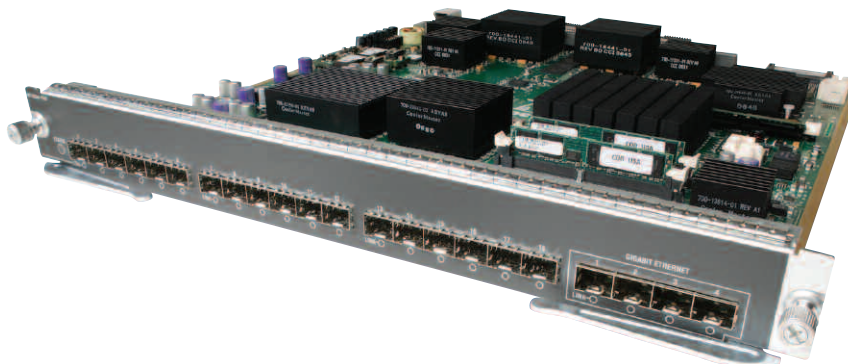


Cisco® 18/4-Port Multiservice Module

Optimize your SAN extensions



The Cisco® MDS 9000 Family 18/4-Port Multiservice Module is optimized for deployment of high-performance Storage Area Network (SAN) extension solutions, distributed intelligent fabric services, and cost-effective IP storage and mainframe connectivity in mission-critical enterprise storage networks.

Supported in the Cisco MDS 9200 Series Multilayer Fabric Switches and Cisco MDS 9500 Series Multilayer Directors and offering 18 1, 2, and 4 Gb/s Fibre Channel ports and four 1 Gb Ethernet IP storage services ports, the Cisco MDS 9000 Family 18/4-Port Multiservice Module provides multiprotocol capabilities integrating, in a single-form-factor Fibre Channel, Fibre Channel over IP (FCIP), Small Computer System Interface over IP (iSCSI), IBM Fiber Connectivity (FICON), FICON Control Unit Port (CUP) management, and switch cascading.

Secure, robust disaster recovery

The Cisco MDS 9000 Family 18/4-Port Multiservice Module is ideal for mission-critical enterprise storage networks that require secure, robust, cost-effective disaster recovery and business continuance services. The module uses Cisco expertise and knowledge of IP networks to deliver outstanding SAN extension

performance, minimizing latency for disk and tape with FCIP acceleration features including FCIP write acceleration, and FCIP tape write and read acceleration. Hardware-based encryption secures sensitive traffic with IP Security (IPsec), and hardware-based compression dramatically enhances performance for both high- and low-speed links, enabling immediate cost savings in expensive WAN infrastructure.

Additionally, the Cisco MDS 9000 Family 18/4-Port Multiservice Federal Information Processing Standards (FIPS) Module, a FIPS 140-2 Level 3 compliant version of the Cisco MDS 9000 Family 18/4-Port Multiservice Module, is offered to provide added security to meet regulatory and industry requirements. FIPS Level 3 certification requires enhanced physical security, including a hard, opaque potting material to deter unauthorized access and tampering.

Highlights

Key applications:

- SAN extensions
- Intelligent fabric services
- IP storage and mainframe connectivity
- Disaster recovery
- Business continuity

Cisco MDS 9000 Family 18/4-Port Multiservice Modules

Description	Integrated services multiprotocol module with 18 1-, 2-, and 4 Gb/s Fibre Channel ports and four 1 Gb Ethernet ports
Main SAN Services	<ul style="list-style-type: none"> • FCIP high-performance SAN extension, minimizing latency for both disk and tape with FCIP acceleration features including FCIP write acceleration, FCIP tape write and read acceleration, and securing of sensitive traffic with IPsec hardware-based encryption • Flexible cost-effective multiprotocol storage connectivity through Fibre Channel, iSCSI, and FICON
Target Group	Mission-critical enterprise storage networks

