

Peter M.A. Sloot Alfons G. Hoekstra
Thierry Priol Alexander Reinefeld
Marian Bubak (Eds.)

LNCS 3470

Advances in Grid Computing – EGC 2005

European Grid Conference
Amsterdam, The Netherlands, February 2005
Revised Selected Papers

TP301.6-53
G847
2005

Peter M.A. Sloot Alfons G. Hoekstra
Thierry Priol Alexander Reinefeld
Marian Bubak (Eds.)

Advances in Grid Computing – EGC 2005

European Grid Conference
Amsterdam, The Netherlands, February 14-16, 2005
Revised Selected Papers



E200501580



Springer

Volume Editors

Peter M.A. Sloot

Alfons G. Hoekstra

University of Amsterdam, Institute for Informatics, Section Computational Science

Laboratory for Computing, Systems Architecture and Programming

Kruislaan 403, 1098 SJ Amsterdam, The Netherlands

E-mail: {sloot, alfons}@science.uva.nl

Thierry Priol

IRISA/INRIA, Campus de Beaulieu

35042 Rennes Cedex, France

E-mail: thierry.priol@irisa.fr

Alexander Reinefeld

Zuse Institute Berlin (ZIB)

Takustr. 7, 14195 Berlin, Germany

E-mail: ar@zib.de

Marian Bubak

AGH University of Science and Technology

Institute of Computer Science and Academic Computer Centre CYFRONET

al. Mickiewicza 30, 30-059 Krakow, Poland

E-mail: bubak@uci.agh.edu.pl

Library of Congress Control Number: 2005928161

CR Subject Classification (1998): C.2.4, D.1.3, D.2.7, D.2.12, D.4, F.2.2, G.2.1

ISSN 0302-9743

ISBN-10 3-540-26918-5 Springer Berlin Heidelberg New York

ISBN-13 978-3-540-26918-2 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springeronline.com

© Springer-Verlag Berlin Heidelberg 2005

Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 11508380 06/3142 5 4 3 2 1 0

Commenced Publication in 1973

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

New York University, NY, USA

Doug Tygar

University of California, Berkeley, CA, USA

Moshe Y. Vardi

Rice University, Houston, TX, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Preface

“When the network is as fast as the computer’s internal links, the machine disintegrates across the net into a set of special purpose appliances.” (George Gilder)

We are proud to present to you the proceedings of the European Grid Conference 2005, held at the Science Park Amsterdam during February 14–16.

The aim of the European Grid Conference was to be the premier event on Grid computing in Europe in 2005, focusing on all aspects of Grid computing and bringing together participants from research and industry. EGC 2005 was a follow-up of the Across Grids Conferences held in Santiago de Compostela, Spain (2003) and in Nicosia, Cyprus (2004).

We decided to have three main tracks during this conference: one with peer-reviewed scientific contributions, one with presentations from business and industry, and one event track with presentations from European and national Grid projects.

In order to guarantee high-quality proceedings, we put extensive effort into reviewing the scientific papers and processing the proceedings. We received over 180 papers from which, after peer review by 2–3 reviewers each, we selected 70 for oral presentations and 52 for poster presentations during the scientific tracks. In this book you find the final versions of these accepted papers.

After the conference opening by the Dean of the Faculty of Science of the University of Amsterdam, Prof. Dr. K.J.F Gaemers, we enjoyed a series of inspiring keynote lectures and two parallel scientific tracks over three days.

The keynote addresses were given by:

- Domenico Laforenza “Towards a Next Generation Grid: Learning from the Past, Looking into the Future”
- Bob Hertzberger “e-Science and Grid”
- Wolfgang Boch “Moving Grids from Science into Industry and Business – Challenges of EU Grid Research”
- Peter Coveney “Real Science on Computational Grids”
- Thierry Priol “Objects, Components, Services for Grid Middleware: Pros and Cons”
- Malcom Atkinson “Lessons Learned Building OGSA-DAI — Middleware for Distributed Data Access”
- Carol Goble “Semantic(Grid services)+(Semantic Grid)Services”
- Carl Kesselman “Managing Work Across Virtual Organizations: The GriPhyN Virtual Data System”

We would like to express our sincere thanks to the invited speakers who delivered such high-quality lectures at EGC 2005.

The scientific programme of the conference was organized along the following tracks:

- Applications
- Architecture and Infrastructure
- Resource Brokers and Management
- Grid Services and Monitoring
- Performance
- Security
- Workflow
- Data and Information Management
- Scheduling Fault-Tolerance and Mapping

This conference would not have been possible without the support of many people and organizations that helped in various ways to make it a success.

First of all we would like to thank the authors who took the effort to submit so many high-quality papers. We thank the Programme Committee for their excellent job in reviewing the submissions and thus guaranteeing the quality of the conference and the proceedings. We thank Lodewijk Bos and his staff for their practical assistance and support. Many thanks go to Coco van der Hoeven for her secretarial work. Dick van Albada, Berry Vermolen, Dennis Kaarsemaker and Derek Groen are acknowledged for their punctuality in preparing the proceedings.

