JÜLICH
FORSCHUNGSZENTRUM

JSCNews
Jülich
Supercomputing
Centre

No. 182 • Feb. 2010

Application for Computing Time

Applications for computing time on the supercomputers JUGENE and JUROPA in Jülich can now be made for the next granting period (1 May 2010 - 30 April 2011). Researchers working on simulation-intensive projects in the natural and engineering sciences are invited to apply. Proposals are eligible from academic and research institutions. The electronic application forms can be accessed through:
http://www.fz-juelich.de/jsc/computing-time

In addition, the Gauss Centre for Supercomputing (GCS) has issued its third call for large-scale projects. Projects are classified as "large-scale" if they require more than 5 % of the potentially available CPU cycles on a member centre's high-end system, for example more than 70 million processor core hours or 24 rack months on JUGENE within the granting period. Further details can be found at: http://www.gauss-centre.eu/computing-time/call.

Deadline for submissions is 1 March 2010.
(Contact: Dr. Walter Nadler, ext. 2324)

Guest Student Programme 2010

During summer 2010, JSC will once again be hosting its guest student programme. As part of this programme, students of the natural sciences, engineering, computer science and mathematics are offered the opportunity to work with JSC staff on current research topics in scientific computing. Depending on previous knowledge and the participant's interests, assignments can be drawn from diverse areas: mathematics, physics, chemistry, software development tools, visualization, grid computing, operating systems and communication. Special emphasis is placed on the use of supercomputers.

The participants are expected to have knowledge of and experience in the computer-oriented branches of their subjects. Students should have already completed their first degree but not yet finished their master's course. Additionally, a letter of recommendation from a university lecturer or professor is required.

The programme will last ten weeks and will take place from 2 August to 8 October 2010. Students are encouraged to apply for the programme in writing (English or German) by 30 April 2010. Further information can be found at *http://www.fz-juelich.de/jsc/gsp/*
(Contact: Robert Speck, ext. 8715)

$C^2A^2S^2E$ and JSC Cooperate to Create "Digital Aircraft"

Deutsches Zentrum für Luft- und Raumfahrt (DLR) and Forschungszentrum Jülich signed a cooperation agreement on "Numerical simulations for aeronautical research on supercomputers" in January 2010. This agreement will be the formal basis for joint research activities by the Center for Computer Applications in AeroSpace Science and Engineering ($C^2A^2S^2E$) and JSC.

$C^2A^2S^2E$, founded by DLR and Airbus, is a well-known competence centre for numer-

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ical aircraft simulations. Besides its activities in improving the modelling of physical processes and numerical algorithms, it develops, maintains and applies the CFD code TAU for its customers in the European aircraft industry. In order to simulate a virtual aircraft with all its multiphysics interactions, $C^2A^2S^2E$ needs access to capability computers like JUGENE and JUROPA at JSC. Furthermore, the efficiency and scalability of the simulation software have to be improved to extend calculations up to tens or hundreds of thousands of cores. The necessary optimization and adaptation of this research code will be supported by supercomputing experts from JSC.

As a first step, the TAU code has been implemented on JUGENE and JUROPA, and successful benchmarks have already been performed up to several thousand cores. On the research side, JSC and $C^2A^2S^2E$ will in future collaborate on the development of scalable CFD methods and software for up-to-date computer architectures and the HPC training of students and young scientists.
(Contact: Dr. Bernd Körfgen, ext. 6761)

LOFAR Antenna Array in Jülich

Low Frequency Array (LOFAR) is an international project to build and operate an interferometric array of radio telescopes without moving parts. The electric signals from the distributed LOFAR antenna fields are digitized, transported to a central computer system, and combined in software in order to map the sky. In this sense, LOFAR can be regarded as an IT telescope.

The project is supported by a consortium of research institutes, universities, and industrial parties, led by ASTRON in the Netherlands. 36 antenna fields in the Netherlands, 5 German stations and other European stations will be established gradually. One of these stations will be constructed in the direct vicinity of Forschungszentrum Jülich, starting in February 2010. The LOFAR station comprises two arrays 75 m in diameter which consist of many low band antennae (LBA) operating between 10 and 90 MHz and high band antennae (HBA) operating between 110 and 250 MHz.

The Jülich LOFAR station will be established and operated in collaboration between Ruhr University Bochum, Jacobs University Bremen, and Forschungszentrum Jülich and is partly funded by the D-LOFAR project of the BMBF (German Federal Ministry of Education and Research). JSC is responsible for the organization and operation of the station. Furthermore, JSC will be a computing and storage centre for the German stations in Effelsberg, Garching, Potsdam, Tautenburg, and Jülich, which are organized in the GLOW (German Long Wavelength) consortium. The connection for the data communication traffic of these stations to the central computing system in Groningen is channelled through JSC.

With LOFAR, key science projects will tackle investigations of the cosmological epoch of re-ionization, transient sources, ultra-high energy cosmic rays and cosmic magnetism. Furthermore, LOFAR is an instrument for solar science, space weather and deep extragalactic surveys.
(Contact: Dr. Thomas Fieseler, ext. 1602)

German-Israeli Cooperation: 24th Umbrella Symposium in Jülich

From 18 - 20 January 2010, JSC hosted the "Umbrella Symposium for the Development of Joint Cooperation Ideas", an annual event which has been run by Technion Haifa, RWTH Aachen University and Forschungszentrum Jülich with changing topics since 1984. This year's symposium, attended by around 50 delegates, was dedicated to "Modelling and Simulation Sciences" and included wide-ranging contributions on surface science, medical engineering, biophysics, nanoelectronics and virtual reality. An important aspect of the symposium is to give young scientists the opportunity to establish new cooperations in their particular field: a call for Umbrella travel grants will be published in spring this year to support a selected number of promising ideas arising from the symposium. Eight such potential partnerships were already proposed by the end of the meeting. The next symposium will be on the same topic and will be hosted by RWTH Aachen from 31 January to 1 February 2011.
(Contact: Dr. Paul Gibbon, ext. 1499)

EU Project FIT4Green

The FIT4Green project (Federated IT for a Sustainable Environmental Impact) started on 1 January 2010. FIT4Green will contribute to energy reduction efforts by creating energy-aware extensions for data centre automation frameworks. These extensions enhance deployment strategies by allocating IT resources and services in a federation of IT data centres, with the goal of minimizing the overall power consumption without loss of performance. The project will run test beds using three representative types of data centres (Enterprise Portal, Grid and Clouds) to validate the models, policies and extensions developed in the project. JSC provides a test bed and contributes its expertise in HPC and Grid to the project. The results of FIT4Green will be exploited in future planning processes for hardware and software environments.
(Contact: Daniel Mallmann, ext. 2433)

Events

NIC Symposium 2010
Date: 24 - 25 February 2010
Venue: Auditorium, Forschungszentrum Jülich
Info: *http://www.fz-juelich.de/nic/symposium/*

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