



EMC® NetWorker®
Module for Databases and Applications

Release 1.0

Installation Guide

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Preface

Chapter 1 Introduction

About NMDA..... 12
 Overview of this guide..... 13

Chapter 2 Getting Started

Installation considerations..... 16
 Installation roadmap 17
 Installation requirements..... 18
 Operating system requirements 18
 Cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition..... 18
 Database or application requirements..... 19
 NetWorker software requirements..... 19
 NMDA requirements 21
 Internationalization requirements..... 21
 Upgrading from a legacy NetWorker module..... 22

Chapter 3 UNIX and Linux Installation

Installing on a single UNIX or Linux host 24
 Task 1: Review the 32-bit and 64-bit coexistence requirements 24
 Task 2: Perform the preinstall tasks on UNIX or Linux 24
 Task 3: Install the NMDA software on UNIX or Linux..... 28
 Task 4: Perform the postinstall tasks on UNIX or Linux 36
 Task 5: Enable the software on UNIX or Linux 46
 Installing on a cluster, DB2 DPF, Oracle RAC, or Sybase ASE Cluster Edition
 on UNIX or Linux 47
 Uninstalling on UNIX and Linux 48
 Task 1: Perform the preuninstall tasks on UNIX or Linux..... 48
 Task 2: Uninstall the NMDA software on UNIX or Linux..... 49

Chapter 4 Microsoft Windows Installation

Software installation path on Microsoft Windows 56
 Installing on a single Microsoft Windows host 57
 Task 1: Review the 32-bit and 64-bit coexistence requirements 57
 Task 2: Perform the preinstall tasks on Microsoft Windows 57
 Task 3: Install and enable the NMDA software on Microsoft Windows .. 60

Task 4: Perform the postinstall tasks on Microsoft Windows.....	62
Installing on a cluster, DB2 DPF, or Oracle RAC on Microsoft Windows.....	66
Maintaining the installation on Microsoft Windows	67
Run the Setup program in maintenance mode.....	67
Repair an NMDA installation	67
Uninstalling on Microsoft Windows	68
Task 1: Perform the preuninstall tasks on a Lotus Notes client	68
Task 2: Uninstall the NMDA software on Microsoft Windows.....	68

Chapter 5 Licensing and Enabling the Software

How NetWorker software is licensed.....	72
The evaluation process	72
Evaluating a new installation.....	72
Evaluating features on an existing installation.....	72
The licensing process	73
Client connection licenses	74
NMDA license	74
Using nsrlc to gather license information.....	74
Querying the local server.....	74
Querying a server.....	76
Managing licenses	77

Title	Page
1 Additional directory on a relocated Linux client	26
2 Accessing the correct directory on the local DVD.....	27
3 Complete the installation for coexistence on 64-bit AIX	30
4 Complete the installation for coexistence on 64-bit HP-UX PA-RISC.....	31
5 Complete the installation for coexistence on 64-bit Linux	33
6 Complete the installation for coexistence on 64-bit Solaris SPARC	35
7 Command to register the wizard on UNIX or Linux.....	36
8 Linking commands for Oracle library file on UNIX or Linux	39
9 NMDA configuration file created by conversion	41
10 Options of the nsrdaadmin command for configuration conversion.....	43
11 Parameter changes in NMDA	45
12 Uninstall 32-bit NMDA on 64-bit AIX with 32-bit and 64-bit coexistence	50
13 Uninstall 32-bit NMDA on 64-bit HP-UX with 32-bit and 64-bit coexistence.....	51
14 Uninstall 32-bit NMDA on 64-bit Linux with 32-bit and 64-bit coexistence	52
15 Uninstall 32-bit NMDA on 64-bit Solaris SPARC with 32-bit and 64-bit coexistence.	53
16 Directory on the DVD with the NMDA software	59
17 Zipped download file and correct directory for install.....	60
18 Complete the installation for coexistence on 64-bit Windows	62
19 Command to register the wizard on Windows	63
20 Uninstall 32-bit NMDA on 64-bit Windows with 32-bit and 64-bit coexistence	68

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 Databases and Applications (NMDA) documentation set, and is intended for use by system administrators or database administrators (DBAs) who are responsible for installing software and maintaining backup and recovery systems for databases or applications. Operators who monitor backups may also find this document useful.

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

- ◆ Backup, recovery, and maintenance of a database or application client
- ◆ Backup, recovery, and maintenance of a database or application server
- ◆ Disaster recovery procedures on a database or application server

Related documentation

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

- ◆ The NetWorker Module for Databases and Applications release 1.0 documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
- ◆ The NetWorker documentation set:
 - Administration guide
 - Installation guide
 - Release notes
 - Command reference guide
 - Disaster recovery guide
- ◆ Other EMC documentation:
 - NetWorker PowerSnap Module documentation
 - Software compatibility guide
 - UNIX man pages

The following additional documentation may be useful:

- ◆ Database or application server documentation
- ◆ Database or application backup and recovery documentation

Conventions used in this document

EMC uses the following conventions for special notices.

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



CAUTION

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



IMPORTANT

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

Typographical conventions

EMC uses the following type style conventions in this document:

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

	Vertical bar indicates alternate selections — the bar means “or”
{ }	Braces indicate content that you must specify (that is, x or y or z)
...	Ellipses indicate nonessential information omitted from the example

Where to get help EMC support, product, and licensing information can be obtained as follows.

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

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Technical support — For technical support, go to Powerlink and select Support. On the Support page, you will see several options, including one for making a service request. Note that to open a service request, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or with 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:

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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:

- ◆ [About NMDA](#) 12
- ◆ [Overview of this guide](#) 13

About NMDA

EMC® NetWorker® Module for Databases and Applications (NMDA) release 1.0 is an add-on module for the NetWorker server that enables you to perform the following tasks:

- ◆ Manual database or application backups
- ◆ Scheduled database or application backups
- ◆ Restores of database or application backup data
- ◆ Automated media management

NMDA replaces all the following NetWorker modules:

- ◆ NetWorker Module for DB2 (NMDB2)
- ◆ NetWorker Module for Informix (NMI)
- ◆ NetWorker Module for Lotus (NML)
- ◆ NetWorker Module for Oracle (NMO)
- ◆ NetWorker Module for Sybase (NMS)

NMDA software provides all the features and functionality that were previously included in these other NetWorker modules, along with new enhancements.

NMDA software includes the following features:

- ◆ Capability to integrate database and file system backups, to relieve the burden of backup from the database administrator while allowing the administrator to retain control of the restore process
- ◆ Automatic database storage management through automated scheduling, autochanger support, electronic tape labeling, and tracking
- ◆ Support for backup to a centralized backup server
- ◆ High performance through support for multiple, concurrent high-speed devices such as digital linear tape (DLT) drives

NMDA works with the NetWorker server to provide a storage management solution that addresses the need for cross-platform support of enterprise applications. NMDA also works with the supported database or application software and NetWorker software to provide backup and restore services for DB2, Informix, Lotus Domino/Notes, Oracle, and Sybase data.

If EMC PowerSnap™-based snapshot backups and restores are supported with a particular database or application (for example, on a DB2 or Oracle server), NMDA works with both the NetWorker server and appropriate NetWorker PowerSnap Module to create snapshots of data that resides on primary storage devices.

The following sources provide details on the NMDA features and functionality:

- ◆ *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide*
- ◆ *EMC NetWorker Module for Databases and Applications Release 1.0 Release Notes*

Overview of this guide

This installation guide describes how to install and enable NMDA release 1.0 on a supported UNIX, Linux, or Microsoft Windows operating system that runs supported database or application software.

Note: The *EMC Information Protection Software Compatibility Guide* on the EMC Powerlink® website, <http://Powerlink.EMC.com>, provides details on all the supported environments, including the operating system, database, application, and PowerSnap Module software versions that NMDA supports.

Use the information in this guide to:

- ◆ Prepare for the NMDA 1.0 installation by reviewing the following:
 - “Installation considerations” on page 16
 - “Installation roadmap” on page 17
 - “Installation requirements” on page 18
- ◆ Upgrade from an existing NetWorker module according to the instructions in “Upgrading from a legacy NetWorker module” on page 22.
- ◆ Install NMDA 1.0 according to the instructions in the following:
 - Chapter 3, “UNIX and Linux Installation”
 - Chapter 4, “Microsoft Windows Installation”
- ◆ Enable NMDA 1.0 according to the instructions in Chapter 5, “Licensing and Enabling the Software.”
- ◆ Uninstall NMDA 1.0 according to the instructions in the following:
 - “Uninstalling on UNIX and Linux” on page 48
 - “Uninstalling on Microsoft Windows” on page 68

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

This chapter includes the following sections:

- ◆ [Installation considerations](#) 16
- ◆ [Installation roadmap](#) 17
- ◆ [Installation requirements](#) 18
- ◆ [Upgrading from a legacy NetWorker module](#) 22

Installation considerations

The NMDA software works with the supported database or application software and NetWorker software to provide backup and restore services for DB2, Informix, Lotus Domino/Notes, Oracle, and Sybase data.

If PowerSnap snapshot backups and restores are supported with a particular database or application (for example, on a DB2 or Oracle server), the required NetWorker PowerSnap Module must also be installed. The snapshot backups create snapshots of data that resides on primary storage devices supported by the PowerSnap Modules that work with NMDA. The *EMC Information Protection Software Compatibility Guide* on Powerlink provides a complete list of supported PowerSnap Modules.

For both regular and PowerSnap snapshot backups and restores, the following software must be installed on the NMDA host that runs the database or application software:

- ◆ NMDA software
- ◆ One of the following types of NetWorker software:
 - NetWorker server software
 - If the NetWorker server resides on a remote host, NetWorker storage node or client software, as required

For PowerSnap snapshot backups and restores, the required PowerSnap Module must be installed on both of the following:

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

Prior to installation, review the *EMC NetWorker Module for Databases and Applications Release 1.0 Release Notes* for any information applicable to the NMDA installation and configuration procedures.

After installation, the software components must be properly configured to enable regular or PowerSnap snapshot backups and restores, as required. The following sources provide information on the configuration procedures:

- ◆ The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* describes the configuration procedures and limitations of both regular and PowerSnap snapshot backups and restores.
- ◆ The PowerSnap Module documentation (for the primary storage system) provides additional details on PowerSnap snapshot backups and restores.

Installation roadmap

Before following the steps in the installation roadmap, review the information in [“Installation considerations”](#) on page 16.

This section provides a roadmap for installing NMDA release 1.0 on each database or application host that requires backup and restore services. Read through the roadmap and the referenced sections before installing the software.

To install the NMDA software, perform the following:

1. Ensure that the installation requirements are met, as described in [“Installation requirements”](#) on page 18.
2. Upgrade to or install the NMDA software on *either* of the following:
 - A single database or application host
 - A cluster, IBM DB2 Database Partitioning Feature (DPF), Oracle Real Application Cluster (RAC), or Sybase ASE Cluster Edition system, if supported

To upgrade from a legacy NetWorker module, follow the instructions in [“Upgrading from a legacy NetWorker module”](#) on page 22.

To install NMDA release 1.0, follow the appropriate instructions:

- [Chapter 3, “UNIX and Linux Installation”](#)
- [Chapter 4, “Microsoft Windows Installation”](#)



IMPORTANT

NMDA software *cannot* coexist with specific NetWorker modules on the same system. Do *not* attempt to install NMDA if any of the following NetWorker modules is already installed:

- NetWorker Module for DB2
- NetWorker Module for Informix
- NetWorker Module for Lotus
- NetWorker Module for Oracle
- NetWorker Module for Sybase

If you install NMDA and then install one of these other NetWorker modules, the NMDA software will become corrupted.

Installation requirements

Before the NMDA software is installed, ensure that the appropriate requirements are met:

- ◆ [“Operating system requirements” on page 18](#)
- ◆ [“Cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition” on page 18](#)
- ◆ [“Database or application requirements” on page 19](#)
- ◆ [“NetWorker software requirements” on page 19](#)
- ◆ [“NMDA requirements” on page 21](#)
- ◆ [“Internationalization requirements” on page 21](#)

Operating system requirements

Before the NMDA software is installed, one of the supported operating systems must be installed on the database or application host.

Note: On a 64-bit operating system *except* AIX, the 64-bit NMDA software does *not* support 32-bit NetWorker release 7.5 or later on the same host as NMDA. If the 64-bit operating system is *not* AIX, then 64-bit NetWorker software must be installed.

The *EMC Information Protection Software Compatibility Guide* on Powerlink provides a complete list of the operating systems that NMDA supports for backups of specific database and application software versions.

