



## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

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### Overview

This document contains information regarding compatibility and interoperability for a "configuration set" of Storage Area Network (SAN) components. A configuration set is a collection of components that are compatible in a particular context. For example, configuration sets of type "array-os" contain components that are compatible from an array-os perspective. An example of an array-os config set is the "EVA4400 Microsoft Windows Server 2008 IA64" config set. It describes the components that are currently supported for the EVA4400 array in a Windows 2008 IA64 environment.

It is very important that you note the details of the components listed in these tables, as they describe the specific attributes of supported component versions. It is also very important to examine the notes in each section, because they may further limit or clarify supported configurations.

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### General notes about this configuration set

For specific configuration guidelines and coexistence information, refer to the SAN Design Reference Guide at <http://h18000.www1.hp.com/products/storage/san/documentation.html>.

### Links

[Solution Software: Application Notes](http://h20272.www2.hp.com/utility/document.aspx?docurl=Shared%20Documents/Solution_Software/All/SolSW_Application_Notes.pdf) -([http://h20272.www2.hp.com/utility/document.aspx?docurl=Shared%20Documents/Solution\\_Software/All/SolSW\\_Application\\_Notes.pdf](http://h20272.www2.hp.com/utility/document.aspx?docurl=Shared%20Documents/Solution_Software/All/SolSW_Application_Notes.pdf))

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## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Disk Array (12)							
Name	Vendor	Family	Firmware	Host Mode	Host Mode Option	System Mode	Group Mode
HP 3PAR F200 Storage System	HP	3PAR	3PAR OS 3.1.1	2 (Generic-ALUA)			
HP 3PAR F200 Storage System	HP	3PAR	3PAR OS 3.1.2	2 (Generic-ALUA)			
HP 3PAR F200 Storage System	HP	3PAR	3PAR OS 3.1.3	2 (Generic-ALUA)			
HP 3PAR F400 Storage System	HP	3PAR	3PAR OS 3.1.3	2 (Generic-ALUA)			
HP 3PAR F400 Storage System	HP	3PAR	3PAR OS 3.1.2	2 (Generic-ALUA)			
HP 3PAR F400 Storage System	HP	3PAR	3PAR OS 3.1.1	2 (Generic-ALUA)			
HP 3PAR T400 Storage System	HP	3PAR	3PAR OS 3.1.1	2 (Generic-ALUA)			
HP 3PAR T400 Storage System	HP	3PAR	3PAR OS 3.1.2	2 (Generic-ALUA)			
HP 3PAR T400 Storage System	HP	3PAR	3PAR OS 3.1.3	2 (Generic-ALUA)			
HP 3PAR T800 Storage System	HP	3PAR	3PAR OS 3.1.3	2 (Generic-ALUA)			
HP 3PAR T800 Storage System	HP	3PAR	3PAR OS 3.1.2	2 (Generic-ALUA)			
HP 3PAR T800 Storage System	HP	3PAR	3PAR OS 3.1.1	2 (Generic-ALUA)			

## Operating System (2)

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	OS Family	OS Version	Service Pack	Vendor	Architecture
Solaris 11 SPARC	Solaris	11		Oracle	SPARC
Solaris 11.1 SPARC	Solaris	11.1		Oracle	SPARC

### Notes:

#### General Operating System (2) Notes:

1) HP 3PAR recommends disabling the new thin provisioning space reclaim feature introduced in Solaris 11.1 due to a known OS issue. The issue causes a delay in host I/O until any given space reclaim function (SCSI UNMAP) is completed. Space reclaim is an automatic function within Solaris 11.1 whenever a ZFS file is deleted. The space reclaim feature can be disabled by adding the following line in file /etc/system: set zfs:zfs\_unmap\_ignore\_size=0. The host must be rebooted for edits to /etc/system to take effect.

## Cluster Management-High Availability (6)

Name	Software Version	Vendor
Solaris Cluster	4.0 GA	Oracle
Solaris Cluster	4.1	Oracle
Veritas Cluster Server	6.0.3	Symantec
Veritas Cluster Server	6.1	Symantec
Veritas Cluster Server	6.0.1	Symantec
Veritas Cluster Server	6.0	Symantec

### Notes:

#### General Cluster Management-High Availability (6) Notes:

- 1) Symantec/Veritas SF 6.0 PR1 is the minimum version of Veritas Storage Foundation that supports Solaris 11.
- 2) There are restrictions for support of online 3PAR OS upgrades for Sun/Solaris Cluster configurations that use SCSI-3 reservations. This affects all supported versions of Sun/Solaris Cluster. Refer to the 3PAR OS Upgrade Pre-Planning Guide for specific restrictions regarding online 3PAR OS upgrades with Sun/Solaris Cluster.
- 3) BFS (Boot from SAN) is not supported with Symantec/Veritas Storage Foundation (VxDMP/VCS) 6.1

