AMD
together we advance_

OPTIMIZE SERVERS, POWER, AND COST FOR AI-READY INFRASTRUCTURE

Drive Innovation without Compromise with AMD EPYC™ Server CPUs

IT leaders today face a complex dual mandate: fuel transformative technological innovation while managing shrinking budgets. This calls for a more strategic approach to choosing data center infrastructure, one that balances performance, efficiency, and cost.

KEY PRESSURES

01

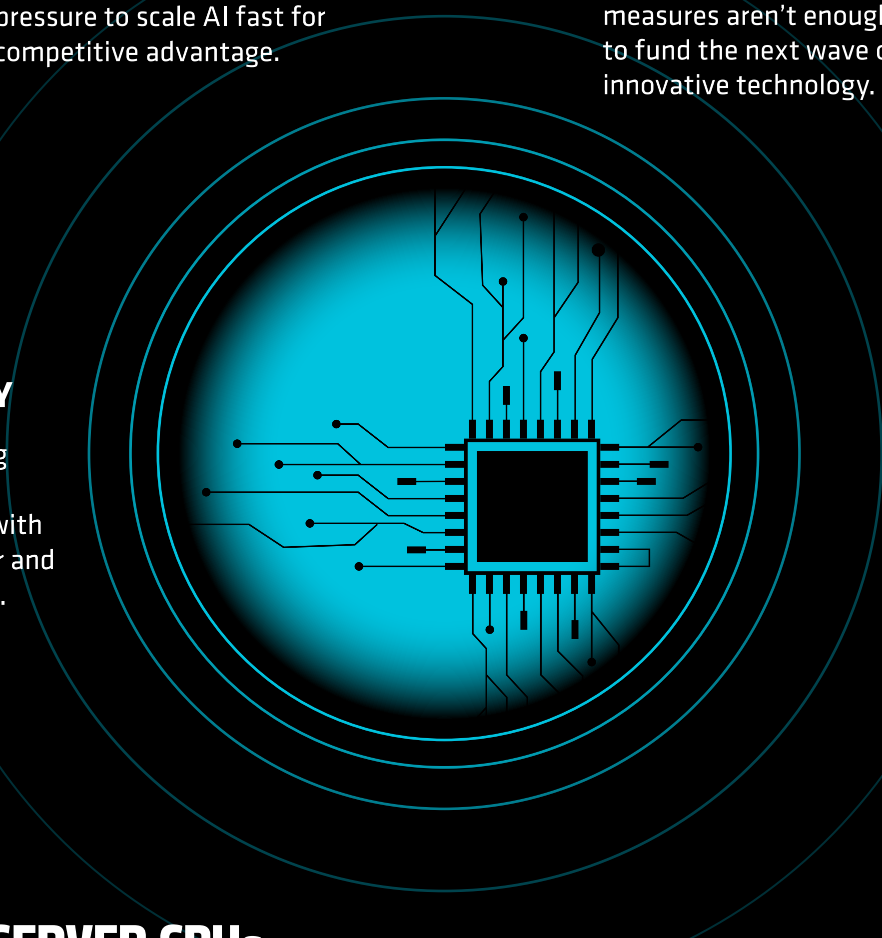
THE RACE TO AI

IT leaders are under pressure to scale AI fast for competitive advantage.

02

BUDGET BUSTERS

Traditional cost-cutting measures aren't enough to fund the next wave of innovative technology.



03

ENERGY EFFICIENCY

There's a rising demand for performance with reduced power and carbon impact.

04

FLEXIBILITY

High switching costs mean organizations must choose an IT partner that can meet the demands of continually evolving technology.

AMD EPYC™ SERVER CPUs

Built for Performance, Efficiency, and Lower TCO

DO MORE WITH LESS

- Delivers up to 13% faster time-to-first-token and 6.6% higher overall inference throughput than an equivalent 8 GPU server powered by Intel® Xeon® 6960P CPUs[1]
- AMD EPYC™ 9005 server CPUs can match integer performance of legacy hardware with up to 88% fewer racks[2]
- AMD EPYC™ server CPUs demonstrate a similar performance advantage over Intel "Granite Rapids," even at the 64-core level[3]

REDUCE ENERGY CONSUMPTION

- AMD EPYC™ server CPUs power the most energy-efficient x86 servers in the game
- Takes 36% less energy consumed annually[4]
- Reduce power consumption by 68%[5]

