

Release Notes

Dell EMC NetWorker Module for Databases and Applications

Version 19.1.x

Release Notes

302-005-544

REV 03

April 7, 2020

These release notes contain supplemental information about NetWorker Module for Databases and Applications (NMDA) version 19.1.

Note: Before you install NMDA and periodically after the installation, refer to the latest revision of this document on the Support website at <https://support.emc.com>. On the **Product Support** page, search for NMDA by typing the full product name in the **Enter a Dell Service Tag, Dell EMC Product ID, or Model** field. The product page provides the product-specific downloads, documentation, and additional content and tools.

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Revision history

The following table presents the revision history of this document.

Table 1 Revision history

Revision	Date	Description
03	April 7, 2020	Updated the following topics: <ul style="list-style-type: none"> • NMDA Oracle backup or restore fails with Oracle 11.2.0.4 and CloudBoost in Client Direct mode on Linux, 317044—Added this topic about Oracle issue 317044 under "Oracle issues and limitations". • MySQL and MEB support—Added the final bullet about offline and partial backups being no longer supported with MySQL 8.0.x.
02	September 9, 2019	Updated the following topics: <ul style="list-style-type: none"> • Release of NMDA 19.1.1—Added this topic under "New and changed features". • MySQL and MEB support—Updated the last row in the table and added a reference to the MySQL Enterprise website.
01	May 20, 2019	Initial release of this document for NMDA version 19.1.

Product description

NetWorker Module for Databases and Applications (NMDA) is an add-on module for the NetWorker server and client that provides backup and recovery services for DB2, Informix, Lotus Domino/Notes, MySQL, Oracle, SAP IQ, and Sybase ASE databases.

NMDA replaces all the following legacy NetWorker modules on the supported UNIX, Linux, or Windows operating systems:

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

 **Note:**

You can use NMDA to restore backups that were performed with the legacy NetWorker modules.

You can use the existing legacy NetWorker module enabler to perform NMDA backups after the upgrade.

The product name Sybase ASE is synonymous with SAP ASE.

[New and changed features](#) on page 3 describes the major new features and enhancements in NMDA 19.1. The *NetWorker Module for Databases and Applications Version 19.1 Administration Guide* describes all the supported NMDA features.

[Environment and system requirements](#) on page 15 provides information about the supported versions of the NetWorker software.

[Known issues and limitations](#) on page 6 describes the known problems and limitations in NMDA 19.1.

[Install and upgrade](#) on page 17 provides details about installing and updating NMDA. [Related documentation](#) on page 19 describes the NMDA 19.1 documentation and related documents.

Before you install NMDA, review the *NetWorker E-LAB Navigator* at <https://elabnavigator.emc.com/eln/elhome> and the NMDA installation guide, administration guide, and other documentation at the Support website.

New and changed features

NMDA 19.1 replaces the previous NMDA releases on the supported Linux, UNIX, and Windows operating systems. You can use the latest NMDA release to restore any backups that are performed with previous NMDA releases.

The following topics describe the major new or enhanced features of NMDA 19.1.


The NMDA 19.1 user documentation provides complete details about the NMDA features. The *NetWorker E-LAB Navigator* at <https://elabnavigator.emc.com/eln/elhome> provides details about the supported environments.

NMDA support of SAP IQ transaction log backups

NMDA 19.1 introduced the support of SAP IQ transaction log backups. The NetWorker software uses a file system backup to back up all the SAP IQ transaction logs and log archives as NetWorker save sets.

You must meet the following requirements for SAP IQ transaction log backups:

- Host operating system is Linux x64.
- NetWorker server version is 19.1 or later.
- SAP IQ version is 16.0 SP11 or later.
- SAP IQ server architecture is simplex.

 **Note:** NMDA does not support the SAP IQ multiplex environments.

The SAP IQ transaction log backups support the following features:

- Backup of multiple log paths.
- Movement of the backed-up logs from the log location to a user-specified local archive directory.
- Retention of the backed-up logs in the local archive for a user-specified period of time.
- Printing of the list of backed-up log files to the console.
- Logging of the retention information.

To enable the SAP IQ transaction log backups, you must set the mandatory parameters, NSR_BACKUP_LEVEL and IQ_PIT_RESTORE_LOG_PATH, in the NMDA SAP IQ backup configuration file. IQ_PIT_RESTORE_LOG_PATH specifies the transaction log files to back up.

NMDA also provides the following new optional parameters for the configuration of specific features of the transaction log backups:

- IQ_PITR_LOG_RETENTION_PATH—Specifies a local archive directory where the transaction log files and log archives are moved after an SAP IQ log backup.

- `IQ_PITR_LOG_RETENTION_TIME`—Specifies how long to retain the log files in the local archive directory.
- `NSR_LOG_VOLUME_POOL`—Specifies the NetWorker volume pool to store the transaction log backup save sets.

You run an SAP IQ transaction log backup manually with the `nsrdasv -z configuration_file_path` command on the NMDA client system. You cannot start the log backup from the NetWorker Management Console (NMC). The log backup does not support a scheduled backup or cloning.

The *NetWorker Module for Databases and Applications Version 19.1 Administration Guide* provides details about how to configure and run the NMDA backups of SAP IQ transaction logs.


