

Symantec™ Dynamic Multi-Pathing 6.1 Release Notes - VMware ESXi

February 2014



Symantec™ Dynamic Multi-Pathing Release Notes

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Product version: 6.1

Document version: 6.1 Rev 2

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350 Ellis Street
Mountain View, CA 94043

<http://www.symantec.com>

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North America and Latin America [supportolutions@symantec.com](mailto:supportsolutions@symantec.com)

Dynamic Multi-Pathing Release Notes

This document includes the following topics:

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About this document

This document provides important information about Symantec Dynamic Multi-Pathing (Dynamic Multi-Pathing) version 6.1 for ESXi. 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: 6.1 Rev 2" of the *Symantec 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:

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About Symantec Dynamic Multi-Pathing for VMware

Symantec Dynamic Multi-Pathing for VMware 6.1 (VxDMP) is a multi-pathing solution integrated with VMware's vSphere infrastructure, which brings the established and proven enterprise-class functionality to VMware virtual environments.

VxDMP provides multi-pathing functionality for the devices that are configured on the system. VxDMP creates VxDMP metadevices (also known as VxDMP nodes) to represent all the device paths to the same physical LUN.

VxDMP provides the best in class availability, reliability, and performance by using advanced path failover and load balancing for a wide range of storage arrays. VxDMP also helps in gaining better visibility of a storage, and in managing it better.

VxDMP solution consists of the following components:

- VxDMP offline bundles installed on the ESXi servers.
The ESXi bundle contains the binaries for VxDMP that need to be installed on each individual ESXi server.
You can obtain the ESXi bundle from the Symantec software download website, or use vSphere Client to download it from the VxDMP UI plug-in tab within the vSphere Client.
- Administrative components:
 - VxDMP Console installed on a Windows-based host (physical or virtual).
The VxDMP Console plugs into VMware vSphere environment, a vCenter Plugin, and enables you to manage VxDMP in the vSphere environment. Once the VxDMP Console is installed, Symantec Dynamic Multi-Pathing is available in vSphere Client, under the **vCenter Home** view, and as a **VxDMP** tab. The VxDMP tab offers the host view for a selected ESXi host, or the datacenter view for a selected datacenter.
Use the Symantec installation media to install the VxDMP Console on a Windows-based host that has the supported Windows version.
 - Administration CLI installed on a Windows-based or Linux-based remote host.
The usual `vxdmpadm` and `vxddladm` commands enable you to administer VxDMP on multiple ESXi from a remote host at a command line shell such as to allow creation of custom scripts.

You can obtain the CLI package from the Symantec product download website, or use vSphere Client to download the CLI package from the VxDMP tab within the vSphere Client.

- VxDMP plug-in for vSphere Web Client.
A VxDMP plug-in is registered in the VMware vSphere Web Client server that enables you to manage VxDMP on an ESXi host from the vSphere Web Client GUI. In the vSphere Web Client, select the host and navigate to the **Manage > VxDMP**. To monitor the I/O performance of the entities, navigate to **Monitor > Performance > VxDMP** views.

Note: VxDMP is referred as DMP in some sections of this document.

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/TECH214340>
- 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/TECH211575>

Note: Before you install or upgrade SFHA Solutions products, review the current compatibility list to confirm the compatibility of your hardware.

Changes introduced in 6.1

This section lists the changes in Symantec Dynamic Multi-Pathing 6.1.

Changes related to Symantec Dynamic Multi-Pathing (DMP)

The following sections describe changes in this release related to Symantec Dynamic Multi-Pathing (DMP).

Support for event monitoring

DMP Multi-Pathing Plug-in (DMP-MPP) demonstrates a proactive role in monitoring the SAN fabric events, detecting errors, and identifying the devices that are potential suspects. DMP-MPP notifies the events to the DMP-provider. The DMP-provider captures these events and logs them in the `/etc/vx/dmpevents.log` file. To view these events from `/var/log/syslog.log` file, use the `dmesg` command.

DMP logs the following major events:

- Marking paths or dmpnodes enabled
- Marking paths or dmpnodes disabled
- Throttling of paths
- I/O error analysis
- HBA and SAN events

For more information about the event monitoring feature, see the *Symantec Dynamic Multi-Pathing Administrator's Guide*.

Support for operating system-based device naming scheme

With enclosure-based naming scheme, DMP on VMware ESXi now supports operating system-based device naming.

