



EMC
NetWorker Restore Node for EDM
Version 1.0.0

Release Notes
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These release notes contain supplemental information about EMC NetWorker Restore Node for EDM, Version 1.0.0. Topics include:

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Product Description

The NetWorker™ Restore Node for EDM (Restore Node) server provides restore only capability for existing EDM backup data, such as databases and file systems. The NetWorker software performs all backup and media duplication functionality. The EDM data is stored on media that is managed by both dedicated and shared Library Managers. The AlphaStor software performs all shared library management tasks for EDM and NetWorker media.

New Features and Changes

A Library Manager manages drive scheduling, volume mounts and dismounts, volume injects and ejects, and library unit inventories.

The `lmconfig` process manages volumes located in physical library units for the following types of Library Managers:

- ◆ *Dedicated Library Manager*
- ◆ *Shared Library Manager*

Dedicated Library Manager

Dedicated Library Managers are controlled by the Restore Node software.

For dedicated Library Managers only, the `lmconfig` process manages volumes in offline and offsite locations.

Shared Library Manager

Shared Library Managers are controlled by the AlphaStor 3.0.9 software.

Library management provides the ability to share the tape library unit between the Restore Node and the NetWorker software (both server and storage node). The shared library is managed by AlphaStor for many of its user-level operations to the tape library unit. The shared Library Manager also provides the ability for the Restore Node to mount and dismount tapes in a shared environment.

Environment and System Requirements

This section lists the following requirements for Restore Node:

- ◆ *Minimum Software Version Requirements* on page 3
- ◆ *Additional Software Requirements for Restore Node* on page 3
- ◆ *Minimum Supported UNIX Client Versions* on page 3
- ◆ *Supported Database Clients* on page 4
- ◆ *EDM Tape Device to AlphaStor Tape Drive Mapping* on page 4

Minimum Software Version Requirements

The following are requirements for the Restore Node product:

- ◆ EDM Version 5.1.0, patch 4 (PE510_04) and higher
- ◆ Solaris 9 server (12/02)

Additional Software Requirements for Restore Node

The following are additional Restore Node software components:

- ◆ NetWorker server release 7.2 build 198
- ◆ EMC AlphaStor Version 3.0.9 (if shared library management is required)

Minimum Supported UNIX Client Versions

The following are the minimum supported operating system versions for UNIX client file systems.

- ◆ HP-UX 11
- ◆ AIX 4.3.3
- ◆ Solaris 2.7
- ◆ HP Tru64 UNIX 5.1
- ◆ RedHat Linux v7.3
- ◆ SGI 6.5

Supported Database Clients

The following are supported database clients:

- ◆ Oracle
- ◆ SAP R/3 System (Oracle database)
- ◆ Sybase
- ◆ Informix
- ◆ Microsoft SQL Server
- ◆ Microsoft Exchange
- ◆ Lotus Notes Domino Server

EDM Tape Device to AlphaStor Tape Drive Mapping

Table 1 lists EDM supported devices and the appropriate drive mappings to AlphaStor software for shared Library Managers:

Table 1 EDM to AlphaStor Drive Mapping (Sheet 1 of 2)

EDM 5.1 Supported Drive	EDM Token	AlphaStor Token Used
DLT7000	DLT	DLT
DLT8000	DLT	DLT
HPLTO 1	LTO	LTO
HPLTO 2	LTO2	LTO2
HPLTO 2 FC	LTO2	LTO2
IBM 3480	Not Supported	Not Supported
IBM 3490	Not Supported	Not Supported
IBM 3490E	Not Supported	Not Supported
IBM 3590	Not Supported	Not Supported
IBMLTO 1	LTO	LTO
IBMLTO 1 FC_AL	LTO	LTO
IBMLTO 2	LTO2	LTO2
IBMLTO 2 FC	LTO2	LTO2
SDLT 320	SDLT	SDLT

Table 1 EDM to AlphaStor Drive Mapping (Sheet 2 of 2)

EDM 5.1 Supported Drive	EDM Token	AlphaStor Token Used
SONY AIT2	AIT2	AIT
SONY AIT3	AIT3	AIT
SONY DTF 1 FC	Not Supported	Not Supported
SONYDTF 1 HVD	Not Supported	Not Supported
SONY DTF 2 FC	Not Supported	Not Supported
SONYDTF 2 HVD	Not Supported	Not Supported
STK 4480	Not Supported	Not Supported
STK 4490	Not Supported	Not Supported
STK 9490	Not Supported	Not Supported
STK 9840 (A)	9840	9840
STK 9840 B	9840	9840
STK 9840 B FC	9840	9840
STK 9840 FC	9840	9840
STK 9940 FC	9940	9940

