◆ Installation requirements for UNIX operating systems..... 14
- ◆ Supported cluster environments on UNIX..... 16
- ◆ Required privileges for installation on UNIX 17
- ◆ Installation requirements for Windows 18
- ◆ Supported cluster environments on Windows 18
- ◆ Required privileges for installation on Windows..... 19

Installation requirements for UNIX operating systems

The following sections list the requirements for installing the NetWorker Module for Informix. Linux operating systems require NetWorker Module for Informix release 3.0.

Requirements for Linux operating systems

To install the NetWorker Module for Informix on a Linux operating system, you need:

- ◆ NetWorker Module for Informix release 3.0.
- ◆ A backup server with NetWorker client and server release 7.4 software.
- ◆ A database server running either IDS version 9.4 and 10. The server can run any of the following Linux distributions:
 - Red Hat ES Linux version 4 (server), and Red Hat ES Linux version 3/4 (client)
 - SuSE release 9 (server), and SuSE 8/9 (client)

Note: Currently Linux Itanium does not support IDS 9.4.

- ◆ NetWorker release 7.4 or later client software installed on the Informix database server.
- ◆ Approximately 8 MB of available space in the `/usr/lib` library directory.
- ◆ Approximately 4 MB in the directory where the NetWorker binaries are installed.
- ◆ A directory, either on the NetWorker server or the system running the Informix server, with approximately 1 MB of space for the online documentation files.
- ◆ Adobe Acrobat Reader software (required to read the product documentation).

The appropriate *EMC NetWorker Installation Guide* provides instructions on installing NetWorker server and client software.

Requirements for all other supported UNIX operating systems

To install the NetWorker Module for Informix on a UNIX operating system other than Linux, you need:

- ◆ NetWorker Module for Informix release 3.0.
- ◆ One of the following operating systems installed:
 - AIX
 - HP Tru64 UNIX
 - HP-UX
 - Solaris

The *EMC Software Compatibility Guide* provides details on the operating system versions NetWorker Module for Informix supports.

- ◆ A backup server with NetWorker server release 7.4 or later and a Network Edition or Power Edition license.

- ◆ An Informix database server with one of the following software versions. For specific version information, refer to the *EMC Software Compatibility Guide* on the EMC website.
 - IDS version 9.4, and 10
 - Database server running Informix version 9.4 and 10
- ◆ NetWorker release 7.4 or later client software installed on the Informix database server.
- ◆ Approximately 4 MB of available space in the library directory.
- ◆ Approximately 2 MB in the directory where the NetWorker binaries are installed.
- ◆ A directory, either on the NetWorker server or the system running the Informix server, with approximately 1 MB of space for the online documentation files.
- ◆ Adobe Acrobat Reader software.

The appropriate *EMC NetWorker Installation Guide* provides instructions on installing NetWorker server and client software.

Supported cluster environments on UNIX

The following cluster environments are supported on UNIX operating systems except Linux:

- ◆ HP MC/ServiceGuard 10.05 or later
- ◆ HP MC/LockManager 10.06, 10.07, and 10.07.01
- ◆ Compaq TruCluster server 1.5 or 1.6

Required privileges for installation on UNIX

Installing this module on UNIX or Linux requires multiple administrator or user privileges because it connects to both your NetWorker software and your Informix database server.

[Table 1 on page 17](#) lists the privileges you need to install and configure the NetWorker Module for Informix.

Table 1 Required installation privileges on UNIX or Linux

Installation tasks	UNIX or Linux root privileges	Informix user password	NetWorker server administrator access
Install NetWorker Module	X		
Update the <i>sm_versions</i> file		X	
Create separate NetWorker volume pools for Informix database data and logical log file backups (recommended)			X
Set up the NetWorker XBSA library	X		

Installation requirements for Windows

To install the NetWorker Module for Informix on a Windows operating system, you need:

- ◆ A Windows 2000, or 2003 backup server running NetWorker release 7.4 or later.
- ◆ An Informix database server running one of the following software versions. For specific version information, check the *EMC Software Compatibility Guide* on the EMC website.
 - IDS version 9.4, or 10
 - Database server running Informix version 9.4, or 10
- ◆ NetWorker client software release 7.4 or later installed on the Informix database server.
- ◆ With NetWorker Module for Informix release 3.0, a database server running on a Windows operating system.
- ◆ Approximately 4 MB of available space in the library directory.
- ◆ Approximately 2 MB in the directory where the NetWorker binaries are installed.
- ◆ A directory, either on the NetWorker server or on the system running the Informix server, with approximately 1 MB of space for the online documentation files. The Adobe Acrobat Reader software must also be installed.

The appropriate *EMC NetWorker Installation Guide* provides instructions on installing NetWorker server and client software.

Supported cluster environments on Windows

The NetWorker Module for Informix supports the Cluster Server 1.0 (MSCS 1.0) cluster environment on Windows.

Required privileges for installation on Windows

Installing this module requires multiple administrator or user privileges because it connects to both your NetWorker software and your Informix database server.

[Table 2 on page 19](#) lists the privileges you need to install and configure the NetWorker Module for Informix.

