The Z9264F-ON 40/100GbE fixed switch comprises Dell EMC’s latest disaggregated hardware and software data center networking solutions, providing state-of-the-art, high-density 40/100GbE ports and a broad range of functionality to meet the growing demands of today’s data center environment. These innovative, next-generation open networking high-density aggregation switches offer optimum flexibility and cost-effectiveness for the web 2.0, enterprise, mid-market and cloud service provider with demanding compute and storage traffic environments.

The compact Z9264F-ON provides industry-leading density of either 64 ports of 40/100GbE in QSFP28 form factor or 128 ports of 1/10/25/40GbE (via breakout), in a 2RU design.

Using industry-leading hardware and a choice of Dell EMC’s OS10 or select 3rd party network operating systems and tools, the Z9264F-ON switch incorporates multiple architectural features that optimize data center network flexibility, efficiency and availability, including IO panel to PSU airflow or PSU to IO panel airflow for hot/cold aisle environments, redundant, hot-swappable power supplies and fans and delivers non-blocking performance for workloads sensitive to packet loss. The compact Z9264F-ON model provides multi-rate speed, enabling denser footprints and simplifying migration to 100Gbps.

Priority-based flow control (PFC), data center bridge exchange (DCBX) and enhanced transmission selection (ETS) make the Z9264F-ON ideally suited for DCB environments.

Dell EMC Networking Z9264F-ON switches support the open source Open Network Install Environment (ONIE) for zero touch installation of Dell EMC’s OS10 networking operating system, as well as of alternative network operating systems.

Key applications
- Organizations looking to enter the software-defined data center era with a choice of networking technologies designed to maximize flexibility
- High-density multi-rate 40/100GbE ToR server aggregation in high-performance data center environments at the desired fabric speed
- Small-scale Fabric implementation via the Z9264F-ON switch in leaf and spine along with S-Series 1/10/25/40GbE ToR switches enabling cost-effective aggregation of 10/25/40/50 uplinks
- High-density 1/10/25/50GbE ToR server access in high-performance data center environments
- Multi-functional 10/25/40/50/100GbE switching in High Performance Computing Clusters or other business-sensitive deployments requiring the highest bandwidth
- iSCSI and FCoE deployment, including DCB converged lossless transactions
- L2/L3 VXLAN Gateway support (hardware only)

Key features
- 2RU high-density 40/100GbE aggregation switch with up to 64 ports of 40/100GbE (QSFP28) or up to 128 ports of 10/25/40GbE ports (using breakout cable)
- Multi-rate 100GbE ports support 10/25/40/50GbE. 40GbE ports support 10/40GbE
- 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
- 6.4Tbps non-blocking, switching fabric delivers line-rate performance under full load on Z9264F-ON
- L2 multipath support via Virtual Link Trunking (VLT) and Routed VLT support
- VXLAN gateway functionality support for bridging and routing the non-virtualized and the virtualized overlay networks with line rate performance (hardware only)
- Support for OS10 Enterprise Edition
- Converged network support for DCB, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV support
- Z9264F-ON supports Routable RoCE to enable convergence of compute and storage on Active Fabric
- IO panel to PSU airflow or PSU to IO panel airflow Redundant, hot-swappable power supplies and fans
- Supports the open source Open Network Install Environment (ONIE) for zero touch installation of alternate network operating systems
- L2, L3, RIOT VXLAN Gateway support (hardware only)
- 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
Key features with Dell EMC Networking 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)
- OS10 Enterprise Edition software enables Dell EMC 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 best practices (data models, commit rollbacks*)
- Increase VM Mobility region by stretching L2 VLAN within or across two DCs with unique VLT capabilities
- Scalable L2 and L3 Ethernet Switching with GoS, 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 Data Center Bridging, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Z9264F-ON</strong></td>
<td>Z9264F, 64x 100GbE QSFP28, 2x AC PSU, Fan module, I/O Panel to PSU Airflow, OS10 Enterprise Edition</td>
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</tbody>
</table>

**Redundant power supplies**

- AC Power Supply, IO Panel to PSU Airflow
- AC Power Supply, PSU to IO Panel Airflow
- DC Power Supply, IO Panel to PSU Airflow (available as custom kit)
- DC Power Supply, PSU to IO Panel Airflow (available as custom kit)

**Fans**

- Fan module, IO Panel to PSU Airflow
- Fan module, PSU to IO Panel Airflow

**Optics**

- Transceiver, 100GbE, SR4 QSFP28
- Transceiver, 100GbE, eSR4 QSFP28
- Transceiver, 100GbE, SWDM4 QSFP28 (Duplex)
- Transceiver, 100GbE, PSM4 (500m) QSFP28
- Transceiver, 100GbE, CWDM4 (2Km) QSFP28
- Transceiver, 100GbE, LR4 QSFP28
- Transceiver, 100GbE, ER4 Lite (30Km) QSFP28
- Transceiver, 100GbE, DWDM4 (80Km) QSFP28
- Transceiver, 40GbE, SR4 optic QSFP+
- Transceiver, 40GbE, eSR4 optic QSFP+
- Transceiver, 40GbE, BIDI optic QSFP+ (Duplex)
- Transceiver, 40GbE, SM4 optic QSFP+ (Duplex)
- Transceiver, 40GbE, LM4 optic QSFP+ (Duplex)
- Transceiver, 40GbE, PSM4 10Km, QSFP+
- Transceiver, 40GbE, LR4 optic QSFP+
- Transceiver, 40GbE, ER4 optics QSFP+

**Cables**

- 100GbE, 6x25GbE, QSFP28 to 4xSFP28, passive DAC
- 100GbE, QSFP28 to QSFP28, active optical
- 100GbE, QSFP28 to QSFP28, passive DAC
- 100GbE, 2x50GbE, 2xQSFP to 2xQSFP28, 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)
Technical specifications

