



Interoperability Matrix for Cisco Nexus and MDS 9000 Products

February, 2014

Cisco MDS 9000 NX-OS Release 6.2(5), 6.2(3), 5.2(8c), Release 4.2(9), and Cisco MDS SAN-OS Release 3.3(5b); Cisco Nexus 7000 NX-OS Release 6.2(6); and Cisco Nexus 6000/5500 NX-OS Release 7.0(0)N1(1), 6.0(2)N2(3), and Cisco Nexus 5000 Release NX-OS Release 5.2(1)N1(6).

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Preface

This document provides a reference to matrices of Cisco MDS SAN-OS and Cisco NX-OS components and configurations tested and validated by Cisco's Data Center Interoperability Lab and/or qualified by Cisco's Partners for supporting seamless deployment of fabrics using the Cisco MDS 9000 family of Fibre Channel Switch and Director class products.

Audience

This reference document is designed for use by Cisco TAC, sales, support engineers, professional service partners, and systems administrators responsible for the design and deployment of Storage Area Networks in the data center environment.

The content of this document is frequently updated.

Related Documentation

The documentation set for the Cisco MDS 9000 Family includes the following documents. To find a document online, use the Cisco Fabric Manager and MDS NX-OS Documentation Locator at:

http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/roadmaps/doclocator.htm

Release Notes

- *Cisco MDS 9000 Family Release Notes for Cisco MDS NX-OS Releases*
- *Cisco MDS 9000 Family Release Notes for MDS SAN-OS Releases*
- *Cisco MDS 9000 Family Release Notes for Storage Services Interface Images*
- *Cisco MDS 9000 Family Release Notes for Cisco MDS 9000 EPLD Images*

Regulatory Compliance and Safety Information

- *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*

Compatibility Information

- *Interoperability Matrix for Cisco Nexus and MDS 9000 Products*
- *Cisco MDS 9000 NX-OS Hardware and Software Compatibility Information and Feature Lists*
- *Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images*
- *Cisco MDS 9000 Family Switch-to-Switch Interoperability Configuration Guide*

Hardware Installation

- *Cisco MDS 9710 Director Hardware Installation Guide*
- *Cisco MDS 9500 Series Hardware Installation Guide*
- *Cisco MDS 9500 Series Supervisor-2A Tech Note*
- *Cisco MDS 9250i Multiservice Fabric Switch Hardware Installation Guide*
- *Cisco MDS 9200 Series Hardware Installation Guide*
- *Cisco MDS 9100 Series Hardware Installation Guide*

Software Installation and Upgrade

- *Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide*

Cisco NX-OS Configuration Guides

- *Cisco MDS 9000 Family NX-OS Licensing Guide*
- *Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide*
- *Cisco MDS 9000 Family NX-OS System Management Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Fabric Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Quality of Service Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Security Configuration Guide*
- *Cisco MDS 9000 Family NX-OS IP Services Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Intelligent Storage Services Configuration Guide*
- *Cisco MDS 9000 Family NX-OS High Availability and Redundancy Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide*

Command-Line Interface

- *Cisco MDS 9000 Family Command Reference*

Intelligent Storage Networking Services Configuration Guides

- *Cisco MDS 9000 I/O Acceleration Configuration Guide*
- *Cisco MDS 9000 Family SANTap Deployment Guide*
- *Cisco MDS 9000 Family Data Mobility Manager Configuration Guide*
- *Cisco MDS 9000 Family Storage Media Encryption Configuration Guide*

Troubleshooting and Reference

- *Cisco NX-OS System Messages Reference*
- *Cisco MDS 9000 Family NX-OS Troubleshooting Guide*
- *Cisco MDS 9000 Family NX-OS MIB Quick Reference*
- *Cisco MDS 9000 Family NX-OS SMI-S Programming Reference*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.



CHAPTER 1

Storage Interoperability Matrix

This chapter includes the following topics:

- [Cisco Nexus 7000/6000/5500/5000 Platforms and Cisco MDS 9000 Series, page 1-1](#)
- [OSM Information, page 1-3](#)

If you have comments or questions about the information presented in the *Interoperability Matrix for Cisco Nexus and MDS 9000 Products*, send them to dc-interop@cisco.com.

Cisco Nexus 7000/6000/5500/5000 Platforms and Cisco MDS 9000 Series

[Table 1-1](#) lists the Cisco NX-OS and SAN-OS software releases that support Cisco MDS 9000 switches, Cisco Nexus 7000 Series switches, Cisco Nexus 6000 Series switches, and Cisco Nexus 5500 and 5000 switches. We recommend that customers use the latest release of Cisco NX-OS or SAN-OS software listed in [Table 1-1](#).

The switches listed in [Table 1-1](#) support the disk and tape storage products and the CNA and HBA devices listed in [Table 1-2](#), [Table 1-3](#), and [Table 1-4](#).

Table 1-1 *Cisco NX-OS and SAN-OS Releases Supported on Cisco MDS 9000 Switches, Cisco Nexus 7000 Series Switches, Cisco Nexus 6000 Series Switches, and Cisco Nexus 5000 and 5500 Switches*

Cisco MDS 9000 Switch	Cisco NX-OS or SAN-OS Release
Cisco MDS 9700 Series	6.2(5), 6.2(3), 6.2(1)
Cisco MDS 9500 Series	6.2(5), 6.2(3), 6.2(1)
	5.2(8c), 5.2(8b), 5.2(8a), 5.2(8), 5.2(6b), 5.2(6a), 5.2(6), 5.2(2d), 5.2(2a), 5.2(2), 5.2(1)
	5.0(8), 5.0(7), 5.0(4d), 5.0(4c), 5.0(4b), 5.0(4), 5.0(1a)
	4.2(9), 4.2(7e), 4.2(7d), 4.2(7b), 4.2(7a), 4.2(5), 4.2(3a), 4.2(3), 4.2(1b), 4.2(1a) 4.1(3a), 4.1(1c), 4.1(1b)
	3.3(5b), 3.3(5a), 3.3(5), 3.3(4a), 3.3(4), 3.3(3), 3.3(2), 3.3(1c), 3.3(1a), 3.2(3a), 3.2(3), 3.2(2c), 3.2(1)
	3.1(4), 3.1(3a), 3.1(3), 3.1(2b), 3.1(2a), 3.1(2), 3.1(1)
	3.0(3b), 3.0(3), 3.0(2b), 3.0(2a), 3.0(2), 3.0(1)

Table 1-1 Cisco NX-OS and SAN-OS Releases Supported on Cisco MDS 9000 Switches, Cisco Nexus 7000 Series Switches, Cisco Nexus 6000 Series Switches, and Cisco Nexus 5000 and 5500 Switches (continued)

Cisco MDS 9000 Switch	Cisco NX-OS or SAN-OS Release
Cisco MDS 9250i switch	6.2(5)
Cisco MDS 9222i switch	6.2(5), 6.2(3), 6.2(1) 5.2(8c), 5.2(8b), 5.2(8a), 5.2(8), 5.2(6b), 5.2(6a), 5.2(6), 5.2(2d), 5.2(2a), 5.2(2), 5.2(1) 5.0(8), 5.0(7), 5.0(4d), 5.0(4c), 5.0(4b), 5.0(4), 5.0(1a) 4.2(9), 4.2(7e), 4.2(7d), 4.2(7b), 4.2(7a), 4.2(5), 4.2(3a), 4.2(3), 4.2(1b), 4.2(1a), 4.1(3a), 4.1(1c), 4.1(1b) 3.3(5b), 3.3(5a), 3.3(5), 3.3(4a), 3.3(4), 3.3(3), 3.3(2), 3.3(1c), 3.3(1a), 3.2(3a), 3.2(3), 3.2(2c), 3.2(1a)
Cisco MDS 9148 switch	6.2(5), 6.2(3), 6.2(1) 5.2(8c), 5.2(8b), 5.2(8a), 5.2(8), 5.2(6b), 5.2(6a), 5.2(6), 5.2(2d), 5.2(2a), 5.2(2), 5.2(1) 5.0(8), 5.0(7), 5.0(4d), 5.0(4c), 5.0(4b), 5.0(4), 5.0(1a)
Cisco MDS 9134 and 9124 switches	5.2(8c), 5.2(8b), 5.2(8a), 5.2(8), 5.2(6b), 5.2(6a), 5.2(6), 5.2(2d), 5.2(2a), 5.2(2) 5.0(8), 5.0(7), 5.0(4d), 5.0(4c), 5.0(4b), 5.0(4), 5.0(1a) 4.2(9), 4.2(7e), 4.2(7d), 4.2(7b), 4.2(7a), 4.2(5), 4.2(3a), 4.2(3), 4.2(1b), 4.2(1a) 4.1(3a), 4.1(1c), 4.1(1b) 3.3(5b), 3.3(5a), 3.3(5), 3.3(4a), 3.3(4), 3.3(3), 3.3(2), 3.3(1c), 3.3(1a), 3.2(3a), 3.2(3), 3.2(2c), 3.2(1) 3.1(4), 3.1(3a), 3.1(3), 3.1(2b), 3.1(2a), 3.1(2), 3.1(1)
Cisco Nexus 7700 switches	6.2(6), 6.2(2a), 6.2(2)
Cisco Nexus 7000 switches	6.2(6), 6.2(2a), 6.2(2) 6.1(4a), 6.1(4), 6.1(3), 6.1(2), 6.1(1), 6.0(4), 6.0(3), 6.0(2), 6.0(1) 5.2(9), 5.2(7) 5.2(5), 5.2(4), 5.2(3a), 5.2(1)
Cisco Nexus 6000 Series	7.0(0)N1(1) 6.0(2)N2(3), 6.0(2)N2(2), 6.0(2)N2(1b), 6.0(2)N2(1), 6.0(2)N1(2a), 6.0(2)N1(2), 6.0(2)N1(1a)
Cisco Nexus 5500 switches	7.0(0)N1(1) 6.0(2)N2(3), 6.0(2)N2(2), 6.0(2)N2(1b), 6.0(2)N2(1), 6.0(2)N1(2a), 6.0(2)N1(2), 6.0(2)N1(1) 5.2(1)N1(6), 5.2(1)N1(5), 5.2(1)N1(4), 5.2(1)N1(3), 5.2(1)N1(2a), 5.2(1)N1(2), 5.2(1)N1(1b), 5.2(1)N1(1a), 5.2(1)N1(1) 5.1(3)N2(1c), 5.1(3)N2(1b), 5.1(3)N2(1a), 5.1(3)N2(1), 5.1(3)N1(1a), 5.1(3)N1(1) 5.0(3)N2(2b), 5.0(3)N2(2a), 5.0(3)N2(2), 5.0(3)N2(1), 5.0(3)N1(1c)

