UPGRADE PERFORMANCE, LOWER COSTS FOR MICROSOFT SQL SERVER

AMD EPYC™ CPUs can help improve performance while reducing operating expenses

In-memory database architectures, ballooning AI workloads, and aging infrastructure are making data center upgrades essential for many enterprises. For Microsoft SQL® customers, AMD EPYC™ CPUs can dramatically improve data movements, transformations, and operations while helping to reduce software licensing costs and lower energy consumption.

Choose the performance boost that reduces software licensing costs[1]

At over $15K per two-core pack[2], Microsoft SQL Server, Enterprise Edition licenses can be a significant portion of overall budgets. Servers with high-frequency AMD EPYC CPUs can help pay for themselves in software savings alone.

Get up to
30%
HIGHER ANALYTICS PERFORMANCE

Use up to
23%
FEWER LICENSES

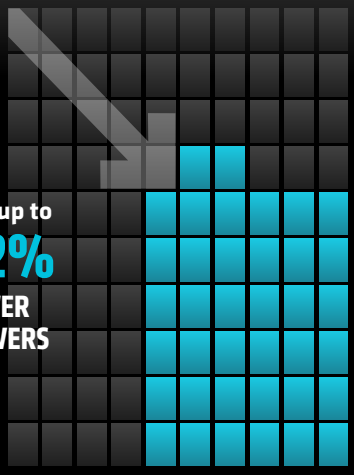
Save up to
$547K
ON SOFTWARE

When you run Microsoft SQL Server 2022 on one 32-core AMD EPYC™ 9375F CPU instead of two 16-core Intel® Xeon® 6544Y CPUs

Performance measures throughput for 10 million analytics transactions. Please see note 1 for details. Pricing based on Microsoft SQL 2022 server pricing as of August 2025. Please see note 2 for details.

Choose high performance while lowering energy consumption and TCO[3]

High core count AMD EPYC CPUs combine high performance and increased density with energy-efficient designs. With AMD EPYC CPUs, one server can do the work of two and a half servers powered by competing x86 CPUs.



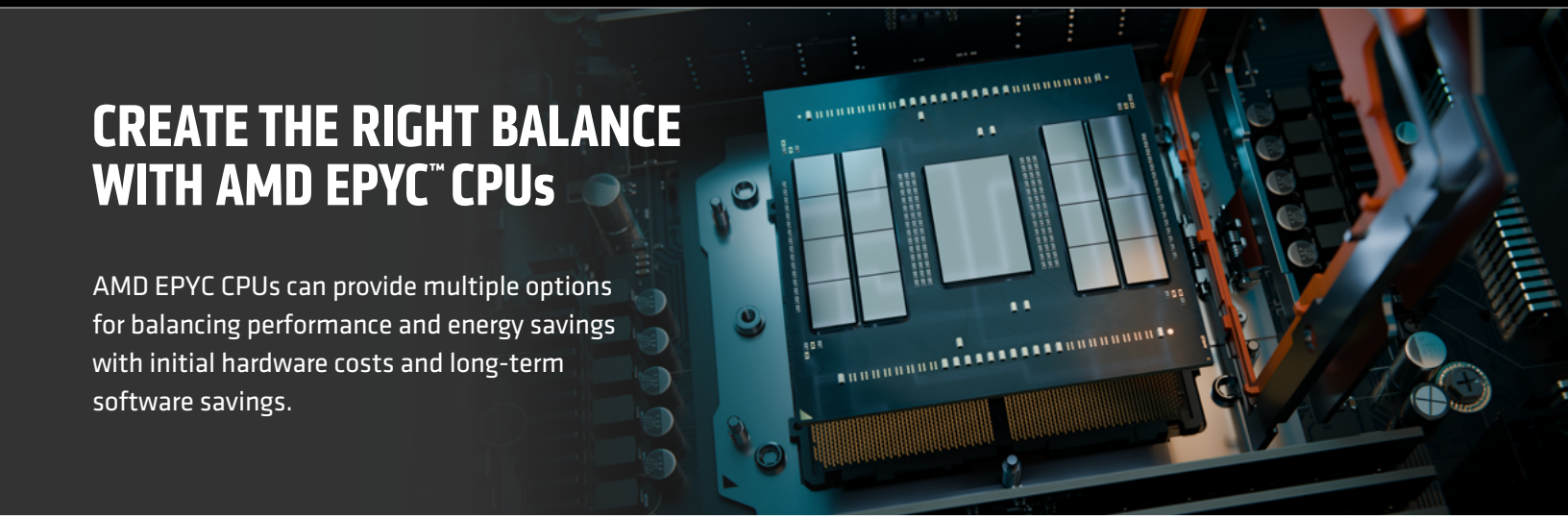
Use up to
62%
FEWER SERVERS

Consume up to
45%
LESS ENERGY

Realize up to
44%
LOWER TCO
over 3 years

Based on the number of 2P 96-core (192 Cores total) EPYC 9965 CPUs (Turin) powered servers and 2P 32-Core (64 cores total) Intel Xeon Platinum 8592+ (Emerald Rapids) powered servers required to deliver a 391,000 SPECrate®2017_int_base score. SPECint results may not represent performance achievable with Microsoft SQL Server workloads. Please see note 3 for details.

CREATE THE RIGHT BALANCE WITH AMD EPYC™ CPUs



AMD EPYC CPUs can provide multiple options for balancing performance and energy savings with initial hardware costs and long-term software savings.

High-frequency AMD EPYC CPUs

Up to 5.0 GHz CPUs deliver more speed for core-licensed software, high-speed transactions, and AI workloads.

High-core-count AMD EPYC CPUs

Up to 192 core-count CPUs deliver throughput for cloud-native applications, virtual machines, and compute-intensive, parallel workloads.

Memory-optimized AMD EPYC CPUs

Multiple AMD Infinity Fabric™ links effectively double memory throughput for memory-intensive workloads.

AMD Infinity Guard

Silicon level security features that help defend against internal and external threats.[4]

Explore AMD EPYC CPUs

Available on premises and in the cloud

AMD EPYC CPU-powered solutions for Microsoft SQL Server are available from leading hardware and cloud providers

Microsoft SQL hardware providers

Hewlett Packard Enterprise
Read brief (amd.com)
Access reference architecture (hpe.com)

DELL Technologies
Read brief (amd.com)
Read white paper (dell.com)

Lenovo
Read brief (lenovo.com)
Access reference architecture (lenovo.com)

SUPERMICRO
Read brief (supermicro.com)

CISCO
See solutions (cisco.com)

Microsoft SQL cloud solutions

Azure
Read brief (amd.com)
Explore AMD VMs on Azure (amd.com)

aws
See solutions (aws.com)

Google Cloud
Explore AMD VMs on Google Cloud (amd.com)

ORACLE CLOUD Infrastructure
Read article (oracle.com)

Links to third party sites are provided for convenience and unless explicitly stated, AMD is not responsible for the contents of such linked sites and no endorsement is implied. (GD-97)

Additional resources

Microsoft SQL Server 2022
AMD EPYC CPUs
AMD Database and Analytics Solutions
AMD Documentation Hub

1. 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 (16total 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)

2. Microsoft, SQL Server 2022 pricing and licensing.

3. 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. AMD Infinity Guard features vary by EPYC™ Processor generations and/or series. 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/products/processors/server/epyc/infinity-guard.html (GD-183A)