The following additional sources provide details on the operating system, installation, and configuration requirements for each supported type of database or application software:

- ◆ IBM documentation for DB2, Informix, or Lotus software
- ◆ Oracle documentation for Oracle database software
- ◆ Sybase documentation for Adaptive Server Enterprise (ASE) software

Cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition

Supported cluster software must be installed for an active-passive cluster, DB2 DPF, Oracle RAC, or Sybase ASE Cluster Edition configuration. DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition systems do *not* have any additional installation requirements except as outlined in this section. The *EMC Information Protection Software Compatibility Guide* on Powerlink provides more details on cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition requirements.

On each required cluster node, DB2 DPF node, or Oracle RAC node, the following software must be installed:

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

With Sybase ASE Cluster Edition, the supported NetWorker and NMDA software is required on only those nodes that run the Sybase Backup Server.

The following sections provide installation information for the supported cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition systems:

- ◆ [“Installing on a cluster, DB2 DPF, Oracle RAC, or Sybase ASE Cluster Edition on UNIX or Linux” on page 47](#)
- ◆ [“Installing on a cluster, DB2 DPF, or Oracle RAC on Microsoft Windows” on page 66](#)

Database or application requirements

Ensure that a supported database or application server release is installed. The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the database and application releases supported on specific platforms.

The database or application release must be certified to run on the operating system. The database or application documentation provides details on the supported operating systems.

NetWorker software requirements

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

- ◆ [“NetWorker server requirements” on page 19](#)
- ◆ [“NetWorker client requirements” on page 20](#)
- ◆ [“NetWorker PowerSnap Module requirements” on page 20](#)

Use the information in the *EMC NetWorker Hardware Compatibility Guide* on Powerlink to ensure that the existing computer hardware is compatible with the NetWorker software.

NetWorker server requirements

A supported release of the NetWorker server (with all applicable patches) must be installed on a NetWorker server host. The NetWorker server host is usually a separate host, but it can also be the NMDA host.

Specific NetWorker server releases are required to support specific features, as described in the *EMC NetWorker Module for Databases and Applications Release 1.0 Release Notes*.

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

The following sources provide more information:

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

NetWorker client requirements

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

You must install the required NetWorker client software on the NMDA host *before* installing the NMDA software:

- ◆ On a 32-bit operating system, you must install the 32-bit NetWorker client.
- ◆ On 64-bit AIX, you must install the 32-bit NetWorker client.
- ◆ On a 64-bit operating system *except* AIX, you must install the 64-bit NetWorker client.

Specific NetWorker client releases are required to support specific features, as described in the *EMC NetWorker Module for Databases and Applications Release 1.0 Release Notes*.

The NMDA installation automatically registers the wizard plugins to the NetWorker Client resource database. If you install NetWorker client 7.5 or later, ensure that you start the NetWorker client service *at least once* just before the NMDA installation. Otherwise, the automatic wizard registration *fails*.

If the automatic wizard registration fails for some reason, you can *manually* register the wizard. The following sections provide details on how to manually register and unregister the wizard:

- ◆ [“Postinstall tasks for the wizard on UNIX or Linux” on page 36](#)
- ◆ [“Postinstall tasks for the wizard on Windows” on page 62](#)

On a Solaris system with Solaris zones, the NetWorker client software must be installed on the same zone as the NMDA software.

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

The following sources provide more information:

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

NetWorker PowerSnap Module requirements

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

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

The NetWorker PowerSnap Module documentation provides more information.

The following sources provide details on supported databases and applications, and on limitations in the PowerSnap snapshot operations and PowerSnap Module support:

- ◆ *EMC NetWorker Module for Databases and Applications Release 1.0 Release Notes*
- ◆ NetWorker PowerSnap Module documentation
- ◆ *EMC Information Protection Software Compatibility Guide*

NMDA requirements

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

The roadmap in the EMC Information Protection and Availability Product Families Media Kit provides the locations of the documentation files on the Documentation Suite DVD. The most up-to-date documents are also available on the EMC website. To view or print the documents, use the Adobe Acrobat Reader.

The EMC website provides details on any patches required for the particular system.

Internationalization requirements

Prior to installing NMDA 1.0 in a non-English environment, ensure that the following requirements are met on the NMDA host:

- ◆ Ensure that a supported internationalized version of the operating system is installed.
- ◆ Ensure that the database or application software provides the required National Language Support (NLS) or globalization support, and the database or application is configured with the required non-ASCII character set.
- ◆ Ensure that a supported version of NetWorker is installed, as described in the *EMC NetWorker Module for Databases and Applications Release 1.0 Release Notes*.

Upgrading from a legacy NetWorker module

NMDA release 1.0 *cannot* be installed if any release of the following NetWorker modules is installed on the same system:

- ◆ NetWorker Module for DB2 (NMDB2)
- ◆ NetWorker Module for Informix (NMI)
- ◆ NetWorker Module for Lotus (NML)
- ◆ NetWorker Module for Oracle (NMO)
- ◆ NetWorker Module for Sybase (NMS)

To upgrade from a legacy NetWorker module to NMDA 1.0 on the local host:

1. Verify that *no* backups are running with the NetWorker module.
2. If you are upgrading from NMI, NMO, or NMS, and you used the script **nsrdbmi**, **nsrnmo**, or **nsrsyb** that was originally installed with the module package to perform the module scheduled backups, do the following *before* you uninstall the module:
 - a. Copy the script **nsrdbmi**, **nsrnmo**, or **nsrsyb** to a file with a different name, for example, to the file **nsrdbmi2**, **nsrnmo2**, or **nsrsyb2**, respectively.
 - b. Change the script name in the Backup Command attribute of the Client resource from the original name (**nsrdbmi**, **nsrnmo**, or **nsrsyb**) to the new filename from [step a](#).
3. Uninstall the NetWorker module according to the instructions in the installation guide for the module release.
4. Ensure that all the installation requirements are met, as described in [“Installation requirements” on page 18](#).
5. Install and enable NMDA release 1.0 according to the appropriate instructions:
 - [Chapter 3, “UNIX and Linux Installation”](#)
 - [Chapter 4, “Microsoft Windows Installation”](#)
6. To enable PowerSnap snapshot backups and restores (if required), complete the upgrade by installing and enabling the required PowerSnap Module on both of the following:
 - NMDA host
 - A separate proxy client host or NetWorker storage node, as requiredFollow the instructions in the PowerSnap Module documentation.

This chapter includes the following sections:

- ◆ Installing on a single UNIX or Linux host..... 24
- ◆ Installing on a cluster, DB2 DPF, Oracle RAC, or Sybase ASE Cluster Edition on UNIX or Linux 47
- ◆ Uninstalling on UNIX and Linux..... 48

Installing on a single UNIX or Linux host

To install and enable the NetWorker Module for Databases and Applications (NMDA) release 1.0 on a single host with a supported UNIX or Linux operating system, perform the following steps:

1. [“Task 1: Review the 32-bit and 64-bit coexistence requirements” on page 24](#)
2. [“Task 2: Perform the preinstall tasks on UNIX or Linux” on page 24](#)
3. [“Task 3: Install the NMDA software on UNIX or Linux” on page 28](#)
4. [“Task 4: Perform the postinstall tasks on UNIX or Linux” on page 36](#)
5. [“Task 5: Enable the software on UNIX or Linux” on page 46](#)

Task 1: Review the 32-bit and 64-bit coexistence requirements

Specific combinations of 32-bit and 64-bit application software can coexist on the same 64-bit AIX, HP-UX PA-RISC, Linux, or Solaris SPARC system. For example:

- ◆ 32-bit Lotus Domino and 64-bit DB2 server might be installed on the same 64-bit Solaris SPARC system.
- ◆ 32-bit Informix IDS and 64-bit IDS might be installed on the same 64-bit HP-UX PA-RISC system.

Refer to the appropriate application documentation for details on the versions of 32-bit and 64-bit application software that can coexist on the same 64-bit UNIX or Linux system.

If both 32-bit and 64-bit application software is installed on the same 64-bit system:

1. If you installed 32-bit NMDA on the system, you must uninstall the existing 32-bit NMDA software according to the appropriate instructions:
 - [“Uninstall on AIX” on page 49](#)
 - [“Uninstall on HP-UX” on page 50](#)
 - [“Uninstall on Linux” on page 51](#)
 - [“Uninstall on Solaris” on page 52](#)
2. You must install the 64-bit NMDA software and complete the additional steps required for 32-bit and 64-bit application coexistence according to the appropriate instructions:
 - [“Install on AIX” on page 29](#)
 - [“Install on HP-UX” on page 30](#)
 - [“Install on Linux” on page 32](#)
 - [“Install on Solaris” on page 34](#)

Task 2: Perform the preinstall tasks on UNIX or Linux

Perform the required preinstall tasks:

- ◆ [“Preinstall tasks on an Informix server” on page 25](#)
- ◆ [“Preinstall tasks for relocated NetWorker client on Linux” on page 26](#)
- ◆ [“Preinstall tasks for relocated NetWorker client on Solaris” on page 26](#)
- ◆ [“Access the software on UNIX or Linux” on page 26](#)

Preinstall tasks on an Informix server

Ensure that Informix Storage Manager (ISM) is *not* installed on the Informix server. ISM is a limited version of the NetWorker Module for Informix that is distributed and installed with Informix Dynamic Server (IDS).

Uninstall ISM on the Informix server, if required:

1. Log in as root user on the NMDA host.
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`, `nsrexecd`, `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
```

Preinstall tasks for relocated NetWorker client on Linux

If the NetWorker client software is relocated on Linux, ensure that the NMDA software will be relocated to the *same* nondefault directory as the NetWorker client software.

For a NetWorker client release earlier than 7.5 *only*, if the NetWorker client software is relocated to a *nondefault* directory on Linux, perform *one* of the following:

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


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


```
# mkdir -p /usr/lib/nsr/apps
# ln -s relocation_dir/nsr/apps/libcommonssl.so
/usr/lib/nsr/apps/libcommonssl.so
```
- ◆ Ensure that the system default library search path is changed by using the `/etc/ld.so.conf` file and the `ldconfig` command to include the additional directory listed in [Table 1 on page 26](#).

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

Table 1 Additional directory on a relocated Linux client

On this platform	Include this additional directory
Linux AMD64/EM64T	<code>relocation_dir/lib/nsr/apps/lib64</code>
Linux Intel	<code>relocation_dir/lib/nsr/apps</code>

Preinstall tasks for relocated NetWorker client on Solaris

If the NetWorker client software is relocated on Solaris, ensure that the NMDA software will be relocated to the *same* nondefault directory as the NetWorker client software.

Access the software on UNIX or Linux

The NMDA software is distributed in the following forms:

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



IMPORTANT

The NMDA software obtained from the DVD or EMC website does *not* include an enabler code. The software can only be *evaluated*. [Chapter 5, “Licensing and Enabling the Software,”](#) provides more information on enabling NMDA.

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

- ◆ [“From a local DVD drive” on page 27](#)
- ◆ [“From the EMC website” on page 27](#)

From a local DVD drive

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

1. Log in as root on the host.
2. Insert and mount the NetWorker Module 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 27](#). The *EMC Information Protection Software Compatibility Guide* provides details on operating systems supported for specific database and application software.

**IMPORTANT**

If Sybase is the only application on 64-bit AIX, HP-UX PA-RISC, or Solaris SPARC, you must access the 32-bit (not 64-bit) NMDA directory on the DVD. A Sybase server on these platforms requires 32-bit NMDA software. Go to the directory listed for 32-bit AIX, 32-bit HP-UX PA-RISC, or 32-bit Solaris SPARC in [Table 2 on page 27](#).

Table 2 Accessing the correct directory on the local DVD

For this platform (bitness)	Type the following command
AIX (32-bit)	<code>cd /mount_point/nmda/aix_32</code>
AIX (64-bit)	<code>cd /mount_point/nmda/aix_64</code>
HP-UX Itanium	<code>cd /mount_point/nmda/hpux11_ia64</code>
HP-UX PA-RISC (32-bit)	<code>cd /mount_point/nmda/hpux11_32</code>
HP-UX PA-RISC (64-bit)	<code>cd /mount_point/nmda/hpux11_64</code>
Linux AMD64/EM64T	<code>cd /mount_point/nmda/linux_x86_64</code>
Linux Intel	<code>cd /mount_point/nmda/linux_x86</code>
Solaris AMD64/EM64T	<code>cd /mount_point/volume_label/nmda/solaris_amd64</code>
Solaris SPARC (32-bit)	<code>cd /mount_point/volume_label/nmda/solaris_32</code>
Solaris SPARC (64-bit)	<code>cd /mount_point/volume_label/nmda/solaris_64</code>

4. Continue with “[Task 3: Install the NMDA software on UNIX or Linux](#)” on [page 28](#).

From the EMC website

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

To access the *evaluation* release of the NMDA 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_nmda
```

3. Go to <http://Powerlink.EMC.com>.

4. Select **Support > Software Downloads and Licensing > Downloads J-O > NetWorker Module**.
5. In the table of NetWorker Module Software Downloads, click the **NetWorker Module for Databases and Applications Version 1.0** for the particular UNIX or Linux platform.