Table 1-1 *Cisco NX-OS and SAN-OS Releases Supported on Cisco MDS 9000 Switches, Cisco Nexus 7000 Series Switches, Cisco Nexus 6000 Series Switches, and Cisco Nexus 5000 and 5500 Switches (continued)*

Cisco MDS 9000 Switch	Cisco NX-OS or SAN-OS Release
Cisco Nexus 5000 switches	5.2(1)N1(6), 5.2(1)N1(5), 5.2(1)N1(4), 5.2(1)N1(3), 5.2(1)N1(2a), 5.2(1)N1(2), 5.2(1)N1(1b), 5.2(1)N1(1a), 5.2(1)N1(1)
	5.1(3)N2(1c), 5.1(3)N2(1b), 5.1(3)N2(1a), 5.1(3)N2(1), 5.1(3)N1(1a), 5.1(3)N1(1)
	5.0(3)N2(2b), 5.0(3)N2(2a), 5.0(3)N2(2), 5.0(3)N2(1), 5.0(3)N1(1c), 5.0(2)N2(1a), 5.0(2)N2(1), 5.0(2)N1(1)
	4.2(1)N2(1a), 4.2(1)N2(1), 4.2(1)N1(1)
	4.1(3)N2(1a), 4.1(3)N2(1), 4.1(3)N1(1a), 4.1(3)N1(1)
	4.0(1a)N2(1a), 4.0(1a)N2(1), 4.0(1a)N1(1a), 4.0(1a)N1(1), 4.0(0)N1(2a), 4.0(0)N1(2), 4.0(0)N1(1a)

OSM Information

For HBA or CNA driver and firmware version and storage firmware version, see the following Original Storage Manufacturer (OSM) websites to obtain their latest support matrix.

- EMC—visit the EMC Interoperability support matrices. Refer to this matrix for comprehensive list of the latest supported EMC storage arrays including Sym V-max and newer CLARiiON disk arrays.
<http://www.emc.com/interoperability>
- HDS—visit Product Interoperability Documentation:
<http://www.hds.com/products/interoperability/>
- HP—visit HP Single Point of Connectivity Knowledge (SPOCK) website:
<http://h20272.www2.hp.com/>

See the EBS compatibility matrix

<http://h18006.www1.hp.com/products/storageworks/san/documentation.html>

- IBM—visit <http://www-03.ibm.com/systems/support/storage/ssic/interoperability.wss>
- NetApp—visit Interoperability Matrix Tool (IMT): <http://support.netapp.com/matrix/>

Table 1-2 provides an HBA and CNA support matrix.

Table 1-2 *HBA and CNA Support Matrix*

Vendor	Model	Operating Systems	Version/Patch	FC/FCoE	MDS 9xxx	Cisco Nexus 7xxx	Cisco Nexus 6xxx	Cisco Nexus 5xxx	Cisco Nexus 2xxx
Cisco	VIC P81E VIC 1225 VIC 1225T	Windows 2008	All	FCoE	x	x	x	x	x
		Red Hat 5.x	All		x	x	x	x	x
		SUSE 11	All		x	x	x	x	x
		VMware ESX 4.x	All		x	x	x	x	x
		VMware ESX 5.x	All		x	x	x	x	x

Table 1-2 HBA and CNA Support Matrix (continued)

Vendor	Model	Operating Systems	Version/ Patch	FC/FCoE	MDS 9xxx	Cisco Nexus 7xxx	Cisco Nexus 6xxx	Cisco Nexus 5xxx	Cisco Nexus 2xxx
Emulex	LPe16000 Series HBA LPe12000 Series HBA LPe11000 Series HBA LP10000 series HBA LP9000 Series HBA	Windows 2000	All	FC	x			x	
		Windows 2003	All		x			x	
		Windows 2008	All		x			x	
		Red Hat AS 4.x	All		x			x	
		Red Hat AS 5.x	All		x			x	
		SUSE 10	All		x			x	
		SUSE 11	All		x			x	
		VMware ESX 4.x	All		x			x	
		VMware ESX 5.x	All		x			x	
		Solaris 10	All		x				
		Solaris 11	All		x				
		HP UX 11	All		x				
		HP UX 11i	All		x				
		AIX 5.x	All		x				
		AIX 6.x	All		x				
		AIX 7.x	All		x				
	OCe 11102 Series CNA OCe 10102 Series CNA	Windows 2003	All	FCoE	x	x	x	x	x
		Windows 2008	All		x	x	x	x	x
		Red Hat 5.x	All		x	x	x	x	x
		SUSE 11	All		x	x	x	x	x
		VMware ESX 4.x	All		x	x	x	x	x
		VMware ESX 5.x	All		x	x	x	x	x

Table 1-2 HBA and CNA Support Matrix (continued)

Vendor	Model	Operating Systems	Version/ Patch	FC/FCoE	MDS 9xxx	Cisco Nexus 7xxx	Cisco Nexus 6xxx	Cisco Nexus 5xxx	Cisco Nexus 2xxx
Qlogic	2600 Series HBA 2500 Series HBA 2400 Seies HBA 2300 Series HBA 2200 Series HBA	Windows 2000	All	FC	x			x	
		Windows 2003	All		x			x	
		Windows 2008	All		x			x	
		Red Hat AS 4.x	All		x			x	
		Red Hat AS 5.x	All		x			x	
		SUSE 10	All		x			x	
		SUSE 11	All		x			x	
		VMware ESX 4.x	All		x			x	
		VMware ESX 5.x	All		x			x	
		Solaris 10	All		x				
		Solaris 11	All		x				
		HP UX 11	All		x				
		HP UX 11i	All		x				
		AIX 5.x	All		x				
		AIX 6.x	All		x				
		AIX 7.x	All		x				
	8100 Series CNA 8200 Series CNA	Windows 2003	All	FCoE	x	x	x	x	x
		Windows 2008	All		x	x	x	x	x
		Red Hat 5.x	All		x	x	x	x	x
		SUSE 11	All		x	x	x	x	x
		VMware ESX 4.x	All		x	x	x	x	x
		VMware ESX 5.x	All		x	x	x	x	x

Table 1-3 lists supported storage devices.

Table 1-3 Storage Device Support Matrix

Vendor	Model	FC/FCOE	MDS 9xxx	Cisco Nexus 7xxx	Cisco Nexus 6xxx	Cisco Nexus 5xxx
IBM	DS3512	FC	x			x
	DS4700		x			x
	DS4800		x			x
	DS5300		x			x
	DS8100		x			x
	DS8300		x			x
	DS8800		x			x
	XIV		x			x
	SVC/Storwize v7000		x			x
EMC	VMAX	FC	x			x
	DMX-3		x			x
	VNX5500		x			x
	CX4-480		x			x
	CX3-80					x
	VMAX	FCOE	x	x	x	x
	CX4-480		x	x	x	x
	VNX5500		x	x	x	x
HDS	VSP	FC/FCoE	x	x	x	x
	USPV	FC	x			x
	USP		x			x
	HUS150/130		x			x
	AMS2000		x			x
	AMS1000		x			x
HP	P9500	FC/FCoE	x	x	x	x
	P6300/6500		x	x	x	x
	P2000 G3	FC	x			x
	EVA4000/4100/6000/ 6100/8000/8100		x			x
	EVA4400		x			x
	EVA6400/8400		x			x
	MSA2000		x			x
	XP 10K, 12K, 20K, 24K		x			x
	3PAR F200/400		x			x
	3PAR T400/800		x			x

Table 1-3 Storage Device Support Matrix (continued)

Vendor	Model	FC/FCoE	MDS 9xxx	Cisco Nexus 7xxx	Cisco Nexus 6xxx	Cisco Nexus 5xxx
NetApp	FAS2000	FCoE/FC	x	x	x	x
	FAS3000		x	x	x	x
	FAS6000		x	x	x	x
Fujitsu ¹	FUJITSU Storage ETERNUS DX100 S3, DX200 S3, DX500 S3, DX600 S3	FC	x			x
	FUJITSU Storage ETERNUS DX60 S2, DX80 S2, DX90 S2		x			x
	FUJITSU Storage ETERNUS DX400 S2 Series		x			x
	FUJITSU Storage ETERNUS DX8000 S2 Series		x			x
	FUJITSU Storage ETERNUS DX60, DX80, DX90		x			x
	FUJITSU Storage ETERNUS DX400 Series		x			x
	FUJITSU Storage ETERNUS DX8000 Series		x			x
	FUJITSU Storage ETERNUS 2000		x			x
	FUJITSU Storage ETERNUS 4000		x			x
	FUJITSU Storage ETERNUS 8000		x			x
	FUJITSU Storage ETERNUS DX100 S3, DX200 S3, DX500 S3, DX600 S3	FCoE				x
	FUJITSU Storage ETERNUS DX80 S2					x
	FUJITSU Storage ETERNUS DX90 S2					x
	FUJITSU Storage ETERNUS DX400 S2 Series					x
	ETERNUS DX8000 S2 Series					x

1. Vendor tested and certified.

Table 1-4 lists supported tape devices.

Table 1-4 Tape Device Support Matrix

Vendor	Library/Drive Model	FC/FCOE	MDS 9xxx	Cisco Nexus 7xxx	Cisco Nexus 5xxx	Cisco Nexus 2xxx
Oracle/STK	SL3000(Library)	FC	x		x	
	SL500 (Library)		x		x	
	SL150(Library)		x		x	
	L700(Library)		x		x	
	L180(Library)		x		x	
	STK-9840-C	FC	x		x	
	STK-9840-D		x		x	
	STK-9940-B		x		x	
	STK-T10K-A		x		x	
	STK-T10K-B		x		x	
	STK-T10K-C		x		x	
	VTLPlus		x		x	
HP	LTO3	FC	x		x	
	LTO4		x		x	
	LTO5		x		x	
	LTO5HH		x		x	
	LTO6		x		x	
IBM	3584 (library)	FC	x		x	
	3592-EO5		x			
	LTO3		x		x	
	LTO4		x		x	
	LTO5		x		x	
Quantum	I500 (Library)	FC	x		x	

Table 1-5 recommended iSCSI initiators.

