IBM SystemStorage SAN18B-R
IBM SystemStorage SAN04B-R

IBM Storage and Server Interoperability Matrix

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Notes:

1. Firmware version **6.1.1a** or later and Fabric Manager 5.4 are recommended.
2. Firmware version 6.1.1a is the latest FICON supported version.
3. FICON is supported with the IBM SystemStorage SAN18B-R only
4. Both tape and disk attached to the same HBA are not recommended.
5. We do not recommend attaching the NAS 300G to an **unzoned** switch configuration.

Release notes for the SAN18B-R and SAN04B-R:

For detailed information regarding these features, refer to the appropriate product manuals.

Supported Routing configuration for the 2005-R18/R04 and the M48 FC Routing Blade are Edge to Edge, Edge to Backbone. The 2005-R18/R04 and the M48 FC Routing Blade do not support Backbone to Backbone routing.

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FC-FC Routing Support

This section details several key support considerations for configurations that utilize the R18/R04 and SAN Router Blade. Several definitions that are fundamental to assessing whether a configuration is supported are provided in Definitions below.

IBM will support fabric configurations and connected SAN devices as long as the maximum values defined in the FC-FC Routing Support Matrix (below) are not exceeded and the switches connected to the Edge Fabrics are running the minimum version of Fabric OS specified .

The maximum size of the Edge Fabric connected to the Routed Fabric must also fall within the support specifications defined in Brocade's **Brocade SilkWorm Scalability Support Matrix**

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Table 5 : FC-FC Routing Support Matrix (for FCR in FOS v5.1)

FC-FC Routing Support Matrix (for FCR in FOS v5.1)	
Max # Edge fabrics/ Meta SAN	16
Max # Local switches / Edge Fabric	26
Max # Front Domains / Edge Fabric	10
Max # Translate domains / Edge Fabric	17
Max # Total Domains / Edge fabric	53
Max # Ex_ports / BB Switch	32
Max # of EX ports to one edge fabric / BB Switch	4
Max # Local switches / BB Fabric	5
Max # Translate domains /BB Fabric	16
Max # Total Domains / BB fabric	21
Max # FCR switches / Meta SAN	10
Max # Local WWN's / Edge Fabric	1000
Max # Local WWN's / BB Fabric	256
Max # Imported devices / Fabric	500
Max # Local & Remote WWN's / Fabric	1300
Max # Device DB entries / Meta SAN	5000
Max # LSAN Zones / Meta SAN	1000
Max # Entries / LSAN Zone	64
Max # Hops btwn Edge Switches	12

Minimum Fabric OS Version supported by the SAN 18B-R and M48 FC Routing Blade is 5.1.0b or later. The minimum Fabric OS Version supported byt the SAN04B-R is 6.1.0 or later.

Switch	Non Secure	Secure
2109-F16, 3534-F16	**3.0.2 or 3.1.2**	**3.1.0 or 3.1.2**
2109-F32, 2109-M12	**4.1**	**4.2**
BladeCenter SSM (3016) 2Gb	**4.2.1a**	**4.2.1a**
SSM 2Gb/s, 2109-F32 ,2005-H08, 2005-B32, 2109- M12, 2109-M14	**4.4.0**	**4.4.0**
2005-B16, 2109-M48	**5.0.1**	**5.0.1**
BladeCenter SSM (4020) – 4Gb/s	**5.3.0a**	**5.0.3a**
2109-M48 (FC3450) , 2005-B64, 2005-R18	**5.1.0b**	**5.1.0b**
2109-A16	**7.4.1**	**N/A**

Definitions

Backbone Fabric: A backbone fabric can consist of a single Multiprotocol Router or multiple Multiprotocol Routers that connect to each other directly or indirectly through other switches via E_Ports or VE_Ports.

- **Fabric**: One or more interconnected Fibre Channel switches. The term “Fabric” only refers to the interconnected switches, not to devices connected to the fabric.
- **Edge Fabric**: A Fibre Channel fabric connected to EX_Ports of the Multiprotocol Router. The edge fabric is where hosts and storage are normally attached in a metaSAN.
- **E_Port**: A standard Fibre Channel mechanism that enables switches to network with each other.
- **EX_Port**: The type of port used to connect an FC router to an edge fabric. An EX_Port follows standard E_Port protocols, but does not allow fabric merging across EX_Ports and supports FC-NAT.
- **FC-NAT**: Fibre Channel Network Address Translation allows devices in different fabrics to communicate when those fabrics have addressing conflicts. This is similar to the "hide behind" NAT used in firewalls. Normally attached in a routed fabric.
- **Front Domain**: A tier of virtual domains between the translate domains and the edge fabrics. This allows FSPF multi-pathing to work as desired. The first instantiation of the FC Routing Service

uses one front domain per EX_Port, though future implementations may limit this to one per edge fabric. No FC-NAT devices are ever “hung off of” front domains. Put another way, each IFL connection from a Router to an edge fabric creates a front domain.