IMPORTANT

If Sybase is the only application on 64-bit AIX, HP-UX PA-RISC, or Solaris SPARC, select the 32-bit (not 64-bit) NMDA software for download. A Sybase server on these platforms requires 32-bit NMDA software. Select NMDA for 32-bit AIX, 32-bit HP-UX PA-RISC, or 32-bit Solaris SPARC.

6. Download the NMDA software file to the temporary directory you created, for example, /usr/nsr_extract_nmda.
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_nmda.
10. Continue with [“Task 3: Install the NMDA software on UNIX or Linux” on page 28](#).

Task 3: Install the NMDA software on UNIX or Linux

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

To install NMDA release 1.0 on the UNIX or Linux system:

1. Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 18](#).
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 26](#).

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 29](#)
 - [“Install on HP-UX” on page 30](#)
 - [“Install on Linux” on page 32](#)
 - [“Install on Solaris” on page 34](#)

After the software installation completes, a message is displayed on how to start the NMDA wizard for configuring backups. The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides more information on the NMDA wizard.

Before you use NMDA for backups, you must enable the software according to [“Task 5: Enable the software on UNIX or Linux”](#) on page 46.

5. If the MANPATH environment variable does *not* include the pathname of the directory that contains the NMDA man pages, modify the variable to include the correct pathname and enable access to the man pages with the **man** command.

The NMDA 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



IMPORTANT

On 64-bit AIX only, if any combination of 32-bit and 64-bit application software is installed:

1. Ensure that any existing 32-bit NMDA software is uninstalled according to [“Uninstall on AIX”](#) on page 49.
2. Install the 64-bit NMDA software according to the following instructions in this section.
3. Complete the NMDA installation on the system according to [“Complete the installation on 64-bit AIX for coexistence of 32-bit and 64-bit applications”](#) on page 30.

To install NMDA on an AIX system, invoke either the **installp** command line interface or the AIX System Management Interface Tool (SMIT) GUI program:

- ◆ To invoke the command line interface, type the following command:

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

where */dir_pathname* is the complete pathname of the correct directory, as described in [“Access the software on UNIX or Linux”](#) on page 26.

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

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

If the **lslpp** command output includes LGTONmda.rte 1.0.0.0, 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 NMDA installation software as the complete pathname of the directory described in [“Access the software on UNIX or Linux”](#) on page 26.
 - 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 NMDA software packages.

- f. Select **LGTONmda.rte** to install the NMDA software.
- g. Select **Install and Update Software**.
- h. Press **Enter** to begin the installation.

Complete the installation on 64-bit AIX for coexistence of 32-bit and 64-bit applications

On 64-bit AIX *only*, if any combination of 32-bit and 64-bit application software is installed, complete the NMDA installation by *manually* copying the files listed in [Table 3 on page 30](#) for *each* 32-bit application on the system.

Table 3 Complete the installation for coexistence on 64-bit AIX

To complete the NMDA installation for this application	Copy these files	To this destination directory
32-bit DB2	Not applicable — 32-bit DB2 is <i>not</i> supported on 64-bit AIX	
32-bit Informix	32-bit/informix/libnsrifmx32.o	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32	/usr/bin
32-bit Lotus	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/lotus/nsrdocr32 32-bit/lotus/nsrnotesrc32	/usr/bin
32-bit Oracle	Not applicable — 32-bit Oracle is <i>not</i> supported on 64-bit AIX	
32-bit Sybase	32-bit/sybase/libnsrsyb32.so	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/sybase/nsrsyb32 32-bit/sybase/nsrsybrc32 32-bit/sybase/threshold.sql	/usr/bin

Install on HP-UX



IMPORTANT

On 64-bit HP-UX PA-RISC *only*, if any combination of 32-bit and 64-bit application software is installed:

1. Ensure that any existing 32-bit NMDA software is uninstalled according to [“Uninstall on HP-UX” on page 50](#).
2. Install the 64-bit NMDA software according to the following instructions in this section.
3. Complete the NMDA installation on the system according to [“Complete the installation on 64-bit HP-UX PA-RISC for coexistence of 32-bit and 64-bit applications” on page 31](#).

To install NMDA on an HP-UX system, type the **swinstall** command to invoke either the command line interface or the GUI program:

- ◆ To invoke the **swinstall** command line interface, type the appropriate command:

- To install the English NMDA software, type the following command:

```
swinstall -x mount_all_filesystems=false
-s /dir_pathname/LGTONmda.pkg NMDA
```

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 26.

- ◆ To invoke the **swinstall** GUI program, type the appropriate command:
 - To install the English NMDA software, type the following command:

```
swinstall -x mount_all_filesystems=false -i
-s /dir_pathname/LGTONmda.pkg NMDA
```

- 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**.

The NMDA 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.

Complete the installation on 64-bit HP-UX PA-RISC for coexistence of 32-bit and 64-bit applications

On 64-bit HP-UX PA-RISC *only*, if any combination of 32-bit and 64-bit application software is installed, complete the NMDA installation by *manually* copying the files listed in [Table 4 on page 31](#) for *each* 32-bit application on the system.

Table 4 Complete the installation for coexistence on 64-bit HP-UX PA-RISC

To complete the NMDA installation for this application	Copy these files	To this destination directory
32-bit DB2	Not applicable — 32-bit DB2 is <i>not</i> supported on 64-bit HP-UX PA-RISC	
32-bit Informix	32-bit/informix/libnsrifmx32.sl	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32	/opt/networker/bin
32-bit Lotus	Not applicable — Lotus is <i>not</i> supported on HP-UX PA-RISC	
32-bit Oracle	Not applicable — 32-bit Oracle is <i>not</i> supported on 64-bit HP-UX PA-RISC	
32-bit Sybase	32-bit/sybase/libnsrsyb32.sl	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/sybase/nsrsyb32 32-bit/sybase/nsrsybr32 32-bit/sybase/threshold.sql	/opt/networker/bin

Install on Linux

**IMPORTANT**

The software must be installed in the same base directory as the NetWorker client software. The software is *relocatable* during the installation on Linux, but *only* to the same relocation path as the NetWorker client. For example, if the NetWorker client software is installed in the /disk1 (nondefault) directory, NMDA must also be installed in the /disk1 directory.

Relocation is *not* supported on a 64-bit Linux system where 32-bit and 64-bit applications coexist.

On 64-bit Linux *only*, if any combination of 32-bit and 64-bit application software is installed:

1. Ensure that any existing 32-bit NMDA software is uninstalled according to [“Uninstall on Linux” on page 51](#).
2. Install the 64-bit NMDA software according to the following instructions in this section.
3. Complete the NMDA installation on the system according to [“Complete the installation on 64-bit Linux for coexistence of 32-bit and 64-bit applications” on page 33](#).

To install NMDA on a Linux system, type the appropriate **rpm** command:

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

◆ On Linux AMD64/EM64T:

- To install the NMDA software in the default directory, type:

```
rpm -i lgtonmda-1.0-1.x86_64.rpm
```

- To relocate the NMDA software to the same relocation path as the NetWorker client, type:

```
rpm -i lgtonmda-1.0-1.x86_64.rpm --relocate
/usr=NetWorker_base_directory
```

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

◆ On Linux Intel:

- To install the NMDA software in the default directory, type:

```
rpm -i lgtonmda-1.0-1.i686.rpm
```

- To relocate the NMDA software to the same relocation path as the NetWorker client, type:

```
rpm -i lgtonmda-1.0-1.i686.rpm --relocate
/usr=NetWorker_base_directory
```

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

To verify that the installation succeeded, type the `rpm -aq` command:

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

If the `rpm -aq` command output includes the appropriate lines, the installation succeeded. For example, the English NMDA software produces these output lines:

```
lgtoclnt-7.4-1
lgtonmda-1.0-1
```

Note: If other NetWorker software components are also installed on the Linux system, the `rpm -aq` command produces other output lines in addition to these two lines.

Complete the installation on 64-bit Linux for coexistence of 32-bit and 64-bit applications

On 64-bit Linux *only*, if any combination of 32-bit and 64-bit application software is installed, complete the NMDA installation by *manually* copying the files listed in [Table 5 on page 33](#) for *each* 32-bit application on the system.

Table 5 Complete the installation for coexistence on 64-bit Linux

To complete the NMDA installation for this application	Copy these files	To this destination directory
32-bit DB2	Not applicable — 32-bit DB2 is <i>not</i> supported on 64-bit Linux	
32-bit Informix	32-bit/informix/libnsrifmx32.so	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32	/usr/sbin
32-bit Lotus	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/lotus/nsrdocr32 32-bit/lotus/nsrnotesrc32 32-bit/lotus/nsrlotusra 32-bit/lotus/nmlra.jar 32-bit/lotus/nmlra_res.jar	/usr/sbin
32-bit Oracle	Not applicable — 32-bit Oracle is <i>not</i> supported on 64-bit Linux	
32-bit Sybase	32-bit/sybase/libnsrsyb32.so	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/sybase/nsrsyb32 32-bit/sybase/nsrsybr32	/usr/sbin

Install on Solaris

**IMPORTANT**

If the Solaris system has Solaris zones and NMDA 1.0 is to run on a sparse root zone, install NMDA on *both* the global zone and the sparse root zone:

1. Install NMDA on the global zone.
2. Install NMDA on each required sparse root zone.

Perform all the NMDA installs by using the `pkgadd` command, as described in the following steps. [“Uninstall NMDA on Solaris \(standard method\)” on page 53](#) provides information on the NMDA uninstall procedures on Solaris zones.

On 64-bit Solaris SPARC *only*, if any combination of 32-bit and 64-bit application software is installed:

1. Ensure that any existing 32-bit NMDA software is uninstalled according to [“Uninstall on Solaris” on page 52](#).
2. Install the 64-bit NMDA software according to the following instructions in this section.
3. Complete the NMDA installation on the system according to [“Complete the installation on 64-bit Solaris SPARC for coexistence of 32-bit and 64-bit applications” on page 35](#).

To install NMDA on a Solaris system, perform the following:

1. Verify the `basedir` variable setting in the `/var/sadm/install/admin/default` file. The `basedir` variable in this file can be set to one of three possible values:
 - If `basedir=default`, the software will be installed in the same directory as the NetWorker client software.
 - If `basedir=ask`, you will be prompted for the name of the base directory where the software will be installed.
 - If `basedir=/dirpath`, the software will be installed in the `/dirpath` directory. The `/dirpath` must be the pathname of the NetWorker client software base directory, as determined by this `pkgparam` command:

```
pkgparam LGTOc1nt BASEDIR
```

**IMPORTANT**

The software must be installed in the same base directory as the NetWorker client software. The software is *relocatable* during the installation on Solaris, but *only* to the same relocation path as the NetWorker client. For example, if the NetWorker client software is installed in the `/disk1` (nondefault) directory, NMDA must also be installed in the `/disk1` directory.

Relocation is *not* supported on a 64-bit Solaris SPARC system where 32-bit and 64-bit applications coexist.

2. Type the appropriate `pkgadd` command:
 - To install the NMDA software, type:


```
pkgadd -d /dir_pathname LGTONmda
```

 where `/dir_pathname` is the complete pathname of the directory containing the LGTONmda package.

3. Complete the NMDA 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 LGTONmda** 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 LGTONmda** command.
- b. Correct basedir=/dirpath in the /var/sadm/install/admin/default file.
- c. Reinstall the software.

Complete the installation on 64-bit Solaris SPARC for coexistence of 32-bit and 64-bit applications

On 64-bit Solaris SPARC *only*, if any combination of 32-bit and 64-bit application software is installed, complete the NMDA software by *manually* copying the files listed in [Table 6 on page 35](#) for *each* 32-bit application on the system.

