

DATA CENTER NETWORKING

QUICK REFERENCE GUIDE

Last update: December 2020

¹ 128 + 2 supported today, additional 16 support is in roadmap
² 128 supported today, additional 16 support is in roadmap
³ 50G NRZ supported today. 50G PAM4 support is in road map

| Z-Series | 400GbE | 10/25/40/50/100GbE | |
|--|---|---|--|
| Overview | High-performance, high-density 100GbE multi-rate aggregation switch | High-performance, high-density 100GbE multi-rate aggregation switch | Fixed form factor switch for high-performance data center and computing environments |
| Models | Z9332F-ON | Z9264F-ON | Z9100-ON |
| Performance | | | |
| Switching capacity (full duplex) | 25.6 Tbps | 12.8 Tbps | 6.4 Tbps |
| Forwarding capacity (Bpps) | 5.1 | 2.5 | 3.5 |
| Buffer size | 64MB | 42MB | 16MB |
| Latency | sub 700 ns | 300ns L2/400ns L3 | 300ns L2/400ns L3 |
| Ports | | | |
| 1/10GBase-T | 1 | N/A | 2 |
| 10GbE (SFP+) | 2 | 128 (breakout) + 2 | — |
| 10GbE | 146 = 128 (breakout) + 16 + 2 ¹ | 128 | 128 (breakout) + 2 |
| 25GbE | 144 = 128 (breakout) + 16 ² | 128 (breakout) | 128 (breakout) |
| 40GbE | 64 (breakout) | 64 | 32 |
| 50GbE | 64 (breakout) ³ | 128 (breakout) | 64 (breakout) |
| 100GbE | 128 (breakout) | 64 | 32 |
| 400 GbE | 32 | | |
| Expansion module slots (Modules support speed indicated) | N/A | N/A | N/A |
| Power and cooling | | | |
| Power consumption (W) | 1500 (max)/900 (normal) | 750 (max)/340 (normal) | 605 (max)/195 (normal) |
| Power options | AC | AC or DC | AC or DC |
| Redundant power (hot-swappable) | Yes | 2 | 2 |
| Airflow | Normal or Reverse as orderable options, can be reversed in the field | | |
| Features | | | |
| Operating Systems | Dell EMC SmartFabric OS10 and select 3rd party OS; Enterprise SONIC Distribution by Dell Technologies | | Dell EMC Networking OS9 and select 3rd party OS |
| Industry-standard CLI (Console, Telnet, SSHv1/v2) | Dell EMC SmartFabric OS10 and several 3rd party OS | | Dell EMC Networking OS9 and select 3rd party OS |
| iSCSI optimization | iSCSI optimization and FSB | iSCSI aware (detect and prioritize iSCSI traffic into pre-defined QoS); iSCSI Auto-Configuration (switch configuration routine for automated setup and optimal performance with Dell EqualLogic or Compellent arrays) | |
| Max VLANs (Configured) | | 4K per port | |
| Max MAC entries | 8K | 160K | 136K |
| Link aggregation (Groups/Members) | 16 links per group, 128 groups | 64 links per group, 128 groups | 16 links per group, 128 groups |
| Max routes (IPv4/IPv6) | 400K/300K | 128K/64K | 136K/68K |
| Jumbo frames | | 9,216 bytes | |
| IPv4 routing | | OSPF, BGP | |
| IPv6 routing | | MP-BGP, OSPFv3 | |
| Multicast routing | | PIM-SM, PIM-SSM | |
| VXLAN | Not supported | Bridging only | Not supported |

| S-Series | 10GbE/8GbFC | 10/25/40/50/100GbE | | | | |
|---|---|--|---|--|--|--|
| Overview | Latest generation 40GbE TOR switch based on Broadcom Trident2+ chip | 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, half-width switch ideal for high-performance HCI connectivity | Low-density 1RU, full-width switch Ideal for high-performance HCI connectivity |
| Models | S6010-ON | S5232F-ON | S5248F-ON | S5296F-ON | S5212F-ON | S5224F-ON |
| Performance | | | | | | |
| Switching capacity (full duplex) (Tbps) | 2.56 | 6.4 | 4.0 | 6.4 | 2.16 | 2.16 |
| Forwarding capacity (Mpps) | 1462 | 1.5 Bpps | 1.9 Bpps | 1.5 Bpps | 892 | 954 |
| Buffer size | 16MB | 32MB | 32MB | 32MB | 32MB | 32MB |
| Latency | Sub 600ns | 877 | 847 | 850 | 906 | 881 |
| Ports | | | | | | |
| 1/10GBase-T | N/A | N/A | N/A | N/A | N/A | N/A |
| 1GbE (SFP) | 96 (Breakout) | 128 | 80 | 128 | 12 | 24 |
| 10GbE | 96 (Breakout) | 128 | 80 | 128 | 12 | 24 |
| 25GbE | — | 128 | 80 | 128 | 12 | 24 |
| 40GbE | 32 fixed 40GbE QSFP+ ports | 32 | 8 | 8 | 3 | 4 |
| 50GbE | — | 64 | 16 | 16 | 6 | 8 |
| 100GbE | — | 32 | 8 | 8 | 3 | 4 |
| Expansion module slots | N/A | N/A | N/A | N/A | N/A | N/A |
| Power and cooling | | | | | | |
| Max. power consumption (W) | 411 (max)/274 (normal) | 635 | 647 | 893 | 304 | 455 |
| Power options | AC | AC or DC | AC or DC | AC or DC | AC or DC | AC or DC |
| Redundant power (hot-swappable) | 2 | 2 | 2 | 2 | N/A | 2 |
| Airflow | Normal or Reverse as orderable options, can be reversed in the field | | | | | |
| Features | | | | | | |
| Operating Systems | Dell EMC SmartFabric OS10 and select 3rd party OS; Enterprise SONiC Distribution by Dell Technologies | | | | | |
| Industry-standard CLI (Console, Telnet, SSHv1/v2) | Dell EMC SmartFabric OS10 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/8K | 128K/64K | | | | |
| Jumbo frames | 9,216 bytes | | | | | |
| IPv4 routing | OSPF, BGP | | | | | |
| IPv6 routing | MP-BGP, OSPFv3 | | | | | |
| Multicast routing | PIM-SM, PIM-SSM | | | | | |
| VXLAN | Routing and Bridging | | | | | |

