10

Storage Networking

Storage Networking at a Glance

Product	Features	Page
Cisco SN 5400 Series Storage Router	Enables access to Fibre Channel attached storage systems anywhere on an IP network through Small Computer Systems Interface over IP (iSCSI); the first storage implementation based on IP standards.	10-2
	• Provides a full function Fibre Channel switch for small / medium businesses and enterprise workgroup storage area networks (SAN).	
Cisco MDS 9000 Family Multilayer Directors and Fabric Switches	• Industry-leading port densities across the Cisco MDS 9000 Family	10-3
	• Intelligent network services including VSANs, Port, Channels, embedded diagnostics and advanced security	
	• Embedded Fabric Manager, open API and integration with CiscoWorks RME and other third party SAN management platforms	
	• Multiprotocol support including Fibre Channel, FICON, Fibre Channel over IP (FCIP) and iSCSI. (Cisco MDS 9500 Series and Cisco MDS 9200 Series)	
	• Open platform for hosting third party storage applications (Cisco MDS 9500 Series and Cisco MDS 9200 Series)	
	• High availability directors with non-disruptive software upgrades, stateful processor restart/failover and redundancy of all major components	
Additional Storage Networking Solutions	• Cisco MDS 9000 Port Analyzer Adapter encapsulates Fibre Channel frames into Ethernet packets for low cost Ethernet based storage/SCSI protocol analysis	10-7
	• Cisco Coarse Wave Division Multiplexing (CWDM) Extended Distance Solution offers Small Form-Factor Pluggable (SFP) optics in 8 different wavelengths, enabling 2/1 Gbps Fibre Channel and 1 Gbps Ethernet ports to be directly connected to passive add/drop CWDM multiplexers.	
	• Cisco 7200 FCIP Port Adapter for long distance SAN connectivity over an IP network infrastructure	
	• Cisco ONS 15530/15540/15454 are Dense Wave Division Multiplexing (DWDM) platforms that provide transport across dark fibre for business continuance applications	

Cisco SN 5428-2 Series Storage Router

The multilayer Cisco SN 5428-2 allows small and medium-sized businesses (SMBs) and enterprise workgroups to migrate servers from a direct-attached-storage (DAS) to SAN environment, enabling highly effective consolidation and utilization of storage assets with existing staff. The Cisco SN 5428-2 (Figure 1) provides extensive security capabilities that are critical for controlling access to valuable storage resources and company information. Protecting businesses' most critical asset-information-the Cisco SN 5428-2 allows you to access storage across LANs, MANs, and WANs using FCIP or iSCSI protocols.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco SN 5428-2	• When a customer is moving from a DAS environment to a SAN and they do not already have a Fibre Channel switch, the SN 5428 provides a Fibre Channel switch and iSCSI ports to deliver a one system solution. • When a customer wants only a full function Fibre Channel switch, the SN 5428 is a very cost effective, low latency switch that fits perfectly in a Fibre Channel only implementation. • When a customer has block level applications and wants to maintain block level access to shared storage over IP data networks for a substantial reduction in attachment costs. • When a customer wants to run a business continuance application involving replication or data sources across geographically dispersed sites. By providing FCIP functionality, the Cisco SN 5428-2 enables sharing of SAN-based devices such as tape libraries and disk arrays.

Key Features

- Provides levels of security and access control beyond what is currently available in traditional SANs by including layer 2 and layer 3 protection to help resist unauthorized access to your storage resources
- Uses the TCP/IP protocol suite for storage networking which protects your existing investment in storage and networking infrastructure
- Fully integrates existing management and configuration tools
- Based on industry standards, maximizes your investment and enables you to reduce total cost of ownership for the increasing storage demands on your network
- Integrates provides standard IP networking capabilities with storage environments
- Designed for high-availability providing continuous access to critical data; extensive security features to protect valuable storage resources; and, full breadth of iSCSI drivers

Competitive Products

• Nishan	• FalconStor
• McDATA: Fibre Channel Switches	• Brocade: Fibre Channel switches
• Qlogic: Fibre Channel Switches	

Selected Part Numbers and Ordering Information[1]

Cisco SN 5428 Storage Router

SN5428-2	The SN 5428 provides two Gigabit Ethernet ports, supporting iSCSI, for connection to standard IP networks and eight Fibre Channel fabric switch ports.

