
Platform
Accelerating Intelligence
LS-DYNA Forum
October 14, 2004
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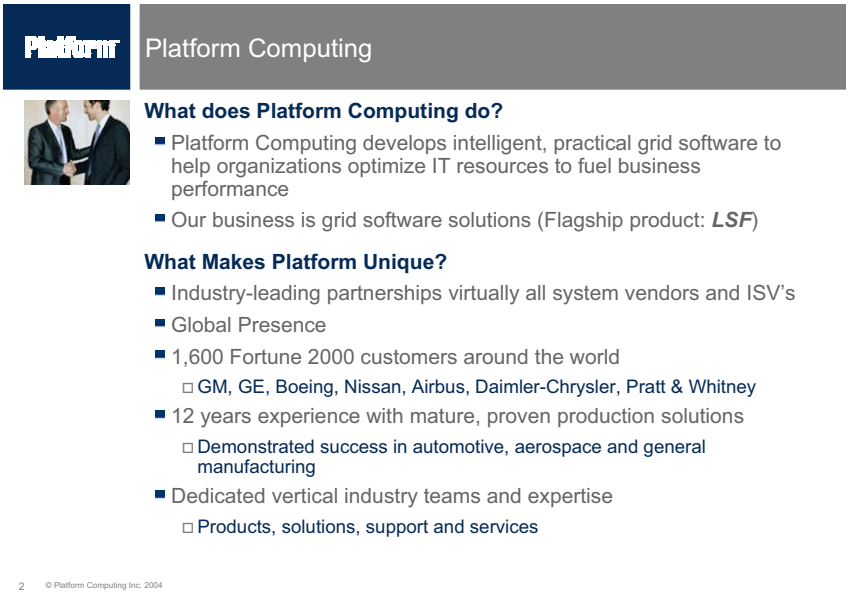
Platform
Platform Computing
What does Platform Computing do?
Platform Computing develops intelligent, practical grid software to help organizations optimize IT resources to fuel business performance
Our business is grid software solutions (Flagship product: LSF)
What Makes Platform Unique?
Industry-leading partnerships virtually all system vendors and ISV's
Global Presence
1,600 Fortune 2000 customers around the world
GM, GE, Boeing, Nissan, Airbus, Daimler-Chrysler, Pratt & Whitney
12 years experience with mature, proven production solutions
Demonstrated success in automotive, aerospace and general manufacturing
Dedicated vertical industry teams and expertise
Products, solutions, support and services
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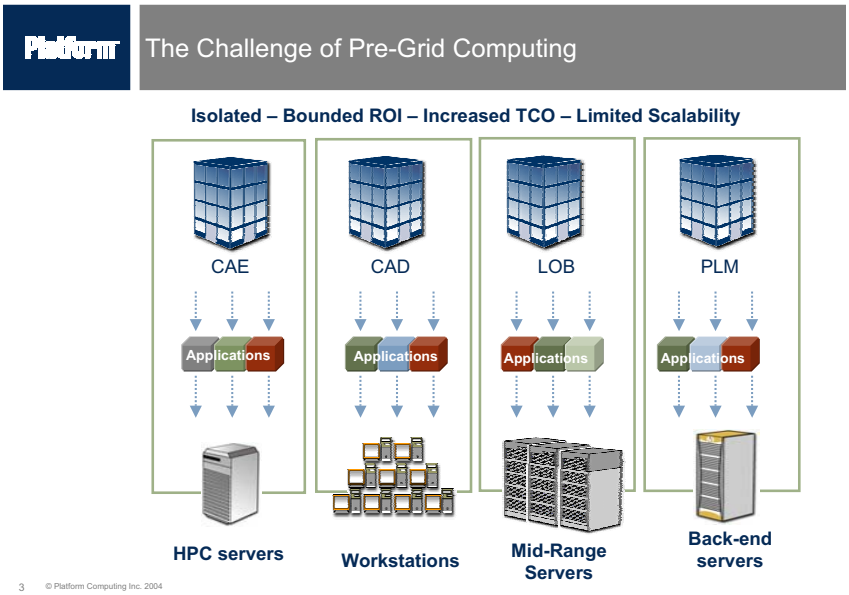