S-Series

| Overview | High-performance switch with 10/40Gbe ports, multi-rate 100GbE ports and deep buffers and tables | Low density ToR switch for 10GE/25GE storage arrays and servers in a compact form factor | |
|--|--|--|-------------------------------|
| Models (all sized 1RU) | S4248FBL-ON | S4112F-ON | S4112T-ON |
| Performance | | | |
| Switching capacity (full duplex) (Tbps) | 1.6 | 840 | 840 |
| Forwarding capacity (Mpps) | 720 | 625 | 625 |
| Buffer size | 6GB | 12MB | 12MB |
| Latency (microseconds) | 1.9 to 10.0 micro sec | 800 | <2.5 |
| Ports | | | |
| 1/10GBase-T | N/A | N/A | 12 |
| 1GbE (SFP) | N/A | N/A | N/A |
| 10GbE | 40 | 12 | 12 |
| 25GbE | - | 2 options: — or 12 (breakout) | 2 options: — or 12 (breakout) |
| 40GbE | 2 | | |
| 40GbE (QSFP+) | | 3 | 3 |
| 50GbE | - | 6 | 6 |
| 100GbE | 6 | 3 | 3 |
| Expansion module slots (Modules support speed indicated) | N/A | N/A | N/A |
| Power and cooling | | | |
| Power consumption (W) | 420 (max)/180 (normal) | 180 (max) / 90 (normal) | 200 (max) / 120 (normal) |
| Power options | AC or DC | | Fixed power supply |
| Redundant power supplies | 2 (hot-swappable) | | Redundant Fixed fans |
| Airflow | Reversible | | Normal or reverse air flow |
| Features | | | |
| Operating Systems | | Dell EMC SmartFabric OS10 and several 3rd party OS | |
| Industry-standard CLI (Console, Telnet, SSHv1/v2) | | Dell EMC SmartFabric OS10 and several 3rd party OS | |
| iSCSI optimization | Yes | iSCSI optimization and FSB | |
| Max VLANs (Configured) | 4K | 4K/500 | |
| Max MAC entries | 750K | 272K | |
| Link aggregation (Groups/Members) | 32 links per group, 128 groups | 32 links per group, 128 groups | |
| Max routes (IPv4/IPv6) | 2 Million / 400K | 200K/130K | |
| Jumbo frames | 9216 bytes | 9,216 bytes | |
| IPv4 routing | OSPF, BGP | OSPF, BGP | |
| IPv6 routing | OSPFv3, MP-BGP | OSPFv3, MP-BGP | |
| Multicast routing | PIM-SM, PIM-SSM | PIM-SM, PIM-SSM | |
| VXLAN | | Routing and Bridging | |

