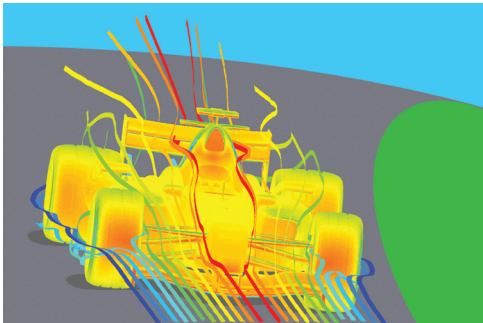


Platform™

CFD Clusters Made Simple with Platform OCS® and Platform HPC Management Software



Raising the Bar in Product Development with Simulation Driven Engineering

ANSYS, Inc., is a global leader in the field of computer aided engineering (CAE) and is one of the leading suppliers of engineering simulation software. The FLUENT® software from ANSYS is a staple tool for flow modeling in industries such as aerospace & defense, automotive manufacturing, consumer goods manufacturing, healthcare and pharmaceuticals. In almost any application where design performance is determined by the behaviour of fluids, FLUENT software can be found helping engineering organizations increase efficiencies, lower design and manufacturing costs and improve product quality. FLUENT is part of the strong ANSYS portfolio of Simulation Driven Product Development solutions.

Benefits

- HPC (High Performance Computing) enables larger simulations and improved simulation turnaround time
- The management of parallel FLUENT jobs are fully automated allowing for simplified management and checkpoint/restart functionality
- Proper resource accounting for MPI based parallel simulators
- Engineers can evaluate intermediate results through an intuitive web portal
- Exposing solvers through a web interface enables collaboration with distributed teams and improves security

Who Needs this Solution

Any engineering organization using FLUENT software that requires additional resources to run more computationally intensive simulations or increase the number of concurrent simulations of any size.

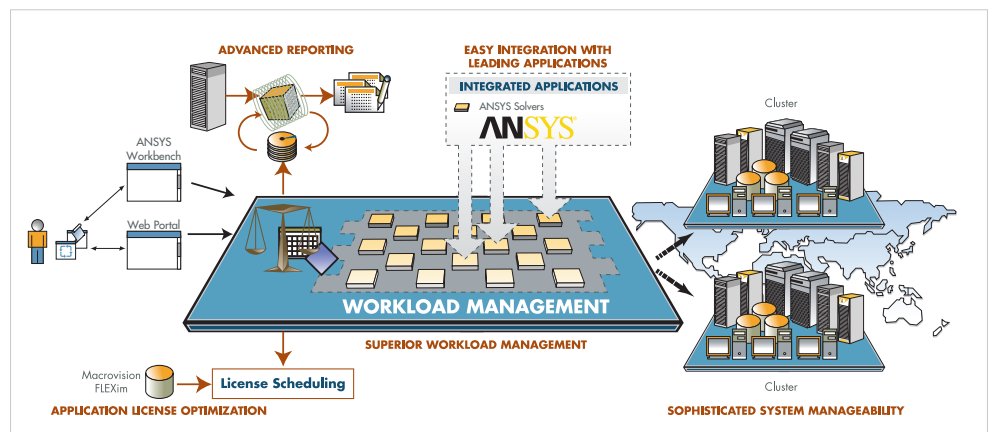
Products in Solution

- Platform LSF for cluster management
- FLUENT CFD software
- Web portal for remote batch job management

For complex CFD problems including modeling of turbulence, moving and deforming objects, reacting flows and acoustic modeling, engineers can simply never have enough computing power. The fidelity of CFD simulations is a function of mesh sizes and timesteps, and simulation accuracy scales with the amount of compute power that can be brought to bear. This requirement for large amounts of computing power makes FLUENT an ideal candidate for deployment on a Platform powered grid computing environment.

