

New Supercomputing Center in Pittsburgh

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The U.S. academic community will soon have access to a new [supercomputer](#) modeled on the highest-performance systems currently being built in the United States, through a \$9.7 million award to the Pittsburgh Supercomputing Center (PSC) announced today by the National Science Foundation (NSF).

The one-year award will allow PSC to install a **Red Storm** system from Cray, Inc., capable of approximately **10 teraflops -- 10 trillion calculations per second**.

The Pittsburgh system will be similar to the Red Storm systems currently being installed at the Department of Energy's Sandia and Oak Ridge national laboratories. The system, to be installed at PSC at the end of 2004, potentially will provide the basis for greatly expanded capability in the future.

"The Red Storm system in Pittsburgh will enable researchers to explore the limits of high-performance computing and to demonstrate the potential of this architecture for a wide range of scientific applications," said Peter Freeman, head of NSF's Computer and Information Science and Engineering directorate. "The system will complement other systems already provided by NSF to the national community and will strengthen the growing high-end computing partnership between NSF and the Department of Energy."

Computational scientists have already lined up to use the Red Storm system at PSC for simulations of severe storms, blood flow and physiology, astrophysics, complex biological systems, turbulence and

fluid dynamics, particle physics and earthquakes.

PSC's Red Storm system will be comprised of more than 2,000 AMD Opteron processors and will run a combination of the Linux operating system and a stripped-down Linux core derived from work on Sandia's ASCI-Red system for use on supercomputers with thousands of processors. Red Storm is distinguished by having an interprocessor bandwidth more than 10 times faster than that of any competing massively parallel system.

The PSC Red Storm is the final component of NSF's five-year Terascale Computing Systems initiative, which has provided for the acquisition of some of the most powerful computing systems available to the U.S. academic science and engineering community. When up and running, the new system will be integrated with NSF's Extensible Terascale Facility (ETF) cyberinfrastructure project, as are PSC's existing LeMieux and Rachel supercomputers.

In a dramatic demonstration of advances in computing technologies, the new Red Storm system will occupy a mere 300 square feet of floor space, compared to the more than 4,000 square feet required to house LeMieux, installed in 2001 with a peak performance of 6 teraflops -- at the time, the world's most powerful supercomputing system for non-classified research.

Source: Pittsburgh Supercomputing Center

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