

Cisco's Cloud-Ready Architecture Leads the Industry with First Posted VMware VMmark 2.0 Benchmark Results

Performance Brief
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Highlights

First Posted Results

- Cisco is the first vendor anywhere to post results for the VMware VMmark 2.0 benchmark, demonstrating Cisco's leadership in cloud computing.

Cloud-Ready Architecture

- A next-generation, cloud-ready architecture, Cisco Unified Computing System is the only integrated system built from the start to support virtualized environments – with the high-volume connectivity needed to support dynamically changing virtualization pools.

The Cisco Advantage

- Cisco Unified Computing System provides completely abstracted, programmable infrastructure that is as fluid and easy to change as the cloud environments you run on it.

The VMware VMmark 2.0 benchmark evaluates cloud computing environments – and Cisco leads the industry by producing the first results ever posted.

This new industry benchmark compares not just server virtualization performance, but also infrastructure performance and agility. Cisco Unified Computing System™, powered by Intel® Xeon® processors, has already established industry-leading virtualization performance, and now Cisco extends that leadership into cloud computing environments.



Beyond Virtualization

Traditional virtualization benchmarks measure how well a server virtualizes individual applications. Today, the VMmark 2.0 benchmark from VMware measures how well an entire infrastructure supports cloud computing environments, including how well its servers, network, and storage support virtual machine movement, storage migration, and virtual machine provisioning.

The VMmark 2.0 benchmark uses a tiled design that incorporates six real-world workloads to determine a *virtualization score*. Then it factors VMware vMotion, Storage vMotion, and virtual machine provisioning times to determine an *infrastructure score*. The combination of these scores is the total benchmark score. Because Cisco Unified Computing System is a single cohesive system, it delivers both virtualization and infrastructure performance. Because the system virtualizes the hardware itself, it offers greater flexibility, running any workload on any server much as cloud computing environments support virtual machine images.

A Platform Built for Cloud Computing

Cisco Unified Computing System provides programmable infrastructure for cloud computing environments, supporting them with an agile, high-performance, and rapidly scalable platform. Cisco Unified Computing System is an integrated, stateless system that is automatically configured through unified, model-based management to simplify deployment of virtualized and cloud computing environments.

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Refined Computing Power

The system begins with x86-architecture servers powered by Intel Xeon processors. These industry-standard servers deliver world-record performance to power a complement of virtualized workloads in VMware vSphere environments.

10-Gbps Unified Fabric

Servers are integrated by a standards-based, high-bandwidth, low-latency, virtualization-aware unified fabric. The fabric carries all IP, Fibre Channel over Ethernet (FCoE), and virtual machine traffic with security isolation, visibility, and control that is equivalent to that of physical networks. The fabric's jumbo frame support speeds infrastructure operations, including VMware vMotion and Storage vMotion operations.

Cisco Port Extender Technology

Cisco® Port Extender technology collapses network layers and scales the system without the overhead of blade server switching. When Cisco virtual interface cards (VICs) are employed, Cisco Port Extender technology connects the network directly to virtual machines, speeding performance by eliminating software switching and enabling direct device access with Intel VT-D technology.

Programmable Infrastructure

Cisco Unified Computing System was designed from the beginning to be programmed, making physical infrastructure as flexible and agile as your virtual infrastructure.

Unified, Model-Based Management

The system's unified, model-based management deploys complete systems with all their personalities, configurations, and I/O devices established with point-and-click simplicity, enabling rapid scaling and preventing inconsistent configurations. An open standards-based XML API enables programming from higher-level tools including cloud management systems

Cisco UCS B200 M2 Blade Server Benchmark Results

Cisco achieved a VMmark 2.0 benchmark score of 6.51@6 tiles using two Cisco UCS B200 M2 Blade Servers (Figure 1), each powered by two Intel Xeon Processors X5680. Intel Turbo Boost Technology was enabled to raise the clock speed from 3.33 GHz to up to 3.6 GHz as conditions permit. Each system was configured with 96 GB of main memory and a Cisco UCS M71KR-Q QLogic Converged Network Adapter (CNA), which provides transparent access to the unified fabric through dual 10 Gigabit Ethernet interfaces and a dual QLogic host bus adapter (HBA).

EMC CLARiiON Storage

Cisco's configuration took advantage of the performance of an EMC CLARiiON CX4 Model 240, a powerful networked storage system that transparently scales to up to 231 terabytes (TB) of capacity. The system provides five nines availability and automated storage

tiering, which helps speed performance of virtualized environments. The system used in Cisco's testing employed a combination of 15,000-RPM disks and solid-state drives.



Figure 1. Cisco UCS B200 M2 Server

Conclusion

Cisco sets the standard in cloud computing performance that other vendors will strive to meet. Cisco Unified Computing System is cloud ready, and that is why Cisco is the first in the industry to post official VMmark 2.0 benchmark results. Cisco's benchmark results demonstrate the architectural advantages of a system built for virtualized environments, and they provide customers with a measure of what they can expect when deploying Cisco Unified Computing System.

For More Information

Visit <http://www.cisco.com/go/ucs>.

Disclosure

VMware® VMmark™ is a product of VMware, Inc. The Cisco UCS B200 M2 Blade Server result of 6.51@6 tiles was made available at <http://www.vmmark.com> as of December 28, 2010.



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