

**Release Notes**P/N 300-006-993  
REV A09

December 24, 2009

These release notes contain supplemental information about EMC NetWorker Module for Oracle (NMO) release 5.0. Topics include:

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Before installing NMO release 5.0, and then periodically after the installation, refer to the latest release of this document on the Powerlink website at <http://Powerlink.EMC.com>.

## Revision history

The following table presents the revision history of this document.

Revision	Date	Description
A09	December 24, 2009	Added the following: <ul style="list-style-type: none"> <li>Information about Oracle11gR2 support on <a href="#">page 4</a>.</li> <li>Information about deduplication support on specific platforms in "Deduplication backups and restores" on <a href="#">page 6</a>.</li> </ul>
A08	October 14, 2009	Added the Note about the operating systems on which NMO 5.0 supports deduplication in "Deduplication backups and restores" on <a href="#">page 6</a> .
A07	September 9, 2009	Added the following: <ul style="list-style-type: none"> <li>Note about 64-bit operating system requirements in "Environment and system requirements" on <a href="#">page 19</a>.</li> <li>"Installation guide — Modify information on 64-bit operating system requirements" on <a href="#">page 41</a>.</li> </ul>
A06	July 22, 2009	Deleted information in "Deduplication backups and restores" on <a href="#">page 6</a> that deduplication operations do not support cluster or RAC backups or restores. Added the following: <ul style="list-style-type: none"> <li>"NW019011" on <a href="#">page 35</a>.</li> <li>"Administration guide — Modify information on deduplication support with cluster or RAC" on <a href="#">page 42</a>.</li> <li>"Administration guide — Modify information on user group privileges for Oracle backups" on <a href="#">page 42</a>.</li> <li>"Administration guide — Modify information on configuring a scheduled deduplication backup" on <a href="#">page 42</a>.</li> </ul>
A05	June 12, 2009	Added "NW018894" on <a href="#">page 35</a> .
A04	June 8, 2009	Added "LGTsc30351" on <a href="#">page 35</a> .

Revision	Date	Description
A03	June 1, 2009	<p>Added the following:</p> <ul style="list-style-type: none"> <li>Note under <a href="#">“New features and changes” on page 5</a> that NMO 5.0 does <i>not</i> support the remote update of language packs from a previous release to release 5.0.</li> <li><a href="#">“L10N support” on page 10</a>.</li> <li><a href="#">“LGTsc07856” on page 27</a> (moved from “Fixed problems” to “Known problems and limitations” section).</li> <li><a href="#">“LGTsc27377” on page 33</a>.</li> <li><a href="#">“LGTsc28445” on page 34</a>.</li> <li><a href="#">“LGTsc28446” on page 34</a>.</li> <li><a href="#">“LGTsc28890” on page 34</a>.</li> <li><a href="#">“LGTsc29488” on page 35</a>.</li> <li><a href="#">“Installation guide — Modify information on the remote update of NMO language packs” on page 41</a>.</li> <li><a href="#">“Administration guide — Modify information on PowerSnap Module requirement for L10N support” on page 42</a>.</li> </ul>
A02	March 31, 2009	<p>Added the following:</p> <ul style="list-style-type: none"> <li><a href="#">“Prevent possible degradation of NMO restore performance with Oracle 10.2 or later” on page 36</a>.</li> <li><a href="#">“Where to find the most recent supported operating system and version information” on page 41</a>.</li> </ul>
A01	March 26, 2009	Initial release of this document.

## Product description

NMO software is an add-on module for the EMC<sup>®</sup> NetWorker<sup>®</sup> server that augments the backup and recovery system of the Oracle Server and provides a storage management solution to address the need for cross-platform support of enterprise applications.

NMO release 5.0 supports the following major features:

- ◆ Regular (nonproxy) backups and restores of Oracle database files.
- ◆ Proxy backups and restores of Oracle database files on specific types of primary storage devices, performed by the NMO, NetWorker server, and appropriate NetWorker PowerSnap<sup>™</sup> Module software. [“Proxy backups and restores” on page 37](#) provides more information.
- ◆ Deduplication backups and restores, performed by the NMO, NetWorker server, and Avamar<sup>®</sup> server software. [“Deduplication backups and restores” on page 6](#) provides more information.
- ◆ Probe-based backups (also known as *event-based backups*) that are triggered when specified conditions are met. [“Probe-based backups” on page 7](#) provides more information.
- ◆ Regular Oracle backups and restores on a VMware Virtual Machine on an ESX server, including support of the following advanced features:
  - Distributed Resource Scheduler (DRS)
  - VMotion[“VMware support” on page 8](#) provides more information.

- ◆ Backup and recovery configuration wizards that are integrated with the NetWorker Management Console (NMC) release 7.5 or later. “[Configuration wizards](#)” on page 8 provides more information.
- ◆ Use of the `nsrnmoadmin` command to migrate a legacy backup configuration to the configuration framework supported by the NMC-based backup configuration wizard. “[Migration of legacy backup configurations](#)” on page 9 provides more information.
- ◆ Internationalization and localization support for both regular and proxy backups and restores, with specified limitations. “[Internationalization \(I18N\) and localization \(L10N\) support](#)” on page 10 provides more information.
- ◆ Save set bundling and staging operations through the NetWorker server.
- ◆ Enforcement of policy uniformity to ensure that dependent save sets in the same scheduled backup cycle or same save set bundle receive the same browse and retention policies.
- ◆ Use of the `nsrnmoinfo` command line program to determine the NetWorker volumes that contain the Oracle backup pieces for a restore.
- ◆ 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.
- ◆ Support for Oracle11gR2 on specific platforms, as described in the *EMC Information Protection Software Compatibility Guide* on EMC Powerlink<sup>®</sup>. “[Oracle11gR2 specific features](#)” on page 5 describes the features specific to Oracle11gR2 that NMO supports.

“[New features and changes](#)” on page 5 provides more information on the major new features in NMO release 5.0.

The *EMC NetWorker Module for Oracle Release 5.0 Installation Guide* provides details on how to install or update to NMO release 5.0.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides details on how to use the NMO release 5.0 software features.

The *EMC Information Protection Software Compatibility Guide* on the Powerlink website at <http://Powerlink.EMC.com> provides details on the operating systems, Oracle Server releases, and other software components that NMO release 5.0 supports.

## Oracle11gR2 specific features

NMO release 5.0 supports the following major features that are specific to Oracle11gR2:

- ◆ Enhanced DUPLICATE command that can duplicate a database *without* connecting to a target database, by using the NMO backups of the target database (connections to a catalog and auxiliary database are required)
- ◆ Tablespace Point-in-Time Recovery (TSPITR) enhancement that recovers a dropped tablespace and recovers to a point in time before the tablespace is brought online
- ◆ Advanced Compression Option

**Note:** Do *not* enable both Oracle and NetWorker compression for Oracle backups.

- ◆ Oracle Grid infrastructure for either a standalone database or a RAC
- ◆ Oracle ASM Dynamic Volume Manager (Oracle ADVM), a new feature of Oracle ASM that provides volume management services and a standard disk device driver interface to clients
- ◆ Policy-managed RAC databases

## New features and changes

NMO release 5.0 replaces all of the preceding NMO releases on the supported UNIX and Windows operating systems.

**Note:** NMO 5.0 does *not* support the use of the software distribution feature to remotely update any NMO language packs from a previous release to release 5.0.

The following sections describe the major new or enhanced features in NMO release 5.0:

- ◆ [“Deduplication backups and restores” on page 6](#)
- ◆ [“Probe-based backups” on page 7](#)
- ◆ [“VMware support” on page 8](#)
- ◆ [“Configuration wizards” on page 8](#)
- ◆ [“Migration of legacy backup configurations” on page 9](#)
- ◆ [“Internationalization \(I18N\) and localization \(L10N\) support” on page 10](#)
- ◆ [“Improved monitoring of manual operations in NMC” on page 12](#)
- ◆ [“Improved reporting of proxy operations in NMC” on page 12](#)
- ◆ [“Improved security measures for sensitive data” on page 12](#)
- ◆ [“IPv6 support \(regular backups and restores\)” on page 13](#)
- ◆ [“NetWorker core debug messages” on page 13](#)
- ◆ [“New platform support for proxy operations” on page 13](#)
- ◆ [“NMO parameter changes” on page 13](#)

- ◆ [“NWORA resource file requirements” on page 14](#)
- ◆ [“Oracle operating system authentication” on page 14](#)
- ◆ [“Restore from a specific volume pool” on page 14](#)

The *EMC NetWorker Module for Oracle Release 5.0 Installation Guide* provides details on any installation requirements for these features.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides details on how to use these features.

[“Fixed problems” on page 15](#) lists the key bug fixes and requests for enhancement that are implemented in NMO release 5.0.

[“Known problems and limitations” on page 19](#) provides details on known problems and limitations that exist in NMO release 5.0.

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## Deduplication backups and restores

NMO release 5.0 provides new support for deduplication backups and restores, which requires NetWorker server and client release 7.5 or later.

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**Note:** When NMO 5.0 is installed with the NetWorker client 7.5 or later, NMO 5.0 supports deduplication on all the operating systems on which the NetWorker client 7.5 supports file system deduplication. The *EMC Information Protection Software Compatibility Guide* on Powerlink outlines the operating systems supported for file system deduplication.

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NMO 5.0 supports deduplication on HP-UX Itanium with NetWorker client release 7.6 or later. You must enable the deduplication support on HP-UX Itanium according to the procedure in [“Deduplication support on HP-UX Itanium” on page 7](#).

NMO 5.0 does *not* support deduplication on Solaris AMD64/EM64T.

A deduplication NMO backup can be a manual or scheduled backup. During the deduplication backup, an Avamar server (the NetWorker deduplication node) deduplicates the data from the NMO client. After an initial full backup, the Avamar server performs the following:

- ◆ Backs up only the unique data blocks (*not* entire files) that contain changes.
- ◆ Maintains only a single instance of any unique data block.

Since data deduplication is performed on the client host, deduplication backups typically require less time, network bandwidth, and storage space than regular NMO backups.

NMO release 5.0 includes several new parameters for the configuration of deduplication backups, as described in [“NMO parameter changes” on page 13](#).

Deduplication operations do *not* support the following:

- ◆ Oracle proxy backups or restores.
- ◆ Internet Protocol version 6 (IPv6).

- ◆ AES encryption, checksumming, or compression of deduplicated data through the parameter `NSR_AES_ENCRYPTION`, `NSR_CHECKSUM`, or `NSR_COMPRESSION`, respectively.
- ◆ Cloning or staging of deduplicated data on the Avamar server.

**Note:** Deduplicated data on the Avamar server can only be *replicated* to another Avamar server that has been configured as a replication node by EMC Professional Services. Avamar documentation and the NetWorker administration guide provide details on replication of deduplicated data.

## Deduplication support on HP-UX Itanium

NMO release 5.0 supports deduplication on HP-UX Itanium with NetWorker client release 7.6 or later.

To enable the NMO duplication support on HP-UX Itanium, you must create three symbolic links on the NMO client host *before* you run a deduplication backup:

```
ln -s /opt/networker/lib/hpux32/libgcc_s.so.0
/opt/networker/lib/pa11_32/libgcc_s.so.0

ln -s /opt/networker/lib/hpux32/libstdc++.so.6
/opt/networker/lib/pa11_32/libstdc++.so.6

ln -s /opt/networker/lib/hpux32/libavctl.so
/opt/networker/lib/pa11_32/libavctl.so
```

## Probe-based backups

NMO release 5.0 provides new support for probe-based backups, which requires the following NetWorker software releases:

- ◆ NetWorker server release 7.5 or later
- ◆ NetWorker client release 7.4 or later

A probe-based backup (also known as an *event-based backup*) is a type of scheduled backup that is started by the NetWorker server when specified conditions are met. (A regular scheduled backup is started at a specified time.)

