The Dell Networking S6010-ON switch is the industry’s first disaggregated hardware + software data center networking solution that empowers organizations to deploy modern workloads and applications designed for the open networking era.

Organizations that benefited from utilizing the disaggregation model with their data center server platforms can now leverage even greater benefits from Dell open networking solutions. Organizations can take advantage of this disaggregated networking model using industry-leading hardware and a choice of leading network operating systems to simplify data center fabric orchestration and automation and accelerate innovation.

These new offerings provide organizations the flexibility to transform their data centers and offer high-capacity network fabrics that are easy to deploy, cost-effective and provide a clear path to a software-defined data center. The Dell S6010-ON supports the open source Open Network Install Environment (ONIE) for zero-touch installation of alternate network operating systems.

Key applications
- High-density 10/40GbE ToR server aggregation in high-performance data center environments
- Active Fabric™ implementation for large deployments in conjunction with the Z9500, S6100, and Z9100
- Small-scale Active Fabric implementation via the S6010 switch in leaf and spine along with S Series 1/10GbE ToR switches enabling cost-effective aggregation of 10/40GbE uplinks
- iSCSI storage deployment including DCB converged lossless transactions
- High-performance SDN/OpenFlow 1.3 enabled with ability to inter-operate with industry standard OpenFlow controllers

Key features
- 1RU high-density 10/40GbE ToR switch with 32 ports of 40GbE (QSFP+) or 96 ports of 10GbE¹ and eight ports of 40GbE
- Up to 2.56Tbps of switching I/O bandwidth (full duplex) and available non-blocking² cut-through switching fabric delivering line-rate performance under full load² with sub 600ns latency
- Scalable L2 and L3 Ethernet switching with QoS and a full complement of standards-based IPv4 VRF3 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
- VXLAN gateway functionality³ support for bridging the non-virtualized and the virtualized overlay networks with line rate performance
- Open Automation Framework adding automated configuration and provisioning capabilities to simplify the management of network environments
- Modular Dell FTOS software delivering inherent stability as well as enhanced monitoring and serviceability functions
- Jumbo frame support for large data transfers
- 128 link aggregation groups with up to 16 members per group, using enhanced hashing
- Redundant, hot-swappable power supplies and fans
- Converged network support for DCB, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV support
- 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
- Fastboot feature enables min-loss software upgrade on a standalone S6010 without VLT/stacking
- ROCE is also supported on S6010 enabling convergence of compute and storage on Active Fabric
Specifications: Dell Networking S6010-ON switch

Ordering information
S6010-ON
32-Port 40G QSFP+ Ports, Redundant AC PS, Fan Subsys, w/Airflow from I/O PNL to P PN
32-Port 40G QSFP+ Ports, Redundant AC PS, Fan Subsys, w/Airflow from PS PNL to I/O PNL

Power supplies
AC Power Supply, I/O Panel to PSU Airflow
AC Power Supply, PSU to I/O Panel Airflow

Fans
S6010 Fan Module, I/O Panel to PSU Airflow
S6010 Fan Module, PSU to I/O Panel Airflow

Optics
Transceiver, SFP, 1000BASE-SX, 850nm Wavelength, 550m Reach
Transceiver, SFP, 1000BASE-LX, 1310nm Wavelength, 10km Reach
Transceiver, SFP, 1GBe, 2X, 1550nm Wavelength, 80km Reach (typical on 9/125um SMF)
Transceiver, SFP, 1000BASE-T SFP to RJ45
Transceiver, SFP+, 10GBe, SR, 850nm Wavelength, 300m Reach
Transceiver, SFP+, 10GBe, ER, 1310nm Wavelength, 10km Reach
Transceiver, 40GE QSFP+ Short Reach, 850nm Wavelength, 100-150m Reach on OM3/OM4
Transceiver, 40GE QSFP+ ESR, 200m Reach on OM3
Transceiver, 40GE QSFP+ PSM4 with 1m, 5m, or 15m pigtail to male
MPO SMF, 2km reach
Transceiver, 40GE, PS4-1R MPO 10Km QSFP+ to LC
Transceiver, 40GE QSFP+ LR4, 10km Reach on SMF
Transceiver, 40GE, LM4 Duplex QSFP+, 150m Reach on MMF, 1km Reach on MMF
Transceiver, 40GE, SM4 Duplex QSFP+, 220m Reach on MMF
Transceiver, 40GE QSFP+ to 1Gbe/10Gbe SFP/ SFP+ adapter, QS

Cables
MTP to MTP OM3 or OM4 Fiber Cable. Available in 3, 5, 7, 10, 25, 50, 75, 100 meter lengths (Optics required)
Cable, 10GBe, SFP+ to SFP+, Active Optical Cable, 15 meter reach (optics included)
Cable, 40GBe QSFP+ to SFP+, Active Optical Cable, 10 meter reach (optics included)
Cable, 40GBe QSFP+ to MTP to 4 x 10GBe SFP+, Active Optical Breakout Cable – 1, 3, 5, 7, 10 meter lengths (Optics required)
Cable, 10GBe, SFP+ to SFP+, passive Copper Twinax DAC 0.5, 1, 3, 5, 7 meter reach
Cable, 40GBe, QSFP+ to QSFP+, passive Copper Twinax DAC 0.5, 1, 3, 5, 7 meter reach
Cable, 40GBe, QSFP+ to QSFP+, passive Copper Breakout Cable – available in 0.5, 1, 3, 5, 7 meter lengths
Cable, 40GBe, QSFP+ to 4x1000Base-T RJ45

