

Handbook of Cloud Computing

Borko Furht · Armando Escalante
Editors

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 Springer

Editors

Borko Furht
Department of Computer and Electrical
Engineering and Computer Science
Florida Atlantic University
777 Glades Road
Boca Raton, FL 33431, USA
bfurht@fau.edu

Armando Escalante
LexisNexis
6601 Park of Commerce Boulevard
Boca Raton, FL 33487, USA
armando.escalante@lexisnexis.com

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Preface

Cloud computing has become a great solution for providing a flexible, on-demand, and dynamically scalable computing infrastructure for many applications. Cloud computing also presents a significant technology trends, and it is already obvious that it is reshaping information technology processes and the IT marketplace.

This Handbook is a carefully edited book – contributors are 65 worldwide experts in the field of cloud computing and their applications. The Handbook Advisory Board, comprised of nine researchers and practitioners from academia and industry, helped in reshaping the Handbook and selecting the right topics and creative and knowledgeable contributors. The scope of the book includes leading-edge cloud computing technologies, systems, and architectures; cloud computing services; and a variety of cloud computing applications.

The Handbook comprises four parts, which consist of 26 chapters. The first part on *Technologies and Systems* includes articles dealing with cloud computing technologies, storage and fault tolerant strategies in cloud computing, workflows, grid computing technologies, and the role of networks in cloud computing.

The second part on *Architectures* focuses on articles on several specific architectural concepts applied in cloud computing, including enterprise knowledge clouds, high-performance computing clouds, clouds with vertical load distribution, and peer-to-peer based clouds.

The third part on *Services* consists of articles on various issues relating to cloud services, including types of services, service scalability, scientific services, and dynamic collaborative services.

The forth part on *Applications* describes various cloud computing applications from enterprise knowledge clouds, scientific and statistical computing, scientific data management, to medical applications.

With the dramatic growth of cloud computing technologies, platforms and services, this Handbook can be the definitive resource for persons working in this field as researchers, scientists, programmers, engineers, and users. The book is intended for a wide variety of people including academicians, designers, developers, educators, engineers, practitioners, researchers, and graduate students. This book can also be beneficial for business managers, entrepreneurs, and investors. The book

can have a great potential to be adopted as a textbook in current and new courses on Cloud Computing.

The main features of this Handbook can be summarized as:

1. The Handbook describes and evaluates the current state-of-the-art in a new field of cloud computing.
2. It also presents current systems, services, and main players in this explosive field.
3. Contributors to the Handbook are the leading researchers from academia and practitioners from industry.

We would like to thank the authors for their contributions. Without their expertise and effort, this Handbook would never come to fruition. Springer editors and staff also deserve our sincere recognition for their support throughout the project.

Boca Raton, Florida

Borko Furht
Armando Escalante

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Contributors

Ankur Agarwal Department of Computer Science and Engineering, FAU, Boca Raton, FL, USA, ankur@cse.fau.edu

Tim Bell Department of Computer Science and Software Engineering, University of Canterbury, Christchurch, New Zealand, tim.bell@canterbury.ac.nz

Paolo Bientinesi AICES, RWTH, Aachen, Germany, pauldj@aices.rwth-aachen.de

Norman Bobroff IBM Watson Research Center, Hawthorne, NY, USA, bobroff@us.ibm.com

Juan Cáceres Telefónica Investigación y Desarrollo, Madrid, Spain, caceres@tid.es

David Chapman Computer Science and Electrical Engineering Department, University of Maryland, Baltimore County, MD, USA, dchapm2@umbc.edu

Jinjun Chen Faculty of Information and Communication Technologies, Swinburne University of Technology, Hawthorn, Melbourne, Australia 3122, jchen@swin.edu.au

Lei Chen Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, leichen@cse.ust.hk

Karim Chine Cloud Era Ltd, Cambridge, UK, karim.chine@polytechnique.org

David Cohen Cloud Infrastructure Group, EMC Corporation, Cambridge, MA, USA, david.cohen@emc.com

Vincenzo D. Cunsolo University of Messina, Contrada di Dio, S. Agata, Messina, Italy, vdconsolo@unime.it

Kemal A. Delic Hewlett-Packard Co., New York, NY, USA, kemal.delic@hp.com

Mac Devine IBM Corporation, Research Triangle Park, NC, USA, wdevine@us.ibm.com

Salvatore Distefano University of Messina, Contrada di Dio, S. Agata, Messina, Italy, sdistefano@unime.it

Patrick Dreher Renaissance Computing Institute, Chapel Hill, NC, 27517 USA, dreher@renci.org

Kathleen Ericson Department of Computer Science, Colorado State University, Fort Collins, CO, USA, ericson@cs.colostate.edu

Liana Fong IBM Watson Research Center, Hawthorne, NY, USA, llfong@us.ibm.com

Ian Foster Argonne National Laboratory, Argonne, IL, USA; The University of Chicago, Chicago, IL, USA, foster@anl.gov

Marc Eduard Frîncu Institute e-Austria, Blvd. Vasile Parvan No 4 300223, Room 045B, Timisoara, Romania, mfrincu@info.uvt.ro

Borko Furht Department of Computer & Electrical Engineering and Computer Science, Florida Atlantic University, Boca Raton, FL, USA, bfurht@fau.edu

