

HP StorageWorks B-Series infrastructure

Data sheet



HP StorageWorks 2 Gb/s 8-port
Fibre Channel SAN switches



HP StorageWorks 2 Gb/s 16-port
Fibre Channel SAN switches



Brocade 4 Gb SAN Switch for
HP p-Class BladeSystem



HP StorageWorks 2 Gb/s 128-port
Fibre Channel SAN director

From entry level to enterprise, building a solid storage area network (SAN) starts with the right infrastructure technology. HP StorageWorks B-Series switches and directors offer reliable technologies, providing the control to achieve high availability, performance, and manageability while increasing efficiency and controlling costs.

The HP StorageWorks SAN Switch 2/8V and 2/8V power pack offer 2 Gb/s connectivity for an entry-level SAN, and the ability to grow to a core-to-edge infrastructure.

HP StorageWorks MSA SAN Switch 2/8

This entry-level, embedded SAN switch is available exclusively with the HP StorageWorks Modular Storage Array 1000 (MSA1000). Delivered with four Small Form Factor Pluggable (SFP) optics installed, this reliable switch offers:

- *Control:* Centralized management tools maximize administrator's efficiency.
- *Superior performance:* Supports 2 Gb/s transfer with non-blocking for maximum performance
- *Efficient, space-saving design:* 8-port 2 Gb/s array embedded Fibre Channel (FC) switch consumes zero rack space.

HP StorageWorks SAN Switch 2/8V and 2/8V power pack

This fourth-generation entry-level 8-port, 2 Gb/s fabric SAN switch features eight non-blocking auto-sensing 1 Gb/s and 2 Gb/s ports in a 1U form factor. Advanced fabric services (including power pack) are available pre-configured on the switch or as an optional upgrade to the base model. This dependable switch provides:

- *Control:* Centralized management tools maximize administrator's efficiency.
- *Superior performance:* Supports 2 Gb/s transfer with non-blocking for maximum performance
- *Versatility:* Provides 100 percent application data transfer uptime during firmware upgrades (hot code activation)
- *Investment protection:* Reduces administrative overhead and offers low incremental cost to upgrade and scale as needs evolve
- *Advanced availability:* Reduces installation time and disruption to fabric services for software upgrades, and improves deployment scalability
- *Flexibility:* Power pack software tools provide the capability to monitor for hot spots and proactively address potential issues; power pack includes ISL Trunking, Fabric Watch, Extended Fabric, Remote Switch and Advanced Performance Monitoring.

The HP StorageWorks SAN Switch 2/16 provides the flexibility, manageability, performance features, and highly networked capabilities that enterprises need to build powerful, flexible storage SANs and consolidate their data storage.

HP StorageWorks SAN Switch 2/16V, 2/16N FF, and 2/16N FF power pack

This 16-port, 2 Gb/s fabric SAN switch features non-blocking auto-sensing 1 Gb/s and 2 Gb/s ports in a 1U form factor. Advanced fabric services (including power pack) are available pre-configured on the switch or as an optional upgrade to the SAN Switch 2/16V and 2/16N FF models.

This comprehensive switch facilitates:

- *Control:* Centralized management tools maximize administrator's efficiency.
- *Superior performance:* Supports 2 Gb/s transfer with non-blocking for maximum performance
- *Investment protection:* Reduces administrative overhead and offers low incremental cost to upgrade and scale as needs evolve
- *Advanced availability:* Hot code activation reduces installation time and disruption to fabric services for software upgrades and improves deployment scalability (SAN Switch 2/16V, 2/16N FF, 2/16N FF power pack).
- *Flexibility:* Power pack software tools provide the capability to monitor for hot spots and proactively address potential issues; power pack includes ISL Trunking, Fabric Watch, Extended Fabric, Remote Switch and Advanced Performance Monitoring.

The SAN Switch 4/32 and 4/32 power pack provide the flexible building blocks customers need to deploy highly scalable, highly available, and easily manageable storage area networks in adaptive enterprise deployments.

HP StorageWorks SAN Switch 4/32 and 4/32 power pack

This 32-port fabric switch offers very flexible connectivity for a performance-level SAN. The switches deliver 16, 24, or 32 high-performance auto-sensing 1, 2, or 4 Gb/s Fibre Channel ports. The SAN Switch 4/32 base model ships with 16 active ports. Ports can be activated in 8-port increments with the purchase of an upgrade license. The SAN Switch 4/32 easily integrates into the installed base of B-Series SANs. It provides non-blocking data transfer and maximum application data throughput.

