

Moab® HPC Suite

Product Overview

September 2013

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Sales Engineer for EMEA

HPC Management Challenges



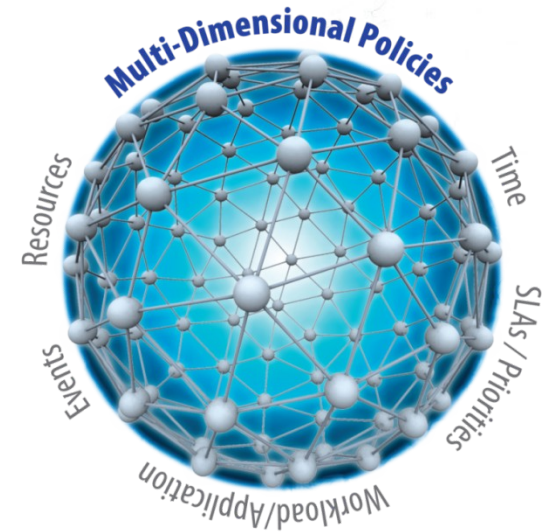
Inter-site workload management
Combining diverse clusters
Maintenance management
Meeting SLAs
Going green
Going cloud

Too complex expertise
Low utilization
Time to result
Job failures
High costs

Moab Intelligence Engine

Core Moab® technology

- Mimics real-world decision-making
- 12+ years battle tested
- Patented

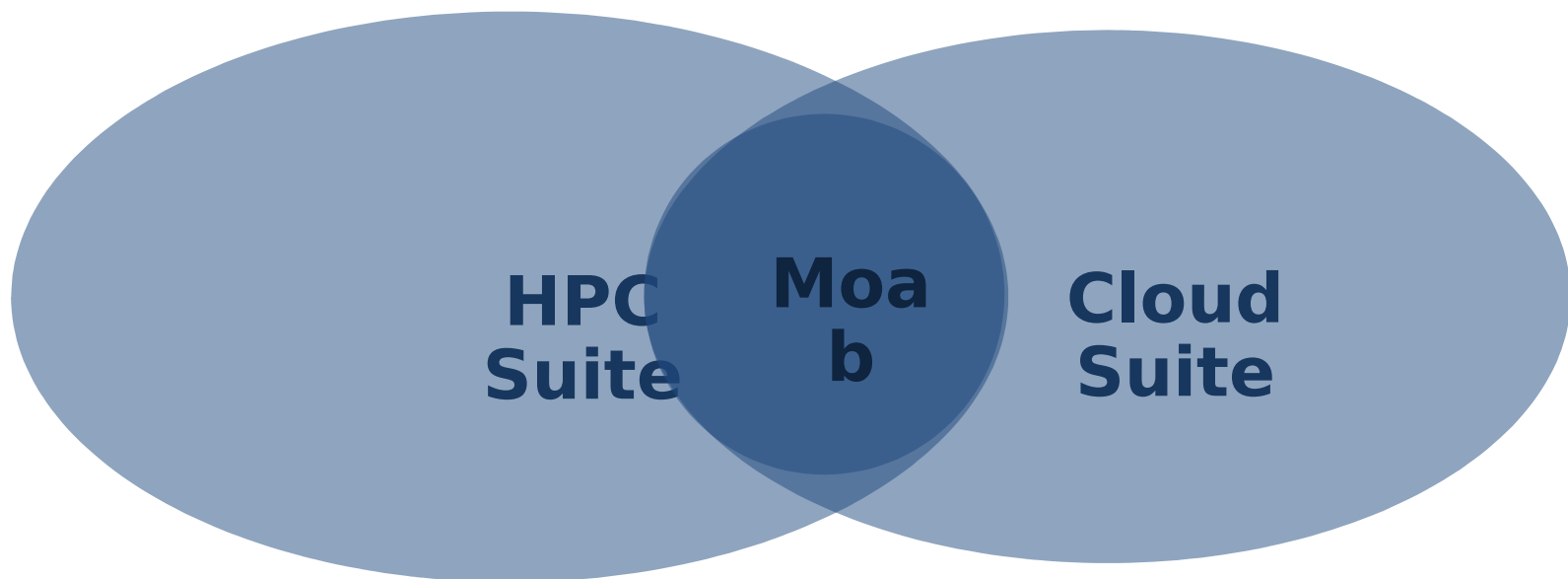


Multi-dimensional policies across

- Service level agreements (SLA)
- Applications
- Resources
- Workloads
- Priorities
- Time