Table 2 Required installation privileges on Windows

Installation tasks	Windows administrator group	Informix user password	NetWorker server administrator access
Install NetWorker Module	X		
Update the <i>sm_versions</i> file		X	
Create separate NetWorker volume pools for Informix database data and logical log file backups (recommended)	X		X
Windows systems: Add NetWorker XBSA variables	X		

This chapter describes how to install NetWorker Module for Informix on UNIX and Linux operating systems. It contains the following sections:

- ◆ Installation roadmap..... 22
- ◆ Installing the module..... 22
- ◆ Verifying the installation..... 29
- ◆ Installation in a cluster environment..... 29
- ◆ Uninstalling NetWorker Module for Informix..... 30

Installation roadmap

Plan your installation of NetWorker Module for Informix as follows:

1. Review [“Installation requirements for UNIX operating systems”](#) on page 14, giving attention to the default directory locations and the software installation file space requirements.
2. Verify that you have the required user privileges. [“Required privileges for installation on UNIX”](#) on page 17 provides details.
3. Install the NetWorker Module for Informix software. [“Installing the module”](#) on page 22 provides details.
4. Enable and register NetWorker Module for Informix. [Chapter 5, “Enabling and Licensing the Software,”](#) provides details.
5. Configure a Client resource on the NetWorker server for each client computer. [“Creating an Informix Client Resource”](#) in the *EMC NetWorker Module for Informix Administration Guide* provides details.

Installing the module

The NetWorker Module for Informix software is installed in evaluation mode and must be authorized for permanent use. [Chapter 5, “Enabling and Licensing the Software,”](#) provides details.

Installation requires six tasks in sequence as follows:

- ◆ [“Task 1: Uninstall Informix storage manager”](#) on page 22
- ◆ [“Task 2: Install EMC NetWorker”](#) on page 23
- ◆ [“Task 3: Access and install the NetWorker Module software”](#) on page 24
- ◆ [“Task 4: Create the default pools”](#) on page 27
- ◆ [“Task 5: Update the environment”](#) on page 28
- ◆ [“Task 6: Update the Informix user’s profile”](#) on page 29
- ◆ [“Task 7: Update the sm_versions file”](#) on page 29

Task 1: Uninstall Informix storage manager

Informix Storage Manager (ISM) is a limited version of the NetWorker Module for Informix, and is distributed and installed with IDS. If ISM is not on your system, skip this task.



IMPORTANT

Ensure that ISM is not installed before installing NetWorker Module for Informix.

To uninstall ISM:

1. Log in as root.
2. Change to the Informix directory:

```
# cd $INFORMIXDIR/bin
```

3. Shut down the ISM daemons:

```
# ./ism_shutdown
```



IMPORTANT

The `ism_shutdown` command shuts down the ISM daemons `nsrd`, `nsrexd`, `nsrmmdbd`, and `nsrindexd`. The command does not remove the ISM executables in `$INFORMIXDIR/bin`, the symbolic link `/nsr`, or the various ISM files in `$INFORMIXDIR/ism`.

4. Verify that the daemons are shut down:

```
# ps -ef | grep nsr
```

5. Move the ISM executables to a temporary directory. For example:

```
# mkdir ISM.TMP
# mv ism* ISM.TMP
# mv nsr* ISM.TMP
# mv mm* ISM.TMP
# mv save* ISM.TMP
# mv scanner ISM.TMP
# mv uasm ISM.TMP
# mv recover ISM.TMP
# mv ansrd ISM.TMP
```

6. Move the ISM catalogs to a temporary directory:

```
# cd $INFORMIXDIR
# mv ism ism.bak
```

7. Remove the symbolic link to the ISM catalogs:

```
# rm /nsr
```

8. Remove the call to `ism_catalog` from the `$INFORMIXDIR/bin/onbar` script.

9. Remove any references to ISM in the environment variable `PATH`.

10. Edit the `$INFORMIXDIR/etc/$ONCONFIG` file and comment out the following line, if it exists:

```
#BAR_BSALIB_PATH ISM_library
```

Also, if they exist, comment out any references to:

```
ISM_DATA_POOL
ISM_LOG_POOL
```

Task 2: Install EMC NetWorker

Before installing the NetWorker Module for Informix on your Informix database server, ensure that:

- ◆ EMC NetWorker client version 7.4 software is installed on the database server.
- ◆ NetWorker server software is installed on either the same server, or on another available server.

The *EMC NetWorker Installation Guide* provides instructions on how to install the NetWorker server and client software.

Task 3: Access and install the NetWorker Module software

Install the NetWorker Module for Informix software, in addition to the NetWorker client software, on the computer running the Informix server.



IMPORTANT

If you are upgrading NetWorker Module for Informix and use the original *nsrdbmi* file as the backup script, be sure to make a copy of the file before performing the upgrade. The *nsrdbmi* file is removed during installation, and overwritten during upgrade.

The following topics provide details on accessing the NetWorker Module software:

- ◆ “From a local CD-ROM” on page 24.
- ◆ “From the EMC website” on page 24

Note: A space allocation of approximately four times the size of the compressed, tarred NetWorker Module for Informix files is required for extraction.

From a local CD-ROM

To install the NetWorker Module for Informix software on an Informix server with a local CD-ROM:

1. Log in as root on the computer running the Informix server.
2. Insert and mount the CD-ROM on the local drive:


```
# mount /dev/cd_drivename /mount_point
```
3. Locate the directory that contains the LGTONmi package.

From the EMC website

Access the EMC website (<http://Powerlink.EMC.com/downloads/>) and download the evaluation version of the NetWorker Module for Informix software.

