Cisco MDS 9000 Family Configurable Fibre Channel Fabric Switches

Cisco® MDS 9000 Family configurable Fibre Channel fabric switches are ideal for small to medium-sized businesses (SMBs) and departmental and remote branch offices that need intelligent storage area networks (SANs).

Cisco MDS 9100 Series Multilayer Fabric Switches offer deployment options ranging from standalone and top-of-the rack, providing customers with exceptional flexibility while maintaining consistent feature sets and management capabilities.

Cisco MDS 9222i Multiservice Modular Switches offer customers a modular yet highly compact form factor solution that provides an optimized platform for deploy¬ing high-performance SAN exten¬sion solutions, distributed intelligent fabric services, and cost-effective multiprotocol connectivity for both open and mainframe environments. With the Cisco MDS 9222i expansion slot, enterprise customers with Cisco MDS 9000 director-class solutions can maximize existing investments and extend their core infrastructure capabilities into the fabric space.

Figure 1 shows the Cisco MDS 9000 Family multilayer fabric switches.

Figure 1. Cisco MDS 9000 Fabric Switch Family

Cisco MDS 9124

Cisco MDS 9134

Cisco MDS 9222i

Product Family Highlights

Cisco MDS 9000 fabric switches consist of the following:

- Cisco MDS 9124 Multilayer Fabric Switch: 24-port Fibre Channel 4-Gbps full-fabric switch; supports VSANs and PortChannels.

- Cisco MDS 9134 Multilayer Fabric Switch: 32-port Fibre Channel 4-Gbps full-fabric switch with 2 ports of standard 10-Gbps Fibre Channel for uplinks or stacking; supports VSANs, PortChannels, and IBM Fibre Connector (FICON).

- Cisco MDS 9222i Multiservice Modular Switch: Flexible platform for up to 66 ports of 4-Gbps Fibre Channel and 4 ports of Gigabit Ethernet; multiprotocol support for Fibre Channel, Fibre Channel over IP (FCIP), Small Computer System Interface over IP (iSCSI), and FICON; and capability to support Cisco Storage Media Encryption (SME) natively and the Cisco Data Mobility Manager (DMM) with the addition of a storage services module. The switch supports Cisco NX-OS 4.1, and supports 8-Gbps Fibre Channel when used with the 4/44 8-Gbps Host Optimized Module.

Benefits of Cisco MDS 9000 Family Fabric Switches

The Cisco MDS 9000 fabric switch portfolio brings nearly all the benefits of Cisco director-class solutions to an entirely new audience, with features such as the following:

- Cisco fabric switches provide more features than competing products and offer the lowest total cost of ownership (TCO) for SMB and branch-office SAN deployments.
- A quick configuration wizard on the Cisco MDS 9124 and 9134 simplifies and streamlines the deployment process.
- Cisco fabric switches are based on the same Cisco MDS 9000 NX-OS Software platform as Cisco director-class switches, and offer many of the same features.
- The switches provide a consistent feature set. Cisco Fabric Manager and Cisco Device Manager are included in the price of the switch.
- Port licensing is enabled so that organizations can expand their deployments as needed.
- SAN security is supported for authentication of devices on the fabric, and role-based access control (RBAC) is provided to restrict management access.
- There are no hidden licenses to enable features. Cisco MDS 9000 fabric switches support innovative Cisco features such as VSANs, PortChannels, quality of service (QoS), SAN security, SAN management, hardware-enforced zoning, and In Service Software Upgrade (ISSU) at no additional cost to the user.
- The Cisco MDS 9222i provides SAN extension, disaster recovery, and business continu-ance, and allows multiple blade options. This fabric switch also extends innovative features unique to Cisco, such as the Cisco DMM for heterogeneous data migration from one storage array to another and encryption of data sent through the fabric with Cisco SME.

Table 1 summarizes the features that Cisco MDS 9000 fabric switch platforms offer to meet the storage network requirements of campus, SMB, and enterprise data centers.

