



Mellanox Breaks Data Center Speed Barriers by Delivering the First 10Gb/sec InfiniBand Switching Solution

New “InfiniScale” Architecture Offers 160 Gb/sec of Available Bandwidth, Integrated Physical Layer, and Support for Up to 192 Ports; Vastly Improves Available Bandwidth for Clustering, Communication and Storage within Enterprise and Internet Data Centers

SANTA CLARA, CA and YOKNEAM, ISRAEL - October 22, 2001 - Mellanox Technologies, Ltd., the leading provider of InfiniBandSM silicon, today introduced and announced the immediate availability of the InfiniScaleTM MT43132 InfiniBand switch; the first commercially available single chip silicon device with integrated physical layer for the InfiniBand market. Mellanox’s InfiniScale switch improves the bandwidth of storage area networking and server clustering by a factor of ten, enabling an integrated and highly-scalable InfiniBand fabric while supporting the economies of copper connectors at 10Gb/sec. The new InfiniScale MT43132 is the second generation of Mellanox’s InfiniBand switch semiconductors and the first member of the InfiniScale switch product family. The InfiniScale device enables system vendors to build a complete InfiniBand switch with eight 10Gb/s ports using only a single chip.

“With the introduction of Mellanox’s InfiniScale product family, 1Gb/sec Ethernet and 1 or 2Gb/sec Fibre Channel backbones can be upgraded to a 10 Gb/sec InfiniBand fabric which will greatly

accelerate the performance within data centers” said Vernon Turner of IDC, “InfiniBand based data centers enable higher performance and improved reliability, availability, and serviceability at price points significantly lower than any competing technology and in addition the option to use copper cables can mean thousand of dollars of savings per switch, versus fiber optic cables.”

InfiniScale MT43132

The InfiniScale MT43132 features eight full wire speed non-blocking full duplex 4X (10Gb/s) ports with more than 160 billion bits of aggregate bandwidth, and the ability to scale from 8 to 192 InfiniBand ports when combined with the InfiniBridge MT21108 switch device. The InfiniScale device integrates thirty-two 2.5Gb/s Vitesse serializer/deserializers (SerDes) into a single 520-pin package, making it the first commercially available InfiniBand semiconductor to include both the logic and physical layer in a single device. This level of integration reduces both power and system cost, simplifies board designs, reduces total package size and eliminates all external physical layer parts. (See the October 22 Vitesse-Mellanox press release for more details).

“We began shipping our first generation InfiniBridge silicon, a 4X channel adapter and 1X switch, for revenues in January 2001,” said Eyal Waldman, CEO, Mellanox Technologies. “Since then we have continued to execute on our roadmap and with the delivery of our InfiniScale device, Mellanox becomes the first company to have designed, manufactured and shipped two generations of InfiniBand silicon. With product shipped to more than 60 companies, Mellanox has clearly proven its ability to deliver and take advantage of InfiniBand’s growing momentum.”

Advanced Feature Set

The InfiniScale MT43132 advances performance, scalability, interoperability and the cost effectiveness of InfiniBand based copper and fiber fabrics. InfiniScale devices are designed to be fully compatible with the InfiniBand Trade Associations (IBTA) 1.0a specification and interoperable with other devices that will be designed to meet the specification. Developers can combine the InfiniScale and InfiniBridge switch devices to enables system port densities ranging from eight 4X ports to multi-tiered systems scalable to 192 ports at 2.5Gb/s (1X). Platforms based on the devices can support full wire speed, non-blocking switches with thirty-two 1X ports or many combinations of 1X and 4X ports. The combination of core and leaf switching capabilities may be

used to aggregate InfiniBand server blade clusters at 10Gb/sec to the InfiniBand fabric. The InfiniScale switch offers advanced features such as caching, flexible forwarding, and advanced partitioning, allowing intelligent processing of InfiniBand packets and enabling flexible enforcement of access privileges. The InfiniScale MT43132 supports either 10Gb/sec fiber optic or copper connections. The advantage of copper connectors is that they offer significant infrastructure costs savings versus fiber optics, as copper transceivers cost many hundreds of dollars less than fiber optic transceivers. At less than \$3 per Gb/sec of bandwidth, the InfiniScale MT43132 offers an unmatched value and performance for data center silicon switching solutions.

