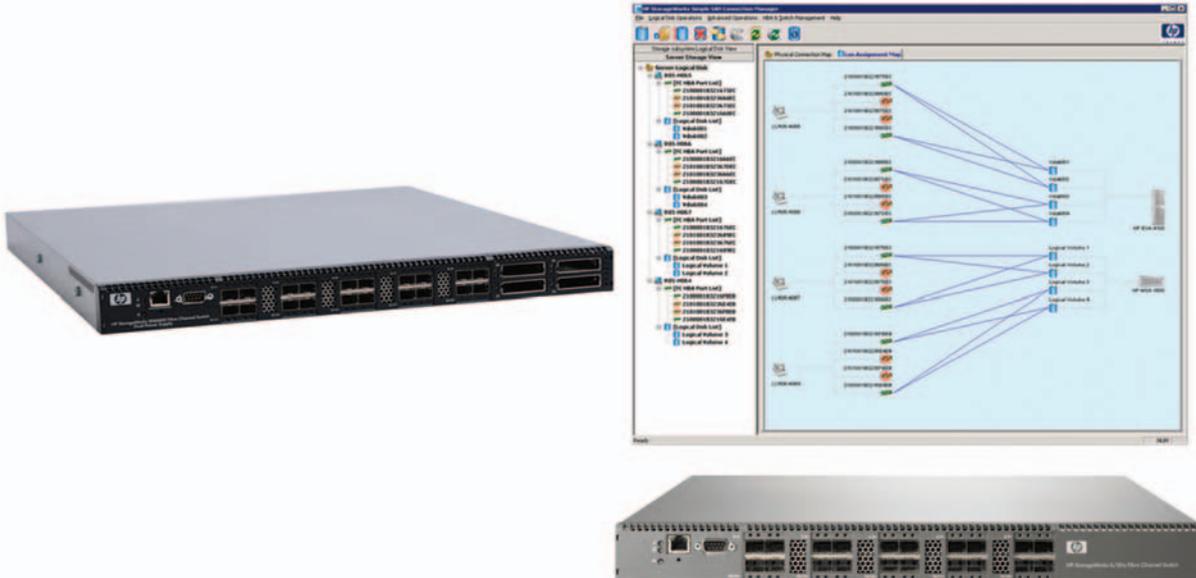




# HP H-series Fibre Channel switch portfolio

Delivers next-generation 8 Gbps Fibre Channel performance with built-in simplicity, scalability, flexibility, and convergence at affordable price points for midmarket and enterprise SAN deployments



HP simplifies SANs by combining 8 Gbps Fibre Channel performance with end-to-end SAN management, stackable architecture, and industry-standard heterogeneous SAN connectivity. Your future is protected today with an infrastructure capable of supporting emerging technologies and convergence at affordable prices.

## HP SN6000 Stackable 8Gb Fibre Channel Switches

HP SN6000 Stackable 8Gb Fibre Channel Switches are designed to make enterprise SANs affordable and easy to use, especially as the network expands. With low-cost, high-performance scalability in mind, each SN6000 switch features eight (single power supply model) or 20 enabled device ports (single- or dual-power supply models) supporting 8/4/2 Gbps speeds, plus four high-speed 10/20 Gbps stacking ports for linking SN6000 switches. Included SAN Connection Manager (SCM) enterprise software enables network management and storage provisioning from a single screen. Transparent Router functionality, standard in HP H-series switches (SN6000 and 8/20q), provides seamless, non-disruptive access to servers and storage on HP B-series and C-series SANs. Adaptive Trunking technology comes standard as well, eliminating the need for costly trunking licenses and providing optimal performance between connected switches.

Begin with one SN6000 switch with eight or 20 enabled device ports for an affordable solution, and then add new ports and switches for up to 120 usable device ports per stack (single manageable unit) or 500+ ports in multi-stack topologies. Included 10 Gbps stacking ports may be upgraded to 20 Gbps speed at any time, extending the solution lifespan while preserving current investments.

