



**EMC® NetWorker®
Module for Oracle**

Release 5.0

Command Reference Guide

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Audience

This document is part of the EMC NetWorker Module for Oracle (NMO) documentation set, and is intended for use by system administrators and Oracle database administrators (DBAs) who are responsible for installing software and maintaining the Oracle Server backup and recovery systems. Operators who monitor Oracle database backups may also find this document useful.

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

- ◆ Oracle terminology and concepts, especially those related to Oracle database backup and recovery.
- ◆ Backup and recovery procedures on an Oracle Server.
- ◆ Disaster recovery procedures on an Oracle Server.

Related documentation

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

- ◆ The NetWorker Module for 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
 - Software compatibility guide
 - UNIX man pages

The following additional documentation may be useful:

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

Where to get help

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

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

<http://Powerlink.EMC.com>

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

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Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Please send your opinion of this document to:

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Maintenance Commands

nsrnm(1m)

NAME

nsrnm - NetWorker Module for Oracle scheduled backup command script

SYNOPSIS

nsrnm <save options>

DESCRIPTION

The **nsrnm** shell script is used by the NetWorker server program **savegrp**(1m) to trigger scheduled backups on an Oracle database server. The **nsrnm** script sets specific environment variables for the scheduled Oracle backup and invokes the Oracle Recovery Manager (RMAN), the backup interface provided by Oracle.

The **nsrnm** script is usually run by **savegrp** only. It is not run manually. To use the **nsrnm** script for a scheduled Oracle backup, you must specify **nsrnm** in the Backup Command attribute of the Client resource (see **nsr_client**(5)) for the scheduled Oracle backup.

To modify the **nsrnm** command script, you should copy the template file /etc/nsrnm.sh to the **nsrnm** file and modify the **nsrnm** file. Do not modify the template file /etc/nsrnm.sh. Keep the template file unchanged, as a reference to the original **nsrnm** script.

For information on how to create a separate **nsrnm** script file for each Oracle instance, refer to scheduled Oracle backups chapter in the latest NetWorker Module for Oracle Administrator's Guide.

There are several environment variables in the **nsrnm** script that you can customize for a particular scheduled Oracle backup. The variables ORACLE_HOME and PATH are *mandatory* for each scheduled Oracle backup. The variable ORACLE_SID is only required by proxy copy backups when catalog synchronization is enabled. The other variables are *optional*, and you can leave them undefined in the script, if desired. Note that the variables in the **nsrnm** file are all initially undefined. Please refer to the /etc/nsrnm.sh template, your site-specific **nsrnm** script, and the latest NetWorker Module for Oracle Administrator's Guide for descriptions of the various environment variables.

OPTIONS

Please see the **save**(1m) man page for a description of options supported by **nsrnm**.

FILES

/etc/nsrnm.sh - A template of this command is provided in /etc.

SEE ALSO

nsrnmstart(1m), **nsrnmoadmin**(1m), **mminfo**(1m), **nsr_client**(5), **nsr_pool**(5), **save**(1m), **savegrp**(1m)

Maintenance Commands

nsrnmoadmin(1m)

NAME

nsrnmoadmin - NMO resource database management command

SYNOPSIS

```

nsrnmoadmin [ -D ] -r list [ ResourceName ] | [ SidName ]
nsrnmoadmin [ -D ] -r add ResourceName ResourceValue
nsrnmoadmin [ -D ] -r add sid=SidName home=OracleHome connect=ConnectFilePath
  [ tns=TNSpath ] [ lib=LibraryPath ]
nsrnmoadmin [ -D ] -r update ResourceName ResourceValue
nsrnmoadmin [ -D ] -r update sid=SidName [ home=OracleHome ]
  [ connect=ConnectFilePath ] [ tns=TNSpath ] [ lib=LibraryPath ]
nsrnmoadmin [ -D ] -r delete SidName
nsrnmoadmin -M [ -Y ] [ -D debug_level ] -s server [ -g group ] [ -c client_name ]
  [ -N save_set_name ]
nsrnmoadmin -P [ -D debug_level ] -s server [ -g group ] [ -c client_name ]
  [ -N save_set_name ]

```

DESCRIPTION

nsrnmoadmin creates, updates and deletes resources from the NMO resource file. It also migrates traditional NMO configurations to the new NMO wizard configuration format which is stored in the RAP database. **nsrnmoadmin** can only be run by the root user.

During migration operations, **nsrnmoadmin** reads the `nsrnm.sh`, `nwora.res` and the RMAN script and stores the configurations they contain in the NMO client's NSR client RAP resource. After the migration operation is performed, the `nsrnm.sh`, `nwora.res` and RMAN script are no longer read by the client. Instead all the configuration information is read from the RAP resource. When migrating, **nsrnmoadmin** migrates all the NSR client resources that match the group, client name and save set name specified on the command line. The save set name must begin with the prefix 'RMAN:', or **nsrnmoadmin** will assume that the NSR client is not for an NMO backup.

