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AI Fabric Switches				100/400/800GbE Multi-rate			

Overview

High-performance, high-density 100/400/800GbE multi-rate aggregation and AI fabric switches

Models	SN5610	SN5600D	Z9864F-ON	Z9664F-ON	SN5400	Z9432F-ON	SN4700
NPU	NVIDIA® Spectrum-4	NVIDIA Spectrum-4	Broadcom® Tomahawk™5	Broadcom Tomahawk 4	NVIDIA Spectrum-4	Broadcom Trident™4-X11	NVIDIA Spectrum-3
Form factor	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Performance							
Switching capacity (Tbps, full duplex)	102.4	102.4	102.4	51.2	25.6	25.6	25.6
Forwarding capacity (Bpps)	33.3	33.3	20.3	10.2	33.3	5.2	8.4
Buffer size (MB)	160	160	165	114	160	132	64
Latency (ns)	N/A	N/A	<700	<850	620	<850	<650
Ports*							
10GbE (SFP+)	256 (breakout) +2	256 (breakout) +1	2	256 (breakout) + 2	256 (breakout) +2	144 (breakout) + 2	128 (breakout)
25GbE (SFP28)	256 (breakout) +2	256 (breakout) +1	N/A	256 (breakout)	256 (breakout) +2	144 (breakout)	128 (breakout)
40GbE (QSFP+)	128 (breakout)	128 (breakout)	N/A	128 (breakout)	128 (breakout)	64 (breakout)	40 (breakout)
50GbE (QSFP28)	256 (breakout)	256 (breakout)	N/A	128 (breakout)	256 (breakout)	128 (breakout) + 16 (QSA) (PAM4)	128 (breakout)
50GbE (SFP56)	256 (breakout)	256 (breakout)	N/A	256 (breakout)	256 (breakout)	128 (breakout)	128 (breakout)
100GbE (QSFP28)	256 (breakout)	256 (breakout)	320 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)	64 (breakout)
200GbE (QSFP28-DD)	256 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)	128 (breakout)	64 (breakout)	64 (breakout)
400GbE (QSFP56-DD)	128 (breakout)	128 (breakout)	128 (breakout)	64	64	32	32
800GbE (OSFP112 PAM4)	64	64	64	N/A	N/A	N/A	N/A
Power and cooling							
Power consumption (W)	900 (normal)	940 (normal)	2848 (max)/1500 (normal)	2125 (max)/500 (normal)	670 (normal)	1404 (max)/900 (normal)	630 (normal)
Power options	AC	DC bus bar	AC or DC		AC	AC or DC	AC
Redundant power	4 hot swappable		2 hot swappable				
Airflow	Normal	Normal	Normal or Reverse				
Features							
Operating Systems	Dell SONiC, NVIDIA Cumulus Linux, Linux Switch		Enterprise SONiC Distribution by Dell Technologies		Dell SONiC, NVIDIA Cumulus Linux	Enterprise SONiC Distribution by Dell Technologies; Dell SmartFabric OS10	Dell SONiC, NVIDIA Cumulus Linux
iSCSI optimization	Optimized for RoCE		N/A	iSCSI optimization and FSB	Optimized for RoCE	iSCSI optimization and FSB	Optimized for RoCE
VXLAN	Routing and Bridging		Routing and Bridging**		Routing and Bridging	Routing and Bridging**	Routing and Bridging

* SN5610 has 64 OSFP + 2 SFP28 connectors, SN5600D has 64 OSFP + 1 SFP28 connectors, 400GbE and lower speeds use OSFP. Port configuration capacities represent HW supportable modes. SW support varies by OS.
** SONiC only.