The SAN Switch 4/32 utilizes current B-Series management and monitoring software tools to optimize operational efficiencies and maximize SAN investment, and simplifies enterprise SAN deployment by combining higher edge switch port density with exceptional scalability, performance, and reliability. Advanced fabric services, including power pack, are available pre-configured on the switch or as an optional upgrade.

This highly available switch offers:

- *Advanced availability:* Offers redundant, hot-swappable, removable power supplies and cooling units, ideal for supporting corporate infrastructure implementations
- *Efficiency:* Provides Ports on Demand capability for instant scalability and “pay-as-you-grow” value
- *Superior performance:* Features industry-leading 4 Gb/s performance for strategic, data-intensive applications
- *Stability:* Provides investment protection as the device is forward and backward compatible with the entire family of 1 Gb and 2 Gb B-Series switches and directors
- *Adaptability:* Offers 4 Gb/s technology with auto-sensing capabilities to recognize 1 and 2 Gb/s devices
- *Compatibility:* Works seamlessly with all 2 Gb and 1 Gb B-Series FC Core, Director, and SAN switch products
- *Flexibility:* Power pack software tools provide the capability to monitor for hot spots and proactively address potential issues; power pack includes ISL Trunking, Fabric Watch, Extended Fabric, Remote Switch and Advanced Performance Monitoring.

The physical integration of the Brocade 4 Gb SAN Switch within the HP p-Class BladeSystem significantly simplifies deployments and increases flexibility and performance, while reducing costs as a result of rack consolidation, reduced cabling, and fewer SFPs.

Brocade 4 Gb SAN Switch for HP p-Class BladeSystem

A member of the B-series family of Fibre Channel switches, the Brocade 4 Gb SAN Switch delivers the latest technology from HP for connecting HP BladeSystems to Fibre Channel SANs. With the introduction of the new Brocade 4 Gb SAN Switch, IT managers now have the capability to consolidate multiple HP servers, Fibre Channel switches, and Ethernet switches into a single platform for optimal connectivity to the networked infrastructure. This integration of technology results in space and cost savings due to a reduction of physical components, significant simplification of the SAN environment, outstanding performance, and easier deployments.

Through advances in technology, Brocade Fibre Channel switching technology has been physically reduced in size down to a 4.5" x 3.5" cube that plugs into the back of the HP p-Class BladeSystem, resulting in a zero footprint solution. Cabling between components that once had to be done manually by IT staff is now integrated into the HP BladeSystem, reducing time-to-deploy and administrative man hours.

This space-saving switch provides:

- *Simplicity:*
 - Plug and play
 - Faster deployment
 - Fewer elements to manage with reductions in SFPs, cables, and rack space
 - Simpler SAN environment
 - Integrated design with blade enclosure to eliminate complexity and reduce costs (zero footprint, shared power and cooling, and elimination of external cabling)
- *Flexibility*
 - Fully compatible with HP StorageWorks B-series and Brocade switches
 - Standards based
 - Interoperable
 - Multi-speed support with 1 Gb, 2 Gb, and 4 Gb auto-sensing
 - Broad range of management options, SMI compliant
 - Redundancy for high availability requirements, up to 2 switches/enclosure
 - Support for hot code activation for non-disruptive firmware updates
 - Unmatched scalability
- *Value*
 - Outstanding 4 Gb performance
 - Support for Brocade trunking, providing up to 16 Gb of direct SAN connectivity at 4 Gb
 - Affordability
 - Investment protection
 - Lower deployment costs from reduced cables, SFPs and rack space

The HP StorageWorks SAN Director 2/128 is a 2 Gb/s director-class switch that delivers high availability and outstanding performance in a modular and flexible architecture. It provides the foundation for an enterprise SAN that integrates seamlessly into an always-on Internet infrastructure.

