

Cisco MDS 9020 Fabric Switch

Highlights

- **Cost-effective, intelligent storage networking**—The Cisco MDS 9020 Fabric Switch offers advanced features in a compact, extremely cost-effective design that simplifies deployment and administration of small and medium-scale storage-area networks (SANs).
- **Industry leading 4 Gbps performance capability**—The MDS 9020 offers full non-blocking 4-Gbps Fibre Channel performance on 20 line rate ports, for an aggregate bandwidth of 160 Gbps full duplex in 1 RU.
- **Nondisruptive software upgrades**—The MDS 9020 supports nondisruptive software upgrades to minimize service disruptions in a highly available storage area networking environment.
- **Scalability**—Compatibility with all Cisco® MDS 9000 Family switches ensures scalability and consistent service delivery as your SAN grows.
- **Simplified storage management**—The MDS 9020 includes built-in storage network management with all features available through a command-line interface (CLI) or Cisco Fabric Manager, a centralized management tool that simplifies management of multiple switches and fabrics.

Product Overview

Building Cost-Effective Intelligent Fabrics

The Cisco® MDS 9020 Fabric Switch (Figure 1) offers advanced storage networking capabilities at new price points, allowing organizations of all sizes to enjoy the benefits of intelligent SANs. With twenty 4-Gbps Fibre Channel ports, the Cisco MDS 9020 is well suited for SMBs that want to deploy cost-effective but scalable, high-performance SANs. The Cisco MDS 9020 is also ideal for branch offices and departments in large enterprises. It can be used as the foundation of small standalone SANs or as an edge switch in larger core-edge SAN infrastructures.

The Cisco MDS 9020 provides the ideal balance of cost, performance, and basic enterprise-class features in a compact 1-RU form factor. Layering a requisite set of intelligent features onto a cost-effective, small-profile switching platform, the Cisco MDS 9020 meets the cost, performance, ease of management, and connectivity requirements of small and medium-scale storage environments. The Cisco MDS 9020 is fully compatible with the Cisco MDS 9500 Series Multilayer Directors and the Cisco MDS 9200 and MDS 9100 Series Multilayer Fabric Switches for transparent, end-to-end service delivery in large data-center core-edge deployments.

Figure 1. Cisco MDS 9020 Fabric Switch



Key Features and Benefits

Industry-Leading 4-Gbps Performance and Scalability

With high port density in a 1-RU form factor that supports auto-sensing 1-, 2-, and 4-Gbps Fibre Channel technology, the Cisco MDS 9020 provides excellent value at an affordable price point. This allows even small businesses to achieve the levels of performance and availability typically attainable only by much larger enterprises. The Cisco MDS 9020 features a nonblocking architecture with as many as 20 ports concurrently active at 4-Gbps full duplex to provide an aggregate bandwidth of 160 Gbps.

The Cisco MDS 9020 works seamlessly with the rest of the Cisco MDS 9000 Family of Directors and Multilayer Fabric Switches, allowing multiple upgrade paths as smaller SANs scale and as multiprotocol functionality becomes necessary. The Cisco MDS 9020 offers full investment protection and can be migrated to the edge of a SAN deployment when coupled with larger core switches like the Cisco MDS 9200 and 9500 Series to introduce more advanced features and multiprotocol technology.

High Availability

The Cisco MDS 9020 is designed to provide high-availability switching for small-to-medium-sized storage networks. The Cisco MDS 9020 offers nondisruptive firmware upgrades (hot code load activation) to help ensure high availability throughout the fabric. It also offers Fabric Shortest Path First (FSPF) traffic rerouting for redundant path failover and extensive diagnostics for quick troubleshooting.

Greater levels of availability can be achieved with the Cisco MDS 9020 at the edge in a core-edge deployment with multiple redundant network paths connected into a core of Cisco MDS9500 Series Directors or MDS 9200 Series Multilayer Fabric Switches.

Ease of Management

Delivering SAN capabilities means delivering management capabilities. To meet the needs of all users, the Cisco MDS 9020 provides three principal modes of management: a CLI consistent with the Cisco MDS 9000 Family, the Cisco Fabric Manager, and integration with third-party storage management tools.

The Cisco MDS 9020 presents a consistent, logical CLI. Adhering to the syntax of the widely known Cisco IOS® Software CLI, the Cisco MDS 9020 CLI is easy to learn and delivers broad management capability. The Cisco MDS 9020 CLI is an extremely efficient and direct interface designed to provide optimal capability to administrators in enterprise environments.

Cisco Fabric Manager is a responsive, easy-to-use Java application that simplifies management across multiple switches and fabrics. Cisco Fabric Manager helps administrators to perform vital tasks such as topology discovery, fabric configuration and verification, provisioning, monitoring,

and fault resolution. All functions are available through a secure interface, enabling remote management from any location.

Cisco Fabric Manager may be used independently or in conjunction with third-party management applications. Cisco provides an extensive API for integration with third-party and user developed management tools.

Product Specifications

Table 1 lists the product specifications for the Cisco MDS 9020.

