



NVIDIA 100GB/S INFINIBAND ROUTER

Scale Out Your Data Center, Sustain Peak Performance

Enabling New Levels of Isolation

The unprecedented growth of the global high performance computing (HPC) and AI market, led by the extreme demands of deep learning and exascale simulations, is driving the need for more connected cluster servers and GPUs.

The NVIDIA® 100Gb/s InfiniBand SB7880 router supports the scale-out of InfiniBand clusters to an almost unlimited number of nodes—all while sustaining the peak performance and reliability demands of research, simulations, high performance computing, and cloud applications data processing. For greater flexibility and business continuity, the router supports connectivity between isolated InfiniBand subnets as well as between different InfiniBand topologies.

Resilience and Ease of Scale

The 100 gigabits per second (Gb/s) InfiniBand SB7880 router enables application performance and scalability by providing up to 36 100Gb/s ports with 7.2 terabits per second (Tb/s) of total throughput and ultra-low port latency, while reducing operational costs and infrastructure complexity.

The SB7880 router's ports can be split among several different subnets to increase resilience and enable new levels of isolation. Each subnet runs its own subnet manager that effectively isolates it from the availability or instability of the other subnets. Customers may use this capability to isolate compute clusters while enabling all subnets to connect to a common storage cluster.

In-Network Acceleration

InfiniBand solutions are the most deployed high-speed interconnect for large-scale machine learning, in terms of training and inferencing systems. The InfiniBand network features smart In-Network Computing and CPU offloads, such as remote direct-memory access (RDMA), and Scalable Hierarchical Aggregation and Reduction Protocol (SHARP)™. These technologies enable ultra-low latency, boost data throughput and message rate, and reduce end-node CPU utilization, improving application performance by an order of magnitude.

SYSTEM SPECIFICATIONS

Performance	100Gb/s per port
Switch radix	36 100Gb/s non-blocking ports with total data throughput up to 7.2Tb/s
System power usage	Typical power with passive cables (ATIS): 136.08W Maximum power with passive cables: 235W Maximum power with optical cables: 374W (each port consumes 3.5W)
Power supply	1+1 redundant and hot-swappable power Input range: 100-127VAC, 200-240VAC 80 Gold+ and ENERGY STAR-certified power supplies
Cooling	Front-to-rear or rear-to-front Cooling option: hot-swappable fan
Management ports	1x RJ45 1x console port: RS232 1x USB
CPU	Intel
System memory	4GB RAM DDR3 16GB SSD
Software	MLNX-OS
System weight	Standard: 1 PSU: 11.11 kg 2 PSUs: 11.978 kg
System dimensions	Standard: Height: 1.7 in (43.6 mm) Width: 16.85 in (433.2 mm) Depth: 27 in (590.6 mm)

World-Class Design

The SB7880 router is designed for performance, serviceability, energy savings, and high-availability, coming equipped with two highly efficient, 80 gold+ and energy star certified power supplies. It's power-optimized design enables the router to support low power consumption, resulting in power reduction when all ports are not fully utilized. The SB7880 also has redundant power supplies (1+1) and fans that support maximal thermal protection.

Enhanced Management

The SB7880's dual-core x86 CPU runs the NVIDIA MLNX-OS® software package, delivering complete chassis management of the router's firmware, power supplies, fans, and ports. The router can also be coupled with NVIDIA UFM® platforms, featuring a comprehensive feature set to meet the broadest range of modern, scale-out InfiniBand data center requirements. Revolutionizing data center management, the UFM family of products combines enhanced, real-time network telemetry with AI-powered cyber intelligence and analytics. The UFM solutions minimize cluster downtime by empowering research and industrial data center operators to efficiently provision, monitor, manage, preventatively troubleshoot, and maintain their InfiniBand data center fabric.

SYSTEM SPECIFICATIONS

Rack mount	1U rack mount
EMC (emissions)	CE, FCC, VCCI, ICES, RCM
Operating conditions	Temperature: Operating: 0°C-45°C Non-operating: -40°C-70°C Humidity: Operating: 10-85% non-condensing Non-operating: 10-90% non-condensing Altitude: up to 3,200m
Safety	RoHS, CS, cTUVus, CE, CU
Product safety compliant/certified	RoHS, CS, cTUVus, CE, CU

Ordering Information

For ordering information, please contact gopny@pny.com

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