



Force10

Dell Force10 S-Series S25V and S50V Power-over-Ethernet Switches

Modular Dell Force10 Operating System (FTOS) software delivers inherent stability; 24-port and 48-port GbE fixed configuration 1-RU switch with up to four 10 GbE ports; scalable stacking technology supports 384 GbE ports with up to eight S50Vs.

S-Series High Performance GbE/10 GbE Switch

The Dell Force10 S25V and S50V bring core-like resiliency in a compact form factor to the network edge, enabling cost-effective scalability. These high performance and low latency Gigabit Ethernet switches deliver the critical functionality that advanced enterprise network edges demand.

Key applications

Coupled with the Dell Force10 E-Series and C-Series, which deliver unmatched resiliency and performance, the S25V and S50V enable IT managers to deploy a reliable end-to-end 10 GbE solution that spans from core to network edge.

- Line-rate GbE edge switches with 10 GbE uplinks for converged services and high bandwidth desktop applications
- Cost-effective PoE-enabled 10/100/1000Base-T wiring closet aggregation of VoIP phones, wireless access points, video cameras or other IEEE 802.3af-compliant devices

Key features

The S25V and S50V are fixed configuration switches with PoE that deliver the reliability and scalability that wiring closets demand.

- 24 or 48 10/100/1000 ports in a 1-RU form factor
 - 20 or 44 ports 10/100/1000Base-T
 - 4 ports 10/100/1000Base-T shared with SFP ports
 - IEEE802.3af compliant PoE that provides up to 15.4 W per port and 790 W per switch
- 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 Dell Force10 FTOS with advanced monitoring and serviceability functions
- Suite of security, access control and wiring closet edge features for enterprise networks
- PowerSmart™ suite of intelligent power management features provide automatic sensing, provisioning and management of PoE power
- Full complement of standards-based Layer 2, IPv4 and IPv6 features for unicast and multicast applications
- Switching fabric capacity of up to 288 Gbps and forwarding capacity of more than 131 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 switching for
powering the data
center edge

Specifications: S-Series Power-over-Ethernet Switches

Ordering Information

Order Number	Description
225-2456	24-port 10/100/1000Base-T chassis with 4 SFP ports, 2 modular slots, 1AC+ 1 DC power supply, FTOS software
225-2516	48-port 10/100/1000Base-T chassis with PoE, 4 SFP ports, 2 modular slots, 1AC+ 1 DC power supply, FTOS software
331-5389	2-port 10 GbE XFP module
331-5313	2-port 10 GbE CX4 module
331-5315	2-port 12 Gbps stacking module
331-5314	1-port 24 Gbps stacking module
331-5264	60 cm stacking cable for S50-01-12G-2S
331-5261	4 m stacking cable for S50-01-12G-2S
331-5265	60 cm stacking cable for S50-01-24G-1S
331-5263	4 m stacking cable for S50-01-24G-1S
421-6978	Layer 3 FTOS software upgrade

Physical

S25V: 24 line-rate 10/100/1000Base-T ports
 S50V: 48 line-rate 10/100/1000Base-T ports
 4 SFP ports (shared)
 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: 15.62 lbs (7.10 kg)
 ISO 7779 A-weighted sound pressure level:
 S25V: 42.9 dBA at 73.4°F (23°C), S50V: 62.2 dBA at 73.4°F (23°C)
 Power supply: 100–240 VAC 50/60 Hz, –48 VDC
 Max. thermal output: S25V: 349 BTU/h, S50V: 497 BTU/h
 Max. current draw per System:
 6.5 A at 100/120 VAC, 3.25 A at 200/240 VAC, 11.5 A at –48 VDC
 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:
 S25V: 102 W, S50V: 146 W
 Max. PoE power:
 320 W using either AC or DC inputs
 790 W using load sharing AC and DC inputs
 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 temperature: –40° to 158°F (–40° to 70°C)
 Reliability: S25V: MTBF 107,720 hours, S50V: MTBF 130,482 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: S25N: 16K, S50V: 32K
 IPv4 routes: 4K
 IPv6 routes: 2,500
 Switching fabric capacity: S25V: 144 Gbps, S50V: 288 Gbps
 User traffic capacity: S25V: 128 Gbps (95 Mpps)
 S50V: 176 Gbps (131 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-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 (relay)
1027	Proxy ARP	2338	RRRP
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 (partial)	2463	ICMPv6
		1858	IP Fragment Filtering
2460	IPv6	2675	Jumbograms
2461	Neighbor Discovery (partial)	3587	Global Unicast Address Format
2462	Stateless Address Autoconfiguration (partial)	4291	Addressing

RIP

1058 RIPv1 2453 RIPv2

OSPF

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

BGP

1997	Communities	2918	Route Refresh
2385	MD5	3065	Confederations
2439	Route Flap Damping	4360	Extended Communities
2796	Route Reflection	4893	4-byte ASN
2842	Capabilities	5396	4-byte ASN Representation
2858	Multiprotocol Extensions		
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	SMIPv1		
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		
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	SMIPv2		
2579	Textual Conventions for SMIPv2		
2580	Conformance Statements for SMIPv2		
2618	RADIUS Authentication MIB		
2665	Ethernet-like Interfaces MIB		
2674	Extended Bridge MIB		
2787	RRRP 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		
ruzin-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+A1:2007 (CISPR 22: 2006), Class A
 Japan: VCCI V3/2009 Class A
 USA: FCC CFR 47 Part 15, Subpart B:2009, Class A

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

The features and specifications are for FTOS. For SFTOS features and specifications, please refer to the SFTOS data sheet.

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