| S-Series | 10GbE | | | | | |
|---|---|------------------------|------------------------|------------------------|-----------------------|--|
| 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) | S4128F-ON | S4128T-ON | S4148F-ON | S4148T-ON | S4148FE-ON | S4148U-ON |
| Performance | | | | | | |
| Switching capacity (full duplex) | 960 Gbps | 960 Gbps | 1.76 Tbps | 1.76 Tbps | 1.76 Tbps | 1.76 Tbps |
| Forwarding Capacity (Mpps) | 714 | 714 | 759 | 759 | 759 | 759 |
| Buffer size | 12MB | 12MB | 12MB | 12MB | 12MB | 12MB |
| Latency (microseconds) | <800 n sec | <2.3 | <800 n sec | <2.3 | <850 n sec | <800 n sec |
| Ports | | | | | | |
| FC8/FC16 | N/A | N/A | N/A | N/A | N/A | unified SFP+/SFP28 |
| FC8/FC16/FC32 | N/A | N/A | N/A | N/A | N/A | unified QSFP28 |
| 1/10GBase-T | N/A | 28 | N/A | 48 | N/A | N/A |
| 10GbE | 36 | 36 | 72 | 72 | 72 | 72 |
| 25GbE (QSFP+) | 8 | 8 | 16 | 16 | 16 | 16 |
| 40GbE | 2 | 2 | 6 | 6 | 6 | 6 |
| 50GbE | 4 | 4 | 8 | 8 | 8 | 8 |
| 100GbE | 2 | 2 | 4 | 4 | 4 | 4 |
| Expansion module slots (Modules support speed indicated) | N/A | N/A | N/A | N/A | N/A | N/A |
| Power and cooling | | | | | | |
| Max. power consumption (W) | 260 (max)/160 (normal) | 300 (max)/250 (normal) | 370 (max)/200 (normal) | 440 (max)/320 (normal) | 400(max)/240 (normal) | 460 (max)/300 (normal) |
| Power options | AC or DC | AC or DC | AC or DC | AC or DC | AC or DC | AC or DC |
| Redundant power supplies | 2 | 2 | 2 | 2 | 2 | 2 |
| Airflow | Normal or Reverse | | | | | |
| Features | | | | | | |
| 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 | | | | | iSCSI optimization, FSB, NPIV Proxy gateway, F_Port, FCoE/ FC hosts, FC zoning |
| Max VLANs (Configured) | 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) | 9,216 | | | | | |
| IPv4 routing | OSPF, BGP | | | | | |
| IPv6 routing | MP-BGP, OSPFv3 | | | | | |
| Multicast routing | PIM-SM, PIM-SSM | | | | | |
| VXLAN | Routing and Bridging | | | | | |

S-Series | N-Series

| Overview | High-density 10GbE open networking switch | Energy-efficient ToR switch optimized for data center efficiency | High-density 1GbE open networking switch | High density 1GbE open networking switch |
|--|--|--|--|---|
| Models (all sized 1RU) | S4048-ON | S4048T-ON | S3048-ON | N3248TE-ON |
| Performance | | | | |
| Switching capacity (full duplex) (Gbps) | 1.44 Tbps | 1.44 Tbps | 260 | 576 |
| Forwarding Capacity (Mpps) | 1080 | 1080 | 131 | 800 |
| Buffer size | 12MB | 16MB | 4MB | 8 MB |
| Latency (microseconds) | <600ns | 2.8 | 3.7 | <4.5 |
| Ports | | | | |
| 1GBase-T | N/A | N/A | N/A | 48 |
| 1/10GBase-T | N/A | 48 | 48 | N/A |
| 1GbE (SFP) | N/A | N/A | N/A | N/A |
| 10GbE | 48 | N/A | 4 | N/A |
| 10G SFP+ | N/A | N/A | N/A | 4 |
| 25GbE | N/A | N/A | N/A | N/A |
| 40GbE (QSFP+) | 6 | 6 | N/A | N/A |
| 50GbE | N/A | N/A | N/A | N/A |
| 100GbE | N/A | N/A | N/A | N/A |
| Expansion module slots (Modules support speed indicated) | N/A | 6 fixed 40GbE QFSP+ ports | N/A | N/A |
| Power and cooling | | | | |
| Power consumption (W) | 234.35 (max)/153 (normal) | 460 (max)/338 (normal) | 87 (max)/65 (normal) | 212 |
| Power options | AC or DC | AC | AC | AC or DC |
| Redundant power supplies | 2 hot-swappable | 2 | 2 hot-swappable | 2 hot swappable redundant power supplies. 1 PSU included, 2nd PSU optional. |
| Airflow | Reversible | | | Normal (IO/PS) and reverse (PS/IO) airflow |
| Features | | | | |
| Stacking | Up to 6 units | | | |
| Operating system | Dell EMC OS9, Dell EMC SmartFabric OS10 Consult the Dell EMC Open Networking 3rd Party OS Ordering Guide for up-to-date details | | | Dell EMC SmartFabric OS10 and select 3rd party OS; Enterprise SONiC Distribution by Dell Technologies |
| Industry-standard CLI | Dell EMC Networking OS9 and several 3rd party OS | | | Dell EMC SmartFabric OS10 and select 3rd party OS |
| iSCSI optimization storage features | iSCSI optimization and FSB | | N/A | N/A |
| Max VLANs (Configured) | 4096/1000 | | 4096/1000 | 4K L2, 1K L3 |
| Max MAC entries | 160K | | 64K | 55K |
| Link aggregation (groups/Members) | 16 links per group, 128 groups | | 16 links per group, 128 groups | 16 links per group, 128 groups |
| Max routes (IPv4/IPv6) | 128K/64K | | 16K/8K | 8K/4K |
| Jumbo frames (Bytes) | 9,216 | | 9,216 | 9K |
| IPv4 routing | OSPF, BGP | | OSPF, BGP | IPv4 and IPv6 functionality including BGP, VRF, BFD, PIM-SM/SSM, OSPFv2/v3 |
| IPv6 routing | MP-BGP, OSPFv3 | | OSPFv3, BGPv6, IS-IS | |
| Multicast routing | PIM-SM, PIM-SSM | | PIM-SM, PIM-SSM | |
| VXLAN | Routing & Bridging | | | |

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