RELEASE NOTES

EMC® NetWorker®
Module for SAP with Oracle
Release 4.5

Release Notes

P/N 300-014-212
REV 04

September 25, 2015

These release notes contain supplemental information about EMC NetWorker Module for SAP with Oracle (NMSAP) release 4.5. Topics include:

- Revision history 2
- Product description 2
- New features and changes 3
- Fixed problems 8
- Environment and system requirements 8
- Known problems and limitations 8
- Technical notes 13
- Documentation 15
- Software media, organization, and files 16
- Installation 16
- Troubleshooting and getting help 16

NOTICE

Before you install NMSAP and periodically after the installation, refer to the latest revision of this document on EMC Online Support at https://support.emc.com. On the Support by Product page, search for NMSAP by typing the full product name in the Find a Product field. The product page provides the product-specific downloads, documentation, and additional content and tools.

EMC²

Revision history

The following table presents the revision history of this document:

Revision	Date	Description
04	September 25, 2015	Updated the following information: • "Backup configuration changes with the NetWorker 9.0 server" on page 3 - Added this topic about the NMSAP configuration requirements with the NetWorker 9.0 server. • "239598" on page 12, "NMSAP RMAN backup might fail with Oracle 12c" - Added to Known problems and limitations. • "Troubleshooting and getting help" on page 16 - Updated the information in this topic.
03	September 30, 2014	Updated "Environment and system requirements" on page 8 - Modified the *EMC NetWorker Software Compatibility Guide* reference to specify the PDF version of the guide. Added to Known problems and limitations: • "NW160774" on page 12,"Directed restore of NMSAP snapshot backup goes to a single file system" • "NW161155" on page 12, "NMSAP operations generate unnecessary debug logs"
02	December 16, 2013	Updated in New features and changes: "Oracle Exadata support" on page 6. Added to New features and changes: "RMAN backup load distribution to multiple RAC nodes" on page 7. Added to Known problems and limitations: • "NW150393" on page 11, "Restore failure due to insufficient permissions produces a misleading error" • "NW155004" on page 11, "POSTCMD script might fail if execute permissions depend on supplementary groups" • "NW156196" on page 11, "Backup fails through a NetWorker 8.1.x storage node with DD Boost over FC" Removed from Known problems and limitations: NW129311.
01	July 25, 2013	Directed availability release of NMSAP 4.5.

Product description

EMC® NetWorker® Module for SAP with Oracle (NMSAP) is an add-on module for the EMC NetWorker client that provides a backup and restore interface between the SAP BR*Tools program and the NetWorker server.

"New features and changes" on page 3 describes the major new features and enhancements in NMSAP release 4.5. The *EMC NetWorker Module for SAP with Oracle Release 4.5 Administration Guide* describes all the features that NMSAP supports.

"Environment and system requirements" on page 8 describes the supported versions of the NetWorker software.

"Known problems and limitations" on page 8 describes the known problems and limitations in NMSAP release 4.5.

"Technical notes" on page 13 describes existing NMSAP features that require special considerations or require a later version of the NetWorker software.

"Documentation" on page 15 describes the NMSAP release 4.5 documentation and related documents. "Installation" on page 16 provides details about installing NMSAP.

Before installing NMSAP, review the *EMC NetWorker Software Compatibility Guide* and the NMSAP installation guide, administration guide, and other documentation at EMC Online Support.

New features and changes

NMSAP release 4.5 replaces the previous NMSAP releases on the supported Linux, UNIX, and Windows operating systems.

These sections describe the major new or enhanced features of NMSAP release 4.5:

- "Backup configuration changes with the NetWorker 9.0 server" on page 3
- "Deduplication backup and restore enhancements with Data Domain" on page 4
- "NMSAP Client Direct backups to an AFTD" on page 5
- "Frequent password changes with the configuration wizard" on page 6
- "New parameters for NMSAP backups" on page 6
- "Oracle Exadata support" on page 6
- "RMAN backups and restores on Oracle ASM" on page 7
- "RMAN backup load distribution to multiple RAC nodes" on page 7
- "Restores of Fujitsu NetWorker Module for SAP R/3 backups" on page 7
- "Simplified scheduled backup configuration of multiple Oracle instances" on page 7

The *EMC NetWorker Module for SAP with Oracle Release 4.5 Administration Guide* provides complete details about all the NMSAP features.

