DELL Technologies

Specification Sheet

CONNECTRIX MP-7810B AND MP-7840B SWITCHES

Multi-protocol SAN Extension Switches

Connectrix B-Series SAN Extension Switch Family

There are two B-Series multi-protocol SAN extension switches. The models include the MP-7810B and the MP-7840B.

MP-7810B – The 1RU MP-7810B is the latest addition to the Connectrix B-Series SAN Extension family. The MP-7810B combines Fibre Channel switching and routing capabilities with powerful hardware-assisted IP Extension and Fibre Channel over Internet Protocol (FCiP) traffic and forwarding over IP wide area networks (WAN). The MP-7810B complements the existing MP-7840B and SX6 extension blade as a lower cost, lower end offering in the Connectrix extension portfolio. The MP-7810B has twelve 32Gb capable Fibre Channel ports and six 1/10GbE SFP+ ports. Maximum WAN bandwidth for the MP-7810B is 2.5Gbps.

MP-7840B – This SAN Extension Switch combines Fibre Channel (FC) switching and routing capabilities with powerful hardware-assisted IP Extension and Fibre Channel over Internet Protocol (FCIP) traffic forwarding over IP Wide Area Networks (WAN). The MP-7840B is a much higher bandwidth version of the MP-7800B and MP-7810B. The 2U MP-7840B has 24 16 Gigabits per second (Gb/s) Fibre Channel ports, 16 1/10 Gigabit Ethernet (GbE), and two 40GbE ports for FCIP. The base chassis arrives fully populated with twenty-four 16Gb Short Wave Fibre Channel SFP's. The 1/10 GbE and the 40GbE ports will not be populated with SFP's by default. Depending upon the optic types selected and the WAN connectivity the MP-7840B can have up to 10 logical FCIP tunnels with a maximum tunnel bandwidth of 20Gbps per tunnel and the switch as a whole can scale up to 40Gbps of WAN/FCIP bandwidth.