Supported operating systems
Cumulus Linux OS
Big Switch Networks Switch Light OS
Dell Networking Operating System v9
Mburus OS

Physical
32 line-rate 40 Gigabit Ethernet QSFP+ ports, RJ45 console/management port with RS232 signaling
1 USB 2.0 type A storage port
1 USB 2.0 type B console port
Size: 1 RU, 17.1 x 17.08 x 18.11o
Weight: 16.12 lbs (7.32 kg)
Max. power supply: 100 – 240 VAC 50/60 Hz
Max. power consumption: 411 Watts
Typ. power consumption: 274 Watts

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 105oC
ReadyRails rack mounting system, no tools required

Redundancy
Hot swappable redundant power
Hot swappable redundant fans

Performance
MAC addresses: 160K
ARP table 128K
IPv4 routes: 128K
IPv6 hosts: 24K
IPv6 routes: 8K
Multicast hosts: 8K
Switch fabric capacity: 2.56Tbps (Full-Duplex)
Forwarding capacity: 1462Mps
Link aggregation: 16 links per group, 128 groups per stack
Layer 2 VLANs: 4K
MST: 64 instances
LAG load balancing: Based on layer 2, IPv4 or IPv6 headers
Latency: Sub 600ns
LAG load balancing: Based on layer 2, IPv4 or IPv6 headers
Latency: Sub 600ns
Packet buffer memory: 16MB
CPU memory: 8GB
QOS data queues: 8
QOS control queues: 12
QOS: Default 768 entries scalable to 2.5K
Ingress ACL: 716
Egress ACL: 1K

IEEE compliance
802.1AB LLD
802.1BD Bridging, STP
802.1p L2 Prioritization
802.1Q VLAN Tagging, Double VLAN Tagging, GVRP
802.1Qbb Priority-Based Flow Control
802.1Qbb PFC
802.1Qaz ETS
802.1s MSTP
802.1w RSTP
802.1X Network Access Control
802.3ac Frame Extensions for VLAN Tagging
802.3ad Link Aggregation with LACP
802.3ad Link Aggregation with LACP
802.3ad Link Aggregation with LACP
802.3ad Link Aggregation with LACP

802.1Q VLAN Tagging
802.1Q VLAN Tagging
802.1Q VLAN Tagging
802.1Q VLAN Tagging

Broadcast: 8K
Multicast: 64K
Unicast: 268435456

QOS data queues: 8
QOS control queues: 12
QOS: Default 768 entries scalable to 2.5K
Ingress ACL: 716
Egress ACL: 1K

RFC and I-D compliance
General Internet protocols
769 UDP, BGP-4, Telnet
793 TCP 959 FTP
General IPv4 protocols
791 IPv4, 1042 Ethernet Transmission
792 ICMP, 1305 NTPv3
826 ARP, 1519 CIDR
1027 Proxy ARP, 1542 BOOTP (relay)
1035 DNS (client)

VRF, VRF–Lite (VRF-aware IPv4 unicast (BGP, OSPF))

General IPv6 protocols
1981 Path MTU Discovery
IPv6 Management
Features (partial) (telnet, FTP, TACACS+
2460 IPv6
RADIUS, SSH, NTP)
2461 Neighbor Discovery
2462 Stateless Address
Address (partial)
Autoconfiguration (partial)

RIP
1058 RIPv1, RIPv2
2453 RIPv2

OSPF
1587 N SSA
2328 OSPFv2
2415 MDS
2370 Opaque LSA

IS-IS
5301 Dynamic hostname exchange mechanism
for IS-IX
5302 Domain-wide prefix distribution with two-level IS-IS
5303 Three way handshake for IS-IS point-to-point adjacencies
5308 IS-IX for IPv6 Bar

BGP
1997 Communities
2385 MDS
2545 BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
2439 Route Flap Damping
2796 Route Reflector
2842 Capabilities
2858 Multiprotocol Extensions
2916 Route Refresh
3065 Confederations
4360 Extended Communities
4893 4-byte ASN
5396 4-byte ASN representations
draft-ietf-idr-bgp4-20 BGPv4
draft-michaelson-4byte-as-representation-05 4-byte ASN Representation (partial)
draft-ietf-idr-add-paths-04.txt ADD PATH

Multicast
1112 IGMPv4
2236 IGMPv2
3376 IGMPv3
MDS
draft-iefr-pim-sm-v2-new-05 PIM-SmW

Data center bridging
802.1Qbd Priority-Based Flow Control
802.1Q Enhanced Transmission Selection (ETS)
Data Center Bridging eXchange (DCBx)
DCBx Application TLV (iSCSI, FCoE)

Network management
1155 SMLv1
1157 SNMPv4
1212 Concise MIB Definitions
1215 SNMP Traps
1493 Bridges Mib
1850 OSPPV2 Mib
1901 Community-Based SNMPv2
Learn More at Dell.com/Networking

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Dell Networking S Series-S6010-ON-Spec Sheet - CHINA

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