Table 1-5 Recommended iSCSI initiators

iSCSI Initiators
Open iSCSI 2.0-872.41.el6
Microsoft iSCSI Initiator 6.2.9200.16451 & 6.1.7601.1751



CHAPTER 2

Fabric Services Interoperability Matrix

This chapter lists Cisco fabric applications supported by the SSM module and tested by Cisco's Solution-Interoperability Engineering group (iLAB) to ensure seamless installation at the end-user data center.

- [Data Mobility Manager \(DMM\)](#)
- [Storage Media Encryption for Tape \(SME-Tape\)](#)
- [Storage Media Encryption for Disk](#)
- [FC-IP SAN Extension](#)

Data Mobility Manager (DMM)

Table 2-1 Data Mobility Manager¹

Software Partner	Storage Array	Page
EMC	Transferring Data Greater Than 2TB LUN from Existing EMC CX4 to New EMC VNX-5300	4
	Transferring data from Existing CLARiiON 600 to New CLARiiON 700	4
	Transferring data from Existing CLARiiON 600 to New DMX 3000	5
	Transferring data from Existing Symmetrix-5 to New DMX 3000	5
	Transferring Data from Existing Symmetrix 8430 to new HDS USPV	6
	Transferring Data from Existing DMX-3 to new CLARiiON 600	6
	Transferring Data from Existing DMX-3 to new CLARiiON 600, then from this CLARiiON 600 back to DMX-3	6
	Under VCS control, transferring Data from Existing DMX-3 to new DMX-3	6
	Under HACMP control, transferring Data from Existing DMX-3 to new DMX-3	7
	Under MSCS control, transferring Data from Existing DMX-3 to new DMX-3	7
	Transferring Data from Existing DMX-3 to new DMX-3	7
	Transferring Data from Existing DMX-3 to IBM SVC	8
	Under Sun Cluster control, transferring Data from Existing DMX-3 to new DMX-3	8
	Transferring Data from Existing DMX-1000 to new DMX-3	8
	Transferring Data from Existing EMC CX700 to new DMX-3	9
	Transferring Data from Existing Oracle STK D280 to new DMX-3	9
	Transferring Data from Existing DMX-1000 to new EMC CX4	9
	Transferring Data from Existing DMX-3 to new EMC CX4	10
	Transferring Data from Existing EMC CX700 to new EMC CX4	10
	Transferring Data from Existing Oracle STK D280 to new EMC CX4	11
	Transferring Data from Existing EMC DMX-3 to new EMC DMX-3	11
	Transferring Data from Existing Compellent storage to new EMC DMX-3	11
	Transferring Data from Existing DMX3 to new EMC DMX-3	11
IBM	Transferring data from Existing FAStT to New DS4500	12
	Transferring data from Existing ESS 2105 model 800 to New DS8000	12
	Transferring data from Existing ESS 2105 model 800 to New DS8000	13
	Transferring data from Existing HP EVA 4000 to New IBM DS8100	13
	Transferring data from Existing HP XP12000 to New IBM DS8100	13
	Transferring data from Existing IBM 2105 800 (ESS Shark) to New NetApp FAS3050	14
	Under VMware ESX environment, transferring data from Existing FAStT900 to New IBM DS4500	14
	Under MSCS, transferring data from Existing HDS 9585v to New IBM DS8100	14
	Transferring Data from Existing IBM N7900 to New NetApp Fas3050	20
	Transferring Data from Existing IBM DS 8000 to New NetApp Fas3050	21

Table 2-1 Data Mobility Manager¹

Software Partner	Storage Array	Page
HP	Transferring data from Existing EVA 5000 to New EVA 4000/ 8000	16
	Transferring data from Existing EVA 5000 to New XP12000	16
	Transferring data from Existing EVA 5000 to New XP12000	16
	Under Oracle RAC environment, transferring data from Existing HP EVA 4000 to New HP EVA 4000	17
	Transferring data from Existing XP1024 to New XP12000	17
HDS	Transferring data from Existing HDS9585 to New HDS9970v	18
	Transferring data from Existing HDS9585 to New TagmaStore	18
	Transferring data from Existing HDS9000 to New TagmaStore	19
	Under MSCS and Veritas Volume Manager, transferring data from existing 9970V to new CLARiiON700	19
	Transferring data from Existing HDS9200 to New HDS USPV	19
NetApp	Transferring data from Existing FAS940C to New FAS940C	20
SUN	Transferring data from Existing StorageTek 9985V to New Storage Tek 9990V	21
	Transferring data from Existing Storage Tek 9900V to New Storage Tek 9990V	21
Compellent	Transferring data from existing EMC DMX-3 to new Compellent storage	22

1. The following matrices includes configurations tested and certified by Cisco Quality Assurance labs. For more details on the listed configs including the SAN-OS and SSI versions, send an inquiry request to “mds-rpq@cisco.com”. For configurations other than listed below, please send an RPQ request to “mds-rpq@cisco.com”. Method 3 configuration is not supported on MDS9222i.

EMC

Table 2-2 Transferring Data Greater Than 2TB LUN¹ from Existing EMC CX4 to New EMC VNX-5300

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2008 Server R2	SP2	QLogic: QLE2562	MPIO	Windows Native	MDS 9222i
Enterprise Linux	Red Hat 5 x86_64		Native		MSM 18/4

1. 2TB LUN support available after NX-OS Release 6.2(3).

Table 2-3 Transferring data from Existing CLARiiON 600 to New CLARiiON 700

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003 R2	SP1	QLogic: QLE2462	PowerPath	Windows Native	SSM
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	QLogic: QLE2462	PowerPath	LVM	MSM 18/4
		Emulex: LPe11002			
	AS 4.0	QLogic: QLE2462	Device Mapper	LVM2	
		Emulex: LPe11002-M4	PowerPath	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			PowerPath		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			PowerPath		
AIX	5.3	IBM: 03N5014	PowerPath	LVM	

Table 2-4 Transferring data from Existing CLARiiON 600 to New DMX 3000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003 R2	SP1, SP2	QLogic: QLE2462	PowerPath	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	PowerPath	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462	PowerPath	LVM2	
		Emulex: LPe11002-M4	Device Mapper	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			PowerPath		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			PowerPath		
AIX	5.3	IBM: 03N5014	PowerPath	LVM	

Table 2-5 Transferring data from Existing Symmetrix-5 to New DMX 3000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	PowerPath	Windows Native	SSM MDS 9222i
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	QLogic: QLE2462	PowerPath	LVM	MSM 18/4
		Emulex: LPe11002-M4			
	AS 4.0	QLogic: QLE2462	PowerPath	LVM2	
		Emulex: LPe11002-M4	Device Mapper	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			PowerPath		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			PowerPath		
AIX	5.3	IBM: 03N5014	PowerPath	LVM	

Table 2-6 Transferring Data from Existing Symmetrix 8430 to new HDS USPV

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003 R2	SP2	QLogic: QLE2462	PowerPath	Windows Native	SSM MDS 9222i MSM 18/4
Linux RedHat	AS 4.0	Emulex: LPe11002-M4	PowerPath	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
AIX	5.3	IBM: 03N5014	PowerPath	LVM	

Table 2-7 Transferring Data from Existing DMX-3 to new CLARiiON 600

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Solaris	8	Emulex: LPe11002-M4 (Leadville)	Veritas DMP PowerPath	VxVm	SSM MDS 9222i MSM 18/4

Table 2-8 Transferring Data from Existing DMX-3 to new CLARiiON 600, then from this CLARiiON 600 back to DMX-3

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003 R2	SP2	QLogic: QLE2462	PowerPath	Windows Native	SSM MDS 9222i
AIX	5.3	IBM: 03N5014	MPIO	LVM	MSM 18/4

Table 2-9 Under VCS control, transferring Data from Existing DMX-3 to new DMX-3¹

Operating Systems	OS Version	VCS version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Solaris	10	5.0 w/IO fencing	Emulex: LPE11002-M4	Veritas DMP	VxVm	SSM
		5.0 w/out IO fencing				MDS 9222i
		4.1 w/ IO fencing		PowerPath 4.5.1		MSM 18/4
		4.1 w/out IO fencing				

1. For VCS, the following cutover procedure need to be followed:
 - a. When ready for cutover first stop all application traffic from all cluster nodes
 - b. Wait for migration to reach 100% (This step can be eliminated once the issue is fixed in a future release)
 - c. Shutdown VCS
 - d. Click “Finish” in DMM GUI
 - e. Once complete change zoning and cutover to NS (Follow the general procedure from this step)

Table 2-10 Under HACMP control, transferring Data from Existing DMX-3 to new DMX-3

Operating Systems	OS Version	HACMP version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
AIX	5.3	5.4	IBM: 03N5014	Power Path 5.1	LVM	SSM MDS 9222i MSM 18/4

Table 2-11 Under MSCS control, transferring Data from Existing DMX-3 to new DMX-3

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows2003 R2	SP2	Emulex: LPE11002-M4	PowerPath 5.1	native	SSM ¹ MDS 9222i MSM 18/4

1. DMM Method 3 and DMM Storage Type Job are not supported with MSCS.

Table 2-12 Transferring Data from Existing DMX-3 to new DMX-3

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows 2000 Advanced Server	SP4	Emulex: LPE11002-M4	PowerPath 4.5.2	Windows Native	SSM MDS 9222i MSM 18/4
Windows 2003 R2	SP2		PowerPath 5.1		
Windows 2000 Server	SP4	QLogic: QLE2462	Powerpath 5.1		
Windows 2000 Advanced Server Cluster			PowerPath 5.2		
Wndows 2003 Server			Powerpath 5.3		
Windows 2003 Advanced Server Cluster			PowerPath 5.2		
Windows 2008 Server R2	SP2		PowerPath 5.3		
Windows 2008 Failover Server					

