DELL EMC NETWORKING S5048F-ON
High-performance open networking top-of-rack switch with native 25G server ports and 100G network fabric connectivity

The Dell EMC S5048-ON switch is an innovative, future-ready Top-of-Rack (ToR) open networking switch providing excellent capabilities and cost-effectiveness for the enterprise, mid-market, Tier2 cloud and NFV service providers with demanding compute and storage traffic environments.

The S5048F-ON 25GbE switch is Dell’s latest disaggregated hardware and software data center networking solution that provides backward compatible 25GbE server port connections, 100GbE uplinks, storage optimized architecture, and a broad range of functionality to meet the growing demands of today’s data center environment now and in the future.

The compact S5048F-ON model design provides industry-leading density with up to 72 ports of 25GbE or up to 48 ports of 25GbE and 6 ports of 100GbE in a 1RU form factor.

Using industry-leading hardware and a choice of Dell’s OS9 or select 3rd party network operating systems and tools, the S5048F-ON delivers non-blocking performance* for workloads sensitive to packet loss. The compact S5048F-ON model provides multi rate speed enabling denser footprints and simplifying migration to 25GbE server connections and 100GbE fabrics.

Priority-based flow control (PFC), data center bridge exchange (DCBX) and enhanced transmission selection (ETS) make the S5048F-ON an excellent choice for DCB environments.

Maximum performance and functionality

The Dell EMC Networking S-Series S5048F-ON is a high-performance, multi-function, 10/25/40/50/100 GbE ToR switch purpose-built for applications in high-performance data center, cloud and computing environments.

In addition, the S5048F-ON 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, and redundant, hot-swappable power supplies and fans.

Key applications

- Organizations looking to enter the software-defined data center era with a choice of networking technologies designed to deliver the flexibility they need
- Native high-density 25 GbE ToR server access in high-performance data center environments
- 25 GbE backward compatible to 10G and 1G for future proofing and data center server migration to faster uplink speeds.
- Capability to support mixed 25G and 10G servers on front panel ports without any limitations
- ISCSI storage deployment including DCB converged lossless transactions
- Suitable as a ToR or Leaf switch in 100G Active Fabric implementations
- As a high speed VXLAN L2 gateway that connects the hypervisor-based overlay networks with non-virtualized infrastructure
- Emerging applications requiring hardware support for new protocols

Key features

- 1RU high-density 25/10/1 GbE ToR switch with up to forty eight ports of native 25 GbE (SFP28) ports supporting 25 GbE without breakout cables
- Multi-rate 100GbE ports support 10/25/40/50/100 GbE
- 3.6 Tbps (full-duplex) non-blocking, store and forward switching fabric delivers line-rate performance under full load*
- 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 eight 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 Fresh Air 2.0 compliant)
- Converged network support for DCB and ECN capability
- Supports the open source Open Network Install Environment (ONIE) for zero touch installation of alternate network operating systems
- FCoE transit (FIP Snooping)

*non-blocking performance is for packet sizes larger than 250B
### Product Description

