Cisco MDS 9710 Multilayer Director for IBM System Networking

Addressing the stringent needs and requirements of large, virtualized data environments

Highlights

- Help future-proof the data center for cloud and big data with next-generation capabilities
- Meet scalability requirements and manage TCO; scale up to 384 Fibre Channel or Fibre Channel over Ethernet ports per chassis
- Support IBM® System z® IBM FICON® and Fibre Channel protocol environments
- Combine large-scale storage networks and multiple storage protocols on a single converged network to reduce complexity and enable hyper agility
- Attain high availability with fully redundant components
- Benefit from intelligent network features such as virtual storage area network (SAN) technology, access control lists and intelligent frame processing

A next-generation, director-class SAN switch designed for deployment in large-scale storage networks, Cisco MDS 9710 Multilayer Director for IBM System Networking enables not only enterprise clouds, but business transformation. By adding enterprise connectivity options that support FICON, MDS 9710 delivers a high-performing and reliable FICON infrastructure designed to support fast and scalable System z servers. The MDS 9700 platform also provides multi-protocol flexibility for SANs delivering both 16-Gbps Fibre Channel and 10-Gbps Fibre Channel over Ethernet (FCoE) capabilities.

Layering a comprehensive set of intelligent features over a high-performance, protocol-independent switch fabric, MDS 9710 addresses the rigorous requirements of large, virtualized data-center storage environments with features such as high availability, extreme scalability, flexibility, security and ease of management. Importantly, it enables the transparent integration of new technologies into the data center to provide highly flexible SAN solutions.

Lowering TCO with SAN consolidation

With the exponential growth of data in today's smarter business environments, organizations must deploy large-scale SANs in the most efficient and cost-effective way possible. To meet scalability requirements while managing total cost of ownership (TCO), MDS 9710 and its components offer:

- High port densities of up to 384 16-Gbps Fibre Channel ports or 384 10-Gbps FCoE full line-rate ports
- 1.5 Tbps performance per slot

- Up to 24 Tbps Fibre Channel backplane bandwidth
- Input/output (I/O) consolidation
- Non-blocking system-level switching
- Front-to-back airflow
- Outstanding functionality with intelligent fabric services
- Virtual SANs (VSANs) for consolidating individual physical SAN islands while maintaining logical boundaries
- Inter-VSAN routing (IVR) for sharing resources across VSANs

These capabilities enable organizations to consolidate their data assets into fewer, larger and more manageable SANs, thus reducing the data-center hardware footprint and associated capital and operational expenses.

Leveraging Cisco MDS 9700 Series components

Also contributing to lower TCO, MDS 9710 shares the same operating system and management interface as other Cisco data-center switches, which enables seamless fabric deployment with high-performance Fibre Channel, FICON and FCoE connectivity.

Cisco MDS 9700 Series 48-port 16-Gbps Fibre Channel Switching Module delivers outstanding performance and innovative features that empower scalability and intelligence in large, virtualized data-center deployments. This switching module features up to 384 line-rate 16-Gbps Fibre Channel ports per chassis and intelligent fabric services such as integrated VSANs, IVR and port channels.

The 48-port 16-Gbps Fibre Channel Switching Module enables users to consolidate SAN deployments with fewer hardware components, consolidate workloads from hundreds of virtual machines with outstanding performance, and scale with incremental updates as their SAN grows—while protecting existing investments. It also offers Cisco VMpath technology, which enables advanced virtual machine-aware SAN provisioning and monitoring for virtualized data centers. Other features include predictable performance and high availability; advanced traffic-management capabilities; resilient, high-performance Inter-Switch Links (ISLs); comprehensive security frameworks; fault detection and isolation of errored packets; and sophisticated diagnostics.

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Cisco MDS 9700 Series Supervisor-1 Module delivers the latest advanced switching technology with proven Cisco NX-OS software. Designed to integrate multiprotocol switching and routing, intelligent SAN services and storage applications onto highly scalable SAN switching platforms, MDS 9700 Series Supervisor-1 Module enables intelligent, resilient, scalable and secure high-performance, multilayer, SAN switching solutions.

