IBM Unleashes Next Generation Supercomputer

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IBM today offered clients a closer glimpse of the next generation p5-575 supercomputer with a pre-release version of the upgraded high-density POWER5+ processor-based server system that can be easily clustered for high performance supercomputing.

Previewed today at the SC2005 Conference in Seattle, the new POWER5+ p5-575 uses the same ultra-thin cluster building-block package and will extend on the success of the POWER5 p5-575 -- a system which has been at the core of supercomputing solutions that power work in areas such as genome research, automotive crash-testing, petroleum exploration, and oceanographic, atmospheric and energy studies.

"Today we have offered the supercomputing community a glimpse into stunning new level of performance and price/performance, as we introduce POWER5+ processor technology and advanced memory to the p5-575," said Karl Freund, vice president, IBM pSeries. "IBM engineers have pushed server design to a new level -- combining innovative, high-density design with cutting edge processor and memory technologies to enhance speed and performance in a remarkably dense package."

IBM intends to deliver extraordinary innovations in the new p5-575, maintaining the system at the forefront of 'off the shelf' supercomputing technology. The new systems use ultra-dense packaging technology innovations to provide high-speed connections between advanced DDR2 dual data rate memory and eight (2.2 GHz) to sixteen (1.9 GHz)

POWER5+ processors. These new developments result in a near doubling of system memory bandwidth, and provide new levels of performance required for memory bandwidth intensive high performance computing.

The new technology will allow up to 128 sixteen-processor p5-575 cluster nodes to create a single high-performance system with over 2000 CPUs and stunning performance capabilities -- which when released will bring higher-density configurations and ease of administration to IBM clients with intense supercomputing application needs.

The European Centre for Medium-Range Weather Forecasts (ECMWF) supplies meteorological information to national weather services and provides specialized services to governmental users. ECMWF currently relies on an IBM supercomputer with two large pSeries clusters. ECMWF will be one of IBM's first customers for large clusters incorporating the new POWER5+ p5-575 systems with initial implementation planned during the first half of 2006.

Built on IBM's industry-leading 64-bit POWER5+ technology, the p5-575 is planned to be available with 1.9 GHz and 2.2 GHz POWER5+ processors and support for AIX 5L Version 5.2 and 5.3, as well as Linux operating systems. The 8-way p5-575, at 2.2 GHz, will have a distinctive single-core implementation of IBM POWER5+ processor technology -- with 36 MB of dedicated L3 cache memory for each core. While the versatile p5-575 nodes will be able to be clustered together for computationally complex supercomputing applications, they will additionally be well-suited for deployment in support of large scale data mining and business intelligence applications.

Introduced in October, POWER5+ is a "server on a chip" containing two processors, a high-bandwidth system switch, a large memory cache and I/O interface. POWER5+ is based on technologies that enable IBM

servers to provide customers improved performance and decreased IT footprint size through logical partitioning. With the POWER5+ processor, IBM is enhancing the features and speed that have made the POWER5 processor the measuring stick of UNIX servers, while offering customers the price performance value they need to justify a long-term investment in their data centers.

According to IDC, IBM POWER servers have seen remarkable revenue share growth and the POWER architecture is now an industry leading 64-bit architecture. Since the announcement of the POWER5 processor in August 2004, IBM has increased its UNIX revenue share by 31.8 percent according to IDC. In Q205, according to IDC, IBM was the number one UNIX server vendor based on revenue share, compared to Sun and HP.

The new 8-way and 16-way POWER5+ System p5 575 is expected to be available during 1H 2006 through IBM Worldwide Sales and Distribution and IBM Business Partners. Support for AIX 5L V5.2, AIX 5L V5.3, SUSE Linux Enterprise Server 9 (SLES 9) for POWER and Red Hat Enterprise Linux AS 4 (RHEL AS 4) for POWER operating systems independently or simultaneously through logical partitions is currently available for the p5-575.

IBM Cluster 1600 is a highly scalable cluster solution that will support up to 128 p5-575 nodes with up to 2048 processors. p5-575 clusters can be interconnected by the IBM pSeries High Performance Switch (HPS), Ethernet, or 4X InfiniBand switch technologies.

Source: IBM