

Press Release

NNSA's Cielo Supercomputer Approved for Classified Operation

Mar 8, 2011

WASHINGTON, D.C. – The National Nuclear Security Administration (NNSA) today announced that its supercomputer platform Cielo has been approved for classified operations.

Cielo, which supports Lawrence Livermore National Laboratory, Los Alamos National Laboratory (LANL) and Sandia National Laboratories, is a petascale supercomputer that helps NNSA ensure the safety, security, and effectiveness of the nuclear stockpile while maintaining the moratorium on underground nuclear explosive testing.

A petascale supercomputer can achieve more than one quadrillion floating point operations per second.

"As NNSA and the Department of Energy work to invest in the future of supercomputing, Cielo enables our researchers and scientists to increase their understanding of complex physics and improve confidence in the predictive capability for stockpile stewardship," said Don Cook, NNSA's Deputy Administrator for Defense Programs. "Ensuring that our nation has cutting edge supercomputing platforms to apply to our stockpile stewardship program is a key element of NNSA's efforts to implement the President's nuclear security agenda."

Cielo runs the largest and most demanding workloads involving modeling and simulation and is housed at LANL. Cielo is primarily utilized to perform milestone weapons calculations.




NNSA selected Cray Inc. to build Cielo last spring. The selection was made through a highly competitive procurement process that included a technical evaluation by members of the labs. Design, procurement and deployment were accomplished by the NNSA's New Mexico Alliance for Computing at Extreme Scale (ACES). ACES is a joint partnership between Los Alamos National Laboratory and Sandia National Laboratories.

Last month, President Obama submitted to Congress his budget request for fiscal year 2012. It includes \$7.6 billion for NNSA weapons activities, up 8.9 percent from 2011, including a 3.1 percent for Science, Technology and Engineering programs. The funds requested for the Department of Energy (DOE) would support NNSA's current supercomputing platforms and make a vital investment in the future of these capabilities by providing more than \$126 million to develop the first exascale computing platform.


For FY 2012, the budget seeks \$90.94 million through the DOE Office and Science and \$36 million from NNSA to fund the Department's exascale initiative. An exascale supercomputer would represent a thousand-fold increase over the petascale supercomputers.

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Established by Congress in 2000, NNSA is a semi-autonomous agency within the U.S. Department of Energy responsible for enhancing national security through the military application of nuclear science in the nation's national security enterprise. NNSA maintains and enhances the safety, security, reliability, and performance of the U.S. nuclear weapons stockpile without nuclear testing; reduces the global danger from weapons of mass destruction; provides the U.S. Navy with safe and effective nuclear propulsion; and responds to nuclear and radiological emergencies in the U.S. and abroad.

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