Table 2-13 Transferring Data from Existing DMX-3 to IBM SVC¹

Operating Systems	OS Version	Host Bus Adapter	SVC Version	Multipath App.	Volume Manager	Switch H//W
AIX	5.3	IBM: 03N5014	4.1.0.566	MPIO	LVM	SSM MDS 9222i MSM 18/4
VMware ESX (sanboot)	4.1	QLogic: QLA2342 Emulex: LPe11002-M4	6.1.0.8	VMware native	VMware native	
VMware ESXi (sanboot)	5.0	QLogic: QLA2342 Emulex: LPe11002-M4	6.1.0.8	VMware native	VMware native	

Table 2-14 Under Sun Cluster control, transferring Data from Existing DMX-3 to new DMX-3

Operating Systems	OS Version	Sun Cluster Ver	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Solaris	10	3.2	Emulex: LPe11002-M4	MPXIO	SVM	SSM MDS 9222i MSM 18/4

Table 2-15 Transferring Data from Existing DMX-1000 to new DMX-3

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows 2000 Server	SP4	QLogic: QLE 2462	PowerPath 5.1	Windows Native	SSM
Windows 2000 Advanced Server Cluster			PowerPath 5.2		MDS 9222i
Windows 2003 Server	PowerPath 5.3		MSM 18/4		
Windows 2008 Server R2	PowerPath 5.2				
Windows 2008 Failover Server	PowerPath 5.3				

1. SVC back-end storage: IBM Shark and FAST900

Table 2-16 Transferring Data from Existing EMC CX700 to new DMX-3

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2000 Server	SP4	QLogic: QLE 2462	PowerPath 5.1	Windows Native	SSM
Windows 2000 Advanced Server Cluster			PowerPath 5.2		MDS 9222i
Windows 2003 Server	PowerPath 5.3		MSM 18/4		
Windows 2003 Advanced Server Cluster	PowerPath 5.2				
Windows 2008 Server R2	PowerPath 5.3				
Windows 2008 Failover Server					

Table 2-17 Transferring Data from Existing Oracle STK D280 to new DMX-3

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2000 Server	SP4	QLogic: QLE 2462	RDAC 9.1.32.30	Windows Native	SSM
Windows 2000 Advanced Server Cluster					MDS 9222i
Windows 2003 Server	SP2				MSM 18/4
Windows 2003 Advanced Server Cluster					

Table 2-18 Transferring Data from Existing DMX-1000 to new EMC CX4

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2000 Server	SP4	QLogic: QLE 2462	PowerPath 5.1	Windows Native	SSM MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster			PowerPath 5.2		
Windows 2003 Server	PowerPath 5.3				
Windows 2003 Advanced Server Cluster	PowerPath 5.2				
Windows 2008 Failover Server	PowerPath 5.3				

Table 2-19 Transferring Data from Existing DMX-3 to new EMC CX4

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows 2000 Server	SP4	QLogic: QLE 2462	PowerPath 5.1	Windows Native	SSM
Windows 2000 Advanced Server Cluster			PowerPath 5.2		MDS 9222i
Windows 2003 Server	PowerPath 5.3		MSM 18/4		
Windows 2003 Advanced Server Cluster	PowerPath 5.2				
Windows 2008 Server R2	PowerPath 5.3				
Windows 2008 Failover Server					

Table 2-20 Transferring Data from Existing EMC CX700 to new EMC CX4

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows 2000 Server	SP4	QLogic: QLE 2462	PowerPath 5.1	Windows Native	SSM MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster			PowerPath 5.2		
Windows 2003 Server	PowerPath 5.3				
Windows 2003 Advanced Server Cluster	PowerPath 5.2				
Windows 2008 Server R2	PowerPath 5.3				
Windows 2008 Failover Server					

Table 2-21 *Transferring Data from Existing Oracle STK D280 to new EMC CX4*

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows 2000 Server	SP4	QLogic: QLE 2462	RDAC 9.1.32.30	Windows Native	SSM
Windows 2000 Advanced Server Cluster					MDS 9222i
Windows 2003 Server	SP2				MSM 18/4
Windows 2003 Advanced Server Cluster					

Table 2-22 *Transferring Data from Existing EMC DMX-3 to new EMC DMX-3*

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Tru64 Unix	5.1b	HP: KGPSA-CA	Native	LSM	SSM
Open VMS	7.3-1				MDS 9222i
					MSM 18/4

Table 2-23 *Transferring Data from Existing Compellent storage to new EMC DMX-3*

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H//W
Windows 2003	Server SP2	QLogic: QLE 2462	MPIO	WIndows Native	MDS 9222i
		Emulex: LPe11002			MSM 18/4

Table 2-24 *Transferring Data from Existing DMX3 to new EMC DMX-3*

Operating Systems	OS Version	Covergent Network Adapter	Multipath App.	Volume Manager	Switch H//W
UCS 1.1.1+	Server	Cisco: M71KR-Q	PowerPath 5.3	WIndows Native	MDS 9222i
Windows 2008					MSM 18/4

IBM

Operating Systems	OS Version	VCS version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Solaris	10	5.0 w/IO fencing	Emulex: LPE11002-M4	Veritas DMP	VxVm	SSM
		5.0 w/out IO fencing				MDS 9222i MSM 18/4

Table 2-25 Transferring data from Existing FAStT to New DS4500

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	RDAC	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	QLogic: QLA2342	RDAC	LVM	MSM 18/4
	AS 4.0	QLogic: QLA2342	Device Mapper	LVM2	
		Emulex: LPe11002-M4	RDAC	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			RDAC		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			RDAC		
AIX	5.3	IBM: 03N5014	RDAC	LVM	

Table 2-26 Transferring data from Existing ESS 2105 model 800 to New DS8000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLA2342	SDD	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	SDD	LVM	MSM 18/4
	AS 4.0	Emulex: LPe11002-M4	Device Mapper	LVM2	
			SDD	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			SDD		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			SDD		
AIX	5.3	IBM: 03N5014	SDD	LVM	

Table 2-27 Transferring data from Existing DS4500 to New DS8000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLA2342	RADAC, SDD	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	QLogic: QLA2342	SDD	LVM	MSM 18/4
	AS 4.0	Emulex: LPe11002-M4	SDD	LVM2	
		QLogic: QLA2342	Device Mapper	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			RDAC, SDD		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			RDAC, SDD		
AIX	5.3	IBM: 03N5014	RDAC, SDD	LVM	

Table 2-28 Transferring data from Existing HP EVA 4000 to New IBM DS8100

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP2	QLogic: QLE2462	MPIO	Windows Native	SSM MDS 9222i MSM 18/4
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
AIX	5.3	IBM: 03N5014	HP MPIO / AIX MPIO	LVM	

Table 2-29 Transferring data from Existing HP XP12000 to New IBM DS8100

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP2	QLogic: QLE2462	MPIO	Windows Native	SSM MDS 9222i
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
					MSM 18/4

Table 2-30 Transferring data from Existing IBM 2105 800 (ESS Shark) to New NetApp FAS3050

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
AIX	5.3	IBM: 10N9824	SDD PCM 2.2.0.0	LVM	SSM MDS 9222i
AIX	5.3	IBM: 10N9824	SDD 1.7.2.0	LVM	MSM 18/4
AIX	5.3	IBM: 03N5014	SDD PCM 2.2.2.0	LVM	
AIX	5.3	QLogic: QLA234200P4295	SDD PCM 2.2.2.0	LVM	

Table 2-31 Under VMware ESX environment, transferring data from Existing FAStT900 to New IBM DS4500

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
VMware ESX	ESX Server 3.0.1 Linux RH 4.0	QLogic: QLA2432	VMware Native	VMware Native	SSM MDS 9222i MSM 18/4
VMware ESX	ESX server 3.0.1 Windows 2003 Server	QLogic: QLA2432	VMware Native	VMware Native	

Table 2-32 Under MSCS, transferring data from Existing HDS 9585v to New IBM DS8100

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP2	QLogic: QLE2462	HDLM	Windows Native	SSM MDS 9222i MSM 18/4

Table 2-33 Transferring Data from Existing IBM N7900 to New NetApp Fas3050

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	N/A	Windows Native	SSM MDS 9222i
Linux Red Hat	AS 3.0	QLogic: QLE2462	N/A	LVM2	MSM-18/4

Table 2-34 *Tansferring Data from Existing IBM DS 8000 to New NetApp Fas3050*

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
AIX	5.3	IBM: 03N5014	SDD PCM 2.2.2.0	LVM	
AIX	5.3	QLogic: QLA234200P4295	SDD PCM 2.2.2.0	LVM	

HP

Table 2-35 Transferring data from Existing EVA 5000 to New EVA 4000/ 8000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	SecurePath	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	SecurePath	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462	QL Failover	LVM2	
		Emulex: LPe11002-M4	Device Mapper	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			MPXIO		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			SecurePath		
AIX	5.3	IBM: 03N5014	SecurePath	LVM	

Table 2-36 Transferring data from Existing EVA 5000 to New XP12000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	MPIO	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	QLogic: QLE2462	QL Failover	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462	QL Failover	LVM2	
		Emulex: LPe1102-M4	Multipulse	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			MPXIO		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			SecurePath		
AIX	5.3	IBM: 03N5014	SecurePath	LVM	

Table 2-37 Under Oracle RAC environment, transferring data from Existing HP EVA 4000 to New HP EVA 4000

Operating Systems	OS Version	Oracle RAC/ Clusterware	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Linux RedHat	AS 4.0	Oracle DB 11g R1 Oracle Clusterware 11gR1	Emulex: LPe1100 2-M4	Emulex Multipulse HP Multipulse	LVM2	SSM MDS 9222i MSM 18/4

Table 2-38 Transferring data from Existing XP1024 to New XP12000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	MPIO	Windows Native	SSM MDS 9222i
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	QLogic: QLE2462	QL Failover	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462	QL Failover	LVM2	
		Emulex: LPe11002-M4	Multipulse	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			MPXIO		
HPUX	11iv2	HP: AB378-60101	HP PVLinks	LVM	
			SecurePath		
AIX	5.3	IBM: 03N5014	?	LVM	

HDS

Table 2-39 Transferring data from Existing HDS9585 to New HDS9970v

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	QLogic: QLE2462		LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462		LVM2	
		Emulex: LPe11002-M4	Device Mapper	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			HDLM		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			HDLM		
AIX	5.3	IBM: 03N5014	HDLM	LVM	

Table 2-40 Transferring data from Existing HDS9585 to New TagmaStore

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W	
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	SSM	
		Emulex: LPe11002-M4			MDS 9222i	
Linux RedHat	AS 3.0	Emulex: LPe11002-M4			LVM	MSM 18/4
	AS 4.0	QLogic: QL?2462			LVM2	
		Emulex: LPe11002-M4	Device Mapper	LVM2		
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm		
			HDLM			
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM		
			HDLM			
AIX	5.3	IBM: 03N5014	HDLM	LVM		

Table 2-41 Transferring data from Existing HDS9000 to New TagmaStore

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	SSM
		Emulex: LPe11002-M4			MDS 9222i
Linux RedHat	AS 3.0	QLogic: QLE2462		LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462		LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Device Mapper	LVM2	
			Veritas DMP	VxVm	
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			HDLM		
AIX	5.3	IBM: 03N5014	HDLM	LVM	

Table 2-42 Under MSCS and Veritas Volume Manager, transferring data from existing 9970V to new CLARiiON700¹

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003 Cluster	SP2	Emulex	Veritas Volume Manager 4.3 M1 for MSCS	Veritas Volume Manager 4.3 M1 for MSCS	SSM MDS 9222i MSM 18/4

1. The VFS for MSCS supports active/passive mode only, so the active path has to be selected as the only path for DMM to do migration. Any failover with this path requires the DMM job to be re-created.

