Veritas Access 7.3 and 7.3.1 Hardware Compatibility List

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Introduction

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This Hardware Compatibility List (HCL) contains support information for hardware products tested with Veritas Access 7.3 and 7.3.1

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 Veritas support for disk storage arrays qualified for use with the Veritas Access 7.3 and 7.3.1. There are no implied additions or exceptions to the tested or compatible devices on the provided lists.

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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 Veritas 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.

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/TECH231389> .

Product Acronyms

Acronym	Definition
Access	Veritas Access

Contents

Servers

Unified Computing and Blade Platforms

Disk Arrays and Storage Devices

Host Bus Adapters

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

Switches

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Servers

Servers are listed on the basis of their processor architecture.

Support Legend

Symbol	Meaning
Yes	Supported
No	Not supported

Linux - Red Hat

Processor architecture	Access
AMD Opteron architecture [1]	Yes
Intel EM64T architecture [1]	Yes

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

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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 Veritas 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

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Disk Arrays and Storage Devices

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 Veritas products

• Other functional options

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

NOTE: For Active/Active (A/A) arrays, unless stated otherwise, Veritas 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 Veritas InfoScale Foundation 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	Veritas I/O fencing is supported for Storage Foundation products. Veritas I/O fencing uses SCSI3 PGR capable devices to allow write access to members of the active cluster. If a split-brain condition occurs, Veritas I/O fencing blocks access to non-members and help in fencing out nodes to prevent data corruption.
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/TECH231389> for details.

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Support Legend

Term	Meaning	Definition
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	Thin Reclamation supported	Support for storage optimization by recovering blocks from deleted files or data. It supports WRITE_SAME, UNMAP, and TRIM/PTRIM depending upon the reclamation method supported by a given device. 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/TECH231389> for details.

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

Linux (Red Hat/Oracle) Device Family Membership

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Linux (Red Hat/Oracle)

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/TECH231389> .

For details on Thin Reclamation support, see: <http://www.veritas.com/docs/TECH231389> .

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.

Amazon

Device/Family	Mode	Access	Interface	Advanced Features
Elastic Block Store	A/A	Yes	Xen_Virtual	
Instance Store [1]	A/A	Yes	Xen_Virtual	Advanced Reporting, Thin Reclamation

1. The device will be claimed as 'SSD' device ONLY when Thin Reclamation (TRIM) is supported by the SSD Instance Store Volume.

Dell

Device/Family	Mode	Access	Interface	Advanced Features
EqualLogic PS3000 series [1] [2]	A/A	Yes, Fencing	iSCSI	
EqualLogic PS4000 series [1]	A/A	Yes, Fencing	iSCSI	
EqualLogic PS6000 series [1]	A/A	Yes, Fencing	iSCSI	
SC Series [3]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
WD 7502ABYS	A/A	Yes	SATA	

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

2. Excludes PS3000 series.

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

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EMC

Device/Family	Mode	Access	Interface	Advanced Features
CLARiiON AX series [1] [2]	A/P-F	Yes, Fencing	Fibre Channel	
ScaleIO	A/A	Yes, Fencing	Fibre Channel	
Symmetrix DMX series [3]	A/A	Yes, Fencing	Fibre Channel	
Symmetrix VMAX series [4] [5] [6] [7]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Symmetrix VMAX series with PowerPath [4] [5] [6] [7]	A/A	Yes, Fencing	Fibre Channel	
Unity series	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
Unity series with PowerPath	A/A-A	Yes, Fencing	Fibre Channel	
VMAX3/VMAX All Flash Family series	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VMAX3/VMAX All Flash Family series with PowerPath	A/A	Yes, Fencing	Fibre Channel	
VNX series [1] [10] [8] [9]	A/A-A	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
VNX series [1] [10] [8] [9]	A/P-F	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, Thin Reclamation
VNX series with PowerPath [1] [10] [11] [8] [9]	A/A-A	Yes, Fencing	Fibre Channel, iSCSI	
VNX series with PowerPath [1] [10] [8] [9]	A/P-F	Yes, Fencing	Fibre Channel	
VNX2 series [8] [9]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2 series with PowerPath [12] [8] [9]	A/A-A	Yes, Fencing	Fibre Channel	
VNX2e series [9]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VNX2e series with PowerPath [9]	A/A-A	Yes, Fencing	Fibre Channel	
VPLEX	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
VPLEX with PowerPath	A/A	Yes	Fibre Channel	
XtremIO	A/A	Yes, Fencing	Fibre Channel, iSCSI	
XtremIO with PowerPath	A/A	Yes, Fencing	Fibre Channel	

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

2. Supports CLARiiON AX4 only.

3. Supports Symmetrix DMX-4 only.

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4. Array microcode level 5876 or above requires the latest ASL to support Thin Reclamation function, see <http://www.veritas.com/docs/TECH194376> for more detail.