**Physical**
1 RU, 454 console/management port with RS232 signaling
64x10GE QSFP28 ports + 2xSFP+ 10GE

**Chassis**
Size: 2 RU, 53" (h) x 170.4" (w) x 20.08" (d) (3.568 x 44.2x x 51.0 cm)
Weight: 414lbs (20kg)

**Environmental**
Power supply: 100–240 VAC 50/60 Hz
Max Power consumption: 1104 Watts
Typ. Power consumption: 900 Watts
Max Operating specifications:
- AC Max. Operating specifications:
  - Operating temperature: 32°F to 113°F (0°C to 45°C)
  - Operating humidity: 10% to 90% (RH), non-condensing
Max. Non-operating specifications:
  - Storage temperature: -40°F to 158°F (-40°C to 70°C)
  - Storage humidity: 5% to 95% (RH), non-condensing
Fresh air Compliant to 45°C

**Redundancy**
Hot swapable redundant power
Hot swapable redundant fans

**Performance**
Switch fabric capacity: 12.8Tbps (full-duplex)
Forwarding capacity: 2900Mpps for 64-packet size<250 bytes, 4200Mpps when average packet size>250 bytes
Latency: 500ns L2/400ns L3
Packet buffer memory: 42MB
CPU memory: 16GB
MAC addresses: 160K
ARP table: 128K
IPv4 routes: 128K
IPv6 routes: 64K
Multicast hosts: 32K
Link aggregation: 16 links per group, 128 groups
Layer 2 VLANs: 4K
MSTP: 64 instances
LAG load balancing: Based on layer 2, IPv4 or IPv6 headers

**IEEE Compliance**
802.1AB LLDP
802.1AI LLDP-MED
802.3ad Link Aggregation
802.1D Bridging, STP
802.1p L2 Prioritization
802.1Q VLAN Tagging
802.1Qbq PFC
802.1Qaz ETS
802.1X Network Access Control
802.1Qo Frame Extensions for VLAN Tagging
802.1x Flow Control

**Layer 2 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 Active/Active
RSTP & RPVST+
Port Mirroring on VLT ports
DCB, iSCSI, FSB on VLT
RPM/ERP over VLT

**VLT Minlos upgrade**
RFC Compliance
776 UDP
793 TCP
854 Telnet
900 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
2151 DHCPv4 (server and relay)
5798 VRRPv3
3021 31-bit Prefixes
1812 Requirements for IPv4 Routers
1918 Address Allocation for Private Internets
2474 DiffServ Field in IPv4 and IPv6 Headers
2537 Assured Forwarding PHB Group
3195 Reliable Delivery for Syslog
3246 Expedited Forwarding PHB Group
VRF (BGPv4/v6)

**General IPv6 Protocols**
1981 Path MTU for IPv6
2372 IPv6 Addressing
2460 IPv6 Protocol Specification
2461 Neighbor Discovery
2462 Stateless Address AutoConfig
2711 IPv6 Router alert
2463 ICMPv6
2464 Ethernet Transmission
2675 IPv6 Jumbograms
3484 Default Address Selection
3493 Basic Socket Interface
2545 BGP-4 Multiprotocol Extensions for IPv6
2796 Route Reflection
2439 Route Flap Damping
2385 MD5
1997 Communities

**IPv6 Static Routes**
3065 Confederations
4271 BGP-4
2545 BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
2858 Multiprotocol Extensions
4360 Extended Communities
4893 4-byte ASN
5396 4-byte ASN Representation
5492 Capabilities Advertisement
draft-ietf-idr-add-paths-04.txt ADD PATH

**IPv6 Management and Monitoring**
SNMPv1/v2c
IPv4/IPv6 Management support (Telnet, FTP, TACACS, RADIUS, SSH, NTP)
Syslog
Port Mirroring
RPM/ERPvM
3716 SFlow
Support Assist (Phone Home)
RestConf APIs (Layer 2 features)
XML Schema
CLI Commit (Scratchpad)
Uplink Failure Detection
Object Tracking
Bidirectional Forwarding Detection (BFD)

**RFC Compliance**
4037 SSHv2
3164 Syslog
TACACS, RADIUS, SSH, NTP)
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**Automation**
Control Plane Services APIs
Linux Utilities and Scripting Tools
CLI Automation (Multiline Alias)
Zero Touch Deployment (ZTD)
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**
802.1Qaz Priority-Based Flow Control
802.1Qaz Enhanced Transmission Selection (ETS)
Explicit Congestion Notification
Data Center Bridging eXchange (DCBX)
DCBX Application TLV (iSCSI, FCoE)
RoCEv2

**Security**
2885 RADIUS
3162 Radius and IPv6
3579 Radius support for EAP
5390 802.1X with RADIUS
3826 AES Cipher in SNMP
1492 TACACS (Authentication, Accounting)
Control Plane, VTY & SNMP ACLs
IP Access Control Lists

**BGP**
1997 Communities
2385 MD5
2439 Route Flap Damping
2796 Route Reflection
2918 Route Refresh
3065 Confederations

**Network Management and Monitoring**
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Weighted Round Robin
Deficit Round Robin
Strict Priority
Weighted Random Early Detect
Software Defined Networking
OpenFlow 1.3 (Native)
MIBS
IP MIB
IP Forward MIB
Host Resources MIB
IF MIB
LLDP EXT1/3 MIB
Entity MIB
LAG MIB
Dell-Vendor MIB
TCP MIB
UDP MIB
SNMPv2 MIB
ETHERLIKE-MIB
SFLOW-MIB
PFC-MIB

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

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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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