

Press release
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Barcelona autumn school training material published

BARCELONA. PRACE, the Partnership for Advanced Computing in Europe, organized an Autumn School on HPC (High Performance Computing) technologies in general and application development on October 25–29, 2010 at the campus of the Technical University of Catalonia, Barcelona, Spain. The presentations and the video material has been published on the PRACE web site: www.prace-ri.eu/hpc-training/prace-code-porting-videos/prace-autumn-school-bsc-2010

The event, hosted by the Barcelona Supercomputing Center (BSC), was held in Barcelona, Spain, on October 25–29, 2010. It gathered almost 50 attendees from many European countries (mostly from Spain). The feedback from the school supports the impression of a successful and well-organized school. The autumn school is followed by the first winter school in Nikosia, Cyprus on January 24 – 27, 2011.

The Autumn School aimed to expand and intensify the existing ecosystem of scientists who use HPC technologies. Researchers and students from Europe and beyond received lectures on topics ranging from basic concepts on programming frameworks to specialised tools and techniques for advanced users. This five day PRACE Autumn School focused on the in-depth presentation for thorough understanding of the HPC topics during morning lectures followed by hands-on training in the afternoon. To enable students to solve problems in scalable scientific computing, access was provided to the supercomputer MareNostrum at BSC.

The school was composed by three tracks running in parallel. The first one aimed to cover the basic and standard concepts of HPC programming through realistic examples and hands-on sessions. The second track focused in explaining alternative advanced programming models. Aside of the basic programming of HPC via the standard programming models (MPI and OpenMP), novel solutions, such as StarSs proposed and implemented at BSC, CUDA and OpenCL targeting GPU or Chapel and CAF to address programming productivity were also presented. The third track was oriented to advanced users and covered aspects of application debugging and performance analysis.

The Autumn School is part of the PRACE project's education and training program, which aims at preparing and initiating a European HPC education and training for scalable computing. It includes advanced topics identified in the recent survey on HPC training and education needs that PRACE has carried out.

"Twenty countries – Austria, Bulgaria, Czech Republic, Cyprus, Finland, France, Germany, Greece, Holland, Ireland, Italy, Norway, Poland, Portugal, Serbia, Spain, Sweden, Switzerland, Turkey and United Kingdom - have created PRACE, a shared HPC Research Infrastructure for European Researchers (both public and private). As HPC is gaining more and more interest worldwide, PRACE is proving to be, indeed, an excellent tool to increase European competitiveness", says **Francesc Subirada**, Associate Director at BSC.

“Programming environments, including programming models, performance and debugging tools, are key towards exploiting the whole potential of novel architectures in the many-/multi-core era, which we are going to live in during this decade. Programming productivity is as important as expressiveness and performance, with new proposals and research to be done in this direction”, remarks **Eduard Ayguadé**, Associate Director of the Computer Sciences Department at BSC.

More information: Renata Giménez/Sara Ibáñez, press@bsc.es, +34934137716

About PRACE: The Partnership for Advanced Computing in Europe (PRACE) is an international non-profit association with its seat in Brussels. The PRACE Research Infrastructure (RI) provides a persistent world-class High Performance Computing (HPC) service for scientists and researchers from academia and industry. The PRACE leadership systems form the apex of the performance pyramid and are well integrated into the European HPC ecosystem. PRACE receives funding from the EU's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° RI-261557.

