AMD
together we advance_

THE DATABASE UPGRADE THAT *HELPS PAY FOR ITSELF*

BOOST PERFORMANCE, CUT COSTS, AND SHRINK YOUR DATA CENTER FOOTPRINT

MORE CORES, MORE COST

Enterprise databases charge by the core, and support fees rise with it, often reaching tens of millions of dollars for large organizations. Do more per core, pay for fewer. That's the power of high-frequency AMD EPYC™ server CPUs.

31% Microsoft SQL Server Analytics Performance[1]
(EPYC 9654 vs. 2P Xeon 8490H)

Up to **23 %** lower software licensing costs for Microsoft SQL Server 2022[2]

Up to **192** cores with 5th Gen EPYC™ server CPUs, for leadership compute performance

HIGHER PERFORMANCE. LOWER COSTS. MORE VALUE.

High-frequency CPUs deliver more work per core, so you can run workloads faster while reducing the number of licensed cores required.

HIGH-FREQUENCY CPUs GET MORE VALUE FROM EACH SOFTWARE LICENSE

Fewer, faster cores do more work per software dollar

DATABASE LICENSES CAN COST $1000s PER CORE
Per-core software licenses charge for every CPU core used, regardless of how much work gets done

SLOWER CORES DO LESS WORK
You get less work per software dollar

VS

FASTER CORES DO MORE WORK
You get more work per software dollar

Graphic for illustration purposes only. Actual performance varies across workloads and CPU specifications.

The Challenge
Organizations often increase database performance by adding more servers and CPUs. But when software is licensed per core, more cores mean higher licensing costs.

The Solution
High-frequency AMD EPYC™ server CPUs increase throughput by doing more work per hour, allowing each single core—and each license—to deliver more value.

The Results
The right CPUs can cut software license costs by up to 23%.[2]

CRITEO MEETS EXPANDING DIGITAL ADVERTISING DEMANDS WITH AMD

"Jobs are running faster, with a clear impact on the response and processing times using fewer, higher-performing servers powered by AMD EPYC processors."

Matthieu Blumberg, Senior Vice President of Engineering Infrastructure, Criteo

STREETLIGHT OPTIMIZES TRANSPORTATION IN THE CLOUD WITH AMD EPYC™ SERVER CPUs

"In our opinion, AMD is delivering the best CPU out there. It's as simple as that."

Paul Friedman, CTO, StreetLight

FEWER SERVERS, OPTIMIZED TCO
Faster cores mean smaller data centers

- Because they are typically more power-efficient, refreshing data centers with AMD EPYC™ server CPUs can reduce energy consumption.
- AMD EPYC™ server CPUs can save millions in software fees and dramatically shrink your data center footprint by consolidating older, slower servers into fewer modern servers.

SEE WHAT CONSOLIDATION CAN DO

Reduce software licensing costs, lower energy consumption, and free capacity for new AI and high-volume workloads.

FEWER SERVERS. LESS POWER. LOWER COSTS.

391,000 SPECRATE® 2017_INT_BASE SCORE DATA CENTER[3]

347 Count Intel servers 2P 5th Generation Intel® Xeon® 8592+ CPUs	**131** High-performance AMD servers 2P 5th Generation, high-performance AMD EPYC™ 9965 server CPUs
Core count **44,416**	Core count **50,304**
Energy consumption **~4744** KWH PER YEAR	Energy consumption **~2627** KWH PER YEAR

Up to **62 %** FEWER SERVERS[3]

Up to **45 %** LESS POWER[3]

Up to **44 %** LOWER TCO OVER 3 YEARS[3]

Illustration compares the number of dual-socket servers required to deliver a 391,000 SPECrate®2017_int_base score using 5th Gen (Emerald Rapids) Intel Xeon Platinum 8592+ CPUs and 5th Generation AMD EPYC™ 9965 server CPUs. For details, see endnote 3.

UPGRADE ON-PREMISES AND IN THE CLOUD

Reduce software licensing costs, lower energy consumption, and free capacity for new AI and high-volume workloads.

