



Highlights

- Support virtualized private and hybrid cloud storage environments and data center consolidation with high scalability in an ultra-dense, Gen 5 Fibre Channel 96-port switch
 - Enable “pay-as-you-grow” flexibility using the Ports on Demand feature with speeds up to 16 Gbps
 - Simplify management with Fabric Vision technology,¹ which helps reduce operational costs and optimize application performance
 - Provide data center-to-data center security and bandwidth savings with up to eight in-flight encryption and compression ports
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IBM System Networking SAN96B-5 switch

Scalable enterprise-class SAN switch for highly virtualized cloud environments

The IBM® System Networking SAN96B-5 switch is a high-density, purpose-built, foundational building block for large and growing storage area network (SAN) infrastructures. It is designed to provide highly resilient, scalable and simplified network infrastructure for storage. By delivering market-leading, Gen 5 Fibre Channel technology and capabilities with 16 Gbps performance, SAN96B-5 meets the demands of growing, dynamic workloads; evolving, virtualized data-centers; and highly virtualized private and hybrid cloud storage environments.

Outstanding scalability for demanding workloads and data center consolidation

SAN96B-5 features 96 Fibre Channel ports in a 2U form factor, delivering industry-leading scalability, reliability and performance in a flexible, easy-to-deploy enterprise-class switch that enables greater data center consolidation, operational efficiency and business continuity. SAN96B-5 delivers notable performance for growing and dynamic workloads through a combination of market-leading throughput and bandwidth utilization. With the unpredictability of virtualized workloads and cloud services, throughput becomes critical to ensuring that the network does not become a bottleneck.

Designed for maximum flexibility, this enterprise-class switch offers “pay-as-you-grow” scalability with the Ports on Demand (PoD) feature. Organizations can quickly, easily and cost-effectively scale from 48 to 96 ports in 24-port increments, each supporting 2, 4, 8, 10 or 16 Gbps.



In addition, flexible, high-speed 16 Gbps and 8 Gbps optics allow organizations to deploy bandwidth on demand to meet growing data center needs. Along with increased throughput, SAN96B-5 helps improve bandwidth utilization, security, and network visibility and management through in-flight data compression, encryption and advanced diagnostics. This is an ideal switch for bandwidth-intensive workloads that require a large number of ports.

Fabric operating system and management software

Included with each SAN96B-5, Fabric OS (FOS) v7.1 or later provides all functions necessary to operate a base system. The Advanced Web Tools, Advanced Zoning, Virtual Fabrics, Full Fabric, Adaptive Networking, Server Application Optimization and Enhanced Group Management features are included in the base FOS—as well as Fabric Vision technology capabilities, such as ClearLink diagnostics, bottleneck detection, Forward Error Correction and Credit Loss Recovery—and do not require a license.

Advanced capabilities can be enabled with optional license activation features. Some of these licenses are: Inter-Switch Link (ISL) Trunking, Extended Fabrics, 24-port SW Upgrade, Integrated Routing, Integrated 10 Gbps Fibre Channel Activation, Fabric Vision and the Enterprise Bundle.²

IBM Network Advisor³ software supports SAN96B-5 Gen 5 Fibre Channel technology by providing end-to-end management of data center fabrics from storage ports on networked storage systems to host bus adapters attached to physical or virtualized servers. IBM Network Advisor v12.0 or later is necessary to support transitions to cloud environments.



High-density, purpose-built, foundational building block for large and growing SAN infrastructures

Enterprise-class reliability, availability and serviceability

SAN96B-5 leverages proven enterprise-class Gen 5 Fibre Channel technology to deliver outstanding reliability to support nonstop operations for mission-critical workloads. SAN96B-5 utilizes Fabric Vision technology,¹ which leverages hardware, FOS and IBM Network Advisor integration to provide advanced functions. It features advanced monitoring, diagnostics, and reliability, availability, and serviceability capabilities to minimize downtime, optimize performance and simplify administration. Moreover, the enterprise-class capabilities of this switch yield a higher performance when compared to 10 Gigabit Ethernet (GbE) storage networking alternatives at a similar cost.