1. Log in as root on the computer running the Informix server.
2. Create a temporary extraction directory by using the following command:


```
# mkdir /usr/tmp/nsr_extract_informix
```
3. Download the file containing the NetWorker Module for Informix *evaluation* software to the temporary extraction directory.
4. Uncompress the file in the temporary extraction directory using the **gunzip** command.
5. Copy the NetWorker Module software to your extraction directory. See [Table 3 on page 25](#) for the values of the *os* directory for supported operating systems:
 - ◆ On Solaris:


```
# cp mount_point/volume_label/informix/os/nmi30_sol.tar .
```
 - ◆ On HP-UX, and HP Tru64:


```
# cp mount_point/informix/os/nmi.tar .
```
 - ◆ On AIX:


```
# tar -xvpf nmi30_aix.tar
```


- ◆ On Linux:

```
# cp mount_point/informix/os/lgtonmi-3.0.i386.rpm .
```

6. Locate the directory that contains the LGTONmi package.

Table 3 OS directory values

Operating system	Value of OS directory
AIX 32-bit	aix_32
AIX 64-bit	aix_64
HP-UX 11.11 32-bit	hpux11_32
HP-UX 11.23 64-bit	hpux11_64
HP IA64	hpux11ia_64
Linux	linux86
Linux x86-x64	linux_x86_64
Linux IA64	linux_ia64
SuSE x86	suse86
Suse x86_x64	suse_x86_x64
Solaris 32-bit	solaris_32
Solaris 64-bit	solaris_64
Tru64 UNIX	tru64

7. Log in as root on the Informix database server where you want to install the software, and complete the installation.

Solaris installation

This release of NetWorker Module for Informix provides Solaris zone support. The NetWorker module must be installed on the same zone as the NetWorker client. NetWorker Module for Informix can run on global and whole root zones, and no additional steps are required when installing on a global or whole root zone.

The Sun Solaris documentation provides details about Solaris zone support in the NetWorker client.

To install the NetWorker Module on Solaris:

```
pkgadd -d /dir_pathname LGTONmi
```

where /dir_pathname is the complete pathname of the LGTONmi directory.

HP-UX installation

- ◆ To use **swinstall** from the command line, enter the following command:

```
swinstall -x mount_all_filesystems=false -s /dir_pathname/LGTONmi.pkg  
NMI
```

where /dir_pathname is the complete pathname of the LGTONmi directory.

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

```
swinstall -x mount_all_filesystems=false -i -s
/dir_pathname/LGTONmi.pkg NMI
```

where /dir_pathname is the complete pathname of the LGTONmi directory.

- From the Actions menu, select Install (analysis). When the analysis is complete, a "Ready with Warnings" message appears.
- Click OK.

HP Tru64 installation

To install the NetWorker Module software on HP Tru64 UNIX:

1. Enter the following command:

```
setld -l
```

2. Select **LGTONMI30** to install the subset when prompted.
3. When the installation is complete, enter **q** to exit.

AIX installation

To install the NetWorker Module software on AIX:

- ◆ To use **SMIT** at the command line:

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

where /dir_pathname is the complete pathname of the correct directory.

- ◆ To verify the installation from the command line:

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

If the **lslpp** command output includes LGTONmi.rte 3.0, the installation is successful.

- ◆ To use the **SMIT** GUI program:

1. Enter either of the following commands:

```
smit
smitty
```

2. From the **System Management** list of the main window, select **Software Installation and Maintenance**.
3. From the **Software Installation and Maintenance** list, select **Install and Update Software**.
4. From the **Install and Update Software** list, select **Install Software**.
5. From the **INPUT device/directory for software** field in the **Install Software** window, enter the complete pathname of the directory.

Note: Do *not* add LGTONmi.rte at the end of the directory pathname at the bottom of the list that appears in the Install Software window.

6. Click **OK** to continue when prompted.
7. When the installation is complete, click **Done**.

Linux installation

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


```
rpm -i --nodeps lgtonmi-3.0-1.x86_64.rpm
```
 - To install the software to the same path as the NetWorker client:


```
rpm -i --nodeps lgtonmi-3.0-1.x86_64.rpm --relocate /usr=NetWorker_base_directory
```
- ◆ Linux Intel:
 - To install the software in the default directory:


```
rpm -i lgtonmi-3.0-1.i686.rpm
```
 - To install the software to the same path as the NetWorker client:


```
rpm -i lgtonmi-3.0-1.i686.rpm --relocate /usr=NetWorker_base_directory
```
- ◆ Linux Itanium:
 - To install the software in the default directory:


```
rpm -i --nodeps lgtonmi-3.0-1.ia64.rpm
```
 - To install the software to the same path as the NetWorker client:


```
rpm -i --nodeps lgtonmi-3.0-1.ia64.rpm --relocate /usr=NetWorker_base_directory
```

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

- ◆ Verify that the installation succeeded:

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

If the command output includes the following lines, the installation was successful:

```
lgtocInt-7.4-1
lgtonmi-3.0-1
```

Note: If NetWorker server software is also installed on the Linux system, the `rpm -aq` command produces additional output lines.

Task 4: Create the default pools

To set up default pools to separate your dbspaces, blobspaces, and logical logs from your other file system data:

1. Log in to the Informix server as root.
2. Enter the following command:

```
# nmi_config -s server name
```

This creates the following default pools to sort your dbject backups:

- ◆ DBMIData
- ◆ DBMILogs

“Chapter 3: Configuring Scheduled Backups” of the *NetWorker Module for Informix Administration Guide* provides details.

Task 5: Update the environment

To update the UNIX environment:

1. Set the `BAR_BSALIB_PATH` variable in the `$ONCONFIG` file with the location of the NetWorker XBSA portion of the shared libraries, as follows:

- On HP Tru64: `/usr/opt/networker/lib/libxnmi.so.1`
- On Linux: `/usr/lib/libxnmi.so`
- On other UNIX: `/usr/lib/libxnmi.x.1`
where `x` is:
 - **s1** on HP-UX 64-Bit
 - **o** on AIX
 - **so** on all other UNIX systems

For some older Informix servers setting the `BAR_BSALIB_PATH` variable does not work. Manually create a symbolic link from the command line for the shared library as follows:

- On HP Tru64:


```
ln -s /usr/opt/networker/lib/libxnmi.so.1 /usr/shlib/ibsad001.so
```
- On 32-bit Informix:


```
ln -s /usr/lib32/libxnmi.so /usr/lib32/ibsad001.so
```
- On 64-bit Informix:


```
ln -s /usr/lib64/libxnmi.so /usr/lib64/ibsad001.so
```
- On Linux:


```
ln -s /usr/lib/libxnmi.so /usr/lib/ibsad001.so
```
- On other UNIX:


```
ln -s /usr/lib/libxnmi.x.1 /usr/lib/ibsad001.x
```

 where `x` is:
 - **-o** on AIX.
 - **-s1** on HP-UX 64-bit.
 - **-so** on all other UNIX systems.