5. On RHEL 5 Update 8 with QLogic QLE2460/QLE2462 HBAs, a minimum driver version of 8.03.07.14.5.6-k is required to support this array to avoid duplicated OS devices issue.

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

10. When using EMC SnapView feature, DMP tunable dmp_monitor_owernship must be set to off on all hosts where the source and snapshot LUNs are not both imported on the same host.

11. SCSI3 PR Fencing is not supported with iSCSI.

12. A minimum PowerPath version 6.0SP1 is required on RHEL 6.6 and RHEL 7 for Storage Foundation support.

Fujitsu

Device/Family	Mode	Access	Interface	Advanced Features
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX400/DX500/DX600 series [1] [2] [3] [4]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [1] [3] [5] [6] [7]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX60/DX80/DX90/DX100/DX200 series [1] [3] [5] [6] [7]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 S3 series [1] [8] [9]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 S3 series [1] [8] [9]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [1] [10] [3]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS DX8000 series [1] [10] [3]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
ETERNUS VS850	A/A-A	Yes, Fencing	Fibre Channel	
ETERNUS2000 series [5]	A/A	Yes, Fencing	Fibre Channel	
ETERNUS4000 series [10] [11] [12]	A/A	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, Thin Reclamation
ETERNUS8000 series [10] [12]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

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

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2. 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.

3. 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.

4. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the following firmware level: ETERNUS DX500 S3 and ETERNUS DX600 S3 are supported with V10L42 or newer.

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

6. 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 when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the following firmware level: ETERNUS DX100 S3, ETERNUS DX200 S3 and ETERNUS DX200F are supported with V10L42 or newer, ETERNUS DX60 S3 is supported with V10L50 or newer.

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

9. Thin Reclamation when the shared disk is protected by I/O fencing in SF-HA configuration is supported with the following firmware level: ETERNUS DX8700 S3 and ETERNUS DX8900 S3 are supported with V10L50 or newer.

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

11. Excludes ETERNUS4000 models 80 and 100.

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

Hewlett Packard Enterprise

Device/Family	Mode	Access	Interface	Advanced Features
3PAR F/T-Class, StoreServ 7000/8000/10000/20000 Storage [1] [2]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
MK0200GEYKC	A/A	Yes	SATA	
MSA 1040 SAN	A/A-A	Yes, Fencing	Fibre Channel	SAN Boot, Thin Reclamation
MSA 2040 SAN	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
MSA2000fc series	A/A	Yes, Fencing	Fibre Channel	
P9500	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
XP7	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, 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.

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

Hitachi

Device/Family	Mode	Access	Interface	Advanced Features
HUS 100 series	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
HUS VM	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
SMS/AMS2000 series [1]	A/A	Yes, Fencing	Fibre Channel	
VSP [2]	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation
VSP G series	A/A	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, Thin Reclamation
VSP Gx00/Fx00 series	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot, Thin Reclamation

1. Excludes SMS Series.

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

Huawei

Device/Family	Mode	Access	Interface	Advanced Features
18000 series [1]	A/A	Yes, Fencing	Fibre Channel	SAN Boot
18000 series [2]	A/A-A	Yes, Fencing	Fibre Channel	SAN Boot
ES3000 V2	A/A	Yes	PCIe	Advanced Reporting, Thin Reclamation
S5000 series	A/A-A	Yes, Fencing	Fibre Channel	
S5000T series	A/A-A	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, Thin Reclamation
VIS series	A/A	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.

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IBM

Device/Family	Mode	Access	Interface	Advanced Features
FlashSystem series [1] [2] [3]	A/A	Yes, Fencing	Fibre Channel, InfiniBand	NDU, SAN Boot
Storwize series [4] [5]	A/A-A	Yes, Fencing	Fibre Channel, iSCSI	Advanced Reporting, SAN Boot, Thin Reclamation
System Storage DS3000 series	A/P-F	Yes, Fencing	Fibre Channel, iSCSI, SAS	
System Storage DS3500 series	A/A-A	Yes, Fencing	Fibre Channel, SAS	SAN Boot
System Storage DS3500 series	A/P-F	Yes, Fencing	Fibre Channel, SAS	Advanced Reporting
System Storage DS8000 series	A/A	Yes, Fencing	Fibre Channel	SAN Boot
System Storage XIV series [6] [7]	A/A	Yes, Fencing	Fibre Channel	
System Storage XIV series [7]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

1. Array firmware version 1.2.x.x or higher is required.

2. For FlashSystem arrays attached to the host via Infiniband, setting the tunable ‘dmp_fast_recovery=off’ is required.

3. Supports device formatted with 4K sector size (in addition to 512 bytes)

4. After added back a previous removed array storage controller for maintenance, issue command "vxdctl enable" to re-discover the controller if the controller is not displayed in the Volume Manager.

