IBM Previews Faster Off-The-Shelf Supercomputer

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IBM announced today details on a planned high-density POWER5 processor-based system for high performance computing. Unveiled today at International Supercomputer Conference 2005, the planned 16-way IBM eServer p5 575 cluster node is capable of sustaining 87.3 Gflop/s of performance and can achieve up to fifty-five percent greater speed than the 8-way IBM eServer p5 575 cluster node, which was introduced last Fall.

The 16-way p5-575 cluster node marks a major step in the evolution of high-powered, off-the-shelf building blocks that are tailored to meet the demands of a broad range of compute-intensive or memory bandwidth-intensive applications. With up to 192 processors installed in a single twenty-four inch wide system frame, this ultra-thin p5-575 can be used to advance high performance computing projects in the areas of engineering problem solving, drug design, oil reservoir modeling and weather forecasting.

"IBM engineers have surpassed expectations with this 16-way system that combines a high-density design in an entirely new and slimmed down form factor," Karl Freund, vice president of IBM eServer pSeries. "When clustered together, these systems can forever change the way users build, manage and utilize traditional rack-mount servers for data-intensive supercomputing projects."

The planned ultra-dense, dual-core POWER5 processor-based system has a 2U enclosure, and can deploy up to 12 nodes in a single 42U

system frame, offering users supercomputing power in an extremely dense and cost-effective system. This p5-575 will use packaging innovations to provide high-speed connections between 16 POWER5 processors. New levels of high performance computing may also be gained through shared memory and high-bandwidth connections between nodes, as well as virtualization and logical partitioning technologies. Although the planned 16-way node will significantly improve the speed of the smaller, 8-way p5-575 system, the 8-way system will continue to be the preferred platform for memory-intensive applications for large-scale data mining and business intelligence projects.

The Max Planck Society is leveraging the power and performance of the IBM eServer p5 575 cluster node. The Max Plank Society is doubling its computing power with 86 p5-575 nodes, offering researchers 10 TeraFLOPS of power to advance nanotechnology and environmental protection research at the Garching Computing Center.

A cluster of 256 8-way p5-575 nodes has also been deployed at Lawrence Livermore National Laboratory, where scientists report sustained a performance of 13.090 TeraFLOPS. This system ranks #13 on the list of TOP500 Supercomputer sites.

The new 16-way 1.5 GHz eServer p5 575 cluster node is expected to be available later this year through IBM Worldwide Sales and Distribution and IBM Business Partners. The new system is planned to support for AIX 5L V5.2, AIX 5L V5.3, SUSE LINUX® Enterprise Server 9 (SLES 9) for POWER(TM) and Red Hat Enterprise Linux AS 3 (RHEL AS 3) for POWER operating systems independently or simultaneously through logical partitioning. Additionally, the p5-575 is planned to have the dual-core implementation of IBM POWER5 processor technology -- with 36MB of dedicated L3 cache memory for each dual-core. The system will also include two hot-swappable SCSI disk drive bays located at the rear of the enclosure.