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Wolfgang Lehner
Norbert Meyer
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Euro-Par 2006 Workshops: Parallel Processing

CoreGRID 2006, UNICORE Summit 2006,
Petascale Computational Biology and Bioinformatics
Dresden, Germany, August/September 2006
Revised Selected Papers



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Preface

Parallel and Distributed Computing, although within the focus of computer science research for a long time, is gaining more and more importance in a wide spectrum of applications. These proceedings aim to demonstrate the use of parallel and distributed computing concepts in different application scenarios and attempt to spark interest in novel research directions to advance the embracing model of high-performance computing research in general. The objective of the workshop is to specifically address researchers coming from universities, industrial and governmental research organizations, and application-oriented companies in order to close the gap between purely scientific research and the applicability of the theoretical ideas to real-life problems. The individual research contributions published in the current proceedings are the result of three different workshops that were collocated at the Euro-Par Conference 2006 in Dresden, Germany:

The CoreGRID Workshop on Grid middleware

The general focus of the CoreGRID workshop is first to assess the current state of the art; second, new approaches in the areas of Knowledge and Data Management on Grids, Grid Resource Management and Scheduling, and Grid Information, Resource and Workflow Monitoring Services are discussed; and finally, it serves as a forum for the exchange of ideas between the user community and Grid middleware developers. The CoreGRID workshop on Grid middleware was organized by the CoreGRID Network of Excellence and took place August 28–29, 2006, in Dresden. CoreGRID is the European Research Network for strengthening and advancing scientific and technological excellence in the area of Grid and Peer-to-Peer technologies. In particular, the workshop was organized by Domenico Talia (University of Calabria, Italy), Ramin Yahyapour (University of Dortmund, Germany), and Norbert Meyer (Poznań Supercomputing and Networking Center, Poland).

The UNICORE Summit 2006 Workshop

The UNICORE Grid technology provides seamless, secure, and intuitive access to distributed Grid resources. UNICORE is a mature and well-tested Grid middleware system, which is nowadays used in daily production processes worldwide. Beyond this production usage, the UNICORE technology serves as a solid basis for many European and international projects. The UNICORE Summit is a unique opportunity for Grid users, developers, administrators, researchers, and service providers to meet, get an inside view of UNICORE, share experiences, and discuss future developments. The two-day UNICORE Summit 2006

Workshop was held August 30–31, 2006, in Dresden and was mainly organized by Achim Streit (Forschungszentrum Jülich, Germany) and Wolfgang Ziegler (Fraunhofer Gesellschaft SCAI, Germany).

The Petascale Computational Biology and Bioinformatics Workshop

The general topic of this workshop is to address the issues that bioinformatics or computational biology applications can or should accomplish within petascale computing environments and the kind of obstacles that must be overcome in order to implement and use effective solutions for important problems in the life sciences (biology, biochemistry, environmental sciences, etc.). The workshop was held on August 28, 2006, and it was organized by Craig Stewart (Indiana University, USA), Michael Schroeder (Technische Universität Dresden, Germany) and Matthias Müller (Technische Universität Dresden, Germany).

All workshops were tightly integrated into the 12th Euro-Par Conference, held in Dresden, Germany, from August 29 to September 1, 2006. This specific Euro-Par Conference was part of an annual series of international conferences focusing on the advancement of parallel computing by covering topics from hardware architectures over algorithms and software design to specific application needs. The Euro-Par Conference is therefore the meeting point of the international community in this particular research field and attracts scholars as well as technology-oriented decision makers from all over the world.

Acknowledgments

Many organizations and individuals were involved in the preparation and actual realization of the workshops collocated at the Euro-Par Conference 2006 in Dresden. At the Technische Universität Dresden, the Center of Information Services and High Performance Computing (ZIH) contributed staff and general infrastructure. The ZIH was supported by the Institute of System Architecture (Database Technology Group) and the Institute of Scientific Computing in the organization of the workshops. Specifically, the workshop organizers would like to mention Claudia Schmidt and Guido Juckeland for their support, ranging from tackling all administrative challenges to carefully preparing the current volume of the workshop proceedings. Additionally, we would like to express our sincere ‘Thank You’ to all other institutions and industrial organizations that contributed in various ways to make the workshops a real success story. Finally, we are also grateful to the huge number of individuals ranging from organizers to authors and reviewers who helped set up a high-quality scientific program. They all did a great job in preparing and actually carrying out the individual workshops. Within this context, we appreciate the support of Springer for agreeing to publish these workshop proceedings; this will definitely help future Euro-Par conferences and collocated workshops to continuously attract top-notch researchers presenting outstanding research results.

It is our hope that these proceedings will help advance research in parallel computing in general and act as a catalyst in promoting the idea of parallel computing to a wide spectrum of applications. It was our pleasure hosting the workshops in Dresden and we hope that the discussions and the current proceedings are beneficial for sustainable growth and awareness of parallel computing concepts in future applications.

September 2006

Wolfgang Lehner
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