Specifications

System Architecture			
Features	MP-7800B	MP-7810B	MP-7840B
Fibre Channel Ports	16 ports, universal (E, F, M, Ex, and FL)	12 Fibre Channel Ports	24 Fibre Channel Ports
FCIP Ports	Six ports, 1 GbE (VE)	Six 1/10GbE SFP+ ports	18 ports; Sixteen 1/10 GbE, Two 40 GbE
Scalability	Full fabric architecture with 239 switches maximum	Refer to the Dell EMC Support Matrix (ESM)	Refer to the Dell EMC Support Matrix (ESM)
Fibre Channel Performance	2.125 Gbps line speed, full duplex 4.25 Gbps line speed, full duplex 8.5 Gbps line speed, full duplex Auto-sensing of 2 Gbps, 4 Gbps, and 8 Gbps port speeds Optionally programmable to fixed port speed Speed matching between 2 Gbps, 4 Gbps, and 8 Gbps ports	Auto-sensing of 4, 8, 16 and 32 Gbps port speeds	Auto-sensing of 4, 8, and 16 Gbps port speeds
FCIP Performance	1 Gbps line speed	2.5Gbps maximum WAN bandwidth	Up to 10 logical FCIP tunnels with a maximum tunnel bandwidth of 20Gbps per tunnel and the switch as a whole can scale up to 40Gbps of WAN/FCIP bandwidth.
ISL Trunking	Up to eight 8 Gbps ports per ISL trunk Up to 64 Gbps per ISL trunk There is no limit to how many trunk groups can be configured in the switch	Included with the -EP model and upgrade license	Up to eight 16 Gbps ports per ISL Trunk; up to 128 Gbps per trunk.
Fabric Latency	700 ns with no contention, cut-through routing at 8 Gbps Maximum MTU Size 1500-byte Ethernet packets with FCIP	Non-blocking shared memory, 900 ns with no contention, cut-through switching at 32 Gb/s	700 ns with no contention, cut-through routing at 16 Gbps
Maximum MTU Size		Jumbo Frames 1280 bytes to 9216 byte	Ethernet Jumbo Frames at 9,000-bytes
Classes of Service	Class 2, Class 3, Class F (inter-switch frames)	Class 2, Class 3, Class F (inter-switch frames)	Class 2, Class 3, Class F (inter-switch frames)
Port Types	FL_Port, F_Port, E_Port, Ex_Port, M_Port (Mirror Port), and self-discovery based on switch type (U_Port) For FCIP, VE_Port (Virtual E_Port)	F_Port, E_Port, EX_Port, (FCR E_Port), D_Port (Diagnostic), M_Port (Mirror), and self-discovery based on switch type (U_Port); VE_Port (FCIP and IP extension)	F_Port, E_Port, EX_Port, (FCR E_Port), D_Port (Diagnostic), M_Port (Mirror), and self-discovery based on switch type (U_Port). VE_Port (FCIP and virtual E_Port)
Data Traffic Types	Fabric switches supporting unicast, multicast (255 groups), and broadcast	Fibre Channel, FCIP, and IP extension	Fabric switches supporting unicast, multicast (255 groups), and broadcast
USB	One USB port for system log file downloads or firmware upgrades	One USB port for system log file downloads or firmware upgrades	One USB port for system log file downloads or firmware upgrades
Media Types	Fibre Channel: Hot-pluggable 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 Gbps) and SFP (1, 2, and 4 Gbps) optical transceivers 1 GbE: Hot-pluggable optical SFP, Short-Wave Laser (SWL) and Long-Wave Laser (LWL); GbE Copper SFP; built-in RJ-45 copper (two GbE ports); distance depends on fiber-optic or copper cable and port speed	Fibre Channel hot-pluggable Small Form-Factor Pluggable (SFP) and SFP+, short wavelength (SWL), and long wavelength (LWL) transceivers (available wavelength options vary for 8, 16, and 32 Gb/s SFPs) Ethernet: Brocade hot-pluggable SFP and SFP+, short-reach wavelength (SRWL), long-reach wavelength (LRWL), and copper SFP/SFP+ transceivers	Fibre Channel: hot-pluggable Small Form Factor STCT and SFP+, short wavelength (SWL), long wavelength (LWL), and extended long wavelength (ELWL) transceivers (available wavelength options vary for 8 Gbps and 16 Gbps SFPs) Ethernet: hot-pluggable Small Form Factor (SFP) and SFP+, short reach wavelength (SRWL), long reach wavelength (LRWL), extended long wavelength (ELWL), and copper at 1 GbE and optical at 1 GbE, 10 GbE, and 40 GbE