The **nsrnmoadmin** creates and updates the NMO resource file which is located at `/nsr/res/nwora.res` on the host where NMO is installed. An NMO resource file is automatically created during the NMO installation process when NMO is not installed to the default location. The NMO resource file created during installation only contains the NMO resources required for a regular (nonproxy) NMO backup. The NMO resource file must be updated or created before performing proxy copy backups.

When **nsrnmoadmin** accesses the NMO resource file for the first time, the NMO resources required for proxy copy backups are automatically added to the NMO resource file. The added NMO resources are initialized with default values. If the file does not exist it is created and the NMO resources are initialized with default values.

There are two types of NMO resources. The first type is the NMO parameter resource. An NMO parameter resource is a single line that follows the `NAME=VALUE` format, where `NAME` is the name of the parameter, and `VALUE` is what the parameter is set to.

The second type of NMO resource is the NMO SID resource. An NMO SID resource contains all the information **nsroraclecat**(1m) requires to synchronize an RMAN repository. An NMO

SID resource contains several NMO parameters which are described in the **nsroraclecat**(1m) man page. Each parameter is represented by a keyword on the **nsrnmoadmin** command line:

```
sid: NSR_ORACLE_SID
home: NSR_ORACLE_HOME
connect: NSR_ORACLE_CONNECT_FILE
tns: NSR_ORACLE_TNS_ADMIN
lib: NSR_ORACLE_LIB_PATH
```

The NMO resource file is automatically backed up by **nsrnmstart**(1m) during scheduled backups.

OPTIONS

-c

Specifies the name of the NMO clients to migrate.

-D

Specifies that debug information should be printed to stdout.

-g

Specifies the group of the NMO NSR client resource that is being migrated.

-M

Specifies that the configuration migration operation should be performed.

-N

Specifies the save set of the NMO NSR client resource that is being migrated.

-r

Several keywords specify the operation the **-r** option will perform:

list

The **list** keyword causes **nsrnmoadmin** to list the contents of the NMO resource file. If *ResourceName* is specified only the NMO parameter resource that matches *ResourceName* will be printed. If *SidName* is specified only the NMO SID resource for the specified Oracle SID will be printed.

add

The **add** keyword causes **nsrnmoadmin** to add a new NMO resource to the NMO resource file. If the **'sid'**, **'home'** and **'connect'** keywords appears in the parameters following **add** an NWORA SID resource is added to the NMO resource file. The **'tns'** and **'lib'** keywords are optional. If the parameters following **add** do not contain the **'sid'**, **'home'** and **'connect'** keywords it is assumed that the parameters are the *ResourceName* and *ResourceValue* of an NMO parameter resource.

update

The **update** keyword causes **nsrnmoadmin** to change the value of the specified NMO resource. An NMO parameter resource is specified with the same semantics used by the **add** keyword. When updating NMO SID resources only the **'sid'** keyword is mandatory. The **'sid'** keyword specifies which NMO SID resource will be updated. The **'sid'** of an NMO SID resource cannot be changed. The **'home'**, **'connect'**, **'tns'** and **'lib'** keywords specify which parameters will be updated. See the **EXAMPLES** section for more information.

delete

The **delete** keyword causes **nsrnmoadmin** to delete an NMO SID resource from the NMO resource file. The parameter after the **delete** keyword is the name of the NMO SID resource without the **'sid='** prefix. Only NMO SID resources can be deleted.

-Y

Specifies to turn off all prompting during migration operations. When this parameter is specified, all questions are automatically answered Yes.

EXAMPLES

The following lists the entire contents of the NMO resource file:

```
nsrnmoadmin -r list
```

The following lists the NMO parameter resource NSR_ORACLECAT_MODE:

```
nsrnmoadmin -r list NSR_ORACLECAT_MODE
```

The following lists the NMO SID parameter resource for the ORACLE_SID 'orcl815':

```
nsrnmoadmin -r list orcl815
```

The following adds the NMO parameter resource NSR_ORACLECAT_MODE:

```
nsrnmoadmin -r add NSR_ORACLECAT_MODE enabled
```

The following adds the NMO SID resource 'orcl815':

```
nsrnmoadmin -r add sid=orcl815 home=/dbapps/orcl815  
connect=/dbapps/orcl815/connect.file
```

The following updates the NMO parameter resource NSR_ORACLECAT_MODE:

```
nsrnmoadmin -r update NSR_ORACLECAT_MODE disabled
```

The following updates the NSR_ORACLE_TNS_ADMIN parameter of the NMO SID resource 'orcl815':

```
nsrnmoadmin -r update sid=orcl815 tns=/dbapps/orcl815/orcl815net8
```

The following deletes the NMO SID resource 'orcl815':

```
nsrnmoadmin -r delete orcl815
```

FILES

/nsr/res/nwora.res The NMO resource file.

