

## Press Release

### **NNSA Announces Procurement of Capacity Computing Clusters to Support Stockpile Stewardship at National Labs** *Jun 8, 2011*

WASHINGTON, D.C. – The National Nuclear Security Administration (NNSA) today announced the award of a contract for up to \$89 million to Appro – a leading developer of high-performance Linux cluster computing systems based in Silicon Valley – to bolster computing for stockpile stewardship at its three national security laboratories.

Under the terms of the contract, which was awarded by NNSA's [Advanced Simulation and Computing \(ASC\) Program](#), Appro will provide computing systems that will have an aggregate total “capacity” computing capability of three petaflops (quadrillion floating operations per second) for \$39 million as initial delivery. NNSA has the option to purchase more computing systems at a later date for a total award of \$89 million. Capacity computing systems are designed to run a large number of jobs simultaneously on a single system.

“These computing clusters will provide needed computing capacity for NNSA’s day-to-day work managing the nation’s nuclear deterrent,” said Don Cook, NNSA’s Deputy Administrator for Defense Programs. “This tri-lab effort will help reduce costs, increase operational efficiencies, and facilitate collaborations that benefit our nation’s security, support academia, and promote American competitiveness.”

This strategy allows NNSA’s more powerful supercomputers, or “capability” systems, to be dedicated to the largest and most complex calculations critical to stockpile stewardship. High performance computing (HPC) is a cornerstone of NNSA’s Stockpile Stewardship program to ensure the safety, security and reliability of the nation’s nuclear deterrent without testing. The computational resources of the three labs are supported by NNSA’s [Advanced Simulation and Computing \(ASC\) program](#).

NNSA’s new capacity computing systems, called the Tri-lab Linux Capacity Cluster 2 (TLCC-2), will be NNSA’s second joint procurement of this type and will replace those procured in 2007, which are now nearing retirement. This tri-lab procurement model reduces costs through economies of scale based on standardized hardware and software environments at the three labs.

Under terms of the contract, computing clusters built of “scalable units” (SUs) will be delivered to each of the laboratories between September 2011 and June 2012. Each scalable unit represents 50 teraflops of computing power. These SUs are designed to be connected, much like Legos, to create more powerful systems. Scalable units will be divided among the three labs, with each configuring the SUs into clusters according to mission needs.

Advances in computational technology, enabled in part by NNSA’s computing initiatives, have brought down the cost of HPC systems from approximately \$100,000,000 per teraflop in 1995 to less than \$17,000 per teraflop today, a factor of nearly



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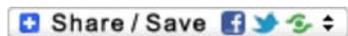
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TLCC-2 clusters will support NNSA's Life Extension Program and investigations into technical issues related to aging weapons systems, efforts critical to ensuring the safety security and reliability of the nuclear weapons in the stockpile as they age well beyond their intended deployment life.

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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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