System Architecture - continued			
Features	MP-7800B	MP-7810B	MP-7840B
Fabric Services	Advanced Zoning, Dynamic Path Selection (DPS), FDMI, Enhanced Group Management (EGM), Frame Redirection, Registered State Change Notification (RSCN), Reliable Commit Service (RCS), and Simple Name Server (SNS); optional fabric services include Advanced Performance Monitoring, Fabric Watch, Integrated Routing, and ISL Trunking	Simple Name Server (SNS); Registered State Change Notification (RSCN), NTP, RADIUS, RCS (Reliable Commit Service), Dynamic Path Selection (DPS), Exchange-based routing, device-based routing, port-based routing, lossless, Advanced Zoning, Web Tools, Trunking, Extended Fabrics, Fabric Vision, SDDQ	Simple Name Server (SNS); Registered State Change Notification (RSCN), NTP, RADIUS, RCS (Reliable Commit Service), Dynamic Path Selection (DPS), Exchange-based routing, device-based routing, port-based routing, lossless), Brocade Advanced Zoning, Web Tools, Adaptive Networking with QoS, Extended Fabric, ISL Trunking, Fabric Vision technology, and Advanced Extension. Optional Fabric Services include: Integrated Routing, (FCR)
Licensing Options	The following optional extension features can be enabled via license keys: • Advanced Extension: Enables FCIP Trunking and Adaptive Rate Limiting • Adaptive Networking: Activates Fibre Channel and FCIP QoS functionality • MP-7800B Upgrade License: Enables all ports, additional FCIP tunnels, and tape read/write pipelining • The following options are available for the MP-7800B 16/6 Extension Switch or MP-7800B 4/2 Extension Switch with the Upgrade License: • FICON Management Server: Control Unit Port (CUP) enables host control of switches in mainframe environments	The following optional extension features can be enabled on the MP-7810B base configuration via the upgrade license: • Enable WAN-side throughput from 1 Gb/s to 2.5 Gb/s • Enable 10 GbE port speed on the Ethernet ports • Turn on additional 8 Fibre Channel ports, includes 16 Gb/s SFPs • Enable advanced software features, including Fabric Vision technology, Extension Trunking, Fibre Channel Trunking, and Integrated Routing	The following optional extension features can be enabled via license keys: • MP-7840B Integrated Routing License - activates the Fibre Channel Routing (FCR) feature. • MP-7840B WAN Upgrade License 1 - upgrades the MP-7840B base FCiP bandwidth from 5Gb/s to 10Gb/s. • MP-7840B WAN Upgrade License 2 - upgrades the MP-7840B to the maximum FCiP WAN bandwidth of 40Gb/s. The MP-7840B-WU1 model must be installed prior to installing the MP-7840B-WU2 model.
Fibre Channel Aggregate Bandwidth	128 Gbps: 16 ports at 8 Gbps (data rate)	8.5 Gb/s line speed, full duplex; 14.025 Gb/s line speed, full duplex; 28.05 Gb/s line speed, full duplex; auto-sensing of 8, 16, and 32 Gb/s port speeds	384 Gb/s
FCIP Aggregate Bandwidth	6 Gbps: 6 ports at 1 Gbps (data rate)	2.5 Gbps maximum WAN bandwidth	40 Gb/s

Connectivity Management			
Features	MP-7800B	MP-7810B	MP-7840B
Supported Management Software	SSH v2, HTTP/HTTPS, SNMP v1/v3, Telnet; SNMP (FE MIB, FC Management MIB); Web Tools; Connectrix Manager Converged Network edition (CMCNE), SMI-S, RADIUS, LDAP	Serial port (9600, 8, 1, no parity, no flow), Command Line Interface (CLI): SSHv2 or Telnet, Web Tools: HTTP/HTTPS, SNMPv1/v3 (FE MIB, FC Management MIB), SMI-S, RADIUS, LDAP	SSH v2, HTTP/HTTPS, SNMP v1/v3, Telnet; SNMP (FE MIB, FC Management MIB); Web Tools; Connectrix Manager Converged Network Edition (CMCNE) Professional/Professional Plus (optional); Command Line Interface (CLI); SMI-S RADIUS, LDAP
Security	DH-CHAP (between switches and end devices), HTTPS, IPsec, IP Filtering, LDAP, Port Binding, RADIUS, Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SSH v2, SSL, Switch Binding, Trusted Switch	AES-GCM-256 encryption on FC ISLs (E_Port), DH-CHAP (between switch and end-device), FCAP switch authentication; FIPS 140-2 L2-compliant, HTTPS, IP filtering, LDAP with IPv6, OpenLDAP, Port Binding, RADIUS, TACACS+, Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SFTP, SSHv2, SSL, Switch Binding, Trusted Switch	AES-GCM-256 encryption on ISLs, AES-GCM-256 IPsec encryption on virtual ISLs (VE_Port), DH-CHAP (between switches and end devices), FCAP switch authentication; FIPS 140-2 L2-compliant, HTTPS, IP filtering, LDAP with IPv6, OpenLDAP, Port Binding, RADIUS, TACACS+, User-defined Role-Based
Management Access	10/100/1000 Ethernet (RJ-45), in-band over Fibre Channel ports; serial port (RJ-45) and one USB port	10/100/1000 Ethernet (RJ-45); serial port (RJ-45) and one USB port	10/100/1000 Ethernet (RJ-45); serial port (RJ-45) and one USB port
Diagnostics	POST and embedded online/offline diagnostics, including FCping, Pathinfo (FCtraceroute), etc.	POST and embedded online/offline diagnostics, including D_Port, WAN Test Tool, FCIP ping, FCIP traceroute, FCping, Pathinfo (FCtraceroute), SupportSave, RAS Log, Syslog, MAPS, SDDQ, Flow Vision, and Ftrace	POST and embedded online/offline diagnostics, including D_Port, FCIP ping, FCIP traceroute, FCping, Pathinfo (FCtraceroute), Wtool, and Ftrace