VMware uses the `naa.<SCSI-UID>` or `eui.<SCSI-UID>` format for device naming. When you enable the operating system-based device naming scheme, DMP is capable of inheriting VMware's device naming format to name its meta-devices. As VMware uses SCSI-UID to create device names, the device names are persistent despite of restarting the operating system.

For more information about configuring operating system-based device naming, see the *Symantec Dynamic Multi-Pathing Administrator's Guide*.

VxDMP supports a pure IPv6 configuration

In this release, VxDMP now supports a pure IPv6 configuration.

DMP proactively probes paths to detect failed paths

DMP is enhanced to bundle the paths having the same endpoints from the host to the array into one logical Subpaths Failover Group (SFG). DMP proactively monitors these SFGs for an I/O error. To enable this feature, use the tunable **dmp_sfg_threshold** parameter. In the absence of IO activity, the restore daemon assists DMP in maintaining an up-to-date status of the paths that are clustered in the SFG. With the introduction of Low Impact Path Probing (LIPP) logic, the restore

daemon optimizes its probes to a restricted number of paths within an SFG. This feature enables DMP to efficiently recognize and restore the failed paths.

Enhancement to apply and save user-specified names

The datacenter view is enhanced in DMP for VMware 6.1 to allow saving the user-friendly names, which you specify to storage and LUNs that are visible on a host. You can apply these saved names to one or more hosts where the same entities are visible.

For instructions on saving and applying user-specified names, see the *Symantec Dynamic Multi-Pathing Administrator's Guide*.

Facility to rename a storage array and LUN

In DMP for VMware 6.1, you can rename a storage array (or enclosure) and LUN to specify a user-friendly name instead of the DMP generated default name. From the host view, you can rename the storage array and LUN, and from the datacenter view only the storage array. When you rename a storage array from the host view the name of the storage array is changed only on the particular host. If you rename the storage array from the datacenter view, then the name of the storage array changes across all the connected hosts.

For more information on renaming, see the *Symantec Dynamic Multi-Pathing Administrator's Guide*.

Support to manually register, unregister, and verify the registration of DMP plug-in

DMP for VMware ESXi 6.1 now lets you manually register a DMP plug-in on additional vCenter servers, verify if the plug-in is registered, and unregister the DMP plug-in.

For instructions to register, unregister, and verify the registration of DMP plug-in, refer to the *Symantec Dynamic Multi-Pathing Installation Guide*.

Support for vSphere Web Client

Symantec Dynamic Multi-Pathing (VxDMP) for VMware is enhanced to provide the ability to administer VxDMP using the VMware's vSphere Web Client. VxDMP is seamlessly integrated with the web-based administration of VMware infrastructure to let you manage an ESXi host's storage infrastructure from a bird's-eye view to filter entities-based on your requirement. Thus, helping in identifying the I/O bottleneck areas and taking the corrective action.

System requirements

The following topics describe the system requirements for this release:

Hardware compatibility list (HCL)

The hardware compatibility list contains information about supported hardware and is updated regularly. 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.

For the latest information on supported hardware, visit the following URL:

<http://www.symantec.com/docs/TECH211575>

Supported VMware software versions

This section lists the supported VMware software versions for this release of Dynamic Multi-Pathing.

[Table 1-1](#) shows the supported VMware software versions for this release.

Table 1-1 Supported VMware software versions

| VMware software version | vCenter Server version |
|-------------------------|------------------------|
| ESXi 5.0 | vCenter Server 5.0 |
| ESXi 5.1 | vCenter Server 5.1 |
| ESXi 5.5 | vCenter Server 5.5 |

Microsoft Windows requirements

The DMP console is the Web server for the vSphere User Interface client for DMP. The DMP console Web server can be installed on a Microsoft Windows system meeting the following requirements.

- The DMP console requires 256M of heap space. So at least 256M of RAM should be free and available on the system for DMP console server to start up.
- Microsoft .NET Framework 4.5 must be installed on your system

[Table 1-2](#) shows the supported Microsoft Windows versions.

Table 1-2 Supported operating systems

| Operating systems |
|----------------------|
| Windows 2008 x64 bit |
| Windows 2008 R2 |
| Windows 2012 |

Optionally, the VxDMP remote CLI can be installed on a physical system or virtual machine running Microsoft Windows. The same requirements apply.