Probe-based backups are *not* supported for proxy backups or cluster/RAC environments.

A probe-based NMO backup starts when *both* of the following are true:

- ◆ The current time is within a specified window of time (the backup window).
- ◆ One of the following conditions is met:
  - A specified amount of time has elapsed since the previous probe-based backup.
  - One or all of the probes associated with the backup are successful, depending on the probe success criteria specified in the backup configuration.

There are two different types of probes:

- ◆ An NMO probe that is implemented through the **nsrnmoprobe** program, which is included with the NMO software. The **nsrnmoprobe** program checks for either of the following conditions:
  - The number of Oracle redo logs generated since the previous probe-based backup exceeds a number known as the change threshold.
  - A new database incarnation (reset log) has occurred since the previous probe-based backup.
- ◆ A user-defined probe that checks if any other user-defined condition (other than the number of generated Oracle redo logs) has been met since the previous probe-based backup. To implement a user-defined probe, you must create a new script or program that checks for the condition.

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## VMware support

NMO release 4.5 provided support for regular backups and restores of an Oracle database installed on a VMware Virtual Machine (VM) on an ESX server.

NMO release 5.0 extends this support for the following advanced features of a VMware ESX server:

- ◆ **VMotion** — The VMotion feature enables migration of virtual machines from one ESX server to another while the servers are on. The migration is seamless to the applications running on the virtual machines, and a user does not experience any disconnection. If a migration occurs during an NMO backup or restore, the backup or restore is *not* interrupted.
- ◆ **Distributed Resource Scheduler (DRS)** — The DRS feature enables dynamic balancing and allocation of resources across multiple ESX servers. Depending on the DRS policies set by the user, the DRS can migrate or recommend that users migrate a virtual machine to a different ESX server by using VMotion. DRS can also start (at boot-up time) a virtual machine on a different ESX server. Since this feature uses VMotion, if a migration occurs during an NMO backup or restore, the backup or restore is *not* interrupted.

VMware documentation provides details on these advanced features.

NMO support of these VMware features requires NetWorker release 7.5 or later.

NMO supports VMware features for regular backups and restores, *not* for proxy backups and restores.

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## Configuration wizards

The configuration wizards used in NMO release 4.5 or earlier are replaced by new backup and recovery configuration wizards that are integrated with NMC release 7.5 or later.

Configuration wizard plug-in components are installed with NMO release 5.0 on the NMO client host. NMC loads the NMO wizard plug-in at run time. You can run the NMO wizards from the NetWorker Console Administration window, which you can start on any supported host by using a web browser session and specifying the Console server URL.

The new wizards provide improved security and ease of management for backup and recovery configurations, compared to the wizards from NMO release 4.5 or earlier.

NMO support of the new wizards requires NMC server, NetWorker server, and NetWorker client release 7.5 or later.

The backup configuration wizard can be used to configure scheduled Oracle backups (either typical or customized), and provides an option to save the backup configuration settings to a `nsrnmno` script or RMAN script on disk.

The backup configuration wizard can modify the following types of backup configurations:

- ◆ Configurations created with the NMC-based wizard.
- ◆ Legacy configurations migrated to the new configuration framework that is supported by the NMC-based wizard, as described in [“Migration of legacy backup configurations” on page 9](#).

The recovery configuration wizard can be used to configure RMAN scripts for either of the following:

- ◆ Oracle data restores to the original host.
- ◆ Oracle database duplication to either a local or remote host.

The configuration wizards provide the following features:

- ◆ Consistent look and feel with other NetWorker products.
- ◆ Administrator or root privileges are not required on the host where the wizard runs. However, specified NetWorker and Oracle user privileges are required to configure a scheduled backup.
- ◆ The configuration wizards, launched from NMC, may be run on a host that has no NetWorker software installed and no direct communication with the NMO client being configured.

The configuration wizards do *not* support the following:

- ◆ Configuration of backups or restores in a RAC environment.
- ◆ Configuration of proxy backups or restores that require a PowerSnap Module. Proxy backups and restores must be configured *without* the wizard.
- ◆ Configuration of two different database backups in the same Client resource. A separate Client resource must be created for each database to be backed up on the same client host.
- ◆ Modification of a backup configuration that was created either with the wizard from NMO 4.5 or earlier, or with the legacy method (*without* a wizard).

## Migration of legacy backup configurations

The backup configuration wizard in NMO release 5.0 stores the scheduled backup configuration in the NetWorker Client resource by using a configuration storage framework that is incompatible with the configurations created either through the wizard from NMO release 4.5 or earlier, or through a legacy method (*without* a wizard).

If you have a backup configuration that was created with the wizard from NMO release 4.5 or earlier, or with a legacy configuration method, you must migrate the configuration before you can use the new wizard to modify it. The recommended migration method is to use the **nsrnmoadmin** command with the required command options.

Migration of a proxy backup configuration is *not* supported.

NMO support of migration with the **nsrnmoadmin** command requires the NetWorker server and client release 7.5 or later.

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## Internationalization (I18N) and localization (L10N) support

The following sections describe internationalization (I18N) and localization (L10N) features that NMO release 5.0 supports in a non-English locale.

### I18N support

NMO release 4.5 supported I18N for regular backups and restores. NMO release 5.0 extends the I18N support for proxy backups and restores with a supported PowerSnap Module release.

NMO release 5.0 provides I18N support, whereby NMO can operate in a non-English environment or locale *without* itself generating non-ASCII data. Once NMO I18N support is set up, NMO can process and display non-ASCII data that is *passed to it* by the operating system, NetWorker software, and Oracle software. The non-ASCII data can include text messages, dates, times, numbers, and so on.

NMO localization (L10N) support is a separate NMO feature, whereby NMO can itself *generate* non-ASCII data and print the data to the user interface. NMO L10N requires the installation of NMO language packs, whereas NMO I18N does *not* require the installation of NMO language packs.

NMO I18N is supported for the following:

- ◆ Regular (nonproxy) backups and restores
- ◆ Proxy backups and restores with a supported PowerSnap Module release, 2.4 SP3 or later

The extent of the NMO I18N support is dependent on the following:

- ◆ I18N support provided by the operating system on the NMO client host.
- ◆ I18N support provided by the NetWorker client and server software.
- ◆ National Language Support (NLS) or globalization support provided by the Oracle software.

The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the different languages supported and the operating system, Oracle Server, and NetWorker software requirements for NMO I18N.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on NMO I18N and how to set it up.

### L10N support

NMO release 4.5 supported L10N for regular backups and restores. NMO release 5.0 extends the L10N support for proxy backups and restores with a supported PowerSnap Module release.

NMO release 5.0 provides L10N support, whereby NMO can itself generate non-ASCII character and numeric data based on the locale of the user, and output the data to the user interface. This capability requires the installation of the appropriate NMO language packs in non-English locales. The non-ASCII data generated by NMO is printed to the command line or to specific log files or wizard screens.

- ◆ When NMO I18N is set up, NMO can process and display non-ASCII data that is *passed to it* by the operating system, NetWorker software, and Oracle software.
- ◆ When NMO L10N is set up by also installing the required NMO language packs, NMO can also *generate* non-ASCII data, localized according to the user locale. The non-ASCII data can include text messages, dates, times, and numeric values, displayed in the locale-dependent format.

NMO L10N is supported for the following:

- ◆ Regular backups and restores
- ◆ Proxy backups and restores with a supported PowerSnap Module release, 2.4 SP3 or later

The extent of the NMO L10N support is limited by the following:

- ◆ L10N support provided by the operating system on the NMO client host.
- ◆ L10N support provided by the NetWorker client and server software.
- ◆ National Language Support (NLS) or globalization support provided by the Oracle software.

The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the different languages supported and the operating system, Oracle Server, and NetWorker software requirements for NMO L10N.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on NMO L10N and how to set it up.

[Table 1 on page 11](#) lists the supported locales.

**Table 1 Supported locales (page 1 of 2)**

Language	Operating system				
	Windows	Solaris	HPUX	AIX	Linux
English	English	OS Default Locale	OS Default Locale	OS Default Locale	OS Default Locale
French	French (France)	UTF-8 ISO8859-1 ISO8859-15	UTF-8 ISO8859-1 ISO8859-15	UTF-8 ISO8859-1 ISO8859-15	UTF-8 ISO8859-1 ISO8859-15

Table 1 Supported locales (page 2 of 2)

Language	Operating system				
	Windows	Solaris	HPUX	AIX	Linux
Japanese	Japanese (Japan)	UTF-8 EUC-JP S-JIS	UTF-8 EUC-JP	UTF-8 EUC-JP	UTF-8 EUC-JP S-JIS
Chinese	Chinese (China)	UTF-8 EUC-CN GB18030 GBK	UTF-8 EUC-CN	UTF-8 EUC-CN	UTF-8 EUC-CN GB18030 GBK
Korean	Korean (Korea)	UTF-8	UTF-8	UTF-8	UTF-8

### Improved monitoring of manual operations in NMC

NMO release 5.0 supports the improved monitoring of manual backups and restores in NMC. Detailed displays of information about manual NMO backups and restores are available under the Sessions tab of the NMC Monitor window.

### Improved reporting of proxy operations in NMC

The Group Details window in NMC reports detailed information for proxy backups. The information includes a complete listing of all the save set sessions run, the total size of the backups, and the sizes of the bootstrap and index save sets.

The Sessions tab of the Monitor window in NMC reports detailed information for proxy restore sessions.

### Improved security measures for sensitive data

NMO release 5.0 uses NetWorker 7.5 or later lockbox services and encryption to ensure the secure storage and transfer of sensitive data and passwords:

- ◆ When you configure NMO backups through the NMC-based configuration wizard, the wizard uses the lockbox services to store sensitive data.
- ◆ When you migrate a legacy backup configuration to the configuration framework supported by the NMC-based wizard, the migration operation uses the lockbox services to store sensitive data.
- ◆ Sensitive data and passwords are encrypted before being transferred by the configuration wizards and NMO programs such as **nsrnmoadmin**, **nsrnmoprobe**, and **nsrnmomstart**.

Lockbox password management is implemented through the NetWorker server.

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## IPv6 support (regular backups and restores)

NMO release 5.0 provides new support of Internet Protocol version 6 (IPv6) for regular (nonproxy) backups and restores.

The NetWorker installation guide provides details on the use of NetWorker software in an IPv6 environment.

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## NetWorker core debug messages

NMO release 5.0 includes a new parameter, `NSR_DPRINTF`, for use with Tech Support *only*. You can set the parameter to specify that NetWorker core debug messages are printed to the file specified by `NSR_DEBUG_FILE`. (If `NSR_DEBUG_FILE` is *not* set, the debug messages are printed to the default location.)

**Note:** The `NSR_DPRINTF` parameter must be set through the **parms** options, *not* through the **send** command. The `NSR_DEBUG_LEVEL` parameter must also be set.

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## New platform support for proxy operations

NMO release 5.0 provides new support of the Linux AMD64/EM64T platform for proxy backups and restores.

The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the platforms, operating systems, and versions that NMO release 5.0 supports.

