TPC-H 3TB Benchmark Result for System x3850 X6
Performance Benchmark Result (withdrawn product)

Lenovo posts world record non-clustered TPC-H@3,000GB benchmark performance result.

March 10, 2016 … Lenovo has published the best performance result and the best price/performance ever on the non-clustered TPC-H benchmark @3,000GB scale. This new result showcases the capability of the Lenovo System x3850 X6 with the latest Intel Xeon E7 processor technology running Microsoft SQL Server 2016.

The TPC Benchmark H (TPC-H) (from tpc.org) is a decision support benchmark that can project performance in a data warehouse environment. It consists of a suite of business oriented ad hoc queries and concurrent data modifications chosen to have broad industry-wide relevance. This benchmark illustrates decision support systems that examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business questions.

The System x3850 X6 server achieved the following score:

- **969,504.2 QphH @3,000GB** (queries per hour H) at **$0.72 USD / QphH @3,000GB**. (1)

This score is the best performance score at the TPC-H @3,000GB scale among the non-clustered results, and is 33% faster than the previous #1 result in the non-clustered TPC-H @3,000GB category at roughly 3/4th of the price/performance. (2)

Lenovo also sets a new world record on non-clustered price/performance @3000GB scale. The price/performance score is 37% lower than the previous #1 result in the non-clustered price/performance category. (3)

The x3850 X6 achieved this record level of data warehouse performance using Microsoft SQL Server 2016 Enterprise Edition and Microsoft Windows Server 2012 R2 Standard Edition. The x3850 X6 was configured with Intel Xeon E7-8890 v3 processors at 2.50 GHz (4 processors/72 cores/144 threads) and 3TB of memory. This result highlights a tightly- integrated optimized Microsoft SQL solution on the Lenovo X6 server. The benchmark showcases the ability to process large amounts of data using this solution.

The System x3850 X6 is a 4-socket rack server that delivers maximum performance and availability for business-critical applications and databases.

With system support for up to 72 processor cores, 6TB of system memory, and over >85TB of flash storage, the 3850 X6 not only is known for its leadership performance, but also for its ability to scale in order to power traditional databases as well as new in-memory database and analytics solutions. Now customers can achieve leadership solution performance by virtualizing high performance databases and applications on the same server.

Clients also can realize infrastructure cost savings by hosting multiple generations of technology in an X6 single platform—without compromising performance or capacity. X6 servers help data center leaders avoid "rip and replace."(4)

X6 platforms are the sixth generation of enterprise X Architecture (EXA) technology and represent more than 15 years of investment and innovation to exceed industry standards.

Results referenced are current as of March 10, 2016. To view all TPC results, visit http://www.tpc.org.

(1) The total solution availability for this TPC-H benchmark result is July 31, 2016. See the details for this result here: http://www.tpc.org/3319.

(2) The Cisco UCS C460 M4 server achieved a performance of 725,686 QphH @3,000GB and price/performance of $1.08 USD/QphH @3,000GB using four Intel Xeon E7-8870 v3 processors at 2.50 GHz (4 processors/72 cores/144 threads), Microsoft SQL Server 2014 Enterprise Edition, and Microsoft Windows Server 2012 R2 Standard Edition. Total solution availability of July 14, 2015. Result details are at: http://www.tpc.org/3315.

 (3) The Lenovo System x3850 X6 server achieved a performance of 700,392 QphH @3000GB and price/performance of $0.99 USD/QphH @3000GB using four Intel Xeon E7-8870 v3 processors at 2.50 GHz (4 processors/72 cores/144 threads), Microsoft SQL Server 2014 Enterprise Edition, and Microsoft Windows Server 2012 R2 Standard Edition. Total solution availability of May 26, 2015. Result details are at: http://www.tpc.org/3313.

 (4) 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.)

Related product families

Product families related to this document are the following:

- 4-Socket Rack Servers
- Mission Critical Servers
- TPC-H Benchmark Results

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