Table 6 Complete the installation for coexistence on 64-bit Solaris SPARC (page 1 of 2)

To complete the NMDA installation for this application	Copy these files	To this destination directory
32-bit DB2	Not applicable — 32-bit DB2 is <i>not</i> supported on 64-bit Solaris SPARC	
32-bit Informix	32-bit/informix/libnsrifmx32.so	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32	/usr/sbin
32-bit Lotus	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/lotus/nsrdocr32 32-bit/lotus/nsrnotesrc32 32-bit/lotus/nsrlotusra 32-bit/lotus/nmlra.jar 32-bit/lotus/nmlra_res.jar	/usr/sbin
32-bit Oracle	Not applicable — 32-bit Oracle is <i>not</i> supported on 64-bit Solaris SPARC	

Table 6 Complete the installation for coexistence on 64-bit Solaris SPARC (page 2 of 2)

To complete the NMDA installation for this application	Copy these files	To this destination directory
32-bit Sybase	32-bit/sybase/libnrsy32.so	/usr/lib
	32-bit/nsrdasv32 32-bit/nsrdaprobe32 32-bit/sybase/nrsyb32 32-bit/sybase/nrsybrc32	/usr/sbin

Task 4: Perform the postinstall tasks on UNIX or Linux

Perform the required postinstall tasks:

- ◆ “Postinstall tasks for the wizard on UNIX or Linux” on page 36
- ◆ “Postinstall tasks on a DB2 server” on page 36
- ◆ “Postinstall tasks on an Informix server” on page 37
- ◆ “Postinstall tasks on an Oracle server” on page 38
- ◆ “Postinstall tasks on a Sybase server” on page 39
- ◆ “Postinstall tasks after upgrading from a legacy NetWorker module” on page 40

Postinstall tasks for the wizard on UNIX or Linux

If automatic registration of the wizard plugins *fails* during the NMDA installation on UNIX or Linux, register the wizard manually:

1. Log in as the root user.
2. Type the appropriate command, as listed in [Table 7 on page 36](#).

Note: To manually unregister the wizard, use the command from [Table 7 on page 36](#) but replace the **-i** option with **-u**.

Table 7 Command to register the wizard on UNIX or Linux

With this database or application	Type this command to register the wizard
DB2	nsrdb2ra -i
Lotus	nsrlotusra -i
Oracle	nsrorara -i

Postinstall tasks on a DB2 server

After NMDA is installed on a DB2 server, perform the following tasks:

1. Unset the DB2_VENDOR_INI registry variable:


```
$ db2set DB2_VENDOR_INI=
```
2. Restart the database instance.

Postinstall tasks on an Informix server

After NMDA is installed on an Informix server, perform the following tasks:

- ◆ [“Update the environment on an Informix server” on page 37](#)
- ◆ [“Update the sm_versions file on an Informix server” on page 38](#)

Note: Setting up the NetWorker XBSA library requires root user privileges.

Update the environment on an Informix server

To update the UNIX or Linux environment on an Informix server:

1. Set the `BAR_BSALIB_PATH` variable in the `$ONCONFIG` file to the location of the NetWorker XBSA portion of the shared libraries:
 - If 32-bit Informix and a 64-bit application are *not* installed on the same system, set `BAR_BSALIB_PATH` to `/usr/lib/libnsrifmx.x`, where *x* is:
 - o on AIX
 - sl on HP-UX 64-bit
 - so on Linux and other UNIX systems

Note: If the software was relocated to the `relocation_path` directory during the installation on Linux, copy the `libnsrifmx.so` library file to the default directory `/usr/lib`.

- If 32-bit Informix and a 64-bit application (Informix or another supported application) are installed on the same 64-bit AIX, HP-UX PA-RISC, Linux, or Solaris SPARC system, set `BAR_BSALIB_PATH` to `/usr/lib/libnsrifmx32.x`, where *x* is:
 - o on AIX
 - sl on HP-UX PA-RISC
 - so on Linux and Solaris SPARC

The *Informix Dynamic Server Release Notes* provide more information and the location of the XBSA shared library.

2. Set the following variable values in the `$ONCONFIG` file:

```
ISM_DATA_POOL Informix_data_pool_name
ISM_LOG_POOL Informix_log_pool_name
```

where:

- `Informix_data_pool_name` is the name of the NetWorker volume pool for the Informix dbspace backups.
- `Informix_log_pool_name` is the name of the NetWorker volume pool for the Informix logical log backups.

The NetWorker administrator creates the volume pools on the NetWorker server that is used to back up the Informix database. The NetWorker documentation provides details on how to set up volume pools.

Update the sm_versions file on an Informix server

You must manually update the shared NetWorker XBSA library links because ON-Bar 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 systools.bar_version table. Without the required values for NetWorker XBSA, ON-Bar 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 (Informix user password required) by typing the following string in quotes exactly as shown, without blank spaces:

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

Postinstall tasks on an Oracle server

After the NMDA software is installed on an Oracle server, the module library file must be linked with the Oracle server for *each* Oracle installation that will use the module software for backups. Depending on the operating system and Oracle server release, the commands to link the library perform one or both of the following:

- ◆ Replace a symbolic link to the NMDA library.
- ◆ Relink the library with the Oracle libraries.

**IMPORTANT**

After an NMDA installation on UNIX or Linux, if Oracle software is reinstalled, the NMDA library file must be relinked with the Oracle server according to the following instructions. However, the NMDA software does *not* need to be reinstalled.

Guidelines for using the linking commands

Table 8 on page 39 lists the commands for linking the module library file. Use the following guidelines for the commands on a UNIX or Linux system:

- ◆ A default NMDA installation is assumed, with the NMDA library file installed in the default directory, /usr/lib.
- ◆ The commands apply only to Oracle *base* releases (if available). Link instructions might vary with patched releases of the Oracle server.

Link the Oracle library file

Perform this procedure for *each* Oracle installation that will use the NMDA software for backups.

Note: You are *not* required to shut down and restart Oracle instances that use the ORACLE_HOME when linking the library file.

To link the module library file with the Oracle server:

1. Log in as the ORACLE_HOME owner:

```
su ORACLE_HOME_owner
```

2. Type the appropriate linking commands from [Table 8 on page 39](#):

- If the software was *not* relocated during the installation, type the linking commands from the table.
- If the software was relocated to the *relocation_path* directory during the installation on Linux, do one of the following:
 - Copy the libnsrora.* library file to the default directory /usr/lib, and type the linking commands from the table.
 - Type the linking commands, replacing the default pathname /usr/lib/libnsrora.* with *relocation_path*/libnsrora.*.

Table 8 Linking commands for Oracle library file on UNIX or Linux

On this system	Use these commands to change the symbolic link
AIX 64-bit	% <code>cd \$ORACLE_HOME/lib</code> % <code>ln -s /usr/lib/libnsrora.a libobk.a</code>
HP-UX 64-bit PA-RISC	% <code>cd \$ORACLE_HOME/lib</code> % <code>ln -s /usr/lib/libnsrora.sl libobk.sl</code>
HP-UX Itanium	% <code>cd \$ORACLE_HOME/lib</code> % <code>ln -s /usr/lib/libnsrora.so libobk.so</code>
Linux AMD64/EM64T	% <code>cd \$ORACLE_HOME/lib</code> % <code>ln -s /usr/lib/libnsrora.so libobk.so</code>
Linux Intel	% <code>cd \$ORACLE_HOME/lib</code> % <code>ln -s /usr/lib/libnsrora.so libobk.so</code>
Solaris 64-bit SPARC Solaris AMD64/EM64T	% <code>cd \$ORACLE_HOME/lib</code> % <code>ln -s /usr/lib/libnsrora.so libobk.so</code>

Postinstall tasks on a Sybase server

After the NMDA software is installed on a Sybase server, the required symbolic links to the NMDA Sybase library files must be created in the directory \$SYBASE/\$SYBASE_ASE/lib.

To create the required symbolic links to the NMDA Sybase libraries:

1. Log in as the Sybase user.
2. Go to the \$SYBASE/\$SYBASE_ASE/lib directory:


```
cd $SYBASE/$SYBASE_ASE/lib
```
3. Create the required symbolic link on the specific platform:
 - If 32-bit Sybase and a 64-bit application are *not* installed on the same system:
 - On AIX:


```
ln -s /usr/lib/libnsrsyb.so libnsrsyb.so
```
 - On HP-UX *except* HP-UX Itanium:


```
ln -s /opt/networker/lib/pa11_32/libnsrsyb.sl libnsrsyb.sl
```

- On HP-UX Itanium:
`ln -s /usr/lib/libnsrsyb.so libnsrsyb.so`
- On Linux or Solaris:
`ln -s /usr/lib/libnsrsyb.so libnsrsyb.so`
- If 32-bit Sybase and a 64-bit application are installed on the same 64-bit AIX, HP-UX PA-RISC, Linux, or Solaris SPARC system:
 - On 64-bit AIX:
`ln -s /usr/lib/libnsrsyb32.o libnsrsyb.so`
 - On 64-bit HP-UX PA-RISC:
`ln -s /usr/lib/libnsrsyb32.sl libnsrsyb.sl`
 - On 64-bit Linux or Solaris SPARC:
`ln -s /usr/lib/libnsrsyb32.so libnsrsyb.so`

Postinstall tasks after upgrading from a legacy NetWorker module

If you have been using a legacy NetWorker module (NMDB2, NMI, NML, NMO, or NMS), ensure that you read this section.

After you upgrade from a legacy NetWorker module to NMDA, you must convert the existing scheduled backup configuration to the NMDA configuration. Otherwise, the scheduled backup will fail after the upgrade. The recommended method for the backup configuration conversion is to use the **nsrdaadmin** command.

This conversion method reduces the configuration effort for a scheduled backup, and enables the continued use of the previous backup configuration with the NMDA software.

The **nsrdaadmin** command can convert any scheduled backup configuration of a NetWorker module to an NMDA configuration, no matter which method was used originally to create the backup configuration, as long as your backup scripts conformed to the templates provided by the NetWorker module in the case of Informix, Oracle, or Sybase. If the scripts did *not* conform to the templates, you might need to perform the conversion manually according to [“Manual conversion of a NetWorker module backup configuration” on page 43](#).



IMPORTANT

If you upgrade from NML software to NMDA, you can use the **nsrdaadmin command to perform the configuration conversion *only* if the Backup Command field of the NML Client resource contains only **nsrnotesv** and the **-z** option. If this condition is *not* true, you must manually convert your existing configuration to an NMDA configuration according to [“Manual conversion of a NetWorker module backup configuration” on page 43](#).**

To convert the scheduled backup configuration with the **nsrdaadmin** command:

1. Review the information in [“Client resource values set by the conversion” on page 41](#).
2. Ensure that you meet the [“Requirements for using the nsrdaadmin command” on page 42](#).
3. Use the proper **nsrdaadmin** command and options, according to [“Syntax and options of the nsrdaadmin command for conversion” on page 42](#).

Note: As an alternative to conversion with the `nsrdaadmin` command, you can manually change the existing backup configuration to work with NMDA, after upgrading from the NetWorker module. “Manual conversion of a NetWorker module backup configuration” on page 43 provides details.

Client resource values set by the conversion

The configuration conversion sets the following values in the NetWorker Client resource:

- ◆ Backup Command attribute is changed to:

```
nsrdasv -z config_file -T app [-c client]
```

where:

- *config_file* is the pathname of the NMDA configuration file created by the conversion, as shown in Table 9 on page 41. The settings in the configuration file are based on the old command line options and the old configuration file or script.
- *app* is **db2**, **informix**, **lotus**, **oracle**, or **sybase**, depending on the database or application.
- *client* is the client name that was used in the old value of the Backup Command attribute. This old option is kept in the `nsrdasv` command line, if required. Otherwise, this value is specified with the `NSR_CLIENT` parameter in the NMDA configuration file.
- ◆ Comment attribute is changed to indicate that this is an NMDA Client resource.
- ◆ Remote User and Password attributes are changed to empty values for Sybase. The conversion sets these options in the configuration file instead.
- ◆ Save Set attribute is *not* changed from its original value in the NetWorker module Client resource.

Table 9 NMDA configuration file created by conversion (page 1 of 2)

Type of configuration converted	NMDA configuration filepath
NetWorker Module for DB2 (NMDB2)	Same as original NMDB2 configuration filepath Note: The original configuration file is saved as <i>original_NMDB2_config_filepath.orig</i> , but the file is not used by NMDA after the conversion.
NetWorker Module for Informix (NMI)	<i>/nsr/apps/config/original_NMI_nsrdbmi_script_name.cfg</i> (UNIX/Linux) or <i>NetWorker_install_dir\apps\config\original_NMI_nsrdbmi_script_name.cfg</i> (Windows) Note: The original script is <i>not</i> changed, but the script is not used by NMDA after the conversion.
NetWorker Module for Lotus (NML)	Same as original NML configuration filepath Note: The original configuration file is saved as <i>original_NML_config_filepath.orig</i> , but the file is not used by NMDA after the conversion.