NMDA support of SAP IQ point-in-time recovery of log backups

NMDA 19.1 introduced the support of the SAP IQ point-in-recovery of log only backups. An SAP IQ point-in-time recovery uses the transaction log backups to restore the database to a transaction log offset.

The point-in-time recovery operation restores all the committed database operations prior to the specified point-in-time. The recovery first restores the database from the data backups and then restores the logs for the time period between the last full data backup and the specified point-in-time.


You must meet the following requirements for the SAP IQ point-in-time recovery of log backups:

- Host operating system is Linux x64.
- NetWorker server version is 19.1 or later.
- SAP IQ version is 16.0 SP11 or later.
- SAP IQ server architecture is simplex.

 **Note:** NMDA does not support the SAP IQ multiplex environments.

The SAP IQ point-in-time recovery supports the following features:

- Point-in-time recovery using a transaction log offset, not a timestamp.

 **Note:** The offset can be either between the previous full backup and the specified transaction log backup, or between the previous full backup and the transaction log backup just before that full backup.

- Point-in-time recovery when only one active log path is available.
- Point-in-time recovery when multiple log paths are available, after the active log path has been changed multiple times.
- Redirection of the log files to a temporary alternate directory during the point-in-time recovery.
- Clean-up of the restored logs after a successful restore.
- Printing of the list of restored log files to the console.

The SAP IQ point-in-time recovery does not support specific features:

- Restore to an offset between a full backup and a cumulative or incremental backup.
- Use of the `RENAME` option with point-in-time recovery.
- Point-in-time recovery on a multiplex system.

NMDA provides the following new parameters for the configuration of an SAP IQ point-in-recovery of log backups:

- `IQ_CLEAR_LOG`—Specifies whether to clear the logs for a point-in-time recovery of a log backup.

- `IQ_PIT_RESTORE_BEFORE_PREV_FULL`—Must be set to `TRUE` when the transaction log offset occurs between the previous full backup and the transaction log backup just before that full backup.
- `IQ_PIT_RESTORE_ENABLE`—Must be set to `TRUE` for a point-in-time recovery of a log backup.
- `IQ_PIT_RESTORE_LOG_PATH`—Specifies the log files to be restored.
- `IQ_PIT_RESTORE_OFFSET`—Specifies the transaction log offset to use for the point-in-time recovery.
- `IQ_PIT_RESTORE_REDIRECTED_LOG_PATH`—Specifies an alternate directory to which the backed-up log files are restored before the point-in-time recovery is performed.
- `NSR_RECOVER_LOG_POOL`—Specifies the NetWorker volume pool from which to restore the transaction log save sets.

The *NetWorker Module for Databases and Applications Version 19.1 Administration Guide* provides details about how to configure and run the SAP IQ point-in-time recovery of log backups.

MySQL 8.0 support

NMDA 19.1 introduced support of MySQL release 8.0.

[MySQL and MEB support](#) on page 16 provides more details about the NMDA support of MySQL and MEB versions and features.

Release of NMDA 19.1.1

NMDA 19.1.1 was released on August 14, 2019, and the NMDA 19.1.1 build 66 is now available for download. NMDA 19.1.1 does not include any new software features.

For more information about the fixed and known software issues, refer to the related topics in this document.

Fixed issues

The following table lists the major fixes that are implemented in NMDA 19.1.

Table 2 Issues that are fixed in NMDA 19.1

Issue number	Problem summary	Application
305253 (ESC 33596)	NMDA Postgres operations through Orchestrated Application Protection fail with DDOS 6.0.x, and display the following type of error message: Data Domain Operating System version 6.1 or later is required by Data Domain BoostFS version 1.1.0. The Data Domain Operating System version on the host '<hostname>' is 6.0.2.21-592326. Upgrade the Data Domain Operating System as required.	All
305410 (ESC 33478)	NMDA DB2 backup of multiple channels on Windows has an issue with leaking of sockets.	DB2

Table 2 Issues that are fixed in NMDA 19.1 (continued)

Issue number	Problem summary	Application
306406 (ESC 34075)	When the NSR_DR_BACKUP_INFO parameter is set to TRUE, the NMDA DB2 backup of system configuration files fails with the following type of error message: <pre>Could not save additional backup information as specified by the NSR_DR_BACKUP_INFO parameter.</pre>	DB2
307072 (ESC 33694)	NMDA Oracle backup configuration wizard fails to create a client resource when the RMAN catalog user is set to the virtual private catalog owner.	Oracle

Known issues and limitations

The following tables list the known issues and limitations that apply to NMDA 19.1:

- Issues and limitations in NMDA 19.1
- Issues and limitations in other products that affect NMDA 19.1 operations

The issues are grouped according to the specific application to which they apply.

When you contact Customer Support about an issue, use the listed issue number.