For more information, and the location of the XBSA shared library, refer to your *Informix Dynamic Server Release Notes*.

2. Set the following variables in the `$ONCONFIG` file to the following:
 - `ISM_DATA_POOL DBMIData`
 - `ISM_LOG_POOL DBMILogs`

Task 6: Update the Informix user's profile

To update the Informix user's profile in your `$INFORMIXDIR/.profile` add the following variables.

```
NSR_DATA_VOLUME_POOL = DBMIData
NSR_LOG_VOLUME_POOL = DBMILogs
export NSR_DATA_VOLUME_POOL NSR_LOG_VOLUME_POOL
```

Task 7: Update the `sm_versions` file

You must manually update the shared NetWorker XBSA library links because OnBar does not automatically update the required version values for the shared NetWorker XBSA library in the `sm_versions` file. Older versions require the update to also be made in the `sysutils.bar_version` table. Without the required values for NetWorker XBSA, OnBar commands fail and the following message appears:

```
ERROR: Version 1.0.1 of the XBSA shared library is not compatible
with version 1 of ON-Bar.
```

Update the `sm_versions` file by entering the following string in quotes exactly as shown, without blank spaces.

```
echo "1|1.0.1|nwbsa|1">> \
$INFORMIXDIR/etc/sm_versions
```

Verifying the installation

After you configure the Informix database server as a NetWorker client, perform a scheduled backup of the Informix server to verify that the software is correctly installed. Chapters 3 and 4 in the *EMC NetWorker Module for Informix Administration Guide* provide details on configuring scheduled backups and performing scheduled backups.

Installation in a cluster environment

NetWorker Module for Informix supports *clustering* except on Linux operating systems. Clustering means that two or more nodes share one or more resources. The result is a shared resource that is essentially a *virtual machine* with its own IP address. [“Supported cluster environments on UNIX” on page 16](#) provides a list of supported cluster environments.

A cluster client is a shared resource or virtual machine containing a NetWorker Module client. The cluster client shares resources mapped to another node in the cluster.

To back up a cluster client, you need a cluster-aware NetWorker server software and a Cluster Client Connection license for each node you will back up from the cluster. You must also ensure that the physical nodes share a common storage area that is managed by a cluster service (virtual node).

To install NetWorker Module for Informix within a cluster environment:

1. Ensure that you have installed the Informix server as a high-availability application in the cluster.
2. Associate the Informix server with a cluster service with its own virtual hostname and virtual IP address.

**IMPORTANT**

Ensure all your tablespaces reside on the shared bus, otherwise failover and virtual node recovery will be impaired.

3. For each of the physical nodes, complete the appropriate procedure of tasks 3 through 6 of the NetWorker Module installation procedure. See the following sections for details:
 - “Task 3: Access and install the NetWorker Module software” on page 24
 - “Task 5: Update the environment” on page 28
 - “Task 6: Update the Informix user’s profile” on page 29
 - “Task 7: Update the sm_versions file” on page 29
4. Update the Informix user’s profile by adding the following two variables to your Informix user’s profile *\$INFORMIXDIR/.profile*:

```
NSR_SERVER = NetWorker_Server_Name
NSR_CLIENT = Virtual_Host_Name
```

5. Log in as root to the computer running the NetWorker server.
6. Within the NetWorker server create a Client resource for the virtual node managing Informix. Also, add all the hostnames of all the nodes in the cluster to the **Remote Access** field of this resource. Use the following format:

```
root@physical_hostname1
informix@physical_hostname1
root@physical_hostname2
informix@physical_hostname2
...
```

Uninstalling NetWorker Module for Informix

**IMPORTANT**

If you are upgrading NetWorker Module for Informix and have been using the original *nsrdbmi* file as your backup script, you must make a copy of this file before performing the upgrade. The *nsrdbmi* file is removed during an installation or overwritten during upgrade, and information saved in this file is lost.

Uninstall the software

To uninstall the software:

- ◆ On Solaris:
 - pkgrm LGTONmi
- ◆ On HP-UX:
 - To use **swremove** from the command line:
 - swremove NMI

- To use the **swremove** GUI program:

```
swremove -i NMI
```

- While using the swremove GUI program, select **Actions>Remove (analysis)**.
- When the system analysis is complete, click **OK** to complete the uninstall.
- To confirm the uninstall, click **Yes**.

- ◆ On Tru64:

```
setld -d LGTONMI30
```

- ◆ On AIX:

- To use **installp** at the command line:

```
installp -u LGTONmi.rte
```

- To use the **SMIT** GUI program, enter either of the following:

```
smit remove
smitty remove
```

1. From the **SMIT** GUI, select **F4=List** to display a list of the installed software packages.
2. Select the **LGTONmi.rte** package to be uninstalled.
3. Ensure that the **PREVIEW Only** option is set to no.
4. Click **Enter** to uninstall the NMI software.
5. Exit the **SMIT** program.

- ◆ On Linux:

```
rpm -e lgtonmi-3.0-1
```

To uninstall both the NetWorker Module, and the NetWorker client software packages, enter the following command:

```
rpm -e lgtonmi-3.0-1 lgtoclnr
```

This chapter describes how to install NetWorker Module for Informix on the Windows operating system. It contains the following sections.