SEE ALSO

nsrnmoo(1m), **nsrnmstart**(1m), **nsroraclecat**(1m)

Maintenance Commands

nsrnmoinfo(1m)

NAME

nsrnmoinfo - Lists the NetWorker volumes required for a restore.

SYNOPSIS

```
nsrnmoinfo [ -s server ] [ -c client ] [ -f file ] [ backup_piece ... ]
```

DESCRIPTION

The **nsrnmoinfo** binary lists the NetWorker volumes required to restore the backup pieces specified on the command line or in a file. The volumes listed are the ones the NetWorker server intends to use at the time the **nsrnmoinfo** command is run. If volumes are removed from NetWorker devices or if volumes are deleted after the **nsrnmoinfo** command was run, the NetWorker server may use different volumes than those specified by **nsrnmoinfo** when the restore is performed.

The **nsrnmoinfo** command will list clones of volumes if the original volumes are not available.

OPTIONS

-s *server*

The NetWorker server to query.

-c *client*

The NetWorker client index that contains the backup pieces.

-f *file*

A file containing a list of backup pieces to query.

EXAMPLES

Display the volumes for backup piece 'bckupc_1' for the client mars on the NetWorker server jupiter:

```
nsrnmoinfo -s jupiter -c mars bckupc_1
```

Display the volumes for backup pieces 'bckupc_1', 'bckupc_2', and 'bckupc_3' for the client mars on the NetWorker server jupiter:

```
nsrnmoinfo -s jupiter -c mars bckupc_1 bckupc_2 bckupc_3
```

Display the volumes for the backup pieces listed in file bckupc.txt for the client mars on the NetWorker server jupiter:

```
nsrnmoinfo -s jupiter -c mars -f bckupc.txt
```

Display the volumes for the backup pieces listed in file bckupc.txt and for 'bckupc_1' for the client mars on the NetWorker server jupiter:

```
nsrnmoinfo -s jupiter -c mars -f bckupc.txt bckupc_1
```

SEE ALSO

nsrnmoinfo(1m), **nsrnmoadmin(1m)**, **save(1m)**, **savegrp(1m)**

Maintenance Commands

nsrnmstart(1m)

NAME

nsrnmstart - NetWorker Module for Oracle scheduled backup executable program

SYNOPSIS

nsrnmstart <backup options>

DESCRIPTION

The **nsrnmstart** executable program is used by the **nsrnmo** script to invoke scheduled backups on an Oracle database server. The **nsrnmstart** program launches Oracle Recovery Manager (RMAN) by passing the appropriate arguments.

The **nsrnmo** script runs the **nsrnmstart** program. Do not run it manually. **nsrnmstart** uses environment variables set in the **nsrnmo** script and backup options passed by **nsrnmo** (see **nsrnmo(1m)**). If the mandatory environment variables are not set in the **nsrnmo** script, **nsrnmstart** returns a nonzero status code. For details on the environment variables to set in the **nsrnmo** script, see the scheduled Oracle backups chapter in the NetWorker Module for Oracle Administrator's Guide.

The directory where **nsrnmstart** is located must be included in the PATH environment variable in the **nsrnmo** script.

The **nsrnmstart** program writes debugging information into the debug file specified by the NSR_SB_DEBUG_FILE environment variable in the **nsrnmo** script.

The **nsrnmstart** program runs a pre-command script specified by the PRECMD environment variable--if the variable is set in the **nsrnmo** script. If the pre-command does not run successfully, **nsrnmstart** returns a nonzero status code to **nsrnmo** without performing the scheduled Oracle backup.

The **nsrnmstart** program invokes RMAN for Oracle database backups based on the inputs from **nsrnmo** and **savegrp** (see **nsrnmo(1m)** and **savegrp(1m)**).

When RMAN execution is finished, the **nsrnmstart** program runs a post-command script specified by the POSTCMD environment variable--if the variable is set in the **nsrnmo** script. If the post-command does not run successfully, **nsrnmstart** returns a nonzero status code to **nsrnmo**. Even if RMAN fails, the post-command is executed.

At the end of each scheduled Oracle proxy backup, the **nsrnmstart** program also backs up the NetWorker Module for Oracle (NMO) resource file.

SEE ALSO

nsrnmo(1m), **nsrnmoadmin(1m)**, **save(1m)**, **savegrp(1m)**

Maintenance Commands

nsroraclecat (1m)

NAME

nsroraclecat - Synchronizes the RMAN repository with the NetWorker indexes.