Table 3 Issues and limitations in NMDA 19.1

Issue number	Description	Operating system	Product feature	Application
206229	A push install operation fails to update the 32-bit NMDA software on a 64-bit OS.	All	Push install	All
257491	A ProtectPoint with RecoverPoint backup fails with the following error when the ProtectPoint device is not located on the server: <pre>no matching protectpoint devices for save of client 'client_name'</pre>	All	ProtectPoint with RecoverPoint backup	DB2, Oracle
259309	When you perform a ProtectPoint with RecoverPoint backup, followed by a clone backup to a remote Data Domain system, the clone operation might produce the following error message: <pre>5009-I/O Error</pre>	All	ProtectPoint with RecoverPoint backup and clone	DB2, Oracle
274228	During a ProtectPoint for VMAX rollback restore to the original backup host, the safety check fails to detect extra LUNs on the target file system.	All	ProtectPoint for VMAX restore	DB2, Oracle
274397	With RecoverPoint pre-5.0, a known issue exists in safety checks with <code>psrollback.res</code> . A ProtectPoint with RecoverPoint rollback restore might overwrite LUNs in a RecoverPoint	All	ProtectPoint with RecoverPoint restore	DB2, Oracle

Table 3 Issues and limitations in NMDA 19.1 (continued)

Issue number	Description	Operating system	Product feature	Application
	consistency group, where the LUNs were not part of the backup.			
274455	A ProtectPoint for VMAX rollback restore to the original backup host fails when an extra file system, which was not part of the backup, is mounted on the source LUNs.	All	ProtectPoint for VMAX restore	DB2, Oracle
288076 (ESC 30057)	On 64-bit Windows, NMDA backups might fail with the following type of error when 32-bit NMDA software is installed: Failed to initialize the environment for the RSA BSAFE libraries.	Windows	Backup	All
309021 (ESC 34476)	In a DB2 HADR system that does not use a VIP address, when a DB2 NSM backup fails over to a standby node, the backup is not stored under the NSR_CLIENT name. Instead, the backup is stored under the standby node name.	All	ProtectPoint for VMAX backup	DB2
309397 (ESC 34478)	When multiple DB2 database storage groups have the same directory pathname, a DB2 NSM point-in-time restore fails from a ProtectPoint clone device.	All	ProtectPoint for VMAX restore	DB2
NW121290	A Lotus full database backup might expire before the dependent transaction log backups because NMDA Lotus does not create dependencies between the backups.	All	Backup	Lotus Domino
LGTsc06110	Japanese Oracle backup information might be displayed incorrectly in the NMC program.	All	Backup, internationalization	Oracle

Table 4 Issues and limitations in other products that affect NMDA 19.1 operations

Issue number	Description	Operating system	Product feature	Application
181210	Due to a DB2 bug, if you use the HPU utility to unload and restore an NMDA DB2 incremental backup, then the operation might fail with an error.	All	Restore	DB2
250127	Configuration of a DB2 scheduled backup with the wizard fails with DB2 9.7 fp9 and fp10.	Linux	Configuration wizard	DB2
266009	With a Data Domain Fibre Channel (DFC) system on AIX, an HPU unload operation becomes suspended.	AIX	HPU unload	DB2
NW152810	Due to a DB2 bug, if you run a multisession DB2 backup and use the <code>db2 prune</code> command to delete backup entries from the DB2 history file, the command might leave some entries in the file.	All	Backup	DB2

Table 4 Issues and limitations in other products that affect NMDA 19.1 operations (continued)

Issue number	Description	Operating system	Product feature	Application
NW154550	Due to a DB2 limitation, NMDA does not delete the logs from the NetWorker server during a <code>db2 prune</code> operation when the NMDA configuration file pathname in the <code>LOGARCHOPTn</code> parameter exceeds 30 ASCII characters.	All	Backup	DB2
280896	On Windows, an NMDA Lotus CloudBoost backup fails with the Lotus Domino server version 9.0.1 FP3 or earlier.	Windows	Backup	Lotus Domino
283426	On AIX, a Data Domain Client Direct backup fails with the Lotus Domino server version 9.0.1 FP3 or earlier.	AIX	Backup	Lotus Domino
317044	Due to an Oracle issue, an NMDA Oracle backup or restore fails when you use CloudBoost in Client Direct mode with Oracle 11.2.0.4 on Linux only.	Linux	Backup	Oracle
NW019057	Due to an Oracle limitation, Oracle backup problems might occur when the RMAN script contains non-ASCII data.	All	Backup, internationalization	Oracle
NW152664	Due to Oracle bug 17080042, a point-in-time recovery of an Oracle 12c table, table partition, or pluggable database (PDB) might fail when you use manual channel allocation.	All	Restore	Oracle
NW154492	Due to Oracle bug 17770652, an Oracle 12cR1 container or pluggable database snapshot backup with NSM fails on Windows when some of the datafiles are not on a snapshotable device.	Windows	Backup, NSM	Oracle
278964	Due to an OCS library limitation on AIX, NMDA Sybase backup and recovery fails with Sybase ASE 15.7 SP 100 or earlier.	AIX	Backup, recovery	Sybase ASE

Common NMDA issues and limitations

This section contains the NMDA issues and limitations that apply to all the applications (DB2, Informix, Lotus Domino/Notes, MySQL, Oracle, SAP IQ, Sybase) that NMDA supports.

