



Platform LSF MultiCluster

Globalized resource sharing

Highlights:

- Transparent global load sharing
- Distributed, peer-to-peer job scheduling among autonomous Platform LSF clusters
- Monitor remote clusters from any desktop

Benefits:

- Boost productivity by giving users access to more resources
- Reduce costs by provisioning for peak use across enterprise, not by individual application or department
- Utilize machines across time zones to maximize use of idle CPU cycles
- Extend value of investment in Platform LSF and other Platform Accelerate suite products



Ideal for customers who:

- Want to let departments borrow unused computing power and software licenses from one another
- Need to let smaller departments, with low compute demand utilize existing HPC clusters without having to build separate clusters at each location
- Are developing a resource-sharing model across departments and physical locations

Resource sharing across multiple clusters

Platform LSF MultiCluster supports workload management and resource sharing among multiple computing clusters – whether they span the globe or a metropolitan-area campus. Platform LSF MultiCluster extends the benefits of the Platform Accelerate suite across a distributed enterprise while maintaining resource ownership and cluster autonomy. Platform Accelerate suite delivers products designed to accelerate the performance of mission-critical, compute and data intensive applications on cluster and grid systems.

The core product of Platform Accelerate suite is Platform LSF. Platform LSF MultiCluster is one of several add-on products available to extend your investment in Platform LSF. Other products in Platform Accelerate suite include Platform LSF License Scheduler, Platform LSF Session Scheduler, Platform Process Manager, Platform Symphony and EnginFrame.

Global workload sharing with Platform LSF MultiCluster works just as users familiar with Platform LSF would expect. Resources in remote clusters can be made transparently available to local users without any special knowledge or effort on their part. Platform LSF MultiCluster enables load sharing among thousands of hosts by extending the centralized job scheduling in a Platform LSF cluster to distributed, peer-to-peer relationships among autonomous Platform LSF clusters.



Resource Ownership

Each cluster is autonomous and has its own Platform LSF administrator. The conditions for inter-cluster load sharing, such as the types and numbers of jobs that are allowed to be transferred between clusters, and the time windows and the users allowed for inter-cluster load sharing, are all specifiable in the Platform LSF configuration files in each of the participating clusters.

Distributed Productivity Boost

Through global load sharing, a user can access a diverse collection of computing resources and get better performance as well as greater computing capabilities. Many machines that are otherwise idle can be used to process jobs, while multiple machines can be used to process a single parallel job. By tapping all enterprise computing resources, you increase user productivity.

Reduced Computing Costs

The demands for computing resources often fluctuate widely across departments and over time. Still, it is not always possible or even desirable to configure and manage a single large cluster. Partitioning the resources of an enterprise along departmental boundaries forces each department to buy computing resources according to maximum demand, leading to high computing costs and wasted resources.

Global Planning

Platform LSF MultiCluster makes it possible for an enterprise to plan computing resources globally based on total demand. You can add resources anywhere, yet make them available to the entire enterprise. With Platform LSF MultiCluster, an enterprise can implement global load-sharing policies.

Remote Cluster Information

Through Platform LSF commands and APIs, the cluster configuration and dynamic load information of any remote cluster can be obtained. This allows all systems in an enterprise to be monitored from any desktop.

Interactive Job Distribution

Interactive jobs can be distributed to powerful, idle, or unique computers, ensuring that you take full advantage of computing resources. Sharing policies are configurable, so no additional effort or knowledge is required of the user.

Batch Queue Import/Export

The importing and exporting of batch queues facilitates inter-cluster sharing of batch jobs. The jobs submitted by a user to a queue may be run locally or transferred to a remote cluster that offers the desired resources and potentially better performance. The Platform LSF administrator of the target cluster has total control of queue exporting, and jobs are processed according to configuration of the target queue.

User Account Mapping

Mapping of user accounts between clusters is supported to address problems that might result from non-uniform user accounts across clusters. As a result, each user does not need to have an account in every cluster. Pseudo user accounts can be created so that users can run remote jobs and enforce policies regarding the way remote jobs are processed.

Automatic File Transfer

When submitting a batch job, a user can specify the input and output files so that Platform LSF can transfer them to and from the selected execution hosts before and after job processing. This allows Platform LSF MultiCluster to be used even when the file systems are not shared among the clusters.

Network Security

Platform LSF MultiCluster ensures that remote jobs are actually from authorized users. Configurable user authentication schemes of various levels of security are supported, ranging from setuid, RFC1413 protocol, to Kerberos and DCE authentication. Data encryption can be used to protect data.

Platform™

Platform Computing is a pioneer and the global leader in High Performance Computing (HPC) management software. The company delivers integrated software solutions that enable organizations to improve time-to-results and reduce computing costs. Many of the world's largest companies rely on Platform to accelerate compute or data intensive applications and manage cluster and grid systems. Platform has over 2,000 global customers and strategic relationships with Dell™, HP, IBM®, Intel®, Microsoft®, Red Hat® and SAS®, along with the industry's broadest support for HPC applications. Building on 16 years of market leadership, Platform continues to define the HPC market. Visit www.platform.com.

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