

Z-Series	100/400GbE Multi-rate	
Overview	High-performance, high-density 100/400GbE multi-rate aggregation switches	
Models	Z9664F-ON	Z9432F-ON
NPU	Broadcom® Tomahawk™4	Broadcom Trident4-X11
Form factor	2 U	1 U
Performance		
Switching capacity (Tbps, full duplex)	51.2	25.6
Forwarding capacity (Bpps)	10.2	5.2
Buffer size (MB)	114	132
Latency (ns)	<850	<850
Ports*		
10GbE (SFP+)	256 (breakout) + 2	144 (breakout) + 2
25GbE (SFP28)	256 (breakout)	144 (breakout)
40GbE (QSFP+)	128 (breakout)	64 (breakout)
50GbE (QSFP28)	128 (breakout)	128 (breakout) + 16 (QSA) (PAM4)
50GbE (SFP56)	256 (breakout)	128 (breakout)
100GbE (QSFP28)	256 (breakout)	128 (breakout)
200GbE (QSFP28-DD)	128 (breakout)	64 (breakout)
400GbE (QSFP56-DD)	64	32
Power and cooling		
Power consumption (W)	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	
Features		
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	156K	
Link aggregation (Groups/Members)	16 links per group, 128 groups	
Max routes (IPv4/IPv6)	400K/300K	340K/310K
Jumbo frames	9,216 bytes	
IPv4 routing	OSPF, BGP	
IPv6 routing	MP-BGP, OSPFv3	
Multicast routing	PIM-SM, PIM-SSM	
VXLAN	L2 & L3 16k	

*Port configuration capacities represent HW supportable modes. SW support varies by OS.

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-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	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
NPU	Broadcom Maverick					
Form factor	1 U compact		1 U		1 U	
Performance						
Switching capacity (full duplex) (Gbps)	840		960		1,760	
Forwarding capacity (Mpps)	625		720		1,320	
Buffer size (MB)	12					
Latency (ns)	<800		<800	<2.3 μs	<800	<2.3 μs
Ports						
1/10GBase-T	N/A	12	N/A	28	N/A	48
1GbE (SFP)	12 + 12 (breakout)	N/A	28 + 8 (breakout)	8 (breakout)	48 + 24 (breakout)	24 (breakout)
10GbE (SFP+)	12 + 12 (breakout)	12 (breakout)	28 + 8 (breakout)	8 (breakout)	48 + 24 (breakout)	24 (breakout)
25GbE (SFP28)	12 (breakout)		8 (breakout)		16 (breakout)	
40GbE (QSFP28)	3		2		4 + 2 (QSFP+)	
50GbE (QSFP28)	6 (breakout)		4 (breakout)		8 (breakout)	
100GbE (QSFP28)	3		2		4	
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)
Power options	AC		AC or DC			
Redundant power supplies	Fixed, redundant power supply and fan		2			
Airflow	Normal or Reverse		Normal or Reverse, can be reversed in the field			
Features						
Operating Systems	Dell SmartFabric OS10					
Industry-standard CLI (Console, Telnet, SSHv1/v2)	Dell SmartFabric OS10					
iSCSI optimization	iSCSI optimization and FSB					
Max VLANs (Configured)	4K/500		500 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	9,216 bytes					
IPv4 routing	OSPF, BGP					
IPv6 routing	OSPFv3, MP-BGP					
Multicast routing	PIM-SM, PIM-SSM					
VXLAN	Routing and Bridging					

1GbE open networking switches for data center management

Overview		1GbE top-of-rack open networking switch	
Models	S3048-ON	N3248TE-ON	
NPU	Broadcom Helix4	Broadcom Trident3-X3	
Form factor	1 U		
Performance			
Switching capacity (full duplex) (Gbps)	260	576	
Forwarding Capacity (Mpps)	131	800	
Buffer size (MB)	4	8	
Latency (µs)	3.7	2.38	
Ports			
1GBase-T	48	48	
10GbE (SFP+)	4	4	
100GbE (QSFP28)	N/A	2	
Power and cooling			
Power consumption (W)	87 (max)/65 (normal)	212 (max)	
Power options	AC	AC or DC	
Redundant power supplies	2 hot swappable redundant power supplies. 1 PSU included, 2nd PSU optional.		
Airflow	Normal or Reverse	Normal or Reverse	
Features			
Stacking	Up to 6 units		
Operating system	Dell OS9, Dell SmartFabric OS10	Dell SmartFabric OS10; Enterprise SONiC Distribution by Dell Technologies	
Industry-standard CLI	Dell OS9, Dell SmartFabric OS10	Dell SmartFabric OS10	
iSCSI optimization storage features	N/A		
Max VLANs (Configured)	4096/1000		
Max MAC entries	64K	55K	
Link aggregation (groups/Members)	16 links per group, 128 groups		
Max routes (IPv4/IPv6)	16K/8K	8K/4K	
Jumbo frames (Bytes)	9,216		
IPv4 routing	OSPF, BGP	IPv4 and IPv6 functionality including BGP, VRF, BFD, PIM-SM/SSM, OSPFv2/v3	
IPv6 routing	OSPFv3, BGPv6, IS-IS		
Multicast routing	PIM-SM, PIM-SSM		
VXLAN	Routing & Bridging	N/A	

[Learn more at Dell.com/Networking](https://www.dell.com/networking)