



Dell PowerSwitch S5448F-ON

High-performance, high-density open networking 100/400GbE multi-rate aggregation switch

The S5448F-ON 100/400GbE fixed switch comprises Dell Technologies' latest disaggregated hardware and software data center networking solutions, providing state-of-the-art, 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 S5448F-ON provides industry-leading density of up to 48 ports of 100GbE (SFP56-DD) and 8 ports of 400GbE (QSFP56-DD), in a 1RU design.

Using industry-leading hardware and a choice of Enterprise SONiC Distribution by Dell Technologies, Dell SmartFabric OS10 or select 3rd party network operating systems and tools, the S5448F-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 S5448F-ON provides multi-rate speed, enabling denser footprints and simplifying migration to 100 and 400Gbps.

Priority-based flow control (PFC), data center bridge exchange (DCBX) and enhanced transmission selection (ETS) make the S5448F-ON ideally suited for DCB environments.

The Dell PowerSwitch S5448F-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.

NOTE:- SFP56-DD 100GbE ports on S5448F-ON use PAM4 technology (i.e. 2x50G SerDes), and not the NRZ technology (i.e. 4x25G SerDes). QSFP28 optics and break-out will not work on the SFP56-DD (or S56DD) ports.

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

*Note that units configured in the PSU to IO airflow direction are subject to tighter restrictions for power consumptions on cables and optics used for 100 and 400GbE ports
**Non-blocking for >364-Byte packets

- Small-scale fabric implementation via the S5448FON switch in leaf and spine along with S-series 10/25/40/50/100GbE ToR switches enabling cost-effective aggregation of 100/400 uplinks
- High-density 10/25/40/50/100GbE ToR server access in high-performance data center environments
- Multi-functional 10/25/40/50/100/200/400GbE 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 48 ports of 100GbE (SFP56-DD) and up to 8 ports of 400GbE (QSFP56-DD)
- Multi-rate 100GbE ports support 10/25/50/100GbE. Multi-rate 400GbE ports support 10/25/40/50/100/200/400GbE
- 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
- 16Tbps non-blocking (full duplex), switching fabric delivers line-rate performance** under full load on S5448F-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
- S5448F-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
- 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
S5448F-ON	S5448F-ON, 48x 100GbE SFP56-DD, 8x 400GbE QSFP56-DD, 2x AC PSU, Fan module, I/O Panel to PSU Airflow S5448F-ON, 48x 100GbE SFP56-DD, 8x 400GbE QSFP56-DD, 2x AC PSU, Fan module, I/O Panel to PSU Airflow, TAA Certified S5448F-ON, 48x 100GbE SFP56-DD, 8x 400GbE QSFP56-DD, 2x AC PSU, Fan module, PSU to I/O Panel Airflow* S5448F-ON, 48x 100GbE SFP56-DD, 8x 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	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.

*** For stability of the system, the infrastructure impedance has to be greater than effective impedance of power supplies connected in parallel (i.e. across the power feed).

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 48x100GbE SFP56-DD + 8x400GbE 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: 11.67 kg (25.73 lbs) with PSU/Fans installed

Environmental

Power supply: 100-240 VAC 50/60Hz
Max Power consumption: 920 Watts
Typ. Power consumption: 250 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 (70° to 158°F)

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

Fresh air compliant to 45°C

Supports AC both lowline and highline power modes

Redundancy

Hot swappable redundant power (2 per switch, 1 + 1 redundancy)

Hot swappable redundant fan trays (6 fan trays per switch, 2 fan rotors per tray, 11 + 1 fan rotor redundancy)

Performance ****

Switch fabric capacity: 16Tbps (full duplex)

Forwarding capacity: 2.6Bpps

Latency: sub 1135ns

Packet buffer memory: 82MB

NPU Pipeline is programmable using NPL

CPU: Intel Denverton C3758 8 Core @ 2.2GHz

CPU memory: 32GB DDR4 ECC

MAC addresses: Up to 256K

ARP table: Up to 192K

IPv4 routes: Up to 875K (ALPM)

IPv6 routes: 310K (IPv6/64 ALPM), 240K (IPv6/128 ALPM)

Multicast routes: 16K (IPMC Table)

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 (on TAA SKUs only)

Supports up to 5W optics in all 48 SFP56-DD ports (3.5W on all 48 SFP56-DD, with 24 of them scaling up to 5W optics in PSU/IO airflow direction)

Supports up to 15W optics in all 8 QSFP56 DD ports, with 4 of them scaling up to 18W optics (6W optics on all 8 QSFP56-DD ports, with 4 of them scaling up to 10W optics in PSU/IO airflow direction)

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 & 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 S Series components are EU RoHS compliant.

Certifications*****

Available with US Trade Agreements Act (TAA) compliance

USGv6 Host and Router Certified on Dell Networking¹

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

Warranty

1 year return to depot constrained

**** Maximum NPU and hardware performance, please refer to specific Network Operating System scalability numbers for actual validated values.

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

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 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 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 DellTechnologies.com/Services



Learn more about
Dell solutions



Contact a Dell
Technologies Expert



View more resources



Join the conversation with
#DellTechnologies