Overview

Moab Adaptive Computing Suite (Moab) delivers infrastructure intelligence for HP ProLiant Servers that enables data center and private and public cloud environments to adapt to changing business needs in real time. Moab is used as a generic term for components or functionality of Moab Adaptive Computing Suite™, a product of Adaptive Computing.

Why use Moab?

- Improve data-center server utilization by up to 5X
- Reduce energy costs by up to 25%
- Improve SLA levels and flexibly apply resources to the application services most critical to an organization's success
- Intelligently automate an organization's existing or preferred hardware, middleware, and virtualization investments
- Support heterogeneous platforms and multiple simultaneous operating-system environments
- Deliver intelligent policy-based governance for data centers and clouds, combining both physical and virtual machine environments
- Schedule resources in the future with advanced reservations, subject to policies
- Integrated with HP iLO on HP blades and servers: Moab can gather system temperature, power consumption and other metrics to more intelligently schedule resources.

What's New

HP Operations Orchestrator Accelerator pack for Moab provides an out of box adapter as well as predefined Operations Orchestration workflows and Actions. Customers are able to use HP Operations Orchestrator Accelerator pack for Moab in conjunction with existing Operations Orchestration Accelerator packs such as HP Server Automation, VMware, MS Hyper-V and Citrix Xen to leverage a market leading dynamic cloud management solution. This includes coverage of the following:

- Dynamic Environment Creation
- Environment Termination
- Environment Modification such as
  - Memory Upgrade
  - CPU Upgrade

HP Operations Accelerator pack for Moab is available for download via Business Service Automation Network (BSAEN) under the Operations Orchestration section. BSAEN can be accessed at https://www.www2.hp.com/. Some OO workflows are included.

Overview

At A Glance

The Adaptive Data Center

An adaptive data center is an intelligent infrastructure that enables business agility, reduces operational costs, and lays the foundation to reach beyond conventional data center architectures to private and public cloud computing environments. These capabilities are delivered by three primary characteristics-

- Consolidated, virtualized infrastructure that behaves like a shared pool of resources that can be reconfigured dynamically to allocate different types and amounts of resources to application services as demands fluctuate over time
- Service-oriented architecture, where the applications and workflows that support varying business functions are designed as abstract services independent of any specific data center resources
- Unified intelligent automation, where a data center-level operating system takes a holistic view over the entire infrastructure, dynamically creates fully functional computing environments, and optimizes the allocation of application services according to organizational policies and required service levels
- In combination with solutions and products such as HP's Business Service Automation products, Moab delivers an integrated and fully adaptive computing environment. The Adaptive Operating Environment™ solution architecture combines Adaptive Computing's Moab Unified Automation Intelligence technology with third-party process- and service-automation middleware (for example, provisioning management and virtualization software).
- The Unified Intelligent Automation™ delivered by Moab manages and monitors the actions needed to adapt the data center- or cloud-level environment in real time, while enforcing service-level agreements, business objectives and policies, and optimization rules.
- In combination with solutions and products such as HP's Business Service Automation products, the Adaptive Operating Environment solution delivers an integrated and fully adaptive computing environment.

Models

Moab Adaptive Computing Suite

Licensing and Support Options	Moab Value Unit SOW or Adaptive Computing Suite Lic with 1yr Support for 1 Proc NOTE: This part number can be used to purchase multiple licenses with a single activation key. Each license is for one socket (a.k.a. physical processor) for one year, and comes with one year of 9x5 technical support and rights to new versions. Customer will receive a printed entitlement certificate via physical shipment. The entitlement certificate must be redeemed online in order to obtain a license key, to download the software, and to register for support. NOTE: This part number an also be used to purchase other products and services from Adaptive Computing as specified in a custom Statement of Work, to be developed with the help of the HP account representative and the Moab product manager. NOTE: Only one certificate is shipped for multiple-quantity licenses.	TC221A