We thank our sponsors for their financial support: the Board of the University of Amsterdam, the Science Faculty and the Institute for Informatics. Finally we thank the Dutch Science Foundation NWO, Section Exact Sciences.

February 2005

P.M.A. Sloot, A.G. Hoekstra, T. Priol, A. Reinefeld and M. Bubak

Organization

Overall Event Chair

- Prof. Dr. P.M.A. Sloot, University of Amsterdam, The Netherlands

Scientific Committee

- Dr. A.G. Hoekstra (chair), University of Amsterdam, The Netherlands
- Dr. M. Bubak, AGH, Cracow, Poland
- Dr. Th. Priol, IRISA, Paris, France

Industrial and Business Board

- Drs. A. Emmen (chair), Genias Benelux, The Netherlands
- Dr. A. Osseyran, Sara Computing and Networking Services, Amsterdam, The Netherlands
- Dr. W. Boch, European Commission, Brussels
- Dr. A. Reuver, IBM, The Netherlands

Special Events Board

- Drs. L. Bos (chair), MC-Consultancy, The Netherlands
- Prof. Dr. L.O. Hertzberger, University of Amsterdam, The Netherlands
- Prof. Dr. M. Turala, Institute of Nuclear Physics, Cracow, Poland
- Dr. K. Baxeivanidis, European Commission, Brussels

Local Steering Committee

- Prof. Dr. W. Hoogland, Dean of the Faculty of Science, University of Amsterdam
- Prof. Dr. B. Noordam, Director of the FOM Institute for Atomic and Molecular Physics AMOLF, Amsterdam, The Netherlands
- Prof. Dr. J.K. Lenstra, Director of the Center for Mathematics and Computer Science, Amsterdam, The Netherlands
- Prof. Dr. K. Gaemers, Director of the National Institute for Nuclear Physics and High Energy Physics, Amsterdam, The Netherlands
- Prof. Dr. E. P.J. van de Heuvel, Director of the Astronomical Institute "Anton Pannekoek", University of Amsterdam, The Netherlands

Programme Committee

- Albada, G.D. van — University of Amsterdam, The Netherlands
- Abramson, D. — Monash University, Australia
- Andrzejak, A. — ZIB Berlin, Germany

VIII Organization

- Badia, R. — Technical University of Catalonia, Spain
- Baker, M. — University of Portsmouth, UK
- Bal, H. — Free University Amsterdam, The Netherlands
- Baraglia, R. — ISTI-CNR, Italy
- Beco, S. — DATAMAT S.p.A., Italy
- Benkner, S. — University of Vienna, Austria
- Bilas, A. — ICS-FORTH, Greece
- Breton, V. — Laboratoire de Physique Corpusculaire de Clermont-Ferrand, France
- Brezany, P. — University of Vienna, Austria
- Bubak, M. — Inst. of Comp. Sci., and Cyfronet, Poland
- Buyya, R. — University of Melbourne, Australia
- Chun-Hsi Huang — University of Connecticut, USA
- Corbalan, J. — Technical University of Catalonia, Spain
- Cunha, J. — New University of Lisbon, Portugal
- Danelutto, M. — University of Pisa, Italy
- Deelman, E. — ISI, Univ. of Southern California, USA
- Dikaiakos, M. — Univ. of Cyprus, Cyprus
- DiMartino, B. — Second University of Naples, Italy
- Epema, D. — Delft University of Technology, The Netherlands
- Erwin, D. — Forschungszentrum Jülich GmbH, Germany
- Fisher, S. — RAL, UK
- Foster, I. — Argonne National Laboratory
- Fox, G. — Univ. of Indiana, USA
- Fusco, L. — ESA, Italy
- Gomez, A. — CESGA, Spain
- Gorlatch, S. — University of Muenster, Germany
- Guisset, P. — CETIC, Belgium
- Hluchy, L. — Slovak Academy of Science, Slovakia
- Hoekstra, A. — Univ. of Amsterdam, The Netherlands
- Houstis, E. — University of Thessaly, Greece
- Jones, R. — CERN, Switzerland
- Kesselman, C. — USC/Information Sciences Institute, USA
- Kielmann, Th. — Free University Amsterdam, The Netherlands
- Kornmayer, H. — KZK, Germany
- Kranzlmüller, D. — Johannes Kepler University Linz, Austria
- Kunszt, P. — CERN, Switzerland
- Laat, C. de — University of Amsterdam, The Netherlands
- Laforenza, D. — ISTI-CNR, Italy
- Marco, J. — CSIC, Santander, Spain
- Markatos, E. — ICS-FORTH, Greece
- Marten, H. — Forschungszentrum Karlsruhe GmbH, Germany
- Matyska, L. — Masary University, Czech Republic
- Meyer, N. — Poznan Supercomputing Center, Poland
- Moreau, L. — Univ. of Southampton, UK
- Morin, C. — IRISA/INRIA, France

