

Veritas InfoScale Device Driver Installation (DDI) Package Readme

Windows

R1 2016

Veritas InfoScale Device Driver Installation (DDI) Readme

Last updated: April 27 2016

Legal Notice

Copyright © 2016 Veritas Technologies LLC. All rights reserved.

Veritas and the Veritas Logo are trademarks or registered trademarks of Veritas Technologies LLC or its affiliates in the U.S. and other countries. Other names may be trademarks of their respective owners.

This product may contain third party software for which Veritas is required to provide attribution to the third party ("Third Party Programs"). Some of the Third Party Programs are available under open source or free software licenses. The License Agreement accompanying the Software does not alter any rights or obligations you may have under those open source or free software licenses. Refer to the third party legal notices document accompanying this Veritas product or available at:

<https://www.veritas.com/about/legal/license-agreements>

The product described in this document is distributed under licenses restricting its use, copying, distribution, and decompilation/reverse engineering. No part of this document may be reproduced in any form by any means without prior written authorization of Veritas Technologies LLC and its licensors, if any.

THE DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. VERITAS TECHNOLOGIES LLC SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

The Licensed Software and Documentation are deemed to be commercial computer software as defined in FAR 12.212 and subject to restricted rights as defined in FAR Section 52.227-19 "Commercial Computer Software - Restricted Rights" and DFARS 227.7202, et seq. "Commercial Computer Software and Commercial Computer Software Documentation," as applicable, and any successor regulations, whether delivered by Veritas as on premises or hosted services. Any use, modification, reproduction release, performance, display or disclosure of the Licensed Software and Documentation by the U.S. Government shall be solely in accordance with the terms of this Agreement.

Veritas Technologies LLC
500 E Middlefield Road
Mountain View, CA 94043

<http://www.veritas.com>

.

Technical Support

Technical Support maintains support centers globally. All support services will be delivered in accordance with your support agreement and the then-current enterprise technical support policies. For information about our support offerings and how to contact Technical Support, visit our website:

<https://www.veritas.com/support>

You can manage your Veritas account information at the following URL:

<https://my.veritas.com>

If you have questions regarding an existing support agreement, please email the support agreement administration team for your region as follows:

Worldwide (except Japan)

CustomerCare@veritas.com

Japan

CustomerCare_Japan@veritas.com

Documentation

Make sure that you have the current version of the documentation. Each document displays the date of the last update on page 2. The latest documentation is available on the Veritas website.

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

Documentation feedback

Your feedback is important to us. Suggest improvements or report errors or omissions to the documentation. Include the document title, document version, chapter title, and section title of the text on which you are reporting. Send feedback to:

doc_feedback@veritas.com

You can also see documentation information or ask a question on the Veritas community site.

<http://www.veritas.com/community/>

Veritas Services and Operations Readiness Tools (SORT)

Veritas Services and Operations Readiness Tools (SORT) is a website that provides information and tools to automate and simplify certain time-consuming administrative tasks. Depending on the product, SORT helps you prepare for installations and upgrades, identify risks in your datacenters, and improve operational efficiency. To see what services and tools SORT provides for your product, see the data sheet:

https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf

Device Driver Installation (DDI) Package

This document includes the following topics:

- [Introduction](#)
- [Additions to DDI R1 2016](#)
- [Known issues](#)
- [Fixed issues](#)
- [Installing DDI R1 2016](#)
- [Uninstalling DDI using the GUI or CLI](#)
- [Additions in previous DDI releases](#)
- [Issues fixed in previous DDI releases](#)

Introduction

This Readme provides general information and instructions that are related to installing and uninstalling DDI R1 2016 Veritas DMP DSM support for Windows Server 2008, 2008 R2, 2012, and 2012 R2 for the following products:

- Veritas InfoScale 7.0 for Windows products (Veritas InfoScale Foundation, Veritas InfoScale Storage, Veritas InfoScale Enterprise)
- Storage Foundation (SFW) versions 6.0, 6.0.1, 6.0.2, and 6.1
- Storage Foundation and High Availability Solutions (SFW HA) versions 6.0, 6.0.1, 6.0.2, and 6.1

- Dynamic Multi-Pathing for Windows (DMP) (the standalone product) versions 6.0, 6.0.1, 6.0.2, and 6.1

Notes about hardware compatibility

Veritas maintains a hardware compatibility list (HCL) for Storage Foundation and High Availability Solutions products on the Veritas Support website. The HCL gives information on HBAs, firmware, and switches that have been tested with each supported array. Check the following HCLs for details about your hardware before installing this DDI package:

Release version	HCL location
Veritas InfoScale 7.0 for Windows	http://www.veritas.com/docs/000025353
SFW, SFW HA, or DMP versions 6.1	http://www.veritas.com/docs/000018627
SFW, SFW HA, or DMP versions 6.0, 6.0.1, 6.0.2	http://www.veritas.com/docs/000011772

Note: Storage arrays may require additional configuration steps or updates to work with Storage Foundation and MPIO. Contact the manufacturer of the storage array for details.

