

NVIDIA Tesla GPUs Power World's Fastest Supercomputer

Half the Size, Lower Power and 50% Faster Than World's Top Supercomputer

SANTA CLARA, CA -- Tianhe-1A, a new supercomputer revealed today at [HPC 2010 China](#), has set a new performance record of 2.507 petaflops, as measured by the LINPACK benchmark, making it the fastest system in China and in the world today¹.

Tianhe-1A epitomizes modern heterogeneous computing by coupling massively parallel GPUs with multi-core CPUs, enabling significant achievements in performance, size and power. The system uses 7,168 NVIDIA® Tesla™ M2050 GPUs and 14,336 CPUs; it would require more than 50,000 CPUs and twice as much floor space to deliver the same performance using CPUs alone.

More importantly, a 2.507 petaflop system built entirely with CPUs would consume more than 12 megawatts. Thanks to the use of GPUs in a heterogeneous computing environment, Tianhe-1A consumes only 4.04 megawatts, making it 3 times more power efficient -- the difference in power consumption is enough to provide electricity to over 5000 homes for a year.

Tianhe-1A was designed by the National University of Defense Technology (NUDT) in China. The system is housed at National Supercomputer Center in Tianjin and is already fully operational.

"The performance and efficiency of Tianhe-1A was simply not possible without GPUs," said Guangming Liu, chief of National Supercomputer Center in Tianjin. "The scientific research that is now possible with a system of this scale is almost without limits; we could not be more pleased with the results."

The Tianhe-1A supercomputer will be operated as an open access system to use for large scale scientific computations.

"GPUs are redefining high performance computing," said Jen-Hsun Huang, president and CEO of NVIDIA. "With the Tianhe-1A, GPUs now power two of the top three fastest computers in the world today. These GPU supercomputers are essential tools for scientists looking to turbocharge their rate of discovery."

NVIDIA Tesla GPUs, based on the CUDA™ parallel computing architecture, are designed specifically for high performance computing (HPC) environments and deliver transformative performance increases across a wide range of HPC fields, including drug discovery, hurricane and tsunami modeling, cancer research, car design, even studying the formation of galaxies.

For more information on NVIDIA Tesla high performance GPU computing products, 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 1,600 patents worldwide, including ones covering designs and insights that are essential 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 and impact of NVIDIA Tesla GPUs, based on the CUDA parallel computing architecture; and the impact of the company's patents on modern computing 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: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of faster or more efficient technology; design, manufacturing or software defects; changes in consumer preferences or demands; 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, or SEC, including its Form 10-Q for the fiscal period ended August 1, 2010. Copies of reports filed with the SEC are posted on the company's 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.

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¹ As compared to performance data submitted for the June 2010 [Top500](#) list

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/>.

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