AI Fabric InfiniBand Switches

Overview			Highest-performance, end-to-end 400/800 Gb/s networking designed for massive-scale AI.		
Models	**QM9700/9790**	**QM9701**	**Q3200-RA**	**Q3400-RA**	**Q3401-RD**
NPU	NVIDIA Quantum™2		NVIDIA Quantum 3		
Form factor	2 U		4 U		
Performance					
Switching capacity (Tbps)	25.6		57.6	115.2	115.2
Latency (ns)	N/A		N/A	N/A	N/A
Physical Interfaces					
800Gb/s (OSFP)	32		NA	NA	NA
1.6Tb/s (OSFP)	N/A		36	72	72
Supported Ports					
100Gb/s	N/A		NA	NA	NA
200Gb/s	128		NA	NA	NA
400Gb/s	64		144	288	288
800Gb/s	N/A		72	144	144
Power and cooling					
Power consumption (W)	640-747	720-1660	862-3486	2900-7000	2900-7000
Power options	AC	DC bus bar	AC		DC bus bar
Airflow	Normal or Reverse		Normal (C2P)		
Features					
Operating Systems	NVIDIA MLNX-OS		NVIDIA Networking OS Software (NVOS)		

S-Series Data Center Switches		10/25/40/50/100/200/400GbE				
Overview		High-performance, open networking 25GbE for compute and storage connectivity or 100/400GbE spine/leaf switches offering optimum flexibility and cost effectiveness				
Models	**S5212F-ON**	**S5224F-ON**	**S5232F-ON**	**S5248F-ON**	**S5296F-ON**	**S5448F-ON**
NPU	Broadcom Trident3-X5		Broadcom Trident3-X7			Broadcom Trident4-X9
Form factor	1 U compact	1 U	1 U	1 U	2 U	1 U
Performance						
Switching capacity (full duplex) (Tbps)	2.16	2.16	6.4	4.0	6.4	16
Forwarding capacity (Bpps)	880 Mpps	1.42	4.8	3.0	4.8	2.6
Buffer size (MB)			32			82
Latency (ns)	906	881	877	847	850	1135
Ports						
10GbE (SFP+)	12 +12 (breakout)	24 + 16 (breakout)	124 (breakout) + 2	48 + 32 (breakout)	96 + 32 (breakout)	48 + 24 (breakout) + 2
25GbE (SFP28)	12 +12 (breakout)	24 + 16 (breakout)	124 (breakout)	48 + 32 (breakout)	96 + 32 (breakout)	48 + 24 (breakout)
40GbE (QSFP28)	3	4	32	4 + 4 (breakout)	8	16 (breakout)
50GbE (QSFP28)	6 (breakout)	8 (breakout)	64 (breakout)	16 (breakout)	16 (breakout)	16 (breakout)
50GbE (SFP56)			N/A			48 + 24 (Breakout)
100GbE (QSFP28)	3	4	32	4 + 4 (breakout)	8	32 (breakout)
100GbE (SFP56-DD)			N/A			48
400GbE (QSFP56-DD)			N/A			8
Power and cooling						
Max. power consumption (W)	304 (max)/140 (normal)	455 (max)/200 (normal)	635 (max)/360 (normal)	647 (max)/310 (normal)	893 (max)/457 (normal)	920 (max)/250 (normal)
Power options			AC or DC			
Redundant power	2 fixed		2 hot swappable			
Airflow	Normal or Reverse		Normal or Reverse, can be reversed in the field			
Features						
Operating Systems			Enterprise SONiC Distribution by Dell Technologies; Dell SmartFabric OS10			
iSCSI optimization			iSCSI optimization and FSB			
VXLAN			Routing and Bridging			

*Hardware maximum. Refer to Network Operating System (NOS) scalability for actual supported numbers with the NOS

