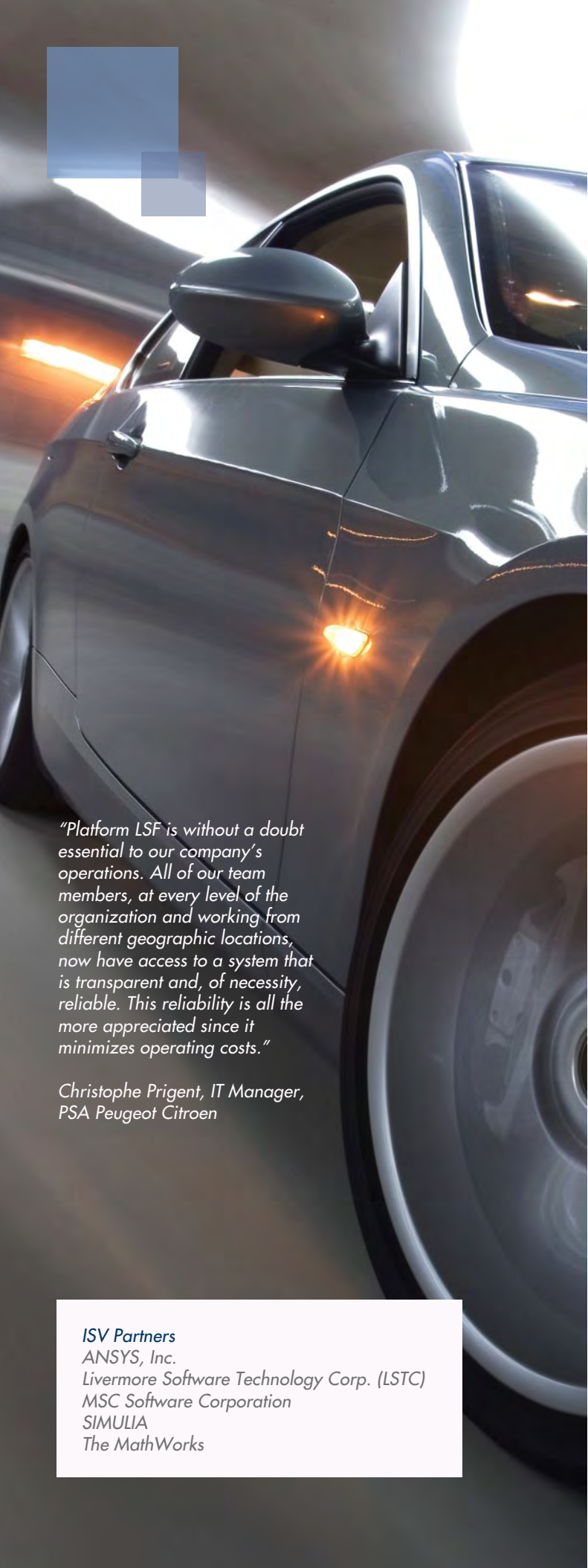


Platform™



Platform HPC Management
Software Solutions for
Industrial Manufacturing



Platform HPC Management Software Solutions for Industrial Manufacturing

In an industry where complexity and competition is increasing, product quality is critical to business success. At the same time, cost avoidance and reduction are essential to the bottom line, necessitating a faster and cheaper design cycle. From aerospace to automotive, IT managers must meet the need for better product design and quality, and shorter time to market, while dealing with low IT utilization, over-provisioned hardware and software and disruptions in efficient design process flow.

A complete solution offers maximum benefit

The challenge facing executives today is how to cost effectively deploy High Performance Computing (HPC) technologies to realize the biggest benefits to their organization. The ultimate goals are to:

- Maximize the utilization of costly IT assets while improving workload throughput for more simulations, better testing, faster model development cycles and superior products
- Reduce the amount of wasted compute cycles
- Maximize utilization of costly software application licenses
- Manage IT assets intelligently

Platform Computing is leading the way by offering a dynamic approach to resource management. Our thoroughly integrated solution allows you to match unpredictable demand for compute power to available supply at the lowest cost.

