



HPC NEWS

PRACE selects Petaflop/s HPC sites

1 September 2008

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 and 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 and 2010 – not to attempt to select the best individual prototypes', said 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 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.

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