Dell PowerConnect B-MLXe advanced routers

Mission critical, wire-speed, Unified Fabric switch for virtualized data centers

The Dell™ PowerConnect™ B-MLXe delivers a comprehensive solution that integrates high-performance wire-speed switching/ routing and non-blocking performance enables converged data and storage networks including iSCSI and FCoE SANs. These switching routers address the diverse needs of multiple environments ranging from data centers, large and distributed enterprise campuses including government networks, education, high density healthcare/life sciences as well as research and collaboration networks for High-Performance Computing (HPC). Built with a state-of-the-art fabric architecture and terabit-scale switch fabrics, the Dell PowerConnect B-MLXe provides wire-speed performance, port capacity, and density, enabling up to 16 100GbE, 128 10 GbE, or 768 1 GbE ports in a single system.

High performance routing

The PowerConnect B-MLXe enables superior performance with up to 2.4Bpps for routing packets and up to 7.68Tbps fabric capacity. This exceptional performance helps data centers support more network traffic using far less infrastructure – with the added benefit of long-term investment protection. This level of capacity also enables advanced feature support like IPv6, Multiprotocol Label Switching (MPLS), and Multi-VRF capabilities as well as VPLS based connectivity between data centers without performance impact/ degradation. In addition to 16 100GbE support in a single chassis, the PowerConnect B-MLXe is 40GbE ready to further scale networks.

Unify storage and network traffic

As data centers continue to scale in size and flexibility to accommodate future network demands, the need to leverage a unified network infrastructure becomes more critical. Ethernet can now support storage traffic iSCSI and FCoE (Fibre Channel over Ethernet) as well as traditional network communications with industry efforts on convergence standards like Data Center Bridging (DCB). The PowerConnect B-MLXe delivers massive scalability for demanding networks and enables convergence of data and network traffic at the data center. In addition, the advanced QoS capabilities on PowerConnect B-MLXe routers enable unified traffic without impact to application performance over 10 GbE scaling to 100 GbE.

High availability

Designed to support mission-critical applications, the Dell PowerConnect B-MLXe features advanced redundant switch fabric architecture for very high availability. The architecture ensures that the system continues to operate at peak performance even in the case of a switch fabric card failure. In the highly unlikely case of additional fabric failures, the advanced architecture allows the system to continue operating in a graceful degradation mode where the system tunes its performance to the remaining fabric capacity.

The advanced fabric architecture is complemented by comprehensive hardware redundancy for the management modules, power supplies, and cooling system. In addition, the Multi-Service IronWare® operating system powered by Brocade, enables the PowerConnect B-MLXe, with hitless management failover for OSPF and IP multicast non-stop routing, BGP graceful restart capabilities, as well as hitless (in-service) software upgrades to further enhance both system availability and overall network availability. The Multi-Chassis Trunking (MCT) feature allows all links to be active and forward traffic, and provides instantaneous link or node failover.

With the Dell PowerConnect B-MLXe, Dell delivers building blocks for unified networks with massive infrastructure scalability and continuous operation support while maintaining the same level of lossless performance delivered in separate networks.

Feature	Dell™ PowerConnect™ B-MLXe4	Dell™ PowerConnect™ B-MLXe8	Dell™ PowerConnect™ B-MLXe16
Interface slots	4	8	16
Switch fabric capacity	1.92 Tbps	3.84 Tbps	7.68 Tbps
Data forwarding capacity	800 Gbps	1.6 Tbps	3.2 Tbps
Packet routing performance	600 million pps	1.2 billion pps	2.4 billion pps
Maximum 10 GbE wire-speed ports	32	64	128
Maximum 1 GbE wire-speed ports	192	384	768
Height (inches/rack units)	8.71"/5RU	12.21"/7RU	24.50"/14RU
Power supply redundancy	M+N	M+N	M+N
Airflow	Side to back	Side to back	Front to back

