Contents

Preface ix
Program Committee and Additional Reviewers xi

Part I: Parallel and distributed algorithms
The Wandering Token: Congestion Avoidance of a Shared Resource
Augusto Ciuffoletti 3

A Locality Optimizing Algorithm for Developing
Stream Programs in Imagine
Jing Du, Xuejun Yang, Canqun Yang, Xiaobo Yan, Yu Deng 13

Granular SSOR Preconditioning Placed on Dynamic SMP Clusters
with Communication on the Fly
Boguslaw Butrylo, Marek Tudruj, Lukasz Masko 23

Bulk Synchronous Parallel ML with Exceptions
Louis Gesbert, Frédéric Gava, Frédéric Loulergue, Frédéric Dabrowski 33

Part II: Networking and communication
A New Approach to MPI Collective Communication Implementations
Torsten Hoefler, Jeffrey M. Squyres, Graham Fagg, George Bosilca,
Wolfgang Rehm, Andrew Lumsdaine 45

Supporting MPI applications in P-GRADE Portal
Zoltán Farkas, Zoltán Balaton, Péter Kacsuk 55

Tuned: An Open MPI Collective Communications Component
Graham E. Fagg, George Bosilca, Jelena Pješivac-Grbović,
Thara Angskun, Jack J. Dongarra 65

Self-Healing Network for Scalable Fault Tolerant Runtime Environments
Thara Angskun, Graham E. Fagg, George Bosilca,
Jelena Pješivac-Grbović, Jack J. Dongarra 73

Supporting Seamless Remote I/O Using a Parallel NetCDF Interface
Yuichi Tsujita 81
Part III: Grid and web services

Generating Semantic Descriptions of Web and Grid Services
Marian Babik, Ladislav Hluchy, Jacek Kitowski, Bartosz Kryza
93

Legacy Code Support for Service-oriented Production Grids
Thierry Delaitre, Tamás Kiss, Gábor Terstyánszky, Stephen Winter, Péter Kacsuk
103

Client-Side Task Support in Matlab for Concurrent Distributed Execution
Christian Hoge, Dan Keith, Allen D. Malony
113

Message Level Security For Grid Services Using S/MIME
Daniel Kouril, Ondřej Krajiček, Martin Kuba, Michal Procházka
123

Part IV: Grid infrastructure

Fault Tolerant Grid Registry
Marek Kasztelnik, Marian Bubak, Cezary Górka, Maciej Malawski, Tomasz Gubala
135

Secure application deployment in the Hierarchical Local Desktop Grid
Attila Marosi, Gábor Gombás, Zoltán Balaton
145

Designing Distributed Mediator Component for the C-GMA Monitoring Architecture
Ondřej Krajiček, Andrea Ceccanti, Aleš Křenek, Luděk Matyska, Miroslav Ruda
155

User Oriented Grid Testing
Miklós Kozlovsky, Krisztán Karóczkai, István Márton, András Schnautigel, Péter Kacsuk, Gábor Hermann, Ramon Harrington, Danielle Martin, Carsten Winsnes, Thomas Strodl
165

Part V: Advanced grid techniques

Application and Middleware Transparent Checkpointing with TCKPT on Clustergrid
József Kovács, Rafał Mikolajczak, Radoslaw Januszewski, Grzegorz Jankowski
179
Contents

UML based Grid Workflow Modeling under ASKALON 191
Jun Qin, Thomas Fahringer, Sabri Pllana

A Taxonomy of Grid Resource Brokers 201
Attila Kertész, Péter Kacsuk

Towards an Agent Integrated Speculative Scheduling Service 211
László Csaba Lőrincz, Attila Ulbert, Zoltán Horváth, Tamás Kozsi

Author Index 223