Push install of 32-bit NMDA fails on a 64-bit OS

206229

If you try to update 32-bit NMDA on a 64-bit OS by using the Package Manager (push install) feature from the NetWorker server, the push install operation fails with the following type of error message:

```
nsrccd NSR warning No upgrade clients available for the selected products
```

As a workaround, update the 32-bit NMDA software manually on a 64-bit OS:

1. Uninstall the existing 32-bit NMDA software according to the uninstall instructions in the NMDA installation guide for the module version.
2. Install the updated 32-bit NMDA software according to the install instructions in the latest NMDA installation guide.

ProtectPoint with RecoverPoint backup fails when device is not on the server

257491

When the ProtectPoint device is located on a storage node that is separate from the NetWorker server, a ProtectPoint with RecoverPoint backup fails with the following error message:

```
no matching protectpoint devices for save of client 'client_name'
```

As a workaround, ensure that the ProtectPoint backup device is located on the NetWorker server before you perform the backup.

Clone operation to remote system might fail for a ProtectPoint with RecoverPoint backup

259309

When you perform a ProtectPoint with RecoverPoint backup, followed by a clone backup to a remote Data Domain system, the clone operation might produce the following error message:

```
5009-I/O Error
```

The clone operation fails to create the clone copy on the remote ProtectPoint device although the backup and clone operations report a successful completion.

As a workaround, perform the following steps:

1. Confirm that the ProtectPoint with RecoverPoint backup and clone configurations are correct.
2. Restart the ProtectPoint with RecoverPoint backup and clone operations.
3. If the clone operation produces the error message, contact Customer Support.

Safety check during ProtectPoint for VMAX rollback restore fails to detect extra LUNs

274228

During a ProtectPoint for VMAX rollback restore to a target file system on the original backup host, the rollback restore might not complete successfully. When the target file system has extra LUNs that did not exist on the original backup file system, the safety check during the rollback restore fails to detect the extra LUNs.

As a result, the rollback restore of the ProtectPoint for VMAX backup does not fail as expected. Although the rollback restore completes without an error, the target file system remains unchanged after the restore.

ProtectPoint with RecoverPoint pre-5.0 rollback restore might overwrite LUNs in a consistency group

274397

With RecoverPoint pre-5.0, a ProtectPoint with RecoverPoint rollback restore might inadvertently overwrite LUNs in a RecoverPoint consistency group, where the LUNs were not part of the backup. The cause is a known issue in safety checks with the `psrollback.res` file. The safety check might not detect the data targets that were configured in the consistency group but were not part of the snapshot backup. The rollback restore overwrites all the LUNs in the given consistency group because the rollback restore occurs at the consistency group level only with the RecoverPoint pre-5.0 version.

As a workaround, to specify that any data targets outside of the backup cannot be overwritten, ensure that the `psrollback.res` file lists only the entries that were included in the snapshot backup and must be restored. This issue does not impact a rollback restore with RecoverPoint 5.0 or later.

ProtectPoint for VMAX rollback restore fails when an extra file system is mounted on the source LUNs

274455

A ProtectPoint for VMAX rollback restore to the original backup host fails when an extra file system, which was not part of the backup, is mounted on the source LUNs. The extra file system is listed in the `psrollback.res` file that is used to override safety checks.

The rollback restore fails when it tries to create and mount back the extra file system that was not part of the backup.

NMDA operations might fail when 32-bit NMDA software is installed on 64-bit Windows

288076 (ESC 30057)

On 64-bit Windows, NMDA backups might fail with the following type of error when 32-bit NMDA software is installed:

```
Failed to initialize the environment for the RSA BSAFE libraries.
```

This error is produced when the 32-bit NMDA software is missing the 32-bit Microsoft Visual C++ 2010 runtime libraries that are required for operations on 64-bit Windows.

As a workaround, manually download and install the Microsoft Visual C++ 2010 SP1 Redistributable Package (x86) package, which includes the required 32-bit libraries.

Backup configuration with the wizard fails in non-English locale

NW007000

Due to a NetWorker limitation in non-English locales, if the NetWorker server is installed in a nondefault path that includes any non-ASCII characters, the configuration of a backup with the wizard fails with the following error message:

```
Failed to open lockbox non-ASCII_dir_name\nsr\lockbox\client_name\clb.lb
```

As a workaround, perform either of the following actions:

- Configure the backup manually with the NMC method, without the wizard.
- Ensure that the installation path of the NetWorker server does not include any non-ASCII characters.

DB2 issues and limitations

This section contains NMDA issues and limitations specific to DB2 operations.

DB2 HPU restore might fail with an incremental backup

181210

Due to a DB2 bug, if you use the IBM Optim High Performance Unload (HPU) utility to unload and restore an NMDA DB2 incremental backup, then the unload and restore operation might fail with the INZU366I HPU return code 8 (reason code 0x283a001).

The DB2 bug is resolved in IBM HPU v5.1.0.1.

DB2 wizard backup configuration fails with DB2 9.7 fp9 and fp10

250127

Due to a DB2 library issue, the configuration of a DB2 scheduled backup with the NMDA DB2 configuration wizard fails with DB2 9.7 fp9 and fp10. The configuration failure produces the following error message:

```
Unable to attach to instance_name database due to attach request failure
```

As a workaround, configure the DB2 backup by using the client-side configuration method without the wizard.

The issue is resolved in DB2 9.7 fp11.