Note: Deprecated features are features supported in this NMSAP release that will be removed and unsupported in a future NMSAP release.

Backup configuration changes with the NetWorker 9.0 server

If you update the NetWorker server to release 9.0, you must change certain settings in the NMSAP backup configurations to enable the NMSAP backup operations with the updated NetWorker server.

With the NetWorker 9.0 server, you cannot create any new configurations of Avamar deduplication backups. However, you can continue to use existing backup configurations of Avamar backups, and you can continue to restore Avamar backups by using NMSAP with the NetWorker 9.0 server.

The NetWorker 9.0 server does not support browse policy settings, and sets the browse policy to the same value as the retention policy. The browse policy field and resource are removed from the NMC 9.0 GUI. The NetWorker 9.0 server ignores any setting of the NSR_SAVESET_BROWSE parameter.

With the NetWorker 9.0 server, the NSR_DATA_VOLUME_POOL and NSR_SAVESET_RETENTION parameters are no longer supported for scheduled backups. However, these parameters are still supported for manual backups. You can continue to

use a scheduled backup configuration that was created with a pre-9.0 server. However, ensure that the destination pool and retention period values are set in the backup action that is configured for the scheduled backup. You can configure a backup action by using the Policy Action Wizard, described in the *EMC NetWorker Version 9.0 Administration Guide*.

The NetWorker 9.0 server introduces the new concepts of a data protection policy, backup workflow, and backup action for a scheduled backup configuration. The *EMC NetWorker Version 9.0 Administration Guide* and the *EMC NetWorker Module for SAP Version 9.0 Administration Guide* provide details about configuring a backup action, workflow, and data protection policy for a scheduled backup.

You can also specify the scheduled backup pool or retention policy in the Client resource. With a NetWorker 9.0 server, the attribute settings in the Client resource override the settings in the backup action. In the Client resource in the NMC 9.0 GUI, the Group attribute is renamed as Protection group list.

The NetWorker 9.0 server no longer supports a scheduled backup pool that is specified with the NSR_DATA_VOLUME_POOL parameter or associated with a backup group.

For manual backups with the NetWorker 9.0 server, the parameter settings in the NMSAP configuration file have a higher precedence than the corresponding settings in the Client resource.

NOTICE

The NetWorker 9.0 server does not support NSM backups and restores with pre-9.0 NetWorker client and NMSAP software. To enable NSM operations with the NetWorker 9.0 server, update the NetWorker client and NMSAP to release 9.0. Ensure that you install the NetWorker 9.0 extended client software. NSM backups that are configured with a pre-9.0 server continue to operate after the software update. However, you cannot perform a NetWorker 9.0 clone operation on any snapshot that was created with pre-9.0 NMSAP, even after you have updated NMSAP and the NetWorker client.

Deduplication backup and restore enhancements with Data Domain

NMSAP supports deduplication backups and restores with an EMC Data Domain® system configured with NetWorker advanced file type devices (AFTDs), virtual tape library (VTL) devices, or DD Boost devices. The data can pass through the NetWorker storage node.

NMSAP supports the following methods of data deduplication:

- Data deduplicated on the Data Domain system for AFTD or VTL devices.
- Data deduplicated on the storage node through the distributed segment processing (DSP) feature for DD Boost devices.
- Data deduplicated directly on the NMSAP host through the DSP feature for DD Boost devices. NMSAP sends only the new unique data blocks from the client directly to the storage device (Client Direct feature).

  NMSAP supports Client Direct backups and restores only on operating systems on which the NetWorker client supports the Data Domain Boost library. The *EMC NetWorker Software Compatibility Guide* provides details.

NMSAP does not require any additional licenses to perform deduplication operations with a storage device on a Data Domain system, provided that the NetWorker server and Data Domain system are configured and licensed for distributed segment processing through the DD Boost license.

