

Solution Overview

# Platform HPC Workgroup Manager

The industry's most advanced and complete cluster management solution

Platform HPC Workgroup Manager includes:

- Provisioning & node management
- Workload management
- Dynamic infrastructure management
- Message passing interface

{ Platform  
} Computing

## Benefits:

- Easy to deploy, run and manage
- Maximum utilization and optimal allocation of cluster assets
- Accelerates and scales your applications
- Update compute nodes without re-installing
- Change node personalities with ease
- Take advantage of leading interconnect technologies

## Highlights:

- A powerful, complete, turn-key cluster solution
- Best-in-class workload management
- Intuitive web-based management interface
- Optimized for performance
- Advanced self-management with self-healing and self-adaptive capabilities
- Certified and supported

## Advanced Linux® clusters made simple

Platform HPC Workgroup Manager is the industry's most advanced and complete cluster management solution. Platform HPC Workgroup Manager is a combination of a simple to deploy and manage cluster management solution "Platform Cluster Manager", a sophisticated workload scheduler "Platform LSF Workgroup Edition" and the market's fastest MPI implementation "Platform MPI". It includes all the cluster management tools you will need to easily deploy, run and manage your HPC environment while meeting the most demanding requirements for application performance and predictable workload management. The result is a complete cluster solution that provides superior performance, reliability and price, while removing the complexity associated with Linux®-based clusters.

## Platform HPC Workgroup Manager components

### Provisioning & node management

Platform Cluster Manager is a complete, certified solution that includes all the tools required to quickly deploy, run and manage HPC clusters with unprecedented ease. Leveraging Platform's leadership in HPC management software, Platform Cluster Manager is built for optimal performance and uptime, while offering management, support and update benefits that are simply not possible with other cluster management solutions.

### Workload management

Platform LSF Workgroup Edition is a workload management solution created specifically for workgroup and departmental clusters. This product is for new adopters of HPC technology and is designed to make their first experience with rack- or blade based servers a seamless transition from their current computing environment. Powered by Platform LSF, the industry's most powerful, comprehensive, policy-driven workload management solution for engineering and scientific distributed computing environments, Platform LSF Workgroup Edition is the solution to improve end user productivity with only rudimentary system administrative effort. Platform LSF Workgroup Edition product allows engineering and scientific teams to easily access and share all existing computing resources, and reduce the time between simulation iterations.

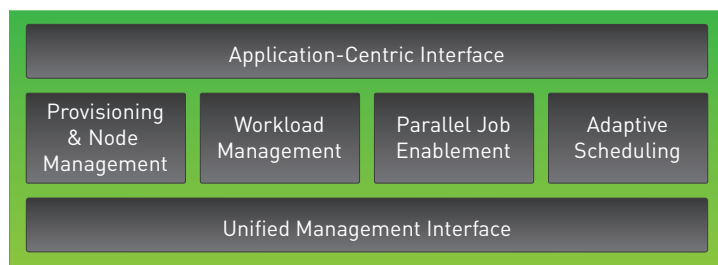
### Features and benefits:

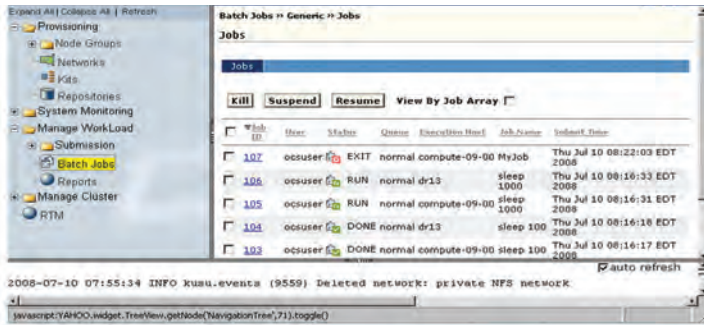
- Full-featured Platform LSF
- Pre-configured, ready to run
- Advanced workload management features
- Integrated web-based management GUI
- Job submission portal
- Application-centric interfaces

### Dynamic infrastructure management

Platform LSF Workgroup Edition dynamically changes the operating system based on workload. Applications often need different operating systems or software stacks to run on a cluster. It allows a node to install multiple operating systems. Based on job resource requirements, it can dynamically boot the right OS for the job. Alternatively, through a web interface, system administrators can easily switch to the required OS for a particular node to meet the application demands.

## Essential components of an HPC cluster solution





Easy to use web interface for submitting, monitoring and managing jobs.

### Message passing interface

Platform MPI™ is a fully integrated message passing interface (MPI) that enables users and independent software vendors (ISVs) to build high performance applications. Platform MPI is widely acknowledged as providing top performance results across a range of third-party

benchmarks compared to open source or other commercial MPIs. By providing consistent performance both at application run-time and for application scaling, Platform MPI enables you to maximize the performance of your applications within your HPC environment.

