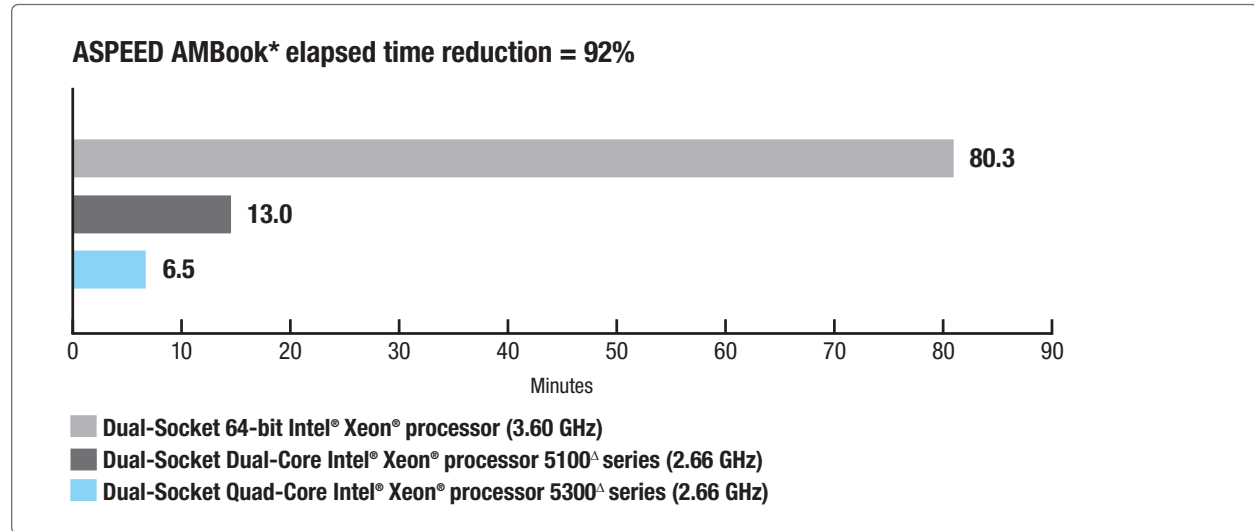


# Quad-Core Processing Increased Capacity for More Fine-Grained Analysis and Heavyweight Processes

“Quad-core processing takes computing performance, power and innovation to new heights – as clearly demonstrated when application run times were reduced from 80 minutes on the dual 64-bit Intel® Xeon® processor to just six minutes on the Quad-Core Intel® Xeon® processor 5300<sup>Δ</sup>.”

Kurt Ziegler, executive vice president for ASPEED Software



AMBook\* is an application that calculates the price and risk of a portfolio of American options. This particular implementation of the application demonstrates many of the characteristics of risk and pricing runs. The model uses a trinomial tree algorithm to calculate the present value of an option and the risk measures (delta, gamma, vega, theta, rho) are calculated by using two-sided finite difference scheme. In this particular portfolio problem, the algorithm is inside the option class. The trinomial algorithm is frequently used to value American options because it avoids the need to introduce more complex considerations surfaced by approaches that use PDE, finite difference or mesh. ASPEED has enabled a single-thread version of this model using ASPEED's ACCELERANT\* software so that it is virtualized and can exploit parallel computing and distributed

platforms. ASPEED uses this version of AMBook as a benchmark tool to see the benefits of various platforms because the virtualized application automatically and dynamically optimizes the performance to whatever platform it runs on. It was used to compare the latest Quad-Core Intel® Xeon® processor performance with other models.

ASPEED tested a single instance running on a dual processor and then on a DP dual core, and finally on DP quad core, with the quad core yielding an elapsed time reduction of over 12X (from 80.3 minutes to 6.5 minutes) through the processing capabilities provided by the Quad-Core Intel Xeon processor 5300 and the application of ASPEED's ACCELERANT.

For more information, visit [www.aspeed.com](http://www.aspeed.com) or contact [info@aspeed.com](mailto:info@aspeed.com).



Solution provided by:



Benchmarks compared dual-socket servers with 64-bit Intel® Xeon® processors 3.60 GHz 800 MHz FSB and 4 GB RAM with Dual-Core Intel® Xeon® processors 5100 series 2.66 GHz with 1333 MHz FSB and 4 GB of memory with Quad-Core Intel® Xeon® processor 5300 series 2.66 GHz with 1333 MHz FSB and 4 GB of memory; all were running Red Hat Linux.\*

<sup>Δ</sup>Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See [http://www.intel.com/products/processor\\_number](http://www.intel.com/products/processor_number) for details.

\*Other names and brands may be claimed as the property of others.

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