Table 1. Cisco MDS 9000 Family Fabric Switch Platform Features

Feature	Cisco MDS 9124	Cisco MDS 9134	Cisco MDS 9222i	Benefit
4-Gbps Fibre Channel Ports	8 to 24	24 to 64	18 to 66	Buy what you need, pay as you grow
10-Gbps Fibre Channel Ports	No	Yes	No	Scalability with high performance
Gigabit Ethernet Ports	No	No	4	Transparent integration of FCIP and iSCSI storage
Modular Expansion Slot	No	No	1	High flexibility, smooth migration, and investment protection with fabric storage services modules
Trunking or PortChannels and Safe Code Upgrades	Yes	Yes	Yes	High-availability features to minimize disruption
Extended Distance Support	Yes	Yes	Yes	Capability for business continuity solutions

Cisco MDS 9000 Family Configurable Fibre Channel Fabric Switches

Feature	Cisco MDS 9124	Cisco MDS 9134	Cisco MDS 9222i	Benefit
Redundant Power Supplies	Yes	Yes	Yes	Critical for high availability
Virtual Fabric or VSAN	Yes	Yes	Yes	Isolation of fabric disruption without the need to spend money on isolated SAN islands
Port Security	Yes	Yes	Yes	Secure port-level access
Easy Configuration, Event Monitoring, and Fabric Management	Configuration wizard and Cisco Fabric and Device Managers	Configuration wizard and Cisco Fabric and Device Managers	Cisco Fabric and Device Managers	Time-efficient; easy setup and network monitoring and fabric management
QoS	Yes	Yes	Yes	Prioritization of business-critical applications in the fabric
Cisco SME and DMM	No	No	Yes	Data encryption for cen¬tralized security and transparent data movement with minimal application disruption

Storage Networking Solutions with Cisco Fabric Switches

Figure 2 shows sample configurations using Cisco MDS 9000 Family fabric switches.

Figure 2. Sample SAN Configurations Using Cisco MDS 9000 Family Fabric Switches

Ordering Information

Table 2 lists ordering information for the Cisco MDS 9124, 9134, and 9222i switches.

Table 2. Ordering Information for Cisco MDS 9124, 9134, and 9222i Fabric Switches

Description	Part Number
Cisco MDS 9222i Multiservice Modular Switch	DS-C9222i-K9
Cisco MDS 9134 32-Port Multilayer Fabric Switch with 24 4-Gbps active ports, VSANs, PortChannels, and Cisco Fabric Manager	DS-C9134-K9
Cisco MDS 9134 32-Port Multilayer Fabric Switch with 32 4-Gbps active ports, VSANs, PortChannels, and Cisco Fabric Manager	DS-C9134-1K9
Cisco MDS 9134 24-Port Multilayer Fabric Switch with VSANs, PortChannels, Cisco Fabric Manager, 2x10G License pre-installed, 2 copper X2 CX4 transceivers, and 1 copper cable **Must be ordered as a pair of units to enable 48 ports**	DS-9134G-K9
Cisco MDS 9134 32-Port Multilayer Fabric Switch with VSANs, PortChannels, Cisco Fabric Manager, 2x10G License pre-installed, 2 copper X2 CX4 transceivers, and 1 copper cable **Must be ordered as a pair of units to enable 64-ports**	DS-9134G-1K9
Cisco MDS 9124 24-Port Multilayer Fabric Switch	DS-C9124-K9
Cisco MDS 9124 On-Demand Ports (8), 4-Gbps Activation License	M9124PL8-4G and M9124PL8-4G=

SAN Type	Sample Configuration Diagram	Solution Focus
Departmental SAN	Email / Database → Cisco MDS 9100 Fabric Switch → Storage Arrays Tape Libraries	· Shared Storage · Common Backup · Simplified Management
Enterprise Core-Edge SAN	Email, Database → Cisco MDS 9100 Fabric Switches → Cisco MDS 9500 Director Switches → Storage Arrays Tape Libraries	· Scalability · Security · Compliance and Regulations · Consolidation
Business Continuity Metro-SAN	Storage Arrays Tape Libraries → Cisco MDS 9100 Fabric Switch → Storage MAN → Cisco MDS 9100 Fabric Switch → Storage Arrays Tape Libraries	· Business Continuity · Compliance and Regulations · Simplified Management
Business Continuity SAN over IP	Storage Arrays Tape Libraries → Cisco MDS 9222i → WAN/LAN → Cisco MDS 9222i → Storage Arrays Tape Libraries	· Business Continuity · Compliance and Regulations · Simplified Management
Consolidation Blade Fan-out SAN	Cisco MDS Blade Switches → Cisco MDS 9100 Fabric Switches → Storage Arrays Tape Libraries	· Consolidation · Simplified Management · Scalability · Virtualization