Table 2-43 Transferring data from Existing HDS9200 to New HDS USPV

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	SSM
Linux RedHat	AS 4.0	QLogic: QLE2462		LVM2	MDS 9222i
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MSM 18/4
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
AIX	5.3	IBM: 03N5014	HDLM	LVM	

NetApp

Table 2-44 Transferring data from Existing FAS940C to New FAS940C

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	N/A	Windows Native	SSM MDS 9222i
Linux RedHat	AS 3.0	QLogic: QLE2462	NA	LVM2	MSM 18/4

SUN

Table 2-45 Transferring data from Existing Storage Tek 9985V to New Storage Tek 9990V

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	SSM MDS 9222i
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	Device Mapper	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462		LVM2	
		Emulex: LPe11002-M4		LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			HDLM		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			HDLM		
AIX	5.3	IBM: 03N5014	HDLM	LVM	

Table 2-46 Transferring data from Existing Storage Tek 9900V to New Storage Tek 9990V

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	SSM MDS 9222i
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	QLogic: QLE2462	Device Mapper	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462		LVM2	
		Emulex: LPe11002-M4		LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			HDLM		
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
			HDLM		
AIX	5.3	IBM: 03N5014	HDLM	LVM	

Compellent

Table 2-47 Transferring data from existing EMC DMX-3 to new Compellent storage

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch H/W
Windows 2003	Server SP2	QLogic: QLE2462	PowerPath 5.2	Windows Native	MDS 9222i MSM 18/4
		Emulex: LPe11002-M4			

Storage Media Encryption for Tape (SME-Tape)

Table 2-48 *Storage Media Encryption for Tape¹*

Software Partner	Data Center Backup Application	Page
Symantec	Veritas NetBackup	24
EMC	Legato Networker	26
HP	HP Data Protector	28
BakBone Software	NetVault	29
IBM	Tivoli Storage Manager (TSM)	30

1. The following matrices include configurations tested and certified by Cisco Quality Assurance Labs. For configurations other than listed below, please send an RPQ request to “mds-rpq@cisco.com”.

Symantec

Table 2-49 Veritas NetBackup

Operating Systems	NetBackup Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch H/W
Windows 2000 ¹ (SP4)	5.1	Sun/STK L180	STK 9840C, IBM LTO-2	SSN-16, MDS 9222i MSM-18/4
		HP Standalone Tape Drive	MSL 6060	
	6.0	Sun/STK L180	HP LTO-2,	
		Sun/STK L700e	STK T10k, IBM LTO-3, IBM LTO-2, HP LTO-3	
		Sun/STK L8500	HP LTO-2, HP LTO-3, IBM LTO-2, IBM LTO-3	
		EMC CDL 4400	ADIC i2k SDLT320 Sun/STK SL500 IBM LTO-3	
		Quantum ADIC Scalar i2000	IBM LTO-3	
		IBM Standalone Tape Drive	IBM 3592	
Windows 2003 (SP1)	5.1	Sun/STK L180	IBM LTO-2, STK 9840C	
		Sun/STK L700e	STK T10k, HP LTO-3, IBM LTO-3	
		HP Stainable Tape Drive	HP MSL 6060	
	6.0	Sun/STK L180	HP LTO-2	
		Sun/STK L700e	STK T10k, HP LTO-3, IBM LTO-2, IBM LTO-3	
		Sun/STK L8500	HP LTO-2, HP LTO-3, IBM LTO-2,	
		Quantum ADIC Scalar i2000	IBM LTO-3	
		EMC CDL 4400	ADIC i2k SDLT320, Sun/STK SL500 IBM LTO-3	
		IBM Standalone Tape Drive	IBM 3592	
Solaris 8	5.1	Sun/STK L180	HP LTO-2, STK 9840C, IBM LTO-2	
		Sun/STK L700e	HP LTO-3, STK T10k IBM LTO-3	
	6.0	Sun/STK L8500	HP LTO-2, HP LTO-3, IBM LTO-2, IBM LTO-3, SDLT 600	

Table 2-49 Veritas NetBackup (continued)

Operating Systems	NetBackup Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch H/W
Solaris 10	5.1	Sun/STK L180	HP LTO2, STK 9840C,	SSN-16, MDS 9222i MSM-18/4
	6.0	Quantum ADIC Scalar i2000	IBM LTO-3	
		Sun/STK L700e	STK T10k, IBM LTO-2, IBM LTO-3, STK 9940B	
		Sun/STK SL500	HP LTO-4	
		Sun/STK L700	IBM LTO-4	
		Sun/STK L8500	HP LTO-3, HP LTO-2, STK T10k, IBM LTO-2, IBM LTO-3, SDLT 600	
		EMC CDL 4400	ADIC i2k SDLT 320 Sun/STK SL500 IBM LTO-3	
		IBM 3584	IBM LTO-2	
		IBM Stand Alone Tape	IBM 3592	
		SpectraLogic T120	IBM LTO-2, IBM LTO-3	
	6.5	Sun/STK L700	IBM LTO-4	
AIX 5.3	6.0	Sun/STK L700e	IBM LTO-2, IBM LTO-3, HP LTO-3, STK T10k	
		EMC CDL 4400	Sun/STK SL500 IBM LTO-3	

1. Windows 2000 operating system is supported on SAN-OS 3.3(1c) code version only.

EMC

Table 2-50 Legato Networker

Operating Systems	Networker Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch H/W	
Windows 2000 ¹ (SP4)	7.2.1	Sun/STK L700e	HP LTO-3, IBM LTO-2, IBM LTO-3	SSN-16, MDS 9222i	
		Quantum ADIC Scalar i2000	IBM LTO-3	MSM-18/4	
		EMC CDL 4400	ADIC i2k SDLT320 Sun/STK SL500 IBM LTO-3		
	7.3.2	Sun/STK L180	HP LTO-2, IBM LTO-2		
		Sun/STK L700e	STK T10k		
		Sun/STK L8500	IBM LTO-2, IBM LTO-3		
		IBM Standalone Tape Drive	IBM 3592, HP MSL 6060		
	Windows 2003 (SP1)	7.2.1	Sun/STK L700e	IBM LTO-2, IBM LTO-3, HP LTO-3	
Quantum ADIC Scalar i2000			HP MSL 6060		
EMC CDL 4400			ADIC i2k SDLT320 Sun/STK SL500 IBM LTO-3		
7.3.2		Sun/STK L180	STK 9840C, HP LTO-2, IBM LTO-2		
		Sun/STK L700e	STK T10k, STK 9940B		
		Sun/STK L8500	IBM LTO-2, IBM LTO-3		
		IBM Standalone Tape Drive	IBM 3592, HP MSL 6060		
7.4		Sun/STK SL500	HP LTO-4		
		Sun/STK L700	IBM LTO-4		
		Sun/STK L8500	HP LTO-2		
Solaris 8		7.2.1	Sun/STK L700e	IBM LTO-3	
		7.3.2	Sun/STK L700	IBM LTO-3	
Solaris 10	7.2.1	Sun/STK L700e	HP LTO-3, IBM LTO-2, IBM LTO-3		
	7.3.2	Sun/STK L700e	STK T10k		
		Sun/STK L180	HP LTO2, STK 9840C, IBM LTO-2		
		Quantum ADIC Scalar i2000	IBM LTO-3		
		Sun/STK L8500	IBM LTO-3, SDLT 600		
		EMC CDL 4400	ADIC i2k SDLT 320 Sun/STK SL500 IBM LTO-3		
		IBM Stand Alone Tape	IBM 3592		

Table 2-50 *Legato Networker (continued)*

Operating Systems	Networker Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch H/W
AIX 5.3	7.2.1	Sun/STK L700e	IBM LTO-2, IBM LTO-3, HP LTO-3	SSN-16, MDS 9222i
	7.3.2	Sun/STK L700e	STK T10k	MSM-18/4
		EMC CDL 4400	Sun/STK SL500 IBM LTO-3	
		IBM Standalone Tape Drives	IBM 3592	
HP-UX 11i (ia64)	7.3.2	Sun/STK L700	IBM LTO-3	

1. Windows 2000 operating system is supported on SAN-OS 3.3(1c) code version only.

HP

Table 2-51 HP Data Protector

Operating Systems	Data Protector	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch H/W
Linux RedHat (version 4.0)	6.0	ESL 322e	HP LTO-2	SSN-16, MDS 9222i MSM-18/4
		MSL 2024	HP LTO-3	
		VLS 6105	HP LTO-2, HP LTO-3	
		ESL E-series	HP LTO-3	
		MSL 6030	Quantum SDLT 600	
		EML E-series	HP LTO-4	
		MSL 8096	HP LTO-4	
Linux SUSE (SLES 9.0)	6.0	ESL 322e	HP LTO-2	SSN-16, MDS 9222i MSM-18/4
		MSL 2024	HP LTO-3	
		VLS 6105	HP LTO-2, HP LTO-3	
		ESL E-series	HP LTO-3	
		MSL 6030	Quantum SDLT 600	
		EML E-series	HP LTO-4	
		MSL 8096	HP LTO-4	
Windows 2003 (Enterprise)	6.0	ESL 322e	HP LTO-2	SSN-16, MDS 9222i MSM-18/4
		MSL 2024	HP LTO-3	
		VLS 6105	HP LTO-2, HP LTO-3	
		ESL E-series	HP LTO-3	
		MSL 6030	Quantum SDLT 600	
		EML E-series	HP LTO-4	
		MSL 8096	HP LTO-4	
HP-UX 11iv3	6.0	HP ESL 322e	HP LTO-2	SSN-16, MDS 9222i MSM-18/4
	5.5	HP ESL 322e	HP LTO-2, HP LTO-3	
		SUN/STK 8500	HP LTO-2, HP LTO-3	
		EMC CDL 4400	SL500 HP LTO-3	