Client Direct to DD Boost Enhancements in NMSAP release 4.5

NMSAP release 4.5 includes the following enhancements in Data Domain Client Direct support:

- Added Client Direct to DD Boost devices support for RMAN backups and restore on AIX, in addition to all the other platforms that the previous release supports. RMAN support on AIX requires NetWorker client 8.0 Service Pack 1 (SP1) or later.
- Easier configuration.

  Starting with the NW 8.0 server, you can use the Client Direct attribute in the NetWorker Client resource or in the backup configuration wizard to enable or disable the Client Direct feature for scheduled backups. By default, SAP tries to perform a Client Direct backup to DD Boost devices.

Requirements and limitations for backups and restores to DD Boost devices

Deduplication backups and restores to DD Boost devices require the following software:

- Data Domain operating system version 4.8 or later supported by the NetWorker release.
- NetWorker server release 7.6 SP1 or later, which must be managed by NetWorker Management Console (NMC) 7.6 SP1 or later.
- NetWorker storage node release 7.6 SP1 or later, which manages the Data Domain system.
- For Client Direct backups and restores only, ONCplus version B.11.31.06 or later installed on the NMSAP host that has HP-UX 11.31.

NMSAP does not support Client Direct backups with the EMC NetWorker PowerSnap™ Module or EMC NetWorker Snapshot Management (NSM).

Note: With NetWorker release 8.1 or later, the NSM feature integrates and replaces the PowerSnap Modules. NSM is available as part of the NetWorker client software.

NMSAP Client Direct backups to an AFTD

Traditionally, an NMSAP backup to an AFTD on either a Data Domain system or another type of system includes the following steps:

1. The NMSAP client sends all the backup data to the storage node.
2. The storage node sends the data to the attached AFTD device.

NMSAP release 4.5 provides new support of Client Direct backups to an AFTD. The Client Direct feature enables the NMSAP client to bypass the storage node and write the data directly to the AFTD by using direct file access (DFA), which can improve the backup

performance. A Client Direct backup uses the storage node only to coordinate the backup and manage the device. If an NMSAP backup cannot use the Client Direct method due to the permissions or accessibility to the AFTD, the backup uses the storage node instead.

NMSAP supports a Client Direct backup to an AFTD only if the storage node and NMSAP client are both Windows systems.

An NMSAP Client Direct backup to an AFTD requires NetWorker server and storage node release 8.0 or later.

Frequent password changes with the configuration wizard

NMSAP release 4.5 supports enhancements of the configuration wizard that facilitate frequent password changes across the server-side backup configurations on a client host.

When you use the configuration wizard to modify a database password or OS password on the client host, you can apply the same password change to other NMSAP configurations that use the same database username or use the same OS username.

New parameters for NMSAP backups

NMSAP release 4.5 supports these new optional parameters:

- NSR_ARCH_LOGS_SEQUENTIAL—SAP BR*Tools can remove archive logs once they have been reported as backed up. The BR*Tools feature recognizes that an archive log can only be removed once the preceding archive logs have been backed up and removed. NMSAP supports this new option to back up the archived logs in a log sequence, which enables the prompt deletion of the archived redo logs after the logs are successfully backed up.
- POSTCMD—This NMSAP **nsrsapsv** parameter specifies a postprocessing script to run after a scheduled backup. If the scheduled backup fails, the postprocessing script still runs. If the postprocessing script fails, an error message appears but the scheduled backup succeeds. You cannot set this parameter for manual backups.
- PRECMD—This NMSAP **nsrsapsv** parameter specifies a preprocessing script to run before a scheduled backup. If the preprocessing script fails, NMSAP does not perform a scheduled backup, an error message appears, and any scheduled postprocessing script does not run. You cannot set this parameter for manual backups.

The NSR_DIRECT_ACCESS=Yes parameter setting is deprecated in NMSAP release 4.5.

Oracle Exadata support

NMSAP supports Oracle Exadata through the BR*Tools RMAN interface only.

NMSAP supports Oracle Exadata in both of the following configurations:

- Exadata Database Machine
- Exadata Storage Server, attached to an external database server

NMSAP supports the same environment for Oracle Exadata (including the Oracle database versions, operating system versions, BR*Tools versions, and NetWorker versions) that NMSAP supports for Oracle RAC, as described in the *EMC NetWorker Software Compatibility Guide*.

