

Press release: PRACE Benchmark Suite Finalised  
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## PRACE Benchmark Suite Finalised

*PRACE, the Partnership for Advanced Computing in Europe, selected 22 applications for the final PRACE application benchmark suite.*

The benchmark suite covers application areas from the PRACE Research Infrastructure's future user base, ranging from particle physics through computational chemistry and fluid dynamics to earth sciences and astronomy. The selected applications have enough scalability potential to run on petascale systems and beyond.

Several aspects were taken into account when creating the final benchmark suite: PRACE investigated the actual usage of scientific applications in Europe, including their industrial usage, and the scalability and performance of the applications were tested on the PRACE prototype Tier-0 platforms.

The PRACE benchmark suite was prepared in such a way that it offers high flexibility. This includes the possibility to use a subset of the full benchmark suite for procurement of specific Tier-0 architectures. Ease of use of the benchmark suite is assured by its integration into the flexible JUBE (Jülich Benchmark Environment) framework, which includes verification procedures.

The applications selected for the PRACE application benchmark suite are:

QCD, particle physics  
Quantum\_Espresso, computational chemistry  
NAMD, computational chemistry  
CPMD, computational chemistry  
Code\_Saturne, computational fluid dynamics  
GADGET, astronomy and cosmology  
TORB/EUTERPE, plasma physics  
WRF, atmospheric modelling  
NEMO, ocean modelling  
CP2K, computational chemistry  
GROMACS, computational chemistry  
NS3D, computational fluid dynamics  
AVBP, computational fluid dynamics  
HELIUM, computational physics  
TRIPOLI-4, computational engineering  
PEPC, plasma physics  
GPAW, computational chemistry  
ALYA, computational mechanics  
OCTOPUS, computational chemistry

BSIT, computational geophysics  
ELMER, computational engineering  
SPECFEM3D, computational geophysics

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**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.

