

# Veritas™ Dynamic Multi-Pathing for Windows Release Notes

Windows Server 2008 (x64), Windows  
Server 2008 R2 (x64)

6.0

# Veritas™ Dynamic Multi-Pathing for Windows Release Notes

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- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
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  - Troubleshooting that was performed before contacting Symantec
  - Recent software configuration changes and network changes

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- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
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North America and Latin America [supportsolutions@symantec.com](mailto:supportsolutions@symantec.com)

## Documentation

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

# Release Notes

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## Introduction

This document provides important information regarding Veritas Dynamic Multi-Pathing 6.0 for Windows (DMPW). Please review this entire document before using this product.

The information in the Release Notes supersedes the information provided in the product documents. You can download the latest version of this document from the Symantec SORT Web site:

<https://sort.symantec.com>

For the latest information on updates, patches, and other issues regarding this release, see the following Technote:

<http://www.symantec.com/docs/TECH1615565>

## Overview and features

This section provides an overview of Veritas Dynamic Multi-Pathing for Windows (DMPW) and describes its main features.

### DMPW overview

Veritas Dynamic Multi-Pathing for Windows (DMPW) adds additional fault tolerance to disk storage by making use of multiple paths between a server/host computer and a disk in a storage array. A path is a connection between the server/host computer and the storage array's disks and consists of a host adapter and a SCSI bus connection to one or more SCSI disks or a fiber optic channel connected to a hub, switch, or array. Thus, multiple paths are made possible by connecting two or more host bus adapters with either SCSI or fiber optic cabling to the storage array. DMPW manages the multiple paths so that the data on each of the array's disks is accessible to the host computer. If a path to a disk fails, Dynamic Multi-Pathing automatically transmits data to and from the disk over an alternate path.

The paths on an array are set up to work in two ways—either in Active/Active mode, which provides load balancing of the data between multiple paths, or in Active/Passive mode, in which only one path is active and any remaining paths are backups.

DMPW is implemented through Veritas Dynamic Multi-Pathing for Windows Device Specific Modules (DMPW DSMs). DMP DSMs are designed to support a multipath disk storage environment set up with the Microsoft Multipath I/O (MPIO) solution. DMP DSMs work effectively with Windows to provide a fault tolerant multipath disk storage environment.

### DMPW major features

The major features of Veritas Dynamic Multi-Pathing for Windows (DMPW) are the following:

- **Fault tolerance**  
Provides fault tolerance to a disk system by using multiple paths to each disk. If the primary path fails, either at the card level or in the cabling from the card to the disk, a secondary path is automatically used.
- **Load balancing in Active/Active configurations**  
When a system is configured as Active/Active, Dynamic Multi-Pathing makes use of all the paths to a disk for the transfer of I/O to and from the disk.



- **Support for multiple paths**  
With DMP DSMs, the maximum number of I/O paths you can have is 16.
- **Dynamic recovery**  
If an active path to a disk fails, Dynamic Multi-Pathing automatically flags the failed path and no longer attempts to transfer data on it. The failed path is monitored and is automatically restored to service when Dynamic Multi-Pathing detects that the path is functioning correctly. Dynamic Multi-Pathing automatically updates path status on the user display when a path fails or is restored to service.
- **Dynamic path recognition**  
If you add a new path to your Dynamic Multi-Pathing configuration, running a rescan or rebooting your system causes Dynamic Multi-Pathing to detect the new path and display its status. If a failed or disabled path is restored to service, Dynamic Multi-Pathing automatically detects the status change and updates the display.

## New features and changes for 6.0

This section describes the new features and changes introduced in Veritas Dynamic Multi-Pathing for Windows (DMPW) 6.0.

### Configuring DSMs without storage connection

On Windows Server 2008 R2, DMP DSM will enable configuration of some DSM settings without a storage connection. When a storage array is later connected to a host under a MPIO management, the connected storage array will inherit the policy that has been previously set in a DSM.

Support for DSM settings without storage connection applies to operations that are general for storage devices without specific knowledge of a DMP path of a storage device.

The following are settings you can configure for a DSM without storage connection:

- **Load balances:** Active/Active, Active/Passive without choosing a primary path, Least Block, Balanced Path and Least Queue. The specific settings for Round Robin with Subset or Weighted Path load balances cannot be configured without a storage connection because the settings require the specific knowledge of a DMP path of a disk which does not exist yet.
- **SCSI-3:** Enabling or disabling the setting for SCSI-3 support.

The VEA DSM Configuration command enables viewing a list of installed DSMs on a system and applying load balance settings and SCSI-3 support settings to

the selected DSMs. These capabilities are also available through the `vxddmpadm` utility in the command line interface (CLI). In addition, you can use the CLI `vxddmpadm getdsmattrib` command to view existing settings for the installed DSMs.

