

# Accelerated HPC Simulation Performance



Engineers need access to powerful compute resources to simulate and analyze large, complex models, and do so faster and with greater frequency. High-Performance Computing (HPC) infrastructure based on new 3<sup>rd</sup> generation AMD EPYC™ processors with 3D V-Cache technology can increase productivity and efficiency.

## Performance Per Core Leadership

Average per-core performance uplift vs. competitive processor with the same number of cores.<sup>1</sup>

**23%** **47%** **88%**

Ansys Fluent®  
Fluid Dynamics

Ansys LS-DYNA®  
FEA Explicit

Ansys CFX®  
Fluid Dynamics

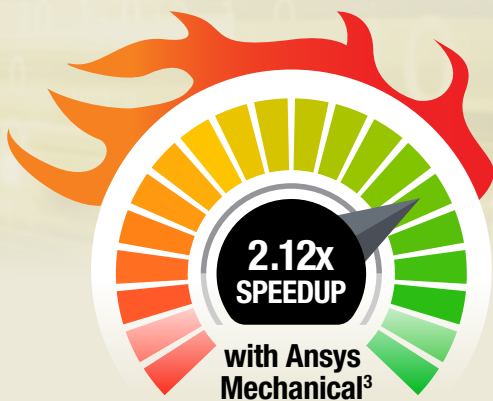
Scaling Efficiency  
in the Cloud

**Up to 199%**  
for Ansys Fluent®  
on Azure HBv3<sup>2</sup>

“AMD has worked with Ansys to make sure our joint customers can leverage the 3rd Gen AMD EPYC processors for structural mechanics simulation. By integrating AMD Optimizing CPU Libraries (AOCL) in Ansys Mechanical, customers can run complex simulations considerably faster, leading to higher quality and more efficient designs for planes, cars, electrical devices and a range of other products.”

— WIM SLAGTER, DIRECTOR OF STRATEGIC PARTNERSHIPS AT ANSYS

## Optimized Performance with AOCL



Learn more: [www.ansys.com/amd](http://www.ansys.com/amd)

## Sustainable Simulation

Compared to competitive environments, running Ansys CFX on an AMD EPYC platform can reduce energy consumption and carbon footprint:<sup>4</sup>



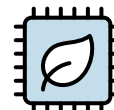
**50%**  
Fewer Servers



**~81 Acres**  
Of U.S. Forest Annually  
(equivalent carbon  
sequestration)



**49%**  
Less Power



**51%**  
Lower 3YR TCO

<sup>1</sup>Source: See MLNX 010A, -014, and -019 at [www.amd.com/en/claims/epyc3x](http://www.amd.com/en/claims/epyc3x)

<sup>2</sup>Source: [www.amd.com/system/files/documents/amd-epyc-7000-3d-v-cache-pb-azure-hbv3-ansys-fluent.pdf](http://www.amd.com/system/files/documents/amd-epyc-7000-3d-v-cache-pb-azure-hbv3-ansys-fluent.pdf)

<sup>3</sup>Source: [image.ansys.com/2016/5/ansys/Aug\\_2021/Ansys\\_Performance\\_of\\_Ansys\\_Mechanical\\_Optimized\\_with\\_AMD\\_Optimizing\\_CPU\\_Libraries.pdf](http://image.ansys.com/2016/5/ansys/Aug_2021/Ansys_Performance_of_Ansys_Mechanical_Optimized_with_AMD_Optimizing_CPU_Libraries.pdf)

<sup>4</sup>To run 4600 airflow\_50M benchmarks per day with Ansys® CFX® it takes an estimated 10 2P AMD EPYC™ 7573X powered servers or 20 2P Intel® Xeon® Platinum 8362 based servers. The EPYC 7573X solution has an estimated 50% fewer servers; 50% less RU space; 49% less power, with an estimated 50% lower 3-year TCO which includes both OS and application software. The EPYC 7573X solution saves an estimated 203.19 Metric Tons of CO<sub>2</sub>, which is an estimated equivalent carbon sequestration of 81 acres of US forests annually.