The Same Processors: Greater SPECjbb2013 Performance with the Cisco UCS C460 M4

With the Highly Scalable Intel Xeon Processor E7-4800 v2 Family

Performance Brief
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Highlights

Dramatically Increase Performance

- The Cisco UCS® C460 M4 Rack Server powered by the Intel® Xeon® processor E7-4800 v2 family achieves a new world-record MultiJVM SPECjbb®2013 max-jOPS result for 4-socket servers.

Increase Transaction Throughput

- High-performance processors and network connections enable the Cisco UCS C460 M4 to handle Java transactions at the rate of 201,117 concurrent Java operations per second and 52,784 concurrent critical Java operations per second on the SPECjbb2013 benchmark.

Take Advantage of High Density

- The Cisco UCS C460 M4 brings large amounts of computing power and massive amounts of memory (up to 6 terabytes [TB] with 64-GB LRDIMMs) into a small footprint to power business-critical applications running in bare-metal or virtualized environments.

Optimize Resource Use

- 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 compares servers with the same processors from Dell and HP. The result: consistently better performance and a new world-record SPECjbb®2013 MultiJVM 4-socket performance result.

With the highly scalable Intel® Xeon® processor E7-4800 v2 family, the Cisco Unified Computing System™ (Cisco UCS®) captured the top 4-socket MultiJVM score for maximum Java operations (max-jOPS). Both Cisco's max-jOPS and critical-jOPS results exceeded those for servers from Dell and HP that are powered by the same processor—demonstrating that you can gain consistently better performance from Cisco® servers.

The Cisco UCS C460 M4 Rack Server, with results of 201,117 max-jOPS and 52,784 critical-jOPS, outperforms the Dell PowerEdge R920 and HP ProLiant DL580 Gen8 servers, as shown in 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.

Benchmark Configuration and Results

The test configuration consisted of a controller and four groups, each consisting of a transaction injector and back end, all running across nine JVM instances within

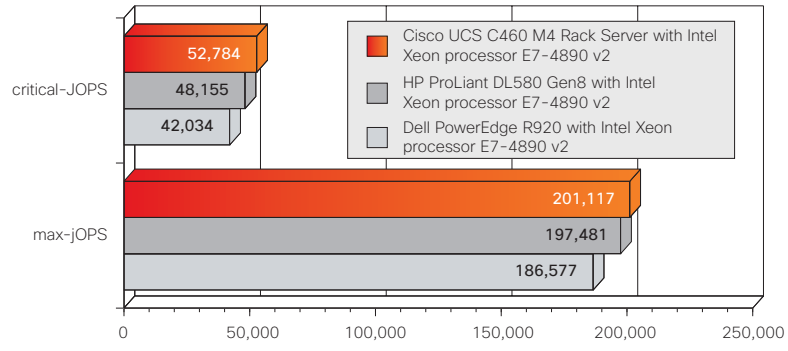

Figure 1. Cisco Servers Outperform Similarly Equipped Servers from Dell and HP

a single operating system image. The JVM instances ran on a Cisco UCS C460 M4 Rack Server powered by four 2.8-GHz, 15-core Intel Xeon processor E7-4890 v2 CPUs running the Red Hat Enterprise Linux (RHEL) 6.5 operating system and 64-bit Oracle Java HotSpot Virtual Machine (VM) server on Linux Version 1.8.0. The server was configured with 1 terabyte (TB) of RAM running at 1333 MHz and accessed the network through the system's built-in 10 Gigabit Ethernet interfaces.

The benchmark results of 201,117 max-jOPS and 52,784 critical-jOPS place the Cisco UCS C460 M4 at the top of the max-jOPS scores for 4-socket servers running multiple JVMs.

Cisco UCS C460 M4 Rack Server

The Cisco UCS C460 M4 Rack Server provides the performance and reliability to run mission-critical applications and virtualized workloads that require intensive computation processing and very high memory capacity. This combination of performance and memory capacity provides the balanced performance that business applications—such as Java middleware—require. Applications that are memory bound (for example, large-scale virtualization applications, massive database applications, and server consolidation applications) benefit from the increased performance and memory footprint of the Cisco UCS C460 M4.

The Cisco UCS C460 M4 is a four-rack-unit (4RU) rack server supporting the Intel Xeon processor E7-4800 v2 and E7-8800 v2 families. The server can support up to 6 TB of memory and 12 small-form-factor hot-pluggable SAS, SATA, or SSD disk drives. The server has abundant I/O capacity with 10 PCI Express (PCIe) Generation 3 slots, two Gigabit Ethernet LAN-on-motherboard (LOM) ports, and two 10 Gigabit Ethernet ports.

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 C460 M4 delivers low latency and server optimization to JVMs.

Increase scalability: SPECjbb2013 benchmark results show that the Cisco UCS C460 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.

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 April 25, 2014, and they include the following:

- Cisco UCS C460 M4 result of May 7, 2014
- Dell PowerEdge R920 result of April 4, 2014
- HP ProLiant DL580 result of April 17, 2014

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