Cisco Improves Performance by Up to 253 Percent in World-Record SPECjbb2013 Benchmark Results

With Versatile Performance from the Intel Xeon Processor E5-2600 v3 Family

Performance Brief
September 2014

Highlights

Dramatically Increase Performance

- A Cisco UCS® C220 M4 Rack Server powered by the Intel® Xeon® processor E5-2600 v3 family delivers a 248 percent increase in critical-jOPS results compared to Cisco's recent results with previous processor generations.

Increase Transaction Throughput

- High-performance rack servers enable the Cisco UCS C220 M4 to handle Java transactions at the rate of 160,283 concurrent Java operations per second (jOPS) and 58,478 concurrent critical jOPS on the SPECjbb®2013 benchmark.

Optimize the Use of Resources

- Cisco UCS dramatically reduces the number of physical components needed to support demanding Java application workloads, enabling IT departments to make effective use of limited space, power, and cooling resources.

Do More with Less

- Cisco UCS enables IT departments to simplify their enterprise application landscape and increase capacity with a smaller footprint.

Cisco claims another world record for the fastest 2-socket server on the SPECjbb®2013 MultiJVM benchmark for critical-jOPS. And you get another leap in performance from Cisco Unified Computing System™ (Cisco UCS®) servers.

When companies need high-performing data center infrastructure, they turn to Cisco® solutions. The reason: Cisco's track record of delivering world-record performance in generation after generation of server and processor technologies. The latest example of Cisco's innovative approach is the Cisco UCS C220 M4 Rack Server with the versatile Intel® Xeon® processor E5-2600 v3 family. This high-performance rack server captured the top 2-socket MultiJVM score for critical Java operations (critical-jOPS).

Today's results of 160,283 max-jOPS and 58,478 critical-jOPS are up to 248 percent better than our record-setting Intel Xeon processor E5 v2 family-based result from just six months ago, and 253 percent faster than our Intel Xeon processor E5 family results from a year ago (Figure 1). With consistent, record-setting performance from Cisco blade and rack servers, you can be confident that Cisco will stay ahead of competitors in delivering high performance for Java Virtual Machines (JVMs) and throughput-intensive Java applications.

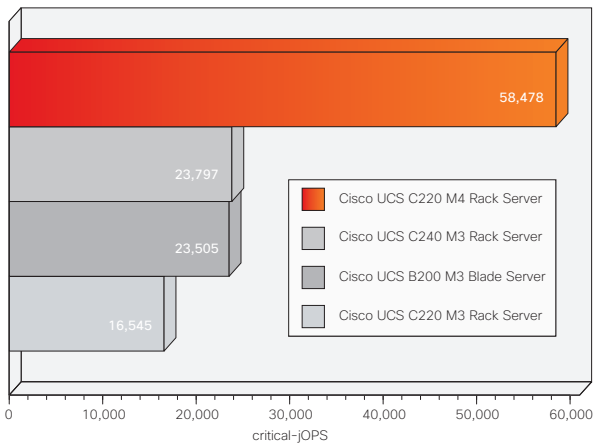

Figure 1. Cisco SPECjbb2013 2-Socket MultiJVM Results Improve Dramatically with Every New Generation of the Intel Xeon Processor E5 Family

Benchmark Configuration

Our configuration consisted of a controller and two groups, each consisting of a transaction injector and back end, all running across multiple JVM instances within a single operating system image. The JVM instances ran on a Cisco UCS C220 M4 Rack Server powered by two 18-core Intel Xeon processor E5-2699 v3 CPUs running Red Hat Enterprise Linux (RHEL)Server 6.5 and Oracle Java HotSpot 64-Bit Server Virtual Machine (VM) version 1.8.0_20. The rack server was configured with 1 terabyte (TB) of RAM and accessed the network through a Cisco UCS Virtual Interface Card (VIC) 1225. The benchmark result of 160,283 max-jOPS and 58,478 critical-jOPS places the Cisco UCS C220 M4 at the top of critical-jOPS scores for 2-socket servers running multiple JVMs.

Cisco UCS C220 M4 Rack Server

Cisco UCS C220 M4 Rack Servers are the most versatile, general-purpose enterprise infrastructure and application servers in the industry. These high-density 2-socket servers support up to eight Small Form-Factor (SFF) or four Large Form-Factor (LFF) drives, up to 1.5 TB of memory, a dedicated slot for a 12-Gbps SAS module RAID controller, two additional PCI Express (PCIe) slots, one modular LAN-on-motherboard (mLOM) slot, and two LOM ports in a compact 1-rack-unit (1RU) design.

Powered by the Versatile Intel Xeon Processor E5 v3 Family

Cisco UCS C220 M4 Rack Servers harness the power of up to two of the latest Intel Xeon processor E5-2600 v3 family CPUs to deliver an outstanding combination of performance, built-in capabilities, and cost effectiveness. Whether your business needs to address technical computing challenges, deliver cloud capabilities and intelligent storage, or power design automation and data analytics, Cisco and Intel technology are the smart choice for a software-defined environment in which performance and efficiency matter most.

Business Advantages

Accelerate response: Cisco tunes its chip sets and servers for specific workloads. With high-performance processors, large and fast memory configurations, and efficient use of Intel Turbo Boost Technology, the Cisco UCS C220 M4 delivers low latency and server optimization to JVMs.

Increase scalability: SPECjbb2013 benchmark results show that the Cisco UCS C220 M4 delivers excellent scalability to JVMs and applications.

Simplify data centers: Cisco UCS delivers the scalability needed for large Java application deployments. The dramatic reduction in the number of physical components results in a system that makes effective use of limited space, power, and cooling resources by deploying less infrastructure to perform the same, or even more, work.

Conclusion

IT departments that deploy Java applications on Cisco UCS can deliver more throughput and support more users while reducing the complexity of the data center. For businesses assessing infrastructure for Java applications, the results demonstrate Cisco's capability to consistently deliver record-setting performance with every new generation of processor.

For More Information

For more information about Cisco UCS performance, visit http://www.cisco.com/go/ucsatwork.

SPEC and SPECjbb are registered trademarks of Standard Performance Evaluation Corporation. The performance comparisons described in this document were valid based on results at http://www.spec.org as of September 8, 2014, and they include the following:

- Cisco UCS C220 M4 result of August 24, 2014
- Cisco UCS C240 M3 result of February 5, 2014
- Cisco UCS B200 M3 result of September 10, 2013
- Cisco UCS C220 M3 result of April 17, 2013

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