ASCI UPDATE
January 2001

A Time for Fond Farewells

Paul Messina's Departure

Paul Messina, former Director of the Office of Advanced Simulation and Computing for Defense Programs in the National Nuclear Security Administration, Department of Energy (NNSA/DOE) made his farewell tour of the weapons laboratories early in December 2000. Dona Crawford, ASCI Program Director at Sandia National Laboratories, credited Paul for his "outstanding leadership that united three national laboratories in an unprecedented common initiative and that brought stability, credibility, and respect to the ASCI Program."

ASCI executives. From the left: Dave Nowak (Livermore), Paul Messina (NNSA/DOE), Don McCoy (Los Alamos), and Dona Crawford (Sandia).

When he accepted his Washington D.C. assignment, Paul took a two-year leave from the California Institute of Technology (Caltech), where he is Assistant Vice President for Scientific Computing at Caltech, Faculty Associate in Scientific Computing, and Director of Caltech's Center for Advanced Computing Research. His interest and expertise in advanced computer architectures, especially their

In the News...

Sandia,Celera and Compaq team up to create 100 teraOPS supercomputer for biotech applications.

Lawrence Livermore National Laboratory released its first newsletter, ASCI at Livermore, this month. Check it out at www.llnl.gov/asci/news/asci_llnl.html.

Version 1.6 of the ChileSPICE electrical circuit simulation code has been released. This version contains a variety of features that enhances stability and allows larger problems to run efficiently. Since ChileSPICE is a maturing code, releases describing development will be forthcoming every six months. Contact Steve Wix for more information: sdwix@sandia.gov or (505) 844-0778.

Who's Who in ASCI...

Materials and Physics Models

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application to large-scale computations in science and engineering, lent themselves well to ASCI.

During his farewell tour, Paul praised the women and men who work to support ASCI, saying that "the prospects for ASCI are excellent," and that the labs are doing "a great job." He cited the progress the initiative has made with the 3- and 12-teraOPS systems already in place and the 30- and 100-teraOPS systems in various stages of development and planning. He also noted major milestones met on schedule and the contributions ASCI has made to stockpile stewardship. Paul stated that, within NNSA/DOE, ASCI is often cited as the most successful of the defense programs, adding that it is considered "a model of good planning and management." He further views ASCI as "a model of tri-lab integration, at the technical level and in tri-lab and headquarters management." Other accomplishments that Paul noted included the world-class visualization facilities, the high-bandwidth, tri-lab network soon to be deployed, and the work researchers have performed on algorithms that has helped ASCI codes reach their mileposts.

To conclude his comments, Paul acknowledged the hard work and accomplishments to come, encouraging all involved to continue planning ahead, looking at how ASCI should evolve in the 2006 to 2010 timeframe. He restated, "ASCI is an important, vigorous project, and I am confident that it will continue to be successful and to get good support."

Intel's Departure

After a long and successful partnership that began early in the 1990s, Intel concluded its work with NNSA/DOE, Sandia National Laboratories, and ASCI Red at the end of December 2000. This partnership pioneered parallel processing and produced a computer system that broke and held the record for speed until October of last year.

In December of 1996, ASCI was the world's first terascale supercomputer and performed 1.8 teraOPS, occupied 1,600 sq. ft. with 86 CBP-II cabinets and had 9,216 Pentium, Pro processors. With its recent upgrades, ASCI Red performs 3.1 teraOPS in 94 CBP-II cabinets with 9,298 Pentium, Xeon processors. It sustained 2.38 teraOPS running the MP-LINPACK in October of 1999.

The success of ASCI Red began with the partnership's work on the Paragon computer system, an effort that first demonstrated proof of principle that massively parallel computing could work. Because of these successes, teraOPS-capable machines are now almost commonplace worldwide, with other government agencies and industry finding the value in high-performance computing. This work performed for the Stockpile Stewardship Program not only helps maintain the U.S. nuclear deterrent, but firmly establishes the U.S. as a world leader in supercomputing.

During their almost four-year tenure on the ASCI project, Intel personnel remained in residence at Sandia and Los Alamos national laboratories, providing technical support, service, and software maintenance. Intel parallel support engineers were the first level of response for maintaining ASCI Red. There also were computational scientists who interfaced with users and who provided the link between the software applications and the operating systems. In addition, Intel provided off-site hardware support.

ASCI Red at Sandia National Laboratories

National laboratory staff worked closely with Intel during ASCI Red's development and early operation, and last year Sandia began training staff to replace departing Intel personnel. Full responsibility for maintaining ASCI Red now belongs to Sandia.

The ASCI Update is written and published monthly by the Los Alamos, Sandia, and Lawrence Livermore national laboratories, with contributions from the Department of Energy. This newsletter, along with past editions, may be viewed on the web: www.sandia.gov/ASCI. Comments or inquires should be sent to ASCI@sandia.gov. SAND 2000-2828.