Portfolio Built Around Moab

- Ubiquitous decision-making engine
- Unified resource pools
- Inter-related techniques
- Out-of-box workload-specific suites



Moab in Top100 (June 2013)



№2 “Titan”
Oak Ridge
National Lab

“Hopper”
Lawrence
Berkeley N’Lab

“Cielo”
Los Alamos
National Lab

“Conte”
Purdue
University

“Hermit”
University of
Stuttgart

“Zin”
Lawrence
Livermore
National Lab

“Big Red II”
Indiana
University

“Gaea C2”
Oak Ridge
National Lab

“Red Sky”
Sandia
National Lab

“Luna”
Los Alamos
National Lab

“Aspen”
Los Alamos
National Lab

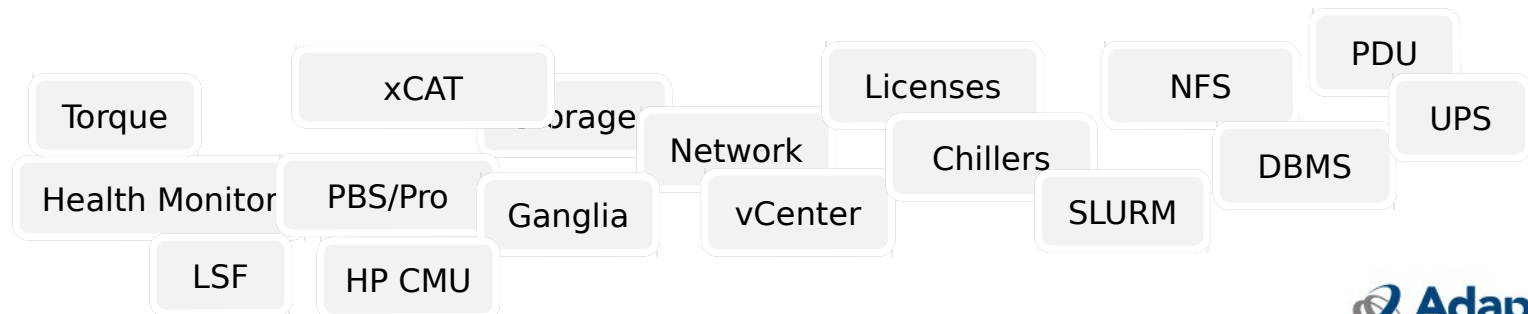
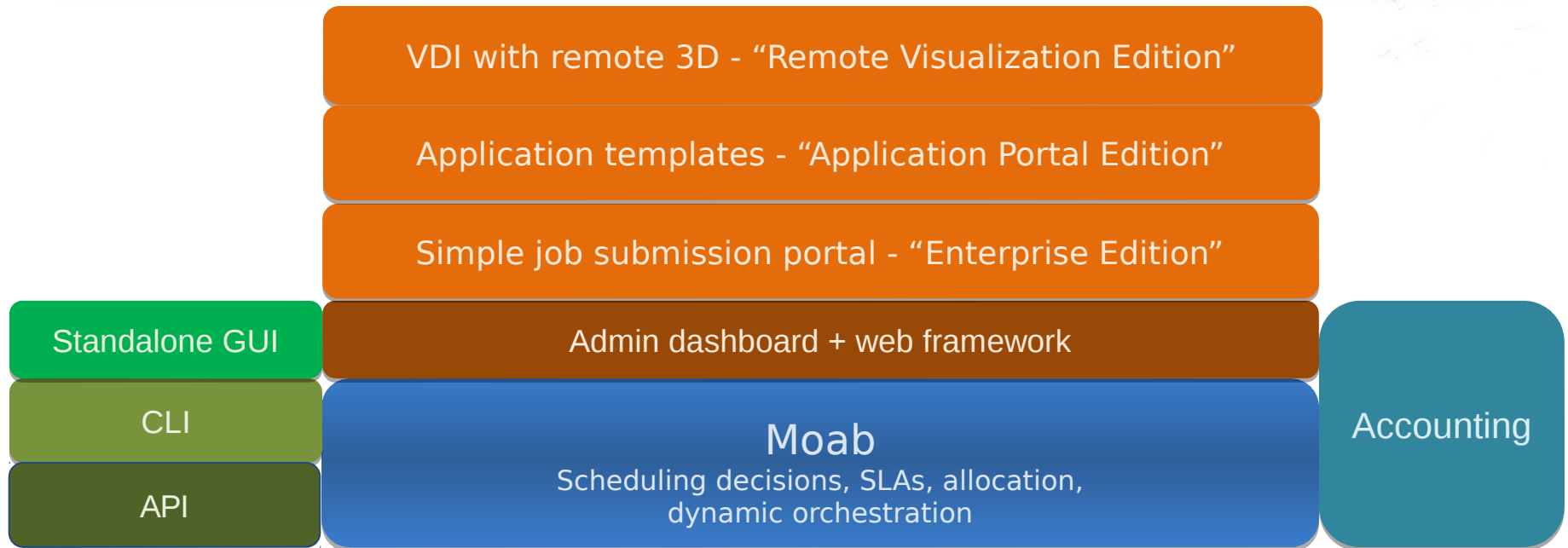
“Pecos”
Sandia
National Lab

