



Grow Your Nutanix Enterprise Cloud with Mellanox

Mellanox Switches Provide the Most Scalable TOR Networking for Nutanix Enterprise Clouds

CHALLENGE

Nutanix Enterprise Cloud Platform brings the benefits of public cloud such as a pay-as-you-grow consumption model, limitless scalability, rapid time to market, one-click simplicity and continuous innovation while still providing control over performance, location of data and services and choice of platforms. Many customers today are migrating to the Nutanix Enterprise Cloud Platform to realize these benefits and achieve reduced capital expenditures and improved operational efficiency.

Networking is a critical piece of the Nutanix Enterprise Cloud Platform that needs to be installed, configured, and deployed properly in order to deliver a seamless datacenter management experience. Networking also needs to be easily scalable as customers expand their Nutanix Enterprise Cloud to meet their growing business needs. Mellanox Ethernet switches are optimized for Nutanix environments, and simplify the deployment and management of high-speed networking in the datacenter.

Mellanox Ethernet switches stand apart from other suppliers with unique port count/form factors, ultra-low latency and exceptional power efficiency. Validated as Nutanix Ready for Networking, Mellanox Ethernet switches make the network transparent and scalable with the Nutanix Enterprise Cloud Platform.

SOLUTION

Based on a distributed scale-out architecture, the Nutanix Enterprise Cloud Platform natively converges compute, storage and virtualization infrastructure into a resilient, software-defined solution with rich machine intelligence. Nutanix can scale out from deployments as small as 3 nodes to hundreds of nodes. With a vast portfolio of platform types and models, Nutanix enables customers to grow their footprint one node at a time.

The Mellanox Ethernet switch solution complements the Nutanix Enterprise Cloud Platform by making the network easy to deploy and expand. Mellanox TOR switches provide the smallest footprint for highest rack utilization, maximum flexibility for configurations at any network speed, and optimal scalability from half-rack to multi-rack deployments.

Mellanox offers a complete portfolio of Ethernet switches. Spectrum SN2100 (and the 10/40G only SN2100B) switches are the most popular TOR switches for converged and hyper-converged infrastructures. The SN2100 offers sixteen 10/25/40/50/100GbE ports in a unique half-width, 1 rack unit (RU) form factor. For deployments requiring high availability, two SN2100s can be deployed side-by-side in a 1RU rack space. The unique port count and form factor make the SN2100 the perfect fit for a rack with 3-4 Nutanix nodes. When additional Nutanix blocks are added, the SN2100 can easily scale up to 64 10/25GbE ports using breakout cables to support more nodes.

As the Nutanix enterprise cloud grows, networking performance needs to scale as well. Mellanox switches deliver ultra-low latency and line rate throughput with zero packet loss at any speed and port combination. They make the network truly transparent when the enterprise cloud scales out.

HIGHLIGHTS

- Nutanix enterprise cloud natively converges compute, storage and virtualization
- Mellanox 10/25/40/50/100G TOR switches in a unique half 19" form factor
- Simple to deploy, automated network provisioning
- Flexible to support various rack configurations
- Easy to scale from half rack to multiple racks

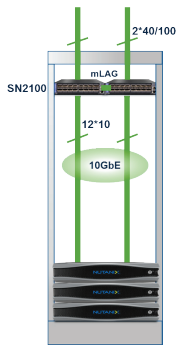


Figure 1. **1x Half Rack**
(total 12 nodes)

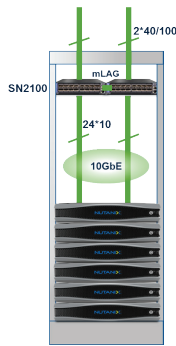


Figure 2. **1x Full Rack**
(total 24 nodes with dual 10G ports per node)

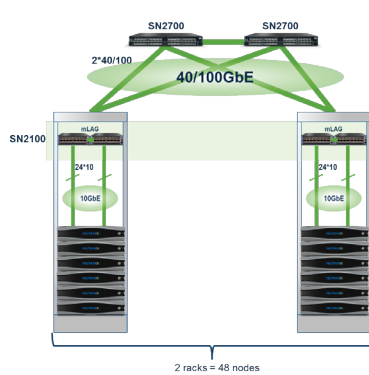


Figure 3. **2x Full Racks**
(total 48 nodes with dual 10G ports per node)

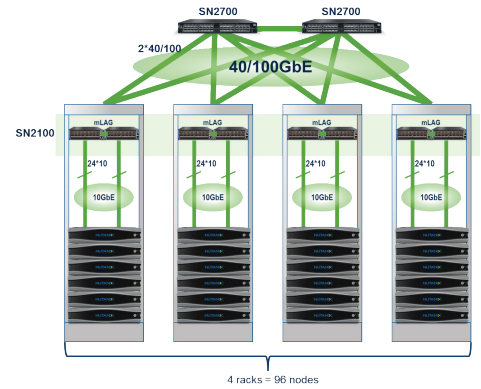


Figure 4. **4x Full Racks**
(total 96 nodes with dual 10G ports per node)

The diagrams illustrate the same network design with SN2100s at four different Nutanix rack scales.

CONCLUSION

Enterprise cloud infrastructure needs to quickly adapt to customers' current and future business needs. A solution that is simple to deploy, use, manage, and scale is critical toward achieving operational efficiency and reducing expenses. By offering these capabilities together, Nutanix and Mellanox make enterprise IT infrastructure invisible and elevate enterprise customers by shifting their focus to applications and services that power their business.

Table 1 - Mellanox Part Numbers and Descriptions

Item	OPN	Description
Top of Rack (TOR) Switch	MSN2100-BB2F	Spectrum™ based 40GbE 1U Switch with MLNX-OS, 16 QSFP28 ports, 2 Power Supplies (AC), P2C airflow.
Cables	MC2210130-001	Mellanox passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m
	MC2309130-003	Mellanox passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 3m
	MC2609130-003	Mellanox passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 3m
Modules	MAM1Q00A-QSA	Mellanox cable module, ETH 10GbE, 40Gb/s to 10Gb/s, QSFP to SFP+
	MC3208411-T	Mellanox module, ETH 1GbE, 1Gb/s, SFP, Base-T, up to 100m
Rack Installation Kit	MTEF-KIT-D	Rack installation kit for SN2100 short depth 1U switches
Switch Support, 1 Yr	SUP-SN2100-1S	Mellanox Technical Support and Warranty - Silver, 1 Year, for SN2100 Series Switch

About Mellanox

Mellanox Technologies (NASDAQ: MLNX) is a leading supplier of end-to-end Ethernet and InfiniBand intelligent interconnect solutions and services for servers, storage, and hyper-converged infrastructure. Mellanox intelligent interconnect solutions increase data center efficiency by providing the highest throughput and lowest latency, delivering data faster to applications and unlocking system performance. Mellanox offers a choice of high performance solutions: network and multi-core processors, network adapters, switches, cables, software and silicon, that accelerate application runtime and maximize business results for a wide range of markets including high performance computing, enterprise data centers, Web 2.0, cloud, storage, network security, telecom and financial services. More information is available at www.mellanox.com.



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About Nutanix

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix enterprise cloud platform leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on [Twitter @nutanix](https://twitter.com/nutanix).