



## CHAPTER **3**

# Fabric Services Interoperability Matrix

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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.

- [SANTap DVT Interoperability Support Matrix](#)
- [Data Mobility Manager \(DMM\)](#)
- [Storage Media Encryption \(SME\)](#)
- [FC-IP SAN Extension](#)

Customer Order Number:

# SANTap DVT Interoperability Support Matrix

**Table 3-1**      *SANTap DVT Interoperability Support Matrix*

Storage Partner	Storage System Model	Page
HDS	TagmaStore Universal Storage Platform (USP), Adaptable Modular Storage, Lightning,	3
IBM	ESS 2105 model 800, DS 8100	4
	DS4200 (FAStT 700), DS4500 (FAStT 900) HP	5
HP	HP MSA 1500, HP EVA XL4000 (HSV200, HSV201), 6000 (HSV200, HSV201), 8000 (2Gb or 4Gb)(HSV210	6
Network Appliance <sup>1</sup>	v3070c, FAS3050c, FAS940c (Ontap 7.2.4)	7
EMC <sup>2</sup>	Symmetrix DMX1000, DMX3, CX500, CX700	8

1. For Network Appliance SANTap/ReplicatorX support matrix, goto: [http://now.netapp.com/NOW/knowledge/docs/olio/guides/tdps/tdps\\_interoperability\\_guide.xls](http://now.netapp.com/NOW/knowledge/docs/olio/guides/tdps/tdps_interoperability_guide.xls)
2. For EMCSANTap/RecoverPoint support, use the EMC e-Lab Navigator web tool.

# HDS

**Table 3-2 TagmaStore Universal Storage Platform (USP), Adaptable Modular Storage, Lightning**

Operating System		Host Bus Adapter	Multipath Support	Switch Fabric <sup>1</sup> SAN-OS/SSI
Type	Version			
Windows 2003	Enterprise	<b>Emulex:</b> LPe11000, LP11000, LP10000	HDLM	MDS9513
	Edition SP2/R2	<b>QLogic:</b> QLA2340, QLE2460		MDS9509
Netware	6.5 SP5	<b>QLogic:</b> QLA2340	bundled	MDS9506
HPUX	11i, 11iv2	<b>HP:</b> A6795A	HDLM	MDS9216A
AIX	5.2, 5.3	IBM: 5715, 6239		MDS9216i
VMWare	ESX 3.0.1	<b>QLogic:</b> QLA2340	bundled	3.0(1)/3.0.1
Solaris	9	Emulex: LP10000, LP11000, LPe11000	HDLM	3.0(2a)/3.0.2i
		QLogic: QLA2340	HDLM	3.0(3)/3.0.3i
Linux	RedHatAS 4.0 UP4	<b>Emulex:</b> LPe11000, LP11000, LP10000	HDLM	3.1(2b) / 3.1(2b) 3.1(3a) / 3.1(3) 3.2(2c) / 3.2(2b) <sup>2</sup> 3.2(2c) / 3.2(3) 3.3(1c)/3.2(3r) 4.1(1b)/4.1(1b)  MDS9222i MSM 18+4 4.1(1b)/4.1(1b)

1. Refer to the following link for SAN-OS Release Compatibility Matrix for Storage Service Module:  
[http://www.cisco.com/en/US/docs/storage/san\\_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html](http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html)
2. This combination is supported on SANTap fabric service only.

# IBM

**Table 3-3** ESS 2105 model 800, DS 8100

Operating System		Host Bus Adapter	Multipath Support	Switch Fabric <sup>1</sup> SAN-OS/SSI
Type	Version			
Windows 2003	Enterprise SP1	<b>Emulex:</b> LP11002	SDD	MDS9513
Solaris	10	<b>QLogic:</b> QLA2462		MDS9509
AIX <sup>3</sup>	5.3	<b>IBM:</b> FC5716		MDS9506
Linux RedHat	4.0	<b>QLogic:</b> QLA2462		MDS9216A MDS9216i 3.0(1)/3.0.1 3.0(2a)/3.0.2i 3.0(3)/3.0.3i 3.1(2b) / 3.1(2b) 3.1(3a) / 3.1(3) 3.2(2c) / 3.2(2b) <sup>2</sup> 3.2(2c) / 3.2(3) 3.3(1c)/3.2(3r) 4.1(1b)/4.1(1b)  MDS9222i MSM 18+4 4.1(1b)/4.1(1b)

1. Refer to the following link for SAN-OS Release Compatibility Matrix for Storage Service Module:  
[http://www.cisco.com/en/US/docs/storage/san\\_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html](http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html)
2. This combination is supported on SANTap fabric service only.
3. SDD support for the DS8000 storage array family is in SSI 3.2(2b) version and higher.

