Lecture Notes in Computer Science

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
Alfred Kobsa
  University of California, Irvine, CA, 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
  TU Dortmund University, Germany
Madhu Sudan
  Microsoft Research, Cambridge, MA, USA
Demetri Terzopoulos
  University of California, Los Angeles, CA, USA
Doug Tygar
  University of California, Berkeley, CA, USA
Gerhard Weikum
  Max Planck Institute for Informatics, Saarbruecken, Germany
Abdelkader Hameurlain  A Min Tjoa (Eds.)

Data Management in Grid and Peer-to-Peer Systems

4th International Conference, Globe 2011
Toulouse, France, September 1-2, 2011
Proceedings

Springer
Preface

Globe is now an established conference on data management in grid and peer-to-peer systems. These systems are characterized with high heterogeneity, high autonomy and dynamics of nodes, decentralization of control and large-scale distribution of resources. These main characteristics give rise to new dimensions and difficult challenges in tackling data management problems. The research on data management in grid and peer-to-peer aims to scale distributed systems and applications that require effective management of voluminous, large-scale distributed and heterogeneous data.

The fourth edition of the international conference Globe was held in Toulouse, France, during September 1–2, 2011. The Globe conference provides opportunities for academic or industry researchers to present and discuss the latest research and applications in data management in grid and peer-to-peer systems.

Globe 2011 received 18 papers from ten countries. The reviewing process led to the acceptance of 11 papers for presentation at the conference and inclusion in this LNCS volume. Each paper was reviewed by at least two Program Committee members.

The conference would not have been possible without the support of the Program Committee members, external reviewers, Organizing Committee members of the DEXA conference and the authors. In particular, we would like to thank Gabriela Wagner and Roland Wagner (FAW, University of Linz) for their help in the realization of this conference.

June 2011

Abdelkader Hameurlain
A Min Tjoa
Organization

Program Chairs

Abdelkader Hameurlain  IRIT, Paul Sabatier University, Toulouse, France
A Min Tjoa  IFS, Vienna University of Technology, Austria

Program Committee

Philippe Balbiani  IRIT, Paul Sabatier University, Toulouse, France
Djamal Benslimane  LIRIS, University of Lyon, France
Leopoldo Bertossi  Carleton University School of Computer Science, Ottawa, Canada
Lionel Brunie  LIRIS, INSA of Lyon, France
Elizabeth Chang  Digital Ecosystems & Business Intelligence Institute, Curtin University, Perth, Australia
Qiming Chen  HP Labs, Palo Alto, California, USA
Alfredo Cuzzocrea  ICAR-CNR, University of Calabria, Italy
Frédéric Cuppens  Telecom, Bretagne, France
Bruno Defude  Telecom INT, Evry, France
Kayhan Erciyes  Ege University, Izmir, Turkey
Shahram Ghandeharizadeh  University of Southern California, USA
Tasos Gounaris  Aristotle University of Thessaloniki, Greece
Farookh Khadeer Hussain  Digital Ecosystems & Business Intelligence Institute, Curtin University, Perth, Australia
Sergio Ilarri  University of Zaragoza, Spain
Ismail Khalil  Johannes Kepler University, Linz, Austria
Gildas Menier  LORIA, University of South Bretagne, France
Anirban Mondal  University of Delhi, India
Riad Mokadem  IRIT, Paul Sabatier University, Toulouse, France
Franck Morvan  IRIT, Paul Sabatier University, Toulouse, France
Faïza Najjar  National Computer Science School, Tunis, Tunisia
VIII Organization

Kjetil Nørvåg  Norwegian University of Science and Technology, Trondheim, Norway
Jean-Marc Pierson  IRIT, Paul Sabatier University, Toulouse, France
Claudia Roncancio  LIG, Grenoble University, France
Florence Sedes  IRIT, Paul Sabatier University, Toulouse, France
Fabricio A.B. Silva  Army Technological Center, Rio de Janeiro, Brazil
Mário J.G. Silva  University of Lisbon, Portugal
Hela Skaf  LORIA, INRIA Nancy -Grand Est, Nancy University, France
David Taniar  Monash University, Melbourne, Australia
Farouk Toumani  LIMOS, Blaise Pascal University, France
Roland Wagner  FAW, University of Linz, Austria
Wolfram Wöß  FAW, University of Linz, Austria

External Reviewers

Efthymia Tsamoura  Aristotle University of Thessaloniki, Greece
# Table of Contents

## Data Storage and Replication

Hybrid Approaches for Distributed Storage Systems .............................. 1  

*Julio Araujo, Frédéric Giroire, and Julian Monteiro*

Lifetime-Based Dynamic Data Replication in P2P Systems ................... 13  

*Aïssatou Diaby Gassama and Idrissa Sarr*

Distributed Overlay Maintenance with Application to Data Consistency ................................................. 25  

*Erwan Le Merrer and Gilles Straub*

## Semantics for P2P Systems and Performance Evaluation

Gossiping Correspondences to Reduce Semantic Heterogeneity of Unstructured P2P Systems .............................................................. 37  

*Thomas Cerqueus, Sylvie Cazalens, and Philippe Lamarre*

Simulation Based Analysis for a Traceable P2P Record Exchange Framework ................................................................. 49  

*Fengrong Li and Yoshiharu Ishikawa*

## Resource Discovery and Routing in Mobile P2P Networks

Resource Discovery Considering Semantic Properties in Data Grid Environments ................................................................. 61  

*Imen Ketata, Riad Mokadem, and Franck Morvan*

Improving Learning-Based Request Forwarding in Resource Discovery through Load-Awareness ................................................................. 73  

*Mohammad Norouzi Arab, Seyyedeh Leili Mirtaheri, Ehsan Mousavi Khaneghah, Mohsen Sharifi, and Meisam Mohammadkhani*

Leveraging Node Centrality and Regularity for Efficient Routing in Mobile Peer-to-Peer Networks ................................................................. 83  

*Jingwei Miao, Omar Hasan, and Lionel Brunie*
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Stream Systems and Large-Scale Distributed Applications</td>
<td></td>
</tr>
<tr>
<td>Query Engine Grid for Executing SQL Streaming Process</td>
<td>95</td>
</tr>
<tr>
<td><em>Qiming Chen and Meichun Hsu</em></td>
<td></td>
</tr>
<tr>
<td>Subdomain Solution of Problem with Unilateral Constraints in Grid</td>
<td>108</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
</tr>
<tr>
<td>*Ming Chau, Thierry Garcia, Abdelhamid Laouar, and Pierre Spiteri</td>
<td></td>
</tr>
<tr>
<td>CAD: An Efficient Data Management and Migration Scheme across Clouds</td>
<td>120</td>
</tr>
<tr>
<td>for Data-Intensive Scientific Applications</td>
<td></td>
</tr>
<tr>
<td><em>Ching-Hsien Hsu, Alfredo Cuzzocrea, and Shih-Chang Chen</em></td>
<td></td>
</tr>
<tr>
<td>Author Index</td>
<td>135</td>
</tr>
</tbody>
</table>
