IBM eServer 325 delivers top score on SPECchemM2002 benchmark

December 11, 2003 ... The IBM® @server® 325, a 2-way SMP server designed for high-performance computing, continues to deliver leadership performance running SPEC CHEM2002, one of three benchmarks in the SPEC HPC2002 suite. (1)

In a 32-node (64-processor) configuration, the e325, powered by the AMD Opteron™ 246 2GHz processor, posted a score of 51.4. This is the fastest result ever achieved on SPECchemM2002. It beat HP's 24-node cluster of 2-way HP rx2600 servers, which used a total of 48 Intel® 1.5GHz/6MB Itanium™ 2 processors.

The e325 server is designed for the demanding environments of scientific and technical computing customers. Its high computing capability and an integrated memory controller eliminate the bottleneck issues of processor-to-memory bandwidth. The e325 uses the AMD Opteron 2GHz processor, which not only enables customers to achieve greater levels of application performance, but also protects their investment when they decide to migrate their existing 32-bit applications to 64-bit. And, the compact 1U rackmount design enables customers to deploy substantial computing power in a small footprint.

Results referenced are current as of December 11, 2003. All results for SPEC HPC2002 are available at www.spec.org.

(1) The benchmarks in the HPC2002 suite are derived from actual HPC applications and application practices, and measure the overall performance of high-end computer systems, including the computer's processors (CPUs), the interconnection system (shared or distributed memory), the compilers, the MPI and/or OpenMP parallel library implementation, and the input/output system. Each benchmark has both a Small and a Medium workload. The three benchmarks in the HPC2002 suite are:

- SPEC CHEM2002, which is based on a quantum chemistry application called GAMESS; its performance metrics are SPECchemS2002 and SPECchemM2002.
- SPEC ENV2002, which is based on a weather research and forecasting model called WRF. It has two performance metrics, SPECenvS2002 and SPECenvM2002, one for each dataset size.
- SPEC SEIS2002, which represents an industrial application that performs time and depth migrations used to locate gas and oil deposits; its performance metrics are SPECseisS2002 and SPECseisM2002.

SPEC HPC2002 metrics represent the number of successive benchmark runs that can be completed in a 24-hour period on a system being tested. Results can be compared for different parallel architectures, shared-memory or distributed-memory (cluster). This allows users to compare performance based on full applications across a range of modern high-performance architectures.

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The benchmark performance results for IBM systems as presented in this document were obtained in a rigorously controlled environment. The extent to which a customer can achieve similar results is highly dependent on how closely the benchmark approximates the customer's application. The relative performance of systems derived from this benchmark does not necessarily hold for other workloads or environments. Extrapolations to any other environment are not recommended.

Benchmark results are highly dependent upon workload, specific application requirements, and systems design and implementation. Relative system performance will vary as a result of these and other factors.

Therefore, these benchmark results should not be for making critical capacity planning and/or product evaluation decisions for a specific customer application.