- Nemeth, Z. — MTA SZTAKI Computer and Automation Research Institute, Hungary
- Novotny, J. — MPI für Gravitationsphysik, Germany
- Orlando, S. — University of Venice, Italy
- Pazat, J.-L. — IRISA, France
- Perez, C. — INRIA, France
- Perrott, R. — Queen's University Belfast, UK
- Pflug, G. — University of Vienna, Austria
- Priol, T. — INRIA/IRISA, France
- Rana, O. — Cardiff University, UK
- Reinefeld, A. — ZIB Berlin, Germany
- Rodero, I. — Technical University of Catalonia, Spain
- Romberg, M. — Forschungszentrum Jülich GmbH, Germany
- Sakellariou, R. — Univ. of Manchester, UK
- Senar, M. — Univ. Autònoma de Barcelona, Spain
- Sloot, P. — Univ. of Amsterdam, The Netherlands
- Szymanski, B. — Rensselaer Polytechnic Institute, USA
- Talia, D. — Università della Calabria
- Trancoso, P. — Univ. of Cyprus, Cyprus
- Turner, S.J. — Nanyang Technological University, Singapore
- Wismüller, R. — TU München, Germany
- Ziegler, W. — Fraunhofer Institute for Algorithms and Scientific Computing, Germany

Sponsoring Organizations

- University of Amsterdam, The Netherlands
- Dutch Science Foundation NWO, Section Exact Sciences, The Netherlands
- SciencePark Amsterdam, The Netherlands

Local Organizing Committee

- Coco van der Hoeven (University of Amsterdam, The Netherlands)
- Dick van Albada (University of Amsterdam, The Netherlands)
- Berry Vermolen (University of Amsterdam, The Netherlands)
- Derek Groen (University of Amsterdam, The Netherlands)
- Dennis Kaarsemaker (University of Amsterdam, The Netherlands)
- Lodewijk Bos (MC-Consultancy, The Netherlands)

