

# Veritas™ Dynamic Multi-Pathing Release Notes

Solaris

5.1 Service Pack 1



# Veritas Dynamic Multi-Pathing Release Notes

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[www.symantec.com/business/support/index.jsp](http://www.symantec.com/business/support/index.jsp)

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- 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

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- Product registration updates, such as address or name changes
- General product information (features, language availability, local dealers)
- 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
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## 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 website.

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

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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## 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](mailto:customercare_apac@symantec.com)

Europe, Middle-East, and Africa

[semea@symantec.com](mailto:semea@symantec.com)

North America and Latin America

[supportsolutions@symantec.com](mailto:supportsolutions@symantec.com)

# Dynamic Multi-Pathing Release Notes

This document includes the following topics:

- [About this document](#)
- [About Veritas Dynamic Multi-Pathing](#)
- [About Symantec Operations Readiness Tools](#)
- [Important release information](#)
- [System requirements](#)
- [Software limitations](#)
- [Known issues](#)
- [Documentation](#)

## About this document

This document provides important information about Veritas Dynamic Multi-Pathing (Dynamic Multi-Pathing) version for Solaris. Review this entire document before you install or upgrade Dynamic Multi-Pathing.

The information in the Release Notes supersedes the information provided in the product documents for Dynamic Multi-Pathing.

This is Document version: 5.1SP1.1 of the *Veritas Dynamic Multi-Pathing Release Notes*. Before you start, ensure that you are using the latest version of this guide. The latest product documentation is available on the Symantec Web site at:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

## About Veritas Dynamic Multi-Pathing

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.

In previous Veritas releases, DMP was only available as a feature of Veritas Volume Manager (VxVM). DMP supported VxVM volumes on DMP metadevices, and Veritas File System (VxFS) file systems on those volumes.

This release extends DMP metadevices to support ZFS. You can create ZFS pools on DMP metadevices. DMP does not support migrating the root ZFS pool onto DMP.

In this release, Veritas Dynamic Multi-Pathing does not support Veritas File System (VxFS) on DMP devices.

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

## About Symantec Operations Readiness Tools

Symantec™ Operations Readiness Tools (SORT) is a set of Web-based tools and services that lets you proactively manage your Symantec enterprise products. SORT automates and simplifies administration tasks, so you can manage your data center more efficiently and get the most out of your Symantec products. SORT lets you do the following:

- Collect, analyze, and report on server configurations across UNIX or Windows environments. You can use this data to do the following:
  - Assess whether your systems are ready to install or upgrade Symantec enterprise products
  - Tune environmental parameters so you can increase performance, availability, and use
  - Analyze your current deployment and identify the Symantec products and licenses you are using
- Upload configuration data to the SORT Web site, so you can share information with coworkers, managers, and Symantec Technical Support
- Compare your configurations to one another or to a standard build, so you can determine if a configuration has "drifted"



- Search for and download the latest product patches
- Get notifications about the latest updates for:
  - Patches
  - Hardware compatibility lists (HCLs)
  - Array Support Libraries (ASLs)
  - Array Policy Modules (APMs)
  - High availability agents
- Determine whether your Symantec enterprise product configurations conform to best practices
- Search and browse the latest product documentation
- Look up error code descriptions and solutions

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**Note:** Certain features of SORT are not available for all products.

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To access SORT, go to:

<http://sort.symantec.com>

## Important release information

- The latest product documentation is available on the Symantec Web site at: <http://www.symantec.com/business/support/overview.jsp?pid=15107>
- For important updates regarding this release, review the Late-Breaking News TechNote on the Symantec Technical Support website: <http://entsupport.symantec.com/docs/334829>
- For the latest patches available for this release, go to: <http://sort.symantec.com/>

## System requirements

This section describes the system requirements for this release.

## Hardware compatibility list

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://entsupport.symantec.com/docs/330441>

## Supported Solaris operating systems

This release of the Veritas products is supported on the following Solaris operating systems:

- Solaris 9 (32-bit and 64-bit, SPARC) with Update 7, 8, and 9  
Symantec VirtualStore is only supported on Solaris 9 (SPARC Platform 64-bit).

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**Note:** In the next major release, Veritas products will not support Solaris 9.

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- Solaris 10 (64-bit, SPARC or x86\_64) with Update 6, 7, 8, and 9  
Solaris 10 (SPARC and x86\_64) with Update 9 requires VRTSvxvm patch 142629-08 (SPARC) or 142630-08 (x86\_64)  
Symantec VirtualStore is only supported on Solaris 10 (SPARC or X86 Platform 64-bit).

For the most up-to-date list of operating system patches, refer to the Release Notes for your product.

For important updates regarding this release, review the Late-Breaking News TechNote on the Symantec Technical Support website:

<http://entsupport.symantec.com/docs/334829>

## Cluster environment requirements for Sun Clusters

Use these steps if the configuration contains a cluster, which is a set of hosts that share a set of disks.

