

Brocade/HPE Entry Storage SAN Solutions

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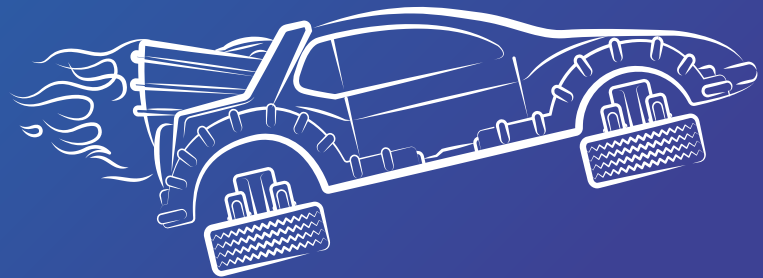


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Agenda

Why Fibre Channel

Gen6 Entry Level Portfolio

Gen6 Features

Why Fibre Channel

Storage networking investments are becoming a **critical top priority** due to the adoption of high-throughput, solid-state and flash storage... Storage performance bottlenecks are moving out of arrays and into the storage network, so **Fibre Channel** will remain as the data center storage **protocol of choice** for the next decade.

The Future of Storage Protocols, June 2016

February 2017



Improving Business Outcomes with HPE DL380 Gen9 Server, 3PAR StoreServ 8450 All-Flash Storage, StoreFabric SN6600B Switch and SN1600E HBA Gen6 32Gb FC Technology

32Gb FC delivers faster time to insight for SQL Server 2016 data warehousing workloads.



Gen6 Overview

HPE Gen6 StoreFabric Family

Flash Forward into Gen6 with the latest in 32 Gb FC opportunities

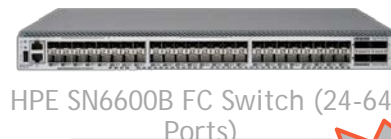
Hewlett Packard
Enterprise



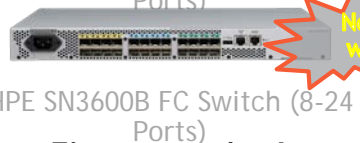
15+ yrs of
Partnership



HPE Smart SAN for 3PAR
Automatic SAN Orchestration for
3PAR StoreServ All-Flash SANs



HPE SN6600B FC Switch (24-64
Ports)



HPE SN3600B FC Switch (8-24
Ports)

First to market!

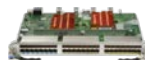


HPE SN8600B 4-slot
Director (48-256 Ports)



HPE SN8600B 8-slot
Director (48-512 Ports)

Director
Blades



32 Gb FC Switch
Blade



32 Gb FC ISL
Blade

HPE SN1600Q 32 Gb HBA
HPE SN1600E 32 Gb HBA

Optics & Cables

Midmarket and
entry FC Switches

What's New: Product description

- Key differentiating features
 - Higher bandwidth with 24 x 32 Gb SFP+ ports
 - VM Insight support
 - Extends the same Fabric Vision functionality as HPE SN3000B 16 Gb FC Switch at the VM granularity
 - NVMe/F ready
 - HPE Smart SAN for 3PAR support
- Carries forward the feature-set from StoreFabric SN3000B
 - Single air-flow direction (port-side exhaust)
 - Switch Mode and Access Gateway Mode
 - HPE PowerPack Software (includes Trunking, Extended Fabric, Fabric Vision)
- Not available: I/O insight, Integrated Routing, FICON-CUP, In-flight encryption, and Compression
- Will be a successor for StoreFabric 8/24 and StoreFabric SN3000B
- Support starting with FOS v8.1.0 and BNA 14.2.0



HPE SN3600B FC Switch (8-24 Ports)

HPE StoreFabric SN6600B 32Gb Fibre Channel Switch

Purpose-built, high-density switch for mission-critical storage

- Industry's highest port density switch
 - 64 ports in a 1U form factor
- Faster Speeds
 - 32 and 128 Gbps speed
- High speed device and ISL connectivity
 - QSFP ports
- New Fabric Vision capabilities
 - IO Insight (Included in HPE PowerPack+ Software Bundle)
- New end-to-end integration
 - Ecosystem adoption of Fabric Vision (Included in HPE PowerPack+ Software Bundle)
- Bundled with 3/3/3 warranty



HPE StoreFabric SN6600B Front View

HPE Smart SAN for 3PAR StoreServ

Extending the autonomic experience beyond the boundaries of the all-flash array

SAN zoning in Minutes not
Hours

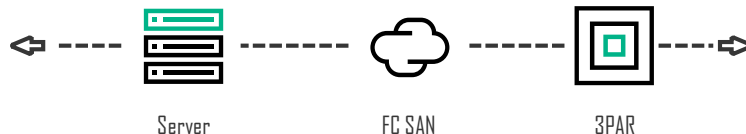


80%
fewer steps

99%
less time



**HPE 3PAR StoreServ Storage: The only all-flash system with
built-in automated SAN configuration**



HPE Smart SAN is integrated into the HPE 3PAR OS and into the firmware of
HPE 3PAR HBAs and switches

Simplification through Target Driven Peer Zoning

HPE Smart SAN is Integrated with HPE StoreFabric 32Gb products offering Greater visibility into your
SAN Fabric

Gen6 Features

HPE Power Pack+ -SAN Health



Automatically detects and recovers from bit errors, negating the need for retransmission

Forward Error Correction



Automatically recovers flow control buffer credit loss at the VC level, improving availability