Table 9 NMDA configuration file created by conversion (page 2 of 2)

Type of configuration converted	NMDA configuration filepath
NetWorker Module for Oracle (NMO)	<p><i>/nsr/apps/config/original_NMO_nsrnmo_script_name.cfg</i> (UNIX/Linux) or <i>NetWorker_install_dir\apps\config\original_NMO_nsrnmo_script_name.cfg</i> (Windows)</p> <hr/> <p>Note: The original script is <i>not</i> changed, but the script is not used by NMDA after the conversion.</p> <hr/>
NetWorker Module for Sybase (NMS)	<p><i>/nsr/apps/config/original_NMS_nsrnyb_script_name.cfg</i> (UNIX/Linux) or <i>NetWorker_install_dir\apps\config\original_NMS_nsrnyb_script_name.cfg</i> (Windows)</p> <hr/> <p>Note: The original script is <i>not</i> changed, but the script is not used by NMDA after the conversion.</p> <hr/>

Requirements for using the `nsrdaadmin` command

Before using the `nsrdaadmin` command to convert a scheduled backup configuration, ensure that the following requirements are met:

- ◆ If you upgraded from NMS on UNIX or Linux, the `Sybase.sh` script must be used to set any required environment variables.
- ◆ The `nsrdaadmin` command must be started on the operating system command line by an administrative user, either the root user on UNIX or Linux, or a member of the Microsoft Windows Administrators group.
- ◆ The administrative user that starts the `nsrdaadmin` command must have the Configure NetWorker user group privilege, as required to query and update the Client resources on a NetWorker server. The NetWorker documentation provides more information on user group privileges.

Syntax and options of the `nsrdaadmin` command for conversion

The `nsrdaadmin` command syntax and options for configuration conversion are as follows:

```
nsrdaadmin -M -s server_name [-c client_name] [-g group_name]
[-N save_set_name] [-Y]
```

Command options and settings in brackets ([]) are optional. Do *not* include the brackets when typing the command.

[Table 10 on page 43](#) describes the `nsrdaadmin` command options.

The *EMC NetWorker Module for Databases and Applications Release 1.0 Command Reference Guide* provides more details on the `nsrdaadmin` command.

Table 10 Options of the `nsrdaadmin` command for configuration conversion

Option	Description
-M	<p><i>Mandatory.</i> Specifies the conversion option. The <code>nsrdaadmin</code> program performs the following:</p> <ol style="list-style-type: none"> 1. Queries the NetWorker server resource database to locate all of the Client resources that match the values specified by the <code>-c</code>, <code>-g</code>, <code>-N</code>, and <code>-s</code> options. 2. Converts each configuration to the configuration format that is supported by the NMDA wizard. <p>Note: The <code>nsrdaadmin</code> program can only convert a configuration that physically resides on the host where the <code>nsrdaadmin</code> command is run. To convert the Client resources for different physical hosts, you must run the <code>nsrdaadmin</code> program on each physical host, or write a script to automate the process.</p>
-c <i>client_name</i>	<p><i>Optional.</i> Specifies the hostname of the NetWorker client to be converted. Typically, this option specifies a virtual client in a cluster. The default value is the hostname of the local physical client.</p>
-g <i>group_name</i>	<p><i>Optional.</i> Specifies the name of the NetWorker group for the query operation. If this option is <i>not</i> specified, then a group name is <i>not</i> included in the criteria for the query of the server resource database.</p>
-N <i>save_set_name</i>	<p><i>Optional.</i> Specifies the value set in the Save Set attribute of the Client resource. If this option is <i>not</i> specified, then a save set name is <i>not</i> included in the criteria for the query of the server resource database.</p>
-s <i>server_name</i>	<p><i>Mandatory.</i> Specifies the hostname of the NetWorker server that backs up the client being configured.</p>
-Y	<p><i>Optional.</i> Specifies non-interactive mode, which causes the <code>nsrdaadmin</code> program to proceed with a conversion <i>without</i> prompting for confirmation. If this option is <i>not</i> specified, the <code>nsrdaadmin</code> program displays all of the fields to be updated in the Client resource (for a client-side configuration, the program also displays the configuration file content) and requests confirmation to proceed with the conversion.</p>

Manual conversion of a NetWorker module backup configuration

If you *cannot* use the `nsrdaadmin` command to convert a NetWorker module backup configuration to the NMDA backup configuration, follow the instructions in the appropriate subsection to manually convert the configuration:

- ◆ [“Manual conversion of an NMDB2 backup configuration” on page 43](#)
- ◆ [“Manual conversion of an NMI, NMO, or NMS backup configuration” on page 44](#)
- ◆ [“Manual conversion of an NML backup configuration” on page 45](#)

Manual conversion of an NMDB2 backup configuration

To manually convert an NMDB2 backup configuration to the NMDA configuration:

1. In the configuration file used for the NMDB2 backups, modify any required parameter settings to conform to the new parameter names and valid values in NMDA. This step creates the required NMDA configuration file.

Certain parameter names and default or valid values have changed in NMDA, as outlined in [“Parameter changes in NMDA” on page 45](#). Ensure that you set the correct parameter names and values in the configuration file, according to Appendix A of the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide*.

2. Use the NMC program to update the Backup Command attribute in the NetWorker Client resource that was used for the NMDB2 backups. The Backup Command attribute must contain the following value:

```
nsrdasv -z config_file
```

where *config_file* is the complete pathname of the NMDA configuration file created in [step 1](#).

Manual conversion of an NMI, NMO, or NMS backup configuration

Note: If your backup scripts did *not* conform to the templates provided by the NetWorker module, you can continue to use the existing scripts for NMDA backups. Instead of performing the steps in this section, modify the existing scripts to do the following:

- Use the NMDA parameters described in Appendix A of the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide*.
- Run the **nsrdasv** binary instead of the old NetWorker module scheduled backup binary.

To manually convert an NMI, NMO, or NMS scheduled backup configuration to the NMDA configuration:

1. Create a new configuration file for the NMDA backups, based on the contents of the script file that is included in the Backup Command attribute of the NetWorker Client resource.

Certain parameter names and default or valid values have changed in NMDA, as outlined in “[Parameter changes in NMDA](#)” on page 45. Ensure that you set the correct parameter names and values in the configuration file, according to Appendix A of the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide*.

Note: For Sybase backups *only*, ensure that the SYBASE parameter and the LD_LIBRARY_PATH, LIBPATH, or SHLIB_PATH parameter are set in the NMDA configuration file. The Sybase-specific section in Appendix A of the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides details.

2. Use the NMC program to update the Backup Command attribute in the NetWorker Client resource that was used for the NMI, NMO, or NMS backups. The Backup Command attribute must contain the following value:

```
nsrdasv -T app -z config_file
```

where:

- *app* is **informix**, **oracle**, or **sybase**.
 - *config_file* is the complete pathname of the NMDA configuration file created in [step 1](#).
3. For Sybase backups *only*, delete any existing values in the Remote User and Password attributes of the NetWorker Client resource.

The Sybase username and password must be set with the SYBASE_USER and USER_PSWD parameters, respectively, in the NMDA configuration file. The Sybase-specific section in Appendix A of the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides details.

Manual conversion of an NML backup configuration

To manually convert an NML backup configuration to the NMDA configuration:

1. Ensure that the correct parameter settings are included in the configuration file for NMDA backups:
 - If the NML backups did *not* use a configuration file (the Backup Command attribute in the Client resource did *not* contain `nsrnotesv -z config_file`), create a new configuration file for NMDA that includes the required parameter settings.
 - If the NML backups did use a configuration file, modify any required parameter settings in the file to conform to the new parameter names and valid values in NMDA.

This step creates the required NMDA configuration file.

Certain parameter names and default or valid values have changed in NMDA, as outlined in “[Parameter changes in NMDA](#)” on page 45. Ensure that you set the correct parameter names and values in the configuration file, according to Appendix A of the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide*.

2. Use the NMC program to update the Backup Command attribute in the NetWorker Client resource that was used for the NML backups. The Backup Command attribute must contain the following value:

```
nsrdasv -T lotus -z config_file
```

where `config_file` is the complete pathname of the NMDA configuration file created in [step 1](#).

Parameter changes in NMDA

[Table 11 on page 45](#) lists specific parameters that have changed in NMDA, as compared to the parameters supported by the legacy NetWorker modules.

Appendix A in the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides details on all of the supported NMDA parameters.

The troubleshooting appendix in the *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides details on the new NMDA parameters that are used for debugging purposes.

Table 11 Parameter changes in NMDA (page 1 of 2)

Parameters in legacy NetWorker modules	Parameter changes in NMDA
NSR_DEBUG_FILE	Dropped.
NSR_ENCRYPTION	Dropped.
NMDB2 parameters	
DB2_PSWD	Replaced by USER_PSWD. (Encryption is adjusted accordingly.)
DB2_USR	Replaced by DB2_USER.
NSR_DB2_BACKUP_INFO	Replaced by NSR_DR_BACKUP_INFO. If NSR_DB2_BACKUP_INFO was not set, NSR_DR_BACKUP_INFO is set to TRUE (default).
NSR_DB2_CONFIG_FILE	Replaced by NSR_DR_FILE_LIST.

Table 11 Parameter changes in NMDA (page 2 of 2)

Parameters in legacy NetWorker modules	Parameter changes in NMDA
NSR_*_DEBUG*	Replaced by NSR_DEBUG_LEVEL.
NMI parameters	
BOOTFILE	Replaced by NSR_DR_FILE_LIST.
DO_BOOTFILE_BACKUPS	Replaced by NSR_DR_BACKUP_INFO.
NML parameter	
LOTUSUSER	Replaced by LOTUS_USER.
NMO parameter	
NSR_SB_DEBUG_FILE	Replaced by NSR_DEBUG_LEVEL=1.
NMS parameter	
BACKUP_OPT	Replaced by a set of new NMDA parameters, detailed in the Sybase-specific section of Appendix A in the <i>EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide</i> .

Task 5: Enable the software on UNIX or Linux

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

Enable the NMDA software according to [Chapter 5, “Licensing and Enabling the Software.”](#)

The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides information on how to configure and use the software.

Installing on a cluster, DB2 DPF, Oracle RAC, or Sybase ASE Cluster Edition on UNIX or Linux

NMDA release 1.0 supports active-passive cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition configurations on all clusters supported by the NetWorker client and database or application server installed on the NMDA host. NMDA also supports Oracle RAC configurations on all Oracle OSD clusterware versions supported by Oracle.

For example, NMDA supports the following:

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

The *EMC Information Protection Software Compatibility Guide on Powerlink* provides details on the operating system and database or application versions supported with cluster, DB2 DPF, Oracle RAC, and Sybase ASE Cluster Edition systems.

Install NetWorker client and NMDA software on *each* cluster node, DB2 DPF node, Oracle RAC node, or Sybase ASE Cluster Edition node to be used for backup and restore operations:

1. Meet all the requirements in ["Installation requirements"](#) on page 18.
2. Follow the instructions in ["Installing on a single UNIX or Linux host"](#) on page 24.

The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides information on how to configure the NMDA software on a cluster, DB2 DPF, Oracle RAC, or Sybase ASE Cluster Edition system.

Uninstalling on UNIX and Linux

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

To uninstall NetWorker Module for Databases and Applications (NMDA) release 1.0 on a supported UNIX or Linux operating system, perform the following steps:

1. [“Task 1: Perform the preinstall tasks on UNIX or Linux” on page 48](#)
2. [“Task 2: Uninstall the NMDA software on UNIX or Linux” on page 49](#)

Task 1: Perform the preinstall tasks on UNIX or Linux

Perform the required preinstall tasks:

- ◆ [“Preinstall tasks with relocated NetWorker client on Linux” on page 48](#)
- ◆ [“Preinstall tasks on an Oracle server” on page 48](#)
- ◆ [“Preinstall tasks on a Sybase server” on page 49](#)

Preinstall tasks with relocated NetWorker client on Linux

For a NetWorker client release earlier than 7.5 that is relocated to a *nondefault* directory on Linux, if you created the symbolic link according to the instructions in [“Preinstall tasks for relocated NetWorker client on Linux” on page 26](#), remove the symbolic link as follows:

- ◆ On Linux AMD64/EM64T:


```
# rm /usr/lib/nsr/apps/lib64/libcommonssl.so
```
- ◆ On Linux Intel:


```
# rm /usr/lib/nsr/apps/libcommonssl.so
```

Preinstall tasks on an Oracle server

Before NMDA is uninstalled on an Oracle server, follow these steps for *each* Oracle installation that uses the NMDA software for its backups:

1. Log in as the ORACLE_HOME owner:


```
su ORACLE_HOME_owner
```
2. Use the following commands to remove the symbolic link:

```
% cd $ORACLE_HOME/lib
% rm libobk.xx
```

where *xx* is the platform-specific extension, as listed in [Table 8 on page 39](#).