HP StorageWorks SAN Director 2/128 and 2/128 power pack

This 2 Gb/s FC SAN Director delivers high availability in a modular 14U enclosure and scales from 32 to 128 ports. The 128-port single domain Director 2/128 enables high port count SANs with fewer domains. Advanced non-blocking architecture with intelligent routing and faster fabric services deliver a high-performance storage network. Advanced fabric services, including power pack, are available pre-configured on the switch or as an optional upgrade to the Director 2/128 base model. This high-performance switch achieves:

- *Control:* Provides multi-switch fabric tools for easy configuring and monitoring
- *Efficiency:* Offers up to 128 x 1 Gb/s and 2 Gb/s universal auto-sensing ports in a 14U rack-mount enclosure
- *Superior performance:* Integrates fully with HP OpenView Storage Area Manager (SAM) software suite
- *Investment protection:* Provides standards-based interoperability with existing FC switches and integrates seamlessly into 1 Gb/s and 2 Gb/s fabrics
- *Advanced availability:* Supports “five-nines” availability with such advantages as hot-swappable Field-Replaceable Units (FRUs), redundant control processors, and stateful failover and concurrent hardware and software upgrades
- *Flexibility:* Power pack software tools provide the capability to monitor for hot spots and proactively address potential issues; power pack includes ISL Trunking, Fabric Watch, Extended Fabric, Remote Switch and Advanced Performance Monitoring.

The power pack provides the SAN administrator with the tools to monitor the health and performance of the network. The power pack also provides the foundation for integration into HP OpenView SAM, providing a SAN administrator the ability to manage their entire environment through a single pane of glass.

Improved connectivity and resource utilization with the HP StorageWorks Multi-Protocol Router

Targeted for the enterprise and mid-range customer, the HP StorageWorks Multi-Protocol (MP) Router provides multiple routing services to increase design options for B-Series switches and directors in a SAN environment. The MP Router provides customers with the ability to implement modular, multi-protocol SAN designs with increased scalability, stability, and return on investment (ROI) on their storage infrastructure through advanced routing services:

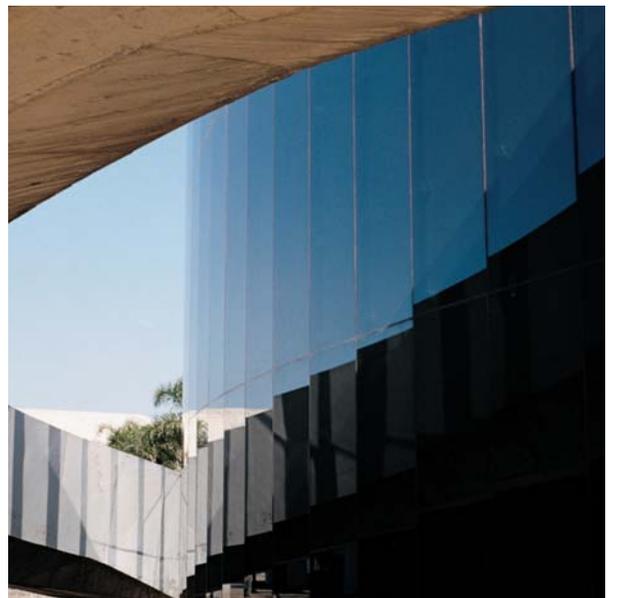
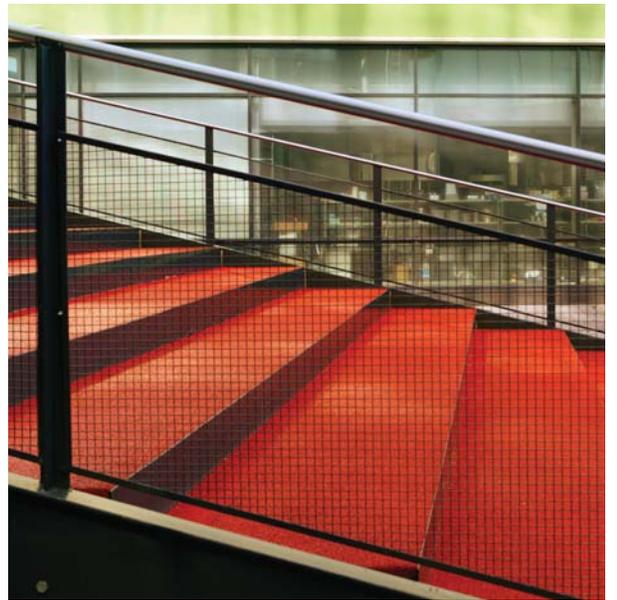
- *FC-FC Subnet Routing Service for hierarchical SAN connectivity:* Enables customers to merge SAN islands for device sharing while preserving the isolation. The results are increased ROI on current storage resources, increased service levels, scalability, and stability to the SAN infrastructure.
- *FCIP Tunneling Service for SAN extension over distance:* The combined subnet routing capability with FCIP services enables a more secure and stable distance-connectivity solution for disaster recovery, like Continuous Access (CA) for EVA and XP product families.
- *iSCSI Gateway Services:* This gateway enables Ethernet-based servers to leverage Fibre Channel SAN resources, thereby improving asset utilization and enabling new applications such as centralized backup.