Notes about Microsoft iSCSI

Setting the load balancing with the Microsoft iSCSI Initiator for an iSCSI device that is claimed by Veritas DMP DSMs does not change the load balancing of the Veritas DMP DSM. Load balancing of an iSCSI device claimed by a Veritas DMP DSM should be done using the VEA GUI or CLI commands.

Additions to DDI R1 2016

Veritas DDI R1 2016 adds support for the following arrays:

- Intel(R) SSD P3700/P3600/P3500/750 Series
- Oracle FS1-2 array
- Support additional fusion IO cards SX300, PX600 and IODrive2
- Support Thin Reclaim for an additional array model in Hitachi "Gx00//Fx0" array family

- DELL MD38xx FC/iScsi and DELL MD34xx SAS/iScsi

Note: The information provided in this document is NOT a statement of support for any particular array, model, mode, or feature for Storage Foundation for Windows or Veritas InfoScale Foundation.

See [“Notes about hardware compatibility”](#) on page 5.

In addition to the support for these new arrays, DDI R1 2016 also includes Array Reporting Support (ARS) and the supported features for the new hardware.

The following table provides details about the SFW features supported by the newly supported:

Table 1-1 Array Reporting Support (ARS) features for new hardware

Hardware enclosure	Support for thin provisioning	Support for track alignment	Enclosure
ORACLE FS1-2 array	No	64 sectors for SFW and SFW HA 6.0 2048 sectors with SFW and SFW HA 6.0.1, 6.0.2, 6.1, and InfoScale 7.0	Yes
Intel P3700 card	No	64 sectors for SFW and SFW HA 6.0 2048 sectors with SFW and SFW HA 6.0.1, 6.0.2, 6.1, and InfoScale 7.0	Yes
FusionIO card SX300, PX600, IODrive2	Yes	64 sectors with SFW and SFW HA 6.0. 2048 sectors with SFW and SFW HA 6.0.1, 6.0.2, 6.1, and InfoScale 7.0	Yes
DELL MD38x, MD34xx	No	64 sectors with SFW and SFW HA 6.0. 2048 sectors with SFW and SFW HA 6.0.1, 6.0.2, 6.1, and InfoScale 7.0	Yes

Known issues

The following known issues exist in this DDI release:

After uninstalling DDI, repairing the product does not restore the installation to its original state

When you uninstall DDI, the files in the MPIO folder remain on the system even after a successful uninstallation. Due to this, you are unable to revert the base product to the original state. (3877572)

Resolution:

Perform the following tasks to resolve the issue:

1. Navigate to `%vmpath%\VM5INF` and rename the MPIO folder to `MPIO_old`.
2. In the Windows Control panel, select **Programs and Features** for the base product and select **Change > Add/Remove**.
3. In the Windows Control panel, select **Programs and Features** for the base product and select **Change > Repair**.

A Windows security warning may appear after you upgrade to SFW 6.0.1

A Windows security warning may appear during the SFW 6.0 to SFW 6.0.1 upgrade, on the systems where a DDI package is installed. (3831307)

This issue occurs because the pre-upgrade cleanup script fails to clean up the device driver specific .cat and .inf files. Some of the .cat and .inf files from the earlier product version are retained.

During the upgrade, a compatibility issue occurs between the files that are retained and the latest files being installed.

As a result, the device driver installation fails and a Windows security warning is displayed.

Resolution:

Perform the following tasks to resolve the issue:

1. On the Windows security warning, click "Don't install the driver" and continue with the product installation.
2. After the product installation is complete, reinstall the required DDI package.

VEA GUI fails to start after uninstalling DDI

When you install DDI over DMP 6.x, and then uninstall DDI, some of the Veritas Enterprise Administrator (VEA) files get deleted. Due to this, the VEA service fails to start and you will not be able to launch the VEA GUI.

Workaround: You must uninstall and then reinstall DMP.

DMP option is incorrectly shown as not selected in Windows Control Panel

After installing the DDI package on a system running SFW or SFW HA without the DMP option, the DMP option is shown as not being selected in the Storage Foundation (Server Components) entry of the Windows Control Panel. There is no workaround for this issue.

SFW fails to install DMP DSMs on Windows Server 2008 Server Core

The installation completes successfully on the Windows Server 2008 Server Core systems; however, after system reboot none of the DMP DSM drivers are seen in the install directory and the registry key

`HKLM\System\CurrentControlSet\Services` is not updated with any of the DMP DSM entries. (1923260)

Workaround: Before the installation, create the following registry key on all the Server Core systems where you want to install SFW.

To create registry key on a Server Core system

- 1 Open the Windows registry editor and type the following command at the command prompt:

```
regedit
```

- 2 In the registry tree (on the left), navigate to the following location:

```
HKLM\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Explorer\Shell  
Folders
```

- 3 Click **Edit > New > String Value** to create a REG_SZ entry with the name **Common AppData**.
- 4 Double-click the newly created Common Appdata key and in the **Edit String** dialog box, specify the Value data as `C:\ProgramData`.

- 5 Click **OK** and then click **File > Exit** to close the registry editor.
- 6 Repeat these steps on all the required Server Core systems and then proceed with the installation.

Fixed issues

The following table provides information about the fixed issues for DDI R1 2016.