The Mellanox InfiniScale MT43132 features include:

InfiniBand Attributes:

- Fully IBTA 1.0a Compatible Design
- Eight 4X (10Gb/sec) InfiniBand Ports
- Ports Configurable as 1X or 4X
- Non-Blocking Full Wire Speed Switch
- InfiniRISC™ Embedded RISC Processor
- Integrated SMA (Subnet Management Agent)
- Integrated GSA (General Services Agent)
- Large on Chip Port Buffers
- Hardware Acceleration of InfiniBand Packet Generation
- Maximum Transfer Unit (MTU or payload) range from 256 to 4096 bytes
- Support of Eight Virtual Lanes + Management Lane at maximum MTU size
- 48K Unicast and 1K Multicast Forwarding Support
- Hardware Enforcement of P_Key Checking
- Hardware Credit Based Link Level Flow Control
- Hardware CRC Checking and Generation
- Per Port Service Level to Virtual Lane (SL to VL) Mapping
- Programmable Port Mirroring
- Cut Through Switching
- Bad Packet filtering
- Dynamic Buffer Allocation

CPU, PCI and Other Bus Interfaces

- PowerQUICC CPU Interface
- 32-bit/66MHz PCI v2.2 Compatible Interface
- General Purpose IO Pins
- I2C Compatible Bus
- Boundary Scan (JTAG) Interface

Bandwidth

- Aggregate Switch Bandwidth - 60Gb/sec
- Maximum PCI Bus Bandwidth - 2Gb/sec

“InfiniScale devices provide high performance 4X core switching capabilities to complement our InfiniBridge 1X and 4X channel adapters and 1X switch devices,” said Roni Ashuri, Vice President of Engineering, Mellanox Technologies. “Mellanox now offers InfiniBand products that provide complete 2.5Gb/s and 10Gb/s solutions for clustering, communication, and storage.”

Comprehensive Software and Reference System Support

Mellanox is offering customers a complete Product Development Kit (PDK) for the InfiniScale device. The PDK includes an eight-port switch with standard 4X copper connectors packaged in an optional 1U chassis and includes schematics, layout, bill of materials, and a software development kit (SDK). The SDK contains driver development code, InfiniBand Verbs implementation, application examples, and debug/development tools, enabling customers to develop InfiniBand systems based on the reference software. The PDK is also supported by software management solutions from Lane15 and VIEO.

Pricing and Availability

The InfiniScale MT43132 is available today and is packaged in a 520 pin L2BGA package with pricing of \$458 in 10K quantities. Production quantities of the MT43132 will be available in Q1 2002. Mellanox offers immediate availability of the MTEK43132-C08 PDK system development board (including SDK), priced at \$10,000. Mellanox’s InfiniBridge 4X host/target channel adapter (MTEK21108-CO2) is a dual port 4X PCI adapter card that is an ideal companion to the

MTEK43132. These reference designs are the basis for complete 4X InfiniBand solutions for server, storage, and switch applications.

To see the InfiniScale MT43132, in action, please visit Mellanox from October 22-24 at Storage Networking World (Booth #11) in Orlando, Florida.

About Mellanox

Mellanox is the leading supplier of InfiniBand semiconductors, providing Switches, Host Channel Adapters, and Target Channel Adapters to the server, communications, and data storage markets. In January 2001, Mellanox Technologies delivered the InfiniBridge MT21108, the first 1X/4X InfiniBand device to market, and is now shipping second generation InfiniScale silicon. The company has raised more than \$33 million to date and has strong corporate and venture backing from Intel Capital, Raza Venture Management, Sequoia Capital, and US Venture Partners. In May 2001, Mellanox was selected by the *Red Herring Magazine* as one of the 50 most important private companies in the world. Mellanox currently has more than 200 employees in multiple sites worldwide. The company's business operations, sales, marketing, and customer support are headquartered in Santa Clara, CA; with the design, engineering, software, system validation, and quality and reliability operations based in Israel.

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