IBM's New Generation of Intel®-based Servers, Software Cuts Through Data Center Chaos

Less expensive to run and simpler to manage, IBM launches new generation of x86 System x racks, blades, iDataPlex technology, and management software to create a dynamic infrastructure

ARMONK, NY – March 30, 2009 – IBM (NSYE: IBM) today unveiled new generation of Intel Xeon processor 5500 series-based System x™ servers and software that enable customers to more easily roll out virtualized computing and significantly reduce growing operating costs with higher performance, simplified management and increased utilization.

With the new systems, IBM engineers addressed key challenges in today's data center, where hefty costs for power usage and IT management pile-up, while processors sit idle or under-utilized. To help enable a more dynamic infrastructure, IBM's four new x86 rack servers and blades feature unique designs – such as lower wattage requirements – that can slash energy costs up to 93 percent.[1] At the same time, the new System x servers boast double the compute performance in some models, and support more memory, storage and I/O to help customers of all sizes ease the transition to highly efficient virtualized computing resources. System x blades and racks lead the industry with 96GB to 1TB memory options.

"The world is going through changes that require IT professionals in every industry to consolidate, virtualize and support a variety of different platforms – a mix of operating systems, hardware, middleware and applications. And there is no one-size-fits-all solution for most businesses," said Adalio Sanchez, general manager, IBM System x. "Not only do these announcements continue our strong commitment to invest in and deliver leading x86 servers that address our customer's needs, System x supports multiple architectures and is designed to lower ownership costs and enable new paradigms such as Cloud computing."

In addition to hardware innovations, IBM announced new management software to complement Systems Director 6.1, which enables clients to automatically manage virtual and physical assets across platforms. IBM Power Systems, System z, storage and non-IBM x86 servers are all supported, with a potential cost savings in management costs of up to 44 percent.

"VMware and IBM have worked closely together for many years to leverage each others' expertise to increase IT efficiency, control and choice for our customers," said Brian Byun, vice president of global alliances at VMware. "With unique scale-up capacity supporting up to 96 cores and the ability to use up to 1 TB of memory, IBM's System x servers complement VMware's upcoming next-generation VMware vSphere family of products and are an excellent choice for customers deploying private cloud environments."

New IBM Servers: Lower Ownership Costs Through Innovation

This new generation of System x technology maximizes the power and performance with a new generation of intelligent server processors – the Intel® Xeon® Processor 5500 series.

IBM BladeCenter HS22
A no-compromise blade with breakneck speed, the two-socket IBM BladeCenter HS22 offers outstanding performance, flexible configuration options and simple management in an efficient server designed to run a broad range of workloads. Among other features, the completely revamped HS22 features three times as much memory as its predecessor, which allows the HS22 to process twice as many transactions per minute. In fact, customers can achieve as high as a 11-to-1 consolidation ratio migrating older rack and blade servers onto HS22 blades, while saving over 93 percent in energy costs alone.[1] In addition, two hot-swap internal storage bays offer customers a choice of SAS, SATA, or solid state options. The HS22 offers best-in-class reliability and is fully compatible with all BladeCenter enterprise and office chassis, protecting the investments customers have already made in BladeCenter.

IBM System x3650 M2 and x3550 M2
Built with all-new, energy-smart designs to simplify power distribution and reduce energy loss, these two-socket enterprise servers feature lower wattage, highly efficient power supplies exceeding the "80 Plus Gold" standard, counter-rotating fans, altimeters, and advanced power management. These innovations translate into reducing energy consumption and lowering annual energy costs for a single enterprise class data center.[2] They also feature outstanding performance delivering computing speeds up to 6.4GT/s, design redundancy and unique security options.

IBM System x iDataPlex dx360 M2
The iDataPlex dx360 M2 is specifically designed for data centers that require high performance, yet are constrained on floor space, power and cooling infrastructure. The dx360 M2 provides up to five times the compute density versus 1U rack servers in the data center, and can cool the data center 70 percent more efficiently with the Rear Door Heat Exchanger. One of the new generation of System x and BladeCenter servers, the dx360 M2 significantly reduces operational costs, is simple to manage, and is pre-integrated for rapid scaling to solve today's IT business challenges.

As testament to the computing power of the new iDataPlex dx360 M2, the University of Toronto's SciNet Consortium will be using the new system, along with IBM's advanced POWER6 architecture, to build a system capable of performing 360 trillion calculations per second. The supercomputer will pioneer an innovative hybrid design containing two systems that can work together or independently, connected to a massive five petabyte storage complex. Because it is a hybrid using IBM's highly efficient iDataPlex system and POWER6 architecture, the system will be extremely flexible, capable of running a wide range of software at a high level of performance.

"IBM innovations in the server space allow us to scale our business rapidly, as needed," said Don Goodwin, Latisys executive vice president, sales and marketing, Fairfax, Va., a leading high-density co-location and managed hosting company using a mix of IBM blades and iDataPlex scale-out servers. "The mix of formats provided by System x allows us to support a wide range of applications and more easily move our enterprise and web hosting offerings into new markets."

New Levels of Performance

IBM's new-generation x86 servers deliver new levels of performance and efficiency for the enterprise. The System x3650 M2 has posted leadership 2-processor results for SPECPower_ssj2008, the two-tier SAP SD Standard Application Benchmark and for the VMware VMmark virtualization benchmark.[3] In addition, the IBM BladeCenter HS22 has posted a leadership 2-processor result for SPECjbb2005.[4]

To complement the complete line up of rack, blade and iDataPlex offerings, IBM will also be releasing new business optimized tower solutions in 2Q. These towers will meet the challenges of running high performance IT in the desk side space where security, serviceability, ease of use and reliability are critical. These new systems make the most of the new features and performance of the new Intel processor family.