Table 1-2 Issues fixed for DDI R1 2016

Fixed incidents	Description	Comments
3871581	After upgrading the DELL Compellent firmware to version 6.7.x, VCOMPLTNT DSM shows only one hard disk with multiple paths for DELL Compellent array.	Applicable for SFW, SFW HA and DMPW versions 6.0, 6.0.1, 6.0.2 and 6.1. Applicable to InfoScale version 7.0
3863191	Add the support of 3PAR enclosure information with the 3PAR firmware that supports 16 byte LUN serial number.	Applicable for SFW, SFW HA and DMPW versions 6.0, 6.0.1, 6.0.2 and 6.1. Applicable to InfoScale version 7.0
3869057	Add the support of Thin Reclaim on a HDS array, which has an internal product ID "HM86", to the HDS array family Hitachi Gx00//Fx0	Applicable for SFW, SFW HA and DMPW versions 6.0, 6.0.1, 6.0.2 and 6.1. Applicable to InfoScale version 7.0
3568040	VDID module fails to generate Unique Disk ID for the Fujitsu ETERNUS array LUNs	Applicable for SFW, SFW HA and DMPW versions 6.0, 6.0.1, 6.0.2 and 6.1. Applicable to InfoScale version 7.0

Table 1-2 Issues fixed for DDI R1 2016 (*continued*)

Fixed incidents	Description	Comments
3853418	<p>Issue 1: The disk group created on EMC Invista devices are automatically deported during another disk group import.</p> <p>Issue 2: The value of the VDID attribute for the EMC Invista devices is not consistent.</p> <p>Issue 3: The failure of the SCSI INQUIRY command in the <code>ddlprov.dll</code> file causes incorrect generation of VDID.</p>	<p>Applicable for SFW, SFW HA and DMPW versions 6.0, 6.0.1, 6.0.2 and 6.1.</p> <p>Applicable to InfoScale version 7.0</p>

Installing DDI R1 2016

Use the GUI-based DDI Installer wizard or the command line interface (CLI) to install the DDI package.

The DDI Installer wizard can install the package on multiple systems at a time, remote as well as local. The CLI installation can install the package on only one system at a time.

Note: After installing the DDI package, DMP DSMs can be managed only through the DDI installer. They cannot be managed through the product-specific installers.

Prerequisites for installing DDI

Before installing the DDI package, ensure that the following prerequisites are met:

- Ensure that either of the following product is installed on the system:
 - InfoScale Foundation, InfoScale Storage, or InfoScale Enterprise 7.0
 - SFW or SFW HA version 6.0, 6.0.1, 6.0.2, or 6.1
 - DMP version 6.0, 6.0.1, 6.0.2, or 6.1
- Ensure that the MPIO feature has been enabled on the server before or after installing DSMs in this DDI package.

- Installing this DDI package on a host that accesses storage requires that this DDI be installed before other DSMs supplied from Microsoft or other vendors. Installing this package before other DSMs ensures that the DSMs contained in this package can claim the storage devices correctly.
- Before performing a silent install on a remote system, you must have network access and appropriate administrative privileges to each remote computer.
- Ensure that the Microsoft .NET Framework 3.5 is installed before running the DDI installer. For information on how to install .NET Framework 3.5, refer to Microsoft documentation.

Veritas DMP DSMs for Windows Server 2008 R2, 2012, and 2012 R2

The following DMP DSMs are supported on Windows Server 2008 R2, 2012, and 2012 R2:

DMP DSMs	File Version
v3paraa.sys	6.1.04400.3
vcomplnt.sys	7.0.16100.2
vdellmd.sys	6.1.00000.374
vemccclar.sys	6.1.04300.2
vemcsymm.sys	6.1.00000.374
vemcvplx.sys	6.1.00000.374
vengap.sys	6.1.00000.374
veqlogic.sys	6.1.00000.374
vfujitsuaa.sys	6.1.00000.374
vhdsaa.sys	6.1.04400.3
vhdsap.sys	6.1.00000.374
vhpeva.sys	6.1.04300.2
vhpmsa2.sys	6.1.00000.374
vhuaweiap.sys	6.1.04400.3

vibmaads.sys	6.1.05200.1
vibmap.sys	6.1.00000.374
vibmapds.sys	6.1.00000.374
vibmflash.sys	6.1.04300.2
vnetapp.sys	6.1.00000.374
vnexsan.sys	6.1.00000.374
vnfinidat.sys	6.1.04400.3
vpillar.sys	6.1.00000.374
vsun.sys	6.1.05200.1
vxiv.sys	6.1.00000.374
vviolin.sys	6.1.00000.374
vxtremio.sys	6.1.04300.2
vpure.sys	6.1.05200.1
voracle.sys	7.0.16100.2

Veritas DMP DSMs for Windows Server 2008

The following DMP DSMs are supported on Windows Server 2008:

DMP DSMs	File Version
v3paraa.sys	6.1.04400.3
vcomplnt.sys	7.0.16100.2
vdellmd.sys	6.1.04300.2
vemcclar.sys	6.1.04300.2
vemcsymm.sys	6.1.04300.2
vemcvplx.sys	6.1.04300.2
vengap.sys	6.1.04300.2
veqlogic.sys	6.1.04300.2

vfujitsuaa.sys	6.1.04300.2
vhdsaa.sys	6.1.04400.3
vhdsap.sys	6.1.04300.2
vhpeva.sys	6.1.04300.2
vhpmsa2.sys	6.1.04300.2
vhuaweiap.sys	6.1.04400.3
vibmaads.sys	6.1.05200.1
vibmap.sys	6.1.04300.2
vibmapds.sys	6.1.04300.2
vnetapp.sys	6.1.04300.2
vnexsan.sys	6.1.04300.2
vnfinidat.sys	6.1.04400.3
vpillar.sys	6.1.04300.2
vsun.sys	6.1.05200.1
vxiv.sys	6.1.04300.2
vnexenta.sys	6.1.04300.2
vviolin.sys	6.1.04300.2
Vibmflash.sys	6.1.04300.2
vxtremio.sys	6.1.04300.2
vpure.sys	6.1.05200.1
voracle.sys	7.0.16100.2

Installing DDI using the DDI Installer wizard

Use the GUI-based DDI Installer wizard to install the DDI package on local as well as remote systems.

To install the DDI package using the DDI Installer wizard:

- 1** Double-click **Setup.exe** from the root directory of the DDI package. The DDI Installer launch screen appears.
- 2** Click the **DDI R1 2016 Installer** option under **Product Installation**.
The DDI Installer wizard appears with the Welcome panel. Review the information and click **Next**.
- 3** On the License panel, select the **I accept the terms of License Agreement** option and click **Next**.
Additionally, you can also save a copy of this agreement by clicking on **Save**.
- 4** On the System Selection panel, do the following:
 - Under **System Name or IP**, specify the systems on which you want to install the DDI package. You can either type a system name or its IP address and click **Add** or click **Browse** to select and add multiple systems.
The DDI package can be installed on local as well as remote systems.
 - Under **Installation options**, specify the installation location and select the features that you want to install on the selected systems.
If the DMP DSMs are already installed on the system, during the product installation, the DDI Installer selects them automatically.

Note: It is recommended that you do not unselect any already-installed DMP DSMs. If you unselect any installed DSM, then the DDI Installer wizard uninstalls it from the base product (SFW, SFW HA, or DMP) installation. To use the uninstalled DSM for the base product, you would need to add it again.

After installing the DDI package, you can use the **Programs and Features** option in Windows Control Panel to add or remove the DSMs.

Click **Next** to continue.

- 5** On the Pre-install Summary panel, the Pre-install Report is displayed. You can save this report by clicking on **Save Report**.
A system restart is required for the operation to successfully complete the installation. Select the **Automatically reboot systems after installer completes the operation** checkbox to restart the systems automatically after the installation is complete.
Click **Next** to begin the DDI installation.

- 6 On the Installation panel, the DDI installation progress is displayed. This takes a few minutes to complete.

The installation progress on the specified system or systems can be seen by clicking on **Show Details**.

When the installation is complete, click **Next**.

- 7 On the Post-install Summary panel, review the installation results in the Post-install Report. Click on **Save** to save the post-install report summary.

Click **Next** to continue.

- 8 On the Finish panel, click **Finish** to close the wizard.

Note: If you are required to repair VxMPIO, after the DDI package is installed, you must do so by repairing the DDI installation. After DDI is installed, VxMPIO cannot be repaired by repairing the base product installation.

To repair the DDI installation, select the DDI entry from the **Programs and Features** option of Windows Control Panel and click **Change**. On the installer wizard follow the steps to finish the repair operation.

The Repair option restores the installation to its original state. This option fixes missing or corrupt files, shortcuts, and registry entries on the local system.

Installing DDI using the CLI

Use the DDI's `Setup.exe` command to perform a silent installation of DDI package.

With this method of installation, you can install the DDI package on only one system at a time.

Note: You must run all the CLI commands in the "Run as administrator" mode.

To install the DDI package using the CLI:

- 1 Open Windows Command Prompt and, from the command prompt, navigate to the root directory where DDI's `Setup.exe` is located.
- 2 At the command prompt, type the following command syntax, and then press **Enter** to install the DDI package:

```
Setup.exe /s solution=<Solution> install_mode=<Install_mode>  
installdir=<"Installdir"> reboot=<Reboot> node=<"target">  
options=<"options">
```

Parameters for DDI's Setup.exe

Table 1-3 provides information about the possible parameter values for DDI's `Setup.exe` command. It helps you choose appropriate values for the command's parameters.

Table 1-3 Parameter values for the Setup.exe command

Parameters	Use
<code>/s</code>	Use this parameter for silent mode installation. If not used, then it launches the GUI-based DDI Installer wizard.
<code>Solution</code>	Specify "1" for installing the DDI package.
<code>Install_mode</code>	Indicates installation or uninstallation. Specify "1" for installation and "5" for uninstallation of DDI. For example: <code>Install_mode=1</code> for installing DDI.
<code>Installdir</code>	This is an optional parameter. If an installation directory is not specified, then the DDI package gets installed at the product installation location.
<code>Reboot</code>	This is an optional parameter. Specify "0" if you do not want to restart system after installation is complete. This is the default setting. Specify "1" if you want to restart system after installation is complete.
<code>target</code>	This is an optional parameter. Specify the target system's name in quotation marks (" <code>Test1</code> "). The default target system is the local system.