Cisco SN 5428 Drivers & Firmware

SN5428-2-FW3XFK9	Cisco SN 5428-2 Firmware: 3.0.x minimum with FCIP
SN-ISCSI-DRV=	Cisco iSCSI drivers that support the Cisco SN 5428 2.2.x firmware: Windows NT, Windows 2000, Linux, Solaris, HP/UX, AIX

Cisco SN 5428 SFP: Small Form Factor Pluggables

DS-SFP-FCGE-SW=	SFP for Fibre Channel/GE Multi-mode fiber with LC connector

Cisco SN 5420 Series Packaged SMARTnet Maintenance 8x5xNBD

CON-SNT-PKG10	Cisco SN 5428-2 Packaged SMARTnet 8x5xNBDCategory 10

For More Information

See the Cisco SN5428 Series Storage Router Web sites:

http://www.cisco.com/en/US/partner/products/hw/ps4159/ps2160/index.html

Cisco MDS 9000 Family Multilayer Directors and Fabric Switches

Consisting of the Cisco MDS 9500 Series of Multilayer Directors, the semi-modular Cisco MDS 9200 Series Multilayer Fabric Switches, and the fixed configuration Cisco MDS 9100 Series Multilayer Fabric Switches, the Cisco MDS 9000 Family provides a full line of products to meet requirements for storage networks of all sizes and architectures. The Cisco MDS 9000 Family delivers intelligent network services such as virtual SANs (VSANs), comprehensive security, advanced traffic management, sophisticated diagnostics, and unified SAN management. In addition, the Cisco MDS 9500 Series and the Cisco MDS 9200 Series provide multiprotocol/multitransport integration and an open platform for embedding intelligent storage services such as network-based virtualization. With its multilayer approach to network and storage intelligence, the Cisco MDS 9000 Family ushers in a new era in storage networking.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco MDS 9500 Multilayer Directors	• Maximum port densities—Up to 224 Fibre Channel ports in a single 9-slot chassis • High availability—non-disruptive software upgrades, stateful processor restart/failover and redundancy of all major components • High performance—1.44 Terabit/sec backplane to provide 10Gbps future readiness • Multiprotocol support —integration of Fibre Channel, FICON, FCIP, and iSCSI in single platform • Hosting intelligent storage applications (network-based virtualization, volume management, data replication, and snapshot capabilities) • Modularity and flexibility for future growth
Cisco MDS 9200 Multilayer Fabric Switches	• Moderate port densities - Up to 48 Fibre Channel ports in a single 2-slot chassis • Multiprotocol support - integration of Fibre Channel, FCIP, and iSCSI in single platform • Hosting intelligent storage applications (network-based virtualization, volume management, data replication, and snapshot capabilities) • Modularity and flexibility for future growth
Cisco MDS 9100 Series Fabric Switches	• Lower port count—20 ports for Cisco MDS 9120; 40 ports for Cisco MDS 9140 • 1RU for space-constrained environments • Fibre Channel-only connectivity • Entry-level SAN where price per port more important than future modularity/flexibility

Key Features

- Configurable—provides embedded Cisco Fabric Manager, open APIs and integration with CiscoWorks RME and third party SAN and network management platforms

- Serviceable—delivers embedded diagnostics (Fibre Channel ping, traceroute and protocol analyzer) and "Call Home"

- Upgradeable—offers investment protection with multiple module options, all interchangeable across Cisco MDS 9500 Series and Cisco MDS 9200 Series;

- High availability—Cisco MDS 9500 Series directors provides nondisruptive software upgrades, stateful process failover and hot swappable components

- Secure—supports VSANs, hardware-enforced zoning, role-based access control, FC-SP, IPsec, SNMPv3, RADIUS and access control lists

- Multiprotocol—integrates Fibre Channel, FICON, iSCSI, and FCIP in one system (Cisco MDS 9500 Series and Cisco MDS 9200 Series)

- Flexible—introduces VSANs for consolidation of isolated SAN islands on a single physical fabric

- Scalable—offers16 to 224 Fibre Channel ports; supports throughput up to 32Gbps in a single Port Channel ISL

