

E-Commerce Leader Deploys GigaSpaces for Faster Processing

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The performance, reliability and scalability advantages of grid computing are here today for a world leading e-commerce company, with daily volumes exceeding \$1 billion.

Outstanding throughput — plus near 100% availability and virtually flawless order processing — have enabled yearly exponential growth rates in transaction volumes measured in billions of dollars per year. In the future, this company wants to maintain those performance levels even in the face of far higher volumes. That’s why it has adopted a distributed infrastructure based on open industry standards — specifically JavaSpaces and its GigaSpaces implementation.

The company provides a complete end-to-end online order-processing platform, connecting buyer and seller through an unbroken worldwide virtual supply chain. It’s a classic example what e-commerce does better than more conventional models: Give the customer the right product at the right price with minimal transaction delays and costs.

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Over half of all orders are filled within one second.

It took this company less than a year to move to its new grid-based distributed environment.

The lead architect on the project reports the transition went extremely well. “Once we decided on GigaSpaces it was just a matter of a day to plug it in,” he states. “GigaSpaces implements a standard JavaSpaces interface. It was very easy.”

That’s because the company followed a completely vendor independent implementation strategy — and GigaSpaces is 100% JavaSpaces compliant.

“The Best One”

“We had been implementing the system for nine months using an open-source approach,” states this project leader. “And during that time we swapped different vendors in and out. We tested different implementations as we coded. One reason we did that is so we would not get locked into any specific vendor. Another reason is that we wanted to pick the best one. So we were actually benchmarking the various implementations as we went along.”

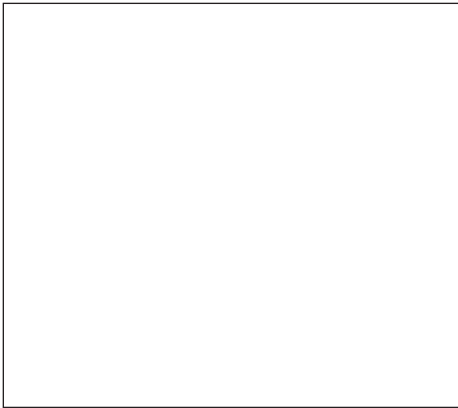
Another critical technology piece is Rio, also a Java standard GigaSpaces supports. Rio facilitates deployment and management of distributed applications — specifically applications that use JavaSpaces and other technologies under Sun’s Jini umbrella.

According to the project leader, “Rio is the core of our system. It is the underlying infrastructure that helps us manage all these distributed objects. GigaSpaces just plugs right into Rio.”

More Scalability, Greater Fault Tolerance

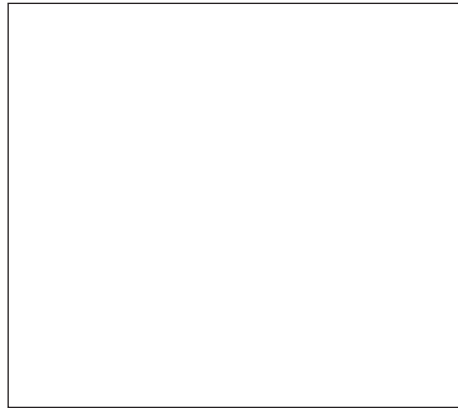
This ability to run different parts of applications on different machines makes the applications much more scalable and fault tolerant, this project leader states. “We can add or remove resources as we need them and still keep the applications running.”

Implementation and Business Benefits



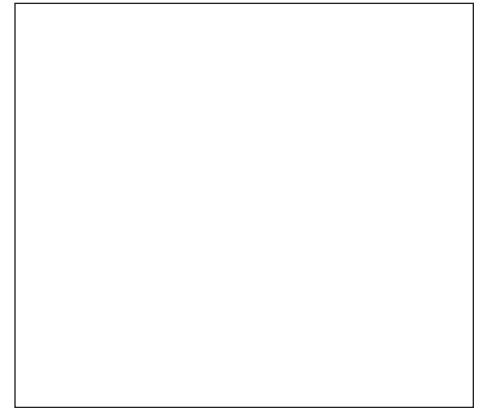
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That's not what happened before GigaSpaces:

“One thing we did before was partitioning. We assigned one set of users on this machine and another set of users on that machine and if we had a problem then at least we only had a partial failure. But it wasn't transparent failover. Having a distributed system allows us to shut down parts of the system without taking the whole company offline. We like to be able to take down a whole machine and have everything function as if nothing happened.”

GigaSpaces is currently deployed to support the company's main e-commerce application and the project leader intends to expand its use to the rest of the company. One obvious candidate is to replace its Messaging Infrastructure. For example, GigaSpaces does distributed memory, which means I can have a distributed messaging implementation. That removes a bottleneck and further improves performance”.

“We don't want to trade growth for efficiency,” he adds. “That's why fault tolerance shouldn't be about detecting failure on one machine and then recovering on another machine — or multicasting an operation so that it runs simultaneously on multiple machines. For us, those kinds of tradeoffs no longer work. We want everything to improve as we grow.”



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