



Ansys Works with Supermicro and NVIDIA to Deliver Unmatched Multiphysics Simulation with Turnkey Hardware

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Collaboration optimizes Ansys solutions and AI capabilities, boosts simulation speeds up to 1,600x

/ Key Highlights

- Turnkey hardware optimized for Ansys multiphysics simulation provides flexible configurations through collaborations with [Supermicro](#) and [NVIDIA](#)
- Supercharged simulation reduces time-to-market and facilitates rich design exploration for automotive crash testing and external aerodynamics, aerospace gas turbine engines, 5G/6G antennas, biopharmaceutical development, and more
- Ansys' open ecosystem streamlines integration of diverse technologies within its multiphysics platform

PITTSBURGH, Pa., July 18, 2024 /PRNewswire/ -- [Ansys](#) (NASDAQ: ANSS) is collaborating with Supermicro and NVIDIA to deliver turnkey hardware, enabling unmatched acceleration for Ansys multiphysics simulation solutions. By leveraging the combined power of industry-leading hardware and software, Ansys customers can solve larger, more complex models up to 1,600x faster. When running on Supermicro and NVIDIA technology, Ansys solutions reduce time-to-market and facilitate more robust design exploration for a wide range of applications, including automotive crash testing and external aerodynamics, aerospace gas turbine engines, 5G/6G antennas, and biopharmaceutical development.



Getting the most out of multiphysics simulation involves integrating different types of physics solvers with a range of hardware choices, each offering unique performance benefits. However, sizing and configuring the right hardware for multiphysics simulation is a complex task that can significantly impact performance, cost, and productivity. Turnkey, customized hardware solutions with central processing units (CPUs), graphics processing units (GPUs), interconnects, and cooling modules allow engineers to run predictively accurate simulations more efficiently.

Collaborative testing between Ansys and Supermicro discovered replicating the performance of [Ansys Fluent™](#) and [Ansys Rocky™](#) running on one NVIDIA GPU would require 1,500 and 480 CPU cores, respectively. [Ansys Perceive EM™](#) running on one NVIDIA GPU achieves the same performance as 1,000,000+ CPU cores. In addition, the testing process revealed the following accelerations:

- [Ansys optiSLang AI+™](#) **1,600x speed-up**
- Ansys Fluent™ **24x speed-up**
- [Ansys Mechanical™](#) **6x speed-up**
- [Ansys HFSS™](#) **11x speed-up**
- Ansys Perceive EM™ **53x speed-up**
- Ansys Rocky™ **17x speed-up**
- [Ansys LS-DYNA™](#) **4x speed-up**

The speed-ups were achieved by introducing or replacing CPU cores and GPUs with NVIDIA technology. NVIDIA hardware used in testing included NVIDIA H100 GPUs, NVIDIA L40S GPUs, and the NVIDIA Grace CPU Superchip.

"The breadth and depth of the Ansys multiphysics portfolio requires a thoughtful approach to compute infrastructure with GPUs," said Vik Malyala, president & managing director, EMEA; SVP, Technology & AI, Supermicro. "We are closely working with Ansys and NVIDIA with the broadest GPU and CPU systems offering (Hyper/CloudDC, scalable GPU systems: 4U-10U, and others) to accelerate simulations, eliminate guesswork, and improve customer deployment time worldwide."

With NVIDIA technology designed with Ansys and Supermicro's energy-efficient server technology, engineers can reduce overhead costs and energy consumption by using fewer servers to do the same work.

"Supermicro provides exceptional architecture for Ansys solutions, reducing constraints on the number, size, and complexity of simulation models," said Shane Emswiler, senior vice president of products at Ansys. "We remain committed to working with NVIDIA to migrate our solutions currently supported on Hopper chips to Blackwell. By offering advanced, customized configurations with Blackwell and Hopper superchips, our customers' projects can truly span the full range of physics, from fluids to electronics and structures."

"The synergy between Ansys and NVIDIA is propelling us into a new era of technological innovation," said Dion Harris, director of data center product solutions at NVIDIA. "Ansys simulation solutions play a key role in the development of our cutting-edge AI superchips, while NVIDIA's accelerated data center AI and digital twin platforms empower Ansys to push the boundaries of simulation performance. Together, we're unlocking deeper insights and paving the way for groundbreaking advancements that will shape the future of engineering and AI."

/ About Ansys

Our Mission: Powering Innovation that Drives Human Advancement™

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

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/ Contacts

Media Mary Kate Joyce
724.820.4368
marykate.joyce@ansys.com

Investors Kelsey DeBriyn
724.820.3927
kelsey.debriyn@ansys.com



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