Web browser requirements

The following are the supported Web browsers for Dynamic Multi-Pathing:

- Internet Explorer 6.0 (or later)

Additional considerations for supported Web browsers:

- The following settings in your Internet Explorer (IE) browser must be enabled:

| | |
|---|---|
| Tools > Internet Options. Advanced tab. | <ul style="list-style-type: none"> ■ Use SSL 2.0 ■ Use SSL 3.0 ■ Use TLS 1.0 |
|---|---|

| | |
|---|--|
| Tools > Internet Options. Security tab. | <ul style="list-style-type: none"> ■ Active scripting ■ Run ActiveX controls and plug-ins ■ Script ActiveX controls marked safe for scripting |
|---|--|

| | |
|------------------------|------------------------|
| Tools > Manage Add-ons | Shockwave Flash Object |
|------------------------|------------------------|

- To view the VxDMP tab, Symantec recommends that for the logged in user, the IE Enhanced Security setting is set to "Off". If you require to set the Enhanced Security setting to "On", the first time you access the VxDMP tab, you must add the console IP to the trusted zone of IE, and restart vSphere client.
- To view the VxDMP tab, you must have Adobe Flash installed on the system from where you run VMware vSphere Client.

Support requirements for the remote CLI

The VxDMP remote Command Line Interface (CLI) can be installed on any Linux or Windows system that uses Java Runtime Environment (JRE) 7.0 or above. The system can be a physical system or a virtual machine.

Fixed issues

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

Table 1-3 Dynamic Multi-Pathing fixed issues

| Incident | Description |
|----------|--|
| 3057458 | ESX crashed after installing DMP for VMware. |
| 2881095 | Contents of the media disc display in truncated format. |
| 2859226 | Using vCenter authentication, the command 'vxndmpadm iostat show interval=n' displays an error after a certain amount of time. |
| 2849901 | DMP templates cannot be applied if the tunable dmp_cache_open is present |
| 2844389 | Host view might display "Unable to retrieve the storage infrastructure details." message. |
| 2821443 | VxDMP does not support a pure IPv6 configuration. |
| 2819641 | Resetting the DMP configuration fails the first time. |
| 2766650 | Plug-in registration is not supported with a link-local IPv6 address |
| 2755451 | The events icon of the VxDMP console UI does not retrieve the events log |
| 2694644 | Enabling or disabling the controller from the VxDMP tab fails for an iSCSI configuration with NetApp Filer. |
| 2655614 | Storage processor name is not displayed correctly for NetApp Filer. |

Known issues

This section covers the known issues in this release.

I/O statistics are not available if overlapping filters are applied in the VxDMP tab of the vSphere Web Client (3306319)

The `Manage > VxDMP` tab of the vSphere Web Client does not support mixing filters for I/O statistics. In the Connectivity Map, the I/O statistics pie chart does not display if you specify an unsupported filter combination, such as specifying both a controller name and a DMP node name.

The VxDMP tab supports the following filters for I/O statistics:

- `[vm=virtual-machine-name] ctrl=ctrl-name`
- `[vm=virtual-machine-name] dmpnodename=dmp-device-name`
- `[vm=virtual-machine-name] enclosure=enclr-name [portid=array-portid] [ctrl=ctrl-name]`
- `[vm=virtual-machine-name] pathname=path-name`
- `[vm=virtual-machine-name] pwwn=array-port-wwn [ctrl=ctrl-name]`

Workaround:

There is no workaround.

Drop-down list for filter on LUNs tab in the Web client fails to load (3189918)

When you click on the drop-down list for filter on the LUNs tab in the Web client, the drop-down list fails to load.

VxDMP console installation fails if installed in a folder having Japanese character in it (2670506)

When you install VxDMP on a host with a Japanese OS, if you select for installation a directory having a Japanese character in its name, the installation fails.

Workaround:

When installing VxDMP on a host with a Japanese OS, use the default installation directory:`C:\program files(x86)\symantec\DMP\`

Configuration of the VxDMP Console server and registering the DMP plugin fails if the installation directory contains special characters (2671487)

If you install DMP Console in a directory that has a name with unsupported special characters, then the post-installation configuration fails. The special characters that

are not supported include the following: percent sign (%); ampersand (&); tilde (~); apostrophe ('); exclamation point (!); at sign (@); number sign (#); dollar sign (\$); carat (^); plus sign (+); equal sign (=); brackets ([]) and semicolon (;).

