Symantec Storage Foundation and High Availability Solutions 5.1 (AIX, Linux, Solaris), 5.1 SP1, 5.1 SP1 RP3 (AIX, HP-UX, Linux, Solaris), 5.1 SP1 RP4 (AIX, Linux, Solaris), 5.1 PR1 (Linux), 5.1 SP1 PR4 (Linux), and VirtualStore 5.1 SP1 PR3

Hardware Compatibility List

Introduction

Created on November 29, 2017

This Hardware Compatibility List (HCL) contains support information for hardware products tested with the following Symantec Storage Foundation and High Availability Solutions product releases and platforms:
• 5.1 and 5.1 SP1 RP4 for AIX, Linux, and Solaris
• 5.1 PR1 for Linux
• 5.1 SP1 and 5.1 SP1 RP3 for AIX, HP-UX, Linux and Solaris
• 5.1 SP1 PR4 for Linux
The HCL also contains information for VirtualStore 5.1 SP1 PR3.
The list is divided into sections for servers, disk storage arrays, host bus adapters, and switches.
Use the links in the Contents to access the specific sections. All devices are presented by operating system and manufacturer.

This HCL represents the limits of Symantec support for disk storage arrays qualified for use with the Symantec 5.1 Storage Foundation products in this list. There are no implied additions or exceptions to the tested or compatible devices on the provided lists.

The information in the Hardware Compatibility List (HCL) for Storage Foundation 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, Symantec corporation shall not be liable for incidental or consequential damages in connection with the furnishing, performance, or use of this documentation.
The information contained on this website and in this HCL documentation is subject to change without notice.

General Notes:

• For support purposes, "Yes", or the instance of any software option in a cell in any of the matrices, indicates Symantec support for the product stack under which it appears. To verify support for a given device, make sure that the manufacturer also shows support for the device in its own HCL.

• Devices are listed by the name and series model number provided by the manufacturer.

• Symantec Volume Replicator has no hardware dependencies. It is only supported when it is used as part of Storage Foundation.

NOTE: The Dynamic Multi-Pathing (DMP) OS native stack support feature is supported with the DMP 5.1 release through an add-on patch. DMP OS native stack support allows non-root OS native volume groups or file systems operate over DMP devices. This feature is available for ZFS on Solaris 10 (SPARC, and X64), LVM on AIX 5.3, 6.1, and 7.1, LVM on HP-UX 11iv3, and LVM on Linux RHEL5, RHEL6, SLES 10, and SLES 11. For DMP OS native stack support patch information for 5.1, see <https://sort.veritas.com/patches> . For 5.1SP1, the DMP OS native stack support feature is supported without an additional patch.

NOTE: The new functionality and cumulative fixes of the ASL/APM are delivered through the updated VRTSaslapm package to ensure proper functioning of the storage hardware. The latest VRTSaslapm package can be found at <https://sort.veritas.com/asl> . For more details about the latest VRTSaslapm package changes, see: <http://www.veritas.com/docs/TECH77062> .

Product Acronyms

Acronym	Definition
DMP	Dynamic Multi-Pathing
DMP for VMware	Dynamic Multi-Pathing for VMware
SF	Storage Foundation
SFCFS/SF Oracle RAC	Storage Foundation Cluster File System/Storage Foundation for Oracle RAC
SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Storage Foundation Cluster File System/Storage Foundation Cluster File System for Oracle RAC/Storage Foundation for Oracle RAC
SFHA	Storage Foundation and High Availability

Contents

Servers

Servers are listed on the basis of their processor architecture.

Support Legend

Symbol	Meaning
Yes	Supported
No	Not supported

AIX

Processor architecture	SF	SFHA	SFCFS/SF Oracle RAC
Power3 series	Yes	Yes	Yes
Power4 series	Yes	Yes	Yes
Power4+ series	Yes	Yes	Yes
Power5 series	Yes	Yes	Yes
Power5+ series	Yes	Yes	Yes
Power6 series	Yes	Yes	Yes
Power6+ series	Yes	Yes	Yes
Power7 series	Yes	Yes	Yes
Power7+ series	Yes	Yes	Yes
PowerPC 970MP series	Yes	Yes	Yes

HP-UX

Processor architecture	SF	SFHA	SFCFS/SF Oracle RAC
IA64 (Intel 64-bit architecture)	Yes	Yes	Yes
IA64 Dual Core (Intel 64-bit Dual Core architecture)	Yes	Yes	Yes
IA64 Quad Core (Intel 64-bit Quad Core architecture)	Yes	Yes	Yes
IA64 Octa Core (Intel 64-bit Octa Core architecture)	Yes	Yes	Yes
PA8700 architecture	Yes	Yes	Yes
PA8800 architecture	Yes	Yes	Yes
PA8900 architecture	Yes	Yes	Yes

Linux - Red Hat/SUSE

Processor architecture	SF	SFHA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC
AMD Opteron architecture [1]	Yes	Yes	Yes
Intel EM64T architecture [1]	Yes	Yes	Yes

1. Supports only the 64-bit versions of the software stacks.

Linux - Red Hat/SUSE (Linux on Power)

Processor architecture	SF	SFHA	SFCFS/SFCFS Oracle RAC
Power5 series	Yes	Yes	Yes
Power5+ series	Yes	Yes	Yes
Power6 series	Yes	Yes	Yes

Solaris

Processor architecture	SF	SFHA	SFCFS/SF Oracle RAC
SPARC M5 series [1] [2]	Yes	Yes	Yes
SPARC M6 series [1] [2]	Yes	Yes	Yes
SPARC T3 series [2]	Yes	Yes	Yes
SPARC T4 series [2] [3]	Yes	Yes	Yes
SPARC T5 series [2] [4]	Yes	Yes	Yes
SPARC64-V series	Yes	Yes	Yes
SPARC64-VI series	Yes	Yes	Yes
SPARC64-VII/VII+ series	Yes	Yes	Yes
SPARC64-X series	Yes	Yes	Yes
SPARC64 X+ series	Yes	Yes	Yes
UltraSPARC II series	Yes	Yes	Yes
UltraSPARC III series	Yes	Yes	Yes
UltraSPARC IV series	Yes	Yes	Yes
UltraSPARC T1 series [2]	Yes	Yes	Yes
UltraSPARC T2/T2+ series [2]	Yes	Yes	Yes

1. A minimum version of Storage Foundation 5.1SP1RP3, and Solaris 10 1/13 are required for support.
2. Oracle VM Server for SPARC supported. See the following TechNote: <http://www.veritas.com/docs/DOC4397> .
3. Installation of Storage Foundation products may encounter issue on Oracle T4 servers, see TechNote <http://www.veritas.com/docs/TECH177307> .
4. A minimum version of Storage Foundation 5.1SP1RP3 is required for support.

Solaris x64

Processor architecture	SF	SFHA	SFCFS/SF Oracle RAC
AMD Opteron architecture [1] [2]	Yes	Yes	Yes
Intel EM64T architecture [1] [2]	Yes	Yes	Yes

1. Supports Solaris 10, 64 bit only.

2. Check Oracle's HCL for specific models: <http://www.oracle.com/webfolder/technetwork/hcl/index.html> .

Unified Computing and Blade Platforms

All Unified Computing and Blade Platforms shown here were tested with drivers and firmware supported by the OS and storage manufacturers. Check with these manufacturers for:

- Minimum driver and firmware levels
- Specific driver and firmware support
- Support for the stated Symantec products
- Other functional options

Device Support

Manufacturer	Platform/module	Connection
Cisco	UCS Platform	FCoE M72KR-Q, 10GbE
HP	Virtual Connect Module	FC, 1GbE, 10GbE
Oracle	Sun Blade Modular Systems	FC, 1GbE, 10GbE

Disk Arrays and Storage Devices

Storage arrays qualified with Storage Foundation and High Availability or Storage Foundation for Oracle RAC were tested with fencing enabled.

All storage configurations shown here were tested with drivers and firmware supported by the storage array vendors. Check with these vendors for:

• Minimum driver and firmware levels

• Specific driver and firmware support

• Support for the stated Symantec products

• Other functional options

Symantec supports hardware products listed here that include virtualization capability, but Symantec does not support compatibility issues that can be attributed to the virtualization feature. Symantec requires any compatibility issue to be reproduced in a non-virtualization environment. If the issue is confirmed to be related to Symantec products, Symantec will support its software at the same level as when that software is not running with hardware virtualization products. Symantec will cooperate with virtualization vendors, and attempt to assist in the diagnosis of problems found between the virtualization and Symantec products.

If the Device/family column in a table includes the qualifier **with PowerPath**, it means the storage array supports EMC PowerPath. If a row does not include the **with PowerPath** qualifier, PowerPath is not supported on that storage array.

Hardware-specific features like LUN Snapshot or Thin Reclamation are supported only if they are explicitly listed for the devices. When a hardware-specific feature is listed, it applies to all product stacks (SF, SF Oracle, SFHA and SFCFS/SFCFS Oracle/SF Oracle RAC).

NOTE: For Active/Active (A/A) arrays, unless stated otherwise, Symantec supports the same Non-Disruptive Upgrade (NDU) operations that the storage vendor supports.

NOTE: Device must be formatted with 512-byte sector size for support.

For more information about the arrays in this HCL, including specific settings, see "Related Documents" in the Symantec Storage Foundation and High Availability Solutions Hardware TechNote <http://www.veritas.com/docs/TECH47728>

Support Legend

Term	Meaning	Definition
Yes	Supported	"Yes" or any other details imply the device is supported with the features listed, if any.
No	Not supported	"No" or the absence of any details imply the device is not supported for that product.
Fencing	Supported with fencing	Symantec I/O fencing is supported for Storage Foundation products. Symantec I/O fencing uses SCSI3 PGR capable devices to allow write access to members of the active cluster. If a split-brain condition occurs, Symantec I/O fencing blocks access to non-members and help in fencing out nodes to prevent data corruption.