5. 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.

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

7. With array firmware version 10.2.1 or above, the array will be claimed as ALUA mode by DMP.

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Infinidat

Device/Family	Mode	Access	Interface	Advanced Features
InfiniBox F-Series	A/A	Yes, Fencing	Fibre Channel	NDU

Intel

Device/Family	Mode	Access	Interface	Advanced Features
DC P3700 [1] [2]	A/A	Yes	PCIe	

1. DMP EBN namingscheme is required.

2. Supports device formatted with 4K sector size (in addition to 512 bytes)

Micron

Device/Family	Mode	Access	Interface	Advanced Features
MTFDHAX1T6MCE-1A	A/A	Yes	PCIe	

Microsoft

Device/Family	Mode	Access	Interface	Advanced Features
Azure [1]	A/A	Yes	Ethernet	

1. A minimum Infoscale version 7.3.1 is required to support Azure storage.

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NEC

Device/Family	Mode	Access	Interface	Advanced Features
iStorage D1/D3 series [1]	A/A	Yes, Fencing	Fibre Channel	
iStorage D8 series	A/A	Yes, Fencing	Fibre Channel	
iStorage M series	A/A-A	Yes, Fencing	Fibre Channel	NDU, SAN Boot
iStorage M5000	A/A-A	Yes, Fencing	Fibre Channel	
Symmetrix DMX-4	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, SAN Boot
Symmetrix DMX-4 with PowerPath	A/A	Yes, Fencing	Fibre Channel	
Symmetrix VMAX	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting
Symmetrix VMAX with PowerPath	A/A	Yes, Fencing	Fibre Channel	

1. Also supported in direct-attach configurations.

NetApp

Device/Family	Mode	Access	Interface	Advanced Features
AFF Series [1]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
E_SERIES [2]	A/A-A	Yes, Fencing	Fibre Channel, InfiniBand	Advanced Reporting, NDU
FAS2000/FAS900/FAS200 series [3] [4]	A/A	Yes, Fencing	iSCSI	
FAS2000/FAS900/FAS200 series [3] [4] [5]	A/A-A	Yes, Fencing	FCoE, Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS3000/V3000 series [3] [4]	A/A	Yes, Fencing	iSCSI	
FAS3000/V3000 series [3] [4] [5]	A/A-A	Yes, Fencing	FCoE, Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS6000/V6000 series [3] [4]	A/A	Yes, Fencing	iSCSI	
FAS6000/V6000 series [3] [4] [5]	A/A-A	Yes, Fencing	FCoE, Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation
FAS8000/FAS9000 Series [3] [4]	A/A	Yes, Fencing	iSCSI	
FAS8000/FAS9000 Series [3] [4] [5]	A/A-A	Yes, Fencing	FCoE, Fibre Channel	Advanced Reporting, NDU, SAN Boot, Thin Reclamation

1. A minimum version of ONTAP 8.3 is required to support this array.

2. A minimum array firmware version 08.10.09.00 is required.

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3. A minimum version of ONTAP 7.3.3, ONTAP 8.0.1 and higher versions of 7-Mode are supported.

4. The DMP tunable dmp_lun_retry_timeout must be set to 60 to support this array. On the RHEL 6 Update 1 platform, a minimum version Emulex driver 8.3.5.44.4p is required to support Emulex LPe12002 HBA; a minimum version QLogic driver 8.03.01.06.05.06-k is required to support QLogic QLE2562 HBA.

5. Supports Clustered Data ONTAP (cDOT) version 8.1 or greater with multiple Controller Nodes.

Oracle

Device/Family	Mode	Access	Interface	Advanced Features
FS1-2	A/A	Yes, Fencing	Fibre Channel	SAN Boot
FS1-2	A/A-A	Yes, Fencing	Fibre Channel	
Storage 6580/6780 series [1]	A/P-F	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU
StorageTek 2500 series [2]	A/P-F	Yes, Fencing	Fibre Channel, iSCSI, SAS	
StorageTek 6140 array	A/P	Yes, Fencing	Fibre Channel	
StorageTek 9900 series	A/A	Yes, Fencing	Fibre Channel	
StorageTek 9985/9990 series	A/A	Yes, Fencing	Fibre Channel	
StorageTek 9985V system	A/A	Yes, Fencing	Fibre Channel	
StorageTek 9990V system	A/A	Yes, Fencing	Fibre Channel	
Sun Storage 6180 array	A/P-F	Yes, Fencing	Fibre Channel	NDU
ZFS Storage Appliance series [3]	A/A-A	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU

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>

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Pure Storage

Device/Family	Mode	Access	Interface	Advanced Features
FlashArray series	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, Thin Reclamation

