HCL Release Revision 1.22, Dec 30th, 2015

Hardware Compatibility List (HCL)
Symantec Storage Foundation™ & High Availability Solutions 5.1 Service Pack 2, 5.1 Service Pack 2 DDI_Q2_2013 and Dynamic Multi-Pathing 5.1 for Windows®

Arrays

Vendor	Model	3rd Party Multipathing Support	Dynamic Multi-Pathing (DMP) Device Specific Module (DSM) Supportability								Notes
			DMP Mode	Fibre Channel Support	iSCSI Support	SAS Support	Thin Reclamation support	Windows Server 2003 Support	Windows Server 2008 Support	Windows Server 2008 R2 Support	
3PAR	E-Class, S-Class		A/A, A/P-C	■			■	■	■	■	See Note 3, 31
Dell	Compellent Storage Center 4		A/A	■				■	■	■	See Note 3
Dell	Compellent Storage Center 5		A/A	■			■	■	■	■	See Note 3
Dell	EqualLogic PS5000 series		A/A, A/P-C		■			■	■	■	See Note 3, 27
Dell	EqualLogic PS6000 series		A/A, A/P-C		■			■	■	■	See Note 3, 27
Dell	PowerVault MD3200		A/A, A/P-C			■		■	■	■	See Note 3
Dell	PowerVault MD3200i		A/A, A/P-C		■			■	■	■	See Note 3
Dell	PowerVault MD3600f		A/P-C	■				■	■	■	See Note 3
Dell	PowerVault MD3600i		A/P-C		■			■	■	■	See Note 3
EMC	Celerra NS series		A/P-C,ALUA	■						■	See Notes 1, 5
EMC	CLARiiON AX series	PowerPath	A/P-C,ALUA	■	■		■	■	■	■	See Notes 1, 5
EMC	CLARiiON CX series	PowerPath	A/P-C,ALUA	■			■	■	■	■	See Notes 1, 5
EMC	CLARiiON CX3 series	PowerPath	A/P-C,ALUA	■	■		■	■	■	■	See Notes 1, 5
EMC	CLARiiON CX4 series	PowerPath	A/P-C,ALUA	■	■		■	■	■	■	See Notes 1, 5
EMC	Symmetrix 3000 series	PowerPath	A/A, A/P-C	■				■	■	■	See Notes 1, 3, 4
EMC	Symmetrix 8000 series	PowerPath	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 4
EMC	Symmetrix DMX series	PowerPath	A/A, A/P-C	■				■	■	■	See Notes 2, 3, 4
EMC	Symmetrix VMAX series	PowerPath	A/A, A/P-C	■			■	■	■	■	See Notes 2, 3
EMC	Symmetrix VMAX3 series		A/A, A/P-C	■					■	■	See Notes 2, 3
EMC	VNX series	PowerPath	A/P-C,ALUA	■	■		■	■	■	■	See Notes 1, 5
EMC	VNX2 series		ALUA	■				■	■	■	See Notes 1, 5
EMC	VPLEX		A/A, ALUA	■				■	■	■	See Notes 2, 3

