

# PERFORMANCE BENCHMARK RESULT

## Lenovo Delivers New Number 1 Result on SAP Business Warehouse-Enhanced Mixed Load Standard Application Benchmark

The result achieved by the Lenovo System x3850 X6 appliance for SAP HANA on 1 billion rows of input data is more than 13 times better than previously published results from HP and Dell

May 5, 2015 ... Leveraging its strong partnership with SAP SE (NYSE: SAP) and technology innovation in support of the SAP HANA® platform, Lenovo announces its Lenovo System x3850 X6 has achieved an industry-leading result on the SAP® Business Warehouse-Enhanced Mixed Load (SAP BW-EML) standard application benchmark<sup>1</sup>.



The x3850 X6 netted a record load of 1,992,570 ad-hoc navigation steps per hour on the benchmark, more than 29 percent faster than the previous result Lenovo posted in March<sup>2</sup> and 13 times better than the previously published winning results from Dell<sup>3</sup> and HP<sup>4</sup>. The SAP BW-EML standard application benchmark measures performance in a real-time, data-warehouse environment running SAP software.

This new leadership benchmark result demonstrates that the System x3850 X6 solution for SAP HANA offers near-linear scalability. By simply adding more nodes to the existing infrastructure to expand memory capacity for SAP HANA, IT leaders can benefit from extremely fast response times for analytical workloads and business queries. The modular approach of the System x3850 X6 enables customers to invest in a workload-optimized solution for SAP HANA that enables infrastructure growth as the software environment grows, eliminating the need for the SAN storage that often is required in other vendors' solutions. The Lenovo System x3850 X6 solution for SAP HANA also comes with built-in high availability and synchronous disaster-recovery capabilities using IBM General Parallel File System™ (GPFS™) software.

The 1,992,570 ad-hoc navigation steps per hour result was achieved at the 1-billion-row scale factor on the System x3850 X6-based appliance scale-out cluster of seven nodes, each configured with four Intel® Xeon® E7-8890 v3 family processors with 72 cores and 144 threads, and 1TB memory, running SAP HANA 1.0, the SAP NetWeaver® technology platform 7.4, SUSE Linux Enterprise Server 11 and Lenovo GPFS 3.5.0.23 FPO on local disks<sup>1</sup>.

The previously recorded result at the 1-billion initial records level is on the Dell R730 with 148,680 ad-hoc navigation steps per hour<sup>3</sup>. That result beat the next-highest figure of 129,930 ad-hoc steps that had been

achieved by the HP ProLiant DL580 Gen7 server<sup>4</sup>. Both of these previous benchmark results were achieved on scale-up or single-node systems.

SAP standard application benchmarks have been designed to represent customer scenarios in different business application areas. The SAP BW-EML standard application benchmark has been developed with near real-time reporting, ad-hoc reporting capabilities, and reduction of TCO in mind. Its focus is a mix of multiuser reporting load and delta data that is input into the database simultaneously to the queries. For more details, visit: [http://global.sap.com/campaigns/benchmark/appbm\\_bweml.epx](http://global.sap.com/campaigns/benchmark/appbm_bweml.epx).

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## About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a \$39 billion global Fortune 500 company and a leader in providing innovative consumer, commercial, and enterprise technology. Its portfolio of high-quality, secure products and services covers PCs (including the well-known Think and multimode YOGA brands), workstations, servers, storage, smart TVs and a family of mobile products like smartphones (including the Motorola brand), tablets and apps. Join us on LinkedIn, follow us on Facebook or Twitter (@Lenovo) or visit us at [www.lenovo.com](http://www.lenovo.com).

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<sup>1</sup> Performance results of the Lenovo System x3850 X6 on the SAP BW-EML standard application benchmark as of May 5, 2015. This benchmark fully complies with the SAP Benchmark Council regulations and has been audited and certified by SAP SE (certification number 2015011). Details can be obtained from Lenovo and SAP. For the latest SAP benchmark results, visit: <http://www.sap.com/benchmark>.

<sup>2</sup> Performance results of the Lenovo System x3850 X6 on the SAP BW-EML standard application benchmark as of March 16, 2015. This benchmark fully complies with the SAP Benchmark Council regulations and has been audited and certified by SAP SE (certification number 2015007).

<sup>3</sup> The claim of achieving more than 13 times improvement in performance is based on results of the Dell PowerEdge R730 on the SAP BW-EML standard application benchmark (certification number 2014038) configured with one database server: 2 processors / 36 cores / 72 threads, Intel Xeon Processor E5-2699 v3, 2.30 GHz, 64 KB L1 cache and 256 KB L2 cache per core, 45 MB L3 cache per processor, 512 GB main memory, SAP NetWeaver 7.30, SAP HANA 1.0 and SUSE Linux Enterprise Server 11

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<sup>4</sup> The claim of achieving more than 13 times improvement in performance is based on results of the HP DL580 G7 on the SAP BW-EML standard application benchmark (certification number 2013027) configured with one database server: 4 processors / 40 cores / 80 threads, Intel Xeon Processor E7-4870, 2.40 GHz, 64 KB L1 cache and 256 KB L2 cache per core, 30 MB L3 cache per processor, 512 GB main memory, SAP NetWeaver 7.30, SAP HANA 1.0 and SUSE Linux Enterprise Server 11