Known Problems and Limitations

This section identifies software limitations and problems that apply to configuring the Restore Node software:

- ◆ *Auto Device Detect Fails* on page 6
- ◆ *The Restore Operation Fails With a Shared TLU* on page 8
- ◆ *Error Message if Resource Queuing Is Not Enabled* on page 8
- ◆ *AlphaStor Drive Availability* on page 9
- ◆ *Reinstalling AlphaStor* on page 10
- ◆ *Recycling EDM Volumes* on page 10

Auto Device Detect Fails

Attempting to configure the P3000 with DLT7000 drives in AlphaStor fails in the Auto device detect with the following error message:

```
5:5:40 STATUS Robot autoserver reports 16 drives
5:5:40 STATUS Robot autoserver checking for occupied devices
5:5:40 STATUS Robot autoserver media_type DLT
5:5:40 STATUS Robot autoserver processing drive 128
5:5:40 STATUS Robot autoserver device autoserver1 does not exist
allocate new.

5:9:41 STATUS Robot autoserver mounting tape TEST46 in
drive 128

5:9:56 STATUS Robot autoserver sleeping 120 seconds to
allow drive to come online

5:11:57 STATUS Robot autoserver Checking host ledma124 to
see if drive on line

5:12:41 STATUS Robot autoserver No tape devices attached
to host ledma124

5:12:41 STATUS Robot autoserver no hosts reported device
online. Manually eject tape, rerun.

5:12:41 Host ledma124 error: no drives online
```

The problem is that the DLT7000 drives take more than 120 seconds to come online.

1. To avoid failure during configuration:

a. Change DLT 120 to DLT 300 in the following file:

```
$ AS_HOME/data/robot_tape
ledma124# more robot_tape

DLT 120

9840 15

9840B 15

LTO 25

LTO2 25

3570A 20

3570B 20

AIT 15

3590 20

default 150
```

b. Restart the AlphaStor processes:

```
/etc/init.d/lgtoas.d start

Importing EDM Volumes
```

2. To inject or import other EDM volumes in AlphaStor:

a. Select **Import** in the AlphaStor GUI, and select **EDM** as the application and the media pool. The media pool name appears similar to the following:

```
EDM_<mtype>_<EDM RN server name>
```

b. Select the appropriate pool for Restore Node server and media type.

The Library Manager then receives a notify indicating that there is a new volume.

The label is automatically read by the Library Manager, and if:

- ◆ the tape is labeled, it appears as uncataloged if it is not previously known to the Restore Node server, and it appears as though it were allocated or available if previously known.
- ◆ the tape is uncataloged, the Restore Node UI displays the uncataloged volumes and an `evmimport` operation is possible.
- ◆ the tape is allocated, then it is available for restore.
- ◆ the tape is available, the recycle tool reformats the volume for use by NetWorker and assigns it to the scratch pool.
- ◆ it is a NetWorker labeled volume, it is displayed as foreign.

The Restore Operation Fails With a Shared TLU

To troubleshoot shared TLU problems, verify that all AlphaStor and `dmi_server` processes are running.

Error Message if Resource Queueing Is Not Enabled

If Resource Queueing is not enabled for a remote AlphaStor server, the configuration results in the following warning:

```
Warning: <host> is a remote AlphaStor server
```

1. Ensure that the AlphaStor server has the `RESOURCE_QUEUE_TM_ENABLE ON` variable included in the `/etc/asenv` file.
2. Complete the configuration.

If the AlphaStor server is local, and the `/etc/asenv` file does not exist, the configuration fails with the following error message:

```
ERROR: the file "/etc/asenv does not exist for this server
```

1. AlphaStor must be installed and configured on this server abandoning configuration.
2. Install and configure the AlphaStor server and verify that the `/etc/asenv` file exists.
3. Complete the configuration.

