IBM Spectrum LSF Analytics

Advanced analysis of technical computing workloads

Highlights

- Visibility into IT operations for validation of planning assumptions
- Extensive reporting and analysis capabilities across workloads
- Easily track and view resource usage by user, department or project
- Detailed infrastructure and workload reporting
- Detailed reporting provides powerful insights into processes

IBM Spectrum LSF Analytics is an advanced analysis and visualization tool for analyzing massive amounts of IBM Spectrum LSF workload data. It enables managers, planners and administrators to correlate job, resource and license data easily from one or more IBM Spectrum LSF clusters for data-driven decision-making. With better insight into their high-performance computing (HPC) or analytics environments across diverse types of workloads, organizations can identify and quickly remove bottlenecks, spot emerging trends and plan capacity more effectively. Unlike traditional business intelligence solutions that require significant time and multiple steps to translate raw data into usable information, IBM Spectrum LSF Analytics incorporates innovative visualization tools that are built on top of a powerful analytics engine for quick and easy results. Users can take advantage of the preconfigured dashboards or construct their own, quickly answer questions about their infrastructure and applications, and use that information to optimize resource use.

With some reporting systems, answering business-level questions requires the development of custom reports or the transformation of underlying data into formats better suited to the question being asked. Custom reports are not only time consuming to produce, but they require considerable expertise on the part of person developing them. In comparison, IBM Spectrum LSF Analytics is flexible and extensible. Existing or new data sources can be rapidly combined with IBM Spectrum LSF Analytics data to provide data views tailored specifically to an organization's unique requirements without the need to build intermediate data views. Users can connect to cluster, workload, and even Hadoop MapReduce performance data in a few clicks, then easily visualize and create interactive dashboards.

Fully functional out of the box

IBM Spectrum LSF Analytics provides several interactive dashboards that are ready to use out of the box, making it quick and easy to analyze key metrics for technical computing environments. Other infrastructure analytics products require users to build complex analytics models from scratch, often with several intermediate steps. With the included IBM Spectrum LSF Analytics dashboards, managers and administrators are instantly productive, with access to information on cluster capacity, resource use, and workload accounting and statistics. The dashboards can be easily modified through the IBM Spectrum LSF Analytics interface to provide users with the most relevant information needed to optimize their business.

Extensive reporting and analysis tools

IBM Spectrum LSF Analytics contains several powerful reporting tools applicable to a wide range of technical computing workloads that allow you to integrate data more effectively, create insightful reports and gain powerful insight into processes, all from an intuitive customizable interface.

Job and resource reporting

IBM Spectrum LSF Analytics enables users and administrators to visualize job and resource data in multiple ways. By understanding exactly how resources are used, scheduling policies can be adjusted, resulting in better resource use and greater overall efficiency.

Usage reporting for chargeback accounting

Some organizations need to apportion costs between client departments based on actual resource usage. By combining resource, license and job-level data, administrators can easily track and view resource usage by user, department or project. The rich capabilities of IBM Spectrum LSF Analytics make it an ideal platform on which to build sophisticated chargeback accounting solutions that reflect an organization's own unique policies and accounting practices.

Operational reporting and analysis

IBM Spectrum LSF Analytics provides full visibility into data center operations, allowing managers to validate their planning assumptions constantly and make mid-course corrections quickly to meet service level agreements (SLAs). In addition, they can ensure that business-critical projects have ample resources. By monitoring key metrics, such as pending time and license denials, planners can help ensure that business users have access to resources when

they need them and at the lowest possible cost. For customers running time-critical workloads, or Hadoop MapReduce applications, IBM Spectrum LSF Analytics helps ensure that service levels are being met and the time-critical tasks are immediately and appropriately resourced.

Resource and service-level analysis

By analyzing resource use and service levels, administrators can quickly identify issues affecting productivity. IBM Spectrum LSF Analytics enables administrators to drill down to discover exactly where and why bottlenecks are occurring. This enables them to correct issues quickly that—without the insights provided by IBM Spectrum LSF Analytics—might otherwise lead to incremental costs.

Trend analysis

IBM Spectrum LSF Analytics turns raw data into usable information, making changes in usage patterns easy to identify. By understanding how the need for different applications and hardware is evolving with time, planners can make better decisions, intercept trends, consolidate under-used assets quickly and ensure that spending is efficient and aligned to business needs.

Intuitive, customizable interface

IBM Spectrum LSF Analytics provides users, administrators and executives with an intuitive interface that can be viewed either through a configurable web portal or a desktop application that runs on Microsoft Windows. The easy-to-use, web-based interface is simple to learn and results are achieved quickly, with minimal effort. The dashboards are preconfigured and provide valuable information about resources and workloads out of the box, so users are immediately productive and can easily gain insights into how resources are being used and by whom. Using the desktop application and the drag-and-drop capabilities of the interface, the included dashboards can be easily altered or new dashboards created. Users can also drill into infrastructure or workload accounting data by many different dimensions—including project, queue and user—and obtain valuable information for any period of interest.

IBM Spectrum LSF Analytics at a glance

Powerful graphical interface	• Easily answer HPC workload usage questions • Clearly correlate complex data associations • Quickly modify analysis views as requirements change • Minimal training required
Supports diverse workloads	• Supports a variety of batch-oriented workloads including serial jobs, parallel jobs and job arrays • Gain insights into the runtime characteristics of Hadoop MapReduce workloads to tune performance and improve resource sharing among applications
Preconfigured dashboards	• Analysts and users are instantly productive • Ready to use out of the box with minimal configuration
Customizable	• No programming required • Easily incorporate existing data sources • Create views relevant to your business
Built-in best practices	• Key IBM Spectrum LSF metrics are readily available • Quickly identify bottlenecks and under-utilized assets • Optimize HPC data center capacity planning practices
License reporting	• Easily analyze commercial software license usage • Use licenses more efficiently, boosting productivity while minimizing cost
Open architecture	• Easily correlate HPC data center and job-related data with external data sources
High performance	• Scalable to thousands of users and millions of jobs • Access to long-range historical data for more complete analysis

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, high-performance computing (HPC), Apache Hadoop, Spark and cloud-native applications at any scale; extract insight from your data; and get higher-quality products to market faster.

Whether deployed in a data center or on the cloud, IBM Spectrum Computing solutions are widely viewed as the systems software of choice for technical and HPC applications, including compute- and data-intensive design, manufacturing, financial analytics, business and research applications. The core value of the portfolio is simplifying and accelerating high-performance simulations and analysis to help you uncover insights into your business, products and science.

For more information

To learn more about IBM Spectrum LSF Analytics, contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/systems/spectrumcomputing/products/lsf

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