Product	Dell™ PowerConnect™ B-MLXe4	Dell™ PowerConnect™ B-MLXe8	Dell™ PowerConnect™ B-MLXe16
Airflow	Side to back	Side to back	Front to back
Dimensions	7.20" w x 8.71" h x 23.0" d 43.69 w x 22.12 h x 58.42 d (cm)	17.20" w x 12.21" h x 24.0" d 43.69 w x 31.01 h x 60.96 d (cm)	17.20" w x 24.47" h x 24.18" d 43.69 w x 62.15 h x 61.42 d (cm)
Weight	117 lb (53 kg)	171 lb (78 kg)	351 lb (159 kg)
RFC compliance	BGPv4: RFC 4271 BGPv4, RFC 1745 OSPF Interactions, RFC 1997 Communities, and Attributes, RFC 2439 Route Flap Dampening, RFC 2796 Route Reflection, RFC 1965 BGP4 Confederations, RFC 2842 Capability Advertisement, RFC 2918 Route Refresh Capability, RFC 1269 Managed Objects for BGP, RFC 2385 BGP Session Protection via TCP MD5, RFC 3682 Generalized TTL Security Mechanism, for eBGP Session Protection, RFC 4273 BGP-4 MIB, RFC 4893 BGP Support for Four-octet AS Number Space, draft-ietf-idr-restart Graceful Restart Mechanism for BGP OSPF: RFC 2328 OSPF v2, RFC 3101 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1850 OSPF v2 MIB, RFC 2370 OSPF Opaque LSA Option, RFC 3630 TE Extensions to OSPF v2, RFC 3623 Graceful OSPF Restart IS-IS: RFC 1195 Routing in TCP/IP and Dual Environments, RFC 1142 OSI IS-IS Intra-domain Routing Protocol, RFC 2763 Dynamic Host Name Exchange, RFC 2966 Domain-wide Prefix Distribution RIP: RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements, IPv4 Multicast, RFC 1122 Host Extensions, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 3376 IGMP v3, RFC 3973 PIM-DM, RFC 2362 PIM-SM, RFC 2858 BGP-MP, RFC 3618 MSDP, RFC 3446 Anycast RP General Protocols: RFC 791 IP,RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 906 TFTP Bootstrap, RFC 1027 Proxy ARP, RFC 951 BootP, RFC 1122 Host Extensions for IP Multicasting, RFC 1256 IRDP, RFC 1519 CIDR , RFC 1542 BootP Extensions, RFC 1812 Requirements for IPv4 Routers, RFC 1541 and 1542 DHCP, RFC 2131 BootP/DHCP Helper, RFC 3768 VRRP, RFC 854 TELNET, RFC 1591 DNS (client) QoS: RFC 2475 An Architecture for Differentiated Services, RFC 3246 An Expedited Forwarding PHB, RFC 2597 Assured Forwarding PHB Group, RFC 2698 A Two-Rate Three-Color Marker Other: RFC 1354 IP Forwarding MIB, RFC 2665 Ethernet Interface MIB, RFC 1757 RMON Groups 1, 2, 3, 9, RFC 2068 HTTP, RFC 4330 SNTP, RFC 2865 RADIUS, RFC 3176 sFlow, RFC 2863 Interfaces Group MIB, Draft-ietf-tcpm-tcpsecure TCP Security, RFC 3704 Ingress Filtering for Multihomed Networks (uRPF), RFC 2784 Generic Routing Encapsulation (GRE), draft-ietf-bfd-base Bidirectional Forwarding Detection (BFD), draft-ietf-bfd-v4v6-1hop BFD for IPv4 and IPv6 (Single Hop); for OSPFv2, OSPFv3, IS-IS IPv6 Core: RFC 2460 IPv6 Specification, RFC 2461 IPv6 Neighbor Discovery, RFC 2462 IPv6 Stateless Address Auto-configuration, RFC 4443 ICMPv6, RFC 4291 IPv6 Addressing Architecture, RFC 3587 IPv6 Global Unicast Address Format, RFC 2375 IPv6 Multicast Address Assignments, RFC 2464 Transmission of IPv6 over