Nvidia

Product Brochure

Supercharge Your Data Center with NVIDIA Quantum-2 InfiniBand

Unlock Unprecedented Performance for AI, HPC, and Data Analytics In today's demanding data-centric world, accelerated computing requires networks that can keep pace. NVIDIA Quantum-2 InfiniBand is the next-generation networking platform designed to power the most challenging workloads in AI, High-Performance Computing (HPC), and data analytics. Quantum-2 delivers groundbreaking performance with **400 Gb/s throughput per port**, a significant leap over previous generations. Its key features include **SHARPv4** (Scalable Hierarchical Aggregation and Reduction Protocol) offering enhanced in-network computing capabilities. By offloading collective communication operations from the CPU to the network, SHARPv4 drastically reduces latency and improves application performance. This is crucial for large-scale AI training where inter-GPU communication is a bottleneck. **Who benefits from NVIDIA Quantum-2?** * **Hyperscale data centers:** Achieve faster training times for large AI models. * **Scientific research institutions:** Accelerate complex simulations and data analysis. * **Financial institutions:** Optimize high-frequency trading platforms with ultra-low latency. * **Enterprises:** Enhance data warehousing and analytics workloads. **The NVIDIA Advantage:** Unlike traditional Ethernet solutions, Quantum-2 InfiniBand offers superior performance and scalability for demanding workloads. Its **Adaptive Routing** technology dynamically adjusts data paths to avoid congestion, ensuring consistent and reliable performance. Integrated with the **NVIDIA Magnum IO** software suite, it provides a unified and optimized I/O stack, streamlining deployment and management. Quantum-2 is also fully integrated with the NVIDIA software ecosystem, including CUDA, allowing seamless integration with existing AI and HPC workflows. **Key Specifications:** * **Throughput:** 400 Gb/s per port * **Switch Capacity:** Exabytes Scale * **Latency:** Sub-microsecond * **SHARPv4:** Enhanced In-Network Computing * **Adaptive Routing:** Dynamic Congestion Management Invest in NVIDIA Quantum-2 InfiniBand and unlock the full potential of your accelerated computing infrastructure. Learn more at [Insert realistic Nvidia webpage here].