Table 3-4 DS4200 (FAStT 700), DS4500 (FAStT 900) HP

Operating System		Host Bus Adapter	Multipath Support	Switch Fabric SAN-OS/SSI
Type	Version			
Windows 2000	Advanced Server SP4	<b>QLogic:</b> QLA2462	RDAC <sup>1</sup>	MDS9513
AIX	5.3	<b>IBM:</b> FC5716		MDS9509
Solaris	10	<b>Emulex:</b> LP11002	MPXIO	MDS9506
				MDS9216A
				MDS9216i
				3.0(1)/3.0.1
				3.0(2a)/3.0.2i
				3.0(3)/3.0.3i
				3.1(2b) / 3.1(2b)
				3.1(3a) / 3.1(3)
				3.2(2c) / 3.2(2b)
				<sup>2</sup> 3.2(2c) / 3.2(3)
			3.3(1c)/3.2(3r)	
			4.1(1b)/4.1(1b)	
			MDS9222i	
			MSM 18+4	
			4.1(1b)/4.1(1b)	

1. For AIX, RDAC is supported on SSI image 3.2(2b) and higher
2. This combination is supported on SANTap fabric service only.

# HP

Table 3-5 HP MSA 1500, HP EVA XL4000 (HSV200, HSV201), 6000 (HSV200, HSV201), 8000 (2Gb or 4Gb)(HSV210)

Operating System		Host Bus Adapter	Multipath Support	Switch Fabric <sup>1</sup> SAN-OS/SSI
Type	Version			
Windows 2000	Advanced Server SP4 (IA32)	<b>QLogic:</b> QLA2342	MPIO-DSM	MDS9513
Windows 2003	Enterprise Edition SP1 (IA32, IA64, x64)	<b>HP:</b> QMH2462 (C-Class Mezzanine) <b>Qlogic:</b> QLE2462, QLA2342 <b>Emulex:</b> LPe1105, LP11002-M4, LP1050DC.		MDS9509
HPUX	11.23, 11.11	<b>HP:</b> AB378A, A6826A	SecurePath	MDS9506
Linux RedHat	4.0 (IA32)	<b>Emulex:</b> LPe1105 (C-Class Mezzanine)	Multipulse	MDS9216A
	4.0 (IA64)	<b>QLogic:</b> QLA2460		Qlogic-MPIO
			PVlink	3.0(1)/3.0.1
				3.0(2a)/3.0.2i
				3.0(3)/3.0.3i
				3.1(2b)/3.1(2b)
				3.1(3a)/3.1(3)
				3.2(2c) / 3.2(2b)
				<sup>2</sup> 3.2(2c) / 3.2(3)
				3.3(1c)/3.2(3r)
				4.1(1b)/4.1(1b)
				MDS9222i
				MSM 18+2
				4.1(1b)/4.1(1b)

1. Refer to the following link for SAN-OS Release Compatibility Matrix for Storage Service Module:  
[http://www.cisco.com/en/US/docs/storage/san\\_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html](http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html)
2. This combination is supported on SANTap fabric service only.

## Network Appliance

Table 3-6 v3070c, FAS3050c, FAS940c (Ontap 7.2.4)

