Cisco MDS 9250i Multiservice Fabric Switch for IBM

An optimised solution for departmental and branch-office SANs as well as large-scale SANs

Highlights

- Provide 16 Gigabits per second (Gbps) connectivity in a high-density Fibre Channel (FC) switch

- Enable storage area network (SAN) consolidation with integrated multiprotocol support

- Deliver high-performance Fibre Channel over IP (FCIP) and fast disaster recovery (DR)

- Support hardware-based virtual fabric isolation with virtual SANs (VSANs) and FC routing with Inter-VSAN routing (IVR)

- Enable cost-effective, high-performing FC and Fibre Channel over Internet Protocol (FCIP) connectivity for open systems and mainframe environments

- Cisco Data Mobility Manager (DMM) as a distributed fabric service.

Cisco MDS 9250i Multiservice Fabric Switch for IBM® System Storage is an optimised platform for deploying high-performance SAN extension solutions, distributed intelligent fabric services and cost-effective multiprotocol connectivity for both open systems and mainframe environments. With a compact form factor and advanced capabilities normally available only on director-class switches, MDS 9250i is an ideal solution for departmental and remote branch-office SANs as well as large-scale SANs in conjunction with the Cisco MDS 9710 Multilayer Director.

MDS 9250i offers up to 40 16 Gbps FC ports, two 10 Gigabit Ethernet (GbE) IP storage services ports and eight 10 GbE Fibre Channel over Ethernet (FCoE) ports in a fixed, two-rack-unit (2RU) form factor. MDS 9250i connects to existing native FC networks, protecting current investments in storage networks.

Main features and benefits

MDS 9250i provides extraordinary multiservice and multiprotocol functions in a compact 2RU form factor. Some of its features and benefits are:[1]

- *SAN consolidation with integrated multiprotocol support:* MDS 9250i is available in a base configuration of 20 ports of 16 Gbps FC for high-performance SAN connectivity, two ports of 10 GbE for FCIP and Internet Small Computer System Interface iSCSI over IP storage services and eight ports of 10 GbE for FCoE connectivity

- *High-density FC switch with 16 Gbps connectivity:*
  MDS 9250i scales up to 40 ports of 16 Gbps FC in a
  fixed configuration switch. The base configuration comes
  with 20 ports of 16 Gbps FC-enabled, for high-performance
  SAN connectivity; it can be upgraded onsite to enable
  20 additional ports of 16 Gbps FC by adding the Cisco
  MDS 9250i On-Demand Port Activation license.
  Additionally, Cisco MDS 9250i cost-effectively scales up for
  IBM FICON mainframe environments
- *Intelligent application services engine:* MDS 9250i includes
  as standard a single application services engine that enables
  the included Cisco SAN Extension over IP software solution
  package to run on the two fixed 10 GbE storage services
  ports. The Cisco SAN Extension over IP package provides an
  integrated, cost-effective and reliable business-continuance
  solution that uses IP infrastructure by offering FCIP for
  remote SAN extension, along with a variety of advanced
  features to optimise the performance and manageability of
  FCIP links
- *Remote SAN extension with high-performance FCIP:*
  Remote SAN extension simplifies data protection and
  business continuance strategies, optimises utilisation of wide
  area network (WAN) resources for backup and replication
  and preserves Cisco MDS 9000 Family enhanced capabilities
- *High-performance Inter-Switch Links (ISLs):* MDS 9250i
  supports up to 16 FC ISLs in a single PortChannel. Links
  can span any port on any module in a chassis for added
  scalability and resilience. Up to 256 buffer-to-buffer credits
  can be assigned to a single FC port to extend storage
  networks over long distances
- *Advanced FICON services:* MDS 9250i supports
  FICON environments, including cascaded FICON fabrics,
  VSAN-enabled intermix of mainframe and open-systems
  environments and N-port ID virtualisation (NPIV) for
  mainframe Linux partitions.
- *Sophisticated diagnostics:* MDS 9250i provides intelligent
  diagnostics, protocol decoding and network analysis tools as
  well as integrated Cisco Call Home capability for added
  reliability, faster problem resolution and reduced
  service costs.

Virtual storage area networks

VSANs are ideal for efficient, secure SAN consolidation,
enabling more efficient storage network utilisation by
creating hardware-based isolated environments with
a single physical SAN fabric or switch. VSANs allow
the cost of SAN infrastructure to be shared among more users,
while helping ensure complete segregation of traffic and
retaining independent control of configuration on a
VSAN-by-VSAN basis.