Support Legend

Term	Meaning	Definition
Advanced Reporting	Advanced Reporting supported	Support reporting special properties of a LUN discovered by the Device Discovery Layer (DDL) that helps storage administration. See <http://www.veritas.com/docs/TECH77062> for details.
NDU	NDU supported	Support for upgrading firmware/microcode on storage array controllers while applications are running on servers.
SAN Boot	SAN Boot supported	Support for booting a server from a multi-pathed storage array LUN and rootability on SAN LUNs.
Thin Reclamation [1] [2]	Thin Reclamation supported	Support for storage optimization by recovering blocks from deleted files or data. It adds the storage back to the storage thin pool. LUNs supported with thin reclamation are denoted by their Advanced Reporting attribute. See <http://www.veritas.com/docs/TECH77062> for details.

1. Thin Reclamation on a striped-mirror volume is supported with 5.1RP2 or later.
2. Thin Reclamation support for CFS requires VxFS 5.1RP2 or later.

Modes

Term	Meaning	Definition
Active/Active (A/A)	Array supported in Active/Active mode	A/A arrays support simultaneous I/O on all paths.
Active/Active-Asymmetric (A/A-A)	Array supported in Active/Active-Asymmetric mode	A/A-A arrays support simultaneous I/O on all paths, but seek the most optimized path for the I/O transmission rate. Asymmetric Logical Unit Access (ALUA) array support is also denoted by A/A-A.
Active/Passive (A/P)	Array supported in Active/Passive mode	A/P arrays in auto-trespass mode support I/O on a single primary (active) path, while the secondary (passive) path is engaged if the primary path fails. A/P implies A/P-C operation mode.
Active/Passive-Concurrent (A/P-C)	Array supported in Active/Passive-Concurrent mode	A/P-C arrays support I/O on multiple primary (active) paths, while the secondary (passive) paths are engaged if all primary paths fail.
Active/Passive-Failover (A/P-F)	Array supported in Active/Passive-Failover (explicit) mode	A/P-F arrays in **explicit** failover mode support I/O on a single primary (active) path, while the secondary (passive) path is engaged through the use of an explicit command if the primary path fails.

Contents

AIX

NOTE: For details on specific PowerPath versions supported for storage Device/Family indicated "with PowerPath", see the EMC Support Matrices at <http://www.emc.com/interoperability> .

The VCS LVM agent supports the EMC PowerPath third-party driver on EMC's Symmetrix 8000 and DMX series arrays.

The VCS LVM agent supports the HITACHI HDLM third-party driver on Hitachi USP/NSC/USPV/USPVM, 9900V series arrays.

For details on Advanced Reporting support, see: <http://www.veritas.com/docs/TECH77062> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH77062> .

NOTE: For the 5.1 release, DMP is supported in VIO client (VIOC) hosts only, and DMP is not supported in VIO server (VIOS). All the arrays listed here are supported with DMP in VIO client with the 5.1 release.

NOTE: Starting from the 5.1 SP1 release, DMP is supported in VIO server (VIOS). All the arrays listed here are supported with DMP in VIO client or server with the 5.1 SP1 release.

NOTE: A minimum product version of 5.1P1 is required for support in the 5.1 release.

NOTE: Array manufacturer Object Data Manager (ODM) definitions are required with MPIO disabled for DMP to manage multi-pathing. See: <http://www.veritas.com/docs/HOWTO21854> .

NOTE: For information on Storage Foundation DMP co-existence with OS native multi-pathing driver MPIO on AIX, see TechNote <http://www.veritas.com/docs/TECH51507> .

3PAR

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
E-Class, S-Class [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. More 3PAR array systems support information is under the HP section.

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
CLARiiON AX series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series [1] [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series with PowerPath [1] [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series with PowerPath [1] [3] [4]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX3 series [1] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU
CLARiiON CX3 series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU
CLARiiON CX3 series with PowerPath [1] [3] [4]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series [1] [5] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series [1] [3] [6] [7]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
CLARiiON CX4 series with PowerPath [1] [3] [4] [6] [7]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series with AIX VIO [1] [5] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series with AIX VIO [1] [3] [6] [7]	A/P-F	Yes	Yes	No	Fibre Channel	SAN Boot
Symmetrix 8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix 8000 series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix DMX series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX series [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VMAX3/VMAX All Flash Family series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX series [1] [10] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series [1] [10] [3] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
VNX series with PowerPath [1] [10] [3] [4] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX2 series [10] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [10] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VPLEX [11]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. NDU operations are supported. For exact procedures for performing NDU on the array, consult with EMC support.

2. Excludes CX200, CX400, and CX600. A minimum FLARE Code version 26 or above is required to support this mode.

3. APAR IZ53813 is required for AIX 5.3 TL10 SP1, and APAR IZ57216 is required for AIX 6.1 TL3 SP1 to support this mode.

4. With PowerPath 5.3SP1 release, more than two storage paths configuration are not supported by SF HA and SFCFS/SF Oracle RAC.

5. A minimum flare code version 26 or above is required to support this mode.

6. The management tools must be used to report physically allocated space for Thin LUNs.

7. Thin Reclamation is supported with this array; the minimum array firmware FLARE 29 is required. On HP-UX platform, CLARiiON Open Initiator Type and the minimum array firmware FLARE 29 are required to support Thin Reclamation with this array. To obtain the maximum reclamation benefits, FLARE 30 is highly recommended; for more detail, see EMC Powerlink Primus Doc ID# emc233231: CLARiiON Thin LUN Space Reclamation for details. Thin Reclamation is not supported with PowerPath.

8. Reporting of physically allocated space requires firmware level of 5876.159.102 or higher.

9. Thin Reclamation is supported with this array; the minimum array firmware 5875.135.91 is required. Thin Reclamation is not supported with PowerPath.

10. Supports block mode storage only.

11. The Array Volume ID (AVID) feature requires the VRTSaslapm pkg version 5.1.100.300 or later.

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [5]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX8000 series [2] [4] [6]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX8000 series [2] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS VS850 [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
ETERNUS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS4000 series [6] [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS6000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS8000 series [6] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

1. 5.1.114.100 or later version of the VRTSaslapm package is required for ETERNUS DX500 S3 and ETERNUS DX600 S3.

2. Ensure proper array settings are configured to support this mode.

3. Thin Reclamation is supported with this array. V20L40 or later version of firmware is required to support Thin Reclamation with ETERNUS DX400 series. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

4. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the certain firmware level of ETERNUS DX S2 arrays. Please consult with the storage vendor for the firmware level.

5. The latest VRTSaslapm package is required to support Thin Reclamation. Thin Reclamation is not supported with ETERNUS DX60/DX60 S2/DX80/DX90. ETERNUS DX80 S2 and DX90 S2 are supported with Thin Reclamation with the minimum array firmware V10L10. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

6. Thin Reclamation is supported with this array; the minimum array firmware V20L40 are required. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

7. A minimum product version of 5.1RP1 is required to support SAN Boot with this array.

8. Excludes ETERNUS4000 models 80 and 100.

9. Thin Reclamation is not supported when the shared disk is protected by I/O fencing in SF-HA configuration.

Generic

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FC JBOD	A/A	Yes	Yes	No	Fibre Channel	
SCSI JBOD	A/A	Yes	Yes	No	SCSI	

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
EVA4000/6000/8000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
EVA4000/6000/8000 with AIX VIO [3]	A/A-A	Yes	Yes	No	Fibre Channel	SAN Boot
EVA4100/6100/8100	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4400/6400/8400 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
P6000 EVA series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
P9500	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
XP10000/12000	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
XP10000/12000 with AIX VIO	A/A	Yes	Yes	No	Fibre Channel	
XP128/1024	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
XP128/1024 with AIX VIO	A/A	Yes	Yes	No	Fibre Channel	
XP20000/24000 [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 3PAR F/T-Class maximum firmware version is 3.1.3; 3PAR StoreServ 7000/10000 minimum firmware version 3.1.2 and StoreServ 8000/20000 minimum firmware version 3.2.2 are required.

2. StoreServ 8000/20000 minimum firmware version 3.2.2 MU1 is required for Thin Reclamation support.

3. Fencing function is not supported with Storage Foundation Cluster File System. Storage Foundation for Oracle RAC is not supported.

4. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

Hitachi

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
AMS/WMS series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
AMS/WMS series with AIX VIO	A/A-A	Yes	Yes	No	Fibre Channel	
HUS 100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
HUS VM	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Lightning 9900V series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
SMS/AMS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Thunder 9500V series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Thunder 9500V series with AIX VIO	A/A-A	Yes	Yes	No	Fibre Channel	
TMS1000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
USP/NSC series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
USPV/USPVM [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
USPV/USPVM with AIX VIO [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
VSP [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
VSP G series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
VSP Gx00/Fx00 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

2. Thin Reclamation is supported with this array; the minimum array firmware 70-02-02-00/00 is required.

Huawei

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
18000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000T series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VIS series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. The 18000 series A/A only includes 18500, 18800 and 18800F.

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
DS5020	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Storwize series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
Storwize series with AIX VIO [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
System Storage DS5000 series	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	
System Storage DS6000 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
System Storage DS8000 series with AIX VIO	A/A	Yes	Yes	No	Fibre Channel	
System Storage N series [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
System Storage N series [4] [7] [8]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
System Storage XIV series [10] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
TotalStorage DS4000 series with RDAC	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
TotalStorage DS4000 series with RDAC	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. A minimum product version of 5.1RP1 is required to support SAN Boot with this array.

2. A version higher than 4.2.1.1 is required to obtain support of this array. Contact IBM support to get Firmware with version greater than 4.2.1.1 for SVC.

3. Thin Reclamation is supported with this array; the minimum array firmware 6.2 is required. Additional steps required to reclaim the storage space, see <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=TSW03164USEN> for detail.

4. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

5. For AIX 5.3, a minimum level of TL12 SP1 is required to support this mode. For AIX 6.1, a minimum level of TL5 SP5 is required to support this mode.