- **Hop Count**: For the purpose of evaluating SAN designs, the hop count is identical to the number of ISLs that a frame must traverse to reach its destination.

- **Inter-Fabric Link (IFL):** A connection between a router EX_Port and an edge fabric.

- **Logical Storage Area Network (LSAN)**: A logical network that spans multiple edge fabrics. The path between devices in an LSAN connects via one or more Multiprotocol Routers.

- **LSAN device entry**: the total number of port WWN entries for all devices defined in all active LSAN zones within a routed fabric. For example, Fabric 1 has lsan_zone1 with device A & B and Fabric 2 has lsan_zone 2 with device A & B. Four LSAN device entries are consumed.

- **LSAN Zone**: Any zone defined in an edge fabric where the zone name is prefixed with the tag LSAN_ The LSAN_ tag is not case sensitive. LSAN zones are a mechanism to specify inter-fabric connectivity and the creation of proxy devices. For examp le, Fabric 1 has lsan_zone1 with device A & B and Fabric 2 has lsan_zone 2 with device A & B. Two LSAN zones entries are consumed.

- **LSAN Zone Entry**: The number of port WWN entries defined in an edge fabric LSAN zone.

- **metaSAN**: A the collection of SAN devices, switches, edge fabrics, LSANs (logical storage area network), and Multiprotocol Routers that make up a physically connected but logically partitioned storage area network.

- **Proxy Device**: A virtual device present in a local fabric that represents a device physically connected to a different edge fabric. From the perspective of a SAN device that is physically connected to a fabric, a proxy device is said to be imported. From the perspective of the proxy device, the proxy device is said to be exported.

- **Routed Fabric:** Consists of two or more edge fabrics interconnected by one or more backbone fabrics.

- **SAN**: A Storage Area Network (SAN) can consist of one or more related fabrics and the connected SAN devices.

- **SAN Device**: Usually either a host or storage device that attaches to a fabric. A SAN device is sometimes referred to as an N-port, NL-port, Nx-port, or node. For point-to-point devices (also known as N-ports) the relationship is one switch port (also known as an F-port) to one N-port. For loop devices (i.e. NL-ports) the relationship is one switch loop port (also known as an FL-port) to one or more NL-ports.

  Total Port Count: The total number of ports of all switches in a fabric.

- **Translation Domain or xlate domain:** A router virtual domain that represents an entire fabric. Device connectivity can be achieved from one fabric to another, over the backbone fabric and through this virtual domain, without merging the two fabrics. Sometimes referred to as “phantom domain,” “phantom translate domain,” or “xlate domain. If an FC router is attached via an EX_Port to an edge fabric, it will create xlate domains in that fabric corresponding to the remote edge fabrics with active LSANs defined.

  VE_Ports and VEX_Ports (over GbE) VE_Ports and VEX_Ports are virtual ports (that represent each FC-IP tunnel, up to eight per GbE_Port) over the physical GbE link. VE_Ports are

essentially tunneled E_Ports over an IP network via FC-IP. VEX_Ports are routed VE_Ports, just as EX_Ports are routed E_Ports. VE_Ports and VEX_Ports have the same behavior and functionality.

NOTE: At this time, you cannot connect both a VEX_Port and an EX_Port to the same edge fabric.

1. Native Interoperablity mode is not supported when attached to System z products or in FICON networks.
2. FICON Configuration Requirements
    - DLS ➔ off (Dynamic Load Sharing)
    - Port Based Routing ➔ on
    - In-Order Delivery ➔ on
    - Domain/Port Zoning ➔ on (required for proper operation of prohibits/allows)
    - Insistent Domain ID ➔ on (required for cascading) (Best practices is to set the switch domain to the same value as the switch address.)
    - Cascading requires use of SCC ACL
    - FMS ➔ enabled (required for CUP)

DS8000 Connectivity

Please see **IBM TotalStorage DS8000** **Interoperability Matrix** for Licensed Machine Code (LMC) level and availability.

