



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	30
	Transferring data from Existing CLARiiON 600 to New DMX 3000	30
	Transferring data from Existing Symmetrix-5 to New DMX 3000	31
	Transferring Data from Existing Symmetrix 8430 to new HDS USPV	31
	Transferring Data from Existing DMX-3 to new CLARiiON 600	31
	Transferring Data from Existing DMX-3 to new CLARiiON 600, then from this CLARiiON 600 back to DMX-3	32
	Under VCS control, transferring Data from Existing DMX-3 to new DMX-3	32
	Under HACMP control, transferring Data from Existing DMX-3 to new DMX-3	32
	Under MSCS control, transferring Data from Existing DMX-3 to new DMX-3	32
	Transferring Data from Existing DMX-3 to new DMX-3	33
	Transferring Data from Existing DMX-3 to IBM SVC	33
	Under Sun Cluster control, transferring Data from Existing DMX-3 to new DMX-3	33
	Transferring Data from Existing DMX-1000 to new DMX-3	34
	Transferring Data from Existing EMC CX700 to new DMX-3	34
	Transferring Data from Existing Oracle STK D280 to new DMX-3	34
	Transferring Data from Existing DMX-1000 to new EMC CX4	35
	Transferring Data from Existing DMX-3 to new EMC CX4	35
	Transferring Data from Existing EMC CX700 to new EMC CX4	36
	Transferring Data from Existing Oracle STK D280 to new EMC CX4	36
Transferring Data from Existing EMC DMX-3 to new EMC DMX-3	36	
Transferring Data from Existing Compellent storage to new EMC DMX-3	36	
Transferring Data from Existing DMX3 to new EMC DMX-3	37	
IBM	Transferring data from Existing FAStT to New DS4500	37
	Transferring data from Existing ESS 2105 model 800 to New DS8000	38
	Transferring data from Existing ESS 2105 model 800 to New DS8000	38
	Transferring data from Existing HP EVA 4000 to New IBM DS8100	38
	Transferring data from Existing HP XP12000 to New IBM DS8100	39
	Transferring data from Existing IBM 2105 800 (ESS Shark) to New NetApp FAS3050	39
	Under VMware ESX environment, transferring data from Existing FAStT900 to New IBM DS4500	40
	Under MSCS, transferring data from Existing HDS 9585v to New IBM DS8100	40
	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	41
	Transferring data from Existing EVA 5000 to New XP12000	41
	Transferring data from Existing EVA 5000 to New XP12000	41
	Under Oracle RAC environment, transferring data from Existing HP EVA 4000 to New HP EVA 4000	42
	Transferring data from Existing XP1024 to New XP12000	42
HDS	Transferring data from Existing HDS9585 to New HDS9970v	43
	Transferring data from Existing HDS9585 to New TagmaStore	43
	Transferring data from Existing HDS9000 to New TagmaStore	44
	Under MSCS and Veritas Volume Manager, transferring data from existing 9970V to new CLARiON700	44
	Transferring data from Existing HDS9200 to New HDS USPV	44
NetApp	Transferring data from Existing FAS940C to New FAS940C	45
SUN	Transferring data from Existing StorageTek 9985V to New Storage Tek 9990V	46
	Transferring data from Existing Storage Tek 9900V to New Storage Tek 9990V	46
Compellent	Transferring data from existing EMC DMX-3 to new Compellent storage	47

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 MDS 9222i
		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 MDS 9222i
		Emulex: LPe11002-M4			
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
Linux RedHat	AS 4.0	Emulex: LPe11002-M4	PowerPath	LVM2	MSM 18/4
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	VxVm	SSM MDS 9222i MSM 18/4
			PowerPath		

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 MDS 9222i MSM 18/4
		5.0 w/out IO fencing				
		4.1 w/ IO fencing		PowerPath 4.5.1		
		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		
Windows 2003 Server	SP2		Powerpath 5.3		
Windows 2003 Advanced Server Cluster			PowerPath 5.2		
Windows 2008 Server R2			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

