



Force10



Dell Force10 S-Series S25P Fiber Switch

Modular Force10 Operating System (FTOS) software delivers inherent stability; 24-port SFP fixed configuration 1-RU switch with up to four 10 GbE uplinks; scalable stacking technology supports 192 fiber Fast Ethernet or GbE ports in up to eight S25Ps.

S-Series S25P high performance GbE/10 GbE switch

The Force10 S25P is a compact form factor switch delivering high Gigabit Ethernet fiber density at the network edge, enabling cost-effective scalability while eliminating bandwidth bottlenecks at key aggregation points.

Key applications

Coupled with the Dell Force10 E-Series and C-Series, which deliver unmatched resiliency and performance, the S25P enables IT managers to deploy a reliable end-to-end 10 GbE solution that spans from core to network edge.

- Small form factor intra-POP Layer 2 interconnects
- 10 GbE LAN PHY or DWDM XFP media modules for cost-effective metro or inter-POP transport
- Flexible customer aggregation and distribution switch supporting 10/100/1000Base-T copper and 100/1000Mbps fiber
- Line-rate GbE and 10 GbE rack switches for the most demanding data center, storage or compute facility

Key features

The S25P is a reliable and scalable fixed configuration modular media switch for high performance Ethernet environments.

- 24 SFP ports in a 1-RU form factor with two modular slots
 - 20 ports 100Base-FX, 10/100/1000Base-T, or 1000Base-X with SFP media modules
 - 4 ports 10/100/1000Base-T shared with SFP ports

- Optional modules
 - 2-port 10 GbE LAN PHY (pluggable XFP modules)
 - 2-port 10 GbE (CX4)
 - 2-port 12 Gbps stacking
 - 1-port 24 Gbps stacking
- Modular FTOS with advanced monitoring and serviceability functions
- VirtualView™ real-time network and application traffic monitoring for virtualized data centers
- Supports jumbo frames of up to 9,252 bytes; ideal for high-end server connectivity and network attached file servers
- Full complement of standards-based Layer 2, IPv4 and IPv6 features for unicast and multicast applications
- Switching fabric capacity of 144 Gbps and forwarding capacity of more than 95 Mpps
- Stack up to eight S25N, S25P, S25V, S50N or S50V switches to deliver a scalable and flexible high capacity solution

High performance,
low latency
Layer 2 Gigabit
fiber switch for the
data center edge.

Specifications: S-Series S25P fiber switch

Ordering Information

Order Number	Description
S25-01-GE-24P-2	24-port 100Base-FX/GbE SFP chassis with four 10/100/1000Base-T ports, two modular slots and two AC power supplies, FTOS software
S25-01-GE-24P-DC-2	24-port 100Base-FX/GbE SFP chassis with four 10/100/1000Base-T ports, two modular slots and two DC power supplies, FTOS software
S50-01-10GE-2P	2-port 10 GbE XFP module
S50-01-10GE-2C	2-port 10 GbE CX4 module
S50-01-12G-2S	2-port 12 Gbps stacking module
S50-01-24G-1S	1-port 24 Gbps stacking module
S50-01-SSC-12G	60 cm stacking cable for S50-01-12G-2S
S50-01-LSC-12G	4 m stacking cable for S50-01-12G-2S
S50-01-SSC-24G	60 cm stacking cable for S50-01-24G-1S
S50-01-LSC-24G	4 m stacking cable for S50-01-24G-1S
SW-SB-LATEST	Layer 3 FTOS software upgrade

Physical

24 line-rate ports supporting GbE or 100Base-FX SFPs
4-ports 10/100/1000Base-T (shared with SFP ports)
1 RJ45 console/management port with RS232 signaling

Optional modules:

- 2 line-rate ports 10 Gigabit Ethernet XFP
- 2 line-rate ports 10 Gigabit Ethernet CX4
- 2 line-rate ports 12 Gigabit Stacking
- 1 line-rate port 24 Gigabit Stacking

Size: 1 RU, 1.7 h x 17.32 w x 16.73" d (4.3 h x 44 w x 42.5 cm d)

Weight: 14.43 lbs (6.56 kg)

ISO 7779 A-weighted sound pressure level: 45.1 dBA at 73.4°F (23°C)

Power supply: 100–240 VAC 50/60 Hz, –44 to –60 VDC

Max. thermal output: S25P (AC): 305 BTU/h, S25P (DC): 262 BTU/h

Max. current draw per system:

2 A at 100/120 VAC, 1 A at 200/240 VAC, 3.6 A at –48 VDC

Max. power consumption:

S25P (AC): 90 W, S25P (DC): 77 W

Max. operating specifications:

Operating temperature: 32° to 122°F (0° to 50°C)
Operating humidity: 10 to 85% (RH), non-condensing

Max. non-operating specifications:

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

Reliability:

S25P (AC): MTBF 164,358 hours, S25P (DC): MTBF 164,358 hours

Redundancy

Ring stacking topology with dynamic master election
Dual modular slots with up to four 10 GbE ports
Link aggregation across stack members
Power redundancy

Performance

MAC addresses: 16K
IPv4 routes: 4K
IPv6 routes: 2,500
Switching fabric capacity: 144 Gbps
User traffic capacity: 128 Gbps (95 Mpps)
Link aggregation: 8 links per group, 128 groups per stack
Stacking capacity: 96 Gbps per stack member
Queues per port: 4 queues
VLANs: 1024 VLANs with 4096 tag value support
Line-rate Layer 2 switching: all protocols, including IPv4 and IPv6
Line-rate Layer 3 routing: IPv4 and IPv6
LAG load balancing: based on Layer 2, IPv4 or IPv6 headers
Switching latency: <5 µs for 64 byte frames

