

Cisco UCS B260 M4 Blade Servers: Take Cloud Computing Performance to a New Level



Performance Brief
February 2014

Highlights

World-Record-Setting Results

- The Cisco UCS® B260 M4 Blade Server delivers a VMware® VMmark™ 2.5 score of 19.18@16 tiles, outperforming all other 2-socket servers in a 2-node configuration.

Better Performance for Workloads

- Whether a virtualized data center or a public or private cloud is needed, this VMware VMmark 2.5 benchmark result demonstrates the degree to which the Cisco Unified Computing System™ (Cisco UCS) can accelerate application performance.

High-Performance Blade Server

- The Cisco UCS B260 M4 Blade Server is designed for virtual desktop infrastructure (VDI), workload consolidation, large-memory applications, database acceleration, and virtualized applications.

Application Acceleration with Cisco UCS Invicta Series Solid State Systems

- Cisco UCS Invicta™ Series Solid-State Systems integrate solid-state memory-powered acceleration with computing resources, delivering performance, scalability, and optimization capabilities to virtual infrastructure.

Excellent Server Performance and Expandability

- Powered by the Intel® Xeon® processor E7 v2 family
- Up to 1.5 terabytes (TB) of memory
- Two modular LAN-on-motherboard (mLOM) ports for the Cisco UCS Virtual Interface Card (VIC) 1240
- Access to up to 160 Gbps of I/O bandwidth

Cisco UCS B260 M4 Blade Servers take cloud infrastructure performance to new heights—higher than Dell and higher than HP.



The Cisco Unified Computing System™ (Cisco UCS®) has captured more than a dozen world-record performance titles on VMware® VMmark® benchmarks. Cisco's newest score on the VMware VMmark 2.5 benchmark continues Cisco's tradition, combining virtualization and infrastructure performance with agility for cloud computing environments. Cisco's score of 19.18@16 tiles makes the Cisco UCS B260 M4 Blade Server the best 2-socket server in a 2-node configuration.

Cisco's results demonstrate the dramatic performance improvement that can be gained by adopting Cisco® servers powered by the Intel® Xeon® E7 processor E7 v2 family. The Cisco UCS B260 M4 Blade Server result improves on the best posted results from the Intel Xeon processor E5 v2 family by nearly 16 percent (Figure 1).

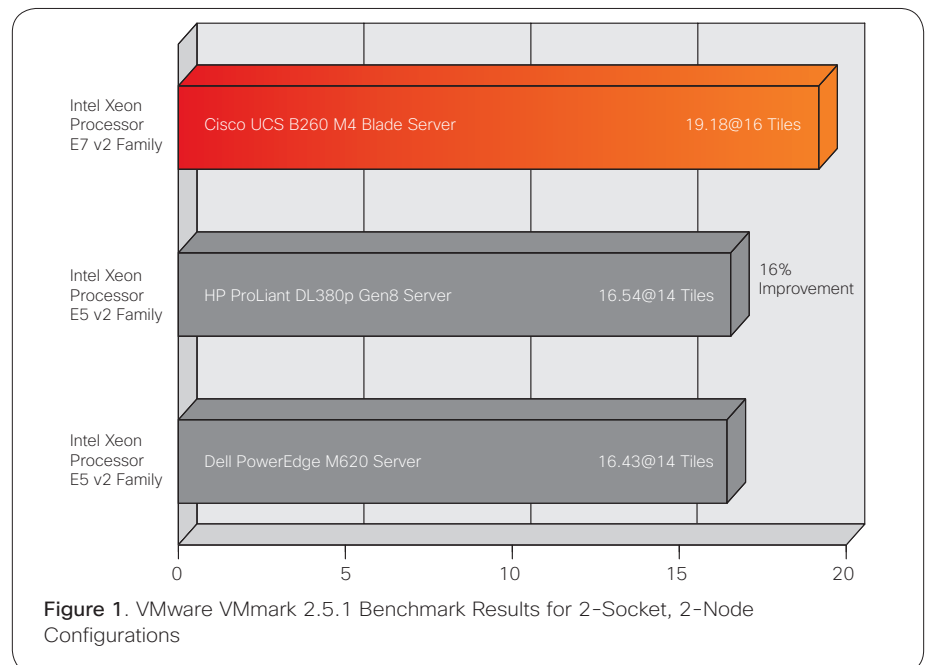


Figure 1. VMware VMmark 2.5.1 Benchmark Results for 2-Socket, 2-Node Configurations

