

DEISA2 engaging for a European HPC Ecosystem

The DEISA Consortium operating the *Distributed European Infrastructure for Supercomputing Applications* was awarded a further three year contract within the EU Framework Programme 7. As of May 1, 2008, the FP7 DEISA2 project is engaged into the enhancement of the European HPC infrastructure towards an integrated HPC ecosystem.

In EU FP7, the DEISA Consortium continues to support and further develop the distributed high performance computing infrastructure and its services through the DEISA2 project funded for three years as of May 2008. Activities and services relevant for Applications Enabling, Operation, and Technologies are continued and further enhanced, as these are indispensable for the effective support of computational sciences in the HPC area. The service provisioning model will be extended from one that supports single projects to one supporting Virtual European Communities. Collaborative activities will be carried out with new European and other international initiatives.

Of strategic importance is the cooperation with the PRACE project which is preparing for the installation of a limited number of leadership-class Tier-0 supercomputers in Europe. The key role and aim will be to deliver a turnkey operational solution for a future persistent European HPC ecosystem, as suggested by ESFRI. The ecosystem will integrate national Tier-1 centres and the new Tier-0 centres.

DEISA: Achievements to build on

In spring 2002 the idea emerged to overcome the fragmentation of supercomputing resources in Europe both in terms of system availability and in the necessary skills for efficient supercomputing support. The establishment of a distributed European supercomputing infrastructure was proposed.

In May 2004 the DEISA project was started as a EU FP6 Integrated Infrastructure Initiative by eight leading European supercomputing centres. In 2006 DEISA was joined by three additional leading centres. Through the joint efforts, DEISA reached production quality soon after to support leading edge capability computing for the European scientific community. DEISA has also contributed to a raising awareness of the need for a persistent European HPC infrastructure as recommended in the ESFRI report 2006.

The DEISA Extreme Computing Initiative (DECI), launched in 2005 with annual calls, has supported challenging European supercomputing projects during the last three years. For the most challenging projects the most powerful and most appropriate supercomputer architectures available in Europe could be offered. So far scientists from 15 different European countries with collaborators from four other continents have benefited.

DEISA2 Essentials

In the DEISA2 projects, the DECI is continued, but these single-project oriented activities will be qualitatively extended towards persistent support of Virtual Science Communities. DEISA2 will provide a computational platform for them, offering integration via distributed services and web applications, as well as managing data repositories. Emphasis will be put on collaborations with research infrastructure projects established by the ESFRI, and European HPC and Grid projects. The activity reinforces the relations to other European HPC centres and leading international HPC centres and HPC projects world-wide. For supporting international science communities across existing political boundaries, DEISA2 participates in the evaluation and implementation of standards for interoperation.

Taking care of the operation of the infrastructure and the support of its efficient usage is the task of the three service activities *Operations*, *Technologies* and *Applications*, which are complemented by two *Joint Research Activities*.

DEISA members and new associated partners

In addition to the eleven DEISA members from seven countries, BSC/Spain, CINECA/Italy, CSC/Finland, ECMWF/UK, EPCC/UK, FZJ/Germany, HLRS/Germany, IDRIS/France, LRZ/Germany, RZG/Germany and SARA/The Netherlands, the three centres CSCS/Switzerland, KTH/Sweden and JSCC/Russia join the DEISA2 project as associated partners.

Further reading: www.deisa.eu

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Acknowledgment

The DEISA Consortium thanks the European Commission for support through FP6 contracts RI-508830 and RI-031513, and FP7 contract RI-222919.