

# CAMPUS NETWORKING

## QUICK REFERENCE GUIDE

Last update: April 2021

S-Series	PowerSwitch S4100 Series			
Overview	Next generation open networking switches for enterprise, mid-market and Tier2 cloud service providers with demanding compute and storage traffic environments			
Models (all sized 1RU)	S4112F-ON	S4112T-ON	S4128F-ON	S4128T-ON
<b>Performance</b>				
Switching capacity (full duplex) (Gbps)	840		960	
Forwarding Capacity (Mpps)	625		714	
Buffer size	12MB			
<b>Ports</b>				
FC8/FC16			N/A	
FC8/FC16/FC32			N/A	
1/10GBase-T	N/A	12	N/A	28
10GbE	12		36	
25GbE	12		8	
40GbE	12 (breakout)		2	
50GbE	3		4	
100GbE	6		2	
Expansion module slots (Modules support speed indicated)	3		N/A	
<b>Power and cooling</b>				
Max. power consumption (W)	180 (max) / 90 (normal)	200 (max) / 120 (normal)	260 (max)/160 (normal)	300 (max)/250 (normal)
Power options	Fixed power supply		AC or DC	
Redundant power supplies	Redundant fixed fans		2	
Airflow	Normal or Reverse		Normal or Reverse	
<b>Features</b>				
Stacking	Not supported			
Operating system	Dell EMC SmartFabric OS10 and select 3rd party OS			
Industry-standard CLI	Dell EMC SmartFabric OS10 and several 3rd party OS			
iSCSI optimization storage features	iSCSI optimization and FSB			
Max L2 VLANs and L3 VLANs	4K/500		500 L3 VLANs	
Max MAC entries	272K		272K	
Link aggregation (groups/Members)	32 links per group, 128 groups		32 links per group, 128 groups	
Max routes (IPv4/IPv6)	200K/130K		200K/130K	
Jumbo frames (Bytes)	9216		9216	
IPv4 routing	OSPF, BGP		OSPF, BGP	
IPv6 routing	MP-BGP, OSPFv3		MP-BGP, OSPFv3	
Multicast routing	PIM-SM, PIM-SSM		PIM-SM, PIM-SSM	
VXLAN	Routing and Bridging			

S-Series	PowerSwitch S4100 Series			
Overview	Next generation open networking switches for enterprise, mid-market and Tier2 cloud service providers with demanding compute and storage traffic environments			
Models (all sized 1RU)	S4148F-ON	S4148T-ON	S4148FE-ON	S4148U-ON
<b>Performance</b>				
Switching capacity (full duplex) (Tbps)				1.76
Forwarding Capacity (Mpps)				759
Buffer size				12MB
<b>Ports</b>				
FC8/FC16	N/A		unified SFP+/SFP28	
FC8/FC16/FC32	N/A		unified QSFP28	
1/10GBase-T	N/A	48	N/A	N/A
10GbE				72
25GbE				16
40GbE				6
50GbE				8
100GbE				4
Expansion module slots (Modules support speed indicated)				N/A
<b>Power and cooling</b>				
Max. power consumption (W)	370 (max)/200 (normal)	440 (max)/320 (normal)	400(max)/240 (normal)	460 (max)/300 (normal)
Power options	AC or DC			
Redundant power supplies	2			
Airflow	Normal or Reverse			
<b>Features</b>				
Stacking	Not supported			
Operating system	Dell EMC SmartFabric OS10 and select 3rd party OS			
Industry-standard CLI	Dell EMC SmartFabric OS10 and select 3rd party OS			
iSCSI optimization storage features	iSCSI optimization and FSB			iSCSI optimization, FSB, NPIV Proxy gateway, F_Port, FCoE/ FC hosts, FC zoning
Max L2 VLANs and L3 VLANs				500 L3 VLANs
Max MAC entries				272K
Link aggregation (groups/Members)				32 links per group, 128 groups
Max routes (IPv4/IPv6)				200K/130K
Jumbo frames (Bytes)				9216
IPv4 routing				OSPF, BGP
IPv6 routing				MP-BGP, OSPFv3
Multicast routing				PIM-SM, PIM-SSM
VXLAN				Routing and Bridging