## MPIO timer parameter settings

New DMP DSM CLI commands are provided for viewing and changing Microsoft MultiPath Input/Output (MPIO) timer parameter settings:

- `vxddmpadm getmpioparam`
- `vxddmpadm setmpioparam`

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**Warning:** Symantec DSMs always use the default MPIO parameters. Attempting to change these MPIO parameters would affect the behavior of a DSM for I/O error, path failover, and DSM performance. Therefore, MPIO parameter settings should not be changed unless a customer has been advised by Microsoft to change the settings for debugging purposes. The `vxddmpadm setmpioparam` command provides a parameter to restore the default settings.

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MPIO timer parameter settings are as follows (see MPIO timer on the Microsoft website for more details):

- **PathVerifyEnabled:** When enabled, MPIO will perform path verification for the amount of time specified in `PathVerificationPeriod`.
- **PathVerificationPeriod:** Specifies the amount of time MPIO will perform the path verification, if enabled.
- **PDORemovePeriod:** Specifies the amount of time an MPIO pseudo LUN, which represents a disk under MPIO control, will stay in memory after all paths of a disk have been removed from the system. It also specifies how long the pending I/O should fail after all paths have been removed from a disk.
- **RetryCount:** Specifies the number of times DSM will ask MPIO to retry the I/O when an I/O error occurs.
- **RetryInterval:** Specifies the amount of time MPIO should retry a failed I/O.

## Requirements

For information about the operating system, hardware, and other general requirements of Veritas Dynamic Multi-Pathing for Windows (DMPW), see the *Veritas Dynamic Multi-Pathing for Windows Installation and Upgrade Guide*.

For the latest information on supported hardware, see the Hardware Compatibility List (HCL) at:

<http://www.symantec.com/docs/TECH152806>

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

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

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To access SORT, go to:

<https://sort.symantec.com>

## Software limitations

The following limitations apply to DMP DSMs.

### Installation directory must contain only English characters

If you plan to configure the cluster for single sign-on authentication, the installation directory must contain only English characters.

During the product installation, if you plan to use a customized location and your system runs a non-english locale operating system, you must ensure that the installation directory contains only English characters.

### DSM ownership of LUNs

Do not use a DMP DSM together with a third-party DSM for the same array. Only one DSM at a time can claim the LUNs in an array. According to Microsoft Multipath I/O (MPIO) documentation, if multiple DSMs are installed, the Microsoft MPIO framework contacts each DSM to determine which is appropriate to handle a device. There is no particular order in which the MPIO framework contacts the DSMs. The first DSM to claim ownership of the device is associated with that device. Other DSMs cannot claim an already claimed device. Therefore, to ensure that the DMP DSM claims the LUNs of an array, no other DSM should be installed for that same array.

## Known issues

The following known issues exist in this release of Veritas Dynamic Multi-Pathing for Windows (DMPW). They are grouped under the following headings:

See “[Installation known issues](#)” on page 12.

See “[Other known issues](#)” on page 15.

For the latest information on issues regarding this release, see the following Technote:

<http://www.symantec.com/docs/TECH161556>

### Installation known issues

The following are known installation issues.

## Issues due to remote installation of client only components

If you have remotely installed the client components, you may experience that the product installer fails to launch the wizards for repairing or uninstalling the client components on the system.

(2605960)

Workaround: Perform the following steps:

1. Insert the software disc into the disc drive of the system where the issue is observed.
2. Allow the autorun feature to start the installation or double-click **Setup.exe**.
3. Click **Install/Upgrade Client Components** under the product you want to install.

A message to install .NET is displayed.

4. Accept to install .NET.
5. Exit the product installer.

## The installation may fail with "The system cannot find the file specified" error

This issue occurs if the vxinstaller service is in a failed state during the product installation. (2560071)

Workaround: Delete the vxinstaller service and then run the installation wizard again.

## Clearing the default selection does not remove the DSMs

During the upgrade, do not choose to clear the selection for the DSMs you want to remove. Clearing the default selection does not remove the installed DSMs.

(2578521)

Workaround: To remove the DSMs, perform any one of the following:

- Before you begin to upgrade the cluster, remove the required DSM, using the Windows Add Remove Program. Reboot the node and then perform the upgrade.
- Upgrade the cluster and then use the Add Remove Program to remove the DSM.
- Upgrade the cluster and then navigate to %ALLUSERSPROFILE%\Veritas\MPIO\. From the command prompt, run the following command:

```
instdsm.exe -u DSMName.inf
```

---

**Note:** If you clear the default selection during the upgrade, you cannot remove the DSM using the Add Remove Program. To remove the DSM in this case, you must run the command mentioned earlier.