Depending on the operating system and Oracle server release, the commands replace or remove a symbolic link to the Oracle System Backup to Tape (SBT) implementation library or relink the Oracle server.



IMPORTANT

These link removal commands restore the Oracle software to its state prior to the NMDA installation. If the installation commands from [“Installing on a single UNIX or Linux host” on page 24](#) were *not* followed exactly, the Oracle software might not be restored to its state prior to the installation. These link removal commands apply only to Oracle *base* releases (if available). Link instructions might vary with patched releases of the Oracle server.

Preuninstall tasks on a Sybase server

Before NMDA is uninstalled on a Sybase server, remove the symbolic links to the NMDA Sybase library by using the following command in the \$SYBASE/\$SYBASE_ASE/lib directory as the root user:

```
# rm libnsrsyb.xx
```

where *xx* is the platform-specific extension:

- ◆ sl on HP-UX (*except* Itanium)
- ◆ so on AIX, HP-UX Itanium, Linux, or Solaris

Task 2: Uninstall the NMDA software on UNIX or Linux

To uninstall NMDA release 1.0 on UNIX or Linux:

1. Ensure that no database or application backups are running.

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

2. Log in as the root user on the NMDA host.
3. Uninstall the NMDA software by using the instructions for the particular operating system:
 - [“Uninstall on AIX” on page 49](#)
 - [“Uninstall on HP-UX” on page 50](#)
 - [“Uninstall on Linux” on page 51](#)
 - [“Uninstall on Solaris” on page 52](#)

Uninstall on AIX

Uninstall NMDA on AIX according to the appropriate instructions:

- ◆ [“Uninstall 32-bit NMDA on 64-bit AIX with 32-bit and 64-bit coexistence” on page 49](#)
- ◆ [“Uninstall NMDA on AIX \(standard method\)” on page 50](#)

Uninstall 32-bit NMDA on 64-bit AIX with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA on a 64-bit AIX system where 32-bit and 64-bit versions of NMDA coexist, *manually* delete the files listed in [Table 12 on page 50](#).

Table 12 Uninstall 32-bit NMDA on 64-bit AIX with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA for this application	Manually delete these files
32-bit Informix	/usr/lib/libnsrifmx32.o /usr/bin/nsrdasv32 /usr/bin/nsrdaprobe32
32-bit Lotus	/usr/bin/nsrdasv32 /usr/bin/nsrdaprobe32 /usr/bin/nsrdocr32 /usr/bin/nsrnotesrc32
32-bit Sybase	/usr/lib/libnsrsyb32.so /usr/bin/nsrdasv32 /usr/bin/nsrdaprobe32 /usr/bin/nsrsyb32 /usr/bin/nsrsyb32 /usr/bin/threshold.sql

Uninstall NMDA on AIX (standard method)

If you are *not* uninstalling 32-bit NMDA on a 64-bit AIX system where 32-bit and 64-bit versions of NMDA coexist, use one of the following standard methods to uninstall the NMDA software:

- ◆ Use the **installp** command line interface by running the appropriate command:
installp -u LGTONmda.rte (NMDA software)
- ◆ Use the SMIT GUI program:
 1. Run the following **smitty** command:
smitty remove
 2. Select **F4=List** to display a list of the installed software packages.
 3. Select the packages to be uninstalled:
LGTONmda.rte (NMDA software)
 4. Ensure that the **PREVIEW Only** option is set to no.
 5. Press **Enter** to uninstall the NMDA software.
 6. Exit the SMIT program.

Uninstall on HP-UX

Uninstall NMDA on HP-UX according to the appropriate instructions:

- ◆ [“Uninstall 32-bit NMDA on 64-bit HP-UX PA-RISC with 32-bit and 64-bit coexistence” on page 50](#)
- ◆ [“Uninstall NMDA on HP-UX \(standard method\)” on page 51](#)

Uninstall 32-bit NMDA on 64-bit HP-UX PA-RISC with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA on a 64-bit HP-UX PA-RISC system where 32-bit and 64-bit versions of NMDA coexist, *manually* delete the files listed in [Table 13 on page 51](#).

Table 13 Uninstall 32-bit NMDA on 64-bit HP-UX with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA for this application	Manually delete these files
32-bit Informix	/usr/lib/libnsrifmx32.sl /opt/networker/bin/nsrdasv32 /opt/networker/bin/nsrdaprobe32
32-bit Sybase	/usr/lib/libnsrsyb32.sl /opt/networker/bin/nsrdasv32 /opt/networker/bin/nsrdaprobe32 /opt/networker/bin/nsrsyb32 /opt/networker/bin/nsrsyb32 /opt/networker/bin/threshold.sql

Uninstall NMDA on HP-UX (standard method)

If you are *not* uninstalling 32-bit NMDA on a 64-bit HP-UX PA-RISC system where 32-bit and 64-bit versions of NMDA coexist, use one of the following standard methods to uninstall the NMDA software:

- ◆ Use the **swremove** command line interface by running this command:
swremove NMDA
- ◆ Use the **swremove** GUI program:
 1. Run the following **swremove** command:
swremove -i NMDA
 2. Select **Actions > Remove (analysis)**.
 3. When the system analysis is complete, click **OK** to complete the uninstall.

Note: To confirm the uninstall, click **Yes**.

Uninstall on Linux

Uninstall NMDA on Linux according to the appropriate instructions:

- ◆ [“Uninstall 32-bit NMDA on 64-bit Linux with 32-bit and 64-bit coexistence” on page 51](#)
- ◆ [“Uninstall NMDA on Linux \(standard method\)” on page 52](#)

Uninstall 32-bit NMDA on 64-bit Linux with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA on a 64-bit Linux system where 32-bit and 64-bit versions of NMDA coexist, *manually* delete the files listed in [Table 14 on page 52](#).

Table 14 Uninstall 32-bit NMDA on 64-bit Linux with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA for this application	Manually delete these files
32-bit Informix	/usr/lib/libnsrifmx32.so /usr/sbin/nsrdasv32 /usr/sbin/nsrdaprobe32
32-bit Lotus	/usr/sbin/nsrdasv32 /usr/sbin/nsrdaprobe32 /usr/sbin/nsrdocr32 /usr/sbin/nsrnotesrc32 /usr/sbin/nsrlotusra /usr/sbin/nmlra.jar /usr/sbin/nmlra_res.jar
32-bit Sybase	/usr/lib/libnsrsyb32.so /usr/sbin/nsrdasv32 /usr/sbin/nsrdaprobe32 /usr/sbin/nsrsyb32 /usr/sbin/nsrsyb32

Uninstall NMDA on Linux (standard method)

If you are *not* uninstalling 32-bit NMDA on a 64-bit Linux system where 32-bit and 64-bit versions of NMDA coexist, run the appropriate command to uninstall the NMDA software:

```
rpm -e lgtonmda-1.0-1 (NMDA software)
```

To uninstall *both* NMDA and the NetWorker client on Linux, perform *one* of the following:

- ◆ Type this command:

```
rpm -e lgtonmda-1.0-1 lgtocInt
```

- ◆ Type these separate commands, in this order *only*:

```
rpm -e lgtonmda-1.0-1  
rpm -e lgtocInt
```

Note: On Linux, the NetWorker client software must be uninstalled *after* the NMDA software. You must *not* uninstall both NMDA and the NetWorker client with the following command:

```
rpm -e lgtocInt lgtonmda-1.0-1
```

Uninstall on Solaris

Uninstall NMDA on Solaris according to the appropriate instructions:

- ◆ [“Uninstall 32-bit NMDA on 64-bit Solaris SPARC with 32-bit and 64-bit coexistence” on page 52](#)
- ◆ [“Uninstall NMDA on Solaris \(standard method\)” on page 53](#)

Uninstall 32-bit NMDA on 64-bit Solaris SPARC with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA on a 64-bit Solaris SPARC system where 32-bit and 64-bit versions of NMDA coexist, *manually* delete the files listed in [Table 15 on page 53](#).

Table 15 Uninstall 32-bit NMDA on 64-bit Solaris SPARC with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA for this application	Manually delete these files
32-bit Informix	/usr/lib/libnsrifmx32.so /usr/sbin/nsrdasv32 /usr/sbin/nsrdaprobe32
32-bit Lotus	/usr/sbin/nsrdasv32 /usr/sbin/nsrdaprobe32 /usr/sbin/nsrdocrc32 /usr/sbin/nsrnotesrc32 /usr/sbin/nsrlotusra /usr/sbin/nmlra.jar /usr/sbin/nmlra_res.jar
32-bit Sybase	/usr/lib/libnsrsyb32.so /usr/sbin/nsrdasv32 /usr/sbin/nsrdaprobe32 /usr/sbin/nsrsybcc32 /usr/sbin/nsrsybr32

Uninstall NMDA on Solaris (standard method)

If you are *not* uninstalling 32-bit NMDA on a 64-bit Solaris SPARC system where 32-bit and 64-bit versions of NMDA coexist, run the appropriate commands to uninstall the NMDA software, depending on the packages installed:

pkgrm LGTONmda (NMDA software)

Note: To uninstall NMDA on Solaris zones:

1. Uninstall NMDA on the global zone.
2. Uninstall NMDA on each required sparse root zone.

Perform the following according to the basedir variable setting in the /var/sadm/install/admin/default file:

- ◆ If basedir=default in the file, type **y** when prompted. The software is uninstalled from the directory containing the NetWorker client software.
- ◆ If basedir=ask in the file, type the result of the **pkgparam LGTONmda BASEDIR** command when prompted for the pathname of the base directory. The software is uninstalled from the specified base directory.
- ◆ If basedir=/dirpath in the file, type **y** when prompted. The software is uninstalled from the specified /dirpath directory.

This chapter includes the following sections:

- ◆ Software installation path on Microsoft Windows..... 56
- ◆ Installing on a single Microsoft Windows host..... 57
- ◆ Installing on a cluster, DB2 DPF, or Oracle RAC on Microsoft Windows..... 66
- ◆ Maintaining the installation on Microsoft Windows 67
- ◆ Uninstalling on Microsoft Windows 68

Software installation path on Microsoft Windows

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

For new installations of NetWorker release 7.x, the default location is *%SystemDrive%\Program Files\Legato\nsr*.

The installation path is not changed during a NetWorker update. For example, an installation of NetWorker release 6.x software that has been updated to release 7.x has the default installation path *%SystemDrive%\Program Files\nsr*.

In NetWorker documentation, references to locations under the installation root use the *NetWorker_install_path* variable in the path statement. For example, the *daemon.raw* file is located in the *NetWorker_install_path\logs* directory.

Note: During a NetWorker installation, you can specify a nondefault location. The *EMC NetWorker Installation Guide* provides more information on NetWorker installation procedures.

Installing on a single Microsoft Windows host

To install and enable the NetWorker Module for Databases and Applications (NMDA) release 1.0 on a single host with a supported Microsoft Windows operating system, perform the following steps:

1. [“Task 1: Review the 32-bit and 64-bit coexistence requirements” on page 57](#)
2. [“Task 2: Perform the preinstall tasks on Microsoft Windows” on page 57](#)
3. [“Task 3: Install and enable the NMDA software on Microsoft Windows” on page 60](#)
4. [“Task 4: Perform the postinstall tasks on Microsoft Windows” on page 62](#)

Task 1: Review the 32-bit and 64-bit coexistence requirements

Specific combinations of 32-bit and 64-bit application software can coexist on the same 64-bit Windows system. For example, 32-bit Informix and 64-bit DB2 server might be installed on the same 64-bit Windows system.

Refer to the appropriate application documentation for details on the versions of 32-bit and 64-bit application software that can coexist on the same 64-bit Windows system.

Note: NMDA does *not* support the coexistence of 32-bit or 64-bit Sybase with 64-bit DB2, Informix, Lotus, or Oracle on the same 64-bit Windows system.

If both 32-bit and 64-bit application software is installed on the same 64-bit system:

1. If you installed 32-bit NMDA on the system, you must uninstall the existing 32-bit NMDA software according to [“Uninstall 32-bit NMDA on 64-bit Windows with 32-bit and 64-bit coexistence” on page 68](#).
2. You must install the 64-bit NMDA software and complete the additional steps required for 32-bit and 64-bit application coexistence according to [“Task 3: Install and enable the NMDA software on Microsoft Windows” on page 60](#).

