

PowerSwitch Datacenter and SD-WAN Networking

Z9000 Series - L3 Core Multi-Gig Access (10 / 25 / 40 / 50 / 100 / 400 GbE)

Features	Z9432F-ON	Z9332F-ON	Z9264F-ON
Ports	32x QSFP66-DD 2x 10 GbE SFP+	32x QSFP66-DD 2x 10 GbE SFP+	64x QSFP28 2x 10 GbE SFP+
Max. 10 GbE density ¹	128 / (+16 +2) ²	128 / (+16 +2) ²	128 / (+2)
Max. 25 GbE density ¹	128 / (+16) ²	128 / (+16) ²	128 / (+2)
Max. 40 GbE density ¹	64	64	64
Max. 50 GbE density ¹	144 ²	144 ²	128
Max. 100 GbE density ¹	128	128	64
Max. 200 GbE density ¹	64	64	-
Max. 400 GbE density	32	32	-
Switching capacity ³	25.6 Tbps	25.6 Tbps	12.8 Tbps
Throughput	5.2 Bpps	5.1 Bpps	2.6 Tpps
Min. latency	Sub 850 ns	Sub 700 ns	Sub 500 ns
CPU Memory	32 GB	32 GB	16 GB
SSD	64 GB	64 GB	32 GB
Packet buffer	132 MB	64 MB	42 MB
Max./Typical power	1,404 W / 900 W	1,500 W / 900 W	1,104 W / 340 W
Max. thermal output	3,983 BTU/h	4,245 BTU/h	3,767 BTU/h
Maximum current	13.0 A / 110 VAC 6.6 A / 220 VAC	8.5 A / 220 VAC	11.0 A / 110 VAC 4.6 A / 220 VAC
Max. power supplies (PSU)	2x AC or DC	2x AC	2x AC or DC
Fan modules	7	7	4
Air flow	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU
Form factor	1 U	1 U	2 U
Dimensions W x D x H	43.8 x 55.0 x 4.3 cm	43.8 x 65.6 x 4.4 cm	44.2 x 51.0 x 8.6 cm
Weight	9.98 Kg	9.98 Kg	15.83 Kg

(1) Max. port density with breakout cable plus on-board ports (2) Support of this port-count/type/speed coming in near future (3) Full Duplex

PowerSwitch Z-Series

Dell EMC PowerSwitch Z-Series of core/aggregation 10/25/40/50/100/200/400 GbE switches provide optimal flexibility, high performance, density and power efficiency for your data center. Offering a range of fixed-form-factor switches, the open networking Z-Series is designed to deliver high performance for today's web 2.0, enterprises, mid-market verticals and cloud service providers demanding workloads while providing headroom for future data-center demands.

- Up to 25.6 Tbps (full duplex) with the Z9332F-ON and Z9432F-ON.
- Exceptional low latency delivering sub-microsecond latency.
- User-configurable table adjustments for virtualized data-center deployments.
- Up to one-third the power consumption of comparable leading switches

S5200 Series - Core L3 Advanced Multi-Gig Aggregation (10 / 25 / 40 / 50 / 100 GbE)