Cisco MDS 9700 48-port 10-Gbps FCoE Switching Module combines both Fibre Channel and FCoE into a single platform, enabling flexible and agile SAN designs, investment protection, reduced costs, and streamlined data-center management and operations. It provides the scalability of 384 10-Gbps full line-rate FCoE ports in a single chassis.

Providing enterprise-class availability

Beyond meeting the basic requirements of nondisruptive software upgrades and redundancy of critical hardware components, the MDS 9710 software architecture offers an outstanding level of availability. MDS 9710 provides redundancy on all major hardware components, including supervisor modules, fabric modules, power supplies and fan trays. Cisco MDS 9700 Series Multilayer Director is designed to exceed 99.999 percent uptime.

Transforming business with enterprise cloud deployment

MDS 9710 is designed to provide outstanding scalability and pay-as-you-grow flexibility, robust security for multi-tenancy cloud applications, the predictable high performance required to meet strict service level agreements (SLAs), the resilient connectivity required for no-downtime cloud infrastructures, and the advanced traffic management capabilities—such as quality of service (QoS)—needed to quickly and cost-efficiently allocate elastic network capabilities to cloud applications.

Furthermore, Cisco Data Center Network Manager (DCNM) for SAN—formerly Cisco Fabric Manager—provides resource monitoring and capacity planning on a per-virtual-machine basis, enabling efficient, consolidated enterprise cloud deployments, federation of up to 10 DCNM servers for easy management of large-scale clouds, and resource usage information through Storage Management Initiative Specification (SMI-S)-based developer application programming interfaces (APIs) to deliver IT as a service.

Easing management

To meet the needs of virtually any user, MDS 9710 provides three principal management modes: the MDS 9000 Family command-line interface (CLI), DCNM and integration with third-party storage-management tools.

MDS 9710 leverages the MDS 9000 Family's easy-to-learn CLI to deliver broad management capabilities. This extremely efficient and direct interface is designed to provide consistent, logical, optimal capabilities to administrators in enterprise environments.

Another option is to use DCNM SAN, a user-friendly application that simplifies management across multiple switches and converged fabrics. It provides robust features to meet the routing, switching and storage administration needs of present and future virtualized data centers; streamlines provisioning of the unified fabric; and proactively monitors SAN components. DCNM SAN can be used independently or in conjunction with third-party management applications.

Enabling robust security

Addressing the need for foolproof security in storage networks, MDS 9710 and the 48-port 16-Gbps line card offer an extensive security framework to protect the highly sensitive data crossing today's enterprise networks. MDS 9710 employs intelligent packet inspection at the port level, including the application of access control lists (ACLs) for hardware enforcement of zones, VSANs and advanced port security features.

Offering advanced diagnostics and troubleshooting tools

Managing large-scale storage networks requires proactive diagnostics tools to verify connectivity and route latency, as well as mechanisms to capture and analyze network traffic. MDS 9710 provides comprehensive port-based and flow-based statistics that enable sophisticated performance analysis and SLA accounting. Plus, an integrated *Call Home* capability can add reliability, speed problem resolution and help reduce service costs.

Cisco MDS 9710 Multilayer Director for IBM System Networking at a glance	
Model	9710-E08
Payload slots	8
Hot-swappable components	Power supplies, fan modules, small form-factor pluggables, supervisor modules, fabric modules
Warranty	One year, 24×7 same-day maintenance service options available
Dimensions	619 mm (24.35 in.) H x 439 mm (17.3 in.) W x 864 mm (34 in.) D
Weight	84.2 kg (185.5 lb) with three fan field-replaceable units (FRUs), not including power supplies, fabric modules or transceivers

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Why IBM?

IBM offers a vast portfolio of hardware, software and services that can help organizations of all sizes address their IT infrastructure requirements in a comprehensive and integrated way. With IBM, organizations can create a more flexible, robust and resilient infrastructure to support critical business operations.

For more information

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