Data center optimized

The Dell EMC Networking Z9100-ON is a 10/25/40/50/100GbE fixed switch purpose-built for applications in high-performance data center and computing environments.

Leveraging a non-blocking switching architecture, the Z9100-ON delivers line-rate L2 and L3 forwarding capacity to maximize network performance. The compact Z9100-ON design provides industry-leading density of either 32 ports of 100GbE, 64 ports of 50GbE, 32 ports of 40GbE, 128 ports of 25GbE or 128 ports of 10GbE and two SFP+ ports of 10GbE/1GbE/100MbE to conserve rack space while enabling denser footprints and simplifying migration to 100Gbps in the data center core. Priority-based flow control (PFC), data center bridge exchange (DCBX) and enhanced transmission selection (ETS) make the Z9100-ON ideally suited for DCB environments. In addition, the Z9100-ON incorporates multiple architectural features that optimize data center network flexibility, efficiency and availability, including redundant, hot-swappable power supplies and fans.

These new offerings provide the flexibility to transform data centers and offer high-capacity network fabrics that are easy to deploy, cost-effective and provide a clear path to a software-defined data center. The Dell EMC Z9100-ON supports the industry standard Open Network Install Environment (ONIE) for zero touch installation of alternate network operating systems. Characteristic of any ONIE device, other ONIE load images may be loaded by the operator.

Key applications

- Active Fabric™ implementation using high-density multi rate 10/25/40/50/100GbE ToR server aggregation in high-performance data center environments at the desired fabric speed
- Small-scale Active Fabric implementation via the Z9100-ON switch in leaf and spine along with S-Series 1/10/40GbE ToR switches enabling cost-effective aggregation of 10/40/50/100GbE uplinks
- High-performance SDN/OpenFlow 1.3.1 enabled with ability to inter-operate with industry standard OpenFlow controllers*
- Use as a high-speed VXLAN Layer 2 Gateway that connects the hypervisor based overlay networks with non-virtualized infrastructure

Key features

- 1RU high-density 10/25/40/50/100GbE fixed switch with choice of up to 32 ports of 100GbE (QSFP28), 64 ports of 50GbE (QSFP+), 32 ports of 40GbE (QSFP+), 128 ports of 25GbE (QSFP+) or 128+2 ports of 10GbE (using breakout cable)
- Up to 6.4Tbps 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
- VRF-lite enables sharing of networking infrastructure and provides L3 traffic isolation across tenants
- Open Automation Framework adding automated configuration and provisioning capabilities to simplify the management of network environments
- Jumbo frame support for large data transfers
- 128 link aggregation groups with up to sixteen members per group, using enhanced hashing
- Redundant, hot-swappable power supplies and fans
- I/O panel to power supply airflow or power supply to I/O panel airflow
- Tool-less enterprise ReadyRails™ mounting kits reducing time and resources for switch rack installation
- Power-efficient operation up to 45°C helping reduce cooling costs in temperature-constrained deployments