Systems Management Leadership

IBM today also announced key system management upgrades designed to complement its new generation of x86 systems and help IT managers orchestrate the unique workload demands of modern businesses.

IBM Systems Director 6.1
The new IBM Systems Director 6.1 provides powerful tools for managing both physical and virtual resources and features an easy-to-use, web-based interface with integrated wizards/tutorials, such as Systems Director Active Energy Manager. It delivers broad cross-platform support including IBM Power Systems, System z, storage and non-IBM x86 servers, with a potential cost savings that can reach 34.5 percent for Windows servers and 43.8 percent for Linux x86 servers.

Unified Extensible Firmware Interface (UEFI)
IBM is offering next-generation BIOS -- the Unified Extensible Firmware Interface (UEFI) – to provide a consistent BIOS across its portfolio and to allow for more detailed remote-configuration options.

Integrated Management Module (IMM)
The Integrated Management Module (IMM) combines diagnostics, virtual presence and remote control to manage, monitor, troubleshoot and repair from any corner of the world. Its standards-based alerting also enables "out-of-the-box" integration into enterprise management environments and provides a single firmware stack for all IMM based systems.

IBM ToolsCenter
The IBM ToolsCenter initiative simplifies the acquisition and usage of single system management tools with a single webpage to acquire tools. It establishes a common look and feel across the entire tool set, this maximizes efficiency and reduces training cost. The latest addition to the ToolsCenter portfolio, IBM bootable media creator is used to create custom bootable media (CD, DVD or USB key) with updates for clients systems.

Express Models for Midsize Businesses

IBM is also introducing "Express" models of three systems that are designed for midsize companies. Two rack-mounted servers, the System x3650 M2 Express and x3550 M2 Express, deliver offer twice the virtualization performance and use up to 60 percent less power than previous generations. The new IBM BladeCenter HS22 Express is a versatile, easy-to-use blade optimized for performance and energy efficiency. The HS22 is two times faster than previous IBM blades and offers best-in-class reliability, availability and serviceability.

About IBM
For more information about this new generation of IBM System x, BladeCenter and iDataPlex products, availability and support, visit http://www.ibm.com/systems/x/newgeneration.

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(1) IBM Power Engineering Study, Feb'09

(2) Based on IBM actual, public results on HS22 & Intel internal analysis. 1U rack server configuration: 2S 1C Xeon (3.8GHz 2MB cache) with 8x 1GB memory and 1 HDD – total power: 382W under load, HS22 blade server configuration: 2S 4C Xeon X5570 (2.93GHz 8MB cache) with 6x 2GB memory and 1 SSD – total power with chassis burden = 307W under load, SPECjbb2005 = 604,417 bops, 151,104 bops/JVM. SPEC, SPECjbb2005 are trademarks of the Standard Performance Evaluation Corporation (SPEC).

(3) IBM System x3650 M2: 5,100 SAP SD Benchmark users, 1.98 seconds average dialog response time, 25,530 SAPS, measured throughput of 1,532,000 dialog steps per hour (or 510,670 fully processed line items per hour), and an average CPU utilization of 99 percent for the central server. Configuration: two Intel Xeon X5570 processors, 2.93GHz with 256KB L2 cache per core and 8MB L3 cache per processor (2 processors/8 cores/16 threads), 48GB of memory, 64-bit DB2 9.5, Microsoft Windows Server 2003 Enterprise x64 Edition, and SAP ERP 6.0 (certification number 2008079). Results published December 19, 2008; results referenced current as of March 30, 2009 (http://www.sap.com/benchmark). SAP and all SAP logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries.

IBM System x3650 M2 server achieved a Performance to Power Ratio of 1,860 overall ssj_ops/watt on the SPECpower_ssj2008 benchmark with the Quad-Core Intel® Xeon® Processor X5570 (2.93GHz, 256KB L2 cache per core and 8MB L3 cache per processor—8 cores/2 chips/4 cores per chip), 8GB of memory and IBM J9 Java™6 Runtime Environment and Microsoft® Windows® Server 2008 Enterprise x64 Edition. Results referenced current as of March 30, 2009. Results submitted to SPEC® for review and will be posted at http://www.spec.org/jbb2005/results upon completion of successful review. SPEC and SPECjbb2005 are trademarks or registered trademarks of Standard Performance Evaluation Corporation (see http://www.spec.org/spec/trademarks.html for all SPEC trademarks and service marks).

IBM System x3650 M2 server delivered 23.89 @ 17 Tiles — the highest 2-socket and 8-core result as of March 30, 2009. VMmark disclosure report available at: ftp://ftp.software.ibm.com/eserver/benchmarks/IBM_x3650M2_VMmark_Independent_Publication_033009.pdf Information and all results available at: http://vmware.com/products/vmmark/results.html VMware is a registered trademark and VMmark is a trademark of VMware, Inc. VMware VMmark is a product of VMware, an EMC Company. VMmark utilizes SPECjbb2005® and SPECweb2005®, which are available from the Standard Performance Evaluation Corporation (SPEC).

(4) IBM BladeCenter HS22: 604,417 SPECjbb2005 business operations per second (SPECjbb2005 bops) and 151,104 SPECjbb2005 bops/JVM. Results referenced current as of March 30, 2009. Results submitted to SPEC® for review and will be posted at http://www.spec.org/jbb2005/results upon completion of successful review. SPEC and SPECjbb2005 are trademarks or registered trademarks of Standard Performance Evaluation Corporation (see http://www.spec.org/spec/trademarks.html for all SPEC trademarks and service marks).