

S4100 SPEC SHEET



DELL EMC POWERSWITCH S4100-ON

High-performance open networking top-of-rack switches with multirate Gigabit Ethernet and unified ports

The S4100-ON 10GbE switches comprise DellTechnologies' latest disaggregated hardware and software data center networking solutions, providing state-of-the-art 100GbE uplinks, fibre channel connectivity and a broad range of functionality to meet the growing demands of today's data center environment. These innovative, next-generation top-of-rack open networking switches offer optimum flexibility and cost-effectiveness for the enterprise, midmarket and tier 2 cloud service providers with demanding compute and storage traffic environments.

The compact S4100-ON models provide industry-leading density with up to 48 ports of 10GbE or up to 48 ports of 10GBaseT ports, 2 ports of 40GbE and 4 ports of 100GbE in a 1RU form factor. The S4148U-ON model can support up to 28 8/16G fibre channel ports, or 16 ports of 32G* fibre channel ports. The S4112-ON is a half-rack width model that supports up to 12 ports of 10GbE or 12 ports 10GBaseT, and 3 ports of 100GbE.

Using industry-leading hardware and a choice of Dell EMC SmartFabric OS10 or select 3rd party network operating systems and tools, the S4100-ON Series offers flexibility by provision of configuration profiles and delivers non-blocking performance for workloads sensitive to packet loss. The compact S4100-ON models provide multirate speed, enabling denser footprints and simplifying migration to 100Gbps. Also unique to the S4100-ON series is the ability to meet the demands of converged and virtualized data centers

by offering unified ports (S4148U) and hardware support for L2 and L3 VXLAN Gateway. Priority-based flow control (PFC), data center bridge exchange (DCBX) and enhanced transmission selection (ETS) make the S4100-ON ideally suited for DCB environments. Dell EMC PowerSwitch S4100-ON switches support the open source Open Network Install Environment (ONIE) for zero touch installation of Dell EMC SmartFabric OS10 networking operating system, as well as of alternative network operating systems

Maximum performance and functionality

The S4100-ON series are high-performance, multifunction, 1/10/25/40/50/100 GbE and 8/16/32G FC top-of-rack (ToR) switches purpose-built for applications in high-performance data center, cloud and computing environments. Architectural features to optimize data center network flexibility, efficiency and availability include 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 maximize flexibility
- Multi-functional 1/10/25/40/50/100 GbE switching in High Performance Computing Clusters or other business-sensitive deployments requiring the highest bandwidth. High-density 1/10 GbE ToR server access in high-performance data center environments

- iSCSI and FC storage deployment, including DCB converged lossless transactions
- Small-scale data center fabric implementation via the S4100-ON switch in leaf and spine along with S-Series 1/10GbE ToR switches
- · VXLAN layer 2/layer 3 gateway support (available in hardware only)

Key features

- 1RU high-density 10/40/100 GbE ToR switches with up to 48 ports of 10 GbE (SFP+) or up to 48 ports of 10GBaseT ports, or up to 28 ports of 8/16 fibre channel, two ports of 40 GbE (QSFP+), and up to four ports of 100GbE (QSFP28) or four ports of 8/16/32G fibre channel
- The S4112 is a 1RU, half-rack width 10/100GbE ToR switch with up to 12 ports of 10GbE (SFP+) or up to 12 ports of 10GBaseT ports, and up to three ports of 100GbE (QSFP28)
- Multi-rate 100GbE ports support 10/25/40/50 GbE. 40GbE ports support 10GbE. 10GbE ports support 1GbE. Up to four different simultaneous speeds are possible in a given profile.
- Supports dynamic reconfiguration of unified ports on S4148U product as 10GbE or 8/16G FC on SFP+ ports, and 25GbE or 16/32Gb FC on QSFP28 ports
- 1.76Tbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load on S4148F-ON, S4148FE-ON, S4148T-ON and S4148U-ON.
- 960Gbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load on S4128F-ON and S4128T-ON
- 840Gbps (full-duplex) non-blocking, cut-through switching fabric delivers line-rate performance under full load on S4112F-ON and S4112T-ON
- VXLAN gateway functionality support for bridging and routing the non-virtualized and the virtualized overlay networks with line rate performance
- · Converged Network support with DCB
- · IO panel to PSU airflow or PSU to IO panel airflow
- Redundant, hot-swappable power supplies and fans (S4112-ON has redundant, fixed power supplies and fans)
- Support for 10GBASE-LRM optics over OM1/OM2 fiber on S4148FE-ON product (not supported on other products in S4100 product family)
- · IEEE 1588v2 supported (hardware only) on 48 port models