Fujitsu	ETERNUS DX400 series		A/A, ALUA	■			■	■	■	■	See Notes 2, 3, 40
Fujitsu	ETERNUS DX60/DX80/DX90 series		A/A, ALUA	■			■	■	■	■	See Notes 2, 3, 42
Fujitsu	ETERNUS DX8000 series		A/A, ALUA	■			■	■	■	■	See Notes 2, 3, 40
Fujitsu	ETERNUS VS850	SDD DSM	A/A, A/P-C, ALUA	■				■	■	■	See Notes 1, 3, 33
Fujitsu	ETERNUS2000 series		A/A, A/P-C	■				■	■	■	See Notes 2, 3
Fujitsu	ETERNUS4000 series (excludes Models 80 and 100)		A/A, A/P-C	■			■	■	■	■	See Notes 2, 3, 40
Fujitsu	ETERNUS6000 series		A/A, A/P-C	■				■	■	■	See Notes 2, 3
Fujitsu	ETERNUS8000 series		A/A, A/P-C	■			■	■	■	■	See Notes 2, 3, 40
Hitachi	AMS/WMS series	HDLM	A/P-C	■				■	■	■	See Notes 1, 6, 7
Hitachi	HUS 100 series	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 46
Hitachi	HUS VM	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3
Hitachi	Lightning 9900V series (9900 & 9900V)	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 10
Hitachi	SANRISE2000 (SANRISE2200 and SANRISE2800)	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 10
Hitachi	SANRISE9900V (SANRISE9970V and SANRISE9980V)	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 3, 10
Hitachi	SMS/AMS2000 series	HDLM	A/A,A/P-C	■	■		■	■	■	■	See Notes 1, 3, 6, 37
Hitachi	Thunder 9500V series	HDLM	A/P-C	■				■	■	■	See Notes 1, 8, 11
Hitachi	USP/NSC series	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 9
Hitachi	USPV/USPVM	HDLM	A/A, A/P-C	■			■	■	■	■	See Notes 1, 3
Hitachi	VSP	HDLM	A/A, A/P-C	■			■	■	■	■	See Notes 2, 3, 50
Hitachi	VSP G1000		A/A, A/P-C	■				■		■	See Notes 2, 3, 52
Hitachi	VSP Gx00 series		A/A, A/P-C	■				■		■	See Notes 2, 3, 52
HP	2000 G2 series		A/A, ALUA	■	■	■		■	■	■	See Notes 2, 3
HP	3PAR F/T-Class, StoreServ 7000/10000 Storage		A/A, A/P-C	■			■	■	■	■	See Notes 3, 41
HP	EVA GL 3000/5000		A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 12, 49
HP	EVA4000/6000/8000		A/A, A/P-C, ALUA	■				■	■	■	See Notes 2, 3, 49
HP	EVA4000/6000/8000		A/P-C,ALUA		■			■	■	■	See Note 14, 27
HP	EVA4100/6100/8100		A/A, A/P-C, ALUA	■				■	■	■	See Notes 2, 3, 49
HP	EVA4100/6100/8100		A/P-C,ALUA		■			■	■	■	See Note 14, 27
HP	EVA4400/6400/8400		A/A, A/P-C, ALUA	■				■	■	■	See Notes 2, 3, 49
HP	MSA1000		A/A	■				■	■	■	See Notes 2, 3, 12, 13
HP	MSA1500		A/A	■				■	■	■	See Notes 2, 3, 12, 13
HP	MSA2000fc series		A/A, ALUA	■				■	■	■	See Notes 2, 3
HP	MSA2012i		A/A, ALUA		■			■	■	■	See Notes 2, 3
HP	MSA2012sa		A/A, ALUA			■		■	■	■	See Notes 2, 3
HP	MSA2212i		A/A, ALUA		■			■	■	■	See Notes 2, 3
HP	MSA2212sa		A/A, ALUA			■		■	■	■	See Notes 2, 3
HP	MSA 2040 SAN		ALUA	■				■	■	■	See Notes 2, 3
HP	P2000 G3 MSA series		ALUA	■	■	■		■	■	■	See Notes 2, 3, 35
HP	P6000 EVA series		A/A, A/P-C, ALUA	■				■	■	■	See Notes 2, 3
HP	P9500		A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3
HP	XP10000/12000		A/A, A/P-C	■			■	■	■	■	See Notes 1, 2, 3, 44, 49
HP	XP128/1024		A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 49
HP	XP20000/24000		A/A, A/P-C	■			■	■	■	■	See Notes 1, 2, 3, 44, 49
HP	XP48		A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 49
HP	XP512		A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3, 49
Huawei	S5000 series		A/P-C	■				■	■	■	See Note 28
Huawei	S5000T series		ALUA	■	■		■	■	■	■	See Note 28, 43
Huawei	VIS series		A/P-C	■				■	■	■	See Note 28
IBM	DS3950		A/P-C	■				■	■	■	See Notes 17, 24
IBM	DS5020		A/P-C	■				■	■	■	See Notes 17, 24

