AMD
EPYC

WHICH AMD EPYC™ PROCESSOR IS RIGHT FOR MY WORKLOAD?

AMD EPYC™ processors can provide exceptional performance, efficiency and security features for the widening array of workloads your business counts on today.

DESPITE MACROECONOMIC UNCERTAINTIES…

The OECD predicts ***2.6%*** GDP growth globally and ***5.9% inflation*** for the G20 in 2023.[1]

…DIGITAL TRANSFORMATION MUST MOVE FORWARD

According to Gartner, enterprise IT spending is recession-proof as CEOs and CFOs, rather than cutting IT budgets, are ***increasing spending on digital business initiatives***.

Gartner predicts Worldwide IT spending will increase to ***$4.6 trillion*** in 2023, an increase of ***5.1%*** from 2022.[2]

WHAT IF YOU COULD:

- ✓ Upgrade the **performance** of your existing landscape with a simple processor choice?
- ✓ Accelerate business **productivity**, make more informed decisions and get to market faster?
- ✓ Easily select a processor suited for your **specific workloads** without any features trade-offs?
- ✓ Experience leaps in **value** for the same job time, watt and square footage?
- ✓ **Confidently** navigate today's business risks, complexities and requirements?

ZEN

Since its introduction in 2017, the AMD "Zen" microprocessor architecture has enabled significant improvements for each processor generation. Compatible with x86 software applications, it's the foundation for streamlined data center upgrades and transformations achieved at your pace and on your budget.

