

ISC14 Video Highlights

It's the third and final day of ISC14, but there is still much to unwrap in the way of news, content and insight. To highlight some of the most memorable moments from the event, the ISC support team has put together a series of daily video packages.

In the first day's video, Anna Schorr from the ISC team speaks with several participants, including such luminaries as Dona Crawford, Erich Strohmaier, Jack Dongarra, Pete Beckman, Michael Resch and Kenneth Ruud.



Dona Crawford, Associate Director for Computation at Lawrence Livermore National Laboratory (LLNL), was particularly impressed with the keynote speech from Dr. Klaus Schulten, a leading computational biophysicist and professor of physics at the University of Illinois at Urbana-Champaign, who spoke about supercomputing as a discovery tool for biomedicine. Crawford remarked finally supercomputers are fast enough that we can do something with them that pertains to biology.

“The one thing I really loved,” said Crawford, “was that he could model an entire organelle at the atomistic level...that has promise for great, dramatic discoveries in medicine.”

After giving his keynote speech announcing the latest TOP500 results, the University of Tennessee professor and TOP500 cofounder Jack Dongarra had some pertinent words to share about the connection between supercomputing prowess and progress and funding.

“What we’re seeing is the slowing down of certain machines and that’s a result of investment being put into high-performance computing,” said Dongarra. “Everything is going to be driven by funding. If the funding is there, machines will be purchased and those machines will be deployed in the scientific industry.”

“That funding is not just for hardware. There has to be a real buildout of high-performance computing, building out that whole ecosystem,” he continued. “The ecosystem is driven by a number of things. The hardware has to be in place, the applications, the algorithms, the software, the operating system, the compilers – all have to be funded at a level which can support the kinds of architectures and machines that would be needed to build out that high-performance system.”

Erich Strohmaier, head of Future Technology Group at Lawrence Berkeley National Laboratory, was also interviewed as a followup to his keynote presentation “Highlights of the 43rd TOP500 List.” Strohmaier specifically addressed increased system age.

“If we have systems for twice as long, the trends should shift to a lower level but then continue along the lines of technology,” he said. “So it should recover to the old growth rate just at a lower level. It’s very surprising to me that we haven’t seen that in the last five years.”

In the day two video wrap-up, ISC’s Anna Schorr spoke with Intersect360 Research analyst Addison Snell, who had recently come out of a panel discussion about Lenovo’s takeover of IBM’s x86 biz.

Addison remarked that he enjoyed the panel. “IBM, Lenovo and some of their main customers showed a real willingness to answer a range of questions about what kind of transition we are likely to see as IBM and Lenovo go forward as separate vendors in the HPC space,” he said. “There are a lot of concerns because there will be significant short-term and long-term impacts as that business separates out. Now IBM’s been through transitions like this before in other markets...and they have reason to be optimistic. But I was very satisfied in terms of their willingness to answer a lot of these questions.”

Also seen in the video are John Shalf of Lawrence Berkeley National Lab and the inimitable Thomas Sterling of Indiana University discussing the challenges of extreme-scale computing. When the 2008 exascale report came out, there was this huge list of problems, but now solutions are starting to come into focus, according to the pair.

“Our speakers [in the Extreme Computing Challenges session] identified three of the key problems and partial solutions in the area of power, power control and programmability and runtime management,” said Sterling. “These are promising high-potential approaches, but we’re facing much greater gaps ... It’s clear that further innovation is going to be essential. There are good research being done in many of necessary areas, however.”

Pak Lui, HPC Advisory Council, spoke about how the Student Cluster Competition has changed over the years. The ISC edition of this popular event developed from five teams two years ago to eight teams last year, and this year 11 teams from around the world competed against each other to measure application performance.

Today the winning teams were announced with South Africa taking home first prize for the second year in a row. The group was sponsored by Dell, NVIDIA and Mellanox. The student team from the University of Science and Technology, China earned second place honors, and the University of Edinburgh, UK (EPCC) team took the award for highest LINPACK with a remarkable 10.14 teraflops. Stay tuned for more coverage of this popular event.

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