

IBM eServer 325 continues to set pace for high-performance computing with new results on SPEC HPC2002

November 12, 2003 ... Building its record-setting SPEC CHEM2002 results announced in October, the IBM® eServer® 325 has delivered leadership scores on the Small and Medium workloads of SPEC ENV2002. (1)

The e325 server posted a score of 2,375 – the fastest result ever achieved on SPECenvS2002 – using a 4-node cluster with eight AMD Opteron™ 246 2GHz processors.

Using a 24-node cluster with 48 processors, the e325 server posted a score of 189 on SPECenvM2002. The powerful e325 cluster used 16 fewer processors to easily overtake the score of 175 achieved by the 64-processor SGI 3800 64X 600MHz R14000A.

The e325, a 2-way SMP 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 November 12, 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 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 CHEM2002, which is based on a quantum chemistry application called GAMESS; its performance metrics are SPECchemS2002 and SPECchemM2002.
- 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.

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