IBM	ESS 750/800 series	SDD DSM	A/A, A/P-C	■				■	■		See Notes 1, 2, 3, 16, 33
IBM	Storwize series	SDD DSM	A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 1, 2, 3, 33, 45
IBM	System Storage DS3200		A/P-C	■	■	■		■	■	■	See Notes 2, 3, 17, 27
IBM	System Storage DS3500 series		A/P-C	■	■			■	■	■	See Notes 2, 3, 17
IBM	System Storage DS5000 series	Storage Manager	A/P-C	■				■	■	■	See Notes 2, 3, 17, 39
IBM	System Storage DS6000 series	SDD DSM	A/P-C,ALUA	■				■	■	■	See Note 1, 2, 33
IBM	System Storage DS8000 series	SDD DSM	A/A, A/P-C	■				■	■	■	See Notes 1, 2, 3,33
IBM	System Storage N series		A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 3, 15 18, 19, 27
IBM	System Storage XIV series		A/A	■			■	■	■	■	See Note 3, 29
IBM	TotalStorage DS4000 series	Storage Manager	A/P-C	■				■	■	■	See Notes 17, 24
NetApp	FAS2000/FAS900/FAS200 series		A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 2, 3, 18, 19, 27,34
NetApp	FAS3000/V3000 series		A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 2, 3, 18, 19, 27,34
NetApp	FAS6000/V6000 series		A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 2, 3, 18, 19, 27,34
NetApp	GF series		A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 2, 3, 18, 19, 27,34
NetApp	NearStore R100		A/A, A/P-C, ALUA	■	■			■	■	■	See Notes 2, 3, 18, 19, 27
Nexsan	Beast Systems		A/A, A/P-C, ALUA	■				■	■	■	See Note 3
Nexsan	Boy Systems		A/A, A/P-C, ALUA	■				■	■	■	See Note 3
Nexsan	E-Series Systems		A/A, A/P-C, ALUA	■				■	■	■	See Note 3
Nexenta	NexentaStor		ALUA	■				■	■	■	See Notes 3, 48
Nihon Unisys	SANARENA 2200	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 3, 10
Nihon Unisys	SANARENA 2800	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 3, 10
Oracle	Axiom series		A/P-C,ALUA	■				■	■	■	See Note 3
Oracle	Storage 6580/6780 series		A/P-C	■				■	■	■	See Note 3
Oracle	Storage 7000 series		A/P-A	■				■	■	■	See Notes 36
Oracle	StorageTek 2500 series		A/P-C	■	■	■		■	■	■	See Note 26
Oracle	StorageTek 6140 array		A/P-C	■				■	■	■	See Note 20
Oracle	StorageTek 9900 series	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 3, 10
Oracle	StorageTek 9990V system	HDLM	A/A, A/P-C	■				■	■	■	See Notes 1, 3, 9
Oracle	Sun Storage 6180 array		A/P-C	■				■	■	■	See Note 3
StorageTek	FlexLine 200/300 series		A/P-C	■				■	■	■	See Notes 17, 21
Sun	StorageTek 6130		A/P-C	■				■	■	■	See Note 20
Sun	StorageTek 6540		A/P-C	■				■	■	■	See Note 20
Violin Memory	Violin 3000/6000 series		A/A, A/A-A	■				■	■	■	See Notes 3, 47, 51

Host Bus Adapters

All Fibre Channel, iSCSI HBAs and FCoE CNAs supported by Operating System and Storage Array Manufacturer's are supported unless otherwise explicitly stated. Please check the Microsoft Windows Catalog and Storage Array Manufacturer's Hardware Compatibility Support Matrices for required Bios/Firmware and driver versions for the HBAs. Any HBAs not supported or that require specific configuration parameters within a Storage Foundation and High Availability Solutions 5.1 SP2 or Dynamic Multi-Pathing 5.1 for Windows environment are explicitly listed below.

Vendor	Model	Type	Not Supported	Supported with Configuration Exceptions	Notes
Egenera	Control BladeTM ES	Fibre Channel		■	
Microsoft	iSCSI Software Initiator	iSCSI - Software		■	See Note 23

Fibre Channel Switches

All Fibre Channel switches supported by Operating System and Storage Array Manufacturers are supported unless otherwise explicitly stated. Please check the Microsoft Windows Catalog, Storage Array Manufacturer and Switch Manufacturer's Hardware Compatibility Support Matrices for required firmware and compatibility of switches. Any switches not supported or that require specific configuration parameters within a Storage Foundation and High Availability Solutions 5.1 SP2 or Dynamic Multi-Pathing 5.1 for Windows environment are explicitly listed below.

Vendor	Model	Not Supported	Supported with Configuration Exceptions	Notes
There are no unsupported or specific switch configuration exceptions for Storage Foundation and High Availability Solutions 5.1 SP2 or Dynamic Multi-Pathing for Windows.				

General Supportability Statements

The Symantec Storage Foundations & High Availability Solutions for Windows Hardware Compatibility List (HCL) applies to Fibre Channel and iSCSI based Storage Area Networks.

All hardware configurations listed have been qualified with the following products: Symantec Storage Foundation 5.1 SP2 and Symantec Dynamic Multi-Pathing 5.1 for Windows® and and Symantec Storage Foundation and High Availability Solutions for Windows 5.1 SP2. The following options are also supported by this HCL list: Symantec Storage Foundation for Windows - Volume Replicator Option, Symantec Storage Foundation for Windows - FlashSnap Option, Symantec Storage Foundation for Windows - Dynamic Multi-pathing Option, Symantec Storage Foundation for Windows - Cluster Option for Microsoft® Clustering (Microsoft Cluster Services on Windows Server 2003 and Windows Server Failover Clustering on Windows Server 2008 and Windows Server 2008 R2).

Configurations using any multipathing software (Symantec Storage Foundation for Windows - Dynamic Multi-pathing Option (DMP) or third-party) are restricted to the Symantec HCL list. This includes Symantec DMP implementations based upon Symantec MPIO Device Specific Modules (DSMs). For third party multipathing products, only the versions listed on the HCL are fully tested and supported. The supported hardware list has been specifically qualified and approved by the Symantec Compatibility Lab (cLAB). Hardware that does not appear on this list is not supported when used with Symantec DMP or any 3rd-party multipathing solution. Employing a multipathing solution with Symantec Storage Foundation for Windows on non-certified hardware can result in unpredictable and possibly data-threatening behavior. Certified hardware is selected by Symantec Product Management, based on market research and input from the field, including customer feedback. If a customer would like to have their hardware considered for inclusion on this HCL, simply submit your request to your Symantec Sales Representative.

