

# **Platform**<sup>™</sup>

The Bottom Line in Distributed Computing

## **THE STRATEGIC VALUE OF GRID COMPUTING**

**A 10-Minute Executive Primer From Platform Computing**

## PROLIFERATING BUSINESS CHALLENGES

In today's more sober economic climate, savvy business executives understand that the rules have changed. Trendy business plans have been properly rejected in favor of sound, proven business models. Capital funding is more scarce. Expense pressures are increasing. Today, the challenges are to bring greater control, speed, and productivity to the corporation to derive maximum value in the most efficient manner possible.

Given how information technology has permeated the enterprise –transforming how companies transact and manage their businesses – it's not surprising that these business challenges are tightly intertwined with strategic IT considerations.

### Expanding Capacity

- **Business Challenge** - During growth cycles, you need to dynamically scale up your operations - expand existing capacity, add work shifts, find subcontract manufacturers, locate additional suppliers, accelerate deliveries, and more.
- **IT Implications** - Experts believe that the peak demand for computing resources can reach five to 10 times average usage. As a result, some departments or divisions over-invest in computing resources to accommodate peak demand, while in other compute-constrained departments, users are frustrated by backlogs and computing bottlenecks that dramatically reduce productivity. There is a fundamental, unpredictable imbalance between compute supply and compute demand. How can you make optimal IT capacity decisions and investments?

We believe that grid computing offers a significant opportunity for collaboration in areas such as the life sciences, manufacturing, and EDA markets in particular."

#### Debra Goldfarb

*Group Vice President - Worldwide Systems and Servers  
IDC*

### Maximizing Return on Investment

- **Business Challenge** - Capital investments are being pared to the bone as companies seek to weather a harsher economic climate. Every investment you make today undergoes far more careful scrutiny with respect to the size and timing of its ROI.
- **IT Implications** - You no longer have the luxury of simply purchasing extra capacity to solve bottlenecks. Building out capacity to accommodate unpredictable peak demand means wasted capital investments. Instead, you need to leverage the large number of idle cycles that are largely inaccessible to users on other processors and make them available on demand.

"Our production grid is moving forward because of the features and capabilities of LSF MultiCluster. It's a fundamentally new and better way to deliver high performance computing services to our researchers and engineers through a uniform queuing environment. After just a few months, we're seeing dramatically increased accessibility and will ultimately be able to provide 1.1 million supercomputer processor hours per year. Our hardware and software utilization is more effective and we are able to recover cycles that would otherwise go unused."

#### William Reidy

*Senior Information Technologist  
U.S. Department of Defense - High Performance  
Computing Modernization Project*

### Driving Product Innovation and Quality

- **Business Challenge** - Product cycles continue to shrink as the demand for innovation grows. Businesses need to reduce time to market, improve product quality and reliability, and accelerate design/development processes.
- **IT Implications** - Compute resources are the key to achieving these business goals. By marshalling the full power of existing IT resources, you can dramatically improve the speed, quality, and innovation of your processes and products. The key to harnessing that untapped supply of IT power: new techniques for administering and managing IT resources.

## Responding to Mergers and Acquisitions

- **Business Challenge** - Consolidations, mergers, and other combinations are a fact of life for companies of every size and industry. The key to success in this area is rapid assimilation of people, facilities, and resources to leverage the synergy these combinations offer.
- **IT Implications** - M&A represents a massive logistical challenge for the IT organization. Multiple application portfolios, platforms, standards must all be integrated and managed in less time than ever.

## SOLVING TODAY'S BUSINESS CHALLENGES WITH GRID COMPUTING

To address these challenges, many companies are giving careful consideration to a new concept in enterprise IT management: *“grid computing.”* Grid computing aggregates all of the enterprise's existing computing resources to create a persistent and pervasive supply of on-demand computing power that can be applied to resource-intensive tasks, providing greater throughput and greater flexibility in managing that computing workload.

In simple terms, grid computing ties existing computers and other IT assets together to create a 'virtual supercomputer' - an adaptable, open, on-demand computing resource in a unified architecture. With grid computing, you can balance the supply and demand of computing cycles and resources by providing users with a single, transparent, aggregated source of computing power that's dependable, consistent, and pervasive. Consider the following illustrative scenarios for a better understanding of the potential of this powerful concept.

