

Veritas™ Dynamic Multipathing readme

AIX

5.1 RP1 DMP



Early release issues and notes

This document includes the following topics:

- [Early release issues and notes](#)

Early release issues and notes

In this release, Veritas Dynamic Multipathing has the following limitations when DMP is used with LVM devices.

Device naming limitations

In order to use DMP for OS native device support, the device naming scheme must be enclosure-based naming (EBN) and the persistence attribute must be on.

The naming scheme cannot be changed after the feature is enabled.

Disk access name limitations

The following limitations apply to disk access names:

- You cannot change the DMP name of a device when native device support is enabled. If you must change the DMP name, you must disable the feature, update the name and again enable the feature.
- You also cannot change the name for an enclosure which has at least one DMP device that is using native device support, because that would require the DMP device name to change.
- When native multipathing is enabled, you cannot assign device names manually using the `vxddladm assign names` command.

Excluding arrays or paths from DMP

If an array includes at least one DMP device that is using native device support, you cannot exclude the array from DMP using the `vxddladm excludearray` command.

If a DMP device has the native device support enabled, you cannot exclude all of the paths from VxVM and DMP. You can exclude paths from VxVM as long as at least one path remains for the DMP device.

Third party driver and foreign device support

When DMP devices have OS native device support enabled, do not add the paths of the DMP device to VxVM using the `vxddladm` command under the foreign disk category.

If a DMP device has a valid VxVM label, you cannot enable native device support on that device.

You cannot enable native device support on a DMP device if the device is in co-existence with any Third Party Multipathing Driver (TPD) meta-device.

The Symantec testing teams have not yet certified the procedures to migrate LVM volume groups over HDLM and IBM SDD.

Object Data Manager (ODM) limitation on device names

On AIX, the Object Data Manager (ODM) has a limitation of 16 characters for device names. To address this issue, the DMP device names are truncated to fit into the ODM database. For DMP or VxVM operations, use the truncated name, as shown in the `lspv` command output.

The following example of `lspv` output shows the EMC Clariion device names that are truncated to fit the 16 character limit.

```
# lspv
.
.
.
emc_clari1_194 000fb4b1961e1c70 cx-alua active
emc_clari1_198 000fb4b1961e29cb cx-alua active
emc_clari1_182 000fb4b1961e25d3 cx-alua active
emc_clari1_184 000fb4b1961e1bad cx-alua active
emc_clari1_195 000fb4b1961e2114 cx-alua active
```

Viewing ODM attributes for DMP devices

On AIX, you can use the `lsattr` command to view the attributes for DMP devices in ODM. However, DMP does not support changing these attributes manually using the `chdev` command.

For example:

```
# lsdev -c disk | grep emc0_00bc
emc0_00bc      Available          Veritas DMP Device
emc0_00bd      Available          Veritas DMP Device

# lsattr -El emc0_00bc
dmpname      emc0_00bc          DMP Device name          True
pvid         00c492ed703eba850000000000000000    Physical volume identifier True
unique_id    EMC%5FSYMMETRIX%5F000290301188%5F88000BC000 Unique device identifier  True
```

Removing DMP devices from ODM

When you remove DMP devices with native device support from the system, ODM definitions for the device are not being cleaned up automatically. You must clean up the device definitions with manual steps.

Creating a LVM volume group on the OS device path

On AIX, when an LVM volume group is created directly on the OS device path, the SCSI driver performs SCSI2 reservation on the rest of the paths to that LUN. As a result, some of the paths of the corresponding DMP devices may be disabled, as shown by the `vxdmpadm getsubpaths` command output. For some arrays, the `vxdisk list` command shows the device in the 'error' state.

This issue is not seen when LVM volume groups are created on the DMP devices.

Example of this issue:

```
# vxdisk list | grep emc0_00bc
emc0_00bc      auto:none          -          -          online invalid

# vxdmpadm getsubpaths dmpnodename=emc0_00bc
NAME          STATE [A]          PATH-TYPE [M]      CTLR-NAME ENCLR-TYPE ENCLR-NAME ATTRS
=====
hdisk110      ENABLED (A)        -                  fscsi0    EMC        emc0        -
hdisk123      ENABLED (A)        -                  fscsi0    EMC        emc0        -
hdisk136      ENABLED (A)        -                  fscsi1    EMC        emc0        -
hdisk149      ENABLED (A)        -                  fscsi1    EMC        emc0        -
```

```
# vxdisk rm emc0_00bc

# mkvg -y dmxxvg hdisk110
dmxxvg

# lspv | egrep "hdisk110|hdisk123|hdisk136|hdisk149"
hdisk110      00c492ed6fbda6e3      dmxxvg      active
hdisk123      none                    None
hdisk136      none                    None
hdisk149      none                    None
```

```
# vxdisk scandisks
```

```
# vxdmpadm getsubpaths dmpnodename=emc0_00bc
NAME          STATE [A]  PATH-TYPE [M]  CTLR-NAME  ENCLR-TYPE  ENCLR-NAME  ATTRS
=====
hdisk110     ENABLED (A) -          fscsi0     EMC         emc0        -
hdisk123     DISABLED  -          fscsi0     EMC         emc0        -
hdisk136     DISABLED  -          fscsi1     EMC         emc0        -
hdisk149     DISABLED  -          fscsi1     EMC         emc0        -
```

To recover from this situation

- 1 Varyoff the LVM volume group:

```
# varyoffvg dmxxvg
```

- 2 Remove the disk from VxVM control.

```
# vxdisk rm emc0_00bc
```

- 3 Trigger DMP reconfiguration.

```
# vxdisk scandisks
```

- 4 The device which was in DISABLED state now appears as ENABLED.

```
# vxdmpadm getsubpaths dmpnodename=emc0_00bc
NAME          STATE [A]  PATH-TYPE [M]  CTLR-NAME  ENCLR-TYPE  ENCLR-NAME  ATTRS
=====
hdisk110     ENABLED (A) -          fscsi0     EMC         emc0        -
hdisk123     ENABLED (A) -          fscsi0     EMC         emc0        -
hdisk136     ENABLED (A) -          fscsi1     EMC         emc0        -
hdisk149     ENABLED (A) -          fscsi1     EMC         emc0        -
```

DMP slab size

If the errpt displays error messages `LVM_IO_FAIL` with `ENOMEM` error code, then you might need to increase the size of the DMP slab allocator. Increase the size of the tunables `dmpslab_minsz` and `dmpslab_maxsz`. The default values are `dmpslab_minsz=1024` and `dmpslab_maxsz=4096`.

For example, increase the size of the `dmpslab_minsz` to 2048 and the size of the `dmpslab_maxsz` to 4096.

If you use the SMIT interface, the tunables are `Total Minimum Pages for dmp slab` and `Total Maximun Pages for dmp slab`.

DMP in a VCS environment

AIX LVM sends `SCSI_RESERVE` flag to multipath drivers. DMP ignores this flag, so data corruption is possible when the volume group is activated on more than one node at a time. This is possible if the volume group is activated outside VCS (VCS detects concurrency violation) or in split brain scenario.

Documentation errata in vxddpdm manual page

The `vxddpdm` manual page is missing the description of the tunable `'dmp_native_support'`.