Operating System		Host Bus Adapter	Multipath Support	Switch Fabric <sup>1</sup> SAN-OS/SSI
Type	Version			
Windows 2000	Advanced Server SP4 (IA32)	<b>Emulex:</b> LP11000	MPIO-DSM	MDS9513
Windows 2003	Enterprise Edition SP2/R2	<b>QLogic:</b> QLA2342 <b>Emulex:</b> LP11002		MDS9509
	IA64	<b>QLogic:</b> Mezzanine QMH2462		MDS9506
HPUX	11.23	<b>HP:</b> A6795A	PVlink	MDS9216A
AIX	5.3	<b>Emulex:</b> LP10000	MPIO-DSM	MDS9216i
Solaris	10 U1	<b>Emulex:</b> LP11000	MPXIO	<sup>2</sup> 3.2(2c) / 3.2(3)
	10 U3	<b>QLogic:</b> QLA2462		3.3(1c)/3.2(3r)
Linux RedHat	4.0 U4	<b>Emulex:</b> LPe11000 <b>QLogic:</b> QLA2460, Mezzanine QMH2462	Device Mapper	4.1(1b)/4.1(1b)

1. Refer to the following link for SAN-OS Release Compatibility Matrix for Storage Service Module:  
[http://www.cisco.com/en/US/docs/storage/san\\_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html](http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html)
2. This combination is supported on SANTap fabric service only.

## EMC

Table 3-7 Symmetrix DMX1000, DMX3, CX500, CX700

Operating System		Host Bus Adapter	Multipath Support	Switch Fabric <sup>1</sup> SAN-OS/SSI
Type	Version			
Windows 2003	Enterprise Edition	<b>Emulex:</b> LP9002DC, 10000, LP1105 (IBM Blade Center), LP9802DC, LP11000 <b>QLogic:</b> QMC2462 (Mezannine card)	Power Path	MDS9513
AIX	5.1, 5.2, 5.3	<b>IBM:</b> 6239, 6228		MDS9509
HPUX	11iv2 (PA-RISC, IA-64)	<b>HP:</b> A6826A, A6795A		MDS9506
Linux RedHat	4.0 AS	<b>QLogic:</b> QLA234, Mezannine card <b>Emulex:</b> LP1105 (Mezzanine card)2		MDS9216A
Solaris	8, 9, 10	Emulex: LP10000, LP10000DC QLogic: QLA2342 Sun: X6768A		MDS9216i
				3.0(2a)/3.0.2j
				3.1(2b)/3.1(2b)
				3.1(3a)//3.1(3)
				3.2(2c) / 3.2(2b)
				<sup>2</sup> 3.2(2c) /3.2(3)
				3.3(1c)/3.2(3r)

1. Refer to the following link for SAN-OS Release Compatibility Matrix for Storage Service Module:  
[http://www.cisco.com/en/US/docs/storage/san\\_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html](http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/sw/ssi/compatibility/matrix/SSImtx.html)
2. This combination is supported on SANTap fabric service only.









# Data Mobility Manager (DMM)

**Table 3-8 Data Mobility Manager<sup>1</sup>**

Software Partner	Storage Array	Page
EMC	Transferring data from Existing CLARiiON 600 to New CLARiiON 700	13
	Transferring data from Existing CLARiiON 600 to New DMX 3000	13
	Transferring data from Existing Symmetrix-5 to New DMX 3000	14
	Transferring Data from Existing Symmetrix 8430 to new HDS USPV	14
	Transferring Data from Existing DMX-3 to new CLARiiON 600	14
	Transferring Data from Existing DMX-3 to new CLARiiON 600, then from this CLARiiON 600 back to DMX-3	15
	Under VCS control, transferring Data from Existing DMX-3 to new DMX-3	15
IBM	Transferring data from Existing FAStT to New DS4500	16
	Transferring data from Existing ESS 2105 model 800 to New DS8000	16
	Transferring data from Existing ESS 2105 model 800 to New DS8000	17
	Transferring data from Existing HP EVA 4000 to New IBM DS8100	17
	Transferring data from Existing HP XP12000 to New IBM DS8100	17
	Under VMware ESX environment, transferring data from Existing FAStT900 to New IBM DS4500	18
	Under MSCS, transferring data from Existing HDS 9585v to New IBM DS8100	18
HP	Transferring data from Existing EVA 5000 to New EVA 4000/ 8000	19
	Transferring data from Existing EVA 5000 to New XP12000	19
	Transferring data from Existing EVA 5000 to New XP12000	19
	Under Oracle RAC environment, transferring data from Existing HP EVA 4000 to New HP EVA 4000	20
	Transferring data from Existing XP1024 to New XP12000	20
HDS	Transferring data from Existing HDS9585 to New HDS9970v	21
	Transferring data from Existing HDS9585 to New TagmaStore	21
	Transferring data from Existing HDS9000 to New TagmaStore	22
	Transferring data from Existing HDS9200 to New HDS USPV	22
Network Appliance	Transferring data from Existing FAS940C to New FAS940C	23

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".

