# Cisco MDS 9000 10-Gbps 8-Port FCoE Module Extends Fibre Channel over Ethernet to the Data Center Core

## Executive Summary

Fibre Channel over Ethernet (FCoE) can help you save money, simplify your management, lower your overall power and cooling requirements, and make your data center more flexible over time. The ability to converge storage and data networking with a single data center OS to deliver seamless convergence, scalability and network intelligence is now possible with the Cisco® MDS 9000 10-Gbps 8-Port FCoE Module, extending these FCoE-based benefits to the core of your data center.

## Introduction

The Cisco MDS 9000 10-Gbps 8-Port FCoE Module (Figure 1) is the industry's first multihop-capable FCoE module for the data center core. Now you can extend the benefits of FCoE beyond the access layer to the data center core with a full line-rate FCoE module for the Cisco MDS 9500 Series Multilayer Directors. The Cisco MDS 9000 10-Gbps 8-Port FCoE Module is part of the Cisco unified fabric, which is a crucial building block for both traditional and virtualized data centers.

**Figure 1.** Cisco MDS 9000 10-Gbps 8-Port FCoE Module

## Business Benefits

Enterprises networks are growing rapidly, challenging data centers to manage power, cooling, and space. In response, enterprises are both building new data centers and looking for ways to extend the life of existing data centers to get the most from their investments now and in the future.

## The Power of Converged Fabric

The data center traditionally handles several types of traffic, each with its own dedicated equipment and capacity. Over time network capacity needs to be increased, but at different intervals for different types of traffic. This staggered approach can lead to wasted bandwidth or worse, the difficult decision to increase capacity for some types of traffic only, at the expense of not being able to afford to increase capacity for other types.

A converged fabric using converged network protocols such as FCoE allows customers to wire once to connect to any device on the SAN and LAN, even mapping to virtual machines. FCoE in particular takes advantage of the more efficient encoding mechanisms of 10 Gigabit Ethernet to provide 50 percent more bandwidth than 8-Gbps Fibre Channel. Thus for the same bandwidth, you use fewer links than with 8-Gbps Fibre Channel alone. Used in combination with low-cost media options such as Twinax cables, the Cisco MDS 9000 10-Gbps 8-Port FCoE Module helps align the data center with the economic benefits of Ethernet while preserving the reliability and features of Fibre Channel. Additionally, every host can mount any storage target, promoting storage consolidation and improving utilization.

Implementation of converged network environments such as FCoE allows data centers to increase their bandwidth so that all types of traffic benefit over time. With evolution of the data center with transparent integration, one type of traffic does not have to be sacrificed at the expense of another.

The Cisco MDS 9000 10-Gbps 8-Port FCoE Module provides the first step towards this kind of fully converged network. It allows the core Fibre Channel capacity to connect to the FCoE access layer while preserving all the reliable network services and features you have come to expect.

## The Power of Scalability

The Cisco MDS 9000 10-Gbps 8-Port FCoE Module provides the scalability of 88 ports per chassis without oversubscription, and PortChannels of up to 16 links. With connection to a Cisco Nexus® 7000 18-Slot Switch populated with 10-Gbps FCoE line-card modules, the number of director-class FCoE ports easily scales to meet the needs of the most demanding data center environments.

## The Power of Intelligent Fabrics

Cisco services embed critical, policy-based intelligent functions into the unified fabric for both traditional and virtualized data centers. Distributed, network-integrated services enable scalability, high performance, agility, and operational simplicity. Delivered in either physical (appliance or blade) or virtual formats, Cisco intelligent fabric services help enable flexible and cost-effective service deployment.

**Table 1.** Cisco MDS 9000 10-Gbps 8-Port FCoE Module

| Part Number | Max. number of ports | Max. number of PortChannels |
|---|---|---|
| **DS-X9708-K9** | 8 | 16 |

## Why Cisco?

Cisco has been the world leader in FCoE technology solutions since the first FCoE switch was available in 2008, pioneering fabric and director switch platforms natively designed to meet LAN and SAN convergence standards.

Cisco MDS 9000 Services-Oriented SANs similarly deliver advanced, integrated storage services to improve agility and enable cloud storage deployments. These solutions represent huge investments in Fibre Channel technology, and Cisco is dedicated to supporting Fibre Channel while bridging to Ethernet and consolidated I/O, fulfilling the promise of unified fabric.

## For More Information

http://www.cisco.com/go/unifiedfabric

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