



SGI Production Supercomputing

HPC User Forum Welcome

April 11, 2016

sgi[®]

Focus and Interest Areas

Workflow Acceleration: Workflow acceleration through high-performance HPC, UV/HPDA integration with Lustre-based data pools

System Uptime and Resilience: Automated capabilities for discovering and isolating component faults to minimize downtime and costs

Converged Storage and Compute: Flash-based “TierZero™” high-performance storage with active data management

Workflow Acceleration

- As HPC workflows expand to include computation, large data set analysis and visualization – optimizing the movement of data becomes critical
- SGI's architecture includes both near term and long term acceleration

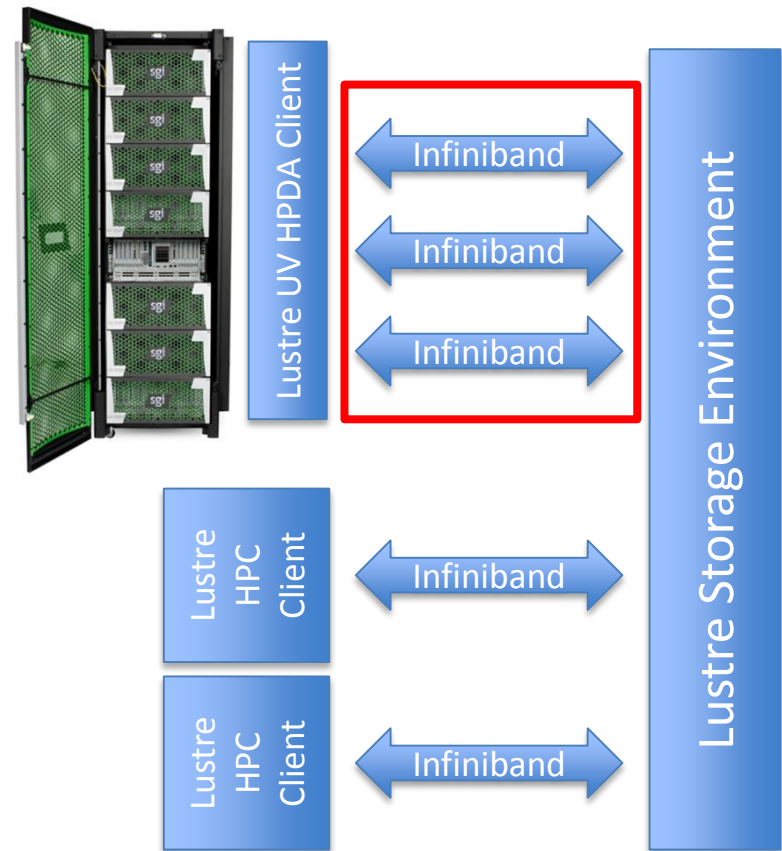
Current Data Points:

- HPC and HPDA Convergence as Key Solution Requirements
- Consistent customer interest in the use of common 'data lakes' for data access supporting multiple uses

SGI UV Multi-Rail Lustre

In-Process Co-Development Project with Intel

- UV optimized client for high-performance Lustre integration
- Multiple IB or OmniPath connections for massive throughput
- Technical details announced last week at Lustre User Group (LUG) 2016



System Uptime and Resilience

Energy Efficiency is a Worldwide Issue



Forecasting

- Accurately measure and predict power usage for better planning



Management



Control

Real Time Memory Management



Reduce Costs

Avoid memory sparing and mirroring costs



Increase Performance

Maximize memory bandwidth



Improve Uptime

Reduce downtime & admin workload

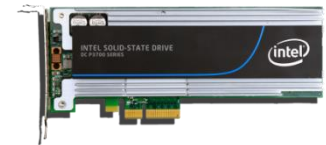
Convergence of Compute & Storage

	The Old Way	The New World
HPC Performance Measurement	GB/sec	TB/sec
High-Performance Storage Tier	Disk	Flash & 3DXPoint
Capacity Storage Tier	Tape	Disk (Tape for Resiliency Tier)

TierZero™ Storage

UV Scalable Converged Compute & Storage Platform

- Single scale-up SMP system delivers
 - Compute:
 - Up to 480 Intel Xeon™ cores (32 sockets)
 - Memory:
 - Up to 24TB DRAM
 - Non-volatile Memory:
 - Up to 128TB FLASH
 - Up to 30 Million IOPs
 - Up to 200GB/s
- All in one rack
- No switches, no arrays, no problems
- Generic servers (e.g. Arcadia) can work as well by scaling out



Intel P3700
400K IOPS
2.4GB/s

sgi®