6. For SF 5.1SP1 release, SF 5.1SP1RP2 is the minimum required level to support this array.

7. Only SSI CF mode is supported with this mode.

8. Starting with 5.1SP1 release, the A/P mode is no longer supported.

9. Excludes A9000 & A9000R models.

10. Thin Reclamation is supported with this array; the minimum array firmware 10.2.2 are required.

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FAS2000/FAS900/FAS200 series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS2000/FAS900/FAS200 series [1] [4] [5]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS3000/V3000 series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS3000/V3000 series [1] [4] [5]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS6000/V6000 series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS6000/V6000 series [1] [4] [5]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS8000/FAS9000 Series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot, Thin Reclamation

1. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

2. For AIX 5.3, a minimum level of TL12 SP1 is required to support this mode. For AIX 6.1, a minimum level of TL5 SP5 is required to support this mode.

3. For SF 5.1SP1 release, SF 5.1SP1RP2 is the minimum required level to support this array.

4. Only SSI CF mode is supported with this mode.

5. Starting with 5.1SP1 release, the A/P mode is no longer supported.

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Storage 6580/6780 series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
StorageTek 2500 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 6140 array	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9900 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9985/9990 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9985V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
StorageTek 9990V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Sun Storage 6180 array	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. A minimum array firmware version 07.60.18.10 is required to support NDU with this array.

StorageTek

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FlexLine 200/300 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

Sun

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
StorageTek 6540	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

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NOTE: For details on specific PowerPath versions supported for storage Device/Family indicated "with PowerPath", see the EMC Support Matrices at <http://www.emc.com/interoperability> .

NOTE: If HBA WWN is not showing in the array management application, manually input HBA WWN into the management application.

For details on Advanced Reporting support, see: <http://www.veritas.com/docs/TECH77062> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH77062> .

NOTE: In this release of Storage Foundation for HP-UX, the version starts with 5.1SP1. There is no 5.1 release.

3PAR

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
E-Class, S-Class [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. More 3PAR array systems support information is under the HP section.

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
CLARiiON CX series [1] [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX3 series [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, NDU, SAN Boot
CLARiiON CX3 series with PowerPath [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series [2] [3] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series with PowerPath [2] [3] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix 8000 series	A/A	Yes	No	No	Fibre Channel	Advanced Reporting
Symmetrix DMX series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Symmetrix VMAX series [6] [7]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [6] [7]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Unity series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Unity series with PowerPath	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VMAX3/VMAX All Flash Family series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX series [2] [4] [8]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series with PowerPath [2] [4] [8]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX2 series [4] [8]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [4] [8]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VPLEX [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Excludes CX200, CX400, and CX600. A minimum FLARE Code version 26 or above is required to support this mode.

2. NDU operations are supported. For exact procedures for performing NDU on the array, consult with EMC support.

3. A minimum flare code version 26 or above is required to support this mode.

4. The management tools must be used to report physically allocated space for Thin LUNs.

5. Thin Reclamation is supported with this array; the minimum array firmware FLARE 29 is required. On HP-UX platform, CLARiiON Open Initiator Type and the minimum array firmware FLARE 29 are required to support Thin Reclamation with this array. To obtain the maximum reclamation benefits, FLARE 30 is highly recommended; for more detail, see EMC Powerlink Primus Doc ID# emc233231: CLARiiON Thin LUN Space Reclamation for details. Thin Reclamation is not supported with PowerPath.

6. Reporting of physically allocated space requires firmware level of 5876.159.102 or higher.

7. Thin Reclamation is supported with this array; the minimum array firmware 5875.135.91 is required. Thin Reclamation is not supported with PowerPath.

8. Supports block mode storage only.

9. The Array Volume ID (AVID) feature requires the VRTSaslapm pkg version 5.1.100.300 or later.

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [5]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX8000 series [2] [4] [6]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [2] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS VS850	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS4000 series [6] [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS8000 series [6] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 5.1.103.100 or later version of the VRTSaslapm package is required for ETERNUS DX500 S3 and ETERNUS DX600 S3.

2. Ensure proper array settings are configured to support this mode.

3. Thin Reclamation is supported with this array. V20L40 or later version of firmware is required to support Thin Reclamation with ETERNUS DX400 series. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

4. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the certain firmware level of ETERNUS DX S2 arrays. Please consult with the storage vendor for the firmware level.

5. The latest VRTSaslapm package is required to support Thin Reclamation. Thin Reclamation is not supported with ETERNUS DX60/DX60 S2/DX80/DX90. ETERNUS DX80 S2 and DX90 S2 are supported with Thin Reclamation with the minimum array firmware V10L10. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

6. Thin Reclamation is supported with this array; the minimum array firmware V20L40 are required. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

7. Excludes ETERNUS4000 models 80 and 100.

8. Thin Reclamation is not supported when the shared disk is protected by I/O fencing in SF-HA configuration.

Generic

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FC JBOD	A/A	Yes	Yes	No	Fibre Channel	
SAS JBOD	A/A	Yes	Yes	No	SAS	
SCSI JBOD	A/A	Yes	No	No	SCSI	

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
2000 G2 series	A/A-A	Yes	Yes	Yes	Fibre Channel	SAN Boot
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
EVA4000/6000/8000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4100/6100/8100	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4400/6400/8400 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot
MSA 2040 SAN	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
P2000 G3 MSA series [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
P6000 EVA series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
P9500	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
XP10000/12000	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
XP20000/24000 [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
XP7	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 3PAR F/T-Class maximum firmware version is 3.1.3; 3PAR StoreServ 7000/10000 minimum firmware version 3.1.2 and StoreServ 8000/20000 minimum firmware version 3.2.2 are required.

2. StoreServ 8000/20000 minimum firmware version 3.2.2 MU1 is required for Thin Reclamation support.

3. For I/O Fencing support, array FW TS250 R023 minimally required.

4. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

Hitachi

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
AMS/WMS series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot
HUS 100 series	A/A	Yes	Yes, Fencing	No	Fibre Channel	
HUS VM	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Lightning 9900V series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
SMS/AMS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Thunder 9500V series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot
USP/NSC series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
USPV/USPVM [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP G series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

2. Thin Reclamation is supported with this array; the minimum array firmware 70-02-02-00/00 is required.

Huawei

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
18000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
S5000T series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. The 18000 series A/A only includes 18500, 18800 and 18800F.

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
DS5020	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Storwize series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
System Storage DS8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
System Storage N series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot
System Storage XIV series [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
TotalStorage DS4000 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Thin Reclamation is supported with this array; the minimum array firmware 6.2 is required. Additional steps required to reclaim the storage space, see <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=TSW03164USEN> for detail.

2. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

3. Thin Reclamation is supported with this array; the minimum array firmware 10.2.2 are required.

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FAS2000/FAS900/FAS200 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot
FAS3000/V3000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot
FAS6000/V6000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot
FAS8000/FAS9000 Series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU, SAN Boot

1. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Storage 6580/6780 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
StorageTek 9900 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9985/9990 series	A/A	Yes	No	No	Fibre Channel	SAN Boot
StorageTek 9985V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Thin Reclamation
StorageTek 9990V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Sun Storage 6180 array	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. A minimum array firmware version 07.60.18.10 is required to support NDU with this array.

Pure Storage

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FlashArray series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

Linux (Red Hat/Oracle)

Note: The SF 5.1 release supports a special SFCFS bundle for Oracle RAC called "SFCFS for Oracle RAC" for the following platforms: Red Hat, SUSE and Oracle Enterprise Linux (OEL). **I/O fencing is not supported with this special SFCFS for Oracle RAC bundle for above platforms.** The SFRAC stack is not supported on all Linux platforms.

NOTE: A Minimum product version of 5.1SP1PR4 is required to support Linux on Power solutions.

NOTE: A minimum product version of 5.1P1 is required for support.

NOTE: For details on specific PowerPath versions supported for storage Device/Family indicated "with PowerPath", see the EMC Support Matrices at <http://www.emc.com/interoperability> .

For details on Advanced Reporting support, see: <http://www.veritas.com/docs/TECH77062> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH77062> .

NOTE: The DMP tunable dmp_fast_recovery needs to be set to off with iSCSI storage array configuration.

NOTE: With Oracle Linux, only supports RHEL compatible mode.

3PAR

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
E-Class, S-Class [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. More 3PAR array systems support information is under the HP section.

Dell

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
EqualLogic PS3000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS4000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS5000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS6000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
PowerVault MD32xx Series	A/P-F	Yes	Yes, Fencing	No	SAS	

1. For RHEL 5.3, a minimum kernel level 2.6.18-164.el5 is required to support this array. A minimum firmware version of V4.3.6 is required to support fencing function.

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
CLARiiON AX series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series [1] [2]	A/A-A	Yes	No	No	Fibre Channel	SAN Boot
CLARiiON CX series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
CLARiiON CX series with PowerPath [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX3 series [1] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot
CLARiiON CX3 series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, NDU
CLARiiON CX3 series with PowerPath [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series [1] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series [1] [3] [5] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, Thin Reclamation
CLARiiON CX4 series with PowerPath [1] [3] [5] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix 8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX series [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VMAX3/VMAX All Flash Family series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
VNX series [1] [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series [1] [3] [5] [9]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
VNX series with PowerPath [1] [3] [5] [9]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX2 series [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VPLEX [10]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot

1. NDU operations are supported. For exact procedures for performing NDU on the array, consult with EMC support.

2. Excludes CX200, CX400, and CX600. A minimum FLARE Code version 26 or above is required to support this mode.

3. For details of iSCSI support, see the "Host Bus Adapters" section below.

4. A minimum flare code version 26 or above is required to support this mode.

5. The management tools must be used to report physically allocated space for Thin LUNs.

6. Thin Reclamation is supported with this array; the minimum array firmware FLARE 29 is required. On HP-UX platform, CLARiiON Open Initiator Type and the minimum array firmware FLARE 29 are required to support Thin Reclamation with this array. To obtain the maximum reclamation benefits, FLARE 30 is highly recommended; for more detail, see EMC Powerlink Primus Doc ID# emc233231: CLARiiON Thin LUN Space Reclamation for details. Thin Reclamation is not supported with PowerPath.