Lecture Notes in Computer Science

For information about Vols. 1–3465

please contact your bookseller or Springer

- Vol. 3573: S. Etalle (Ed.), *Logic Based Program Synthesis and Transformation*. VIII, 279 pages. 2005.
- Vol. 3572: C. De Felice, A. Restivo (Eds.), *Developments in Language Theory*. XII, 409 pages. 2005.
- Vol. 3570: A. S. Patrick, M. Yung (Eds.), *Financial Cryptography and Data Security*. XII, 376 pages. 2005.
- Vol. 3569: F. Bacchus, T. Walsh (Eds.), *Theory and Applications of Satisfiability Testing*. XII, 492 pages. 2005.
- Vol. 3562: J. Mira, J.R. Álvarez (Eds.), *Artificial Intelligence and Knowledge Engineering Applications: A Bioinspired Approach, Part II*. XXIV, 636 pages. 2005.
- Vol. 3561: J. Mira, J.R. Álvarez (Eds.), *Mechanisms, Symbols, and Models Underlying Cognition, Part I*. XXIV, 532 pages. 2005.
- Vol. 3560: V.K. Prasanna, S. Iyengar, P.G. Spirakis, M. Welsh (Eds.), *Distributed Computing in Sensor Systems*. XV, 423 pages. 2005.
- Vol. 3559: P. Auer, R. Meir (Eds.), *Learning Theory*. XI, 692 pages. 2005. (Subseries LNAI).
- Vol. 3557: H. Gilbert, H. Handschuh (Eds.), *Fast Software Encryption*. XI, 443 pages. 2005.
- Vol. 3556: H. Baumeister, M. Marchesi, M. Holcombe (Eds.), *Extreme Programming and Agile Processes in Software Engineering*. XIV, 332 pages. 2005.
- Vol. 3555: T. Vardanega, A. Wellings (Eds.), *Reliable Software Technology – Ada-Europe 2005*. XV, 273 pages. 2005.
- Vol. 3553: T.D. Hämäläinen, A.D. Pimentel, J. Takala, S. Vassiliadis (Eds.), *Embedded Computer Systems: Architectures, Modeling, and Simulation*. XV, 476 pages. 2005.
- Vol. 3552: H. de Meer, N. Bhatti (Eds.), *Quality of Service – IWQoS 2005*. XV, 400 pages. 2005.
- Vol. 3551: T. Härder, W. Lehner (Eds.), *Data Management in a Connected World*. XIX, 371 pages. 2005.
- Vol. 3548: K. Julisch, C. Kruegel (Eds.), *Intrusion and Malware Detection and Vulnerability Assessment*. X, 241 pages. 2005.
- Vol. 3547: F. Bornarius, S. Komi-Sirviö (Eds.), *Product Focused Software Process Improvement*. XIII, 588 pages. 2005.
- Vol. 3543: L. Kutvonen, N. Alonistioti (Eds.), *Distributed Applications and Interoperable Systems*. XI, 235 pages. 2005.
- Vol. 3541: N.C. Oza, R. Polikar, J. Kittler, F. Roli (Eds.), *Multiple Classifier Systems*. XII, 430 pages. 2005.
- Vol. 3540: H. Kalviainen, J. Parkkinen, A. Kaarna (Eds.), *Image Analysis*. XXII, 1270 pages. 2005.
- Vol. 3537: A. Apostolico, M. Crochemore, K. Park (Eds.), *Combinatorial Pattern Matching*. XI, 444 pages. 2005.
- Vol. 3536: G. Ciardo, P. Darondeau (Eds.), *Applications and Theory of Petri Nets 2005*. XI, 470 pages. 2005.
- Vol. 3535: M. Steffen, G. Zavattaro (Eds.), *Formal Methods for Open Object-Based Distributed Systems*. X, 323 pages. 2005.
- Vol. 3533: M. Ali, F. Esposito (Eds.), *Innovations in Applied Artificial Intelligence*. XX, 858 pages. 2005. (Subseries LNAI).
- Vol. 3532: A. Gómez-Pérez, J. Euzenat (Eds.), *The Semantic Web: Research and Applications*. XV, 728 pages. 2005.
- Vol. 3531: J. Ioannidis, A. Keromytis, M. Yung (Eds.), *Applied Cryptography and Network Security*. XI, 530 pages. 2005.
- Vol. 3530: A. Prinz, R. Reed, J. Reed (Eds.), *SDL 2005: Model Driven*. XI, 361 pages. 2005.
- Vol. 3528: P.S. Szczepaniak, J. Kacprzyk, A. Niewiadomski (Eds.), *Advances in Web Intelligence*. XVII, 513 pages. 2005. (Subseries LNAI).
- Vol. 3527: R. Morrison, F. Oquendo (Eds.), *Software Architecture*. XII, 263 pages. 2005.
- Vol. 3526: S.B. Cooper, B. Löwe, L. Torenvliet (Eds.), *New Computational Paradigms*. XVII, 574 pages. 2005.
- Vol. 3525: A.E. Abdallah, C.B. Jones, J.W. Sanders (Eds.), *Communicating Sequential Processes*. XIV, 321 pages. 2005.
- Vol. 3524: R. Barták, M. Milano (Eds.), *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems*. XI, 320 pages. 2005.
- Vol. 3523: J.S. Marques, N. Pérez de la Blanca, P. Pina (Eds.), *Pattern Recognition and Image Analysis, Part II*. XXVI, 733 pages. 2005.
- Vol. 3522: J.S. Marques, N. Pérez de la Blanca, P. Pina (Eds.), *Pattern Recognition and Image Analysis, Part I*. XXVI, 703 pages. 2005.
- Vol. 3521: N. Megiddo, Y. Xu, B. Zhu (Eds.), *Algorithmic Applications in Management*. XIII, 484 pages. 2005.
- Vol. 3520: O. Pastor, J. Falcão e Cunha (Eds.), *Advanced Information Systems Engineering*. XVI, 584 pages. 2005.
- Vol. 3519: H. Li, P. J. Olver, G. Sommer (Eds.), *Computer Algebra and Geometric Algebra with Applications*. IX, 449 pages. 2005.
- Vol. 3518: T.B. Ho, D. Cheung, H. Liu (Eds.), *Advances in Knowledge Discovery and Data Mining*. XXI, 864 pages. 2005. (Subseries LNAI).
- Vol. 3517: H.S. Baird, D.P. Lopresti (Eds.), *Human Interactive Proofs*. IX, 143 pages. 2005.
- Vol. 3516: V.S. Sunderam, G.D.v. Albada, P.M.A. Sloot, J.J. Dongarra (Eds.), *Computational Science – ICCS 2005, Part III*. LXIII, 1143 pages. 2005.

