Moab HPC Suite

Ease-of-Use Driven Productivity

Moab® HPC Suite is a workload and resource orchestration platform that automates the scheduling, managing, monitoring, and reporting of HPC workloads on massive scale. The patented Moab intelligence engine uses multi-dimensional policies and advanced future modeling to optimize workload start and run times on diverse resources.

These policies balance high utilization and throughput goals with competing workload priorities and SLA requirements, thereby accomplishing more work in less time and in the right priority order. Moab HPC Suite optimizes the value and usability of HPC systems while reducing management cost and complexity.

Drive Higher ROI and SLA's

The patented Moab intelligence engine uses multi-dimensional policies and advanced future modeling to optimize resource efficiency on heterogeneous clusters and align usage to SLA's that match business objectives.

Resource Efficiency on Heterogeneous Clusters
As clusters are scaled up to meet the needs of multiple groups, inevitably the application requirements of those groups require different resource configurations to optimize their application performance. Moab's advanced resource management effectively controls and optimizes resources in complex or heterogeneous HPC environments.

Moab includes capabilities that allow it to aggregate local resources, incorporate
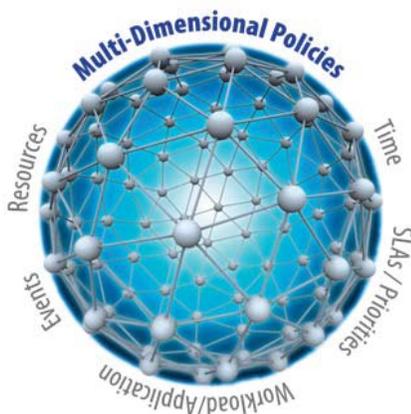
information from remote tools or custom fields into scheduling decisions, apply unique policies to groupings of nodes, and add fine-tuned controls over workload placement on resources.

These capabilities will enhance scheduling decisions in complex environments, boost application performance through better resource matching, and improve overall system utilization. To accomplish this, Moab utilizes node sets, NUMA, multi-resource manager support, and node allocation policies. Other features include Docker Support, Malleable Jobs, Remap Classes, Generic Metrics, and Generic Events.

### Usage Alignment to SLA's and Business Objectives
As multiple groups begin to utilize a cluster, their competing needs and usage behaviors will inevitably cause conflict. Therefore, service guarantees are important to help ensure the system is utilized in a way that completes the "most important" work for achieving the organization's top objectives.

With Moab's group sharing policies, organizations get the controls they need to efficiently share a cluster between multiple groups and the ability to align resource usage to business objectives, while still maintaining high utilization. Example capabilities include Account and QoS credential rights, Hierarchical Fairshare, Advanced Prioritization, Preemption, and Administrative Reservations. Other features include Job Deadlines and Personal Reservations.

Support and Value Added Modules

Adaptive Computing offers commercial support as well as other value added features that can be purchased to extend this basic foundation. Add these powerful modules according to specific needs.

- **Viewpoint -** Simplify the workload submission process for end-users with an easy-to-use job submission portal, which includes features like application templates, script builders, job details, and web-based file management.
- **Accounting -** Flexibly track and charge for resource or service usage. Perform deposits, withdrawals, transfers, and refunds while providing balance and usage feedback to users, managers, and system administrators.
- **Workflow Management -** Perform health checks, handle failures, develop workflows, and provision/ re-purpose nodes through a trigger-based workflow engine, enabling end-to-end automated processes.
- **Grid Management -** Enable unified scheduling, intelligent policy management, integrated resource management, data staging, and consolidated monitoring and management across multiple clusters.
- **Elastic Computing -** Manage resource expansion and contraction of bursty workloads utilizing additional resources from private clouds or other data centers.
- **Power Management -** Automate individual, per-application CPU clock frequencies and lower the power state of idle nodes using the Green Pool Buffer Policy, minimizing energy costs while preserving performance.
- **Nitro -** Accelerate launch times for large volumes of small jobs. This HTC scheduler packages these many tasks into group requests and launches them up to hundreds of times faster than traditional schedulers.
- **Remote Visualization -** Avoid purchasing high-end desktops for all workers, instead sharing expensive licenses or GPU's, by rendering applications remotely and visualizing locally through an integrated portal.
- **Reporting & Analytics -** Configure reports and create custom dashboards to visualize resource usage and workload performance.
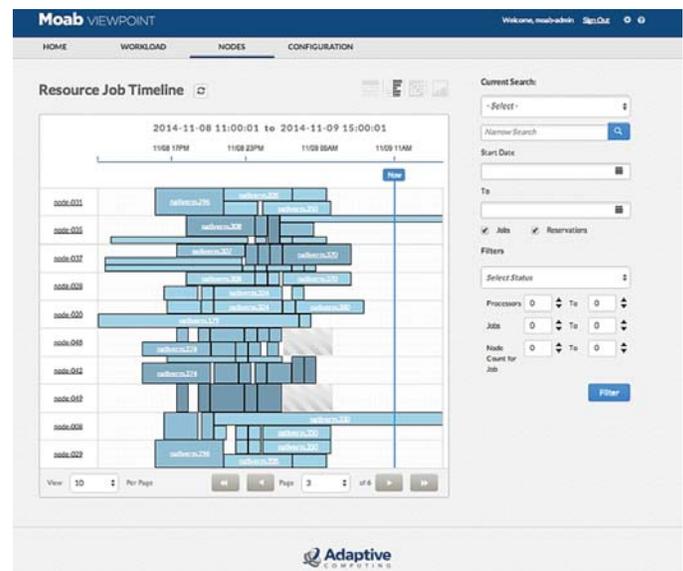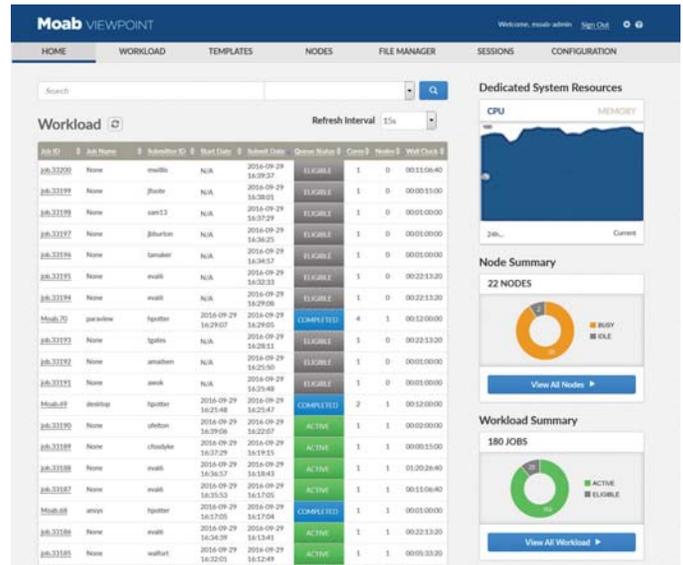
Intelligent Workload Management

With a proven history of managing the most advanced, diverse, and data-intensive systems in the Top500, Moab continues to be the preferred workload management solution for next-generation HPC facilities. Visit our website or contact an Adaptive Computing representative for more information or a free demo/evaluation.

Contact a solutions advisor by phone or email, or visit our web site today.

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