- High performance—Cisco MDS 9500 Directors supply 1.44 Terabits/sec of internal throughput ensuring readiness for future 10 Gbps integration
- Open—Cisco MDS 9500 Series directors and Cisco MDS 9200 Series provide open platform for network-based storage applications

Specifications

Feature	MDS 9509 Director	MDS 9506 Director	MDS 9216 Fabric Switch	MDS 9100 Fabric Switches
Modular Slots	9 slots: 2 for supervisors, 7 for connectivity	6 slots: 2 for supervisors, 4 for connectivity	2 slots: 1 fixed configuration, 16 Fibre Channel ports: 1 slot for connectivity	fixed configuration, Fibre Channel ports
Maximum Number of Ports per Switch	224 Fibre Channel ports	128 Fibre Channel ports	48 Fibre Channel ports	MDS 9120/9140: 20 and 40 Fibre Channel ports, respectively
Multiprotocol/ Multitransport	Yes: Fibre Channel, FCIP, iSCSI, IP-FC and FICON	Yes: Fibre Channel, FCIP, iSCSI, IP-FC and FICON	Yes: Fibre Channel, FCIP, iSCSI, IP-FC and FICON	No: Fibre Channel only
High Availability:	Non-disruptive software upgrades, stateful failover, process re-startability, system health monitoring, hot swap: optics, power supplies, fans, supervisors, switching and services modules	Same as MDS 9509 Director	Stateful failover, process re-startability, system health monitoring, hot swap: optics, power supplies, fans, switching and services modules	Stateful failover, process re-startability, system health monitoring, hot swap: optics, power supplies, and fans
Intelligent Network Services: VSANs, PortChannels, Diagnostics, Security, Traffic Mgmt, QoS	Yes	Yes	Yes	Yes
Platform for Hosting network-based storage applications (virtualization, volume mgmt, data replication)	Yes	Yes	Yes	No
Embedded Fabric Management, open API, integration with CiscoWorks, third party SAN and network mgmt platforms	Yes	Yes	Yes	Yes
Dimensions (HxWxD)	24.5 x 17.25 x 18.4 in.	12.25 x 17.37 x 21.75 in	5.25 x 17.32 x 22.66 in	1.75 x 17.2 x 23.1 in
Max Buffer Credits per port	255 per port in the 16 port line card; 12 per port in the 32 port line card	Same as MDS 9509 Director	255 per port in the 16 port line card and in the fixed module; 12 per port in the 32 port line card	255 per port (target-optimized ports); 12 per port (host-optimized ports)
Port Channel	Up to 16 ports per Port Channel across switching modules	Up to 16 ports per Port Channel across switching modules	Up to 16 ports per Port Channel across switching modules	Cisco MDS 9120: Up to 7 ports; Cisco MDS 9140: up to 15 ports
Optics Support	Fibre Channel Ethernet and CWDM	Same as MDS 9509 Director	Same as MDS 9509 Director	Same as MDS 9509 Director
HW enforced Zoning Support	N_Port WWN, F_Port WWN, N_Port FCID, Port Broadcast,	Same as MDS 9509 Director	Same as MDS 9509 Director	Same as MDS 9509 Director
Default, LUN, Read Only	Yes	Yes	Yes	Yes
Security	Role-based access control, VSAN-based access control, Port security, RADIUS, TACACS+, SNMPv3, FC-SP, SSH, SSL, SFTP and IPsec	Same as MDS 9509 Director	Same as MDS 9509 Director	Role-based access control, VSAN-based access control, Port security, RADIUS, TACACS+, SNMPv3, FC-SP, SSH, SSL, and SFTP

Selected Part Numbers and Ordering Information[1]

MDS 9500 Base Configuration

DS-C9506	MDS 9506 Chassis
DS-C9506=	MDS 9506 Chassis, Spare
DS-C9509	MDS 9509 Chassis
DS-C9509=	MDS 9509 Chassis, Spare
DS-X9530-SF1-K9	MDS 9500 Supervisor/Fabric I
DS-X9530-SF1-K9=	MDS 9500 Supervisor/Fabric I, Spare