- Vol. 3515: V.S. Sunderam, G.D.v. Albada, P.M.A. Sloot, J.J. Dongarra (Eds.), Computational Science – ICCS 2005, Part II. LXIII, 1101 pages. 2005.
- Vol. 3514: V.S. Sunderam, G.D.v. Albada, P.M.A. Sloot, J.J. Dongarra (Eds.), Computational Science – ICCS 2005, Part I. LXIII, 1089 pages. 2005.
- Vol. 3513: A. Montoyo, R. Muñoz, E. Métais (Eds.), Natural Language Processing and Information Systems. XII, 408 pages. 2005.
- Vol. 3512: J. Cabestany, A. Prieto, F. Sandoval (Eds.), Computational Intelligence and Bioinspired Systems. XXV, 1260 pages. 2005.
- Vol. 3510: T. Braun, G. Carle, Y. Koucheryavy, V. Tsoulos (Eds.), Wired/Wireless Internet Communications. XIV, 366 pages. 2005.
- Vol. 3509: M. Jünger, V. Kaibel (Eds.), Integer Programming and Combinatorial Optimization. XI, 484 pages. 2005.
- Vol. 3508: P. Bresciani, P. Giorgini, B. Henderson-Sellers, G. Low, M. Winikoff (Eds.), Agent-Oriented Information Systems II. X, 227 pages. 2005. (Subseries LNAI).
- Vol. 3507: F. Crestani, I. Ruthven (Eds.), Information Context: Nature, Impact, and Role. XIII, 253 pages. 2005.
- Vol. 3506: C. Park, S. Chee (Eds.), Information Security and Cryptology – ICISC 2004. XIV, 490 pages. 2005.
- Vol. 3505: V. Gorodetsky, J. Liu, V. A. Skormin (Eds.), Autonomous Intelligent Systems: Agents and Data Mining. XIII, 303 pages. 2005. (Subseries LNAI).
- Vol. 3504: A.F. Frangi, P.I. Radeva, A. Santos, M. Hernandez (Eds.), Functional Imaging and Modeling of the Heart. XV, 489 pages. 2005.
- Vol. 3503: S.E. Nikolettas (Ed.), Experimental and Efficient Algorithms. XV, 624 pages. 2005.
- Vol. 3502: F. Khendek, R. Dssouli (Eds.), Testing of Communicating Systems. X, 381 pages. 2005.
- Vol. 3501: B. Kégl, G. Lapalme (Eds.), Advances in Artificial Intelligence. XV, 458 pages. 2005. (Subseries LNAI).
- Vol. 3500: S. Miyano, J. Mesirov, S. Kasif, S. Istrail, P. Pevzner, M. Waterman (Eds.), Research in Computational Molecular Biology. XVII, 632 pages. 2005. (Subseries LNBI).
- Vol. 3499: A. Pelc, M. Raynal (Eds.), Structural Information and Communication Complexity. X, 323 pages. 2005.
- Vol. 3498: J. Wang, X. Liao, Z. Yi (Eds.), Advances in Neural Networks – ISNN 2005, Part III. XLIX, 1077 pages. 2005.
- Vol. 3497: J. Wang, X. Liao, Z. Yi (Eds.), Advances in Neural Networks – ISNN 2005, Part II. XLIX, 947 pages. 2005.
- Vol. 3496: J. Wang, X. Liao, Z. Yi (Eds.), Advances in Neural Networks – ISNN 2005, Part II. L, 1055 pages. 2005.
- Vol. 3495: P. Kantor, G. Muresan, F. Roberts, D.D. Zeng, F.-Y. Wang, H. Chen, R.C. Merkle (Eds.), Intelligence and Security Informatics. XVIII, 674 pages. 2005.
- Vol. 3494: R. Cramer (Ed.), Advances in Cryptology – EUROCRYPT 2005. XIV, 576 pages. 2005.
- Vol. 3493: N. Fuhr, M. Lalmas, S. Malik, Z. Szlávik (Eds.), Advances in XML Information Retrieval. XI, 438 pages. 2005.
- Vol. 3492: P. Blache, E. Stabler, J. Busquets, R. Moot (Eds.), Logical Aspects of Computational Linguistics. X, 363 pages. 2005. (Subseries LNAI).
- Vol. 3489: G.T. Heineman, I. Crnkovic, H.W. Schmidt, J.A. Stafford, C. Szyperski, K. Wallnau (Eds.), Component-Based Software Engineering. XI, 358 pages. 2005.
- Vol. 3488: M.-S. Hacid, N.V. Murray, Z.W. Raś, S. Tsumoto (Eds.), Foundations of Intelligent Systems. XIII, 700 pages. 2005. (Subseries LNAI).
- Vol. 3486: T. Helleseth, D. Sarwate, H.-Y. Song, K. Yang (Eds.), Sequences and Their Applications – SETA 2004. XII, 451 pages. 2005.
- Vol. 3483: O. Gervasi, M.L. Gavrilova, V. Kumar, A. Lagana, H.P. Lee, Y. Mun, D. Taniar, C.J.K. Tan (Eds.), Computational Science and Its Applications – ICCSA 2005, Part IV. LXV, 1362 pages. 2005.
- Vol. 3482: O. Gervasi, M.L. Gavrilova, V. Kumar, A. Lagana, H.P. Lee, Y. Mun, D. Taniar, C.J.K. Tan (Eds.), Computational Science and Its Applications – ICCSA 2005, Part III. LXV, 1340 pages. 2005.
- Vol. 3481: O. Gervasi, M.L. Gavrilova, V. Kumar, A. Lagana, H.P. Lee, Y. Mun, D. Taniar, C.J.K. Tan (Eds.), Computational Science and Its Applications – ICCSA 2005, Part II. LXV, 1316 pages. 2005.
- Vol. 3480: O. Gervasi, M.L. Gavrilova, V. Kumar, A. Lagana, H.P. Lee, Y. Mun, D. Taniar, C.J.K. Tan (Eds.), Computational Science and Its Applications – ICCSA 2005, Part I. LXV, 1234 pages. 2005.
- Vol. 3479: T. Strang, C. Linnhoff-Popien (Eds.), Location and Context-Awareness. XII, 378 pages. 2005.
- Vol. 3478: C. Jermann, A. Neumaier, D. Sam (Eds.), Global Optimization and Constraint Satisfaction. XIII, 193 pages. 2005.
- Vol. 3477: P. Herrmann, V. Issarny, S. Shiu (Eds.), Trust Management. XII, 426 pages. 2005.
- Vol. 3476: J. Leite, A. Omicini, P. Torroni, P. Yolum (Eds.), Declarative Agent Languages and Technologies II. XII, 289 pages. 2005. (Subseries LNAI).
- Vol. 3475: N. Guelfi (Ed.), Rapid Integration of Software Engineering Techniques. X, 145 pages. 2005.
- Vol. 3474: C. Grelck, F. Huch, G.J. Michaelson, P. Trinder (Eds.), Implementation and Application of Functional Languages. X, 227 pages. 2005.
- Vol. 3472: M. Broy, B. Jonsson, J.-P. Katoen, M. Leucker, A. Pretschner (Eds.), Model-Based Testing of Reactive Systems. VIII, 659 pages. 2005.
- Vol. 3470: P.M.A. Sloot, A.G. Hoekstra, T. Priol, A. Reinefeld, M. Bubak (Eds.), Advances in Grid Computing – EGC 2005. XXI, 1197 pages. 2005.
- Vol. 3468: H.W. Gellersen, R. Want, A. Schmidt (Eds.), Pervasive Computing. XIII, 347 pages. 2005.
- Vol. 3467: J. Giesl (Ed.), Term Rewriting and Applications. XIII, 517 pages. 2005.
- Vol. 3466: S. Leue, T.J. Systä (Eds.), Scenarios: Models, Transformations and Tools. XII, 279 pages. 2005.

