

# HP StorageWorks SAN Switch 2/16-EL



The HP StorageWorks SAN Switch 2/16-EL provides the configuration flexibility and performance needed by corporate storage network infrastructures. The SAN Switch 2/16-EL delivers sixteen high performance auto sensing 1 and 2 Gb Fibre Channel ports. It's fully non-blocking and provides uncongested sustained, 2 Gb full duplex throughput. The SAN Switch 2/16-EL has universal, self-configuring (F, FL, E) ports and includes Web Tools, Quickloop and Advanced Zoning features. The switch features highly networked capabilities that can be incorporated into powerful, flexible storage area networks (SANs). SFPs (removable-small-form-factor-pluggable optical transceivers) are ordered separately. The SAN Switch 2/16-EL offers storage networking features which include redundant power supplies, and cooling; making it ideal for supporting corporate infrastructure implementations. The switch scales to a maximum of 4 switches in a SAN and is upgradable to full SAN scaling with the purchase of an optional upgrade license.

#### What's new

- 2 Gb/sec 16 port connectivity
  - Investment protection for previous SAN switch installations
  - Strongest management

- Flexible
  - Choose the connection type (fabric, loop)
  - Choose the best management
  - Easily integrated into a core to edge SAN Switch configuration
- 4 switch maximum switch scaling
- Upgradable to full SAN scaling

#### Key features and benefits

- *Available*: incorporates hot-plug redundant power supplies and fans and hot-plug optics
- *Manageable*: maximizes system administrator resources with centralized management tools
- *Efficient*: utilizes the same firmware as other HP StorageWorks SAN Switches
- *Scalable*: up to 4 switch scaling and all 16-ports can be cascaded to other switches to form larger SANs
- *High performance*: supports 2 Gb transfer with non-blocking for highest performance

The HP StorageWorks SAN Switch 2/16-EL features high performance 2 Gb/sec connectivity to configure an entry-level SAN and the ability to grow to a core to edge infrastructure.



## HP StorageWorks SAN Switch 2/16-EL



<b>Performance</b>	1.063 Gb/sec line speed, full duplex; 2.125 Gb/sec line speed, full duplex; auto-sensing of 1 Gb/sec and 2 Gb/sec port speeds; optionally programmable to fixed port speed; speed matching between 1 Gb/sec and 2 Gb/sec ports; aggregate bandwidth 64 Gb/sec end-to-end Fabric latency <2.1 μsec with no contention, cut-through routing at 2 Gb/sec
<b>Switch bandwidth</b>	64 Gb/sec end-to-end
<b>Maximum frame size</b>	2112-byte payload
<b>Port types</b>	16-ports universal, FL_Port, F_Port, and E_Port; self-discovery based on switch type (U_Port)
<b>Media types</b>	Small-form-factor-pluggable (SFP); short wavelength (SWL) up to .31 mi (500m), long wavelength (LWL) up to 21 mi ( 35 km); distance depends on fiber-optic cable and port speed
<b>Management access</b>	10/100 Ethernet port (RJ-45); Serial port (RS-232);
<b>Management</b>	Advanced Web Tools included; Fabric Manager (optional) Management access in-band via Management Server
<b>Availability</b>	Hot-plug redundant power supplies and fans; hot-plug optics; online diagnostics; fault-isolation tools for network-wide activity
<b>Security</b>	Fabric security for configuration management, SAN access, and authentication/authorization
<b>Diagnostics</b>	Diagnostics POST and embedded online/offline diagnostics
<b>Dimensions (h x w x d)</b>	8.73 cm (1.71 in) x 42.855 cm (16.87 in) x 45.0 cm (17.72 in)
<b>Temperature range</b>	10°C to 40°C (50°F to 104°F) (operating) -35°C to 65°C (-31°F to 147°F) (non-operating)
<b>Humidity range</b>	5% to 85% non-condensing at 40°C (104°F)
<b>Electrical specifications</b>	Operational: 85 to 264 VAC
<b>Weight</b>	12.94 kg (28.5 lbs)
<b>Safety</b>	EN 60950/IEC 950 Compliance (International); UL Listed, UL 60950 (USA, Canada, File E136462); TÜV GS Certificate (Germany); CE Marking (European Union); Highly Specialized Equipment (Mexico)
<b>Electromagnetic emissions</b>	USA: FCC Class A (Self Declaration); EU Countries: EN 55022 Class A; International: CISPR22 Class A; Korea: RRL Class A; Japan: VCCI Class A; Australia/New Zealand: CISPR22 Class A; Taiwan: BSMI Class A; Russia: GOST Class A; IEC 61000-3-2: Harmonic Current; IEC 61000-3-3: Voltage Fluctuations and Flicker
<b>Electromagnetic immunity</b>	EU Countries: EN 55024 / CISPR 24 including: EN 61000-4-2/IEC 61000-4-2: Electrostatic Discharge (ESD) EN 61000-4-3/IEC 61000-4-3: Radiated Immunity EN 61000-4-4/IEC 61000-4-4: Electrical Fast Transient (EFT) / Burst EN 61000-4-5/IEC 61000-4-5: Surge EN 61000-4-6/IEC 61000-4-6: Conducted Immunity EN 61000-4-11/IEC 61000-4-11: Voltage Dips and Interruptions