AMD
together we advance_data centers

PICK YOUR PROCESSOR

	AMD EPYC™ 7002 SERIES	AMD EPYC 7003 SERIES	AMD EPYC 7003X SERIES WITH 3D V-CACHE™ TECHNOLOGY	AMD EPYC 9004 SERIES	AMD EPYC 9004X SERIES WITH 3D V-CACHE TECHNOLOGY	AMD EPYC 97x4 PROCESSORS
	Manage new deployments and changing workloads simply and cost-effectively.	Supercharge your data center with performance and productivity.	Achieve breakthrough performance for complex technical computing workloads like EDA, CFD, FEA and more with a dramatic increase in L3 cache that helps you get more from the core.	Get more from your applications and accelerate business results by advancing your data center performance and energy efficiency.	Take advantage of leadership architecture that can solve today's most complex technical problems.	Get the performance, density, energy efficiency and compatibility needed to provide no-compromise computing for on-premises or growing cloud native environments.
THE SPECS	ZEN 2 2nd Gen AMD EPYC™ x86-architecture server processor based on 7nm process technology and **"Zen2"** architecture • Up to 64 cores • Up to 128 threads • Up to 128 PCIe® 3.0 I/O lanes	ZEN 3 3rd Gen AMD EPYC processor based on 7nm process technology and **"Zen3"** architecture • Up to 64 cores • Up to 128 threads • Up to 128 PCIe 4.0 I/O lanes[3] • Up to 4 TB of DDR4-3200 memory across 16 DIMM slots	ZEN 3 3rd Gen AMD EPYC processor architecture based on 7nm process technology and **"Zen3"** architecture • Up to 64 cores • Up to 128 threads • Up to 128 PCIe 4.0 I/O lanes[3] • Up to 4 TB of DDR4-3200 memory across 16 DIMM slots • 768 MB L3 cache per socket enabled by 3D V-Cache™ technology	ZEN 4 4th Gen AMD EPYC architecture based on 5nm process technology and **"Zen4"** architecture • Up to 96 cores • Up to 192 threads • Up to 128 lanes of PCIe 5.0 I/O[3] • 12 DDR5-4800 memory channels • Up to 256 MB of L3 cache • Up to 64 lanes of CXL™ connectivity for cache-coherent memory pools • Industry-standard AVX-512 support	ZEN 4 4th Gen AMD EPYC architecture based on 5nm process technology and **"Zen4"** architecture • Up to 96 cores • Up to 192 threads • Up to 128 lanes of PCIe 5.0 I/O[3] • 12 DDR5-4800 memory channels • Plus up to 1152 MB L3 cache per socket, enabled by 3D V-Cache™ technology	ZEN 4 4th Gen AMD EPYC architecture based on 5nm process technology and **"Zen4"** architecture • Up to 128 simultaneous multithreading cores and industry-leading 256 threads based on ultra-efficient "Zen4c" chiplet microarchitecture • Up to 128 lanes of PCIe 5.0 I/O[3] • 12 DDR5-4800 memory channels • Up to 256 MB of L3 cache
PERFORMANCE HIGHLIGHTS	2nd Gen AMD EPYC CPU integer 1P performance outpaces 2nd Gen Intel® Xeon® Scalable processors by ~2x (EPYC 7742 vs. Xeon 8280).[ROM-544]	Exceptional performance across a wide range of workloads. Drive fast time to results, fast processing, high throughput and good TCO across your most demanding applications and use cases. Delivers up to ~19% average IPC generational uplift on representative server workloads.[MLN-003] Very competitive with both 3rd and 4th Gen Intel Xeon CPUs.	Outstanding x86 server processors that introduced breakthrough per-core L3 cache and exceptional energy efficiency. Comparing 2P 32-core CPU–based servers running ANSYS® Fluent®, AMD EPYC 7573X with 3D V-Cache technology solves up to ~50% maximum (~16% average) more CFD problems per day than EPYC 75F3[MLNX-003C] and up to ~68% maximum (~23% average) more than Intel Xeon Platinum 8362.[MLNX-014]	Impressive results across a broad spectrum of industry standard applications. Two 4th Gen 64-core EPYC 9554 CPUs provide impressive improvement over two 3rd Gen 64-core EPYC 7763 CPUs, with 52% higher integer[SP5-053A] and 86% higher floating-point[SP5-052A] performance per core – plus significant efficiency capabilities to enable low TCO. Comparing 2P servers, 64-core EPYC 9554 outperforms 60-core Intel Xeon Platinum 8490H by 21% for SPECrate®2017_fp_base[SP5-028D] and 31% for SPECrate®2017_int_base.[SP5-029C]	High-impact out-of-the-box performance across a range of high-performance computing (HPC), computer-aided engineering (CAE) and memory-intensive, serially dependent technical workloads. The 96-core EPYC 9684X is the world's highest performance x86 server CPU for technical computing.[SP5-165]	The 128-core EPYC 9754 processor is the world's highest-performing server CPU,[SP5-143A] making it ideal for fast-emerging cloud native workloads. Comparing 2P servers running eight common cloud-native workloads, EPYC 9754 delivers up to ~2.6x (~2.0x average) the performance of Intel Xeon Platinum 8490H and up to ~3.7x (~2.8x average) the performance of Ampere® Altra® Max M128-30.[4]
IDEAL FOR	Cost-efficient data center transformations requiring x86-compatible architecture. Get outstanding performance per core, great system performance while enabling low system power and cost to accommodate your workloads and address budget goals.	Leveraging flexible hardware configurations for memory-intensive workloads because you can choose the right number of cores, frequencies and cache sizes for a particular need. Advanced security capabilities and high I/O capacity are included without additional cost.	Complex predictive workloads of all kinds. Your x86 technical workloads just work better, right away. Avoid having to update the architecture—just use your existing software and realize immediate performance benefits.	Accelerating time to value and optimizing return on IT investments in your data center and the cloud. Supporting the continuous improvement of performance and efficiency across your application landscape.	Accelerate productivity for EDA, CFD, FEA, WFA and other complex technical workloads. Show your team a new world of possibilities and modernize efficiently while targeting and managing today's new set of business risks.	Dense multi-tenant, high-VM-count, highly containerized, and cloud-native workloads. High-throughput, high-thread-density applications including AI and ML. Enable improved deployment, cost management and scalability for your enterprise applications and scalable cloud-native services.

DEFEND AGAINST THREATS AND GUARD YOUR DATA

AMD IS SERIOUS ABOUT SECURITY.

With the modern "Zen" architecture, AMD processors are designed with security in mind from the ground up to be highly resistant to today's sophisticated attacks, helping protect your sensitive data, avoid downtime and reduce resource drain. In addition, all AMD EPYC Series processors include AMD Infinity Guard[GD-183], which provides a unique and robust set of on-chip security features to help complement industry ecosystem partners at the software and system levels. Take control of security and defend your most important assets with AMD.

Visit the AMD EPYC processor selector tool and contact your AMD sales representative.

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[1] OECD (2023), OECD Economic Outlook, Interim Report March 2023: A Fragile Recovery, OECD Publishing, Paris, https://doi.org/10.1787/d14d49eb-en

[2] "Gartner Forecasts Worldwide IT Spending to Grow 5.1% in 2023," October 19, 2022, https://www.gartner.com/en/newsroom/press-releases/2022-10-19-gartner-forecasts-worldwide-it-spending-to-grow-5-percent-in-2023/

[3] Up to 160 lanes in 2-socket configurations.

[4] See https://www.amd.com/system/files/documents/amd-epyc-9754-pb-cloud-native-workloads.pdf.

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