# Cisco UCS Demonstrates TPC-H Performance and Price/Performance Leadership

Performance Brief
December 2011

## Highlights

### The Fastest Four-Socket Intel Xeon Processor-Powered Server for Microsoft SQL Server

- A Cisco Unified Computing System™ (Cisco UCS™) C460 M2 High-Performance Rack-Mount server achieved 134,117 queries per hour (QphH@1000 GB) in the TPC-H benchmark, with a price/performance ratio of $1.30 USD per QphH@1000 GB, exceeding the fastest IBM four-socket TPC-H 1000 GB result for Microsoft SQL server by 32 percent in performance, with a 26 percent lower price/performance ratio.

### Dramatic Single-System Scalability for Decision Support

- The Cisco® UCS C460 Rack-Mount Server has the capacity to deliver leading performance for Microsoft SQL Server.

### A Tradition of Performance Leadership

- Cisco has established a tradition of performance leadership on essential enterprise benchmarks, including TPC-H and TPC-C. Cisco's results indicate the degree to which Cisco products can deliver superior scalability and performance to enterprise applications..

## In its inaugural TPC-H result, Cisco asserts industry leadership in partnership with Microsoft, establishing the Cisco Unified Computing System (Cisco UCS) as the fastest four-socket Intel Xeon processor-powered platform for running Microsoft SQL Server.

### Industry-Leading Performance for Decision Support

Decision support performance depends on the performance and scalability of the server, and on the ability of operating system and database software to exploit the underlying system hardware efficiently. Cisco's recent TPC-H result offers a vivid illustration of the power of Cisco Unified Computing System™ (Cisco UCS™) servers to provide industry-leading performance and scalability at lower cost of ownership in concert with Microsoft SQL Server. Not only does this result represent Cisco's first TPC-H result , but it establishes both performance and price/performance leadership, exceeding the fastest IBM four-socket TPC-H result for Microsoft SQL server by 32 percent, while providing a 26 percent lower price/performance ratio (Table 1 and Figure 1).

**Table 1.** TPC-H Results for Four-Socket Intel® Xeon® Processor-Powered Servers.

| Server | Processors (Cores/ Threads) | Performance | Price/ Performance Ratio | Availability Date |
|---|---|---|---|---|
| Cisco® UCS C460 M2 | 4 Intel Xeon E7-4870 2.4 GHz (40 cores, 80 threads in total) | 134,117 QphH@1000GB | $1.30 USD per QphH@1000GB | December 7, 2011 |
| IBM x3850 X5 | 4 Intel Xeon X7560 2.26 GHz (32 cores, 64 threads in total) | 101,719 QphH@1000GB | $1.76 USD per QphH@1000GB | March 3, 2011 |

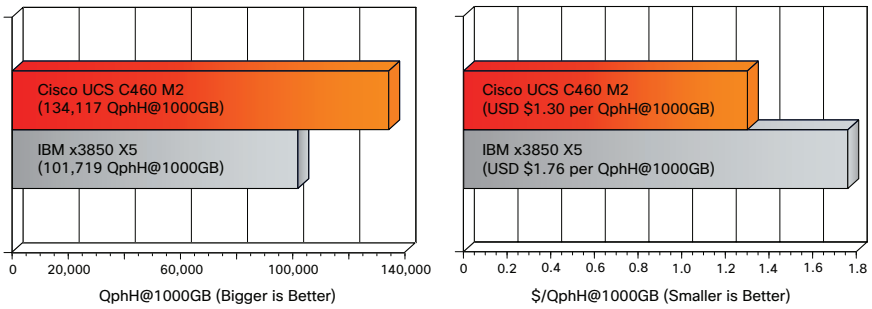


**Figure 1.** Cisco UCS Provides 32% TPC-H Performance Advantage Over Nearest Competitor Running Micorsoft SQL Server and 26% Lower Price/Performance Ratio.

### TPC-H Benchmark

The TPC-H benchmark is an industry-standard decision support test, designed to measure the capability of a system to examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business questions. The TPC-H benchmark evaluates a composite performance metric (QphH@size) and a price/performance metric ($/QphH@size) that measure the performance of various decision support systems by running sets of queries against a standard database under controlled conditions.

## Cisco UCS C460 M2 Rack-Mount Server

The Cisco UCS C460 Rack-Mount Server is a high-performance, high-memory-capacity server designed with the performance and reliability to power compute-intensive, enterprise-critical standalone applications and virtualized workloads. The system is a four-rack-unit (4RU) rack-mount server supporting the Intel® Xeon® processor E7-4800 product family, up to 1 TB of double data rate 3 (DDR3) memory, and up to 12 Small Form Factor (SFF) hot-pluggable SAS or SATA disk drives or solid state drives (SSDs).

### Benchmark Configuration

As tested, the benchmark configuration As tested, the benchmark configuration consisted of a Cisco UCS C460 M2 Server equipped with 1 TB of memory and four 2.4-GHz Intel Xeon E7-4870 processors, each with 30 MB of cache. The system ran Microsoft SQL Server 2008 R2 Enterprise Edition and Windows Server 2008 R2 Enterprise Edition. The test database resided on 10 LSI WarpDrive SLP-300 300 GB SLC PCIe Solid State Storage cards.

## Conclusion

Cisco's leading TPC-H result demonstrates the enterprise performance for Cisco UCS Servers when combined with Microsoft SQL Server.

## For More Information

- For more information about Cisco UCS servers, please visit http://www/cisco.com/go/ucs.
- For more information about Cisco UCS performance, please visit http://www.cisco.com/go/ucsatwork.
- For more information about LSI, please visit http://www.lsi.com/channel/products/storagecomponents/Pages/WarpDriveSLP-300.aspx.

## Disclosures

The Transaction Processing Performance Council (TPC) is a nonprofit corporation founded to define transaction processing and database benchmarks, and to disseminate objective and verifiable performance data to the industry. TPC membership includes major hardware and software companies. TPC-H, QphH, and $/QphH are trademarks of the Transaction Processing Performance Council (TPC). The performance results described in this document are derived from detailed benchmark results available as of December 14, 2011, at http://www.tpc.org/tpch/default.asp.

**Americas Headquarters**
Cisco Systems, Inc.
San Jose, CA

**Asia Pacific Headquarters**
Cisco Systems (USA) Pte. Ltd.
Singapore

**Europe Headquarters**
Cisco Systems International BV Amsterdam,
The Netherlands

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LE-33301-00 12/11