## Server (5)

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Vendor	Architecture
Oracle Sun Netra CP-Series SPARC Servers	Oracle	SPARC
Oracle Sun Netra T-Series Servers	Oracle	SPARC
Oracle Sun SPARC M-Series Servers	Oracle	SPARC
Oracle Sun SPARC T-Series Servers	Oracle	SPARC
PRIMEPOWER Servers	Fujitsu	Enterprise

### Notes:

#### General Server (5) Notes:

1) Fujitsu Servers not supported with Sun Branded HBAs.

Host Bus Adapter (HBA) (46)												
Name	Vendor	Vendor Part Number	HP Part Number	Bus	Speed	Driver Version	Firmware Version	BIOS	EFI	Boot Image	Direct Connect Support	Boot Support
7101684	Oracle			PCIe	16Gb		1.1.43.8	Contained in FW			N	Y
825	Brocade	825		PCIe	8Gb		3.2.3.0	2.3.0.0			N	N
LP11000	Emulex	LP11000		PCI-X 2.0	4Gb	Use native emlxs driver	2.70a5	2.01a2	4.00a1	3.01a1	Y	Y
LP11002	Emulex	LP11002		PCI-X 2.0	4Gb	Use native emlxs driver	2.50a8				Y	Y
LPe11000	Emulex	LPe11000		PCIe	4Gb	Use native emlxs driver	2.72a2	2.01a2	4.00a1	3.01a1	Y	Y
LPe11002	Emulex	LPe11002		PCIe	4Gb	Use native emlxs driver	2.82a4				Y	Y
LPe12000	Emulex	LPe12000		PCIe	8Gb	Use native emlxs driver	2.01a4	5.03a0			Y	Y

# HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Vendor	Vendor Part Number	HP Part Number	Bus	Speed	Driver Version	Firmware Version	BIOS	EFI	Boot Image	Direct Connect Support	Boot Support
LPe12000	Emulex	LPe12000	N/A	PCle	8Gb	Use native emlxs driver	1.10a5	N/A	N/A	N/A	Y	Y
LPe12002	Emulex	LPe12002		PCle	8Gb	Use native emlxs driver	1.10a5				Y	Y
LPe12002	Emulex	LPe12002		PCle	8Gb	Use native emlxs driver	2.01a4				Y	Y
LPe12002	Emulex	LPe12002		PCle	8Gb	Use native emlxs driver	1.11a5				Y	Y
LPe12002	Emulex	LPe12002		PCle	8Gb	Use native emlxs driver	1.11a5	Contained in FW	N/A	5.12a2	Y	Y
LPe16000	Emulex			PCle	16Gb		1.0.11.110	Contained in FW			N	Y
LPe16000	Emulex			PCle	16Gb		1.1.43.3	Contained in FW			N	Y
LPe16002	Emulex	LPe16002		PCle	16Gb		1.0.11.110	Contained in FW			N	Y
LPe16002	Emulex	LPe16002		PCle	16Gb		1.1.43.3	Contained in FW			N	Y
LPe16002	Emulex	LPe16002		PCle	16Gb	Use native emlxs driver	1.0.11.101	Contained in FW			Y	Y
QLA2440	QLogic			PCI-X 2.0	4Gb	Use native qlc driver					Y	Y
QLA2460	QLogic	QLA2460		PCI-X 2.0	4Gb	Use native qlc driver	any				Y	Y
QLA2462	QLogic			PCI-X 2.0	4Gb	Use native qlc drive	N/A	2.10			Y	Y
QLE2460	QLogic	QLE2460		PCle	4Gb	Use native qlc drive	NA				Y	Y
QLE2462	QLogic	QLE2462		PCle	4Gb	Use native qlc driver	NA				Y	Y

# HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Vendor	Vendor Part Number	HP Part Number	Bus	Speed	Driver Version	Firmware Version	BIOS	EFI	Boot Image	Direct Connect Support	Boot Support
QLE2462	QLogic	QLE2462		PCIe	4Gb	Use native qlc driver	05.06.04				Y	Y
QLE2464	QLogic	QLE2464		PCIe	4Gb	Use native qlc driver	N/A				Y	Y
QLE2560	QLogic	QLE2560		PCIe	8Gb	Use native qlc driver	any	2.02			Y	Y
QLE2560	QLogic	QLE2560		PCIe	8Gb		05.06.04	2.02	2.01	2.03	Y	Y
QLE2562	QLogic	QLE2562		PCIe	8Gb	Use native qlc driver	05.06.04	2.02	2.01	2.03	Y	Y
QLE2562	QLogic	QLE2562		PCIe	8Gb		05.06.04	2.02	2.01	2.03		
QLE2562	QLogic	QLE2562		PCIe	8Gb	Use native qlc driver	any				Y	Y
QLE2562	QLogic	QLE2562		PCIe	8Gb	Use native qlc driver	05.06.04	3.2			Y	Y
QLE2562	QLogic	QLE2562		PCIe	8Gb	Use native qlc driver	05.04.03				Y	Y
SG-XPCI1F C-EM4-Z	Oracle	SG-XPCI1F C-EM4-Z		PCI-X	4Gb	Use native qlc driver	Any	2.01a2	4.00a1	3.01a1	Y	Y
SG-XPCI2F C-EM4-Z	Oracle	SG-XPCI2F C-EM4-Z		PCI-X	4Gb	Use native qlc driver	Any	2.01a2	4.00a1	3.01a1	Y	Y
SG-XPCI2F C-QF4	Oracle	SG-XPCI2F C-QF4		PCI-X	4Gb	Use native qlc driver	Any	2.02	2	2	Y	Y
SG-XPCIE1 FC-EM4	Oracle	SG-XPCIE1 FC-EM4		PCIe	4Gb	Use native emlxs driver	Any	2.01a2	4.00a1	3.01a1	Y	Y
SG-XPCIE1 FC-EM8-Z	Oracle	LPe12002-S		PCIe	8Gb	Use native emlxs driver	Loaded by Driver	5.03a0			Y	Y
SG-XPCIE1 FC-QF4	Oracle	SG-XPCIE1 FC-QF4		PCIe	4Gb	Use native qlc driver	Any	2.02	2	2	Y	Y
SG-XPCIE1 FC-QF8-N	Oracle	QLE2560		PCIe	8Gb	Use native qlc driver	Any				Y	Y



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Name	Vendor	Vendor Part Number	HP Part Number	Bus	Speed	Driver Version	Firmware Version	BIOS	EFI	Boot Image	Direct Connect Support	Boot Support
SG-XPCIE1 FC-QF8-N	Oracle	QLE2560		PCle	8Gb		05.06.04	2.02	2.01	2.03	Y	Y
SG-XPCIE1 FC-QF8-Z	Oracle			PCle	8Gb	Use native qlc driver	N/A				Y	Y
SG-XPCIE2 FC-EM4	Oracle	SG-XPCIE2 FC-EM4		PCle	4Gb	Use native emlxs driver	Any	2.01a2	4.00a1	3.01a1	Y	Y
SG-XPCIE2 FC-EM8-Z	Oracle	LPe12002-S		PCle	8Gb	Use native emlxs driver	Loaded by Driver	5.03a0			Y	Y
SG-XPCIE2 FC-QF4	Oracle	SG-XPCIE2 FC-QF4		PCle	4Gb	Use native qlc driver	Any	2.02	2	2	Y	Y
SG-XPCIE2 FC-QF8-N	Oracle	QLE2562		PCle	8Gb	Use native qlc driver	Any				Y	Y
SG-XPCIE2 FC-QF8-N	Oracle	QLE2562		PCle	8Gb	Use native qlc driver	Any				Y	Y
SG-XPCIE2 FC-QF8-N	Oracle	QLE2562		PCle	8Gb		05.06.04	2.02	2.01	2.03	Y	Y

### Notes:

#### General Host Bus Adapter (HBA) (46) Notes:

All 2GB HBA's are only supported with 3.1.1 only.