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## NMO parameter changes

NMO release 5.0 supports the following new parameters:

- ◆ `NSR_DEDUP_BACKUP`
- ◆ `NSR_DEDUP_CACHE_ENABLED`
- ◆ `NSR_DEDUP_CACHE_TAG`
- ◆ `NSR_DEDUP_CHUNK_SIZE`
- ◆ `NSR_DEDUP_NODE`
- ◆ `NSR_DPRINTF`
- ◆ `NSR_RECOVER_POOL`
- ◆ `ORACLE_USER`

The `NSR_ORACLE_NLS_LANG` parameter is no longer required to enable use of the configuration wizard with internationalized NMO in a non-English user locale.

NMO release 5.0 no longer supports the following parameters:

- ◆ `NSR_RMAN_OUTPUT`
- ◆ `NSR_TMPDIR`

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides complete details on NMO parameters.

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## NWORA resource file requirements

In NMO release 5.0, the NWORA resource file requirements are changed from previous NMO releases:

- ◆ The NWORA resource file is *no longer* mandatory for performing any type of NMO backup.
- ◆ The NWORA resource file is only required to enable the following NMO features:
  - Catalog synchronization for proxy backups
  - Policy uniformity
  - Save set bundling

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## Oracle operating system authentication

On UNIX *only*, NMO release 5.0 supports Oracle operating system authentication to connect to RMAN.

You can enable a scheduled NMO backup for operating system authentication by setting the `ORACLE_USER` parameter to the username of the Oracle operating system user, which is set up to connect to the Oracle database through operating system authentication.

Operating system authentication is supported for a scheduled backup configured through the legacy method (*without* the wizard) on UNIX. The operating system authentication is *not* supported for the following:

- ◆ A scheduled backup configured through the new configuration wizard.
- ◆ A scheduled backup on Microsoft Windows.
- ◆ A probe-based backup.
- ◆ A scheduled proxy backup.

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## Restore from a specific volume pool

By default, NMO and NetWorker use configuration settings and information in the media database to determine the backup volume to use for an NMO restore.

NMO release 5.0 supports the alternative restore method whereby you set the `NSR_RECOVER_POOL` parameter in the RMAN restore script to specify data restore from a specified volume pool if there are multiple copies (clones) of the backup on different volume pools.

The `NSR_RECOVER_POOL` parameter is *not* supported for proxy restores.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides complete details on NMO parameters.

## Fixed problems

Table 2 on page 15 provides a list of the major bug fixes implemented in NMO release 5.0:

- ◆ When you contact Customer Service about an issue, use the issue number listed for Customer Service.
- ◆ When you search for an issue in Powerlink, use the issue number listed for Issue Tracker.

**Note:** The most up-to-date product issues for NMO are detailed online in the EMC Issue Tracker available on the EMC Powerlink website: <http://Powerlink.EMC.com>

**Table 2 Fixed bugs in NMO release 5.0 (page 1 of 4)**

Issue number for Customer Service	Issue number for Issue Tracker	Product feature	Problem summary
LGTpa72448	72448nmo	Configuration wizard	When you clicked <b>Finish</b> in the final window of the NMO configuration wizard, the wizard exited without displaying a confirmation message. NMO 5.0 does not support the previous wizard releases.
LGTpa72924	72924nmo	Configuration wizard	In the NMO configuration wizard with Oracle10g on Windows, if you specified an invalid username and password for the target database or catalog database, the wizard did not validate the database credentials. NMO 5.0 does not support the previous wizard releases.
LGTpa80670	80670nmo	Restore	Twice as much disk space was required for a datafile with a file-logical image restore (FLIR) type of proxy restore than for a conventional-type proxy restore that involves a PowerSnap Module.
LGTpa90977	90977nmo	Install	If the /lib directory was not linked to /usr/lib on a Solaris system, you could not use the linking commands listed for Solaris in the NetWorker Module for Oracle installation guide.
LGTpa95951	95951nmo	Backup	Due to the Oracle bug 5887447, save set bundling and enforcement of policy uniformity both failed with Oracle9i. NMO 5.0 does not support Oracle9i.
LGTsc01009	01009nmo	Configuration wizard	Duplicate database recovery failed if you used the NMO configuration wizard to generate an RMAN script to recover a duplicate database and then ran the script with Oracle9i. NMO 5.0 does not support Oracle9i or the previous wizard releases.
LGTsc01178	01178nmo	Configuration wizard	A button used to change the date of the timestamp option on two of the NMO wizard screens had an incorrect default setting. NMO 5.0 does not support the previous wizard releases.
LGTsc03137	03137nmo	Install	Duplicate copyright information appeared during the NMO installation on Solaris.
LGTsc04633	04633nmo	Localization	Non-English characters were displayed incorrectly on Linux Intel in the following two cases: <ul style="list-style-type: none"> <li>• If non-English characters were included in a pathname specified by the parameter NSR_RMAN_ARGUMENTS</li> <li>• If non-English characters were written to a debug file specified by the parameter NSR_SB_DEBUG_FILE</li> </ul>
LGTsc04963	04963nmo	Localization	Non-English characters might be displayed incorrectly in the localized version of the NMO configuration wizard on Solaris. NMO 5.0 does not support the previous wizard releases.

Table 2 Fixed bugs in NMO release 5.0 (page 2 of 4)

Issue number for Customer Service	Issue number for Issue Tracker	Product feature	Problem summary
LGTsc04989	04989nmo	Localization	When the NMO installer program was run on Windows Intel and <b>Custom</b> was selected in the <b>Setup Type</b> dialog box, the listed size of the Japanese language pack was incorrect.
LGTsc05336	05336nmo	Localization	When localized NMO was installed in a Japanese environment on AIX and MANPATH included the pathname of the Japanese man pages, the <b>man</b> command did not display the NMO man pages in Japanese. The <b>man</b> command on AIX displayed NMO man pages in English only.
LGTsc05579	05579nmo	Install	A warning message appeared during the NMO installation on HP-UX Itanium.
LGTsc05694	05694nmo_c	Backup	An NMO backup of any level might fail intermittently when an Oracle process core dumped with the following RMAN error: RMAN-00601: fatal error in recovery manager RMAN-03004: fatal error during execution of command RMAN-10038: database session for channel x terminated unexpectedly RC from RMAN = 1
LGTsc05749	05749nmo	Configuration wizard	When archived redo logs were selected for restore in the NMO wizard, the <b>SCN</b> and <b>Log sequence</b> fields were disabled by default on the <b>Specify the Archived Redo Log List for Restore</b> screen. NMO 5.0 does not support the previous wizard releases.
LGTsc05754	05754nmo	Configuration wizard	When duplicate database recovery was selected in the NMO wizard, and a nonexistent parameter file was specified on the <b>Specify Duplicate Database Options (Part 1 of 3)</b> screen, the wizard displayed an incorrect error message. NMO 5.0 does not support the previous wizard releases.
LGTsc05760	05760nmo	Configuration wizard	When the NMO wizard was used to generate an RMAN restore script, and the restore and relocation of a partial tablespace was specified along with the restore of one or more other tablespaces, the wizard displayed unnecessary information in the <b>Review and Create an RMAN Script</b> screen. NMO 5.0 does not support the previous wizard releases.
LGTsc05874	05874nmo	Configuration wizard	In the internationalized NMO wizard in a Japanese environment on Windows, the online help for labels on specific wizard screens contained text that was truncated. NMO 5.0 does not support the previous wizard releases.
LGTsc06316	06316nmo	Configuration wizard	With Oracle9i, when the NMO configuration wizard was used to create a point-in-time recovery script, the wizard did not accept a value in any of the <b>SCN</b> fields. NMO 5.0 does not support Oracle9i or the previous wizard releases.
LGTsc06357	06357nmo	Configuration wizard	When the NMO configuration wizard was used to generate an RMAN recovery script that included a log sequence number, and then the script was run with Oracle9i, the recovery failed with a syntax error. NMO 5.0 does not support Oracle9i or the previous wizard releases.
LGTsc06388	06388nmo	Backup	When save set bundling was enabled and a scheduled NMO backup was performed on UNIX or Linux with an Oracle database username that included Japanese characters, the save set bundling operation failed.
LGTsc06451	06451nmo	Backup	When NSR_SAVESET_BROWSE was set and NSR_SAVESET_RETENTION was <i>not</i> set during an NMO backup, the retention policy was changed to the value specified by NSR_SAVESET_BROWSE but the browse policy itself was <i>not</i> changed.

Table 2 Fixed bugs in NMO release 5.0 (page 3 of 4)

Issue number for Customer Service	Issue number for Issue Tracker	Product feature	Problem summary
LGTsc07586	07586nmo	Configuration wizard	When archived redo logs were selected for restore in the NMO wizard, and then the <b>Timestamp</b> radio button was selected on the <b>Specify the Archived Redo Log List for Restore</b> screen, the restore script generated by the wizard contained a command to restore <i>all</i> archived logs, instead of the expected command to restore archived logs for a specified period of time. NMO 5.0 does not support the previous wizard releases.
LGTsc07711	07711nmo	Backup, Localization	In a French environment on Windows, when a precommand or postcommand file path contained a French special character (for example, an accent), and the file path was included in a <b>nsrnmno.bat</b> file that was created with the NMO wizard, the following occurred during a scheduled NMO backup with the <b>nsrnmno.bat</b> file: <ul style="list-style-type: none"> <li>• If the backup attempted to invoke the precommand, the precommand failed.</li> <li>• If the backup attempted to invoke the postcommand <i>only</i>, the backup itself succeeded but the postcommand failed.</li> </ul>
LGTsc07791	07791nmo	Install, Localization	On Windows, when you installed a non-Japanese NMO language pack <i>first</i> and then installed the Japanese language pack, the Japanese language pack was disabled. As a result, Japanese NMO localization was not supported.
LGTsc07792	07792nmo	Install, Localization	On Windows, when you uninstalled the NMO Japanese language pack according to the instructions in the NetWorker Module for Oracle installation guide, other language packs installed on the same computer became disabled. As a result, NMO localization was no longer supported for the other languages.
LGTsc08475	08475nmo	Configuration wizard, Localization	In a Chinese, Japanese, or Korean environment on Solaris, the table rows and browse buttons were not sized properly on three of the NMO wizard screens. NMO 5.0 does not support the previous wizard releases.
LGTsc08880	08880nmo	Backup	When NetWorker release 7.3.x or earlier was installed on the NMO client, an NMO backup failed and the messages in the NMO log file, <code>nmo.messages.raw</code> , were unreadable. NMO 5.0 requires NetWorker client release 7.4 or later.
LGTsc09096	09096nmo	Backup, Localization	In a French environment, NMO backups translated the values TRUE and FALSE to the French values VRAI and FAUX, respectively. However, the NMO software should <i>not</i> have translated the values TRUE and FALSE; these values should always appear in English <i>only</i> .
LGTsc09556	09556nmo	Backup	During an NMO backup, if a failure occurred in closing a save session with the NetWorker server, an incorrect error was reported as follows: The NMO error message has been lost. Please set NSR_DEBUG_FILE and run NMO.
LGTsc10426	10426nmo	Configuration wizard	When the NMO wizard was used to configure a backup of an HP-UX (PA-RISC) client that contained NetWorker 7.3.x or earlier client software, and the client was specified on the <b>Specify the NetWorker Client</b> screen, the wizard failed with an error. NMO 5.0 does not support the previous wizard releases.
LGTsc10485	10485nmo	Backup	During a scheduled NMO backup, with NetWorker 7.2.x client installed on the NMO host, the Currently Running section of the group details window in NetWorker Management Console 7.3.1 and later could <i>not</i> report the running backup session. After a successful scheduled NMO backup, the NMO save set name was reported as the RMAN script pathname instead of <code>RMAN:backup_piece_name</code> : NMO 5.0 requires NetWorker client release 7.4 or later.
LGTsc10670	10670nmo	Configuration wizard	With NetWorker server release 7.2.x, if the wizard was used to configure a backup, the wizard failed at the <b>Specify the Target Database Credentials</b> screen. NMO 5.0 requires NetWorker server release 7.4 or later. NMO 5.0 does not support the previous wizard releases.

