

Veritas™ Dynamic Multi-Pathing Release Notes

HP-UX

6.0.1

Veritas™ Dynamic Multi-Pathing Release Notes

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www.symantec.com/business/support/contact_techsupp_static.jsp

Before contacting Technical Support, make sure you have satisfied the system requirements that are listed in your product documentation. Also, you should be at the computer on which the problem occurred, in case it is necessary to replicate the problem.

When you contact Technical Support, please have the following information available:

- Product release level

- Hardware information
- Available memory, disk space, and NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
 - Error messages and log files
 - Troubleshooting that was performed before contacting Symantec
 - Recent software configuration changes and network changes

Licensing and registration

If your Symantec product requires registration or a license key, access our technical support Web page at the following URL:

www.symantec.com/business/support/

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www.symantec.com/business/support/

Customer Service is available to assist with non-technical questions, such as the following types of issues:

- Questions regarding product licensing or serialization
- Product registration updates, such as address or name changes
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- Latest information about product updates and upgrades
- Information about upgrade assurance and support contracts
- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs or manuals

Documentation

Product guides are available on the media in PDF format. Make sure that you are using the current version of the documentation. The document version appears on page 2 of each guide. The latest product documentation is available on the Symantec Web site.

<https://sort.symantec.com/documents>

Your feedback on product documentation is important to us. Send suggestions for improvements and reports on errors or omissions. Include the title and document version (located on the second page), and chapter and section titles of the text on which you are reporting. Send feedback to:

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For information regarding the latest HOWTO articles, documentation updates, or to ask a question regarding product documentation, visit the Storage and Clustering Documentation forum on Symantec Connect.

<https://www-secure.symantec.com/connect/storage-management/forums/storage-and-clustering-documentation>

About Symantec Connect

Symantec Connect is the peer-to-peer technical community site for Symantec's enterprise customers. Participants can connect and share information with other product users, including creating forum posts, articles, videos, downloads, blogs and suggesting ideas, as well as interact with Symantec product teams and Technical Support. Content is rated by the community, and members receive reward points for their contributions.

<http://www.symantec.com/connect/storage-management>

Support agreement resources

If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

Asia-Pacific and Japan customercare_apac@symantec.com

Europe, Middle-East, and Africa semea@symantec.com

North America and Latin America supportsolutions@symantec.com

Dynamic Multi-Pathing Release Notes

This document includes the following topics:

- [About this document](#)
- [About Veritas Dynamic Multi-Pathing \(DMP\)](#)
- [About Symantec Operations Readiness Tools](#)
- [Important release information](#)
- [Changes introduced in 6.0.1](#)
- [System requirements](#)
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- [Known issues](#)
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About this document

This document provides important information about Veritas Dynamic Multi-Pathing (DMP) version 6.0.1 for HP-UX 11i v3. Review this entire document before you install or upgrade DMP.

The information in the Release Notes supersedes the information provided in the product documents for DMP.

This is "Document version: 6.0.1 Rev 0" of the *Veritas Dynamic Multi-Pathing Release Notes*. Before you start, make sure that you are using the latest version of this guide. The latest product documentation is available on the Symantec Web site at:

<https://sort.symantec.com/documents>

About Veritas Dynamic Multi-Pathing (DMP)

Veritas Dynamic Multi-Pathing (DMP) provides multi-pathing functionality for the operating system native devices configured on the system. DMP creates DMP metadevices (also known as DMP nodes) to represent all the device paths to the same physical LUN.

DMP is also available as a stand-alone product, which extends DMP metadevices to support the OS native logical volume manager (LVM). You can create LVM volumes and volume groups on DMP metadevices.

DMP does not support migrating the root LVM volume group onto DMP.

Veritas Dynamic Multi-Pathing can be licensed separately from Storage Foundation products. Veritas Volume Manager and Veritas File System functionality is not provided with a DMP license.

DMP functionality is available with a Storage Foundation (SF) Enterprise license, a SF HA Enterprise license, and a Storage Foundation Standard license.

