



QLogic in HPC

Vendor Update

IDC HPC User Forum
April 16, 2008

Jeff Broughton
Sr. Director Engineering
Host Solutions Group



- **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**

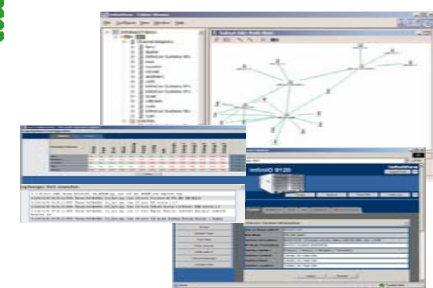
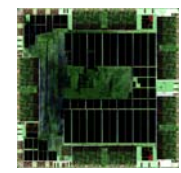
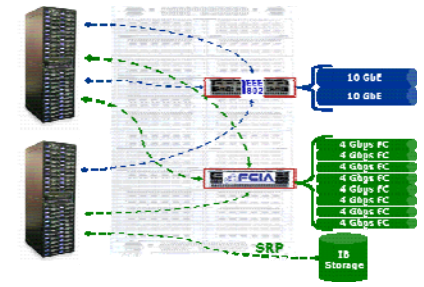
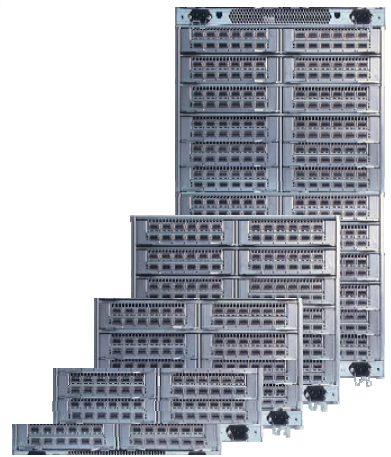
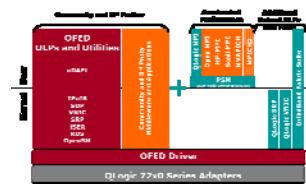
QLogic Acquired Two Leading InfiniBand Companies in 2006