FC to FC and FCIP using 2005 R18/R04/SAN Router Blade and DS8000 Global Mirror/Global Copy environments is supported.

IBM System z Servers Models z10, z9, z900, z990 and G5/G6

Description	Operating Systems	Additional Information
IBM TotalStorage DS8000	**IBM z/OS level 1. through 1.9** **z/VM, VSE, TPF**	**System z I/O Connectivity**

IBM System z Servers Models z10, z9, z890, z900 and z990

Description	Operating Systems	Additional Information
IBM TotalStorage DS8000	**Fibre Channel** **Red Hat Enterprise Linux** • 3.0 • 4.0 • 5.0 **SuSE Linux Enterprise Server (SLES)** • 9 • 10	

IBM System p Servers

Description	Operating Systems	Additional Information
IBM TotalStorage DS8000 • DS8100 2107-921 • DS8300 2107-922 2107-9A2	**AIX** • 5L • Version 5.1 Version 5.2 • Version 5.3 **Red Hat Enterprise Linux** • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9	Available. **IBM TotalStorage DS8000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

IBM System i Servers

Description	Platform/Operating Systems	Additional Information
IBM TotalStorage DS8000 • DS8100 2107-921 • DS8300 2107-922 2107-9A2	**IBM iSeries Model and i5 eServer** **OS/400** • V5R2 • V5R3 • V5R4 **I5/OS** • V5R3 • V5R4	Available **IBM TotalStorage DS8000 Interoperbility Guide** **Fibre Channel Host Bus Adapter** firmware and driver level matrix. System i SAN information

IBM System x Servers and other Intel-based Servers

Description	Operating Systems	Additional Information
IBM TotalStorage DS8000 • DS8100 2107-921 • DS8300 2107-922 2107-9A2	**Microsoft Windows 2000** • Server • Advanced Server including Cluster service • Datacenter Server **Microsoft Windows Server 2003** • Standard Edition • Enterprise Edition including cluster service • Datacenter Edition including cluster service	Available. **IBM TotalStorage DS8000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.
	Novell Netware • 6.5	Available.
	Red Hat Enterprise Linux • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9	Available.

SUN microsystems Servers

Description	Operating Systems	Additional Information
IBM TotalStorage DS8000 • DS8100 2107-921 • DS8300 2107-922 2107-9A2	**Solaris** • 8 • 9 • 10	Available. **IBM TotalStorage DS8000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

Hewlett-Packard Servers – HP- UX

Description	Operating Systems	Additional Information
IBM TotalStorage DS8000 • DS8100 2107-921 • DS8300 2107-922 2107-9A2	**HP-UX** • 11i • 11iv2	Available. **IBM TotalStorage DS8000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

DS6000 Connectivity

Please see **IBM TotalStorage DS6000 Interoperability Matrix** for Licensed Machine Code (LMC) level and availability.

IBM System z Servers Models z10, z900, z990, z9, and G5/G6

Description	Operating Systems (FICON)	Additional Information
IBM TotalStorage DS6000	**IBM z/OS level 1.4 through 1.9** **z/VM, VSE, TPF**	**IBM TotalStorage DS6000 Interoperability Matrix**

IBM System z Servers Models z10, z9, z890, z900 and z990

Description	Operating Systems (FCP)	Additional Information
IBM TotalStorage DS6000	**Fibre Channel** **Red Hat Enterprise Linux** • 3.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9	**IBM TotalStorage DS6000 Interoperability Matrix**

IBM System p Servers

Description	Operating Systems	Additional Information
IBM TotalStorage DS6000 • DS6800 1750-111	**AIX** • 5L • Version 5.1 Version 5.2 • Version 5.3 **Red Hat Enterprise Linux** • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9	Available. **IBM TotalStorage DS6000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

IBM System i Servers

Description	Platform/Operating Systems	Additional Information
IBM TotalStorage DS6000 • DS6800 1750-111	**IBM iSeries Model and i5 eServer** **OS/400** • V5R2 • V5R3 • V5R4 **I5/OS** • V5R3 • V5R4	Available **IBM TotalStorage DS6000 Interoperability Matrix** **System i** SAN information

IBM System x Servers and other Intel-based Servers

Description	Operating Systems	Additional Information
IBM TotalStorage DS6000 • DS6800 1750-111	**Microsoft Windows 2000** • Server • Advanced Server including Cluster service • Datacenter Server **Microsoft Windows Server 2003** • Standard Edition • Enterprise Edition including cluster service • Datacenter Edition including cluster service	Available. **IBM TotalStorage DS6000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.
	Novell Netware • 6.5	Available.
	Red Hat Enterprise Linux • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • SLES 8 • SLES 9	Available.