Key features and benefits

- **Integrated Fibre Channel and IP storage services in an optimized form factor:** The module supports 18 4 Gb/s Fibre Channel interfaces for high-performance SAN and mainframe connectivity and four 1 Gb Ethernet ports for FCIP and iSCSI storage services. Individual ports can be configured with hot-swappable shortwave, longwave, extended-reach, Coarse Wavelength-Division Multiplexing (CWDM) or Dense Wavelength-Division Multiplexing (DWDM) Small Form-Factor Pluggables (SFPs) for connectivity up to 200 kilometers, or 125 miles.
- **Integrated hardware-based Virtual SANs (VSANs) and Inter-VSAN Routing (IVR):** The module enables deployment of large-scale multisite and heterogeneous SAN topologies. Integration into port-level hardware allows any port within a system or fabric to be partitioned into any VSAN. Integrated hardware-based IVR provides line-rate routing between any ports within a system or fabric without the need for external routing appliances.
- **FCIP for remote SAN extension:**
 - Simplifies data protection and business continuance strategies by enabling backup, remote replication, and other disaster-recovery services over WAN distances using open-standard FCIP tunneling
 - Optimizes utilization of WAN resources for backup and replication by enabling hardware-based compression, hardware-based encryption, FCIP write acceleration, and FCIP tape read and write acceleration; up to 16 virtual Inter-Switch Link (ISL) connections are provided on the four 1 Gb Ethernet ports through tunneling
 - Preserves Cisco MDS 9000 family enhanced capabilities, including VSANs, advanced traffic management, and security, across remote connections
- **iSCSI for extension of SAN to Ethernet attached servers:**
 - Extends the benefits of Fibre Channel SAN-based storage to Ethernet attached servers at a lower cost than is possible using Fibre Channel interconnect alone
 - Increases storage utilization and availability through consolidation of IP and Fibre Channel block storage
 - Through transparent operation, preserves the capability of existing management storage applications
- **Advanced FICON services:** The module supports FICON environments, including cascaded FICON fabrics, VSAN-enabled intermix of mainframe and open systems environments, and N-port ID virtualization for mainframe Linux partitions.

Cisco MDS 9000 Family 18/4-Port Multiservice Module Software License Packages

License Type	Cisco SAN Extension over IP Package
Description	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 optimize the performance and manageability of FCIP links.
Features	FCIP support, FCIP compression, IVR for FCIP, FCIP write acceleration, FCIP read and write tape acceleration, and SAN extension tuner are provided.

Learn More.

To learn more about Cisco MDS 9000 Family 18/4-Port Multiservice Module, visit sun.com/storagetek/networking

- Intelligent network services:** The module uses VSAN technology for hardware-enforced, isolated environments within a single physical fabric, Access Control Lists (ACLs) for hardware-based intelligent frame processing, and advanced traffic management features such as Fibre Channel congestion control and fabricwide Quality of Service (QoS) to facilitate migration from SAN islands to enterprisewide storage networks.
- High-performance ISLs:** The module supports up to 16 Fibre Channel links in a single PortChannel. Links can span any port on any module within the chassis for added scalability and resilience. Up to 4095 buffer-to-buffer credits can be assigned to a single Fibre Channel port to extend storage networks over long distances.
- Sophisticated diagnostics:** The module provides intelligent diagnostics, protocol decoding, and network analysis tools as well as integrated Call Home capability for added reliability, faster problem resolution, and reduced service costs.
- Comprehensive network security framework:** The module supports RADIUS and TACACS+, Fibre Channel Security Protocol (FC-SP), Secure File Transfer Protocol (SFTP), Secure Shell (SSH) Protocol, and Simple Network Management Protocol Version 3 (SNMPv3) implementing AES, VSANs, hardware-enforced zoning, ACLs, and per-VSAN Role-Based Access Control (RBAC). RBAC provides separate control over management functions and access on a per-VSAN basis, enabling separation of duties between administrators on the same physical switch. Gigabit Ethernet ports support IPsec authentication, data integrity, and hardware-assisted data encryption.
- IP Version 6 (IPv6) support:** The module supports IPv6 as mandated by the U.S. Department of Defense (DoD), Japan, and China. IPv6 support is provided for FCIP, iSCSI, and management traffic routed in-band and out-of-band.