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June 08, 2011

## Xcelerit Puts Monte-Carlo Simulations on Steroids Using Supermicro GPU Server

Demonstration of the world's fastest Monte-Carlo option pricing computation

June 8 -- Xcelerit today announces the world's fastest execution of a Monte-Carlo option pricing algorithm (Black-Scholes model) on a single unit rack-mounted system.

The benchmark was carried out on a new compact 1U Supermicro 6016GT-TF-FM209 GPU SuperServer equipped with two brand-new NVIDIA Tesla M2090 GPUs driven to the max using Xcelerit's software development kit.

Monte-Carlo methods are used extensively by the financial engineering community in situations where conventional analytical formulae are impractical or do not exist. The method involves repeated random sampling to generate the results and is a voracious consumer of compute power.

For situations like this, Supermicro, a leading supplier of high-performance, high-efficiency server technology can supply highly concentrated compute capabilities in the form of their GPU SuperServer family. Chris Butler, Enterprise Sales Manager for Supermicro in the UK commented on today's result: "We were delighted to be involved in today's demonstration which really gives our 6016GT server a good work-out."

The Supermicro 6016GT server simply bristles with advanced compute capability. In the driving seat are two Intel Xeon X5670 processors. What really impacts on the computation though are the two NVIDIA Tesla M2090 cards slotted into the SuperServer chassis. The GPUs on these cards each can achieve up to 1.3TFLOPS in single precision mode and can be used to split up the computation over several hundreds of thousands of threads.

Simply making all this compute power available is not enough though as Hicham Lahlou, CEO of Xcelerit notes. "Splitting up a complex problem so that it can be executed in parallel across all of these CPUs and GPUs is a task that programmers do not find easy, but our Xcelerit SDK really simplifies this." In addition, it is both difficult and time-consuming to develop separate code-bases to take advantage of each different platform technology that comes along and Xcelerit addresses this problem. "The beauty of our SDK is that users need only one codebase and the tools provided will ensure that it runs seamlessly on many platforms," comments Xcelerit's Lahlou. "These include multi-core CPUs, GPUs, and combinations of these in a cluster."

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Investment banks can directly benefit from this blindingly fast option pricing computation. Results can be known earlier, giving a competitive edge to the bank over its competitors when making decisions.

In today's demonstration, Xcelerit ran a Monte-Carlo simulation based on a Black-Scholes model to evaluate the prices for European style options. Using all available CPUs and GPUs in the 6016GT, the Xcelerit code ran almost 2,500 faster than an equivalent traditional sequential implementation running on a single CPU core, leading to an earth shattering speed of 30 billion paths (or experiments) per second. With this compute power, the prices of 1 million options were evaluated with 500,000 simulation paths in less than 17 seconds.

"Our system used the fastest 1U server in the world and we drove it to the max using the Xcelerit SDK," says Xcelerit's Lahlou, "That's why we know we have a record breaker on our hands."

For more information on Xcelerit's tools and services for efficient multi-core computing, visit <http://www.xcelerit.com>. For more information on Supermicro's complete line of high-performance GPU SuperServers, visit <http://www.supermicro.com/GPU>.

#### About Xcelerit

Xcelerit is a software tools company, committed to providing solutions to close the widening gap between hardware evolution and software performance. The company is targeting industries facing compute-intensive problems including: computational finance, oil & gas, and data analytics. Xcelerit is headquartered in Dublin, Ireland. More information at <http://www.xcelerit.com>.

#### About Super Micro Computer, Inc.

Supermicro (NASDAQ: SMC), the leading innovator in high-performance, high-efficiency server technology is a premier provider of advanced server Building Block Solutions for HPC, Data Center, Enterprise IT and Embedded computing worldwide. Supermicro is committed to protecting the environment through its "We Keep IT Green" initiative by providing customers with the most energy-efficient, environmentally-friendly solutions available on the market.

Source: Xcelerit



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National Laboratory (LANL) with yet another high performance computing cluster. The new Mustang supercomputer, installed there last month, will give the lab another 353 teraflops of number crunching capacity. [Read more...](#)

#### IBM Makes Bet on Distributed Computing with Platform Buy

Platform Computing will soon be under new management. IBM announced on Tuesday that it intends to buy the Toronto-based company and fold it into its Systems and Technology Group. If all goes according to plan, the deal will close in Q4, ending Platform's 19-year reign as an independent, privately held company. [Read more...](#)

#### GPUs Will Morph ORNL's Jaguar Into 20-Petaflop Titan

Jaguar's days as a CPU-only supercomputer are numbered. Over the next year, the 2.3 petaflop machine at the Oak Ridge National Lab will be upgraded by Cray with the new NVIDIA "Kepler" GPUs, producing a system with about 10 times Jaguar's peak performance. The transformed supercomputer will be renamed Titan and should deliver in the neighborhood of 20 peak petaflops sometime in late 2012. [Read more...](#)

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