



Accelerate Insight



Moab[®] Big Workflow Solution

Overview

Big Workflow is an industry term coined by Adaptive Computing that accelerates insights by more efficiently processing intense simulations and big data analysis. Adaptive Computing's **Big Workflow** solution derives its name from its ability to solve **big** data challenges by streamlining the **workflow** to deliver valuable insights from massive quantities of data across multiple platforms, environments, and locations.

Leveraging Big Data

Data collection and analysis has been a foundation of IT since its inception. But with the rise of big data the application set is increasing in number and broadening in scope. More complex data sets – both structured and unstructured – are being amassed and analyzed to deliver critical intelligence to a growing set of users.

This expansion is happening across many domains – such as, financial services, scientific research, energy exploration, healthcare, manufacturing, security, and media/entertainment. In each field, data scientists are building applications to extract value from their growing datasets. Businesses want to better monetize this in a variety of ways: targeting the needs of new and existing customers, detecting fraud or security breaches, optimizing logistics and accounting, and streamlining product development, to name a few. IT is the way to change the rules of competition! By leveraging Big Data to accelerate insights, the business can gain a competitive advantage by making better data-driven decisions.

The Big Data Challenge

Traditionally IT has operated in a steady state, with maximum uptime and continuous equilibrium with signature characteristics that have no definitive end to their lifetime such as email serving, web hosting, and CRM systems. As a result of simple and permanent allocation, many of these applications could share the same server, without the need for scheduling or resource allocation beyond that of a single server node.

Steady state will always play a role for applications like web, e-mail and CRM, but Big Data requires a new approach for IT. In fact, the ever increasing demand for analysis of big data and intense simulations are making change the constant for IT. The applications processing the analysis and simulations are resource intensive often requiring many servers -- in some cases, thousands of them for a single request. Since the goal is to deliver a particular answer or insight in a specific timeframe, they do not run continuously. For these reasons, scheduling and resource allocation are critical, and to run these applications optimally, IT must utilize all resources within the data center such as an IT compute cluster, data center and/or cloud.

Unify – Optimize – Guarantee

While collection current solutions solve big data challenges with just cloud or just HPC, Adaptive **unifies** all available resources – including bare metal and virtual machines, technical computing environments (e.g., HPC, Hadoop), cloud (public, private and hybrid) and even agnostic platforms that span multiple environments, such as OpenStack – as a single ecosystem that adapts as workloads demand.

Big Workflow orchestrates and **optimizes** the analysis process to increase throughput and productivity, and reduce cost, complexity, and errors. Even with big data challenges, the data center can still **guarantee** services that ensure SLAs, maximize uptime and prove services were delivered and resources were allocated fairly.

Adaptive Computing's Moab HPC Suite and Moab Cloud Suite are an integral part of the Big Workflow solution. By adding Moab's workflow coordination capabilities to the Moab family, Moab becomes more data aware and data center aware across multiple environments. To schedule workloads on all available resources, the workflow coordinator collaborates with Moab HPC Suite and Moab Cloud Suite, residing within the individual silos, to optimize the analysis process and guarantee services to the business, ultimately shortening the time to discovery.



Unify Data Center Resources

Moab utilizes all available resources across multiple platforms, environments and locations and manages them all as a single ecosystem that adapts as workload demand changes by:

- Unifying all data center resources
 - Traditional Data Center – Bare Metal/VMs
 - Technical Computing - HPC
 - Big Data - Hadoop
 - Cloud – Private, Public, and Hybrid
- Eliminating under/over utilized, siloed environments and improving utilization
 - 2-3x beyond virtualization alone
 - Up to 99% utilization for technical computing environments
- Operating on agnostic platforms such as:
 - OpenStack
 - HP Cloud and HPC platforms
 - VMware
 - KVM
 - Other open source platforms
- Delivering robust use cases such as:
 - Intelligent resource allocation
 - Auto and dynamic provisioning
 - Optimized service placement
 - Grid collaboration

Optimize the Analysis Process

Moab streamlines the analytical process, increasing throughput and productivity and reducing cost, complexity and errors through:

- Intelligent, policy-based scheduling
- Massive scalability
- High throughput
- Rich policy-based workload management
 - Power Management
 - Job prioritization
 - Remote visualization

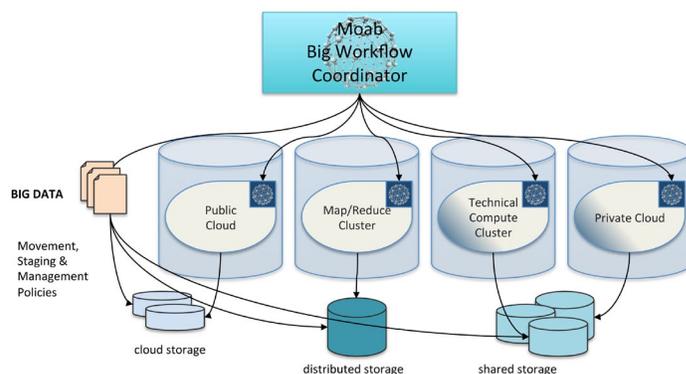
Guarantee Services to the Business

Moab allows the data center to ensure SLAs, maximize uptime and prove services were delivered and resources were allocated fairly as a result of:

- Advanced SLA enforcement policies
- Uptime Automation
- Enhanced Monitoring
 - Multi-resource user interface
 - Enhanced Dashboard
 - Self Service Catalogue
- Advanced reporting
 - Home grown integration
 - Off-the-shelf
- Accounting
 - Showback
 - Chargeback

Leverage Proven Expertise

Adaptive Computing has over a decade of expertise across cloud, high performance computing, big data, and data center automation. Our solutions manage the world's largest, most dynamic and scale-intensive computing and cloud environments across a variety of industries. Adaptive's Big Workflow solution is backed by our experienced professional services and technical support services teams. Leverage their expertise for a swift and successful deployment that ensures maximum value across agility, cost savings and service performance goals.



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

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