7. Reporting of physically allocated space requires firmware level of 5876.159.102 or higher.

8. Thin Reclamation is supported with this array; the minimum array firmware 5875.135.91 is required. Thin Reclamation is not supported with PowerPath.

9. Supports block mode storage only.

10. The Array Volume ID (AVID) feature requires the VRTSaslapm pkg version 5.1.100.300 or later.

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [6]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX8000 series [2] [4] [7]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX8000 series [2] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS VS850	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS4000 series [7] [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, Thin Reclamation
ETERNUS8000 series [7] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

1. 5.1.134.100 or later version of the VRTSaslapm package is required for ETERNUS DX500 S3 and ETERNUS DX600 S3.

2. Ensure proper array settings are configured to support this mode.

3. Thin Reclamation is supported with this array. V20L40 or later version of firmware is required to support Thin Reclamation with ETERNUS DX400 series. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

4. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the certain firmware level of ETERNUS DX S2 arrays. Please consult with the storage vendor for the firmware level.

5. 5.1SP1RP4 or later is required to support this mode.

6. The latest VRTSaslapm package is required to support Thin Reclamation. Thin Reclamation is not supported with ETERNUS DX60/DX60 S2/DX80/DX90. ETERNUS DX80 S2 and DX90 S2 are supported with Thin Reclamation with the minimum array firmware V10L10. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

7. Thin Reclamation is supported with this array; the minimum array firmware V20L40 are required. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

8. Excludes ETERNUS4000 models 80 and 100.

9. Thin Reclamation is not supported when the shared disk is protected by I/O fencing in SF-HA configuration.

Generic

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FC JBOD	A/A	Yes	Yes	No	Fibre Channel	
SCSI JBOD	A/A	Yes	Yes	No	SCSI	

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
2000 G2 series	A/A-A	Yes	Yes, Fencing	Yes	Fibre Channel	
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
EVA4000/6000/8000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4100/6100/8100	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4400/6400/8400 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
MSA 2040 SAN	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
MSA2000fc series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
MSA2012sa	A/A-A	Yes	Yes	No	SAS	
P2000 G3 MSA series [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
P6000 EVA series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	FCoE, Fibre Channel, iSCSI	Advanced Reporting, SAN Boot
P9500	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
XP10000/12000	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
XP128/1024	A/A	Yes	No	No	Fibre Channel	SAN Boot

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
XP20000/24000 [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 3PAR F/T-Class maximum firmware version is 3.1.3; 3PAR StoreServ 7000/10000 minimum firmware version 3.1.2 and StoreServ 8000/20000 minimum firmware version 3.2.2 are required.

2. StoreServ 8000/20000 minimum firmware version 3.2.2 MU1 is required for Thin Reclamation support.

3. For I/O Fencing support, array FW TS250 R023 minimally required.

4. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

Hitachi

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
AMS/WMS series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
HUS 100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
HUS VM	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Lightning 9900V series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
SMS/AMS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Thunder 9500V series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
TMS1000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
USP/NSC series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
USPV/USPVM [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
VSP G series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP Gx00/Fx00 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

1. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

2. Thin Reclamation is supported with this array; the minimum array firmware 70-02-02-00/00 is required.

Huawei

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
18000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
18000 series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000T series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VIS series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. The 18000 series A/A only includes 18500, 18800 and 18800F.

2. The proper array settings is required to support this mode.

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
DS3950	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	
DS5020	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	Advanced Reporting
Storwize series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
System Storage DS3000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
System Storage DS3500 series	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	
System Storage DS5000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS6000 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
System Storage N series [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
System Storage N series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
System Storage N series [2] [3] [4]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
System Storage XIV series [5] [6]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
TotalStorage DS4000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Thin Reclamation is supported with this array; the minimum array firmware 6.2 is required. Additional steps required to reclaim the storage space, see <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=TSW03164USEN> for detail.

2. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

3. Only SSI CF mode is supported with this mode.

4. Starting with 5.1SP1 release, the A/P mode is no longer supported.

5. Excludes A9000 & A9000R models.

6. Thin Reclamation is supported with this array; the minimum array firmware 10.2.2 are required.

Imation

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
Nexsan E-Series Systems	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	

Kaminario

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
K2	A/A	Yes	Yes, Fencing	No	Fibre Channel	

NEC

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
iStorage D1/D3 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
iStorage D8 series	A/A	Yes	Yes, Fencing	No	Fibre Channel	
iStorage M series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
iStorage S4000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix DMX-4	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX-4 with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting
Symmetrix VMAX with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Also supported in direct-attach configurations.

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FAS2000/FAS900/FAS200 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
FAS2000/FAS900/FAS200 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS2000/FAS900/FAS200 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS3000/V3000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FAS3000/V3000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS3000/V3000 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS6000/V6000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
FAS6000/V6000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS6000/V6000 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS8000/FAS9000 Series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

1. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

2. Only SSI CF mode is supported with this mode.

3. Starting with 5.1SP1 release, the A/P mode is no longer supported.

Nexsan

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
Beast Systems	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	
Boy Systems	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
Axiom series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Storage 6580/6780 series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
StorageTek 2500 series [2]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
StorageTek 6140 array	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9900 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9985/9990 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9985V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
StorageTek 9990V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Sun Storage 6180 array	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
ZFS Storage Appliance series [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. A minimum array firmware version 07.60.18.10 is required to support NDU with this array.

2. To obtain support for this array, configuration change at the OS level is needed. Specifically in modprobe.conf file mpt_disable_hotplug_remove parameter should be set to 1 instead of default value of 0. A rebuild of initrd may be required.

3. See Hardware TechNote for array limitation - <http://www.veritas.com/docs/TECH47728>

Pure Storage

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FlashArray FA-300 series [1]	A/A	Yes	Yes, Fencing	No	Fibre Channel	
FlashArray series [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

1. The latest VRTSaslapm package from <https://sort.veritas.com/asl> is required.

2. SF 5.1SP1RP4 and private fix HF18 (5.1SP1RP4HF18) are required.

SanDisk

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
ioDrive [1]	A/A	Yes	No	No	PCIe	Advanced Reporting

1. The minimum firmware version 3.0 is required.

StorageTek

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FlexLine 200/300 series	A/P	Yes	Yes	No	Fibre Channel	

Sun

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
StorEdge 3510/3511 [1]	A/A	Yes	Yes, Fencing	No	Fibre Channel	SAN Boot

1. Only direct attach topology is supported on this array.

Violin Memory

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
Violin 3000/6000 series	A/A	Yes	Yes, Fencing	No	Fibre Channel	NDU

Linux (SUSE)

Note: The SF 5.1 release supports a special SFCFS bundle for Oracle RAC called "SFCFS for Oracle RAC" for the following platforms: Red Hat, SUSE and Oracle Enterprise Linux (OEL). **I/O fencing is not supported with this special SFCFS for Oracle RAC bundle for above platforms.** The SFRAC stack is not supported on all Linux platforms.

NOTE: A Minimum product version of 5.1SP1PR4 is required to support Linux on Power solutions.

NOTE: A minimum product version of 5.1P1 is required for support.

NOTE: For details on specific PowerPath versions supported for storage Device/Family indicated "with PowerPath", see the EMC Support Matrices at <http://www.emc.com/interoperability> .

For details on Advanced Reporting support, see: <http://www.veritas.com/docs/TECH77062> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH77062> .

NOTE: The DMP tunable dmp_fast_recovery needs to be set to off with iSCSI storage array configuration.

3PAR

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
E-Class, S-Class [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. More 3PAR array systems support information is under the HP section.

DataDirect Networks

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
S2A6620	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
SFA10K-X	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

Dell

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
EqualLogic PS3000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS4000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS5000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS6000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
PowerVault MD32xx Series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	iSCSI	

1. A minimum firmware version of V4.3.6 is required to support fencing function.

Dot Hill

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
5730	A/A	Yes	Yes, Fencing	Yes	Fibre Channel	
AssuredSAN 4000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
CLARiiON AX series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series [1] [2]	A/A-A	Yes	No	No	Fibre Channel	SAN Boot
CLARiiON CX series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	SAN Boot
CLARiiON CX3 series [1] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot
CLARiiON CX3 series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot
CLARiiON CX3 series with PowerPath [1] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
CLARiiON CX3 series with PowerPath [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series [1] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series [1] [3] [5] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series with PowerPath [1] [4] [5] [6]	A/A-A	No	No	Yes, Fencing	Fibre Channel	
Symmetrix 8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX series [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX series [1] [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series [1] [3] [5] [9]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series with PowerPath [1] [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX2 series [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VPLEX [10]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. NDU operations are supported. For exact procedures for performing NDU on the array, consult with EMC support.

2. Excludes CX200, CX400, and CX600. A minimum FLARE Code version 26 or above is required to support this mode.

3. For details of iSCSI support, see the "Host Bus Adapters" section below.

4. A minimum flare code version 26 or above is required to support this mode.

5. The management tools must be used to report physically allocated space for Thin LUNs.

6. Thin Reclamation is supported with this array; the minimum array firmware FLARE 29 is required. On HP-UX platform, CLARiiON Open Initiator Type and the minimum array firmware FLARE 29 are required to support Thin Reclamation with this array. To obtain the maximum reclamation benefits, FLARE 30 is highly recommended; for more detail, see EMC Powerlink Primus Doc ID# emc233231: CLARiiON Thin LUN Space Reclamation for details. Thin Reclamation is not supported with PowerPath.

7. Reporting of physically allocated space requires firmware level of 5876.159.102 or higher.

8. Thin Reclamation is supported with this array; the minimum array firmware 5875.135.91 is required. Thin Reclamation is not supported with PowerPath.

9. Supports block mode storage only.

10. The Array Volume ID (AVID) feature requires the VRTSaslapm pkg version 5.1.100.300 or later.

Evertz

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
EMS-SC series	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4] [5]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [3] [5] [7]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [3] [5] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [2] [3] [5] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [2] [3] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS VS850	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS2000 series [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS4000 series [10] [2] [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
ETERNUS8000 series [10] [2] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
FibreCAT SX80/100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. 5.1.134.100 or later version of the VRTSaslapm package is required for ETERNUS DX500 S3 and ETERNUS DX600 S3.