Table 1. Product Specifications

Product Compatibility	Cisco MDS 9000 Family
Software Compatibility	Cisco MDS FabricWare Release 2.1.(2) or later
Protocols	<ul style="list-style-type: none"> • Fibre Channel standards • FC-PH, Revision 4.3 (ANSI/INCITS 230-1994) • FC-AL-2, Revision 7.0 (ANSI/INCITS 332-1999) • FC-SW-2, Revision 5.3 (ANSI/INCITS 355-2001) • Class of Service: Class 2, Class 3, Class F • Fibre Channel standard port types: E, F, FL, B
Cards, Ports, Slots	20 fixed auto-sensing 4/2/1-Gbps Fibre Channel ports
Features and Functions	<ul style="list-style-type: none"> • Fabric services • Name server • Registered State Change Notification (RSCN) • Login services • Fabric Configuration Server (FCS) • Public loop • Broadcast • In-order delivery • Diagnostics and troubleshooting tools • Power-on-self-test (POST) diagnostics • Online diagnostics • Internal port loopbacks • Syslog • Port-level statistics • Network security • Access Control Lists • Fibre Channel N_Port WWN Zoning • Management access • SSH v2 • SNMPv2 • Serviceability • Configuration file management • Nondisruptive software upgrades • Power-management LEDs • Port beaconing • System LED • SNMP traps for alerts

Product Compatibility	Cisco MDS 9000 Family
Performance	<ul style="list-style-type: none"> • Port speed: 4/2/1-Gbps auto-sensing, optionally configurable • Buffer credits: 16 per port • Ports per chassis: Twenty 4-, 2-, 1-Gbps Fibre Channel ports • Supported optics, media, and transmission distances: <ul style="list-style-type: none"> ◦ Optics ◦ Media ◦ Distance • 4-Gbps-SW, LC SFP <ul style="list-style-type: none"> ◦ 50/125 micron multimode ◦ 150 m • 4-Gbps-SW, LC SFP <ul style="list-style-type: none"> ◦ 62.5/125 micron multimode ◦ 70 m • 4-Gbps-MR, LC SFP <ul style="list-style-type: none"> ◦ 9/125 micron single-mode ◦ 10 km • 4-Gbps-LW, LC SFP <ul style="list-style-type: none"> ◦ 9/125 micron single-mode ◦ 10 km
Network Management	<ul style="list-style-type: none"> • Access methods • Out-of-band 10/100 Ethernet port • RS-232 serial console port with DB-9 • Access protocols • CLI-via console and Ethernet ports • SNMPv2-via Ethernet port • Network security • Secure Shell (SSH) Protocol v2 • Simple Network Management Protocol Version 2 (SNMPv2) • Management applications • Cisco MDS 9020 CLI • Cisco Fabric Manager • Cisco Device Manager
Programming Interfaces	<ul style="list-style-type: none"> • Scriptable CLI • Fabric Manager GUI • Device Manager GUI
Environmental	<ul style="list-style-type: none"> • Temperature, ambient operating <ul style="list-style-type: none"> ◦ 41 to 104°F (5 to 40°C) • Temperature, ambient nonoperating and storage <ul style="list-style-type: none"> ◦ -40 to 158°F (-40 to 70°C) • Relative humidity, ambient (noncondensing) operating <ul style="list-style-type: none"> ◦ 5 to 90 percent • Relative humidity, ambient (noncondensing) nonoperating and storage <ul style="list-style-type: none"> ◦ 5 to 93 percent • Altitude, operating <ul style="list-style-type: none"> ◦ 0 to 10,000 feet (0 to 3048 meters)
Physical Dimensions	<ul style="list-style-type: none"> • Dimensions in inches (H x W x D) <ul style="list-style-type: none"> ◦ 1.70 inches tall, 12 inches wide, and 17 inches deep (43.2 mm x 305 mm x 432 mm) ◦ 1 RU ◦ All units rack mountable in standard 19 inch EIA rack • Weight <ul style="list-style-type: none"> ◦ Fully configured chassis: 9 lbs (4.08 kg)
Power	<ul style="list-style-type: none"> • Integral power supply • AC input characteristics • 100 to 240 VAC (10% range) • 50 to 60 Hz (nominal)

Product Compatibility	Cisco MDS 9000 Family
Approvals and Compliance	<ul style="list-style-type: none"> • Safety compliance • CE Marking • UL 60950 • CAN/CSA-C22.2 No. 60950 • EN 60950 • IEC 60950 • TS 001 • AS/NZS 3260 • IEC60825 • EN60825 • 21 CFR 1040 • EMC compliance • FCC Part 15 (CFR 47) Class A • ICES-003 Class A • EN 55022 Class A • CISPR 22 Class A • AS/NZS 3548 Class A • VCCI Class A • EN 55024 • EN 50082-1 • EN 61000-6-1 • EN 61000-3-2 • EN 61000-3-3

Ordering Information

Table 2 lists ordering information for the Cisco MDS 9020.

Table 2. Ordering Information

Product Name	Part Number
Cisco MDS 9020 Fabric Switch	DS-C9020-20K9
Small Form-Factor Pluggable (SFP) Optics Options	
Cisco MDS 9000 Family 4/2/1-Gbps Fibre Channel-SW, SFP, LC	DS-SFP-FC4G-SW
Cisco MDS 9000 Family 4/2/1 Gbps Fibre Channel-MR, SFP, LC	DS-SFP-FC4G-MR
Cisco MDS 9000 Family 4/2/1 Gbps Fibre Channel-LW, SFP, LC	DS-SFP-FC4G-LW
Spare Components	
Cisco MDS 9000 Family 4/2/1-Gbps Fibre Channel-SW, SFP, LC, Spare	DS-SFP-FC4G-SW=
Cisco MDS 9000 Family 4/2/1-Gbps Fibre Channel-MR, SFP, LC, Spare	DS-SFP-FC4G-MR=
Cisco MDS 9000 Family 4/2/1-Gbps Fibre Channel-LW, SFP, LC, Spare	DS-SFP-FC4G-LW=

Service and Support

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For More Information

For more information about the Cisco MDS 9020, visit

<http://www.cisco.com/en/US/products/hw/ps4159/ps4358/index.html> or contact your local account representative.



Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

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