

# Newsletter #12 – June 2009

## Content

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- **ParTec at ISC09 – Hamburg**
  - **Visit our booth at **easc** – Munich 6-7<sup>th</sup> July**
  - **JuRoPA: 274.8 Teraflops with *ParaStationV5* – learn more**
  - ***ParaStationMPI* delivers proven scalability on more than 25,000 MPI tasks – get the details**
  - **Novell Technology Partner**
  - **Intel Cluster Ready Solution Partner**
  - **Intel Cluster Connection – ParTec ventures into Web 2.0**
  - **Dell HPC Solution Partner EMEA**
  - **ParTec expands operations to the United States**
  - **Support & Services based on *ParaStationV5* – learn more**
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### ParTec at ISC09 - Hamburg

ParTec recently had it's most successful ISC09 exhibition yet – with significant interest generated from recent successes using *ParaStationV5* at the Forschungszentrum Jülich.

The Juropa cluster at Jülich, driven by *ParaStationV5* and *ParaStationMPI*, has given ParTec international recognition for excellence in cluster computing as it helped propel the **Juropa cluster to #10 on the global top500 list published June 09!**

<http://www.top500.org/lists>

*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.



### Visit us at easc in Munich

Visit ParTec at the European Automotive Simulation Conference **easc** in Munich **from July 6 to July 7, 2009** (<http://easc.ansys.com/>)



#### ParTec - cluster solutions for design and simulation

ParTec provides excellence across the entire compute cluster environment, focusing on optimal software experiences for its users while keeping operational and support costs under control. Today's modular cluster middleware solutions, composed of collections of open source tools and software from independent vendors, do not offer the continuity of support and interoperability our simulation clients need. ParTec frees your technical staff from the burden of cluster management – allowing you to focus on your core business objectives.

## JuRoPA: 274.8 Teraflops with *ParaStationV5* at rank #10 of Top500 -

### *ParaStationMPI* delivers proven scalability on more than 25,000 MPI tasks

JuRoPA's architecture was developed by HPC experts from the Jülich Supercomputing Centre. Partner companies **Bull, Sun, Intel, Mellanox, Novell and ParTec** were responsible for the realization of the machine which consists of 3288 compute nodes and a total computing power of 308 Teraflops peak.

## *ParaStationV5*

During recent HPL (LinPack) benchmarking tests on the JuRoPA system, an impressive **274.8 trillion floating point operations/second** was recorded over a sustained 11 hour period. This was achieved 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, in fact, 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 its 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.

The performance of the JuRoPA cluster ranks it at **#10** of the world's most powerful supercomputers. This is an impressive achievement for a true general purpose machine with a modest footprint and power consumption.



ParTec's *ParaStationV5* cluster operating system combined with *ParaStationMPI* delivered an integrated, easy to use and reliable compute cluster environment which made a significant contribution to 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 operating system of the whole system is SUSE Linux Enterprise Server 11 from Novell.

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.

#### **Complete JuRoPA System (HPC-FF & JuRoPA-JSC combined):**

- 3288 compute nodes (26304 cores)
- 308 Teraflops peak performance
- 79 TB main memory
- QDR Infiniband
- *ParaStationV5* operating and management
- Linux SLES11
- Intel compiler and tools
- MOAB scheduler
- Lustre file system

### **Novell Technology Partner**

As a Novell Technology Partner, ParTec is well placed to support SLES operating systems with partner level access to specialist resources from Novell. Combine that with ParTec's in house support for the *ParaStationV5* cluster middleware and your organization has the comprehensive cluster software support it needs, all from a single vendor.

ParTec recommends SUSE Linux Enterprise Server for cluster systems. SUSE Linux Enterprise 11 is the most interoperable platform for mission-critical computing.

## Intel® Cluster Ready and ClusterConnection

### Intel Cluster Ready

The Intel® Cluster Ready program aims to expedite and simplify the deployment of high performance compute clusters. Developed in partnership with leading hardware and software vendors, the program makes it simpler to purchase, deploy and manage HPC clusters. It gives our clients the confidence they need to make purchasing decisions, safe in the knowledge that pre-defined certification requirements will be met. ParTec is an active member of Intel's cluster ready program.



<http://software.intel.com/en-us/cluster-ready/>

## Intel ClusterConnection – ParTec ventures into Web 2.0

Simplify HPC. Sharing knowledge.

Cluster Connection is a new HPC resource, geared toward HPC users and administrators and focused on making it easier to adopt and utilize High Performance Computing (HPC) today. (source: Intel)



ParTec is a frequent contributor to the ClusterConnection community blog. Visit the ClusterConnection website to learn more about ParTec's work on the JuRoPA supercomputer installation at the Jülich Supercomputing Centre.

<http://www.clusterconnection.com>

## Dell HPC Solution Partner EMEA

### Early 2009 - ParTec becomes HPC solution partner for Dell in EMEA.

Trade today is global. ParTec recognises the challenges and opportunities of the global marketplace, as it continues to expand, and has secured a partnership with Dell as a HPC partner for the EMEA group of countries. ParTec looks forward to making ParaStation and its support solutions available to this wider market.

## ParTec expands operations to North America

### We have opened a new office in San Jose, CA.!

Need cluster competency in North America ? Get in touch with our HPC specialists in California:

ParTec Cluster Competence Center

2290 North First Street  
Suite 209A  
San Jose (CA) 95131

Phone: +1 408 955 0853

eMail [info@par-tec.com](mailto:info@par-tec.com)

Support & Services based on *ParaStationV5* is our business



...smarter clustering

## » *Support & Services*

- HPC consulting, planning and cluster configuration
- Specialist HPC software installation
- Software maintenance services & bug fixing
- On-site & remote cluster management
- ***ParaStationV5*** and ***ParaStationMPI*** support
- Software support for SLES
- Cluster management



### Imprint

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