These services provide new options for connecting SANs and extending SAN benefits over multiple networks, to larger SAN sizes, and across longer distances. The primary advantage of this approach is the ability to interconnect devices between SAN fabrics without merging those fabrics—thereby providing a more secure and flexible storage networking foundation.

This level of SAN connectivity gives organizations a better way to reduce or even eliminate disruptions associated with common operational events, including:

- Data migration from 1 Gb/s storage arrays to 2 Gb/s systems, or migration between logically separated environments such as test/development SANs and production SANs
- Data center consolidation that requires the movement of data between physical locations
- Storage and application rebalancing between previously isolated SANs

HP StorageWorks B-Series switches and directors offer superior performance, easy installation with existing networks, and extreme compatibility with Universal self-configuring ports.



Technical specifications



HP StorageWorks MSA SAN Switch 2/8

HP StorageWorks SAN Switch 2/8V

HP StorageWorks SAN Switch 2/8V power pack

Hardware features	Array embedded blade leverages power and cooling features of MSA, four SFPs included, feature set common with SAN Switch product line, Firmware version 3.1	Rack-mount kit Firmware version 4.4.x	Rack-mount kit Firmware version 4.4.x
Power supply/fans	Fixed power supply	Fixed power supply	Fixed power supply
Form factor	Embedded SAN switch	1U	1U
Port types	Universal self-configuring ports (F, FL, E)	Universal self-configuring ports (F, FL, E)	Universal self-configuring ports (F, FL, E)
Software features	<ul style="list-style-type: none"> Advanced Zoning Web Tools Quickloop 	<ul style="list-style-type: none"> Advanced Zoning Web Tools 	<ul style="list-style-type: none"> Advanced Zoning Web Tools Power pack: Advanced Performance Monitoring, Extended Fabrics, Fabric Watch, ISL Trunking, Remote Switch
Fabric	Eight 2 Gb/s ports: one to controller, seven user accessible No e-ports restricted	2-Switch Fabric Limit Upgradeable to Full Fabric (AA975A)	All e-ports enabled Upgradeable to Full Fabric (AA975A)

Ordering information

Part number	288247-B21	AA979A	AA980A
Optional software upgrades	<ul style="list-style-type: none"> Power pack software (325892-B21) Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) Fabric Manager v3 to v4 enterprise license upgrade (A7391A) Fabric Manager base to enterprise license upgrade (A7392A) Advanced Performance Monitoring (324507-B21) Extended Fabric (324505-B21) Fabric Watch (324504-B21) ISL Trunking (324506-B21) Remote Switch (325891-B21) Secure Fabric OS (332924-B21) Secure Fabric OS Doc Kit (332928-B21) 	<ul style="list-style-type: none"> SAN Switch 2/8V FF upgrade (AA975A) Power pack software (T3573A) Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) Fabric Manager v3 to v4 enterprise license upgrade (A7391A) Fabric Manager base to enterprise license upgrade (A7392A) Advanced Performance Monitoring (324507-B21) Extended Fabric (324505-B21) Fabric Watch (324504-B21) ISL Trunking (324506-B21) Remote Switch (325891-B21) Secure Fabric OS (332924-B21) Secure Fabric OS Doc Kit (332928-B21) 	<ul style="list-style-type: none"> Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) Fabric Manager v3 to v4 enterprise license upgrade (A7391A) Fabric Manager base to enterprise license upgrade (A7392A) Secure Fabric OS (332924-B21) Secure Fabric OS Doc Kit (332928-B21)