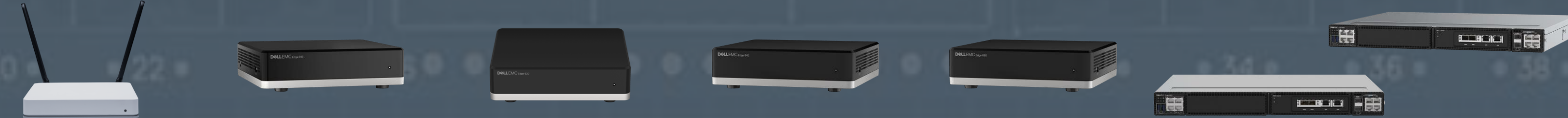
Features	S5212F-ON	S5224F-ON	S5232F-ON	S5248F-ON	S5296F-ON	S6010-ON ¹
Ports	12x SFP28 3x QSFP28	24x SFP28 4x QSFP28	32x QSFP28 2x SFP+	48x SFP28 2x QSFP28-DD 4x QSFP28	96x SFP28 8x QSFP28	32x QSFP+
Max. 1/10 GbE density	24	40	126	80	128	96
Max. 25 GbE density	24	40	124	80	128	-
Max. 40 GbE density	3	4	32	8	8	32
Max. 50 GbE density	6	8	64	16	16	-
Max. 100 GbE density	3	4	32	8	8	-
Switching capacity ²	2.16 Tbps	2.16 Tbps	6.4 Tbps	4.0 Tbps	6.4 Tbps	2.56 Tbps
Throughput	892 Mpps	954 Mpps	1.5 Bpps	1.9 Bpps	1.5 Bpps	1,462 Mpps
Latency	906 ns	881 ns	877 ns	847 ns	850 ns	Sub 600 ns
1588v2 PTP timing (HW)	-	✓	✓	✓	✓	✓
CPU Memory	8 GB	8 GB	16 GB	16 GB	16 GB	8 GB
SSD	16 GB	32 GB	64 GB	64 GB	64 GB	32 GB
Packet buffer	32 MB	32 MB	32 MB	32 MB	32 MB	16 MB
Max./Typical power	304 W / 140 W	455 W / 200 W	635 W / 360 W	647 W / 310 W	893 W / 457 W	411 W / 274 W
Max. thermal output	1,037 BTU/h	1,552 BTU/h	2,167 BTU/h	2,208 BTU/h	3,047 BTU/h	1,402 BTU/h
Maximum current	2.8 A / 110 VAC 1.4 A / 220 VAC	4.2 A / 110 VAC 2.1 A / 220 VAC	5.8 A / 110 VAC 2.9 A / 220 VAC	5.8 A / 110 VAC 2.9 A / 220 VAC	8.2 A / 110 VAC 4.1 A / 220 VAC	4.1 A / 110 VAC 2.1 A / 220 VAC
Max. power supplies (PSU)	2x AC or DC fixed	2x AC or DC	2x AC or DC	2x AC or DC	2x AC or DC	2x AC
Fan modules	4x fixed	4	4	4	4	5
Air flow	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU
Form factor	1 U compact	1 U	1 U	1 U	2 U	2 U
Dimensions W x D x H	20.9 x 49.0 x 4.1 cm	43.4 x 46.0 x 4.4 cm	43.4 x 46.0 x 4.4 cm	43.4 x 46.0 x 4.4 cm	44.4 x 51.1 x 8.7 cm	43.4 x 46.0 x 4.4 cm
Weight	4.5 Kg	9.7 Kg	9.8 Kg	9.7 Kg	15.1 Kg	9.9 Kg

(1) EOS H2 2021 (2) Full Duplex

PowerSwitch S-Series

- Next generation open networking switches for enterprise, mid-market and Tier2 cloud service providers with demanding compute and storage traffic environments
- Designed for architectural agility and flexibility to help data centers smoothly migrate to a software-defined data center
- High density for 25/40/50/100 GbE deployments in top-of-rack, middle-of-row, and end-of-row deployments
- A choice of 10/25/40/50/100 GbE with OS10 and 3rd Party OS
- Disaggregated hardware/software solutions bring new levels of freedom and flexibility to your data center.
- Support for Open Network Install Environment (ONIE) enables zero-touch installation of alternate network operating systems.
- A broad ecosystem of open-source and Linux-based applications and tools provides more options to optimize and manage your network.