Configurations using Symantec Cluster Server (VCS) or Microsoft Cluster Server (MSCS) or Windows Server Failover Clustering (WSFC) that are not on the Symantec HCL list are provided "commercially reasonable effort" support based on the Microsoft Windows Catalog. Commercially reasonable effort support allows for escalations based on unqualified hardware, but if a problem is determined to be hardware specific, the problem is not guaranteed to be resolved.

Configurations should follow storage configuration best practices set forth by the hardware manufacturer in addition to those provided by Symantec. Symantec provided storage configuration best practices for zoning in a Storage Foundation for Windows environment are at http://www.symantec.com/docs/TECH54713.

All storage configurations shown in this HCL were tested with drivers and firmware supported by the storage array vendors. See the storage array vendor's recommendation for the driver and firmware levels, or contact the vendor for specific drivers and firmware support, as well as the vendor's support for the stated Symantec products.

Symantec DMP with MPIO Device Specific Modules (DSMs) support:
- Symantec Storage Foundation 5.1 SP2 for Windows - Dynamic Multi-pathing (DMP) supports multi-pathing via Device Specific Modules integrated with the MPIO framework, Symantec Dynamic Multi-pathing Array Support Libraries (ASL) are retired from support as of Symantec Storage Foundation 5.1 for Windows Dynamic Multi-pathing (DMP).
- Supported with Windows Server 2003, Windows Server 2008, and Windows Server 2008 R2 (x86, x64 & IA64) operating systems
- Supported with FC Storport Miniport drivers, iSCSI HBAs, Microsoft iSCSI Software Initiator
- Basic disks are supported with DMP. For Windows Server 2003, SCSI-3 registry support should not be enabled in the DMP DSM or set for the entire system in the Symantec Enterprise Administrator Control Panel system wide SCSI reservation setting when utilizing basic disk. On Windows Server 2003, if SCSI-3 registry is enabled in a DMP DSM for an attached array or set for the entire system then any existing basic disks should be upgraded to dynamic disks before placing them under DMP control. For Windows Server 2008 and Windows Server 2008 R2, SCSI-3 support is supported with basic disks.
- Boot from SAN is supported with Dynamic and Basic disks provided customers follow Microsoft's Boot from SAN recommendations
- Boot and Data Volumes are supported on the same bus/HBA's for clustered and non-clustered servers
- Symantec DMP MPIO DSMs are not supported with Windows 2000, FC Port drivers or FC SCSI Miniport drivers
- Arrays listed in the HCL are also supported with the Microsoft DSM (MSDSM) in configurations where it coexists with Symantec Storage Foundation for Windows, as long as the array satisfies Microsoft's requirements for support, including being supported for use with MSDSM by the array vendor.

DMP Modes are A/A = Active/Active, A/P-C = Active/Passive Concurrent, ALUA=Asymmetric Logical Unit Access.
Active/Active DMP mode is supported with clustering (VCS, MSCS, WSFC) with SCSI-3 enabled storage arrays and MPIO Device Specific Modules (DSMs). See Note 3 for details on enabling SCSI-3 PGR on a host for a specific array.

Detailed Supportability Notes

Note 1: The 3rd party multi-pathing support noted for this array or array family should be compatible, but has not been explicitly tested by Symantec with this particular array or array family at this time.

Note 2: Array requirements to support Active/Active DMP DSM in a cluster (VCS/MSCS/WSFC)

- 3PAR arrays:
  - InServ E200, S400, S800. Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- EMC arrays:
  - EMC Symmetrix 8000 series requires FW 5568.67 or higher
  - EMC Symmetrix DMX series requires FW 5670.73 or higher
  - EMC Symmetrix VMAX/VMAX3 series: Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
  - EMC VPLEX array: Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- Fujitsu arrays
  - Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- Hitachi arrays:
  - Hitachi Network Storage Controller (NSC) model 55 requires FW 50-05-22-00/00 or higher
  - Hitachi Lightning 9900V series requires FW 01-19-83-00/00 or higher
  - Hitachi 9900V Lightning series requires FW 21-10-13-00/00 or higher
  - Hitachi USP models 100, 600, and 1000 requires FW 50-05-22-00/00 or higher
  - Hitachi VSP array requires FW 70-01-04-00/00 or higher
  - Hitachi SANRISE2000 series: Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- HP arrays:
  - HP P9500 Disk Array requires FW 70-01-04-00/00 or higher
  - HP XP 10000/12000 requires FW 50-01-40-00/00 or higher
  - HP XP128/XP1024 requires FW 21-09-15 or higher
  - HP Enterprise Virtual Array EVA4000/6000/8000 requires FW 5030 or higher
  - HP Enterprise Virtual Array EVA4100/6100/8100 requires FW 5030 or higher
  - HP Enterprise Virtual Array EVA GL 3000/5000 requires FW 4.004 or higher
  - HP MSA, P6000 EVA series: Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- IBM arrays:
  - IBM ESS 750/800 series requires FW 2.3.2.71 or higher
  - IBM System Storage DS6000 series requires FW 6.1.600.46 or higher
  - IBM System Storage DS8000 series requires FW 6.1.600.46 or higher
  - IBM System Storage N series requires ONTAP v7.0.2 or higher
  - IBM Storwize, DS3200, DS3500, DS5000, and XIV series: Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- Oracle arrays:
  - Sun Axiom 300/500, and StorEdge series (StoreEdge SE9910, SE9960, SE9970V, SE9980V and SE9990). Please check with Storage Array Manufacturer's Hardware Compatibility Support Matrices for required FW.
- Network Appliance arrays:
  - All require NetApp ONTAP v7.0.2 or higher