## HP 8/20q Fibre Channel Switch and 8Gb Simple SAN Connection Kit

HP 8/20q Fibre Channel Switch and 8Gb Simple SAN Connection Kit are designed to make small, affordable SANs with medium growth potential. With low-cost high performance in mind, each 8/20q switch features 20 device ports supporting 8/4/2 Gbps speeds. The 8/20q switch also includes SCM enterprise software for "single pane of glass" installation, provisioning, and management. Begin with eight or 16 enabled device ports for a truly affordable solution, and then upgrade to 20 ports via 4-port upgrade licenses. The 8Gb Simple SAN Connection Kit combines the performance and value of the 8/20q Fibre Channel Switch with four HP 81Q PCIe FC HBAs, six 8 Gb SPF+ Fibre Channel optics, six Fibre Channel cables, and HP SCM enterprise software to provide all the SAN infrastructure and software for a 4-host SAN.

## HP H-series switches

The HP H-series Fibre Channel switch portfolio makes installing your first SAN (or your hundredth) easy. An entire SAN may now be deployed in minutes. SAN novices and seasoned experts alike, whether installing the 8/20q or SN6000 switch, will appreciate the simplicity and power of the included SCM enterprise software. SCM works seamlessly with HP HBAs, HP Enterprise Virtual Array, and HP Modular Storage Array (MSA) to handle common cross-platform management and maintenance tasks quickly. In addition, all HP H-series switches include Adaptive Trunking technology to keep communications between switches in constant balance. Adaptive Trunking eliminates the need for the expensive trunking licenses that are required with other FC switch solutions.

## Product key selling points

### Build a scalable SAN with less hardware and less complexity

Stackable architecture: Stack up to six HP SN6000 Stackable 8Gb Fibre Channel Switches for 120 ports in a single manageable unit. Multi-stack topologies of SN6000 switches support larger enterprise environments with over 500 device ports. No need to use device ports for ISL connections in a stack. Each 10 Gbps/20 Gbps stacking (ISL) port provides three times the bandwidth of a device port for industry-leading performance.

- **Fewer cables and optics**

Stacking enables networks with simpler topologies, fewer cables to manage, and fewer optics to purchase.

- **Non-disruptive upgrades**

Non-disruptive hardware expansion using dedicated stacking ports allows customers to add ports/switches without unplugging cables. Software upgrades are non-disruptive, too, through the SCM enterprise software wizards.

### Gain operational efficiencies with unique SAN management software

Integrated end-to-end management: For the SAN administrator, there is no need to master separate interfaces to control HP switches, HBAs, and storage. Deploy, manage, and upgrade all of them from one convenient SCM window. Integration of HP Virtual Connect Enterprise Manager and HP SCM enables unique end-to-end viewing of HP BladeSystem c-Class server-to-storage connectivity in the fabric.

### Ease of deployment

Setting up your first SAN is now fast, easy, and foolproof. Eliminate the risk of expensive configuration errors with point-and-click wizards. Get full optimization and best practices with minimal training and expertise.

### Enterprise-class functionality

Powerful features such as Adaptive Trunking (optimizes fabric speed), drag-and-drop zoning, I/O StreamGuard (uninterrupted dataflow), automatic firmware notifications, downloads, and non-disruptive upgrades give you the winning edge and help you get the most out of your SAN.

### Application-based wizards

Application-based wizards allow your SAN to be quickly and easily provisioned based on published best practices. Included is a Microsoft® Exchange wizard sized for a variety of typical configurations and a custom template for fast deployment of other applications.

### Scale with ease

With SN6000 switches, scale up to 120 device ports in a single stack without having to redeploy device ports in a stack. Each six-switch stack can be managed as a single unit. The fabric can scale beyond 500 device ports in multi-stack configurations.

### Get industry-standard interoperability

#### NPIV

The H-series switches use industry-standard NPIV to connect H-series with HP B-series and C-series fabrics. This is the same standards-based technology used by HP Virtual Connect, and it will play a major role in future convergence.

#### Transparent Router

Inexpensively add a new departmental or remote SAN and seamlessly connect to the existing HP B-series and C-series fabrics with the H-series Fibre Channel switches using Transparent Router (TR). TR technology eliminates the support and management challenges of switch interoperability and merged SAN fabrics of the past, allowing sharing of HP server and storage resources over multiple paths between SANs. The security and containment of TR allow extension of the SAN without impact on existing infrastructure. The TR feature of H-series Fibre Channel switches is ideal for existing B-series and C-series SAN customers who are deploying a new SAN for departmental build-out, a new backup SAN, a new enterprise SAN, or a legacy SAN environment migration.