Starting with NX-OS 4.1(1b), DMM method3 will be supported via RPQ only.

## EMC

Table 3-9 Transferring data from Existing CLARiiON 600 to New CLARiiON 700

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	PowerPath	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	QLogic :QLE2462	PowerPath	LVM	MDS9216i
		Emulex: LPe11002			MDS 9222i
	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 3-10 Transferring data from Existing CLARiiON 600 to New DMX 3000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1, SP2	QLogic: QLE2462	PowerPath	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	PowerPath	LVM	MDS9216i
	AS 4.0	QLogic: QLE2462	PowerPath	LVM2	MDS 9222i
		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 3-11** Transferring data from Existing Symmetrix-5 to New DMX 3000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch	
Windows 2003	SP1	QLogic: QLE2462	PowerPath	Windows Native	MDS9500	
		Emulex: LPe11002-M4			MDS 9216A	
Linux RedHat	AS 3.0	QLogic :QLE2462	PowerPath	LVM	MDS9216i	
		Emulex: LPe11002-M4			MDS 9222i	
	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 3-12** Transferring Data from Existing Symmetrix 8430 to new HDS USPV

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP2	QLogic: QLE2462	PowerPath	Windows Native	MDS9500
					MDS 9216A
Linux RedHat	AS 4.0	Emulex: LPe11002-M4	PowerPath	LVM2	MDS9216i
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MDS 9222i
HPUX	11iv2	HP: AB378-60101	HP PVLlinks	LVM	
AIX	5.3	IBM: 03N5014	PowerPath	LVM	

**Table 3-13** Transferring Data from Existing DMX-3 to new CLARiiON 600

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Solaris	8	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MDS9500
			PowerPath		MDS 9216A
					MDS9216i
					MDS 9222i

**Table 3-14** *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
Windows 2003	SP2	QLogic :QLE2462	PowerPath	Windows Native	MDS9500 MDS 9216A
AIX	5.3	IBM: 03N5014	MPIO	LVM	MDS9216i MDS 9222i

**Table 3-15** *Under VCS control, transferring Data from Existing DMX-3 to new DMX-3*

Operating Systems	OS Version	VCS version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Solaris	10	5.0 with IO fencing enabled	Emulex: LPE11002-M4	Veritas DMP	VxVm	MDS9500 MDS 9216A MDS9216i MDS 9222i
		5.0 with IO fencing disabled				

# IBM

**Table 3-16** Transferring data from Existing FASTT to New DS4500

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	RDAC	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	QLogic :QLA2342	RDAC	LVM	MDS9216i
	AS 4.0	QLogic: QLA2342	Device Mapper	LVM2	MDS 9222i
		Emulex: LPe11002-M4	RDAC	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			RDAC		
HPUX	11iv2	HP: AB378-60101	HP PVLinks	LVM	
			RDAC		
AIX	5.3	IBM: 03N5014	RDAC	LVM	

**Table 3-17** Transferring data from Existing ESS 2105 model 800 to New DS8000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLA2342	SDD	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	SDD	LVM	MDS9216i
	AS 4.0	Emulex: LPe11002-M4	Device Mapper	LVM2	MDS 9222i
			SDD	LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			SDD		
HPUX	11iv2	HP: AB378-60101	HP PVLinks	LVM	
			SDD		
AIX	5.3	IBM: 03N5014	SDD	LVM	



**Table 3-18** Transferring data from Existing DS4500 to New DS8000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	<b>QLogic:</b> QLA2342	RADAC, SDD	Windows Native	MDS9500
		<b>Emulex:</b> LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	<b>QLogic:</b> QLA2342	SDD	LVM	MDS9216i
	AS 4.0	<b>Emulex:</b> LPe11002-M4	SDD	LVM2	MDS 9222i
		<b>QLogic:</b> QLA2342	Device Mapper	LVM2	
Solaris	10	<b>Emulex:</b> LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			RDAC, SDD		
HPUX	11iv2	<b>HP:</b> AB378-60101	HP PVLinks	LVM	
			RDAC, SDD		
AIX	5.3	<b>IBM:</b> 03N5014	RDAC, SDD	LVM	