Note 3: Enabling SCSI-3 support on Your Array to Support Active/Active DMP DSM in a Cluster (MSCS/VCS)
You must enable SCSI-3 reservation before using the Active/Active DMP setting for MPIO DSMs in Clustering (VCS/MSCS/WSFC) environments (SCSI-3 reservation is disabled by default on Windows Server 2003). You can do this by following steps below:
(1) Move any Cluster dgs to another cluster node or deport the Cluster dg.
(2) Select SCSI-3 support on the SCSI Support Tab of VEA (Symantec Enterprise Administrator)
This setting affects all arrays on the system. If you have both SCSI-3 Persistent Reservation capable/incapable arrays on the system, and if you would like to use Active/Active DMP setting for SCSI-3 Persistent Reservation capable arrays, then you should select SCSI-2 support and then run command in next step (3) for each array.
(3) vxdmpadm [-g<DynamicDiskGroupName>] setdsmscsi3
(4) Optional: After setting "SCSI3 support" with DMP DSMs, restart the service by running the following CLI commands:
net stop vxvm
net start vxvm
Please refer Symantec Storage Foundation Administrator's Guide for more details.

Note 4: EMC Symmetrix 8000 series arrays include the 8230, 8430, 8530, 8730 and 8830 arrays. EMC Symmetrix 3000 series arrays include the 3330, 3430, 3630, 3700, 3830 and 3930 arrays. EMC DMX series arrays include the DMX800, DMX1000, DMX2000, DMX3000, DMX-3 and DMX-4 arrays.

Note 5: EMC Celerra NS series arrays supported included the NS-120, NS-480 and NS-960. EMC CLARiiON CX series arrays supported include the CX200, CX300, CX400, CX500, CX600 and CX700. EMC CLARiiON CX-3 Ultrascale series arrays supported include the CX3-10, CX3-20, CX3-40 and CX3-80 arrays. EMC CLARiiON AX series arrays supported include the AX100, AX150, AX4. EMC VNX series arrays are supported with block mode storage only.

Note 6: Support of the Hitachi SMS/Adaptable Modular Storage (AMS) series includes the following specific models: SMS100, SMS110, AMS200, AMS500, AMS1000, AMS2100, AMS 2300, AMS2500.

Note 7: Support of the Hitachi Workgroup Modular Storage (WMS) series includes the following specific models: WMS100.

Note 8: Hitachi Thunder 9500V series array (9520V, 9530V, 9570V, 9580V and 9585V) support also applies to the Hitachi SANRISE 9500V series and the Nihon Unisys SANArena 1500 series.

Note 9: Hitachi USP models 100, 600 & 1100 support also applies to the SUN StorEdge SE9990 series.

Note 10: Hitachi Lightning 9900V series array (9910 and 9960) support also applies to the Hitachi SANRISE2000 series (SANRISE2200 and SANRISE2800), the Nihon Unisys SANArena 2000 series (SANArena 2200 and 2800), and the SUN StorEdge SE9900 series (StorEdge SE9910 and SE9960) arrays. Hitachi 9900V Lightning series array (9970V and 9980V) support also applies to the Hitachi SANRISE9900V series (SANRISE9970V and SANRISE9980V), SUN StorEdge SE9900V series (StorEdge SE9970V and SE9980V).

Note 11: During a Hitachi online format of new LUNS, certain SCSI commands are disabled which may temporarily suspend data access. Contact Hitachi for a list of these commands.

Note 12: For the HP Enterprise Virtual Arrays (EVA3000, EVA5000) and the HP Modular Storage Arrays (MSA1000, MSA1500), Active/Active array firmware is required. Contact your local HP representative for more information.

Note 13: At the time of the 5.1 SP2 release, SCSI-3 support for the HP MSA 1000/1500 has not been fully qualified by Symantec. Therefore, SCSI3 support cannot be used and must be disabled in the system registry when an HP MSA 1000/1500 array, by itself or in combination with other arrays, is connected to a host. For DMP DSM support the HP MSA arrays must be set to use the 'Windows' profile within the MSA array configuration.