If the directory contains unsupported characters, you cannot configure Symantec DMP Console server, or register the DMP plug-in.

If you try to uninstall VxDMP from the system, then a fatal error occurs.

Workaround:

The installation directory name must not have special characters other than dash (-); underscore (_); parenthesis (()); or period (.).

Issues related to installation (2642164)

Repair of the DMP console installation fails if the *InstallDirectory/DMP/bin* directory is missing, or if files are missing from this directory.

Workaround:

If the repair fails, you must uninstall and reinstall the package.

Refreshing the VxDMP tab multiple times displays a network connectivity error (2379946, 2379707)

This issue is typically observed in case of Internet Explorer 7 (IE7) browser. If auto-refresh is enabled, VxDMP tab refreshes the I/O statistics for every interval (as specified in seconds). However, in case of network failure if you manually refresh the VxDMP tab multiple times, IE7 displays a network connectivity error.

Workaround:

For details, refer to the following knowledge base article from Microsoft.

http://support.microsoft.com/kb/927917#more_information

On ESXi 5.0, DMP may fail to fetch any data (2733610)

Small Footprint CIM Broker (SFCB) on ESXi 5.0 is incompatible with JRE 1.6 u29 or later. As a result, the VxDMP tab in the vSphere Client UI fails to fetch any data. The remote CLI displays the Operation execution failed message as shown in the following example:

```
C:\Program Files (x86)\Symantec\DMP\bin> vxdmpadm vcenter=10.209.62.226  
vc_user=zen\administrator vc_passwd=Merlin@123 host=10.217.56.157 gettune  
VxVM vxdmpcmd ERROR V-5-1-18620 Operation execution failed.
```

To avoid this issue, upgrade to ESXi 5.0 Update 1 or higher.

On ESXi 5.0, run the following on every reboot of ESX server:

```
# /etc/init.d/sfcbd-watchdog restart
```

Additionally, perform the following workaround after installing DMP:

Workaround for vSphere Client UI:

- 1 Add `sblim.wbem.httpPoolSize=0` in `cimclinet.properties` file, which is located on the Console server:

```
%AllUsersProfile%\Symantec\DMP\Conf\
```

- 2 Restart the VxDMP console service.

Workaround for CLI:

- 1 Create a new file and name it as **sblim-cim-client2.properties**.
- 2 In the file, add **sblim.wbem.httpPoolSize=0**, and copy the file to the following location:

```
VxDMP Console install directory\DMP\bin\
```

Workaround for Web Client: There is no workaround for vSphere Web Client.

Downloading the ESXi bundle for an ESXi server requires that the Internet Explorer Enhanced Security is off (2843571)

To be able to download the ESXi offline bundle from the home view, make sure that for the logged in user, the Internet Explorer Enhanced Security setting is set to "Off".

VxDMP fails to detect the virtual machines with special characters (3249544)

In the Web Client, VxDMP fails to detect the virtual machines that contain special characters in their names. The special characters that are not supported include the following: bracket ([]); slash (/); carat (^); dollar sign (\$); period (.); pipe (|); question mark (?); asterisk (*); plus sign (+); parenthesis (()); and braces ({}).

Workaround: Rename the virtual machine, such that it does not contain a special character.

The connection lines in the Connectivity Map fail to appear as expected when you resize the Web Client view (3356063)

In the VxDMP Web Client view, with multiple tabs open if you unpin the panels to resize the view or resize the browser, then the connection lines in the Connectivity Map do not appear as expected. You may observe this issue in the Connectivity Map tab after resizing the view in a different tab.

Workaround: To fix this issue, in the **Connectivity Map** view, click **Reset**.

The VxDMP Web Client does not display LUNs with names longer than 51 characters (3306263)

The VxDMP Web Client does not display LUNs with names longer than 51 characters.

Workaround:

Rename the LUN so that the name has 51 characters or less.

DMP shows errors if the ESXi server is disconnected (3405262)

DMP shows errors if the ESXi server is disconnected. This issue is seen with both the DMP Web Client and the DMP vSphere Client. If you click the Settings tab, DMP displays an Action script error.

There is no workaround.

The DMP CLI for remote management of an ESXi 5.0 host requires configuration (3389530)

By default, the DMP CLI is not configured for remote management of an ESXi 5.0 host. The configuration step is not required for hosts with ESXi 5.0 update 1 or later.