MDS 9000 Modules

DS-X9016	MDS 9000 16-port 1 / 2 Gbps FC Module
DS-X9016=	MDS 9000 16-port 1 / 2 Gbps FC Module, Spare
DS-X9032	MDS 9000 32-port 1 / 2 Gbps FC Module
DS-X9032=	MDS 9000 32-port 1 / 2 Gbps FC Module, Spare
DS-X9032-SMV	MDS 9000 Advanced Services Module
DS-X9032-SMV=	MDS 9000 Advanced Services Module , Spare
DS-X9560-SMC	MDS 9000 Caching Services Module
DS-X9560-SMC=	MDS 9000 Caching Services Module. Spare
DS-X9302-14K9	MDS 9000 2-port GE and 14-port FC Module
DS-X9302-14K9=	MDS 9000 2-port GE and 14-port FC Module, Spare
DS-X9304-SMIP	MDS 9000 4-port 1GE IP Storage Services Module
DS-X9304-SMIP=	MDS 9000 4-port 1GE IP Storage Services Module. Spare
DS-X9308-SMIP	MDS 9000 8-port 1GE IP Storage Services Module
DS-X9308-SMIP=	MDS 9000 8-port 1GE IP Storage Services Module, Spare
DS-SFP-FC-2G-SW	2 Gbps Fibre Channel-SW SFP, LC
DS-SFP-FC-2G-SW=	2 Gbps Fibre Channel-SW SFP, LC, Spare
DS-SFP-FC-2G-LW	2 Gbps Fibre Channel-LW SFP, LC
DS-SFP-FC-2G-LW=	2 Gbps Fibre Channel-LW SFP, LC, Spare
DS-SFP-FCGE-SW	1 Gbps Ethernet and 2 Gbps Fibre Channel-SW SFP, LC
DS-SFP-FCGE-SW=	1 Gbps Ethernet and 2 Gbps Fibre Channel-SW SFP, LC, Spare
DS-SFP-FCGE-LW	1 Gbps Ethernet and 2 Gbps Fibre Channel-LW SFP, LC
DS-SFP-FCGE-LW=	1 Gbps Ethernet and 2 Gbps Fibre Channel-LW SFP, LC, Spare

MDS 9500 Power Supplies and Cord Options

CAB-2500W-US1	Power Cord, 250VAC 20A, Straight C19, NEMA 6-20 Plug, US
CAB-2500W-US2	Power Cord, 250VAC 20A, Straight C19, NEMA L6-20 Plug, US
CAB-2500W-EU	Power Cord, 250VAC 16A, Straight C19, CEE 7/7 Plug, EU
CAB-2500W-INT	Power Cord, 250VAC 20A, Straight C19, IEC 309 Plug, INTL
CAB-2500W-SW	Power Cord, 250VAC 16A, Straight C19, 23G Plug, SWITZ
CAB-2500W-SA	Power Cord, 250VAC 16A, Straight C19, South Africa
DS-CAC-2500W	2500W AC Power Supply
DS-CAC-2500W=	2500W AC Power Supply, Spare
DS-CDC-2500W	2500W DC Power Supply
DS-CDC-2500W=	2500W DC Power Supply, Spare
DS-CAC-4000W-US	4000W AC Power Supply for US (cable attached)
DS-CAC-4000W-US=	4000W AC Power Supply for US (cable attached), spare
DS-CAC-4000W-INT	4000W AC Power Supply International (cable attached)
DS-CAC-4000W-INT=	4000W AC Power Supply International (cable attached), spare
DS-CAC-1900W	1900W AC Power Supply
DS-CAC-1900W=	1900W AC Power Supply, Spare

Additional MDS 9500 Power Cord Options

CAB-1900W-US1	Power Cord, 250VAC 20A, Right Angle C19, NEMA 6-20 Plug, US
CAB-1900W-US2	Power Cord, 250Vac 20A, Right Angle C19, NEMA L6-20 Plug, US
CAB-1900W-EU	Power Cord, 250VAC 16A, Right Angle C19, CEE 7/7 Plug, EU
CAB-1900W-INT	Power Cord, 250Vac 20A, Right Angle C19, IEC 309 Plug, INTL
DS-CDC-1900W	1900W DC Power Supply
DS-CDC-1900W=	1900W DC Power Supply, Spare

MDS 9500 Memory Options

MEM-MDS-FLD512M	MDS 9500 Sup Compact Flash Disk, 512MB
MEM-MDS-FLD512M=	MDS 9500 Sup Compact Flash Disk, 512MB, Spare

