Cisco Improves Performance by Up to 48 Percent in World-Record SPECjbb2013 Benchmark Results

With the Versatile Intel Xeon Processor E5-2600 v2 Family

Performance Brief
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Cisco UCS delivers top SPECjbb2013 MultiJVM 2-socket x86 performance.

With the versatile Intel® Xeon® processor E5-2600 v2 family, Cisco improves SPECjbb®2013 benchmark performance by up to 48 percent over the previous generation of Intel Xeon processors, setting new world records for x86/x64-architecture 2-socket servers. The results include 62,393 maximum Java operations (max-jOPS), a 48 percent improvement, and 23,505 critical Java operations (critical-jOPS), a 42 percent improvement. These results demonstrate that the Cisco UCS® B200 M3 Blade Server and Oracle Java HotSpot™ 64-Bit Server VM on Linux, version 1.7.0_40 provide a high-performance platform for Java Virtual Machines (JVMs) and deliver accelerated response to throughput-intensive Java applications.

SPECjbb2013 Benchmark

The SPECjbb2013 benchmark takes a fresh approach to Java server performance evaluation. It measures response time in critical situations as well as maximum Java operation throughput for handling point-of-sale (POS) requests, online purchases, inventory replenishment, and coupon management, all with concurrent data mining in the background.

The SPECjbb2013 benchmark result consists of two metrics: the full capacity throughput (max-jOPS) and the critical throughput (critical-jOPS) under service-level agreements (SLAs), ranging from 10 to 500 milliseconds (ms) from request issuance to receipt of a response indicating operation completion. The overall critical-jOPS value is calculated as a geometric mean of the critical-jOPS measured at five SLA points for the 99th percentile response time. These metrics indicate how quickly a platform can process operations and deliver responses to real-world Java business applications.

Benchmark Configuration

To compete in the SPECjbb2013 MultiJVM category, the configuration consisted of a controller and two groups each consisting of a transaction injector and backend, all running across multiple JVM instances within a single operating system image. The JVM instances ran on a Cisco UCS B200 M3 Blade Server powered by two 2.7-GHz, 12-core Intel® Xeon® processor E5-2697 v2 CPUs running the Red Hat Enterprise Linux 6.4 operating system and Oracle Java HotSpot 64-Bit Server VM on Linux (build 24.0-b55, mixed mode). The blade server was configured with 128 GB of 1866-MHz RAM and accessed the network through a Cisco UCS Virtual Interface Card (VIC) 1240.

Cisco UCS B200 M3 Blade Server

Managed as part of Cisco UCS, the Cisco UCS B200 M3 Blade Server extends unified computing innovations to very high-density computing without compromise. Powered by the Intel Xeon processor E5-2600 v2 family, the blade server offers up to 768 GB of fast (1866 MHz) RAM, two disk drives, and up to eight 10 Gigabit Ethernet ports to deliver outstanding density and performance in a compact package.

Figure 1. Cisco UCS B200 M3 Blade Server Performance Compared to the Previous Generation of Intel Xeon Processors

Benchmark Results

The Cisco UCS B200 M3 Blade Server and Oracle Java SE 7 delivered fast response times and high transaction throughput on the SPECjbb2013 benchmark. The system supported 62,393 max-jOPS and 23,505 critical-jOPS. These are the best max-jOPS and critical-jOPS 2-socket x86/x64 server results in the MultiJVM category . The results demonstrate dramatic performance enhancements over the previous generation of Intel Xeon processors (Figure 1).

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 B200 M3 Blade Server delivers low latency and server optimization to JVMs.
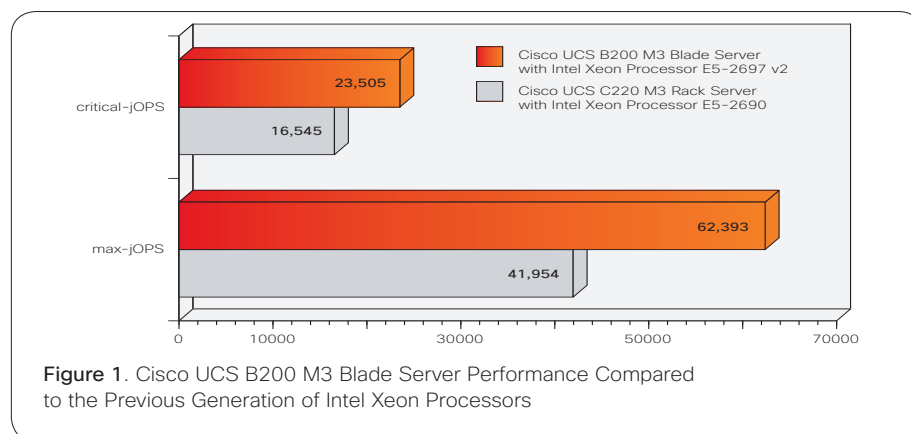
Increase scalability: SPECjbb2013 benchmark results show that the Cisco UCS B200 M3 Blade Server delivers excellent scalability to JVMs and applications. Many Java operations can be supported—62,393 max-jOPS and 23,505 critical-jOPS in the test configuration. IT departments can scale deployments further with these powerful servers.

Streamline 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 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, benchmark results demonstrate Cisco's commitment to delivering systems with outstanding response.

For More Information

For more information about the Cisco Unified Computing System, visit http://www.cisco.com/go/ucs.

Benchmark Disclosures

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