¥1095.04元

Table of Contents

Telemedical Applications and Grid Technology <i>Georgi Graschew, Theo A. Roelofs, Stefan Rakowsky, Peter M. Schlag, Sahin Albayrak, Silvan Kaiser</i>	1
Statistical Modeling and Segmentation in Cardiac MRI Using a Grid Computing Approach <i>Sebastian Ordas, Hans C. van Assen, Loic Boisrobert, Marco Laucelli, Jesús Puente, Boudewijn P.F. Lelieveldt, Alejandro F. Frangi</i>	6
A Grid Molecular Simulator for E-Science <i>Oswaldo Gervasi, Cristian Dittamo, Antonio Laganà</i>	16
Application Driven Grid Developments in the OpenMolGRID Project <i>Bernd Schuller, Mathilde Romberg, Lidia Kirtchakova</i>	23
ATLAS Data Challenge 2: A Massive Monte Carlo Production on the Grid <i>Santiago González de la Hoz, Javier Sánchez, Julio Lozano, Jose Salt, Farida Fassi, Luis March, D.L. Adams, Gilbert Poulard, Luc Goossens, DC2 Production TEAM (ATLAS Experiment)</i>	30
High Throughput Computing for Spatial Information Processing (HIT-SIP) System on Grid Platform <i>Yong Xue, Yanguang Wang, Jianqin Wang, Ying Luo, Yincui Hu, Shaobo Zhong, Jiakui Tang, Guoyin Cai, Yanning Guan</i>	40
The University of Virginia Campus Grid: Integrating Grid Technologies with the Campus Information Infrastructure <i>Marty Humphrey, Glenn Wasson</i>	50
M-Grid: Using Ubiquitous Web Technologies to Create a Computational Grid <i>Robert John Walters, Stephen Crouch</i>	59
GLIDE: A Grid-Based Light-Weight Infrastructure for Data-Intensive Environments <i>Chris A. Mattmann, Sam Malek, Nels Beckman, Marija Mikic-Rakic, Nenad Medvidovic, Daniel J. Crichton</i>	68
HotGrid: Graduated Access to Grid-Based Science Gateways <i>Roy Williams, Conrad Steenberg, Julian Bunn</i>	78

Principles of Transactional Grid Deployment

- Brian Coghlan, John Walsh, Geoff Quigley, David O'Callaghan,
Stephen Childs, Eamonn Kenny* 88

Experience with the International Testbed in the CrossGrid Project

- J. Gomes, M. David, J. Martins, L. Bernardo, A. García, M. Hardt,
H. Kornmayer, J. Marco, R. Marco, D. Rodríguez, I. Diaz, D. Cano,
J. Salt, S. Gonzalez, J. Sánchez, F. Fassi, V. Lara, P. Nyczyk,
P. Lason, A. Ozieblo, P. Wolniewicz, M. Bluj, K. Nawrocki,
A. Padee, W. Wislicki, C. Fernández, J. Fontán, Y. Cotronis,
E. Floros, G. Tsouloupas, W. Xing, M. Dikaiakos, J. Astalos,
B. Coghlan, E. Heymann, M. Senar, C. Kanellopoulos, A. Ramos,
D. Groen* 98

eNANOS Grid Resource Broker

- Ivan Roderó, Julita Corbalán, Rosa M. Badia, Jesús Labarta* 111

GridARM: Askalon's Grid Resource Management System

- Mumtaz Siddiqui, Thomas Fahringer* 122

A Super-Peer Model for Building Resource Discovery Services in Grids:
Design and Simulation Analysis

