

IBM Delivers Unparalleled Technology to Intel-Server Segment

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IBM introduced the eServer X3 architecture, the culmination of a three year, one hundred-million-dollar development effort, to bring mainframe-inspired capabilities and sophisticated high-end technology to the company's next-generation 64-bit Intel Xeon processor-based xSeries servers. The new X3 architecture provides up to 38 percent higher four-way performance than the previous generation of Intel Xeon processor-based systems, enabling businesses to simultaneously run 32-bit and 64-bit applications and more rapidly process massive amounts of data.

IBM also announced the new IBM eServer xSeries 366, the first in a planned IBM family of dual-core-capable Intel-based server offerings.

"IBM today delivers the most advanced technology ever available on an Intel server platform," said Susan Whitney, general manager for eServer xSeries, IBM Systems and Technology Group. "The new xSeries product family based on X3 draws from our mainframe expertise and provides unprecedented benefits for customers seeking the most sophisticated capabilities and performance from their software applications."

The third generation of IBM's Enterprise X-Architecture design, X3 is optimized for superior server consolidation and enterprise application software, and uses IBM's high-end Virtualization Engine technology to enhance virtualization capabilities. IBM's X3 architecture offers investment protection for IBM customers with its family of pay-as-you-grow Intel-based servers by supporting both 32-bit and 64-bit applications on the same platform so clients can migrate to 64-bit as

needed.

Formerly known as "Summit" prior to its 2001 introduction, Enterprise X-Architecture has been well received by customers and has helped IBM capture market leadership for the eight-way and above Intel server market segment. In fact, IBM went from 18 percent worldwide market share to nearly 60 percent in the eight-way space. Additionally, IBM has consistently been the fastest-growing Intel-server vendor in the world since 2001, and grew revenue in the Intel server market segment by 26 percent year-to-year for 3Q04.*

The eServer xSeries 366 is built with 64-bit Intel Xeon processors MP and platform capabilities including support for DDR2-based Active Memory and Active PCI-X 2.0, the new standard for high performance server I/O. This platform, combined with IBM's chipset technology expertise, can improve overall system performance compared to the previous generation by up to 38 percent when 64GB of memory is used.

The x366 will offer a significant price/performance improvement over prior generations, eliminating the price discontinuity between two-way and four-way commercial platforms. The x366 is optimized for server consolidation and enterprise applications, including business software such as IBM DB2 Universal Database, SAP, Microsoft SQL Server and Oracle.

IBM Hurricane chipset technology leadership

Hurricane, the third-generation Enterprise X-Architecture chipset, is the heart of X3, providing the x366 with an integrated processor and memory controller that significantly reduces memory latency, improving response times and overall system performance for customers. The XA-64e chipset was specifically designed for xSeries by a cross-platform architectural team who has expertise from IBM's mainframe heritage.

Some key advantages available exclusively from the Hurricane chipset include:

- Significant improvement in price-performance versus previous generation x365.
- Substantial improvement in processor-to-memory latency reduction critical for commercial enterprise workloads.
- Virtual XceL4v Dynamic Server Cache delivering intelligent caching with memory latency so low that a physical L4 cache is not necessary.
- Embedded Dynamic Random Access Memory (DRAM) with an integrated snoop filter and remote directory.
- Three scalability ports, each operating at 6.4 GB/s, among the fastest in the industry.
- Active PCI-X 2.0 up to 266 MHz - double the previous generation with backward compatibility to legacy PCI and PCI-X.

X3 Enables New Performance Records - x366 Beats Industry Benchmarks

The x366 has set a new performance record for 4-way Intel Xeon processor-based servers on the TPC-C online transaction processing benchmark. The x366 achieved 141,504 tpmC (transactions per minute C) , delivering 48% better performance than the HP ProLiant DL580G2/3.0GHz system and 8% better than the HP ProLiant DL585 O850 2.6GHz system.

The x366 also set a new performance record for 4-way servers on the 300GB TPC-H business intelligence benchmark. The x366 achieved a Composite Query-per-Hour metric of 7,731.9 QphH@300GB, ranking it in the Top Ten TPC-H by Performance for the 300GB database.

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