

EMC Connectrix MP-8000B



The EMC® Connectrix® MP-8000B is a top-of-rack FCoE switch that enables consolidation of server adapters and cables by allowing LAN and SAN traffic to travel on a single 10 Gigabit Ethernet link. By reducing server adapters and cabling, customers can lower equipment acquisition costs as well as the operational costs associated with server power consumption and cooling. The switch features eight 8 Gb/s Fibre Channel ports along with twenty-four 10 Gigabit Ethernet (10 GbE) ports. The 10 GbE ports support Converged Enhanced Ethernet (CEE), a new version of the Ethernet standard which increases the reliability, efficiency, and scalability of Ethernet networks. This enhanced version supports multiple traffic classes over a lossless Ethernet fabric, enabling the consolidation of LAN, SAN, and cluster environments. The MP-8000B also has hot-swappable, redundant 350W power supplies and cooling fans to provide the highest levels of availability, reliability, and performance.

System Architecture

Fibre Channel Ports

Eight Fibre Channel universal (E, F, M, and FL) ports with 2, 4, and 8 Gbit/s

Ethernet Ports

Twenty-four 10 Gigabit Ethernet ports

FCoE Features

Complete T11 FCoE entity and FCoE bridging

The FCoE translation entity built into the hardware engine provides:

- Detection of Fibre Channel encapsulation and redirection of FCoE fabric login frames
- Encapsulation of Fibre Channel frames in FCoE Ethernet packets (FC > FCoE)
- Extraction of Fibre Channel frames from FCoE Ethernet packets (FCoE > FC)
- Mapping of Fibre Channel destination Virtual Fabrics and destination FC_ID to Ethernet Virtual LAN and destination MAC addresses

Fabric-Provided MAC Addresses (FPMAs) enable new Ethernet MAC addresses to be created using the FC_ID assigned by the fabric

CEE Features

Data Center Bridging eXchange (DCBX)

Priority-based Flow Control (PFC)—IEEE 802.1Qbb

Enhanced Transmission Selection (ETS)—IEEE 802.1Qaz

Performance

Fibre Channel: 2, 4, and 8 Gbit/s line speed full duplex

CEE: 10 Gbit/s line speed

ISL Trunking

Frame-based ISL Trunking (optional license) enables up to eight ports between a pair of switches to be combined into a logical ISL with speeds of up to 64 Gbit/s (128 Gbit/s full duplex) for optimal bandwidth utilization and load balancing; exchange-based load balancing across ISLs with DPS (included in fabric OS)

Link Aggregation (10 Gigabit Ethernet)

Link Aggregation Control Protocol (LACP), Brocade-enhanced and 802.3ad standards-based

Maximum Frame Size

2112-byte Fibre Channel payload; 9048 byte Ethernet frame

Classes of Service

Class 2, Class 3, Class F (inter-switch frames)

Port Types

FL_Port, F_Port, M_Port (Mirror Port), E_Port; self-discovery based on switch type (U_Port); optional port type control

Data Traffic Types

Fabric switches supporting unicast, multicast (255 groups), and broadcast

Media Types

- Fibre Channel media type: Hot-pluggable, industry-standard Small Form Factor Pluggable (SFP) and SFP+, LC connector
- Short-Wave Laser (SWL) and Long-Wave Laser (LWL)
- Distance depends on fiber optic cable and port speed
- Supports SFP+ (2, 4, and 8 Gbit/s) and SFP (2 and 4 Gbit/s) optical transceivers
- CEE media type: Hot-pluggable, Brocade 10 Gigabit Ethernet SFP+, supports any combination of Short-Reach (SR) and Long-Reach (LR) optical transceivers
- Brocade copper twinax cables of one, three, or five meters

USB

One USB port for firmware download, support save, and configuration upload/download

Fibre Channel Fabric Services

Simple Name Server (SNS), Registered State Change Notification (RSCN), NTP, RADIUS, LDAP, Reliable Commit Service (RCS), Dynamic Path Selection (DPS), Enhanced Group Management (EGM), and Web Tools; optional fabric services include Fabric Watch, ISL Trunking, and Advanced Performance Monitoring

CEE Services

- Spanning Tree Protocol (STP, MSTP, RSTP), VLAN Tagging (802.1q), MAC address learning and aging
- Native FCoE switching
- IEEE 802.3ad Link Aggregation (LACP)
- Access control lists based on VLAN, source, destination address, and port
- Eight priority levels for QoS and approximately 4000 VLANs
- Priority-based Flow Control (PFC)
- Data Center Bridging eXchange (DCBX)-Capabilities Exchange
- Enhanced Transmission Selection (ETS)

Licensing Options

Fabric OS 6.1.2_cee includes the following optional features that can be enabled via license keys and are applicable only to the Fibre Channel ports of the MP-8000B:

- Fibre Channel ISL Trunking
- Advanced Performance Monitoring
- Fabric Watch

Management

Management Software

SSH v2, HTTP/HTTPS, SNMP v1/v3, Telnet; SNMP (FE MIB, FC Management MIB, RMON, and IF-MIB for CEE); Web Tools; Connectrix Manager Data Center Edition (CMDCE) Professional and Enterprise; SMI-S; RADIUS

Management Access

One 10/100/1000 Megabit Ethernet, in-band over Fibre Channel, one serial port, and one USB port

Diagnostics

POST and embedded online/offline diagnostics, including FCping and Pathinfo (FCtracroute)

Physical Specifications

Enclosure

Non-port to port-side airflow; 1U, 19-inch EIA-compliant, power from non-port side

Size

Width: 42.9 cm (16.9 in)

Height: 4.3 cm (1.7 in)

Depth: 63.4 cm (25.0 in)

System Weight

13.0 kg (28.6 lbs) with two power supply FRUs, without transceivers

Environmental Specifications

Temperature

Operating: 0°C to 40°C (32°F to 104°F)

Non-operating: -25°C to 70°C (-13°F to 158°F)

Humidity

Operating: 10% to 85% non-condensing

Non-operating: 10% to 90% non-condensing

Altitude

Operating: Up to 3000 meters (9,842 feet)

Storage: Up to 12 kilometers (39,370 feet)

Shock

Operating: 20 g, 6 ms half-sine

Non-operating: Half-sine, 33 g 11 ms, 3/eg Axis

Vibration

Operating: 0.5 g sine, 0.4 grms random, 5 to 500 Hz

Non-operating: 2.0 g sine, 1.1 grms random, 5 to 500 Hz

CO² Emissions

335 kg per year (with 40 ports at 0.42 kg/kWh)

1.05 kg per Gbit/s per year

Airflow

Maximum: 42 CFM

Nominal (65% Speed): 35 CFM

Heat Dissipation

32 ports: 1,044 BTU/hr

Power Requirements

Power

Maximum: 350 watts

Consumption: 306 watts

Input Voltage

85 to 264 VAC nominal

Input Line Frequency

47 to 63 Hz

Inrush Current

60 amps maximum

Maximum Current

29 amps at 12V DC

Regulatory Requirements

	Safety	EMI
United States	UL 60950	FCC Part 15 Class A
Canada	CSA No. 60950	ICES-003 Class A
Australia/New Zealand	-	EN550022 Level A
Japan	IEC 60950	VCCI Class A
International	IEC 60950	CSPR22 Class A
European Community	EN60950	EN55022 Level A
	TUV, NEMKO	EN55024
Taiwan	CNS	13438 Class A



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