Key Features with Dell EMC SmartFabric OS10

- Consistent DevOps framework across compute, storage and networking elements
- Standard networking features, interfaces and scripting functions for legacy network operations integration
- Standards-based switching hardware abstraction via Switch Abstraction Interface (SAI)
- Pervasive, unrestricted developer environment via Control Plane Services (CPS)
- OS10 Enterprise Edition software enables Dell Technologies layer 2 and 3 switching and routing protocols with integrated IP services, quality of service, manageability and automation features
- OS10 supports Precision Time Protocol (PTP, IEEE 1588v2) to synchronize clocks on network devices. **

- Leverage common open source tools and best practices (data models, commit rollbacks)
- Increase VM Mobility region by stretching L2 VLAN within or across two DCs with unique VLT capabilities
- Scalable L2 and L3 Ethernet Switching with QoS, ACL and a full complement of standards based IPv4 and IPv6 features including OSPF, BGP and PBR
- Enhanced mirroring capabilities including local mirroring, Remote Port Mirroring (RPM), and Encapsulated Remote Port Mirroring (ERPM)
- Converged network support for Data Center Bridging, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV Enhanced mirroring capabilities including local mirroring, Remote Port Mirroring (RPM), and Encapsulated Remote Port Mirroring (ERPM)
- Converged network support for Data Center Bridging, with priority flow control (802.1Qbb), ETS (802.1Qaz), DCBx and iSCSI TLV

	S4112F-ON	S4112T-ON	S4128F-ON	S4128T-ON	S4148F-ON	S4148FE-ON	S4148T-ON	S4148U-ON
Ports	12xSFP+ 3xQSFP28	12x10GbT 3xQSFP28	28xSFP+ 2xQSFP28	28x10GbT 2x QSFP28	48xSFP+ 2xQSFP+ 4xQSFP28	48xSFP+ 2xQSFP+ 4xQSFP28	48x10GbT 2xQSFP+ 4xQSFP28	48xSFP+ 2xQSFP+ 4xQSFP28
Unified port								•
Max 10GbE density	24	24 (12 10GbT and 12 SFP+)	6	36 (28 10GbT and 8 FP+)	72	72	72 (48 10GbT and 24 FP+)	72
Max 25GbE density	12	12	8	8	16	16	16	16
Max 40GbE density	3	3	2	2	6	6	6	6
Max 50GbE density	6	6	4	4	8	8	8	8
Max 100GbE density	3	3	2	2	4	4	4	4
Max FC 8G/16G ports (oversubscribed)	0	0	0	0	0	0	0	40
Max FC 16G line rate	0	0	0	0	0	0	0	28
Max FC 32G ports (oversubscribed)	0	0	0	0	0	0	0	16
Max FC 32G line rate	0	0	0	0	0	0	0	8
Switching capacity	840Gbps	840Gbps	960Gbps	960Gbps	1.76Tbps	1.76Tbps	1.76Tbps	1.76Tbps
Throughput	630Mpps	630Mpps	720Mpps	720Mpps	1320Mpps	1320Mpps	1320Mpps	1320Mpps
LRM optics support						•		
1588v2 PTP timing					•	•	•	•
Max power consumption	180W	200W	260W	300W	370W	400W	440W	460W
Typical operating power	90W	120W	160W	250W	200W	240W	320W	300W
Number of fan trays	Fixed	Fixed	4	4	4	4	4	4
Fans per fan tray	3	3	1	1	1	1	2	2
Weight	8.30lbs	8.45lbs	19.66 lbs (8.92 kg)	20.67 lbs (9.38 kg)	20.15 lbs (9.14 kg)	20.85 lbs (9.46 kg)	22.37 lbs (10.15 kg)	20.52 lbs (9.31 kg)
Max thermal output	614 BTU/ hour	682 BTU/ hour	886 BTU/h	1,023 BTU/h	1261 BTU/h	1,364 BTU/h	1,500 BTU/h	1,568 BTU/



