IBM eServer 325 delivers high performance at affordable price

January 22, 2004 ... Building on its previous performance achievements, the IBM® @server® 325 has delivered another leadership score, this time on SPEC ENV2002. (1) The e325 cluster delivers high performance for significantly less cost than the similarly performing HP Integrity rx2600 cluster – making the e325 the ideal choice for demanding scientific and technical computing environments. (2)

The e325 server posted a score of 310 – the fastest result ever achieved on SPECenvM2002 – using a 35-node cluster that employed the power of 70 AMD Opteron™ 246 2GHz processors.

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 associated with 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 helps protect 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 January 22, 2004. 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.

(2) For a comparison of performance where price is factored in, see the white paper:
“A Comparison of the IBM eServer 325 with the HP Integrity rx2600.”

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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.