### Converged Network Adapter (CNA) (2)

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Driver Type	Driver Version	Boot Support	Direct Connect Support	Direct Boot Support	Fabric Attach Support	Fabric Boot Support	FC Driver Type	FC Driver Version	NIC Driver Type	NIC Driver Version	One Command	Bus	Ethernet Speed	Vendor	FC Speed	HP Part Number	3PO Part Number	Vendor Part Number	CEE Firmware	FC Firmware	BIO S	EFI	Boot Image	Firmware
OCe10102-FM			Y										PCIe	10 GbE	Emulex										2.10 3.39 7.34 55
OCe10102-FM													PCIe	10 GbE	Emulex										4.0. 360. 3

### Notes:

#### General Converged Network Adapter (CNA) (2) Notes:

- 1) OCe10102 card is supported on Oracle servers only.
- 2) With OCe10102, configuring the disks using the Solaris command "cfgadm -c configure cX" where "X" is the controller instance while I/O is running to the array can cause I/O stalls of up to a minute or higher. If using this command, stop all I/O beforehand, or, alternatively use the command "cfgadm -al".
- 3) QLE8142 is not supported with Solaris 11

Fibre Channel Switch (42)				
Name	Class	Vendor	Bandwidth	Port Count
Cisco MDS 9124 Fabric Switch	Edge	Cisco	4Gb/s	24
Cisco MDS 9134 Fabric Switch	Edge	Cisco	4Gb/s	32
Cisco MDS 9222i Multiservice Fabric Switch	Edge	Cisco	4Gb/s	66
HP SN3000B 16Gb 24/12 Fibre Channel Switch	Edge	Brocade	16Gb/s	24
HP SN3000B 16Gb 24/24 Fibre Channel Switch	Edge	Brocade	16Gb/s	24
HP SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch	Edge	Brocade	16Gb/s	48

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Class	Vendor	Bandwidth	Port Count
HP SN6000B 16Gb 48-port/24-port Active Power Pack+ Fibre Channel Switch	Edge	Brocade	16Gb/s	48
HP SN6000B 16Gb 48-port/48-port Active Fibre Channel Switch	Edge	Brocade	16Gbs	48
HP SN6000B 16Gb 48-port/48-port Active Power Pack+ Fibre Channel Switch	Edge	Brocade	16Gb/s	48
HP SN6000C Fibre Channel Switch (Cisco MDS 9148 Fabric Switch)	Edge	Cisco	8Gb/s	48
HP SN8000B 16Gb 32-port Fibre Channel Blade	Module	Brocade	16Gb/s	32
HP SN8000B 16Gb 48-port Fibre Channel Blade	Module	Brocade	16Gb/s	48
HP SN8000B 4-Slot Power Pack+ SAN Director Switch	Director	Brocade	16Gb/s	32 to 256
HP SN8000B 4-Slot SAN Director Switch	Director	Brocade	16Gb/s	32 to 256
HP SN8000B 8Gb 48-port Enhanced Fibre Channel Blade	Module	Brocade	8Gb/s	48
HP SN8000B 8-Slot Power Pack+ SAN Backbone Director Switch	Director	Brocade	16Gb/s	32 to 512
HP SN8000C 13-Slot Director Switch (Cisco MDS 9513 Multilayer Director Switch)	Director	Cisco	4Gb/s	528
HP SN8000C 6-Slot Director Switch (Cisco MDS 9506 Multilayer Director Switch)	Director	Cisco	4Gb/s	192
HP SN8000C 9-Slot Director Switch (Cisco MDS 9509 Multilayer Director Switch)	Director	Cisco	4Gb/s	336
HP StorageWorks 4/16 SAN Switch	Edge	Brocade	4Gb/s	16

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Class	Vendor	Bandwidth	Port Count
HP StorageWorks 4/256 SAN Director	Director	Brocade	4Gb/s	16 to 384
HP StorageWorks 4/8 SAN Switch	Edge	Brocade	4Gb/s	8
HP StorageWorks 8/20q Fibre Channel Switch	Edge	QLogic	8Gb/s	20
HP StorageWorks 8/24 SAN Switch	Edge	Brocade	8Gb/s	24
HP StorageWorks 8/40 SAN Switch	Edge	Brocade	8Gb/s	40
HP StorageWorks 8/8 SAN Switch	Edge	Brocade	8Gb/s	8
HP StorageWorks 8/80 SAN Switch	Edge	Brocade	8Gb/s	80
HP StorageWorks DC SAN Backbone Director Switch	Director	Brocade	8Gb/s	16 to 384
HP StorageWorks DC Switch Encryption FC Blade	Module	Brocade	8Gb/s	16
HP StorageWorks DC04 Power Pack+ SAN Director Switch	Director	Brocade	8Gb/s	16 to 192
HP StorageWorks DC04 SAN Director Switch	Director	Brocade	8Gb/s	16 to 192
HP StorageWorks Encryption SAN Switch	Edge	Brocade	8Gb/s	32
HP StorageWorks SAN Switch 4/32B Base	Edge	Brocade	4Gb/s	32
HP StorageWorks SAN Switch 4/32B Base Full	Edge	Brocade	4Gb/s	32
HP StorageWorks SAN Switch 4/32B Power Pack	Edge	Brocade	4Gb/s	32
HP StorageWorks SAN Switch 4/64 Base	Edge	Brocade	4Gb/s	64
HP StorageWorks SAN Switch 4/64 Base Power Pack	Edge	Brocade	4Gb/s	32/48/64