RMAN backups and restores on Oracle ASM

Due to BR*Tools and Oracle limitations, NMSAP supports backups and restores of Oracle database files and archive logs that reside on Oracle ASM through the RMAN option only with the following software:

- BR*Tools 7.20 patch 18 or later
- Oracle 11gR2

RMAN backup load distribution to multiple RAC nodes

NMSAP supports the distribution of the RMAN backup load to multiple nodes in an Oracle RAC environment, which can reduce the load on a dedicated backup node and improve the backup performance. The Oracle RMAN documentation provides details about the RMAN feature.

You can use the RMAN feature only with the **brbackup**, **brarchive**, or **brrestore** command. The feature requires BR*Tools 7.20 Patch 31 or 7.40 at a minimum. You must implement the feature support according to the SAP Note 1844380.

Restores of Fujitsu NetWorker Module for SAP R/3 backups

NMSAP release 4.5 can restore backups performed with Fujitsu NetWorker Module for SAP R/3 version 3.0 on an operating system that this NMSAP release supports. The *EMC NetWorker Software Compatibility Guide* at EMC Online Support provides details.

If the backup with the Fujitsu NetWorker Module for SAP R/3 used advanced backup compression with GZIP or BZIP2, NMSAP will automatically uncompress the backup during the restore.

If you convert from using Fujitsu NetWorker Module for SAP R/3 to using NMSAP, you must configure backups of SAP Oracle data according to the NMSAP documentation. For example, NMSAP operations ignore the Fujitsu-specific compression options GZIP and BZIP2 if the options are set.

Simplified scheduled backup configuration of multiple Oracle instances

NMSAP release 4.5 supports the scheduled backup of multiple Oracle instances on the same client host by using a single NetWorker Client resource.

When you configure a scheduled backup without the wizard, you can specify multiple Oracle instances in the Save Set attribute of a single Client resource. You do not need to configure a separate Client resource for each instance.

When you use a single Client resource for multiple Oracle instances, you can also use a single NMSAP configuration file and specify unique backup parameter settings for each instance.

Fixed problems

Table 1 on page 8 provides a list of the major fixes in NMSAP release 4.5.

Table 1 Problems fixed in NMSAP release 4.5

Issue number	Problem summary
NW131252	NMSAP wizard failed during a backup configuration with Oracle 11gR2.
NW131632	NMSAP wizard exported incorrect parameters to the configuration and utl files.
NW133642	NMSAP configuration file templates were out-of-date.
NW133797	NMSAP backup could fail when NSR_SAVESET_BROWSE and NSR_SAVESET_RETENTION were set to the same value
NW144863	BRRESTORE initiated from the BRGui failed with an error 2 reported from **backint**.

Environment and system requirements

As client-side products, NMSAP and the NetWorker client must reside on each SAP with Oracle server that participates in the backup. The NetWorker server and the SAP software can reside on either the same system or separate systems.

Unless otherwise specified, NMSAP requires the NetWorker server, storage node, and client release 7.6 or later.

The PDF version of the *EMC NetWorker Software Compatibility Guide* at EMC Online Support provides current details on the software that NMSAP release 4.5 requires, such as supported operating systems and versions, BR*Tools versions, and other software.

For details on updates of patches required for a particular system, see the appropriate section at EMC Online Support.

The *EMC NetWorker Module for SAP with Oracle Release 4.5 Administration Guide* provides details on the environment and system configurations required to operate NMSAP.

Known problems and limitations

Table 2 on page 8 lists problems and limitations that occurred under certain circumstances and continue to be applicable to NMSAP release 4.5.