### Benefits of Platform MPI:

- Accelerates and scales your applications
- Takes advantage of leading interconnect technologies to build high performance clusters
- Allows developers to support a wider range of customer environments

### Cluster management capability

**Easy to use web interface** The web interface makes operations like installing and maintaining clusters a snap. Cluster administrators will appreciate the built-in alerting, reporting and management features and the ease with which software configurations can be managed and deployed without ever leaving the Platform Application Center

Capability / Feature	Platform HPC Workgroup Manager	An Open Source Tool	A Commercial Tool
<b>Cluster Provisioning and Management Features</b>			
Initial cluster provisioning	✓	✓	*
Multiple provisioning methods	✓	✗	✗
Web-based cluster mgmt.	✓	✗	✓
Node updates with no re-boot	✓	✗	✗
Repository snapshots	✓	✗	✗
Flexible node templates	✓	Weak	*
Multiple OS and OS versions	✓	Weak	*
<b>Workload Management and Application Integration Features</b>			
Integrated workload management	✓	✓	✓
Application-centric web-portal	✓	✗	✗
HPC libraries and toolsets	✓	✓	✗
NVIDIA CUDA SDK support	✓	✓	*
Web-based job management	✓	✗	✓
Multi-boot based on workload	✓	✗	*
Advanced parallel job management	✓	✗	✓
Commercial grade MPI	✓	✗	✗

\*Items marked with an asterisk indicate that the feature is available, but requires a separately installed add-on package.

graphical interface. Cluster users can take advantage of the web portal and the advanced workload manager capabilities provided by Platform LSF Workgroup Edition, that allows them to submit, monitor and manage their own cluster workloads without ever touching the command line.

**Update compute nodes “on the fly”** As clusters get busy and user communities grow scheduling downtime, even in small environments, can be a challenge. While other cluster management solutions require that nodes be re-installed every time a minor software update is made, Platform HPC Workgroup Manager provides a powerful cluster file manager (CFM) which for common activities such as package and patch installations, can transparently synchronize files to cluster nodes without any downtime or re-installation.

**Flexible provisioning** In addition to performing simple package-based installations, Platform HPC Workgroup Manager also supports image-based installs allowing cluster nodes to be rapidly “cloned” and provides support for diskless nodes. Multiple operating systems and versions can be deployed concurrently to the same cluster providing cluster administrators with the flexibility to support special requests from their user communities and accommodate unanticipated changes.

**Fully supported by Platform** Platform HPC Workgroup Manager is the only open Linux cluster solution fully supported by Platform Computing, the world leader in HPC management solutions. Unlike competing cluster toolkits which are little more than thrown together collections of open-source software, Platform HPC Workgroup Manager is the result of a close and long-standing engineering collaboration with our system partners. With a focus on quality and platform certification, Platform Computing and our systems partners jointly provide outstanding support on a 24 x 7 basis.

## Built for performance, growth and ease of use

**Performance** is the whole reason to purchase an HPC cluster, Platform HPC Workgroup Manager provides the most advanced suite of HPC infrastructure components including libraries pre-optimized for vendor hardware

and network components. Standard benchmark tests are included to ensure your cluster will deliver the best performance possible out-of-the-box. Platform HPC Workgroup Manager includes a range of industry standard, pre-tuned MPI implementations together with the industry’s highest performing MPI implementation “Platform MPI” making it easy to get your parallel applications up and running quickly. Enhanced, low latency workload management of parallel workloads is seamlessly handled with Platform LSF Workgroup Edition.

**Growth** must be manageable and seamless. Clusters grow, not always in terms of nodes, but certainly in terms of applications, users and complexity as clusters are augmented with new hardware, network and storage devices. Platform HPC Workgroup Manager ensures that your cluster is future proof – not only can you easily grow and scale, but you can support different operating systems and provisioning approaches as your needs evolve.

**Ease of Use** is mandatory for cluster management. The intuitive web interface makes operations like installing, running jobs and maintaining the cluster a snap. For ease of installation and management, add-on software is packaged as easy-to-deploy, pre-built “kits”. Administrators can still easily install their own software using more traditional approaches if they choose, but since kits are easy to build, sites may choose to package their own software as kits, or take advantage of a growing library of contributed kits from Platform Computing and others available at <http://hpccommunity.org>.

## Supported operating systems

The latest set of supported hardware platforms and operating systems are available at: [www.platform.com/partners/partner-solution/platform-HPC-workgroup-manager](http://www.platform.com/partners/partner-solution/platform-HPC-workgroup-manager).



Platform Computing is the leader in cluster, grid and cloud management software - serving more than 2,000 of the world’s most demanding organizations for over 17 years. Our workload and resource management solutions deliver IT responsiveness and lower costs for enterprise and HPC applications. Platform has strategic relationships with Cray, Dell™, HP, IBM®, Intel®, Microsoft®, Red Hat®, and SAS®. Visit [www.platform.com](http://www.platform.com).

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