MDS 9200 Base Configuration

DS-C9216-K9	MDS 9216 16-port 2Gbps FC + 1-slot Modular Switch
DS-C9216A-K9	MDS 9216A 16-port 2Gbps FC + 1-slot Modular Switch
DS-C9216i-K9	MDS 9216i 14-port FC and 2-port GE + 1-slot Modular Switch

MDS 9200 Power Supplies and Cord Options

CAB-7KAC	AC Power Cord (North America)
CAB-7KACA	AC Power Cord (Australia)
CAB-7KACE	AC Power Cord (Europe)
CAB-7KACI	AC Power Cord (Italy)
CAB-7KACU	AC Power Cord (UK)
CAB-7KACR	AC Power Cord (Argentina)
CAB-7KACSW	AC Power Cord, 250VAC 10A, Straight C15, MP232 Plug, SWITZ
CAB-7KACSA	AC Power Cord (South Africa)
DS-CAC-845W	845W AC Power Supply
DS-CAC-845W=	845W AC Power Supply, Spare

MDS 9100 Base Configuration

DS-C9140-K9	MDS 9140 40-Port Fibre Channel Fabric Switch
DS-C9120-K9	MDS 9120 20-Port Fibre Channel Fabric Switch
DS-CAC-300W	300W AC Power Supply
DS-CAC-300W=	300W AC Power Supply, Spare

MDS Software

M95S1K9-1.3.4	MDS 9500 Supervisor/Fabric-I, Enterprise SW, Release 1.3.4
M92S1K9-1.3.4	MDS 9200 Supervisor/Fabric-I, Enterprise SW, Release 1.3.4
M91S1K9-1.3.4	MDS 9100 Supervisor/Fabric-I, Enterprise SW, Release 1.3.4
M95S1K9-2.0.1	MDS 9500 Supervisor/Fabric-I, SAN-OS Software Release 2.0.1
M92S1K9-2.0.1	MDS 9200 Supervisor/Fabric-I, SAN-OS Software Release 2.0.1
M91S1K9-2.0.1	MDS 9100 Supervisor/Fabric-I, SAN-OS Software Release 2.0.1

MDS licensed features

M9500EXT1K9	FCIP license for 1 8-Port IP Storage module in MDS9500
M9500EXT1K9=	FCIP license for 1 8-Port IP Storage module in MDS9500, spare
M9200EXT1K9	FCIP license for 1 8-Port IP Storage module in MDS9200
M9200EXT1K9=	FCIP license for 1 8-Port IP Storage module in MDS9200, spare
M9500EXT14K9	FCIP license for 1 4-Port IP Storage module in MDS9500
M9500EXT14K9=	FCIP license for 1 4-Port IP Storage module in MDS9500, spare
M9200EXT14K9	FCIP license for 1 4-Port IP Storage module in MDS9200
M9200EXT14K9=	FCIP license for 1 4-Port IP Storage module in MDS9200, spare
M9500FIC1K9	MDS 9500 Mainframe Package license for 1 MDS 9500 switch
M9500FIC1K9=	MDS 9500 Mainframe Package license for 1 MDS 9500 switch, spare
M9200FIC1K9	MDS 9200 Mainframe Package license for 1 MDS 9200 switch
M9200FIC1K9=	MDS 9200 Mainframe Package license for 1 MDS 9200 switch, spare
M9500SSE1K9	Storage Services Enabler pkg: 1 ASM on 1 MDS9500
M9500SSE1K9=	Storage Services Enabler pkg: 1 ASM on 1 MDS9500, Spare
M9200SSE1K9	Storage Services Enabler pkg: 1 ASM on 1 MDS9200
M9200SSE1K9=	Storage Services Enabler pkg: 1 ASM on 1 MDS9200, Spare
M9500FMS1K9	MDS 9500 Fabric Manager Server license for 1 MDS 9500 switch
M9500FMS1K9=	MDS 9500 Fabric Manager Server license for 1 MDS 9500 switch, Spare
M9200FMS1K9	MDS 9200 Fabric Manager Server license for 1 MDS 9200 switch
M9200FMS1K9=	MDS 9200 Fabric Manager Server license for 1 MDS 9200 switch, Spare
M9100FMS1K9	MDS 9100 Fabric Manager Server license for 1 MDS 9100 switch
M9100FMS1K9=	MDS 9100 Fabric Manager Server license for 1 MDS 9100 switch, Spare
M9500ENT1K9	MDS 9500 Enterprise Package license for 1 MDS 9500 switch
M9500ENT1K9=	MDS 9500 Enterprise Package license for 1 MDS 9500 switch, spare
M9200ENT1K9	MDS 9200 Enterprise Package license for 1 MDS 9200 switch
M9200ENT1K9=	MDS 9200 Enterprise Package license for 1 MDS 9200 switch, spare
M9100ENT1K9	MDS 9100 Enterprise Package license for 1 MDS 9100 switch
M9100ENT1K9=	MDS 9100 Enterprise Package license for 1 MDS 9100 switch, spare