Task 2: Perform the preinstall tasks on Microsoft Windows

Perform the required preinstall tasks:

- ◆ [“Preinstall tasks on an Informix server” on page 57](#)
- ◆ [“Access the software on Microsoft Windows” on page 58](#)

Preinstall tasks on an Informix server

Ensure that Informix Storage Manager (ISM) is *not* installed on the Informix server. ISM is a limited version of the NetWorker Module for Informix that is distributed and installed with Informix Dynamic Server (IDS).

Uninstall ISM on the Informix server, if required:

1. Log in as user *informix*.
2. Set the Informix Database server environment variables by running the following:

```
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. Ensure 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, change the following PATH setting:


```
PATH=C:C:\installdir;D:\ISM\2.20\bin;C:\msdev
```

 Change the PATH setting 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 in 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.

Access the software on Microsoft Windows

The NMDA software is distributed in the following forms:

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

**IMPORTANT**

The NMDA software obtained from the DVD or EMC website does *not* include an enabler code. The software can only be *evaluated*. [Chapter 5, “Licensing and Enabling the Software,”](#) provides more information on enabling NMDA.

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

- ◆ “From a local DVD drive” on page 59
- ◆ “From the EMC website” on page 59

From a local DVD drive

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

1. Log in as the Windows system administrator on the host.
2. Insert the NetWorker Module DVD into the DVD drive.
3. Select the DVD drive in Windows Explorer.
4. Go to the correct directory on the DVD, as shown in [Table 16 on page 59](#). The *EMC Information Protection Software Compatibility Guide* provides details on operating systems supported for specific database and application software.

**IMPORTANT**

For Sybase *only* on Windows AMD64/EM64T, you must access the 32-bit (*not* 64-bit) NMDA directory on the DVD. A Sybase server requires 32-bit NMDA software. Go to the `nmda\win_x86` directory, listed for Windows Intel in [Table 16 on page 59](#).

Table 16 Directory on the DVD with the NMDA software

For this platform	Go to this directory
Windows AMD64/EM64T	<code>nmda\win_x64</code>
Windows Intel	<code>nmda\win_x86</code>

5. Continue with “[Task 3: Install and enable the NMDA software on Microsoft Windows](#)” on page 60.

From the EMC website

To access the *evaluation* release of the NMDA 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 <http://Powerlink.EMC.com>.
4. Select **Support > Software Downloads and Licensing > Downloads J-O > NetWorker Module**.

- In the table of NetWorker Module Software Downloads, click the **NetWorker Module for Databases and Applications Version 1.0** for the particular Windows platform.



IMPORTANT

For Sybase *only* on Windows AMD64/EM64T, select the 32-bit (*not* 64-bit) NMDA software for download. A Sybase server requires 32-bit NMDA software. Select **NMDA for Windows x86 (32-bit)** in the downloads table on Powerlink.

- Download the NMDA software file to the temporary directory you created, for example, C:\instdir.
- Unzip the downloaded software file, as shown in [Table 17 on page 60](#).
- Go to the correct directory, as shown in [Table 17 on page 60](#).



IMPORTANT

For Sybase *only* on Windows AMD64/EM64T, unzip the nmda10_win_x86.zip file and then go to the win_x86 directory.

Table 17 Zipped download file and correct directory for install

For this platform	Unzip this downloaded file	Then go to this directory
Windows AMD64/EM64T	nmda10_win_x64.zip	win_x64
Windows Intel	nmda10_win_x86.zip	win_x86

- Continue with [“Task 3: Install and enable the NMDA software on Microsoft Windows” on page 60](#).

Task 3: Install and enable the NMDA software on Microsoft Windows

After you have accessed the NMDA software files, you are ready to begin the installation.



IMPORTANT

On 64-bit Windows *only*, if any combination of 32-bit and 64-bit application software other than Sybase is installed:

- Ensure that any existing 32-bit NMDA software is uninstalled according to [“Uninstall 32-bit NMDA on 64-bit Windows with 32-bit and 64-bit coexistence” on page 68](#).
- Install the 64-bit NMDA software according to the following instructions in this section.
- Complete the NMDA installation on the system according to [“Complete the installation on 64-bit Windows for coexistence of 32-bit and 64-bit applications” on page 62](#).

To install and enable the NMDA software on a supported Windows platform:

- Ensure that all the installation requirements have been met, as described in [“Installation requirements” on page 18](#).
- Ensure that you are logged in as the Windows system administrator.
- Ensure that no database or application backups are running.

4. Ensure that you are in the correct directory containing the NMDA installation files, as described in [“Access the software on Microsoft Windows”](#) on page 58.

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

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

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

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

At the end of the NMDA install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard. The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides more information on the configuration wizard.

9. In the **InstallShield Wizard Completed** dialog box, click **Finish** to exit the installation program.
10. Verify that the system PATH environment variable includes the NetWorker client installation directory. If required, add the NetWorker client installation directory to the system PATH variable.



IMPORTANT

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

11. If you installed NetWorker for the first time on an Oracle or Sybase server, restart the Oracle or Sybase server instance.
12. Enable the NMDA software according to [Chapter 5, “Licensing and Enabling the Software.”](#)

After NMDA is installed and enabled, the software must be properly configured for backup and restore operations. The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides information on how to configure and use the software.

Complete the installation on 64-bit Windows for coexistence of 32-bit and 64-bit applications

On 64-bit Windows *only*, if any combination of 32-bit and 64-bit application software is installed, complete the NMDA installation by *manually* copying the files listed in [Table 18 on page 62](#) for *each* 32-bit application on the system.

Table 18 Complete the installation for coexistence on 64-bit Windows

To complete the NMDA installation for this application	Copy these files	To this destination directory
32-bit DB2	32-bit\nsrdasv32.exe 32-bit\nsrdaprobe32.exe 32-bit\db2\libnsrdb232.dll 32-bit\db2\nsrd2rlog32.exe	<i>NetWorker_install_path</i> \bin
32-bit Informix	32-bit\nsrdasv32.exe 32-bit\nsrdaprobe32.exe 32-bit\informix\libbsa32.dll	<i>NetWorker_install_path</i> \bin
32-bit Lotus	32-bit\nsrdasv32.exe 32-bit\nsrdaprobe32.exe 32-bit\lotus\nsrdocrc32.exe 32-bit\lotus\nsrnotesrc32.exe	<i>NetWorker_install_path</i> \bin
32-bit Oracle	Not applicable — 32-bit Oracle is <i>not</i> supported on 64-bit Windows	
32-bit Sybase	Not applicable — 32-bit or 64-bit Sybase <i>cannot</i> coexist with another application on 64-bit Windows	

Task 4: Perform the postinstall tasks on Microsoft Windows

Perform the required postinstall tasks:

- ◆ [“Postinstall tasks for the wizard on Windows” on page 62](#)
- ◆ [“Postinstall tasks on a DB2 server” on page 63](#)
- ◆ [“Postinstall tasks on an Informix server” on page 63](#)
- ◆ [“Postinstall tasks on a Lotus Notes client” on page 64](#)
- ◆ [“Postinstall tasks on a Sybase server on Windows AMD64/EM64T” on page 65](#)
- ◆ [“Postinstall tasks after upgrading from a legacy NetWorker module” on page 65](#)

Postinstall tasks for the wizard on Windows

If automatic registration of the wizard plugins *fails* during the NMDA installation on Windows, register the wizard manually:

1. Log in as a member of the Microsoft Windows Administrators group.
2. Type the appropriate command, as listed in [Table 19 on page 63](#).

Note: To manually unregister the wizard, use the command from [Table 19 on page 63](#) but replace the `-i` option with `-u`.

Table 19 Command to register the wizard on Windows

With this database or application	Type this command to register the wizard
DB2	<code>nsrdb2ra.exe -i</code>
Lotus	<code>nsr Lotusra.exe -i</code>
Oracle	<code>nsrorara.exe -i</code>

Postinstall tasks on a DB2 server

After NMDA is installed on a DB2 server, perform the following tasks:

1. Stop the database engine with the **db2stop** command.
2. Unset the DB2_VENDOR_INI registry variable:

```
db2set DB2_VENDOR_INI=
```

3. For DB2 9.5 or later *only*, use the **db2hdr.exe** utility to increase the stack size for the **db2syscs.exe** file to a minimum of 512. For example:

```
C:\Program Files\IBM\SQLLIB\BIN> ..\misc\db2hdr db2syscs.exe /s 512,32
```

Note: Insufficient stack size might cause backup failure with the error SQL2079N return code 30.

4. Start the database engine with the **db2 start** command.

Postinstall tasks on an Informix server

After NMDA is installed on an Informix server, perform the following tasks:

- ◆ [“Verify the NMDA Informix library on an Informix server” on page 63](#)
- ◆ [“Update the sm_versions file on an Informix server” on page 64](#)

Verify the NMDA Informix library on an Informix server

Verify that the NMDA Informix library has been correctly updated:

1. Log in as informix.
2. Go to the Informix configuration directory. For example:

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

3. Open the %ONCONFIG% file in Notepad, and verify that the following variable settings are present. If required, add the variable settings:

```
ISM_DATA_POOL Informix_data_pool_name
ISM_LOG_POOL Informix_log_pool_name
BAR_BSALIB_PATH NetWorker_install_path\bin\libxbsa.dll
```

where:

- *Informix_data_pool_name* is the name of the NetWorker volume pool for the Informix dbspace backups.
- *Informix_log_pool_name* is the name of the NetWorker volume pool for the Informix logical log backups.

The NetWorker administrator creates the volume pools on the NetWorker server that is used to back up the Informix database. The NetWorker documentation provides details on how to set up volume pools.



IMPORTANT

Replace `libxbsa.dll` with `libxbsa32.dll` in the `BAR_BSALIB_PATH` setting if 32-bit NMDA was installed for 32-bit Informix on 64-bit Windows according to [“Complete the installation on 64-bit Windows for coexistence of 32-bit and 64-bit applications” on page 62.](#)

- Restart the Informix application.

Update the `sm_versions` file on an Informix server

You must update the NetWorker XBSA library links because ON-Bar does *not* automatically update the required version values for the shared NetWorker XBSA library in the `sm_versions` file. Without the required values for NetWorker XBSA, ON-Bar 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.
```

Ensure that the `sm_versions` file in the `$INFORMIXDIR/etc` directory includes the following line:

```
1|1.0.1|nwbsa|1
```

For example, when you display the `sm_versions` file content, you should see that line:

```
type sm_versions
```

```
1|1.0.1|nwbsa|1
```

Postinstall tasks on a Lotus Notes client

Document-level recovery enables Lotus Notes users to recover individual Notes documents.

To add the document-level recovery feature to Lotus Notes client software:

- Close the Lotus Notes client software.
- Copy the `nsrdoclb.dll` file from the NMDA software directory to the Notes directory, which is typically `%SystemDrive%\Lotus\Notes`.
- Add the following line to the `notes.ini` file located in the Notes directory:

```
AddInMenus=nsrdoclb.dll
```

If the `AddInMenus` line already exists, place a comma after the existing entry and add `nsrdoclb.dll` after the comma, as follows:

```
AddInMenus=command.dll, nsrdoclb.dll
```

- Start the Lotus Notes client software.

After you open the Lotus database, the following menu choices are accessible from the **Actions** menu in the Lotus Notes client:

- ◆ **NMDA Lotus - Restore Selected Documents**
- ◆ **NMDA Lotus - Restore Deleted Documents**

[“Task 1: Perform the preuninstall tasks on a Lotus Notes client” on page 68](#) provides details on how to remove the document-level recovery feature.

The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides more information about document-level recovery on a Lotus Notes client.

Postinstall tasks on a Sybase server on Windows AMD64/EM64T

After you install NMDA on a Sybase server on Windows, perform the appropriate postinstall tasks:

- ◆ On Windows AMD64/EM64T:
 1. Go to the win_x86 directory that contains the NMDA installation files, as described in [“Access the software on Microsoft Windows”](#) on page 58.
 2. Copy the libnsrsyb64.dll file from the win_x86 directory to %SYBASE%\%SYBASE_ASE%\lib\libnsrsyb.dll.
- ◆ On Windows Intel, copy the file C:\Program Files\Legato\nsr\bin\libnsrsyb.dll to the directory %SYBASE%\%SYBASE_ASE%\lib.

Postinstall tasks after upgrading from a legacy NetWorker module

If you have been using a legacy NetWorker module (NMDB2, NMI, NML, NMO, or NMS), ensure that you read this section.