- ◆ [Installation roadmap](#)..... 34
- ◆ [Installing the module](#)..... 34
- ◆ [Installation in a cluster environment](#)..... 40
- ◆ [Uninstalling NetWorker Module for Informix](#)..... 41

Installation roadmap

Plan your installation of NetWorker Module for Informix as follows:

1. Review [“Installation requirements for Windows” on page 18](#), giving attention to the software installation file space requirements.
2. Verify that you have the required user privileges. [“Required Informix account privileges for Windows” on page 34](#) provides details.
3. Install the NetWorker Module for Informix software that is appropriate for your platform. [“Installing the module” on page 34](#) provides details.
4. Enable and register NetWorker Module for Informix. [Chapter 5, “Enabling and Licensing the Software,”](#) provides details.
5. Configure a Client resource on the NetWorker server for each client computer. [“Creating an Informix Client Resource” in the EMC NetWorker Module for Informix Administration Guide](#) provides details.

Required Informix account privileges for Windows

Before installing NetWorker Module for Informix, ensure that you have the following Informix group and account privileges:

- ◆ Group membership in:
 - Informix-Admin
 - Administrators
- ◆ Informix policies to:
 - Act as part of the operating system
 - Increase quotas
 - Log in as a batch job
 - Log in as a service
 - Replace a token level

To set an Informix policy:

1. Open the Informix main menu and select **User Manager>Policies>User Rights**.
2. Select the **Show Advanced User Rights** checkbox.
3. Add the appropriate policies from the menu, then click **OK**.

Installing the module

Installation requires four tasks in sequence as follows:

- ◆ [“Task 1: Uninstall the current Informix Storage Manager” on page 35](#)
- ◆ [“Task 2: Install NetWorker” on page 36](#)
- ◆ [“Task 3: Install NetWorker Module for Informix” on page 36](#)
- ◆ [“Task 4: Update the sm_versions file” on page 40](#)

Task 1: Uninstall the current Informix Storage Manager

ISM is installed with the IDS. If Informix Storage Manager (ISM) is not installed, skip this task.



IMPORTANT

Ensure that ISM is not resident before installing NetWorker Module for Informix.

To uninstall ISM:

1. Log in as user *informix*.
2. Set the Informix Database server environment variables by running, for example:
`database-servername.cmd`
3. Change to the ISM directory, for example:
`cd c:\ism\2.2\bin`
4. Set the ISM path variable, for example:
`set ISMDIR=c:\ism\2.2`
5. Shut down the ISM services:
`ism_shutdown -deinstall`
6. Make sure that the ISM is shut down. Select **Start>Settings>Control Panel>Services** and verify that there are no entries for ISM.
7. Rename the directory containing the ISM:
`rename ism ism.bak`
8. Remove the call to **ism_catalog** from the `%INFORMIXDIR%\bin\onbar.bat`.
9. Remove any references to ISM in the environment variable `PATH`.

Delete the `%ISMDIR%\bin` directory entry from the user environment variable `PATH`. For example, if:

```
PATH=c:c:\installdir;d:\ISM\2.20\bin;c:\msdev
```

change it to:

```
PATH=c:\installdir;c:\msdev
```

10. Edit the `%INFORMIXDIR%\%ONCONFIG%` file and comment out the following line, if it exists:
`#BAR_BSALIB_PATH <ISM_library>`
11. Remove the ISM portmapper.
 - a. Stop the ISM portmapper service.
 - b. Run **Regedit** and delete the following entry:

```
HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES\PORTMAP
```

Confirm that the Displayname is ISM Portmapper before deleting the entry.

12. Edit the registry to delete any of the following keys, if present:



IMPORTANT

Be careful editing the registry; mistakes can cause corruption of your Windows system.

- Hkey_Local_Machine\Software\XBSA
 - Hkey_Local_Machine\Software\Informix\ISM
 - Hkey_Local_Machine\Software\Informix\Informix Storage Manager
13. Reboot the computer to process the changes.

Task 2: Install NetWorker

Before you install the NetWorker Module for Informix on your Informix database server, ensure that the EMC NetWorker version 7.4 client and server software is installed on the server.

Also ensure that NetWorker server software is installed on either the same server or on another server available on the network.

The *EMC NetWorker Installation Guide* provides instructions on how to install the NetWorker server and client software.

Task 3: Install NetWorker Module for Informix

This section assumes that you have administrative privileges to initiate all configuration tasks.

To install the NetWorker Module software:

1. Log in as Administrator on the system running the database server.
2. From the **Start** menu, select **Control Panel>Services** and ensure that the following processes are running.
 - Informix Dynamic Server
 - NetWorker Backup and Recover Server
 - NetWorker Remote Exec Service
3. Open the NETWORKR directory (on the CD-ROM or in the directory that you created for the web download) and double-click setup.exe.
4. Choose the **Install NetWorker Module for Informix** option. The InstallShield Wizard opens.
5. Follow the wizard as follows.

Figures 1 through 6 illustrate the process.

