5 REASONS 4TH GENERATION AMD EPYC™ PROCESSORS ARE ADVANCING DATA CENTER PERFORMANCE AND EFFICIENCY

AT A GLANCE

In today's world, you know that time is everything. Time to market. Time to value. Time to results. AMD EPYC 9004 Series processors offer the next generation of server performance and efficiency to help you accelerate productivity, modernize your infrastructure with energy-efficient performance and navigate today's business complexities and requirements.

Built on the innovative 4th Gen AMD hybrid multi-die architecture and supported by a broad ecosystem of ready solutions, the new generation of AMD EPYC features the world's highest-performing x86 server processor[SP5-143] and is optimized to help you deploy a wide range of workloads from the enterprise to the cloud.

1

ACCELERATE PRODUCTIVITY

Enable your business to increase productivity, make more informed decisions and get to market faster.

2

SHORTEN DEVELOPMENT TIMES AND SPEED TIME TO VALUE

AMD EPYC 9004 series solutions enable you to accelerate your software, allowing you to streamline processes and reduce cycle times. Uncover cost saving opportunities, gain new insights, better predict outcomes and meet business goals.

3

MODERNIZE YOUR INFRASTRUCTURE

Seamlessly upgrade to AMD EPYC to realize high performance, strong security features and energy efficiency. Advance your business by enabling new workloads and use cases such as AI/ML, containers and cloud-native workloads.

4

CREATE ENERGY-EFFICIENT SOLUTIONS

Scale your data center in remarkable new ways while also optimizing performance to support your efficiency and TCO goals. AMD helps you advance your data center sustainability goals, even as you push the limits of high-performance computing.

5

CONFIDENTLY NAVIGATE TODAY'S BUSINESS RISKS, COMPLEXITIES AND REQUIREMENTS

You can address the myriad of new risks facing your business, everything from hackers and compliance challenges to business continuity. The AMD Infinity Guard "Security by Design" approach includes a set of advanced security features and a silicon embedded security subsystem to help protect your most valuable asset: your data.[GD-183]

Continue reading for more technical detail

TECHNICAL DEEP DIVE

#1 ACCELERATE PRODUCTIVITY

- AMD EPYC CPUs have earned **300+ world records for performance** across a wide range of workloads,[1] making them the right choice for successful data center transformations.
- AMD EPYC 9684X with AMD 3D V-Cache™ technology is the world's **highest performance x86 server CPU for technical computing**.SP5-165
- Achieve **super linear scaling** using systems featuring AMD 9684X processors with AMD 3D V-Cache technology to run cache sensitive workloads.[2] For example, an 8-node cluster of 2P 96-core AMD EPYC 9684X based servers deliver ~14 nodes of OpenFOAM® CFD performance.[3]
- **Handle peak web server cycles with ultra-high density** AMD EPYC processors: 2P servers with 128-core AMD EPYC 9754 CPUs deliver up to ~3x the cloud NGINX® workload performance compared to 128-Core Ampere Altra® Max 128-30 CPUs.[4]

#2 GET TO MARKET FASTER

- 2P servers with AMD EPYC 9684X processors **deliver up to ~2.4x** the ANSYS® CFX® CFD (external air flow over an airfoil 10M/50M/100M) jobs per day compared to 4th Gen Xeon 8480+.[5]
- **Get up to ~52% more** ANSYS LS-Dyna® Explicit FEA average crash simulations/day using 2P servers with 32-core EPYC 9384X compared to 4th Gen Xeon 8462Y+.[6]
- **Render ~2.2x** the max Chaos® V-Ray® vsamples per day with 2P servers using 96-core AMD EPYC 9654 vs. 2P 60-core Xeon Platinum 8490H.SP5-038B

#3 MODERNIZE YOUR INFRASTRUCTURE

- **Use up to 27% fewer servers** to deliver 7,500 units of integer performance, with a 24% lower annual OPEX, when you choose 2P 32-core servers based on AMD EPYC 9354 CPUs over Intel Xeon Platinum 8454H.SP5TCO-030
- Tap into a broad ecosystem of platforms, instances and solutions to build and scale your hybrid, multi-cloud or cloud-native platform with innovative design and density while accommodating your legacy systems and cost models.
- With their x86-compatible configurations, AMD EPYC processors can handle a wide range of workloads and configurations and deliver the performance you need. Configure your platform to address your most demanding applications without burdensome tradeoffs.

#4 CREATE ENERGY-EFFICIENT SOLUTIONS

- Discover new ways you can optimize core usage, impact your TCO and advance your sustainability and corporate responsibility goals. Enable rapid digital transformations while simultaneously delivering efficiency with the possibility of deploying fewer servers to support the same number of workloads, users and jobs.
- You can deliver 2,000 VMs by deploying up to 35% fewer servers and use up to 36% lower power annually when you choose 2P servers based on 96-core AMD EPYC 9654 CPUs over 60-core Intel Xeon Platinum 8490H CPUs.SP5TCO-049

#5 CONFIDENTLY NAVIGATE TODAY'S BUSINESS RISKS, COMPLEXITIES AND REQUIREMENTS

- Building on the state-of-the-art AMD Infinity Guard[7] security feature set, 4th Gen AMD EPYC processors add improved advanced features such as 256b AES-XTS encryption and SEV-SNP for CXL™ type 3 memory expansion to help make strong security features even stronger.
- Leverage a growing ecosystem of Confidential Computing, addressing the special security concerns about migrating sensitive applications and data to the cloud.
- Compliance and corporate responsibility are more straightforward than ever. AMD partners with suppliers to advance human rights, drive environmental sustainability and support supply chain resilience.[8]

4TH GEN AMD EPYC™ PROCESSORS

TOGETHER WE ADVANCE_DATA CENTERS

READY TO CONNECT? VISIT AMD.COM/EPYC.

1 See www.amd.com/en/processors/epyc-world-records.

2 AMD defines "Linear scaling" as an equal and proportionate application performance uplift relative to single node performance; that is, when scaling out to 2 nodes results in 2x performance of a single node, scaling out to 4 nodes results in 4x the performance of a single node, and so forth. "Super linear" scaling is when the performance uplift achieved by adding one or more node(s) is greater than linear. AMD allows a +/= of 2% margin of error when claiming linear or super linear scaling. GD-205

3 See https://www.amd.com/system/files/documents/amd-epyc-9004x-pb-openfoam.pdf.

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

5 See https://www.amd.com/system/files/documents/amd-epyc-9004x-pb-ansys-cfx.pdf.

6 See https://www.amd.com/system/files/documents/amd-epyc-9004x-pb-ansys-ls-dyna.pdf.

7 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

8 See amd.com/en/corporate-responsibility/supply-chain-responsibility.