

Inauguration and Start-up: Europe's Fastest Supercomputers

Three supercomputers for European research were unveiled on 26 May 2009 in Jülich in a ceremony attended by the Federal Minister for Education and Research, Prof. Dr. Annette Schavan, and the Prime Minister of North Rhine-Westphalia, Dr. Jürgen Rüttgers. The three systems include the supercomputer JUGENE, which with a computing power of one petaflop/s is currently the fastest computer in Europe.

More than 250 guests attended the inauguration ceremony. At the beginning, it soon became clear that this event is not only of importance for Jülich. All three partners in the Gauss Centre for Supercomputing GCS – formed by the national supercomputing centres in Stuttgart, Garching and Jülich – were proud to present the new petaflop system to the public. JUGENE is the first German supercomputer system to be selected and purchased in the context of the GCS. Therefore, the

welcoming address was given jointly by the GCS partners, represented by Prof. Dr. Achim Bachem, Chairman of the Board of Directors of Forschungszentrum Jülich, Prof. Dr. Arndt Bode, Chairman of the Board of Directors of the Leibniz Rechenzentrum in Garching, and Prof. Dr. Michael Resch, Director of the High-Performance Computing Center Stuttgart.

“The supercomputer JUGENE will secure Europe independent access to a decisive key technology of the 21st century,” said Bachem, who is also Coordinator of PRACE, the European Supercomputing Alliance. PRACE is funded by the EU and will coordinate the creation of a Europe-wide computer infrastructure. Bachem expressed special thanks to the Federal Government and the state of North Rhine-Westphalia for the many years of support and funding. “The supercomputers at Forschungszentrum Jülich show that North Rhine-Westphalia is already one of the leaders in strategically important sectors,” said Prime Minister Rüttgers. “We want to make North Rhine-Westphalia the top state for innovation – and Forschungszentrum Jülich with its excellent research will make a major contribution to achieving this goal.”

In a round table discussion, representatives of the companies Bull, Sun, Intel and ParTec gave their views on the unique collaboration established in building the supercomputers JUROPA and HPC-FF. JSC director Prof. Dr. Thomas Lippert expressed the view that in building a computer from best-of-breed parts, one has to combine the

heart and soul of the computer: the processors form the heart, the software represents the soul. Yvan Capouet of the European Commission pointed out that great hopes are placed in the new HPC-FF system, which will be exclusively available to European fusion researchers. A short time-lapse video showed the building of the supercomputers in the JSC machine room. In the second discussion, representatives of PRACE, the European Commission and IBM emphasized the importance of JUGENE for European researchers. Finally, Minister Schavan stressed the importance of supercomputing for Germany. “This is a good day for the German Gauss Centre and a good day for Europe as well. Acquiring JUGENE demonstrates Germany's bid for leadership in supercomputing,” she said. “This day confirms our strategy that the GCS as a model of partnership in supercomputing is right for Germany.” The supercomputers were officially launched by Schavan, Rüttgers and Bachem, who together pushed a lever for the start-up. After that, they visited the machine room of the Jülich Supercomputing Centre.

JUGENE went into production on 1 July 2009, just in time for the new computing-time period in Jülich. In total, there were 75 project proposals for JUGENE requesting more than four times the available computing time. The proposals were reviewed and selected by the NIC Peer Review Board on behalf of the GCS Management Board. The large number of project proposals show that JUGENE has turned out to be a very popular supercomputer. JUGENE was also the first computer available for the first call for large-scale projects by the Gauss Centre for Supercomputing in April, which attracted ten project submissions.

Projects are classified as “large-scale” if they require more than 5% of the available CPU cycles. In the case of JUGENE, this is at least 20 rack months. Two projects were awarded the status of large-scale project: one from the field of fluid dynamics, “Geometrical Properties of Small-Scale Turbulence”, by Prof. Dr. Norbert Peters (RWTH Aachen University) with 24 rack months, and one from elementary particle physics, “QCD Simulations with Light, Strange and Charm Dynamical Quarks”, by Dr. Karl Jansen (DESY Zeuthen) with 20 rack months.

Among all proposals for the supercomputers in Jülich – JUGENE as well as JUROPA – the NIC Peer Review Board decided to recognize two outstanding projects by designating them NIC Excellence Projects 2009/2010. The projects receiving this distinction are from the field of elementary particle physics, “Lattice QCD with 2 plus 1 flavours at the physical mass point”, submitted by Prof. Dr. Zoltan Fodor (University of Wuppertal), and from astrophysics, “The small-scale structure of the universe”, submitted by Dr. Stefan Gottlöber (Astrophysical Institute Potsdam).



Start-up for the supercomputers. From left to right: Jürgen Rüttgers (Prime Minister of North Rhine-Westphalia), Achim Bachem (Chairman of the Board of Directors, Forschungszentrum Jülich), Annette Schavan (Federal Minister for Education and Research)



In front of the first European petaflop system JUGENE in the machine room in Jülich. From left to right: Martin Jetter (Managing Director of IBM Germany), Achim Bachem (Chairman of the Board of Directors, Forschungszentrum Jülich), Annette Schavan (Federal Minister for Education and Research), Jürgen Rüttgers (Prime Minister of North Rhine-Westphalia), Thomas Lippert (Director of Jülich Supercomputing Centre)

- Sabine Höfler-Thierfeldt
- Walter Nadler

Jülich Supercomputing Centre