

# NVIDIA GPUs power world's fastest supercomputer

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(PhysOrg.com) -- NVIDIA has built the world's fastest supercomputer using 7,000 of its graphics processor chips. With a horsepower equivalent to 175,000 laptop computers, its sustained performance is equivalent to 2.5 Petaflops.

The supercomputer was built by the National University of Defense Technology and is located at the National Supercomputing Center in Tianjin, China. According to [NVIDIA](#), the computer is 30 percent faster than the world's second largest computer which is at the Oak Ridge National Laboratory in Tennessee.

Tianhe-1A supercomputer parallels large quantities of GPUs with multi-core CPUs to significantly boost performance, power and size. The Tianhe-1A uses 7,168 NVIDIA Tesla M2050 GPUs and 14,336 CPUs. This would be equivalent to more than 50,000 CPUs and would require twice as much floor space to deliver the same performance using CPUs

alone.

A 2.5 petaflop system using CPU's only would require more than 12 megawatts of power to run it. By using NVIDIA's GPUs in a heterogeneous computing environment, Tianhe-1A consumes only 4.04 megawatts, making it 3 times more power efficient.

At the HPC 2010 in China, Guangming Liu, chief of National [Supercomputer](#) Center in Tianjin stated: "The performance and efficiency of Tianhe-1A was simply not possible without GPUs. 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."

Jen-Hsun Huang, president and CEO of NVIDIA commented, "GPUs are redefining high performance computing. 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 turbo-charge their rate of discovery."

NVIDIA first invented the computer graphics chip in 1999 and showed the computer industry the power of computer graphics. NVIDIA's programmable GPUs have made advancements in parallel processing which makes supercomputing inexpensive and widely accessible; NVIDIA holds more than 1,600 patents worldwide.

**More information:** [press release](#), [Nvidia Tesla](#)

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