Datasheet

NVIDIA Skyway-3

400 Gb/s InfiniBand-to-400GbE Ethernet gateway.



Seamless InfiniBand-Ethernet Integration

NVIDIA Skyway™-3 is a high-performance gateway that extends NVIDIA Quantum InfiniBand-based AI and HPC supercomputing environments to Ethernet storage and external networks. Built on the NVIDIA ConnectX™-8 SuperNIC™ and optimized for NVIDIA Quantum-X800 InfiniBand fabrics, Skyway-3 delivers NDR speeds with up to 400 Gb/s per port and supports flexible 400 Gb/s connectivity. By seamlessly bridging the world's fastest InfiniBand networks with Ethernet domains, Skyway-3 enables ultra-low latency; intelligent acceleration; and high efficiency, resilience, and performance for next-generation AI and HPC infrastructure.

Optimized Design

Skyway is an appliance-based InfiniBand-to-Ethernet gateway, designed for fast setup and simple management. Installed at the network boundary, the appliance supports standard IP routing protocols and integrates seamlessly with any InfiniBand topology for flexible deployment. Skyway includes:

- **Eight ConnectX-8 InfiniBand/Ethernet SuperNIC Dual-Port Adapter Cards:** These cards enable efficient hardware-based forwarding of IP packets between InfiniBand (IPoIB) and Ethernet networks.
- **NVIDIA Gateway Operating System (MLNX-GW):** This system manages the appliance hardware and provides high availability and load balancing across gateway appliances and ports.
- **Integration with NVIDIA Spectrum Ethernet switches:** For simpler deployment and seamless operations, NVIDIA recommends connecting Skyway-3 to a Spectrum Ethernet switch to provide IP routing functionality such as BGP. This configuration maps a single InfiniBand network to a single IP subnet, without requiring proxy ARP or VLANs.

Scalable and Flexible

Skyway-3's scalable architecture allows IT administrators to meet increasing user demands by connecting multiple Skyway appliances in parallel—achieving higher connectivity bandwidth. Each gateway appliance supports 6.4 terabits per second (Tb/s) of total throughput, utilizing 16 ports with 400 Gb/s bandwidth each.

Key Features

- High data transfer speeds
- Ultra-low latency
- Intelligent accelerations
- Top-tier efficiency and resilience
- Optimized design for easy setup and management
- Scalability and efficiency
- IPv6 datapath support
- QoS Support

Benefits

- Converge all data communications into a single, cost-effective fabric
- Scale InfiniBand with the ease of Ethernet connectivity
- Maximizes networking resource availability with high performance
- Designed for energy and cost savings
- Quick and easy setup and management

InfiniBand Management

The InfiniBand subnet hosts a single, centralized subnet manager (SM), that acts as a software-defined network (SDN) controller for the InfiniBand network. An option to run the SM within the UFM (Unified Fabric Manager) is also available. Please visit NVIDIA UFM™ for more information.

Product Specifications

Dimensions	**>** Standard 2U appliance: 19”
Connectivity	**>** 8x 400/200 Gb/s InfiniBand ports **>** 8x 400/200GbE Ethernet ports
Total Throughput	**>** 6.4 Tb/s
Power Supply	**>** 80 Plus Platinum 2+1 redundant power supply **>** 1,000 W @ 100 ~ 127 V **>** 2,000 W @ 200 ~ 240 V
CPU	**>** Dual Intel Xeon Silver 4516Y processors
Software	**>** MLNX-GW gateway operating system
Rack Mount	**>** 2U rack mount
System Weight	**>** 40 kg
System Dimensions	**>** Height: 3.46 in. (88 mm) **>** Width: 17.25 in. (438.4 mm) **>** Depth: 35.43 in. (900 mm)
Operating Conditions	**Temperature** **>** Operating: 10°C–35°C **>** Non-operating: -30°C–60°C **Humidity** **>** Operating: 8%–80% @ 40°C (non-condensing) **>** Non-operating: 8%–90% @ 40°C (non-condensing)

Ready to Get Started?

Learn more by contacting an NVIDIA sales representative:
nvidia.com/networking-contact-sales

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