DB2 HPU unload becomes suspended with a DFC system on AIX

266009

On AIX, NMDA does not support an IBM HPU unload with the configuration of a Data Domain Fibre Channel (DFC) system. When you run the `db2hpu` command to perform an HPU unload from an NMDA DB2 backup in such a configuration on AIX, the HPU unload operation becomes suspended.

DB2 NSM backup does not use the NSR_CLIENT setting after failover in HADR system

309021 (ESC 34476)

In a DB2 HADR system that does not use a VIP address, when a DB2 NSM backup fails over to a standby node, the backup is not stored under the NSR_CLIENT name in the NetWorker client file index. Instead, the backup is stored under the standby node name.

DB2 NSM restore fails from a ProtectPoint clone device

309397 (ESC 34478)

When multiple DB2 database storage groups have the same directory pathname, a DB2 NSM point-in-time restore fails from a ProtectPoint clone device.

DB2 prune operation might fail to delete all entries from DB2 history file

NW152810

Due to a DB2 bug, if you run a multisession DB2 backup and then use the `db2 prune` command to delete the backup entries from the DB2 history file, the command deletes the index entries on the NetWorker server but might leave some of the entries in the DB2 history file.

The DB2 bug is fixed in DB2 9.7 fp4.

As a workaround, run the `db2 prune` command again without the `and delete` option to delete the remaining entries in the DB2 history file. For example:

```
db2 prune history 20130605180753 with force option and delete
db2 prune history 20130605180753 with force option
```

DB2 prune operation does not delete the logs from the NetWorker server in certain cases

NW154550

NMDA does not delete the DB2 transaction logs from the NetWorker server during a DB2 prune operation when the NMDA configuration file pathname specified in the `LOGARCHOPTn` parameter exceeds 30 ASCII characters. This character length limitation is a DB2 limitation. The `LOGARCHOPTn` parameter is set when configuring an automatic backup of DB2 transaction logs.

The issue is a result of DB2 not setting the NMDA configuration file pathname correctly in the Comment field of the corresponding DB2 history file record when the pathname exceeds 30 ASCII characters.

As a workaround, perform the following steps:

1. Run the `db2 update history` command to update the Comment field in the DB2 history file to point to an NMDA configuration file pathname that does not exceed 30 ASCII characters. For example, the following `db2 list history` command output shows that the Comment field in the history file does not contain a valid NMDA configuration file pathname:

```
db2 list history archive log all for db hat
```

```
List History File for hat
```

```
Op Obj Timestamp+Sequence Type Dev Earliest Log Current Log Backup ID
-----
X D 20130920133146 1 O S0000017.LOG C0000000
-----
Comment:
Start Time: 20130920133146
End Time: 20130920133155
Status: P
-----
EID: 25 Location: /usr/lib/libnsrdb2.so
```

You can run the following `db2 update history` command to update the Comment field with a valid configuration file pathname:

```
db2 update history eid 25 with comment \"@/space/db2inst1/nmda.cfg\"
```

2. Rerun the `db2 prune` command.

To prevent this issue in future archive log backups, use an NMDA configuration file pathname that does not exceed 30 ASCII characters in the `LOGARCHOPTn` parameter.

Lotus Domino/Notes issues and limitations

This section contains NMDA issues and limitations specific to Lotus Domino/Notes operations.

CloudBoost backup fails with Lotus Domino 9.0.1 FP3 or earlier on Windows

280896

On Windows, when you try to perform an NMDA Lotus CloudBoost backup with the Lotus Domino server version 9.0.1 FP3 or earlier, the backup fails with the following type of error message:

```
nsrdasv: 05/22/17 11:30:50.999711 D:/views/nw/dev/rpc/lib/c_tcp.c:1355 Failed
to write to socket 784; peer = 10.13.144.249:[1055], errno = An established
connection was aborted by the software in your host machine.
```

As a workaround, upgrade the Lotus Domino server to version 9.0.1 FP4 or later.

Data Domain Client Direct backup fails with Lotus Domino 9.0.1 FP3 or earlier on AIX

283426

On AIX, an NMDA Lotus backup fails and the Lotus Domino server crashes when both of the following conditions are true:

- The NMDA Lotus backup uses the Client Direct feature to a Data Domain device.
- The Lotus Domino server version is 9.0.1 FP3 or earlier.

As a workaround, upgrade the Lotus Domino server to version 9.0.1 FP4 or later.

Lotus full backups might expire before dependent transaction logs

NW121290

NMDA Lotus does not create dependencies between any transaction log backups (performed during an incremental backup or transaction log only backup) and full database backups. As a result, a database backup might expire before the corresponding transaction log backups. You cannot use the transaction log backups to restore and recover the data without the full backup.

If you have encountered this issue with your backups, the backups expired from the NetWorker online indexes might not be deleted immediately from the backup media. As a workaround, run the `scanner -i` command or the `nsrck -L7` command to rebuild the online indexes so that you can still use full backups for restore operations.

To reduce the possibility of encountering this issue, set the retention policy of the Domino and Notes backups to a much longer time than the recovery point objective (RPO). For example, if the RPO is 1 week and you perform full backups on Sundays and incremental backups for the rest of the week, set the browse policy and retention policy to 2 weeks for both full backups and incremental backups. This setting ensures that the software retains the backups on the media to achieve the RPO of 1 week.

