AMD EPYC™ 9004 SERIES PROCESSORS: ADVANCING PERFORMANCE AND ENERGY EFFICIENCY FOR THE NEXT GENERATION OF SERVER ARCHITECTURE, TODAY.

With AMD EPYC 9004 Series processors, you can experience continued performance leaps, open a new world of possibilities. modernize efficiently and address data center sustainability goals, all while helping target and manage today's new set of business vulnerabilities.

AT A GLANCE

Today's enterprise requires rapid advances in computing power and efficiency, but steady progress is challenging amid a storm of innovation and disruption. What if you could improve your data agility and data center performance—delivering leaps in value for the same job times, wattage and square feet—and redefine your adoption and operations expectations? AMD EPYC 9004 Series processors can enable **rapid digital transformations** and **performance and productivity gains** while simultaneously enabling **data center efficiency**.

TARGET AUDIENCE

CIOs, CTOs	VP of Infrastructure, Head of IT Architecture	Head of HPC, R&D Leader, IT Analyst supporting R&D/HPC	Head of IT Architecture, AI/ML Technical Lead, Enterprise/ Cloud Architect	Data Analytics Director, Application Lead for HPC, AI/ML	IT Resellers or OEM Salespeople

SELL IT IN 5 SECONDS

PERFORMANCE

AMD EPYC 9004 Series processors again deliver on the multi-generation AMD EPYC processor roadmap, featuring innovative design that continues to enable powerful performance for demanding computing workloads.

FLEXIBILITY

AMD EPYC processor-based servers are everywhere – they can be found across industry verticals from manufacturing and retail to healthcare, financial services and more, enabling exceptional performance for industry specific workloads, advanced virtualization, hyperconverged infrastructure, containerization and exceptional database performance.

EFFICIENCY

High performance, energy-efficient servers built on AMD EPYC 9004 Series processors can help you scale your data center in remarkable new ways while also optimizing it to support your efficiency and TCO goals. AMD helps you address your data center sustainability goals, even as we push the limits of high-performance computing.

WHY IS IT A GREAT PRODUCT?

EXPERIENCE CONTINUED PERFORMANCE LEAPS

AMD EPYC 9004 Series processors are built on the record-setting performance and system-on-chip simplicity of the multi-generation AMD EPYC processor roadmap. Among the industry firsts included with the AMD EPYC 9004 Series: It's the only x86-compatible 5nm CPU, with up to 96 x86 "Zen4" cores; it offers 12 DDR5 memory channels – more memory channels than any other x86 processor EPYC-033 – for the highest X86 memory throughput; EPYC-032 and it has 128 PCIe® Gen5 lanes that maximize I/O. EPYC-035 The results: you gain 2.1x the integer and 2.2x the floating-point top-of-stack performance compared to our previous generation processors that helps accelerate your time to valuable results. SP5-001C, SP5-002C

OPEN UP A NEW WORLD

Generate new domains of value from workload performance with a system-on-chip that's designed for solutions not just specs. With a wide range of x86-compatible CPU models, AMD EPYC processors can accommodate a wide range of workloads, configurations and levels of performance you need, starting from where you are today. Improvements such as more PCIe connections for higher throughput EPYC-036 between nodes help you gain deeper insights, boost the value of AI/ML, or create incredible animations and simulations. Advanced virtualization, hyperconverged infrastructure, containerization, AI/ML and exceptional database performance are all within reach.

MODERNIZE EFFICIENTLY WHILE ADDRESSING DATA CENTER SUSTAINABILITY GOALS

AMD EPYC processor leadership 5nm processor node technology delivers efficient performance gains that can let you deploy fewer servers to accomplish the same jobs, which can result in less power usage and its associated lower CO_2 generation. Moving just a few servers to AMD EPYC CPUs can make a big impact. It takes just eight 2P, 96-core AMD EPYC 9654 powered servers to deliver 1500 VMs with 1 core and 8GB of memory per VM compared to forty-seven four-year-old 2P, 16-core Intel® Xeon® Gold 6130 powered servers. The AMD based solution uses an estimated 89% fewer servers and 57% less power, saving ~516633kWH of electricity over three years, equaling the carbon sequestration equivalent of 94 acres of US forest annually. SP5TCO-016

