

SPEC releases power-performance benchmark for servers

WARRENTON, Va., December 11, 2007 – The Standard Performance Evaluation Corp. (SPEC) has released SPECpower_ssj2008, the first industry-standard benchmark that measures power consumption in relation to performance for server-class computers.

SPEC has designed SPECpower_ssj2008 to be used as both a benchmark to compare power and performance among different servers and as a toolset to improve server efficiency.

“The power efficiency of servers has become a high-priority issue for the IT industry, computer manufacturers, and governments,” says Klaus-Dieter Lange, chair of the SPECpower committee. “SPEC is taking its proven methodologies for ensuring consistent, fair and repeatable performance measurement and applying them to power consumption.”

SPEC member companies active in developing the new power-performance measurement standard include AMD, Dell, Fujitsu Siemens Computers, HP, Intel, IBM, and Sun Microsystems. Associate members participating in the effort include University of California – Berkeley, Lawrence Berkeley National Laboratory, and Virginia Polytechnic Institute and State University.

About the benchmark

SPECpower_ssj2008 reports power consumption for servers at different performance levels – from 100-percent to idle in 10-percent segments – over a set period of time. The graduated workload recognizes the fact that processing loads and power consumption on servers vary substantially over the course of days or weeks. To compute a power-performance metric across all levels, measured transaction throughputs for each segment are added together, then divided by the sum of the average power consumed for each segment. The result is a figure of merit called “overall ssj_ops/watt.”

The benchmark workload represents typical server-side Java business applications. The workload is scalable, multi-threaded, portable across a wide range of operating environments, and economical to run. It exercises CPUs, caches, memory hierarchy, and the scalability of shared memory processors (SMPs), as well as implementations of the Java Virtual Machine (JVM), JIT (just in time) compiler, garbage collection, threads, and some aspects of the operating system.

The minimum equipment for SPEC-compliant testing is two networked computers, plus a power analyzer and a temperature sensor. One computer is the system under test (SUT), the other a controller system where power, performance and temperature are captured for reporting. A typical test run for SPECpower_ssj2008 takes about 70 minutes using default settings.

“A critical first step”

Representatives from the Environmental Protection Agency (EPA) and the Consortium for Energy Efficiency (CEE) have been monitoring SPEC’s progress in developing power-performance evaluation tools and see the release of this first benchmark as a significant step forward.

“The ability to measure power consumption in a consistent way across multiple server platforms is an important element of the Energy Star program,” says Andrew Fanara, director of the Energy Star Product Specifications Development Team for the EPA. “SPEC has taken a critical first step to give server vendors and their customers a standardized benchmark tool that elevates power efficiency in the performance evaluation process.”

“The Consortium for Energy Efficiency is reviewing SPEC’s latest release,” says Jason Erwin, who manages and supports commercial programs for CEE. “A test procedure for server power performance that is accepted by the industry could enable improved customer guidance concerning potential energy savings. CEE benefits by working with organizations like SPEC to ensure that industry-endorsed test methods are available and accessible.”

Available immediately

SPECpower_ssj2008 is available immediately from SPEC for \$1,600; discounts are available for qualified non-profit and educational institutions. More details and order information are available at www.spec.org/specpower or through e-mail at info@spec.org.

About SPEC

SPEC is a non-profit organization that establishes, maintains and endorses standardized benchmarks to evaluate performance for the newest generation of computing systems. Its membership comprises more than 80 leading computer hardware and software vendors, educational institutions, research organizations, and government agencies worldwide. For more information, visit www.spec.org or contact the SPEC office by phone: 540-349-7878, fax: 540-349-5992, or email: info@spec.org.

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