Veritas Volume Manager (VxVM) volumes and disk groups can co-exist with LVM volumes and volume groups, but each device can only support one of the types. If a disk has a VxVM label, then the disk is not available to LVM. Similarly, if a disk is in use by LVM, then the disk is not available to VxVM.

About Symantec Operations Readiness Tools

[Symantec Operations Readiness Tools \(SORT\)](#) is a Web site that automates and simplifies some of the most time-consuming administrative tasks. SORT helps you manage your datacenter more efficiently and get the most out of your Symantec products.

SORT can help you do the following:

- | | |
|---|--|
| Prepare for your next installation or upgrade | <ul style="list-style-type: none">■ List product installation and upgrade requirements, including operating system versions, memory, disk space, and architecture.■ Analyze systems to determine if they are ready to install or upgrade Symantec products.■ Download the latest patches, documentation, and high availability agents from a central repository.■ Access up-to-date compatibility lists for hardware, software, databases, and operating systems. |
| Manage risks | <ul style="list-style-type: none">■ Get automatic email notifications about changes to patches, array-specific modules (ASLs/APMs/DDIs/DDLs), and high availability agents from a central repository.■ Identify and mitigate system and environmental risks.■ Display descriptions and solutions for hundreds of Symantec error codes. |
| Improve efficiency | <ul style="list-style-type: none">■ Find and download patches based on product version and platform.■ List installed Symantec products and license keys.■ Tune and optimize your environment. |

Note: Certain features of SORT are not available for all products. Access to SORT is available at no extra cost.

To access SORT, go to:

<https://sort.symantec.com>

Important release information

- For important updates regarding this release, review the Late-Breaking News TechNote on the Symantec Technical Support website:
<http://www.symantec.com/docs/TECH164885>
- For the latest patches available for this release, go to:
<https://sort.symantec.com/>
- The hardware compatibility list contains information about supported hardware and is updated regularly. For the latest information on supported hardware visit the following URL:
<http://www.symantec.com/docs/TECH170013>

Before installing or upgrading Storage Foundation and High Availability Solutions products, review the current compatibility list to confirm the compatibility of your hardware and software.

Changes introduced in 6.0.1

This section lists the changes in Veritas Dynamic Multi-Pathing 6.0.1.

New versioning process for SFHA Solutions products

Symantec made some changes to simplify the versioning process to ensure that customers have a unified experience when it comes to deploying our different products across Storage, Availability, Backup, Archiving and Enterprise Security products. With this change, all the products will have a 3 digit version. In complying with this approach, the current SFHA Solutions release is available as version 6.0.1.

New directory location for the documentation on the software media

The PDF files of the product documentation are now located in the `/docs` directory on the software media. Within the `/docs` directory are subdirectories for each of the bundled products, which contain the documentation specific to that product. The `sfha_solutions` directory contains documentation that applies to all products.

Dynamic Reconfiguration tool

Dynamic Multi-Pathing provides a Dynamic Reconfiguration tool. The Dynamic Reconfiguration tool is an interactive tool to automate dynamic reconfiguration of LUNs or HBAs. Dynamic reconfiguration includes addition, removal or replacement of LUNs, and replacement of certain HBAs, without requiring a reboot. The Dynamic Reconfiguration tool simplifies the process, so that you do not need a complex set of DMP and operating system related commands.

Changes related to installation and upgrades

The product installer includes the following changes in 6.0.1.

Locally-installed installation and uninstallation scripts now include the release version

When you run local scripts (`/opt/VRTS/install`) to configure Veritas products, the names of the installed scripts now include the release version.

Note: If you install your Veritas product from the install media, continue to run the `installdmp` command without including the release version.

To run the script from the installed binaries, run the `installdmp<version>` command.

Where `<version>` is the current release version with no periods or spaces.

For example, to configure the 6.0.1 version of your product, run this command:

```
# /opt/VRTS/install/installdmp601 -configure
```

Support for tunables file templates

You can use the installer to create a tunables file template. If you start the installer with the `-tunables` option, you see a list of all supported tunables, and the location of the tunables file template.

Additional installation postcheck options

The `postcheck` option has been enhanced to include additional checks.