LOWER INFRASTRUCTURE COSTS

- Replace 100 old 2-socket servers with 28-core Intel® Xeon® 8280 CPUs with just 13 new 2-socket servers powered by 192-core AMD EPYC™ 9965 CPUs[5]
- Deliver the same 39,100 units of integer performance[5]
- Lower three-year total cost of ownership (TCO) by up to 69%[5]

THE INVESTMENT THAT PAYS FOR ITSELF

TRANSFORM YOUR DATA CENTER

DBS adopted Dell EMC PowerEdge servers powered by AMD EPYC™ server CPUs, enabling huge cost savings and a massive upswing in sustainability, all while achieving higher resiliency and faster release cadences.

"[With AMD EPYC™ servers], our power consumption reduced by 50%. But we had ten times the capacity to grow.[6]"

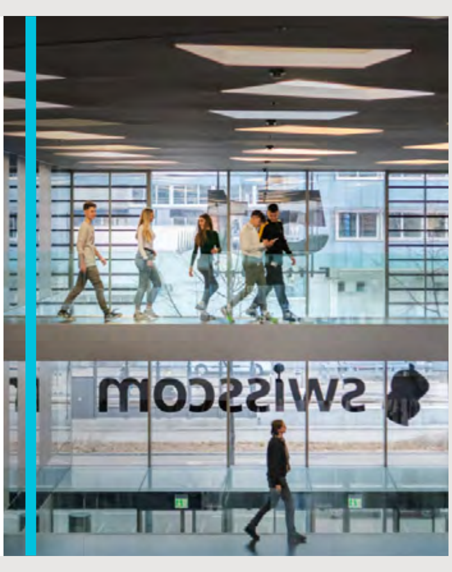
CHOON BOON TAN
Managing Director and Head of Cloud Engineering & Services at DBS

OPTIMIZE YOUR INFRASTRUCTURE COSTS

Swisscom reduced power usage by 24% with 55% fewer Watts per vCPU by switching to AMD EPYC™ server CPUs.[7]

"It's amazing the amount of power you can save and the ease of management of single NUMA nodes with AMD EPYC™ processors."

RAINER MEIER
System Architect, Telco Cloud Infrastructure Swisscom



BUILD THE DATA CENTER YOUR BUSINESS DEMANDS

Optimize performance. Lower energy consumption. Reduce costs. Build the foundation for innovation and AI workloads with AMD EPYC™ server CPUs.

