Mellanox Introduction - Open19

Intelligent and Open Networking with Mellanox

September, 2018
Mellanox Overview

~2,900 Employees worldwide
Founded in 1999
Ticker: MLNX

Company Headquarters
- Yokneam, Israel
- Sunnyvale, California
- Worldwide Offices

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Networking Leadership Accelerates Key Workloads

End to End Networking Solutions Across Markets

HPC | Enterprise | Storage | Cloud | Big Data | Security

Comprehensive End-to-End Ethernet & InfiniBand Networking Portfolio

ICs | NIC & HCA | SOC & SmartNIC | Switches/Gateways | Software | Cables/Modules

NIC: Network Interface Card
HCA: Host Channel Adapter
SOC: System On a Chip
Intelligent Network Key to Data Center Efficiency

Intelligent Networking is Critical for Data Center Transformation

Efficient Data Movement

Virtualization & Security Acceleration

Application Acceleration: Storage, Big Data, AI/ML

Cloud & Telco
Simplicity, Flexibility, Automation, Efficiency & Reduced Costs

Storage
Enabling NexGen Flash & Software Defined Storage

Distributed Security
Customer & Application Data Isolation/Protection

Machine Learning
Most Efficient AI & ML Learning Systems

DPDK: Data Plane Development Kit | OVS: Open Virtual Switch | NVMe: Non-Volatile Express | RDMA: Remote Direct Memory Access | RoCE: RDMA over Converged Ethernet
Mellanox Ethernet Adapter Portfolio

Markets
- Data Center
- Storage
- Web 2.0
- Cloud
- Virtualization
- Artificial Intelligence

Best of Breed Software
- WinOF-2:
  Driver for Windows
- MLNX-OFED:
  for Linux
- VMA:
  Messaging Accelerator
- ASAP²:
  Accelerated System Acceleration Protocol
- ReFlex:
  Flexibility for Future

Flexible Form Factors
- RoCE/RDMA: Packet Pacing
- ASAP²: Socket Direct
- GPU Direct
  - Storage Accelerations
  - Multi Host

Core Technologies

Silicon Innovation Foundation
- Connect X³
- Connect X³ PRO
- Connect X⁴
- Connect X⁴ Lx
- Connect X⁵
- Connect X⁶
25G & Above is Fastest Growing Ethernet Segment

- Key Drivers of 25G+ Networking:
  - Cloud, Big Data, Faster Storage, Virtualization, AI & Machine Learning
- 25G+ Adoption Cycle:
  - #1: US Hyperscalers
  - #2: BAT in China
  - #3: Third wave of cloud, telco, and storage in US, ASIA, and Japan

High Speed Adapter Forecast 2021 TAM ($2.3B)

Source: Crehan Long Range Forecast Server-Class Adapter & Lom Controller (10G and greater), Jan ‘18
Mellanox #1 Share in 25G+ Adapter Segment

- High performance (>10G) Ethernet adapter segment more than doubled Y/Y
- Mellanox is the market leader with 65% share
- Mellanox leadership is driven by significant ongoing investment in hardware and software

Source: Crehan Research, 1Q18 Quarterly market shares
Open Source Investment & Leadership

- Mellanox is regularly a top 10 contributor to Linux kernel: [https://lwn.net/Articles/701650/](https://lwn.net/Articles/701650/)

- Multiple projects
  - Virtual Switching
  - Quality of Service
  - RoCE – Ethernet standard for RDMA
  - Tensorflow
  - Hadoop
  - Ceph
  - NVME-over-Fabrics
  - Security – TLS offload
  - SwitchDev – kernel interface

Most Active 4.8 Kernel Contributors by Employers

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<th>Employer</th>
<th>Lines Changed</th>
<th>Percentage</th>
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Thank You