

IBM System Storage SAN768B-2 and SAN384B-2



Designed to become the foundation for private or hybrid cloud storage area networks

Highlights

- Unleash the full potential of cloud storage with outstanding scalability, performance and reliability
 - Reduce network complexity, management and costs with ultra-scale chassis connectivity
 - Simplify and centralize end-to-end storage area network (SAN) administration
 - Protect investments in existing SAN fabrics and automation tools while reducing costs and minimizing disruption
 - Speed problem identification, SAN configuration and management with IBM® Network Advisor dashboards
 - Maximize performance for I/O- and bandwidth-intensive applications
 - Optimize data center connectivity with integrated, high-performance metro and global connectivity
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IBM System Storage® SAN768B-2 and IBM System Storage SAN384B-2 fabric backbones are among the industry's most powerful Fibre Channel switching infrastructure offerings. They provide reliable, scalable, high-performance foundations for mission-critical storage. These fabric backbones also offer enterprise connectivity options to add support for IBM FICON® connectivity, delivering a high-performing and reliable FICON infrastructure with fast and scalable IBM z Systems™ servers.

The IBM System Storage SAN b-type family switch—designed to support Fibre Channel connectivity for servers and storage—introduces the next generation of fabric backbones with Gen 5 Fibre Channel and Fabric Vision technology,¹ offering long-term solutions for mission-critical applications that require secure, high-performance, low-latency storage networks. These fabric backbones enable organizations to continue leveraging their existing IT investments as they grow their businesses and solve their most difficult business challenges, while unleashing the full potential of high-density server virtualization, cloud architectures and next-generation storage.



Improve flexibility and reliability

SAN768B-2 and SAN384B-2 are designed to address key customer requirements while consolidating the SAN infrastructure. These fabric backbones with Gen 5 Fibre Channel technology are available in two modular form factors.

Built for large enterprise networks and measuring 14U, SAN768B-2 has eight vertical blade slots to provide up to 512 16 Gbps Fibre Channel ports. Designed for midsized networks and measuring 8U, SAN384B-2 has four horizontal blade slots to provide up to 256 16 Gbps Fibre Channel ports. The Gen 5 Fibre Channel technology directors support 2, 4, 8, 10 and 16 Gbps Fibre Channel, FICON, Fibre Channel over Ethernet (FCoE) and 1/10 Gbps Fibre Channel over IP (FCIP).

Built upon years of innovation and using the core technology of systems designed to perform at up to 99.999 percent uptime, the new generation of SAN b-type networking backbones helps minimize downtime and disruption for some of the world's most demanding data centers.

Achieve industry-leading performance

Emerging and evolving critical workloads and higher density virtualization continue to push the limits of SAN infrastructures. SAN768B-2 and SAN384B-2 directors feature industry-leading Gen 5 Fibre Channel technology delivering 16 Gbps line-speed performance and up to 10.2 Tbps chassis bandwidth to address next-generation I/O requirements. In addition, local switching capabilities have been designed to ensure that data traffic within the same port group does not consume slot bandwidth, maximizing the number of line-rate ports.



A foundation for private or hybrid cloud storage area networks

Each SAN768B-2 and SAN384B-2 contains redundant control processor modules (active/passive) and core blades (active/active), plus slots for Fibre Channel port blades and advanced functionality blades. All Fibre Channel ports on the blades support full-duplex, non-blocking performance. These backbones are available with a number of selectable options. While the base systems do not include any blades, at least one blade is required for host and storage connectivity.

Deliver simplified scale-out network design

Networks are evolving in order to adapt to rapid growth and change in the server and storage infrastructure. UltraScale chassis connectivity leverages optical inter-chassis links (ICLs) to connect up to 10 Gen 5 backbones up to 2 kilometers apart, enabling flatter, faster and simpler fabrics that increase consolidation while reducing network complexity and costs.

UltraScale ICLs enable scalable core-edge and active-active mesh chassis topologies. These high-density chassis topologies reduce inter-switch cabling and free up ports for servers and storage, thus maximizing overall port density in a smaller amount of rack space.

Leverage fabric operating system and management software

The Fabric Operating System (FOS) included with each SAN768B-2 and SAN384B-2 contains all functions necessary to operate a base system. These Gen 5 Fibre Channel base systems require FOS v7.1 or later to take advantage of the advanced functions delivered through Fabric Vision technology.¹ Web Tools, Zoning, Full Fabric, Virtual Fabrics, Enhanced Group Management (EGM) and the Enterprise bundle are part of the base FOS and do not require a license.