Oracle issues and limitations

This section contains NMDA issues and limitations specific to Oracle operations.

NMDA Oracle backup or restore fails with Oracle 11.2.0.4 and CloudBoost in Client Direct mode on Linux

317044

Due to an Oracle issue, an NMDA Oracle backup or restore fails when you use CloudBoost in Client Direct mode with Oracle 11.2.0.4 on Linux only.

As a workaround to back up the data to the cloud and restore from the cloud, you can disable the Client Direct feature.

Japanese Oracle backup information might be displayed incorrectly in NMC program

LGTsc06110

When a scheduled NMDA Oracle 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 backup information that is displayed in the NMC program might appear incorrectly as box or question mark characters.

As a workaround, perform the following actions:

- 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 that are used for the scheduled NMDA Oracle backup.

Backup problems might occur due to non-ASCII data in RMAN script

NW019057

Due to Oracle bug 3627132, an NMDA Oracle backup might fail or some parameters might be ignored in a non-English locale when the following conditions exist:

- NMDA 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 NMDA Oracle backup fails when the `parms` option or `send` command in the RMAN script contains any non-ASCII data.

As a result, the NMDA software 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.

Oracle 12c point-in-time recovery might fail with manual channel allocation

NW152664

Due to Oracle bug 17080042, a point-in-time recovery of an Oracle 12c table, table partition, or pluggable database (PDB) might fail when you use manual channel allocation with the `allocate channel` command.

As a workaround, use automatic channel allocation with the `configure channel` command for a point-in-time recovery of an Oracle 12c table, table partition, or PDB.

Oracle 12cR1 container or pluggable database snapshot backup fails on Windows when some datafiles are not on a snapshotable device

NW154492

Due to Oracle bug 17770652, an Oracle 12cR1 snapshot backup of a container or pluggable database on Windows fails when some of the datafiles are not on a snapshotable device.

For example, you run the following RMAN command to back up a database that consists of datafiles 1 to 5, but datafiles 3 and 4 are not on a snapshotable device:

```
backup proxy
full
format '%d_%U'
database;
```

The backup fails with the following error message:

```
ORA-00600: internal error code, arguments: [krbbdr_inconsistent_pdbid]
```

As a workaround, exclude from the proxy backup any datafiles that are not on a snapshotable device, and back up those datafiles in a separate backup command without the proxy option.

For example, in the previous example where datafiles 3 and 4 are not on a snapshotable device, run two separate backups by using the following separate RMAN commands:

```
backup proxy
full
format '%d_%U'
datafile 1,2,5;
```

```
backup
full
format '%d_%U'
datafile 3,4;
```

Sybase ASE issues and limitations

This section contains NMDA issues and limitations specific to Sybase ASE operations.

Sybase backup and recovery fails with Sybase ASE 15.7 SP 100 or earlier on AIX

278964

Due to a limitation in the OCS library that Sybase ASE provides on AIX, NMDA Sybase backup and recovery fails with Sybase ASE 15.7 SP 100 or earlier. This issue occurs with NMDA version 9.2 or later, which includes a multi-threaded backup and recovery design.

As a workaround, update the Sybase database to Sybase ASE 15.7 SP 101 or later. The issue does not occur with Sybase ASE 16.0 or later.

Sybase scheduled backup might fail when the Sybase server and NetWorker client run in different locales

NW146800

A Sybase scheduled backup might fail when the Sybase server and NetWorker client run in different locales.

As described in the *NetWorker Module for Databases and Applications Administration Guide*, you must set the `NSR_LOCALE` parameter to the required locale in the NMDA configuration file for a Sybase manual backup configuration or a client-side scheduled backup configuration. However, `NSR_LOCALE` is not supported for a server-side scheduled backup or a probe-based backup.

As a workaround for a server-side scheduled backup or a probe-based backup, you can set the `LANG` environment variable in the NetWorker start script that is installed with the NetWorker client software on the Sybase server host. For example on Linux, insert the `LANG` setting lines at the beginning of the start script after the `#!/bin/sh` line:

```
#!/bin/sh
LANG=en_US.UTF-8
export LANG
```

Environment and system requirements

The *NetWorker E-LAB Navigator* at <https://elabnavigator.emc.com/eln/elhome> provides the current details about the software that NMDA 19.1 requires, including the following information:

- Operating systems and versions
- Database and application versions

- NetWorker server, storage node, and client versions


Install the NetWorker extended client package for support of NetWorker Snapshot Management (NSM) and ProtectPoint operations. The extended client package is also recommended for general NMDA operations. The *NetWorker Installation Guide* provides details about the NetWorker installation procedures.

The *NetWorker Module for Databases and Applications Version 19.1 Administration Guide* provides details about the environment and system configurations that are required to operate NMDA.

MySQL and MEB support

NMDA interacts with the MySQL Enterprise Backup (MEB) software to perform MySQL backups and restores. You must install a supported version of MEB with the proper version of MySQL as shown in the following table.