It's no accident that the most progressive and competitive manufacturing companies have chosen Platform. Platform serves over 80% of the world's leading manufacturing organizations. Twenty of the top auto manufacturers use our solutions to manage crash test, product durability, and engine performance simulations. The top ten commercial and defense aerospace companies use Platform technology to maximize throughput of their aerodynamic and propulsion simulations.

Scalable and robust workload management

Platform LSF, allows you to manage and accelerate batch workload processing for mission-critical compute- or data-intensive application workload. Powering millions of processors in both industries and academia globally, Platform LSF is the most reliable workload management solution for mission critical production environments. Platform LSF helps organizations deliver a non-stop HPC environment for end users with minimum operational cost in order to:

- Do more work with fewer resources by optimizing utilization of IT infrastructure
- Improve productivity for engineers and designers by giving them the tools to obtain higher quality results, faster

"Platform LSF is without a doubt essential to our company's operations. All of our team members, at every level of the organization and working from different geographic locations, now have access to a system that is transparent and, of necessity, reliable. This reliability is all the more appreciated since it minimizes operating costs."

*Christophe Prigent, IT Manager,
PSA Peugeot Citroen*

ISV Partners

ANSYS, Inc.

Livermore Software Technology Corp. (LSTC)

MSC Software Corporation

SIMULIA

The MathWorks



Sophisticated tools and add-ons make Platform LSF the most complete and versatile grid-aware scheduling and workflow solution. Platform Process Manager for example, helps eliminate the most probable causes of failure – human error. By incorporating sophisticated error handling and conditional logic, once a flow is started, the workflow administrator can move to the next task knowing that the flow will complete as planned. If there is a problem that it cannot resolve, Platform Process Manager provides email alerts, or raises an alarm through an existing management system.

Unlike traditional workflow solutions, Platform Process Manager allows dynamic host selection at run-time – which makes workflows resilient and flexible. By removing the need to associate individual hosts with particular process steps, workflows that would otherwise be “brittle” and failure-prone, are made reliable and flexible. Workflows can scale dynamically and seamlessly as nodes are added to a shared cluster without the need to modify workflow definitions. Multiple workflows with different business priorities can be run concurrently in accordance with the powerful sharing policies configurable in Platform LSF to ensure that resources are allocated according to business need.

Platform Process Manager can help you streamline processes that previously defied scripting or automation. By minimizing scripting, workflows become self-documenting making workflow logic easier to follow and they also become more cost effective to maintain. Platform Process Manager workflows can even be triggered by other Enterprise Workflow Management Systems allowing Platform Process Manager to integrate seamlessly with existing tools.

Extensive support for ISV applications

The integration of ISV applications with Platform HPC management software accelerates engineering simulations while providing users with transparent access to its distributed computing resource environment. With a Platform-powered enterprise, engineering firms can benefit from the resiliency inherent in the grid so that a hardware or software failure on a single node does not result in a long simulation needing to be restarted from the beginning. By allowing engineers and designers to focus on business-critical process design and execution, your product quality is able to improve dramatically. When your engineers can see results in an hour or two that formerly took days or a week, the whole design process changes – from one of lengthy delays to one of high productivity.

Platform maintains close business relationships with over 20 CAE ISVs. Collaboration, understanding and coordination in product development, Platform takes advantage of the latest trends in high performance computing. Platform also has an established Partner Alliance Network to ensure that all software vendors developing CAE applications, as well as operating system and hardware vendors, receive the attention and continuous support they deserve for rapid deployment at customer sites.

MPI tools to develop your own integrations

High performance parallel application development is complicated enough without the additional burden of managing support for a growing list of hardware architectures that leverage different interconnects. Platform MPI, fully integrated message passing interface (MPI), simplifies development, testing, and maintenance through its unique interconnect-independent architecture. Many of our customers who develop in-house applications are turning to this high-quality MPI product.

