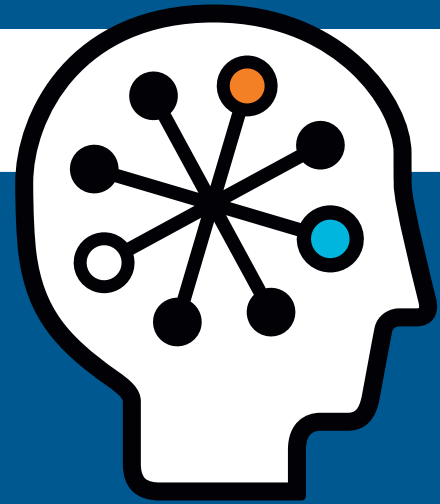




## HP and Platform Computing

Optimizing multi-core processors



### Platform LSF offers a solution to alleviate memory bandwidth limitations on multi-core processors.

#### **The memory bandwidth roadblock**

Multi-core processors offer several key business benefits to organizations dealing with cluster sprawl. Increased performance, lower power usage and greater system density are three. Still, memory performance improvement lags behind processor performance, creating possible performance bottlenecks.

#### **Platform LSF finds shortest way around roadblock**

Typically, job schedulers delegate the job of assigning application processes to cores to the operating system. This is not an optimal situation. In multi-core architectures, poor operating system (OS) process placement can result in memory bandwidth saturation. Platform LSF can be used to schedule jobs based on available memory bandwidth. This allows you to determine how bandwidth is used by specific jobs in the queue, rather than leaving the decision up to the OS. Since Platform LSF allows you to individually assign hosts to particular business requirements, you can accommodate high bandwidth and low bandwidth requirement jobs on the same cluster, at the same time, without performance degradation.

#### **Solution benefits**

- Improve performance of multi-core enabled applications based on your unique business needs
- Bridge gap between processor performance and memory bandwidth performance
- Achieve optimal balance between job turn around and cluster throughput
- Support conflicting scheduling objectives by configuring resource usage host-by-host

#### **Working together with HP**

High Performance Computing (HPC) solutions set the industry standard in advancing innovation, cost-efficiency and productivity. Organizations of all sizes gain the power of market-changing innovations with standards-based economies and time-proven confidence—making it easier to speed and optimize the scientific, financial, discovery and engineering development outcomes of their organizations. By partnering with HP, we can leverage our vast knowledge and experience in HPC to deliver complete solutions that help you address your most demanding computing requirements.

**Platform™**



## Smart multi-core scheduling

Platform LSF offers a powerful technique to mitigate the inherent lag of memory performance vis-a-vis processor performance. Platform's solution intelligently schedules jobs onto processor cores by automating management of memory bandwidth supply and demand.

Each host in the cluster is assigned a resource that represents available memory bandwidth. When a job specifying memory bandwidth is submitted to the queue, Platform LSF automatically dispatches it to a host with adequate memory.

The key business benefit is that Platform LSF allows you to do all of this based on your unique business priorities. If your cluster usage is geared towards fast turn around time for high priority jobs, Platform LSF resources can be configured so that applications are not limited by memory bandwidth. If your usage is weighted towards maximizing job throughput, then you can configure the resources accordingly.

Most importantly though, if you run a number of different applications and job types on the cluster, Platform LSF lets you accommodate each objective by creating both a high priority queue and a high throughput queue.

### HP products supported

Our solutions are supported on a broad range of HP servers. From blades and clustered servers to high-powered, 64-bit, multi-processor super-computing, HP servers set the standard for performance, scalability, availability and manageability. With their industry-leading innovation and value, HP servers are the ideal choice to meet your most demanding business needs.

### HP management software

Our solutions leverage the HP software portfolio of management solutions, providing the intelligent tools you need to enable your business-critical data and services to be delivered on time, all the time. With HP software solutions, you gain a new level of insight and control to increase the performance of your infrastructure, anticipate and correct problems before they become critical, automate and manage change in real time, and keep your data secure.

### Operating systems supported

Our Linux-based solutions are built on best-of-breed software and standards-based servers—delivered with world-class services. By working with HP, we can leverage its leadership in Linux to provide optimized solutions based on HP Open Source Integrated Portfolio (OSIP) and HP Open Source Middleware Stacks (OSMS). With our combined expertise and comprehensive services, you get open, integrated, cost-effective and proven Linux solutions that deliver the best return on your IT investments with confidence.

### Service and support

Platform professional services is an expert consulting group that guides clients through the planning, building and implementation of grid solutions, ensuring that business objectives are met. Using a proven methodology, these services effectively plan, build, run and manage end-to-end grid solutions.

### Building on the value of strong relationships

By working with HP, we have the resources, experience and knowledge of an industry leader to ensure our solution delivers the business results and value your company requires. HP is a company that thrives on innovation, with a proven track record of success in virtually every market, customer segment and region worldwide. Together, we have the technology and services to meet your most demanding needs.

Platform Computing is a pioneer and a global leader in HPC infrastructure software. The company delivers integrated software solutions that enable organizations to improve time-to-results and reduce computing costs. The world's largest companies rely on Platform for workload management, cluster and grid management.

### Working together to drive success

By combining standards-based and modular technologies with our leading-edge applications and a full portfolio of services, you gain a powerful, flexible solution that meets your business needs today—and adapts dynamically as those needs change. That's the foundation for building an agile, responsive enterprise to drive better business outcomes for your long term success.

## Technology for better business outcomes

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