Table 1-3 Parameter values for the Setup.exe command (*continued*)

Parameters	Use
options	<p>This is an optional parameter.</p> <p>For the DMP DSMs that you want to install from the following list, specify their names in quotation marks:</p> <ul style="list-style-type: none">■ V3PARAA■ VCOMPLNT■ VDELLMD■ VEMCCLAR■ VEMCVPLX■ VEMCSYMM■ VENGAP■ VEQLOGIC■ VFUJITSUAA■ VHDSAA■ VHDSAP■ VHPEVA■ VHPMSA2■ VHUAWEIAP■ VIBMAADS■ VIBMAP■ VIBMAPDS■ VIBMFLASH■ VNETAPP■ VNEXENTA■ VNEXSAN■ VNFINIDAT■ VPILLAR■ VSUN■ VVIOLIN■ VXIV■ VXTREMIO■ VPURE■ VORACLE

Uninstalling DDI using the GUI or CLI

You can uninstall the entire DDI package using either the GUI-based DDI Installer wizard or the command-line interface (CLI), which is a silent uninstallation. This section provides information about both the methods.

Note: Before uninstalling the DDI package from a node in a clustered environment, move the cluster resources to another node.

Uninstalling the DDI package also uninstalls all the installed DMP DSMs from the system.

Note: There is a known issue related to uninstalling DDI.

See [“After uninstalling DDI, repairing the product does not restore the installation to its original state”](#) on page 7.

To reinstall the DSMs, install the DDI package again, or perform the following steps:

- In the Windows Control panel, select **Programs and Features** for the base product and select **Change > Add/Remove**.
- In the Windows Control panel, select **Programs and Features** for the base product and select **Change > Repair**.

Note: The **Repair** option restores the installation to its original state. This option fixes missing or corrupt files, shortcuts, and registry entries on the local system.

To uninstall the DDI package using the DDI Installer wizard:

- 1 In the Windows Control panel, select **Programs and Features**.
- 2 From the installed programs list, select the DDI R1 2016 program entry **DDI R1 2016 for InfoScale**, and then click **Uninstall**.
- 3 Follow the wizard instructions to complete the uninstallation.

To uninstall the DDI package using the CLI:

- 1 Open Windows Command Prompt and, from the command prompt, navigate to the root directory where DDI's `Setup.exe` is located.
- 2 At the command prompt, type the following command syntax, and then press **Enter** to uninstall the DDI package:

```
Setup.exe /s solution=1 install_mode=5
```

Additions in previous DDI releases

This section provides information about supported arrays and DMP DSMs added in the previous DDI releases.

[Additions to DDI Q3 2015](#)

[Additions in DDI Q4 2014](#)

[Additions in DDI Q3 2014](#)

[Additions in DDI Q2 2013](#)

[Additions in DDI Q4 2012](#)

[Additions in DDI Q4 2011](#)

[Additions in DDI Q3 2011](#)

[Additions in DDI Q2 2011](#)

[Additions to DDI-1 for SFW and SFW HA 5.1 SP1](#)

Additions to DDI Q3 2015

The Veritas DDI Q3 2015 adds support for the following arrays:

- PURESTORAGE FlashArray
- HITACHI VSP G400 array
- Oracle ZFS Storage 7350, 7355, 7430, 7470 array

In addition to the support for these new arrays, DDI Q3 2015 also includes Array Reporting Support (ARS) and includes array enclosure information for the newly supported arrays.

The following table provides details about the SFW features supported by the newly supported:

Table 1-4 Array Reporting Support (ARS) features for new arrays

Array	Support for thin provisioning	Support for track alignment	Support for enclosure information
Pure	Yes	64 sectors with SFW and SFW HA 6.0. 2048 sectors with SFW and SFW HA 6.0.1, 6.0.2, 6.1, and InfoScale 7.0	Yes
HITACHI VSP G400	Yes	128 sectors	Yes
Oracle ZFS Storage 7350, 7355, 7430, 7470	No	64 sectors with SFW and SFW HA 6.0. 2048 sectors with SFW and SFW HA 6.0.1, 6.0.2, 6.1, and InfoScale 7.0	Yes

Additions in DDI Q4 2014

DDI Q4 2014 added support for the following arrays:

- EMC XTREMIO array
- INFINIDAT INFINIBOX array
- HUAWEI XSG1 firmware V3 array

Additions in DDI Q3 2014

DDI Q3 2014 for SFW and SFW HA for versions 6.0, 6.0.1, 6.0.2, and 6.1 adds support for the following arrays:

- HP MSA 1040 Storage
- HP XP7 Storage
- Huawei 5600T Firmware v2 and 18000T

- IBM FlashSystem 820 and IBM FlashSystem 840
- NETAPP CDOT cluster for two nodes (two controllers)
- Oracle ZFS Storage 7330

Note: DMP 6.0, 6.0.1, 6.0.2 and 6.1 is not supported in DDI Q3 2014.