“Keeneland”
Georgia
Institute of
Technology

“Blackthorn”
Atomic
Weapons
Establishment

“Gaea C1”
Oak Ridge
National Lab

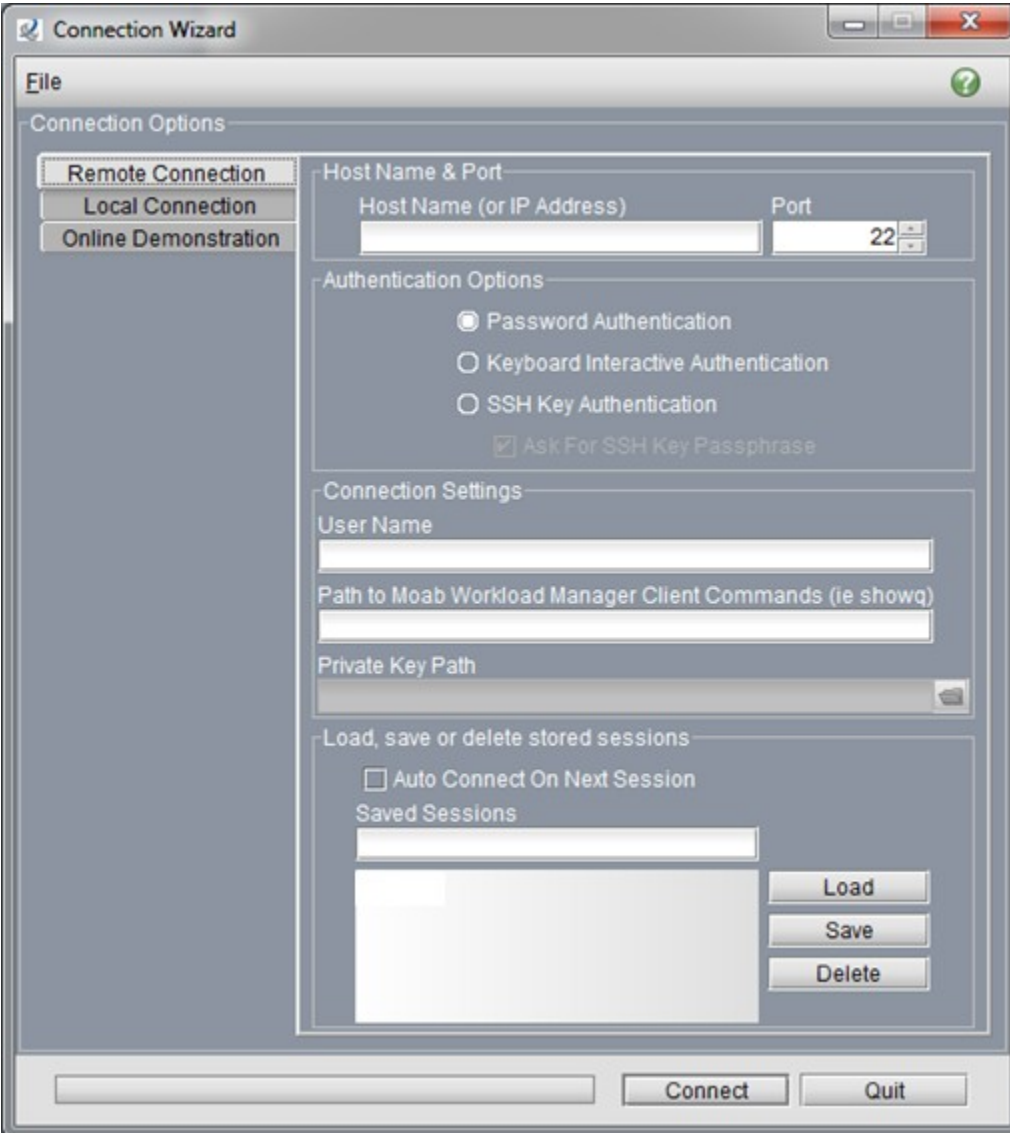
Intelligent Workload Optimization



Moab Cluster Manager



Login



The screenshot shows a 'Connection Wizard' window with a 'File' menu and a help icon. It contains three main sections: 'Connection Options' with buttons for 'Remote Connection', 'Local Connection', and 'Online Demonstration'; 'Host Name & Port' with input fields for 'Host Name (or IP Address)' and 'Port' (set to 22); 'Authentication Options' with radio buttons for 'Password Authentication', 'Keyboard Interactive Authentication', and 'SSH Key Authentication', plus a checked checkbox for 'Ask For SSH Key Passphrase'; 'Connection Settings' with input fields for 'User Name', 'Path to Moab Workload Manager Client Commands (ie showq)', and 'Private Key Path'; and 'Load, save or delete stored sessions' with a checkbox for 'Auto Connect On Next Session', a 'Saved Sessions' list box, and 'Load', 'Save', and 'Delete' buttons. At the bottom are 'Connect' and 'Quit' buttons.

Connection Wizard

File ?

Connection Options

Remote Connection
Local Connection
Online Demonstration

Host Name & Port

Host Name (or IP Address) Port 22

Authentication Options

☒ Password Authentication
☐ Keyboard Interactive Authentication
☐ SSH Key Authentication
☒ Ask For SSH Key Passphrase