Simplified management and robust network analytics

SAN96B-5 with Fabric Vision technology,¹ 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, Fabric Vision technology enables administrators to avoid

problems before they impact operations, helping organizations meet service level agreements (SLAs). Some key advantages of SAN96B-5 with Fabric Vision⁴ include:

- Dramatically reduced costs
 - Helps eliminate the need for expensive third-party monitoring, diagnostics and test equipment through built-in flow monitoring, flow mirroring and traffic-generator tools
 - Pre-tests and validates the SAN infrastructure to accelerate deployments and simplify ongoing support
 - Automates the deployment of threshold-based rules and policies for proactive monitoring and management, reducing operational costs
- Maximum infrastructure uptime
 - Provides a customizable dashboard that displays the overall health of the SAN, helping to pinpoint problems faster and enabling trend analysis
 - Features critical diagnostic and monitoring capabilities, helping to ensure early problem detection and recovery
 - Validates the health, reliability and performance of the network prior to deployment and for ongoing support, helping to reduce the risk of downtime
- Optimized application performance
 - Provides comprehensive visibility into flows in the fabric, including the ability to automatically learn (discover) flows and non-disruptively monitor flow performance
 - Instantly identifies congestion or abnormal levels of latency in the fabric and identifies exactly which devices and hosts are impacted by the bottleneck

A building block for virtualized, private cloud storage

SAN96B-5 provides a critical building block for today's highly virtualized, private cloud storage environments. It simplifies server virtualization and virtual desktop infrastructure management while meeting the high-throughput demands of solid-state disks. SAN96B-5 also supports multi-tenancy in cloud environments through Virtual Fabrics, quality of service (QoS) and fabric-based zoning features.

In addition, SAN96B-5 enables secure metro extension to virtual private or hybrid clouds with 10 Gbps dense wavelength division multiplexing link support, as well as in-flight encryption and data compression to optimize bandwidth and minimize the risk of unauthorized access. With four times more in-flight encryption and compression ports than the IBM System Storage® SAN48B-5 switch, SAN96B-5 supports higher data volumes over long distances. This switch also features onboard data security and acceleration, minimizing the need for separate acceleration appliances to support distance extension. Internal fault-tolerant and enterprise-class reliability, availability and serviceability features help minimize downtime to support mission-critical cloud environments.

Why IBM?

IBM provides flexible, scalable and open standards-based business-class and global enterprise-class storage networking solutions for an increasingly interconnected smarter planet. The IBM System Networking SAN96B-5 switch is designed to provide industry-leading scalability, reliability and performance in a flexible, easy-to-deploy, enterprise-class switch, enabling greater data center consolidation, operational efficiency and business continuity.



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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.

* For maximum rack flexibility, two models with different airflow options are available to support the latest hot aisle/cold aisle configurations.

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

² The Enterprise Bundle includes one license for each of the following: Fabric Watch, Extended Fabric, Advanced Performance Monitor, Trunking Activation and Fabric Vision.

³ For more information, please refer to the [IBM Network Advisor datasheet](#).

⁴ For more information, please refer to the [SAN96B-5 Redbooks Product Guide](#).



Please Recycle

IBM System Networking SAN96B-5 at a glance

Product number	2498-F96 / 2498-N96*
Hot-swap components	Power supplies, fan modules, small form-factor pluggables (SFPs)
Warranty	One-year; customer-replaceable unit and onsite; next-business-day response, warranty service upgrades are available
Optional features	Please refer to the SAN96B-5 Redbooks Product Guide to review most current optional features
Size	Width: 42.93 cm (16.90 in.); Height: 8.67 cm (3.42 in.); Depth: 60.98 cm (24.01 in.)
Weight	16.92 kg (37.3 lb) with two power supply field-replaceable units, without transceivers

For more information

To learn more about the IBM System Networking SAN96B-5 switch, please contact your IBM representative or IBM Business Partner, or visit:

ibm.com/systems/storage/san/b-type/san96b-5/

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