

Table of Contents

Keynote and Invited Lectures

Performance Analysis of Gigabit Ethernet Based Interconnects for HPC Clusters	1
<i>J. Weglinski, and P. Pisarczyk</i>	

Overview of Grid Projects

Interactive European Grid Environment for HEP Application with Real Time Requirements	11
<i>L. Dutka, K. Korcyl, K. Zieliński, J. Kitowski, R. Słota, W. Funika, K. Bałos, L. Skital, and B. Kryza</i>	
InteliGrid Document Management System: an Overview	21
<i>M. Dolenc, K. Kurowski, M. Kulczewski, and A. Gehre</i>	
SPARQLing UNICORE	28
<i>R. Menday, and A. Streit</i>	
g-Eclipse – an Integrated Workbench Tool for Grid Application Users, Grid Operators and Grid Application Developers	34
<i>H. Kornmayer, M. Stümpert, P. Wolniewicz, and M. Knauer</i>	
SZTAKI Desktop Grid – a Hierarchical Desktop Grid System	42
<i>P. Kacsuk, A. Marosi, J. Kovács, Z. Balaton, G. Gombás, G. Vida, and Á. Kornafeld</i>	
Combining a Virtual Grid Testbed and eLearning Courseware	50
<i>K. Cassidy, J. McCandless, S. Childs, J. Walsh, B. Coghlan, and D. Dagger</i>	

Workflows

A General Approach to Pluggable Workflow-Processing for the Next Generation UNICORE	58
<i>H. Mersch, B. Schuller, and A. Streit</i>	
Synchronizer-Based Dynamic Workflow Implementation in Grids	66
<i>J. Borkowski, D. Kopański, and M. Tudruj</i>	

Defining and Running Parametric Study Workflow Applications by the P-GRADE Portal	75
<i>P. Kacsuk, G. Sipos, A. Tóth, Z. Farkas, G. Kecskeméti, and G. Hermann</i>	
Workflow Interoperability in Grid-Based Systems	84
<i>M. Ghanem, N. Azam, and M. Boniface</i>	

Semantics

Managing Semantic Grid Metadata in S-OGSA	96
<i>P. Missier, P. Alper, O. Corcho, I. Kotsopoulos, I. Dunlop, W. Xing, S. Bechhofer, and C. Goble</i>	
GVOSF: Grid Virtual Organization Semantic Framework for Knowledge Support	104
<i>B. Kryza, L. Dutka, R. Slota, J. Pieczykolan, and J. Kitowski</i>	
The Knowledge of the Grid: A Grid Ontology	111
<i>M. Parkin, S. van den Burghe, O. Corcho, D. Snelling, and J. Brooke</i>	

Resource Management

Quality of Service on the Grid with User Level Scheduling	119
<i>J.T. Mościcki, M. Bubak, H.-C. Lee, A. Muraru, and P. Sloot</i>	
Mechanisms for Java Application Adaptive Resource Management in NGG	130
<i>A. Janik, and K. Zieliński</i>	
Magrathea – Grid Management Using Virtual Machines	138
<i>J. Denemark, M. Ruda, and L. Matyska</i>	
Social Grid Agents as a Metagrid Technology: an Approach for Flexible Resource Allocation in Heterogeneous Grid Middlewares	146
<i>G. Pierantoni, B. Coghlan, D. O'Callaghan, O. Lyttleton, E. Kenny, S. Maad, and G. Quigley</i>	
Execution Management and SLA Enforcement in Akogrimo	154
<i>A. Litke, K. Konstanteli, V. Andronikou, S. Chatzis, and T. Varvarigou</i>	
Grid-Based Business Partnerships Using Service Level Agreements	165
<i>M. Boniface, S. Phillips, and M. Surridge</i>	

