Dell M8428-k Converged Networking Switch

Dell M8428-k converged networking switch module for the Dell™ PowerEdge™ M1000e blade chassis provides comprehensive functionality of three distinct products (10GbE Ethernet (10GbE KR CEE-DCB), Fibre Channel over Ethernet and Fibre Channel) in a single flexible solution, addressing the diverse needs of next-generation virtualized data centers.

Extend server virtualization to network and storage

The Dell M8428-k switch module meets the high bandwidth demands of multi-core CPUs and server virtualization with 10GbE capability. With NPIV-capable CNAs such as BR1741M-k, the Dell M8428-k switch module enables VM awareness inside the SAN fabric to provide rapid workload mobility and QoS.

Efficient infrastructure optimization

The highly integrated M8428-k solution is designed to drive I/O consolidation in the M1000e blade chassis and reduce the need for external switches. External 10GbE ports can be used to connect to DCB-capable LANs, while the Fibre Channel ports allow connectivity to Fibre Channel storage and SANs. With the high level of consolidation provided by this module, IT organizations can meet their networking and storage I/O needs with a single module and reduce potential points of failure. This solution helps reduce infrastructure requirements including adapters, switches, cables and management ports by 50% and drive down overall capital/operation costs of data center networks.

Address today's infrastructure investment challenges

The Dell M8428-k Converged Networking Switch offers direct server connectivity combined with low latency 10Gb cut-through switching capability and direct access to storage networks. The high-performance architecture offers up to 272Gbps of combined switching and storage connectivity.

Organizations can protect existing data center investment through seamless integration with any Fibre Channel storage, switches and management utilities. Unlike other convergent technologies, M8428-k deployment does not require a "forklift upgrade" of existing data center infrastructure to implement converged networks.

Feature	Dell M8428-k Converged Networking Switch
Performance	272Gbps full duplex bandwidth across 28 ports Low latency: 600 nano second
Scalability	Highly scalable with features including • VLANs: 3583 • MAC addresses: 32,000 MAC address table entries • ACLs: 5000
Maximum frame size	2112-byte Fibre Channel payload 9048-byte Ethernet frame
Data traffic types	Fabric switches supporting unicast, multicast and broadcast
Operating modes	NPIV Mode for SAN-agnostic Fibre Channel connectivity Full fabric Fibre Channel Switch Mode 10Gb Ethernet and FCoE

Interconnects	
Adapter interoperability	Brocade BR1741M-k 10 Gbps Converged Network Adapter* Broadcom NetXtreme II 57712-k Dual Port 10Gb Ethernet Network Daughter Card Intel Ethernet X520-x/k 10Gb Dual Port Converged Network Adapter All 1Gb Network Interface Cards available on M-Series blades *Additional functionality provided from the optional Brocade ISL Trunking, Fabric Watch and Advanced Performance Monitoring software licenses when the M8428-k and BR-1741M-k are used together.
Interfaces	
External ports	Ethernet: 8x 10Gb Ethernet ports, support DCB Supported optical transceivers: • 10Gb Short Wavelength SFP+ • 10Gb 10km Long Wavelength SFP+ • 10Gb TwinAx Direct-Attach Cables (1m, 3m, 5m) Fibre Channel: 4x Fibre Channel ports: Channel universal (E, F, M, N and FL) ports support 2, 4 and 8 Gbps full duplex Supported optical transceivers: • 8Gbps Short Wavelength SFP+ (4 factory-installed, standard) • 8Gbps 10km Long Wavelength SFP+
Internal (server) ports	16x 10Gb Ethernet ports support DCB, FCoE Wake on LAN support
Fibre Channel features	
Fibre Channel classes	Class 2, Class 3, Class F (inter-switch frames)
Fibre Channel port types	F_Port (Fabric Ports), FL_Port (Fabric Loop Ports), M_Port (Mirror Port), N_Port (For NPIV uplinks) or E_Port (Expansion Ports)
Fibre Channel fabric services	Optional services available on Fibre Channel ports including, ISL Trunking, Advanced Performance Monitoring and Fabric Watch
Management	
Management software	Web interface through Web Tools Command-line interface through the Telnet program Switch's SNMP agent EZ Switch Wizard Brocade Network Advisor, Data Center Fabric Manager Professional, DCFM Professional Plus and DCFM Enterprise
Management protocols	Industry-common command line interface Security Shell (SSH) v2 Authentication, Authorization and Accounting Simple Network Management Protocol v1, v2, and v3 Unified username and passwords across CLI and SNMP Syslog Microsoft Challenge Handshake Authentication Protocol (MS-CHAP) Remote monitoring Per-port ingress and egress counters Role-based access control Power-On Self-Test Comprehensive bootup diagnostics Ethernet-like Interface MIB, RFC 1643 RFC 1213 MIB-II RADIUS, RFC 2865
Management	One external RJ45 serial console port for debugging and field support
Diagnostics	Power-on self-test diagnostics and status reporting Power-on self-test and embedded online/offline diagnostics, including FCping and Pathinfo (FCtraceroute)
Mechanical	
Size	Single-wide I/O module for M1000e (supported in any 10Gb-capable fabric slot) Approximate width: 27.27 cm (10.74 inches) Approximate height: 3.25 cm (1.27 inches) Approximate depth: 30.72 cm (12.09 inches)
System weight	Approximate weight: 2.1 kg (4.65 lb) without media
Environmental	
Temperature	Operating: 0° to 40°C (32° to 104°F), Non-operating: -20° to 70°C (-4°F to 158°F)
Humidity	Operating: 10% to 90% (non-condensing) at 29°C, Non-operating: 5% to 95% (non-condensing) at 38°C
Altitude	Operating: Up to 3,048 meters (10,000 feet), Non-operating: Up to 10,688 kilometers (35,000 feet)
Shock	Operating: 20G, 6ms half-sine, Non-operating: 50G with a velocity change of 4216 mm/sec squared
Vibration	Operating: 0.4G, 5 to 500Hz, 60 minutes, Non-operating: 0.5G, 2 to 200 Hz, 15 minutes; 1.04 GRMS Random for 15 minutes
Power	Maximum: 75 Watts

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September 2013 | Version 2
Dell_Networking_M8428_K_Switch_Spec_Sheet