You can use the installer's post-check option to perform the following checks:

- General checks for all products.
- Checks for Volume Manager (VM).
- Checks for File System (FS).
- Checks for Cluster File System (CFS).

System requirements

This section describes the system requirements for this release.

Hardware compatibility list

VCS supports vpar/npar from release VCS 5.0.1 and later.

The compatibility list contains information about supported hardware and is updated regularly. For the latest information on supported hardware go to the following URL:

<http://www.symantec.com/docs/TECH170013>

Supported HP-UX 11i v3 operating systems

This section lists the supported operating systems for this release of Veritas products.

[Table 1-1](#) shows the supported operating systems for this release.

Table 1-1 Supported operating systems

Operating system	Operating system version	Architecture
HP-UX 11i Version 3 March 2011 Operating Environments Update Release or later	HP-UX B.11.31.1103	PA-RISC
	HP-UX B.11.31.1109	Itanium
	HP-UX B.11.31.1203	

Fixed issues

This section covers the incidents that are fixed in this release.

Installation and upgrades fixed issues

This section describes the incidents that are fixed related to installation and upgrades in this release.

Table 1-2 Fixed issues related to installation and upgrades

Incident	Description
2628469	Base501 packages doesn't get removed on fresh installation with 1109 Fusion.
2626311	Installer checks for VRTSfsadv if you specify -version.
2532432	CPI fails to remove older VRTSperl package after the upgrade.
2526709	DMP-OSN tunable value not get persistence after upgrade from 5.1SP1 to 6.0.
2088827	During product migration the installer overestimates disk space use.

Dynamic Multi-Pathing fixed issues

This section describes the incidents that are fixed for Dynamic Multi-Pathing in this release.

Table 1-3 Veritas Dynamic Multi-Pathing fixed issues

Incident	Description
2826958	pwwn no is not displayed in the output of command "vxdmadm list dmpnode dmpnodename=".
2818840	Enhance the vxdmpraw utility to support permission and root:non-system ownership be set and make it persistent.
2792242	I/O hang after performing zone remove/add operations.
2743926	DMP restored fails to restart during system boot in 6.0.
2729501	exclude path not working properly and can cause system hang while coming up after enabling native support.
2700086	EMC BCV (NR) established devices are resulting in multiple dmp events messages (paths being disabled/enabled).
2677016	vxesd dumps core with SIGILL.
2652485	Inactive snapshot luns cause trespassing.
2626199	vxdmadm list dmpnode printing incorrect path-type.
2564092	[VxVM][Usability]Automate the lun provisioning (addition) / removal steps using vxdiskadm /or new VxVM CLI command.
2556467	DMP-ASM: disable all paths and reboot host cause /etc/vx/vxdmprawdev records losing.

Known issues

This section covers the known issues in this release.

DMP path discovery behavior when a device is removed from PowerPath control (2144891)

To remove a device from PowerPath control, you use the `powermt unmanage` command. When you remove a device from PowerPath control, DMP requires two device discovery cycles to discover the attributes of the paths of the device correctly.

Workaround:

Issue the following command to start the device discovery:

```
# vxdisk scandisks
```

After the discovery completes, issue the command again to start a second device discovery cycle.

Path name character limit when converting LVM volumes over DMP to VxVM volumes over DMP (2035399)

The HP-UX `lvdisplay` utility truncates physical volume path names to 22 characters. If a path name is truncated, utilities such as `vxvmconvert` or `vxautoconvert` that depend on the `lvdisplay` output may not function properly. If you intend to use the `vxvmconvert` utility or the `vxautoconvert` utility to convert LVM over DMP to VxVM over DMP, Symantec recommends that you reduce the length of the enclosure name to at most 8 characters before enabling native stack support.

Changes in enclosure attributes are not persistent after an upgrade to VxVM 6.0.1 (2082414)

The Veritas Volume Manager (VxVM) 6.0.1 includes several array names that differ from the array names in releases prior to release 5.1SP1. Therefore, if you upgrade from a previous release to VxVM 6.0.1, changes in the enclosure attributes may not remain persistent. Any enclosure attribute set for these arrays may be reset to the default value after an upgrade to VxVM 6.0.1. Manually reconfigure the enclosure attributes to resolve the issue.

