The Dell EMC Networking MX5108n Ethernet Switch is a high-performance, low latency single chassis 25Gbps Ethernet switch purpose-built for the PowerEdge™ MX platform providing enhanced capabilities and cost-effectiveness for enterprise and mid-market environments with traditional compute traffic environments.

Delivering industry leading performance in a blade switch, the non-blocking switching architecture in the MX5108n provides line-rate 25GbE L2 and L3 forwarding capacity with no oversubscription and a sub 800ns latency. In addition to 8 internal 25GbE ports, the MX5108n provides four 10G-BaseT, two QSFP28 100GbE, and one QSFP+ 40GbE port for uplinks.

**Maximum performance and functionality**

The Dell EMC Networking MX5108n is a high-performance, multi-function, 25GbE Ethernet switch designed for applications in demanding data center, cloud and computing environments. The MX5108n also supports the open source Open Network Install Environment (ONIE) for zero touch installation of alternate operating systems in future releases.

**OS10 SmartFabric**

SmartFabric OS10 is a Network Operating System supporting multiple architectures and environments. The networking world is moving from a monolithic stack to a pick-your-own world. The OS10 solution is designed to allow multi-layered disaggregation of network functionality. While OS10 contributions to Open Source provide users freedom and flexibility to pick their own 3rd party networking, monitoring, management and orchestration applications, OS10 bundles an industry hardened networking stack featuring standard L2 and L3 protocols over a standard and well accepted CLI interface.

**SmartFabric Services**

Included in SmartFabric OS10, SmartFabric Services provides single pane of glass management and automation across every fabric in a PowerEdge MX deployment, up to the 20 chassis Multi-Chassis Management group limit. SmartFabric Services key features include:

- I/O Aggregation to simplify connectivity to existing networks
- Integration of VLAN and automated QoS settings with Server Deployment Templates
- Fabric-wide firmware upgrades and configuration consistency checks
- Automatic topology validation – detects physical topology misconfigurations and provides corrective guidance
- Automatically heals fabric upon failure condition removal

**Key applications**

- Up to 960Gbps of switching I/O bandwidth (full duplex) available and non-blocking switching fabric delivering line-rate performance under full load with sub usec latency
- Scalable L2 and L3 Ethernet switching with QoS and a full complement of standards-based IPv4 and IPv6 features, including OSPF and BGP routing support
- L2 multipath support via Virtual Link Trunking (VLT) and multiple VLT (mVLT) multi-chassis link aggregation technology
- NVMe-oF ready to support the next generation of high performance storage
• Jumbo frame support for large data transfers
• 128 link aggregation groups with up to sixteen members per group, using enhanced hashing
• Converged network support for DCB, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV support
• Supports Routable RoCE to enable convergence of compute and storage

Key features with OS10
• Consistent DevOps framework across compute, storage and networking elements
• Standard networking features, interfaces and scripting functions for legacy network operations integration
• Standards-based switching hardware abstraction via Switch Abstraction Interface (SAI)
• Pervasive, unrestricted developer environment via Control Plane Services (CPS)
• Open and programmatic management interface via Common Management Services (CMS)
• OS10 software enables Dell EMC layer 2 and 3 switching and routing protocols with integrated IP Services, Quality of Service, Manageability and Automation features
• Platform agnostic via standard hardware abstraction layer (OCP-SAI)
• Unmodified Linux kernel and unmodified Linux distribution
• Leverage common open source tools and best-practices (data models, commit rollbacks)
• Scalable L2 and L3 Ethernet Switching with QoS, ACL and a full complement of standards based IPv4 and IPv6 features including OSPF, BGP and PBR
• Enhanced mirroring capabilities including local mirroring, Remote Port Mirroring (RPM), and Encapsulated Remote Port Mirroring (ERPM)
• Converged network support for DCB, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV
• Rogue NIC control provides hardware-based protection from NICS sending out excessive pause frames