2. Also supported in direct-attach configurations with SF RAC product.

3. Ensure proper array settings are configured to support this mode.

4. Thin Reclamation is supported with this array. V20L40 or later version of firmware is required to support Thin Reclamation with ETERNUS DX400 series. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

5. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the certain firmware level of ETERNUS DX S2 arrays. Please consult with the storage vendor for the firmware level.

6. 5.1SP1RP4 or later is required to support this mode.

7. The latest VRTSaslapm package is required to support Thin Reclamation. Thin Reclamation is not supported with ETERNUS DX60/DX60 S2/DX80/DX90. ETERNUS DX80 S2 and DX90 S2 are supported with Thin Reclamation with the minimum array firmware V10L10. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

8. Thin Reclamation is supported with this array; the minimum array firmware V20L40 are required. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

9. Excludes ETERNUS4000 models 80 and 100.

10. Thin Reclamation is not supported when the shared disk is protected by I/O fencing in SF-HA configuration.

Generic

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FC JBOD	A/A	Yes	Yes	No	Fibre Channel	
SCSI JBOD	A/A	Yes	Yes	No	SCSI	

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
2000 G2 series	A/A-A	Yes	No	Yes	Fibre Channel	
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
EVA4000/6000/8000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4100/6100/8100	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
EVA4400/6400/8400 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
MSA 2040 SAN	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
MSA2000fc series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
MSA2012sa	A/A-A	Yes	Yes	No	SAS	
P2000 G3 MSA series [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
P6000 EVA series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
P9500	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
XP10000/12000	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
XP20000/24000 [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 3PAR F/T-Class maximum firmware version is 3.1.3; 3PAR StoreServ 7000/10000 minimum firmware version 3.1.2 and StoreServ 8000/20000 minimum firmware version 3.2.2 are required.

2. StoreServ 8000/20000 minimum firmware version 3.2.2 MU1 is required for Thin Reclamation support.

3. For I/O Fencing support, array FW TS250 R023 minimally required.

4. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

Hitachi

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
AMS/WMS series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
HUS 100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
HUS VM	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Lightning 9900V series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
SMS/AMS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Thunder 9500V series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
TMS1000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
USP/NSC series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
USPV/USPVM [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

2. Thin Reclamation is supported with this array; the minimum array firmware 70-02-02-00/00 is required.

Huawei

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
18000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
18000 series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000T series [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000T series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VIS series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. The 18000 series A/A only includes 18500, 18800 and 18800F.

2. The proper array settings is required to support this mode.

3. Only the OceanStor V3 models support A/A mode.

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
DS3950	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
DS5020	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting
Storwize series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
System Storage DS3000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, SAS	
System Storage DS3500 series	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	
System Storage DS5000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS6000 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
System Storage DS8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
System Storage N series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
System Storage N series [2] [3] [4]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
System Storage XIV series [5] [6]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
TotalStorage DS4000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Thin Reclamation is supported with this array; the minimum array firmware 6.2 is required. Additional steps required to reclaim the storage space, see <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=TSW03164USEN> for detail.

2. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

3. Only SSI CF mode is supported with this mode.

4. Starting with 5.1SP1 release, the A/P mode is no longer supported.

5. Excludes A9000 & A9000R models.

6. Thin Reclamation is supported with this array; the minimum array firmware 10.2.2 are required.

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FAS2000/FAS900/FAS200 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS2000/FAS900/FAS200 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS3000/V3000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS3000/V3000 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS6000/V6000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS6000/V6000 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS8000/FAS9000 Series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

1. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

2. Only SSI CF mode is supported with this mode.

3. Starting with 5.1SP1 release, the A/P mode is no longer supported.

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
Storage 6580/6780 series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
StorageTek 2500 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
StorageTek 6140 array	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9900 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9985/9990 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
StorageTek 9985V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
StorageTek 9990V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Sun Storage 6180 array	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
ZFS Storage Appliance series [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU

1. A minimum array firmware version 07.60.18.10 is required to support NDU with this array.

2. In a CVM/CFS configuration with fencing enabled environment, the time for a node rejoins a cluster with active I/Os are running on the cluster is proportional to the number of active-unoptimized paths of shared disk groups; an experiment shows it can take up to 40 minutes for a node to rejoin a cluster in a 260 active-unoptimized paths of shared disk groups configuration.

3. See Hardware TechNote for array limitation - <http://www.veritas.com/docs/TECH47728>

SanDisk

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
ioDrive [1]	A/A	Yes	No	No	PCIe	Advanced Reporting

1. The minimum firmware version 3.0 is required.

StorageTek

Device/Family	Mode	SF	SF HA	SFCFS/SFCFS Oracle RAC/SF Oracle RAC	Interface	Advanced Features
FlexLine 200/300 series	A/P	Yes	Yes	No	Fibre Channel	

Solaris

NOTE: For details on specific PowerPath versions supported for storage Device/Family indicated "with PowerPath", see the EMC Support Matrices at <http://www.emc.com/interoperability> .

For details on Advanced Reporting support, see: <http://www.veritas.com/docs/TECH77062> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH77062> .

NOTE: Direct-Attach (no switch) Configurations:

• All array types are supported in direct-attach configurations with SFHA products.

• A/A type arrays are supported in direct-attach configurations with the SF Oracle RAC product.

• Inquire with the array manufacturer for specific limitations of use.

NOTE: A minimum product version of 5.1P1 is required for support.

NOTE: For information on Storage Foundation DMP co-existence with OS native multi-pathing driver MPxIO on Solaris, see TechNote <http://www.veritas.com/docs/TECH204060> .

3PAR

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
E-Class, S-Class [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. More 3PAR array systems support information is under the HP section.

Dell

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
EqualLogic PS3000 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS4000 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS5000 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS6000 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
SC Series [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. To use with hardware iSCSI initiators, the TGT_KeepAliveTimeout iSCSI HBA tunable needs to be set to 180 seconds.

2. To use with software iSCSI initiators, minimum OS version of Solaris 10 Update 8 and host side iSCSI link aggregation are required.

3. Support Storage Center OS (SCOS) software version 6.2.2 and higher.

Dot Hill

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
2730/2730T	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
5730	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
SANnet II FC	A/A	Yes	Yes	No	Fibre Channel	

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
CLARiiON AX series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	NDU, SAN Boot
CLARiiON CX series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	SAN Boot
CLARiiON CX series with PowerPath [1] [2] [3]	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	
CLARiiON CX series with PowerPath [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX3 series [1] [3] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, NDU, SAN Boot
CLARiiON CX3 series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot
CLARiiON CX3 series with PowerPath [1] [3] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX3 series with PowerPath [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series [1] [3] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
CLARiiON CX4 series [1] [3] [5] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series with PowerPath [1] [3] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series with PowerPath [1] [3] [5] [6]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix 8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix 8000 series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix DMX series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX series [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [7] [8]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VMAX3/VMAX All Flash Family series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
VNX series [1] [3] [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
VNX series [1] [3] [5] [9]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series with PowerPath [1] [3] [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX series with PowerPath [1] [3] [5] [9]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX2 series [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [5] [9]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VPLEX [10]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. NDU operations are supported. For exact procedures for performing NDU on the array, consult with EMC support.

2. Excludes CX200, CX400, and CX600. A minimum FLARE Code version 26 or above is required to support this mode.

3. SUN patch 119090-30 or above is required for iSCSI support on 5.1.

4. A minimum flare code version 26 or above is required to support this mode.

5. The management tools must be used to report physically allocated space for Thin LUNs.

6. Thin Reclamation is supported with this array; the minimum array firmware FLARE 29 is required. On HP-UX platform, CLARiiON Open Initiator Type and the minimum array firmware FLARE 29 are required to support Thin Reclamation with this array. To obtain the maximum reclamation benefits, FLARE 30 is highly

recommended; for more detail, see EMC Powerlink Primus Doc ID# emc233231: CLARiiON Thin LUN Space Reclamation for details. Thin Reclamation is not supported with PowerPath.

7. Reporting of physically allocated space requires firmware level of 5876.159.102 or higher.

8. Thin Reclamation is supported with this array; the minimum array firmware 5875.135.91 is required. Thin Reclamation is not supported with PowerPath.

9. Supports block mode storage only.

10. The Array Volume ID (AVID) feature requires the VRTSaslapm pkg version 5.1.100.300 or later.

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [6]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [2] [4] [5] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [2] [4] [7]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [2] [4] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
ETERNUS VS850	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
ETERNUS4000 series [7] [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS6000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ETERNUS8000 series [7] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
FibreCAT SX80/100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. 5.1.104.100 or later version of the VRTSaslapm package is required for ETERNUS DX500 S3 and ETERNUS DX600 S3.

2. Ensure proper array settings are configured to support this mode.

3. Thin Reclamation is supported with this array. V20L40 or later version of firmware is required to support Thin Reclamation with ETERNUS DX400 series. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

4. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the certain firmware level of ETERNUS DX S2 arrays. Please consult with the storage vendor for the firmware level.

5. 5.1SP1RP4 or later is required to support this mode.

6. The latest VRTSaslapm package is required to support Thin Reclamation. Thin Reclamation is not supported with ETERNUS DX60/DX60 S2/DX80/DX90. ETERNUS DX80 S2 and DX90 S2 are supported with Thin Reclamation with the minimum array firmware V10L10. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

7. Thin Reclamation is supported with this array; the minimum array firmware V20L40 are required. There are known issues with Reclamation, see <http://www.veritas.com/docs/TECH164853> for details.

