# Cisco UCS Delivers the Best Two-Processor SAP SD Performance Result on Microsoft Windows

## With the Intel Xeon Processor E5-2600 v4 Family

**Performance Brief**
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## Highlights

### Deploy a High-Performance Solution
- Cisco delivers the best two-processor SAP Sales and Distribution (SD) Benchmark result running Microsoft Windows in a two-tier configuration (a SAP Application Performance Standard [SAPS] score of 115,820) running Microsoft Windows 2012 R2 Datacenter Edition, representing a performance improvement of 32 percent over Cisco's last published result.

### Standardize on an Industry-Leading Solution
- Deploy the Cisco Unified Computing System™ (Cisco UCS®) with Microsoft Windows Server 2012 for additional flexibility and efficiency. Cisco UCS servers make an excellent foundation for any standards-based infrastructure solution.

### Scale to Meet Demand
- Results show that the Cisco UCS C240 M4 Rack Server configured with the Intel Xeon processor E5-2600 v4 family can support up to 21,210 concurrent SAP SD Benchmark users in a Microsoft Windows Server 2012 and IBM DB2 relational database management system (RDBMS) environment.

### Optimize Application Throughput
- High-performance rack servers, blade servers, and network fabrics enable Cisco UCS to handle many SAP application tasks. The benchmark results show that the Cisco UCS C240 M4 Rack Server configured with the Intel Xeon processor E5-2600 v4 family can process 1,753,670 order line items per hour or 5,261,000 dialog steps per hour.

### Simplify Data Center Infrastructure
- Cisco UCS reduces the number of physical components needed to support demanding SAP landscape applications, enabling you to make effective use of your limited space, power, and cooling resources.

## Cisco® servers and the IBM DB2 relational database management system (RDBMS) accelerate SAP performance from one processor generation to the next.

Cisco's comprehensive set of solutions for SAP and SAP HANA workloads—solutions that include servers with two to eight processors—deliver excellent performance on the SAP Sales and Distribution (SD) Benchmark. With the Cisco UCS® C240 M4 Rack Server powered by the Intel® Xeon® processor E5-2600 v4 product family, Cisco delivers a **SAP Application Performance Standard (SAPS) score of 115,820 (21,210 SAP SD benchmark users)**: the best two-processor, two-tier result running Microsoft Windows. These results show a 32 percent improvement over performance delivered by the previous generation of Intel Xeon processor E5 product family CPUs (Figure 1).

## SAP Sales and Distribution Benchmark

The SAP SD Benchmark is designed to stress the computing infrastructure and determine whether a consistent response can be delivered as more users consume system resources. Focused on testing components that influence the sizing of deployments, the benchmark exercises the processes that handle a sell-from-stock transaction, including business processes such as order creation and delivery, the movement of goods, and invoice creation. As a result, real-world infrastructure experiences conditions similar to those found in two-tier SAP applications.
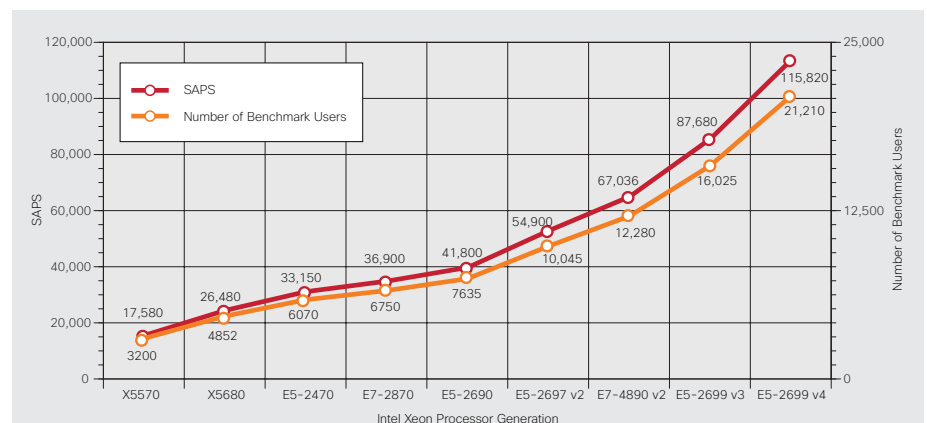


**Figure 1** Generation After Generation, Cisco Consistently Improves Two-Processor, Two-Tier SAP SD Benchmark Performance

## Benchmark Configuration

Cisco tested a Cisco UCS C240 M4 server equipped with two 2.20-GHz, 22-core Intel Xeon processor E5-2699 v4 CPUs and 512 GB of main memory. The server ran both the SAP software and the 64-bit IBM DB2 v10.1 Advanced Enterprise Edition in a bare-metal configuration. SAP Enhancement Package 5 for SAP Enterprise Resource Planning (ERP) 6.0 was used in this measurement. The IBM DB2 database software ran locally using just two Cisco UCS 3200-GB Fusion ioMemory 3SX scale flash-memory line cards for Cisco UCS C-Series.