DELL EMC NETWORKING Z9100-ON SERIES SWITCHES

High-performance 1/10/25/40/50/100GbE multi-rate open networking fixed switch featuring Dell Networking OS9
<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
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| **Z9100-ON** | AC base normal airflow  
32-port 100G QSFP28, 2 AC PS, 5 fan subsys w/ airflow from I/O PNL to PS  
AC base reverse airflow  
32-port 100G QSFP28, 2 AC PS, 5 fan subsys w/ airflow from PS to I/O PNL (TAA versions also available) |
| **Fans** | Fan spare normal airflow  
Fan with airflow from I/O PNL to PS  
Fan spare reverse airflow  
Fan with airflow from PS to I/O PNL |
| **Power supplies** | AC PS spare normal airflow  
AC power supply with airflow from I/O PNL to PS  
AC PS spare reverse airflow  
AC power supply with airflow from PS to I/O PNL  
DC PSU spare normal airflow  
DC PSU with airflow from I/O PNL to PSU  
DC PSU spare reverse airflow  
DC PSU with airflow from PSU to I/O PNL |
| **Optics (optional)** | Transceiver, 100GbE, SR4 QSFP28  
Transceiver, 100GbE, LR4 QSFP28  
Transceiver, 100GbE, LR4Lite QSFP28(*)  
Transceiver, 100GbE, CWDMA 2km QSFP28(*)  
Transceiver, 100GbE, PSM4 500m QSFP28(*)  
Transceiver, 40GbE, SR4 optic QSFP+  
Transceiver, 40GbE, eSR4 optic QSFP+  
Transceiver, 40GbE, LR4 optic QSFP+  
Transceiver, 40GbE, ER4 optics QSFP+  
Transceiver, 40GbE, PSM4 10km, QSFP+  
Transceiver, 40GbE, PSM4-LR MPO 10km QSFP+ to LC  
Transceiver, 40GbE, LMI / SM4 Duplex QSFP+ |
| **Cables (optional)** | 100GbE, 4x25GbE, QSFP28 to 4xSFP28, passive DAC  
100GbE, QSFP28 to QSFP28, active optical  
100GbE, QSFP28 to QSFP28, passive DAC  
100GbE, 4x5GbE, QSFP28 to 4xQSFP28, passive DAC, breakout(*)  
40GbE, QSFP+ to QSFP+, active optical  
40GbE, QSFP+ to QSFP+, passive DAC  
40GbE, MTP to 4xLC optical breakout  
40GbE, 4x10GbE, QSFP+ to 4xSFP+, passive DAC  
Cable management  
Z9100 Cable Breakout Kit, MTP to LC (1RU 64-port LC over MMF)  
Z9100 Cable Breakout Kit, MTP to LC (1RU 64-port LC over SMF)  
Z9100 Cable Breakout Kit, MTP to LC (1RU 48-port LC over MMF) |
| **Software** | L3 Dell Networking OS  
Z9100 series: Dell Networking Software License operating system software license for advanced L3 features, latest version  
Dell Networking OS  
Z9100 series: Dell Networking Software License operating system software license, latest version  
Select third-party operating system offerings  
Note: in-field change of airflow direction only supported when unit is powered down and all fan and power supply units are replaced with airflow moving in a uniform direction. |

* Future deliverable  
** Supported in future release
### Physical
- Compact, full featured fixed 10/25/40/100GE switch
- 1 RJ45 console/management port with RS232 signaling
- 10/100/1000BT Ethernet for management
- 1 USB 2.0 type A storage port
- 1 micro USB type B port for console/management port access
- 2 SFP+ 10GBase-E/1GBe ports for data access

Size: 1 RU, 17.2" h x 17.1" w x 18" d
Weight: 22 lbs (9.98 kg)
Power supply: 100–240 VAC 50/60 Hz
Max. power consumption: 605 Watts
Typ. power consumption: 195 Watts
Max. operating specifications:
  - Operating temperature: 32°F to 113°F (0°C to 45°C)
  - Operating humidity: 10 to 90% (RH), non-condensing

### Redundancy
- Two hot swappable power supplies with integrated fans
- ReadyRails rack mounting system, no tools required

### Performance
- Switching I/O bandwidth: 6.4Tbps
- Forwarding capacity: Up to 4400 Mpps (Full Duplex)
- MAC addresses: 136K
- IPv4 Unicast routes: 156K
- IPv6 Unicast routes: 68K
- IPv4 Multicast routes: 88K
- IPv6 Multicast routes: Not supported
- Multicast Hosts: 8K
- ARP entries: 128K
- Layer 2 VLANs: 4K per port
- Layer 3 VLANs: Standalone 1K/VLT 4K
- MST: 64 instances
- PV/ST+: 128 instances
- LAG: 128 groups, 16 members per LAG group
- LAG load balancing:
  - Based on layer 2, IPv4 or IPv6 headers
- Latency: Sub 500ns
- Packet buffer memory: 16MB
- CPU memory: 8GB
- QoS data queues: 8
- QoS control queues: 12
- QoS: Default 1204 entries scalable to 2.5K
- ACL Support: 3K

