










Z-series		100/400/800GbE Multi-rate		
<b>Overview</b>		High-performance, high-density 100/400/800GbE multi-rate aggregation and AI fabric switches		
	Models	Z9864F-ON	Z9664F-ON	Z9432F-ON
				
NPU		Broadcom® Tomahawk™5	Broadcom Tomahawk 4	Broadcom Trident™4-X11
Form factor		2 U	2 U	1 U
<b>Performance</b>				
Switching capacity (Tbps, full duplex)		102.4	51.2	25.6
Forwarding capacity (Bpps)		20.3	10.2	5.2
Buffer size (MB)		165	114	132
Latency (ns)		<700	<850	<850
<b>Ports*</b>				
10GbE (SFP+)		2	256 (breakout) + 2	144 (breakout) + 2
25GbE (SFP28)		N/A	256 (breakout)	144 (breakout)
40GbE (QSFP+)		N/A	128 (breakout)	64 (breakout)
50GbE (QSFP28)		N/A	128 (breakout)	128 (breakout) + 16 (QSA) (PAM4)
50GbE (SFP56)		N/A	256 (breakout)	128 (breakout)
100GbE (QSFP28)		320 (breakout)	256 (breakout)	128 (breakout)
200GbE (QSFP28-DD)		256 (breakout)	128 (breakout)	64 (breakout)
400GbE (QSFP56-DD)		128 (breakout)	64	32
800GbE (OSFP112 PAM4)		64	N/A	N/A
<b>Power and cooling</b>				
Power consumption (W)		2848 (max)/1500 (normal)	2125 (max)/500 (normal)	1404 (max)/900 (normal)
Power options		AC or DC**		
Redundant power		2 hot swappable		
Airflow		Normal or Reverse, can be reversed in the field		
<b>Features</b>				
Operating Systems		Enterprise SONiC Distribution by Dell Technologies	Dell SmartFabric OS10; Enterprise SONiC Distribution by Dell Technologies	
Industry-standard CLI (Console, Telnet, SSHv1/v2)		Enterprise SONiC Distribution by Dell Technologies	Dell SmartFabric OS10	
iSCSI optimization		N/A	iSCSI optimization and FSB	
Max VLANs (Configured)		4K per port		
Max MAC entries		156K		
Link aggregation (Groups/Members)		32 links per group, 128 groups		16 links per group, 128 groups
Max routes (IPv4/IPv6)		400K/300K		
Jumbo frames		9,216 bytes		
IPv4 routing		OSPFv2, BGPv4	OSPF, BGP	
IPv6 routing		BGPv6	MP-BGP, OSPFv3	
Multicast routing		IPv4 PIM-SSM	PIM-SM, PIM-SSM	
VXLAN		Routing and Bridging***		

\* Port configuration capacities represent HW supportable modes. SW support varies by OS. \*\* In Roadmap, post-RTS for Z9864F-ON. \*\*\* SONiC only.

**S-series** **10/25/40/50/100/200/400GbE**

**Overview** High-performance, open networking 25GbE for compute and storage connectivity or 100/400GbE spine/leaf switches offer 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 Trident3-X7	Broadcom Trident3-X7	Broadcom Trident4-X9
Form factor	1 U compact	1 U	1 U	1 U	2 U	1 U
<b>Performance</b>						
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
<b>Ports</b>						
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		
<b>Power and cooling</b>						
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				
<b>Features</b>						
Operating Systems	Dell SmartFabric OS10; Enterprise SONiC Distribution by Dell Technologies					
Industry-standard CLI (Console, Telnet, SSHv1/v2)	Dell SmartFabric OS10					
iSCSI optimization	iSCSI optimization and FSB					
Max VLANs (Configured)*	4K per port					
Max MAC entries*	160K					256k
Link aggregation (Groups/Members) *	16 links per group, 128 groups					
Max routes (IPv4/IPv6) *	128K/64K					875K/310K (IPv6/64 ALPM), 240K (IPv6/128 ALPM)
Jumbo frames	9,216 bytes					
IPv4 routing	OSPF, BGP					
IPv6 routing	MP-BGP, OSPFv3					
Multicast routing	PIM-SM, PIM-SSM					
VXLAN	Routing and Bridging					

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

**S-series** **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
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NPU	Broadcom Maverick						Trident3-X5		
Form factor	1 U compact				1 U				

**Performance**

Switching capacity (full duplex) (Gbps)	840		960		1,760		2,016	2,016	
Forwarding capacity (Mpps)	625		720		1,320		1,007	1,007	
Buffer size (MB)	12								
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)			
40GbE (QSFP28)	3				2				4 + 2 (QSFP+)				6			
50GbE (QSFP28)	6 (breakout)				4 (breakout)				8 (breakout)				N/A			
100GbE (QSFP28)	3				2				4				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					
Industry-standard CLI (Console, Telnet, SSHv1/v2)	Dell SmartFabric OS10						OpenConfig gNMI					
iSCSI optimization	iSCSI optimization and FSB						N/A					
Max VLANs (Configured)	4K/500				500 L3 VLANs				3965			
Max MAC entries	272K						64K (L3 mode) / 224K (L2 mode)					
Link aggregation (Groups/Members)	32 links per group, 128 groups											
Max routes (IPv4/IPv6)	200K/130K						160K/65K (in route scale mode)					
Jumbo frames	9,216 bytes						9,216 bytes					
IPv4 routing	OSPF, BGP						OSPFv2, BGPv4					
IPv6 routing	OSPFv3, MP-BGP						BGPv6					
Multicast routing	PIM-SM, PIM-SSM						IPv4 PIM-SSM					
VXLAN	Routing and Bridging											

## 1GbE open networking switches for data center management

Overview		1GbE top-of-rack open networking switches	
Models	S3248T-ON	N3248TE-ON	
			
NPU	Broadcom Trident3-X3		
Form factor	1 U		
<b>Performance</b>			
Switching capacity (full duplex) (Gbps)	576		
Forwarding Capacity (Mpps)	800		
Buffer size (MB)	8		
Latency (µs)	2.38		
<b>Ports</b>			
1GBase-T	48		
10GbE (SFP+)	4		
100GbE (QSFP28)	2		
<b>Power and cooling</b>			
Power consumption (W)	212 (max)		
Power options	AC or DC		
Redundant power supplies	2 hot swappable redundant power supplies. 1 PSU included, 2nd PSU optional.		
Airflow	Normal or Reverse		
<b>Features</b>			
Operating system	Dell SmartFabric OS10; Enterprise SONiC Distribution by Dell Technologies		
Industry-standard CLI	OpenConfig gNMI		
iSCSI optimization storage features	N/A		
Max VLANs (Configured)	4096/1000		
Max MAC entries	55K		
Link aggregation (groups/Members)	16 links per group, 128 groups		
Max routes (IPv4/IPv6)	8K/4K		
Jumbo frames (Bytes)	9,216		
IPv4 routing	IPv4 and IPv6 functionality including BGP, VRF, BFD, PIM SSM, OSPFv2/v3		
IPv6 routing			
Multicast routing			
VXLAN	L2 and L3		

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