Product	Description
S4100-ON	S4112F, 12x 10GbE SFP+, 3x 100GbE QSFP28, 2x AC Fixed PSU, 3x Fixed Fan, I/O Panel to PSU Airflow S4112F, 12x 10GbE SFP+, 3x 100GbE QSFP28, 2x AC Fixed PSU, 3x Fixed Fan, I/O PSU to I/O Panel Airflow S4112T, 12x 10GBASE-T, 3x 100GbE QSFP28, 2x AC Fixed PSU, 3x Fixed Fan, I/O Panel to PSU Airflow S4112T, 12x 10GBASE-T, 3x 100GbE QSFP28, 2x AC Fixed PSU, 3x Fixed Fan, I/O PSU to I/O Panel Airflow S4112F, 12x 10GbE SFP+, 3x 100GbE QSFP28, 2x DC Fixed PSU, 3x Fixed Fan, I/O Panel to PSU Airflow S4112F, 12x 10GbE SFP+, 3x 100GbE QSFP28, 2x DC Fixed PSU, 3x Fixed Fan, I/O Panel to PSU Airflow S4112T, 12x 10GBASE-T, 3x 100GbE QSFP28, 2x DC Fixed PSU, 3x Fixed Fan, I/O Panel to PSU Airflow S4112T, 12x 10GBASE-T, 3x 100GbE QSFP28, 2x DC Fixed PSU, 3x Fixed Fan, I/O Panel to PSU Airflow S412BF, 28x 10GBASE-T, 3x 100GbE QSFP28, 2x AC PSU, 4x Fan module, I/O Panel to PSU Airflow S4128F, 28x 10GbE SFP+, 2x 100GbE QSFP28, 2x AC PSU, 4x Fan module, I/O Panel to PSU Airflow S4128T, 28x 10GBASE-T, 2x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S412BT, 28x 10GBASE-T, 2x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148F, 48x 10GbE SFP+, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, I/O Panel Airflow S4148F, 48x 10GbE SFP+, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148F, 48x 10GbE SFP+, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148F, 48x 10GbE SFP+, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148F, 48x 10GbE SFP+, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148F, 48x 10GbE SFP+, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148F, 48x 10GbASE-T, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148T, 48x 10GBASE-T, 2x QSFP+, 4x 100GbE QSFP28, 2x AC PSU, 4x Fan module, PSU to I/O Panel Airflow S4148U, 24x Unified port SFP+, 24x 10GbE SFP+, 2x QSFP+, 4x Unified port Q
Redundant power supplies (not applicable to S4112)	S4100, AC Power Supply, IO Panel to PSU Airflow S4100, AC Power Supply, PSU to IO Panel Airflow S4100, DC Power Supply, IO Panel to PSU Airflow (available as custom kit) S4100, DC Power Supply, PSU to IO Panel Airflow (available as custom kit) S4100, HV DC Power Supply, IO Panel to PSU Airflow S4100, HV DC Power Supply, PSU to IO Panel Airflow
Fans (not applicable to S4112)	S4100 fan module, IO Panel to PSU Airflow S4100 fan module, PSU to IO Panel Airflow
Optics	Transceiver, 10GbE, SR SFP+, short reach Transceiver, 10GbE, LR SFP+, long reach Transceiver, 10GbE, ER SFP+, extended reach Transceiver, 10GbE, ZR SFP+ extra extended reach 10G, Transceiver, 10GbE, USR, SFP+ Transceiver, 10GbE, LRM, SFP+ (for S4148FE only) Transceiver, 10GbE, LRM, SFP+ (for S4148FE only) Transceiver, 10GBE, SR4 optic QSFP+ Transceiver, 40GbE, eSR4 optic QSFP+ Transceiver, 40GbE, SR4 optic QSFP+ Transceiver, 40GbE, LR4 optic QSFP+ Transceiver, 40GbE, ER4 optics QSFP+ Transceiver, 40GbE, ER4 optics QSFP+ Transceiver, 40GbE, PSM4-LR MPO 10Km QSFP+ to LC Transceiver, 40GbE, LM4 / SM4 Duplex QSFP+ Transceiver, 100GbE, SR4 QSFP28 Transceiver, 100GbE, LR4 USFP28 Transceiver, 100GbE, LR4 USFP28 Transceiver, 100GbE, CWDM4 2Km QSFP28 Transceiver, 100GbE, PSM4 500m QSFP28 Transceiver, 100GbE, PSM4-IR, QSFP28 Transceiver, 100GbE, PSM5-IR, QSFP28 Transceiver, 100GbE, PSM6-IR, QSFP28 Transceiver, 100GbE, PSM6-IR, QSFP28 Transceiver, 100GbE, PSM6-IR, QSFP28 Transceiver, 100GbE, PSM6-IR, QSFP28 Transceiver, SFP+, 16Gbps Fibre Channel, SWL, 850nm, LC Duplex (S4148U model only) Transceiver, QSFP4, 4x16Gbps Fibre Channel, SW4, 850nm, MPO MMF (S4148U model only) Transceiver, QSFP28, 4x32Gbps Fibre Channel, SW4, 850nm, MPO MMF (S4148U model only)
Cables	40GbE, QSFP+ to QSFP+, active optical 40GbE, QSFP+ to QSFP+, passive DAC 40GbE, MTP to 4xLC optical breakout 40GbE, 4x10GbE, QSFP+ to 4xSFP+, passive DAC 100GbE, 4x25GbE, QSFP28 to 4xSFP28, passive DAC 100GbE, QSFP28 to QSFP28, active optical 100GbE, QSFP28 to QSFP28, passive DAC 100GbE, QSFP28 to QSFP28, passive DAC 100GbE, QSFP28 to QSFP28, passive DAC 100GbE, 2x50GbE, QSFP28 to 2xQSFP28, passive DAC, breakout