AMD EPYC™ Server CPUs Deliver Exceptional Performance for Microsoft SQL Server

- Powering over 1,000 instances in the public cloud
- 31% faster Microsoft SQL performance EPYC 9654 server CPUs vs. 2P Xeon 8490H[1]
- Up to 30% higher analytics performance, Microsoft SQL 2022[4]

Oracle EXADATA X11M Delivers Major Gains with AMD EPYC™ Server CPUs

- Up to 4.6x faster queries[5]
- Up to 25% more concurrent transactions[5]
- Up to 25% faster serial transactions[5]

LOGDNA EMPOWERS DEVOPS LOG MANAGEMENT WITH AMD EPYC™ SERVER CPUs

"We don't even need to run as many servers because of how fast the EPYC server CPUs are. It's very rare to find something that's both more cost-effective and has better performance."

Lee Liu, Co-founder and CTO, LogDNA

AMD EPYC™ SERVER CPUs, TRUSTED THE WORLD OVER

- Proven deployments with Fortune 500 companies
- World record transactional and analytics performance on popular databases
- Powering four of the top ten supercomputers in the world[6]
- Installed in business-critical infrastructure for finance, automotive, aerospace, technology, telecom, healthcare, and the public sector

DO MORE PER CORE WITH AMD EPYC™ SERVER CPUs

No matter where your databases run—at the edge, on premises, or in the cloud—AMD EPYC™ server CPUs bring the speed and performance you need while using less space, power, and infrastructure.