### Achieve affordable performance

#### High bandwidth

The SN6000 switches have a high 544 Gbps aggregate bandwidth with less than 200 nanosecond latency. The 10 Gbps stacking (ISL) ports are included for stacking and trunking multiple switches. These stacking ports are upgradable to 20 Gbps and use the same cables used for 10 Gbps.

#### High performance at affordable pricing

The future is within your reach today with state-of-the-art 8 Gbps Fibre Channel technology, offering the bandwidth today that you will need for support of emerging technologies. Speed of 8 Gbps extends the useful life of your purchase. Migrate at your own pace from 4 and 2 Gbps devices to 8 Gbps devices.<sup>1</sup>

#### Aggressively priced bundles

Ordering and deploying your first SAN couldn't be easier—or a better value. The HP P2000 G3 FC MSA Dual Controller Small Business SAN Starter Kit features the new HP SN6000 Stackable 8Gb 12 port Single Power FC Switches, the HP P2000 G3 Modular Smart Array, and SCM enterprise software, along with 8 Gbps HBAs. The kit is easy to buy with one part number (AP847A) and includes everything needed to start a small-scale, high-availability, dual-path SAN. The 8Gb Simple SAN Connection Kit for the HP 8/20q Fibre Channel Switch includes everything required for a 4-host SAN infrastructure, including 8 Gbps HBAs, cables, and SFPs—just add your choice of HP storage.

## HP SN6000 Stackable 8Gb Fibre Channel Switches



<b>Performance</b>	8 Gbps
<b>Maximum ports</b>	(20) 8 Gbps device ports; (4) 10 Gbps stacking ports (ISLs)
<b>Minimum ports</b>	(8) 8 Gbps device ports; (4) 10 Gbps stacking ports (ISLs)
<b>Aggregate switch bandwidth</b>	544 Gbps
<b>Protocol support</b>	Fibre Channel
<b>HBA support</b>	(4) HP 81Q HBAs included in the HP P2000 G3 FC MSA Dual Controller Small Business SAN Starter Kit; support for HP (QLogic, Emulex, Brocade) 4 Gb and 8 Gb; PCIe and PCI-X HBAs and mezzanine cards
<b>Servers supported</b>	HP BladeSystem c-Class; HP ProLiant ML, DL, and SL; and HP Integrity
<b>High-availability features</b>	(2) hot-swappable power-supply modules or (1) replaceable power-supply module, depending on model Optional: hot-swappable 8 Gbps SFP+ and 4 Gbps SFP optical interface, hot-swappable 10 Gb/20 Gb XPAK copper and optical transceiver, non-disruptive code load and activation (NDCLA), non-disruptive port license activation, (2) switches for redundancy
<b>Management</b>	SAN Connection Manager enterprise software, QuickTools, command-line interface, HP Systems Insight Manager, SMI-S v1.1 provider, SNMP, GS-4 Management Server (including FDMI), FTP, TFTP, RADIUS
<b>Media types</b>	8 Gbps Small Form-Factor Pluggable+ (SFP+); 4 Gbps SFP optical transceivers; 10 Gb/20 Gb XPAK copper and optical transceivers
<b>Upgradability</b>	(4) 10 Gbps stacking (ISL) ports, upgradable to 20 Gbps; 8-enabled-device-port model, upgradable to 20 enabled device ports with 4-port licenses
<b>Models available</b>	8- and 20-enabled-device-port, 4-stacking-port (ISL); single-power-supply and dual-power-supply models (20 enabled device ports); single-power-supply model (8 enabled device ports)
<b>Form factor</b>	1U
<b>Warranty</b>	1-year parts, 1-year labor, and 1-year onsite (normal business hours, next business day response)

For the most recent support information on HP SN6000 Stackable 8Gb Fibre Channel Switches, reference the QuickSpecs link at [hp.com/go/sn6000](http://hp.com/go/sn6000).

For the most recent support information on the HP P2000 G3 FC MSA Dual Controller Small Business SAN Starter Kit, go to [hp.com/go/p2000](http://hp.com/go/p2000).