- **Faster Time to Market** - Texas Instruments -- a major manufacturer of integrated circuits with facilities in Dallas, Chicago, Europe, and India -- uses grid computing to improve collaboration on integrated circuit designs. The company takes advantage of global time differences to maximize its use of all hardware cycles across its enterprise grid. They can also manage design-tool software licenses -- possibly the company's most-valuable capital asset. The result: faster time to market and maximized use of IT infrastructure.
- **Accelerated Research and Development** - The U.S. Department of Defense High Performance Computing Modernization Project (HPCMP) has established an enterprise grid among numerous shared and distributed resource centers. Supporting the Kerberos security framework end-to-end, this deployment uses grid technologies to support its research and development of solutions to Challenge problems, and for time-critical delivery of a variety of operational products. The result: shorter R&D cycles, faster time to market.
- **Improved Product Quality** - A manufacturer of electronic components is creating a family of products that grows more sophisticated and complex every few months. They can evaluate and select from a wider set of design alternatives. What's more, ensuring the quality of those products requires an increasingly intense suite of tests. Grid computing enables the company to perform billions of tests -- up to 10 times more tests -- and perform them in less time. The result: better products, higher yields, and fewer returns.
- **Sophisticated Analysis** - The Italian National Agency for New Technology, Energy and the Environment (ENEA) operates a computational grid that masks the complexities of data management and serves as the engine for an immersive visualization facility used by its scientists and engineers. The result: greater insights into massive amounts of data in less time.

“Grid computing answered our requirement for a scalable, parallel computing infrastructure for our organization's research, development, and educational activities. We strongly support Platform Grid Suite as this will allow us to take our current grid to the next level in compute and data sharing.”

### Silvio Migliori

*Vice Director for Scientific Computing  
ENEA, Italy*

“Platform is a recognized global leader in distributed computing, with proven technology and an established customer base. Our partnership with Platform enhances our ability to harness and distribute computing power as a more cost-efficient offering -- from enterprise desktops and clusters to the next evolution in distributed computing, the global grid. Together, Platform and Globus have the potential to provide grid computing solutions that deliver real business value.”

### Dr. Ian Foster

*Globus Project Lead and Senior Scientist  
Argonne National Laboratory  
Professor of Computer Science at the University of  
Chicago*

"Compaq is strongly committed to grid computing and endorses Platform Grid Suite as a vendor-neutral, standards-driven solution. By grid-enabling our servers with Platform Grid Suite, we can help our customers harness unlimited compute power to build virtual communities, facilitate access to information and share distributed resources to pursue common goals."

**Bill Blake**  
*Vice President - High Performance Technical Computing*  
*Compaq Computer Corporation*

- **Intensive Computations** - After data collection and post-processing for their high-energy physics experiments, scientists from Fermi Laboratory use a wide-area data access grid for in-depth computational analyses. The result: faster and more thorough analyses of complex data.

- **Corporate Merger Integration** - After a large corporate merger, Pharmacia needed to aggregate the collective resources of three previously distinct organizations (including Searle and Monsanto) in St. Louis with another organization in Boston. Grid computing helps them integrate global drug-discovery operations on more than 600 individual servers and workstations. Since discovery can't wait, a grid-based solution enables Pharmacia to remain highly competitive during a period of substantive change. The result: smoother assimilation, no loss of focus during organizational merging.

As these examples suggest, large-scale implementations of grid technologies are feasible and successful today. However, grid technologies are also inherently flexible and scalable, which means that you can implement them on any scale that is more appropriate to your enterprise. Even small-scale deployments can create significant value in a short timeframe.

To find out more about how grid computing can transform how your corporation, visit the Platform Computing Grid Resource Center at <http://www.platform.com/grid/index.asp>

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## About Platform

Platform is the world's leading distributed computing software provider, with desktop to Grid solutions that allow organizations to dramatically improve time to market and quality of results, while maximizing their I.T. investment. Platform has strategic relationships with industry leaders including Compaq, HP, IBM, SGI, Cadence and SAS Institute and its open, scalable software solutions are the choice of more than 1,500 result-driven organizations around the world. Platform is a private company with 400 employees in 14 offices in North America, Europe and Asia. For more information visit [www.platform.com](http://www.platform.com)

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