

**Appro Wins DOE/NNSA Tri-Lab Contract for Capacity Clusters**

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The verdict is in on one of this year's important HPC procurements. Appro (www.appro.com) has won the two-year contract to supply the National Nuclear Security Administration's (NNSA) Lawrence Livermore National Laboratory, Los Alamos National Laboratory and Sandia National Laboratories with Linux clusters for capacity computing. The \$26 million agreement under the new Tri-Lab Linux Capacity Cluster (TLCC) program calls for Appro to provide 8 rack-mounted clusters with aggregate peak performance of 437 teraflops and 96.8 aggregate terabytes of memory. A \$15.8 million contract option could boost these totals to 620 teraflops and 143 terabytes of memory. The clusters will use quad-socket, quad-core AMD Opteron processors with Infiniband 4x DDR interconnects. Core totals: 48,384, or 71,424 if the option is exercised. The Appro clusters will be used in the Advanced Simulation and Computing (ASC) program, a cornerstone of NNSA's Stockpile Stewardship program to ensure the safety, security and reliability of the nation's nuclear deterrent without nuclear testing (www.sandia.gov/NNSA/ASC). 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.

Originally the brainchild of Livermore's Mark Seager, the TLCC program gained strong traction at the other labs for two main reasons. First, the three labs have a huge need for capacity computing: every capability run requires hundreds or thousands of smaller runs for preparation and post-processing. In fact, the large demand for capacity computing was making it tougher to find enough computing cycles for the capability runs. The other big attraction of the TLCC concept was its ability to reduce total cost of ownership (TCO) by 30% to 50%, with the baseline 30% savings coming from doing a single procurement rather than 8 separate RFPs, and other potential savings coming from floor space reductions, power and cooling, and system and applications development and support. (Cooling computer racks is especially challenging at Los Alamos' 7,500-foot altitude, where forced-air cooling is only about half as effective as at sea level.)

The strategy of pooling their purchasing power and creating a uniform capacity computing environment makes good sense, and still leaves the three DOE/NNSA labs free to pursue separate paths for capability computing. The vendor choice is a strong vote of confidence in Appro. The company had a lot going for it in this procurement, including a successful track record with Livermore's Peloton Project since June 2006 (three Appro 1U Quad XtremeServer clusters with a total of 16,128 Opteron cores). Like Peloton, the TLCC program is based on the notion of modular building blocks called Scalable Units. The TLCC contract calls for Appro to begin delivering Scalable Units in November 2007.

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