Table 2 Fixed bugs in NMO release 5.0 (page 4 of 4)

Issue number for Customer Service	Issue number for Issue Tracker	Product feature	Problem summary
LGTsc10884	10884nmo	Configuration wizard	When NetWorker 7.3.x or earlier client was installed on a Solaris 10 sparse zone host, launching the wizard console on the sparse zone host was <i>not</i> supported. NMO 5.0 does not support the previous wizard releases.
LGTsc10887	10887nmo	Configuration wizard	When NMO wizard was used to configure a backup of a Solaris sparse zone host, and the wizard console was not on the sparse zone host, the wizard performed the configuration without any error messages, but the resulting configuration had the following problems: <ul style="list-style-type: none"> <li>• In the Client resource, the Backup Command attribute was blank.</li> <li>• The <b>nsrnmno</b> script was <i>not</i> created in the /usr/sbin directory on the Solaris sparse zone host.</li> </ul>
LGTsc11575	11575nmo	Backup, Restore	If one or more datafiles could not be backed up or restored by the PowerSnap Module for any reason, the NMO proxy backup or restore might become suspended.
LGTsc11968	11968nmo	Restore	On Windows, an NMO proxy restore that involved a PowerSnap Module might require twice as much disk space as expected when temporary files were not deleted during the restore.
LGTsc12226	12226nmo_c	Backup	If a scheduled NMO backup failed but a postcommand (postprocessing script) containing the NetWorker <b>save</b> command succeeded at the end of the scheduled backup, the failed backup savegroup was reported as successful. A failed savegroup should be reported as unsuccessful, whether or not the postcommand succeeds.
LGTsc14744	14744nmo_c	Backup	If the NetWorker user group Users did <i>not</i> specify *@*, an NMO backup might fail with a NetWorker authentication error.
LGTsc14858	14858nmo_c	Backup	NMO backs up the NWORA resource file, nwora.res, at the end of each scheduled backup. If the nwora.res file backup failed, the main scheduled backup process, <b>nsrnmstart</b> , might core dump.
LGTsc15184	15184nmo	Restore	If any issue (for example, insufficient disk space) prevented completion of a PIT proxy restore, the restore might become suspended. In this case, the snapshots remained mounted on the datamover.
LGTsc15383	15383nmo	Backup	An NMO backup might become suspended after printing a "JOB NAME" line in the debug file.
LGTsc16852	16852nmo	Restore	Either a conventional or PIT proxy restore might fail on HP-UX Itanium.
LGTsc18427	18427nmo	Backup, Restore, Internationalization	NMO supported proxy operations on English and Japanese operating systems only. Proxy operations on Japanese operating systems supported only the platforms that the PowerSnap Modules supported, with specific limitations. NMO 5.0 supports proxy operations on other non-English operating systems.
LGTsc19273	19273nmo	Backup	The <b>nsroraclecat</b> binary was missing from the NMO software on Windows AMD64/EM64T. Without the binary, the automatic catalog synchronization feature could not be used for proxy backups.
LGTsc19856	19856nmo	Backup	During a proxy backup with PowerSnap 2.4 SP2, if the parameter NSR_ENCRYPTION_PHRASES was set to multiple encryption phrases and the parameter setting was in a user-defined configuration file (specified through the parameter NSR_PROXY_PFILE), the proxy backup failed.
LGTsc23577	23577nmo_c	Restore	When using Oracle Managed Files (OMF), an Oracle proxy restore might fail due to an unexpected argument change with specific Oracle SBT calls.

## Environment and system requirements

**Note:** On a 64-bit operating system *except* AIX, 64-bit NMO 5.0 does *not* support 32-bit NetWorker release 7.5 or later. If the 64-bit operating system is *not* AIX, then 64-bit NetWorker software must be installed.

The following sources provide details on the versions of operating systems, Oracle Server, NetWorker, PowerSnap Module, and other NetWorker Module software that NMO release 5.0 supports:

- ◆ *EMC Information Protection Software Compatibility Guide* on Powerlink
- ◆ *EMC NetWorker Module for Oracle Release 5.0 Installation Guide*

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides details on the environment and system configurations required to operate NMO release 5.0.

## Known problems and limitations

This section describes known problems and limitations that apply to the NMO release 5.0 software:

- ◆ [“Problems and limitations discovered in NMO release 5.0” on page 19](#)
- ◆ [“Problems and limitations discovered in releases other than NMO 5.0” on page 21](#)

### Problems and limitations discovered in NMO release 5.0

[Table 3 on page 19](#) identifies problems and limitations discovered in NMO release 5.0 that continue to be applicable.

**Note:** Some limitations in NMO release 5.0 originated in other releases, or are caused by a limitation of Oracle or another EMC product. [Table 4 on page 21](#) identifies the limitations discovered in other releases.

**Table 3** Limitations discovered in NMO release 5.0 (page 1 of 3)

Number	Description	Operating system
<a href="#">“LGTsc22005” on page 30</a>	Due to a NetWorker 7.5 or later lockbox limitation, the NMO 5.0 configuration wizard is <i>not</i> supported with the following NetWorker server platforms: <ul style="list-style-type: none"> <li>• Linux Itanium</li> <li>• Microsoft Windows Itanium</li> </ul>	Linux, Microsoft Windows
<a href="#">“LGTsc22790” on page 30</a>	If an existing RMAN script contains non-ASCII characters on Windows, migration of the legacy backup configuration with the <code>nsrnmoadmin -M</code> command might fail.	Microsoft Windows
<a href="#">“LGTsc23490” on page 31</a>	When a proxy backup is performed with AES encryption on an EMC Symmetrix® system, the proxy restore of the encrypted backup fails with an error.	Linux, UNIX, Microsoft Windows
<a href="#">“LGTsc23523” on page 31</a>	When you restore a deduplication NMO backup, a misleading error message might appear in the <code>nsravtar</code> log file.	Linux, UNIX, Microsoft Windows

Table 3 Limitations discovered in NMO release 5.0 (page 2 of 3)

Number	Description	Operating system
<a href="#">"LGTsc24413, LGTsc24978" on page 31</a>	Due to PowerSnap Module limitations, NMO 5.0 does <i>not</i> support proxy operations with raw devices using PowerSnap Module 2.4 SP3 on 64-bit Linux.	Linux
<a href="#">"LGTsc24972" on page 31</a>	Due to an NMC 7.5 bug, if you attempt to start the NMO 5.0 recovery wizard with NMC release 7.5 for an NMO client that was configured through the legacy method ( <i>without</i> the wizard), the recovery wizard fails with an error.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTsc25654" on page 31</a>	Due to an NMC 7.5 bug, the backup configuration wizard in NMC 7.5 fails to recognize a virtual client and fails to properly complete the NetWorker Client and Lockbox resource configurations for the virtual client backup.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTsc26452" on page 32</a>	When you use the Windows installation upgrade process to update the NMO software from release 4.5 to 5.0, an existing nsrnmobat script (used for scheduled backups) is replaced by the default nsrnmobat template.	Microsoft Windows
<a href="#">"LGTsc26748, LGTpa94301" on page 32</a>	Due to the Oracle bug 3627132, an NMO backup fails in a non-English locale when the following conditions exist: <ul style="list-style-type: none"> <li>NMO internationalization is set up.</li> <li>The character sets of the RMAN script and Oracle database are different.</li> <li>A non-ASCII character is included in the <b>parms</b> option or <b>send</b> command in the RMAN script.</li> </ul>	Linux, UNIX, Microsoft Windows
<a href="#">"LGTsc27057" on page 33</a>	On Windows, if the NSR_RMAN_ARGUMENTS parameter setting contains a message log pathname that includes Japanese characters, the message log file is <i>not</i> generated during the scheduled NMO backup.	Microsoft Windows
<a href="#">"LGTsc27172" on page 33</a>	If the NSR_PROXY_PFILE parameter is set to a pathname that includes non-ASCII characters, the proxy backup might fail.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTsc27377" on page 33</a>	If you enter an invalid value for NLS_LANG on the <b>Specify the Database Information</b> screen in the backup or recovery configuration wizard, you <i>cannot</i> correct the value without exiting the wizard screen and then returning to that screen. Since NLS_LANG is set to an invalid value, an unreadable error message appears when you attempt to exit the wizard screen.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTsc27665" on page 33</a>	With NetWorker PowerSnap Module for EMC CLARiiON® release 2.4 SP3 on Linux, if a proxy backup of a CLARiiON system includes any files that reside on a nonsnapshotable disk, the proxy backup fails.	Linux
<a href="#">"LGTsc28445" on page 34</a>	During the installation of the French language pack on Microsoft Windows, unexpected characters appear at the bottom of the final dialog box in the InstallShield wizard.	Microsoft Windows
<a href="#">"LGTsc28446" on page 34</a>	If Java Runtime Environment (RTE) version 1.5 is installed on Microsoft Windows (the system where NMC is run), the following unexpected characters might appear on help screens in the backup or recovery configuration wizard: &thinsp	Microsoft Windows
<a href="#">"LGTsc28472" on page 34</a>	When the NetWorker client is remotely updated (using the software distribution feature) to release 7.5 on the NMO client either after or at the same time as NMO is remotely updated to release 5.0, the NMC-based configuration wizard fails to run.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTsc28890" on page 34</a>	On Microsoft Windows AMD64/EM64T, an update of English NMO release 4.5 to 5.0 through either a local update or remote (push) update procedure causes NMO 5.0 to be installed in the default directory, C:\Program Files\Legato\nsr, even if NMO 4.5 was installed in a nondefault directory.	Microsoft Windows
<a href="#">"LGTsc29488" on page 35</a>	After the NMO software is installed and properly set up for localization support in a Chinese locale on Microsoft Windows 2008, NMO 5.0 does <i>not</i> recognize the Chinese locale.	Microsoft Windows

Table 3 Limitations discovered in NMO release 5.0 (page 3 of 3)

Number	Description	Operating system
<a href="#">"LGTsc30351" on page 35</a>	If you use the configuration wizard in NMC 7.5.1 to configure an NMO deduplication backup, the deduplication backup <i>fails</i> .	Linux, UNIX, Microsoft Windows
<a href="#">"NW018894" on page 35</a>	The total size of the data backed up during an NMO (non-deduplication) scheduled backup is reported incorrectly as 0 KB in the savegrp summary report that is sent as an email notification. The backup data size is reported correctly in the group details on the Groups tab of the NMC Monitoring window.	Linux, UNIX, Microsoft Windows
<a href="#">"NW019011" on page 35</a>	The size of an NMO scheduled deduplication backup reported in the group details in NMC is smaller than the actual size of the data that was backed up. The incorrect size is reported in the group details on the Groups tab of the NMC Monitoring window.	Linux, UNIX, Microsoft Windows

## Problems and limitations discovered in releases other than NMO 5.0

[Table 4 on page 21](#) identifies problems and limitations discovered in releases other than NMO 5.0 that continue to be applicable.