Connection Settings

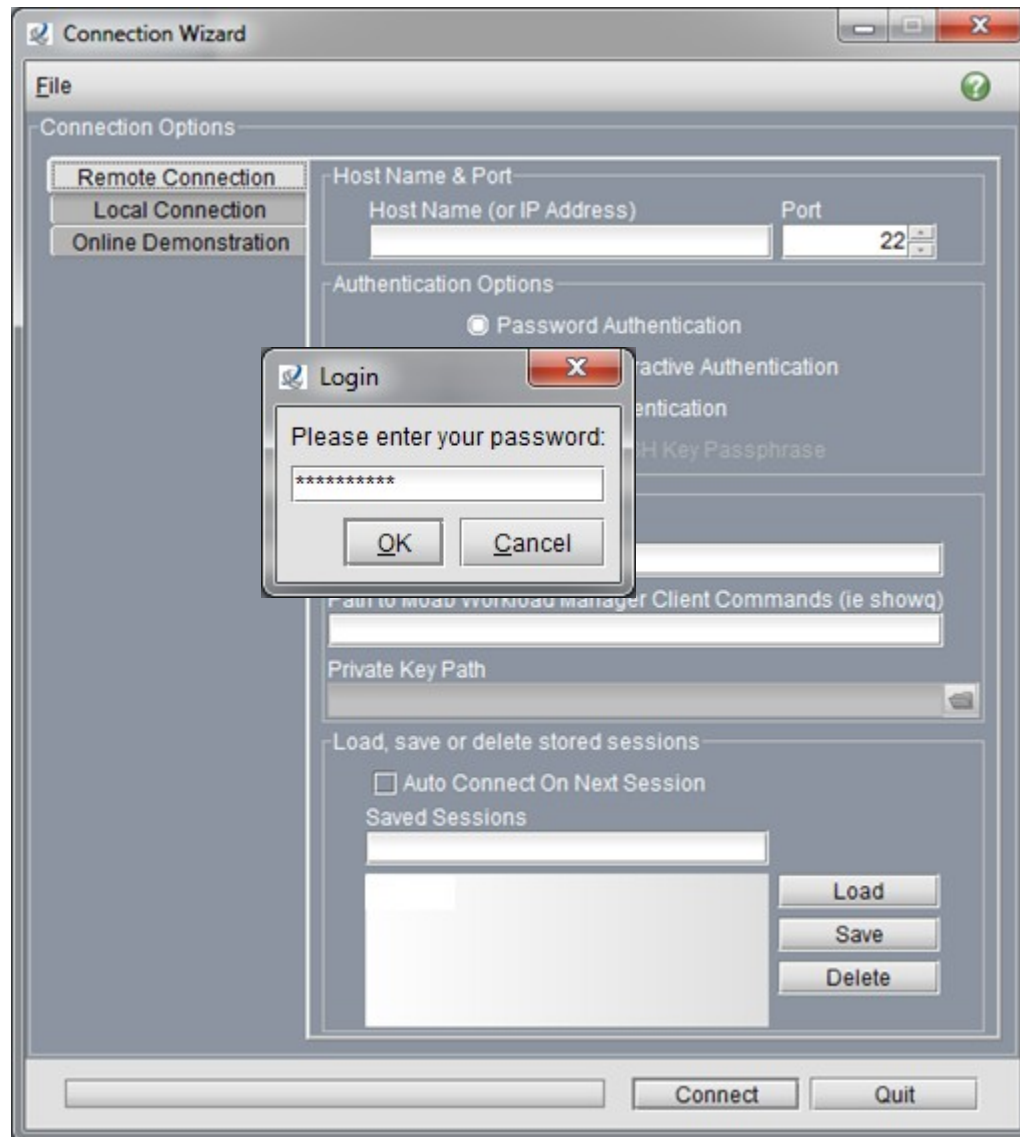
User Name
Path to Moab Workload Manager Client Commands (ie showq)
Private Key Path

Load, save or delete stored sessions

☐ Auto Connect On Next Session
Saved Sessions
Load
Save
Delete

Connect Quit

Login



Summary



Moab Cluster Manager

Main Configure Create Window Actions View Reporting Help

Summary

Node Summary

Busy Nodes	0	0 %
Idle Nodes	40	97,6 %
Down Nodes	1	2,4 %
Total Nodes	41	

Job Summary

Running Jobs	0	0 %
Eligible Jobs	0	0 %
Blocked Jobs	1	100 %
Total Jobs	1	

User Information

User	ac
Group	ac
Account	
Class	batch
Qos	

ac Job Summary

Running Jobs	0	0 %
Eligible Jobs	0	0 %
Blocked Jobs	0	0 %
Total Jobs	0	

Adaptive Computing

Professional Support

Documentation

Powered by Moab

System Utilization

0 % Refresh System

Adaptive COMPUTING

Jobs



Moab Cluster Manager

Main Configure Create Window Actions View Reporting Help

Summary ☐ Jobs ☒ Job Timeline ☐

Job ID	Job Name	Queue Status	▲ State	User	Start Time	Used Wallclock	Wall Clock	Allocated Nodes	Required Procs
749	HPL-JOB	Blocked	Idle	tplat			01:00:00	0	0

System Utilization

0% Refresh System

Adaptive COMPUTING

Job Submission – Basic Options

Submit Job

Actions View

Basic

Template

Script File

☒ Num. Of Nodes 1

☐ Node List

☐ VM List

Duration

Submit Close

Job Submission – Advanced Options

The screenshot displays the 'Submit Job' window with the following sections:

- Basic**: Includes fields for Template, Script File, Num. Of Nodes (set to 1), Node List, VM List, and Duration.
- Job Information**: Includes Job Name and User Job Priority.
- Resources**: Includes Procs. Per Node, Memory Per Node, Swap Per Node, Operating System, Architecture, Required Node Features, Partition, and Reservation.
- Generic Resources**: A section for additional resource specifications.
- Data Management**: Includes Execution Directory (set to /home/ac), Output File, and Error File.
- Credentials Information**: Includes User (ac), Group (ac), Account, Class (batch), and Quality of Service.
- Job Dependencies**: A section for defining job dependencies.
- Flags/Options**: Includes checkboxes for Preemptible, Restartable, Preemptor, and Hold.
- Time Frame**: Includes Start Time, Estimated Start Time Calculator, and Estimated Start Time Table.
- Email Notifications**: Includes checkboxes for On Job Completion, On Job Execution, and On Job Failure.