**Table 3-19** Transferring data from Existing HP EVA 4000 to New IBM DS8100

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP2	<b>QLogic:</b> QLE2462	MPIO	Windows Native	MDS9500 MDS 9216A
Solaris	10	<b>Emulex:</b> LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MDS9216i MDS 9222i
AIX	5.3	<b>IBM:</b> 03N5014	HP MPIO / AIX MPIO	LVM	

**Table 3-20** Transferring data from Existing HP XP12000 to New IBM DS8100

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP2	<b>QLogic:</b> QLE2462	MPIO	Windows Native	MDS9500 MDS 9216A
Solaris	10	<b>Emulex:</b> LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MDS9216i MDS 9222i

**Table 3-21** Under VMware ESX environment, transferring data from Existing FASt900 to New IBM DS4500

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
VMware ESX	ESX Server 3.0.1 Linux RH 4.0	QLogic: QLA2432	VMware Native	VMware Native	MDS9500 MDS 9216A MDS9216i MDS 9222i
VMware ESX	ESX server 3.0.1 Windows 2003 Server	QLogic: QLA2432	VMware Native	VMware Native	

**Table 3-22** Under MSCS, transferring data from Existing HDS 9585v to New IBM DS8100

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP2	QLogic: QLE2462	HDLM	Windows Native	MDS9500 MDS 9216A MDS9216i MDS 9222i

## HP

Table 3-23 Transferring data from Existing EVA 5000 to New EVA 4000/ 8000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	SecurePath	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	SecurePath	LVM	MDS9216i
	AS 4.0	QLogic: QLE2462	QL Failover	LVM2	MDS 9222i
		Emulex: LPe11002-M4	Device Mapper	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	SecurePath	LVM	

Table 3-24 Transferring data from Existing EVA 5000 to New XP12000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	MPIO	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	QLogic: QLE2462	QL Failover	LVM	MDS9216i
	AS 4.0	QLogic: QLE2462	QL Failover	LVM2	MDS 9222i
		Emulex: ?	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	SecurePath	LVM	

**Table 3-25** 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
Linux RedHat	AS 4.0	Oracle DB 11g R1  Oracle Clusterware  11gR1	Emulex:LPe1100 2-M4	Emulex Multipulse  HP Multipulse	LVM2	MDS9500 MDS 9216A MDS9216i MDS 9222i

**Table 3-26** Transferring data from Existing XP1024 to New XP12000

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	MPIO	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	QLogic: QLE2462	QL Failover	LVM	MDS9216i
	AS 4.0	QLogic: QLE2462	QL Failover	LVM2	MDS 9222i
		Emulex: LPe11002-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	?	LVM	

## HDS

**Table 3-27** Transferring data from Existing HDS9585 to New HDS9970v

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	<b>QLogic:</b> QLE2462	HDLM	Windows Native	MDS9500
		<b>Emulex:</b> LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	<b>QLogic:</b> QLE2462	Device Mapper	LVM	MDS9216i
	AS 4.0	<b>QLogic:</b> QLE2462		LVM2	MDS 9222i
Solaris	10	<b>Emulex:</b> LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			HDLM		
HPUX	11iv2	<b>HP:</b> AB378-60101	HP PVLlinks	LVM	
			HDLM		
AIX	5.3	<b>IBM:</b> 03N5014	HDLM	LVM	

**Table 3-28** Transferring data from Existing HDS9585 to New TagmaStore

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	<b>QLogic:</b> QLE2462	HDLM	Windows Native	MDS9500
		<b>Emulex:</b> LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	Emulex: ?	Device Mapper	LVM	MDS9216i
	AS 4.0	<b>QLogic:</b> QL?2462		LVM2	MDS 9222i
Solaris	10	<b>Emulex:</b> LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			HDLM		
HPUX	11iv2	<b>HP:</b> AB378-60101	HP PVLlinks	LVM	
			HDLM		
AIX	5.3	<b>IBM:</b> 03N5014	HDLM	LVM	