8. Excludes ETERNUS4000 models 80 and 100.

9. Thin Reclamation is not supported when the shared disk is protected by I/O fencing in SF-HA configuration.

Generic

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FC JBOD	A/A	Yes	Yes	No	Fibre Channel	
SAS JBOD	A/A	Yes	Yes	No	SAS	
SCSI JBOD	A/A	Yes	Yes	No	SCSI	

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
EVA4000/6000/8000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
EVA4100/6100/8100	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4400/6400/8400 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
P6000 EVA series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
P9500	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
XP10000/12000	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
XP128/1024	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
XP20000/24000 [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 3PAR F/T-Class maximum firmware version is 3.1.3; 3PAR StoreServ 7000/10000 minimum firmware version 3.1.2 and StoreServ 8000/20000 minimum firmware version 3.2.2 are required.

2. StoreServ 8000/20000 minimum firmware version 3.2.2 MU1 is required for Thin Reclamation support.

3. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

Hitachi

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
AMS/WMS series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
HUS 100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
HUS VM	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Lightning 9900V series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
SMS/AMS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Thunder 9500V series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
TMS1000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
USP/NSC series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
USPV/USPVM [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP G series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP Gx00/Fx00 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

1. Also supported in direct-attach configurations with both SF HA and SF RAC products.

2. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

3. Thin Reclamation is supported with this array; the minimum array firmware 70-02-02-00/00 is required.

Huawei

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
18000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
S5000T series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VIS series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. The 18000 series A/A only includes 18500, 18800 and 18800F.

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
DS3950	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
DS5020	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
ESS 750/800 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
Storwize series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
System Storage DS3500 series	A/P-F	Yes	Yes, Fencing	No	Fibre Channel, SAS	
System Storage DS5000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS6000 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
System Storage N series [2] [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
System Storage N series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
System Storage N series [2] [4] [5]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
System Storage XIV series [6] [7]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
TotalStorage DS4000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Thin Reclamation is supported with this array; the minimum array firmware 6.2 is required. Additional steps required to reclaim the storage space, see <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=TSW03164USEN> for detail.

2. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

3. iSCSI support requires SUN patch 119090-30 or later.

4. Only SSI CF mode is supported with this mode.

5. Starting with 5.1SP1 release, the A/P mode is no longer supported.

6. Excludes A9000 & A9000R models.

7. Thin Reclamation is supported with this array; the minimum array firmware 10.2.2 are required.

Imation

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Nexsan E-Series Systems	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	

Kaminario

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
K2-D	A/A	Yes	Yes, Fencing	No	Fibre Channel	
K2-F	A/A	Yes	Yes, Fencing	No	Fibre Channel	
K2-H	A/A	Yes	Yes, Fencing	No	Fibre Channel	

NEC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
iStorage D1/D3 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
iStorage D8 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
iStorage M series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
iStorage S1000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
iStorage S2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
iStorage S4000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix DMX-4	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX-4 with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting
Symmetrix VMAX with PowerPath	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. Device scans on I/O fenced LUNs can take a long time to complete.

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FAS2000/FAS900/FAS200 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
FAS2000/FAS900/FAS200 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS2000/FAS900/FAS200 series [1] [3] [4]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS3000/V3000 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
FAS3000/V3000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS3000/V3000 series [1] [3] [4]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS6000/V6000 series [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
FAS6000/V6000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS6000/V6000 series [1] [3] [4]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FAS8000/FAS9000 Series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

1. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

2. iSCSI support requires SUN patch 119090-30 or later.

3. Only SSI CF mode is supported with this mode.

4. Starting with 5.1SP1 release, the A/P mode is no longer supported.

Nexsan

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Beast Systems	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	
Boy Systems	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Axiom series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Storage 6580/6780 series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
StorageTek 2500 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
StorageTek 6140 array	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9900 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9985/9990 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9985V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
StorageTek 9990V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Sun Storage 6180 array	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
ZFS Storage Appliance series [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	NDU

1. A minimum array firmware version 07.60.18.10 is required to support NDU with this array.
2. A minimum product version of VM 5.1RP1 + HF3 is required to support the clustered arrays, contact support to obtain HF3.
3. See Hardware TechNote for array limitation - <http://www.veritas.com/docs/TECH47728>

Pure Storage

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FlashArray FA-300 series [1]	A/A	Yes	Yes, Fencing	No	Fibre Channel	Advanced Reporting, Thin Reclamation
FlashArray series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

1. The latest VRTSaslapm package from <https://sort.veritas.com/asl> is required.

StorageTek

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FlexLine 200/300 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

Sun

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
StorageTek 3310	A/A	Yes	Yes, Fencing	Yes, Fencing	SCSI	
StorageTek 3320	A/A	Yes	Yes, Fencing	Yes, Fencing	SCSI	
StorageTek 6130	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 6540	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	
StorEdge 3510/3511	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

Texas Memory Systems

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
RamSan-620	A/A	Yes	Yes, Fencing	No	Fibre Channel	
RamSan-630	A/A	Yes	Yes, Fencing	No	Fibre Channel	

Violin Memory

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Violin 3000/6000 series	A/A	Yes	Yes, Fencing	No	Fibre Channel	SAN Boot

Solaris x64

NOTE: For details on specific PowerPath versions supported for storage Device/Family indicated "with PowerPath", see the EMC Support Matrices at <http://www.emc.com/interoperability> .

For details on Advanced Reporting support, see: <http://www.veritas.com/docs/TECH77062> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH77062> .

NOTE: Direct-Attach (no switch) Configurations:

• All array types are supported in direct-attach configurations with SFHA products.

• A/A type arrays are supported in direct-attach configurations with the SF Oracle RAC product.

• Inquire with the array manufacturer for specific limitations of use.

NOTE: For SAN Boot support, there is a known issue listed in CF 6928093. Symantec recommends that you install the OS on the system internal disk, and then disable the MPxIO before cloning the OS to the SAN disk to avoid any issues.

NOTE: A minimum product version of 5.1P1 is required for support.

NOTE: For information on Storage Foundation DMP co-existence with OS native multi-pathing driver MPxIO on Solaris, see TechNote <http://www.veritas.com/docs/TECH204060> .

3PAR

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
E-Class, S-Class [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. More 3PAR array systems support information is under the HP section.

Dell

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
EqualLogic PS3000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS4000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS5000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	
EqualLogic PS6000 series [1]	A/A	Yes	Yes, Fencing	Yes, Fencing	iSCSI	

1. To use with software iSCSI initiators, minimum OS version of Solaris 10 Update 8 and host side iSCSI link aggregation are required.

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
CLARiiON AX series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX series [1] [2] [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	SAN Boot
CLARiiON CX series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	SAN Boot
CLARiiON CX series with PowerPath [1] [2] [3] [4]	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	
CLARiiON CX series with PowerPath [1] [3] [4]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX3 series [1] [3] [5]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot
CLARiiON CX3 series [1] [3]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, NDU, SAN Boot
CLARiiON CX3 series with PowerPath [1] [3] [4] [5]	A/A-A	Yes	Yes, Fencing	No	Fibre Channel	
CLARiiON CX3 series with PowerPath [1] [3] [4]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series [1] [3] [5] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series [1] [3] [6] [7]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
CLARiiON CX4 series with PowerPath [1] [3] [4] [5] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
CLARiiON CX4 series with PowerPath [1] [3] [4] [6] [7]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

EMC

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Symmetrix 8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix 8000 series with PowerPath [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix DMX series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX series with PowerPath [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Symmetrix VMAX series [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [4] [8] [9]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX series [1] [10] [3] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series [1] [10] [3] [6] [7]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series with PowerPath [1] [10] [3] [4] [6] [7]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX series with PowerPath [1] [10] [3] [4] [6] [7]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VNX2 series [10] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [10] [6]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
VPLEX [11]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. NDU operations are supported. For exact procedures for performing NDU on the array, consult with EMC support.

2. Excludes CX200, CX400, and CX600. A minimum FLARE Code version 26 or above is required to support this mode.

3. SUN patch 119091-31 or above is required for iSCSI support on 5.1.

4. A minimum of Storage Foundation 5.1P1 + HF and PowerPath 5.2.2 + HF2 are required to support this mode.

5. A minimum flare code version 26 or above is required to support this mode.

6. The management tools must be used to report physically allocated space for Thin LUNs.

7. Thin Reclamation is supported with this array; the minimum array firmware FLARE 29 is required. On HP-UX platform, CLARiiON Open Initiator Type and the minimum array firmware FLARE 29 are required to support Thin Reclamation with this array. To obtain the maximum reclamation benefits, FLARE 30 is highly recommended; for more detail, see EMC Powerlink Primus Doc ID# emc233231: CLARiiON Thin LUN Space Reclamation for details. Thin Reclamation is not supported with PowerPath.

8. Reporting of physically allocated space requires firmware level of 5876.159.102 or higher.

9. Thin Reclamation is supported with this array; the minimum array firmware 5875.135.91 is required. Thin Reclamation is not supported with PowerPath.

10. Supports block mode storage only.

11. The Array Volume ID (AVID) feature requires the VRTSaslapm pkg version 5.1.100.300 or later.

Fujitsu

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
ETERNUS VS850	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot

Generic

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FC JBOD	A/A	Yes	Yes	No	Fibre Channel	
SCSI JBOD	A/A	Yes	Yes	No	SCSI	

Hewlett Packard Enterprise

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
EVA4000/6000/8000	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4100/6100/8100	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
EVA4400/6400/8400 series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
P2000 G3 MSA series [3]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, SAS	
P6000 EVA series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
P9500	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
XP10000/12000	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
XP20000/24000 [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. 3PAR F/T-Class maximum firmware version is 3.1.3; 3PAR StoreServ 7000/10000 minimum firmware version 3.1.2 and StoreServ 8000/20000 minimum firmware version 3.2.2 are required.