Buttons at the bottom right include 'Submit' and 'Close'.

Nodes



Moab Cluster Manager

Main Configure Create Window Actions View Reporting Help

Summary ☒ Jobs ☒ Job Timeline ☒ Workflows ☒ Reservations for the Month starting Tuesday Sep 03, 2013 ☒ Nodes ☒

Node ID	State	Class	Features	Job List	Messages	O.S. List	Total Procs
smp	Idle	[batch]	[]	[]		linux	64
node9	Idle	[batch]	[compute]	[]		linux	16
node8	Idle	[batch]	[compute]	[]		linux	16
node7	Idle	[batch]	[compute]	[]		linux	16
node6	Idle	[batch]	[compute]	[]		linux	16
node5	Idle	[batch]	[compute]	[]		linux	16
node40	Idle	[batch]	[compute]	[]		linux	16
node4	Idle	[batch]	[compute]	[]		linux	16
node39	Idle	[batch]	[compute]	[]		linux	16
node38	Idle	[batch]	[compute]	[]		linux	16
node37	Idle	[batch]	[batch] [compute]	[]		linux	16
node36	Idle	[batch]	[compute]	[]		linux	16
node35	Idle	[batch]	[compute]	[]		linux	16
node34	Down	[batch]	[compute]	[]		DEFAULT	16
node33	Idle	[batch]	[compute]	[]		linux	16
node32	Idle	[batch]	[compute]	[]		linux	16
node31	Idle	[batch]	[compute]	[]		linux	16
node30	Idle	[batch]	[compute]	[]		linux	16
node3	Idle	[batch]	[compute]	[]		linux	16
node29	Idle	[batch]	[compute]	[]		linux	16
node28	Idle	[batch]	[compute]	[]		linux	16
node27	Idle	[batch]	[compute]	[]		linux	16
node26	Idle	[batch]	[compute]	[]		linux	16
node25	Idle	[batch]	[compute]	[]		linux	16
node24	Idle	[batch]	[compute]	[]		linux	16
node23	Idle	[batch]	[compute]	[]		linux	16
node22	Idle	[batch]	[compute]	[]		linux	16
node21	Idle	[batch]	[compute]	[]		linux	16
node20	Idle	[batch]	[compute]	[]		linux	16
node2	Idle	[batch]	[compute]	[]		linux	16
node19	Idle	[batch]	[compute]	[]		linux	16

System Utilization 0% Refresh System Adaptive COMPUTING

Reports



Moab Cluster Manager

Main Configure Create Window Actions View Reporting Help

Summary ☒ Jobs ☒ Job Timeline ☒ Workflows ☒ Reservations for the Month starting Tuesday Sep 03, 2013 ☒ Nodes ☒ Node Calendar ☒ Reports ☒

Basic Advanced Detailed Summary

Select Credentials

User

☒ Display All Credentials
☐ Display Credentials With Statistics
☐ Display Listed Credentials

Categorized By

Account

☒ Display All Credentials
☐ Display Listed Credentials

Select Usage Metric

Executed Jobs ☒

Thursday, April 04, 2008

Site	Count	Total Estimated Jobs
atlas	1	1
atlas2	1	1
atlas3	1	1
atlas4	1	1
atlas5	1	1
atlas6	1	1
atlas7	1	1
atlas8	1	1
atlas9	1	1
atlas10	1	1
atlas11	1	1
atlas12	1	1
atlas13	1	1
atlas14	1	1
atlas15	1	1
atlas16	1	1
atlas17	1	1
atlas18	1	1
atlas19	1	1
atlas20	1	1
atlas21	1	1
atlas22	1	1
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atlas189	1	1
atlas190	1	1
atlas191	1	1
atlas192	1	1
atlas193	1	1
atlas194	1	1
atlas195	1	1
atlas196	1	1
atlas197	1	1
atlas198	1	1
atlas199	1	1
atlas200	1	1

