



Press release

The TU Dresden and Bull sign an agreement for the delivery of a petaflops-scale supercomputer and initiate a research cooperation

Once the two phases of its installation are completed in 2013/14, the new supercomputer, which represents an investment of about 15 million Euros, will benefit the whole research community in Saxony. The Excellence University and the European high tech company also signed a cooperation agreement for the development of software solutions for the measurement and optimization of energy efficiency in high performance computing systems.

Issy Les Moulineaux, 13th December 2012- High performance computing (HPC) plays a key role today and has become a vital tool in many areas of research and science. In biology for example, the efficiency of today's microscopes relies entirely on the automated analysis of generated images. In life sciences, complex simulations help develop new materials and medicines, and in the automotive industry, supercomputers are used for example to design vehicles with new materials and optimized shapes that help reduce fuel consumption.

“The new supercomputer and storage system will replace the system installed in 2005/2006 and will create again optimal conditions for innovative research for universities and research centers in Saxony. The new system will support more than 100 existing scientific projects related to a large variety of research areas – mainly life and material sciences“ rejoices Professor Wolfgang E. Nagel, director of the University's Computing Center (ZIH) and holder of the Chair of Computer Architecture in the Faculty of Information Technologies at the TU Dresden.

When phase 2 is completed, the system will deliver a peak performance in excess of one petaflops – i.e. 1.000.000 billion (10^{15}) operations per second. To reach this performance, the new Bull supercomputer will rely on thousands of cores from the latest generation of Intel® Xeon® processors.

“The Direct Liquid Cooling (DLC) technology developed by Bull is implemented in the new bullx supercomputer. With DLC, the HPC blades can be cooled with warm water, by evacuating the heat generated by the main components as close as possible to the source of heat, i.e. the processors and memory. With this market-leading technology, the compute blades are much more energy-efficient than standard HPC blades”, declares Thomas Weselowski, Director of Extreme Computing at Bull Germany.

Beyond providing high performance computing capacity to scientists in Saxony, the ZIH also pursues its own research on three central topics in HPC: scalability, data-intensive computing and energy-efficient HPC. The support of data-intensive computing has been a central research theme for ZIH since 2006 and the installation of the first HRSK supercomputer. The new HRSK-II system will make it possible to analyze parallel file systems and optimize applications, especially the input/output of large data volumes. Its specific architecture features such as a fine-grained performance and energy monitoring with adaptive commands, and its flexible I/O infrastructure (FASS: Flexible Agile Storage System) make HRSK-II a unique research tool in Germany in this respect.

Energy consumption and the associated costs have become a stumbling block in HPC. Therefore energy efficient HPC is a key part of the cooperation agreement.

“As part of the cooperation, our scientists will work together with Bull experts to develop a software-based measurement center for HPC environments. With this tool it will be possible for example to determine the compute time used for a job execution, but also other detailed measurements related to the energy consumption needed for the job. The expected results will be extremely useful to optimize the energy-efficiency of software and to design future supercomputers”, explains Nagel.

“We have chosen Bull at the end of our Request for Proposal, because Bull’s proposal was the one that best met the specified demands of our users. With the advanced warm water cooling technology, the solution even allows us to re-use the output hot water to warm the new Lehman Computing Center of the university, a very energy efficient feature” justifies the Dean of the TU Dresden, Professor Hans Müller-Steinhagen.

„We are very proud that the new Bull cluster of the TU Dresden marks the start of a cooperation that goes far beyond the simple provision of computing performance. With this cooperation, the University, Bull and the associated partners make a significant contribution to the scientific and economic position of Germany and to the future of High Performance Computing“, says Gerd-Lothar Leonhart, director of Bull Germany. „The decision of the Dresden University of Technology in favor of Bull highlights our recognized expertise in Extreme Computing. We are very happy that, after the petaflops-scale supercomputers installed by Bull in France and Japan, a Bull petaflops-scale cluster is now going to be installed in Germany”, continues Leonhart.

The contract will be officially signed on December 13th, 2012 between 10 and 11:30 AM in the banquet hall of the TU Dresden.

About Bull

Bull is a leader in secure mission-critical digital systems. The Group is dedicated to developing and implementing solutions where computing power and security serve to optimize its customers’ information systems, to support their business.

Bull operates in high added-value markets including computer simulation, Cloud computing and ‘computing power plants’, outsourcing and security.

Currently Bull employs around 9,000 people across more than 50 countries, with over 700 staff totally focused on R&D. In 2011, Bull recorded revenues of €1.3 billion.

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