Workaround:

Upgrade to ESXi 5.0 update 1

OR

Use the following procedure to configure the DMP CLI.

To configure the DMP CLI for remote management of an ESXi 5.0 host

1 Stop the console service.

2 Add the following line to the file

```
C:\ProgramData\Symantec\DMP\conf\cimclient.properties:
```

```
sblim.wbem.httpPoolSize=0
```

3 Restart the console service.

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 21.

DMP Web Client and vSphere GUIs require the same version of DMP in the ESXi server (3403624)

To use DMP on ESXi with the DMP Web Client GUI or the DMP vSphere GUI, the version of DMP must be the same.

For example, if you have DMP 6.0.1 installed on ESXi and DMP 6.1 installed on the vCenter, then no DMP data is displayed in the Web Client GUI or the vSphere GUI for that ESXi.

Workaround:

Update the DMP on the ESXi to version 6.1.

I/O errors are reported from arrays that do not support VAAI commands

Some arrays do not support vStorage APIs for Array Integration (VAAI) commands. When DMP processes such commands from VMware to the storage, the error from the array is reported in the `vmkernel.log`.

The error message is logged similar to the following message:

```
2013-12-18T13:41:39.336Z cpu1:33249) VxVM vxdmp V-5-0-0 [Error] i/o error occurred (errno=0xbad00f1) on dmpnode emc_clariion0_1
```

This error message does not indicate a problem with DMP. The error message occurs if DMP manages the LUNs that cannot support the requested functions from VMware.

Workaround:

You can correlate the I/O error message with the `dmpevents.log` to determine the underlying error. If the error message refers to an INQUIRY failure on a unsupported page, you can ignore the `0xbad00f1` errors in the `vmkernel.log`. For example:

```
Wed Dec 18 13:41:39.336: SCSI error occurred on Path vmhba1:C0:T1:L0:
opcode=0x12 reported 'illegal request' (cdb=0x2 key=0x5 asc=0x24
ascq=0x0) invalid field in cdb
Wed Dec 18 13:41:39.336: I/O analysis done as DMP_TRY_ALT_PATH on Path
vmhba1:C0:T1:L0 belonging to Dmpnode emc_clariion0_1
```

Contents of the media disc display in truncated format (2881095)

After you mount the media disc (DVD), the ESXi server displays file names truncated to eight (8) characters. This issue is an ESXi limitation and does not impact the DMP installation.

vSphere Client DMP GUI limitations

The following are the software limitations for the vSphere Client DMP GUI, in the current release.

- Some attributes in the controller and LUN tables are currently displayed as '!'.

VMware device claiming limitation

The following is a software limitation from VMware, for the current release.

If the vendor and the model of the storage device is not supported by VMware, the device is not claimed by VxDMP or the device disappears after VxDMP installation.

Workaround: If the device is not supported, delete the MPP claim rule associated with VxDMP, from the **esxcli corestorage claimrule list**.

For arrays with such vendor IDs, create claim rules for each Product ID on your setup.

Internet Explorer limitation with the browser back button (2677479)

When you navigate through the VxDMP online help with the browser back button, you may encounter the following issue. If you click on any links in a page to display

a different page, you must click the browser back button twice to return to the original page.

If HBA does not trigger events when the connectivity is restored, DMP paths are restored after next routine path restore task (3313496)

DMP depends on the events from the HBA to restore device paths as soon as the connectivity is restored. If the HBA does not provide events when the connectivity is restored, then the paths are only restored after the next routine path restore task. The path restore tasks depend on the value of the `dmp_restore_interval` tunable. To ensure paths are restored in a timely manner, set the `dmp_restore_interval` to a reasonable interval.

To set the `dmp_restore_interval` to 300 seconds:

```
# vxddmpadm settune dmp_restore_interval=300
```

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Documentation set

Table 1-4 lists the documentation for Symantec Dynamic Multi-Pathing.

Table 1-4 Symantec Dynamic Multi-Pathing documentation

| Document title | File name |
|---|------------------------|
| <i>Symantec Dynamic Multi-Pathing Release Notes</i> | dmp_notes_61_esx.pdf |
| <i>Symantec Dynamic Multi-Pathing Installation Guide</i> | dmp_install_61_esx.pdf |
| <i>Symantec Dynamic Multi-Pathing Administrator's Guide</i> | dmp_admin_61_esx.pdf |