Additions in DDI Q2 2013

DDI Q2 2013 for SFW, SFW HA (5.1 SP1, 5.1 SP2, 6.0, 6.0.1, 6.0.2) and DMP (5.1, 6.0, 6.0.1, 6.0.2) added support for the following arrays:

- EMC VNX iScsi
- NETAPP V3240
- VIOLIN in ALUA mode
- HP MSA 2040
- IBM V7000 iSCSI
- HUAWEI VIS6600T

Note: The VXIOTECH, VPROMISE, and VITARGET DMP DSMs are not supported in this release.

Additions in DDI Q1 2013

DDI Q1 2013 for SFW, SFW HA (5.1 SP1, 5.1 SP2, 6.0, 6.0.1, 6.0.2) and DMPW (5.1, 6.0, 6.0.1, 6.0.2) added support for the following:

- New DSM for NexentaStor, and VNEXENTA VDSM
- Support for arrays HUAWEI S2200T, Dorado 5100

Additions in DDI Q4 2012

DDI Q4 2012 for SFW, SFW HA (5.1 SP1, 5.1 SP2, 6.0, 6.0.1) and DMP (5.1, 6.0, 6.0.1) added support for the following arrays:

- Hitachi HUS VM array
- VIOLIN Memory 3000/6000 series array
- HP 3PAR StoreServ 7000 Systems

SFW Microsoft failover clustering is supported for Hitachi HUSVMarray. If Hitachi HUSVMarray LUN is used as a quorum, perform the following:

- Change the value of the “QuorumArbitrationTimeMax” property in Microsoft failover cluster to 60 or greater.
To change the value of the attribute, type the following command at the command prompt:

```
Cluster /prop QuorumArbitrationTimeMax=60
```

- Change the value of the registry key ReservationTimer from 7000 to 21000 on every cluster node by changing the system registry.

- On SFW 5.1 SP1 or 5.1 SP2, set the following registry key:

```
HKLM\SOFTWARE\Wow6432Node\Veritas\VxSvc\  
CurrentVersion\VolumeManager\ReservationTimer to 21000 in decimal.
```

- On SFW 6.0 or 6.0.1, set the following registry key:

```
HKLM\SOFTWARE\Veritas\VxSvc\CurrentVersion\  
VolumeManager\ReservationTimer to 21000 in decimal.
```

- Restart the system.

DDI Q4 2012 also added support for the following DSM:

- VVIOLIN DSM: Supports the VIOLIN V3000, V6000 arrays

Additions in DDI Q4 2011

DDI Q4 2011 for SFW, SFW HA (5.1 SP1, 5.1 SP2, 6.0) and DMP (5.1, 6.0) added support for the following arrays:

- Dell MD3200
- Dell MD3200i
- EMC CLARiiON iSCSI connection
- HP P10000 3PAR V400

DDI Q4 2011 also added support for the following DSM:

- VDELLMD DSM: Supports the Dell MD3200, MD3200i arrays

Additions in DDI Q3 2011

DDI Q3 2011 for SFW, SFW HA (5.1 SP1, 5.1 SP2) and DMP (5.1) added support for the following arrays:

- EMC VPLEX
- IBM DS3500

- IBM DS3950
- IBM DS5020
- HP P6300
- HP P6500
- NEXSAN E-series
- Huawei Veritas Oceanspace S5000T series
- Huawei Veritas Oceanspace VIS series

DDI Q3 2011 also added support for the following DSMs:

- VEMCVPLX DSM: Supports the EMC VPLEX array
- VNEXSAN DSM: Supports the NEXSAN E-series arrays

The following existing DSMs were modified to support additional arrays:

- VENGAP DSM: Supports the IBM DS3950 and IBM DS 5020 arrays
- VIBMAPDS DSM: Supports the IBM DS3500 array
- VHPEVA DSM: Supports the HP P6300 and P6500 arrays
- VHUAWEIAP DSM: Supports the Huawei Veritas Oceanspace S5000T series and VIS series arrays

Additions in DDI Q2 2011

DDI Q2 2011 for SFW, SFW HA (5.1 SP1, 5.1 SP2) and DMP (5.1) added support for the following arrays:

- IBM DS5100
- IBM DS5300
- DMP DSM support (VPROMISE) for PROMISE VTrak™ Ex30 array

Notes on DMP DSM support for PROMISE Ex30 array

The following information applies to SFW, SFW HA versions 5.1 SP1 and 5.1 SP2 and DMP 5.1; the 6.0 release does not include support for the PROMISE array.

The following information applies to SFW and SFW HA versions 5.1 SP1 and 5.1 SP2; the 6.0 release does not include support for the PROMISE array.

If installing DMP DSM support for a PROMISE Ex30 array on Windows Server 2008, make sure that you first install the hotfix referenced in the Microsoft knowledge base article KB968287.

