DKRZ chooses Bull for its first Petaflops-scale supercomputer and for cooperation on climate research in Germany, as part of an initial contract worth 26 million euro

In 2016, this ultra-fast, but extremely energy-efficient super-system will reach a peak performance of 3 Petaflops and a storage capacity of 45 Petabytes. This means it can perform 3 million billion operations per second, and store the equivalent of 10 million DVDs.

Köln/Hamburg 12th May, 2014 – The German computing center for climate research DKRZ (Deutsches Klimarechenzentrum) and Bull have signed a contract for the delivery of a petaflops-scale supercomputer, as well as cooperation on climate research simulation. The contract worth 26 million euro covers the delivery of all the key computing and storage components of the new system.

"What does the climate have in store for our future and for the Earth?" It's a question that arouses a great deal of interest and controversy nowadays. To answer it, climate simulations are an essential tool. This involves replicating the climate system and its complex developments on a computer, with the help of digital models. The new system will be used to process the huge quantity of data (Big Data) needed to carry out effective climate simulation.

Combining high performance and energy efficiency

Despite its impressive technical performance, the global energy consumption of the system demonstrates exemplary energy efficiency, with a PUE as low as 1.2. The PUE value is the ratio between the global energy consumption of the Data Center and the actual energy consumption of the computer. This excellent result is a direct result of the technology developed by Bull for High-Performance Computing (HPC): the system being purchased by the Hamburg climate researchers will be cooled using warm water, a technology that requires significantly less energy than standard cooling systems, as the heat generated by processors and memory modules is extracted as close as possible to source. The system will also benefit from advances in energy consumption reductions, born out of a cooperative project between by Bull and the Technical University of Dresden.

"*We are very proud that DKRZ has chosen Bull. Bull is a leading international provider of HPC solutions, and supports HPC research and education in Germany for customers including the Universities of Dresden, Cologne, Aachen, Düsseldorf and Munster, and the Jülich Research Center. The contract signed today with the German computing center for climate research is a new milestone in Bull's HPC success story,*" said Gerd-Lothar Leonhart, CEO of Bull for the DACH area (Germany/Austria/Switzerland).

"As part of the agreement signed today, DKRZ and Bull will cooperate to improve the scalability of climate models and the corresponding software algorithms. In climate simulation, we generate such enormous quantities of data that we not only need efficient hardware, but also highly efficient software, to get to grips with that data," commented Professor Thomas Ludwig, Director of DKRZ and research team leader.

"We must be able to rely on supercomputers that incorporate the latest technological advances to be able to improve our climate forecasts. With the new system, for example, we hope to gain new insight into the forecasting of cloud formation," explained Professor Dr. Jochem Marotzke, Director of the Max-Planck Institute of Meteorology, one of the main users of the DKRZ facilities.

The expertise in the optimization of software codes developed by Bull's Parallel Programming team in Grenoble was a key factor in DKRZ's decision.

"It is also this proven competence that finally convinced us that Bull was the right partner to have at our side," Professor Ludwig added.

If the new system were fully installed today, it would rank among the five fastest supercomputers in Germany according to the current Top500 list. And the project breaks another record: its 45 Petabyte storage system is one of the largest in the world. DKRZ is setting new standards with the deployment of this outstanding infrastructure, specifically scaled to support its users' scientific research programs.

For more information visit: www.dkrz.de and www.bull.com

About DKRZ
The German Climate Computing Center (DKRZ) for climate and earth system research is a non-profit limited liability company and a nationwide service centre for the German earth system research community. DKRZ provides high performance computing, technical user support, data services and world climate database and visualization of model results. DKRZ in Hamburg is one of the high-performance scientific computing centers in Germany and one of a few centers worldwide which particularly and exclusively provide resources for qualitative and quantitative simulations of the earth system. Its shareholders are the Max Planck Society (55%), the University of Hamburg (27%), the Helmholtz-Zentrum Geesthacht (9%), the Alfred Wegner Institute for Marine and Polar Research Bremerhaven (9%). DKRZ has been headed by Prof. Dr. Thomas Ludwig, who simultaneously leads as a professor for computer science at the University of Hamburg the working group "scientific computing" that focuses on energy efficiency in high performance computing.

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About Bull
Bull is the trusted partner for enterprise data. The Group, which is firmly established in the Cloud and in Big Data, integrates and manages high-performance systems and end-to-end security solutions. Bull's offerings enable its customers to process all the data at their disposal, creating new types of demand. Bull converts data into value for organizations in a completely secure manner.

Bull currently employs around 9,200 people across more than 50 countries, with over 700 staff totally focused on R&D. In 2013, Bull recorded revenues of €1.3 billion.

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