SD-WAN Virtual Edge Platform Series



Features	510 LTE	610	620	640	680	3400	3800
Use Case	Branch	Branch	Branch	Branch	Branch	Large Branch Data Center	Large Branch Data Center
Ports	4x 1 GbE RJ45	6x 1 GbE RJ45 2x 1 GbE SFP	6x 1 GbE RJ45 2x 10 GbE SFP+	6x 1 GbE RJ45 2x 10 GbE SFP+	6x 1 GbE RJ45 2x 10 GbE SFP+	6x 1 GbE RJ45 2x 10 GbE SFP+	6x 1 GbE RJ45 2x 10 GbE SFP+
CPU	2-Core Intel Atom	2-Core Intel Atom	4-Core Intel Atom	8-Core Intel Atom	16-Core Intel Atom	8-Core Intel Xeon	16-Core Intel Xeon
RAM	4 GB DDR4	4 GB DDR4	8 GB DDR4	32 GB DDR4	32 GB DDR4	32 GB DDR4	32 GB DDR4
Storage	8 GB eMMC	16 GB eMMC	120 GB M.2 SSD 16 GB eMMC	240 GB M.2 SSD 16 GB eMMC	240 GB M.2 SSD 16 GB eMMC	256 GB M.2 SSD	256 GB M.2 SSD
VMware software	✓	✓	✓	✓	✓	✓	✓
HA / Cluster	Active/Passiv HA	Active/Passiv HA	Active/Passiv HA	Active/Passiv HA	Active/Passiv HA	Active/Active Cluster	Active/Active Cluster
Max. throughput	200 Mbps	350 Mbps	1.5 Gbps	3.0 Gbps	6.0 Gbps	7.0 Gbps	10.0 Gbps
Wi-Fi / Bluetooth	802.11b/g/n/ac, 2x2 MIMO, 2.4/5 GHz, Bluetooth	802.11b/g/n/ac, 2x2 MIMO, 2.4/5 GHz, Bluetooth	802.11b/g/n/ac, 2x2 MIMO, 2.4/5 GHz, Bluetooth	802.11b/g/n/ac, 2x2 MIMO, 2.4/5 GHz, Bluetooth	802.11b/g/n/ac, 2x2 MIMO, 2.4/5 GHz, Bluetooth	2x 1350 2x X710	2x 1350 2x X710
Max./Typical power	40 W / 15 W	26 W / 16 W	30 W / 20 W	45 W / 35 W	50 W / 40 W	242 W / 178 W	312 W / 208 W
Power supply	External AC	External AC	External AC	External AC	External AC	2x AC I/O to PSU	2x AC I/O to PSU
Cooling / Fan modules	Air Cooled	Air Cooled	1x fixed	2x fixed	2x fixed	4x Fans	5x Fans
Form factor	Table Top	Table Top	Table Top	Table Top	Table Top	1 U	1 U
Dimensions W x D x H	20.6 x 18.0 x 4.0 cm	20.8 x 20.0 x 5.2 cm	20.8 x 20.0 x 5.2 cm	20.8 x 20.0 x 5.2 cm	20.8 x 20.0 x 5.2 cm	43.4 x 38.1 x 4.4 cm	43.4 x 38.1 x 4.4 cm
Weight	0.91 Kg	1.4 Kg	1.4 Kg	1.4 Kg	1.4 Kg	7.2 Kg	7.4 Kg

Dell EMC SD-WAN

Dell EMC SD-WAN solution offers an unmatched experience, featuring powerful appliances with Intel processors factory-integrated with VMware's leading software. Backed by Dell EMC's global supply chain, high-SLA support, and full suite of services, Dell EMC SD-WAN Solution addresses enterprise-level WAN modernization challenges. An edge appliance includes cloud-managed, transport-independent secure overlay (a virtualized network layer that sits on top of the physical network). This overlay will use available transports, including broadband internet, with or without traditional MPLS (Multiprotocol Label Switching). It provides secure access to a cloud network that may include cloud applications and other remote office or datacenter resources. It also provides a business-driven orchestration layer for automation and virtual services.

- **Dell EMC Edge Appliances** - All in one, hardware + software, Intel CPU and DDR memory, Branch and Core Data Center models, wide range of bandwidth options
- **Dell EMC Dedicated Orchestrator** - Centralized Management, Zero-touch provisioning, Group Policies, Automatic link profiling
- **VMware Virtual Cloud Gateways** - Global network of cloud gateways, optimized for application performance, 30+ Regions, 99.99% Reliability SLA

S3000/N3200 Series - L3 Advanced Multi-Gig Access (1 / 10 / 40 GbE)



Features	S3048-ON	N3248TE-ON
Ports	48x RJ45 4x SFP+	48x RJ45 4x SFP+
Max. 10/100/1000 MbE density	48	48
Max. 1/10 GbE density	4	4
Max. 25 GbE density	-	-
Max. 40 GbE density	-	-
Max. 50 GbE density	-	-
Max. 100 GbE density	-	-
Switching capacity ¹	260 Gbps	576 Gbps
Throughput	131 Mpps	800 Mpps
Min. latency	2.38 ms	2.38 ms
CPU Memory	2 GB	4 GB
SSD	4 GB	32 GB
Packet buffer	4 MB	8 MB
Max. power	87 W	212 W
Max. thermal output	290 BTU/h	723 BTU/h
Maximum current	1.0 A / 110 VAC 0.5 A / 220 VAC	2.2 A / 110 VAC 1.1 A / 220 VAC
Max. power supplies (PSU)	2x AC	2x AC or DC
Fan modules	3	3
Air flow	PSU to I/O I/O to PSU	PSU to I/O I/O to PSU
Form factor	1 U	1 U
Dimensions W x D x H	43.4 x 32.0 x 4.4 cm	43.4 x 40.0 x 4.3 cm
Weight	6.7 Kg	7.0 Kg