On Similarities of Grid Resources for Identifying Potential Migration Targets	176
<i>G. Birkenheuer, S. Döhre, M. Hovestadt, O. Kao, and K. Voß</i>	
Attaching Dynamic Clusters to CLUSTERIX Grid	184
<i>J. Kwiatkowski, M. Pawlik, G. Frankowski, R. Wyrzykowski, and K. Karczewski</i>	
Online Steering of HEP Grid Applications	191
<i>D. Lorenz, P. Buchholz, C. Uebing, W. Walkowiak, and R. Wismüller</i>	
Large-Scale Evolutionary Optimization on the Grid: Multiple-Deme Genetic Algorithm in the Globus-Based Environment	199
<i>A. Padée, W. Padée, and K. Zaremba</i>	
Method for Mapping FEM Computations onto Cluster Grid Architectures	207
<i>T. Olas, and R. Wyrzykowski</i>	

Monitoring and Performance Analysis

First Steps of a Monitoring Framework to Empower Risk Assessment in Grids	216
<i>N. Lerch, H. Nitsche, K. Voß, and M. Hovestadt</i>	
Monitoring of Jobs and their Execution for the LHC Computing Grid	224
<i>R. Müller-Pfefferkorn, R. Neumann, S. Borovac, A. Hammad, T. Harenberg, M. Hüskens, P. Mättig, M. Mechtel, D. Meder-Marouelli, and P. Ueberholz</i>	
Adaptive, Component Based System Architecture for Monitoring Data Storing	232
<i>D. Radziszowski, and K. Zieliński</i>	
LDAP-PC – LDAP Gateway with a Partial Caching	241
<i>J. Sitera</i>	
Performance Visualization of Distributed Java Applications Based on J-OCM	247
<i>W. Funika, P. Godowski, and P. Pęgiel</i>	
Extending Grid Infrastructure Services with Monitoring Support	255
<i>O. Krajiček, and L. Matyska</i>	

Data Management

Management and Access of Biomedical Data in a Grid Environment	263
<i>M. Assel, B. Krammer, and A. Loehden</i>	
Preparing Storage Infrastructure to Meet the Requirements of the Grid Environment	271
<i>M. Pogoda, G. Sułkowski, and M. Twardy</i>	
Data Grids: A Collaborative Semantic Model for Data Grids with Hybrid Namespace	280
<i>D. El-Mansy, and A. Sameh</i>	
The IGOR File System for Efficient Data Distribution in the GRID	289
<i>K. Kutzner, and T. Fuhrmann</i>	
StoRM: A SRM Solution on Disk Based Storage System	296
<i>E. Corso, S. Cozzini, A. Forti, A. Ghiselli, L. Magnoni, A. Messina, A. Nobile, A. Terpin, V. Vagnoni, and R. Zappi</i>	
IEBS – Intelligent ExaByte Storage Based on Grid Approach	304
<i>L. Dutka, B. Palacz, and J. Kitowski</i>	

Middleware

A Universal API for Grids	312
<i>B. Hagemeier, R. Menday, B. Schuller, and A. Streit</i>	
GScript Editor as Part of the ViroLab Presentation Layer	320
<i>W. Funika, and P. Pęgiel</i>	
A New Approach to Supporting Component Applications on Grid	328
<i>M. Malawski, T. Bartysiński, E. Ciepiela, J. Kocot, P. Pelczar, and M. Bubak</i>	
Automatic and On Demand Web-Based Configuration-Driven Remote Build System	337
<i>F. Giacomini, R. Lops, F. Prelz, and E. Ronchieri</i>	
A Failover Solution for EGEE-compliant Stateful Grid Core Services	345
<i>L. Flis, J. Janczak, and M. Radecki</i>	
Charon Extension Layer – Universal Toolkit for Grid Applications and Computational Jobs Maintenance	353
<i>J. Kmuniček, M. Petřek, and P. Kulhánek</i>	