VMware VMmark 2.5 Benchmark

The VMware VMmark 2.5 benchmark uses a tiled design that incorporates six real-world workloads to calculate a virtualization score. Then it includes VMware vMotion, Storage vMotion, and virtual machine provisioning times to calculate an infrastructure score. The combination of these scores is the total benchmark score. Because Cisco UCS is a truly unified system, it delivers performance for both virtualization and infrastructure scores.

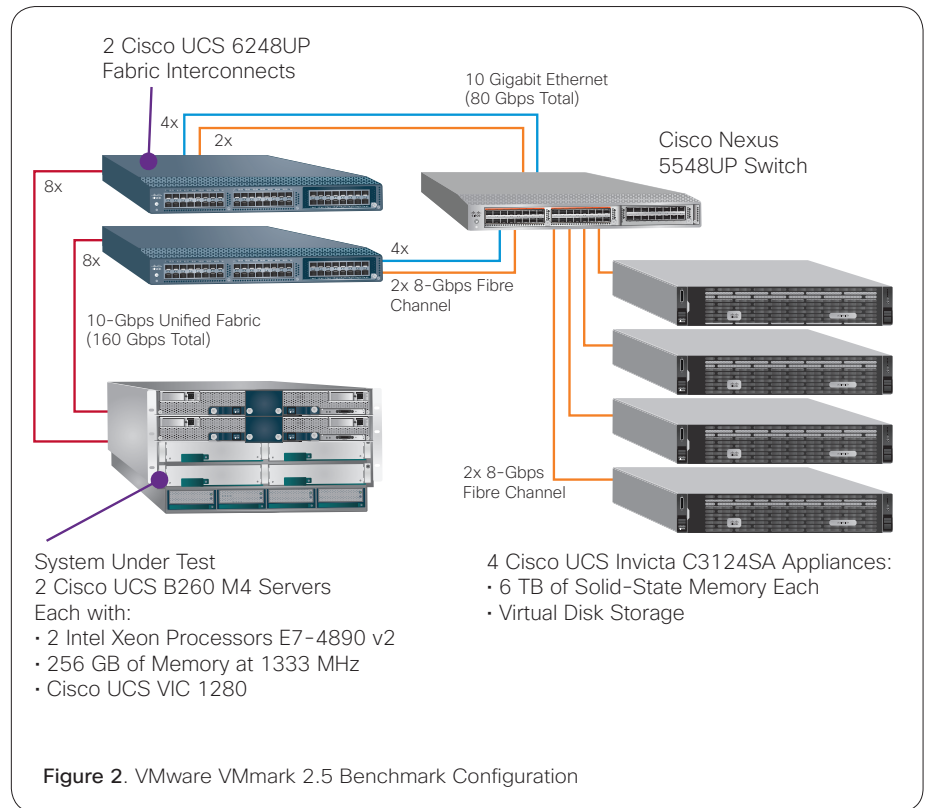
Benchmark Configuration

The benchmark used two Cisco UCS B260 M4 Blade Servers, each powered by two 15-core Intel Xeon processor E7-4890 v2 CPUs operating at 2.8 GHz. Intel Turbo Boost Technology was enabled to raise the clock speed from 2.8 GHz to up to 3.4 GHz as conditions permitted.

Each system was configured with 256 GB of main memory and a mezzanine LAN-on-motherboard (LOM)-format Cisco UCS Virtual Interface Card (VIC) 1280. Four Cisco UCS Invicta™ C3124SA Appliances integrated a total of 24 terabytes (TB) of acceleration powered by solid-state memory into the computing fabric (Figure 2).