Small form factor pluggable (SFP)	Ships with four (4) shortwave SFPs <ul style="list-style-type: none"> Shortwave SFPs: A6515A Longwave SFPs: 10 km – A6516A 35 km – 300836-B21 	SFPs sold separately <ul style="list-style-type: none"> Shortwave SFPs: A6515A Longwave SFPs: 10 km – A6516A 35 km – 300836-B21 	SFPs sold separately <ul style="list-style-type: none"> Shortwave SFPs: A6515A Longwave SFPs: 10 km – A6516A 35 km – 300836-B21
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Technical specifications



HP StorageWorks SAN Switch 2/16V

HP StorageWorks SAN Switch 2/16N FF

HP StorageWorks SAN Switch 2/16N FF power pack

Hardware features	Rack-mount kit Firmware version 4.4.x	Rack-mount kit Firmware version 4.4.x	Rack-mount kit Firmware version 4.4.x
Power supply/fans	Fixed power supplies, fans	Fixed power supplies, fans	Fixed power supplies, fans
Form factor	1U	1U	1U
Port types	Universal self-configuring ports (F, FL, E)	Universal self-configuring ports (F, FL, E)	Universal self-configuring ports (F, FL, E)
Software features	<ul style="list-style-type: none"> Advanced Zoning Web Tools 	<ul style="list-style-type: none"> Advanced Zoning Web Tools 	<ul style="list-style-type: none"> Advanced Zoning Web Tools Power pack: Advanced Performance Monitoring, Extended Fabrics, Fabric Watch, ISL Trunking, Remote Switch
Fabric	2-Switch Fabric Limit Upgradeable to either 4-Switch Fabric Limit (T3572A) or Full Fabric (AA976A)	All e-ports enabled Full Fabric	All e-ports enabled Full Fabric

Ordering information

Part number	AA978A	AA990A	AA977A
Optional software upgrades	<ul style="list-style-type: none"> SAN Switch 2/16V 2-switch to 4-switch Upgrade License (T3572A) SAN switch 2/16V 2-switch to Full Fabric Upgrade License (AA976A) Power pack software (T3574A) Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) Fabric Manager v3 to v4 enterprise license upgrade (A7391A) Fabric Manager base to enterprise license upgrade (A7392A) Advanced Performance Monitoring (324507-B21) Extended Fabric (324505-B21) Fabric Watch (324504-B21) ISL Trunking (324506-B21) Remote Switch (325891-B21) Secure Fabric OS (332924-B21) Secure Fabric OS Doc Kit (332928-B21) 	<ul style="list-style-type: none"> Power pack software (T3574A) Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) Fabric Manager v3 to v4 enterprise license upgrade (A7391A) Fabric Manager base to enterprise license upgrade (A7392A) Advanced Performance Monitoring (324507-B21) Extended Fabric (324505-B21) Fabric Watch (324504-B21) ISL Trunking (324506-B21) Remote Switch (325891-B21) Secure Fabric OS (332924-B21) Secure Fabric OS Doc Kit (332928-B21) 	<ul style="list-style-type: none"> Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) Fabric Manager v3 to v4 enterprise license upgrade (A7391A) Fabric Manager base to enterprise license upgrade (A7392A) Secure Fabric OS (332924-B21) Secure Fabric OS Doc Kit (332928-B21)
Small form factor pluggable (SFP)	SFPs sold separately <ul style="list-style-type: none"> Shortwave SFPs: A6515A Longwave SFPs: 10 km – A6516A 35 km – 300836-B21 	SFPs sold separately <ul style="list-style-type: none"> Shortwave SFPs: A6515A Longwave SFPs: 10 km – A6516A 35 km – 300836-B21 	SFPs sold separately <ul style="list-style-type: none"> Shortwave SFPs: A6515A Longwave SFPs: 10 km – A6516A 35 km – 300836-B21

Technical specifications



HP StorageWorks SAN Switch 4/32

HP StorageWorks SAN Switch 4/32 power pack

Hardware features

Rack-mount kit
Firmware version 4.x

Rack-mount kit
Firmware version 4.x

Power supply/fans

Redundant, hot-swappable, removable power supplies and cooling units

Redundant, hot-swappable, removable power supplies and cooling units

Form factor

1U

1U

Ports

- Universal self-configuring ports (E, F and FL)
- 16 installed (2 x 8-port blades), 32 ports max with 8-port blade upgrades

- Universal self-configuring ports (E, F and FL)
- 32 installed (2 x 16-port blades), 32 ports max with 8-port blade upgrades