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

INFINIBAND[™] Trade Association

IEEE 802

FCIA

4X SDR

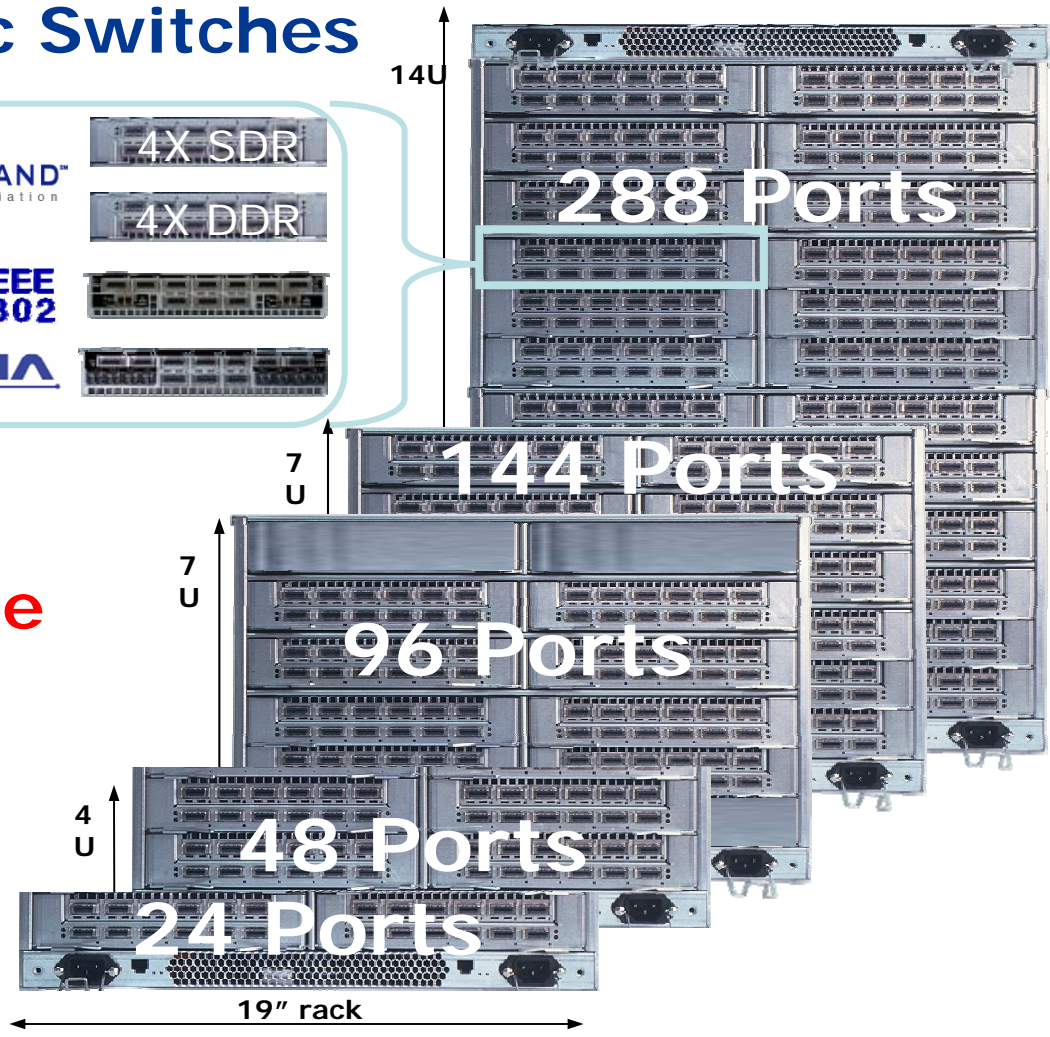
4X DDR

Over 150,000 DDR ports shipped since 2006

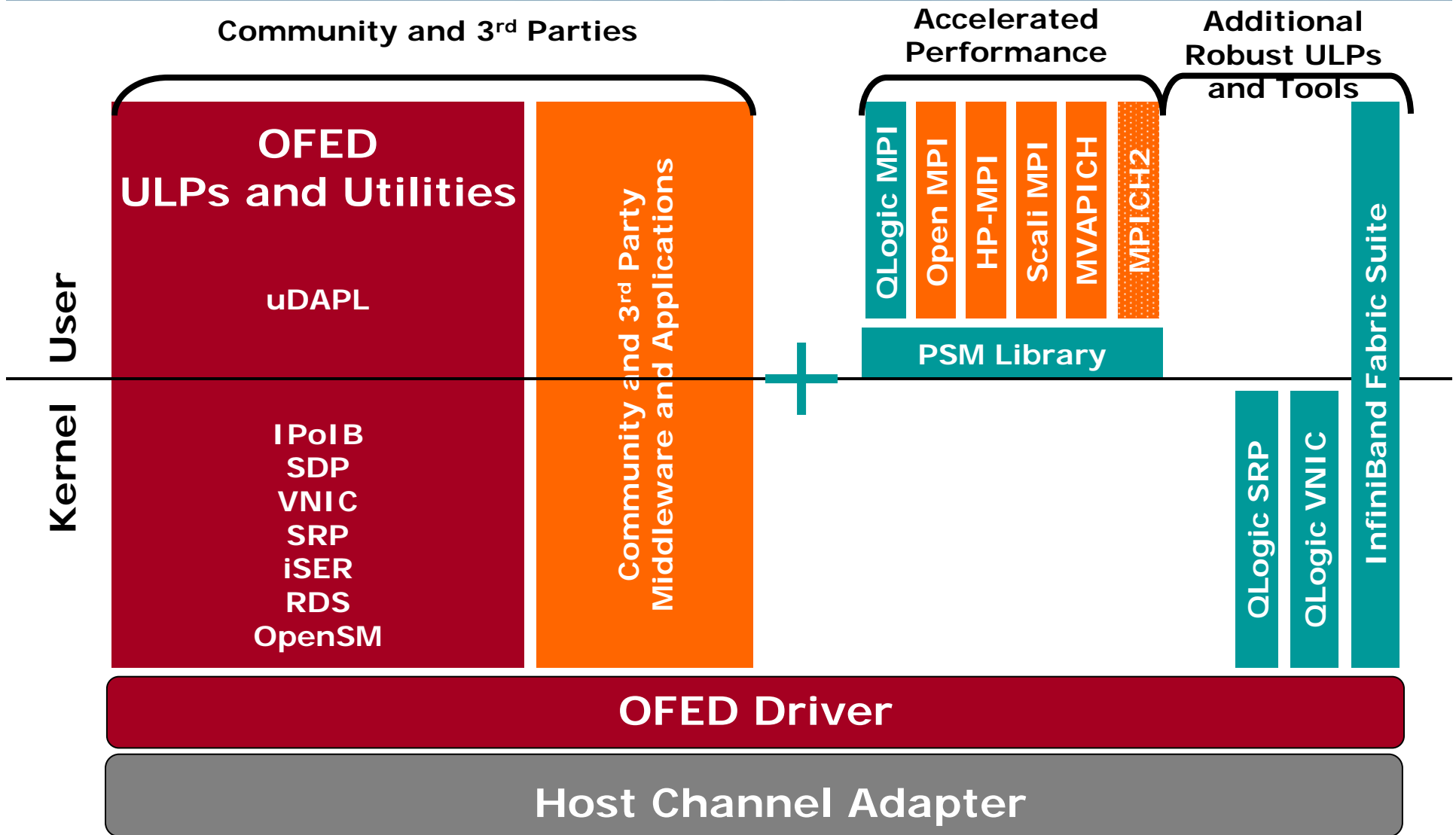
Edge Fabric Switch

1 U

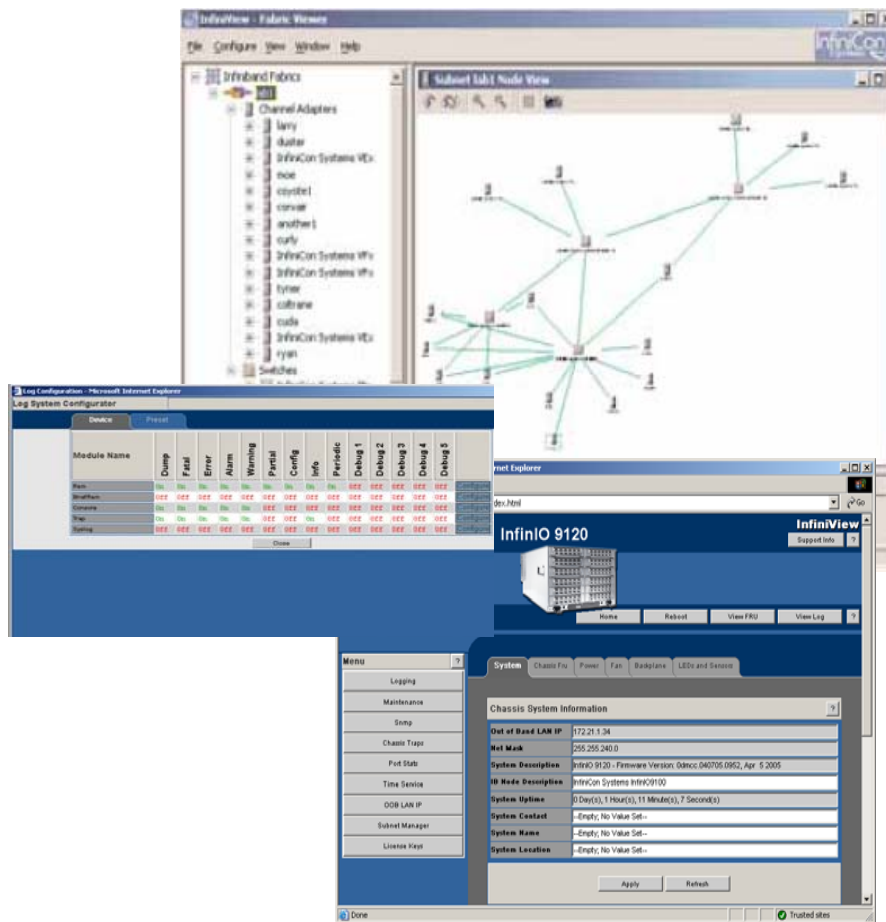
24 Ports



OFED+ Provides OpenFabrics Benefits Plus Optional Value Added Capabilities



Management Software



Lowering InfiniBand OpEx

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

New QLogic QLE7280 Adapter



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



New QLogic QLE7280 Adapter



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

- **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**

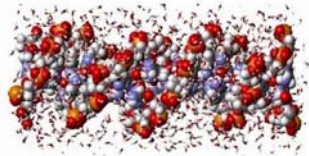
New QLogic QLE7280 Adapter



- **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

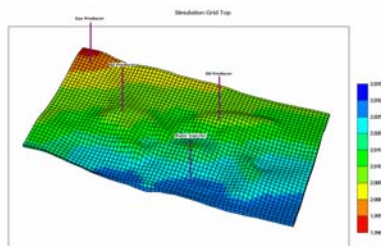


▪ Oil and Gas

- 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