Physical	802.3ad	Link Aggregation with LACP	3021	31-bit Prefixes
1 RJ45 console/management port with RS232	802.3ae	10 Gigabit Ethernet (10GBase-X)	3046	DHCP Option 82 (Relay)
signaling	802.3ba	40 Gigabit Ethernet (40GBase-X)	1812	Requirements for IPv4 Routers
1 RJ45 micro-USB-B console port	802.3i	Ethernet (10Base-T)	1918	Address Allocation for Private
1 RJ45 10/100/1000Base-T management Ethernet	802.3u	Fast Ethernet (100Base-TX)		Internets
· ·			0.474	
port	802.3z	Gigabit Ethernet (1000BaseX)	2474	Diffserv Field in IPv4 and Ipv6
Size: 1 RU, 1.75"(h) x 17"(w) x 18"(d) (4.4cm (h)	802.1D	Bridging, STP		Headers
x 43.1cm (w) x 45.7cm (d))	802.1p	L2 Prioritization	2597	Assured Forwarding PHB Group
S4112: 1.7"(h) x 8.28"(w) x 18"(d) (4.125cm	802.1Q	VLAN Tagging, GVRP	3195	Reliable Delivery for Syslog
(h) x 20.9cm (w) x 45cm (d)	802.1Qbb	PFC	3246	Expedited Forwarding PHB
Power supply: 100-240 VAC 50/60 Hz	802.1Qaz	FTS	4364	VRF-lite (IPv4 VRF with OSPF and
			1001	
Power supply (DC), applicable to S4412: rated	802.1s	MSTP		BGP)*
-40 to -72 VDC	802.1w	RSTP	COPP: 0	Control Plane Policing
Max. current draw per system: 6A/5A at	PVST+		Policy Ba	ased Routing
100/120V	802.1X	Network Access Control		IPv6 Protocols
AC; 3A/2.5A at 200/240V AC	802.3ab	Gigabit Ethernet (1000BASE-T) or	1981	Path MTU Discovery*
S4112: 2A/1.7A at 100/120V AC; 1A/0.8A at		breakout	2460	IPv6
200/240V AC	802.3ac	Frame Extensions for VLAN Tagging	2461	Neighbor Discovery*
S4112 (DC): -40V/5A, -48V/4.2A, -72V/2.8A	802.3ad	Link Aggregation with LACP	2462	Stateless Address AutoConfig
Max. operating specifications:	802.3ae	10 Gigabit Ethernet (10GBase-X)	2463	ICMPv6
Operating temperature: 41° to 104° F	802.3ba	40 Gigabit Ethernet (40GBase- SR4,	2464	Ethernet Transmission
(5° to 40° C)	002.000	40GBase-CR4, 40GBase-LR4,	2675	
				Jumbo grams
Operating humidity: 5 to 85% (RH),		100GBase-SR10, 100GBase-LR4,	3587	Global Unicast Address Format
non-condensing		100GBase-ER4) on optical ports	4291	IPv6 Addressing
Max. non-operating specifications:	802.3bj	100 Gigabit Ethernet	2464	Transmission of IPv6 Packets over
			2404	
Storage temperature: -40° to 149°F	802.3u	Fast Ethernet (100Base-TX) on mgmt		Ethernet Networks
(-40° C to 65° C)		ports	2711	IPv6 Router Alert Option
Storage humidity: 5 to 95% (RH),	802.3x	Flow Control	4007	IPv6 Scoped Address Architecture
non-condensing	802.3z	Gigabit Ethernet (1000Base-X) with	4213	Basic Transition Mechanisms for IPv6
Redundancy	QSA			Hosts and Routers
Hot swappable redundant power (not applicable	ANSI/TIA	-1057 LLDP-MED	4291	IPv6 Addressing Architecture
to S4112)		TU support 9,416 bytes	5095	Deprecation of Type 0 Routing
Hot swappable redundant fans (not applicable	Layer2 F	rotocols		Headers in IPv6
to S4112)	802.1D	Compatible	IPv6 Ma	nagement support (telnet, FTP,
,		•		
Fixed, redundant power supply and fan for S4112	802.1p	L2 Prioritization		i, RADIUS, SSH, NTP)
Performance	802.1Q	VLAN Tagging	OSPF	
Packet buffer memory: 12MB	802.1s	MSTP	1587	NSSA
CPU memory: 4GB	802.1w	RSTP	1745	OSPF/BGP interaction
MAC addresses: 272K (in Scaled L2 mode)	802.1t	RPVST+	1765	OSPF Database overflow
PVST: 128 instances	802.3ad	Link Aggregation with LACP	2154	MD5
ARP table 200K (in Scaled		tual Link Trunking)	2328	OSPFv2
•				
L3 host mode)		ncements	2370	Opaque LSA
IPv4 routes: 200K (in Scaled	Minloss L	lparades	3101	OSPF NSSA
L3 routes mode)		y Gateway	3623	OSPF Graceful Restart (Helper
•			0020	
IPv6 hosts: 64K	RVPST o			mode)*
IPv6 routes: 130K (in Scaled L3 routes mode)	DCB, FSE	3, iSCSI over VLT	Securit	y
Multicast hosts: 8K	RSPAN o	ver VIT	2865	RADIUS
Link aggregation: 32 links per group, 128	RFC Cor		3162	Radius and IPv6
groups	768	UDP		251, 4252, 4253, 4254 SSHv2
Layer 2 VLANs: 4K	793	TCP	4301	Security Architecture for IPSec*
Layer3 VLANs: 500				
Lavera VI AINS DUU	854	Telnet		IPSec Authentication Header*
	854	Telnet	4302	IPSec Authentication Header*
MSTP: 32 instances	959	FTP	4302 4303	IPSec Authentication Header* ESP Protocol*
	959 1321		4302	
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6	959 1321	FTP MD5	4302 4303 BGP	ESP Protocol*
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers	959 1321 1350	FTP MD5 TFTP	4302 4303 BGP 1997	ESP Protocol* Communities
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K	959 1321 1350 2474	FTP MD5 TFTP Differentiated Services	4302 4303 BGP 1997 2385	ESP Protocol* Communities MD5
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K	959 1321 1350 2474 2698	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker	4302 4303 BGP 1997 2385 2439	ESP Protocol* Communities MD5 Route Flap Damping
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K	959 1321 1350 2474	FTP MD5 TFTP Differentiated Services	4302 4303 BGP 1997 2385	ESP Protocol* Communities MD5
