Gain more with AMD EPYC processors and Cisco UCS servers

- More instructions per cycle from AMD ‘Zen3’ cores
- Up to 128 cores per server
- Up to 32 DDR-3200 DIMMs (8 TB) of memory
- Up to 128 lanes of PCIe 4.0 I/O connectivity

The world’s fastest processors bring your workloads to life on Cisco UCS.

With our Cisco UCS® C225 M6 and C245 M6 Rack Servers equipped with 3rd Gen AMD EPYC™ processors, your decision-support workloads come to life with the simplicity of the Cisco Unified Computing System™. Our world-record-setting performance as measured by the Transaction Processing Performance Council Benchmark H (TPC-H™) benchmarks suggests that your workloads will run faster on Cisco UCS servers.

When choosing the world’s fastest processors, you get a choice of two rack servers from Cisco: The Cisco UCS C225 M6 Rack Server is a 1-rack-unit (1RU) server optimized for both 1- and 2-processor configurations. The Cisco UCS C245 M6 Rack Server is a 2-socket, 2RU server designed to support large amounts of direct-attached storage with room for up to 8 PCIe 4.0 cards.
Real-world performance

Our TPC-H 30-TB benchmark result reflects real-world performance that can propel your business decision support to new levels of efficiency. We demonstrate a 12 percent gain over HPE that you can achieve by moving to 3rd Gen AMD EPYC processors to target the needs of your business. The world record was set by the Cisco UCS C245 M6 Rack Server using AMD EPYC 7763 processors with 64 cores per CPU. We used 8 TB of main memory to achieve these 2-socket results.

TPC-H performance

The TPC-H benchmark is a decision-support benchmark. It consists of a suite of business oriented ad-hoc queries and concurrent data modifications. The benchmark models decision-support systems that examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business questions.

Cisco has been the long-time performance leader running Microsoft SQL Server. What these results mean for you is that a large and expensive server is not required to achieve excellent results.

Comparisons are made against vendor participants with TPC-H benchmarks that use similar processor and memory configurations. The Cisco advantage is our architecture and close working relationships with AMD and Microsoft.

Our record-setting benchmark (Figure 1) is a matter of excellent engineering. With power and cooling designed to support the fastest x86-architecture CPUs anywhere, you gain the best that 3rd Gen AMD EPYC Processors have to deliver. Firmware settings that control boost frequencies are set through the Cisco Intersight™

**Cisco UCS C245 M6 Rack Server**

The world-record-setting server used our TPC-H measurements, the Cisco UCS C245 M6, is well suited for a wide range of storage- and I/O-intensive applications such as big data analytics, databases, collaboration, virtualization, and server consolidation.

- Up to two 3rd Gen AMD EPYC Processors with up to 64 cores per socket
- 32 DIMM slots for up to 8 TB of memory
- Up to 24 front-facing small-form-factor (SFF) SAS or SATA drives including up to 4 NVMe drives
- 4 optional rear-facing NVMe drives
- Up to 8 PCIe Gen 4 slots
- Support for 1400 series Cisco virtual interface cards and OCP 3.0 network cards
- RAID controller and GPU options
- Internal dual M.2 drive options

Figure 1. Our 2-socket TPC-H 30-TB result outpaces 4-socket results from HPE and from our prior-generation 4-socket server
Cisco UCS C225 M6 Rack Server

Optimized to deliver uncompromised I/O capacity whether one or two CPUs are installed, the Cisco UCS C225 M6 is one of the most versatile in the industry. This high-density, 1RU, 2-socket rack server supports a range of workloads including virtualization, engineering design automation (EDA), software-defined storage, big data, and edge-centric workloads.

- Up to two 3rd Gen AMD EPYC Processors with up to 64 cores per socket
- 32 DIMM slots for up to 8 TB of memory
- Up to 10 SFF NVMe, SAS, or SATA drives
- Up to 3 PCIe Gen 4 slots
- Support for 1400 series Cisco virtual interface cards and OCP 3.0 network cards
- RAID controller and GPU options
- Internal dual M.2 drive options

For details on the footnotes used in this document, visit amd.com/en/claims/epyc

1. AMD Infinity Guard features vary by EPYC™ Processor generations. Infinity Guard security features must be enabled by server OEMs and/or Cloud Service Providers to operate. Check with your OEM or provider to confirm support of these features. Learn more about Infinity Guard at https://www.amd.com/en/technologies/infinity-guard. GD-183

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Third generation AMD EPYC processors

Having established a performance leadership position for three generations of processors, the AMD EPYC 7003 Series processors bring performance to a new level. With industry-leading 7-nm process technology these processors help you drive faster time to results, more and better decision making, and better business outcomes. This generation delivers:

- Improved ‘Zen3’ core executes more (19 percent) instructions per clock than the prior generation
- Enhanced memory performance with synchronization between AMD Infinity Fabric and memory clocks
- High-frequency CPU options deliver highest per-core performance
- Multilevel (4, 6, and 8) memory interleaving helps optimize low-core-count CPUs

How much would your organization save by choosing Cisco for SQL Server?

It is important to note that the HPE Superdome Flex 280 is a 4-socket, 5U server. In comparison, the Cisco UCS C245 M6 is a 2-socket, 2U server. This saves space, cooling, and power and leaves more room to add storage as you need to scale your data.

Disclosures

TPC-H and QphH, are trademarks of the Transaction Processing Performance Council (TPC). The performance results described in this document are derived from detailed benchmark results available as April 7, 2022 on TPC.org.