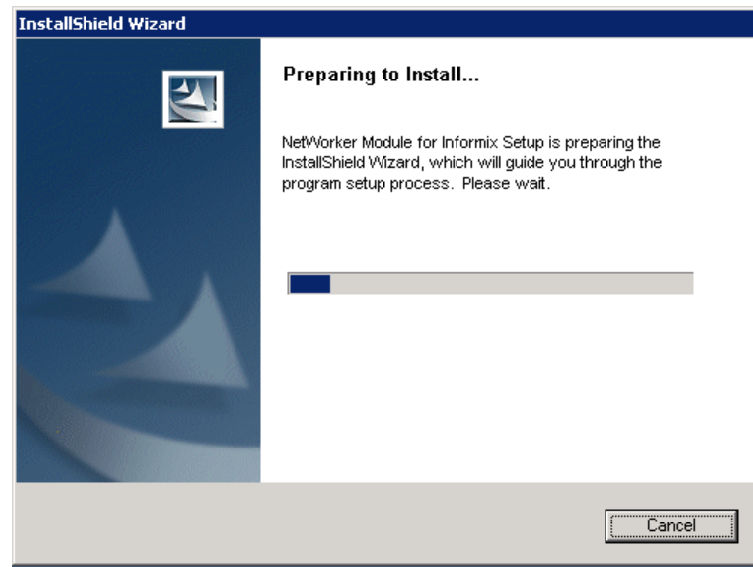


Figure 1 InstallShield Wizard

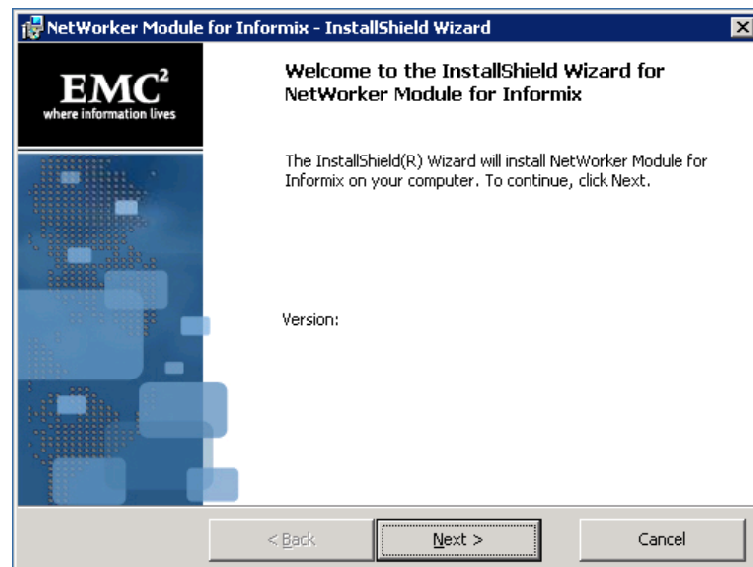


Figure 2 NetWorker Module for Informix InstallShield Wizard

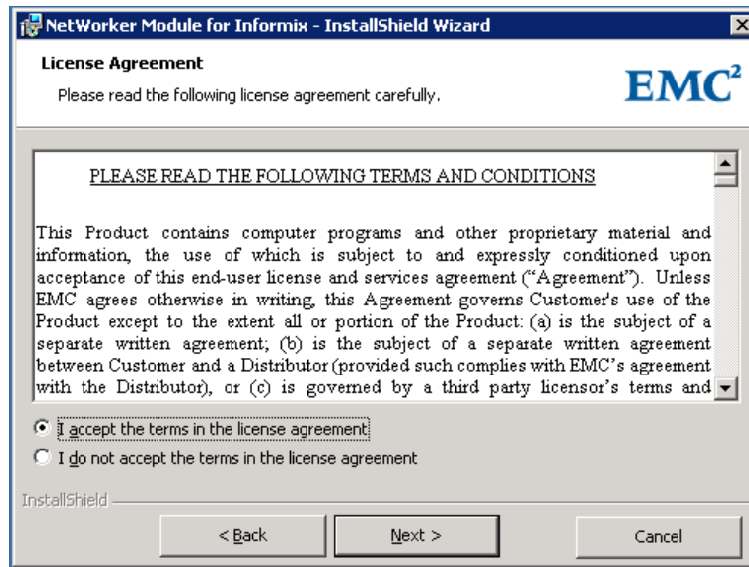


Figure 3 NetWorker Module for Informix InstallShield Wizard Licence Agreement

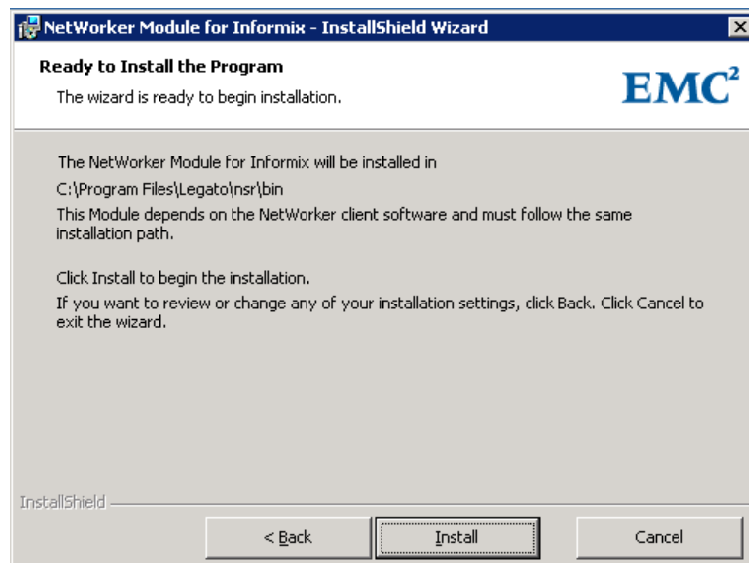


Figure 4 NetWorker Module for Informix InstallShield Wizard installation screen

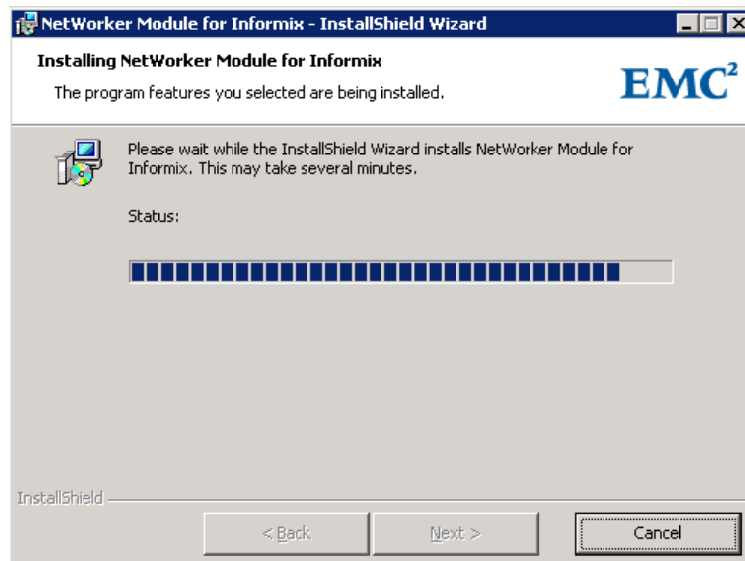


Figure 5 NetWorker Module for Informix InstallShield Wizard Status screen

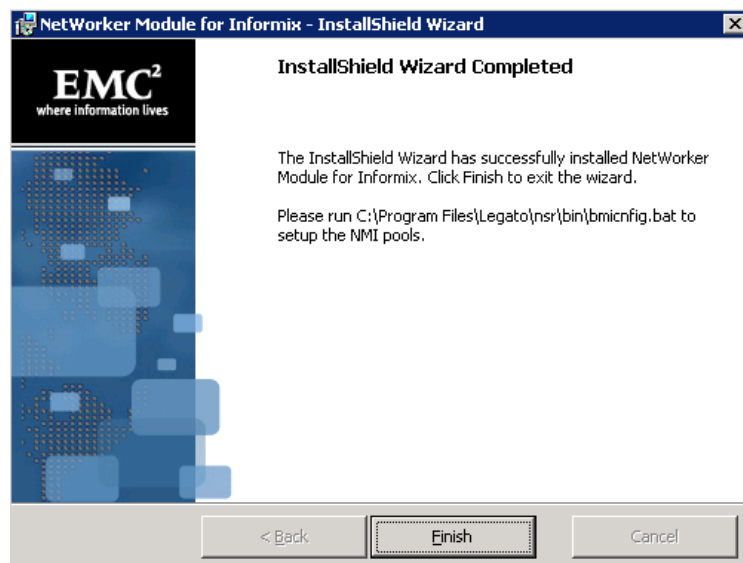


Figure 6 NetWorker Module for Informix InstallShield Wizard completion screen

Verify that the NetWorker Module for Informix library has been updated

Use the following procedure to verify that the NetWorker Module for Informix library has been correctly updated during the installation process.

To verify that the NetWorker Module for Informix library has been updated:

1. Log in as *informix*.
2. Change to the Informix Configuration directory, for example:

```
cd %INFORMIXDIR%\etc
```

3. Open the %ONCONFIG% file in Notepad and verify that the following variables are present. If not, edit the file to include the following variables.

```
ISM_DATA_POOL DBMIData
ISM_LOG_POOL DBMILogs
BAR_BSALIB_PATH c:\Program Files\Legato\nsr\bin
```

4. Restart the Informix application.

Task 4: Update the sm_versions file

You must update the shared NetWorker XBSA library links because OnBar does not automatically update the required version values for the shared NetWorker XBSA library into the *sysutils.bar_version* table or the *sm_versions* file. Without the required values for NetWorker XBSA, OnBar commands fail and the following message appears:

```
ERROR: Version 1.0.1 of the XBSA shared library is not compatible
with version 1 of ON-Bar.
```

To update the *sm_versions* file:

1. Enter the following string in quotes exactly as shown, without blank spaces; otherwise, you will encounter OnBar errors.

```
echo "1|1.0.1|nwbsa|1">> \${INFORMIXDIR}/etc/sm_versions
```

2. For Informix 9.4, and 10, update the *sysutils.bar_versions* table directly as follows:
 - a. Place the database server online.