[Table 1-4](#) shows the Hitachi arrays that have new array names.

Table 1-4 Hitachi arrays with new array names

Previous name	New name
TagmaStore-USP	Hitachi_USP
TagmaStore-NSC	Hitachi_NSC
TagmaStoreUSPV	Hitachi_USP-V
TagmaStoreUSPVM	Hitachi_USP-VM
<New Addition>	Hitachi_R700
Hitachi AMS2300 Series arrays	New array names are based on the Model Number 8x. For example, AMS_100, AMS_2100, AMS_2300, AMS_2500, etc.

In addition, the Array Support Library (ASL) for the enclosures XIV and 3PAR now converts the cabinet serial number that is reported from Hex to Decimal, to correspond with the value shown on the GUI. Because the cabinet serial number has changed, any enclosure attribute set for these arrays may be reset to the default value after an upgrade to VxVM 6.0.1. Manually reconfigure the enclosure attributes to resolve the issue.

The cabinet serial numbers are changed for the following enclosures:

- IBM XIV Series arrays
- 3PAR arrays

Enclosure name limitation when using HP-UX LVM pvcreate command on DMP device

For HP-UX LVM on a DMP device, you cannot use the `pvcreate` command if the enclosure-based name of the DMP device contains the 's' character. This is a limitation of the `pvcreate` utility on HP-UX LVM.

Workaround:

Rename the enclosure to replace the 's' with some other character in the name of the enclosure before you run the `pvcreate` command. To rename the enclosure, use the following command:

```
# vxddmpadm setattr enclosure enclr_name name=new_enclr_name
```

Adding a DMP device or its OS device path as a foreign disk is not supported (2062230)

When DMP native support is enable, adding a DMP device or its OS device path as a foreign disk using the `vxddladm addforeign` command is not supported. Using this command can lead to unexplained behavior.

The pvcreate command failed with DMP devices on IA machines (2482178)

When `dmp_native_support` is enabled on HP-UX 11i version 3 systems, you must run the `pvcreate` command on `/dev/disk/<disk#>` before creating a LVM volume group on the corresponding DMP device.

After disconnecting and reconnecting the Fibre Channel, DMP is unable to present the device tree (2509636)

On some HP-UX 11i version 3 systems, after disconnecting and reconnecting the Fibre Channel, DMP is unable to present the device tree.

Workaround:

Restart the `vxconfigd` daemon with the following command:

```
# vxconfigd -k
```

Continuous trespass loop when a Clariion LUN is mapped to a different host than its snapshot (2761567)

If a Clariion LUN is mapped to a different host than its snapshot, a trespass on one of them could cause a trespass on the other. This behavior could result in a loop for these LUNs, as DMP tries to fail back the LUNs if the primary paths are available.

Workaround

To avoid this issue, turn off the `dmp_monitor_ownership` tunable:

```
# vxddm adm settune dmp_monitor_ownership=off
```

Installation known issues

This section describes the known issues during installation and upgrade.

Warning messages may be seen during script-based installation (2615500)

When you install DMP using the script-based installer, you may see the following warning message:

```
interpreter "/opt/VRTSperl/bin/perl" not found
```

Workaround: You must install perl to resolve the issue.

To install perl

- 1 Exit the installer.
- 2 Install the `VRTSperl` depot from the product media manually:

```
# cd /dvd_path/depot
# /usr/sbin/swinstall -x enforce_dependencies=false
-x autoreboot=false -s `pwd` VRTSperl
```

- 3 Start the installer again.

Web installer does not ask for authentication after the first session if the browser is still open (2509330)

If you install or configure DMP and then close the Web installer, if you have other browser windows open, the Web installer does not ask for authentication in the subsequent sessions. Since there is no option to log out of the Web installer, the session remains open as long as the browser is open on the system.

Workaround: Make sure that all browser windows are closed to end the browser session and subsequently log in again.

Stopping the Web installer causes Device Busy error messages (2633924)

If you start the Web installer, and then perform an operation (such as prechecking, configuring, or uninstalling), you may get an error message saying the device is busy.

