# An Excellent Addition to Your Library!

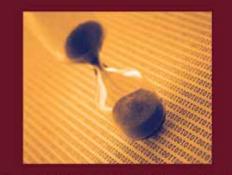
## Released: July 2011

# Achieving Real-Time in Distributed Computing: From Grids to Clouds

#### PREMIER REFERENCE SOURCE

### Achieving Real-Time in Distributed Computing

From Grids to Clouds



Dimosthenia P. Kyriazis, Theodora A. Varvarigou & Kleopatra G. Konstantoli

ISBN: 9781609608279; © 2012; 330 pp. Print: US \$195.00 | Perpetual: US \$295.00 | Print + Perpetual: US \$390.00 Dimosthenis Kyriazis (National Technical University of Athens, Greece), Theodora Varvarigou (National Technical University of Athens, Greece) and Kleopatra G. Konstanteli (National Technical University of Athens, Greece)

Real-time systems are of importance to a large number of university laboratories and research institutes worldwide, and without the proper integration of real-time into distributed computing, institutions simply could not function.

Achieving Real-Time in Distributed Computing: From Grids to Clouds offers over 400 accounts from a wide range of specific research efforts. Major focus is given to the need for methodologies, tools, and architectures for complex distributed systems that address the practical issues of performance guarantees, timed execution, real-time management of resources, synchronized communication under various load conditions, satisfaction of QoS constraints, and dealing with the trade-offs between these aspects.

### **Topics Covered:**

- Data Management
- Execution and Resource Management
- Monitoring and Metering
- Network Management
- · Security and Trust
- Semantics

- Service Discovery and Information Services
- Service Level Agreements
- Simulation, Modelling, Planning, and Decision Support
- Workflow Management

**Market:** This premier publication is essential for all academic and research library reference collections. It is a crucial tool for academicians, researchers, and practitioners and is ideal for classroom use.

**Dimosthenis Kyriazis** received the diploma from the Dept. of Electrical and Computer Engineering of the National Technical University of Athens, Athens, Greece in 2001, the MS degree in Techno-Economic Systems (MBA) co-organized by the Electrical and Computer Engineering Dept - NTUA, Economic Sciences Dept - National Kapodistrian University of Athens, Industrial Management Dept - University of Piraeus and his Ph.D. from the Electrical and Computer Engineering Department of the National Technical University of Athens in 2007. He is currently a Research Engineer in the Telecommunication Laboratory of the Institute of Communication and Computer Systems (ICCS). Before joining the ICCS he worked in the private sector as Telecom Software Engineer. He has participated in numerous EU / National funded projects (such as IRMOS, NextGRID, Akogrimo, BEinGRID, HPC-Europa, GRIA, Memphis, CHALLENGERS, HellasGRID, etc) and currently serves as the Technical Coordinator of the IRMOS EU project. His research interests include Grid computing, scheduling, Quality of Service provision, and workflow management in heterogeneous systems and service oriented architectures.



www.igi-global.com

Publishing Academic Excellence at the Pace of Technology Since 1988

#### Section 1: Software as a Service

#### Chapter 1

Modelling and Analysing QoS for Real-Time Interactive Applications on the Cloud Addis Matthew (University of Southampton IT Innovation Centre, UK) Boniface Michael (University of Southampton IT Innovation Centre, UK) Papay Juri (University of Southampton IT Innovation Centre, UK) Servin Arturo (University of Southampton IT Innovation Centre, UK) Zlatev Zlatko (University of Southampton IT Innovation Centre, UK) Kousiouris George (National Technical University Athens)

#### Chapter 2

Model-Driven Engineering, Services and Interactive Real-Time Applications Costa Luis (SINTEF ICT, Norway) Loughran Neil (SINTEF ICT, Norway) Gronmo Roy (SINTEF ICT, Norway)

#### Chapter 3

Programming Interfaces for Realtime and Cloud-Based Computing Katsaros Gregory (National Technical University of Athens, Greece) Cucinotta Tommaso (Scuola Superiore Sant'Anna, Italy)

#### Chapter 4

Servic Quality Model Evaluation Aisopos Fotis (National Technical University of Athens, Greece) Kardara Magdalini (National Technical University of Athens, Greece) Moulos Vrettos (National Technical University of Athens, Greece) Papaoikonomou Athanasios (National Technical University of Athens, Greece) Tserpes Konstantinos (National Technical University of Athens, Greece) Varvarigou Theodora (National Technical University of Athens, Greece)

#### Section 2: Platform as a Service

#### Chapter 5

Taxonomy and State of the Art of Service Discovery Mechanisms and Their Relation to the Cloud Computing Stack

Kousiouris George (National Technical University of Athens, Greece) Kyriazis Dimosthenis P. (National Technical University of Athens, Greece) Varvarigou Theodora (National Technical University of Athens, Greece) Oliveros Eduardo (Telefónica Investigación y Desarrollo, Spain) Mandic Patrick (Rechenzentrum Universität Stuttgart, Germany)