Sun microsystems Servers

Description	Operating Systems	Additional Information
IBM TotalStorage DS6000 • DS6800 1750-111	**Solaris** • 8 • 9 • 10	Available. **IBM TotalStorage DS6000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

Hewlett-Packard Servers – HP- UX

Description	Operating Systems	Additional Information
IBM TotalStorage DS6000 • DS6800 1750-111	**HP-UX** • 11i • 11iv2	Available. **IBM TotalStorage DS6000 Interoperability Matrix** **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

IBM TotalStorage Enterprise Storage Server (ESS) Connectivity

Please see **IBM TotalStorage Enterprise Storage Server Interoperability Matrix** for Licensed Internal Code (LIC) level.

IBM System z Servers Models z9, z10, z900, z990, z9, and G5/G6

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 800	**IBM z/OS level 1.4 through 1.9** **z/VM, VSE, TPF** **FICON or FICON Express** Channel	**System z I/O Connectivity**

IBM System z Servers Models z9, z10, z890, z900 and z990

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 800	**Fibre Channel** **Red Hat Enterprise Linux** • 3.0 • 4.0 • 5.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9 • 10	

IBM System p Servers

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 750 • 800 • F10/F20	**AIX** • 5L • Version 5.1 Version 5.2 • Version 5.3 **Red Hat Enterprise Linux** • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9	\ **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

IBM RS/6000 SP Servers

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 750 • 800 • F10/F20	**AIX** • 5L • Version 5.1 ML2 • Version 5.2 • Version 5.3 **PSSP** [1]	**Fibre Channel Host Bus Adapter** firmware and driver level matrix.

IBM System x and other Intel-based Servers

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 750 • 800 • F10/F20	**Microsoft Windows 2000** • Server • Advanced Server • Datacenter Server **Microsoft Windows 2003** [1] • Standard Edition • Enterprise Edition • Datacenter Edition	**Fibre Channel Host Bus Adapter** firmware and driver level matrix.
	Novell Netware • 6.5	Available
	Red Hat Enterprise Linux • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9	Available

[1] Requires ESS LIC level 2.2.0, or later. Windows 2003 is not supprted on the Emulex LP7000E, QLogic QLA2100F,and IBM P/N 01K7297 host adapters.

Sun Microsystems Servers

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 750 • 800 • F10/F20	**Solaris** • 8 • 9 • 10	**Fibre Channel Host Bus Adapter** firmware and driver level matrix.

Hewlett-Packard Servers – HP- UX

Description	Operating Systems	Additional Information
IBM TotalStorage Enterprise Storage Servers **IBM 2105 Model** • 750 • 800 • F10/F20	**HP-UX** • 11.i • 11.i v2	**Fibre Channel Host Bus Adapter** firmware and driver level matrix.

DS4000 Connectivity

1 Attachment of the **IBM DS4000** on the same Intel server as the **TotalStorage Enterprise Storage Server** is not recommended. Both devices may be attached to the same switch.
2 FC to FC and FCIP using a 2005-R18/R04/SAN Router Blade and DS4000 Remote Volume Mirroring / Enhanced Global Mirror and Global Copy environments are supported.
3 For the most current supported **PSSP, GPFS/RVSD** configurations see the important notices and readmes posted on:
   - **http://www-1.ibm.com/servers/storage/support/disk/ds4500/**
   - **http://www-1.ibm.com/servers/storage/support/disk/ds4400/**
   - **http://www-1.ibm.com/servers/storage/support/disk/ds4300/**
   - **http://www-1.ibm.com/servers/storage/support/disk/ds4100/**
   - **http://www-03.ibm.com/servers/storage/support/disk/fastt500/**
   - **http://www-03.ibm.com/servers/storage/support/disk/fastt200/**

IBM System p Servers

Description	Operating Systems	Additional Information

IBM TotalStorage Storage Servers
• **DS4100**
• **DS4300**
• **DS4400**
• **DS4500**
• **DS4800**
• **FAStT500**
• **FAStT200**
	AIX
	• 5L
	  • Version 5.1
	  • Version 5.2
	  • Version 5.3
	
	Red Hat Enterprise Linux
	• 3.0
	• 4.0
	
	SuSE Linux Enterprise Server (SLES)
	• 8
	• 9
	• 10
		Available.
		