Physical Specifications			
Features	MP-7800B	MP-7810B	MP-7840B
Enclosure	Enclosure back-to-front airflow; 1U, 19-inch EIA-compliant, power from back	Back-to-front airflow/non-port-side air intake and power, 1 RU, 19-in., EIA-compliant.	Back-to-front airflow; 2U, 19-in. EIA-compliant, power from back
Size	Width: 17.0 in (43.2 cm) Height: 1.8 in (4.5 cm) Depth: 25.2 in (64.1 cm)	Width: 44.0 cm (17.32 in.) Height: 4.4 cm (1.73 in.) Depth: 45.7 cm (17.74 in.)	Width: 44 cm (17.3 in.) Height: 8.6 cm (3.2 in.) Depth: 60.9 cm (24.01 in.)
System Weight	24.0 lbs (10.9 kg) with two power supplies, without SFPs	7.98 kg (17.6 lb.) empty 8.35 kg (18.4 lb.) fully loaded	42.0 lbs (19 kg) with two power supplies, without SFPs

Environmental Specifications			
Features	MP-7800B	MP-7810B	MP-7840B
Temperature	Operating: 0° C to 40° C (32° F to 104° F) Non-operating: -25° C to 70° C (-13° F to 158° F)	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: −25°C to 70°C (−13°F to 158°F)	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	Operating: 10% to 85% at 40°C (104°F) Non-operating: 10% to 90%	Operating: 10% to 85% (non-condensing) Non-operating: 10% to 90% (non-condensing)
Altitude	Operating: Up to 9,842 ft (3000 m) Storage: Up to 39,370 ft (12 km)	Operating: 0 to 3000m (9842 ft) Storage: 0 to 12 km (39,370 ft)	Operating: Up to 3,000 m (9,842 ft) Storage: Up to 12 km (39,370 ft)
Shock	Operating: 20 g, 6 ms half-sine Non-operating: 33 g, 11 ms, half-sine, 3/eg Axis	Operating: 10G, 10 ms, half-sine wave Non-operating: 33G, 11 ms, half-sine wave, 3G Axis	Operating: 20 g, 11 ms, half-sine Non-operating: 33 g, 11 ms, half-sine, 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	Operating: 0.25g sine, 0.4 grms random, 5 Hz to 500 Hz Non-operating: 5 Hz at 0.5 grms, 10 Hz to 500 Hz at 1.0 grms (sine vibration), 3 Hz to 500 Hz at 1.12 grms (random vibration)	Operating: 1.0 g sine, 0.5 grms random, 5 to 500 Hz Non-operating: 2.4 g sine, 1.1 grms random 5 to 500 Hz
Heat Dissipation	Maximum 22 ports: 590 BTU/hr Airflow Maximum 60 CFM; nominal 44 CFM		Maximum: 478 BTU/hr
Airflow		Maximum: 45.0 CFM Nominal: 22.4 CFM	

