World’s first 100Gb/s interconnect adapter
- PCIe 3.0 x16, dual FDR 56Gb/s InfiniBand ports to provide >100Gb/s

Highest InfiniBand message rate: 137 million messages per second
- 4X higher than other InfiniBand solutions

<0.7 micro-second application latency

Supports GPUDirect RDMA for direct GPU-to-GPU communication

Unmatchable Storage Performance
- 8,000,000 IOPs (1QP), 18,500,000 IOPs (32 QPs)

New Innovative Transport – Dynamically Connected Transport Service

Supports Scalable HPC with MPI, SHMEM and PGAS/UPC offloads

Enter the World of Boundless Performance
FDR InfiniBand Delivers Highest Application Performance

OpenFOAM Performance
(Lid-driven Cavity)

Message Rate

NAMD Benchmark
(Platform MPI, ApoA1)

RADI OSS Benchmark
(NEON1M11, MPI)
MetroDX™ and MetroX™

- MetroX™ and MetroDX™ extends InfiniBand and Ethernet RDMA reach
- Enable same subnet on both sides – one system
- Supporting multiple distances – 1KM, 10KM, 40KM
- High port density

40Gb/s over Campus and Metro
GPUDirect RDMA

Receive

System Memory

GPU

Chip set

GPU Memory

CPU

InfiniBand

GPUDirect 1.0

InfiniBand

System Memory

Transmit

CPU

Chip set

GPU Memory

GPU

System Memory

InfiniBand

GPUDirect RDMA

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Preliminary Performance of MVAPICH2 with GPUDirect RDMA

GPU-GPU Internode MPI Latency

Small Message Latency

Lower is Better

69% Lower Latency

LATENCY (us)

Message Size (bytes)

MVAPICH2-1.9
MVAPICH2-1.9-GDR

19.78
6.12

69% Lower Latency

GPU-GPU Internode MPI Bandwidth

Small Message Bandwidth

Higher is Better

BANDWIDTH (MB/s)

Message Size (bytes)

MVAPICH2-1.9
MVAPICH2-1.9-GDR

3X Increase in Throughput

Source: Prof. DK Panda

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Execution Time of HSG (Heisenberg Spin Glass) Application with 2 GPU Nodes

Source: Prof. DK Panda
Bandwidth

Latency

Same Software Interface
Thank You