Buffer Credit Recovery



Automation that simplifies policy-based monitoring and alerting

MAPS



Cable and optic diagnostics that simplify the deployment and support of large fabrics

ClearLink Diagnostics



Automatically detect degraded storage IO performance with integrated device latency and IOPS monitoring

IO Insight



Identifies, monitors, and analyzes the performance of specific flows or frame types

Flow Vision



Customizable health and performance dashboard, with all critical information on one screen

Dashboards



Simplifies SAN configuration and maintains consistency in operational behavior

COMPASS



Quickly detects and clearly alerts admins to high levels of latency, helping to identify slow drain devices

Fabric Performance Impact Monitoring



Identify, baseline, and monitor VM performance end-to-end, VM throughput and VM flows

VM Insight



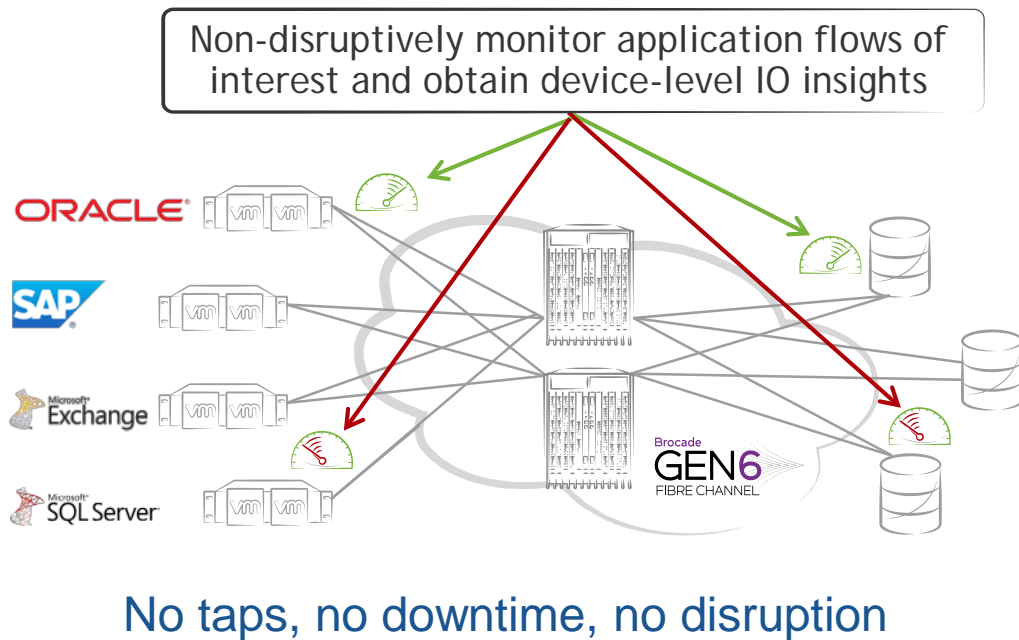
IO Insight Capabilities

Monitor storage IO metrics to gain insights into problems

Proactive IO monitoring:

- Total IOs
- First response max/average
- IO latency (ECT) max/average
- Outstanding IO max/average

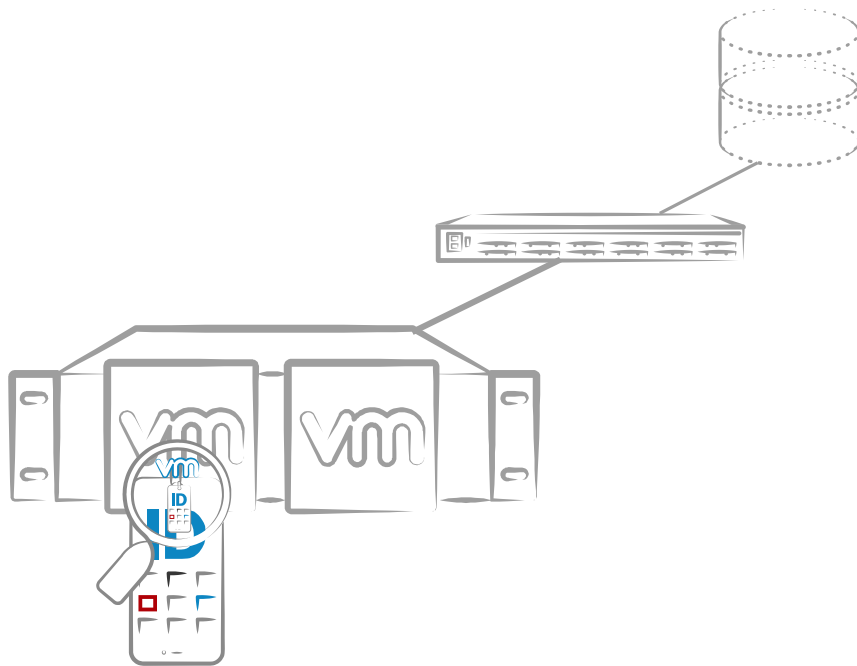
Performance metrics provided based on data size



Brocade VM Insight

Extends Brocade Fabric Vision capabilities to monitor Virtual Machine IO

- Enables network administrators to identify and benchmark VM performance end to end
- Proactively monitor:
 - Read/Write statistics
 - IO per second
 - Avg/max IO
 - Total IO
- Latency metrics:
 - First Response Time
 - Exchange Completion Time
 - Pending IO Time



Thank you