The Enterprise bundle comprises FOS features on top of base FOS functionality included in the hardware for both SAN768B-2 and SAN384B-2. It includes the following features: Adaptive Networking, Advanced Performance Monitoring, Extended Fabrics, Fabric Watch, Inter-Switch Link (ISL) Trunking, Server Application Optimization and Fabric Vision. Other advanced capabilities can be enabled with additional optional licenses.²

IBM Network Advisor is the base management software required by SAN768B-2 and SAN384B-2. It enables end-to-end management of data center fabrics from storage ports on networked storage systems to host bus adapters (HBAs) attached to physical or virtualized servers. IBM Network Advisor v12.0 or later is required to support transitions to cloud environments.



Gen 5 Fibre Channel technology backbones

Simplify management and enable robust analytics

Fabric Vision technology, an extension of Gen 5 Fibre Channel, provides a breakthrough hardware and software solution that helps simplify monitoring, maximize network availability and dramatically reduce costs. Featuring innovative monitoring, management and diagnostic capabilities, the SAN768B-2 and SAN384B-2 fabric backbones with Fabric Vision technology enables administrators to avoid problems before they impact operations, helping organizations meet service level agreements (SLAs).

Fabric Vision technology¹ includes Monitoring and Alerting Policy Suite (MAPS), Fabric Performance Impact (FPI) Monitoring, Dashboards, ClearLink Diagnostics, Flow Vision, Bottleneck Detection, Forward Error Correction (FEC), Credit Loss Recovery, Configuration and Operational Monitoring Policy Automation Services Suite (COMPASS) and integration with IBM Network Advisor.²

Optimize data center connectivity over distance

SAN768B-2 and SAN384B-2 are designed to connect distributed data centers for data mobility and advanced data protection. These fabric backbones include integrated metro and global SAN extension capabilities, which can provide application agility and support flexible business-continuity and disaster-recovery solutions.

The b-type director family with Gen 5 Fibre Channel technology is designed to provide high-speed replication and backup solutions over metro or wide area network (WAN) links with native Fibre Channel (10/16 Gbps) and optional FCIP (1/10 GbE) extension support. Extending Fabric Vision technology between data centers enables organizations to move more data faster and minimize the impact of disruptions and outages for nonstop business operations. The integrated metro connectivity includes in-flight compression and encryption to optimize bandwidth and help reduce the risk of unauthorized access.

Help ensure enterprise-class reliability, availability and serviceability

SAN768B-2 and SAN384B-2 Fibre Channel backbones utilize Fabric Vision technology,¹ which leverages hardware, FOS and IBM Network Advisor integration to provide advanced functions. It features advanced monitoring, diagnostics, reliability, availability and serviceability capabilities to help minimize downtime, optimize performance and simplify administration.

SAN768B-2 and SAN384B-2 are also highly efficient b-type directors that can help reduce power consumption, cooling requirements and carbon footprints in data centers. While providing greater performance and scalability, they require significantly less power to deliver much greater bandwidth, making them more efficient than other offerings.

IBM System Storage SAN768B-2 and IBM System Storage SAN384B-2 at a glance

Product numbers	SAN768B-2 (2499-816) SAN384B-2 (2499-416)
Hot-swap components	Control processors, core routing modules, power supplies, fan modules, all Fibre Channel port blades, extension blades, small form-factor pluggables (SFPs) and quad small form-factor pluggables (QSFPs)
Warranty	One year; 24x7 same-day maintenance; service options are available
Optional features	Please refer to the SAN768B-2 and SAN384B-2 Redbooks Product Guide to review most current optional features

IBM System Storage SAN768B-2 and IBM System Storage SAN384B-2 at a glance

Dimensions	<ul style="list-style-type: none"> • SAN768B-2 <ul style="list-style-type: none"> – Width: 43.74 cm (17.22 in.) – Height: 62.23 cm (24.50 in., 14U) – Depth without door: 61.29 cm (24.13 in.) – Depth with door: 73.20 cm (28.82 in.) • SAN384B-2 <ul style="list-style-type: none"> – Width: 43.74 cm (17.22 in.) – Height: 35.60 cm (14.00 in., 8U) plus 4.00 cm (1.72 in., 1U) exhaust shelf – Depth without door: 61.29 cm (24.13 in.) – Depth with door: 73.20 cm (28.82 in.)
Weight	<ul style="list-style-type: none"> • SAN768B-2 <ul style="list-style-type: none"> – 103.38 kg (227.90 lb) for 512-port configuration fully populated – 37.3 kg (82.20 lb) for chassis • SAN384B-2 <ul style="list-style-type: none"> – 69.00 kg (152.00 lb) for 256-port configuration fully populated – 25.40 kg (56.00 lb) for chassis

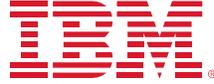
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For more information

To learn more about [IBM System Storage SAN768B-2](#) and [SAN384B-2](#), please contact your IBM representative or IBM Business Partner, or visit: ibm.com/systems/storage/san/b-type/san768b-2/

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

¹ For most current information, please refer to the [Fabric Vision technology solution brief](#)

² For more information, please refer to the [SAN768B-2 and SAN384B-2 Redbooks Product Guide](#)



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