Cisco SFS M7000E InfiniBand Blade Switch for Dell M1000E

The Cisco® SFS M7000E Double Data Rate (DDR) InfiniBand Switch, designed exclusively for the Dell M1000E Blade systems, offers an innovative, cost-effective solution for building high-performance clusters.

Figure 1. Cisco SFS M7000E InfiniBand Switch for Dell M1000E Blade System

As the exclusive DDR InfiniBand solution for Dell's next-generation blade platform, the Cisco SFS M7000E Switch offers optimal density, high performance, and power efficiency to clusters of any size. Built on the latest DDR InfiniBand technologies, the Cisco SFS M7000E Switch is engineered to efficiently maximize I/O performance and minimize time to results for the most demanding class of applications.

Product Overview

The Cisco SFS M7000E Switch delivers an ideal combination of price and performance for customers seeking to minimize costs and maximize results with the Dell M1000E Blade platform. The switch provides DDR InfiniBand connectivity to upto 16 server modules and provides 8 DDR InfiniBand uplink ports. Each DDR InfiniBand port can support 20Gbps of fully non-blocking bandwidth to each port. The port to port latency through the switch is 140 ns.

When fully populated, the Dell M1000E can have four Cisco SFS M7000E blade modules to drive 1.28 terabits of nonblocking traffic for I/O-intensive applications. The blade switch is also a hot-pluggable expansion module, allowing on-the-fly capacity expansion without application disruption. The Cisco SFS M7000E is designed to a compelling high performance computing (HPC) solution in the blade market.

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Figure 2. Cisco SFS M7000E InfiniBand Switch with 8 DDR external ports

The Cisco SFS M7000E has been certified with the Cisco SFS 7000 Series InfiniBand Server Switches and Cisco SFS 3000/3500 Multi-fabric Server Switches. Cisco provides a complete DDR InfiniBand switching family to complement the Cisco SFS M7000E switch to deliver HPC solutions. For example, by using the Cisco SFS-7024D Switches in the core (288-port, 4x DDR InfiniBand switches) to aggregate multiple blade chassis, a customer can build clusters with tens of thousands of processors using Dell M1000 blade systems.

Because the Cisco SFS M7000E is an unmanaged switch, a subnet manager is required for the operation of the InfiniBand fabric. Cisco recommends running the Cisco High Performance Subnet Manager on a server module in the InfiniBand fabric. The Cisco SFS M7000E is also qualified with other SFS management applications such as the Fabric Analysis and Correlation Toolkit.

Table 1. General Features of the Cisco SFS M7000E Switch

Feature	Description
20-Gbps (DDR), 4x InfiniBand Ports	The Cisco SFS M7000E offers 24 4x DDR IB ports of 20-Gbps links for the most demanding high-performance computing (HPC) applications. The switch has full bisectional bandwidth of 960 Gbps. Each port is autosensing in both single-data rate (SDR) and double-data rate (DDR) modes. 16-ports provide connectivity to server modules and 8 uplink ports are available for external connectivity.
Low Latency	The Cisco SFS M7000E is a cut-through switch with less than 140 nanoseconds of port-to-port latency. The switch is ideal for applications that have large inter-process communication (IPC) or simply depend on quick movement of data for competitive advantage in the market.
Powered Ports	All ports are powered to enable connectivity with passive and active copper cables as well as optical cables.
Hot-Plug Swappable	The Cisco SFS M7000E Switches are hot-plug swappable into any of the four I/O slots in the rear of the Dell M1000E blade chassis. The administrator can reconfigure and maintain the fabric without powering down the server nodes.
Scale-out Fabric Topologies	Each server blade may contain up to 2 HCA cards. When the blade chassis is fully populated with the Cisco SFS M7000E Switches, a customer can build multiple, independent fabrics with the same server nodes. This type of configuration offers extremely high throughput.
Unmanaged Switch	The Cisco SFS M7000E is an unmanaged switch to provide a power-efficient, cost-effective solution for HPC customers.
Complete Ecosystem	Cisco offers an InfiniBand platform that has been certified and extensively tested to provide optimal productivity. The Cisco SFS M7000E is part of a greater InfiniBand offering from Cisco.

Product Specifications

Tables 2 through 4 give specifications of the Cisco SFS M7000E Switch.

Table 2. Mechanical Specifications of Cisco SFS M7000E Switch

Feature	Description
Size (H x W x D)	1.15 x 12.10 x 10.75 in.
System Weight	3.75 lb

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Table 3. Environmental Specifications of Cisco SFS M7000E Switch

Feature	Description
Temperature	• Operating: 40 to 120°F (5 to 50°C) • Nonoperating: -40 to 140°F (–40 to 60°C)
Altitude	• Operating: 10,000 ft • Nonoperating: 50,000 ft
Power Consumption	• 56W
Environmental Standards	• ROHS-5 compliant • WEEE compliant

Table 4. Reliability Specifications of Cisco SFS M7000E Switch

Reliability	Specifications
Mean time bewteen Failure (MTBF)	>100,000 hours

Ordering Information

Table 5 provides ordering information for the Cisco SFS M7000E Switch.

Table 5. Ordering Information

Product Name	Part Number	Product Description
Cisco SFS M7000E Primary Switch	SFSM7000E-SW1=	Cisco SFS M7000E Primary Switch includes the following: • 24 port DDR InfiniBand Blade Switch • "Right to use" licenses for InfiniBand drivers to install on each server blades per Dell M1000E Chassis. Download upto 16 copies of driver. • 3 years of hardware support
Cisco SFS M7000E Redundant Switch	SFSM7000E-SW2=	Cisco SFS M7000E Redundant Switch includes the following: • 24 port DDR InfiniBand Blade Switch • 3 years of hardware support

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, refer to Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about the Cisco SFS M7000E Switch, please contact ask-sfs-pm@cisco.com.

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