Standard Features

Software Included

- Moab Workload Manager - Policy-based workload management and scheduling engine
  - Moab Workload Manager is a policy-based workload scheduler and event engine that enables utility-based and cloud computing for shared pools of resources. It simplifies management across one or multiple hardware, operating system, storage, network, and license and resource manager environments to increase the ROI of pooled resources, and improve system utilization up to 90-99 percent.
  - Moab Workload Manager combines intelligent scheduling of resources with advanced reservations to process jobs on the right resources at the right time. It also provides flexible policy and event engines that process workloads faster and in line with set business requirements and priorities.
- Moab Cloud Manager - Graphical administration interface, monitoring and reporting tool
  - Moab Cloud Manager is a task-based management interface, monitoring and reporting tool for Moab Workload Manager®. Moab Cloud Manager reduces administration costs by enabling common and complex management tasks such as resource status, diagnostics, changes staging, report generation and job submission to be done faster and easier.
  - Moab Cloud Manager provides graphics and charting capabilities that work across one or multiple hardware, operating system, storage, network, license and resource manager environments. This capability enables administrators to view and modify and report on all of the vast amounts of diverse resource information in a few mouse clicks as opposed to hours or days.
- Moab ViewPoint - Web-based end user job submission and management portal
  - Moab ViewPoint is an end-user job submission and management web portal that works with Moab Workload Manager. It provides universally accessible workload submission to Moab Workload Manager and associated resource managers from any location without the need to install software on the client computer.
  - Moab Viewpoint empowers end users with web-based workload submission, an intuitive graphical interface and the other tools they need to track and manage their own workload, thus decreasing burdens on administrators.
- TORQUE Technical Support included (software not included but free of charge and downloadable from adaptivecomputing.com)
- Gold Allocation Manager Technical Support IS NOT included (software not included but free of charge and downloadable from adaptivecomputing.com)

Application Workload Types

- Data center
- Virtualized
- HPC/batch/background

Dynamic Infrastructure Management

- Full-environment provisioning management (service, security, credential)
- Virtualization environment orchestration
- Node provisioning orchestration
- Holistic resource reporting and accounting
- Storage management integration
- Network management integration

Cloud and Utility Computing Management

- SLA/QoS-based performance controls
- External resource management controls
- Provisioning management
- Virtual private compute environments and profiles
- Unlimited triggers, partitions, and resource manager interfaces
- Dynamic resource management
- Dynamic workload and environment overflow to other systems

Standard Features

Cloud-to-Cloud and Grid Support	• Moab-to-Moab communication for hierarchical Clouds and Grids • Workload migration • Data migration • Credential mapping for unified user and group identification • Resource manager translation
Workflow Management	• System requests • Workflow support with trigger dependencies • Dynamic virtual service requests • Workload performance learning • Workload health/success learning • Transaction ID support
Accounting and Statistics	• Basic profiling (credential, node, workload) • Advanced profiling (custom metrics, resources, events) • Reports (credential, node, workload) • Statistics (credential, node, workload) • Grid statistics and reporting • Capacity planning reports • Per-SLA/QoS charging
Policy Management	• Prioritization • Fairshare • Backfill • Reservations • Preemption • Application and workload management • Network storage and license policies
Interfaces	• End-user workload-submission portal • Graphical administrator interface • Graphical manager interface • Rich APIs

Licensing	Moab licenses are required for every server which is managed by Moab. Each license covers one socket. So, for example, if a server has two sockets, it will require two licenses. Each Moab license is for one year and also includes 9x5 support. The Moab software is executed on a node called the head node. If the head node is also used to run applications that are to be managed by Moab, then the head node will need to be licensed, otherwise it does not require a Moab license.
Warranty	NOTE: HP provides third-party products, software, and services that are not HP Branded "AS IS" without warranties of any kind, although the original manufacturers or third party suppliers of such products, software and services may provide their own warranties.

Complementary Products	• HP Server Automation software • HP Operations Orchestration software

Standard Features

Supported Hardware

System Requirements:

Moab can be executed from a head node based on one of the following architectures:

- x86
- x64
- ia64
- IBM p-series (PowerPC)

The head node must meet the following minimum requirements:

- **Processor Requirements**: Recommend quad-core server (quad-core Xeon equivalent, 3 GHz or higher)
- **Network Requirements**: Medium (100 Mbps or higher)
- **Hard disk drive Requirements**: 80 GB
- **RAM Requirements:** 8 GB
- **Optional ODBC-compliant database**

Architectures Supported by Moab

Moab can manage workloads on servers with the following architectures:

- AMD x86
- AMD Opteron
- Intel x86
- Intel IA-32
- Intel IA-64
- IBM i-Series
- IBM p-Series
- IBM x-Series (System x)
- IBM SP
- Mac G4, G5
- SGI Altix

Other product information Additional product materials are available from the Moab web pages at: http://www.hp.com/go/max.

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Standard Features