BakBone Software

Table 2-52 *NetVault*

Operating Systems	NetVault	Tape Library Model	Tape Drives & Emulated Libraries Supported	MDS Switch H/W
Linux RHEL V4	8.0	Sun/STK L180	HP LTO-2, IBM LTO-2	SSN-16, MDS 9222i
		Stand Alone drive	HP LTO-4	
	8.2	Sun/STK L180	HP LTO-3, IBM LTO-3, HP LTO-4, IBM LTO-4	MSM-18/2
Linux RHEL V5	8.2			
Linux RHEL V6	8.6.1	Sun SL3000	IBM LTO-5	
		Sun SL500	IBM LTO5, HP-LTO-5	
NetApp FAS Series	8.0 (NDMP)	Sun/STK L180	HP LTO-2, IBM LTO-2	
	8.2 (NDMP)		HP LTO-3, IBM LTO-3, HP LTO-4, IBM LTO-4	
	8.0 (NDMP)	Stand Alone drive	HP LTO-4	
EMC CDL Series	8.2 (NDMP)	Sun/STK L180	IBM LTO-3, IBM LTO-4	
		Sun/STK SL500		

IBM

Table 2-53 Tivoli Storage Manager (TSM)

Operating Systems	TSM Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch H/W
Windows 2000 ¹ (SP4)	5.4.0	IBM Stand-Alone Tape	IBM LTO-2, IBM TS1120	SSN-16, MDS 9222i MSM-18/2
Windows 2003 (SP2)	5.4.0	IBM Stand-Alone Tape	IBM LTO-2, IBM TS1120	
Linux RH AS 4 U2 kernel 2.6.9.22	5.4.0	IBM Stand-Alone Tape	IBM LTO-2, IBM TS1120	
AIX 5.3	5.4.0	SUN/STK 8500	HP LTO-2	
		SUN/STK SL500	HP LTO-3, IBM LTO-4, HP LTO-4	
		IBM Stand-Alone Tape	IBM TS1120, IBM LTO-2	
		EMC CDL SL500	IBM LTO-2, IBM LTO-4	
		SUN/STK L700	IBM LTO-2, IBM LTO-3, STK9840C, STKT10000A	
		SUN/STK L180	IBM LTO-2	
		IBM 3584	IBM LTO-2	
		Quantum ADIC Scalar i2000	IBM LTO-3	
		EMC CDL 4400	IBM LTO-3	
		EMC CDL 4400	SL500-IBM LTO-3	
	5.4.2	SUN/STK SL500	HP LTO-4	
		SUN/STK L700	IBM LTO-4	
	5.5.1	SpectraLogic T120	IBM LTO-2, LTO-3	

1. Windows 2000 operating system is supported on SAN-OS 3.3(1c) code version only.

Storage Media Encryption for Disk



Note

Storage Media Encryption for Disk (SME-Disk) reached End of Life on March 10, 2013.

For more information, see the EoL announcement (EOL9051) at this URL:

http://www.cisco.com/en/US/prod/collateral/ps4159/ps6409/ps6028/eol__C51-727124.html

Cisco is no longer accepting requests to qualify new arrays.

EMC

Table 2-54 EMC CX4-480 (FLARE v04.30.000.5.511)

Operating System	OS Version	HBA	HBA Driver	Multipath Application	Failover Mode
Windows Server 2003	SP2	Qlogic QLE 2462	9.1.8.25	PowerPath 5.5	Failover Mode: 4
AIX	5300-12	IBM FC 1905, 5758, 5760, 5761 PN 03N5014	Native OS driver	PowerPath 5.1.0	Failover Mode: 1

Table 2-55 EMC Clarion CX700 (FLARE v02.16.700.5.010)

Operating System	OS Version	HBA	HBA/CNA Driver	Multipath Application	Failover Mode
Windows Server 2003	SP2	Qlogic QLE 2462	9.1.8.25	PowerPath 5.5	Failover Mode: 1
AIX	5300-12	IBM FC 1905, 5758, 5760, 5761 PN 03N5014	Native OS driver	PowerPath 5.1.0	Failover Mode: 1
Red Hat	5.5	Cisco M71KR-E	1.3(1n)	PowerPath 5.5	Failover Mode: 1

Table 2-56 EMC VNX-5300 (v05.31.000.5.008)

Operating System	OS Version	HBA	HBA/CNA Driver	Multipath Application	Failover Mode
Red Hat	5.5	Cisco M71KR-E	1.3(1n)	PowerPath 5.5	Failover Mode: 1

Table 2-57 NetApp FAS940(6.5.6)

Operating System	OS Version	HBA	HBA/CNA Driver	Multipath Application	Failover Mode
Red Hat	5.5	Cisco M71KR-E	1.3(1n)	Native	Load-balance

Table 2-58 HDS 9585v

Operating System	OS Version	HBA	HBA/CNA Driver	Multipath Application	Failover Mode
Windows Server 2008 Datacenter	SP2	Cisco M71KR-Q	1.3(1n)	MPIO	

FC-IP SAN Extension

Table 2-59 SAN Extension InterOp Support Matrix

				Compression			
				S/W			FC-IP TA
MDS Module	IPSec	FC-IP WA ¹	H/W	Mode 1	Mode 2	Mode 3	
9216i/14+2 to 9216i/14+2	Yes	Yes	Yes (LZS)	See note ²	Yes (DEFLATE moderate comp)	Yes (DEFLATE high comp)	Yes
9216i/14+2 to 9222i/18+4	Yes	No	No	No	No	No	See note ³
9222i/18+4 to 9222i/18+4	Yes	Yes	Yes (DEFLATE)	See note ⁴	See note ⁴	See note ⁴	Yes
SSN-16 to SSN-16/18+4	Yes	Yes	Yes (DEFLATE)	See note ⁴	See note ⁴	See note ⁴	Yes
SSN-16 to SSN-16/18+4	Yes	No	No	No	No	No	See note ³
IPS(IPS-4/IPS-8) to IPS(IPS-4/IPS-8)	Yes	Yes	No	Yes (LZS)	Yes (DEFLATE moderate comp)	Yes (DEFLATE high comp)	Yes
IPS to 9216i/14+2 (See note ⁵)	Yes	Yes	See note ⁶	See note ⁶	Yes (DEFLATE moderate comp)	Yes (DEFLATE high comp)	Yes
IPS to 9222i/18+4 (See note ⁴)	Yes	No	No	No	No	No	See note ¹

1. IBM PPRC is not supported.
2. If Mode1 is configured on 9216i/14+2 HW (LZS) compression will be in effect
3. Veritas NetBackup and IBM TSM backup applications are supported only
4. On 9222i/18+4 mode1/mode2/mode3 configuration will automatically be converted to "auto" which means H/W (DEFLATE) compression will in effect
5. The IPS modules are not supported in Nx-OS 4.x and higher. However, replication between IPS module running SAN-OS 3.x code version to the 4.x supported modules is supported.
6. S/W LZS on IPS4/8 side and H/W LZS on 14+2 side



CHAPTER 3

Switch Interoperability Matrix

This chapter lists the devices tested by Cisco Solution-Interoperability Engineering group (iLAB) for switch interoperability and lists firmware versions and software versions.

- [Switch Interoperability Matrix](#)
- [IBM eServer Bladecenter Interoperability Matrix](#)
- [NPV Interoperability Matrix](#)

Use the following link for access to the latest Storage Service Interface (SSI) release compatibility matrix:

<http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/sw/nx-os/ssi/matrix/SSImtx.html>

Switch Interoperability Matrix

The switch Interoperability test was performed per the Fibre Channel Methodologies for Interconnect (FC-MI) Technical Report version 1.92 which describes common methodologies for facilitating interoperability in a heterogeneous switch SAN environment.

The MDS family is **SANmark** 3001 and 3002 qualified.

IBM Supports MDS InterOp Mode-1 (FC-MI standard), Mode-2 (Brocade PID=0), Mode-3 (Brocade PID=1), and Mode-4 (McDATA native). Please refer to the following IBM document for more information:

<ftp://service.boulder.ibm.com/storage/san/cisco/mds9216.pdf>

EMC Supports all MDS InterOp Modes with Brocade and McDATA outlined in the Switched Fabric Topology Parameters section EMC Support Matrix:

<http://www.emc.com/collateral/elab/emc-support-matrices.pdf>

HDS Supports MDS InterOp Mode-1 with Brocade and McDATA.

HP Supports MDS InterOp Mode-1 with Brocade and McDATA, refer to the below link for more information:

<http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00758719/c00758719.pdf>



Note

All Cisco data center switches including MDS and Nexus platforms are interoperable among each other at all code levels released on Cisco web site. If there is any feature specific code level recommendation for a release, we publish the information in Release Notes and product configuration guides.



Note

If a desired combination of a Cisco NX-OS software version and a Brocade or McData switch does not appear in this section, submit a Cisco Configuration Request (CCR) to have the combination validated before deploying that combination. Click [here](#) to download the CCR form.



Note

Interoperability between a Cisco MDS 9000 or Cisco Nexus 5000 switch and a Brocade switch is based on the software version that is running on each switch. Interoperability is not based on the model number of the switch. The model numbers of the switches are provided in the table below for reference.

