

Adaptive Operating Environment™

Powered by Moab™

Intelligently orchestrate your data center's operating environment to adapt to your project, workload, and business-process needs—and achieve organizational objectives—in real time.

The Challenge: Siloed, Static Resources

Siloed, static compute resources present serious challenges to data center owners and managers as they respond to changing organizational computing needs.

Overcoming the inefficiencies of project-specific compute environments. Serious efficiency and cost challenges result from single-purpose, dedicated application pools. Special-use resource silos are inflexible and inefficient and generally require a great deal of administrator intervention.

Keeping up with changing needs. Data centers with siloed resources face service failures and demand surges that result in unmet SLAs at critical times because of their static nature. Further, they face delays of 6-18 months for the design and acquisition of additional systems to meet the needs of new or growing projects.

Eliminating delayed and inaccurate results from disjointed workflows. Complex business processes often use disjointed data-transfer and process-initiation steps and manual repurposing of resources for interdependent processes. They have a high level of inefficiency, wasted resources, potential points of failure, and time-to-market delays.

Adaptive Operating Environment™

Cluster Resources' *Adaptive Operating Environment*—Powered by Moab intelligently and dynamically orchestrates your data center's operating environment by adapting and managing resources to meet workload requirements, respond to changing environmental conditions, streamline business processes, and achieve organizational objectives. Using the key functions of compute-environment creation, workload-driven adaptation, and business-process optimization, the *Adaptive Operating Environment* helps you overcome the adaptation and integration challenges facing your data center—

1. Compute-environment creation dynamically creates and manages fully functional compute environments on the fly.

Moab dynamically orchestrates the creation, scheduling, provisioning, and configuration of fully functional

environments—both virtual and physical project spaces, test environments, and hosted resources—for specific projects or shared environments for multiple users and departments.

Moab then can be used to grow and shrink those compute environments to meet project demands. Moab enables your data center to provide such capabilities as platform as a service (PaaS), hosting, automated testing environments, shared project environments, and simple cloud computing.

Using *compute-environment creation*, Moab can enable your organization to meet the needs of both short- and long-term projects rapidly and efficiently and to establish the foundation for either internal or external hosting.

2. Workload-driven adaptation adapts the computing environment to match the changing requirements of underlying applications and workload.

Moab enables your data center's compute environment to dynamically accommodate workload surges and eliminate and respond to resource and application failures and other changes in application, service, or batch workload that can impact SLA delivery, using virtual or physical methods.

Moab can also monitor the state of resources and the demands of applications and Web services and then dynamically balance resources to those applications and services. Moab can enforce SLAs and improve the quality of service.

Moab can enable your organization to have a truly *adaptive* data center with autonomic (automatically *self-healing*) systems, intelligent energy-savings policies, and business-continuity services. It can also enable your data center to offer such solutions as software as a service (SaaS), self-balancing Web 2.0 services, corporate-capable cloud computing, and SLA-based hosting.

Workload-driven adaptation by Moab unifies and simplifies server and project management and delivers much added efficiency and flexibility.



Solution and Capability Enablement

The *Adaptive Operating Environment* is a fundamental enabler of a number of next-generation solutions and capabilities—

- ▶ **Platform as a Service (PaaS).** Create, manage, and track purpose-built hardware platforms.
- ▶ **Web 2.0.** Dynamically balance competing Web services to meet the needs of demand surges and QoS requirements and to dynamically respond to failures.
- ▶ **Software as a Service (SaaS).** Dynamically grow and shrink compute and application environments to meet changing customer needs for SaaS.
- ▶ **Green-Computing Optimization.** Monitor workload needs and dynamically optimize compute resources from the perspectives of power consumption and cooling to match current needs and guaranteed SLAs.
- ▶ **Data Pipelines.** Optimize and dynamically allocate your operating environment to meet the changing needs and dependencies of complex data-centric workflows.
- ▶ **Business-Process Workflows.** Integrate and optimize end-to-end business processes with event-triggered coordination of compute-cycle delivery and data movement.
- ▶ **Environment-Level Disaster Recovery.** Minimize or eliminate service interruption due to disasters as the environment responds to failures from the perspectives of workload reallocation and purpose-built provisioning.
- ▶ **Adaptive Data Center.** Balance data center services, dynamically repurpose environments to meet changing needs, and fully integrate the adaptive nature of your environments to meet holistic business processes and objectives.
- ▶ **Corporate Cloud Computing.** Fully automate and deliver environment creation, workload and service-level management, and process optimization as a service.

3. Business-process optimization orchestrates the computing environment to optimize workload-, policy-, and data-driven business processes or workflows.

Moab can identify and enforce task dependencies within processes and then adapt the operating environment to optimize the processes. Moab eliminates the need for manual intervention between process steps—and the associated potential for failure points—and automates multi-step business processes to produce final results in the shortest time possible. Those processes may include rich decision making, failure response, and other workflow steps. They may also interact with both internal and external resources, policies, and services.

With *business-process orchestration*, Moab will enable your data center to handle business-process streamlining services, data pipelines, and other integrated IT optimizations—and to discover and implement mission-critical solutions in the most efficient manner possible.

Architecture and Building Blocks

The *Adaptive Operating Environment—Powered by Moab* consists of intelligent orchestration services delivered by Moab Utility/Hosting Suite™, tightly integrated with provisioning, monitoring, and management tools and common add-ons like virtualization, billing, and licensing. It is available preinstalled on an *Adaptive Computing Appliance* or installed on your existing system by Cluster Resources or a professional services partner.

Meet Organizational Needs and Goals

Adaptive Operating Environment—Powered by Moab optimizes the quantity and timeliness of work completed while intelligently adapting to changes in needs and in the compute environment.

As a result of the added integration and optimization achieved by a Moab-based adaptive environment, your data center will also be able to grow projects more rapidly and help you achieve organizational first-to-market goals.

Try Moab for 30 days with full technical support—absolutely free. For more information, please contact us.

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