SanDisk

Device/Family	Mode	Access	Interface	Advanced Features
ioDrive [1] [2] [3]	A/A	Yes	PCIe	Advanced Reporting
ioDrive2 [2] [3] [4] [5]	A/A	Yes	PCIe	Advanced Reporting
ioMemory PX600 series [5]	A/A	Yes	PCIe	
ioMemory SX300 series [5]	A/A	Yes	PCIe	
ioMemory SX350 series [5]	A/A	Yes	PCIe	
ION Data Accelerator [6] [7]	A/A-A	Yes, Fencing	Fibre Channel, InfiniBand	NDU

1. Device must be formatted with 512-byte sector size.

2. Supports the Thin Reclamation TRIM operation with Red Hat Linux 6.0 (RHEL6). See the Fusion-IO documentation for the firmware version requirements for TRIM support.

3. The minimum firmware version 3.0 is required.

4. AtomicIO is supported with SF 6.2 and higher versions.

5. Supports device formatted with 4K sector size (in addition to 512 bytes)

6. Only supports ION standalone mode.

7. Supports RadHat Linux 7.1 and higher versions.

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Shannon

Device/Family	Mode	Access	Interface	Advanced Features
Direct-IO	A/A	Yes	PCIe	

sTec

Device/Family	Mode	Access	Interface	Advanced Features
s1120 [1] [2]	A/A	Yes	PCIe	Advanced Reporting

1. Device must be formatted with 512-byte sector size.

2. DMP EBN namingscheme is required.

Violin Memory

Device/Family	Mode	Access	Interface	Advanced Features
Violin 3000/6000 series	A/A	Yes, Fencing	Fibre Channel	Advanced Reporting, NDU, SAN Boot
Violin 3000/6000 series	A/A-A	Yes, Fencing	Fibre Channel	SAN Boot

Device Family Membership

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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 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
SC Series	SC4000, SC4020, SC8000, SC9000, SCv2000

EMC

Device Family	Members
CLARiiON AX series	Celerra NX4, CLARiiON AX100, CLARiiON AX4
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
VNX2e series	VNXe1600, VNXe3200

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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 S3 series	ETERNUS DX8700 S3, ETERNUS DX8900 S3
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
ETERNUS8000 series	ETERNUS8000 Model 1100, ETERNUS8000 Model 1200, ETERNUS8000 Model 2100, ETERNUS8000 Model 2200, ETERNUS8000 Model 700, ETERNUS8000 Model 800, ETERNUS8000 Model 900

Hewlett Packard Enterprise

Device Family	Members
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
MSA2000fc series	MSA2012fc, MSA2212fc

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Hitachi

Device Family	Members
HUS 100 series	HUS110, HUS130, HUS150
SMS/AMS2000 series	AMS2100, AMS2300, AMS2500, SMS100
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
ES3000 V2	ES3000 V2-1200, ES3000 V2-1200H, ES3000 V2-1600, ES3000 V2-2400H, ES3000 V2-3200H, ES3000 V2-600, ES3000 V2-800
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

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IBM

Device Family	Members
FlashSystem series	FlashSystem 710, FlashSystem 820, FlashSystem 840, FlashSystem 900
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 DS8000 series	DS8000, DS8100, DS8300, DS8700, DS8800, DS8870
System Storage XIV series	FlashSystem A9000, FlashSystem A9000R, XIV Storage System, XIV Storage System Gen3

Infinidat

Device Family	Members
InfiniBox F-Series	InfiniBox F2000, InfiniBox F6000

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

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NetApp

Device Family	Members
AFF Series	AFF 8020, AFF 8040, AFF 8060, AFF 8080EX, AFF A200, AFF A300, AFF A700, AFF A700s
E_SERIES	E2600, E2700, E5400, E5500, E5600, EF540, EF550, EF560
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

Oracle

Device Family	Members
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

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Pure Storage

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

SanDisk

Device Family	Members
ioMemory PX600 series	ioMemory PX600-1000, ioMemory PX600-1300, ioMemory PX600-2600, ioMemory PX600-5200
ioMemory SX300 series	ioMemory SX300-1300, ioMemory SX300-1600, ioMemory SX300-3200, ioMemory SX300-6400
ioMemory SX350 series	ioMemory SX350-1300, ioMemory SX350-1600, ioMemory SX350-3200, ioMemory SX350-6400

Violin Memory

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

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Host Bus Adapters

The information presented here does not refer to specific host bus adapter (HBA) models or architectures. Unless stated otherwise, Veritas Access supports all the HBAs that are supported by the OS and storage array manufacturers listed here. Veritas Access 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.

The information presented here is only to add exceptions for HBA models that have issues and are therefore not supported by the Veritas Access.

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

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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 Veritas 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. Veritas recommends adding SCSI3 conformant disk support.

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Switches

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

Unless stated otherwise, Veritas Access 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 Veritas Access.

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