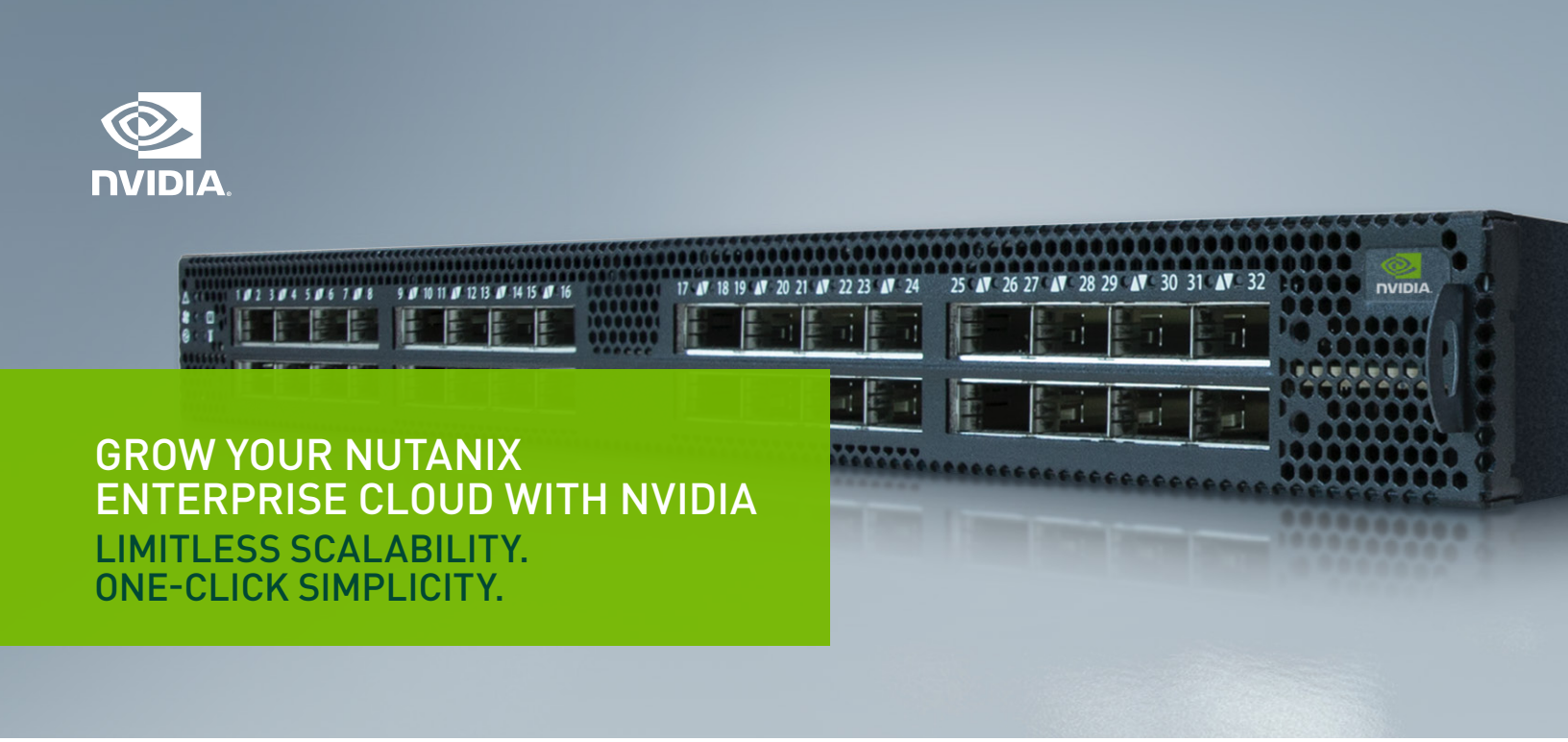

GROW YOUR NUTANIX ENTERPRISE CLOUD WITH NVIDIA

LIMITLESS SCALABILITY. ONE-CLICK SIMPLICITY.

CHALLENGE

Nutanix Enterprise Cloud Platform brings the benefits of a pay-as-you-grow consumption model including unlimited scalability and rapid time to market, with 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 data center management experience. Networking also needs to be easily scalable as customers expand their Nutanix Enterprise Cloud to meet their growing business needs. Optimized for Nutanix environments, NVIDIA® Mellanox® Ethernet switches simplify the deployment and management of high-speed networking in the data center.

NVIDIA Mellanox Ethernet switches stand apart from other suppliers, with their unique port count/form factors, ultra-low latency and exceptional power efficiency. Validated as Nutanix Ready for Networking, NVIDIA 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 NVIDIA Mellanox Ethernet switch solution complements the Nutanix Enterprise Cloud Platform by making the network easy to deploy and expand. NVIDIA 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.