Table 2 Known problems and limitations (page 1 of 2)

Issue number	Description	Operating system	Product feature
"LGTpa96555" on page 9	Snapshot backups leave NetWorker out of sync with EMC CLARiiON.	Solaris	Backup, NSM
"LGTsc06833" on page 9	Due to Oracle bug 6211367, RMAN backup fails if a NSR* parameter is set to an invalid value.	Microsoft Windows	Backup, RMAN
"NW105330" on page 10	Save Set Details reports multiple snapshots when ps_group_objs is set.	Any supported	Backup, NSM
"NW113842, NW123329" on page 10	Configuration wizard might fail to create a lockbox.	Any supported	Configuration wizard

Table 2 Known problems and limitations (page 2 of 2)

Issue number	Description	Operating system	Product feature
"NW140388" on page 10	On Solaris 11 with the zfs file system, an NMSAP restore fails with an error.	Solaris	Restore
"NW150393" on page 11	During a restore on a UNIX or Linux system, when NMSAP fails to browse the index due to insufficient permissions, the failure might produce a misleading error message.	UNIX, Linux	Restore
"NW155004" on page 11	On UNIX or Linux, a postprocessing script might fail if the permissions required to execute commands in the script depend on the SAP user's supplementary groups.	UNIX, Linux	Backup
"NW156196" on page 11	An NMSAP backup fails when the backup is performed through a NetWorker 8.1.*x* storage node and the storage node writes the backup to a DD Boost device over Fibre Channel.	Any supported	Backup
"NW160774" on page 12	A directed restore of an NMSAP NSM snapshot backup causes all the files in the backup to be restored to a single file system directory by default.	Any supported	Restore, NSM
"NW161155" on page 12	NMSAP backup and restore operations generate large quantities of debug logs because debug messages are enabled by default.	Any supported	Backup, restore
"239598" on page 12	NMSAP RMAN backup might fail with Oracle 12c.	UNIX, Linux	Backup

Snapshot backups leave NetWorker out of sync with CLARiiON

LGTpa96555

An NMSAP backup with EMC PowerSnap performed on a CLARiiON storage array might have been successful and might be deleted from the array, but the NetWorker media database index does not record the backup and still shows the previous backup entry.

The daemon.log file may contain errors similar to the following error:

```
nsrd: Impersonation was requested by: remoteuser@jupiter, but the user
   does not have enough privileges to impersonate.

nsrd: PowerSnap notice: Operation Requested for: backint:SAP:PS:
```

This discrepancy can occur when the following conditions exist:

- The remote user does not have enough NetWorker permissions.
- There are no users for the particular host in the user groups.
- The remote user is not in the Administrator/user groups list.

Workaround — Provide the user with enough permission for the backups.

Backup fails if an NSR* parameter for RMAN is set to an invalid value

LGTsc06833

Due to Oracle bug 6211367, if you set the NSR* parameter to an invalid value for an NMSAP backup that uses RMAN, then the backup fails and Oracle might become suspended. Subsequent backups also fail, whether or not you correctly configured the backups.

Workaround — Perform either of the following actions:

- Set a valid parameter value and restart the Oracle services. If required, restart the operating system.
- Contact Oracle Technical Support to port the bug fix to your Oracle version.

Save Set Details incorrectly reports multiple snapshots when ps_group_objs is set

NW105330

When you set the ps_group_objs parameter to TRUE and the software creates a snapshot of a file system that has multiple directories, the software creates a single snapshot copy of the group, as expected for this parameter. However, the NMC Save Set Details report incorrectly shows that a snapshot copy was created for each datafile within the group.

Workaround — None.

Configuration wizard might fail to create a lockbox (NetWorker 7.6.0 server only)

NW113842, NW123329

Due to a bug in NetWorker server 7.6.0, the NMSAP backup configuration wizard might fail with one or more of the following error messages when the NetWorker server operates in a locale that uses a comma (,) as a decimal separator:

```
Unknown error encountered while creating lockbox

Error encountered while creating lockbox: Opening (CLB_open APIs) of
   the Lockbox failed because of inconsistent policy settings between
   the Lockbox library and Lockbox file

Error encountered while creating lockbox: The system hostname key is
   missing from the lockbox
```

Workaround — Upgrade to NetWorker server 7.6.1 or later.

NMSAP restore fails on Solaris 11 with zfs file system

NW140388

On Solaris 11 with the zfs file system, an NMSAP restore fails with the following error:

```
Permission denied (has acl)
```

This error occurs due to hardened security on the zfs file system, which is the default file system on Solaris 11.