Table 4 Limitations discovered in releases other than NMO 5.0 (page 1 of 3)

Number	Description	Operating system
<a href="#">"LGTpa53921" on page 23</a>	If an Oracle RMAN session fails on Windows, any <b>nsrsbctn.exe</b> processes that are still running must be terminated manually in the Task Manager.	Microsoft Windows
<a href="#">"LGTpa72726" on page 23</a>	Due to an Oracle bug in Oracle10g, when two or more channels are allocated and <i>all</i> the channels fail during an NMO backup, RMAN terminates abnormally and displays RMAN debug text instead of an expected error message on the console screen.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTpa80288, LGTpa81336" on page 24</a>	Proxy backups of archived redo logs fail to roll over to NetWorker backup media, such as tape.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTpa88636" on page 24</a>	With a PowerSnap Module prior to version 2.4.2, a FLIB (file-logical image backup) type of proxy backup fails when a nonsnapshotable disk (a disk for which a snapshot cannot be made) contains more than one datafile, for example, a tablespace with multiple datafiles.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTpa91081, LGTpa91655, LGTpa93691" on page 24</a>	Due to the Oracle10g bug 5870989, if NMO attempts to restore an Oracle tablespace backup but the backup is inaccessible, the restore might become suspended or produce an error when it attempts to fail over to a previous backup of the tablespace.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTpa92641" on page 24</a>	After a PIT proxy restore of a datafile on a Celerra <sup>®</sup> NAS device, the timestamp is changed so that the restored datafile has a different timestamp. The timestamp change is caused by the PowerSnap snapshot control module (SCM) on Celerra NAS devices only.	Linux, UNIX, Microsoft Windows
<a href="#">"LGTpa94842, LGTpa94846" on page 25</a>	If you create a copy of an Oracle datafile or archived log to the flash recovery area, and then perform a successful proxy backup of that copy in the recovery area, a rollback restore of the proxy backup fails to restore the Oracle datafile or archived log to its original location outside of the recovery area.	Linux, UNIX, and Microsoft Windows
<a href="#">"LGTpa95041" on page 25</a>	Due to a NetWorker 7.4 limitation on Windows, NMO does not support a localized date value for the NSR_SAVESET_BROWSE or NSR_SAVESET_RETENTION parameter.	Microsoft Windows

Table 4 Limitations discovered in releases other than NMO 5.0 (page 2 of 3)

Number	Description	Operating system
"LGTsc06110" on page 26	When a scheduled NMO backup is run in a Japanese environment and the output from RMAN or from a preprocessing or postprocessing script (used for the backup) is <i>not</i> UTF8 text, the Japanese NMO backup information displayed in the NetWorker Management Console might appear incorrectly as box or question mark characters.	Linux, UNIX, Microsoft Windows
"LGTsc06281" on page 26	The software distribution feature on a remote NetWorker 7.4 server does not support update and inventory procedures involving language packs.	Linux, UNIX, Microsoft Windows
"LGTsc07287" on page 26	When the NLS_LANG value in the <b>nsrnm</b> script on UNIX or Linux contains a space and is <i>not</i> surrounded by double (") quotes, a scheduled NMO backup that uses the script fails.	Linux, UNIX
"LGTsc07389" on page 27	Crosscheck and channel allocation operations might take a long time to complete on an HP-UX cluster (MC/ServiceGuard). The issue is caused by an HP limitation when the Oracle user is not allowed to run the HP system command, <b>cmviewcl</b> .	HP-UX
"LGTsc07856" on page 27	In a non-English environment on Windows, when you run the installation program <b>setup.exe</b> in maintenance mode, the repair option does <i>not</i> function properly to repair missing or corrupted NMO files.	Microsoft Windows
"LGTsc11340" on page 27	Due to Oracle11g and NetWorker limitations, NetWorker multiplexing for multisection backups (a new feature with Oracle11g) is supported with advanced file type devices only, not with tape or regular file type devices.	Linux, UNIX, Microsoft Windows
"LGTsc11491" on page 27	NetWorker file system backups and NetWorker Module backups might fail on Windows if <i>all</i> of the following conditions are true: <ul style="list-style-type: none"> <li>• Oracle11g is installed on the client, and the Oracle VSS Writer service is running.</li> <li>• NetWorker software release on the Oracle11g host is prior to release 7.4.2.</li> <li>• The Oracle database contains at least one datafile on a raw partition identified by a drive letter, such as \\.\d:.</li> </ul>	Microsoft Windows
"LGTsc11501" on page 28	The NWORA resource file ( <i>NetWorker_install_path\nsr\res\nwora.res</i> on Windows) is typically backed up at the end of each scheduled NMO backup. On Microsoft Windows with Oracle11g and a NetWorker client release prior to 7.4.2, when the Oracle VSS Writer service is running, the resource file backup fails at the end of a scheduled NMO backup.	Microsoft Windows
"LGTsc12549" on page 28	Each of the following NMO limitations is caused by an Oracle11gR1 bug: <ul style="list-style-type: none"> <li>• "Automatic catalog synchronization fails with deletion of proxy archive log backup in Oracle11gR1 (Oracle bug ID 6658567)"</li> <li>• "Backup channel failover fails with Oracle11gR1 on Windows (Oracle Bug ID 6733394)"</li> <li>• "Failover and duplication fails with Oracle11gR1 in non-English environment (Oracle bug ID 6658479)"</li> <li>• "Oracle11gR1 multisection backup with small section size might not be restorable"</li> <li>• "Proxy backup of archived logs fails in specific scenario with Oracle11gR1 (Oracle bug ID 6656875)"</li> </ul>	Linux, UNIX, Microsoft Windows

Table 4 Limitations discovered in releases other than NMO 5.0 (page 3 of 3)

Number	Description	Operating system
"LGTsc15258" on page 29	Due to a NetWorker bug, NMO backups and the <code>nsrnmoadmin</code> command fail on Windows 2008 and Windows Vista with NetWorker releases 7.4.1 and 7.4.2. During the NetWorker client installation on the Windows systems, the <code>NetWorker_install_dir\atmp</code> directory is assigned incorrect permissions. The Administrator account requires write permissions to this directory.	Microsoft Windows
"LGTsc22741, LGTpa93474" on page 30	When you use a legacy backup configuration ( <i>not</i> configured through the NMO 5.0 wizard) and a <code>nsrmmo</code> script (created from the template in NMO 4.5 or earlier) for a scheduled backup with NetWorker server 7.4.3 or later, the group details window in NetWorker Management Console (NMC) might report incorrect details about the Oracle save sets in the scheduled backup on a UNIX NMO client.	Linux, UNIX

### Backup process termination is required on Windows

#### LGTpa53921

If an Oracle RMAN session fails on Windows, check for any `nsrsbctn.exe` processes that are still running and terminate the processes manually in the Task Manager.

### Channel failure causes abnormal termination in Oracle10g

#### LGTpa72726

Due to an Oracle bug in Oracle10g, when two or more channels are allocated and *all* the channels fail during an NMO backup, RMAN terminates abnormally and displays RMAN debug text instead of an expected error message on the console screen.

In Oracle10g, if multiple channels are allocated and one of the channels fails, Oracle attempts to fail over the operation on that channel to one of the other channels. If all the channels fail, RMAN should terminate with an appropriate error message.

Some of the possible reasons for a channel failure are as follows:

- ◆ The NMO software is not licensed.
- ◆ The channel is assigned a NetWorker server through the `NSR_SERVER` parameter, where one of the following exists:
  - The name of the server is invalid.
  - The client is not properly configured on the server.
  - The evaluation license is expired on the server.
- ◆ The channel is assigned an invalid NetWorker volume pool through the `NSR_DATA_VOLUME_POOL` parameter.
- ◆ During a manual backup, the channel is assigned a NetWorker server that contains a Server resource with the Manual Saves attribute set to Disabled.
- ◆ The channel encounters an internal error.

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## Proxy backups of archived redo logs fail to roll over to backup media

### **LGTpa80288, LGTpa81336**

Proxy backups of archived redo logs fail to roll over to NetWorker backup media, such as tape.

As a workaround, perform a regular NetWorker backup of the archived log directory, or place the archived logs on a nonsnapshot storage volume.

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## FLIB-type proxy backup of multiple nonsnapshotable files fails

### **LGTpa88636**

With a PowerSnap Module prior to version 2.4.2, a FLIB (file-logical image backup) type of proxy backup fails when a nonsnapshotable disk (a disk for which a snapshot cannot be made) contains more than one datafile, for example, a tablespace with multiple datafiles.

A conventional proxy backup is successful for the same nonsnapshotable disk with multiple datafiles.

As a workaround, perform one of the following:

- ◆ Perform a nonproxy backup of the datafiles on a nonsnapshotable disk.
- ◆ Perform a conventional proxy backup of the datafiles on a nonsnapshotable disk.

Ensure the success of a FLIB-type proxy backup by using snapshotable storage (volumes that can be snapshotted by the PowerSnap Module).

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## Restore failover might fail for Oracle tablespace backup

### **LGTpa91081, LGTpa91655, LGTpa93691**

Due to the Oracle10g bug 5870989, if NMO attempts to restore an Oracle tablespace backup but the backup is inaccessible (for example, because the backup encryption key is not available), the restore might become suspended or produce an error when it attempts to fail over to a previous backup of the tablespace. Restore failover to a previous backup of the tablespace should succeed.

As a workaround, ensure that the Oracle tablespace backup is accessible before attempting an NMO restore of the backup.

---

## Timestamp is changed after a PIT proxy restore on a Celerra NAS device

### **LGTpa92641**

After a PIT proxy restore of a datafile on a Celerra NAS device, the timestamp is changed so that the restored datafile has a different timestamp. The timestamp change is caused by the PowerSnap SCM on Celerra NAS devices only. This issue has *no* functional impact on an NMO customer.

## Rollback restore fails for proxy backup in flash recovery area

### LGTPa94842, LGTPa94846

If you create a copy of an Oracle datafile or archived log to the flash recovery area, and then perform a successful proxy backup of that copy in the recovery area, a rollback restore of the proxy backup fails to restore the Oracle datafile or archived log to its original location outside the recovery area. The rollback restore produces the following RMAN error:

```
ORA-27037: unable to obtain file status
```

**Note:** The flash recovery area is a directory where RMAN places all of the disk type backups it creates (backups not created with NMO). NMO can back up the backups from the recovery area.

For example, you create a datafile copy and proxy backup as follows:

1. Use the **backup as copy datafile** command to create a datafile copy of the file `/fs1/test1.dbf` to the recovery area located at `/fs2`. The datafile copy is created as `/fs2/datafile/o1_mf_test1_2nnplt1z_.dbf`.
2. Use the **backup proxy recovery area** command to perform a proxy NMO backup of the datafile copy in the recovery area.

Then if you perform a rollback restore of this proxy backup, the restore occurs to `/fs2`. The restore produces the RMAN error because RMAN expects the backed-up file to be restored to `/fs1`, the original file location.

As a workaround, use the additional command **restore...from datafilecopy** to restore from the datafile copy in the recovery area to the original datafile location.

## Backup fails due to localized date value of NSR\_SAVESET\_BROWSE or NSR\_SAVESET\_RETENTION

### LGTPa95041

Due to a NetWorker 7.4 limitation on Windows, NMO does *not* support a localized date value for the `NSR_SAVESET_BROWSE` or `NSR_SAVESET_RETENTION` parameter.

For example, in a non-English Windows environment, if you set `NSR_SAVESET_BROWSE` or `NSR_SAVESET_RETENTION` to a date in Japanese format (such as `2008/06/28`), the NMO backup fails with one of the following errors:

```
The NSR_SAVESET_BROWSE parameter was set to an invalid value.
```

```
The NSR_SAVESET_RETENTION parameter was set to an invalid value.
```

As a workaround on Windows, set the date value for `NSR_SAVESET_BROWSE` and `NSR_SAVESET_RETENTION` in the form `MM/DD/YY` or `MM/DD/YYYY`.