Highlights

- Nutanix enterprise cloud natively converges compute, storage and virtualization
- Mellanox 10/25/40/50/100G TOR switches in a unique half 19", 1U form factor
- Simple to deploy, automated network provisioning
- Flexible support for various rack configurations
- Easy to scale from half rack to multiple racks

Mellanox offers a complete portfolio of Ethernet switches, with Spectrum SN2010 and SN2100 switches being the most popular TOR switches for converged and hyper-converged infrastructures. In a unique half-width, 1 rack unit (RU) form factor, the SN2010 provides eighteen 10/25GbE SFP+ ports and four 40/100GbE QSFP ports; the SN2100 offers sixteen 10/25/40/50/100GbE ports. For deployments requiring high availability, two SN2010s or SN2100s can be deployed side-by-side in a 1RU rack space. The unique port count and form factor make the SN2010 the perfect fit for a rack with 3-4 Nutanix nodes. For high density Nutanix racks, 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.

CONCLUSION

Enterprise cloud infrastructures need 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	MSN2010-CB2F	NVIDIA Mellanox Spectrum-based10/25GbE and 100GbE, 1U Open Ethernet Switch with MLNX-OS, 18 SFP28 and 4 QSFP28 ports, 2 Power Supplies (AC), standard depth, P2C airflow
	MSN2100-CB2F	NVIDIA Mellanox Spectrum-based 100GbE, 1U Open Ethernet Switch with MLNX-OS, 16 QSFP28 ports, 2 AC PSUs, standard depth, P2C airflow
Rack Installation Kit (for SN2010 and SN2100)	MTEF-KIT-D	Rack installation kit for SN2100/SN2010 series 1U switches, allows installation of One or Two switches side-by-side into standard depth racks
Spine Switch	MSN2700-CS2F	NVIDIA Mellanox Spectrum(R) based 100GbE 1U Open Ethernet Switch with Onyx, 32 QSFP28 ports, 2 power supplies (AC), standard depth, P2C airflow
Cables	MCP2M00-A003E26N	NVIDIA Mellanox passive copper cable, ETH, up to 25Gb/s, SFP28, 3m, 26AWG
	MCP1600-C00AE30N	NVIDIA Mellanox passive copper hybrid cable,100GbE, 100Gb/s, QSFP28, 0.5m, Black, 30AWG, CA-N
	MCP7F00-A003	NVIDIA Mellanox passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, 28AWG
Modules	MAM1Q00A-QSA28	NVIDIA Mellanox cable module, ETH 25GbE, 100Gb/s to 25Gb/s, QSFP28 to SFP28
	MC3208411-T	NVIDIA Mellanox module, ETH 1GbE, 1Gb/s, SFP, Base-T, up to 100m
Switch Support, 3 Yrs	SUP-SN2010-3S	Mellanox Technical Support and Warranty - Silver, 3 Years, for SN2010 Switch
	SUP-SN2100-3S	Mellanox Technical Support and Warranty - Silver, 3 Years, for SN2100 Series Switch
	SUP-SN2000-3S	Mellanox Technical Support and Warranty - Silver, 3 Years, for SN2000 Series Switch

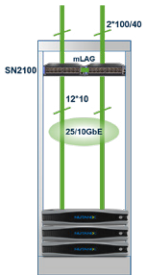

Figure 1.
1x Half Rack (total 12 nodes)

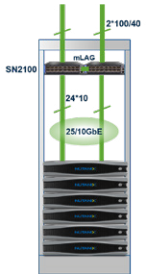

Figure 2.
1x Full Rack (total 24 nodes with dual ports per node)

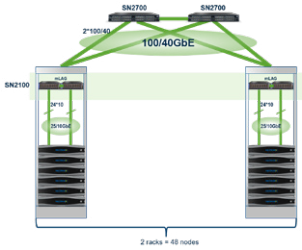

Figure 3.
2x Full Racks (total 48 nodes with dual ports per node)

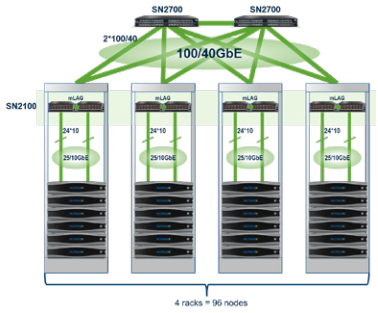

Figure 4.
4x Full Racks (total 96 nodes wth dual ports per node)

ABOUT NVIDIA 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.**

ABOUT NUTANIX

Nutanix is a global leader in cloud software and hyperconverged infrastructure solutions, making infrastructure invisible so that IT can focus on the applications and services that power their business. Companies around the world use Nutanix Enterprise Cloud OS software to bring one-click application management and mobility across public, private and distributed edge clouds so they can run any application at any scale with a dramatically lower total cost of ownership. The result is organizations that can rapidly deliver a high-performance IT environment on demand, giving application owners a true cloud-like experience.
Learn more at **www.nutanix.com**

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