**Table 3-29** *Transferring data from Existing HDS9000 to New TagmaStore*

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	MDS9500
		Emulex: LPe11002-M4			MDS 9216A
Linux RedHat	AS 3.0	QLogic: QLE2462	Device Mapper	LVM	MDS9216i
	AS 4.0	QLogic: QLE2462		LVM2	MDS 9222i
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	
			HDLM		
HPUX	11iv2	HP: AB378-60101	HP PVLinks	LVM	
			HDLM		
AIX	5.3	IBM: 03N5014	HDLM	LVM	

**Table 3-30** *Transferring data from Existing HDS9200 to New HDS USPV*

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	HDLM	Windows Native	MDS9500
Linux RedHat	AS 4.0	QLogic: QLE2462		LVM2	MDS 9216A
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MDS9216i
HPUX	11iv2	HP: AB378-60101	HP PVLinks	LVM	MDS 9222i
AIX	5.3	IBM: 03N5014	HDLM	LVM	

## Network Appliance

**Table 3-31** Transferring data from Existing FAS940C to New FAS940C

Operating Systems	OS Version	Host Bus Adapter	Multipath App.	Volume Manager	Switch
Windows 2003	SP1	QLogic: QLE2462	N/A	Windows Native	MDS9500 MDS 9216A
Linux RedHat	AS 3.0	QLogic: QLE2462	NA	LVM2	MDS9216i MDS 9222i

# Storage Media Encryption (SME)

**Table 3-32 Storage Media Encryption<sup>1</sup>**

Software Partner	Data Center Backup Application	Page
<a href="#">Symantec</a>	<a href="#">Veritas NetBackup</a>	25
<a href="#">EMC</a>	<a href="#">Legato Networker</a>	27
<a href="#">HP</a>	<a href="#">HP Data Protector</a>	29
<a href="#">BakBone Software</a>	<a href="#">NetVault</a>	30
<a href="#">IBM</a>	<a href="#">Tivoli Storage Manager (TSM)</a>	31

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 3-33 Veritas NetBackup

Operating Systems	NetBackup Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
Windows 2000 (SP4)	5.1	Sun/STK L180	STK 9840C, IBM LTO-2	MDS 9500
		HP Stanalone Tape Drive	MSL 6060	MDS 9216A
	6.0	Sun/STK L180	HP LTO-2,	MDS9216i
		Sun/STK L700e	STK T10k, IBM LTO-3, IBM LTO-2, HP LTO-3	MDS9222i
		Sun/STK L8500	HP LTO-2, HP LTO-3, IBM LTO-2, IBM LTO-3	3.2(2c)
		EMC CDL 4400	ADIC i2k SDLT320 Sun/STK SL500 IBM LTO-3	3.2(3a)
		Quantum ADIC Scalar i2000	IBM LTO-3	3.3(1c)
IBM Standalone Tape Drive	IBM 3592	4.1(1b)		
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 Stanalone 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 3-33 Veritas NetBackup (continued)

Operating Systems	NetBackup Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
Solaris 10	5.1	Sun/STK L180	HP LTO2, STK 9840C,	MDS 9500
	6.0	Quantum ADIC Scalar i2000	IBM LTO-3	MDS 9216A
		Sun/STK L700e	STK T10k, IBM LTO-2, IBM LTO-3, STK 9940B	MDS9216i MDS9222i
		Sun/STK SL500	HP LTO-4	3.2(2c)
		Sun/STK L700	IBM LTO-4	3.2(3a)
		Sun/STK L8500	HP LTO-3, HP LTO-2, STK T10k, IBM LTO-2, IBM LTO-3, SDLT 600	3.3(1c) 4.1(1b)
		EMC CDL 4400	ADIC i2k SDLT 320 Sun/STK SL500 IBM LTO-3	
		IBM 3584	IBM LTO-2	
		IBM Stand Alone Tape	IBM 3592	
	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	