Page 1

Month: Сентябрь 2013

Day: Пн Вт Ср Чт Пт Сб Вс

35 1

36 2 3 4 5 6 7 8

37 9 10 11 12 13 14 15

38 16 17 18 19 20 21 22

39 23 24 25 26 27 28 29

40 30

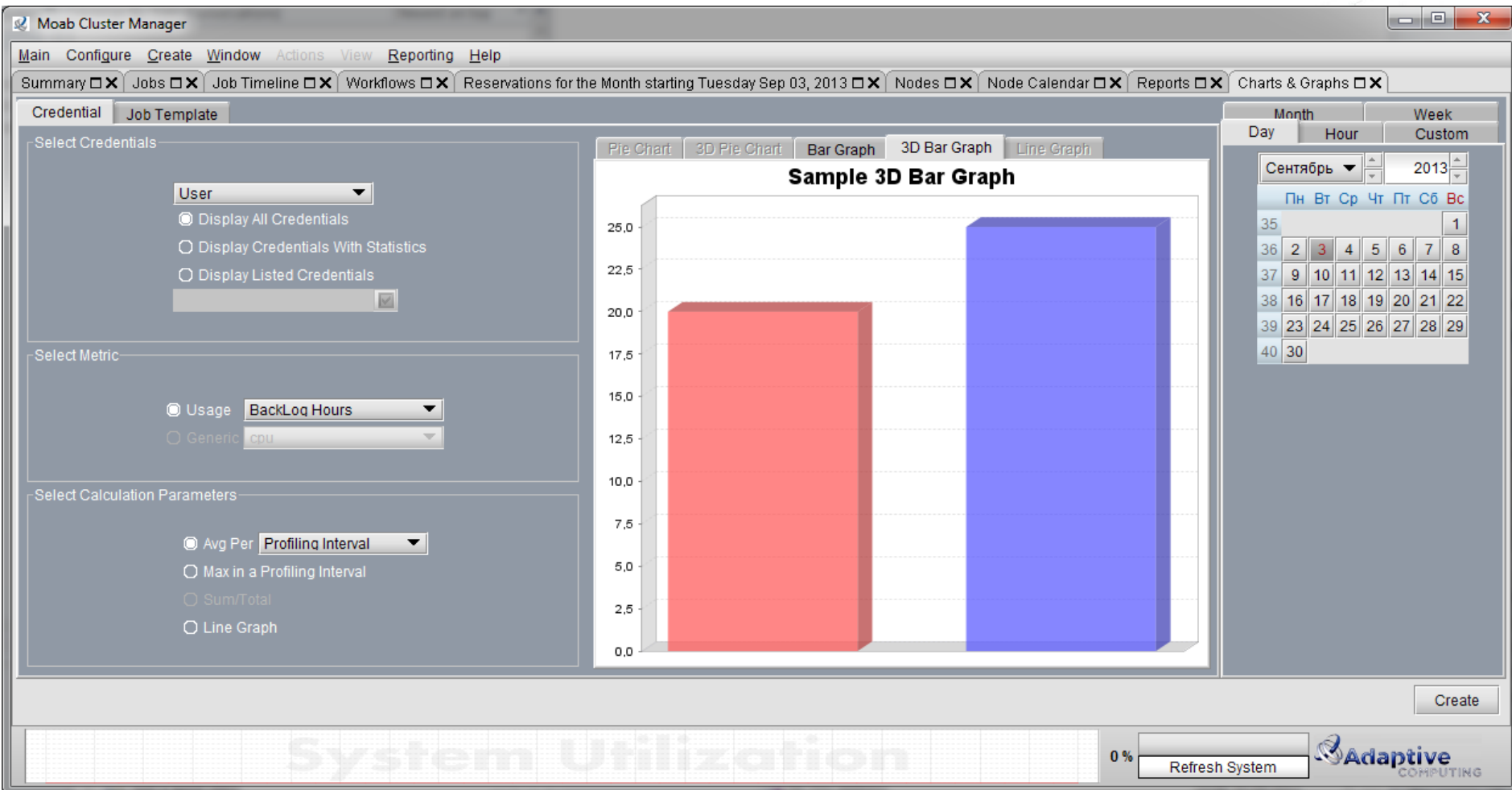
Create

