Ultra-low-latency, data center optimized

The Dell Force10 S-Series S4810 is an ultra low-latency 10/40 GbE Top-of-Rack (ToR) switch purpose-built for applications in high-performance data center and computing environments. Leveraging a non-blocking, cut-through switching architecture, the S4810 delivers line-rate L2 and L3 forwarding capacity with ultra low-latency to maximize network performance. The compact S4810 design provides industry-leading density of 48 dual-speed 1/10 GbE (SFP+) ports as well as four 40 GbE QSFP+ uplinks to conserve valuable rack space and simplify the migration to 40 Gbps in the data center core. Each 40 GbE QSFP+ uplink can support four 10 GbE ports with a breakout cable. Powerful QoS features, coupled with Data Center Bridging (DCB) support via a future software enhancement, make the S4810 ideally suited for iSCSI storage environments. In addition, the S4810 incorporates multiple architectural features that optimize data center network flexibility, efficiency, and availability, including Force10’s VirtualScale stacking technology, reversible front-to-back or back-to-front airflow for hot/cold aisle environments, and redundant, hot-swappable power supplies and fans.

The S4810 also supports Dell Force10’s Open Automation Framework, which provides advanced network automation and virtualization capabilities for virtual data center environments. The Open Automation Framework is comprised of a suite of inter-related network management tools that can be used together or independently to provide a network that is more flexible, available and manageable while reducing operational expenses.

Key applications
- Ultra-low-latency 10 GbE switching in HPCC, high-speed trading, iSCSI storage or other business-sensitive deployments that require the highest bandwidth and lowest latency
- High-density 10 GbE ToR server aggregation in high-performance data center environments
- Design with the E-Series core switch/router to create a flat, two-tier, non-blocking 1/10/40 GbE data center network design
- Stack with the S-Series 1/10GbE ToR switches for cost-effective aggregation of 10 GbE uplinks

Key features
- 1RU high-density 10/40 GbE ToR switch with 48 dual-speed 1/10 GbE (SFP+) ports and four 40 GbE (QSFP+) uplinks (totaling 64 10 GbE ports with breakout cables)
- 1.28 Tbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load with sub 700ns latency
- Scalable L2 and L3 Ethernet switching with QoS and a full complement of standards-based IPv4 and IPv6 features for unicast and multicast applications
- Reversible front-to-back or back-to-front airflow
- VirtualScale stacking technology leveraging 10 GbE
- Open Automation Framework adds VM-awareness as well as automated configuration and provisioning capabilities to simplify the management of virtual network environments
- Modular Dell Force10 Operating System (FTOS) software delivers inherent stability as well as advanced monitoring and serviceability functions
- Support for Data Center Bridging (DCB) in a future release, to enable a lossless Ethernet fabric for iSCSI storage and NFS traffic
- Supports jumbo frames for high-end server connectivity
- 128 link aggregation groups with up to 8 members per group, using advanced hashing
- VirtualView real-time network and application traffic monitoring for virtualized data centers
- Redundant, hot-swappable power supplies and fans
- Hardware support for TRILL, EVB, DCB
- Low power consumption

Ultra low latency
10GbE Top-of-Rack
switch optimized for
data center efficiency
Specifications: S4810 High-Performance 10/40 GbE Top-of-Rack Switch

Ordering Information

<table>
<thead>
<tr>
<th>Order Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4810P-AC</td>
<td>S4810 base unit* with 1 AC power supply and dual fans (rear to front airflow)**</td>
</tr>
<tr>
<td>S4810P-AC-R</td>
<td>S4810 base unit* with 1 AC power supply and dual fans (front to rear airflow)**</td>
</tr>
<tr>
<td>S4810P-PWR-AC</td>
<td>S4810 AC power supply module with integrated fan (rear to front airflow)**</td>
</tr>
<tr>
<td>S4810P-PWR-AC-R</td>
<td>S4810 AC power supply module with integrated fan (front to rear airflow)**</td>
</tr>
<tr>
<td>S4810P-FAN</td>
<td>S4810 fan module (rear to front airflow)**</td>
</tr>
<tr>
<td>S4810P-FAN-R</td>
<td>S4810 fan module (front to rear airflow)**</td>
</tr>
</tbody>
</table>

Specifications:
- 802.1s MSTP
- 802.1Q VLAN Tagging, Double VLAN Tagging, GVRP
- 802.1D Bridging, STP
- 802.1AD RSTP
- 802.1X Network Access Control
- 802.3ab Gigabit Ethernet (1000BASE-T)
- 802.3c Frame Extensions for VLAN Tagging
- 802.3ad Link Aggregation with LACP
- 802.3i 10 Gigabit Ethernet (10GBASE-X)
- 802.3ba 40 Gigabit Ethernet (40GBase-SR4, 40GBase-CR4) on optical ports
- 802.3u Fast Ethernet (10BASE-T) on mfr ports
- 802.3x Flow Control
- 802.3z Gigabit Ethernet (1000BASE-X)

** Notes:
- * The S4810 I/O panel is considered the rear, the power supply panel is considered the front.
- ** The S4810 I/O panel is considered the front.

Physical:
- 48 line-rate 10 Gigabit Ethernet SFP+ ports
- 4 line-rate 40 Gigabit Ethernet QSFP+ ports
- 1 RJ45 console/management port with RS232 signaling
- Size: 1 RU, 17.3 x 17.3 x 18.11 in (44.4 x 44 x 46 cm)
- Weight: 14.93 lbs (6.56 kg)
- ISO 7779-rated weighted sound pressure level: 59.6 dBA at 73.4°F (23°C)
- Power supply: 100–240 VAC 50/60 Hz
- Max. thermal output: 955.36 BTU/h

Redundancy:
- Ring stacking topology with dynamic master election
- Hot swapable redundant power
- Hot swapable redundant fans

Performance:
- MAC addresses: 128K
- IPv4 routes: 16K
- IPv6 routes: 8K
- Switch fabric capacity: 1.28 Tbps (full-duplex)
- 640 Gbps (half-duplex)
- Forwarding capacity: 960 Mbps
- Link aggregation: 8 links per group, 128 groups per stack
- Queues per port: 4 queues
- VLANs: 4096
- Line-rate Layer 2 switching: all protocols, including IPv4 and IPv6
- Line-rate Layer 3 routing: IPv4 and IPv6
- ACLs: 2k ingress, 1k egress
- LAGs: 128 with up to 8
- LAG load balancing: based on Layer 2, IPv4 or IPv6 headers
- Latency: sub 700ns
- Packet buffer memory: 96MB
- CPU memory: 2GB

IEEE Compliance:
- 802.1AB LLDP
- 802.1ag Connectivity fault Management
- 802.1D Bridging, STP
- 802.1p L2 Prioritization
- 802.1Q VLAN Tagging, Double VLAN Tagging, GVRP
- 802.1s MSTP

RFC and I-D Compliance

General Internet Protocols

General IPv4 Protocols:
- 98 802.1s MSTP
- 98 802.1Q VLAN Tagging, Double VLAN Tagging, GVRP
- 98 802.1D RSTP
- 98 802.1X Network Access Control
- 98 802.3ab Gigabit Ethernet (1000BASE-T)
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Max. non-operating specifications:
- Max. operating specifications:
- Max. current draw per system:
- Max. thermal output: 955.36 BTU/h
- Power supply: 100–240 VAC 50/60 Hz

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

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 2009, Class A

Imunity:
- USA: FCC CFR 47 Part 15, Subpart B 2009, Class A

RoHS:
- All S- Serie components are EU RoHS compliant.