

NEWSletter

Volume 4 – December 2008

Students Strengthen High Performance Computing Skills at PRACE Winter School

PRACE, the Partnership for Advanced Computing in Europe, is proud to announce a Petascale Computing Winter School in Athens, Greece, from 10–13 February, 2009.

The Winter School will take place at the training Center of the Hellenic Telecommunications Organization, the OTE Academy in Athens. The event is hosted by the Greek Research and Technology Network with the contribution of the Aristotle University of Thessaloniki (AUTH), and addresses potential users of future Petascale systems in Europe.

The Winter School will cover advanced topics such as programming models and optimization techniques and MPI/OpenMP hybrid programming, optimization and profiling. The first three days will focus on the thorough presentation and deep understanding of these HPC (High Performance Computing) topics, with morning lectures followed by hands-on training in the afternoon. The last day which is optional for participation, will be dedicated to a novel multiprocessor architecture, with all-day parallel lectures and hands-on training.

Access to PRACE prototypes

In order to enable students to solve problems in scalable scientific computing, access will be pro-

vided to two PRACE prototype systems, which denote the latest developments of HPC facilities in Europe. These are the Power 6 system at the SARA Computing and Networking Services in Amsterdam, Netherlands and the Cell system at the Barcelona Supercomputing Center (BSC) in Spain.

“As HPC is gaining more and more interest both in Europe and worldwide, it is straightforward that the training needs on HPC topics will grow proportionally. The PRACE project is leading the HPC efforts in Europe and one of its main axes has been the formulation of high level training sessions, which will allow participants to improve their HPC skills and get in touch with the latest technological achievements at the same time. This constitutes the objective of the Winter School, which will take place in Athens, Greece and the main idea, according to which the School’s program has been defined. The participants will receive training on “hot” HPC topics and will get acquainted with two promising PRACE prototypes, the SARA Power 6 and the BSC Cell”, says **Nikos Tsakiris**, the chair of the PRACE Petascale Winter School Program Committee and application expert at GRNET/AUTH.

European HPC training

The Winter School is part of the PRACE

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project’s education and training task, which aims at preparing and initiating a European HPC education and training for scalable computing. In this respect, PRACE has carried out a survey on HPC training and education needs which was conducted amongst the top-tier computational users across all partner sites within the PRACE consortium. The mission of the survey has been to evaluate the current educational needs of PRACE HPC users by assessing existing proficiency and satisfaction in traditional HPC techniques as well as soliciting their training requirements for next-generation Petascale systems. Based on the outcomes of the survey, the Winter School agenda will address the training needs of the HPC users.

Registration for the Winter School will open in December 2008, at the Winter School web page (<http://pracewinterschool.grnet.gr/>). The number of participants is limited to 40, and a PRACE Admission Committee will be responsible for selecting the students.

More information:

More information about the Winter School can be found on:

<http://pracewinterschool.grnet.gr/>

Contact: prace-winter-pc@fz-juelich.de



The PRACE Petascale Winter School will take place in Athens, Greece.

WP3 is about Dissemination, Outreach and Training

Work Package 3 (WP3) Dissemination, Outreach and Training - is responsible for the coordination and presentation of project results at conferences, the organisation of PRACE events, as well as establishing a training programme for potential PRACE research infrastructure users.

The mission of WP3 will be completed within the three following tasks:

- Dissemination activities,
- Industry and business collaboration,

- Education and training program.

The main objective of WP3 is dissemination to the major HPC stakeholders, the European scientific and research communities, research infrastructure organizations, universities and centres for higher education, and the general public and to liaise with industrial and business partners as potential HPC users as well as to implement an education and training program for computational science aimed at scalable computing.

WP3 is fully connected to other work packages; dissemination is done in cooperation with all work packages. This includes for example press releases of different work packages' results which are disseminated to the public audience by this Work Package.

Work Packages 1, 2 and 6 have been introduced in previous PRACE newsletters. All previous issues of the PRACE newsletter can be found on www.prace-project.eu

1st PRACE Industry Seminar in Amsterdam was a Highly Successful Event

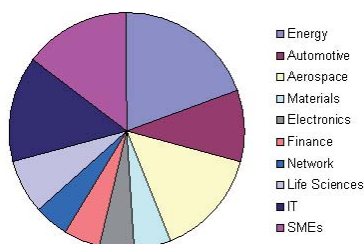
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PRACE organised a one-day "Industrial Competitiveness: Europe goes HPC" seminar in Amsterdam. The seminar targeted large European companies with potential interest in using High Performance Computing (HPC) to increase their competitiveness and productivity, and to accelerate innovation.