Table 3-1 Switch Interoperability Matrix, MDS 9000 Series

Switch Vendor	Switch Models	Firmware Version	Cisco MDS OS Version	MDS InterOp Mode
Brocade	5100/7800	7.0.0c	6.2(3)	3
Brocade	5100	6.4.2a	6.2(1)	NPIV
Brocade	5100	6.4.2a	6.2(1)	3, 1
Brocade	48000/7500/4100	6.4.3e	6.2(3)	3
Brocade	5100/DCX	6.2.0g	5.2(8b)	3
Brocade	HP Blade Chassis with Brocade 4Gb SAN Switches (Brocade model 4024)	6.2.2f	5.2(8)	NPIV
McData	4700	08.01.00	6.2(1)	4

Table 3-2 Switch Interoperability Matrix, Cisco Nexus 5000 Series

Switch Vendor	Switch Models	Firmware Version	Cisco Nexus 5000 OS Version	Cisco Nexus 5000 InterOp Mode
Brocade ¹	DCX	6.2.0b	4.1(3)N2(1) 4.2(1)N1(1)	NPV, Switch
		6.1.4b	All 5.1(3) based code All 5.2(1) based code	NPV, Switch
		7.0(1b)	All 6.0(2) based code	NPV, Switch
	48K	6.2.0b	4.2(1)N1(1)	NPV
		6.2.1b	4.2(1)N1(1)	Switch
	3900	12.4	5.0(2)N1(1)	NPV, Switch
	8510	7.0.0a	5.0(3)N2(1)	NPV

1. Speed of 8G supported after NX-OS Release 5.2(1)N1(5) and 6.0(2)N2(1).

Table 3-3 Switch Interoperability, Legacy Matrix

Switch Vendor	Switch Models	Firmware Version	Cisco MDS OS Version	MDS InterOp Mode
Brocade	2400, 2800	2.6.0j	1.2(1b)	1 ¹ , 2 ²
		2.6.1a	1.2(1a)	
		2.6.1c	1.2(1b)	
		2.6.2	1.3(4a)	
		2.6.2b	2.0(1b)	
			2.1(1a)	1, 2, 3 ³
	200E	5.1.0d	3.1.2b, 4.1(1b)	1, 3 ³
		5.3.1a	4.1(3a)	
		6.1.0d ⁴	4.1(1b)	1, 3 ³
	3000	5.3.2x, 6.1.2x	5.0(1a)	3 ³
	3800	3.0.2k	1.2(1a)	1, 2
		3.1.1	1.2(1a)	
		3.1.1c	1.2(1b)	
		3.1.2	1.3(4a)	
		3.1.3a	2.0(1b)	1, 2, 3 ³
			2.1(1a)	
			3.0(1)	
			3.0(2a)	
			3.0(2)	
			3.0(3)	
			3.1(2)	
			3.1(3)	
		3.2.1c	3.2(3a), 3.3(1a), 3.3(1c), 4.1(1b), 4.1(3a), 4.2(1a), 5.0(1a)	
	3900	4.0.2d	1.2(1a)	1
		4.1.1		
		4.1.2b	1.2(1b)	
		4.2.0b	1.3(4a)	1, 3 ³
		4.2.2a	2.0(1b)	
			2.1(1a)	
		4.4.0f	3.0(2a)	
			3.0(3)	
		4.4.0f	3.0(1)	1, 2, 3 ³
			3.0(2)	
			3.0(2a)	
			3.0(3)	
		4.4.0f	3.1(2)	1, 2, 3 ³
			3.1(3)	
			3.2(1a)	

Table 3-3 Switch Interoperability, Legacy Matrix (continued)

Switch Vendor	Switch Models	Firmware Version	Cisco MDS OS Version	MDS InterOp Mode
Brocade (continued)	3900	5.0.3	3.0(1)	1, 3 ³
		5.0.3b	3.0(2)	
		5.0(3)	3.0(2a)	1, 3 ³
			3.0(3)	
		5.1.0d	3.1(2)	1, 3 ³
			3.1(3)	
			3.2(1a)	1
		5.3.0	3.2(1a), 4.2(1a)	
	5.3.0b		3.2(3a)	1, 3 ³
			3.3(1a), 3.3(1c), 4.1(1b), 4.2(1a)	
		5.3.1a	4.1(3a), 4.2(1a)	3 ³
		5.0.5f, 5.3.1b, 5.3.2	4.1(1b), 4.1(3a)	
	5.3.2x, 6.1.1x		5.0(1a)	
	4100	5.3.2x, 6.1.2x	5.0(1a)	1
		6.1.0x	4.1(1b)	
	48000,7500	6.1.0d	4.1(1b)	3 ³
		6.1.0f, 6.1.0j, 6.1.0h, 6.1.0d ⁴	4.1(1b)	
	DCX, DCX(8G)	6.3.0x, 6.2.1x	5.0(1a)	NPV
		6.1.0x ⁴	4.1(1b)	
		6.2.0x	4.2(3a), 4.2(x), 4.2(7d)	
		6.2.2c	5.0(4), 5.0(4b), 5.0(4c), 5.0(4d)	
		6.4.0b	5.0(1a)	3 ³
	DCX ⁵	6.4.0c	5.0(4d)	
		6.4.1a	5.0(4d)	
		6.2.2c, 6.4.2, 6.4.2b	5.2(1)	NPIV
	5480 (HP 8/24c)	7.0.0b	5.2(2d)	
	48000, 3850, 4900, 4100 ⁶	5.0.3	3.0(1)	1, 3 ³
		5.0.3b	3.0(2)	
		5.0(3)	3.0(2a)	1
			3.0(3)	
		5.3.0	3.2(1a), 4.2(x)	1, 3 ³
		5.3.0b	3.2(3a)	
			3.3(1a), 3.3(1c), 4.1(1b), 4.2(x)	3 ³
		5.3.0d	5.0(1a)	
		5.3.1a	4.1(3a), 4.2(1a)	3 ³
		5.0.5f, 5.3.1b, 5.3.2	4.1(1b), 4.1(3a)	
		5.3.2	5.0(1a)	3 ³
		6.2.2c	5.0(4), 5.0(4b), 5.0(4c), 5.0(4d)	

Table 3-3 Switch Interoperability, Legacy Matrix (continued)

Switch Vendor	Switch Models	Firmware Version	Cisco MDS OS Version	MDS InterOp Mode	
	4012, 4024	5.3.0b	3.3(1a), 3.3(1c), 4.2(1a)	1, 3 ³	
		5.3.1a	4.1(3a)		
		5.0.5f, 5.3.1b, 5.3.2	4.1(1b), 4.1(3a)	3	
	12000	5.0.5c	3.2(3a) 3.3(1a), 3.3(1c), 4.1(1b)	1, 3 ³	
		5.0.5f	4.1(3a), 4.2(1a)		
		5.0.5f, 5.3.1b, 5.3.2	4.1(1b), 4.1(3a)	3 ³	
		4.2.0x, 5.3.2x	5.0(1a)		
	Brocade (continued)	24000	5.1.0d	3.1(2), 3.2(1a)	1, 3 ³
5.3.0b			3.2(3a) 3.3(1a), 3.3(1c), 4.1(1b)	1, 3 ³	
5.3.1a			4.1(3a), 4.2(1a)		
5.0.5f, 5.3.1b, 5.3.2			4.1(1b), 4.1(3a)	3 ³	
5.3.2x, 6.1.1x, 6.2.1x			5.0(1a)		
5.3.2c			5.0(4), 5.0(4b), 5.04(c), 5.0(4d)		
4900		5.3.0b	4.1(1b)		
5100		6.1.1x, 6.2.1x	5.0(1a)		
		6.1.0x,	4.1(1b)		
5300		6.4.0c	5.2(1)	1, 3 ³	
		6.4.1a	5.2(1)	1, 3 ³	
		6.4.1b	5.2(1)	3 ³	
QLogic		SANbox2	1.4.0.43-0	1.3(4a)	Native
		SANbox 5200	6.0	2.1(2b)	
		SANbox64	1.5.1.04	1.3(4a)	
			2.01	1.3(4a)	
	SANbox 5600	5.0.1.10.00	3.0(2a) 3.0(3)		
HP	Virtual Connect	VCM 2.01 (FC 1.30)	4.1(3a), 4.2(1a)	Native (NPIV enabled), 1	
McDATA	6064, 6140, 4500, 3232	4.01	1.2(1a)	1	
		5.0.1	1.2(1b)		
		5.0.2	1.2(1a), 1.3(4a)		
		6.0, 6.01	1.3(4a)		
		6.02	2.0(1b)		
		7.0	2.1(1a)		
		7.1.0.5			

Table 3-3 *Switch Interoperability, Legacy Matrix (continued)*

Switch Vendor	Switch Models	Firmware Version	Cisco MDS OS Version	MDS InterOp Mode
McDATA	4500, 6140, 6064	07.1.0.5	3.0(1), 3.0(2a)	1, 4 ⁷
		08.1.01.4	3.0(1), 3.0(2a), 3.1(2), 4.2(5), 4.2(7a)	
		09.00	3.0(3), 3.1(2), 3.1(3)	
		09.01.00	3.0(3), 3.2(1a), 3.3(4)	
		09.06	3.2(1a)	
		09.06.00 22	3.2(3a)	
			4.1(1b)	
		09.07.01.4	3.3(1a), 3.3(1c), 4.1(1b)	
		09.07.02.1	3.3(3), 4.1(1b)	
		09.07.02.1	4.1(3a), 4.2(1a), 5.0(1a)	
		09.08.01	4.1(1b), 4.1(1c), 4.1(3a), 4.2(1a), 4.2(1b)	
		09.09.06	4.1(3a) ⁸	
	4500, 6064	09.09.08	3.3(3), 3.3(5), 4.2(7c)	4 ⁶
	6140	09.06.00, 09.09.06	5.0(1a)	1, 4 ⁶
		09.09.08	4.2(3) ⁹	4 ⁸
		09.09.08	5.2(1)	1, 4 ⁹
		09.09.09	5.0(4b)	4 ⁸
		09.09.09	5.2(1)	1, 4 ⁹
		09.08.01	5.2(2a)	1, 4 ^{7,9}
	6064	09.09.03, 09.09.06	5.0(1a)	1, 4 ⁶
	3032	09.07.01.4	3.3(1a), 3.3(1c), 4.1(1b)	
		09.07.02.1	3.3(3), 4.1(1b), 4.1(3a), 4.2(1)	
		09.09.08	4.2(3)	1, 4 ⁹
	4700	08.01.00, 09.09.03	5.0(1a)	1, 4 ⁶
	4500	09.09.03	5.0(1a)	1, 4 ⁶
		09.09.07, 09.09.08	4.2.(1a), 5.0(4b)	4 ⁹
		09.09.08	4.2(3)	1
	i10k	09.2.0.8	3.2(2c), 3.2(3), 3.2(3a)	1, 4 ⁶
		09.07.1.5	3.3(1a), 3.3(1c), 4.1(1b)	
		09.07.02.1	3.3(3), 4.1(1b), 4.1(3a), 4.2(1a)	
		09.08.03, 09.09.03	4.1(1b), 4.1(1c), 4.1(3a), 4.2(1a), 4.2(1b)	
		09.09.05	3.3(3), 4.1(1b), 4.1(1c), 4.1(3a), 4.2(1a), 4.2(1b)	
		09.09.08	4.2(3) ¹⁰	4 ⁸
		09.09.06	5.0(4b)	1, 4 ⁶