[1]SP5-148: One 96-core AMD EPYC 9654 CPU delivers 31% more performance per core than two 60-core Intel Xeon® 8490H CPUs on TPC-E. 1P 96C AMD EPYC 9654 delivers 31% more per core performance on Microsoft SQL Server® 2022 Enterprise compared to 2P 60C Intel Xeon Platinum 8490H. AMD results (13,000 tpsE or 135.4 tpsE/core, $74.09/tpsE, avail 5/24/23, https://www.tpc.org/4093). Intel results (12,436 tpsE or 103.6 tpsE/core, $95.46/tpsE, avail 5/18/23, https://www.tpc.org/4091). TPC Benchmark is a trademark of TPC. (SP5-148).
[2]9xx5-221: TPC-H analytics workload based on internal AMD measurements as of 6/16/2025. This workload is derived from the TPC-H Benchmark and is not comparable to published TPC-H Benchmark results, as this implementation does not comply with all requirements of the TPC-H Benchmark. Workload configs: SQL Server 2022 CU 11, 32 Core Node, SF3000, TPC-H Kit MSTPCH 2.18.0-2600 1P 32C AMD EPYC 9375F powered production server (32 total cores, 1.5 TB DDR5 5200Mhz Memory, BIOS 0.2.3 X-Rev, SMT=On, Determinism=Power, mitigations=off; OS Microsoft Windows Server 2022 Standard, 10.0.20348 Build 20348, 10 x 3.49TB storage) with 1,346,026 avg QphH@3000 1P 16C AMD EPYC 9175F powered production server (16 total cores, 1.5 TB DDR5 5200Mhz Memory, BIOS 0.2.3 X-Rev, SMT=On, Determinism=Power, mitigations=off; OS Microsoft Windows Server 2022 Standard, 10.0.20348 Build 20348, 10 x 3.49TB storage) with 826,781 avg QphH@3000 2P 16C AMD EPYC 9124 powered production server (32 total cores, 1.5 TB DDR5 4800Mhz Memory, BIOS 1.7.2, SMT=On, Determinism=Power, mitigations=off; OS Microsoft Windows Server 2022 Datacenter, 10.0.20348 Build 20348, 3 x 6.9TB and 3 x 3.4TB storage) with 1,206,427 avg QphH@3000 Versus 2P 16C Intel Xeon 6544Y powered production server (32 total cores, 3 TB DDR5 5600Mhz Memory, BIOS ESE124B-3.11, SMT=On, mitigations=off; OS Microsoft Windows Server 2022 Datacenter, 10.0.20348 Build 20348, 9 x 3.49TB storage) with 1,031,925 avg QphH@3000.
Estimated licensing costs for running 10M queries
2P Intel Xeon 6544Y platform: $2,344,822 2P AMD EPYC 9124 platform: $2,005,657
1P AMD EPYC 9375F platform: $1,797,648
1P AMD EPYC 9175F platform: $1,463,313
Microsoft SQL Server 2022 license pricing information: $15,123 per 2 core pack, source: https://www.microsoft.com/en-us/sql-server/sql-server-2022-pricing. Pricing as of 5/2/2025. Results may vary due to factors including system configurations, software versions and BIOS settings. (9xx5-221).
[3]9xx5TCO-002A: This scenario contains many assumptions and estimates and, while based on AMD internal research and best approximations, should be considered an example for information purposes only, and not used as a basis for decision making over actual testing. The AMD Server & Greenhouse Gas Emissions TCO (total cost of ownership) Estimator Tool - version 1.12, compares the selected AMD EPYC™ and Intel® Xeon® CPU based server solutions required to deliver a TOTAL_PERFORMANCE of 391000 units of SPECrate2017_int_base performance as of October 10, 2024. This estimation compares a legacy 2P Intel Xeon 28 core Platinum_8280 based server with a score of 391 versus 2P EPYC 9965 (192C) powered server with a score of 3000 (https://www.spec.org/cpu2017/results/res2024q4/cpu2017-20240923-44837.pdf) along with a comparison upgrade to a 2P Intel Xeon Platinum 8592+ (64C) based server with a score of 1130 (https://spec.org/cpu2017/results/res2024q3/cpu2017-20240701-43948.pdf). Actual SPECrate®2017_int_base score for 2P EPYC 9965 will vary based on OEM publications. Environmental impact estimates made leveraging this data, using the Country / Region specific electricity factors from the 2024 International Country Specific Electricity Factors 10 – July 2024, and the United States Environmental Protection Agency "Greenhouse Gas Equivalencies Calculator." For additional details, see https://www.amd.com/en/legal/claims/epyc.html#q=epyc4#SP9xxTCO-002A. (9xx5TCO-002A).
[4]9xx5-221T: PC-H analytics workload based on internal AMD measurements as of 6/16/2025. This workload is derived from the TPC-H Benchmark and is not comparable to published TPC-H Benchmark results, as this implementation does not comply with all requirements of the TPC-H Benchmark. Workload configs: SQL Server 2022 CU 11, 32 Core Node, SF3000, TPC-H Kit MSTPCH 2.18.0-2600 1P 32C AMD EPYC 9375F powered production server (32 total cores, 1.5 TB DDR5 5200Mhz Memory, BIOS 0.2.3 X-Rev, SMT=On, Determinism=Power, mitigations=off; OS Microsoft Windows Server 2022 Standard, 10.0.20348 Build 20348, 10 x 3.49TB storage) with 1,346,026 avg QphH@3000 1P 16C AMD EPYC 9175F powered production server (16 total cores, 1.5 TB DDR5 5200Mhz Memory, BIOS 0.2.3 X-Rev, SMT=On, Determinism=Power, mitigations=off; OS Microsoft Windows Server 2022 Standard, 10.0.20348 Build 20348, 10 x 3.49TB storage) with 826,781 avg QphH@3000 2P 16C AMD EPYC 9124 powered production server (32 total cores, 1.5 TB DDR5 4800Mhz Memory, BIOS 1.7.2, SMT=On, Determinism=Power, mitigations=off; OS Microsoft Windows Server 2022 Datacenter, 10.0.20348 Build 20348, 3 x 6.9TB and 3 x 3.4TB storage) with 1,206,427 avg QphH@3000 Versus 2P 16C Intel Xeon 6544Y powered production server (32 total cores, 3 TB DDR5 5600Mhz Memory, BIOS ESE124B-3.11, SMT=On, mitigations=off; OS Microsoft Windows Server 2022 Datacenter, 10.0.20348 Build 20348, 9 x 3.49TB storage) with 1,031,925 avg QphH@3000.
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[5]Oracle, Exadata Database Machine X11M, 2026. Pg#9.
[6]TOP500, Supercomputer list November, 2025.

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