IBM publishes best ever virtualization benchmark result with x3850 X6

IBM System x3850 X6 demonstrates enterprise class world-record performance for virtualization environments.

February 18th, 2014 ... IBM® again delivers leadership performance on the SPECvirt_sc2013 benchmark with the publication of the highest overall SPECvirt_sc2013 score ever achieved.

The IBM System x3850 X6 delivered the following overall SPECvirt_sc2013 performance score:

- 2081 @ 116 VMs

SPECvirt_sc2013 is the second-generation SPEC® benchmark for evaluating the virtualization performance of datacenter server consolidation, including enterprise class workloads such as virtualized SMP application server VMs and SMP database VMs, as well as dynamic workload levels across many workload types and VM instances.

The IBM System x3850 X6 server was configured with the new generation Intel® Xeon® Processor E7-4890 v2 (2.8 GHz with 38400 KB L3 cache per processor—4 chips/60 cores/15 cores per chip), 1024 GB (1TB) of memory, and IBM eXFlash SSD integrated storage with sixteen 400GB SSDs. The operating system was Red Hat Enterprise Linux® 6.5 and Kernel-based Virtual Machine (KVM) hypervisor.

The IBM System x3850 X6 is a flagship, 4-socket, 4U rack server, designed for maximum performance and uptime for business-critical applications and cloud deployments. The X6 solution provides a powerful platform for mission-critical applications. Integrating hardware, software and memory advancements, the X6 enterprise servers are designed to be FAST, AGILE and RESILIENT.

As the first server designed and optimized for new IBM eXFlash memory-channel storage, the x3850 X6 delivers FAST application performance. This system can deliver up to 12.8 TB of ultra-low latency flash storage—unmatched storage performance in an x86 server. The x3850 X6 can deliver up to 6.0 TB of memory and 60 cores of processing power for essential business-critical applications, for implementing large virtual machines or for running sizeable in-memory databases. eXFlash memory-channel storage offers significantly lower write latency than any other flash offering on the market—less than 5 microseconds write latency.(1)

The unique, adaptive modular rack design of the new x3850 X6 is AGILE, enabling the design of fit-for-purpose solutions and the ability to realize infrastructure cost savings by hosting multiple generations of technology in a single platform—without compromising performance or capacity. X6 platforms enable customers to:
- Configure the server to fit the unique requirements of specific applications and workloads and add, modify or upgrade X6 platforms easily with selectable modular book components;
- Scale capacity and performance from 4-socket to 8-socket, to deliver twice the performance for growing applications without creating IT sprawl;
- Use IBM Fast Setup software for automated provisioning of a cluster of servers to realize time-to-value in minutes rather than days;
- Capitalize on agile system design that provides the ability to host multiple generations of technology in a single server. (2)

X6 enterprise platforms are RESILIENT. Through differentiated X6 self-healing technology, the x3850 X6 maximizes uptime by proactively identifying potential failures and transparently taking necessary corrective actions. Four unique IBM features proactively protect applications from corrupt pages in memory; allow the platform to maintain access to networking and storage and server management during a processor failure; enable concurrent updating of the system

firmware with no impact on application performance or availability; and enable the creation and management of policies to maintain high availability of virtual machines. These built-in technologies drive the outstanding system availability and uninterrupted application performance needed to host business-critical applications.

X6 platforms help reduce costs and complexity and deliver the breakthrough performance and capacity that enterprise applications demand. X6 servers are the result of more than 15 years of EXA investment and innovation in industry-standard servers. X6 platforms are backed by a 100-year history of market-leading IBM technology designed to solve customers' most pressing business problems.

Results referenced are current as of February 18th, 2014. Result summary available at
http://www.spec.org/virt_sc2013/results/res2013q3/virt_sc2013-20140211-00010-perf.html

To view all SPECvirt_sc2013 performance results visit the SPEC results page at
http://www.spec.org/virt_sc2013/results/specvirt_sc2013_perf.html

(1) Laboratory testing shows eXFlash DIMMs can deliver 3 times lower latency (<5 µs) than PCIe based flash (15-19 µs).

(2) When a newer generation of processor and memory technology becomes available, Compute Books can be replaced with newer ones. (All Compute Books must use matching technology.)