After you upgrade from a legacy NetWorker module to NMDA, you must convert the existing scheduled backup configuration to the NMDA configuration. Otherwise, the scheduled backup will fail after the upgrade. The recommended method for the backup configuration conversion is to use the **nsrdaadmin.exe** command.

Perform the configuration conversion according to [“Postinstall tasks after upgrading from a legacy NetWorker module”](#) on page 40, which also applies to Microsoft Windows. Simply change the executable names to include the .exe ending for Windows.

Installing on a cluster, DB2 DPF, or Oracle RAC on Microsoft Windows

NMDA release 1.0 supports active-passive cluster, DB2 DPF, and Oracle RAC configurations on all clusters supported by the NetWorker client and database or application server installed on the NMDA host. NMDA also supports Oracle RAC configurations on all Oracle OSD clusterware versions supported by Oracle.

The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the operating system and database or application versions supported with cluster, DB2 DPF, and Oracle RAC systems.

Install NetWorker client and NMDA software on *each* cluster node, DB2 DPF node, or Oracle RAC node to be used for backup and restore operations:

1. Meet all the requirements in [“Installation requirements” on page 18](#).
2. Follow the instructions in [“Installing on a single Microsoft Windows host” on page 57](#).

The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides information on how to configure the NMDA software on a cluster, DB2 DPF, or Oracle RAC system.

Maintaining the installation on Microsoft Windows

After the NMDA software is installed on Windows, you can run the **Setup** program in maintenance mode to repair or remove the existing installation.

Run the Setup program in maintenance mode

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

1. Ensure that you are logged in as the Windows system administrator.
 2. Ensure that no database or application backups are running.
 3. Go to the directory that contains the NMDA installation files, as described in [“Access the software on Microsoft Windows” on page 58](#), and run the program for the specific software:
 - Run `networkr\setup.exe` for the NMDA software.
 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 NMDA installation. [“Repair an NMDA installation” on page 67](#) provides details.
 - **Remove** — Depending on the `setup.exe` program run in [step 3](#), allows you to remove the following:
 - With the `networkr\setup.exe` program, remove the NMDA software.
- You can also use the **Windows Control Panel Add or Remove** program to remove the components. [“Uninstalling on Microsoft Windows” on page 68](#) provides details.

Repair an NMDA installation

To repair an NMDA installation:

1. Start the **Setup** program in maintenance mode. [“Run the Setup program in maintenance mode” on page 67](#) 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 NMDA files as required.

At the end of the install, the **InstallShield Wizard Completed** dialog box displays a message on how to start the backup configuration wizard. The *EMC NetWorker Module for Databases and Applications Release 1.0 Administration Guide* provides more information on the configuration wizard.

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

Uninstalling on Microsoft Windows

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

To uninstall NMDA release 1.0 on a supported Microsoft Windows operating system, perform the following steps:

1. [“Task 1: Perform the preinstall tasks on a Lotus Notes client” on page 68](#)
2. [“Task 2: Uninstall the NMDA software on Microsoft Windows” on page 68](#)

Task 1: Perform the preinstall tasks on a Lotus Notes client

To remove the document-level recovery feature on a Lotus Notes client:

1. Close the Lotus Notes client software.
2. Remove the nsrdoclb.dll entry from the notes.ini file located in the Notes directory.
3. Delete the nsrdoclb.dll file from the Notes directory.
4. Restart the Lotus Notes client software.

Task 2: Uninstall the NMDA software on Microsoft Windows

Uninstall NMDA on Microsoft Windows according to the appropriate instructions:

- ◆ [“Uninstall 32-bit NMDA on 64-bit Windows with 32-bit and 64-bit coexistence” on page 68](#)
- ◆ [“Uninstall NMDA on Windows \(standard method\)” on page 69](#)

Uninstall 32-bit NMDA on 64-bit Windows with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA on a 64-bit Windows system where 32-bit and 64-bit versions of NMDA coexist, *manually* deleting the files listed in [Table 20 on page 68](#).

Table 20 Uninstall 32-bit NMDA on 64-bit Windows with 32-bit and 64-bit coexistence

To uninstall 32-bit NMDA for this application	Manually delete these files
32-bit DB2	NetWorker_install_path\bin\libnsrdb232.dll NetWorker_install_path\bin\nsrdasv32.exe NetWorker_install_path\bin\nsrdaprobe32.exe NetWorker_install_path\bin\nsrdb2log32.exe
32-bit Informix	NetWorker_install_path\bin\libxbsa32.dll NetWorker_install_path\bin\nsrdasv32.exe NetWorker_install_path\bin\nsrdaprobe32.exe
32-bit Lotus	NetWorker_install_path\bin\nsrdasv32.exe NetWorker_install_path\bin\nsrdaprobe32.exe NetWorker_install_path\bin\nsrdocr32.exe NetWorker_install_path\bin\nsrnotesrc32.exe

Uninstall NMDA on Windows (standard method)

If you are *not* uninstalling 32-bit NMDA on a 64-bit Windows system where 32-bit and 64-bit versions of NMDA coexist, use one of the following standard methods to uninstall the NMDA software:

- ◆ [“Uninstall NMDA by using the Setup program” on page 69](#)
- ◆ [“Uninstall NMDA by using the Control Panel” on page 69](#)

Uninstall NMDA by using the Setup program

To uninstall NMDA by using the **Setup** program:

1. Log in as the Windows system administrator.
2. Ensure that no database or application backups are running.
3. Uninstall the NMDA software:
 - a. Run the `networkr\setup.exe` program, as described in [“Run the Setup program in maintenance mode” on page 67](#).
 - 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 NMDA software.

Uninstall NMDA by using the Control Panel

To uninstall NMDA 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. In the **Windows Control Panel**, select **Add or Remove Programs**. (On Windows 2008 or Vista, select **Programs and Features**.)
4. In the **Control Panel Add or Remove Programs** window, select **NetWorker Module for Databases and Applications**, and click **Remove**.

This chapter includes the following sections:

- ◆ How NetWorker software is licensed..... 72
- ◆ The evaluation process 72
- ◆ The licensing process 73
- ◆ Client connection licenses 74
- ◆ NMDA license 74
- ◆ Using nsrlic to gather license information..... 74
- ◆ Managing licenses 77

How NetWorker software is licensed

NetWorker software and added features, such as modules, are installed in evaluation mode with all of the features enabled for a period of 30 days. NetWorker software is licensed by the entry of enabler and authorization codes on the server for the NetWorker environment. Without these codes, the software or added features will *not* run beyond the evaluation period.

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

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

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

The evaluation process

You can evaluate NetWorker software in two ways:

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

Evaluating a new installation

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

By the end of the evaluation period, you must purchase, enter, and authorize a base enabler to continue to use the NetWorker software to back up data. The base enabler is the license that enables the edition purchased.

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

Evaluating features on an existing installation

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

To obtain a temporary enabler code, do one of the following:

- ◆ Go to the <http://Powerlink.EMC.com> website, select **Support > Software Downloads and Licensing > License Management**, and then follow the instructions for your product.
- ◆ Refer to the EMC Information Protection and Availability Product Families Media Kit.

Note: Evaluation enablers and licenses from other NetWorker modules are *not* valid for NMDA release 1.0.

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

To view the license alert:

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

By the end of the evaluation period, you must purchase, install, and authorize the corresponding license enablers to continue to use modules or features you have evaluated. [“The licensing process” on page 73](#) provides instructions.

Entering a temporary enabler code

To enter the temporary enabler code:

1. Start the **NetWorker Management Console** software.
2. Open the **Administration** window:
 - a. In the **Console** window, click **Enterprise**.
 - b. In the left pane, select a NetWorker server in the **Enterprise** list.
 - c. In the right pane, select the application.
 - d. From the **Enterprise** menu, click **Launch Application**.The **Administration** window is launched as a separate application.
3. From the **Administration** window, click **Configuration**.
4. In the left pane, select **Registration**.
5. From the **File** menu, select **New**.
6. In the **Enabler Code** attribute, type the enabler code.
7. (Optional) In the **Comment** attribute, type a description of the license.
8. Click **OK**.

The licensing process

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

The license enabler code that you purchase is valid for 45 days, as a registration period. During the registration period, you must obtain and enter a corresponding authorization code. More instructions for purchasing, enabling, and authorizing the NetWorker software are provided in [“The evaluation process” on page 72](#).



IMPORTANT

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

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

Client connection licenses

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

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

NMDA license

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

Detailed information on the licensing requirements for NetWorker modules is available in the *EMC Price Guide*.

Using nsrlic to gather license information

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

Querying the local server

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

- ◆ On UNIX:

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

- ◆ On Windows:

```
NetWorker_install_dir\bin\nsrlic
```

A report is produced with various quantities and servers indicated. [Example 1 on page 75](#) provides an example report.

Example 1 Report from the nsrlic command

```

# /usr/sbin/nsrlic
connecting to bu-sunburn.lss.emc.com ...
12116:nsrlic: License Summary:
66441:nsrlic: Available: sv=12, virt=0, ndmp=0
64047:nsrlic: Borrowed: sv_borrowed=0
66442:nsrlic: Remaining: sv=3, virt=0, ndmp=0
69792:nsrlic: Connected Clients:(9)
bu-automne bu-cosmos bu-galaxy.lss.emc.com bu-henry bu-orantx64ja
bu-pecan bu-sunburn.lss.emc.com bu-sunscreen.lss.emc.com bu-willow
12128:nsrlic: NetWorker Module for Databases and Applications, Unix
Client/1: Available=1, Remaining=0, Used=1

STANDARD CLIENT LICENSES
    Available: 12
    Used: 9
    Loaned to Virtual: 0
    Remaining: 3
    Connected Clients

VIRTUAL CLIENT LICENSES
    Available: 0
    Borrowed from Server: 0
    Used: 0
    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: 1
    HP MPE: 0
    Linux: 2
    NetWare: 0
    Network Appliance: 0
    IBM DYNIX/ptx: 0
    SGI: 0
    Solaris: 2
    SunOS: 0
    UnixWare: 0
    Windows NT Server: 4

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

    Defined Clients          PRE-5.0 CLIENT TYPES

APPLICATION LICENSES
NetWorker Module for Databases and Applications, Unix Client/1
    Available: 1
    Used: 1
    Remaining: 0

```

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 75](#), "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

```
# nsrlic -v -s bu-sunburn
connecting to bu-sunburn.lss.emc.com ...
12116:nsrlic: License Summary:
66441:nsrlic: Available: sv=12, virt=0, ndmp=0
64047:nsrlic: Borrowed: sv_borrowed=0
66442:nsrlic: Remaining: sv=3, virt=0, ndmp=0
69792:nsrlic: Connected Clients: (9)
  bu-automne bu-cosmos bu-galaxy.lss.emc.com bu-henry bu-orantx64ja
bu-pecan bu-sunburn.lss.emc.com bu-sunscreen.lss.emc.com bu-willow
12128:nsrlic: NetWorker Module for Databases and Applications, Unix
Client/1: Available=1, Remaining=0, Used=1

STANDARD CLIENT LICENSES
    Available: 12
    Used: 9
    Loaned to Virtual: 0
    Remaining: 3
    Connected Clients: bu-automne, bu-cosmos,
                      bu-galaxy.lss.emc.com,
                      bu-henry, bu-orantx64ja,
                      bu-pecan,
                      bu-sunburn.lss.emc.com,
                      bu-sunscreen.lss.emc.com,
                      bu-willow;

VIRTUAL CLIENT LICENSES
    Available: 0
    Borrowed from Server: 0
    Used: 0
    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: 1
        HP MPE: 0
        Linux: 2
        NetWare: 0
        Network Appliance: 0
        IBM DYNIX/ptx: 0
        SGI: 0
        Solaris: 2
        SunOS: 0
        UnixWare: 0
        Windows NT Server: 4
WORKSTATION CLIENT TYPES
        DOS: 0
        Macintosh: 0
        OS/2: 0
        Windows 3.1x: 0
        Windows 95: 0
        Windows NT Workstation: 0
        UX/4800: 0
        Others: 0
        Defined Clients: bu-babyback, bu-babyrac,
                        bu-charity, bu-february,
                        bu-pistachio, bu-printemps,
                        bu-split, bu-universe,
                        hypnos.lss.emc.com, jan;
PRE-5.0 CLIENT TYPES
APPLICATION LICENSES
NetWorker Module for Databases and Applications, Unix Client/1
        Available: 1
        Used: 1
        Remaining: 0
        Connected Clients: bu-sunscreen.lss.emc.com;

```

Managing licenses

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

To begin to implement the NetWorker License Manager:

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

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

