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The utility computing payoff

By virtualizing its Java application infrastructure, Wachovia Bank achieves a 300%-plus ROI.

By Julie Bort , Network World , 09/25/2006

While others talk about how utility computing and a services orientation could affect IT delivery, Wachovia Bank is a living demonstration. The financial services giant, which controls assets of about $541 billion, wins membership to the 2006 Enterprise All-Star Award list for its application virtualization project.

Completed in May, this is the latest effort in an ongoing virtualization strategy, says Tony Bishop, senior vice president and director of product management for Wachovia, in Charlotte, N.C. The project relies on DataSynapse's FabricServer, which distances Java applications from application servers so they can be parceled out onto any available application server at run-time.

The project flowed naturally from five years of advanced network work. Wachovia became one of the first commercial users to deploy business applications on a grid-computing architecture with the implementation of DataSynapse GridServer (and consequently became one of the vendor's institutional investors). By 2005, the grid had become Wachovia's standard application server. Today it operates on 3,000 dedicated engines with an additional 5,000 CPUs that can be tapped as needed, Bishop says.

All this is the basis for Wachovia's service-oriented infrastructure (SOI), which Bishop likens to an IT utility. For example, when a trader accesses an application, the SOI distributes, brokers and manages the various services involved in the application, ensuring that each service meets performance and business objectives. When traders are asking to price deals, "you want to give a higher-margin deal better service," Bishop says. "GridServer and FabricServer become the mechanisms that let us do that across distributed and transactional applications."

In all, for every $1 invested in the SOI, Wachovia reports a $3 to $4 return.

All virtual layers

The FabricServer deployment was a significant step in the evolution of Wachovia's SOI because it virtualizes Wachovia's mission-critical Java 2 Platform Enterprise Edition (J2EE) applications. At run-time, FabricServer distributes an application to an available server. FabricServer handles the application's configuration needs and eradicates conflicts, even if two or more applications are sharing the same server.

"Everything on top of the network – even the network – should be virtualized."
- Tony Bishop, senior vice president and director of product management, Wachovia

Because application servers can be better utilized, fewer are needed. This adds up to significant savings. While the bank didn't perform a detailed cost-savings analysis (because it has years of experience with savings achieved from virtualization), Bishop estimates annual savings from this project will tally near the seven-digit mark. This from reduced hardware and maintenance expenses. Plus, he says application programming efficiency is up by 30%, application performance is up fivefold and throughput is 50% faster since FabricServer was implemented.

Grid computing and a virtualized Java application environment represent only a portion of Wachovia's SOI, however. The bank also uses VMware for servers not part of the FabricServer project, and has virtualized its data layer, relying on Tangosol's Coherence for data access and Composite Software's Composite Information Server (CIS) to virtualize the data-query process.

Coherence gives Wachovia's SOI a mechanism to track where data is stored so J2EE application developers do not have to worry about specific file locations when writing new services. CIS virtualizes the query itself, draping a service in whatever custom application-interface formatting it needs to interact with other applications.

"So you have a data query that's virtual; you have a data-query environment that's virtual, and that ties right in with our processing virtualization with GridServer and FabricServer. And VMware partitions and makes virtual different images of the operating environment," Bishop says.

The SOI next will tie into a virtualized storage infrastructure that Wachovia engineers are working on now, he says. He sums up the goal: "Everything on top of the network, even the network, should be virtualized."