- Carlo Mastroianni, Domenico Talia, Oreste Verta* 132

Ontology-Based Grid Index Service for Advanced Resource Discovery
and Monitoring

- Said Mirza Pahlevi, Isao Kojima* 144

Grid Service Based Collaboration for VL-e: Requirements, Analysis
and Design

- A. de Ridder, A.S.Z. Belloum, L.O. Hertzberger* 154

A Fully Decentralized Approach to Grid Service Discovery Using
Self-organized Overlay Networks

- Qi Xia, Weinong Wang, Ruijun Yang* 164

Dynamic Parallelization of Grid-Enabled Web Services

- Manfred Wurz, Heiko Schuldt* 173

Automatic Composition and Selection of Semantic Web Services

- Tor Arne Kvaløy, Erik Rongen, Alfredo Tirado-Ramos,
Peter M.A. Sloot* 184

Grid Application Monitoring and Debugging Using the Mercury
Monitoring System

- Gábor Gombás, Csaba Attila Marosi, Zoltán Balaton* 193

Interactive Visualization of Grid Monitoring Data on Multiple Client Platforms <i>Lea Skorin-Kapov, Igor Pandžić, Maja Matijašević, Hrvoje Komerički, Miran Mošmondor</i>	200
GridBench: A Workbench for Grid Benchmarking <i>George Tsouloupas, Marios D. Dikaiakos</i>	211
A Method for Estimating the Execution Time of a Parallel Task on a Grid Node <i>Panu Phinjaroenphan, Savitri Bevinakoppa, Panlop Zeephongsekul</i> ...	226
Performance of a Parallel Astrophysical N-Body Solver on Pan-European Computational Grids <i>Alfredo Tirado-Ramos, Alessia Gualandris, Simon Portegies Zwart</i> ...	237
Introducing Grid Speedup Γ : A Scalability Metric for Parallel Applications on the Grid <i>Alfons G. Hoekstra, Peter M.A. Sloot</i>	245
A Dynamic Key Infrastructure for GRID <i>H.W. Lim, M.J.B. Robshaw</i>	255
Experiences of Applying Advanced Grid Authorisation Infrastructures <i>R.O. Sinnott, A.J. Stell, D.W. Chadwick, O. Otenko</i>	265
Towards a Grid-wide Intrusion Detection System <i>Stuart Kenny, Brian Coghlan</i>	275
International Grid CA Interworking, Peer Review and Policy Management Through the European DataGrid Certification Authority Coordination Group <i>J. Astalos, R. Cecchini, B. Coghlan, R. Cowles, U. Epting, T. Genovese, J. Gomes, D. Groep, M. Gug, A. Hanushevsky, M. Helm, J. Jensen, C. Kanellopoulos, D. Kelsey, R. Marco, I. Neilson, S. Nicoud, D. O'Callaghan, D. Quesnel, I. Schaeffner, L. Shamardin, D. Skow, M. Sova, A. Wäänänen, P. Wolniewicz, W. Xing</i>	285
Grid Enabled Optimization <i>Hee-Khiang Ng, Yew-Soon Ong, Terence Hung, Bu-Sung Lee</i>	296
Towards a Coordination Model for Parallel Cooperative P2P Multi-objective Optimization <i>M. Mezmaz, N. Melab, E.-G. Talbi</i>	305

XIV Table of Contents

A Grid-Oriented Genetic Algorithm <i>J. Herrera, E. Huedo, R.S. Montero, I.M. Llorente</i>	315
A Probabilistic Approach for Task and Result Certification of Large-Scale Distributed Applications in Hostile Environments <i>Axel Krings, Jean-Louis Roch, Samir Jafar, Sébastien Varrette</i>	323
A Service Oriented Architecture for Decision Making in Engineering Design <i>Alex Shenfield, Peter J. Fleming</i>	334
A Grid Architecture for Comfortable Robot Control <i>Stéphane Vialle, Amelia De Vivo, Fabrice Sabatier</i>	344
The Grid-Ireland Deployment Architecture <i>Brian Coghlan, John Walsh, David O'Callaghan</i>	354
UNICORE as Uniform Grid Environment for Life Sciences <i>Krzysztof Benedyczak, Michał Wroński, Aleksander Nowiński, Krzysztof S. Nowiński, Jarosław Wypychowski, Piotr Bała</i>	364
MyGridFTP: A Zero-Deployment GridFTP Client Using the .NET Framework <i>Arumugam Paventhan, Kenji Takeda</i>	374
On Using Jini and JXTA in Lightweight Grids <i>Kurt Vanmechelen, Jan Broeckhove</i>	384
Ticket-Based Grid Services Architecture for Dynamic Virtual Organizations <i>Byung Joon Kim, Kyong Hoon Kim, Sung Je Hong, Jong Kim</i>	394
Heterogeneity of Computing Nodes for Grid Computing <i>Eamonn Kenny, Brian Coghlan, John Walsh, Stephen Childs, David O'Callaghan, Geoff Quigley</i>	404
Effective Job Management in the Virtual Laboratory <i>Marcin Lawenda, Norbert Meyer, Maciej Stroński, Tomasz Rajtar, Marcin Okoń, Dominik Stokłosa, Damian Kaliszan</i>	414
Workflow Management in the CrossGrid Project <i>Anna Morajko, Enol Fernández, Alvaro Fernández, Elisa Heymann, Miquel Àngel Senar</i>	424
Workflow-Oriented Collaborative Grid Portals <i>Gergely Sipos, Gareth J. Lewis, Péter Kacsuk, Vassil N. Alexandrov</i> ..	434

