CRANK UP THE POWER ON YOUR COMPUTER-AIDED ENGINEERING WORKLOADS

AMD EPYC™ 7003 SERIES CPUS WITH AMD 3D V-CACHE™ TECHNOLOGY

Breakthrough performance for data-hungry product design and technical computing workloads

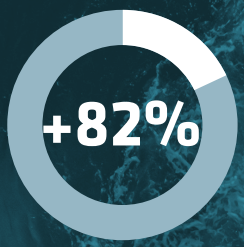
NOTHING STACKS UP TO EPYC™

AMD EPYC™ 7003 Processors with AMD 3D V-Cache™ technology are raising the bar once more for breakthrough performance on targeted technical computing[1] workloads such as electronic design automation (EDA), computational fluid dynamics (CFD), and finite element analysis (FEA) solver software and solutions. These processors optimize performance to accelerate development of new products and technologies, deliver breakthrough performance per core, help reduce TCO, and speed product development. Socket compatible with existing 3rd Gen AMD EPYC platforms,[2] these new processor options work with existing software solutions to make it easy to adopt this technology, helping drive better, energy-efficient business outcomes with the confidence of modern security.

EPYC WITH AMD 3D V-CACHE TECHNOLOGY OUTPERFORMS OUR OWN HIGH-PERFORMING STANDARD CPUS

ANALYZE FLUID DYNAMICS FASTER

- *Up to 82% maximum speedup (23% average) on computational fluid dynamics with Ansys® Fluent®*
- *Comparing single servers with 2x 64-core AMD EPYC 7773X to 2x 64-core EPYC 7763* MLNX-003C



ELECTRIFY DESIGN AUTOMATION

- *Up to 66% max speedup on RTL simulation using Synopsys VCS® software*
- *Comparing single servers with 1x 16-core EPYC 7373x to 1x 16-core EPYC 73F3* MLNX-001A

SPEED UP DYNAMIC LOADING SIMULATIONS

- *Up to 56% max speedup (~28% average) on dynamic structural analysis (FEA explicit solvers) using Altair® Radioss®*
- *Comparing 1-node servers with 2x 64-core EPYC 7773X to 2x 64-core EPYC 7763* MLNX-015

EPYC 7003 SERIES PROCESSORS WITH AMD 3D V-CACHE

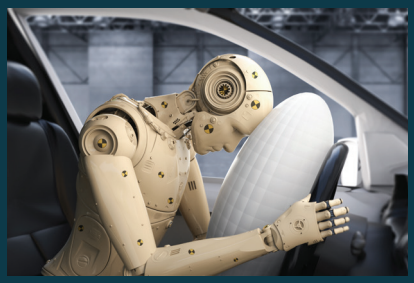
MODEL	CORES	THREADS	BASE FREQ. (GHZ)	UP TO MAX. BOOST FREQ. (GHZ)[3]	TDP (W)	L3 CACHE (MB)	DDR CHANNELS	UP TO MAX DDR FREQ. (1DPC)	PER-SOCKET THEORETICAL MEMORY BANDWIDTH (GB/S)	PCIE® GEN 4 LANES	NUMBER OF SOCKETS
7773X	64	128	2.20	3.50	280	768	8	3200	204.8	128	2P
7573X	32	64	2.80	3.60	280	768	8	3200	204.8	128	2P
7473X	24	48	2.80	3.70	240	768	8	3200	204.8	128	2P
7373X	16	32	3.05	3.80	240	768	8	3200	204.8	128	2P

DESIGNED TO GET MORE DONE IN LESS TIME WITH MORE CACHE

AMD 7003 Series processors with AMD 3D V-Cache fit some workloads like a glove. Built on ground-breaking AMD 3D Chiplet architecture and using 7-nm process technology, they employ leading-edge logic stacking based on a copper-to-copper hybrid bonding process to enable increased interconnect densities over current technologies, helping lower latency, boost bandwidth, and enhance power and thermal efficiencies.

UP TO **75%** MAX SPEEDUP (37% AVG) ON DYNAMIC STRUCTURAL ANALYSIS

- ***Altair Radioss FEA explicit solvers***
- ***Comparing servers with 2x 32-core EPYC 7573X with 2x 32-core Intel® Xeon® Platinum 8362[MLNX-017]***



UP TO **119%** HIGHER MAX (69% AVG) PERFORMANCE

- ***Ansys LS-DYNA® is widely used for crash simulations and complex problems.***
- ***Execute more jobs per day with servers based on 2x 64-core EPYC 7773X compared to 2x 40-core Xeon 8380[MLNX-009A]***

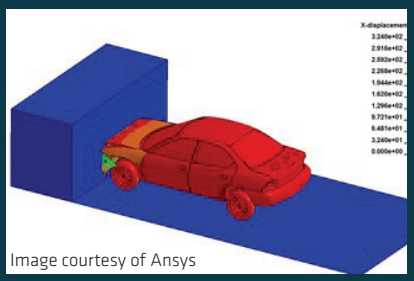


Image courtesy of Ansys

UP TO **2.18x** THE MAX (1.88X AVG) PERFORMANCE

- ***Ansys CFX® helps solve large, complex fluid simulation models***
- ***Get more simulations done each day with servers based on 2x EPYC 7573X compared to 2x Xeon 8362[MLNX-010A]***

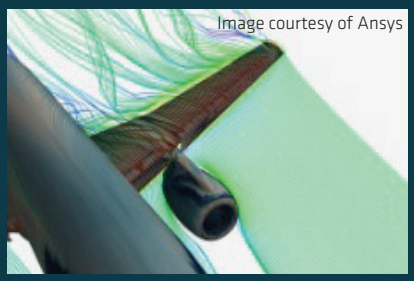


Image courtesy of Ansys

UP TO **30%** FEWER SERVERS

- ***Use up to 30% fewer servers and reduce 3-year TCO by up to 30% percent when you choose servers based on 2x AMD EPYC 7773X over 2x Xeon 8380 to run 26,000 Ansys fluent-aw14 jobs per day[MLNXTCO-003]***

UP TO **30%** LESS POWER

- ***Save an estimated 123.53 Metric Tons of CO_2 which is an estimated equivalent carbon sequestration of 49 acres of US forests annually.***
- ***Based on servers running ANSYS Fluent with processors at left[MLNXTCO-003]***

HELP SECURE YOUR DATA

- ***Help take control of security and decrease risks to your most important assets—your data—with AMD Infinity Guard[3]***
- ***Learn how to help secure and encrypt virtual machines with minimal performance impact from this Principled Technologies paper[4]***

READY TO SWITCH?

- Learn more at amd.com/epyc
- Survey our HPC performance briefs

FOOTNOTES

For details on the footnotes used in this document, visit amd.com/en/claims/epyc

a. Maximum boost for AMD EPYC processors is the maximum frequency achievable by any single core on the processor under normal operating conditions for server systems. EPYC-18

1. "Technical Computing" or "Technical Computing Workloads" as defined by AMD can include: electronic design automation, computational fluid dynamics, finite element analysis, seismic tomography, weather forecasting, quantum mechanics, climate research, molecular modeling, or similar workloads. GD-204.

2. Processor compatibility with EPYC 7003 powered platforms may require a BIOS update.

3. AMD Infinity Guard features vary by EPYC processor generations. Infinity Guard 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/technologies/infinity-guard. GD-183

4. The claims made by the title of this Principled Technologies paper have not been verified by AMD.

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