Power Specifications			
Features	MP-7800B	MP-7810B	MP-7840B
Power Supply	Dual hot-swappable redundant power supplies	Dual, hot-swappable, redundant, AC input power supplies with integrated system cooling fans	Dual hot-swappable redundant power supplies
Input Voltage	85 to 264 VAC nominal Input Line Frequency 47 to 63 Hz	100 VAC to 240 VAC (nominal), 90 VAC to 264 VAC (range)	90 to 264 VAC nominal Input Line Frequency 47 to 63 Hz
Input Line Frequency		50/60 Hz (nominal), 47 Hz to 63 Hz (range)	47 to 63 Hz nominal
Inrush Current	Maximum of 60 amps for period of 10 to 150 ms	50A peak at 240 VAC for <10 ms to 150 ms, <15A peak 50A peak at 240 VAC at cold start for <10 ms 15A peak for cycles 10 ms to 150 ms, <3.5A peak for >150 ms	Maximum of 60 amps for period of 10 to 150 ms
Power	Nominal 145 watts; maximum 173 watts	100 VAC: 1.29A, 130W, 444 BTU/hr, 135 VA (max config) 200 VAC: 0.65A, 132W, 449 BTU/hr, 146 VA (max config)	Short-range optics: Nominal 388 watts/1,324 BTU/hr; maximum 454 watts/1,550 BTU/hr Long-range optics: Nominal 426 watts/1,454 BTU/hr; maximum 492 watts/1,679 BTU/hr
Power Inlet		C14; requires C13 plug	C14; requires C13 plug

Regulatory Requirements MP-7800B, MP-7840B and MP-7810B

Regulatory Requirements		
MP-7800B	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	IEC60950	VCCI Class A
International	IEC60950	CSPR22 Class A
European Community	EN60950 TUV NEMKO	EN55022 Level A EN55024
Taiwan	CNS	13438 Class A
MP-7840B	Safety	EMI
United States	Bi-Nat UL/CSA 60950-1	FCC Part 15 , Subpart B

Canada	Bi-Nat UL/CSA 60950-1	ICES-3 (A) / NMB-3(A)
Australia/New Zealand	EN 60950-1 or IEC 60950-1	EN 55022 or CISPR22 or AS/NZS CISPR22
Japan		CISPR22 and JEIDA (Harmonics)
International	IEC 60950-1	EN55022 Class A
European Community	EN 60950-1	EN 55022 and EN 55024
Argentina	IEC 60950-1	
Russian Federation	IEC 60950-1	51318.22-99 and 51318.24.99 or latest
Korea		KN22 and KN24
China	GB 4943.1-2011	GB 9254-2008, YD/T993-1998
Taiwan (PS Only)	CNS 14336-1:99 or latest	CNS 13438:95 or latest

MP-7810B Regulatory Compliance

EMC	2014/30/EU, AS/NZS CISPR 55032 (Australia) (Class A), CISPR 32, CNS 13438, EN 300 386,EN 55032/55024 (CE Mark) (Class A), EN 61000-3-2, EN 61000-3-3, FCC Part 15 (Subpart B) (Class A), GB 9254, ICES-003 (Canada), KN 32, KN 35, TCVN 7189, VCCI-32 (Japan)
Safety	2014/35/EU, CNS 14336-1, EN/UL 60825, EN/UL/CSA/IEC 60950-1, GB 4943.1
Environmental	
2011/65/EU	Restriction of the use of certain hazardous substances in electronic equipment (EU RoHS)
2012/19/EU	Waste electrical and electronic equipment (EU WEEE)
2006/66/EC	Batteries and accumulators and waste batteries and accumulators (EU battery directive)
30/2011/TT-BCT	Vietnam circular
1907/2006	Of the European Parliament and if the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (EU REACH)
Section 1502	Of the Dodd-Frank Wall Street Reform and Consumer Protection Act 2010 – U.S. Conflict Minerals.
94/62/EC	Packaging and packaging waste (EU)
SU/T 11364	2006 marking for Control Pollution Caused by EIPs (China)
SU/T 11363	2006 Requirements for Concentration Limits for Certain Hazardous substances in EIPs (China)