## Japanese NMO information might be displayed incorrectly in NetWorker Management Console

### LGTsc06110

When a scheduled NMO backup is run in a Japanese environment and the output from RMAN or from a preprocessing or postprocessing script (used for the backup) is *not* UTF8 text, the Japanese NMO backup information displayed in the NetWorker Management Console might appear incorrectly as box or question mark characters.

As a workaround, perform the following:

- ◆ Use the NSR\_RMAN\_ARGUMENTS parameter to redirect the RMAN output to a specified log file.
- ◆ Specify "echo off" in any preprocessing and postprocessing scripts used for the scheduled NMO backup.

## Software distribution feature does not support update or inventory with language packs

### LGTsc06281

The software distribution feature on a remote NetWorker 7.4 server does not support update or inventory procedures involving language packs:

- ◆ When you use the software distribution feature on the remote server to update NMO release 4.5 to 5.0 on an NMO client, any language packs included with the NMO 5.0 release are *not* installed during the update.

As a workaround, install any required language packs for the NMO 5.0 release separately on the local NMO client.

- ◆ The inventory process fails on clients that were updated for NMO, NMSQL, or NME because the software distribution feature does not support the language packs included with the NetWorker Module packages.

## Scheduled backup fails on UNIX and Linux due to space in NLS\_LANG value in nsrnmo script

### LGTsc07287

When the NLS\_LANG value in the **nsrnmo** script on UNIX or Linux contains a space and is *not* surrounded by double (") quotes, a scheduled NMO backup that uses the script fails. For example, the scheduled backup fails if NLS\_LANG in the **nsrnmo** script is set to the following value that contains a space:

```
NLS_LANG=SIMPLIFIED CHINESE_CHINA.ZHS16GBK
```

As a workaround, before the scheduled backup starts, ensure that the NLS\_LANG value is set, with double quotes around the value if it contains any spaces. For example:

```
NLS_LANG="SIMPLIFIED CHINESE_CHINA.ZHS16GBK"
```

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on setting the required parameters for a scheduled backup.

---

## Crosscheck and channel allocation might take a long time on an HP-UX cluster

### LGTsc07389

Crosscheck and channel allocation operations might take a long time to complete on an HP-UX cluster (MC/ServiceGuard). The issue is caused by an HP limitation when the Oracle user is not allowed to run the HP system command, **cmviewcl**.

As a workaround, contact HP Support, and ensure that the Oracle user is allowed to run the HP command, **cmviewcl**.

---

## Windows installation repair is not supported in non-English environment

### LGTsc07856

In a non-English environment on Windows, when you run the installation program **setup.exe** in maintenance mode, the repair option does *not* function properly to repair missing or corrupted NMO files. The NetWorker Module for Oracle Installation Guide provides information on running the installation program in maintenance mode.

As a workaround, to repair missing or corrupted NMO files in a non-English environment on Windows, perform the following steps according to the NetWorker Module for Oracle Installation Guide:

1. Uninstall the NMO software and language packs.
2. Re-install the NMO software and language packs in the correct order.

---

## Multiplexing for Oracle11g multisection backups is supported with advanced file type devices only

### LGTsc11340

Due to Oracle11g and NetWorker limitations, NetWorker multiplexing for multisection backups (a new feature with Oracle11g) is supported with advanced file type devices only, *not* with tape or regular file type devices.

If you have tape or regular file type devices, you should configure a separate NetWorker device for each RMAN channel, to avoid multiplexing in NetWorker.

If you multiplex the Oracle11g multisection backups on a tape or regular file type device and then experience a hang at restore time, use a single RMAN channel to restore the multisection NMO backups.

---

## Backups might fail on Windows with NetWorker 7.4.1 (and earlier) and Oracle11g

### LGTsc11491

NetWorker file system backups and NetWorker Module backups might fail on Windows if *all* of the following conditions are true:

- ◆ Oracle11g is installed on the client, and the Oracle VSS Writer service is running.
- ◆ NetWorker software release on the Oracle11g host is prior to release 7.4.2.

- ◆ The Oracle database contains at least one datafile on a raw partition identified by a drive letter, such as \\.\d:. (Backup failure does *not* occur if the raw datafile is located on a volume mount point.)

As a workaround, stop the Oracle VSS Writer from the Windows services.

---

## NWORA resource file is not backed up on Windows when Oracle VSS Writer is running

### LGtsc11501

The NWORA resource file (*NetWorker\_install\_path\nsr\res\nwora.res* on Windows) is typically backed up at the end of each scheduled NMO backup. On Microsoft Windows with Oracle11g and a NetWorker client release prior to 7.4.2, when the Oracle VSS Writer service is running, the resource file backup fails at the end of a scheduled NMO backup.

As a workaround, stop the corresponding Windows service. Refer to Oracle documentation for details on how to stop the Oracle VSS Writer.

---

## Specific NMO limitations are caused by Oracle 11gR1 bugs

### LGtsc12549

Each of the following NMO limitations is caused by an Oracle11gR1 bug.

If you experience any of these problems with Oracle11gR1, contact Oracle for support and provide the Oracle bug ID if it is listed as follows.

### Automatic catalog synchronization fails with deletion of proxy archive log backup in Oracle 11gR1 (Oracle bug ID 6658567)

If automatic catalog synchronization is enabled and you delete a proxy archive log backup with Oracle11gR1, the automatic catalog synchronization fails to delete the proxy backup entry from the RMAN catalog.

The underlying cause is failure of RMAN **delete** commands in Oracle11gR1 to delete proxy archive log backup entries from the RMAN catalog. The RMAN **delete** commands in this case produce the following error:

```
RMAN-03002: failure of delete command at date time
ORA-01455: converting column overflows integer datatype
```

### Backup channel failover fails with Oracle 11gR1 on Windows (Oracle Bug ID 6733394)

Automatic backup channel failover fails during an NMO backup with Oracle11gR1 on Windows.

### Failover and duplication fails with Oracle 11gR1 in non-English environment (Oracle bug ID 6658479)

With Oracle11gR1 in a non-English environment, NMO does *not* support the following operations:

- ◆ Failover of a backup channel
- ◆ Failover of a backup piece during restore
- ◆ Duplication with the **duplicate target database...until** command

For each of these operations, the following RMAN internal error is generated:

```
DBGANY: Mismatched message length!
```

### Oracle11gR1 multisection backup with small section size might not be restorable

For a multisection backup with Oracle11gR1, if you specify a small section size that generates more than 256 backup pieces for the same file, the NMO backup is reported as successful, but the status of some of the backup pieces is DELETED. RMAN cannot perform a restore of the backup set.

As a workaround, specify a large enough section size to ensure that the multisection backup does *not* generate more than 256 backup pieces for any files.

### Proxy backup of archived logs fails in specific scenario with Oracle11gR1 (Oracle bug ID 6656875)

An NMO proxy backup of Oracle11gR1 archived redo logs fails when some of the archived logs are missing from the main location but available in the alternative location. In this case:

- ◆ The archivelog main location is on a snapshotable disk.
- ◆ The archivelog alternate location is on a nonsnapshotable disk.

The proxy backup of archived redo logs fails with the following RMAN error:

```
RMAN-00600: internal error, arguments [13200] [] [] [] []
```

## NMO backups and nsrnmoadmin command fail on Windows 2008 and Windows Vista with NetWorker 7.4.1 and 7.4.2

### LGTsc15258

Due to a NetWorker bug, NMO backups and the **nsrnmoadmin** command fail on Windows 2008 and Windows Vista with NetWorker releases 7.4.1 and 7.4.2. During the NetWorker client installation on the Windows systems, the *NetWorker\_install\_dir*\tmp directory is assigned incorrect permissions. The Administrator account requires write permissions to this directory.

As a workaround on Windows 2008 and Windows Vista, manually change the permissions on the *NetWorker\_install\_dir*\tmp directory:

1. In Windows Explorer, right-click the *NetWorker\_installation\_dir*\tmp directory, and select **Properties**.
2. On the **Security** tab, click **Advanced**.
3. On the **Owner** tab, click **Edit**.
4. Temporarily change the ownership to the Administrators group.
5. Reopen the **Properties** window.
6. In the **Properties** window, add Administrators to the **Group or user names** table, and grant Read and Write permissions to the Administrators group.
7. Follow steps 1 to 4 to change the ownership back to SYSTEM.

---

## NMO 5.0 configuration wizard is not supported on Linux Itanium and Microsoft Windows Itanium

### LGTsc22005

Due to a NetWorker 7.5 or later lockbox limitation, the NMO 5.0 configuration wizard is *not* supported with the following NetWorker server platforms:

- ◆ Linux Itanium
- ◆ Microsoft Windows Itanium

If you attempt to run the NMO 5.0 wizard on one of these platforms, an error is displayed, stating that lockboxes are not supported on the platform.

---

## NMC group details for scheduled backups might be incorrect with NetWorker server 7.4.3 and later

### LGTsc22741, LGTpa93474

When you use a legacy backup configuration (*not* configured through the NMO 5.0 wizard) and a **nsrnm** script (created from the template in NMO 4.5 or earlier) for a scheduled backup with NetWorker server 7.4.3 or later, the group details window in NetWorker Management Console (NMC) might report incorrect details about the Oracle save sets in the scheduled backup on a UNIX NMO client. (The group details window is accessible through the Groups tab of the NMC Monitoring window.)

This issue is caused by broken reporting between the **nsrnmstart** program and the NetWorker server when the standard shell (/bin/sh) closes and makes use of file descriptor 19 for internal purposes on certain UNIX platforms.

As a workaround, edit the **nsrnm** shell script on the UNIX client, and change /bin/sh in the script to the appropriate value:

- ◆ /bin/bash, if it exists on the UNIX client
- ◆ /bin/ksh, if /bin/bash does *not* exist on the UNIX client

---

## Migration with nsrnmoadmin on Windows might not support a non-ASCII RMAN script

### LGTsc22790

If an existing RMAN script contains non-ASCII characters on Windows, migration of the legacy backup configuration with the **nsrnmoadmin -M** command might fail.

As a workaround, perform one of the following:

- ◆ Do *not* use the NMC-based configuration wizard in NMO 5.0 to modify the legacy backup configuration. In this case, you must continue to use the legacy configuration (including the existing RMAN script, **nsrnm** script, and so on) for the NMO backups.
- ◆ Create a new configuration for the NMO backups with the NMC-based configuration wizard in NMO 5.0. In this case, the Client resource created by the new wizard replaces the legacy backup configuration, and you must use the wizard *only* to modify the configuration going forward.

---

## Proxy restore fails with AES encryption on a Symmetrix system

### LGTsc23490

When a proxy backup is performed with AES encryption on an EMC Symmetrix system, the proxy restore of the encrypted backup fails with the following error message:

```
No decryption key found
```

During the proxy backup, a pass phrase is specified in the the Datazone pass phrase attribute in the NetWorker Server resource. During the proxy restore, the same pass phrase is specified in the NSR\_ENCRYPTION\_PHRASES parameter.

---

## Misleading error message might appear for a deduplication restore

### LGTsc23523

When you restore a deduplication NMO backup, the following error message might appear in the `nsravatar` log file:

```
nsrvatar will dump error: avatar Error <0000: Error getting slice
```

Ignore this misleading error message, which is *not* related to the status of the deduplication restore.

---

## Raw devices are not supported with PowerSnap Module 2.4 SP3 on 64-bit Linux

### LGTsc24413, LGTsc24978

Due to PowerSnap Module limitations, NMO 5.0 does *not* support proxy operations with raw devices using PowerSnap Module 2.4 SP3 on 64-bit Linux.