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
802.1w RSTP
802.1X Network Access Control
802.3ab Gigabit Ethernet (1000BASE-T)
802.3ac Frame Extensions for VLAN Tagging
802.3ad Link Aggregation with LACP
802.3ae 10 Gigabit Ethernet (10GBASE-X)
802.3ak 10 Gigabit Ethernet (10GBASE-CX4)
802.3i Ethernet (10BASE-T)
802.3u Fast Ethernet (100BASE-FX, 100BASE-TX)
802.3x Flow Control
802.3z Gigabit Ethernet (1000BASE-X)
ANSI/TIA-1057 LLDP-MED
Force10 FRRP (Force10 Redundant Ring Protocol)
Force10 PVST+
MTU 9,252 bytes

RFC and I-D compliance

General internet protocols

768 UDP 1321 MD5
793 TCP 1350 TFTP
854 Telnet 2474 Differentiated Services
959 FTP 3164 Syslog

General IPv4 protocols

791 IPv4 1812 Routers
792 ICMP 1858 IP Fragment Filtering
826 ARP 2131 DHCP (server and relay)
1027 Proxy ARP 2338 VRRP
1035 DNS (client) 3021 31-bit Prefixes
1042 Ethernet Transmission 3046 DHCP Option 82
1191 Path MTU Discovery 3069 Private VLAN
1305 NTPv3 3128 Tiny Fragment Attack Protection
1519 CIDR
1542 BOOTP (relay)

General IPv6 protocols

1981 Path MTU Discovery 2463 ICMPv6 (partial) 2464 Ethernet Transmission
2460 IPv6 2675 Jumbograms
2461 Neighbor Discovery 3587 Global Unicast Address Format Addressing (partial)
2462 Stateless Address Autoconfiguration (partial)

RIP

1058 RIPv1 2453 RIPv2

OSPF

2154 MD5 3623 Graceful Restart
1587 NSSA 4222 Prioritization and
2328 OSPFv2 Congestion Avoidance
2370 Opaque LSA

BGP

1997 Communities
2385 MD5
2439 Route Flap Damping
2796 Route Reflection
2842 Capabilities
2858 Multiprotocol Extensions
2918 Route Refresh
3065 Confederations
4360 Extended Communities
4893 4-byte ASN
5396 4-byte ASN Representation
draft-ietf-idr-bgp4-20 BGPv4
draft-ietf-idr-restart-06 Graceful Restart

Multicast

1112 IGMPv1
2236 IGMPv2
3376 IGMPv3
3569 SSM for IPv4
4541 IGMPv1/v2 Snooping
draft-ietf-pim-sm-v2-new-05 PIM-SM

Network management

1155 SMIv1
1156 Internet MIB
1157 SNMPv1
1212 Concise MIB Definitions
1215 SNMP Traps
1493 Bridges MIB
1850 OSPFv2 MIB
1901 Community-based SNMPv2
2011 IP MIB
2012 TCP MIB
2013 UDP MIB
2024 DLSw MIB

2096 IP Forwarding Table MIB
2570 SNMPv3
2571 Management Frameworks
2572 Message Processing and Dispatching
2574 SNMPv3 USM
2575 SNMPv3 VACM
2576 Coexistence Between SNMPv1/v2/v3
2578 SMIv2
2579 Textual Conventions for SMIv2
2580 Conformance Statements for SMIv2
2618 RADIUS Authentication MIB
2665 Ethernet-like Interfaces MIB
2674 Extended Bridge MIB
2787 VRRP MIB
2819 RMON MIB (groups 1, 2, 3, 9)
2863 Interfaces MIB
2865 RADIUS
3273 RMON High Capacity MIB
3416 SNMPv2
3418 SNMP MIB
3434 RMON High Capacity Alarm MIB
3580 802.1X with RADIUS
5060 PIM MIB
ANSI/TIA-1057 LLDP-MED MIB
draft-grant-tacacs-02 TACACS+
draft-ietf-idr-bgp4-mib-06 BGP MIBv1
IEEE 802.1AB LLDP MIB
IEEE 802.1AB LLDP DOT1 MIB
IEEE 802.1AB LLDP DOT3 MIB
rulin-mstp-mib-02 MSTP MIB (traps)
sFlow.org sFlowv5
sFlow.org sFlowv5 MIB (version 1.3)
FORCE10-BGP4-V2-MIB Force10 BGP MIB (draft-ietf-idr-bgp4-mibv2-05)

FORCE10-IF-EXTENSION-MIB

FORCE10-LINKAGG-MIB

FORCE10-COPY-CONFIG-MIB

FORCE10-MON-MIB

FORCE10-PRODUCTS-MIB

FORCE10-SS-CHASSIS-MIB

FORCE10-SMI

FORCE10-SYSTEM-COMPONENT-MIB

FORCE10-TC-MIB

FORCE10-TRAP-ALARM-MIB

Regulatory compliance

Safety

UL/CSA 60950-1, 1st Edition
EN 60950-1, 1st Edition
IEC 60950-1, 1st 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 (CISPR 22: 2006), Class A
Japan: VCCI V3/2007.04 Class A
USA: FCC CFR 47 Part 15, Subpart B, Class A

Immunity

EN 300 386 V1.3.3: 2005 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.

The features and specifications are for FTOS.