Workaround: Do one of the following:

- Kill the `start.pl` process.
- Start the webinstaller again. On the first Web page you see that the session is still active. Either take over this session and finish it or terminate it directly.

Perl module error on completion of DMP installation (2879417)

When you install, configure, or uninstall DMP, the installer prompts you to optionally upload installation logs to the Symantec Web site. If the installer encounters connectivity problems, you may see an error similar to the following:

```
Status read failed: Connection reset by peer at
<media_path>/../perl/lib/5.14.2/Net/HTTP/Methods.pm line 269.
```

Workaround:

Ignore this error. It is harmless.

In some cases with large LUN setup, the storage disappears after DMP device scan (2828328)

This issue is typically seen on a large LUN setup. In some cases, the storage disappears after the DMP device scan. The DMP device scan is generated with the `vxdisk scandisks` command or the `vxctl enable` command. Even if the the OS command `ioscan` can discover devices, VxVM/DMP cannot.

Workaround:

Restarting the `vxconfigd` daemon on the affected node may resolve the issue. If that does not work, you must reboot the system.

Software limitations

This section covers the software limitations of this release.

See the corresponding Release Notes for a complete list of software limitations related to that component or product.

See [“Documentation”](#) on page 19.

DMP settings for NetApp storage attached environment

To minimize the path restoration window and maximize high availability in the NetApp storage attached environment, set the following DMP tunables:

Table 1-5

Parameter name	Definition	New value	Default value
<code>dmp_restore_interval</code>	DMP restore daemon cycle	60 seconds.	300 seconds.
<code>dmp_path_age</code>	DMP path aging tunable	120 seconds.	300 seconds.

The change is persistent across reboots.

To change the tunable parameters

- 1 Issue the following commands:

```
# vxdmpadm settune dmp_restore_interval=60  
  
# vxdmpadm settune dmp_path_age=120
```

- 2 To verify the new settings, use the following commands:

```
# vxdmpadm gettune dmp_restore_interval  
  
# vxdmpadm gettune dmp_path_age
```

LVM volume group in unusable state if last path is excluded from DMP (1976620)

When a DMP device is used by a native LVM volume group, do not exclude the last path to the device. This can put the LVM volume group in an unusable state.

DMP does not support devices in the same enclosure that are configured in different modes (2643506)

DMP does not support the configuration where two devices in the same enclosure are configured in different modes. For example, if one device is configured as ALUA and another one is configured as Active/Passive (A/P).

Documentation

Product guides are available in the PDF format on the software media in the `/docs/product_name` directory. Additional documentation is available online.

Make sure that you are using the current version of documentation. The document version appears on page 2 of each guide. The publication date appears on the title page of each document. The latest product documentation is available on the Symantec website.

<http://sort.symantec.com/documents>

Documentation set

[Table 1-6](#) lists the documentation for Veritas Dynamic Multi-Pathing.

Table 1-6 Veritas Dynamic Multi-Pathing documentation

Document title	File name
<i>Veritas Dynamic Multi-Pathing Release Notes</i>	dmp_notes_601_hpux.pdf
<i>Veritas Dynamic Multi-Pathing Installation Guide</i>	dmp_install_601_hpux.pdf
<i>Veritas Dynamic Multi-Pathing Administrator's Guide</i>	dmp_admin_601_hpux.pdf

If you use Veritas Operations Manager (VOM) to manage Veritas Storage Foundation and High Availability products, refer to the VOM product documentation at:

<http://sort.symantec.com/documents>

Manual pages

The manual pages for Veritas Storage Foundation and High Availability Solutions products are installed in the `/opt/VRTS/man` directory.

Set the `MANPATH` environment variable so the `man(1)` command can point to the Veritas Storage Foundation manual pages:

- For the Bourne or Korn shell (`sh` or `ksh`), enter the following commands:

```
MANPATH=$MANPATH:/opt/VRTS/man
export MANPATH
```

- For C shell (`csh` or `tcsh`), enter the following command:

```
setenv MANPATH ${MANPATH}:/opt/VRTS/man
```

See the `man(1)` manual page.