



# Cisco MDS 9148 Multilayer Fabric Switch

At-A-Glance

## Overview

The Cisco® MDS 9148 Multilayer Fabric Switch (Figure 1) is a high-performance, flexible, cost-effective Fibre Channel switch platform providing the industry's lowest power consumption and highest density with up to 48 line-rate 8 Gbps ports in a mere one rack unit (1RU).

Figure 1. Cisco MDS 9148



The Cisco MDS 9148 has plug-and-play capabilities allowing it to be easily deployed in any size of network for a superior out-of-the-box experience.

The Cisco MDS 9148 is attractively priced with enterprise-class capabilities included as standard versus competitive offerings that charge substantial additional license charges.

Furthermore, the Cisco MDS 9148 simplifies scalable deployment of virtual machines.

## Solutions

The Cisco MDS 9148 can be used as the foundation for small, standalone SANs, as a top-of-rack switch, or as an edge switch in larger core-edge SAN infrastructures (Figure 2).

### Single-Switch SAN Deployments

The Cisco MDS 9148 is designed to address the needs of small and medium-sized businesses, helping them deploy cost-effective and scalable high-performance SANs. It is also ideal for branch offices and departments in large enterprises.

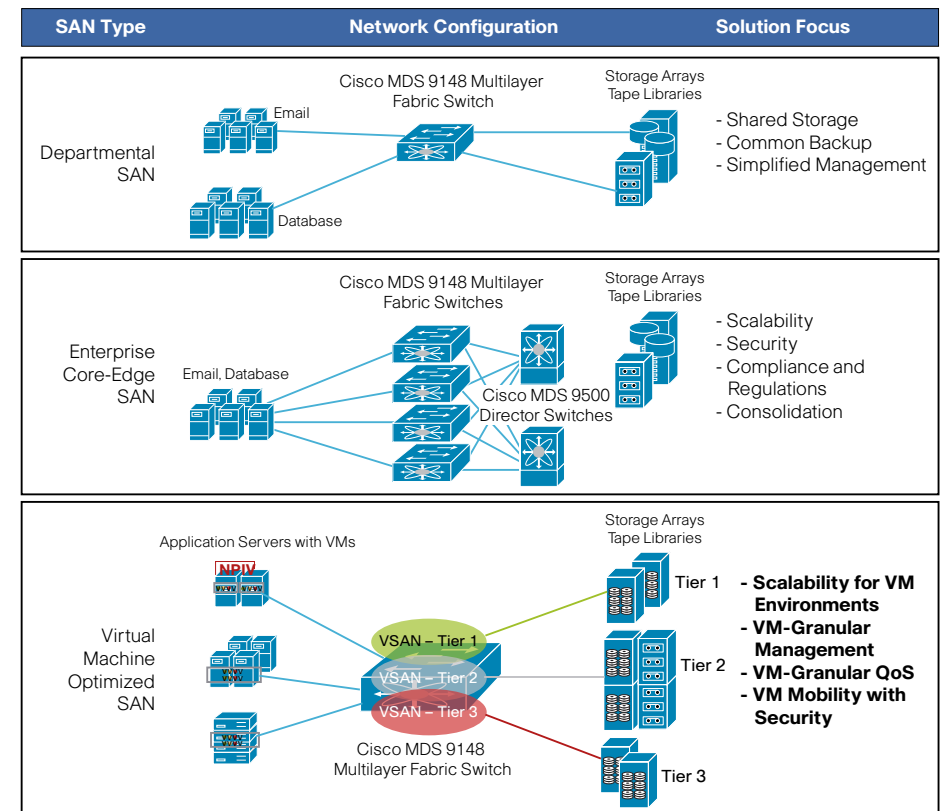
### Data Center Core-Edge Deployments

The Cisco MDS 9148 is fully compatible with the Cisco MDS 9500 Series Multilayer Directors, MDS 9200 Series Multiservice Fabric Switches, and other 9100 Series Multilayer Fabric Switches for transparent, end-to-end service delivery in large data center core-edge deployments.

## Virtual Machine–Optimized Switch

The Cisco MDS 9148 is fully optimized to accommodate virtualized server environments. Scalability is provided for virtual machines through N-Port ID Virtualization (NPIV) and VSAN technology. Virtual machine granularity is provided for QoS and management together with flexibility for virtual machine mobility and security. Additionally, the Cisco MDS 9148 is supported as an "option" by the Virtual Computing Environment (VCE) coalition between Cisco, EMC and VMware relative to the VCE/ Vblock® framework for integrated virtualization solutions.