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX5108n Ethernet Switch</td>
<td></td>
</tr>
<tr>
<td><strong>Optics</strong></td>
<td>Transceiver, 100GbE, SR4 QSFP28</td>
</tr>
<tr>
<td></td>
<td>Transceiver, 100GbE, LR4 QSFP28</td>
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<tr>
<td></td>
<td>Transceiver, 100GbE, ESR4 QSFP28</td>
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<tr>
<td></td>
<td>Transceiver, 100GbE, PSM4 500m QSFP28</td>
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<tr>
<td></td>
<td>Transceiver, 100GbE, CWDM4 2Km QSFP28</td>
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<tr>
<td></td>
<td>Transceiver, 100GbE, SWDM4 100m QSFP28</td>
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<tr>
<td></td>
<td>Transceiver, 100GbE, BIDI optic QSFP28</td>
</tr>
<tr>
<td></td>
<td>Transceiver, 40GbE, SR4 optic QSFP+</td>
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<tr>
<td></td>
<td>Transceiver, 40GbE, eSR4 optic QSFP+</td>
</tr>
<tr>
<td></td>
<td>Transceiver, 40GbE, LR4 optic QSFP+</td>
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<tr>
<td></td>
<td>Transceiver, 40GbE, BIDI optic QSFP+</td>
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<tr>
<td></td>
<td>Transceiver, 40GbE, PSM4 10Km QSFP+</td>
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<tr>
<td></td>
<td>Transceiver, 40GbE, LM4 Duplex QSFP+</td>
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<tr>
<td></td>
<td>Transceiver, 40GbE, SM4 Duplex QSFP+</td>
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<tr>
<td><strong>Cables</strong></td>
<td>100GbE, QSFP28 to QSFP28, active optical, passive DAC</td>
</tr>
<tr>
<td></td>
<td>100GbE, QSFP28 to 4xSFP28 (4x10/25GbE), active optical, passive DAC</td>
</tr>
<tr>
<td></td>
<td>100GbE, MTP to MTP optical</td>
</tr>
<tr>
<td></td>
<td>100GbE, MTP to 4xLC optical breakout</td>
</tr>
<tr>
<td></td>
<td>40GbE, QSFP+ to QSFP+, active optical &amp; passive DAC</td>
</tr>
<tr>
<td></td>
<td>40GbE, QSFP+ to 4xSFP+ (4x10GbE), active optical &amp; passive DAC</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td>SmartFabric OS10</td>
</tr>
<tr>
<td></td>
<td>Select third-party operating system offerings (future)</td>
</tr>
</tbody>
</table>

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Technical specifications

**Physical**

- Full featured 25/100GE switch in PowerEdge MX Fabric A/B I/O sled form factor
- 1 USB 2.0 type A storage port
- 1 micro USB type B port for console/management port access

**Indicators**

- Power/Health LED
- ID LED
- Link/activity LEDs

**Size**

- 1.18"h x 17.11"w x 10.94"d
- Weight: 7.72lbs (3.5kg)

**Max. power consumption**

- 65 Watts
- Typ. power consumption: 63.3 Watts

**Operating specifications**

- Standard Operating Temperature: 10°C to 35°C (50°F to 95°F)
- Operating Relative Humidity: 5% to 85%, noncondensing

**Max. non-operating specifications**

- Storage temperature: -40°C to 65°C (-40°F to 149°F)
- Storage humidity: 5% to 95% (RH), noncondensing

**Expanded Operating Temperature**

- Operation: 5°C to 40°C at 5% to 85% RH with 29°C dew point

**Note:** Outside the standard operating temperature, the system can operate continuously in temperatures as low as 5°C and as high as 40°C. For temperature between 35°C to 40°C, de-rate maximum allowable temperature by 1°C per 175m above 950m (1°F per 319 ft).

**Redundancy**

- Redundant Power and Cooling provided by Dell EMC PowerEdge MX7000 Chassis

**Performance**

- Switching I/O bandwidth: 960 Gbps
- Forwarding capacity: 363 Mpps
- Latency: Sub 800ns
- MAC addresses: 273K
- IPv4 Unicast routes: 200K
- IPv6 Unicast routes: 160K
- ARP entries: 48K
- Layer 2 VLANs: 30K P*V in Full Switch mode
- Layer 3 VLANs: 10K P*V in Full Switch mode
- MST: 32instances
- PVST+: 128 instances
- LAG: 128 groups, 16 members per LAG group
- ACL Entries-Layer 2 Egress: 1020
- ACL Entries-Layer 2 Ingress: 6144
- ACL Entries-IpV4 Egress: 1020
- ACL Entries-IpV4 Ingress: 6144
- ACL Entries-VLAN Egress: 512
- ACL Entries-VLAN Ingress: 3072
- Jumbo Frames: 9K

