

Press release: PRACE selected promising architectures  
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## PRACE selected promising architectures

*PRACE, Partnership for Advanced Computing in Europe, has selected a broad coverage of promising architectures for Petaflop/s-class systems to be deployed in 2009/2010. Prototypes will be installed at six partner sites starting in 2008.*

PRACE analysed key scientific applications and mapped them to suitable architectures. As a result six prototypes were selected including more advanced hybrid systems.

“Our objective is to build the best set of prototypes for preparing a timely and seamless deployment of production systems in 2009/2010 – not to attempt to select the best individual prototypes”, says François Robin, from CEA/GENCI.

The prototypes will be installed at the following PRACE partner sites:

BSC (Barcelona Supercomputing Center, Spain), installs a hybrid prototype combining IBM Cell and Power6 processors. The Cell processors are used for computation and the Power6 processors for service.

CEA (French Atomic Energy Commission, France) and FZJ (Forschungszentrum Jülich, Germany) jointly use Intel Nehalem/Xeon processors in their systems. Two shared-memory multiprocessors (thin node clusters) will be distributed over the two sites; a prototype produced by BULL at CEA and a larger system of the same architecture at FZJ.

CSC (The Finnish IT Center for Science, Finland) and CSCS (Swiss National Supercomputing Centre, Switzerland) jointly evaluate the Cray XT5 architecture. This Massively Parallel Processing (MPP) prototype will be installed at CSC's facilities.

FZJ provides its already installed IBM BlueGene/P system, as a Massively Parallel Processing prototype.

HLRS (High Performance Computing Center Stuttgart, Germany) offers a NEC SX-9 and an x86 based cluster as a hybrid prototype.

NCF (Netherlands Computing Facilities Foundation, The Netherlands) evaluates the IBM Power6 architecture, a shared-memory multiprocessor (fat node cluster). This prototype will be installed in SARA Computing and Networking Services facilities in Amsterdam.

These prototypes will be used to evaluate the architectures in near-production situation with regard to application performance and scalability, as well as total cost of ownership and energy consumption. They will make also possible the evaluation of software for managing the distributed infrastructure, the preparation of benchmarks for future Petascale systems allowing better understanding of user

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requirements, the scaling and optimisation of libraries and codes and the definition of technical requirements and procurement procedures for the PRACE Petaflop/s production systems for 2009/2010.

**Notes for editors:** In computing flop/s is an acronym meaning FLoating point OPerations per Second. The flop/s is a measure of a computer's performance. One Petaflop/s means computer performance of  $10^{15}$  flop/s.

**More information:** PRACE work package 7 has been leading the evaluation work. The leader of the work package, François Robin from CEA/GENCI, will give more information on request. E-mail: francois.robin@genci.fr

**About PRACE:** The Partnership for Advanced Computing in Europe (PRACE) prepares the creation of a persistent pan-European HPC service, consisting of several tier-0 centres providing European researchers with access to capability computers and forming the top level of the European HPC ecosystem. PRACE is a project funded in part by the EU's 7th Framework Programme. The PRACE project receives funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° RI-211528.

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