System Utilization

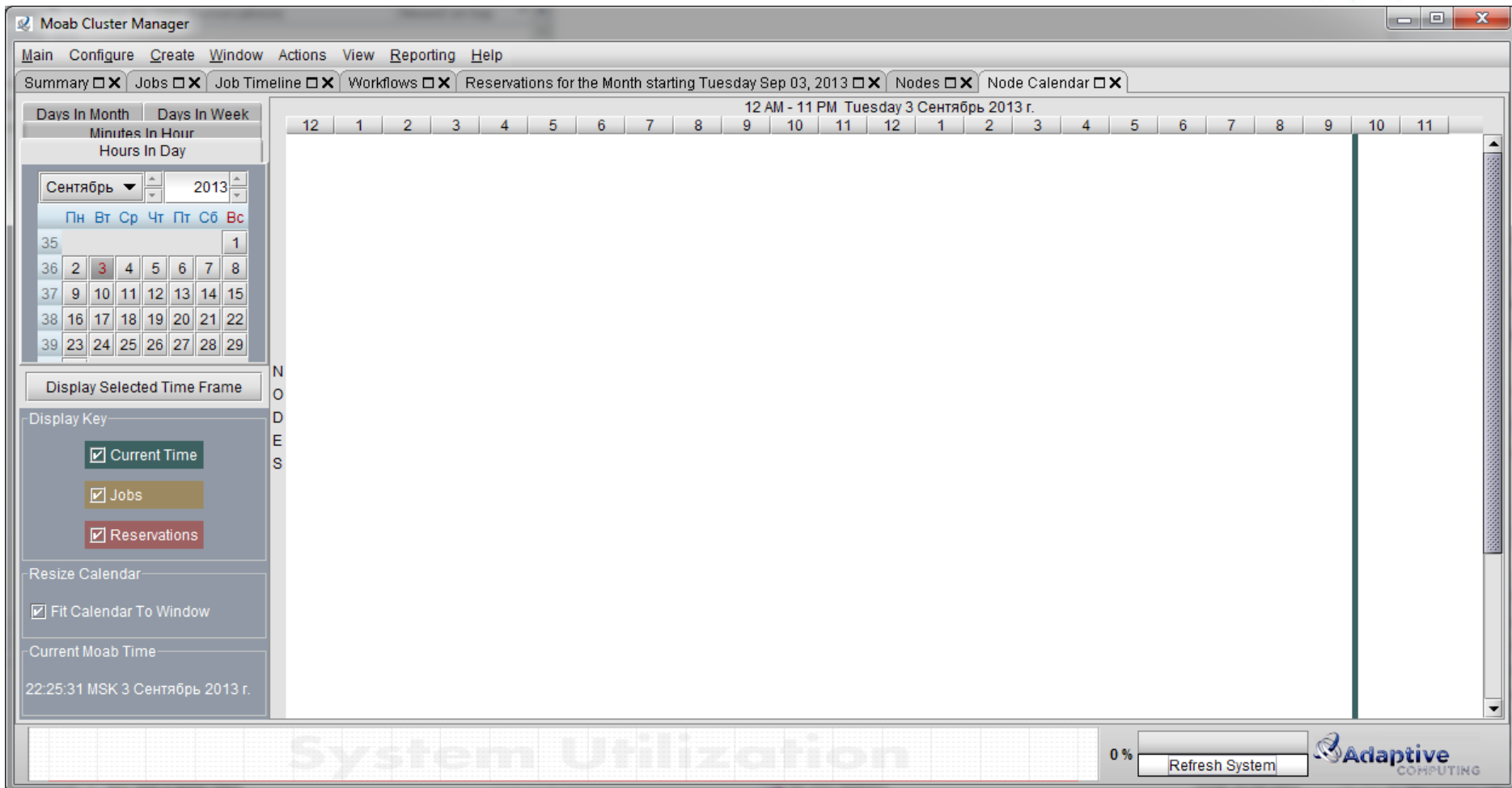
0 % Refresh System

Adaptive COMPUTING

Charts And Graphs



Nodes Calendar





Intelligent Workload Management Software for HPC and Cloud Environments