S-Series	PowerSwitch S5200 Series				
Overview	Build a high-performance, cost-efficient data center leaf/spine fabric with this spine fabric switch	Provide optimum flexibility and cost-effectiveness for demanding compute and storage traffic environments	Double the amount of direct 25GbE ports with a ToR switch that features 96 x 25GbE SFP28	Low-density 1RU, full-width switch ideal for high-performance HCI connectivity	Low-density 1RU, half-width switch ideal for high-performance HCI connectivity
Models (all sized 1RU, S5296F-ON 2RU)	S5232F-ON	S5248F-ON	S5296F-ON	S5224F-ON	S5212F-ON
<b>Performance</b>					
Switching capacity (full duplex) (Tbps)	6.4	4.0	6.4	2.16	2.16
Forwarding capacity (Mpps)	1.5 Bpps	1.9 Bpps	1.5 Bpps	954	892
Buffer size	32MB				
<b>Ports</b>					
1/10GBase-T	N/A				
1GbE (SFP)	128	80	128	24	12
10GbE	128	80	128	24	12
25GbE	128	80	128	24	12
40GbE	32	8	8	4	3
50GbE	64	16	16	8	6
100GbE	32	8	8	4	3
Expansion module slots	N/A				Redundant (fixed)
<b>Power and cooling</b>					
Max. power consumption (W)	635	647	893	455	304
Power options	AC or DC				
Redundant power (hot-swappable)	2				N/A
Airflow	Normal or Reverse as orderable options, can be reversed in the field				Normal or Reverse
<b>Features</b>					
Operating Systems	Dell EMC SmartFabric OS10, Enterprise SONIC Distribution by Dell Technologies and select 3rd party OS				
Industry-standard CLI (Console, Telnet, SSHv1/v2)	Dell EMC Networking and several 3rd party OS				
iSCSI optimization	iSCSI optimization and FSB				
Max VLANs (Configured)	4K per port				
Max MAC entries	160K				
Link aggregation (Groups/Members)	16 links per group, 128 groups				
Max routes (IPv4/IPV6)	128K/64K				
Jumbo frames	9216 bytes				
IPv4 routing	OSPF, BGP				
IPv6 routing	MP-BGP, OSPFv3				
Multicast routing	PIM-SM, PIM-SSM				
VXLAN	Routing and Bridging				

Series	PowerSwitch N3200 Series								
Overview	Power-efficient and resilient 1GbE and 1/2.5/5/10GbE Multigig range of switching solution with 90W PoE options, for advanced Layer 3 distribution in large enterprise campus and retail networks.								
Models (all sized 1RU)	N3208PX-ON	N3224T-ON	N3224F-ON	N3224P-ON	N3224PX-ON	N3248TE-ON	N3248P-ON	N3248X-ON	N3248PXE-ON
<b>Performance</b>									
Switch capacity (Gbps)	88		528		1080		576		1560
Forwarding capacity (Mpps)	122		733		1500		800		2167
Buffer size	4 MB				8 MB				32 MB
<b>Ports</b>									
1G Base-T	4		24		-		48		-
5G Base-T Multigig (1/2.5/5G)	4				-				
10G Base-T Multigig (1/2.5/5/10G)	-	-	-	-	24	-	-	48	48
10G SFP+	2	4	4	4	-	4	4	-	-
25G SFP28		-	-	-	4	-	-	4	4
100GbE QSFP28	-				2 (Rear side) - Default for stacking				
Expansion module slots					-				
Power-over-Ethernet ports	8x 802.3bt Type-4 (90W) PoE	-	-	24x 802.3at (30W) PoE	24x 802.3bt Type-4 (90W) PoE	-	48x 802.3at (30W) PoE	-	48x 802.3bt Type-4 (90W) PoE
<b>Power and cooling</b>									
Max power consumption (watts)	900	201	224	944	2740	212	1677	480	5344
Power options	AC or DC*								
Internal power supplies	1 fixed	2 hot swappable redundant power supplies. 1 PSU included, 2nd PSU optional.							
External power supplies/adapters	Optional* (extends PoE budget)	-	-	-	Optional* (extends PoE budget)	-	Optional* (extends PoE budget)	-	Optional* (extends PoE budget)
Airflow	I/O to power supply. Fixed fans.	I/O to power supply; Power supply to I/O options available with non-PoE RJ-45 models. Supports field replaceable fans with N+1 redundancy.							
VLANs	4094								
VLAN support	Voice VLAN, Private Edge, Protocol and MAC-based, GVRP, 802.1x, Auto VLAN								
Layer 2 and 3	Layer 3 Advanced								
Jumbo frames	9216 bytes								
IPv4/IPv6 routing	IPv4 and IPv6 functionality including BGP, VRF, BFD, OSPFv2/v3								
Multicast routing	PIM-SM, PIM-SSM								
Rapid Deployment	Deploy switch configuration files, stacking commands, and firmware updates by simply inserting a USB device.								
<b>Management and security</b>									
Switch security	AAA authorization, TACACS+ accounting and RADIUS support for comprehensive secure access support.								
SNMP support	SNMPv1/2/3								
sFlow	Yes								
Management	GUI access via http/https. CLI via console, Telnet or serial connection.								