### Cisco Unified Computing System

The Cisco Unified Computing System™ (Cisco UCS) is the first data center platform that integrates industry-standard, x86-architecture Intel Xeon processor–based servers with networking resources and storage access into a unified system. Server, networking, storage, and intelligent management resources work together in a self-aware and self-integrating

system. This design delivers greater computing density and network simplicity in a smaller footprint that reduces operating costs.

Cisco SingleConnect technology brings to each server a high-bandwidth, low-latency, 10-Gbps unified fabric that carries IP, storage, and management traffic over a single set of cables. The system represents a radical simplification compared to traditional architectures, resulting in lower capital expenditures and operating costs.

### Cisco UCS C240 M4 Rack Server

The Cisco UCS C240 M4 Rack Server delivers the balanced I/O, memory, and computing capacity you need for your large-scale analytical and business intelligence applications. The system is a 2-rack-unit (2RU) rack server supporting the Intel Xeon processor E5-2600 v4 product family with up to 1.5 terabytes (TB) of memory. Optional modular RAID controllers support a variety of storage solutions, including up to 12 large form-factor (LFF) or 24 small form-factor (SFF) hot-pluggable

SAS or SATA drives or solid-state disk (SSD) drives and up to two internal SFF boot drives. For I/O expansion, the server supports up to six PCI Express (PCIe) Generation 3 cards.

### Powered by the Versatile Intel Xeon Processor E5 v4 Family

Cisco UCS C240 M4 Rack Servers harness the power of up to two of the latest Intel Xeon processor E5-2600 v4 family CPUs to deliver an excellent 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 choices for a software-defined environment in which performance and efficiency matter most.

## Benchmark Results

The Cisco UCS C240 M4 running Microsoft Windows Server 2012 R2 delivered the best two-tier, SAP

**Table 1** SAP SD Benchmark Results (Certification 2016006)

| | | |
|---|---|---|
| Number of SAP SD Benchmark users | 21,210 | |
| Average dialog response time | 1295 ms | **Central server:** Cisco UCS C240 M4 (2 processors, 44 cores, and 88 threads), Intel Xeon Processor E5-2699 v4, at 2.20 GHz with 64-KB Level-1 cache and 256-KB Level-2 cache per core, and 55-MB Level-3 cache per processor, and 512 GB of main memory |
| Fully processed order line items per hour | 2,316,330 | |
| Dialog steps per hour | 6,949,000 | **Operating system:** Microsoft Windows Server 2012 R2 Datacenter Edition |
| SAPS score | 115,820 | **RDBMS:** IBM DB2 v10.1 Advanced Enterprise Edition |
| Average database request time | 11 ms (dialog) 23 ms (update) | **SAP Business Suite Software:** SAP Enhancement Package 5 for SAP ERP 6.0 |
| CPU utilization (central server) | 99 percent | |

SD Benchmark result with SAP Enhancement Package 5 for SAP ERP 6.0 and IBM DB2 v10.1 The solution supported 21,210 SAP SD Benchmark users while maintaining a consistent application response time of less than one second (Table 1). In addition, the server delivered a SAPS score of 115,820, representing a performance improvement of 32 percent over Cisco's last published result for the Cisco UCS B200 M3 server equipped with the previous generation of Intel Xeon processor, the E5-2600 v3 product family, with a SAPS score of 87,680.

The SAP certification number for the result reported in this brief is 2012006. Published results for the SAP SD 2-tier benchmark can be found on the SAP website at http://global.sap.com/solutions/benchmark/sd2tier.epx.

## Conclusion

Just as important as this record-setting result is the diligence with which Cisco performs benchmark testing and certifies its SAP environments. This diligence is revealed in the consistent performance improvements that Cisco demonstrates with each new server generation. By deploying SAP on Cisco UCS, you can have confidence that the thousands of users that rely on your SAP landscape applications and computing, network, and storage resources will get the response they need. With the capability to support more users and accelerate response times—up to 21,210 in the benchmark configuration—your business can operate effectively using little hardware.

In addition, you can choose from a broad range of Cisco UCS blade and rack server models to scale deployments further by using larger servers or by adding servers to create scale-out deployments with small footprints. Cisco innovations, plus a dramatic reduction in the number of physical components needed in the data center, demonstrate Cisco's commitment to the delivery of systems that provide value to SAP deployments.

## For More Information

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

## SAP Benchmark Disclosures

The statement of comparison is based on highest-performing system using two Intel Xeon processors and running SAP Enhancement Package 5 for SAP ERP 6.0 on Microsoft Windows Server 2012 R2 Datacenter Edition in a two-tier configuration.

Results referenced are available from the SAP website at http://global.sap.com/solutions/benchmark/sd2tier.epx and are current as of March 31, 2016.