## HP 8/20q Fibre Channel Switch and 8Gb Simple SAN Connection Kit



<b>Performance</b>	8 Gbps
<b>Maximum ports</b>	20
<b>Minimum ports</b>	8
<b>Aggregate switch bandwidth</b>	340 Gbps
<b>Protocol support</b>	Fibre Channel
<b>HBA support</b>	(4) HP 81Q HBAs included in kit; support for HP (QLogic, Emulex, Brocade) 4 Gb and 8 Gb; PCIe and PCI-X HBAs and mezzanine cards
<b>Servers supported</b>	HP BladeSystem c-Class; HP ProLiant ML, DL, and SL; and HP Integrity
<b>High-availability features</b>	Hot-swappable 8 Gb SFP+ optical interface modules, non-disruptive code load and activation (NDCLA), non-disruptive port license activation, two switches for redundancy
<b>Management</b>	SAN Connection Manager enterprise software, QuickTools, command-line interface, HP Systems Insight Manager, SMI-S v1.1 provider, SNMP, GS-4 Management Server (including FDMI), FTP, TFTP, RADIUS
<b>Media types</b>	8 Gbps Small Form-Factor Pluggable+ (SFP+) and 4 Gbps Small Form-Factor Pluggable (SFP) optical transceivers
<b>Upgradability</b>	4-port upgrade license
<b>Models available</b>	8- and 16-port active FC switch, bundle
<b>Form factor</b>	1U
<b>Warranty</b>	1-year parts, 1-year labor, and 1-year onsite (normal business hours, next business day response)

For the most recent support information on HP 8/20q Fibre Channel Switch and 8Gb Simple SAN Connection Kit, reference the QuickSpecs link at [hp.com/go/8Gb-SSC](http://hp.com/go/8Gb-SSC).

## Warranty

HP warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery. For more information about HP Global Limited Warranty and Technical Support, visit: [hp.com/products/storageworks/warranty](http://hp.com/products/storageworks/warranty).

## Service and support

### Factory Express

HP Factory Express is designed to help you get a better return from your IT investment by providing customization, integration, and deployment services along with your storage and server purchases. It provides predictable, trusted, and tested IT solutions tailored to your business needs. We allow you to customize hardware to your exact specifications in the factory—helping to speed up deployment and free up internal resources. For more information, visit: [hp.com/go/factoryexpress](http://hp.com/go/factoryexpress).

### Customer technical training

Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training classes on storage software, networking, archiving, and disk storage systems. Our classes are available in many delivery modalities, from traditional instructor-led classes at one of our 80 training centers worldwide to onsite training customized to your needs, as well as online classes. For more information, visit: [hp.com/learn/storage](http://hp.com/learn/storage).

### Financial services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, visit: [hp.com/go/hpfinancialservices](http://hp.com/go/hpfinancialservices).

<sup>1</sup> Only HP 8 Gbps and 4 Gbps HBAs are supported with the SN6000. HP 2 Gbps HBAs are not supported with the SN6000.

## HP Services

When you buy H-series switches, the HP P2000 G3 FC MSA Dual Controller Small Business SAN Starter Kit, or the 8Gb Simple SAN Connection Kit, it's also a good time to think about what level of service and support you may need. To help take the worry out of deploying and managing your environment, we've designed a portfolio of service options that are as flexible, scalable, and affordable as your storage.

### Recommended services

- **3-year HP Support Plus 24 Service**  
Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around the clock.
- **HP SAN Solution Service**  
A scalable service providing specialized expertise in storage area network planning and configuration. Service helps ensure that your SAN is configured for high performance and availability and is integrated with your applications, management environment, and business.

### Related services

- **3-year HP Proactive 24 (P24) for SANs**  
Offers an integrated hardware and software support solution designed to help you resolve interoperability issues in your SAN environment.
- **HP Assessment for SANs Service**  
Offers customized technical and operational guidance to customers with a deployed SAN infrastructure, and provides recommendations to help improve availability levels and ongoing management of your SAN environment.
- **HP Critical Service (CS)**  
HP CS is a comprehensive support solution designed for businesses that run mission-critical applications where any downtime causes a significant business impact.

For more information about HP services and support, visit: [hp.com/go/services](http://hp.com/go/services)

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