QLogic in HPC
Vendor Update

IDC HPC User Forum
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Host Solutions Group
Networking for Storage and HPC

- Leading supplier of Fibre Channel
- Leading supplier of iSCSI
- Early provider of Data Center Ethernet / FCoE
- FY2007 Revenue: 587.6M
- No debt
- ~1,000 employees
QLogic Acquired Two Leading InfiniBand Companies in 2006
Complete InfiniBand Solution

- HPC oriented Host Channel Adaptors
- OFED Plus software stacks
- High Port-count Director Switches
- Edge Switches
- Multi-protocol gateways
- Cables
- InfiniBand Fabric Management
- InfiniBand Silicon
- Worldwide Support
Series 9000 InfiniBand Fabric Products

Core Fabric Switches

Multi-Protocol Fabric Director Modules

Over 150,000 DDR ports shipped since 2006

Edge Fabric Switch

1U 24 Ports

14U 288 Ports

14U 144 Ports

7U 96 Ports

4U 48 Ports

4U 24 Ports

19” rack
OFED+ Provides OpenFabrics Benefits
Plus Optional Value Added Capabilities

Community and 3rd Parties

OFED ULPs and Utilities
- uDAPL

IPoIB
- SDP
- VNIC
- SRP
- iSER
- RDS
- OpenSM

PSM Library

Accelerated Performance
- QLogic MPI
- Open MPI
- HP-MPI
- Scali MPI
- MVAPICH
- MPICH2

Additional Robust ULPs and Tools
- QLogic SRP
- QLogic VNIC
- InfiniBand Fabric Suite

Kernel

User

OFED Driver

Host Channel Adapter
Management Software

FastFabric
- Centralized Fabric Administration Tools
- Rapid Fabric Installation/Upgrade
- Powerful Verification and Diagnostic tools

Fabric Management
- No user intervention required
- Scalable to thousands of nodes
- Fast subnet manager
- Optional redundancy

Chassis/Element Management
- No user intervention required
- Hot swap FRU(s)
- Optional redundancy
- Common feature set, look and feel across all chassis/switch products

IO Management
- Flexible IO configurations
- Hot swap IO
- Virtual / Scalable IO

Lowering InfiniBand OpEx
New QLogic QLE7280 Adapter

- Built for HPC
- Superior Performance
- Outstanding Scalability
- Low Total Cost of Ownership
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- Superior Performance
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- Designed for multicore processors
- Optimized for MPI Applications
- Parallel file systems and IB networking, too.
New QLogic QLE7280 Adapter

- Built for HPC
- Superior Performance
- Outstanding Scalability
- Low Total Cost of Ownership

- Full DDR bandwidth even for PCIe Gen1 systems (1950 MB/s)
- Low latency (~1.2us)
- High message rate (26 million / sec)
- No compromises
New QLogic QLE7280 Adapter

- Built for HPC
- Superior Performance
- Outstanding Scalability
- Low Total Cost of Ownership

- Connectionless
- Small memory footprint at scale
- Latency stays low as core & socket count increases
- Excellent collective performance
New QLogic QLE7280 Adapter

- Built for HPC
- Superior Performance
- Outstanding Scalability
- Low Total Cost of Ownership

- Simple, reliable design
- No firmware to upgrade
- Low power (< 6.5W) using CoolHCA technology
- Support for most popular Linux distros and MPIs
Superior Performance for Key HPC Applications

- **Aerospace and Automotive**
  - CFD
    - Fluent – 2~22% faster at 32 cores
    - PowerFlow – 10~29% faster at 64 cores
    - OpenFOAM – 10% faster on F1 racing team data set
  - Finite Element Analysis
    - LS-DYNA – 34% faster at 128 cores
    - ABAQUS – 12~34% faster at 16 cores

- **Oil and Gas**
  - Reservoir Simulation
    - Schlumberger Eclipse – 6% faster at 16 cores

- **Life and Materials Science**
  - Molecular Simulation
    - NAMD – Top Gun results for ≥32 processes.
    - CHARMM – Excellent scaling at low core counts.
    - Gromacs – Excellent scaling at low core counts.
Thank You