Workaround — Modify the sudoers file to enable the user group of the SAP user who performs the restore or recovery to run any command.

For example, if “testing” is the group name of the SAP user, make the following change to the sudoers file:

```
root ALL = (ALL) ALL
%testing  ALL = (ALL) NOPASSWD: ALL
```

Any user that is part of the testing group can then perform a restore.

Restore failure due to insufficient permissions produces a misleading error

NW150393

During a restore on a UNIX or Linux system, when NMSAP fails to browse the index due to insufficient permissions, the failure might produces one of the following misleading error messages:

```
Not in index
```

```
Nothing found in index
```

You can restore only a file for which you have read permissions on the file and its directory, based on the operating system permissions at the time that the files were backed up. On a UNIX or Linux system, the permission is associated with the numeric user ID (UID) and group ID (GID), not the username or group name. The UID and GID of the user performing a restore must match the IDs associated with the files at backup time.

Workaround — If you see one of the preceding error messages, ensure that the UID and GID of the user performing the restore matches the IDs associated with the files at the backup time.

POSTCMD script might fail if execute permissions depend on supplementary groups

NW155004

You can use the POSTCMD parameter to specify a postprocessing script that runs after an NMSAP scheduled backup completes.

On UNIX or Linux, a postprocessing script might fail if the permissions required to execute commands in the script depend on the SAP user's supplementary groups and not the primary group.

Workaround — Contact EMC Technical Support for a hotfix.

Backup fails through a NetWorker 8.1.*x* storage node with DD Boost over FC

NW156196

An NMSAP backup fails when the backup is performed through a NetWorker 8.1.*x* storage node and the storage node writes the backup to a DD Boost device over Fibre Channel (FC). The backup fails with the following error message:

```
lgto_auth for `nsrmmd' failed: no matching IP interface data domain
   devices for save of client `client_name'; check storage nodes,
   devices or pools
```

Workaround — Upgrade NMSAP to release 4.6 or obtain a hotfix for the NetWorker storage node from EMC Technical Support.

Directed restore of NMSAP snapshot backup goes to a single file system

NW160774

A directed restore of an NMSAP NSM snapshot backup causes all the files in the backup to be restored to a single file system directory by default.

Contact EMC Technical Support for a hotfix.

NMSAP operations generate unnecessary debug logs

NW161155

NMSAP backup and restore operations generate large quantities of debug logs because debug messages are enabled by default.

Contact EMC Technical Support for a hotfix.

NMSAP RMAN backup might fail with Oracle 12c

239598

An NMSAP RMAN backup might fail with Oracle 12c due to two separate causes, depending on the particular platform:

1. On AIX, Linux, and Solaris with Oracle 12c, an NMSAP RMAN backup might fail to load the RSA BSAFE dynamic libraries, which produces the following error message:

   ```
   RMAN-03009: failure of allocate command on sbt_1 channel at
   09/14/2015 10:50:03
   ORA-03113: end-of-file on communication channel
   ```

   Workaround — On AIX, Linux, or Solaris with Oracle 12c, run the required command to set the shared library path to the NMSAP 64-bit library directory. For example:

   - On AIX:

     ```
     export LIBPATH=/usr/lib/nsr/apps/nmsap/lib64:$LIBPATH
     ```

   - On Linux, with NMSAP installed in the default location:

     ```
     export
     LD_LIBRARY_PATH=/usr/lib/nsr/apps/nmsap/lib64:$LD_LIBRARY_PATH
     ```

   - On Solaris SPARC (solarissparcv9):

     ```
     export
     LD_LIBRARY_PATH=/usr/lib/nsr/apps/nmsap/sparcv9:$LD_LIBRARY_PATH
     ```

   - On Solaris x64(solarisx64):

     ```
     export
     LD_LIBRARY_PATH=/usr/lib/nsr/apps/nmsap/amd64:$LD_LIBRARY_PATH
     ```

   This issue on AIX, Linux, and Solaris is resolved in NMSAP 8.2 SP2.

