Dell PowerSwitch Z9432F-ON

High-performance, high-density open networking 400GbE multi-rate aggregation switch

The Z9432F-ON 100/400GbE fixed switch comprises Dell Technologies' latest disaggregated hardware and software data center networking solutions, providing state-of-theart, high-density 100/400 GbE ports and a broad range of functionality to meet the growing demands of today's data center environment. This innovative, next-generation open networking high-density aggregation switch offers optimum flexibility and cost-effectiveness for the web 2.0, enterprise, mid-market and cloud service providers with demanding compute and storage traffic environments.

The compact PowerSwitch Z9432F-ON provides industryleading density of either 32 ports of 400GbE in QSFP56- DD form factor or 128 ports of 100 or up to 144 ports of 10/25/50 (via breakout), in a 1RU design.

Using industry-leading hardware and a choice of Enterprise SONiC Distribution by Dell Technologies, Enterprise SONiC Distribution by Dell Technologies, Dell SmartFabric OS10 or select 3rd party network operating systems and tools, the Z9432F-ON switch incorporates multiple architectural features that optimize data center network flexibility, efficiency and availability, including IO panel to PSU and 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 Z9432F-ON model provides multi-rate speed, enabling denser footprints and simplifying migration to 400Gbps.

Priority-based flow control (PFC), data center bridge exchange (DCBX) and enhanced transmission selection (ETS) make the Z9432F-ON ideally suited for DCB environments.

The Dell PowerSwitch Z9432F-ON switch supports the open source Open Network Install Environment (ONIE) for zero touch installation of Enterprise SONiC Distribution by Dell Technologies, Dell SmartFabric OS10 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 100/400GbE ToR server aggregation in high-performance data center environments at the desired fabric speed
- Small-scale Fabric implementation via the Z9432FON switch in leaf and spine along with S-Series 10/25/40/50/100GbE ToR switches enabling costeffective aggregation of 100/400 uplinks
- High-density 10/25/40/50/100GbE ToR server access in high-performance data center environments

- Multi-functional 10/25/40/50/100/400GbE switching in High Performance Computing Clusters or other business-sensitive deployments requiring the highest bandwidth.
- iSCSI and FCOE deployment, including DCB converged lossless transactions

Key features

- 1RU high-density 100/400GbE aggregation switch with up to 32 ports of 400GbE (QSFP56-DD) or up to 128 ports of 100GbE or up to 144 ports of 10/25/50GbE*(using breakout cable)
- Multi-rate 400GbE ports support 10/25/40/50/100GbE. 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
- 25.6Tbps non-blocking (full duplex), switching fabric delivers line-rate performance under full load on Z9432F-ON
- L2 multipath support via Virtual Link Trunking (VLT) and Routed VLT support
- 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 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
- Accelerated 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

Product	Description
Z9432F-ON	Z9432F, 32x 400GbE QSFP56-DD, 2x AC PSU, Fan module, I/O Panel to PSU Airflow Z9432F, 32x 400GbE QSFP56-DD, 2x AC PSU, Fan module, I/O Panel to PSU Airflow, TAA Certified Z9432F, 32x 400GbE QSFP56-DD, 2x AC PSU, Fan module, PSU to I/O Panel Airflow Z9432F, 32x 400GbE QSFP56-DD, 2x AC PSU, Fan module, PSU to I/O Panel Airflow, TAA Certified
Dell SW Options	Dell SmartFabric OS10 Enterprise SONiC Distribution by Dell Technologies
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 DC Power Supply, PSU to IO Panel Airflow
Fans	Fan module, IO Panel to PSU Airflow Fan module, PSU to IO Panel Airflow
Optics, Cables and Cable Management	Enterprise SONiC Distribution by Dell Technologies Please refer to Dell Networking Transceivers and Cables spec sheet for complete list of optics and cables. for a complete list of optics and cables.

Technical specifications

Physical

1 RJ45 console/management port with RS232 signaling and Micro USB-B port

1 10/100/1000BASE-T Ethernet for management

1 USB 2.0 type A storage port 32x400GbE QSFP56-DD ports + 2xSFP+ 10GbE

Chassis

Size: 1 RU, 43 x 438 x 550 mm (1.72 x 17.3 x 21.7 inches)

Weight: 9.98 kg (22 lbs)

Environmental

Power supply: 100-240 VAC 50/60H*
Max Power consumption: 1404 Watts
Typ. Power consumption: 900 Watts
Max Operating specifications:

AC max. operating specifications:
Operating temperature: 0° to 45°C (32° to 113°F)

Operating humidity: 5 to 90% (RH), non-condensing

Max. non-operating specifications:
Storage temperature: −40° to 70°C (−40° to 158°F)

Storage humidity: 5 to 95% (RH), non-condensing

Fresh air compliant to 45°C

Support AC both lowline and highline power modes

Redundancy

Hot swappable redundant power (2 per switch, 1 + 1 redundancy except with using lowline power)*

Hot swappable redundant fans (7 per switch, 6 + 1 redundancy)

Performance

Switch fabric capacity: 25.6Tbps (full duplex)

Forwarding capacity: 5.2Bpps

Latency: sub 850ns

Packet buffer memory: 132MB

NPU Pipeline is programmable capable using NPL

CPU: Intel Denverton C3758 8 Core @ 2.2GHz

CPU memory: 32GB DDR4 ECC

MAC addresses: 156K

ARP table: 16K standalone, 8K shared

IPv4 routes: up to 400K (ALPM)

IPv6 routes: 300K

Multicast hosts: 1K

Multicast IPv6 Routes : 4K

Layer 2 VLANs: 4K

MSTP: 64 instances

LAG load balancing: Based on layer 2, IPv4 or IPv6 headers

Timing Card PTP/1588 and Sync-E

Trusted Platform Module

Supports up to 4 ports of 20W optics when in IO/PSU airflow direction

Supports up to 15W optics in all QSFP56-DD ports

For Network Operating System (NOS) specific features, refer to Dell SmartFabric OS10 and Enterprise SONiC Distribution by Dell Technologies spec sheets.

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

EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems

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

Europe: EN 55022: 2006+A1:2007 (CISPR 22: 2006), 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 55024: 1998 + A1: 2001 + A2: 2003

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 Z Series components are EU RoHS compliant.

Certifications**

Available with US Trade Agreements Act (TAA) compliance

USGv6 Host and Router Certified on Dell Networking[1]

IPv6 Ready for both Host and Router UCR DoD APL (core and distribution ALSAN switch)

Warranty

1 year return to depot constrained

*100V - 127V lowline power solution is non-redundant

**Federal Certifications are granted on an OS specific basis - please reference the SONiC and OS10 spec sheets for latest certification updates

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