## HP StorageWorks SAN Switch 2/16-EL



## Ordering Information

Product number	Description
344181-B21	SAN Switch 2/16-EL, (16-port switch) and the following software: Hardware and Software Enforced Zoning Frame Filtering Quick Loop Built-in Web browser management tools Serial cable and power cords
325889-B21	Full SAN scaling upgrade license Increases switch scaling from 4 switch limitation to full SAN configurations

Accessories				
A6515A	Short wavelength (SFP)	300834-B21	Short wavelength (SFP)	
	Short wavelength (SFP)	221470-B21	Short wavelength (SFP)	
A6516A	Long wavelength (SFP), 10 km	300835-B21	Long wavelength (SFP), 10 km	
	Long wavelength (SFP), 35 km	300836-B21	Long wavelength (SFP), 35 km	
C7524A	2m LC-to-LC Fibre Channel cable	221692-B21	2m LC-to-LC multi-mode FC cable	
C7525A	16m LC-to-LC Fibre Channel cable	221692-B22	5m LC-to-LC multi-mode FC cable	
C7526A	50m LC-to-LC Fibre Channel cable	221692-B23	15m LC-to-LC multi-mode FC cable	
C7527A	200m LC-to-LC Fibre Channel cable	221692-B26	30m LC-to-LC multi-mode FC cable	
		221692-B27	50m LC-to-LC multi-mode FC cable	
C7529A	2m LC-to-SC Fibre Channel cable	221691-B21	2m LC-to-SC multi-mode FC cable	
C7530A	16m LC-to-SC Fibre Channel cable	221691-B22	5m LC-to-SC multi-mode FC cable	
		221691-B23	15m LC-to-SC multi-mode FC cable	
C7534A	SC female to SC female adapter	221691-B26	30m LC-to-SC multi-mode FC cable	
C7540A	2m LC male to SC male adapter kit	221691-B27	50m LC-to-SC multi-mode FC cable	

Optional Software		
313455-B21	Fabric Manager, Management Station Software for SAN-wide switch fabric management	
324504-B21	HP StorageWorks Fabric Watch for SAN Switch 2/8-EL, 2/16-EL, 2/16	
324506-B21	HP StorageWorks ISL Trunking kit for SAN Switch 2/8-EL, 2/16-EL, 2/16	
324507-B21	HP StorageWorks Adv Perf Monitor for SAN Switch 2/8-EL, 2/16-EL, 2/16	
325891-B21	HP StorageWorks Remote Switch for SAN Switch 2/8-EL, 2/16-EL, 2/16	
324505-B21	HP StorageWorks Extended Fabric for SAN Switch 2/8-EL, 2/16-EL, 2/16	
332924-B21	HP StorageWorks Secure Fabric OS for SAN Switch 2/8-EL, 2/16-EL, 2/16 with v3.1fw	
325892-B21	PowerPak software bundle for SAN Switch 2/8-EL SAN Switch 2/16 -EL and SAN Switch 2/16 Includes: Fabric Watch, ISL Trunking, Remote Switch, Extended Fabrics, Adv Perf, monitor	

# HP StorageWorks SAN Switch 2/16-EL

## What's included

HP StorageWorks SAN Switch 2/16-EL; rack-mount kit; accessory kit (manuals on CD, enterprise safety and regulatory information, installation guide, rack-mounting instructions); and power cord. Also includes Fabric OS, Web Tools, Advanced Zoning, Quick loop, serial cable, power cords.

## Warranty and support

### Warranty:

1-1-1, one-year warranty, on-site next day response

Additional warranty protection can be purchased

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

### Additional options:

Increased warranty options are available, including 1 and 3-year on-site, next-day, same-day, and 24 x 7 hardware and phone support; critical support; and business connectivity support

For more information on warranty and support options, please visit our web sites at:

[www.hp.com/hps/storage](http://www.hp.com/hps/storage)

[http://h18005.www1.hp.com/services/CarePAQ/us/install/cp\\_storage.html](http://h18005.www1.hp.com/services/CarePAQ/us/install/cp_storage.html)

[http://h18005.www1.hp.com/services/CarePAQ/us/hardware/cp\\_storage.html](http://h18005.www1.hp.com/services/CarePAQ/us/hardware/cp_storage.html)

### Service options:

SAN Implementation service H9273A; SAN Architecture service H9162A

For more information on service options, please visit our web site at:

<http://www.compaq.com/services/CarePAQ>

## For more information

For more information on HP StorageWorks switches, contact any of our worldwide sales offices or visit:

<http://h18006.www1.hp.com/products/storageworks/san/documentation.html>

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<http://h18006.www1.hp.com/products/storageworks/san/documentation.html>

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