

The International Supercomputing Conference (ISC), due to kick off in Hamburg in mid-June, is Europe's leading supercomputing event. This show has almost everything you'd expect: keynote speeches by research computing stars; presentations, tutorials, demonstrations, and exhibits; and a huge variety of logo-imprinted tote bags. This year, they're adding a Student Cluster Competition to their growing slate of offerings.

So what is a student cluster competition? Small teams (usually six or eight members) of university or even high school students put together their own clusters and compete to achieve the fastest/best results on a set of benchmarks and real-world HPC applications. The systems they build are subject to power constraints, usually somewhere around 25-30 amps, which is what keeps them from trying to Infiniband together anything that has a processor. (Read more below...)

The hardware is provided by vendor sponsors, and the students work with the vendor and their coaches (usually professors) to design systems that will provide the absolute best performance on a range of workloads while keeping within the power constraint.

The U.S.-based SC conferences have been running student cluster competitions for several years now, and the range of gear that the students have brought to battle is surprising. We've seen exotic interconnects, GPU-heavy systems, and even immersive liquid cooling. I would expect to see the same thing at the European version of the contest.

(If you want to take a look, here are some [articles covering the SC11 contest](#) in Seattle.

The [ISC Student Cluster Competition](#), jointly sponsored by the [HPC Advisory Council](#), will showcase six teams this year. The U.S. will be represented by teams from the University of Colorado and Stony Brook University (both multi-year veterans of the U.S. version of the competition.) Germany will have a team from the Karlsruhe Institute of Technology defending the pride of the ISC host nation.

There will be two teams from China participating in the contest, but we don't know exactly who they are yet. Last year at SC11, the Chinese team from NUDT was very competitive, and lost to

the overall winner Taiwan by the narrowest of margins. This must have stoked competitive fires in China, because there are now so many universities vying to compete in Hamburg that they're going to have an intra-China playoff to determine which two teams will go.

These competitions are impressive in a number of ways. It's great to see highly motivated students, many of whom are new to HPC, learning how to build, tune, and drive their clusters. They have to learn about not only the computer gear but also the specific applications and scientific disciplines that the apps support. These 'kids' are the future of HPC. It's also fun to watch the personalities of the various teams emerge and to see how much they enjoy taking part in the competition.

We'll be following this competition as it unfolds with articles on the applications, individual teams, and probably even another [betting pool](#) .