

Cisco UCS C460 M4 Rack Server: Best Nonclustered TPC-H Performance at the 3000-GB Scale Factor



Performance Brief
July 2015

Highlights

Industry-Leading Performance

- The Cisco UCS® C460 M4 Rack Server delivers the highest TPC-H result ever reported for nonclustered systems at the 3000-GB scale factor.

Consistent TPC-H Performance Leadership

- Cisco continues its industry leadership with top performance at the 3000GB scale factor (Table 1) and top performance and price/performance at the 1000GB scale factor (Cisco UCS C460 M4 with 588,831 QphH@1000GB and \$0.97 USD per QphH@3000GB, available December 16, 2014).

Dramatic Single-System Scalability for Decision Support

- The Cisco UCS C460 M4's balanced computing power, I/O bandwidth, and storage capacity makes it an excellent platform for high-performance databases.

A Tradition of Performance Leadership

- The Cisco Unified Computing System™ (Cisco UCS) has established a tradition of performance leadership on industry benchmarks, with 100 world records since the platform was introduced in 2009.

Your business depends on decision-support systems. We deliver the server that consistently outperforms the competition.

Industry-Leading Performance for Decision Support

The Cisco UCS® C460 M4 Rack Server delivers the top nonclustered TPC-H benchmark performance result at the 3000-GB scale factor (Table 1). This result continues Cisco's tradition of performance leadership, with the Cisco UCS C460 M4 maintaining the top performance and price/performance slots for nonclustered servers at the 1000-GB scale factor, and again achieving the best performance at the 3000-GB scale factor. When you need to choose a vendor that can consistently deliver industry-leading performance, you need to look no further than Cisco.

Table 1. TPC-H 3000-GB Result for the Cisco UCS C460 M4

Server	Processors (Cores and Threads)	Performance	Price/Performance Ratio	Availability Date
Cisco UCS C460 M4	4 Intel Xeon processor E7-8890 v3 CPUs at 2.5 GHz	725,686 QphH@3000GB	\$1.08 USD per QphH@3000GB	July 14, 2015

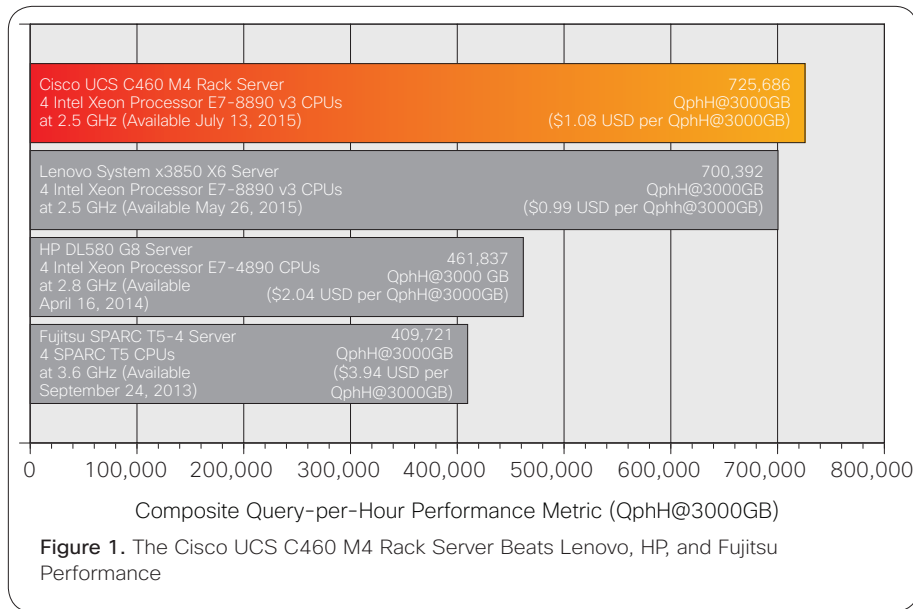
This result offers a vivid example of how the system's Intel® Xeon® processors, large memory capacity, internal solid-state disk (SSD) storage, and Fusion-io PCIe cards deliver world-record database performance in concert with Microsoft SQL Server 2014 Enterprise Edition. When you incorporate servers such as the Cisco UCS C460 M4 as part of the Cisco Unified Computing System™ (Cisco UCS), you can run your other Microsoft and non-Microsoft workloads in the same unified system with integrated management and low-latency 10-Gbps unified fabric connectivity between servers.

This TPC-H result demonstrates the degree to which Cisco UCS servers deliver superior performance. Among the nonclustered 3000-GB scale factor results, the Cisco UCS C460 M4 is 57 percent faster than the HP DL580 and 47 percent less expensive, and it surpasses servers from other contenders, including Fujitsu and Lenovo (Figure 2).

TPC-H Benchmark

The TPC-H benchmark is an industry-standard decision-support system benchmark. It is designed to measure the capability of a system to examine large volumes of data, process queries with a high degree of complexity, and return answers to critical business questions. The TPC-H benchmark evaluates a

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composite performance metric (QphH@size) and a price-to-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 M4 Rack Server

The Cisco UCS C460 M4 delivers the balanced I/O, memory, and computing capacity needed for large-scale analytical and business intelligence applications. The system is a 4-rack-unit (4RU) rack server that supports up to four Intel Xeon processor E7-4800

and E7-8800 v3 product family CPUs, up to 6 terabytes (TB) of double-data-rate-4 (DDR4) memory, and up to 12 Small Form-Factor (SFF) hot-pluggable SAS, SATA, or SSD drives. With 10 full-height Generation 3 PCI Express (Gen3 PCIe) slots, the server supports massive I/O capacity.

Benchmark Configuration

For the benchmark, the server was equipped with 3 TB of memory and four 2.5-GHz Intel Xeon processor E7-8890 v3 CPUs. The system ran Microsoft SQL Server 2014 Enterprise Edition and Windows Server 2012 R2 Standard Edition.

The database files resided on a set of 6 Cisco UCS Fusion ioMemory3 Flash Adapters, the operating system and log files resided on four 400-GB Enterprise Performance SSDs, and backup and flat files resided on eight 400-GB Enterprise Performance SSDs. The SSDs were connected through a Cisco 12-Gbps Modular RAID Controller with 1-GB flash-backed write cache.

Record-Setting Performance

These benchmark results demonstrate the industry-leading performance you can expect when you choose Cisco servers.

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>.

Disclosures

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 July 13, 2015, at <http://www.tpc.org/tpch/default.asp>.



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