KOI COMPUTERS

AMD

Ansys

ANSYS ON KOI COMPUTERS

PERFORMANCE WITHOUT COMPROMISE

Optional liquid cooling for higher-performance CPUs / 4th Generation AMD EPYC Processors / Up to 24x DDR5 4800MHz memory / Available in 1U, 2U & 4U Rack Servers & Turnkey HPC Cluster

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ANSYS APPLICATIONS

AMD VALUE PROPOSITION FOR ANSYS

Better performance with 4th Gen AMD EPYC™ CPUs* vs. 3rd Gen Intel® Xeon® Platinum CPUs*

Up To **~1.5x** speedup[1] for Ansys® Mechanical™

Up To **~1.76x** speedup[2] for Ansys® LS-DYNA®

Up To **~2.17x** speedup[3] for Ansys® CFX®

Up To **~1.75x** speedup[4] for Ansys® Fluent®

CONTACT US TODAY

WHY RUN ANSYS APPLICATIONS ON AMD PROCESSORS?

Companies are investing in high-performance compute infrastructure with the best-performing processors to maximize the value of game-changing Ansys applications. The 4th Gen AMD EPYC processors deliver the optimal architecture for Ansys and help reduce constraints on the number, size, and complexity of simulation models while helping provide faster time to results. In addition, with AMD CPU-based systems, engineers can improve design quality and prototype performance and significantly reduce total cost of ownership (TCO) using fewer servers to do the same work, helping reduce power and lower related emissions.

HOW DOES AMD IMPROVE ANSYS APPLICATIONS' PERFORMANCE?

Compared to the prior generation, the new AMD EPYC 4th Gen processors achieve better performance[5] for Ansys applications with up to 50% more cores, higher frequencies, support for AVX-512 instructions, more memory bandwidth, and faster PCIe® and Infinity Fabric™ data transfer rate. In addition, optimizing Ansys applications with AMD compilers and libraries can help enhance performance further.

AMD PROCESSORS FOR ANSYS

KOI COMPUTER SYSTEM CONFIGURATIONS

Below are our recommendations for Ansys applications with 4th Gen AMD EPYC™ processors with 12 memory channels per socket and support for AVX-512 instructions. This can deliver high throughput per node for Ansys applications since they benefit from multicore parallelism and greater memory bandwidth.

SUITABLE FOR	SERVER/PROCESSOR	MEMORY	STORAGE/NETWORK
ANSYS CFX, FLUENT	• EG22-2UDP893 • 2x EPYC 9554 CPUs • 128 Cores Per Node • 3.10 GHz | 3.75 GHz • L3 Cache of 256MB	• 768GB Total RAM • 24x 32GB DDR5 4800MHz	• 1 x 480GB SATA Read Intensive • 1 InfiniBand HDR100/Ethernet 100Gb 1-port adapter
ANSYS LS-DYNA	• EG22-2UDP893 • 2x EPYC 9554 CPUs • 128 Cores Per Node • 3.10 GHz | 3.75 GHz • L3 Cache of 256MB	• 1.5TB Total RAM • 24x 64GB DDR5 4800MHz	• 2 x 960GB NVMe (RAID 0) Read Intensive for local scratch • 1 InfiniBand HDR100/Ethernet 100Gb 1-port adapter
ANSYS MECHANICAL	• EG22-2UDP893 • 2x EPYC 9354 CPUs • 64 Cores Per Node • 3.25 GHz | 3.80 GHz • L3 Cache of 256MB	• 1.5TB Total RAM • 24x 64GB DDR5 4800MHz	• 1 x 480GB SATA Read Intensive • 1 InfiniBand HDR100/Ethernet 100Gb 1-port adapter

AVAILABLE ON KOI COMPUTERS'

FEDERAL GOVERNMENT CONTRACTS

NITAAC OMB Authorized GWACs for IT Acquisitions
CIO-CS COMMODITIES / SOLUTIONS
SEWP V www.sewp.nasa.gov
GSA Schedule
2GIT

BENEFITS

AMD CPU-BASED KOI SERVERS WITH ANSYS

Validated and optimized
solutions with compute, storage, software, services, and TAA & FIPS Compliance.

On-site install, start-up, and integration services
delivered by Koi Computers, an AMD EPYC™ Elite Partner.