Platform MPI provides the following advantages:

- Engineer productivity. By delivering application independence from OS, interconnect and CPU type, Platform MPI reduces testing requirements when deploying applications
- Increased system utilization. Backward compatibility of new versions means a reduction in downtime as applications are upgraded
- Quick issue resolution. Platform’s 24/7 support will help you resolve issues before they escalate into major problems

Application License Optimization

Platform LSF License Scheduler is the only product on the market that integrates workload management with license prioritization to tackle the problem of dynamically prioritizing license usage to meet business needs. The savings on license costs, combined with increased designer productivity can easily justify your investment in Platform LSF License Scheduler. The solution allows you to:

- Dynamically arbitrates license usage based on business priorities
- Guarantee licenses for the critical projects
- Maximize license sharing across multiple design projects
- Reduce delays waiting for license availability
- Provide job scheduling policies based on floating software licenses
- Employ best practices for configuration and application integrations

Capacity Planning

Platform Analytics provides visibility for executives, project managers and IT management into compute resource and software license usage. It enables an organization to customize the reporting tool to reflect its own business process for resource planning and cost analysis. There is no product on the market as comprehensive as Platform Analytics, which offers:

- Reliable and consistent data collection across multiple sites
- Industry commonly used reports
- Customized reporting capability to meet your needs

The focus of this capacity planning solution is: “know what’s happening” in the environment, hardware compute resources, and applications software licenses. As compute infrastructure gets increasingly complex, reflecting the need to support more sophisticated designs, importance of understanding how that infrastructure is being used becomes an imperative, due to a number of reasons:

- CFOs/CIOs need to control costs and defer new purchases
- Project managers need to know how much hardware and software resource was used in the past so they can better plan future projects
- IT managers must prove their existing infrastructure is used above set threshold in order to get approval for additional purchases
- IT managers need to know who is using what resources and how much, so they can define SLA to end-users and demonstrate adhered to SLAs

Having a single reporting solution for all reporting needs means lower cost. The overall TCO (total cost of ownership) is very favorable when compared to using multiple other solutions combined together to provide equivalent functionality.

Centralized monitoring and management

Platform RTM (Report, Track and Monitor) is Platform Computing’s operational management environment for Platform LSF clusters. It provides immediate improvements in near-real-time cluster visibility, manageability and availability. Platform RTM is built on Cacti™, an open-source data center management tool. Together, Platform RTM and Cacti provide unmatched capabilities in the management of HPC environments.

Platform Manager, a solution for enterprise cluster lifecycle management, tackles the full range of challenges presented by cluster lifecycle management. It helps provision, manage, and maintain multiple clusters and server farms in the most complex commercial HPC environments. With Platform Manager, you can automate the installation, configuration, updating, and monitoring of the most complex multi-vendor environments through a single integrated, user-friendly interface. Platform Manager provides application-aware HPC infrastructure management through its integration with Platform LSF and other workload management software. The integration gives system administrators greater visibility into cluster operations by linking hardware management directly to the applications running on workload management clusters. Platform Cluster Manager provides similar open-source-based functionality for single, Linux-only clusters.

Platform Cluster Manager a modular and hybrid stack that transparently integrates open source and commercial software into a single consistent cluster operating environment for crash, durability and fluid dynamics. Both Platform LSF and Platform Cluster Manager are backed by 24 x 7 global technical support.

The Platform Promise

Platform’s HPC management software reduces the TCO by fully utilizing existing hardware and facilitates the easy deployment and use of economical, heterogeneous, commodity hardware-based systems.

Add-ons and integrated solutions help lower TCO

Platform’s key competitive differentiator in strategic HPC deployments is our wide range of value-added products, and integrated solutions. Our competitors do not offer a full suite of add-on capabilities to their WLM solutions that enable informed decision making, dynamic resource management, comprehensive analysis, software license visibility, and the ability to design automated workflows and time or event based scheduling triggers. Our software addresses many of the problems that you face:

- License usage optimization
- Capacity planning and resource analysis
- Cluster lifecycle management
- Multi-core bottleneck alleviation
- Data aware scheduling
- Topology aware scheduling
- Intuitive user Web portal
- Multi-site resource sharing

Platform™

Platform Computing is the leader in grid and cloud computing software that dynamically connects IT resources to workload demand according to business policies. Over 2,000 of the world’s largest organizations rely on our solutions to improve IT productivity and reduce data center costs. Platform has strategic relationships with Dell™, HP, IBM®, Intel®, Microsoft®, Red Hat®, and SAS®. Building on 16 years of market leadership, Platform continues to help data centers be more efficient, responsive and dynamic. Visit www.platform.com.

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