

PRACE 1IP: PRACE-First Implementation Phase Project

Description

Large scale simulations are the third pillar of science today alongside theory and experiment. They produce scientific insights, technological advances, and solve problems in many fields of society. Their tools are high-end computers and effective software. PRACE, the Partnership for Advanced Computing, has been created as a not for profit association in May 2010, as a permanent pan-European High Performance Computing service providing world-class systems for world-class science.

Up to six systems at the highest performance level (Tier-0) will be deployed – the first one being the already installed BlueGene/P in Germany. Funding for the next three systems has been committed by France, Italy, and Spain. Twenty European states are members of the PRACE Research Infrastructure (RI). Access to the PRACE resources will be through a single peer review process. The Scientific Steering Committee represents the user communities and guides the strategic directions. PRACE works closely with national, regional, and topical centres to shape the European HPC ecosystem.

The PRACE 1IP project was designed to support the accelerated implementation of the RI. The project supported the evolution of the RI by refining and extending the administrative, legal and financial framework with focus on the specific requirements of industry. To enable world-class science on novel systems the project assisted users in porting, optimising and petascaling applications to the different architectures and deployed consistent services across the RI. The tools and techniques were selected to have broad applicability across many disciplines. This was accompanied by advanced training in modern programming methods and paradigms, establishing a permanent distributed training infrastructure.

The PRACE brand was already well established in the international HPC scene; extensive dissemination and outreach will be continued. The project advises PRACE on procurements of the next generation of systems. Finally, promising technologies, especially with respect to energy efficiency, were evaluated with the ultimate goal to collaborate with industrial partners to develop products exploiting STRATOS, PRACE advisory group for Strategic Technologies created in the PRACE Preparatory Phase project.

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