**IEEE Compliance**

- 802.1AB LLDP
- TIA-1057 LLDP-MED
- 802.3ad Link Aggregation
- 802.1D Bridging, STP
- 802.1p L2 Prioritization
- 802.1Q VLAN Tagging
- 802.1QbF PFC
- 802.1Qaz ETS
- 802.1X Network Access Control
- 802.3ac Frame Extensions for VLAN Tagging
- 802.3x Flow Control

**Layer2 Protocols**

- 802.1D Compatible
- 802.1p L2 Prioritization
- 802.1Q VLAN Tagging

**802.1Q  VLAN Tagging**

- 802.1Q VLAN Tagging
- 802.1p L2 Prioritization
- 802.1D Bridging, STP
- 802.3ac Frame Extensions for VLAN Tagging

**VLT (Virtual Link Trunking)**

- VRRP Active/Active
- RSTP, MSTP & RPVST+
- Port Mirroring on VLT ports
- DGB, ISCSI, FSB on VLT
- RPM/ERP over VLT
- VLT Minloss upgrade
- VXLAN with VLT
- IGMPLS snooping over VLT
- PIM SM/SSM over VLT

**RFC Compliance**

- 768 UDP
- 793 TCP
- 854 Telnet
- 959 FTP
- 1321 MD5
- 1350 TFTP
- 2474 Differentiated Services
- 2698 Two Rate Three Color Marker
- 3164 Syslog
- 4254 SSHv2

**General IPv4 Protocols**

- 791 IPv4
- 792 ICMP
- 826 ARP
- 1027 Proxy ARP
- 1035 DNS (client)
- 1042 Ethernet Transmission
- 1191 Path MTU Discovery
- 1305 NTPv4
- 1519 CIDR
- 1812 Routers, Static Routes
- 1858 IP Fragment Filtering
- 1918 Address Allocation for Private Internets
- 2131 DHCPv4 (server and relay)
- 2474 Diffserv Field in IPv4 and IPv6 Headers
- 3021 31-bit Prefixes
- 3195 Reliable Delivery for Syslog
- 3246 Expedited Forwarding PHB Group
- 5798 VRRPv3

**General IPv6 Protocols**

- 1981 Path MTU for IPv6
- 2372 IPv6 Addressing
- 2460 IPv6 Protocol Specification
- 2461 Neighbor Discovery
- 2462 Stateless Address AutoConfig
- 2463 ICMPv6
- 2464 Ethernet Transmission
- 2465 IPv6 Jumbograms
- 2466 Transmission of IPv6 Packets over Ethernet Networks
- 2711 IPv6 Router Alert
- 3493 Basic Socket Interface
- 3542 Advanced Socket, API
- 3587 Global Unicast Address Format
- 3848 Default Address Selection
- 4007 IPv6 Scoped Address Architecture
- 4213 Basic Transition Mechanisms for IPv6
- 4219 Hosts and Routers
- 4291 IPv6 Addressing
- 3633 DHCPv6 Relay
- 4576 IPv6 Static Routes

**OSPF (v2/v3)**

- 1745 OSPF/BGP interaction
- 1765 OSPF Database overflow
- 2154 OSPF with Digital Signatures

**Multicast**

- 2236 IGMPv2 Snooping
- 3810 MLDv2 Snooping

**Security**

- 1492 TACACS (Authentication, Accounting, Authorization)
- 2865 RADIUS
- 3162 RADIUS and IPv6
- 3579 RADIUS support for EAP
- 3580 802.1x with RADIUS
- 3826 AES Cipher in SNMP

**BGP**

- 1997 Communities
- 2385 MD5
- 2439 Route Flap Damping
- 2545 BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
- 2796 Route Reflection
- 2858 Multiprotocol Extensions
- 2918 Route Refresh
- 3065 Confederations
- 4271 BGP-4
- 4360 Extended Communities
- 4893 4-byte ASN
- 5396 4-byte ASN Representation
- 5492 Capabilities Advertisement
- 5549 BGP Unnumbered
- BGP ADD PATH
- BGP to OSPF route distribution
- BGP EVPN
- L2 & L3 Gateway with VXLAN Tunnels
- BGP EVPN Symmetric IRB
- Symmetric IRB
- Type 5 Routes