The 1st PRACE Industry Seminar was hosted by the city of Amsterdam, in the NH Grand Hotel Krasnapolsky on September 3, 2008. It was organised by GAUSS, GENCI and NCF.

The seminar had close to 100 invited attendees - CEOs, CIOs, CTOs and high level decision makers from different industrial domains as well as academic participants, scientific software developers and representation from the European Commission. This wide scope of attendees promoted increase contacts and discussions about potential technology transfer.

The attendees covered a total of 13 Euro-



Breakdown of industrial attendees per domain



The seminar had close to 100 invited attendees: CEOs, CIOs, CTOs and high level decision makers from different industrial domains as well as academic participants, scientific software developers and representation from the European Commission.

pean countries, representing 35 significant European companies and covering a wide part of the HET Scientific Case (High Performance Computing in Europe Taskforce).

Increasing interest in high-end computing

One of PRACE's goals is to increase the interest in high-end computing and its potential for increased business competitiveness as well as to raise awareness of the creation of a world class computing infrastructure in Europe for HPC applications.

The participants enjoyed a rich program of talks and discussions showing the importance of

PRACE for scientific and industrial development. The program of the seminar was a mix of high ranked speakers from both industry and academia, with presentations focused on demonstrating through success stories the proven effects of HPC usage for increasing their competitiveness and productivity or boosting their innovation.

One of the PRACE representatives gave detailed information about the project and how the latest HPC trends are mapped onto the technical work packages in both short and middle term vision.

Renowned speakers

VIP speakers like the 2007 Physics Nobel Prize winner, **Peter Grünberg** and the mayor of Amsterdam, **Job Cohen** brought to the audience testimonials respectively about their scientific achievement and their vision about the impact of numerical simulation for the global economy.

Finally, the seminar was the opportunity for PRACE to gather the attendees needs and expectations about PRACE, through panel sessions animated by **Mark Parsons** (EPCC). Questions on security, interconnexion through high speed networks, legal aspects, SLAs (Service Level Agreement), capacity vs. capa-

bility, licensing issues, training, etc. were raised and discussed.

The participating companies were: EDF, Repsol, ENI, CEA, Iberdrola, Total, GM, Porsche, Scania, Airbus, BAE, SNECMA, EADS, VOLVO AERO, Schering Plough, Novartis, AkzoNobel, Arcelor Mittal, Hutchinson, Philips, NXP, BNP Paribas, Société Générale, Alcatel Lucent, Renater, Cerfacs, CS, EDS, T-Systems, TER@TEC, Acumen, Gnodal, NAG, Alinea Numtech and RISC.

Industrial pilot applications on prototypes

As a result of the seminar, industrial pilot applications suitable for Petaflop/s scalability are planned to be run on the PRACE prototype systems.

"The PRACE First Industry Seminar showed the need of collaboration between academia and the industry and the synergies which both may benefit from in order to give to Europe the HPC level of resources for industrial advances and R&D competitiveness in various domains. Regarding the oil and gas industry, the use of massively parallel technologies coupled with new algorithms for processing more complex seismic acquisitions is without any doubt one of the keys of success for improving the efficiency in exploration and development of new oil reservoirs", said **Philippe Malzac** Vice President, Exploration & Production Information Systems of TOTAL, one of the major world oil & gas companies.

"One of the most pronounced conclusions drawn from this event is that PRACE is to form a European Industry Platform for permanent discussions between PRACE and Industry on further co-operations, which could well go far beyond the present scope of PRACE. National

chambers of this platform could strengthen such contacts at the national levels as well. If only for this conclusion the seminar was a great success", said the event organisers **Catherine Riviere, Thomas Lippert and Patrick Aerts**.

Second industry seminar in 2009

The first industry seminar will be followed by a second one in late 2009. In the second industry seminar PRACE will discuss models for HPC usage throughout industry and other forms of cooperation in more depth.

The PRACE industry usage model will be elaborated between the two seminars through follow up meetings with the majority of the industry attendees who expressed a strong interest on this initiative.

These meetings will be completed by an upcoming online survey which will address needs and expectations on a wider European industrial scope including small and medium size enterprises (SMEs), which represent a significant and more widespread business group of future users of HPC and an important part of industry competitiveness in Europe.

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PRACE project coordinator, Dr. Prof. Achim Bachem gave a presentation at the seminar.

More information:

More information can be given by the organising committee upon request.

E-mail: prace-industry@fz-juelich.de

Presentations given at the "Industrial Competitiveness: Europe goes HPC" seminar are available at www.prace-project.eu/documents

Cyprus joins the PRACE Initiative

PRACE has a new member country - Cyprus - which joined the initiative on 29 October 2008.

The overall number of countries in the initiative has increased to 17 as Cyprus signed the Memorandum of Understanding.