### To configure a cluster

- 1 Obtain a license for the optional VxVM cluster feature for a Sun Cluster from your Sun Customer Support channel.
- 2 If you plan to encapsulate the root disk group, decide where you want to place it for each node in the cluster. The root disk group, usually aliased as `bootdg`, contains the volumes that are used to boot the system. VxVM sets `bootdg` to the appropriate disk group if it takes control of the root disk. Otherwise `bootdg` is set to `nodg`. To check the name of the disk group, enter the command:  

```
# vxpdg bootdg
```
- 3 Decide the layout of shared disk groups. There may be one or more shared disk groups. Determine how many you wish to use.
- 4 If you plan to use Dirty Region Logging (DRL) with VxVM in a cluster, leave a small amount of space on the disk for these logs. The log size is proportional to the volume size and the number of nodes. Refer to the *Veritas Volume Manager Administrator's Guide* for more information on DRL.
- 5 Install the license on every node in the cluster.

## Veritas Storage Foundation memory requirements

A minimum of 1 GB of memory is strongly recommended.

## Software limitations

This section covers the software limitations of this release.

See "[Documentation](#)" on page 18.

### Dynamic LUN Expansion may fail on Solaris for EMC Clariion LUNs (2148851)

For EMC Clariion LUNs, if you perform Dynamic LUN Expansion operation using the `vxdisk resize` command while the I/O is in progress, the `vxdisk resize` command may fail with the following error:

```
VxVM vxdisk ERROR V-5-1-8643 Device device_name: resize failed:  
New geometry makes partition unaligned
```

#### Work-around:

To resolve the issue, perform the following steps.

**To recover from the error**

- 1 Stop the I/O.
- 2 Reboot the system with the following command:

```
# reboot -- r
```

- 3 Retry the operation.

## DMP support for the Solaris format command (2043956)

When DMP is enabled to support Solaris ZFS pools, the Solaris `format` command displays either a path or the corresponding `dmnode`. The result depends on the order in which the `format` command parses the entries in the `/dev/rdsk` directory.

## 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 1-1**

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:

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

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

```
# vxddmpadm gettune dmp_restore_interval
# vxddmpadm gettune dmp_path_age
```

## ZFS pool in unusable state if last path is excluded from DMP (1976620)

When a DMP device is used by a ZFS pool, do not exclude the last path to the device. This can put the ZFS pool in an unusable state.

## Known issues

This section covers the known issues in this release.

See the corresponding Release Notes for a complete list of known issues related to that product.

See [“Documentation”](#) on page 18.

## I/O fails on some paths after array connectivity is restored, due to high restore daemon interval (2091619)

If a path loses connectivity to the array, the path is marked with the `NODE_SUSPECT` flag. After the connectivity is restored, the restore daemon detects that the path is restored when the restore daemon probes the paths. The restore daemon clears the `NODE_SUSPECT` flag and makes the path available for I/O. The restore daemon probes the paths at the interval set with the tunable parameter `dmp_restore_interval`. If you set the `dmp_restore_interval` parameter to a high value, the paths are not available for I/O until the next interval.

## Suppressing the primary path of an encapsulated SAN boot disk from Veritas Volume Manager causes the system reboot to fail (1933631)

If you suppress the primary path of an array from VxVM control and then reboot the system, the system boot fails.

If you have an encapsulated SAN boot device with multiple primary paths, the issue occurs when you suppress the first primary path. When you configure a SAN boot device, the primary path is set as a boot device. In general, the first path of the SAN boot device corresponds to the first configured path during SAN boot. Even if another primary path is configured as a boot device, suppressing the first device from VxVM causes the boot to fail.

### **Workaround:**

When the boot device is suppressed from VxVM, change the OS boot device sequencing accordingly.

For Solaris SPARC system, use the `eeprom boot-device` command to set the boot device sequencing.

For Solaris x86-64 systems, use the `eeprom bootpath` command to set the boot device sequencing.

## Node is not able to join the cluster with high I/O load on the array with Veritas Cluster Server (2124595)

When the array has a high I/O load, the DMP database exchange between master node and joining node takes a longer time. This situation results in VCS resource online timeout, and then VCS stops the join operation.

### **Workaround:**

Increase the online timeout value for the HA resource to 600 seconds. The default value is 300 seconds.

### **To set the OnlineTimeout attribute for the HA resource type CVMCluster**

- 1 Make the VCS configuration to be read/write:

```
# haconf -makerw
```

- 2 Change the OnlineTimeout attribute value of CVMCluster:

```
# hatype -modify CVMCluster OnlineTimeout 600
```

- 3 Display the current value of OnlineTimeout attribute of CVMCluster:

```
# hatype -display CVMCluster -attribute OnlineTimeout
```

- 4 Save and close the VCS configuration:

```
# haconf -dump -makero
```

## Changes in enclosure attributes are not persistent after an upgrade to VxVM 5.1 SP1 (2082414)

The Veritas Volume Manager (VxVM) 5.1 SP1 includes several array names that differ from the array names in previous releases. Therefore, if you upgrade from a previous release to VxVM 5.1 SP1, 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 5.1 SP1. Manually reconfigure the enclosure attributes to resolve the issue.