2. StoreServ 8000/20000 minimum firmware version 3.2.2 MU1 is required for Thin Reclamation support.

3. For I/O Fencing support, array FW TS250 R023 minimally required.

4. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

Hitachi

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
AMS/WMS series [1] [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot
HUS 100 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
HUS VM	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation
Lightning 9900V series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
SMS/AMS2000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Thunder 9500V series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot
TMS1000 [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
USP/NSC series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
USPV/USPVM [3]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP [4]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation

1. Direct attach topology is supported for this array on SF-HA without IO Fencing.

2. There are issues concerning support of this array. For specific information, see <http://www.veritas.com/docs/TECH50452>

3. Thin Reclamation is supported with this array; the minimum array firmware 60.06.05-00 is required.

4. Thin Reclamation is supported with this array; the minimum array firmware 70-02-02-00/00 is required.

IBM

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
ESS 750/800 series	A/A	Yes	Yes, Fencing	No	Fibre Channel	SAN Boot
Storwize series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
System Storage DS3000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	
System Storage DS5000 series	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS6000 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
System Storage DS8000 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
System Storage N series [2]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
System Storage N series [2] [3] [4]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
System Storage XIV series [5]	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
TotalStorage DS4000 series	A/P-F	Yes	Yes, Fencing	No	Fibre Channel	

1. Thin Reclamation is supported with this array; the minimum array firmware 6.2 is required. Additional steps required to reclaim the storage space, see <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=TSW03164USEN> for detail.

2. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

3. Only SSI CF mode is supported with this mode.

4. Starting with 5.1SP1 release, the A/P mode is no longer supported.

5. Thin Reclamation is supported with this array; the minimum array firmware 10.2.2 are required.

NetApp

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FAS2000/FAS900/FAS200 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS2000/FAS900/FAS200 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS3000/V3000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS3000/V3000 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS6000/V6000 series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS6000/V6000 series [1] [2] [3]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, Thin Reclamation
FAS8000/FAS9000 Series [1]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

1. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 7-Mode, or ONTAP 8.1.1 7-Mode is required to support this array; including Thin Reclamation. ONTAP 8.x Cluster-Mode is not supported.

2. Only SSI CF mode is supported with this mode.

3. Starting with 5.1SP1 release, the A/P mode is no longer supported.

Oracle

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Axiom series	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
Storage 6580/6780 series [1]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
StorageTek 2500 series [2]	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel, iSCSI, SAS	
StorageTek 6140 array [2]	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 9900 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9985/9990 series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot
StorageTek 9985V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
StorageTek 9990V system	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Sun Storage 6180 array	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	NDU
ZFS Storage Appliance series [3] [4]	A/A-A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

1. A minimum array firmware version 07.60.18.10 is required to support NDU with this array.
2. Direct attach topology is supported for this array on SF-HA without IO Fencing.
3. A minimum product version of VM 5.1RP1 + HF3 is required to support the clustered arrays, contact support to obtain HF3.
4. See Hardware TechNote for array limitation - <http://www.veritas.com/docs/TECH47728>

Pure Storage

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FlashArray series	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

StorageTek

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
FlexLine 200/300 series	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

Sun

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
StorageTek 6130	A/P	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorageTek 6540	A/P-F	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	
StorEdge 3510/3511	A/A	Yes	Yes, Fencing	Yes, Fencing	Fibre Channel	

Violin Memory

Device/Family	Mode	SF	SF HA	SFCFS/SF Oracle RAC	Interface	Advanced Features
Violin 3000/6000 series	A/A	Yes	Yes, Fencing	No	Fibre Channel	NDU

Device Family Membership

3PAR

Device Family	Members
E-Class, S-Class	E200 Storage System, S200 Storage System, S400 Storage System, S800 Storage System

Dell

Device Family	Members
EqualLogic PS3000 series	EqualLogic PS3000E, EqualLogic PS3000X, EqualLogic PS3000XV
EqualLogic PS4000 series	EqualLogic PS4000E, EqualLogic PS4000X, EqualLogic PS4000XV, EqualLogic PS4100E, EqualLogic PS4100X, EqualLogic PS4100XV, EqualLogic PS4100XV3.5"
EqualLogic PS5000 series	EqualLogic PS5000E, EqualLogic PS5000X, EqualLogic PS5000XV, EqualLogic PS5500E
EqualLogic PS6000 series	EqualLogic PS6000E, EqualLogic PS6000S, EqualLogic PS6000X, EqualLogic PS6000XV, EqualLogic PS6000XVS, EqualLogic PS6010E, EqualLogic PS6010S, EqualLogic PS6010X, EqualLogic PS6010XV, EqualLogic PS6010XVS, EqualLogic PS6100E, EqualLogic PS6100X, EqualLogic PS6100XV, EqualLogic PS6100XV3.5", EqualLogic PS6500E, EqualLogic PS6500X, EqualLogic PS6500XV, EqualLogic PS6510E, EqualLogic PS6510X, EqualLogic PX6100S, EqualLogic PX6100XS
PowerVault MD32xx Series	PowerVault MD3200, PowerVault MD3200i, PowerVault MD3220, PowerVault MD3220i
SC Series	SC4000, SC4020, SC8000, SC9000, SCv2000

EMC

Device Family	Members
CLARiiON AX series	Celerra NX4, CLARiiON AX100, CLARiiON AX4
CLARiiON CX series	CLARiiON CX300, CLARiiON CX400, CLARiiON CX500, CLARiiON CX600, CLARiiON CX700
CLARiiON CX3 series	CLARiiON CX3 Model 10, CLARiiON CX3 Model 20, CLARiiON CX3 Model 40, CLARiiON CX3 Model 80
CLARiiON CX4 series	CLARiiON CX4 Model 120, CLARiiON CX4 Model 240, CLARiiON CX4 Model 480, CLARiiON CX4 Model 960
Symmetrix 8000 series	Symmetrix 8230, Symmetrix 8430, Symmetrix 8530, Symmetrix 8830
Symmetrix DMX series	Symmetrix DMX 1000, Symmetrix DMX 2000, Symmetrix DMX 3000, Symmetrix DMX 800, Symmetrix DMX-3, Symmetrix DMX-4
Symmetrix VMAX series	Symmetrix VMAX, Symmetrix VMAXe
Unity series	Unity 300, Unity 300F, Unity 400, Unity 400F, Unity 500, Unity 500F, Unity 600, Unity 600F, Unity VSA
VMAX3/VMAX All Flash Family series	VMAX 450F, VMAX 450FX, VMAX 850F, VMAX 850FX, VMAX3
VNX series	VNX 5100, VNX 5300, VNX 5500, VNX 5700, VNX 7500
VNX2 series	VNX5200, VNX5400, VNX5600, VNX5800, VNX7600, VNX8000

Evertz

Device Family	Members
EMS-SC series	EMS-SC-20R24, EMS-SC-30R16

Fujitsu

Device Family	Members
ETERNUS DX400/DX500/DX600 series	ETERNUS AF650, ETERNUS AF650 S2, ETERNUS DX410, ETERNUS DX410 S2, ETERNUS DX440, ETERNUS DX440 S2, ETERNUS DX500 S3, ETERNUS DX500 S4, ETERNUS DX600 S3, ETERNUS DX600 S4
ETERNUS DX60/DX80/DX90/DX100/DX200 series	ETERNUS AF250, ETERNUS AF250 S2, ETERNUS DX100 S3, ETERNUS DX100 S4, ETERNUS DX200 S3, ETERNUS DX200 S4, ETERNUS DX200F, ETERNUS DX60, ETERNUS DX60 S2, ETERNUS DX60 S3, ETERNUS DX60 S4, ETERNUS DX80, ETERNUS DX80 S2, ETERNUS DX90, ETERNUS DX90 S2
ETERNUS DX8000 series	ETERNUS DX8100, ETERNUS DX8100 S2, ETERNUS DX8400, ETERNUS DX8700, ETERNUS DX8700 S2
ETERNUS2000 series	ETERNUS2000 Model 100, ETERNUS2000 Model 200, ETERNUS2000 Model 50
ETERNUS4000 series	ETERNUS4000 Model 100, ETERNUS4000 Model 300, ETERNUS4000 Model 400, ETERNUS4000 Model 500, ETERNUS4000 Model 600, ETERNUS4000 Model 80
ETERNUS6000 series	ETERNUS6000 Model 1000, ETERNUS6000 Model 1100, ETERNUS6000 Model 400, ETERNUS6000 Model 500, ETERNUS6000 Model 600, ETERNUS6000 Model 700, ETERNUS6000 Model 800, ETERNUS6000 Model 900
ETERNUS8000 series	ETERNUS8000 Model 1100, ETERNUS8000 Model 1200, ETERNUS8000 Model 2100, ETERNUS8000 Model 2200, ETERNUS8000 Model 700, ETERNUS8000 Model 800, ETERNUS8000 Model 900
FibreCAT SX80/100 series	FibreCAT SX100, FibreCAT SX80

Hewlett Packard Enterprise

Device Family	Members
2000 G2 series	MSA2312fc, MSA2312i, MSA2312sa, MSA2324fc, MSA2324i, MSA2324sa
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage	3PAR F200 Storage, 3PAR F400 Storage, 3PAR StoreServ 10400 Storage, 3PAR StoreServ 10800 Storage, 3PAR StoreServ 20450 Storage, 3PAR StoreServ 20800 Storage, 3PAR StoreServ 20850 Storage, 3PAR StoreServ 7200 Storage, 3PAR StoreServ 7400 Storage, 3PAR StoreServ 7450 Storage, 3PAR StoreServ 8200 Storage, 3PAR StoreServ 8400 Storage, 3PAR StoreServ 8440 Storage, 3PAR StoreServ 8450 Storage, 3PAR T400 Storage, 3PAR T800 Storage
EVA4000/6000/8000	EVA4000, EVA6000, EVA8000
EVA4100/6100/8100	EVA4100, EVA6100, EVA8100
EVA4400/6400/8400 series	EVA4400, EVA6400, EVA8400
MSA2000fc series	MSA2012fc, MSA2212fc
P2000 G3 MSA series	P2000 G3 FC, P2000 G3 FC/iSCSI, P2000 G3 iSCSI, P2000 G3 SAS

Hewlett Packard Enterprise

Device Family	Members
P6000 EVA series	P6300, P6350, P6500, P6550
XP10000/12000	XP10000, XP12000
XP128/1024	XP1024, XP128
XP20000/24000	XP20000, XP24000