Software features

- Advanced Zoning
- Web Tools

- Advanced Zoning
- Web Tools
- Power pack: Advanced Performance Monitoring, Extended Fabric, Fabric Watch, ISL Trunking, Remote Switch

Ordering information

Part number

A7393A

A7394A

Optional software upgrades

- 8-port upgrade license (T3677A)
- Power pack software (313448-B21)
- Fabric Manager 4.x (345690-B22)
- Advanced Performance Monitoring (313450-B21)
- Extended Fabric (313458-B21)
- Fabric Watch (313454-B21)
- ISL Trunking (313452-B21)
- Remote Switch (313460-B21)
- Secure Fabric OS, Firmware v4.1 (332925-B21)

- 8-port upgrade license (T3677A)
- Secure Fabric OS, Firmware v4.1 (332925-B21)

Small form factor pluggable (SFP)

SFPs ordered separately

- Shortwave SFPs: A7446A
- Longwave SFPs:
 - 10 km – 300835-B21
 - 35 km – 300836-B21

SFPs ordered separately

- Shortwave SFPs: A7446A
- Longwave SFPs:
 - 10 km – 300835-B21
 - 35 km – 300836-B21

Technical specifications



Brocade 4 Gb SAN Switch for HP p-Class BladeSystem

Brocade 4 Gb SAN Switch for HP p-Class BladeSystem power pack

Hardware features

(1) 4 Gb SAN switch, (2) 4Gb industry-standard hot-pluggable small form factor optical transceivers, (1) re-timer card, (1) serial cable, (1) mini USB-to-serial adapter, Firmware version 5.x

(1) 4 Gb SAN switch, (2) 4 Gb industry-standard hot-pluggable small form factor optical transceivers, (1) re-timer card, (1) serial cable, (1) mini USB-to-serial adapter, Firmware version 5.x

Power supply/fans

Integrated design with BladeSystem, with shared power and cooling resources

Integrated design with BladeSystem, with shared power and cooling resources

Form factor

Reduced octal cube design (4.5 x 3.5 x 1.5 in); plugs into the back of the HP p-Class BladeSystem, resulting in a zero footprint solution

Reduced octal cube design (4.5 x 3.5 x 1.5 in); plugs into the back of the HP p-Class BladeSystem, resulting in a zero footprint solution

Ports

- Universal self-configuring ports (E, F, FL)
- 8 internal; 4 external

- Universal self-configuring ports (E, F, FL)
- 8 internal; 4 external

Software features

- Advanced Zoning
- Web Tools

- Advanced Zoning
- Web Tools
- Power pack: Advanced Performance Monitoring, Extended Fabric, Fabric Watch, ISL Trunking

Ordering information

Part number

A7534A (full fabric)
A7533A (base, 2 switches max.)

A7535A (power pack, full fabric)

Optional software upgrades

- Full Fabric Upgrade License (AA976A)
- Power pack Upgrade License (T3574A)
- Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A)
- Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A)
- Advanced Performance Monitoring (324507-B21)
- Extended Fabric (324505-B21)
- Fabric Watch (324504-B21)
- ISL Trunking (324506-B21)
- Secure Fabric OS, Firmware v4.1 (332924-B21)

- Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A)
- Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A)
- Secure Fabric OS, Firmware v4.1 (332924-B21)

Small form factor pluggable (SFP)

SFPs ordered separately

- Shortwave SFPs (4 Gb):
A7446A
- Shortwave SFPs (2 Gb):
A6516A
- Longwave SFPs:
10 km – A6516A
35 km – 300836-B21

SFPs ordered separately

- Shortwave SFPs (4 Gb):
A7446A
- Shortwave SFPs (2 Gb):
A6516A
- Longwave SFPs:
10 km – A6516A
35 km – 300836-B21

