DATABASE AND ANALYTICS WORKLOADS ON CISCO® UCS SERVERS WITH AMD EPYC™ PROCESSORS

Matching processors to your specific workloads can help optimize performance, cost, and efficiency. Cisco offers flexible and powerful servers to meet your data management needs.

Working together, AMD and Cisco have designed servers to deliver outstanding database performance, energy efficiency, and value. Data management is a fundamental need, and businesses constantly look to optimize and extract value from their data. High-performance solutions that are also energy efficient help reduce TCO which is a key to success. Cisco UCS® servers with AMD EPYC™ processors provide flexible options optimized for every business need, in conjunction with the data management ecosystem's leading software products. Transforming data into value quickly has earned AMD EPYC processors nine world records on structured database benchmarks and ten on business intelligence and analytics workloads.[1] AMD EPYC processors power energy-efficient servers, helping to reduce energy costs, holding 49 world records in virtualization and integer energy efficiency.[1] Efficiency leads to value, and choosing 5th Gen AMD EPYC processors over 5th Gen Intel Xeon processors can lead to fewer servers to achieve the same results, with less power consumption and lower TCO. See page 2 for details. [9xx5TCO-001C]

EPYC Performance Accelerates Data Analytics and AI Inference

Microsoft SQL Server®

~44%

More Queries/Hr

QPHH@3000GB DSS benchmark based on TPC-H
2P 32c EPYC 9374F vs 2P 32c Intel® Xeon® 8562Y+

Cloudera®

~40%

More Queries/Hr

QPHH@3000GB with 6-node clusters
DSS benchmark based on TPC-DS
Comparing 1P EPYC 9654 vs 2P Xeon 8480+

MySQL®

~2.7x

Queries/Hr

on TPROC-H DSS benchmark
2P EPYC 9654 vs. 2P Xeon Platinum 8380 [SP5-070]

EPYC Processors Accelerate Transactions and Queries to Gain Actionable Insights

Microsoft SQL Server

~31%

More Transactions/Sec Per Core

TPC-E comparing 1P 96C EPYC 9654 to 2P 60C Xeon 8490H [SP5-148]

MySQL

~3.9x

Transactions/Sec

TPROC-C comparing 2x 192C EPYC 9965 vs 2P 64C Xeon 8592+ [9xx5-005A]

PostgreSQL®

~58%

Higher Transactions/Sec

TPROC-C using a 1P EPYC configuration
1P EPYC 9374 vs 2P Xeon 8462Y+

CHOOSE YOUR ADVANTAGE WITH CISCO UCS SERVERS

Cisco powers data-intensive workloads across multiple generations of AMD EPYC processors. Cisco UCS M8 servers support 4th and 5th Gen AMD EPYC processors in both rack-mount and modular form factors. The 1U Cisco UCS C225 M8 accelerates database I/O with up to ten direct-attach NVMe drives, while the 2U Cisco UCS C245 M8 can directly attach up to eight NVMe drives for a direct link from storage to the CPU. The new Cisco UCS X215c Compute Node supports GPU accelerators both internal to the node, or in a companion PCIe sled, both of which integrate into the Cisco UCS X-Series Modular System. Cisco is the only vendor offering consistent management across all form factors and CPU architectures with the Cisco Intersight® IT operations platform. These Cisco UCS servers help accelerate speed to insight as you transform large volumes of data into competitive advantage—all while optimizing energy efficiency.

Model	Cisco UCS X215c M8	Cisco UCS C225 M8	Cisco UCS C245 M8	Cisco UCS C225 M6	Cisco UCS C245 M6
Configuration	2-socket compute node	1RU, 1-socket	2RU, 2-socket	1RU, 2-socket	2RU, 2-socket
AMD EPYC processors	EPYC 9005 Series up to 96 cores EPYC 9004 Series up to 128 cores	EPYC 9005 and 9004 Series	EPYC 9005 and 9004 Series up to 160 cores	EPYC 7003 Series	EPYC 7003 Series
Memory capacity	24 DDR5-6400 or 5600 DIMMs up to 6 TB	12 DDR5-6000 or 4800 up to 3 TB	24 DDR5-6000 up to 6 TB	32 DDR4-3200 up to 4 TB	32 DDR5-6000 up to 8 TB
Front disk options	Up to 6 2.5" SSDs	Up to 10x 2.5"	Up to 28x 2.5"	Up to 10x 2.5"	Up to 24x 2.5" plus up to 4 rear NVMe SFF drives

290% MORE OLTP PERFORMANCE

- ***Handle intermittent traffic peaks with ease***
- ***Power highly responsive customer applications***
- ***For non-per-core-licensed software, use high-core-count CPUs to deliver higher performance: a server with two 192-core AMD EPYC 9965 CPUs processes 2.9x the transactions per second compared to two 64-core Intel® Xeon® 8592+ CPUs running the TPROC-C benchmark on MySQL[9xx5-005A]***

SPEED DECISION MAKING WITH AI

ACCELERATE TIME TO RESULTS WITH THE TOP PERFORMER ON THE SPECACCEL 2023 BENCHMARK

Cisco UCS C245 M8 equipped with the 2x 192-core AMD EPYC 9684x processor takes the top score on this compute-intensive benchmark

41% LOWER TCO

60% FEWER SERVERS

41% LESS POWER

Comparing the number of servers needed to produce an aggregate SPECrate®2017_int_base score of ~39,100, using 2P servers with 192-core EPYC 9965 processors compared to 2P 64-core Xeon 8592+ CPUs[9xx5TCO-001C]

READY TO SWITCH?

- Learn more about Cisco UCS servers with AMD EPYC processors
- Learn more at amd.com/epyc

FOOTNOTES

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

[1]EPYC-022F: For a complete list of world records see: http://amd.com/worldrecords.

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