Hitachi

Device Family	Members
AMS/WMS series	AMS1000, AMS200, AMS500, WMS100
HUS 100 series	HUS110, HUS130, HUS150
Lightning 9900V series	9970V, 9980
SMS/AMS2000 series	AMS2100, AMS2300, AMS2500, SMS100
Thunder 9500V series	9500 (DF600), 9500V, 9570V, 9580V, AMS1000, AMS200, AMS500, WMS100
USP/NSC series	NSC55, USP100, USP1100, USP600
USPV/USPVM	USP V, USP VM
VSP G series	VSP F1500, VSP G1000, VSP G1500
VSP Gx00/Fx00 series	VSP F400, VSP F600, VSP F800, VSP G200, VSP G400, VSP G600, VSP G800

Huawei

Device Family	Members
18000 series	18500, 18800, 18800F, HVS85T, HVS88T
S5000 series	S2100, S2300, S2300E, S2600, S5100, S5300, S5500, S5600, S6800E, V1500, V1800
S5000T series	Dorado2100, Dorado2100G2, Dorado5100, OceanStor 18500 V3, OceanStor 18800 V3, OceanStor 2200 V3, OceanStor 2600 V3, OceanStor 5300 V3, OceanStor 5500 V3, OceanStor 5600 V3, OceanStor 5800 V3, OceanStor 6800 V3, OceanStor 6900 V3, OceanStor Dorado5000 V3, OceanStor Dorado6000 V3, S2200T, S2600T, S2600T V2, S3900-M100, S3900-M200, S3900-M300, S5500T, S5500T V2, S5600T, S5600T V2, S5800T, S5800T V2, S5900-M100, S5900-M200, S6800T, S6800T V2, S6900-M100
VIS series	S8000, VIS6000, VIS6000T

IBM

Device Family	Members
ESS 750/800 series	ESS 2105-800
Storwize series	FlashSystem V9000, SANVC(2145), Storwize V3500, Storwize V3700, Storwize V5000, Storwize V5010, Storwize V5020, Storwize V5030, Storwize V7000, Storwize V7000 Unified
System Storage DS3000 series	DS3200, DS3300, DS3400
System Storage DS3500 series	DCS3700, DS3512, DS3524
System Storage DS5000 series	DS5100, DS5300
System Storage DS6000 series	DS6000 (1750-511), DS6800
System Storage DS8000 series	DS8000, DS8100, DS8300, DS8700, DS8800, DS8870
System Storage N series	N3150, N3220, N3240, N3300, N3400, N3600, N3700, N5200, N5300, N5500, N5600, N6040, N6060, N6070, N6210, N6220, N6240, N6250, N6270, N7550T, N7600, N7700, N7750T, N7800, N7900, N7950T
System Storage XIV series	FlashSystem A9000, FlashSystem A9000R, XIV Storage System, XIV Storage System Gen3
TotalStorage DS4000 series	DS4100 (FAStT100), DS4200, DS4300 (FAStT600), DS4400 (FAStT700), DS4500 (FAStT900), DS4700, DS4800

Imation

Device Family	Members
Nexsan E-Series Systems	Nexsan E18, Nexsan E48, Nexsan E60

NEC

Device Family	Members
iStorage D1/D3 series	iStorage D1-10, iStorage D1-30, iStorage D1-30i, iStorage D3-10, iStorage D3-10i, iStorage D3-30, iStorage D3-30i, iStorage D4-30, iStorage D4-30i
iStorage D8 series	iStorage D8-10, iStorage D8-20, iStorage D8-30
iStorage M series	iStorage M100, iStorage M10e, iStorage M110, iStorage M11e, iStorage M300, iStorage M310, iStorage M310F, iStorage M500, iStorage M510, iStorage M700, iStorage M710, iStorage M710F
iStorage S1000 series	iStorage S1100, iStorage S1300, iStorage S1400, iStorage S1500
iStorage S2000 series	iStorage S2100, iStorage S2300, iStorage S2400, iStorage S2500, iStorage S2800, iStorage S2900
iStorage S4000 series	iStorage S4100, iStorage S4300, iStorage S4900

NetApp

Device Family	Members
FAS2000/FAS900/FAS200 series	FAS2020, FAS2040, FAS2050, FAS2220, FAS2240-2, FAS2240-4, FAS250, FAS2520, FAS2552, FAS2554, FAS2620, FAS2650, FAS270, FAS920, FAS940, FAS960, FAS980
FAS3000/V3000 series	FAS3020, FAS3040, FAS3050, FAS3070, FAS3140, FAS3160, FAS3170, FAS3210, FAS3220, FAS3240, FAS3250, FAS3270, V3020, V3040, V3050, V3070, V3140, V3160, V3170, V3210, V3220, V3240, V3250, V3270
FAS6000/V6000 series	FAS6030, FAS6040, FAS6070, FAS6080, FAS6210, FAS6220, FAS6240, FAS6250, FAS6280, FAS6290, V6030, V6040, V6070, V6080, V6210, V6220, V6240, V6250, V6280, V6290
FAS8000/FAS9000 Series	FAS8020, FAS8040, FAS8060, FAS8080EX, FAS8200, FAS9000

Nexsan

Device Family	Members
Beast Systems	SASBeast, SATABeast, SATABeast2
Boy Systems	SASBoy, SATABoy2

Oracle

Device Family	Members
Axiom series	Axiom 300, Axiom 500, Axiom 600
Storage 6580/6780 series	Sun Storage 6580 array, Sun Storage 6780 array
StorageTek 2500 series	StorageTek 2510 array, StorageTek 2530 array, StorageTek 2540 array, Sun Storage 2530-M2 array, Sun Storage 2540-M2 array
StorageTek 9900 series	StorageTek 9970 array, StorageTek 9980 array
StorageTek 9985/9990 series	StorageTek 9985 system, StorageTek 9990 system
ZFS Storage Appliance series	Oracle ZFS Storage 7110, Oracle ZFS Storage 7120, Oracle ZFS Storage 7210, Oracle ZFS Storage 7310, Oracle ZFS Storage 7320, Oracle ZFS Storage 7410, Oracle ZFS Storage 7420, ZFS Storage ZS3-2, ZFS Storage ZS3-4, ZFS Storage ZS4-4

Pure Storage

Device Family	Members
FlashArray FA-300 series	FA-300
FlashArray series	FA-400, FA-405, FA-420, FA-450, FlashArray//m10, FlashArray//m20, FlashArray//m50, FlashArray//m70

StorageTek

Device Family	Members
FlexLine 200/300 series	FlexLine FLX280, FlexLine FLX380

Sun

Device Family	Members
StorEdge 3510/3511	StorageTek 3510, StorageTek 3511

Violin Memory

Device Family	Members
Violin 3000/6000 series	3120, 3202, 3205, 3210, 3220, 6212, 6232, 6264, 6606, 6616

Generic Non-RAID SSD/FLASH Storage (PCI-E Cards)

All solid-state drives (SSDs) and flash-based PCI-E storage shown here were tested with drivers and firmware supported by the OS and the storage manufacturers. Check with these manufacturers for:

- Minimum driver and firmware levels
- Specific driver and firmware support
- Support for the stated Symantec products
- Other functional options

NOTE: Mode page 83 SCSI inquiry and native OS SCSI driver support are required. For more details, check with the hardware manufacturer. Symantec recommends adding SCSI3 conformant disk support.

Device Support

Manufacturer	Device/family
Oracle	Sun Flash Accelerator F20

NOTE: More vendors SSD/Flash Devices (PCIe Cards) are supported, please refer to the 'Disk Arrays and Storage Devices' section for details.

Host Bus Adapters

The information presented here does not refer to specific host bus adapter (HBA) models or architectures. Unless stated otherwise, Storage Foundation supports all the HBAs that are supported by the OS and storage array manufacturers listed here. Storage Foundation includes support for Fibre Channel over Ethernet (FCoE) Converged Network Adapters (CNAs), but not iSCSI HBAs. For the required HBA BIOS/firmware and driver versions, see the operating system and storage array manufacturers' hardware compatibility support matrices.

For HP-UX Fibre Channel and FlexFabric FCoE Host Bus Adapter Support Matrix information, see

<http://h20565.www2.hpe.com/hpsc/doc/public/display?sp4ts.oid=5039733&docId=emr_na-c03056605&docLocale=en_US>

The information presented here is only to add exceptions for HBA models that have issues and are therefore not supported by the Storage Foundation products listed.

For supported iSCSI initiator versions, see the table below. For details on configuring the iSCSI software initiator, see <http://www.veritas.com/docs/TECH62838> .

iSCSI Support

OS	iSCSI software initiator version
RHEL 5	6.2.0.868 or above
SLES 10/11 [1]	2.0.707 or above

1. For SLES 11SP1, the node.session.timeo.replacement_timeout tunable needs to be set to 40 or above.

For supported SAN Boot boot code versions, see the table below.

SAN Boot Support

OS	HBA model	Boot code version
Solaris SPARC/X64	QLogic QLE246x/QLA246x	FCode v1.12 or above
Solaris SPARC/X64	SUN SG-XPCIxFC-QF4/SG-XPCIExFC-QF4	FCode v1.12 or above

Generic RAID SCSI/SAS/e-SATA Controller (Internal Card With External Storage Attached)

All RAID SCSI/SAS/e-SATA Controllers shown here were tested with drivers and firmware supported by the OS and the storage vendors. Check with these vendors for:

- Minimum driver and firmware levels
- Specific driver and firmware support
- Support for the stated Symantec products
- Other functional options

NOTE: Mode page 83 SCSI inquiry and native OS SCSI driver support are required. For more details, check with the hardware manufacturer. Symantec recommends adding SCSI3 conformant disk support.

Switches

The information presented here does not refer to specific switch models or architectures.

Unless stated otherwise, Storage Foundation supports all Fibre Channel switches that are supported by the OS and storage array manufacturers listed here. For the required BIOS/firmware and driver versions for the switches, see the operating system and storage array manufacturers' hardware compatibility support matrices.

The information presented here is only to add exceptions for switch models that have issues and are therefore not supported by the Storage Foundation products listed.