

## GE Financial Assurance Innovates to Reduce Cost and Cycle Time by Enabling the Power of PCs

By Robert Regis Hyle  
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When the actuarial staff at GE Financial Assurance came to the IT department with a problem, the actuaries figured the simple solution to their needs was buying more server capacity. But the IT department, headed by Debora Horvath, senior vice president and CIO, and Kevin Gordon, vice president, technology, chose not to follow the most obvious solution. “We don’t have a large technology workforce in our business, especially in comparison with our competitors,” says Horvath. “But we’ve got a really innovative team.”

That innovation led GE Financial Assurance to a grid computing solution. Instead of added server capacity, the carrier combined the power of 100 desktop PCs to give the National Underwriter actuaries more computing power than they needed.

“The actuaries have jobs that involve analysis for reserves and valuations that are compute-intensive,” says Horvath. “We knew grid computing actually is used in the engineering industry for compute-intensive activity. Our staff thought we could pilot the use of grid technology in this manner. It basically was an innovative application of existing technology.”

### Exploiting Excess Capacity

Horvath says the IT staff found there is a huge amount of underutilized capacity in desktops—one estimate is 95 percent of a PC’s capacity is underutilized—and the carrier could tap into that capacity rather than investing in more servers.

“Think of all the time people are away from their desks the PCs are unused,” says Horvath. “And even when we are using them, we’re not fully using the processing capabilities.” The best part of the solution, she adds, is even when the PCs are being utilized for normal business, users aren’t even aware the PCs are computing for other jobs. Gordon says GE Financial Assurance looked at all the vendors in the space and chose software called **GridServer** from **DataSynapse**. The software linked 100 GE PCs on a grid. “We had anticipated a three-times cycle improvement in running these actuarial jobs,” says Gordon. “We’re actually seeing cycle-time improvement of 10 times or greater.”

GE conducted a training session for the actuaries, and at the start of the session, the IT staff took a job that normally was run overnight and started it at the beginning of the training session. By the time the session was over, 30 minutes later, so was the job. “The actuaries quickly understood the power of grid computing.”

If GE Financial Assurance had gone with the traditional mode of increasing server capacity, Horvath says, the carrier not only would have spent more money, but it would not have seen any improvement in cycle time. “What we replaced was a farm of 10 servers with 100 desktops we already had,” says Gordon. “We had no additional costs on the hardware side, and we are getting 10 times the cycle improvement.”

## No Limits

There is no limit to what a company can do using grid computing. “We’ve computed if we were to grid-enable 5,000 [desktop] computers, it would be equivalent to one of the largest supercomputers in the world,” says Horvath. “We don’t actually have the need for that much capacity.”

But GE Financial Assurance isn’t finished. The next phase could see 500 desktops used as a grid. The carrier is working with other departments including investment, capital markets, and risk management to see how those departments might be able to utilize the technology. The normal day-to-day operations could be conducted on the grid, but Horvath believes the greatest improvement a carrier would find from grid computing is in compute-intensive processing.

The **GridServer** software is the core of the system. “It takes the jobs and provides the capability for the actuaries to kick those jobs off and for IT folks to manage and view what is happening in the environment, and it distributes the pieces of work across the different engines in a multiprocessing fashion,” says Horvath. The software also monitors the grid, so if a piece of work is sent to a particular desktop and the worker happens to shut off the PC, the software acknowledges that situation and redistributes the work. “That’s really the brains of the system,” she says.

Installation of the software was pretty simple, according to Gordon. GE Financial Assurance took the models used by the actuaries to DataSynapse, and the vendor conducted the decoding and testing off site. DataSynapse returned a month later and spent a week with GE implementing and testing.

## The Benefits

“The great thing about this technology application is it gives benefits at the front end and the back end,” says Horvath. “At the front end are the lower costs IT is going to realize by reducing the amount of servers we are going to support and enabling the capacity that was underutilized. At the back end, we have better, faster business decisions, which is an even greater return on our investment.”

GE Financial Assurance didn’t run across anyone in the insurance arena using grid computing, Horvath says. Success breeds interest. GE Financial Assurance is the first of the GE financial businesses to utilize the grid. Adds Horvath: “In true GE fashion, though, our other GE financial businesses now are exploring how they can kick this off.”