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

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 MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster			PowerPath 5.2		
Windows 2003 Server	SP2		PowerPath 5.3		
Windows 2008 Server R2			PowerPath 5.2		
Windows 2008 Failover Server			PowerPath 5.3		

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 MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster			PowerPath 5.2		
Windows 2003 Server	SP2		PowerPath 5.3		
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 MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster					
Windows 2003 Server	SP2				
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	SP2		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 MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster			PowerPath 5.2		
Windows 2003 Server	SP2		PowerPath 5.3		
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	SP2		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 MDS 9222i MSM 18/4
Windows 2000 Advanced Server Cluster					
Windows 2003 Server	SP2				
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 MDS 9222i MSM 18/4
Open VMS	7.3-1				

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 Emulex: LPe11002	MPIO	Windows Native	MDS 9222i 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+ Windows 2008	Server	Cisco: M71KR-Q	PowerPath 5.3	WIndows Native	MDS 9222i 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 5.0 w/out IO fencing	Emulex: LPE11002-M4	Veritas DMP	VxVm	SSM 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 MDS 9222i MSM 18/4
		Emulex: LPe11002-M4			
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 RDAC	VxVm	
HPUX	11iv2	HP: AB378-60101	HP PVLlinks RDAC	LVM	
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 MDS 9222i
		Emulex: LPe11002-M4			
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 MDS 9222i
		Emulex: LPe11002-M4			
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
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MSM 18/4
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 FASt900 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 Transferring 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 MDS 9222i
		Emulex: LPe11002-M4			
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 PVLinks	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 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: LPe1102-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	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 Emulex: LPe11002-M4	QL Failover Multipulse	LVM2 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 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 MDS 9222i
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	QLogic: QLE2462	Device Mapper	LVM	MSM 18/4
	AS 4.0	QLogic: QLE2462		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 MDS 9222i
		Emulex: LPe11002-M4			
Linux RedHat	AS 3.0	Emulex: LPe11002-M4	Device Mapper	LVM	MSM 18/4
	AS 4.0	QLogic: QL?2462		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			
Linux RedHat	AS 3.0	QLogic: QLE2462	Device Mapper	LVM	MDS 9222i
	AS 4.0	QLogic: QLE2462		LVM2	
Solaris	10	Emulex: LPe11002-M4 (Leadville)	Veritas DMP	VxVm	MSM 18/4
			HDLM		
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
				LVM2	
Linux RedHat	AS 4.0	QLogic: QLE2462			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 StorageTek 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
		Emulex: LPe11002-M4			MSM 18/4

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	48
EMC	Legato Networker	50
HP	HP Data Protector	52
BakBone Software	NetVault	53
IBM	Tivoli Storage Manager (TSM)	54

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		
		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 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	
Linux RHEL V5	8.2	Sun/STK L180	HP LTO-3, IBM LTO-3, HP LTO-4, IBM LTO-4	MSM-18/2
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

The Cisco MDS 9250i switch, the 24/10 Port SAN Extension Module, the MSM-18/4, and SSN-16 modules support Auto, Mode1 and Mode2 compression modes. All of these modes internally use the hardware compression engine of the module. By default, Auto mode is enabled. Mode2 uses a larger batch size for compression than Auto mode, which results in higher compression throughput. However, Mode2 incurs a small latency because of the compression throughput. For the deployments where aggressive throughput is most important, Mode2 should be used. Mode1 gives the better compression ratio when compared to all other modes. For the deployments where compression ratio is most important, Mode1 should be used. Auto mode is similar to Mode2 with respect to the algorithm used for compression except that the batching is not done in Auto mode.

Table 2-59 SAN Extension InterOp Support Matrix

Cisco MDS Modules/Switches	IPSEC	FCIP-WA	HW Compression ¹			FCIP-TA
			Auto	Mode1	Mode2	
24/10 Port SAN Extension Module	X	X	X	X	X	X
9250i	X	X	X	X	X	X
SSN-16	X	X	X	X	X	X ²
9222i/18+4	X	X	X	X	X	X

1. For more information on module and version support, see the Cisco MDS 9000 Series IP Services Configuration Guide.
2. Only Veritas NetBackup and IBM TSM backup applications are supported.