NVIDIA Tesla GPUs Enable Shorter Design Cycles, Improved Product Quality Using AcuSolve

Latest Release of the AcuSolve CFD Software Doubles Performance of Flow Simulations Using NVIDIA Tesla C2050 GPUs

SANTA CLARA, CA -- NVIDIA announced today that ACUSIM Software, a leading provider of computational fluid dynamics (CFD) solutions widely used by engineers and scientists involved in product design, has integrated support for NVIDIA® Tesla™ 20-series GPUs into the company's latest AcuSolve 1.8 release.

Performance tests of the general-purpose finite-element-based CFD flow solver have demonstrated up to a 2x boost in performance with the Tesla C2050 GPU processor, compared with the latest quad-core CPU running the same simulation.

AcuSolve is used in a broad range of mechanical design applications and deployed by research organizations and Fortune 500 companies including Bechtel, Chevron, John Deere, Procter & Gamble, Sanyo, Visteon and Whirlpool. They use CFD simulations to replace costly physical tests during product development, which leads to shorter design times and improved product quality.

"It's always about computing speed," said Tom Lange, director of Modeling and Simulation at Procter & Gamble. "GPU-accelerated CFD allows for more realism, helping us replace slow and expensive physical learning cycles with virtual ones. This transforms engineering analysis from the study of failure to true virtual trial and error, and design optimization."

With the introduction of AcuSolve 1.8, industries ranging from automotive, aerospace and defense to consumer goods, bio-medical devices and energy production can now reduce CFD simulation times, enabling more and increasingly complex simulations to be carried out by tapping into the massively parallel CUDA computing architecture of NVIDIA Tesla GPUs.

"Customers can improve their competitive advantage through faster time-to-market, improved product quality and lower product development cost," said Dr. Farzin Shakib, founder and CEO of ACUSIM Software. "Our collaboration with NVIDIA has helped us explore and implement innovative approaches to advance on these performance goals for AcuSolve simulations."

ACUSIM has implemented a hybrid parallel scheme for AcuSolve that combines shared and distributed memory parallel processing in a single CFD simulation. The shared memory operations of AcuSolve are accelerated on Tesla GPUs using OpenMP standards, while the CPUs manage the distributed memory operations using message passing library standards. Using this heterogeneous processing scheme, AcuSolve essentially selects the right processor (GPU or CPU) for the right job by executing each operation on the compute device that will maximize overall parallel efficiency.

AcuSolve has also demonstrated efficient multi-GPU scalability enabling it to be deployed in systems containing multiple GPUs such as the Tesla S-series and M-series products for datacenter-class HPC installations.

"More and more scientists and engineers are embracing GPU computing to drive value and efficiency into their CAE workflows," said Andrew Cresci, general manager of vertical marketing, NVIDIA. "We are delighted with ACUSIM's achievements and look forward to continued collaboration to bring additional performance benefits to our customers."

For more information on ACUSIM Software's AcuSolve, please go here. For more information on NVIDIA Tesla GPU Computing solutions, please go here.

About NVIDIA
NVIDIA (NASDAQ: NVDA) awakened the world to the power of computer graphics when it invented the GPU in 1999. Since then, it has consistently set new standards in visual computing with breathtaking, interactive graphics available on devices ranging from tablets and portable media players to notebooks and workstations. NVIDIA's expertise in programmable GPUs has led to breakthroughs in parallel processing which make supercomputing inexpensive and widely accessible. The company holds more than 1,100 U.S. patents, including ones covering designs and insights which are fundamental to modern computing. For more information, see www.nvidia.com.

Certain statements in this press release including, but not limited to, statements as to: the benefits, features, impact, performance and capabilities of NVIDIA Tesla GPUs and CUDA architecture; and the effect of NVIDIA Tesla GPUs on AcuSolve CFD Software are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: our reliance on third parties to manufacture, assemble, package and test our products; global economic conditions; development of more efficient or faster technology; design, manufacturing or software defects; the impact of technological development and competition; changes in consumer preferences and demands; customer adoption of different standards or our competitor's products; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems as well as other factors detailed from time to time in the reports NVIDIA files with the Securities and Exchange Commission including its Form 10-Q for the fiscal period ended May 2, 2010. Copies of reports filed with the SEC are posted on our website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

About NVIDIA

Since 1993, NVIDIA (NASDAQ : NVDA) has pioneered the art and science of visual computing. The company's technologies are transforming a world of displays into a world of interactive discovery — for everyone from gamers to scientists, and consumers to enterprise customers. More information at http://nvidianews.nvidia.com/ and http://blogs.nvidia.com/.

Media Contacts

Hector Marinez
+1 408 486 3443
hmarinez@nvidia.com
Andrew Humber
(408) 486-8138
ahumber@nvidia.com