Table 3-3 **Switch Interoperability, Legacy Matrix (continued)**

Switch Vendor	Switch Models	Firmware Version	Cisco MDS OS Version	MDS InterOp Mode
Inrange	FC/9000	04.00.04.06	1.3(4a)	No Interop Setting required

1. Cisco MDS interop mode 1 supports connectivity of Cisco MDS 9000 Family switches to other Fibre Channel vendor switches per the FC-MI standard document.
2. Cisco MDS interop mode 2 supports nondisruptive connectivity to Brocade Silkorm 2800 and 3800 switches family with Core-PID set to 0.
3. Cisco MDS **InterOp mode 3** supports nondisruptive connectivity of all Brocade Silkorm switches including 3900 and 12000 switch family with Core-PID set to 1. We recommend using Cisco Fabric Manager for all MDS interop mode types with Brocade for zone administration. In MDS InterOp mode 3 and Brocade Native, Host attached to Brocade does not receive RSCN after zoneset activation/de-activation and can not discover LUNs immediately. Zoneset activation includes, a new zoneset activation and modification of existing zoneset and reactivation. Zoneset may be a regular zoneset or IVR zoneset. This issue is seen on all major Brocade releases 5.3.x; 6.1.0d, 6.x.
4. Zoning changes cannot be activated from Brocade switch. Work around is to use MDS switches to activate zoning changes. Brocade switches cannot see IVR enabled devices if NAT is enabled
5. In an IVR NAT enabled configuration, use persistence FCID with Area's value of 64 or less for MDS connected devices. This will ensure that the Brocade nameserver will discover the devices. In addition, RDI mode must be configured.
6. Cisco SAN-OS 3.2(1a) is supported on Brocade switches running 5.3.0 only.
7. MDS interop mode 4 supports native connectivity to McDATA switches, and is supported for migration purposes. McDATA software security features such as Fabric Binding are not supported in this mode and must be disabled.
The McDATA/IBM Bladecenter embedded switch in McDATA mode is not supported in interop mode 4. Only the standard mode (mode 1) is supported. For HP Blade servers with embedded Brocade and McDATA switch Interoperability matrix, visit:
<http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00758719/c00758719.pdf> and
http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00758729/c00758729.pdf?jumpid=reg_R1002_USEN.
For procedures, guidelines, and techniques for implementing switch-to-switch interoperability refer to the *Cisco MDS 9000 Family Switch to Switch Interoperability Configuration Guide* at the following URL:
http://www.cisco.com/en/US/products/hw/ps4159/ps4358/products_device_support_tables_list.html
8. MDS9124e in NPV mode.
9. Zoneset de-activation from either MDS or McDATA will cause McDATA switch to be un-responsive and rebooting it would be requirde to gain access.
10. MDS 9513 and MDS 9124 in IBM blade center

IBM eServer BladeCenter Interoperability Matrix

Table 3-4 MDS Interoperability with IBM eServer BladeCenter¹

	Blade SW Module Firmware	2062-D07, T07,D04, T04 (MDS 9500) Firmware	2054-E11 (MDS9513) Firmware	2062-D01/2061-020/ 040 (MDS9200/9100) Firmware	2053-424 (MDS9124) Firmware
Blade Center					
2-port FC Switch Module (No InterOp Mode Required)	2.0.1.09	1.3(2a) to 3.0(2a)	3.0(1) & 3.0(2a)	1.3(2a) to 3.0(2a)	NA
QLogic 6-port 2G Enterprise FC Switch Module (No InterOp Mode Required)	4.1.0.22 5.5.1.10	2.1(1a) to 3.0(2a) 3.0(2a)	3.0(1) & 3.0(2a) 3.0(2a)	2.1(1a) to 3.0(2a) 3.0(2a)	NA
QLogic 6-port 4G Enterprise FC Switch Module (No InterOp Mode Required)	5.5.1.10 5.5.2.6 5.5.2.8	3.0(2a) & higher	3.0(2a) & higher	3.0(2a) & higher	3.1(2) & higher
QLogic 4G Intelligent Pass-thru Module	6.5.0.21	4.1(1c) & higher (NPIV Mode)	4.1(1c) & higher (NPIV Mode)	4.1(1c) & higher (NPIV Mode)	4.1(1c) & higher (NPIV Mode)
QLogic 8G IPM	7.10.1.3.0	4.2.(5) & higher	4.2(5) & higher	4.2(5) & higher	4.2(5) & higher
McData 6-port 2/4G FC Switch Module (Standard Mode)	5.5.1.10 5.5.2.5 5.5.2.6.0	3.0(2a) & higher (default Mode)	3.0(1) & higher (default Mode)	3.0(2a) & higher (default Mode)	3.1(2) & higher (default Mode)
McData 6-port 2/4G FC Switch Module Standard and McDATA Fabric modes	5.5.2.6.0	NX-OS 4.1(1b)	NX-OS 4.1(1b)	NX-OS 4.1(1b)	NX-OS 4.1(1b)
Optical Pass-thru Module	NA	1.3(2a) to 3.0(2a)	3.0(1) & 3.0(2a)	1.3(2a) to 3.0(2a)	NA
Brocade Enterprise SAN Switch Module (InterOp Mode)	4.2.1a 5.0.3a	1.3(4a), 2.0(2b), 2.1(1a) 3.0(1), 3.0(2), 3.0(2a) (InterOp Mode 1)	3.0(2a) (InterOp Mode 1)	1.3(4a), 2.0(2b), 2.1(1a) 3.0(1), 3.0(2), 3.0(2a) (InterOp Mode 1)	NA
Brocade Entry SAN Switch Module (InterOp Mode)					

Table 3-4 MDS Interoperability with IBM eServer BladeCenter¹

	Blade SW Module Firmware	2062-D07, T07,D04, T04 (MDS 9500) Firmware	2054-E11 (MDS9513) Firmware	2062-D01/2061-020/ 040 (MDS9200/9100) Firmware	2053-424 (MDS9124) Firmware
Blade Center					
Brocade Enterprise SAN Switch Module (Native Mode)	4.2.1a	1.3(4a), 2.0(2b), 2.1(1a)	3.0(2a) (InterOp Mode 3)	1.3(4a), 2.0(2b), 2.1(1a)	NA
Brocade Entry SAN Switch Module (Native Mode)	5.0.3a	3.0(1), 3.0(2), 3.0(2a)		3.0(1), 3.0(2), 3.0(2a)	
		(InterOp Mode 3)		(InterOp Mode 3)	
Brocade 4G 6-port SAN Switch Module (InterOp Mode)	5.0.3a 5.3.1	3.0(1), 3.0(2), 3.0(2a) & higher (InterOp Mode 1)	3.0(2a) & higher (InterOp Mode 1)	3.0(1), 3.0(2), 3.0(2a) & higher (InterOp Mode 1)	3.1(2) & higher (InterOp Mode 1)
Brocade 4G 6-port SAN Switch Module (Native Mode)	5.0.3a 5.3.1	3.0(1), 3.0(2), 3.0(2a) & higher (InterOp Mode 3)	3.0(2a) & higher (InterOp Mode 3)	3.0(1), 3.0(2), 3.0(2a) & higher (InterOp Mode 3)	3.1(2) & higher (InterOp Mode 3)
Brocade 4G 6-port SAN Switch Module (Access Gateway)	5.3.1	4.1(1c) & higher (NPIV Mode)	4.1(1c) & higher (NPIV Mode)	4.1(1c) & higher (NPIV Mode)	4.1(1c) & higher (NPIV Mode)

1. Refer to the following URL for full IBM SAN Volume Controller compatibility information with Cisco MDS 9000 switch family:
<http://www-1.ibm.com/support/docview.wss?rs=591&uid=ssg1S1002472>

NPV Interoperability Matrix

Table 3-5 Cisco N-Port Virtualization (NPV) InterOp Matrix - Edge

Cisco MDS9000	MDS OS version (NPV enabled)	Brocade Core FOS version (NPIV)	McDATA
Embedded MDS 9124e	3.2(1), 3.3(1c)	5.2.0a	
	4.1(1b), 4.1(1c), 4.1(3a)	6.1.0d	
	4.1(3a)		9.09.06
	4.2(3a)	5.1.0d	
Embedded MDS IBM Blade Switch	3.2(1), 3.3(1c)	5.2.0a	
	4.1(1b), 4.1(1c), 4.1(3a), 4.2(1a)	6.1.0d	
MDS9134	5.0(1a)	6.4.0b	

Table 3-6 Cisco N-Port Virtualization (NPV) InterOp Matrix - Core

Brocade Embedded Switch Blade (edge)	FabricOS	Cisco Core NX-OS (NPIV)
Access Gateway	6.4.x	4.2(7c)
HP Bladeserver (Brocade 5480)	6.4.0b	4.2(1b), 5.0(1a)

Table 3-7 Cisco N-Port Virtualization (NPV) InterOp Matrix - Core

HP embedded swiches	FW	Cisco Core NX-OS (NPIV)
Virtual Connect ¹	VCM 2.01 (FC 1.30)	4.1(3a), 4.2(1a)

1. Refer to HP matrix for more detailed information:

http://h20272.www2.hp.com/utility/document.aspx?docurl=Shared%20Documents/hw/switches/C-Series_FC_Switch_Connectivity_Stream_2011_02_04.pdf