---

## NMO 5.0 recovery wizard cannot be started for a legacy NMO client

### LGTsc24972

Due to an NMC 7.5 bug, if you attempt to start the NMO 5.0 recovery wizard with NMC release 7.5 for an NMO client that was configured through the legacy method (*without* the wizard), the recovery wizard fails with the following error:

```
invokeHandlerForFinished called: msgid = 10
java.lang.NullPointerException
:
```

---

## Backup configuration wizard does not properly configure a virtual client with NetWorker 7.5

### LGTsc25654

Due to an NMC 7.5 bug, the Oracle backup configuration wizard in NMC 7.5 fails to recognize a cluster virtual client and fails to properly complete the NetWorker Client and Lockbox resource configurations for the virtual client backup.

As a workaround, perform the following after using the backup configuration wizard to configure a scheduled backup for the cluster virtual client:

1. Create Client resources for the associated physical clients if the resources do not yet exist.
2. Edit the Lockbox resource for the virtual client, and add the name `root@physical_hostname` (UNIX) or `system@physical_hostname` (Windows) to the Users attribute.
3. Use the configuration wizard to set the NSR\_CLIENT parameter to the virtual client hostname in the Advanced Backup Options field on the **Specify RMAN Options (Part 2 of 2)** screen.
4. Add `-c virtual_clientname` to the Backup Command attribute in the Client resource of the virtual client.

The NetWorker administration guide provides details on how to create and edit the NetWorker resources.

---

### Update on Windows corrupts an existing nsrnmo.bat script

#### LGTsc26452

When you use the Windows installation upgrade process to update the NMO software from release 4.5 to 5.0, an existing nsrnmo.bat script (used for scheduled backups) is replaced by the default nsrnmo.bat template.

As a workaround, ensure that you save a copy of any existing nsrnmo.bat script *before* you use the Windows installation upgrade process to update NMO 4.5 to 5.0. After the update is complete, replace the default nsrnmo.bat template with the saved nsrnmo.bat script.

---

### Backup fails due to non-ASCII data in RMAN script when character sets differ in a non-English locale

#### LGTsc26748, LGTpa94301

Due to the Oracle bug 3627132, an NMO backup fails in a non-English locale when the following conditions exist:

- ◆ NMO internationalization is set up.
- ◆ The character sets of the RMAN script and Oracle database are different.
- ◆ A non-ASCII character is included in the **parms** option or **send** command in the RMAN script.

For example, if the database uses the UTF8 character set and the RMAN script uses the EUC-JP character set, an NMO backup fails when the **parms** option or **send** command in the RMAN script contains any non-ASCII data.

As a result, NMO does *not* support non-ASCII data in the RMAN script when the character set of the RMAN script (set through the NLS\_LANG environment variable) differs from the character set of the Oracle database in a non-English locale.

---

## NSR\_RMAN\_ARGUMENTS does not support a pathname with Japanese characters on Windows

### LGTsc27057

On Windows, if the NSR\_RMAN\_ARGUMENTS parameter setting contains a message log pathname that includes Japanese characters, the message log file is *not* generated during the scheduled NMO backup.

For example, if NSR\_RMAN\_ARGUMENTS is set to the following value in the **nsrnm** script on Windows and *log\_file\_pathname* includes any Japanese characters, the log file is *not* generated during the scheduled NMO backup:

```
NSR_RMAN_ARGUMENTS="msglog 'log_file_pathname' append"
```

---

## NSR\_PROXY\_PFILE does not support a pathname with non-ASCII characters

### LGTsc27172

If the NSR\_PROXY\_PFILE parameter is set to a pathname that includes non-ASCII characters, the proxy backup might fail.

As a workaround, if the NSR\_PROXY\_PFILE parameter is used, ensure that the parameter is set to a pathname that contains ASCII characters *only*.

---

## NLS\_LANG error in the wizard cannot be corrected without exiting and returning to the screen

### LGTsc27377

If you enter an invalid value for NLS\_LANG on the **Specify the Database Information** screen in the backup or recovery configuration wizard, you *cannot* correct the value without exiting the wizard screen and then returning to that screen. Since NLS\_LANG is set to an invalid value, an unreadable error message appears when you attempt to exit the wizard screen.

As a workaround after you enter an incorrect value for NLS\_LANG:

1. Click **Next** to exit the **Specify the Database Information** screen.
2. Click **Back** to return to the **Specify the Database Information** screen.
3. Correct the value in the NLS\_LANG field.

---

## Proxy backup of a CLARiiON system on Linux fails if any files are on a nonsnapshotable disk

### LGTsc27665

With NetWorker PowerSnap Module for EMC CLARiiON release 2.4 SP3 on Linux, if a proxy backup of a CLARiiON system includes any files that reside on a nonsnapshotable disk, the proxy backup fails.

---

## Unexpected characters appear during the French language pack install on Windows

### LGTsc28445

During the installation of the French language pack on Microsoft Windows, unexpected characters appear at the bottom of the final dialog box in the InstallShield wizard.

Ignore the characters, and click the required button to exit the InstallShield wizard.

---

## Unexpected characters might appear in wizard help screens on Windows

### LGTsc28446

If Java Runtime Environment (RTE) version 1.5 is installed on Microsoft Windows (the system where NMC is run), the following unexpected characters might appear on help screens in the backup or recovery configuration wizard:

&thinsp

Ignore the unexpected characters.

---

## NMC-based wizard fails to run after a remote (push) update

### LGTsc28472

When the NetWorker client is remotely updated (using the software distribution feature) to release 7.5 on the NMO client either after or at the same time as NMO is remotely updated to release 5.0, the NMC-based configuration wizard fails to run.

As a workaround to enable the configuration wizard:

1. Log in as superuser on the NMO client.
2. Run the appropriate **nsrorara** command:
  - On UNIX:  
`nsrorara -i`
  - On Windows:  
`nsrorara.exe -i`

---

## Update of English NMO 4.5 on Windows AMD64/EM64T installs NMO 5.0 in default directory

### LGTsc28890

On Microsoft Windows AMD64/EM64T, an update of English NMO release 4.5 to 5.0 through either a local update or remote (push) update procedure causes NMO 5.0 to be installed in the default directory, C:\Program Files\Legato\nsr, even if NMO 4.5 was installed in a nondefault directory.

As a workaround on Windows AMD64/EM64T:

1. Uninstall English NMO 4.5 manually.
2. Install English NMO 5.0 in the preferred directory.

---

## NMO does not recognize a Chinese locale on Windows 2008

### LGTsc29488

After the NMO software is installed and properly set up for localization support in a Chinese locale on Microsoft Windows 2008, NMO 5.0 does *not* recognize the Chinese locale.

As a workaround, run the following command to enable NMO 5.0 support of a Chinese locale on Windows 2008:

```
nsrconfig -e dapp zh Chinese
```

---

## Deduplication backup fails if configured with the wizard in NMC 7.5.1

### LGTsc30351

Due to an NMC 7.5.1 bug, if you use the configuration wizard in NMC 7.5.1 to configure an NMO deduplication backup, the deduplication backup *fails*.

As a workaround, use the wizard to edit the RMAN script for the deduplication backup, and set the NSR\_DEDUP\_CACHE\_TAG parameter in the script to a different value for each channel, as described in Table 10, "Parameters in the RMAN command or script" in the *EMC NetWorker Module for Oracle Release 5.0 Administration Guide*.

---

## Size of scheduled backup is reported incorrectly in the savegrp summary report

### NW018894

The total size of the data backed up during an NMO (non-deduplication) scheduled backup is reported incorrectly as 0 KB in the savegrp summary report that is sent as an email notification. The backup data size is reported correctly in the group details on the Groups tab of the NMC Monitoring window.

As a workaround, obtain the size information for a non-deduplication scheduled backup from the group details on the NMC Monitoring window only.

---

## Size of deduplication backup is reported incorrectly in NMC

### NW019011

The size of an NMO scheduled deduplication backup reported in the group details in NMC is smaller than the actual size of the data that was backed up. The incorrect size is reported in the group details on the Groups tab of the NMC Monitoring window.

As a workaround, obtain the size information for a scheduled deduplication backup from either the **mminfo** command output or the savegroup completion report.

## Technical notes

Review the following sections for important notes and tips on the use of NMO release 5.0.

### Prevent possible degradation of NMO restore performance with Oracle 10.2 or later

Due to an Oracle limitation, degradation of NMO restore performance might occur with Oracle 10.2 or later if NetWorker multiplexing is used for NMO backups. If NetWorker multiplexing is enabled, you can prevent the restore performance degradation by including the **set parallelmediarestore off** command in the RMAN restore script that is used for the NMO restore.

For example, the following RMAN restore script contains the required Oracle command to disable the multiplexing during the NMO restore:

```
set parallelmediarestore off;
run {
  allocate channel c1 type 'SBT_TAPE';
  restore database;
  release channel c1;
}
```

### Operations across datazones might cause expired and deleted backups

When backups of a single database are performed to more than one NetWorker datazone, you cannot use the **crosscheck** and **delete** commands for all the backup pieces across *all* the datazones due to Oracle limitations.

This issue applies to *both* proxy and regular (nonproxy) backups.

As a alternative, run the **crosscheck** and **delete** commands with the list of backup pieces generated on only one datazone, in one datazone at a time. For example:

1. Run the following command to allocate a maintenance channel for the NetWorker server host *host1*:

```
allocate channel for maintenance type 'SBT' parms 'ENV=(NSR_SERVER=host1)';
```

2. Run the **crosscheck** command with an exact list of backup pieces on host *host1*.
3. Run the **delete expired** command on the backup pieces on host *host1* from [step 2](#).

### Oracle requirements for backups

When a device is allocated with the **allocate channel...type disk** command, backups can be directed to disk files through Oracle's backup implementation.

To perform an Oracle backup with NMO, a device must be allocated with the **allocate channel...type sbt\_tape** command, even if it is an advanced file type device.

## Proxy backups and restores

NMO release 5.0 supports proxy backups and restores of Oracle data residing on primary storage devices supported by the NetWorker PowerSnap Modules.

The *EMC Information Protection Software Compatibility Guide* on Powerlink provides details on the supported types of primary storage. The NetWorker PowerSnap Module documentation provides details on the PowerSnap Module software.

A proxy backup creates a snapshot of Oracle data that can be either used directly for restore or sent to a traditional storage medium. NMO supports *scheduled* proxy backups only.

**Note:** If you attempt to run a manual (unscheduled) proxy backup, you receive an error message.

To enable proxy backups:

- ◆ Configure the required NetWorker resources for a scheduled proxy backup.
- ◆ Set the required PowerSnap Module parameters.
- ◆ Specify the **backup proxy** or **backup proxy only** command in the RMAN backup script.

The procedure to restore proxy backups is the same as to restore regular backups, *except* that certain PowerSnap Module parameters might need to be set.

**Note:** The RMAN **restore** command does *not* include a **proxy** option.

NMO release 5.0 and the PowerSnap Modules do *not* support proxy backups and restores of archived redo logs. [“Proxy backups of archived redo logs fail to roll over to backup media” on page 24](#) provides details.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on proxy backups and restores.

## Discrepancy between NetWorker resource and RMAN backup configurations for proxy backups

As mentioned in the *EMC NetWorker Module for Oracle Release 5.0 Administration Guide*, RMAN performs a regular backup instead of a proxy backup if the **backup** commands in the RMAN script include the **proxy** option, but none of the Oracle database objects (tablespaces or datafiles) specified in the **backup** commands reside on a primary storage device that the PowerSnap Module supports. The resulting savegroup completion report includes warning messages.