Cisco MDS 9250i Multiservice Fabric Switch for IBM System Storage

Inter-VSAN routing

In another step toward deploying efficient, cost-effective,
consolidated storage networks, MDS 9250i supports IVR, the
industry's first routing function for FC. With IVR, data can
transit VSAN boundaries while maintaining control plane
isolation, thereby maintaining fabric stability and availability.
It eliminates the need for external routing appliances, greatly
increasing routing scalability while delivering line-rate routing
performance, simplifying management and eliminating the
challenges associated with maintaining separate systems.
Deploying IVR can mean lower total cost of SAN ownership.

FCIP for remote SAN extension

Data distribution, data protection and business continuance
services are significant components of today's information-
centric businesses. The capability to efficiently replicate critical
data on a global scale not only helps ensure a higher level of
data protection for valuable corporate information, but also
helps increase utilisation of backup resources and lower the
total cost of storage ownership.

I/O Accelerator Services

MDS 9250i supports Cisco MDS 9000 I/O Accelerator (IOA) Services, an advanced software package that can significantly improve application performance when storage traffic is extended across long distances. When FC and FCIP write acceleration are enabled, WAN throughput is optimised through reduced latency for command acknowledgments. Similarly, MDS 9250i supports FC and FCIP tape write acceleration, which allows operation at nearly full throughput over WAN links for remote tape backup and restore operations.

MDS 9000 IOA can be deployed in conjunction with disk data replication solutions to extend the distance between DC or reduce the effects of latency. It can also be used to enable remote tape backup and restore operations without significant throughput degradation.

Mainframe support

Cisco MDS 9250i is mainframe ready and supports IBM zSeries FICON and Linux environments provided with the Cisco MDS 9000 Mainframe advanced software package. Cisco MDS 9250i switches support transport of the FICON protocol in both cascaded and noncascaded fabrics, as well as an intermix of FICON and open-systems FC Protocol traffic on the same switch. VSANs simplify intermixing of SAN resources among IBM z/OS, mainframe Linux® and open-systems environments, enabling increased SAN utilisation and simplified SAN management. FICON VSANs can be managed using the standard Cisco DC Network Manager (DCNM), the command-line interface (CLI) or IBM control unit port (CUP)-enabled management tools. The Cisco MDS 9000 Mainframe package is required for all Cisco MDS 9250i integrated FICON channel extension features.

Comprehensive solution for robust network security

To address the need for failure-proof security in storage networks, MDS 9250i includes as standard an extensive security framework to protect highly sensitive data crossing today's enterprise network. This framework includes smart zoning, intelligent packet inspection and extended zoning capabilities. Additional advanced security-management capabilities also are available on MDS 9250i with the Cisco MDS 9000 Enterprise advanced software package.

Advanced diagnostics and troubleshooting tools

Management of large-scale storage networks requires proactive diagnostics, tools to verify connectivity and route latency and mechanisms for capturing and analysing traffic. The MDS 9000 Family integrates outstanding analysis and diagnostic tools, which are included as standard on MDS 9250i.[1] With the MDS 9000 Family, Cisco, jointly with IBM, delivers a comprehensive toolset for troubleshooting and analysis of storage networks.

Ease of management

To meet the needs of all users, MDS 9250i provides three principal modes of management: the MDS 9000 Family Command Line Interface (CLI), Cisco DC Network Manager (DCNM) for SAN and integration with third-party storage management tools.[1]

Advanced software packages

MDS 9250i can be further enhanced through additional optional licensed software packages that offer advanced intelligence and functions. Currently available software packages include the MDS 9200 Enterprise package, MDS 9200 DCNM SAN Advanced Edition, the MDS 9250i IO Accelerator, the MDS 9250i 20-port FC Port-On-Demand license and the MDS 9200 Mainframe Package.

Why IBM?

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

Cisco MDS 9250i Multiservice Fabric Switch for IBM System Storage at a glance

Model	9710-E01
Hot-swappable components	Power supplies, fan modules, small form-factor pluggable
Warranty	One-year CRU, around the clock same-day maintenance service options available
Dimensions	975 mm (3.84 in.) H x 437 mm (17.22 in.) W x 543 mm (21.4 in.) D, 2RUs; all units rack-mountable in standard 19-inch Electronic Industries Alliance [EIA] rack)
Weight	Fully configured chassis: 10.2 kg (22.4 lb)
Airflow	Front to back
Ports	40 ports of 16 Gbps FC and 10 ports of 10 GbE
Link speeds	Port speed: 4/8/16 Gbps autosensing, optionally configurable
Optional features	MDS 9200 Enterprise Package (7011), MDS 9250i I/O Accelerator (7012), MDS 9200 Mainframe Package (7031), MDS 9200 DCNM SAN Advanced Edition (7050), MDS 9250i 20-port FC Upgrade License (7065)

For more information

To learn more about Cisco MDS 9250i Multiservice Fabric Switch for IBM System Storage, please contact your IBM representative or IBM Business Partner (BP), or visit the following website: **ibm.com**/systems/storage/san/ctype/9250i/