Ethernet Networks, RFC 2711 IPv6 Router Alert Option, RFC 3596 DNS support IPv6 Routing : RFC 2080 RIPng for IPv6, RFC 2740 OSPFv3 for IPv6, draft-ietf-isis-ipv6 Routing IPv6 with IS-IS, RFC 2545 Use of BGP-MP for IPv6 IPv6 Multicast: RFC 2710 Multicast Listener Discovery (MLD) for IPv6, RFC 3810 Multicast Listener Discovery Version 2 for IPv6, RFC 4604 IGMPv3 and MLDv2 for SSM, draft-ietf-ssm-arch SSM for IP, RFC 2362 PIM-SM, draft-ietf-pim-sm-v2-new; partial support: SSM mode of operation IPv6 Transitioning: RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers, RFC 3056 Connection of IPv6 Domains via IPv4 Clouds MPLS: RFC 3031 MPLS Architecture, RFC 3032 MPLS Label Stack Encoding, RFC 3036 LDP Specification, RFC 2205 RSVP v1 Functional Specification, RFC 2209 RSVP v1 Message Processing Rules, RFC 3209 RSVP-TE, RFC 3270 MPLS Support of Differentiated Services, RFC 4090 Fast Reroute Extensions to RSVP-TE for LSP Tunnels; partial support: detour style, RFC 3812 MPLS TE MIB, draft-ietf-bfd-mpls BFD for MPLS LSPs (RSVP-TE) Layer 3 VPN: RFC 2858 Multiprotocol Extensions for BGP-4, RFC 3107 Carrying Label Information in BGP-4, RFC 4364 BGP/MPLS IP VPNs, draft-ietf-idr-bgp-ext-communities BGP Extended Communities Attribute, RFC 4576 Using LSA Options Bit to Prevent Looping in BGP/MPLS IP VPNs (DN Bit), RFC 4577 OSPF as the PE/CE Protocol in BGP/MPLS IP VPNs, draft-ietf-idr-route-filter Cooperative Route Filtering Capability for BGP-4, RFC 4382 MPLS/BGP Layer 3 VPN MIB Layer 2 VPN and PWE3: draft-ietf-l2vpn-l2-framework Framework for Layer 2 Virtual Private Networks, draft-ietf-l2vpn-requirements Service Requirements for Layer 2 Provider, Provisioned Virtual Private Networks, RFC 4762 VPLS Using LDP Signaling, draft-ietf-pwe3-arch PWE3 Architecture, RFC 4447 Pseudowire Setup and Maintenance using LDP, RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks, draft-ietf-pwe3-pw-tc-mib Definitions for Textual Conventions and OBJECT-IDENTITIES for Pseudo-Wires Management, draft-ietf-pwe3-pw-mib Pseudo Wire (PW) Management Information Base		
Network management	Brocade Network Adviser Web-based Graphical User Interface (GUI), Integrated industry-standard Command Line Interface (CLI), sFlow (RFC 3176), Telnet, SNMP v1, v2c, v3, SNMP MIB II, RMON		
Element security options	AAA, RADIUS, Secure Shell (SSH v2), Secure Copy (SCP v2), HTTPs, TACACS/ TACACS+, Username/Password (Challenge and Response), Bi-level Access Mode (Standard and EXEC Level), Protection against Denial of Service (DoS) attacks such as TCP SYN or Smurf Attacks		
Environmental	Operating temperature: 0°C to 40°C (32°F to 104°F), Storage temperature: -25°C to 70°C (-13°F to 158°F), Relative humidity: 5% to 90%, at 40°C (104°F), non-condensing, Storage humidity: 95% maximum relative humidity, non-condensing, Operating altitude: 6600 ft (2012 m), Storage altitude: 15,000 ft (4500 m) maximum		

Learn more at www.Dell.com/PowerConnect-B-Series