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K	959 1321 1350 2474 2698 3164	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog	4302 4303 BGP 1997 2385 2439 2796	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K	959 1321 1350 2474 2698 3164 4254	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2	4302 4303 BGP 1997 2385 2439 2796 2842	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Ingress ACL: 3K	959 1321 1350 2474 2698 3164 4254 General	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols	4302 4303 BGP 1997 2385 2439 2796 2842 2918	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K	959 1321 1350 2474 2698 3164 4254	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2	4302 4303 BGP 1997 2385 2439 2796 2842	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Ingress ACL: 3K IPv6 Egress ACL: 500	959 1321 1350 2474 2698 3164 4254 General 791	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 Pv4 Protocols Pv4	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters	959 1321 1350 2474 2698 3164 4254 General 791	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255	959 1321 1350 2474 2698 3164 4254 General 791 792 826	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHV2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255	959 1321 1350 2474 2698 3164 4254 General 791 792 826	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client)	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Ingress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Ingress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Ingress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 1K IPv6 Ingress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux Ke	ESP Protocol* Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 1K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance 802.1AB LLDP	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519 1588v2	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR PTP support **	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux Ke MIBS	Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4 rnel 3.16
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance 802.1AB LLDP TIA-1057 LLDP-MED	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519 1588v2 1812	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR PTP support ** Routers	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux Ke MIBS IP MIB—	Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4 rnel 3.16 Net SNMP
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 1K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance 802.1AB LLDP	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519 1588v2	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR PTP support **	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux Ke MIBS IP MIB—	Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4 rnel 3.16
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance 802.1AB LLDP TIA-1057 LLDP-MED 802.1s MSTP	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519 1588v2 1812 1858	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR PTP support ** Routers IP Fragment Filtering	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux Ke MIBS IP MIB– IP Forwa	Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4 rnel 3.16 Net SNMP and MIB- Net SNMP
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 logress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance 802.1AB LLDP TIA-1057 LLDP-MED 802.1s MSTP 802.1w RSTP	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519 1588v2 1812 1858 2131	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR PTP support ** Routers IP Fragment Filtering DHCP (server and relay)	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux K MIBS IP MIB- IP Forwa Host Re	Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4 rnel 3.16 Net SNMP and MIB— Net SNMP sources MIB— Net SNMP
MSTP: 32 instances LAG load balancing: Based on layer 2, IPv4 or IPv6 headers L2 Ingress ACL: 6K L2 Egress ACL: 1K IPv4 Ingress ACL: 6K IPv4 Egress ACL: 1K IPv6 Egress ACL: 3K IPv6 Egress ACL: 500 Storage performance parameters iSCSI Sessions: 255 iSCSI Target: 16 F-Port: Max F-Port Sessions: 526 F-Port: Max members in a zone: 526 Dell EMC SmartFabric OS10 Software Specifications IEEE Compliance 802.1AB LLDP TIA-1057 LLDP-MED 802.1s MSTP	959 1321 1350 2474 2698 3164 4254 General 791 792 826 1027 1035 1042 1191 1305 1519 1588v2 1812 1858	FTP MD5 TFTP Differentiated Services Two Rate Three Color Marker Syslog SSHv2 IPv4 Protocols IPv4 ICMP ARP Proxy ARP DNS (client) Ethernet Transmission Path MTU Discovery NTPv4 CIDR PTP support ** Routers IP Fragment Filtering	4302 4303 BGP 1997 2385 2439 2796 2842 2918 3065 4271 4360 4893 5396 5492 Linux D Debian L Linux K MIBS IP MIB- IP Forwa Host Re	Communities MD5 Route Flap Damping Route Reflection Capabilities Route Refresh Confederations BGP-4 Extended Communities 4-byte ASN 4-byte ASN Representation Capabilities Advertisement istribution inux version 8.4 rnel 3.16 Net SNMP and MIB- Net SNMP