Figure 2. Solution Configurations





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## Benefits

- High-performance, enterprise-class capabilities for environments with bandwidth-intensive applications such as server virtualization, backup, video, and OLTP databases
- Flexible and cost effective to deploy as an entry-level departmental switch, as a top-of-rack switch, or as an edge switch in enterprise SANs, with pay-as-you-grow pricing scalability as your business grows. Installation and operational simplicity through plug-n-play capabilities such as Zero-Touch Installation, Quick Configuration Wizard and task-based management wizards
- Common Cisco NX-OS software and features across Cisco MDS 9000 and Cisco Nexus® Families of switches and directors
- Attractive end-user pricing while offering Cisco programs and promotions to increase partner profit margins

## Features of the High-Performance Cisco MDS 9148

**High performance with exceptional flexibility:** The Cisco MDS 9148 offers up to 48 autosensing Fibre Channel ports capable of speeds of 1/2/4/8 with 8 Gbps of dedicated line-rate bandwidth for each port and an aggregate platform non-blocking bandwidth of 768 Gbps. The Cisco MDS 9148 comes with three preconfigured models for 16, 32, and 48 ports. The 16- and 32-port models can be upgraded to enable additional ports onsite with an 8-port Cisco MDS 9148 On-Demand Port Activation license.

**Intelligent storage networking services at a cost-effective price:** The Cisco MDS 9148, powered by Cisco MDS 9000 NX-OS Software, offers intelligent storage networking capabilities standard such as virtual SANs (VSANs), extended distance buffer credits, PortChannels with load balancing, quality of service (QoS), plus extensive security, diagnostics, statistics and APIs for optimizing the design, deployment, and management of a Cisco MDS 9148 in any sized SAN topology or solution environment.

**Simplified scalable deployment of virtual machine-aware SANs:** In a virtual machine environment in which many host operating systems or applications are running on a physical host, the Cisco MDS 9148 uses N-Port ID Virtualization (NPIV) technology to provide independent management for each virtual machine. It supports granularity at the Virtual Machine level for management and QoS. Furthermore, Cisco MDS 9148 provides Cisco N-Port Virtualization (NPV) and fabric-port (F-port) channeling features to enable scaling of SANs without reaching Fibre Channel Domain ID limits. The Cisco FlexAttach feature enables transparent server deployment and movement without SAN reconfiguration.

**High-availability platform for mission-critical deployments:** The Cisco MDS 9148 is designed for environments in which downtime is unacceptable. It offers nondisruptive

software upgrades with fall-back, dual redundant hot-swappable power supplies and fan trays, VSANs for fault isolation, and PortChannels for Inter-Switch Link (ISL) and F-port trunking resiliency. Additionally, Cisco allows any failed licensed FC port to be quickly be redeployed to an unlicensed port to maximize recoverability and uptime.

**Comprehensive security framework:** Recognizing the need for unassailable business security, the Cisco MDS 9148 provides a comprehensive framework to protect highly sensitive data traversing today's enterprise networks. Included as standard with every Cisco MDS 9148 are features such as VSAN isolation, role based access control (RBAC), Secure FTP (SFTP), intelligent packet inspection at the port level, hardware zoning via Access Control Lists (ACLs), extended broadcast zoning, Secure Shell (SSH), control plane security, Simple Network Management Protocol (SNMP) and FC-SP switch-to-switch plus host-to-switch access authentication. These features, in conjunction with the rarely needed, but even more innovative and powerful security features in the optional Enterprise Package License, will make the Cisco MDS 9148 the most secure platform in its class.

**Simplified storage management:** The Cisco MDS 9148 supports SAN capabilities such as the Zero-Touch Installation and Quick Configuration Wizard that allow the switch to be easily deployed and provisioned in multiple topologies in any size of network. All features are available through a command line interface (CLI) or the Cisco Data Center Network Manager (DCNM) for SAN, a centralized management tool with task-based wizards that simplify management of a standalone switch or multiple switches and fabrics.

## Powered by Cisco MDS 9000 NX-OS Software 5.0

The underlying system software for the Cisco MDS 9000 Family multilayer switches, the Cisco MDS 9000 NX-OS Software is designed for SANs to create a strategic SAN platform with superior reliability, performance, scalability, serviceability and advanced features. In addition to providing all the essentials you expect in a storage network switch, it provides industry-unique self-healing, fault isolation and corrupted data handling capabilities plus many other innovative features to help deliver the industry's lowest total cost of ownership (TCO) and a quick return on investment (ROI).

## Ordering Information

Please refer to the data sheet [http://www.cisco.com/en/US/prod/collateral/ps4159/ps6409/ps5987/ps10703/data\\_sheet\\_c78-571411.html](http://www.cisco.com/en/US/prod/collateral/ps4159/ps6409/ps5987/ps10703/data_sheet_c78-571411.html) for detailed ordering information and part numbers.

## For More Information

For more information about the Cisco MDS 9148, visit <http://www.cisco.com/go/storage>.