Several additional countries have also expressed their interest in the initiative. Thus, the coverage of PRACE is getting wider in Europe.

The following countries collaborate in PRACE: Germany (project coordinator), Austria, Cyprus, Finland, France, Greece, Ireland, Italy, The Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey and UK.



Cyprus became the 17th member of the PRACE Initiative on 29th October

PRACE at SC08 and ICT 2008

PRACE participated for the first time in the exhibition at SC08 in Austin, TX, from November 14-21, 2008.

PRACE organised a treasure hunt at SC08. The grand prizes were an iPod Touch (1st prize) and an iPod Nano (2nd prize). The treasure hunt was the ideal opportunity to contact by-passers and invite them to read the PRACE flyer, which contained the answers and to visit

the nine PRACE partner booths at the exhibition.

The lucky winners of the treasure hunt were **Renato Nascimento Elias** from Brazil (1st prize) and **Yvan Fournier** from France.

Congratulations to the winners!

First scientific conference held

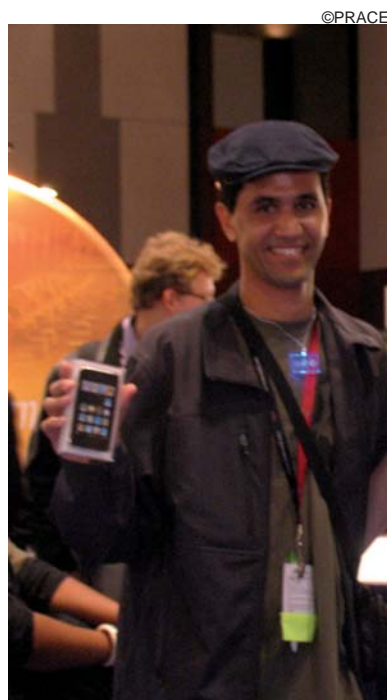
On the following week PRACE took part at ICT 2008 in Lyon, France, the largest research

event for information and communication technologies in Europe. The first PRACE Scientific Conference was held on 26 November 2008 in Lyon, organized in conjunction with ICT 2008. The programme focused on applications, architectures and training for the petascale regime. The conference covered these topics from multiple perspectives ranging from the application scientist to the policy maker.

Over 40 participants from 16 countries at-



The PRACE exhibition booth at SC08



A lot of people took part to the PRACE treasure hunt at SC08. The first prize went to Renato Nascimento Elias from Brazil (picture on left).

tended the sessions and engaged in discussions about collaborations between researchers, technical experts, and policy makers.

The PRACE presentations were complemented by a booth in the ICT exhibition. This provided an excellent opportunity to inform the 4500 participants from existing and prospective ICT projects about the objectives and achievements of PRACE.

The second PRACE conference will be organised in May 2009 jointly with DEISA2 and will take place in Amsterdam.

More information:

The presentations from the conference are available at www.prace-project.eu/documents.

More pictures from SC08 and ICT 2008 are available on www.prace-project.eu

The next PRACE newsletter will include an article from the scientific workshop.



The PRACE exhibition booth at ICT 2008

PRACE Award 2009: Call for Papers has Started

The call for papers for the PRACE Award 2009 has begun. It will be the second time the PRACE Award will be presented at the ISC Opening Session.

PRACE will award a prize to the best scientific paper by a European student or young scientist in one of the following areas:

- Algorithms or implementations that can expose scalability on many thousands of processors
- A breakthrough in science achieved with massively parallel high performance computing resources
- Novel approaches to evaluate the performance of applications on massively parallel architectures.

The winner chosen by the ISC'09 Award Committee will receive a PRACE sponsorship for the participation in a training event or a conference relevant to petascale computing.

The authors of the ISC and PRACE Award winning papers will have the opportunity to give a keynote talk on their work during the Scientific Sessions on Tuesday, June 23.

Full papers (written in English only) of not more than eight pages should be submitted in PDF format to cfp@supercomp.de by Sunday, February 1, 2009. Please indicate in your accompanying email the name and address of the corresponding author and the topic area (also please mention that you wish for your paper to be considered for the PRACE Award).

The conference provides an unrivalled platform to meet with the key decision makers from the HPC industry over 4 days under one roof. Taking place in Hamburg, Germany, June 23-26, 2009, this jam-packed event is one of the best opportunities in 2009 to learn about the most important developments in HPC. An exceptional line-up of speakers, a world-class HPC show and great networking opportunities will draw some 1 500 participants.

More details: <http://www.supercomp.de/isc09/>



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Coordinator/Contact:
Prof. Dr. Achim Bachem:
prace-coordinator@fz-juelich.de

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