#### Chapter 6

Monitoring and Metering in the Cloud Oliveros Eduardo (Telefónica Investigación y Desarrollo, Spain) Cucinotta Tommaso (Scuola Superiore Sant'Anna, Italy) Phillips Stephen C. (University of Southampton IT Innovation Centre, UK) Yang Xiaoyu (University of Southampton IT Innovation Centre, UK) Middleton Stuart (University of Southampton IT Innovation Centre, UK) Voith Thomas (Alcatel-Lucent, Germany)

#### Chapter 7

Workflow Management Systems in Distributed Environments Gogouvitis Spyridon V. (National Technical University of Athens, Greece) Konstanteli Kleopatra G. (National Technical University of Athens, Greece) Kyriazis Dimosthenis P. (National Technical University of Athens, Greece) Katsaros Gregory (National Technical University of Athens, Greece) Cucinotta Tommaso (Scuola Superiore Sant'Anna, Italy) Boniface Michael (University of Southampton IT Innovation Centre, UK)

#### Chapter 8

Service Level Agreements for Real-Time Service-Oriented Infrastructures Kübert Roland (University of Stuttgart, Germany) Gallizo Georgina (University of Stuttgart, Germany) Polychniatis Thodoris (National Technical University of Athens, Greece) Varvarigou Theodora (National Technical University of Athens, Greece) Oliveros Eduardo (Telefónica Investigación y Desarollo, Spain) Phillips Stephen C. (University of Southampton IT Innovation Centre, UK) Oberle Karsten (Alcatel Lucent Bell Labs, Germany)

#### Chapter 9

Secting Real-Time Interactive Applications in Federated Clouds Boniface Michael (University of Southampton IT Innovation Centre, UK) Nasser Bassem (University of Southampton IT Innovation Centre, UK) Surridge Mike (University of Southampton IT Innovation Centre, UK) Oliveros Eduardo (Telefónica Investigación y Desarollo, Spain)

#### Chapter 10

Web Service Specifications Relevant for Service Oriented Infrastructures Oliveros Eduardo (Telefónica Investigación y Desarrollo, Spain) Movilla Jesús (Telefónica Investigación y Desarrollo, Spain) Menychtas Andreas (National Technical University of Athens, Greece) Kuebert Roland (University of Stuttgart, Germany) Braitmaier Michael (University of Stuttgart, Germany) Middleton Stuart (University of Southampton IT Innovation Centre, UK) Phillips Stephen C. (University of Southampton IT Innovation Centre, UK) Boniface Michael (University of Southampton IT Innovation Centre, UK) Nasser Bassem (University of Southampton IT Innovation Centre, UK)

#### Section 3: Infrastructure as a Service

#### Chapter 11

Execution and Resource Management in QoS-Aware Virtualized Infrastructures Lamp Dominik (University of Stuttgart, Germany) Berger Sören (University of Stuttgart, Germany) Stein Manuel (Alcatel-Lucent Bell Labs, Germany) Voith Thomas (Alcatel-Lucent Bell Labs, Germany) Cucinotta Tommaso (Scuola Superiore Sant'Anna, Italy) Bertogna Marko (Scuola Superiore Sant'Anna, Italy)

#### Chapter 12

Network Management in Virtualized Infrastructures Stein Manuel (Alcatel-Lucent Bell Labs, Germany) Oberle Karsten (Alcatel-Lucent Bell Labs, Germany) Voith Thomas (Alcatel-Lucent Bell Labs, Germany) Lamp Dominik (University of Stuttgart, Germany) Berger Sören (University of Stuttgart, Germany)

#### Chapter 13

Data Storage in Cloud Based Real-Time Environments Narasimhamurthy Sai (Xyratex, UK) Muggeridge Malcolm (Xyratex, UK) Waldschmidt Stefan (Digital Film Technology, Germany) Checconi Fabio (Scuola Superiore Sant'Anna, Italy) Cucinotta Tommaso (Scuola Superiore Sant'Anna, Italy)

#### Chapter 14

Fault Detection and Recovery Mechanisms and Techniques for Service Oriented Infrastructures Menychtas Andreas (National Technical University of Athens, Greece) Konstanteli Kleopatra G. (National Technical University of Athens, Greece)

#### Chapter 15

Real-Time Attributes in Operating Systems Cucinotta Tommaso (Scuola Superiore Sant'Anna, Italy) Gogouvitis Spyridon V. (National Technical University of Athens, Greece)

# Order Your Copy Today!

Name: Organization:	Enclosed is check payable to IGI Global in US Dollars, drawn on a US-based bank
Address:	🗌 Credit Card 🔲 Mastercard 🗌 Visa 🗌 Am. Express
City, State, Zip:	3 or 4 Digit Security Code:
Country:	Name on Card:
Tel:	Account #:
Fax:	Expiration Date:
E-mail:	