**Linux Distribution**

- Debian Linux version 8
- Linux Kernel 3.16

**MIBS**

- BRIDGE-MIB
- ENTITY-MIB
- EtherLike-MIB
- HOST-RESOURCES-V2-MIB
- IEE80201-PFC-MIB
- IEE8023-LAG-MIB
- IF-MIB
- IF-FORWARD-MIB
- IP-MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB
- LLDP-MIB
- OSPF-MIB
- OSPFV3-MIB
- Q-BRIDGE-MIB (Get)
- RFC1213-MIB
- SFLOW-MIB
- SNMP-FRAMEWORK-MIB
- SNMP-MPD-MIB
- SNMPv2-MIB
- TCP-MIB
- UDP-MIB
- SNMP-USER-BASED-SM-MIB
- SNMP-VIEW-BASED-ACM-MIB
- SNMP-TARGET-MIB

3 Dell EMC Networking MX5108n Spec Sheet
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Technical specifications

Network Management and Monitoring
- SNMPv1/v2c/v3
- IPv4/IPv6 management support
- Port Mirroring
- RPM/ERPM
- 3176 SFlow
- Support Assist (Phone Home)
- RestConf APIs, Auto-docs
- XML Schema
- CLI Commit (Scratchpad)
- Uplink Failure Detection
- Object Tracking
- FarEnd Failure Detection
- Bidirectional Forwarding Detection (BFD) – BGPv4/6, OSPFv2/3, Static Routes
- Streaming Telemetry
- System, Buffers, Data monitoring
gRPC Transport with gPB encoding

Automate
- Control Plane Services APIs
- Linux Utilities and Scripting Tools
- CLI Automation (Multiline Alias)
- Ansible, Puppet, Chef, SaltStack
- Zero Touch Deployment (ZTD)
- 3rd party packages support on Docker Container

Quality of Service
- Prefix List
- Route-Map
- Rate Shaping (Egress)
- Rate Policing (Ingress)
- Scheduling Algorithms
  - Round Robin
  - Weighted Round Robin
  - Deficit Round Robin
  - Strict Priority
  - Weighted Random Early Detect

Data center bridging
- 802.1Qbb
- Priority-Based Flow Control
- 802.1Qaz
- Enhanced Transmission Selection (ETS)
- Explicit Congestion Notification
- Data Center Bridging eXchange (DCBx)
- DCBx Application TLV (iSCSI, FCoE)
- RoCEv2

Fibre Channel
- FIP Snooping

Regulatory compliance

Safety
- UL/CSA 60950-1, Second Edition
- IEC 60950-1, Second Edition
- IEC 60950-1, Second Edition Including all National Deviations and Group Differences

FDA Regulation 21 CFR 1040.10 and 1040.11

Emissions & Immunity
- Australia/New Zealand: AS/NZS CISPR 32:2015, Class A
- Canada: ICES-3/NMB-3, Class A
- Europe: EN 55024:2010 (CISPR 24:2010), Class A
- Japan: VCCI V-3/2010.04 Class A
- USA: FCC CFR 47 Part 15, Subpart B:2011, Class A

Class A Immunity
- EN 300 386 V1.6.1 EMC for Network Equipment
- EN 55024:2010
- EN 61000-3-2: Harmonic Current Emissions
- EN 61000-3-3: Voltage Fluctuations and Flicker
- EN 61000-4-2: ESD
- EN 61000-4-3: Radiated Immunity
- EN 61000-4-4: EFT
- EN 61000-4-5: Surge
- EN 61000-4-6: Low Frequency Conducted Immunity

RoHS
- EN 50581:2012 All MX5108n components are EU RoHS compliant
IT Lifecycle Services for Networking

Experts, insights and ease
Our highly trained experts, with innovative tools and proven processes, help you transform your IT investments into strategic advantages.

Plan & Design
Let us analyze your multivendor environment and deliver a comprehensive report and action plan to build upon the existing network and improve performance.

Deploy & Integrate
Get new wired or wireless network technology installed and configured with ProDeploy. Reduce costs, save time, and get up and running fast.

Educate
Ensure your staff builds the right skills for long-term success. Get certified on Dell EMC Networking technology and learn how to increase performance and optimize infrastructure.

Manage & Support
Gain access to technical experts and quickly resolve multivendor networking challenges with ProSupport. Spend less time resolving network issues and more time innovating.

Optimize
Maximize performance for dynamic IT environments with Dell EMC Optimize. Benefit from in-depth predictive analysis, remote monitoring and a dedicated systems analyst for your network.

Retire
We can help you resell or retire excess hardware while meeting local regulatory guidelines and acting in an environmentally responsible way.

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