The Dell EMC Networking OS10 Enterprise Edition is a Network Operating System supporting multiple architectures and environments. The OS10 solution is designed to allow multi-layered disaggregation of network functions. OS10 contributions to Open Source provide users freedom and flexibility to pick their own 3rd party networking, monitoring, management and orchestration applications, while OS10 Enterprise Edition bundles an industry-hardened networking stack featuring standard L2 and L3 protocols over well accepted Northbound interfaces like CLI, SNMP & REST. The Switch Abstraction Interface (SAI) and Control Plane Services (CPS) abstraction layers provide disaggregation at the Network Processing Unit (NPU), as well as for the software applications written on top of linux kernel.

Feature rich OS10 Enterprise Edition software allows users to build fault-tolerant, scalable Layer 2 and Layer 3 network fabric designs. Modular and disaggregated, yet offered as a single-binary, OS10 offers integration with a variety of management and monitoring tools to help orchestrate network updates and fabric life-cycle management.

Key features of Dell EMC Networking OS10

- Standard networking features, interfaces and scripting functions for legacy network operations integration
- Standards-based switching hardware abstraction via Switch Abstraction Interface (SAI)
- Consistent DevOps framework across compute, storage and networking elements
- Pervasive, unrestricted developer environment via Control Plane Services (CPS)
- Layer 2 and 3 switching and routing protocols with integrated IP services, quality of service, manageability and automation features
- Leverage common open source tools and DevOps best practices (unified data models, commit scratchpad)
- Increase VM Mobility region by stretching L2 VLAN within or across two DCs with unique VLT capabilities
- Scalable L2 and L3 Ethernet Switching with QoS, ACL and a full complement of standards based IPv4 and IPv6 features
- Enhanced mirroring capabilities including local mirroring, Remote Port Mirroring (RPM), and Encapsulated Remote Port Mirroring (ERPM)
- Programmatic APIs and CLI automation using batch and aliases to simplify configuration management
- Converged network support for Data Center Bridging, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV

OS10—Software for the Open Networking era

- Native Linux & Open-Source Apps
- 3rd-Party Apps
- Automation Tools
- Fabric Services
- Security Services
- Policy Control

Modern software for modern operations
Specifications

Supported Platforms

IEEE Compliance
- 802.1AB: LLDP
- TIA-1057: LLDP-MED
- 802.1D: Bridging, STP
- 802.1p: L2 Prioritization
- 802.1Q: VLAN Tagging
- 802.1Qbb: PFC
- 802.1Qaz: ETS

Layer2 Protocols
- 802.1D: Compatible
- 802.1p: L2 Prioritization
- 802.1Q: VLAN Tagging
- 802.1s: MSTP
- 802.1w: RSTP
- 802.1t: RPVST+
- VLT (Virtual Link Trunking)
- VRRP (Virtual Router Redundancy Protocol)
- RSTP & RPVST+
- Port Mirroring on VLT ports
- DCB, iSCSI, FSB on VLT
- RPM/ERPM over VLT
- VLT Minloss upgrade

RFC Compliance
- 768: UDP
- 793: TCP
- 854: Telnet
- 959: FTP
- 1027: Proxy ARP
- 1035: DNS (client)
- 1321: MIBs
- 1350: TFTP
- 2474: Differentiated Services
- 2698: Two Rate Three Color Marker
- 3164: syslog
- 4254: SSHv2

Linux Distribution
- Debian Linux version 8
- Linux Kernel 3.16

Network Management and Monitoring
- SNMPv1/2c
- IPv4/IPv6 Management support (Telnet, FTP, TACACS, RADIUS, SSH, NTP)
- Syslog
- Port Mirroring
- RPM/ERPM
- SFlow
- Support Assist (Phone Home)
- RestConf APIs (Layer 2 features)
- XML Schema
- CLI Commit (Scratchpad)
- Uplink Failure Detection
- Object Tracking
- Management VRF

Automation
- Control Plane Services APIs
- Linux Utilities and Scripting Tools
- CLI Automation (Multiline Alias)
- Ansible, Puppet, Chef, SaltStack

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)

FiberChannel
- FCP: F-Port
- FC Zoning
- FIP Snooping

MIIBS
- IP MIB
- IP Forward MIB
- Host Resources MIB
- IF MIB
- LLDP EXT/3 MIB
- Entity MIB
- LAG MIB
- Dell-Vendor MIB
- TCP MIB
- UDP MIB
- SNMPv2 MIB

General IPv6 Protocols
- 1931: Path MTU for IPv6
- 2372: IPv6 Addressing
- 2460: IPv6 Protocol Specification
- 2461: Neighbor Discovery
- 2462: Stateless Address AutoConfig
- 2463: ICMPv6
- 2464: Transmission of IPv6 Packets over Ethernet Networks
- 2675: IPv6 Jumbograms
- 2711: IPv6 Router Alert Option
- 3484: Default Address Selection
- 3493: Basic Socket Interface
- 4291: Addressing Architecture
- 3542: Advanced Sockets API
- 3587: Global Unicast Address Format
- 4212: IPv6 Addressing
- 4007: IPv6 Scoped Address Architecture
- 5340: OSPF for IPv6 (OSPFv3)

General IPv4 Protocols
- 791: IPv4
- 792: ICMP
- 826: ARP
- 1027: Proxy ARP
- 1035: DNS (client)
- 1042: Ethernet Transmission
- 1191: Path MTU Discovery
- 1321: MIBs
- 1350: TFTP
- 2236: IGMPv2 Snooping
- 3810: MLdV2 Snooping

OSPF
- 1745: OSPF/BGP interaction
- 2154: OSPF Database overflow
- 2328: OSPFv2
- 2370: OSPF with DigitalSignatures
- 3101: OSPF NSSA
- 4552: OSPFv3 Authentication
- 5340: OSPF for IPv6 (OSPFv3)

BGP
- 1997: Communities
- 2385: MDS
- 2439: Route Flap Damping
- 2545: BGP-4 Multiprotocol Extensions for IPv6
- 2885: RADIUS
- 3162: Radius and IPv6
- 3579: Radius support for EAP
- 3580: 802.1X with RADIUS
- 3826: AES Cipher in SNMP

IP Access Control Lists

Linux Management and Monitoring

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Learn more at Dell.com/Networking