### IEEE compliance
- 802.1AB: LLDP
- 802.1D: Bridging, STP
- 802.1p: L2 Prioritization
- 802.1Q: VLAN Tagging, Double VLAN Tagging, GVRP
- 802.1Qbb: FCoE
- 802.1Qaz: ETS
- 802.1s: MSTP
- 802.1w: RSTP
- 802.1X: Network Access Control
- 802.3ab: Gigabit Ethernet (1000BASE-T) or breakout
- 802.3ac: Frame Extensions for VLAN Tagging
- 802.3ad: Link Aggregation with LACP
- 802.3ae: 10 Gigabit Ethernet (10GBase-X)
- 802.3ba: 40 Gigabit Ethernet (40GBase-SR4, 40GBase-CR4, 40GBase-LR4, 100GBase-SR10, 100GBase-LR4, 100GBase-ER4) on optical ports
- 802.3bj: 100 Gigabit Ethernet
- 802.3u: Fast Ethernet (100Base-TX) on mgmt ports
- 802.3x: Flow Control
- 802.3z: Gigabit Ethernet (1000Base-X) with QSA ANSI/TIA-1057 LLDP-MED
- Force10 PVST+
- Jumbo MTU support 9,144 bytes

### RFC and I-D compliance
- **General Internet protocols**
  - UDP
  - TCP
  - ICMP
  - ARP
  - Telnet
  - DNS (client)
  - Ethernet Transmission
  - NTPv3
  - CDR
  - BOOTP (relay)
  - IETF requirements for IPv4
  - Address Allocation for Private Internets
  - DiffServ Field in IPv4 and IPv6 Headers
  - Assured Forwarding PHB Group
  - Assured Forwarded
  - VRF-lite (IPv4 VRF with OSPF and BGP)
  - VRRP

- **General IPv4 protocols**
  - IPv4
  - ICMP
  - ARP
  - Proxy ARP
  - DNS
  - DHCP
  - RIPv2
  - BGP
  - OSPFv2
  - IS-IS

- **General IPv6 protocols**
  - IPv6
  - ICMPv6
  - ARPs
  - DNS
  - DHCPv6
  - RIPv2
  - BGP4+
  - OSPFv3
  - IS-IS

- **Multicast**
  - Path MTU Discovery
  - Internet Protocol, Version 6 (IPv6)
  - Requirements for IPv6
  - IPv6 Scoped Address Architecture
  - Basic Transition Mechanisms for IPv6 Hosts and Routers
  - IPv6 Addressing Architecture
  - ICMP for IPv6
  - Neighbor Discovery for IPv6
  - IPv6 Stateless Address Autoconfiguration
  - Delegation of Type 0 Routing Headers in IPv6
  - IPv6 Management support (telnet, FTP, TACACS, RADIUS, SSH, NTP)

### Security
- 2404: The Use of HMACSHA-1-96 within ESP and AH
- 2985: RADIUS
- 3182: Radius and IPv6

### Networking management
- 1155: SMIV1
- 1157: SNMPv1
- 1212: Concise MIB Definitions
- 1215: SNMP Traps
- 1493: Bridges MIB
- 1850: OSPFv2 MIB
- 1901: Community-Based SNMPv2
- 2011: IP MIB
- 2006: IP Forwarding Table MIB
- 2578: SMIV2
- 2579: Textual Conventions for SMIV2
Learn more at Dell.com/Networking

Regulatory compliance
Safety
UL/CSA 60950-1, Second Edition
EN 60950-1, Second Edition
IEC 60950-1, Second Edition Including All National Deviations and Group Differences
EN 60825-1 Safety of Laser Products Part 1: Equipment Classification Requirements and User’s Guide
FDA Regulation 21 CFR 1040.10 and 1040.11

Emissions
Australia/New Zealand: AS/NZS CISPR 22: 2006, Class A
Canada: ICES-003, Issue-4, Class A
Japan: VCCI V3/2009 Class A
USA: FCC CFR 47 Part 15, Subpart B:2011, Class A

Immunity
EN 300 386 V1.4.1:2008 EMC for Network Equipment
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
All S Series components are EU RoHS compliant.

Certifications
Available with US Trade Agreements Act (TAA) compliance
USGv6 Host and Router Certified on Dell Networking OS 9.5 and greater
IPv6 Ready for both Host and Router UCR DoD APL (core and distribution ALSAN switch

Warranty
1 year return to depot

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.

Learn more at Dell.com/lifecycleservices