Note the following guidelines for PROMISE Ex30 ALUA configuration:

- One PROMISE controller can be the optimized path of a LUN. The other PROMISE controller can be the standby path of a LUN.
- The VPROMISE DSM detects the PROMISE array in ALUA mode as Active/Passive – Asymmetric (A/P-A).
- The VPROMISE DSM does not support a PROMISE “ALUA” or “Active/Active with LUN affinity” array configuration mode in a multiple node environment where one node is only connected to one PROMISE controller, and the other node is only connected to the other PROMISE controller.
- If a PROMISE storage path fails, the failing condition should be corrected as soon as possible.
- If a cluster disk group is not active in one node but it is active on the other node, during reboot or path failure on the inactive node, the inactive node may show missing disk(s) for the inactive cluster disk group. You can resolve a missing disk(s) issue by reconnecting all paths to the PROMISE controllers and performing a VEA rescan.

Additions to DDI-1 for SFW and SFW HA 5.1 SP1

DDI-1 for SFW and SFW HA 5.1 SP1 added support for the following:

- DMP DSM Support (VCOMPLNT) for the COMPELLENT Vol array
- Added support for SUN 6180 in VENGAP DSM
- Added support for a new vendor "HS" in VHUAWEIAP DSM
- Added support for HUAWEI S6800E and HS S6800E

Issues fixed in previous DDI releases

This section provides information about the SFW, SFW HA, and DMP issues that were fixed in the previous DDI releases.

[Fixed issues for DDI Q3 2015](#)

[Fixed issues for DDI Q4 2014](#)

[Fixed issues for DDI Q3 2014](#)

[Fixed issues for DDI Q2 2013](#)

[Fixed issues for DDI Q4 2012](#)

[Fixed issues for DDI Q3 2011](#)

[Fixed issues for DDI Q2 2011](#)

[Fixed issues for DDI-1 for 5.1 SP1](#)

Fixed issues for DDI Q3 2015

[Table 1-5](#) lists the issues that were fixed for DDI Q3 2015.

Table 1-5 Issues fixed for DDI Q3 2015

Fixed incidents	Description	Comments
3496547	<p>VHPEVA.sys causes STOP 0x7E error for ALUA-compliant HP EVA arrays</p> <p>For SFW/DMP configured with Asymmetric Logical Unit Access (ALUA)-compliant HP EVA arrays, this issue occurs when the DSM driver VHPEVA.sys tries to claim ALUA-compliant HP EVA LUNs. VHPEVA.sys tries to access NULL pointer while claiming ALUA-compliant HP EVA LUNs. Because of which, the STOP 0x7E error occurs and the system crashes.</p>	<p>Applicable for:</p> <ul style="list-style-type: none">■ SFW, SFW HA and DMP versions 6.0, 6.0.1, 6.0.2, and 6.1■ Veritas InfoScale 7.0

Fixed issues for DDI Q4 2014

[Table 1-6](#) lists the issues that were fixed for DDI Q4 2014.

Table 1-6 Issues fixed for DDI Q4 2014

Fixed incidents	Description	Comments
3646978	<p>V3PARAA DSM addresses 3PAR firmware changes regarding 3PAR LUN serial and cabinet serial numbers.</p>	<p>Applicable for SFW, SFW HA and DMP versions 6.0, 6.0.1, 6.0.2, and 6.1</p>

Table 1-6 Issues fixed for DDI Q4 2014 (*continued*)

Fixed incidents	Description	Comments
3657878	VHDSAA DSM doesn't use IOs on paths that have been unmapped and then mapped back from Hitachi VSP G1000 array storage array management software.	Applicable for SFW, SFW HA and DMP versions 6.0, 6.0.1, 6.0.2, and 6.1 Requirement: After mapping back paths from HDS storage array for an existing disk under DMP, reboot the system that connects to the array storage.

Note: If you are installing this DDI package on SFW, SFW HA, or DMP for versions 6.0, 6.0.1, 6.0.2, or 6.1, note that this DDI includes the fixes that were included in the earlier DDI releases.

Fixed issues for DDI Q3 2014

[Table 1-7](#) lists the issues that were fixed for DDI Q3 2014.

Table 1-7 Issues fixed for DDI Q3 2014

Fixed Incidents	Description	Comments
3318049	VIBMAADS DSM failed internal qualification tests where IBM controllers are reboot periodically.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, and 6.0.2.
3330336	VCOMPLNT DSM may cause bug check 0xCA when VCOMPNT DSM claims Compellent's LUNs.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, and 6.0.2.
3370740	VHDSAA DSM may return an invalid path during a path failure after configuring HDS Command (-CM) Devices.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, and 6.0.2.
3383395	VEMCCLAR DSM uses both Optimized and Non-Optimized ALUA paths after the recovery from the failure of an EMC Clarrion controller.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, and 6.0.2.

Table 1-7 Issues fixed for DDI Q3 2014 (*continued*)

Fixed Incidents	Description	Comments
3445978	DMP uses the deprecated MPIO API PathOnline notification, which can cause bug check 7e while DMP claiming a new LUN.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, and 6.0.2.
3481488, 3534175	VEMCCLAR DSM can cause bugcheck 0xCA after presenting LUNs from EMC Clariion arrays.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, 6.0.2, and 6.1.
3496547	VHPEVA DSM can cause bugcheck 0x7e during the arrival of HP EVA LUNs.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, 6.0.2, and 6.1.
3562363	I/O failure can occur when deleting a LUN path from Hitachi VSP G1000 from HDS array storage array management software.	Applicable for SFW and SFW HA versions 6.0, 6.0.1, 6.0.2, and 6.1.