 - b. Connect to *sysutils* from *dbaccess*.
 - c. Enter the Microsoft SQL **insert** command:

```
insert into bar_version values ('1', '1.0.1', 'nwbsa', '1');
```

Installation in a cluster environment

NetWorker Module for Informix supports *clustering*. Clustering means that two or more nodes share one or more resources. The result is a shared resource that is essentially a *virtual machine* with its own IP address.

A cluster client is a shared resource or virtual machine containing a NetWorker Module client. The cluster client shares resources mapped to another node in the cluster.

To back up a cluster client, use the Cluster Client Connection. Ensure that you install a cluster client license. You must also ensure that the physical nodes share a common storage area that is mapped to a virtual storage connection.

To install NetWorker Module for Informix within a cluster environment:

1. Ensure that the Informix server is running as cluster-aware.
2. Associate the Informix server with a cluster service with its own virtual hostname and virtual IP address.



IMPORTANT

Ensure that all tablespaces reside on the shared bus; otherwise failover and virtual node recovery will be impaired.

3. For each of the physical nodes, complete the appropriate procedure for “[Task 3: Install NetWorker Module for Informix](#)” on page 36, then complete “[Task 4: Update the sm_versions file](#)” on page 40 of the NetWorker Module installation procedure.
4. Update the Informix user’s profile by adding the following two variables to your Informix user profile.


```
NSR_SERVER = NetWorker_Server_Name
NSR_CLIENT = Virtual_Host_Name
```
5. Log in as Administrator to the computer running the NetWorker server.
6. Create a NetWorker client for the Informix virtual hostname by adding the names of all the physical hosts in the cluster running the Informix virtual server in the Remote Access field. Use the following format:


```
root@physical_hostname1
informix@physical_hostname1
root@physical_hostname2
informix@physical_hostname2
...
```

Uninstalling NetWorker Module for Informix

This section provides procedures for uninstalling the NetWorker Module for Informix on a Windows system.

