Scaling Up Low Latency, Virtualization, Windows and Linux for Wall Street

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Mixed Environments Add Complexity

Compounded by cross-platform challenges ...

- Mixed environments common in most large data centers
- Multiple vendors, OSes, support agreements, skills requirements
- Little cooperation between vendors
- Interoperability challenges, integration needs increase complexity and cost
- Bridging the divide between the commercial software and Open Source worlds
- Managing multiple user groups and silos of infrastructure
Essential Characteristics for Cloud and HPC

Financial markets need a unique blend of enterprise IT and HPC

Deliver business and HPC services rapidly, efficiently and successfully

Eliminate human error, enable scaling and capacity, reduce management complexity and cost

Anticipate and adapt intelligently to dynamic business and HPC service needs and conditions
Low Latency, Performance & Scale

Access to larger spreadsheets
- 256 columns -> 16K
- 64k Rows -> 1M Rows

Expanded memory use
- 1GB -> 2GB

Multi-threaded Calculations
- Ability to take advantage of multi-core/CPU

Integration with HPC
- OOB Support for Remote UDFs
- HPC Server v3 Supports Excel-on-Server
Low Latency HPC Services for Excel

Diagram showing the connection between a spreadsheet, head node, brokers, and compute nodes in an HPC setup.
Dual Boot / Hybrid Windows & Linux

- **Manual deployment & management of dual-boot clusters**
  - Manually set up an environment that supports Windows & Linux on the same physical server cluster
  - Up to cluster admin to setup processes to migrate servers between various operating systems

- **Hybrid dual-boot clusters**
  - Moab Adaptive HPC Suite™ manages resources dynamically based on policies that integrate both the Windows and Linux job queues
  - Users have single point of job submission
  - Administrators have a single point of control
  - Managers have a full view of what is happening across their environment
On-demand Provisioning Works

Moab Adaptive HPC Suite
Policy Engine • Service Governor • Event Engine

Linux Resource Manager

Windows Resource Manager

Linux Workload

Windows Workload

OS Provisioning
Dual Boot • Imaging • Virtualization

Linux Workload

Windows Workload

Upcoming Workload

SUSE Linux Enterprise

Windows HPC Server
“The design goal of private cloud computing is to enable frequently requested and standardized IT services to be delivered in a completely automated way, from service request through service delivery. The services are delivered and hosted on a shared pool of resources (servers, storage, network).

RTI is the technology architecture behind elasticity, dynamically increasing and decreasing or repurposing service capacity based on real-time demand, planned schedules or to meet SLAs. RTI maps the demand for services into just the right level of resource supply required. There are few vendors that provide such functionality.”

Cloud and HPC Triple Play

Moab Adaptive HPC Suite™

Agile
Automated
Adaptive

- SUSE Linux HPC
- Optional support for Red Hat (from Novell)
- Dual-Boot With Windows Server HPC
- MOAB Adaptive HPC Suite
- Single, Low Price
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