		IBM TotalStorage DS4000 Storage Interoperability matrix
		
		IBM Server Proven Interoperability matrix
		
		Fibre Channel Host Bus Adapter firmware and driver level matrix.

IBM System x and Netfinity Servers and other Intel-based Servers

Description	Operating Systems	Additional Information
IBM TotalStorage Storage Servers • DS4100 • DS4300 • DS4400 • DS4500 • DS4800 • FAStT500 • FAStT200	**Microsoft Windows 2000** • Server • Advanced Server **Microsoft Windows 2003** • Standard Edition • Enterprise Edition • Web Edition	Available. **IBM TotalStorage DS4000** Storage Interoperability matrix **IBM Server Proven** Interoperability matrix **Fibre Channel Host Bus Adapter** firmware and driver level matrix.
	Novell Netware • 6.5	
	Red Hat Enterprise Linux • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9 • 10	

SUN Microsystems Servers

Description	Operating Systems	Additional Information
IBM TotalStorage Storage Servers • **DS4100** • **DS4300** • **DS4400** • **DS4500** • **DS4800** • **FAStT500** • **FAStT200**	**Solaris** • 8 • 9 • 10	Available. **IBM TotalStorage DS4000** Storage Interoperability matrix **IBM Server Proven** Interoperability matrix **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

Hewlett-Packard Servers – HP- UX

Description	Operating Systems	Additional Information
IBM TotalStorage Storage Servers • **DS4100** • **DS4300** • **DS4400** • **DS4500** • **DS4800** • **FAStT500** • **FAStT200**	**HP-UX** • 11i • 11i v2	Available. **IBM TotalStorage DS4000** Storage Interoperability matrix **IBM Server Proven** Interoperability matrix **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

TAPE Connectivity[2]

AVOID DYNAMIC ZONING CHANGES
As a recommendation, we advise that one avoid making zoning changes to your fabric while data is being transferred, if possible. There may be some risk in job interruption, especially with serial data during the Registered State Change Notifications (RSCN's) that are produced as a result of the zone change. Some HBA's are more prone to an interruption than others.

IBM z10, z9, G5, G6, 2064 System z Servers

Description	Operating Systems	Additional Information
IBM Virtualization Engine TS7700 **IBM TotalStorage Enterprise** Automated Tape Library 3494 **IBM TotalStorage Virtual Tape Server 3494-B10/B20** in Standalone or Peer to Peer configurations. **IBM TotalStorage Enterprise Tape Controller 3592 Model J70** **IBM TotalStorage Enterprise** Tape Drive Frame 3590 Model A14	**FICON** Channel Card	Web site for TS7700 code and Brocade Code interoperability http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/FQ116133 Web site for TS7400 code and Brocade Code interoperability http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/FQ105505

[2] Supports FC to FC and FCIP only..

IBM System p Servers

Description	Operating Systems	Additional Information
Enterprise Tape System 3592 J1A and E05 (TS1120) **Enterprise Tape System 3590 E11/E1A and H11/H1A** **Ultrium 3584 UltraScalable** Tape Library. (TS3500) **Ultrium 3583 Scalable** Tape Library **Ultrium 3582** Scalable Tape Library. **Ultrium 3581** Scalable Tape Library. **3576 Tape Library (TS3310)** **3573 Tape Library (TS3100, TS3200)** **Virtualization Engine 3954 Model CV5**	**AIX** • 5L • Version 5.1 • Version 5.2 • Version 5.3 **Red Hat Enterprise Linux** • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • 8 • 9 • 10	Available. **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

IBM System x and other Intel-based Servers

Description	Operating Systems	Additional Information
Enterprise Tape System 3592 J1A and E05 (TS1120) **Enterprise Tape System 3590 E11/E1A and H11/H1A** **Ultrium 3584 UltraScalable** Tape Library. (TS3500) **Ultrium 3583 Scalable** Tape Library **Ultrium 3582** Scalable Tape Library. **Ultrium 3581** Scalable Tape Library. **3576 Tape Library (TS3310)** **3573 Tape Library (TS3100, TS3200)** **Virtualization Engine 3954 Model CV5**	**Microsoft Windows 2000** • Server • Advanced Server • Datacenter Server **Microsoft Windows 2003 Server** • Standard Edition • Enterprise Edition • Datacenter Edition • Web Edition **Red Hat Enterprise Linux** • 3.0 • 4.0 **SuSE Linux Enterprise Server (SLES)** • SLES 8 • SLES 9 • SLES 10	Available. **IBM Server Proven** Interoperability matrix **Fibre Channel Host Bus Adapter** firmware and driver level matrix. Please review **RMSS TechnicalSupport** Site.