To uninstall the NetWorker Module for Informix:

1. From the *NETWORKR* directory, double-click **setup.exe** to start the NetWorker Module for Informix setup program.
2. Select **Remove**, then select **Next**.
3. When the message “Removal completed” appears, select **OK**.
4. Use the NetWorker Management Console to delete the DBMIData and DBMILogs volume pools and label templates.

This chapter provides information on how to enable the NetWorker software (including NetWorker Modules and additional features) for the purpose of evaluating and licensing the software for permanent use.

This chapter includes the following sections:

- ◆ [How NetWorker software is licensed.....](#) 44
- ◆ [The evaluation process.....](#) 44
- ◆ [The licensing process.....](#) 45
- ◆ [Multiplatform licensing.....](#) 47
- ◆ [Managing EMC licenses.....](#) 49

How NetWorker software is licensed

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

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

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

The evaluation process

Evaluating NetWorker software can take place in two ways:

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

Evaluating a new installation

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

By the end of the evaluation period, you must purchase, enter, and authorize a base enabler to continue to use the NetWorker software to back up data. The base enabler is the license that enables the edition purchased. Go to <http://Powerlink.EMC.com> for information.

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

Evaluating features on an existing installation

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

- ◆ To obtain a temporary enabler code, refer to the EMC Information Protection Media Kit or go to <http://Powerlink.EMC.com>.
- ◆ “[How to enter a temporary enabler code](#)” on page 45 describes how to install a temporary enabler code.

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 45 provides instructions. “[Multiplatform licensing](#)” on page 47 provides information on the different NetWorker features.

How to enter a temporary enabler code



CAUTION

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

To enter the temporary enabler code on NetWorker server release 7.4:

1. Start the NetWorker Management Console (NMC) software.
2. In the **Administration** window, click **Configuration**.
3. In the left pane, select **Registration**.
4. From the **File** menu, select **New**.
5. In the **Enabler Code** attribute, enter the enabler code.
6. In the **Name** attribute, enter the name of the license.
7. (Optional) In the **Comment** attribute, enter a description of the license.
8. Click **OK**.

The licensing process

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

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

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

- ◆ [“Task 1: Enter the license enabler code” on page 45](#)
- ◆ [“Task 2: Obtain an authorization code” on page 46](#)
- ◆ [“Task 3: Enter the authorization code” on page 47](#)

Task 1: Enter the license enabler code

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

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

To enter the license enabler code on NetWorker server release 7.4:

1. Start the NMC software.
2. In the **Administration** window, click **Configuration**.

3. In the left pane, select **Registrations**.
4. From the **File** menu, select **New**.
The **Create Registration** dialog box appears.
5. In the **Enabler Code** attribute, enter the enabler code.
6. In the **Name** attribute, enter the name of the license.
7. (Optional) In the **Comment** attribute, enter a description of the license.
8. Click **OK**.

The new license is added and appears in the right pane. Repeat the procedure 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.

Task 2: Obtain an authorization code

Registration of NetWorker software takes place by obtaining an authorization code. Obtain a unique authorization code through one of the following methods:

- ◆ “By using the EMC website” on page 46
- ◆ “By using email” on page 46



CAUTION

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

By using the EMC website

Register products and obtain authorization codes online by completing a registration form on the EMC website at <http://Powerlink.EMC.com>. Web registration takes just a few minutes and is available 24 hours a day, 7 days a week.

An authorization code that permanently enables the NetWorker license will be sent by email. “[Where to get help](#)” on page 7 provides contacts for any questions about software updates.

By using email

To register the software and obtain an authorization code by email for NetWorker server release 7.4:

1. Start the NMC software.
2. In the **Administration** window, click **Configuration**.
3. In the left pane, select the NetWorker server.
4. From the **File** menu, select **Properties**.

The **Properties** dialog box appears.

Select the **Customer Information** tab and complete your contact information.

Email your registration information. For contact information, go to the EMC website at <http://Powerlink.EMC.com>.

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

Task 3: Enter the authorization code

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

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, go to <http://Powerlink.EMC.com>.

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

- ◆ Obtain a new authorization code. You need the host ID of the original server as well as the new server. The host ID appears in the server's Registration window. For contact information, go to <http://Powerlink.EMC.com>.
- ◆ Install and configure the EMC License Manager software. "Managing EMC licenses" on page 49 provides information on use of the License Manager, and the latest *EMC License Manager Installation and Administration Guide*.

To enter the authorization code on NetWorker server release 7.4:

1. Start the NetWorker Management Console software.
2. In the **Administration** window, click **Configuration**.
3. In the left pane, click **Registration**.
4. In the right pane, right-click the license to be authorized, and then select **Properties**.

The **Properties** dialog box appears.

5. In the **Auth Code** attribute, enter the authorization code for the product (the authorization code assigned to the specified permanent enabler or update enabler code).
6. Click **OK**.

The license is now permanently enabled.

Multiplatform licensing

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

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

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

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

Example 1 **Multiplatform licensing scenarios**

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

As the company grew and needed to add a server, it added a Windows 2000 server, which backed up the 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 required to operate some of the NetWorker features.

Client connection licenses

Every computer to be backed up in a NetWorker datazone requires a client connection license, even the NetWorker server. The client connection license may be one of the licenses that is supplied with the base enabler or purchased separately. A cluster client or NDMP data server requires a special type of client connection license, as described in [“Cluster clients” on page 49](#) or [“NDMP licensing” on page 49](#).

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

Although the NMD software does *not* require a separate license, any *other* NetWorker Module that is used with the software must be licensed. For example, each of the following modules must be licensed, if used:

- ◆ NetWorker Module for Microsoft SQL Server
- ◆ NetWorker Module for Oracle
- ◆ NetWorker Module for Sybase
- ◆ NetWorker SnapImage Module

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

Cluster clients

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

NDMP licensing

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

Managing EMC licenses

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

To begin to implement the License Manager:

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

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