LEARN MORE

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[1]9xx5-258: GPU Inference throughput results based on AMD internal testing as of 10/24/2025. Workload Configs: vLLM version, NIM version, Input/Output Tokens: 128/128, 1024/128, 128/1024, 1024/1024, results in tokens per second 2P AMD EPYC 9575F (128 Total Cores) production system with 8x NVIDIA B200 GPUs, 24x64GB DDR5-6400, SAMSUNG MZWLO3T8HCLS-00A07 3.84 TB NVMe, Ubuntu 24.04 6.8.0-85-generic, BIOS 1.5, SMT OFF, Mitigations OFF, Power Determinism, CUDA 13.0, NPS1 2P Intel Xeon 6960P (128 Total Cores) production system with 8x NVIDIA B200 GPUs, 24x64GB DDR5-6400, SAMSUNG MZWLO3T8HCLS-00A07 3.84 TB NVMe, Ubuntu 24.04 6.8.0-85-generic, BIOS 1.2, SMT OFF, Mitigations OFF, Power Determinism, CUDA 13.0, NPS1 Results: Framework Model Relative NIM llama3.3-70b-instruct 1.053 NIM gpt-oss-120b 1.133 NIM qwen2_5-coder-32b-instruct 1.034 VLLM Vllm_Deepseek_V3(R1) 1.036 VLLM Vllm_Llama4_scout 1.049 VLLM Vllm_Qwen2.5-VL-72B-Instruct 1.073 NIM Multi-instance llama3.1-8b-instruct 1.144 NIM Multi-instance qwen2_5-coder-32b-instruct 1.014 Overall Geomean 1.066 Best Result 1.144 Results may vary due to factors including system configurations, software versions and BIOS settings.
[2]9xx5TCO-018: 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 1.53, compares the selected AMD EPYC™ and Intel® Xeon® CPU based server solutions required to deliver a TOTAL_PERFORMANCE of 391,000 units of SPECrate2017_int_base performance as of December 3, 2025. This analysis compares a 2P AMD 192 core EPYC_9965 powered server with a SPECrate2017_int_base score of 3230, https://spec.org/cpu2017/results/res2025q2/cpu2017-20250324-47086.pdf;
compared to a 2P Intel Xeon 128 core Xeon_6980P based server with a SPECrate2017_int_base score of 2510, https://spec.org/cpu2017/results/res2025q2/cpu2017-20250324-47099.pdf; versus legacy 2P Intel Xeon 28 core Platinum_8280 based server with a SPECrate2017_int_base score of 391, https://spec.org/cpu2017/results/res2020q3/cpu2017-20200915-23984.pdf
Environmental impact estimates made leveraging data from the 2025 International Country Specific Electricity Factors and can be found at https://www.carbondi.com/#electricity-factors/ and the US EPA Greenhouse Gas Equivalencies Calculator used in this analysis was sourced on 09/04/2024 and can be found at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator. For additional details, see https://www.amd.com/en/legal/claims/epyc.html#q=9xx5TCO-018.
[3]AMD EPYC 9575F 64-core performance gain over Intel Xeon 6767P 64-core. For additional details see https://www.amd.com/en/blogs/2025/winning-at-every-core-count--maximizing-performance--minimizing-.html.
[4]Over the 3-years of this analysis, The AMD powered server takes 36% less power with an estimated cost of $67,055 vs the Intel based server power cost of $104,701, using a PUE of 1.7, saving $37,645 with the EPYC solution over the 3 years of this analysis with an estimated US power cost of $0.128 / kWh. Including the virtualization SW licensing the 1st year TCO per VM for AMD is $715.73 vs Intel at $910.26. AMD is $195 or 21% less per 1st year cost / VM.
[5]9xx5TCO-019: As of 11/06/2025 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 Server & Greenhouse Gas Emissions TCO (total cost of ownership) Estimator Tool compares the selected AMD EPYC™ and Intel® Xeon® CPU based server solutions required to deliver a Target Performance Metric of ~9,460 units of integer performance based on the published scores (or estimated if indicated by an asterisk) for Intel Xeon and AMD EPYC CPU based servers. This estimation reflects a 5 year time frame. Only power costs contribute to OPEX.
This analysis compares a 1P AMD 64 core EPYC_9555P powered server with a SPECrate2017_int_base score of 828,
https://spec.org/cpu2017/results/res2025q2/cpu2017-20250404-47298.pdf;
versus legacy 2P Intel Xeon 32 core Platinum_8352Y based server with a SPECrate2017_int_base score of 473,
https://spec.org/cpu2017/results/res2023q1/cpu2017-20230215-34346.pdf
CORE ASSUMPTIONS:
Cost of Power @ 0.1311 per kWh; Power per rack for server use 8.6kW (kilowatts); PUE (power usage effectiveness) of 1.7; server rack size of 42RU. Server racks are considered pre-existing (no cost) for this analysis. The CPU & Chassis Power in this analysis is modeled at 100% of TDP for EPYC powered servers, and at 100% for the Intel based servers.
HARDWARE CONFIGURATIONS AND COSTS:
The EPYC powered server configuration is:
To achieve an estimated aggregated SPECrate2017_int_base score of ~9,460 requires 12, AMD EPYC 9555P Servers at $7,983 per CPU, total per system memory of 256GB with 4GB of memory / core and a total per system memory cost using DDR5 DIMMs of $1,312; 1TB internal storage cost of $380 and a 1S, 2RU server chassis, at $1,950 per chassis; requiring 1 rack(s). This results in a per server hardware acquisition cost of $11,625 and a solution hardware cost of $139,500.
Legacy server hardware acquisition cost is considered sunk costs and only extended annual warranty costs apply as operating expenses. The legacy based powered server configuration is:
To achieve an estimated aggregated SPECrate2017_int_base score of ~9,460 requires 20, Intel Platinum 8352Y Servers; at $3,995 per CPU, total per system memory of 256GB with 4GB of memory / core and a total per system memory cost using DDR4 DIMMs of $624; 1TB internal storage with similar capacity and cost of $380; and a 2S, 2RU server chassis at, $2,025 per chassis; requiring 2 rack(s). This results in an initial per server hardware acquisition cost of $11,059 with a total solution hardware cost of ~$221,183, resulting in an associated warranty cost of ~$221,183, (20% times the total hardware acquisition costs for 5-years).
SOFTWARE CONFIGURATIONS AND COSTS:
The AMD solution has a total of 12 servers with 768 total cores. The VMware vSphere Standard is based on a 5 year commitment plan at a price of $250 on a per core license. The total 5 year estimated software cost for the AMD solution is $192,000.
The legacy Intel solution has a total of 20 servers with 1,280 total cores. The VMware vSphere Standard is based on a 5 year commitment plan at a price of $250 on a per core license. The total 5 year estimated software cost for the legacy Intel solution is $320,000.
POWER ONLY OPERATING COSTS:
AMD EPYC: The total solution for the 12 AMD EPYC 9555P Servers, over the 5 year period of this analysis is 461,414kWh at a total solution power cost of ~$60,491.
LEGACY INTEL: The total solution for the 20 Intel Platinum 8352Y Servers, over the 5 year period of this analysis is 810,720kWh at a total solution power cost of ~$106,285.
HARDWARE, POWER & SOFTWARE TCO:
Delivering an aggregated SPECrate2017_int_base score of ~9,460, the AMD EPYC 9555P Server solution produces the following estimated results: total hardware acquisition cost of ~$139,500; total power cost of ~$60,491; total software cost of ~$192,000 providing a 5 year TCO of ~$391,991.
The Intel legacy Platinum_8352Y solution delivering a total SPECrate2017_int_base score of ~9,460 produces the following estimated results: Total warranty cost of ~$221,183 total power costs of ~$106,285 total software licensing costs of ~$320,000 providing a 5 year TCO of ~$647,469.
The AMD EPYC 9555P Server solution requires 40% fewer servers; 70% fewer CPUs; 40% fewer cores; 50% fewer racks; 43% less power; providing a 5 year savings of $255,478 or ~39% lower vs legacy Intel. The legacy Intel solution 5 year software virtualization licensing has a cost of ~$320,000, and the AMD solution has a 5 year software virtualization licensing cost of ~$192,000 providing a savings of $128,000 or 40% lower software virtualization licensing costs.
ENVIRONMENTAL:
The 12 servers powered by AMD EPYC_9555P CPUs save ~349,308kWh of electricity versus the Intel Platinum_8352Y solution for the 5 years of this analysis. Leveraging this data and using the Country / Region specific electricity factors from the 'Carbon Database Initiative', and the United States Environmental Protection Agency 'Greenhouse Gas Equivalencies Calculator', the AMD EPYC_9555P powered server saves ~130 Metric Tons of CO2 equivalents (which is equal to 143 US tons. MT * 1.10231 = US tons). This results in the following estimated savings based on United States data,
Emissions Avoided equivalent to one of the following:
6 USA Passenger Cars Not Driven Annually; or
14,668 Gallons of Gasoline Not Used; or
5 USA Homes' Electricity Use for 1 year; or
144,839 Pounds of Coal Not Burned in USA; or
Carbon Sequestered equivalent to:
2,173 Tree Seedlings Grown for 10 years in USA; or
26.07 Acres of USA Forests Annually.
The 2025 International Country Specific Electricity Factors data used in this analysis can be found at https://www.carbondi.com/#electricity-factors/ and the US EPA Greenhouse Gas Equivalencies Calculator used in this analysis was sourced on 09/04/2024 and can be found at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
AMD CPU pricing based on 1KU price as of August 25, 2025. Intel® Xeon® Scalable CPU data and pricing from https://ark.intel.com as of August 25, 2025. Memory pricing from http://www.atic.ca/ as of 08/26/2025. All pricing is in USD.
VMmark® is a registered trademark of the VMware Corporation. See www.vmware.com for more information. VMmark® is a registered trademark of VMware in the US or other countries. VMware pricing from https://tech.cc as of 08/26/2025
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AMD EPYC performance numbers based on the identified benchmark reported scores or the user provided score where indicated. Product and company names are for informational purposes only and may be trademarks of their respective owners.
Results generated by: AMD EPYC™ Server TCO Greenhouse Gas Emission Estimation Tool - version 1.55.
[6]GD-181: All performance and cost savings claims are provided by DBS and have not been independently verified by AMD. Performance and cost benefits are impacted by a variety of variables. Results herein are specific to DBS and may not be typical. GD-181.
[7]GD-181: All performance and cost savings claims are provided by Swisscom and have not been independently verified by AMD. Performance and cost benefits are impacted by a variety of variables. Results herein are specific to Swisscom and may not be typical. GD-181.

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