SYNOPSIS

nsroraclecat

DESCRIPTION

NMO proxy copy backups are periodically pruned from the NetWorker indexes when the snapshots they are stored on expire. The **nsroraclecat** binary keeps RMAN repositories and the NetWorker indexes synchronized during the pruning operations by removing the backup piece entries of the snapshot backup from the RMAN repository. **nsroraclecat** is started automatically by **nsrsnapck(1m)** during pruning. The RMAN repository entries are removed by forking an RMAN session. The **nsroraclecat** binary should never be run manually.

The configuration of **nsroraclecat** is stored in the NMO resource file which is administered by **nsrnmoadmin(1m)**. The following NMO resources specify the **nsroraclecat** configuration:

NSR_ORACLECAT_MODE

The default setting of **NSR_ORACLECAT_MODE** is 'undetermined'. When **NSR_ORACLECAT_MODE** is set to 'undetermined', NMO will not perform proxy copy backups. To use proxy copy backups, the NMO administrator must set **NSR_ORACLECAT_MODE** to 'enabled' or 'disabled'. If **NSR_ORACLECAT_MODE** is set to 'disabled', catalog synchronization will not be performed.

NSR_REMOVE_ON_FAILURE

When **NSR_REMOVE_ON_FAILURE** is set to 'FALSE', **nsrsnapck(1m)** will not remove the NetWorker index entries for backup pieces that were not successfully synchronized.

NSR_ORACLECAT_LOG_FILE

Designates the location of the **nsroraclecat** operations log file. All operational messages are written to this file. If **NSR_ORACLECAT_LOG_FILE** is not set, the operations messages go to the default log file `/nsr/applogs/nsroraclecat.log`.

NSR_ORACLECAT_DEBUG_FILE

Designates the location of the **nsroraclecat** debug log file. All debugging messages are written to this file. If **NSR_ORACLECAT_DEBUG_FILE** is not set, no debug logging is done.

An NMO SID resource must be configured for each Oracle database that has an RMAN repository that will be synchronized. An NMO SID resource has the following parameters:

NSR_ORACLE_CONNECT_FILE

Specifies the location of the file that contains the connection strings for the RMAN repository.

NSR_ORACLE_HOME

The **ORACLE_HOME** of the Oracle Server installation. It is used to locate the copy of RMAN that is used to prune the RMAN repository entries.

NSR_ORACLE_LIB_PATH

Some Oracle Server installations require the system shared library path to be set when using NMO. The name of the environment variable used to set the shared library path varies from system to system (it is **LD_LIBRARY_PATH** on Solaris and **HP-UX 64-bit**, **SHLIB_PATH** on **HP-UX 32-bit**, **LIBPATH** on **AIX**, etc).

NSR_ORACLE_LIB_PATH must be set to the value of the shared library path environment variable. If the Oracle Server installation does *not* require the shared library path, **NSR_ORACLE_LIB_PATH** does *not* have to be set.

NSR_ORACLE_SID

The ORACLE_SID of the Oracle database instance that performed the NMO proxy copy backup. NMO caches the ORACLE_SID in the NetWorker online indexes when NMO proxy copy backups are performed. The cached copy of the ORACLE_SID is then used by **nsroraclecat** as a key to locate the required NMO SID resource during catalog synchronizations.

NSR_ORACLE_TNS_ADMIN

The location of the Oracle Net configuration files required by the Oracle Server installation whose RMAN will perform the catalog synchronization. If the Oracle Net configuration files are in the default location, NSR_ORACLE_TNS_ADMIN does not have to be set.

FILES

/nsr/applogs/nsroraclecat.log - The default **nsroraclecat** log file.

SEE ALSO

nsrnmoadmin(1m), **nsrsnapck**(1m)

Maintenance Commands

nsrorara(1m)

NAME

nsrorara - NetWorker Module for Oracle Scheduled Backup and Recovery Configuration Wizard Remote Agent.

SYNOPSIS

nsrorara [**-i**] [**-u**]

DESCRIPTION

nsrorara is part of NMO Scheduled Backup Configuration Wizard and NMO Recover Configuration Wizard, available starting with NMO release 5.0. The primary function of the **nsrorara** command is to perform operations on behalf of the wizard on the local or remote NMO host. Those operations include, but are not limited to, the database queries to the Oracle server. The secondary function is to register (**-i**) or unregister (**-u**) the NMO wizard as a plug-in on the client host during installation.

The **nsrorara** command is invoked only by:

- (1) The NetWorker Management Console (NMC) during the creation or modification of an NMO scheduled backup configuration.
- (2) The packaging subsystem during NMO installation or uninstallation.

The **nsrorara** command should *not* be run on the command line without instructions from EMC Customer Support.

