



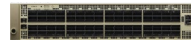










AI Fabric Ethernet Switches		100/400/800GbE, 1.6TbE Multi-rate						
Overview		High-performance, high-density 100/400/800GbE multi-rate aggregation and AI fabric switches						
Models	SN6800-LD	SN6810-LD	SN6600-LD	SN6600	SN5610	SN5600D	SN5400	SN4700
								
NPU	NVIDIA® Spectrum™-6	NVIDIA Spectrum-6	NVIDIA Spectrum-6	NVIDIA Spectrum-6	NVIDIA® Spectrum™-4	NVIDIA Spectrum-4	NVIDIA Spectrum-4	NVIDIA Spectrum-3
Form factor	5U (MGX1.2)	2U (MGX1.2)	2U (MGX1.2)	3U (EIA)	2U (EIA)	2U (MGX1.x)	2U (EIA)	1U (EIA)
Performance								
Switching capacity (Tbps)	409.6	102.4	102.4	102.4	51.2	51.2	25.6	12.8
Forwarding capacity (Bpps)	96	24	24	24	33.3	33.3	33.3	8.4
Buffer size (MB)	4 x 160	160	160	160	160	160	160	64
Latency (ns)	850	850	850	850	<850	<850	620	<650
Ports*								
10GbE (SFP+)	N/A	N/A	N/A	N/A	256 (breakout)+2	256 (breakout)+1	256 (breakout)+2	128 (breakout)
25GbE (SFP28)	N/A	N/A	N/A	N/A	256 (breakout)	256 (breakout)+1	256 (breakout)+2	128 (breakout)
40GbE (QSFP+)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50GbE (QSFP28)	N/A	N/A	N/A	N/A	128 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)
50GbE (SFP56)	N/A	N/A	N/A	N/A	256 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)
100GbE	2048+8 (breakout)	512+2 (breakout)	512+2 (breakout)	512 (breakout)	256 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)
200GbE	2048 (breakout)	512 (breakout)	512 (breakout)	512 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)	64 (breakout)
400GbE	N/A	256 (breakout)	256 (breakout)	256 (breakout)	128 (breakout)	128 (breakout)	64 (QSFP-DD)	32 (QSFP-DD)
800GbE	N/A	128 (MMC-12)	128 (breakout)	128 (breakout)	64 (OSFP112)	64 (OSFP112)	N/A	N/A
1.6TbE	N/A	N/A	64 (OSFP224)	64 (OSFP224)	N/A	N/A	N/A	N/A
Power and cooling								
Power consumption (W)	8032 (normal)	1800 (normal)	1800 (normal)	1800 (normal)	900 (normal)	940 (normal)	670 (normal)	630 (normal)
Power options	DC busbar	DC busbar	DC busbar	AC	AC	DC busbar	AC	AC
Redundant power	N/A	N/A	1+1	1+1	2+2	N/A	1+1	1+1
Airflow / DLC	DLC 100%, UQD08			Air I/P (C2P)			Air I/P or P/I (C2P or P2C)	
Features								
Operating Systems	Enterprise SONiC Distribution by Dell Technologies (phased rollout), NVIDIA Cumulus Linux, Linux Switch							
iSCSI optimization	Optimized for RoCE							
VXLAN	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.

AI Fabric Ethernet Switches (cont.)





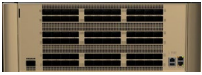
Overview

Models	Z9964FL-ON	Z9964F-ON	Z9864F-ON	Z9664F-ON	Z9432F-ON
					
NPU	Broadcom® Tomahawk™6	Broadcom Tomahawk 6	Broadcom Tomahawk 5	Broadcom Tomahawk 4	Broadcom Trident™4-X11
Form factor	2U (ORv3)	3U (EIA)	2U (EIA)	2U (EIA)	1U (EIA)
Performance					
Switching capacity (Tbps)	102.4	102.4	51.2	25.6	12.8
Forwarding capacity (Bpps)	37.6	37.6	20.3	10.2	5.2
Buffer size (MB)	267	267	165	114	132
Latency (ns)	<700	<700	<700	<850	<850
Ports*					
10GbE (SFP+)	2	2	2	256 (breakout)+2	144 (breakout)+2
25GbE (SFP28)	N/A	N/A	N/A	256 (breakout)	144 (breakout)
40GbE (QSFP+)	N/A	N/A	N/A	128 (breakout)	64 (breakout)
50GbE (QSFP28)	N/A	N/A	N/A	128 (breakout)	128 (breakout)+16 (QSA) (PAM4)
50GbE (SFP56)	N/A	N/A	N/A	256 (breakout)	128 (breakout)
100GbE	512 (breakout)	512 (breakout)	320 (breakout)	256 (breakout)	128 (breakout)
200GbE	512 (breakout)	512 (breakout)	256 (breakout)	128 (breakout)	64 (breakout)
400GbE	256 (breakout)	256 (breakout)	128 (breakout)	64 (QSFP-DD)	32 (QSFP-DD)
800GbE	128 (breakout)	128 (breakout)	64 (OSFP112)	N/A	N/A
1.6TbE	64 (OSFP224)	64 (OSFP224)	N/A	N/A	N/A
Power and Airflow					
Power consumption (W)	4207 (max)	4987 (Max)	2848 (max)/1500 (normal)	2125 (max)/500 (normal)	1404 (max)/900 (normal)
Power options	DC busbar	AC	AC or DC	AC or DC	AC or DC
Redundant power	N/A	1+1	1+1	1+1	1+1
Airflow / DLC	DLC 85%, UQD06, I/P		Air I/P or P/I		
Operating Systems					
Operating Systems	Enterprise SONiC Distribution by Dell Technologies		Enterprise SONiC Distribution by Dell Technologies ; Dell SmartFabric OS10		
iSCSI optimization	Optimized for RoCE		N/A	iSCSI optimization and FSB	iSCSI optimization and FSB
VXLAN	Routing and Bridging		Routing and Bridging**		Routing and Bridging**

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 busbar	AC		DC busbar
Airflow	Air I/P or P/I (C2P or P2C)		Air I/P (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 (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	Air I/P or P/I					
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				Broadcom Trident3-X5			
Form factor	1 U compact				1 U			
Performance								
Switching capacity (Gbps)	840		960		1760		2160	2160
Forwarding capacity (Mpps)	625		720		1320		1007	1007
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	Air I/P or P/I							
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 (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	Air I/P or P/I	Air I/P or P/I (C2P or P2C)
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 2 nd PSU optional.		
Redundant power	550W AC	1050W AC	1600W AC
Airflow	Air I/P or P/I		
Features			
Operating Systems	Dell SmartFabric OS10	Enterprise SONiC Distribution by Dell Technologies	

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