Sun Microsystems Servers

Description	Operating Systems	Additional Information
Enterprise Tape System 3592 J1A and E05 (TS1120) **Enterprise Tape System 3590 E11/E1A and H11/H1A** **Ultrium 3584 UltraScalable** Tape Library. (TS3500) **Ultrium 3583 Scalable** Tape Library **Ultrium 3582** Scalable Tape Library. **Ultrium 3581** Scalable Tape Library. **3576 Tape Library (TS3310)** **3573 Tape Library (TS3100, TS3200)** **Virtualization Engine 3954 Model CV5**	**Solaris** • 8 • 9 • 10	Available. **Fibre Channel Host Bus Adapter** firmware and driver level matrix.

Hewlett-Packard Servers – HP- UX

Description	Operating Systems	Additional Information
Enterprise Tape System 3592 J1A and E05 (TS1120) **Enterprise Tape System 3590 E11/E1A and H11/H1A** **Ultrium 3584 UltraScalable** Tape Library. (TS3500) **Ultrium 3583 Scalable** Tape Library **Ultrium 3582** Scalable Tape Library. **Ultrium 3581** Scalable Tape Library. **3576 Tape Library (TS3310)** **3573 Tape Library (TS3100, TS3200)** **Virtualization Engine 3954 Model CV5**	**HP-UX** • 11i • 11iV2	Available. **Fibre Channel Host Bus Adapter** firmware and driver level matrix. For specific details and restrictions please see the **readme** file.

Network Attached Storage (NAS) Connectivity

Description	Firmware Version	Additional Information
NAS Gateway 500	NAS Gateway 500 System Software	
N3700	7.2.2	
N5200	7.2.2	
N5500	7.2.2	
N7600	7.2.2	
N7800	7.2.2	

IBM BladeCenter Connectivity

Description	Blade Switch Module Firmware	Switch Firmware
Brocade 10-port 4Gb SAN Switch Module	5.0.2, 5.0.3a, 5.0.4a	5.2.1, 5.2.1b
Brocade 20-port 4Gb SAN Switch Module	5.0.2, 5.0.3a, 5.0.4a	5.2.1, 5.2.1b
Brocade Enterprise 2Gb SAN Switch Module (no domain limit)	4.2.1, 4.2.1a, 4.4.1a, 5.0.1b, 5.0.3a, 5.0.4a	5.2.1, 5.2.1b
Brocade Entry 2Gb SAN Switch Module (no domain limit)	4.2.1, 4.2.1a, 4.4.1a, 5.0.1b, 5.0.3a, 5.0.4a	5.2.1, 5.2.1b
IBM BladeCenter Optical Pass-thru Module	n/a	5.2.1, 5.2.1b

Transceivers

Below are supported transceivers.

IBM P/N	Description	Alternate PN
4 Gbps		
77P5990	4 Gbps Short Wave	JSH-42S3AB3
77P5933	4 Gbps/1GbE SW	FTLF8524P2BNV
77P6008	4 Gbps Short Wave	AFBR-57R5AEZ
77P6439	4 Gbps/1GbE Long Wave 4km	FTLF1324P2BTV
77P6441	4 Gbps/1GbE SW	JSH-42S4DB3
77P6442	4 Gbps Long Wave 10km	JSH-42L3AB3-20
77P6967	4 Gbps Long Wave 4km	AFCT-57R5APZ
77P6968	4 Gbps Long Wave 10km	AFCT-57R5ATPZ
77P7405	4 Gbps Long Wave 4km	FTLF1324P2BTV-B1
77P7407	4 Gbps Long Wave 10km	FTLF1424P2BCD-B1
2 Gbps		
17P7489	2 Gbps Ext Long Wave, 35km	FTRJ1419P1BCL
17P7490	2 Gbps Ext Long Wave, 80km	FTRJ1519P1BCL