[Table 1-2](#) shows the Hitachi arrays that have new array names.

**Table 1-2** 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. The persistence of the enclosure name is achieved with the `/etc/vx/array.info` file, which stores the mapping between cabinet serial number and array name. 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 5.1 SP1. 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

## 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 behaviour.

## ZFS pool creation on a DMP device fails when the LUN size is between 1 TB and 2TB (2010919)

Creating a ZFS pool on a DMP device using the whole disk of size > 1TB and < 2TB that contains a SMI SUN label fails. The issue is that zpool create on a whole disk changes the device label from SMI to EFI. This causes confusion between the OS

device paths of the same DMP device due to a bug in the Sun SCSI layer. This is due to SUN BugID: 6912703.

## Issues related to installation

This section describes the known issues during installation and upgrade.

### **While configuring authentication passwords through the Veritas product installer, the double quote character is not accepted (1245237)**

The Veritas product installer prompts you to configure authentication passwords when you configure Veritas Cluster Server (VCS) as a secure cluster, or when you configure Symantec Product Authentication Service (AT) in authentication broker (AB) mode. If you use the Veritas product installer to configure authentication passwords, the double quote character (") is not accepted. Even though this special character is accepted by authentication, the installer does not correctly pass the characters through to the nodes.

**Workaround:** There is no workaround for this issue. When entering authentication passwords, do not use the double quote character (").

### **Incorrect error messages: error: failed to stat, etc. (2120567)**

During installation, you may receive errors such as, "error: failed to stat /net: No such file or directory." Ignore this message. You are most likely to see this message on a node that has a mount record of /net/x.x.x.x. The /net directory, however, is unavailable at the time of installation.

### **EULA changes (2161557)**

The locations for all EULAs have changed.

The English EULAs now appear in */product\_dir/EULA/en/product\_eula.pdf*

The EULAs for Japanese and Chinese now appear in those language in the following locations:

The Japanese EULAs appear in */product\_dir/EULA/ja/product\_eula.pdf*

The Chinese EULAs appear in */product\_dir/EULA/zh/product\_eula.pdf*

### **Upgrade or uninstallation of Dynamic Multi-Pathing may encounter module unload failures (2159652)**

When you upgrade or uninstall Dynamic Multi-Pathing, some modules may fail to unload with error messages similar to the following messages:



```
fdd failed to stop on node_name  
vxfs failed to stop on node_name
```

The issue may be observed on any one or all the nodes in the sub-cluster.

**Workaround:** After the upgrade or uninstallation completes, follow the instructions provided by the installer to resolve the issue.

### During product migration the installer overestimates disk space use (2088827)

The installer displays the space that all the product packages and patches needs. During migration some packages are already installed and during migration some packages are removed. This releases disk space. The installer then claims more space than it actually needs.

**Workaround:** Run the installer with `-nospacecheck` option if the disk space is less than that installer claims but more than actually required.

### The VRTSacclib package is deprecated (2032052)

The VRTSacclib package is deprecated. For installation, uninstallation, and upgrades, note the following:

- Fresh installs: Do not install VRTSacclib.
- Upgrade: Uninstall old VRTSacclib and install new VRTSacclib.
- Uninstall: Ignore VRTSacclib.

### The `-help` option for certain commands prints an erroneous argument list (2138046)

For `installsf`, `installat`, and the `installdmp` scripts, although the `-help` option prints the `-security`, `-fencing`, `-addnode` options as supported, they are in fact not supported. These options are only applicable for high availability products.

### Installed 5.0 MP3 without configuration, then upgrade to 5.1 SP1, installer can not continue (2016346)

If you install 5.0MP3 without configuration, you cannot upgrade to 5.1SP1. This upgrade path is not supported.

**Workaround:** Uninstall 5.0 MP3, and then install 5.1 SP1.

# Documentation

Product guides are available on the documentation disc in PDF formats. Symantec recommends copying pertinent information, such as installation guides and release notes, from the disc to your system's `/opt/VRTS/docs` directory for reference.

## Documentation set

[Table 1-3](#) lists the documentation for Veritas Dynamic Multi-Pathing.

**Table 1-3** Veritas Dynamic Multi-Pathing documentation

Document title	File name
<i>Veritas Dynamic Multi-Pathing Release Notes</i>	dmp_notes_51SP1_sol.pdf
<i>Veritas Dynamic Multi-Pathing Installation Guide</i>	dmp_install_51SP1_sol.pdf
<i>Veritas Dynamic Multi-Pathing Administrator's Guide</i>	dmp_admin_51SP1_sol.pdf

[Table 1-4](#) lists the documentation for Symantec Product Authentication Service (AT).

**Table 1-4** Symantec Product Authentication Service documentation

Title	File name
<i>Symantec Product Authentication Service Release Notes</i>	vxat_notes.pdf
<i>Symantec Product Authentication Service Administrator's Guide</i>	vxat_admin.pdf

## 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.