\* Roadmap

Series	PowerSwitch N2200 Series				PowerSwitch N1500 Series				N1100
Overview	Power-efficient and resilient 1/2.5G Multigig switching solution with 30/60W PoE support, for mid-to-large enterprise access deployments.				Power-efficient and resilient 1/10GbE switching solution with PoE.				
Models (all sized 1RU)	N2224X	N2224PX	N2248X	N2248PX	N1524	N1548	N1524P	N1548P	N1108EP-ON
<b>Performance</b>									
Switch capacity (Gbps)	480		600		128	176	128	176	24
Forwarding capacity (Mpps)	667		833		128	164	128	164	18
Buffer size	4MB				1.5MB				1.5MB
<b>Ports</b>									
10/100/1000 Base-T	1 Out of Band Management Port				24	48	24	48	8
1GbE	-				-				2
2.5G Base-T	24		48						-
10GbE	-	-	-	-	4 SFP+ (auto-negotiate 1/10Gb)				-
25GbE (SFP28)	4								-
40GbE (QSFP+)	2								-
Power-over-Ethernet ports	-	12x30W, 12x60W	-	24x30W, 24x60W	-	-	24 PoE+	48 PoE+	8
<b>Power and cooling</b>									
Max. power consumption (watts)	238	1318	326	2486	30.2	44.6	871*	1704*	19.51
AC power supplies	1								1
Redundant power	550W AC	1050W internal pluggable and/or external MPS-1S or MPS-3S power shelf	550W AC	1600W internal pluggable and/or external MPS-1S or MPS-3S power shelf	External RPS-720		External MPS-1000		-
Airflow	IO/PS, PS to IO	IO to PS	IO to PS, PS to IO	IO to PS	I/O panel to PSU				I/O to power supply; Pass through POE
<b>Features</b>									
Stacking	Stacks up to 12 using 40Gb user ports				Up to 4 using SFP ports				N/A
VLANs	4094				512				
VLAN support	Voice VLAN, Private Edge, Protocol and MAC-based, GVRP				Voice VLAN, Private Edge, Protocol-based, Auto VLAN				
Layer 2 and 3	Layer 3 Standard				Layer 2 with static routing				Layer 2 only
IPv4/IPv6 routing	IPv4/IPv6, OSPFv2/v3				IPv4/IPv6				-
Multicast routing	PIM-SM, PIM-SSM				PIM-SM, PIM-SSM				
Rapid Deployment	Deploy switch configuration files, stacking commands and firmware updates by simply inserting a USB device into the port				Yes				
<b>Management and security</b>									
Switch security	Strong passwords, password masking, management access control - privilege levels. RADIUS and TACACS+ support, 802.1x port-based authentication.								
SNMP support	SNMPv1/2/3				SNMPv1/2/3				
sFlow	Yes				v1.3 draft 5				
Management	GUI access via http/https. CLI via console, Telnet, SSH				GUI access via http/https. CLI via console, Telnet, SSH				

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