Technical specifications



HP StorageWorks SAN Director 2/128

HP StorageWorks SAN Director 2/128 power pack

HP StorageWorks Multi-Protocol (MP) Router

	HP StorageWorks SAN Director 2/128	HP StorageWorks SAN Director 2/128 power pack	HP StorageWorks Multi-Protocol (MP) Router
Hardware features	Rack-mount kit, industry-standard hot-pluggable small form factor optical transceivers, 16-port Director Blade (AD504A), Firmware version 4.x	Rack-mount kit, industry-standard hot-pluggable small form factor optical transceivers, 16-port Director Blade (AD504A), Firmware version 4.x	Rack-mount kit, industry-standard hot-pluggable small form factor optical transceivers, Firmware version 7.x
Power supply/fans	Four hot-swappable power supplies and three hot-swappable cooling units	Four hot-swappable power supplies and three hot-swappable cooling units	Redundant power supplies
Form factor	14U	14U	2U
Ports	<ul style="list-style-type: none"> • Universal self-configuring ports (F, FL, E) • 32 installed (2x16-port blades), 128 ports max with 16-port FC blades 	<ul style="list-style-type: none"> • Universal self-configuring ports (F, FL, E) • 32 installed (2x16-port blades), 128 ports max with 16-port FC blades 	<ul style="list-style-type: none"> • Fibre Channel (E, F, FL, EX) and Gigabit Ethernet • 16 ports
Software features	<ul style="list-style-type: none"> • Advanced Zoning • Web Tools 	<ul style="list-style-type: none"> • Advanced Zoning • Web Tools • Power pack: Advanced Performance Monitoring, Extended Fabrics, Fabric Watch, ISL Trunking, Remote Switch 	<ul style="list-style-type: none"> • Simple Name Server, Registered State Change Notification (RSCN), and iSCSI Gateway Service • Additional fabric services include the FC-FC Routing Service, FCIP Tunneling Service, Advanced Zoning, and Web Tools

Ordering information

	AA981A	AA982A	A7437A, A7438A, A7439A
Part number	AA981A	AA982A	A7437A, A7438A, A7439A
Optional software upgrades	<ul style="list-style-type: none"> • Power pack software (330882-B21) • Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) • Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) • Fabric Manager v3 to v4 enterprise license upgrade (A7391A) • Fabric Manager base to enterprise license upgrade (A7392A) • Advanced Performance Monitoring (334219-B21) • Extended Fabric (325886-B21) • Fabric Watch (334218-B21) • ISL Trunking (325887-B21) • Remote Switch (330883-B21) • Secure Fabric OS, Firmware v4.1 (332926-B21) • Secure Fabric OS Doc Kit (332929-B21) 	<ul style="list-style-type: none"> • Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) • Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) • Fabric Manager v3 to v4 enterprise license upgrade (A7391A) • Fabric Manager base to enterprise license upgrade (A7392A) • Secure Fabric OS, Firmware v4.1 (332926-B21) • Secure Fabric OS Doc Kit (332929-B21) 	<ul style="list-style-type: none"> • Fabric Manager Base Edition (supports up to 10 domains/switches) (A7390A) • Fabric Manager Enterprise Edition (supports up to 8 fabrics and/or 200 domains/switches) (A7389A) • Fabric Manager base to enterprise license upgrade (A7392A)
Small form factor pluggable (SFP)	<p>SFPs ordered separately</p> <ul style="list-style-type: none"> • Shortwave SFPs: A6515A • Longwave SFPs: 10 km – A6516A 35 km – 300836-B21 	<p>SFPs ordered separately</p> <ul style="list-style-type: none"> • Shortwave SFPs: A6515A • Longwave SFPs: 10 km – A6516A 35 km – 300836-B21 	<p>SFPs ordered separately</p> <ul style="list-style-type: none"> • Shortwave SFPs: A6515A A6516A • Longwave SFPs: 10 km – A6516A