S-Series Data Center Switches				1/10/25/40/50/100GbE				
Overview				High-performance open networking 10GbE top-of-rack switches with 100GbE uplinks for compute and storage connectivity				
Models	**S4112F-ON**	**S4112T-ON**	**S4128F-ON**	**S4128T-ON**	**S4148F-ON**	**S4148T-ON**	**S4348F-ON**	**S4348T-ON**
NPU	Broadcom Maverick						Trident3-X5	
Form factor	1 U compact		1 U					
Performance								
Switching capacity (full duplex) (Gbps)	840		960		1,760		2,160	2,160
Forwarding capacity (Mpps)	625		720		1,320		1,007	1,007
Buffer size (MB)	12						32	32
Latency (ns)	<800		<800	<2.3 µs	<800	<2.3 µs	<650	<3.5 µs
Ports								
1/10GBase-T	N/A	12	N/A	28	N/A	48	N/A	48
1GbE (SFP)	12 + 12 (breakout)	N/A	28 + 8 (breakout)	8 (breakout)	48 + 24 (breakout)	24 (breakout)	48	N/A
10GbE (SFP+)	12 + 12 (breakout)	12 (breakout)	28 + 8 (breakout)	8 (breakout)	48 + 24 (breakout)	24 (breakout)	48 + 12 (breakout)	12 (breakout)
25GbE (SFP28)	12 (breakout)		8 (breakout)		16 (breakout)		12 (breakout)	12 (breakout)
40GbE (QSFP28)	3		2		4 + 2 (QSFP+)		6	6
50GbE (QSFP28)	6 (breakout)		4 (breakout)		8 (breakout)		N/A	N/A
100GbE (QSFP28)	3		2		4		6	6
Power and cooling								
Power consumption (W)	180 (max)/ 90 (normal)	200 (max)/ 120 (normal)	260 (max)/ 160 (normal)	300 (max)/ 250 (normal)	370 (max)/ 200 (normal)	440 (max)/ 320 (normal)	362 (max)/ 119 (normal)	393 (max)/ 222 (normal)
Power options	AC		AC or DC					
Redundant power supplies	Fixed, redundant power supply and fan		2				Fixed, redundant power supply and fan	
Airflow	Normal or Reverse		Normal or Reverse, can be reversed in the field				Normal or Reverse	
Features								
Operating Systems	Dell SmartFabric OS10						Enterprise SONiC Distribution by Dell Technologies	
iSCSI optimization	iSCSI optimization and FSB						N/A	
Multicast routing	PIM-SM, PIM-SSM						IPv4 PIM-SSM	
VXLAN	Routing and Bridging							

Out-of-Band Management Switches		
Overview	Ethernet switches for out-of-band data center management	
Models	**S3248T-ON**	**SN2201**
NPU	Broadcom Trident3-X3	NVIDIA Spectrum
Form factor	1 U	1U
Performance		
Switching capacity (full duplex) (Gbps)	576	448
Forwarding Capacity (Mpps)	800	667
Buffer size (MB)	8	16
Latency (µs)	2.38	N/A
Ports		
1GBase-T	48	48
10GbE (SFP+)	4	16
100GbE (QSFP28)	2	4
Power and cooling		
Power consumption (W)	212 (max)	100 (typical)
Power options	AC or DC	AC
Redundant power supplies	2	2
Airflow	Normal or Reverse	Normal or Reverse
Features		
Operating system	Enterprise SONiC Distribution by Dell Technologies; Dell SmartFabric OS10	NVIDIA Cumulus Linux, SONiC, Linux Switch
iSCSI optimization storage features	N/A	Optimized for RoCE
VXLAN	L2 and L3	Bridging and Routing

Edge switches			
Overview	High performance open networking 1GbE and 10GbE multigigabit switches for modern workloads at the network edge		
Models	E3224F-ON	E3248P-ON	E3248PXE-ON
NPU	Broadcom® Trident3-X3		Broadcom Trident3-X5
Form factor	1U		
Switch capacity (Gbps)	528	576	1560
Forwarding capacity (Mpps)	733	800	2167
Buffer size	8 MB	8 MB	32 MB
1G	24 (SFP)	48 (GBASE-T)	-
5GBase-T Multigig (1/2.5/5G)	-		
10GBase-T Multigig (1/2.5/5/10G)	-	-	48
10G (SFP+)	4	4	-
25G (SFP28)	-	-	4
100GbE (QSFP28)	2 (Rear side)		
Power-over-Ethernet ports	-	48x 802.3at (30W) PoE	48x 802.3bt Type-4 (90W) PoE
Power and cooling			
Max power consumption (watts)	230	1683	4869
Power options	AC	AC	AC
Internal power supplies	2 hot swappable redundant power supplies. 1 PSU included, 2nd PSU optional.		
Redundant power	550W AC	1050W AC	1600W AC
Airflow	I/O to power supply. Supports field replaceable fans with N+1 redundancy.		
Features			
Operating Systems	Dell SmartFabric OS10	Enterprise SONiC Distribution by Dell Technologies	

Learn more at Dell.com/Networking

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