Table 5 MySQL and MEB version dependencies

MySQL version	Supported MEB versions
5.5	3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12
5.6	3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12
5.7	3.12, 4.0, 4.1  Note: MEB 3.12 supports MySQL pre-5.7.9. MEB 4.0 and 4.1 support MySQL 5.7.9 and later.
8.0	8.0

The [MySQL Enterprise website](#) provides up-to-date information about the MySQL and MEB versions.

The following considerations apply to NMDA MySQL operations and MEB dependencies:

- 32-bit MEB must be installed for 32-bit MySQL support, and 64-bit MEB must be installed for 64-bit MySQL support.
- NMDA does not support the MEB 3.9 “copy-back-and-apply-log” operation.
- With MEB 3.11, 3.12, 4.0, and 4.1, NMDA does not support wizard configurations of the partial MySQL backups of non-InnoDB databases. However, you can use the NMDA wizard to configure the partial MySQL backups of InnoDB databases.
- With MEB 3.11, 3.12, 4.0, and 4.1, NMDA supports MySQL binary log backups only if you disable the MEB log file backups by setting `MYSQL_MEB_OPTIONS=---skip-binlog`.
- With MEB 3.12, 4.0, and 4.1, NMDA does not support cloud backup and restore with OpenStack Object Storage (Swift) 1.0.
- With MEB 4.0 and 4.1, NMDA does not support the `mysql.backup_sbt_history` table on the backed-up MySQL instance for accessing information about online backups to tape. You must use the `mminfo` or `nsrinfo` command to obtain information about NMDA MySQL backups to a NetWorker server.

The MySQL documentation provides details about MEB 4.0 and 4.1 limitations, which also affect the NMDA MySQL operations.

- Starting with MySQL 8.0.x, offline backups and partial backups are no longer supported. Using the old `--no-connection` and `--connect-if-online` options and a partial database backup using the `--databases` option with MEB will result in an error.

MySQL 5.6 support

NMDA supports MySQL release 5.6, including the new features except for the use of an encrypted login file, `mylogin.cnf`, for setting the backup credentials.

NMDA support of new features in MySQL 5.6 requires MEB version 3.8.1 or later to be installed on the MySQL server host. For a list of the new features that are supported only with MEB 3.8.1 or later, refer to the topic “Compatibility Note for MySQL Version” in the *MySQL Enterprise Backup User's Guide* for version 3.8.1 or later.

Client Direct backups and restores

NMDA supports Client Direct backups to an AFTD or DD Boost device or a CloudBoost appliance. NMDA also supports the Client Direct feature for NSM snapshot backups of DB2 or Oracle data to these types of devices.

For DD Boost over IP only, Client Direct backups require ONCplus version B.11.31.06 or later installed on HP-UX 11.31.

NMDA support of Client Direct snapshot backups and restores to an AFTD or DD Boost device with NSM requires the NetWorker server, storage node, and client release 9.1 or later. NSM is available as part of the NetWorker extended client software. The extended client software package must be installed in addition to the NetWorker base client software on the NMDA client host.

NMDA support of Client Direct CloudBoost backups and restores requires the NetWorker server, client, and storage node release 9.1 or later.

DB2 pureScale support

NMDA supports DB2 pureScale, which is an active-active application cluster with a shared-disk architecture.

NMDA support of DB2 pureScale requires DB2 release 10.1 or later on the operating systems that support DB2 pureScale. Support of delta and incremental pureScale backups requires DB2 10.5 fp4 or later as required by DB2.

The IBM documentation and the *NetWorker E-LAB Navigator* provide details and requirements of the operating systems for DB2 pureScale.

Software media, organization, and files

The *NetWorker Module for Databases and Applications Version 19.1 Installation Guide* describes the NMDA software media, organization, and files.

Install and upgrade

The *NetWorker Module for Databases and Applications Version 19.1 Installation Guide* describes how to install, upgrade, uninstall, and license NMDA.

Coexistence of NMDA software

NMDA does not support the coexistence of NMDA with any other legacy NetWorker module release on the same system.

NMDA does not support the coexistence of different NMDA releases on the same system.

NMDA reinstall after NetWorker software update

If you relocate the NetWorker client installation directory, for example, during a NetWorker software update on the database or application server host where NMDA is installed, you must uninstall and reinstall NMDA.

Licensing

To enable NMDA operations after the end of an evaluation period, obtain and install the Licensing Solution with a capacity entitlement.

In the following cases, you can continue to use the legacy licensing model for NMDA operations as described in the latest *NetWorker Licensing Guide*:

- You updated from a legacy NetWorker module.
- You updated from a previous NMDA version that used the legacy enabler-based licensing or legacy capacity licensing.

All new NMDA installations use the Licensing Solution with the capacity entitlement.

To enable NSM snapshot operations, obtain and install a separate NSM license.

The latest *NetWorker Licensing Guide* provides details about how to properly license the software.


NMDA wizard and GUI installations on supported platforms

NMDA installs the configuration wizard for all the applications or databases that the wizard supports on the particular platform, regardless of which database or application is actually installed on the system. The wizard also displays all the supported applications accordingly as the available choices of applications for which backups can be configured.

If Lotus or Sybase is not installed on a Windows system, NMDA still installs the NetWorker User for Lotus and NetWorker User for Sybase GUI programs on the system. The programs are displayed under the Start menu.