Note 14: When utilizing the HP EVA arrays with SFW DMP, iSCSI is supported when used with the HP EVA iSCSI Connectivity Option. However, Active/Active Load Balancing algorithms are not supported in this configuration because SCSI-3 Persistent Reservation is not supported with the EVA iSCSI Connectivity Option at this point in time. Therefore, SCSI-3 support cannot be used and must be disabled in the system registry or system wide in the Symantec Enterprise Administrator Control Panel System Settings when the EVA iSCSI Connectivity Option, by itself or in combination with other arrays, is connected to a host.

Note 15: IBM System Storage N3000, N5000, N6000, and N7000 series arrays.
Cross Reference to NetApp Models
- IBM System Storage N3300 = NetApp FAS2020, FAS2020c
- IBM System Storage N3400 = NetApp FAS2040, FAS2040c
- IBM System Storage N3600 = NetApp FAS2050, FAS2050c
- IBM System Storage N3700 = NetApp FAS270, FAS270c and GF270c
- IBM System Storage N5200 = NetApp FAS3020, FAS3020c, V3020 and V3020c
- IBM System Storage N5300 = NetApp FAS3040, FAS3040c, V3040 and V3040c
- IBM System Storage N5500 = NetApp FAS3050, FAS3050c, V3050 and V3050c
- IBM System Storage N5600 = NetApp FAS3070, FAS3070c, V3070 and V3070c
- IBM System Storage N6040 = NetApp FAS3140, FAS3140c, V3140 and V3140c
- IBM System Storage N6060 = NetApp FAS3160, FAS3160c, V3160 and V3160c
- IBM System Storage N6070 = NetApp FAS3170, FAS3170c, V3170 and V3170c
- IBM System Storage N6210 = NetApp FAS3210, FAS3210c, V3210 and V3210c
- IBM System Storage N6240 = NetApp FAS3240, FAS3240c, V3240 and V3240c
- IBM System Storage N6270 = NetApp FAS3270, FAS3270c, V3270 and V3270c
- IBM System Storage N7600 = NetApp FAS 6030, FAS6030c, V6030, V6030c
- IBM System Storage N7700 = NetApp FAS 6040, FAS6040c, V6040, V6040c
- IBM System Storage N7800 = NetApp FAS 6070, FAS6070c, V6070, V6070c
- IBM System Storage N7900 = NetApp FAS 6080, FAS6080c, V6080, V6080c
- IBM System Storage N7550T = NetApp FAS 6210, FAS6210c, V6210, V6210c
- IBM System Storage N7750T = NetApp FAS 6240, FAS6240c, V6240, V6240c
- IBM System Storage N7950T = NetApp FAS 6280, FAS6280c, V6280, V6280c

Note 16: DMP DSM does not support the IBM ESS 800 and ESS 750 on Windows Server 2008 because IBM does not support these models on Windows Server 2008. For questions regarding support of TotalStorage™ ESS on Windows operating system versions please check the IBM Compatibility Matrices or check with your IBM Support Representative.

Note 17: IMPORTANT: These arrays require additional configuration steps in order to work properly with Symantec Storage Foundation for Windows. Before attempting to use any of these arrays with Symantec Storage Foundation for Windows DMP software, please contact the array hardware manufacturer for additional configuration instructions and updates. Several special settings must be enabled on these arrays to allow compatibility with DMP, including Auto Volume Transfer (AVT), also referred to as Auto Logical Drive Transfer (ADT). Specific firmware levels from the manufacturer for these arrays may also be required.