LLDP MIB
Entity MIB
LAG MIB
Dell-Vendor MIB
TCP MIB – Net SNMP
UDP MIB – Net SNMP
SNMPv2 MIB – Net SNMP

Network Management

SNMPv1/2 SSHv2

FTP, TFTP, SCP

Syslog
Port Mirroring
RADIUS

802.1X

Support Assist (Phone Home) Netconf APIs XML Schema

CLI Commit (Scratchpad)

sFlow Automation

Control Plane Services APIs Linux Utilities and Scripting Tools

Quality of Service Access Control Lists

Prefix List Route-Map

Rate Shaping (Egress) Rate Policing (Ingress)

Scheduling Algorithms

Round Robin
Weighted Roun

Weighted Round Robin Deficit Round Robin Strict Priority

Strict Priority

Weighted Random Early Detect

Data center bridging

802.1Qbb Priority-Based Flow Control 802.1Qaz Enhanced Transmission Selection (ETS)*

Data Center Bridging eXchange (DCBx) DCBx Application TLV (iSCSI, FCoE*)

Fibre Channel (applicable only to S4148U-ON) FCF F-Port FC Zoning 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
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 32: Class A

Canada: ICES-003, Issue-4, Class A

Europe: EN 55032: 2015+A1:2007 (CISPR 32),

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 61000-3-2: 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.

Certifications

Japan: VCCI V3/2009 Class A

USA: FCC CFR 47 Part 15, Subpart B:2009,

Class A Warranty

1 Year Return to Depot



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