2. On HP-UX with Oracle 12c, an NMSAP RMAN backup fails if it loads an OpenSSL version that is not in the OpenSSL 0.9.8x series, which produces the following error message:

   ```
   ORA-27211: Failed to load Media Management Library
   ```

An NMSAP RMAN backup on HP-UX requires OpenSSL 0.9.8zb or later in the 0.9.8x series.

Workaround — On HP-UX with Oracle 12c, run the required command to set the shared library path with OpenSSL 0.9.8zb (has a critical security fix) or later in the 0.9.8x series. For example:

```
export SHLIB_PATH=/usr/lib/hpux64/libssl:$SHLIB_PATH
```

This issue on HP-UX applies to all NMSAP releases.

Technical notes

This section provides supplementary technical notes for implementing this release of NMSAP. Some of these notes describe issues that are dependent on the functionality of other products used with NMSAP.

Probe-based backups

NMSAP supports probe-based (event-based) backups.

NMSAP does not support probe-based backups for snapshot backups with the PowerSnap Module or NSM.

Configuration wizard integration with NMC

NMSAP supports the scheduled backup configuration wizard that is integrated with NMC.

The NMSAP wizard does not support the following operations:

- Configuration of backups with a NetWorker server installed on a Linux Itanium or a Microsoft Windows Itanium operating system
- Configuration of probe-based (event-based) backups

  Note: An NMSAP Client resource created with the wizard can be associated with a probe by selecting the Probe attribute in the Client resource in NMC (outside of the wizard).

- Configuration of snapshot backups with PowerSnap or NSM
- Configuration of split-mirror backups with EMC Replication Manager
- Modification of a scheduled backup configuration that was created without the wizard

The **nsrsapadm** command can convert NMSAP 3.5 and later scheduled backup settings to the new style of configuration that can be modified through the wizard.

Chained symbolic links are not supported

On UNIX systems, if the path of a file contains a chained symbolic link (a link that points to another link), then the backup succeeds but restores of the file will fail.

The SAP program does not support chained symbolic links. SAP Note 27428 provides details.

Directory backups and restores

NMSAP supports backups and restores of directories that contain non-database files through the following commands:

brbackup -m {**sap_dir** | **ora_dir** | **all_dir** | *full_directory_path*}

brrestore -m *full_directory_path*

You must use the non-wizard method to configure scheduled directory backups. NMSAP does not support configuration through the wizard.

Note: Due to an issue in the SAP BR*Tools interface, you cannot back up directories and files with names that contain white space. The SAP note 898787 provides more details on this issue.

NetWorker Console on Windows systems does not display RMAN save sets

If you use the RMAN utility for scheduled backups on Microsoft Windows systems, then the information for the save sets generated by RMAN is not reported in the Group Details window of the NetWorker Management Console. Only the information for save sets generated by the **backint** program is reported.

Use the NetWorker **nsrinfo** and **mminfo** commands to obtain information on the RMAN save sets.

Restartable backups

NMSAP supports scheduled and manual restartable backups through the NetWorker checkpoint restart feature and SAP BR*Tools **brbackup -fillup** feature. These features enable you to restart an NMSAP backup from a known good point called a checkpoint. During the restarted backup, NMSAP will not back up the files that you successfully backed up.

The NetWorker concept of a partial save set does not apply to NMSAP restartable backups. An NMSAP save set cannot exist in a partial state. Either the save set completes in its entirety or is marked as failed. You can achieve NMSAP checkpoint granularity by dividing the SAP data into several save sets, where the number of save sets is greater than the backup parallelism.

NMSAP scheduled restartable backups require the following software:

- NetWorker server release 7.6 SP2 or later
- SAP BR*Tools version 7.10 or later

The manual restartable backups work with all the supported NetWorker and BR*Tools versions.

Documentation

The following sections describe related documentation and any corrections or additions for the NMSAP documentation.

Related documentation

The *EMC NetWorker Software Compatibility Guide* provides the latest details about the platforms, operating systems, database server releases, and other software components that NMSAP supports. The guide is available at EMC Online Support at https://support.emc.com.