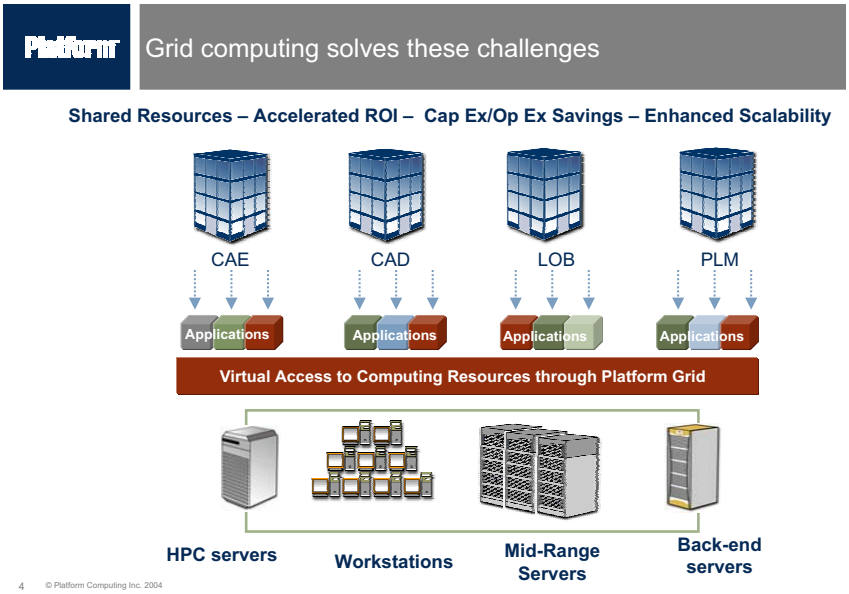

Choosing a Grid Solution and Technology Partner

Grid solutions deliver significant value only if they satisfy key technical and business criteria for your organization – 10 evaluation areas for value realization

Grid Solution Criteria

Reliability
- Automatic failover
- Self management features
- Re-runnable jobs
- Service level agreement support

Scalability
- Small clusters to 1,000's of nodes
- 10's of thousands of flows and 100's thousands of jobs
- Multiple global cluster support

Compatibility
- Heterogeneous HW and operating systems
- Desktops, servers, super-computers, and mainframes
- Data sharing integration

Functionality
- Comprehensive scheduling policies for all resources
- Job flow management
- Reporting and analytics

Performance
- Workload throughput
- Response time

Security
- Plug-in security modules
- Kerberos, UNIX, LDAP support

Application support
- Large inventory of pre-integrated applications
- Easy to use API for new integrations

Technology Partner Criteria

Grid vision
- Complete family of integrated grid solutions
- Large R&D team with defined product roadmaps
- Supports and contributes to grid standards

Services
- 7x24 global support
- Repeatable methodologies based on best practices
- Partnerships with leading HW, SW, and services companies

Qualified
- Large installed base of production grids
- Industry focused solutions and case studies

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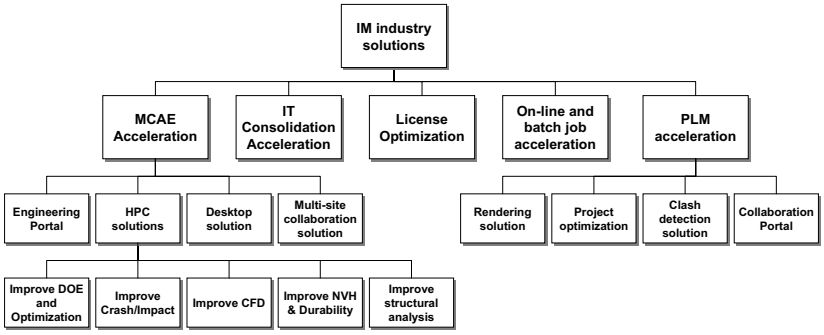
Industrial Manufacturing Solution Landscape

Grid solutions allow Platform to deliver significant value to all aspects of the manufacturing enterprise. By using Platform solutions, more work can be done in less time on the existing IT infrastructure. This has been proven to result in faster to market, higher quality, and more innovate products.



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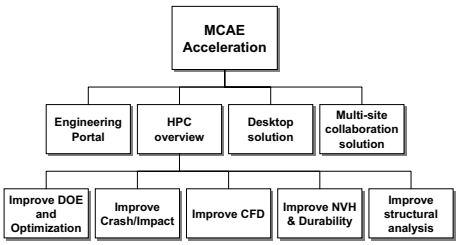
Industrial Manufacturing Solutions for MCAE

Virtually all MCAE applications have been integrated with Platform technologies. These solutions are running on servers, desktops, and across multiple locations.



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Platform Solution for MCAE Acceleration

- Integrations with all major MCAE applications
  - ABAQUS, ANSYS, STAR-CD, iSIGHT, Fluent, LS-DYNA, MSC.Nastran, MSC.Patran, MSC.Patran Analysis Manager
  - Virtually any batch or interactive MCAE and EDA application can be run in a Platform cluster
- Ability to extend grid computing to UNIX or Windows workstations to harness idle CPU cycles
- Ability to support multiple locations to allow geographic collaboration and sharing of resources
- Engineering user centric Web interface to simplify use and adoption

Bottom line benefits

- **Reduce IT capital expenditures by 20% to 40%**
- **Reduce operational expenditure spending by 5% to 10%**
- **Increase workload throughput by 10 times to 25 times**
- **Increase utilization of the existing IT infrastructure by 25% to 75%**

Top line benefits

- **Higher quality (lower warranty costs)**
- **Lower material costs**
- **Faster time to market**
- **Higher customer satisfaction**
- **Improved standards compliance**
- **Better crashworthiness ratings**