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
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<tr>
<td>S5048F-ON</td>
<td>S5048F, 48x 25GbE SFP+, 6x 100GbE QSFP28, 2x AC PSU, 4x Fans, I/O Panel to PSU Airflow  &lt;br&gt; S5048F, 48x 25GbE SFP+, 6x 100GbE QSFP28, 2x AC PSU, 4x Fans, PSU to I/O Panel Airflow  &lt;br&gt; S5048F, 48x 25GbE SFP+, 6x 100GbE QSFP28, 2x AC PSU, 4x Fans, I/O Panel to PSU Airflow - TAA  &lt;br&gt; S5048F, 48x 25GbE SFP+, 6x 100GbE QSFP28, 2x DC PSU, 4x Fans, PSU to I/O Panel Airflow - NEBS Level 3 Certified**</td>
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<td>Redundant power supplies</td>
<td>SS048F, AC Power Supply, IO Panel to PSU Airflow  &lt;br&gt; SS048F, AC Power Supply, PSU to IO Panel Airflow  &lt;br&gt; SS048F, DC Power Supply, PSU to IO Panel Airflow**</td>
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<td>Fans</td>
<td>SS048F fan module, IO Panel to PSU Airflow  &lt;br&gt; SS048F fan module, PSU to IO Panel Airflow</td>
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<td>Optics</td>
<td>Transceiver, 100GbE, SR4 QSFP28  &lt;br&gt; Transceiver, 100GbE, LR4 QSFP28  &lt;br&gt; Transceiver, 100GbE, SWDM4 QSFP28 to LC duplex (**  &lt;br&gt; Transceiver, 100GbE, PSM4 10Km QSFP28 (<strong>)  &lt;br&gt; Transceiver, 100GbE, CWDM4 10km QSFP28 (</strong>)  &lt;br&gt; Transceiver, 100GbE, PSM4 500m QSFP28 (<strong>)  &lt;br&gt; Transceiver 100GbE, ER4Lite QSFP28 (</strong>)  &lt;br&gt; Transceiver, 40GbE, SR4 optic QSFP+ Transceiver, 40GbE, eSR4 optic QSFP+  &lt;br&gt; Transceiver, 40GbE, SR4 optic QSFP+  &lt;br&gt; Transceiver, 40GbE, ER4 optics QSFP+  &lt;br&gt; Transceiver, 40GbE, PSM4 10Km, QSFP+  &lt;br&gt; Transceiver, 40GbE, PSM4-LR MPO 10Km QSFP+ to LC  &lt;br&gt; Transceiver, 40GbE, LM4 / SM4/BiDi QSFP+  &lt;br&gt; Transceiver, 25GbE, SR4 SFP28  &lt;br&gt; Transceiver, 25GbE, eSR SFP28  &lt;br&gt; Transceiver, 25GbE, LR4 SFP28  &lt;br&gt; Transceiver, 25GbE, SR4 SFP28 NOF  &lt;br&gt; Transceiver, 10GbE, SR SFP+  &lt;br&gt; Transceiver, 10GbE, LR SFP+  &lt;br&gt; Transceiver, 10GbE, ER SFP+  &lt;br&gt; Transceiver, 10GbE, ZR SFP+  &lt;br&gt; Transceiver, 10GbE, 10GBASE-T SFP+, Copper  &lt;br&gt; Transceiver, 1GbE, SX SFP  &lt;br&gt; Transceiver, 1GbE, LX SFP  &lt;br&gt; Transceiver, 1GbE, ZX SFP  &lt;br&gt; Transceiver, 1GbE, BiDi SFP (10km/40km/80km)  &lt;br&gt; Transceiver, 1GbE, 1000BASE-T SFP, Copper</td>
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<td>Cables</td>
<td>100GbE, 4x25GbE, QSFP28 to 4xSFP28, passive DAC  &lt;br&gt; 100GbE, QSFP28 to QSFP28, active optical  &lt;br&gt; 100GbE, QSFP28 to QSFP28, passive DAC  &lt;br&gt; 100GbE, 2x50GbE, QSFP28 to 2xQSFP28, passive DAC, breakout (**  &lt;br&gt; 40GbE, QSFP+ to QSFP++, active optical  &lt;br&gt; 40GbE, QSFP+ to QSFP++, passive DAC  &lt;br&gt; 40GbE, MTP to 4xLC optical breakout  &lt;br&gt; 40GbE, 4x10GbE, QSFP+ to 4xSFP++, passive DAC  &lt;br&gt; 25GbE SFP28 to SFP28, passive DAC, 1M, 2M, 3M, 5M  &lt;br&gt; 25GbE SFP28 to SFP28, active optical cable, 7M, 10M, 15M, 20M  &lt;br&gt; 10GbE SFP+ to SFP+, passive DAC, 1M, 3M, 5M, 7M  &lt;br&gt; 10GbE SFP+ to SFP+, active optical cable, 2M, 3M, 5M, 7M, 10M, 15M, 20M</td>
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** future deliverable
Technical specifications

**Physical**
- 48 line-rate 25 Gigabit Ethernet SFP28 ports
- 6 line-rate 100 Gigabit Ethernet QSFP28 ports
- 1 RJ45 console/management port with RS232 signaling
- 1 Micro-USB type B optional console port
- 1 10/100/1000 Base-T Ethernet port used as management port
- 1 USB type A port for the external mass storage
- Size: 1 RU, 17.2 x 17.1 x 18” d
- Weight: 22lbs (9.98kg)
- ISO 7779 A-weighted sound pressure level: 59.6 dB(A) at 73°F (23°C)
- Power supply: 100–240 VAC 50/60 Hz at 1.72A/2.4A at 200/240V AC
- Max. thermal output: 1956 BTU/h

Max. current draw per system:
- 5.73A/4.8A at 100/120V AC
- 2.87A/2.4A at 200/240V AC

Max. power consumption: 575 Watts (AC)

Typo: power consumption: 288 Watts (AC) with all optics loaded

Max. operating specifications:
- Operating temperature: 32°F to 113°F (0°C to 45°C)
- Operating humidity: 10 to 90% (RH), non-condensing

Fresh Air Compliant to 45°C

Max. non-operating specifications:
- Storage temperature: -40° to 158°F (–40° to 70°C)
- Storage humidity: 5 to 95% (RH), non-condensing

**Redundancy**
- Two hot swappable redundant power supplies
- Hot swappable redundant fans

**Performance**
- Switch fabric capacity: 3.6Tbps
- Forwarding capacity: Up to 2,678 Mpps
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- Forwarding capacity: Up to 2,678 Mpps

**RFC Compliance**
- 788  UDP
- 793  TCP
- 854  Telnet
- 959  FTP
- 1352 MD5
- 1530  FTP
- 1532  MD5
- 2474 Differentiated Services
- 2698 Two Rate Three Color Marker
- 3164 Syslog
- 4254 SSHv2

**Layer2 Protocols**
- Jumbo MTU support: 9,146 bytes
- Link Aggregation with LACP
- Link Aggregation with LACP

**IPv4 Protocols**
- IPv4
- ICMP
- ARP
- Proxy ARP
- DNS (client)
- Ethernet Transmission
- Path MTU Discovery
- NTPv4
- CIDR
- BGPv4

**IPv6 Protocols**
- IPv6
- Neighbor Discovery
- Neighbor Discovery
- Stateless Address AutoConfig
- DHCPv6
- NTPv4
- IPv6

**Network Management**
- SNMPv2
- SNMPv3
- RMON
- RMON
- RADIUS
- TACACS
- TFTP
- Telnet
- FTP
- TACACS
- TFTP
- Telnet
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