If the AlphaStor is local and the `RESOURCE_QUEUE_TM_ENABLE` variable is not included in the `/etc/asenv` file, the configuration fails with the following error message:

```
ERROR: Resource Queueing is not defined for the
AlphaStor in "/etc/asenv"
```

1. Shut down the AlphaStor processes:

```
/etc/init.d/lgtoas.d stop
```

2. Add the `RESOURCE_QUEUE_TM_ENABLE ON` variable to the `/etc/asenv` file.

3. Restart the AlphaStor processes:

```
/etc/init.d/lgtoas.d start
```

4. Complete the configuration.

If the AlphaStor server is local and `RESOURCE_QUEUE_TM_ENABLE` variable is set to `OFF` in the `/etc/asenv` file, the configuration fails with the following error message:

```
ERROR: Resource Queueing is turned off for the
AlphaStor in "/etc/asenv".
```

To turn resource queueing on:

1. Shut down the AlphaStor processes:

```
/etc/init.d/lgtoas.d stop
```

2. Change the `RESOURCE_QUEUE_TM_ENABLE` variable from `OFF` to `ON` in the `/etc/asenv` file.

3. Restart the AlphaStor processes:

```
/etc/init.d/lgtoas.d start
```

4. Complete the configuration.

AlphaStor Drive Availability

The following section describes two separate issues that exist with AlphaStor drive availability:

1. Restore Node does not handle the drive offline and online notifies. Drives that are available to Restore Node are not mapped out. The physical drives that can be utilized by AlphaStor are not evident, but the Restore Node shared

lmdaemon only manages mounted drives. Based on this, the drives can only be online when mounted and can not become offline.

2. Even with device resource queueing enabled, AlphaStor does not return a failure if all drives that can be utilized by a mount operation are offline. The `dmi_mount` callback reports SUCCESS, FAILURE, and CANCELLED for return statuses. The mount error that results because all devices are disabled, can not take priority over other mount failure errors.

Workaround

To avoid these problems, reenble the drives and restart the restore operation.

Reinstalling AlphaStor

If it is necessary to reinstall the AlphaStor software after the Restore Node software has been installed, you must run the `eb_server_config` utility. This utility specifies the ports that are used by AlphaStor.

EDM Tape Labels



WARNING

To avoid EDM tape data loss, it is necessary that all NetWorker servers and storage nodes in a shared TLU environment have the NetWorker 7.2 build 198 software installed. This release of NetWorker includes a fix to recognize EDM tape labels, and will not overwrite them.

Recycling EDM Volumes

Do not change the media pool of volumes that belong to the EDM.

If EDM media is available, `as_recycle_media` will recycle it. Also, the `as_recycle_media` tool can be used to manually recycle media. Recycling changes the media pool to the AlphaStor scratch pool.

If EDM media is available but not listed as available and if it was imported from another EDM and will never be imported using `ebimport`, use `rvmvolops` to change the volume state to available, and then `as_recycle_media` will recycle it.

Converting Control of EDM Media to AlphaStor

If required for shared Library Management, use the `as_convert_media` tool to pass control of EDM media to an AlphaStor server during configuration.

For more information on the refer to the `as_convert_media` utility man page.

Importing Volumes into an AlphaStor controlled TLU

To import different EDM volumes into an AlphaStor controlled TLU:

1. Start AlphaStor.
2. In the Administrative console, select Operations center, and select Import Volumes.
3. In the Import Volumes window, select the library unit, EDM, enter the EDM server name, and enter the EDM media-pool name:

```
EDM_<uppercase media type>_<lowercase ERN host name>  
example: EDM_DLT_ledma160
```

4. Insert the volumes into the library unit.

The volume changes appear as uncataloged to the Restore Node. Refer to the AlphaStor documentation for complete instructions on inserting the volumes into the library unit.

The `evmstat -v` command takes a few minutes to display the volume changes in the output.

5. Import the volume:

```
evmimport -l <as_XXX_0> -b <barcode>
```

6. Import the save set and catalog on the volumes:

```
ebimport -media <volid> -level 9 -clevel 9
```

For more information, refer to the `ebimport` and `evmimport` man pages.

Technical Notes

Requirements for the /etc/system Parameters

Restore Node Only

The Restore Node and AlphaStor software have different requirements for the `/etc/system` parameters.