(1) Full Duplex

Dell EMC Networking

Dell Technologies data center switching solutions are cost-effective and easy to deploy at any scale. From 1 GbE to 100 GbE and 400 GbE multirate options, PowerSwitch switches provide optimum connectivity within the rack, between multiple racks, and through modular compute chassis solutions. PowerSwitch switches feature a choice of software options, including Dell EMC SmartFabric OS10, Enterprise SONiC Distribution by Dell Technologies, and options from the Dell Technologies Open Networking software ecosystem and open-source communities, to address virtually any enterprise or service provider use-case or environment at any scale.

Also, our standards-based networking solutions are interoperable with leading virtualization environments that serve as a foundation for scale-out storage, and hyperconverged infrastructure through deep integration for VMware NSX-T, VMware vCenter, VMware vSphere, and VMware vSAN and deployments. At the top of the rack, our latest PowerSwitch S series 25 GbE switches help customers unlock the high-speed I/O capabilities that are inherent in today's server and storage elements, boosting performance 2.5x over legacy 10 GbE environments. The Dell EMC PowerSwitch S series platforms include 100 GbE uplinks to facilitate high-speed inter-rack connectivity with our PowerSwitch Z series family of 100 GbE and 400 GbE fabric switches. In addition to the migration towards open networking solutions within the data center, customers are also looking to reduce operating expenses.

- Dell Technologies is the market leader in open networking with the broadest set of offerings in both Access/Edge, to Core and Cloud hardware platforms from 1GbE to 400GbE connectivity to OS choices.
- Dell Technologies worldwide ProSupport, ProDeploy and ProConsult services
- Consulting - Dell Technologies Consulting Services provides industry professionals with a wide range of tools and the experience you need to design and execute plans to transform your business.
- Deployment - Accelerate technology adoption with ProDeploy Enterprise Suite. Trust our experts to lead deployments through planning, configuration and complex integrations.
- Management - Regain control of operations with flexible IT management options. Our Residency Services help you adopt and optimize new technologies and our Managed Services allow you to outsource portions of your environment to us.
- Support - Increase productivity and reduce downtime with ProSupport Enterprise Suite. Expert support backed by proactive and predictive artificial intelligence tools.
- Education - Dell Technologies Education Services help you develop the IT skills required to lead and execute transformational strategies. Get certified today.

Dell EMC Open Networking / Planning / Management

Open networking enable IT to build an application-agnostic, software-defined network infrastructure and simplify network management with standard automation tools and standards-based open platforms. Organizations can leverage open-source and automation tools to help automate up to 99% of networking tasks and help reduce the time and effort required to design, provision and manage these networks. Dell EMC Open Networking switch solutions are cost-effective and easy to deploy, providing a clear path to software-defined networking (SDN).

Dell EMC OS6 / OS10 are a Linux-based Open-Source Network Operating Systems supporting multiple architectures and environments. The OS10 solution is designed to allow multi-layered disaggregation of enterprise network functions. The OS6 version is designed for campus network and edge functions.

SONiC is an open source software project under OCP and a network operating system with the seed code provided by MSFT. This networking OS is open and extensible and it based on open source Debian Linux distribution. It is container-based - incorporates a modular/micro services containerized architecture.

SONiC allows the operator to control the complexity of the data center fabric by moving towards an automated, intent-based, API-centric, and purpose-built containerized network. Created for cloud operations at scale and it is real-world tested at production deployments on more than 50,000 switches at different hyper scalars and SaaS vendors. Dell EMC PowerSwitch Z and S series platforms are SONiC integrated.

Fabric Design Center tool is a simple-to-use, cloud-based design wizard that abstracts and automates the planning, design and deployment of network fabrics and will help you design and document a solution specific data center fabric in a few steps.

SmartFabric Services is an integrated component of Dell EMC SmartFabric OS10, enables smarter fabrics and end-to-end management of physical to virtual environments, offering customers the benefits of faster provisioning, integrated automation, and micro-segmentation and security.

SmartFabric Director is specifically designed to help define, provision and monitor a physical underlay data center fabric that is aware of a virtual network overlay and reacts to changing requirements in real-time.