HP StorageWorks B-Series infrastructure

Product name	Product description	Product number	
B-Series 2 Gb/s optical cables	LC-LC connection between two 2 Gb/s devices:		
	2m LC-LC Multi-Mode Fibre Channel Cable	221692-B21	
	5m LC-LC Multi-Mode Fibre Channel Cable	221692-B22	
	15m LC-LC Multi-Mode Fibre Channel Cable	221692-B23	
	30m LC-LC Multi-Mode Fibre Channel Cable	221692-B26	
	50m LC-LC Multi-Mode Fibre Channel Cable	221692-B27	
	LC-SC connection between a 1 Gb/s and a 2 Gb/s device:		
	2m LC-SC Multi-Mode Fibre Channel Cable	221691-B21	
	5m LC-SC Multi-Mode Fibre Channel Cable	221691-B22	
	15m LC-SC Multi-Mode Fibre Channel Cable	221691-B23	
	30m LC-SC Multi-Mode Fibre Channel Cable	221691-B26	
	50m LC-SC Multi-Mode Fibre Channel Cable	221691-B27	
	HP StorageWorks MP Router	Multi-Protocol Router base—8-port MP Router providing three types of routing services: FC subnet routing, FCIP tunneling, and iSCSI bridging	A7437A
		Multi-Protocol Router full—16-port MP Router providing three types of routing services: FC subnet routing, FCIP tunneling, and iSCSI bridging	A7438A
Multi-Protocol Router upgrade license—Flexible port upgrade license to increase the base model to 16 ports		A7439A	
What's included	HP StorageWorks MSA SAN Switch 2/8:* Switch; four SFPs; accessory kit (manuals on CD, enterprise safety and regulatory information, installation guide, plenum); Advanced Zoning and Web Tools		
	HP StorageWorks 4 Gb SAN Switch for HP p-Class BladeSystem:* Switch; two 4 Gb SFPs; one re-timer card; one serial cable; one mini USB-to-serial adapter; WebTools license; Zoning license; one-year warranty; and 8 x 5, next-business-day response support		
	All other HP StorageWorks SAN switches and directors:* Switch; rack-mount kit; accessory kit (manuals on CD, enterprise safety and regulatory information, installation guide, plenum); Advanced Zoning and Web Tools; serial cable; standard and PDU power cords		
	HP StorageWorks Multi-Protocol Router: Multi-Protocol Router, rack-mount kit; accessory kit (manuals on CD, enterprise safety and regulatory information, installation guide, rack-mounting instructions)		
	* Power pack additionally includes: Fabric Watch, Trunking, Performance Monitoring, Extended Fabrics, Remote Switch		

HP StorageWorks B-Series infrastructure

Warranty and support

Software warranty: HP warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery.

Exclusive remedy: The entire liability of HP and its suppliers and your exclusive remedy for software that does not conform to this limited warranty shall be the repair or replacement of the defective media. This warranty and remedy are subject to your returning the defective media during the warranty period to HP in the country in which you obtained the software.

Note: Certain restrictions and exclusions apply. Consult the Customer Support Center for details.

Hardware warranty: HP provides a one-year, hardware limited warranty, fully supported by a worldwide network of resellers and service providers. It includes one (1) year parts; one (1) year on-site (8 x 5, next-business-day response) and one (1) year labor.

Note: The hardware warranty covers firmware and embedded non-saleable software.

Hardware or software product installation is not included in the warranty, but is available and highly recommended.

Service options

HP Services also has a portfolio of SAN services:

- HP SAN-Environment Support annuity service allows continuous SAN growth by ensuring that your entire SAN is safely kept updated with relevant, ongoing firmware (FW) changes and ensures rapid resolution of complex SAN issues.
- HP SAN Solution Service is a one-time review of your entire SAN and all the components (applications, HBAs, switches, FW and arrays, etc.) to ensure that all components are at tested, HP Certified levels.
- The HP SAN Design/Architecture Service provides as broad and as deep a review and recommendation as needed of how your SAN environment can be designed and implemented to meet your business storage needs.

Additional warranty protection and/or HP installation packages can be purchased as an HP Care Pack. An HP Care Pack is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage. HP Care Packs are not available for less than the product's warranty duration.

HP Care Packs are available for sale any time during the warranty period for most products, but the commencement date will be the same as the warranty start date (delivery date to end-user customer). Proof of purchase may be required. HP Care Pack services are prepaid.

For additional HP Care Pack (hardware and software) information, as well as orderable part numbers, please visit: <http://h20219.www2.hp.com/services/cache/10950-0-0-225-121.aspx>.

Note: Certain restrictions and exclusions apply. Consult the Customer Support Center for details.

For more information on these and other service options, please visit:
<http://www.hp.com/hps/tech/storage/supp/>.

Financial services

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage and ultimately retire your HP solutions. For more information on these services, please contact your HP sales representative, or visit: www.hp.com/go/hpfinancialservices.

Customer support

HP Customer Support provides a broad spectrum of services to commercial and enterprise customers, including performance and availability services such as proactive mission-critical services and support management services for deployment of the entire IT infrastructure, including HP and multi-vendor environments. For more information on these services, contact your HP sales representative or visit www.hp.com/hps/support.

For more information

For more information on HP StorageWorks B-Series switches, directors, and the MP Router, please visit: www.hp.com/go/san.



www.hp.com/go/san

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