IBM System x3755 delivers high performance through innovative design

x3755 posts leadership SPECfp_rate2006 score for a 4-socket system

April 10, 2007 ... The IBM® System x™ 3755 server is an attractive platform for high performance computing, particularly for Linux® clusters where clients value high performance, manageability, and optimal price/performance per watt. The x3755 is ideal for applications such as weather simulation, financial analysis, CAD and oil exploration, all of which take advantage of the performance delivered with this system.

The x3755 is a 4-socket system that offers state-of-the-art AMD dual-core processors and large memory capacity with IBM Xcelerated Memory Technology™, which allows all eight memory DIMMs per processor to run at the maximum speed of 667MHz. The competition clocks memory down to 533MHz after more than four DIMMs are populated.

Exploiting the innovative design of the IBM CPU Pass Thru card, the x3755 out-performed the HP DL585G2 by more than 27% using 3 processors against their 4 processors in SPECjbb2005 measurements conducted by VeriTest. (1) The IBM CPU Pass Thru card enables flexible configurations in increments of 1, 2, 3, and or 4 processors to provide near-linear performance. The same VeriTest paper also shows a head-to-head comparison of the HP DL585G2 and the IBM System x3755. Each system was configured with 4 processors. The x3755 outperformed the HP DL585G2 by more than 10%, demonstrating superior design and functionality.

In SPEC CPU2006 measurements, the x3755 achieved a leadership SPECfp_rate2006 score for a 4-socket server. The x3755 used the dual-core AMD Opteron™ Model 8222 SE processor (3.0GHz, 1MB L2 cache per core—4 processors/8 cores/8 threads) and SUSE Linux Enterprise Server 9 SP3. (2) The other scores are competitive for a 4-socket AMD system on the SPEC CPU2006 benchmark suite.

The scores in the following tables are the first SPEC CPU2006 results published for this processor model.

SPEC CPU2006 Benchmark	x3755 – Dual-Core AMD Opteron Model 8222 SE Processor (3.0GHz, 2MB L2 Cache)
SPECint2006	12.6
SPECint_rate2006	95.4
SPECfp2006	13.8
SPECfp_rate2006	95.7

SPEC CPU2000 was released six years ago. Since then, advances in technology and the resulting improvements in hardware and software have made it necessary to ensure that the benchmarks are also improved so that they keep pace. SPEC CPU2006 is designed to measure more technologically advanced systems; hence, these results should not be compared with CPU2000 results.

Results are current as of April 10, 2007. The scores have been submitted to SPEC for review and will be posted on their Web site upon successful completion of the review. View all published results at www.spec.org.

(1) "IBM x3755 AMD Opteron Server CPU Performance and Xcelerated Memory Technology Study," prepared under contract from IBM System x, and completed in January 2007. To view the report, click Study.

(2) Planned availability for the x3755 model using the dual-core AMD Opteron Processor Model 8222 SE (3.0GHz, 2MB L2 cache) is May 25, 2007.