Note 18: If Network Appliance SnapDrive and SnapManager applications are being used, then you must use Symantec Cluster Server 5.1 SP1 or later for Windows. These applications do not support Windows dynamic disks at this time. Due to this NetApp application limitation, Storage Foundation for Windows and Storage Foundation HA for Windows cannot be used with NetApp arrays if these applications are installed.
Note 19: When utilizing NetApp storage, the SCSI setting in the Control Panel in Symantec Enterprise Administrator must be set to SCSI-3.
Note 20: The Sun StorEdge 6130 array requires additional configuration steps in order to work properly with Symantec Storage Foundation for Windows. Before attempting to use the Sun StorEdge 6130 array with Symantec Storage Foundation for Windows DMP software, please contact the array hardware manufacturer for additional configuration instructions and updates. Several special settings must be enabled on these arrays to allow compatibility with DMP. Specific firmware levels from the manufacturer for these arrays may also be required.
Note 21: DMP DSM is only supported for StorageTek FlexLine 380 of FlexLine 200/300 series.
Note 23: The Microsoft iSCSI Software Initiator is supported on any Ethernet NIC card that is supported by the Microsoft iSCSI Software Initiator. For Windows 2003, Microsoft iSCSI initiator version of 2.07 has been tested at the time of the release. In general The Microsoft iSCSI initiator version listed on the HCL has been tested and qualified at the time of the SFW/HA release. However, Symantec will support customers utilizing a newer version. Check with Microsoft on the most current and supported release of the iSCSI initiator. Recommended Microsoft iSCSI Software Initiator setting for adding a new target is to specifically select the adapter and port of the NIC configured for the iSCSI connection instead of selecting the default adapter. There is no Symantec DMP support for the Microsoft iSCSI Software Initiator unless an MPIO DSM is available for the specific array.
Note 24: DMP DSM - support is available for the DS3950, DS4200, DS4300, DS4500, DS4700, DS4800, and DS5020 Arrays.
Note 26: SUN 2500 series includes SUN 2510, SUN 2530 and SUN 2540.
Note 27: There is a known problem of IO hang sometimes when a NIC port is disabled on the Switch. Also, it is recommended to use 2 NICs for private heartbeat and a separate NIC for public-mix use or client-only use in MSCS environments due to a known issue when Private NICs are used for private heartbeat and other types of traffic.
Note 28: The full company name is "Huawei Technologies Co. Ltd." S5000 series: V1500, V1800, S2100, S2300, S2300E, S2600, S5100, S5300, S5500, S5600, S6800E S5000T series: S2600T, S5500T, S3900-M100, S3900-M200, S3900-M300, S5600T, S5900-M100, S5900-M200, S5800T, S6800T, S6900-M100, Dorado2100, S2200T, Dorado5100 VIS series: VIS6000, VIS6600T.
Note 29: To obtain Clustering support with IBM System Storage XIV, a minimum Firmware level of 10.0.1.c is required.
Note 31: Consult 3PAR's Configuration Matrix for interoperability and space reclamation support.
Note 33: IBM SDD Version 2.4.2.0-1 is not supported, there are known issues of Blue screen (BSOD) during use of this version of the driver.
Note 34: There is a known issue with support for NetApp arrays. when the interconnect cable between the filers is disconnected, the servers get rebooted and stay at boot prompt until the cable is reconnected and servers are rebooted.
Note 35: There is a known issue with support for HP P2000 G3 MSA series arrays where disabling all but 1 active path to the lun causes disk missing from the server.
Note 36: Due to known issues, Takeover/Giveback operations on Oracle Storage 7000 series are not supported at this time.
Note 37: SMS does not support Thin Provisioning.
Note 38: Ensure to install the hot fix referenced in the Microsoft Knowledge Base article KB968287 first before installing DMP DSM support for a PROMISE Ex30 array on Windows Server 2008.
Note 39: For support in DDI 2, ensure to install the hot fix referenced in the Microsoft Knowledge Base article KB979743 first before installing DMP DSM support for a IBM DS5000 array on Windows Server 2008. It's recommended to change the disk TimeOutValue from the default 60 seconds to 120 seconds.
Note 40: Hotfix is required for Reclamation support, it can be downloaded from https://sort.symantec.com/patch/detail/4698 . There are known issues with Reclamation. Please see also http://www.symantec.com/docs/TECH164853 for more details.
Note 41: Consult HP's Configuration Matrix for interoperability and space reclamation support.
Note 42: Thin Reclamation is only supported with DX80 S2, and DX90 S2. Hotfix is required for Thin Reclamation support, and it can be downloaded from https://sort.symantec.com/patch/detail/5843 . There are known issues with Thin Reclamation, and please see http://www.symantec.com/docs/TECH164853 for more details.
Note 43: Thin Reclamation is only supported with S5600T, with volumes track aligned to 2048 sectors. ALUA explicit trespass on Thin LUN is not supported.
Note 44: Thin Reclamation is only supported with XP20000, and XP24000.
Note 45: Storwize series includes SANVC(2145), and Storwize V7000.
Note 46: HUS 100 series includes HUS 110, HUS 130, and HUS 150 .
Note 47: Violin 3000/6000 series includes 3120, 3202, 3205, 3210, 3220, 6212, 6232, 6606, 6616.
Note 49: Storage Foundation is only supported with Symantec's MPIO DSM as the multi-pathing software. Coexistence with other multi-pathing options is not supported .
Note 50: Thin Reclamation is supported with Hitachi VSP. There is a known issue with thin reclamation: space of striped volume or striped and mirrored volumes can't be reclaimed.
Note 51: A minimum array firmware version G5.5.1 is required to support ALUA mode.
Note 52: Support Windows Servers 2003 R2 and 2008 R2. Need to install the latest Hot Fix package from SORT: https://sort.veritas.com/patch/detail/8346 .