The following section describes the `/etc/system` parameters for the Restore Node software:

```
set shmsys:shminfo_shmmni=300
set shmsys:shminfo_shmseg=200
set msgsys:msginfo_msgmnb=524288
set msgsys:msginfo_msgssz=128
set msgsys:msginfo_msgseg=4096
set msgsys:msginfo_msgtql=1024
set shmsys:shminfo_shmmax=33554432
```

Restore Node with an AlphaStor Server

The following section describes the `/etc/system` parameters for the Restore Node software with an AlphaStor server:

```
set max_nprocs=5000
set shmsys:shminfo_shmmax=0x20000000
set shmsys:shminfo_shmmni=400
set shmsys:shminfo_shmseg=400
set shmsys:shminfo_shmmin=1
set semsys:seminfo_semap=500
set semsys:seminfo_semmni=1000
set semsys:seminfo_semmns=1600
set semsys:seminfo_semmsl=1000
set semsys:seminfo_semmnu=1000
set semsys:seminfo_semume=900
set semsys:seminfo_semopm=50
set msgsys:msginfo_msgseg=4096
set msgsys:msginfo_msgtql=1024
set msgsys:msginfo_msgssz=128
```

```

set msgsys:msginfo_msgmnb=524288
set lwp_default_stksize=0x4000
set pt_cnt=1024
set slowscan=100
set autoup=300
set tune_t_fsflushr = 5
set rlim_fd_cur = 1024
set rlim_fd_max = 1024
set maxphys = 8388608

```

Restore Node with an AlphaStor Server, NetWorker Server, and Storagenode

The `/etc/system` parameters for Restore Node with an AlphaStor server, and a NetWorker server and storagenode are not known.

NDMP and TLU Configuration Limitations

When running the `lmconfig` utility option `AUTOCONFIG`, do not configure an NDMP-attached library unit that another Restore Node or backup solution is using.

The NDMP-attached TLU is not supported by the AlphaStor software.

Exclusive Access Support

During the configuration of a tape library unit (TLU) in the AlphaStor Wizard, the user is prompted to set the TLU with either Exclusive Access or Shared Access - Bar Code Range.

Ensure that you select `Exclusive Access` as the Restore Node software supports Exclusive Access only.

Application Configuration Options

During the configuration of tape library units (TLU) in the AlphaStor wizard, the following options are displayed in the Application Configuration section:

- ◆ NetWorker
- ◆ Other External Applications
- ◆ None

Select `None` to correctly configure the TLU.

Converting Media Using the lmconfig Tool

If converting media to AlphaStor using `lmconfig`, ensure that the `vmdaemon` process is running or the operation will fail.

Restore

This section describes limitations, problems, and workarounds that apply to Restore Node restore operations. It also includes information about restore data display.

The Restore Data Display

When restoring data using a command such as `ebrestore`, `ebrecover`, or `eb_dc_restore`, the data appears in its approximate size. For example, 13 files, 3 directories, 0 other (16 total). The approximate size is 2 GB.

This estimate is the nearest number of whole KB, MB or GB. It is rounded up if the fractional part of the actual value is more than .5 KB, MB, or GB. Data that is less than 1 KB in size appears as 1 KB.

Restore Limitations

The search function in the restore area of the Restore Node console cannot locate a search string that contains the slash (/) character.

Reimporting a Manually Expired Save Set

When using the `ebimport` utility, you might need assistance from Customer Support to recover expired, individual save sets. You can, however, use `ebimport` to recover an expired trail rotation, provided no backups were performed using the volumes. Refer to the `ebimport` man page for more information about this utility.

Documentation

Related EDM and Restore Node Documentation.

You can access EDM 5.1.0 and other related documentation at the EMC Powerlink™ website.

To access the books at the Powerlink website, supply the correct login information at <http://powerlink.emc.com>.

Books include:

- ◆ *EMC NetWorker Restore Node for EDM Software Reference*
- ◆ *EMC Data Manager Console User Guide*
- ◆ *EMC Data Manager Software Reference*
- ◆ *EMC Data Manager Disaster Recovery*

- ◆ *EMC Data Manager Symmetrix Connect User Guide*
- ◆ *EMC Data Manager Symmetrix Path User Guide*

Other documentation related to the Restore Node product is available at <http://www.legato.com>:

- ◆ NetWorker Release 7.2 Documentation
- ◆ NetWorker Module Documentation
- ◆ AlphaStor Release 3.0.9 Documentation (<ftp.legato.com>)

Installation

EMC Customer Support personnel install and configure the Restore Node software.

Troubleshooting and Getting Help

If you need technical assistance, contact the EMC support hotline at:

1 800 SVC-4EMC (1 800 782-4362)

If you are located outside the United States, contact the nearest EMC office for assistance.

For additional information on the EMC products and services available to customers and partners, refer to the EMC Powerlink web site at <http://powerlink.emc.com>.

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