IBM Spectrum LSF Session Scheduler

High-throughput computing

Highlights

- Improve user productivity, reduce wait times
- Increase throughput and utilization
- Run more complex simulations in less time

Today, many technical and high-performance computing (HPC) users have to accept tradeoffs. The productivity gains of scalable workloads are often balanced against the challenges of managing large numbers of short-duration jobs. Often they have to adjust their workloads to address the constraints of the workload scheduler. Sometimes it can take longer to set up a short duration job than it takes to run it, which leads to inefficient system performance—particularly when submitting a large volume of identical jobs.

IBM® Spectrum LSF Session Scheduler gives you the best of both worlds: speed and volume. It is designed to work with IBM Spectrum LSF to provide high-throughput, low-latency scheduling for a wide range of workloads. IBM Spectrum LSF Session Scheduler is particularly well suited to environments that run high volumes of short-duration jobs and where users require faster and more predictable job turnaround times.

Unlike traditional batch schedulers that make resource allocation decisions for every job submission, with IBM Spectrum LSF Session Scheduler you can specify resource allocation decisions only once for multiple jobs in a session, which effectively gives you your own virtual private cluster. With this more efficient scheduling model, you benefit from higher job throughput and faster response times.

In traditional batch scheduling environments, large numbers of short-running jobs can lead to clusters being poorly utilized. With IBM Spectrum LSF Session Scheduler, you can dispatch tasks immediately without needing to wait for the main scheduler to make a decision,

which leads to dramatic gains in efficiency. Both traditional workloads as well as parametric jobs or job arrays throughput can benefit from IBM Spectrum LSF Session Scheduler. Because cluster resources are used more efficiently, a fixed number of cluster nodes are able to process a higher volume of jobs or support a larger user community.

IBM Spectrum LSF Session Scheduler provides the performance benefits of a low-latency operation without the need to re-code applications or adapt to client-side or server-side application programming interfaces (APIs). IBM Spectrum LSF Session Scheduler jobs are submitted just like any other IBM Spectrum LSF job. With minimal changes to scripts, you enjoy faster throughput with essentially no scheduling delays once a session is started.

Because IBM Spectrum LSF Session Scheduler exhibits much lower latency than traditional batch environments, it can be an easy-to-implement alternative to service-oriented environments. For some types of problems such as Monte Carlo simulations where pricing engines are invoked from the command line, IBM Spectrum LSF Session Scheduler may be a solution that can be implemented faster and more cost-effectively, while providing similar benefits to service-oriented architecture (SOA) environments in terms of throughput and latency.

Why IBM?

IBM Spectrum Computing offers a comprehensive portfolio of software defined infrastructure solutions designed to help your organization deliver IT services in the most efficient way possible, optimizing resource utilization to speed time to results and reduce costs. These offerings help maximize the potential of your infrastructure to accelerate your analytics, HPC, Hadoop, Apache Spark and cloud-native applications at any scale, extract insight from your data and get higher-quality products to market faster. The core value of the portfolio is simplifying simulations and analysis to help you uncover insights into your business or science and get higher-quality products to market faster.

For more information

To learn more about IBM Spectrum LSF Session Scheduler, contact your IBM representative or IBM Business Partner, or visit:
ibm.com/systems/spectrum-computing/products/lsf/resources.html