Revision History

V1.1 Oct 18th, 2010: Added support for 5.1SP2. Added support for Oracle Storage 7000 series, HP P2000 G3 MSA series and Fujitsu ETERNUS VS850 Arrays. Clarified EMC AX series support to include support for AX4, Added EMC Celerra support, Added Hitachi Virtual Storage Platform (VSP).
V1.2 Jan 20th, 2011: Added HP P9500.
V1.3 Jun 1st, 2011: Added Promise Technology, Note 38, and 39. Updated PowerPath, HDLM, SDD DSM, Storage manager DSM version.
V1.4 Jul 7th, 2011: Added Thin Reclamation support to EMC Symmetrix VMAX array. Added EMC VNX series array.
V1.5 Aug 24th, 2011: Added Fujitsu ETERNUS DX60 S2, DX80 S2, DX90 S2 and Fujitsu ETERNUS DX400 S2 array. Added Thin Reclamation support to Fujitsu ETERNUS4000, ETERNUS8000, ETERNUS DX400, ETERNUS DX8000 series array. Note 40.
V1.6 Sep 30th, 2011: Added DDI3 support. Added EMC VPLEX array, HP P6000 EVA series array, Huawei Symantec Oceanspace S5000T series array, IBM DS3500, DS3950, DS5020 array, Nexsan E-series Systems array. Added iSCSI support to HP P2000 G3 MSA series array. Updated Huawei Symantec Oceanspace S5000 series, and Oceanspace VIS series array. Updated SDD DSM to 2.4.3.1-3.
V1.7 Jan 23rd, 2012: Added DDI_Q4_2011 support. Updated 3PAR E-Class, S-Class, HP 3PAR F-Class, T-Class support. Added HP 3PAR P10000 Systems, Dell PowerVault MD3200/MD3200i series array. Added iSCSI support to CLARiiON arrays. Note 41.
V1.8 Mar 28th, 2012: Added Thin Reclamation support to Fujitsu DX80 S2, DX90 S2 array, Huawei Symantec S5600T array. Updated SDD DSM to the latest GA 2.4.3.1-2. Note 42, 43.
V1.9 May 3rd, 2012: Added Dell MD3600f, MD3600i array, Hitachi HUS series array, IBM Storwize V7000 array, Nexsan Beast Systems, Boy Systems array. Added SAS support to HP P2000 G3 MSAS series array. Added Thin Reclamation support to XP20000/XP24000 array. Updated HP MPIO to 4.02.00 for Enterprise Virtual Array series Updated Storage Manager to 10.70.x5.10. Note 44. Updated Note 43.
V1.10 May 31st, 2012: Updated Huawei vendor and array models naming. Updated HDLM to 7.2.
V1.11 Jul 19th, 2012: Added HDLM support to HDS VSP array.
V1.12 Nov 22nd, 2012: Sync up model naming with other releases. Note 45.
V1.13 Jan 14th, 2013: Added DDI_Q4_2012 support. Updated Hitachi HUS series to Hitachi HUS 100 series , Update Hitachi USP/NSC to Hitachi USP/NSC series, Update HP 3PAR F-Class, T-Class, P10000 Systems to HP 3PAR F/T-Class, StoreServ 7000/10000 Storage, Update Oracle Sun StorageTek 6540 array to Sun StorageTek 6540 . Added HP 3PAR StoreServ 7000 Storage array, Hitachi HUS VM array, Violin Memory Violin 3000/6000 series array. Remove Promise Technology array, Xiotech Emprise 5000 array and HP Proliant DL380 G5 Storage Server support from DDI_Q4_2012. Note 46, 47.
V1.14 Mar 21st, 2013: Added Hitachi Lightning 9900V series (9900 & 9900V) support.
V1.15 May 22nd, 2013: Added DDI_Q1_2013 support. Added HuaWei S2200T Storage array, HuaWei Dorado5100 Storage array, Nexenta NexentaStor support, Removed versioning from the Third Party Multipathing Support Column, Removed HP Storage Array System MPIO DSM support. Note 48, 49. Updated Note 28. Removed Note 30.
V1.16 Jul 3rd, 2013: Added ALUA support to Fujitsu ETERNUS DX400 series, Fujitsu ETERNUS DX60/DX80/DX90 series, and Fujitsu ETERNUS DX8000 series array. Added Thin Reclamation support to Hitachi VSP array. Note 50.
V1.17 Jul 30th, 2013: Document maintenance.
V1.18 Sep 30th, 2013: Added DDI_Q2_2013 support. Added ALUA support to Violin 3000/6000 series, Added ISCSI support to EMC VNX series array, Added ISCSI support to IBM Storwize series array, Added HP MSA 2040 SAN array, Added HuaWei VIS series array. Note 51.
V1.19 Oct 30th, 2013: Updated Note 28, Removed Note 48.
V1.20 Jul 31th, 2014: Added EMC VNX2 support.
V1.21 Nov 30th, 2015: Added Hitachi VSP G1000 / Gx00 series support and Note 52.
V1.22 Dec 30th, 2015: Added EMC VMAX3 series support.