Contextualised Workflow Execution in MyGrid

- M. Nedim Alpdemir, Arijit Mukherjee, Norman W. Paton,
Alvaro A.A. Fernandes, Paul Watson, Kevin Glover,
Chris Greenhalgh, Tom Oinn, Hannah Tipney* 444

Real World Workflow Applications in the Askalon Grid

Environment

- Rubing Duan, Thomas Fahringer, Radu Prodan, Jun Qin,
Alex Villazón, Marek Wieczorek* 454

OpenMolGRID: Using Automated Workflows in GRID Computing

Environment

- Sulev Sild, Uko Maran, Mathilde Romberg, Bernd Schuller,
Emilio Benfenati* 464

Implementation of Replication Methods in the Grid Environment

- Renata Słota, Darin Nikolow, Lukasz Skitał, Jacek Kitowski* 474

A Secure Wrapper for OGSA-DAI

- David Power, Mark Slaymaker, Eugenia Politou,
Andrew Simpson* 485

XDTM: The XML Data Type and Mapping for Specifying Datasets

- Luc Moreau, Yong Zhao, Ian Foster, Jens Voekler,
Michael Wilde* 495

iGrid, a Novel Grid Information Service

- Giovanni Aloisio, Massimo Cafaro, Italo Epicoco, Sandro Fiore,
Daniele Lezzi, Maria Mirto, Silvia Mocavero* 506

A Grid-Enabled Digital Library System for Natural Disaster

Metadata

- Wei Xing, Marios D. Dikaiakos, Hua Yang, Angelos Sphyrakis, George
Eftichidis* 516

Optimising Parallel Applications on the Grid Using Irregular Array

Distributions

- Radu Prodan, Thomas Fahringer* 527

Dynamic Adaptation for Grid Computing

- Jérémy Buisson, Françoise André, Jean-Louis Pazat* 538

Improving Multilevel Approach for Optimizing Collective

Communications in Computational Grids

- Boro Jakimovski, Marjan Gusev* 548

Rough Set Based Computation Times Estimation on Knowledge Grid <i>Kun Gao, Youquan Ji, Meiqun Liu, Jiaxun Chen</i>	557
A Behavior Characteristics-Based Reputation Evaluation Method for Grid Entities <i>Xiangli Qu, Xuejun Yang, Yuhua Tang, Haifang Zhou</i>	567
Dynamic Policy Management Framework for Partial Policy Information <i>Chiu-Man Yu, Kam-Wing Ng</i>	578
Security Architecture for Open Collaborative Environment <i>Yuri Demchenko, Leon Gommans, Cees de Laat, Bas Oudenaarde, Andrew Tokmakoff, Martin Snijders, Rene van Buuren</i>	589
An Experimental Information Grid Environment for Cultural Heritage Knowledge Sharing <i>A. Aiello, M. Mango Furnari, A. Massarotti</i>	600
Implementation of Federated Databases Through Updatable Views <i>Hanna Kozankiewicz, Krzysztof Stencel, Kazimierz Subieta</i>	610
Data Mining Tools: From Web to Grid Architectures <i>Davide Anguita, Arianna Poggi, Fabio Riveccio, Anna Marina Scapolla</i>	620
Fault-Tolerant Scheduling for Bag-of-Tasks Grid Applications <i>Cosimo Anglano, Massimo Canonico</i>	630
The Design and Implementation of the KOALA Co-allocating Grid Scheduler <i>H.H. Mohamed, D.H.J. Epema</i>	640
A Multi-agent Infrastructure and a Service Level Agreement Negotiation Protocol for Robust Scheduling in Grid Computing <i>D. Ouelhadj, J. Garibaldi, J. MacLaren, R. Sakellariou, K. Krishnakumar</i>	651
Towards Quality of Service Support for Grid Workflows <i>Ivona Brandic, Siegfried Benkner, Gerhard Engelbrecht, Rainer Schmidt</i>	661
Transparent Fault Tolerance for Grid Applications <i>Pawel Garbacki, Bartosz Biskupski, Henri Bal</i>	671