Press Release

ParTec Cluster Competence Center GmbH

ParaStationV5 Cluster Operating and Management Software propelled the JuRoPA cluster at Jülich Supercomputer Centre to an impressive performance of 274,8 Teraflops at an efficiency of 91,6%

This represents Rank No. 10 in the World and Rank No. 1 in Europe of most powerful cluster computers

Hamburg, Germany June, 25. 2009. In parallel to the release of this years TOP500 list during the International Supercomputing Conference (ISC09) in Hamburg, ParTec is proud to announce that its own developed **ParaStationV5 cluster operating system** combined **with ParaStationMPI** propelled the Juropa cluster to an impressive **274,8 trillion floating point operations/second** to rank **No. 10 of this years Top 500 list** of the worldwide fastest supercomputers.

The name JUROPA stands for "**Jü**lich **R**esearch **o**n **P**etaflops **A**rchitectures" and the project was set up by the Supercomputing Centre JSC of Forschungszentrum Jülich, Germany to investigate emerging cluster technologies and achieve a new class of cost-efficient supercomputers for peta-scale computing. Together with partner companies Bull, Sun, Intel, Mellanox and ParTec this machine was built with 3288 compute nodes and a total computing power of 308 Teraflops peak. The computer was inaugurated last month.

This impressive performance was recorded during recent HPL (LinPack) benchmarking tests over a sustained 11 hour period using 3219 compute nodes each containing 8 cores and a Nehalem, dual socket, serverboard architecture. This constitutes an impressive 91.6% parallel efficiency.

The Juropa cluster is an aggregate of two smaller clusters, known individually as Juropa-JSC and HPC-FF. Both machines share a common interconnect fabric (QDR Infiniband) in addition to a common management network. ParastationV5, ParTec's current release of it's cluster operating system, enabled both clusters to be integrated to form a single heterogeneous cluster entity capable of solving the most challenging problems facing researchers today.

ParTec's ParaStationV5 cluster operating system combined with ParaStation-MPI delivered an integrated, easy to use and reliable compute cluster environment which made a significant contribution the success of this project. ParaStationMPI delivered **proven scalability running more than 25,000 MPI tasks** with parallel efficiencies in excess of 91.6%. The Linux operating system of the whole system is Suse Linux Enterprise Server (SLES11).

The Juropa cluster is seen as a model for the next generation of general purpose supercomputers designed using open standards and commodity hardware on an Intel platform.

"Science and industry increasingly rely and profit from simulations on computers of the highest performance class," explained Prof. Thomas Lippert, Director of the Jülich Supercomputing Centre."
"Our partnership with Jülich, Bull, Mellanox, SUN and Intel, marks a significant step in the development of commodity supercomputer systems," says Hugo Falter, COO of ParTec GmbH. "We expect this alliance to continue to deliver key components for general-purpose petascale cluster systems in Europe and we are proud that our cluster software scales so well over more than 3200 compute nodes and contributes to highest efficiency of supercomputers."

ParaStationV5- innovative software solution- not only for Petaflop computers

ParaStationV5 is ParTec's core software product – it represents our company's view of where real value can be added in the HPC market. The ParaStationV5 software architecture includes a runtime environment for parallel jobs coupled with an optimized MPI library that supports a variety of standards-based interconnects. It also includes an extensible monitoring tool, the GridMonitor, which gives operators and administrators a unique insight into all aspect of a cluster's state. As commodity clusters grow in size and power consumption, identifying potential problems before they cause job failures is of primary importance. Hence, the GridMonitor is the primary tools used to ensure maximum uptime and cluster productivity.

About ParTec

ParTec Cluster Competence Center GmbH is specialized in development of comprehensive cluster software and support of productive supercomputers. ParaStation, an own developed cluster software stack that creates a parallel environment for Linux clusters in a reliable, stable and highly efficient way is one of the most world class operating and management platforms. ParTec provides vendor-independent consultancy for a sophisticated choice of products and support for professional operation of Linux compute clusters. Our approach ensures rapid deployment cycles and seamless interoperability of software components.
ParTec is member of major European and worldwide research consortia (e.g. PROSPECT, PRACE, D-GRID, Unicore etc.) to further contribute to the development of next Petaflop architecture of general purpose supercomputers. The headquarter of **ParTec** is located in Munich, Germany.

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