Infogrid: Grid Middleware Using Only a Distributed Information System <i>O. Lyttleton, B. Coghlan, E. Kenny, and G. Quigley</i>	360
Influence of Virtualization on Process of Grid Application Deployment – CCM Case Study <i>J. Cała, and K. Zieliński</i>	367
Paravirtualization and Operating System Level Virtualization Techniques in Dynamic Grid Environments <i>M. Pawlik, and J. Kwiatkowski</i>	376
Virtualized Access to the Grid Computational Resources <i>M. Jankowski, P. Wolniewicz, J. Denemark, N. Meyer, and L. Matyska</i>	384
Economic Virtualization of ICT Infrastructures <i>J. Stößer, A. Anandasivam, N. Borissov, and D. Neumann</i>	392
Description of a Lightweight Bartering Grid Architecture <i>C. Briquet, and P.-A. de Marneffe</i>	400
An Extension of Globus Toolkit for Grid Computing Optimization <i>A. Doroshenko, and K. Rukhlis</i>	408
Specification, Analysis and Testing of Statefull Grid Services Using Abstract State Machines <i>D. Lamch, and R. Wyrzykowski</i>	417

VO and Security

An Approach for Intra-VO Computing Differentiated Services in Grid Systems <i>S. Andreozzi, M. Cecchi, V. Ciaschini, A. Ferraro, A. Ghiselli, F. Giacomini, A. Italiano, G.L. Rubini, and D. Salomoni</i>	425
Fine-Grained Security Management in a Service-Oriented Grid Architecture <i>A. Hoheisel, S. Mueller, and B. Schnor</i>	433
Dynamic Firewalls and Service Deployment Models for Grid Environments <i>G.L. Volpato, and C. Grimm</i>	441
Secure Logistical Networking in Virtual Organizations <i>L. Hejtmánek, L. Matyska, and M. Procházka</i>	450
Comparison of Grid Accounting Concepts for D-Grid <i>C.-P. Rückemann, W. Müller, and G. von Voigt</i>	459

Development of a Billing Framework for D-Grid	467
<i>G. von Voigt, C.-P. Rückemann, and W. Müller</i>	
An Approach to Restricted Delegation of User Rights Based on the gLite Middleware	475
<i>S. Piger, C. Grimm, J. Wiebelitz, and R. Groeper</i>	
Virtual Organization Approach for Running HEP Applications in Grid Environment	483
<i>L. Skital, L. Dutka, K. Korcyl, M. Janusz, R. Stota, and J. Kitowski</i>	
Operation and Management Issues in the EGEE South West Grid Infrastructure	491
<i>G. Barreira, G. Borges, M. David, N. Dias, J. Gomes, J.P. Martins, C. Borrego, M. Delfino, G. Merino, K. Neuffer, A. Pacheco, F. Bernabé, J. Fontán, J. Lopez, P. Rey, R. Marco, and J. Palacios</i>	

Applications

Enabling Commercial Chemical Software on EGEE Grid – Gaussian VO	499
<i>M. Sterzel, and T. Szepieniec</i>	
The Quest for Pharmacology Active Never Born Proteins within the EUChinaGRID Project	505
<i>M. Malawski, T. Szepieniec, M. Kochanczyk, M. Piwowar, and I. Roterman-Konieczna</i>	
Integration of Applications in MediGRID	511
<i>J. Falkner, and A. Weisbecker</i>	
Distributing a n-Body Problem Algorithm at Large-Scale over a Multi-Sites Grid Using JavaSpace	519
<i>V. Galtier</i>	
“River Soca Project” – Interactive Visualization of Massive Amount of Data with a Grid-based Engine	527
<i>M. Šterk, I. Leben, E. Milošev, and G. Pipan</i>	
Multiscale Multimodal Visualization on a Grid	535
<i>R. Watson, S. Maad, and B. Coghlan</i>	
Using Ant Colony Optimization for Collaborative (Re)Search in Data Grids	543
<i>U. Jovanović, J. Močnik, M. Novak, G. Pipan, and B. Slivnik</i>	
Author Index	551