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## Highlights

- Provide up to 192 16 Gbps Fibre Channel or 10 Gbps Fibre Channel over Ethernet (FCoE) ports per chassis
  - Enable up to 12 terabits per second (Tbps) front panel Fibre Channel, line rate, nonblocking system-level switching capacity
  - Support IBM® z System™ FICON® and Linux environments
  - Deliver exceptional capabilities with intelligent fabric services
  - Enable virtual storage area networks (VSANs) for consolidating individual physical storage area network (SAN) islands while maintaining logical boundaries
  - Provide inter-VSAN routing (IVR) for sharing resources across VSANs
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# Cisco MDS 9706 Multilayer Director for IBM System Storage

*Consolidate data assets into fewer, larger, more manageable SANs to keep up with data growth*

Cisco MDS 9706 Multilayer Director for IBM System Storage® is a director-class SAN switch designed for deployment in small to midsized storage networks that can support enterprise clouds and business transformation. It layers a comprehensive set of intelligent features onto a high-performance, protocol-independent switch fabric.

MDS 9706 addresses the stringent requirements of large virtualized data center storage environments. It delivers uncompromising availability, security, scalability, ease of management and transparent integration of new technologies for extremely flexible data center SAN solutions. It shares the same operating system and management interface with other Cisco data center switches. MDS 9706 lets you transparently deploy unified fabrics with Fibre Channel, FICON and FCoE connectivity for low total cost of ownership (TCO).

For organizations that need efficient, cost-effective SANs to keep up with today's exponential data growth, MDS 9706 is the answer. The switch lets you easily consolidate data assets into fewer, larger and more manageable SANs to reduce hardware footprint and associated capital and operational expenses—all with outstanding scalability.

For unified fabric deployments with converged local area network (LAN) and SAN using lossless Ethernet, MDS 9706 provides multihop FCoE, enabling organizations to protect investments in existing storage infrastructure with any-to-any connectivity across multiple protocols.



## Scalable expansion with outstanding investment protection

MDS 9706 is designed to make optimal use of valuable data center floor space. It is 15.6 inches tall (9RU) and allows up to four MDS 9706 Directors per standard 7-foot rack (42RU). A smaller footprint makes it an excellent candidate for deployment in smaller storage networks as well as pod-based converged data center infrastructure solutions for the cloud.

Using Cisco MDS 9700 Family switching modules, MDS 9706 supports up to 192 ports in a 6-slot modular chassis, with up to 768 ports in a single rack. You can configure ports as Fibre Channel (2/4/8 Gbps, 4/8/16 Gbps, or 10 Gbps), FCoE (10 Gbps) or a mix of both Fibre Channel and FCoE. MDS 9706 supports the same Fibre Channel and FCoE switching modules as Cisco MDS 9710 Director for IBM System Networking for a high degree of system commonality. Designed to grow with your storage environment, MDS 9706 provides smooth migration, common sparing and outstanding investment protection.



Cisco MDS 9706 Multilayer Director for IBM System Storage

## Enterprise-class availability

MDS 9706 is designed from the beginning for high availability. In addition to meeting the basic requirements of nondisruptive software upgrades and redundancy of all critical hardware components, MDS 9706 software architecture offers outstanding availability. MDS 9706 provides redundancy on all major hardware components, including the supervisor and fabric modules as well as the power supplies. Cisco MDS 9700 Series Supervisor Module automatically restarts failed processes, making MDS 9706 exceptionally robust. In the rare event that a supervisor module is reset, complete synchronization between the active and standby supervisor modules helps ensure stateful failover with no disruption of traffic.

## Business transformation with enterprise cloud deployment

Enterprise clouds provide organizations with elastic computing and network capabilities, enabling IT to scale resources up or down as needed in a quick and cost-efficient manner. MDS 9706 provides industry-leading scalability and the following features for enterprise cloud deployments:

- Pay-as-you-grow flexibility to meet the scalability needs in the cloud
- Multihop FCoE to provision storage in a multiprotocol unified fabric
- Robust security for multitenant cloud applications
- Predictable performance to meet stringent service level agreements (SLAs)
- Resilient connectivity for an always-on cloud infrastructure
- Advanced traffic management capabilities, such as quality of service (QoS), to rapidly and cost-efficiently allocate network capabilities to cloud applications

Furthermore, Cisco Data Center Network Manager provides resource monitoring and capacity planning on a per-virtual machine basis.<sup>1</sup>

### Convergence with multihop FCoE

FCoE allows an evolutionary approach to network and input/output (I/O) convergence by preserving all Fibre Channel constructs, maintaining the latency, security and traffic management attributes of Fibre Channel and preserving investments in Fibre Channel tools, training and SANs.

### Integrated mainframe support

Cisco MDS 9706 supports the FICON protocol in both cascaded and noncascaded fabrics, as well as an intermix of FICON and open-systems Fibre Channel Protocol traffic on the same switch. IBM control unit port (CUP) support enables in-band management of Cisco MDS 9000 Family switches from mainframe management applications and supports a fabric-

binding feature that helps ensure that inter-switch links (ISLs) are enabled only between specified switches in the fabric-binding configuration.

### Comprehensive solution for robust security

MDS 9706 offers an extensive security framework to protect highly sensitive data crossing today's enterprise storage networks. It 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. It also uses Fibre Channel Security Protocol (FC-SP) and Cisco TrustSec Fibre Channel link encryption mechanisms to provide comprehensive security for storage networks.

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#### Cisco MDS 9706 Multilayer Director for IBM System Storage at a glance

<b>Model</b>	9710-E06
<b>Payload slots</b>	4
<b>Hot-swappable components</b>	Power supplies, fan modules, small form-factor pluggables, supervisor modules, fabric modules
<b>Warranty</b>	One year, 24x7 same-day maintenance; service options available
<b>Dimensions</b>	396.2 mm (15.6 in.) H x 439.0 mm (17.3 in.) W x 813.0 mm (32 in.) D
<b>Weight</b>	<ul style="list-style-type: none"><li>• Chassis only: 65.80 kg (145 lb)</li><li>• Fully configured: 147.42 kg (325 lb)</li></ul>

## Why IBM?

Innovative technology, open standards, excellent performance, and a broad portfolio of proven storage software, hardware and solutions offerings—all backed by IBM with its recognized industry leadership—are just a few of the reasons to consider storage solutions from IBM. In addition, IBM delivers some of the best storage products, technologies, services and solutions in the industry without the complexity of dealing with different hardware and software vendors.

## For more information

To learn more about Cisco MDS 9706 Multilayer Director for IBM System Storage, please contact your IBM representative or IBM Business Partner, visit: [ibm.com/systems/storage/san/ctype/9706/](http://ibm.com/systems/storage/san/ctype/9706/)

To download the Cisco MDS 9706 Multilayer Director for IBM System Storage Redbooks Product Guide, please visit: <http://www.redbooks.ibm.com/abstracts/tips1256.html>

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<sup>1</sup> For more information, please refer to the [Cisco MDS 9706 Multilayer Director for IBM System Storage Redbooks Product Guide](#)



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