HELP TARGET AND MANAGE A NEW SET OF BUSINESS VULNERABILITIES

How can you best manage the myriad of new risks facing your business, everything from hackers and compliance vulnerabilities to business continuity? Building on the state-of-the-art AMD Infinity Guard[1] security feature set, 4th Gen AMD EPYC processors add improved advanced features such as 256-bit AES-XTS encryption and secure multi-key encryption (SMKE) that enables hypervisors to selectively encrypt address space ranges on CXL™-attached memory. This makes the existing software encryption features work seamlessly with CXL-attached memory. Leverage a growing ecosystem of confidential computing that focuses on addressing the special security concerns about migrating sensitive applications and data by encrypting data in-use, in cloud and virtualization environments. In addition, invest with confidence, knowing that AMD works with suppliers to advance human rights, environmental sustainability and supply chain resilience.

HOW DO WE COMPARE TO THE COMPETITION?

PERFORMANCE LEADERSHIP:

Get phenomenal competitive performance. Nine 2-socket and four 1-socket AMD EPYC 9004 Series processor-based servers are estimated to outperform the top-of-stack 2-socket Intel® Xeon® Platinum 8380 processor on SPECrate®2017_int_base. SP5-020

HPC FLOATING POINT PERFORMANCE:

A 2P, 96-core AMD EPYC 9654 powered server delivers 2.2x the generational top-of-stack floating-point performance SP5-002C and 2.5x the performance than the top competitive x86 CPU. SP5-009C

VIRTUALIZED IT:

2-node, 2P, 96-core AMD EPYC 9654 powered servers provide 1.8x better virtualization performance and 3.1x the VM capacity than 2-node, 2P, 40-core Intel® Xeon® Platinum 8380 powered servers running VMware® VMmark® 3.1.1 matched pair for improved server consolidation and mixed workload management. SP5-049B 4-node, 2P 32-core AMD EPYC 9374F powered servers have 2.1x the score and 2.2x the tile (VM) capacity vs. 4-node, 2P 32-core Intel® Xeon® Gold 6338 powered servers on VMmark® 3.1.1. SP5-055A

ENTERPRISE EFFICIENCY:

A 2P, 96-core AMD EPYC 9654 powered server offers up to 2x the overall ssj_ops/W performance of a 2P, 40-core Intel® Xeon® Platinum 8380 powered server running a server-side Java/watt workload. SP5-011B

MANUFACTURING:

2P, 96-core AMD EPYC 9654 powered servers enable up to ~2.5x the average Ansys® Fluent® performance than 2P, 40-core Intel® Xeon® Platinum 8380 powered servers for improved computational fluid dynamics. SP5-034A 2P, 96-core AMD EPYC 9654 powered servers deliver ~2.6× the Altair Radioss performance than 2P, 40-core Intel® Xeon® Platinum 8380 powered servers for improved finite element analysis. SP5-036

FINANCIAL SERVICES:

A 2P 64-core AMD EPYC 9554 powered server offers up to ~2.1x the performance on the Black-Scholes European options pricing workload than a 2P 40-core 3rd Gen Intel® Xeon® Platinum 8380 powered server. SP5-031
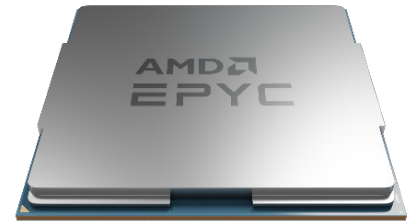
RENDERING:

A 2P 96-core AMD EPYC 9654 powered server offers up to 3.3x the max rendering score performance on the V-Ray rendering benchmark SP5-038A and up to ~2.4x the ray-tracing score performance of a 2P Intel® Xeon® Platinum 8380 powered server on the Autodesk® Arnold gtc_robot workload. SP5-039

CONSISTENT LEADERSHIP:

AMD EPYC 9004 Series processors are the latest step on a clear and well-executed processor design roadmap that helps IT professionals drive performance and efficiency for their next generation of server data center architecture - today.

4TH GEN AMD EPYC PROCESSORS ARE RAISING THE BAR... AGAIN.

TOGETHER WE ADVANCE_DATA CENTER COMPUTING.

LEARN MORE AT AMD.COM/EPYC

Contact an AMD server expert: explore.amd.com/server-request/request

1   AMD Infinity Guard features vary by EPYC Processor generations. Infinity Guard security features on AMD EPYC processors 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/technologies/infinity-guard. GD-183

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