

Grids, P2P and Services Computing

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Editors

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Preface

The symposium was organised by the ERCIM¹ CoreGRID Working Group (WG) funded by ERCIM and INRIA. This Working Group sponsored by ERCIM has been established with two main objectives: to ensure the sustainability of the CoreGRID Network of Excellence which is requested by both the European Commission and the CoreGRID members who want to continue and extend their successful co operation, and to establish a forum to foster collaboration between research communities that are now involved in the area of Service Computing: namely high performance computing, distributed systems and software engineering.

CoreGRID² officially started in September 2004 as an European research Network of Excellence to develop the foundations, software infrastructures and applications for large-scale, distributed Grid and Peer-to-Peer technologies. Since then, the Network has achieved outstanding results in terms of integration, working as a team to address research challenges, and producing high quality research results. Although the main objective was to solve research challenges in the area of Grid and Peer-to-Peer technologies, the Network has adapted its research roadmap to include also the new challenges related to service-oriented infrastructures, which are very relevant to the European industry as illustrated by the NESSI initiative³ to develop the European Technology Platform on Software and Services. Currently, the CoreGRID WG is conducting research in the area of the emerging Internet of Services, with direct relevance to the Future Internet Assembly⁴. The Grid research community has not only embraced but has also contributed to the development of the service-oriented paradigm to build interoperable Grid middleware and to benefit from the progress made by the services research community.

¹ European Research Consortium for Informatics and Mathematics, <http://www.ercim.eu/>

² <http://www.coregrid.net/>

³ Networked European Software and Services Initiative, <http://www.nessi-europe.com/>

⁴ <http://www.future-internet.eu/>

The goal of this one day workshop, organized within the frame of the Euro-Par 2009 conference⁵, was to gather together participants of the working group, present the topics chosen for the first year, and to attract new participants.

The program was built upon several interesting papers presenting innovative results for a wide range of topics going from low level optimizations of grid operating systems to high level programming approaches.

Grid operating systems have a bright future, simplifying the access to large scale resources. XtreamOS is one of them and it was presented in an invited paper by Kielmann, Pierre, and Morin.

The seamless access to data at a large scale is offered by Grid file systems such as Blobseer, described in a paper from Tran, Antoniu, Nicolae, Boug, and Tatebe.

Failure and faults is one of the main issues of large scale production grids. A paper from Andrzejak, Zeinalipour-Yazti, and Dikaiakos presents an analysis and prediction of faults in the EGEE grid.

A paper from Cesario, De Caria, Mastroianni, and Talia presents the architecture of a decentralized peer-to-peer system applied to data-mining.

Monitoring distributed grid systems allows researchers to understand the internal behavior of middleware systems and applications. The paper from Funika, Caromel, Koperek, and Kupisz presents a semantic approach chosen for the ProActive software suite.

The resource discovery in large scale systems deserve a distributed approach. The paper from Papadakis, Trunfio, Talia, and Fragopoulou presents an approach mixing dynamic queries on top of a distributed hash table.

A paper from Carlini, Coppola, Laforenza, and Richi aims at proposing scalable approach for resource discovery allowing range queries and minimizing the network traffic.

Skeleton programming is one promising approach for high level programming in distributed environments. The paper from Aldinucci, Danelutto, and Kilpatrick describes a methodology to allow multiple non-functionnal concerns to be managed in an autonomic way.

In their paper, Moca and Silaghi describe several decision models for resource agregation within peer-to-peer architectures allowing different decision aids classes to be taken into account.

Workflows management and scheduling received a large attention of the grid community. The paper from Sakellariou, Zhao, and Deelman describes several mapping strategies for a astronomy workflow called Montage.

Access control is an important issue that needs to be efficiently solved to allow the wide scale adoption of grid technologies. The paper from Colombo, Lazouski, Martinelli, and Mori presents new flexible policy language called U-XACML that improves the XACML language in several directions.

The paper from Fragopoulou, Mastroianni, Montero, Andrzejak, and Kondo describes several research areas investigated within the Self-* and adaptive mechanisms topic from the Working group.

⁵ <http://europar2009.ewi.tudelft.nl/>

Several research issues around network monitoring and in particular network virtualization and network monitoring are presented in the paper from Ciuffoletti.

Research challenges for large scale desktop computing platforms are described in the paper from Fedak.

Finally, a paper from Rana and Ziegler presents the research areas addressed within the Service Level Agreement topic of the Working Group.

The Programme Committee who made the selection of papers included:

Alvaro Arenas, STFC Rutherford Appleton Laboratory, UK
Christophe Crin, Universit de Paris Nord, LIPN, France
Augusto Ciuffoletti, University of Pisa, Italy
Frédéric Desprez, INRIA, France
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Gabriel Antoniu
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Haiwu He
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Christian Perez
Pierre Riteau
Thomas Rblitz
Bing Tang

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Deflt, the Netherlands,
August 2009

Frédéric Desprez
Vladimir Getov
Thierry Priol
Ramin Yahyapour

Contents

XtreemOS: a Sound Foundation for Cloud Infrastructure and Federations	1
Thilo Kielmann, Guillaume Pierre, Christine Morin	
Towards a Grid File System Based on a Large-Scale BLOB Management Service	7
Viet-Trung Tran, Gabriel Antoniu, Bogdan Nicolae, Luc Bougé, Osamu Tatebe	
Improving the Dependability of Grids via Short-Term Failure Predictions	21
Artur Andrzejak and Demetrios Zeinalipour-Yazti and Marios D. Dikaiakos	
Distributed Data Mining using a Public Resource Computing Framework	33
Eugenio Cesario, Nicola De Caria, Carlo Mastroianni and Domenico Talia	
Integration of the ProActive Suite and the semantic-oriented monitoring tool SemMon	45
Wlodzimierz Funika, Denis Caromel, Pawel Koperek, and Mateusz Kupisz	
An Experimental Evaluation of the DQ-DHT Algorithm in a Grid Information Service	59
Harris Papadakis, Paolo Trunfio, Domenico Talia and Paraskevi Fragopoulou	
Reducing traffic in DHT-based discovery protocols for dynamic resources	73
Emanuele Carlini, Massimo Coppola, Domenico Laforenza and Laura Ricci	
Autonomic management of multiple non-functional concerns in behavioural skeletons	89
Marco Aldinucci, Marco Danelutto and Peter Kilpatrick	

Decision Models for Resource Aggregation in Peer-to-Peer Architectures .	105
Mircea Moca and Gheorghe Cosmin Silaghi	
Mapping Workflows on Grid Resources: Experiments with the Montage Workflow	119
Rizos Sakellariou and Henan Zhao and Ewa Deelman	
A Proposal on Enhancing XACML with Continuous Usage Control Features	133
Maurizio Colombo, Aliaksandr Lazouski, Fabio Martinelli, and Paolo Mori	
Self-* and Adaptive Mechanisms for Large Scale Distributed Systems . . .	147
P. Fragopoulou, C. Mastroianni, R. Montero, A. Andrzejak, D. Kondo	
Network Monitoring in the age of the Cloud	157
Augusto Ciuffoletti	
Recent Advances and Research Challenges in Desktop Grid and Volunteer Computing	171
Gilles Fedak	
Research Challenges in Managing and Using Service Level Agreements . .	187
Omer Rana, Wolfgang Ziegler	

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