In addition, the savegroup completion report for the backup includes *both* warning messages and a report of scheduled backup failure if the Snapshot Policy attribute in the Group resource specifies a SnapShot Policy resource with the following attribute settings:

- ◆ The Backup Snapshots attribute is set to a value different from None. For example, the attribute is set to All.
- ◆ The Retained Snapshot attribute is set to a value greater than 0. For example, the attribute is set to 1.

The scheduled backup failure occurs because the software attempts to back up a nonexistent snapshot (point-in-time copy) to secondary storage, such as tape or disk.

---

## Automatic catalog synchronization for proxy backups

Automatic catalog synchronization removes an entry from the RMAN catalog as soon as the corresponding proxy backup entry expires in the NetWorker indexes.

**Note:** This feature is supported for proxy backups only, *not* for regular backups. For regular backups, you must synchronize the RMAN catalog and NetWorker indexes manually by using RMAN commands.

Automatic catalog synchronization is disabled by default. The feature must be enabled through the NMO program, **nsrnmoadmin**. The **nsrnmoadmin** program sets parameters that are stored in the NMO resource file named `nwora.res`, located as follows:

- ◆ On UNIX: `/nsr/res/nwora.res`
- ◆ On Windows: `NetWorker_install_path\res\nwora.res`, where `NetWorker_install_path` is the root directory of the NetWorker installation path

**Note:** The resource file is backed up automatically at the end of each proxy backup.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on automatic catalog synchronization.

---

## Catalog synchronization after proxy backup volume is relabeled manually

If you relabel a NetWorker volume containing proxy backups *manually*, the NMO program **nsroraclecat** cannot remove the corresponding entries from the RMAN catalog during automatic catalog synchronization.

In this case, you must perform the following procedures to reestablish automatic catalog synchronization for the volume. The procedures to perform depend on the setting of `NSR_REMOVE_ON_FAILURE` in the `NWORA` resource file. The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on this parameter resource.

To reestablish catalog synchronization for the relabeled volume, use the instructions in the appropriate section, depending on the `NSR_REMOVE_ON_FAILURE` setting:

- ◆ [“If NSR\\_REMOVE\\_ON\\_FAILURE is set to TRUE” on page 38](#)
- ◆ [“If NSR\\_REMOVE\\_ON\\_FAILURE is set to FALSE” on page 39](#)

### If `NSR_REMOVE_ON_FAILURE` is set to TRUE

If `NSR_REMOVE_ON_FAILURE` is set to TRUE in the `NWORA` resource file, synchronize the RMAN catalog entries manually by using the RMAN **crosscheck** command. This reestablishes the catalog synchronization for the relabeled volume.

The appropriate Oracle documentation provides more information on the RMAN **crosscheck** command.

## If NSR\_REMOVE\_ON\_FAILURE is set to FALSE

If NSR\_REMOVE\_ON\_FAILURE is set to FALSE in the NWORA resource file, you must first detect a catalog synchronization failure before you can reestablish the catalog synchronization. To detect a failure, monitor the backup system for one of the following events:

- ◆ A proxy backup fails due to the catalog synchronization failure and the snapshot resources not being released.
- ◆ One of the following messages appears in both the **nsroraclecat** log and debug files. (The log and debug files are specified by the NSR\_ORACLECAT\_LOG\_FILE and NSR\_ORACLECAT\_DEBUG\_FILE parameter resources, respectively.)

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**Note:** The first message appears when all the RMAN catalog entries fail to be synchronized. The second message appears when only some of the entries fail.

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ALERT: The save times could not be automatically synchronized because they have already been removed from the NetWorker client file index (possibly through manually relabeling a volume). Please manually synchronize the catalogs using the RMAN 'crosscheck' command.

ALERT: Some of the backup pieces may have already been removed from the NetWorker client index (possibly by manually relabeling a volume). Please manually synchronize the catalogs using the RMAN 'crosscheck' command.

When you detect this type of failure, reestablish the catalog synchronization for the relabeled volume by performing the following:

1. In the NWORA resource file, set NSR\_REMOVE\_ON\_FAILURE to TRUE by typing the **nsrnmoadmin** command.

The *EMC NetWorker Module for Oracle Release 5.0 Administration Guide* provides more details on the **nsrnmoadmin** command.

2. To induce catalog synchronization, type the **nsrsnapck -y** command.

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**Note:** This **nsrsnapck** command also releases any incomplete or invalid snapshots that it detects.

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3. In the NWORA resource file, set NSR\_REMOVE\_ON\_FAILURE to FALSE by typing the **nsrnmoadmin** command.
4. Synchronize the RMAN catalog entries manually by typing the RMAN **crosscheck** command.

The appropriate Oracle documentation provides more information on the RMAN **crosscheck** command.

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## NMO parameters

Review the following information on NMO parameters.

### NSR\_CHECKSUM, NSR\_COMPRESSION, and NSR\_ENCRYPTION for proxy backups

For proxy backups only, if you want the data checksum, compression, or encryption feature to be disabled, do *not* set NSR\_CHECKSUM, NSR\_COMPRESSION, or NSR\_ENCRYPTION, respectively.

To disable any of these data features for proxy backups, the corresponding parameter must *not* be set to either TRUE or FALSE in the following:

- ◆ The RMAN **send** command, either on the operating system command line or in the RMAN script.
- ◆ The user-defined configuration file specified in the parameter NSR\_PROXY\_PFILE.

For example, if NSR\_COMPRESSION is set to either TRUE or FALSE, the NetWorker software performs compression on the proxy backup data.

### NSR\_GROUP and NSR\_SERVER

For a scheduled Oracle backup, do *not* set the NMO parameters NSR\_GROUP and NSR\_SERVER in the RMAN script. During a scheduled backup, these parameters are overridden by the values in the Group and Server attributes, respectively, of the NetWorker Client resource.

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## Documentation

The following sections describe related documentation and any documentation corrections or additions for NMO release 5.0.

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### Related documentation

The *EMC Information Protection Software Compatibility Guide* provides the latest information on operating systems and versions supported by the NMO software. The guide is available at <http://Powerlink.EMC.com>, **Support > Interoperability and Product Lifecycle Information > Compatibility Guides**.

The following documentation provides information related to the NMO software:

- ◆ The NetWorker Module for Oracle release 5.0 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
  - UNIX man pages

The guides are available at <http://Powerlink.EMC.com>, **Support > Technical Documentation and Advisories**.

**Note:** The most up-to-date product issues for NMO release 5.0 are detailed online in the EMC Issue Tracker, available on Powerlink.

The following additional documentation may be useful:

- ◆ Oracle Server documentation
- ◆ Oracle database backup and recovery documentation

## Documentation errata

The following sections describe documentation corrections or additions for NMO release 5.0.

### Where to find the most recent supported operating system and version information

The *EMC NetWorker Module for Oracle Release 5.0 Installation Guide* and *Administration Guide* do *not* contain the most recent information on supported operating systems and versions of database, application, and NetWorker software. Consult the *EMC Information Protection Software Compatibility Guide* on Powerlink for the most up-to-date information on supported operating systems and versions.

### Installation guide — Modify information on 64-bit operating system requirements

In the *EMC NetWorker Module for Oracle Release 5.0 Installation Guide*, add the following Note to the section “Operating system requirements” on page 15:

**Note:** On a 64-bit operating system *except* AIX, 64-bit NMO 5.0 does *not* support 32-bit NetWorker release 7.5 or later. If the 64-bit operating system is *not* AIX, then 64-bit NetWorker software must be installed.

### Installation guide — Modify information on the remote update of NMO language packs

In the *EMC NetWorker Module for Oracle Release 5.0 Installation Guide*, modify the section “Update remotely from NMO release 4.x” on page 19:

- ◆ Change the first Note in the section to the following:

**Note:** The NetWorker software distribution feature is *not* supported for the remote (push) update of the following:

- Update of NMO from release 4.x to 5.0 on Linux Itanium or Solaris AMD64/EM64T.
- Update of any NMO language pack from release 4.x to 5.0.

- ◆ Change the NetWorker server requirement in step 1 to the following:
  - NetWorker server 7.4 or later is installed on the remote NetWorker server host.

### Administration guide — Modify information on deduplication support with cluster or RAC

In the *EMC NetWorker Module for Oracle Release 5.0 Administration Guide*, modify the section “Features not supported with deduplication operations” on page 22 by removing the second bullet as follows:

- ◆ Cluster or RAC backups or restores.

### Administration guide — Modify information on user group privileges for Oracle backups

In the *EMC NetWorker Module for Oracle Release 5.0 Administration Guide*, modify the information on the user group privileges for Oracle backups in Table 3, “User group privileges required for NMO operations” on page 65. Information in the other rows of the table should remain unchanged. Make only the following changes in the table:

Operation	Operating system user that performs operation	Required user group privileges
Regular manual Oracle backup	Oracle user on the Oracle Server	Recover Local Data, Backup Local Data, Monitor NetWorker (These privileges are set by default)
Regular scheduled Oracle backup	Oracle user on the Oracle Server	Recover Local Data, Backup Local Data, Monitor NetWorker (These privileges are set by default)
	Root user, or a member of the Microsoft Windows Administrators group, on the Oracle Server	Monitor NetWorker, Backup Local Data (These privileges are set by default)

### Administration guide — Modify information on PowerSnap Module requirement for L10N support

In the *EMC NetWorker Module for Oracle Release 5.0 Administration Guide*, modify the Note in the section “Configure L10N support” on page 69 to the following:

**Note:** L10N support for proxy operations requires PowerSnap Module 2.4 SP3 or later.

### Administration guide — Modify information on configuring a scheduled deduplication backup

In the *EMC NetWorker Module for Oracle Release 5.0 Administration Guide*, modify the section “Configure a deduplication backup” on page 96 by adding a third bullet in step a:

- For a scheduled deduplication backup in a cluster, RAC, or any scenario that uses NSR\_CLIENT, where the backup is initiated from a client that is different from the NSR\_CLIENT client, ensure the following attribute settings in the Client resource of the NSR\_CLIENT client:

1. Unselect the Scheduled Backup attribute by ensuring that the checkbox is clear.
2. Set the Group attribute to the name of the backup group used to initiate the backup.

For example, if you set `NSR_CLIENT=racvip1` in the RMAN script for a scheduled deduplication backup, but you use the NetWorker client `racvip2` and the NetWorker backup group `rac-dedup` to initiate the backup, set the following in the Client resource of the `racvip1` client:

1. Unselect the Scheduled Backup attribute by ensuring that the checkbox is clear.
2. Set the Group attribute to the backup group named `rac-dedup`.

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## Software media, organization, and files

The *EMC NetWorker Module for Oracle Release 5.0 Installation Guide* provides details on the NMO release 5.0 software media, organization, and files.

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## Installation

The *EMC NetWorker Module for Oracle Release 5.0 Installation Guide* provides details on how to install, update, uninstall, and license the NMO 5.0 software.

**Note:** Linking instructions can vary with patched releases of the Oracle Server. The installation guide provides information for the *base* releases only.

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## Coexistence of NMO software

The NMO software does *not* support the coexistence of NMO 5.0 with a previous NMO release on the same system.

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## NMO reinstall after NetWorker software update

If the NetWorker client installation directory is relocated (for example, during a NetWorker software update) on the Oracle Server host where the NMO release 5.0 software is installed, you must uninstall and reinstall the NMO software.

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## Licensing

To enable NMO operations after the end of an evaluation period, obtain and install an NMO license enabler.

To enable proxy operations, obtain and install a separate PowerSnap license enabler.

## Troubleshooting and getting help

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

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

<http://Powerlink.EMC.com>

**Technical support** — For technical support, go to EMC Customer Service on Powerlink. To open a service request through Powerlink, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.

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