Technology Innovation

Technology innovation contributes to Cisco's success in providing solutions that deliver high performance and support virtual machine movement, storage migration, and virtual machine



provisioning for more agile data center cloud deployments.

Cisco UCS

Cisco UCS is the first data center platform that integrates industry-standard, x86-architecture Intel Xeon processor-based servers with networking and storage access into a unified system. Server, networking, storage, and intelligent management resources work together in a self-aware and self-integrating system. Cisco SingleConnect technology provides a single way to connect to the LAN, SAN, and management networks, with physical servers and virtual machines

connected identically. This design delivers greater computing density and network simplicity in a smaller footprint that reduces capital and operating costs for virtual infrastructure.

Cisco UCS B260 M4 Blade Server

Cisco UCS B-Series Blade Servers deliver scalable and flexible computing capacity while helping reduce total cost of ownership (TCO). The new Cisco UCS B260 M4 Blade Server continues this trend with the right balance of price and performance for virtual desktop infrastructure (VDI), workload consolidation, large memory

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applications, database acceleration, and virtualized applications.

The Cisco UCS B260 M4 Blade Server harnesses the power of up to two of the latest Intel Xeon processor E7 v2 product family CPUs and accelerates access to critical data, with expandability up to 1.5 TB of RAM (using 32-GB DIMMs). Standard features include two hot-pluggable drives or solid-state disks (SSDs), two modular LOM (mLOM) ports, two PCI Express (PCIe) mezzanine slots, and access to up to 160 Gbps of overall I/O bandwidth. Because the Cisco UCS B260 M4 is a full-width blade server, up to four of these high-density, 2-socket blade servers can reside in a Cisco UCS chassis.

For virtualized environments benefitting from more CPUs per chassis, two Cisco UCS B260 M4 servers can be interconnected to create a single Cisco UCS B460 M4 server accommodating up to four Intel Xeon processor E7 v2 CPUs and up to 3 TB of main memory.

Intel Xeon Processor E7 v2 Family

The highly-scalable Intel Xeon processor E7 v2 family delivers high performance to applications. These processors offer up to 1.5 TB of memory per socket—triple the memory capacity of previous-generation processors—so you can keep more data local and easily manage data-

demanding, transaction-intensive workloads. In addition, Intel Run Sure Technology increases system uptime and data integrity for your business-critical solutions. Hardware-embedded security features provide a safer environment that protects data.

Cisco UCS Invicta Series Solutions

Cisco UCS Invicta products use scalable pools of solid-state memory to create an integrated memory tier in the Cisco UCS computing fabric. With the capability to scale up and scale out, the solutions deliver powerful and easy-to-manage application acceleration for data-intensive workloads.

Intelligent Switches

The Cisco Nexus® 5248UP Switch provides a standards-based, multipurpose, multiprotocol, Ethernet-based fabric. Support for 10 Gigabit Ethernet or 8-Gbps Fibre Channel on any port allows you select the right communication mode for a given workload through the simple use of a transceiver.

Conclusion

Better infrastructure yields better performance, and Cisco's world-record-setting VMware VMmark 2.5 benchmark results demonstrate how important infrastructure choices are for virtualized data center and cloud computing environments.

With innovations such as Cisco SingleConnect technology, large memory capacity, scale-up capabilities, and the solid-state-memory-acceleration of the Cisco UCS Invicta Series, Cisco's results demonstrate the architectural advantages of a system built for virtualized environments.

Learn More

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

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

Disclosures

VMware VMmark is a product of VMware, Inc. The [Cisco UCS B260 M4](#) result of 19.18@16 Tiles was made available at <http://www.cisco.com/go/ucsatwork> on February 18, 2014. The comparative benchmark results used in this document were available at <http://www.vmmark.com> as of February 18, 2014 including:

- The [HP ProLiant DL380p](#) result of 16.54@14 Tiles.
- The [Dell PowerEdge M260](#) result of 16.43@14 Tiles.



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