Fixed issues for DDI Q2 2013

[Table 1-8](#) lists the issues that were fixed for DDI Q2 2013.

Table 1-8 Issues fixed for DDI Q2 2013

Fixed Incidents	Description	Comments
3272593	Fix a problem where deleting the HBA port among multiple HBA ports from XIV array management utility causes I/O failure.	N/A

Note: If you install this DDI on SFW, SFW HA 5.1 SP1, 5.1 SP2, 6.0, 6.0.1, 6.0.2 or on DMP 5.1, 6.0, 6.0.1 or 6.0.2, note that this DDI includes the fixes that were included in the earlier DDI releases.

Fixed issues for DDI Q4 2012

[Table 1-9](#) lists the issues that were fixed for DDI Q4 2012.

Table 1-9 Issues fixed for DDI Q4 2012

Fixed Incidents	Description	Comments
2759051	Fix bugcheck 0xCA where multiple EMC SYMMETRIX arrays are attached to a server.	N/A
2774415	Fix a problem where a "bogus path" system event is logged when a path failover occurs on an EMC SYMMETRIX data disk.	N/A
2711792	Fix a problem where DMP DSM doesn't use all paths of an Active/Active array in a round-robin load balance policy.	N/A
2991454	Fix bugcheck 0xCA where multiple FUJITSU arrays are attached to a server.	N/A
2251828	Fix a problem in SFW, SFW HA 5.1 SP1, 5.1 SP2 or DMP 5.1 where zoning one EMC Clariion array causes a system to hang during SFW refresh or rescan operation.	N/A

Note: If you install this DDI on SFW, SFW HA 5.1 SP1 or 5.1 SP2 or on DMP 5.1, note that this DDI includes the fixes that were included in DDI Q2 2011 and DDI Q3 2011.

Fixed issues for DDI Q3 2011

[Table 1-10](#) lists the issues that were fixed for DDI Q3 2011.

Table 1-10 Issues fixed for DDI Q3 2011

Fixed Incidents	Description	Comments
2416460	Fix a problem where the mpiprov.dll does not display the new path after a new path arrives in the system.	N/A
2488258	The VEA GUI does not display the correct information for paths and DSMs if Huawei (VHUAWEIAP) is used together with EMC Celerra (VEMCCLAR) storage.	N/A

Fixed issues for DDI Q2 2011

[Table 1-11](#) lists the issues that were fixed for DDI Q2 2011.

Table 1-11 Issues fixed for DDI Q2 2011

Fixed Incidents	Description	Comments
2102065	NETAPP array - Disk group Import/Deport failures/delays on SAN storage from NETAPP array when multiple paths are being used.	N/A
2251828	EMC Clariion VEMCCLAR - Zone away one array from Clariion Navisphere to a host causes the VEA to hang during refresh or rescan.	N/A

Note: If you install DDI Q2 2011 on 5.1 SP1, then this DDI also includes the fixes that were included in the DDI-1 for SFW and SFW HA 5.1 SP1.

Fixed issues for DDI-1 for 5.1 SP1

[Table 1-12](#) lists the issues that were fixed for DDI-1 for 5.1 SP1.

Table 1-12 Issues fixed for DDI-1 for 5.1 SP1

Fixed Incidents	Description	Comments
1788853	VXDMPADM fails to display performance information on some array configurations when vxdmppadm "dsmperf" or "arrayperf" parameter is used.	The DDI will automatically install the fix for vxdmppadm.exe and mpioprov.dll.
1793667	After disabling the active path, VEA GUI does not show path state correctly on Huawei arrays.	Applicable for 5.1 SP1 for VHUAWEIAP DSM
1863354	Disk in one array is being shown in array in VEA GUI.	The DDI will automatically install the fix for vxdmppadm.exe and mpioprov.dll.
1880159	On NETAPP array, I/O goes through non-optimized path after a giveback operation on NETAPP storage controllers.	Applicable for 5.1 SP1 for VNETAPP DSM
1880167	On NETAPP array, I/O fails after a giveback operation on NETAPP storage controllers.	Applicable for 5.1 SP1 for VNETAPP DSM

Table 1-12 Issues fixed for DDI-1 for 5.1 SP1 (*continued*)

Fixed Incidents	Description	Comments
1927505	After installing 5.1 SP1 VIBMAADSDSM, disks under IBM DS8000 are not being shown under SFW.	Applicable for 5.1 SP1 for VIBMAADS
1932717	After installing 5.1 SP1 VHPMSA2 DSM, disks under HP MSA2012 are not being shown under SFW.	Applicable for 5.1 SP1 for VHPMSA2
1959044	<ul style="list-style-type: none"> ■ Add the new HS as the new Vendor ID along with HUAWEI in VHUAWEIAP DSM, changed PID V2600 to S2600. ■ Add the support for HUAWEI S6800E and HSS6800E in VHUAWEIAP DSM. 	Applicable for 5.1 SP1 for VHUAWEIAP DSM