The following documentation provides information about NMSAP and is also available at EMC Online Support:

- The NetWorker Module for SAP with Oracle release 4.5 documentation set:
  - Administration guide—Information on how to configure and use NMSAP
  - Installation guide—Information on how to install or update NMSAP in stand-alone and cluster environments
  - Release notes—Information on new NMSAP features and changes, fixed problems, and known limitations
  - Command reference guide—Reference information on NMSAP commands and options
- The NetWorker client, storage node, and server documentation set, including (but not limited to) the following documents:
  - Administration guide—Information on how to configure and maintain the NetWorker software
  - Installation guide—Information on how to install or update the NetWorker software on supported platforms
  - Release notes—Information on new NetWorker features and changes, fixed problems, and known limitations
  - Command reference guide—Reference information on NetWorker commands and options
  - Data Domain deduplication devices integration guide—Information on how to configure and use Data Domain systems
  - Disaster recovery guide—Information on how to prepare for and perform disaster recovery with NetWorker
  - Licensing guide—Information on how to enable and license the NetWorker software

- Other EMC documentation:
  - NetWorker PowerSnap Module or NetWorker Snapshot Management (NSM) documentation—Information on the PowerSnap Module or NSM releases and requirements for snapshot backups and restores
  - Replication Manager documentation—Information on the Replication Manager releases and requirements for snapshot backups and restores of Oracle ASM

The following additional documentation might be useful:

- Oracle Server documentation
- Oracle database backup and recovery documentation

Software media, organization, and files

The *EMC NetWorker Module for SAP with Oracle Release 4.5 Installation Guide* describes the NMSAP software media, organization, and files.

Installation

The *EMC NetWorker Module for SAP with Oracle Release 4.5 Installation Guide* describes how to install, update, uninstall, and license NMSAP.

Troubleshooting and getting help

The EMC support page provides access to licensing information, product documentation, advisories, and downloads, as well as how-to and troubleshooting information. This information may enable you to resolve a product issue before you contact EMC Customer Support.

Support page

To access the support page:

1. Go to https://support.emc.com/products.
2. Type a product name in the **Find a Product** box.
3. Select the product from the list that appears.
4. Click the arrow next to the **Find a Product** box.
5. (Optional) Add the product to the **My Saved Products** list by clicking **Add to My Saved Products** in the top right corner of the **Support by Product** page.

Knowledgebase

The EMC Knowledgebase contains applicable solutions that you can search for either by solution number (for example, esgxxxxxx) or by keyword.

To search the EMC Knowledgebase:

1. Click the **Search** link at the top of the page.
2. Type either the solution number or keywords in the search box.

3. (Optional) Limit the search to specific products by typing a product name in the **Scope by product** box and then selecting the product from the list that appears.
4. Select **Knowledgebase** from the **Scope by resource** list.
5. (Optional) Specify advanced options by clicking **Advanced options** and specifying values in the available fields.
6. Click the **Search** button.

Online communities

Visit EMC Community Network at https://community.emc.com for peer contacts, conversations, and content on product support and solutions. Interactively engage online with customers, partners, and certified professionals for all EMC products.

Live chat

To engage EMC Customer Support by using live interactive chat, click **Join Live Chat** on the **Service Center** panel of the support page.

Service requests

For in-depth help from EMC Customer Support, submit a service request by clicking **Create Service Request** on the **Service Center** panel of the support page.

Note: To open a service request, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

To review an open service request, click the **Service Center** link on the **Service Center** panel, and then click **View and manage service requests**.

Copyright © 2009 - 2015 EMC Corporation. All rights reserved. Published in the USA.

Published September 25, 2015

EMC believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

The information in this publication is provided as is. EMC Corporation makes no representations or warranties of any kind with respect to the information in this publication, and specifically disclaims implied warranties of merchantability or fitness for a particular purpose. Use, copying, and distribution of any EMC software described in this publication requires an applicable software license.

EMC^2, EMC, and the EMC logo are registered trademarks or trademarks of EMC Corporation in the United States and other countries. All other trademarks used herein are the property of their respective owners.

For the most up-to-date regulatory document for your product line, go to EMC Online Support (https://support.emc.com).