

Major Wall Street firm shrinks IT costs

Increasing flexibility while cutting tens of millions in annual costs with IBM Technical Computing

Overview

The need

Drive down the capital and operational costs for a distributed computational grid, and refresh it for manageability, and to support new regulations like Basel III and more complex risk analytics.

The solution

Deployed IBM® Platform™ Symphony management software and 6,000 nodes of IBM System x® iDataPlex® hardware, in a bundled deal creating a single grid for compute and data intensive applications.

The benefit

Matched previous performance with expectation to cut hardware by 25 to 50 percent; projected tens of millions in savings from CAPEX/OPEX reduction; simplified procurement, deployment and support with IBM as a single vendor.

High-performance computing (HPC) grids are a core component of the distributed IT infrastructure for all but the smallest banks. Grid enables cost savings, operational efficiency, and greater scalability—which are even more important today due to tighter cost controls and stricter risk regulations like Basel III.

Banks need to provide more IT power with less money. The hardware infrastructure for a Tier 1 bank could easily exceed 20,000 servers, each of which must be housed, powered, cooled, networked, maintained and provisioned with software. The three-year operational cost of a grid is estimated to be 1.8 times the acquisition cost of the hardware—which recurs every three years as old servers make way for new. The total outlay can easily top \$150 million over three years.

In-house grid: costly and inflexible

A major Wall Street-based investment bank wanted to drive down the cost, simplify the management, and increase the agility and scalability of its existing grid infrastructure. The bank was uncertain that its existing infrastructure would handle the workload demanded by more compute-intensive risk analytics, specifically counterparty credit risk and Credit Value Adjustment (CVA). The bank's existing grid had grown in an unplanned manner, resulting in inconsistent architecture consisting of multiple homegrown and commercial grid technology solutions. The ad hoc nature of the infrastructure made it hard to share IT resources



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— CIO, Major Wall Street investment bank

between systems, and to manage upgrades and changes. The inefficiencies of the grid infrastructure resulted in consistent under-utilization of IT assets and lengthy upgrade and maintenance cycles. Overall this meant that the bank could not fully utilize its IT assets.

Managing the disparate grids was challenging and time-consuming. An increasing challenge was around input/output (I/O). The I/O bottleneck was becoming a business-critical issue for the firm. Also, the volume of data and the number of applications running on the grid would continue to grow. The existing grid infrastructure was not viewed as viable going forward to meet the scalability and compute demands from CVA calculations. CVA depends on the ability to integrate with and to aggregate data from different risk and trading systems and to perform full Monte Carlo simulations. By one estimate of a typical Monte Carlo simulation, there are 10,000 simulations for each risk factor.

These scalability and I/O concerns posed both an operational and financial risk, as did the grid infrastructure’s ad-hoc architecture: the knowledge to maintain and evolve the grid infrastructure was concentrated in a few IT employees. The bank needed to reduce these risks, and decided to adopt a single standard architecture for its grid. A single standard would enable a fully shared commodity pool of resources that would provide greater agility and power while reducing OPEX. The bank also decided to standardize on one commercial grid offering to reduce its vendor risk and support costs, freeing up and redirecting headcount and internal spend toward value-add projects.

Enterprise grid from IBM

The bank invited vendors to submit proposals for the new grid, aiming to maintain performance while shrinking the size and the cost. IBM proved its credentials with a winning proof of concept for a combined compute and data-intensive grid.

“First, IBM went toe-to-toe with our two most demanding groups,” says the bank’s CIO. “IBM then proved its approach, taking an existing job that required two hours on 20,000 cores and running it in one hour on 10,000 cores. Achieving twice the performance on half the infrastructure was absolutely compelling for us.”

Solution components

Hardware

- IBM® System x® iDataPlex®

Software

- IBM Platform™ Symphony – Advanced Edition with MapReduce
- IBM Platform Analytics

Services

- IBM Implementation Services
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Uniquely, IBM was able to propose a single bundled deal comprising an enterprise-wide license for IBM Platform Symphony grid-management software and 6,000 nodes of best-in-class IBM System x iDataPlex hardware featuring Intel Xeon processors. Platform Symphony is one of the most widely used grid-management tools on Wall Street, and iDataPlex packs a huge amount of compute power into a small physical and environmental footprint.

“With IBM Platform Symphony and IBM System x iDataPlex, we have a single grid for both computation and Big Data,” says the bank’s CIO.

“Instead of expanding internal silos, we now have one shared enterprise grid that provides much better server utilization, simpler manageability, greater agility and higher scalability. We also have a single contract and a single throat to choke on the support side.”

Saving tens of millions of dollars

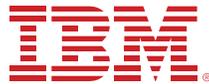
Adopting Platform Symphony and moving from 8-core to 16-core servers enabled the bank to provide identical performance to its previous grid with the ultimate goal of reducing the hardware footprint to potentially just one quarter of the original footprint. In doing so, the bank estimates it can save tens of millions of dollars in CAPEX and is also avoiding tens of millions of dollars in recurring annual OPEX. The new IBM solution provides a reliable, scalable high-performance technical computing environment that ensures high utilization of the available compute resources, and includes IBM Platform Analytics software for capacity planning, governance and reporting. The bank is migrating its key Financial Markets applications to the shared infrastructure, presenting it as a commodity platform internally and applying charge-back to any groups that wish to use it.

“This has been a multi-year journey for our organization, and we now have a true enterprise-class grid from IBM Platform Computing,” says the bank’s CIO. “It’s not just about the technology, but also about developing the people and processes to run it efficiently and reliably. With IBM as our sole vendor for the HPC grid, we are free to focus on building software that delivers competitive advantage while IBM handles the commodity aspects of the grid.”

“IBM’s acquisition of Platform Computing enables us to make really compelling value propositions to banks looking to increase performance and cut costs for their HPC grids,” says IBM spokesperson. “We have a comprehensive footprint of grid capability, covering both hardware and software, so banks no longer need to buy from multiple sources and stitch all the technology together for themselves.”

For more information

Contact your IBM sales representative or IBM Business Partner, or visit us at: Platform Computing (ibm.com/PlatformComputing/) and Technical Computing (ibm.com/Technical Computing)



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