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## **Installation may fail with the "Windows Installer Service could not be accessed" error**

This issue occurs if the Windows Installer Service is not accessible during the installation. Since the service is not accessible, the installer fails to proceed with the installation. (2497344)

Workaround: The Windows Installer Service is a native component of an operating system. Typically, the Installer Service inaccessible issue occurs, if the service is damaged or unregistered and thus repairing the operating system installation serves as a workaround.

For more details on the workaround, refer to the following Microsoft knowledge base articles.

<http://support.microsoft.com/kb/315353>

<http://support.microsoft.com/kb/315346>

## **Bug check may occur when adding DMPW DSM option**

After installing SFW, adding the DMPW DSM option, with Windows Add or Remove Programs, may result in bug check 0xD1. This issue has been reported to Microsoft (SRZ080421000462). (1251851)

## **Delayed installation on certain systems**

You may experience a slower installation on certain systems.

This issue occurs, if you have configured any software restriction policies on the system. During the installation the restriction policies increases the package verification time and thus the over all installation time is increased. (2516062)

## **Installation may fail with "Unspecified error" on a remote system**

This issue occurs if the vxInstaller service does not start on the remote node to begin the installation. (2429526)

Workaround: Run the installation locally on the system where the installation has failed.

## **vxlicrep and GUI showing wrong product name for DMPW license**

In a graphical user interface (GUI) based installation, on the **License** page, when you enter the license key and select the key to view the licensed options, it shows the wrong product name and does not list product features. In a command-line interface (CLI) based installation, you can see this by using the `vxlicrep` command. (2160859)

There is no workaround for this issue.

## **Side-by-side error may appear in the Windows Event Viewer**

This issue occurs on the systems where the Microsoft VC redistributable package or the Dot Net installation is corrupted. (2406978)

Workaround: You must repair the VC redistributable package or the Dot Net installation.

## **Other known issues**

The following are other known issues for this release.

### **vxdmadm's deviceinfo and pathinfo with disk specified in p#c#t#l# parameter displays information only by one path**

The `deviceinfo` and `pathinfo` commands of `vxdmadm` work with only one `p#c#t#l#` parameter shown with the disk in the `vxdmadm disk list` command. Even if the disk has more than one path, the `deviceinfo` and `pathinfo` commands with `p#c#t#l#` values of other paths fail with the Invalid Argument error. (2162670)

### **Changes made to a multipathing policy of a LUN using the Microsoft Disk Management console, do not appear on the VEA GUI**

DMP DSMs do not manage the load balance settings made with the Microsoft Disk Management console. So changes made to a multipathing policy using the Microsoft Disk Management console do not appear on the VEA GUI.

Changing the load balance settings for DMP DSMs must be done using the SFW VEA GUI or CLI. (1859745)

## VEA or CLI operations for DMP DSMs fail without providing error message if WMI service is disabled

The Windows Management Instrumentation (WMI) service is required for using the DMP DSM feature. If you disable the WMI service, the wizards or commands for DMP DSM operations that require the WMI service will fail. The message window displays only an error code without a message explaining the cause of the failure. (2590359)

## Fixed issues for 6.0

Table 1-1 lists the issues that have been fixed in the 6.0 release.

**Table 1-1** DMPW fixed incidents for 6.0

Fixed Incidents	Description
2149046	Statistics monitoring dialog accepts a large polling value without any error
2162011	vxdmpadm setattr dsm CLI fails to set load balance policy or primary path or SCSI parameters
2163823	Cannot set SCSI3 support for a DSM
2164658	vxdmpadm disk list CLI does not show the correct disk style and status
2169691	VEA fails to launch because MSVCR71.dll is missing
2171310	Array/Device setting wizards for weighted path policy accept a larger number without throwing any error

## Documentation

Veritas Dynamic Multi-Pathing for Windows includes the following documentation, in addition to the release notes.

- *Veritas Dynamic Multi-Pathing for Windows Getting Started Guide*
- *Veritas Dynamic Multi-Pathing for Windows Installation and Upgrade Guide*
- *Veritas Dynamic Multi-Pathing for Windows Administrator's Guide*

You can download the latest version of these documents from the Symantec SORT Web site.

<https://sort.symantec.com>



# Acronyms

The following table defines acronyms used in the Veritas Dynamic Multi-Pathing for Windows (DMPW) release notes:

**Table 1-2** Acronym List

Acronym	Definition
DMPW	Dynamic Multi-Pathing for Windows
CLI	Command-line interface
GUI	Graphical user interface
HCL	Hardware Compatibility List
MPIO	Multipath I/O
VEA	Veritas Enterprise Administrator