Remote update of NMDA by push installation

You can update NMDA on one or more remote NMDA hosts with the push installation feature from a centralized NetWorker server. You can perform a push installation with either the Package Manager or the `nsrpush` command.

 **Note:** You cannot perform a push installation in a cluster environment.

You can perform a push installation of NMDA on the following NMDA platforms (NMDA bitness in parentheses):

- AIX (32-bit, 64-bit)
- HP PA-RISC (64-bit)
- HP Itanium (64-bit)
- Linux s390x (zLinux 64-bit)
- Linux x86 (32-bit)
- Linux x64 (64-bit)
- PowerLinux (64-bit little-endian)
- Solaris AMD (64-bit)
- Solaris SPARC (32-bit, 64-bit)

- Windows x86 (32-bit)
- Windows x64 (64-bit)

The *NetWorker Module for Databases and Applications Installation Guide* describes the push installation requirements and procedures.

Additional resources

You can use the following resources to find more information about this product, obtain support, and provide feedback.

Related documentation

The *NetWorker E-LAB Navigator* at <https://elabnavigator.emc.com/eln/elhome> provides the latest details about the platforms, operating systems, database servers, application servers, and other software components that NMDA supports.

The following documentation provides information about NMDA and is available on the Support website at <https://support.emc.com>:

- The NetWorker Module for Databases and Applications documentation set:
 - *NetWorker Module for Databases and Applications Administration Guide*—Provides information about how to configure and use NMDA.
 - *NetWorker Module for Databases and Applications Installation Guide*—Provides information about how to install or update NMDA in stand-alone and cluster environments.
 - *NetWorker Module for Databases and Applications Release Notes*—Provides information about new NMDA features and changes, fixed problems, and known limitations.
 - *NetWorker Module for Databases and Applications Command Reference Guide*—Provides reference information about NMDA commands and options.
- The NetWorker client, storage node, and server documentation set, including (but not limited to) the following documents:
 - *NetWorker Administration Guide*—Provides information about how to configure and maintain the NetWorker software.
 - *NetWorker Installation Guide*—Provides information about how to install or update the NetWorker software on supported platforms.
 - *NetWorker Updating from a Previous Release Guide*—Provides information about how to update the NetWorker software from a previously installed release.
 - *NetWorker Release Notes*—Provides information about new NetWorker features and changes, fixed problems, and known limitations.
 - *NetWorker with CloudBoost Integration Guide*—Provides information about how to configure the CloudBoost integration with NetWorker software.
 - *NetWorker Command Reference Guide*—Provides reference information about NetWorker commands and options.
 - *NetWorker Data Domain Boost Integration Guide*—Provides information about how to configure and use Data Domain systems for data deduplication backup and storage in a NetWorker environment.
 - *NetWorker Licensing Guide*—Provides information about how to enable and license the NetWorker software.
 - *NetWorker Snapshot Management Integration Guide*—Provides information about the NSM requirements for snapshot backups and restores.
 - *NetWorker REST API Getting Start Guide*—Provides information about how to configure and use the NetWorker REST API programmatic interfaces to the NetWorker server.

- *NetWorker REST API Reference Guide*—Provides information about the NetWorker REST API specification that is used to create programmatic interfaces to the NetWorker server.

The following additional documentation might be useful:

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

Where to find product documentation

- <https://www.dell.com/support>
- <https://community.emc.com>

Where to get support

The Support website <https://www.dell.com/support> provides access to product licensing, documentation, advisories, downloads, and how-to and troubleshooting information. The information can enable you to resolve a product issue before you contact Support.

To access a product-specific page:

1. Go to <https://www.dell.com/support>.
2. In the search box, type a product name, and then from the list that appears, select the product.

Knowledgebase

The Knowledgebase contains applicable solutions that you can search for either by solution number (for example, KB000xxxxxx) or by keyword.

To search the Knowledgebase:

1. Go to <https://www.dell.com/support>.
2. On the **Support** tab, click **Knowledge Base**.
3. In the search box, type either the solution number or keywords. Optionally, you can limit the search to specific products by typing a product name in the search box, and then selecting the product from the list that appears.

Live chat

To participate in a live interactive chat with a support agent:

1. Go to <https://www.dell.com/support>.
2. On the **Support** tab, click **Contact Support**.
3. On the **Contact Information** page, click the relevant support, and then proceed.

Service requests

To obtain in-depth help from Licensing, submit a service request. To submit a service request:

1. Go to <https://www.dell.com/support>.
2. On the **Support** tab, click **Service Requests**.

Note: To create a service request, you must have a valid support agreement. For details about either an account or obtaining a valid support agreement, contact a sales representative. To get the details of a service request, in the `Service Request Number` field, type the service request number, and then click the right arrow.

To review an open service request:

1. Go to <https://www.dell.com/support>.
2. On the **Support** tab, click **Service Requests**.

3. On the **Service Requests** page, under **Manage Your Service Requests**, click **View All Dell Service Requests**.

Online communities

For peer contacts, conversations, and content on product support and solutions, go to the Community Network <https://community.emc.com>. Interactively engage with customers, partners, and certified professionals online.

How to provide feedback

Feedback helps to improve the accuracy, organization, and overall quality of publications. You can send feedback to DPAD.Doc.Feedback@emc.com.

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