## EMC

Table 3-34 Legato Networker

Operating Systems	Networker Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
Windows 2000 (SP4)	7.2.1	Sun/STK L700e	HP LTO-3, IBM LTO-2, IBM LTO-3	MDS 9500 MDS 9216A
		Quantum ADIC Scalar i2000	IBM LTO-3	MDS9216i
		EMC CDL 4400	ADIC i2k SDLT320 Sun/STK SL500 IBM LTO-3	MDS9222i
	7.3.2	Sun/STK L180	HP LTO-2, IBM LTO-2	3.2(2c)
		Sun/STK L700e	STK T10k	3.2(3a)
		Sun/STK L8500	IBM LTO-2, IBM LTO-3	3.3(1c)
		IBM Standalone Tape Drive	IBM 3592, HP MSL 6060	4.1(1b)
	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	
		Sun/STK L700e	STK T10k	
	7.3.2	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 3-34 Legato Networker (continued)

Operating Systems	Networker Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
AIX 5.3	7.2.1	Sun/STK L700e	IBM LTO-2, IBM LTO-3, HP LTO-3	MDS 9500 MDS 9216A
	7.3.2	Sun/STK L700e	STK T10k	MDS9216i
		EMC CDL 4400	Sun/STK SL500 IBM LTO-3	MDS9222i
		IBM Standalone Tape Drives	IBM 3592	3.2(2c)
HP-UX 11i (ia64)	7.3.2	Sun/STK L700	IBM LTO-3	3.2(3a) 3.3(1c) 4.1(1b)

# HP

**Table 3-35 HP Data Protector**

Operating Systems	Data Protector	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
Linux RedHat (version 4.0)	6.0	ESL 322e	HP LTO-2	MDS 9500
		MSL 2024	HP LTO-3	MDS 9216A
		VLS 6105	HP LTO-2, HP LTO-3	MDS9216i
		ESL E-series	HP LTO-3	MDS9222i
		MSL 6030	Quantum SDLT 600	3.2(3)
		EML E-serries	HP LTO-4	3.2(3a)
		MSL 8096	HP LTO-4	3.3(1c)
Linux SUSE (SLES 9.0)	6.0	ESL 322e	HP LTO-2	4.1(1b)
		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-serries	HP LTO-4	
		MSL 8096	HP LTO-4	
Windows 2003 (Enterprise)	6.0	ESL 322e	HP LTO-2	4.1(1b)
		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-serries	HP LTO-4	
		MSL 8096	HP LTO-4	
HP-UX 11iv3	6.0	HP ESL 322e	HP LTO-2	
	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 3-36 NetVault

Operating Systems	NetVault	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
Linux RedHat AS 4.0 U4 Kernel 2.6.9.42	8.0	Sun/STK L180	HP LTO-2, IBM LTO-2	MDS 9500
		Stand Alone drive	HP LTO-4	MDS 9216A
FAS 940C - Data ONTAP 6.5.2	8.0 (NDMP)	Sun/STK L180	HP LTO-2, IBM LTO-2	MDS9216i MDS9222i
FAS 940C - Data ONTAP 7.2.4	8.0 (NDMP)	Stand Alone drive	HP LTO-4	3.2(3) 3.2(3a) 3.3(1c) 4.1(1b)

# IBM

**Table 3-37 Tivoli Storage Manager (TSM)**

Operating Systems	TSM Version	Tape Library Model	Tape Drives & Emulated Libraries Supported	Switch
Windows 2000 (SP4)	5.4.0	IBM Stand-Alone Tape	IBM LTO-2, IBM TS1120	MDS 9500
Windows 2003 (SP2)	5.4.0	IBM Stand-Alone Tape	IBM LTO-2, IBM TS1120	MDS 9216A
Linux RH AS 4 U2 kernel 2.6.9.22	5.4.0	IBM Stand-Alone Tape	IBM LTO-2, IBM TS1120	MDS9216i MDS9222i
AIX 5.3	5.4.0	SUN/STK 8500	HP LTO-2	4.1(1b)
		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			

# FC-IP SAN Extension

**Table 3-38 SAN Extension InterOp Support Matrix**

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

1. If Mode1 is configured on 9216i/14+2 HW (LZS) compression will be in effect
2. Veritas NetBackup and IBM TSM backup applications are supported only
3. On 9222i/18+4 mode1/mode2/mode3 configuration will automatically be converted to "auto" which means H/W (DEFLATE) compression will in effect
4. 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.
5. S/W LZS on IPS4/8 side and H/W LZS on 14+2 side