Remote management
is available along with Cluster Management Solutions.

LET US HELP YOU SIZE UP THE RIGHT HPC CLUSTER TODAY!

CONTACT US TO GET YOUR FREE CUSTOM QUOTE

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[1] SP5-130: Mechanical® Release 2022 R2 test cases benchmark comparison based on AMD measurements as of 10/19/2022. Configurations: 2x 32-core Intel Xeon Platinum 8362 vs. vs. 2x 32-core EPYC 9374F for ~1.5x the rating performance. System Configurations: 2P AMD EPYC 9374F (32 cores/socket, 64 cores/node); 1.5 TB (24x) Dual-Rank DDR5-4800 64GB DIMMs, 1DIMM per channel; 1 x 256 GB SATA (OS) | 1 x 1 TB NVMe (data); BIOS Version 1002, SMT=off, Determinism=performance, NPS=4, TDP/ PPT=400; RHEL 8.6; OS settings: Clear caches before every run, NUMA balancing 0, randomize_va_space 0 vs. 2P Intel Xeon Platinum 8362 (32 cores/socket, 64 cores/node); 1 TB (16x) Dual-Rank DDR4-3200 64GB DIMMs, 1DIMM per channel; 1 x 256 GB SATA (OS) | 1 x 1 TB NVMe (data); BIOS Version 1.6.5, SMT=off, HPC Profile; OS settings: Clear caches before every run, NUMA balancing 0, randomize_va_space 0. Results may vary based on factors such as software version, hardware configurations and BIOS version and settings.

[2] SP5-112: LS-DYNA® Version 2021 R1 Nonlinear FEA benchmark comparison based on AMD measurements as of 09/18/2022. Tests run: obd10m, car2car, obd10m-short, ls-3cars and ls-neon. System Configurations: 2P AMD EPYC 9374F (32 cores/socket, 64 cores/node); 1.5 TB (24x) Dual-Rank DDR5-4800 64GB DIMMs, 1DIMM per channel; 1 x 256 GB SATA (OS) | 1 x 1 TB NVMe (data); BIOS Version 1002C, SMT=off, Determinism=performance, NPS=4, TDP/ PPT=400 versus 2P Intel Xeon Platinum 8362 (32 cores/socket, 64 cores/node); 1 TB (16x) Dual-Rank DDR4-3200 64GB DIMMs, 1DIMM per channel; 1 x 256 GB SATA (OS) | 1 x 1 TB NVMe (data); BIOS Version 1.6.5, SMT=off, HPC Profile. Common: RHEL 8.6 OS settings: Clear caches before every run, NUMA balancing 0, randomize_va_space 0. Results may vary due to factors including system configurations, software versions and BIOS settings.

[3] SP5-116: CFX 2022 R2 Solver, Nonlinear CFD benchmark comparison based on AMD measurements as of 9/16/22. Tests used: cfx_100, cfx_50, cfx_10, cfx_lmans, cfx_pump. Configurations: 2P AMD EPYC 9374F (32 cores/socket, 64 cores/node); 1.5 TB (24x) Dual-Rank DDR5-4800 64GB DIMMs, 1DIMM per channel; 1 x 256 GB SATA (OS) | 1 x 1 TB NVMe (data); BIOS Version 1002C, SMT=off, Determinism=performance, NPS=4, TDP/ PPT=400 versus 2P Intel Xeon Platinum 8362 (32 cores/socket, 64 cores/node); 1 TB (16x) Dual-Rank DDR4-3200 64GB DIMMs, 1DIMM per channel; 1 x 256 GB SATA (OS) | 1 x 1 TB NVMe (data); BIOS Version 1.6.5, SMT=off, HPC Profile. Common: RHEL 8.6 OS settings: Clear caches before every run, NUMA balancing 0, randomize_va_space 0. Results may vary due to factors including system configurations, software versions and BIOS settings.

[4] SP5-035A: Fluent® Release 2022 R2 test cases benchmark comparison based on AMD measurements as of 10/19/2022. Configurations: 2x 32-core Intel Xeon Platinum 8362 vs. vs. 2x 32-core EPYC 9374F for ~1.75x the rating performance. Results may vary.

[5] https://www.amd.com/system/files/documents/epyc-9004-pb-ansys-generational.pdf