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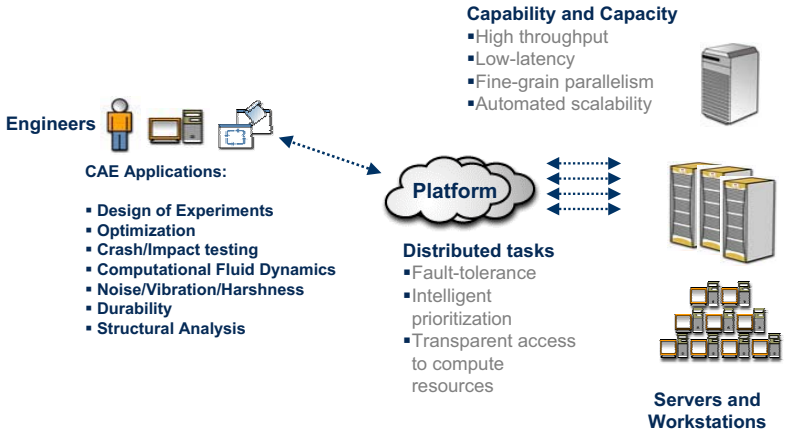
Solutions for MCAE - How it works



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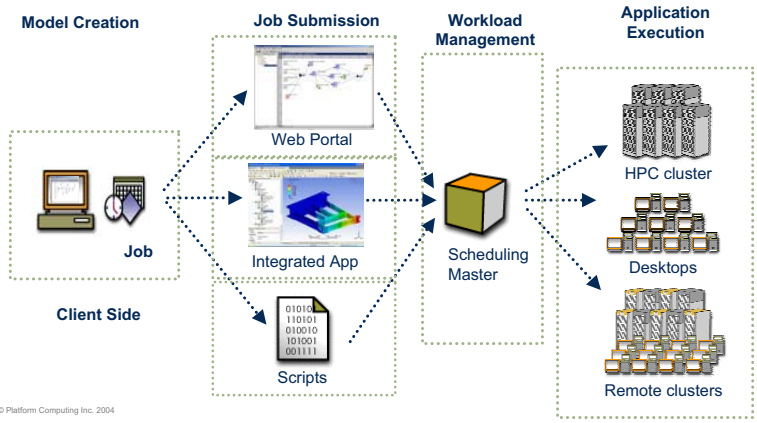
Architecture

Integrations are intended to be transparent and seamless to the engineer



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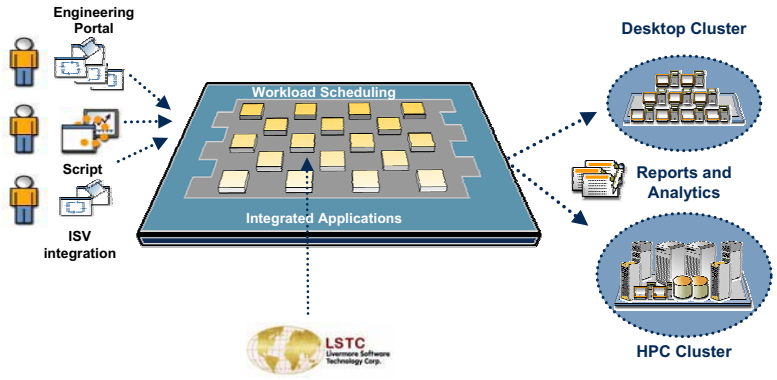
Platform Solution for Crash/Impact Analysis Acceleration

Solutions have been pre-configured to provide immediate and sustained benefits



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What are large scale simulations?

Large scale simulations can have one or more of the following characteristics:

- Multiple jobs – collections of jobs used to study various permutations (i.e. DOE, Stochastic, etc.)
- Heavy memory and disk requirements – simulations that require substantial amounts of available memory and disk space to complete
- Long duration – simulation jobs that typically take a long time (cpu and wall clock) to complete

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The Challenges

Multiple jobs

- How can engineers find the right resources to run all the jobs they need to run
- How can they manage all of these jobs

Heavy memory and disk requirements

- Budget limitations may limit the amount of resources
- How does one match job requirements to available resources?

Long Duration

- How can engineers run big jobs and still leave resources available for smaller jobs?
- How can an organization fairly allocate limited resources?

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The Solution – Clustering → Grid Computing

Solutions to solve these problems, within the existing corporate infrastructure:

- Data center high performance computing
- Workstation clusters
- Platform LSF MultiCluster
- Any or all of the above

Let the software find the resources for you

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The Integrations

Product Name	Job Submission	Check pointing	Parallelization	License Scheduling
LS-Dyna	Yes	Yes	Yes	

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Some flagship clients running LS Dyna on Grid

Proctor and Gamble on HP Opteron Linux using Scali MPI

Land Rover Jaguar

GM

DCX

Automotive manufacturers tell us that they use anywhere from 75%-80% of their HPC capacity for Dyna

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Conclusion

The capabilities of an organization are measured by the size of the jobs it can handle.

By effective utilization of existing resources, most companies could run larger jobs than they run today.

Which leads to a new definition of “large”…

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Thank you.

Platform