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Class	Vendor	Bandwidth	Port Count
HP StorageWorks SAN Switch 4/64 Power Pack	Edge	Brocade	4Gb/s	64
HP StorageWorks SAN Switch 4/64 Power Pack	Edge	Brocade	4Gb/s	64
HP StorageWorks SN6000 Fibre Channel Switch	Edge	QLogic	8Gb/s	24
HP StoreFabric SN8500C 48-port 16Gb FC Module	Module	Cisco	16 Gbs	48
HP StoreFabric SN8500C 8-slot 16Gb FC Director	Director	Cisco	16 Gbs	384

Fibre Channel over Ethernet (FCoE) Switch (7)							
Name	Vendor	Vendor Part Number	Ethernet Port Speed	Ethernet Port Count	Class	FC Port Speed	FC Port Count
Cisco Nexus 5010 Converged Network Switch	Cisco		10Gb/s	26	Edge	4Gb/s	8
Cisco Nexus 5020 Converged Network Switch	Cisco		10Gb/s	52	Edge	4Gb/s	16
Cisco Nexus 5548UP Converged Network Switch	Cisco	N5K-C5548UP-OSM	10Gb/s	48	Edge	8Gb/s	48
HP FlexFabric 5900CP	HP	JG838A	10GbE / 40GbE	48 / 4	Edge	8Gb/s	48
HP FlexFabric 5900CP	HP	JG838A	10GbE / 40GbE	48 / 4	Edge	8Gb/s	48
HP StorageWorks 2408 FCoE Converged Network Switch	Brocade	8000	10Gb/s	24	Edge	8Gb/s	8

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Vendor	Vendor Part Number	Ethernet Port Speed	Ethernet Port Count	Class	FC Port Speed	FC Port Count
HP StorageWorks 2408 FCoE Power Pack+ Converged Network Switch	Brocade	8000	10Gb/s	24	Edge	8Gb/s	8

Router (5)							
Name	Vendor	Class	Port Speed	Port Count	Port Type	Ethernet Port Speed	Ethernet Port Count
HP StorageWorks 1606 Full Extension SAN Switch	Brocade	Router-Gateway	8Gb/s (FC/FCR)	16 (FC/FCR)	FC/FCR/FCIP	1Gb/s	6
HP StorageWorks 1606 Power Pack+ Extension SAN Switch	Brocade	Router-Gateway	8Gb/s (FC/FCR)	16 (FC/FCR)	FC/FCR/FCIP	1Gb/s	6
HP StorageWorks 400 Multi-protocol Router 7500	HP	Router-Gateway	4Gbit	16	FC/FCR/FCIP	1Gbit	2
HP StorageWorks DC SAN Director Switch Multiprotocol Extension Blade	Brocade	Router-Gateway	8Gb/s (FC/FCR)	12 (FC/FCR)	FC/FCR/FCIP	1Gb/s and 10Gb/s	ten 1Gb/s and two 10Gb/s
HP StorageWorks Multi-protocol RouterBlade FR4-18i	HP	Router-Gateway	4Gbit	16	FC/FCR/FCIP	1Gbit	2

## Path Management (5)

## HP 3PAR F200/F400 T400/T800 FC Solaris 11 (SPARC)

Name	Vendor	Category	Software Version
Sun StorEdge Traffic Manager Software ( STMS/MPxIO )	Sun Microsystems	Multipath	
Veritas DMP (Dynamic Multipathing)	Symantec	Multipath	6.0
Veritas DMP (Dynamic Multipathing)	Symantec	Multipath	6.0.1
Veritas DMP (Dynamic Multipathing)	Symantec	Multipath	6.0.3
Veritas DMP (Dynamic Multipathing)	Symantec	Multipath	6.1

### Notes:

#### General Path Management (5) Notes:

- 1) Symantec/Veritas SF 6.0 PR1 is the minimum version of Veritas Storage Foundation that supports Solaris 11.
- 2) Symantec/Veritas Storage Foundation (VxDMP/VCS) is only supported in a FC-Fabric attach (FC-switched) configuration.
- 3) BFS (Boot from SAN) is not supported with Symantec/Veritas Storage Foundation (VxDMP/VCS) 6.1