Platform LSF includes a web portal, other software components and useful documentation allowing you to get the most of your CAE (Computer Aided Engineering) environment. Platform LSF makes it fast and simple to deploy CAE tools on a shared compute cluster by packaging integrations with FLUENT and other CAE tools from ANSYS. The use of the shared compute cluster ensures that costly IT assets are fully utilized while improving workload throughput and allowing for more simulations, better testing, and shorter development cycles. Using Platform LSF with FLUENT provides engineers with an easy to use environment where jobs can be submitted and managed through a single web interface. Intermediate files created during simulation runs are managed automatically in a spooler according to site defined retention policies, saving engineers and system administrators the trouble of managing these intermediate files themselves. With full support for the scheduling and management of FLUENT jobs utilizing multiple nodes in a cluster in parallel, the Platform LSF has the ability to accurately report on resource consumption, which makes the need to manually log into nodes and kill orphan MPI processes a thing of the past.

Platform LSF integrates directly with the FLUENT software checkpoint-restart mechanism, allowing for advanced functionality such as automatic job recovery and job migration. Whether your needs are simple or complex, Platform LSF provides engineering teams with the leading technology and best practices, in a simple, effective, packaged solution.



Note regarding Platform OCS 4.4.0: This product includes software developed by the Rocks Cluster Group at the San Diego Supercomputer Center at the University of California, San Diego and its contributors.

About ANSYS, Inc.

ANSYS, Inc., founded in 1970, develops and globally markets engineering simulation software and technologies widely used by engineers and designers across a broad spectrum of industries. The Company focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. Fluent Inc. is a wholly owned subsidiary of ANSYS, Inc. one of the world's largest providers of CFD software and consulting services. Fluent's software is used for simulation, visualization and prediction of fluid flow, heat and mass transfer and chemical reactions. It is a vital part of the CAE process for companies around the world and is deployed in nearly every manufacturing industry. Using Fluent's software, product development, design and research engineers build virtual prototypes and simulate the performance of proposed and existing designs, allowing them to improve design quality while reducing cost and speeding time to market.

Platform LSF

Platform LSF is the first, user-friendly, grid solution created specifically for CAE simulation departments in industrial manufacturing organizations. It is based on Platform LSF, the industry leading workload management software used by Fortune 100 automotive and aerospace manufacturers globally. Platform LSF includes an easy to use web-based, user interface that simplifies job submission to your HPC environment. In addition, it is integrated with the most widely used CAE software solutions for crash, durability and fluid dynamics.

Platform Open Cluster Stack (OCS) is a pre-integrated, vendor certified, software stack that enables the consistent delivery of scale-out application clusters. Platform OCS is the first commercial software system used to create certified Intel Cluster Ready systems enabling a new class of users by

simplifying Linux® cluster application, deployment and management. Backed by available, global 24x7 enterprise support, Platform OCS is 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.

The Integrated Solution

ANSYS, Inc. is uniquely committed to providing customers with engineering simulation technologies and solutions that are unmatched in terms of the functionality and power necessary to optimize components, subsystems and systems. Organizations are deploying ANSYS solutions at various stages of product development to leverage digital design performance information and make timely decisions.

The integration with Platform LSF accelerates engineering simulations while providing users with transparent access to a heterogeneous distributed computing resource environment. With a deeper managed compute capacity users are able to run more complex and accurate simulations than was previously possible. Users will also have the ability to run more exhaustive sets of test cases in a finite time period. Platform LSF allows your engineering team to deliver faster, more accurate designs by leveraging all existing resources and more efficiently managing large, long-running parallel jobs. By using a Platform LSF managed cluster, 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.

Platform LSF provides an easy to use web-based, user interface that simplifies job submission to your HPC environment. Geographically distributed teams are able to collaborate via this engineering portal to manage jobs and examine the results of simulations and security is improved by reducing the number of users with direct access to the cluster.

Faced with competitive challenges, customer demands and financial pressures, businesses need to find new ways to engineer more reliable, innovative products while minimizing costs. The combination of FLUENT software and Platform LSF enables businesses to improve product quality and improve the cost efficiencies of compute clusters.

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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