Port Analyzer Adapter

DS-PAA-2	MDS 9000 Port Analyzer Adapter

Port Analyzer Adapter Power Cord Options

CAB-2WIRE-ARG	Power Cord, 250VAC 2.5A, C7 coupler, Argentina
CAB-2WIRE-AUS	Power Cord, 250VAC 2.5A, C7 coupler, BS 1363 plug, Australia
CAB-2WIRE-EU	Power Cord, 250VAC 2.5A, C7 coupler, EN 50075 plug, EU
CAB-2WIRE-US	Power Cord, 125VAC 3A, C7 coupler, NEMA 1-15P plug, US
CAB-2WIRE-UK	Power Cord, 250VAC 2.5A, C7 coupler, AS 3112 plug, UK
CAB-2WIRE-KOR	Power Cord, 250VAC 2.5A, C7 coupler, Korea

Fiber Optic Cables

CAB-MM-LCLC-1M	Fiber Optic Cable, Multimode, LC/LC, 1 Meter
CAB-MM-LCLC-5M	Fiber Optic Cable, Multimode, LC/LC, 5 Meter
CAB-MM-LCLC-25M	Fiber Optic Cable, Multimode, LC/LC, 25 Meter
CAB-CP-SCLC-8IN	Fiber Optic Cable, Coupler, SC/LC, 8 Inch
CAB-CP-LCSC-2M	Fiber Optic Cable, Coupler, LC/SC, 2 Meter

CWDM Solution

CWDM-SFP-1470=	1470 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1490=	1490 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1510=	1510 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1530=	1530 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1550=	1550 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1570=	1570 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1590=	1590 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-SFP-1610=	1610 NM CWDM Gigabit Ethernet and 2 Gbps FC SFP
CWDM-MUX-4=	4 Wavelength Add/Drop MUX for CWDM-CHASSIS-2=
CWDM-MUX-8=	8 Wavelength Mux/Demux Plug in Module for CWDM-CHASSIS-2=
CWDM-CHASSIS-2=	2 Slot Chassis for CWDM Mux Plug in Modules
CAB-SM-LCSC-1M	Fiber Optic Cable, Single mode, LC/SC, 1 Meter
CAB-SM-LCSC-5M	Fiber Optic Cable, Single mode, LC/SC, 5 Meter

For More Information

See the Cisco MDS 9000 Family at Web site: **http://www.cisco.com/go/storage**

Additional Storage Networking Solutions

Cisco MDS 9000 Port Analyzer Adapter—Reducing Time to Problem Resolution

The Cisco MDS 9000 Port Analyzer Adapter enables effective, low-cost analysis of Fibre Channel traffic anywhere in the network at any time, simplifying debug of network problems and reducing time to problem resolution. The device is a "plug-and-play" accessory for the Cisco MDS 9000 Family that enables simple, transparent analysis of Fibre Channel traffic in a switched fabric, eliminating the need for expensive standalone protocol analyzers.

Cisco MDS 9000 Optical Modules—Optimizing SAN Interconnect

The Cisco MDS 9000 Family optical interface modules offer a broad range of SAN connectivity solutions for both local and extended reach. SFP modules for the Cisco MDS 9000 are available in either short-wave or long-wave options supporting Fibre Channel and Gigabit Ethernet connections over distances of up to 500 meters and 10 kilometers, respectively. Cisco CWDM SFPs and passive add/drop multiplexers provide cost-effective, multiprotocol, extended-distance connectivity by optimizing the use of the existing optical infrastructure.