Wei Gao Services Computing Technology and System Lab; Cluster and Grid Computing Lab, Huazhong University of Science and Technology, Wuhan, China, gaowei715@gmail.com

Giulio Giunta Department of Applied Science, University of Napoli Parthenope, Napoli, Italy, giulio.giunta@uniparthenope.it

Milt Halem Computer Science and Electrical Engineering Department, University of Maryland, Baltimore County, MD, USA, halem@umbc.edu

Mohammad Mehedi Hassan Department of Computer Engineering, Kyung Hee University, Global Campus, South Korea, hassan@khu.ac.kr

Nathan Henehan Senior Software Developer, NACS Solutions, Oberlin, OH, USA, nhenehan@gmail.com

Juan J. Hierro Telefónica Investigación y Desarrollo, Madrid, Spain, jhierro@tid.es

Dachuan Huang Services Computing Technology and System Lab; Cluster and Grid Computing Lab, Huazhong University of Science and Technology, Wuhan, China, hdc1112@gmail.com

Eui-Nam Huh Department of Computer Engineering, Kyung Hee University, Global Campus, South Korea, johnhuh@khu.ac.kr

Roman Iakymchuk AICES, RWTH, Aachen, Germany, iakymchuk@aices.rwth-aachen.de

Shadi Ibrahim Services Computing Technology and System Lab; Cluster and Grid Computing Lab, Huazhong University of Science and Technology, Wuhan, China, shadi@hust.edu.cn

Hai Jin Services Computing Technology and System Lab; Cluster and Grid Computing Lab, Huazhong University of Science and Technology, Wuhan, China, hjin@hust.edu.cn

Karuna P. Joshi Computer Science and Electrical Engineering Department, University of Maryland, Baltimore County, MD, USA, kjoshi1@umbc.edu

Burton S. Kaliski Jr. Office of the CTO, EMC Corporation, Hopkinton, MA, USA, burt.kaliski@emc.com

Hari Kalva Department of Computer Science and Engineering, FAU, Boca Raton, FL, USA, hari.kalva@fau.edu

Giuliano Laccetti Department of Mathematics and Applications, University of Napoli Federico II, Napoli, Italy, giuliano.laccetti@unina.it

Rui Li Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, csli@cse.ust.hk

Wen-Syan Li SAP Technology Lab, Shanghai, China, wen-syan.li@sap.com

Geng Lin IBM Alliance, Cisco Systems, San Francisco, CA, USA, gelin@cisco.com

Xiao Liu Faculty of Information and Communication Technologies, Swinburne University of Technology, Hawthorn, Melbourne, Australia 3122, xliu@groupwise.swin.edu.au

Yanbin Liu IBM Watson Research Center, Hawthorne, NY, USA, ygliu@us.ibm.com

Anthony M. Middleton LexisNexis Risk Solutions, Boca Raton, FL, USA, tony.middleton@lexisnexis.com

Raffaele Montella Department of Applied Science, University of Napoli Parthenope, Napoli, Italy, raffaele.montella@uniparthenope.it

Jeff Napper Vrije Universiteit, Amsterdam, Netherlands, jnapper@cs.vu.nl

Phuong Nguyen Computer Science and Electrical Engineering Department, University of Maryland, Baltimore County, MD, USA, phuong3@umbc.edu

Jeffrey M. Nick Office of the CTO, EMC Corporation, Hopkinton, MA, USA, jeff.nick@emc.com

Sangyoon Oh WISE Research Lab, School of Information and Communication Engineering, Ajou University, Suwon, South Korea, syoh@ajou.ac.kr

Shrideep Pallickara Department of Computer Science, Colorado State University, Fort Collins, CO, USA, shrideep@cs.colostate.edu

Sangmi Lee Pallickara Department of Computer Science, Colorado State University, Fort Collins, CO, USA, sangmi@cs.colostate.edu

A.S. Pandya Department of Computer Science and Engineering, FAU, Boca Raton, FL, USA, pandya@fau.edu

Manish Parashar NSF CAC, Rutgers University, Piscataway, NJ, USA, parashar@rutgers.edu

Thomas Phan Microsoft Corporation, Washington, DC, USA, thomas.phan@acm.org

Marlon Pierce Community Grids Lab, Indiana University, Bloomington, IN, USA, mpierce@cs.indiana.edu

Álvaro Polo Telefónica Investigación y Desarrollo, Madrid, Spain, apv@tid.es

Antonio Puliafito University of Messina, Contrada di Dio, S. Agata, Messina, Italy, apuliafito@unime.it

Jeff A. Riley Hewlett-Packard Co., New York, NY, USA, jeff.riley@hp.com

Ivan Rodero NSF CAC, Rutgers University, Piscataway, NJ, USA, irodero@rutgers.edu

Luis Rodero-Merino INRIA-ENS, INRIA, Lyon, France, luis.rodero-merino@ens-lyon.fr

S. Masoud Sadjadi CIS, Florida International University, Miami, FL, USA, sadjadi@cis.fiu.edu

Marco Scarpa University of Messina, Contrada di Dio, S. Agata, Messina, Italy, mscarpa@unime.it

Eric Sills North Carolina State University, Raleigh, NC 27695, USA, edsills@ncsu.edu

Mikael Fernandus Simalango WISE Research Lab, Ajou University, Suwon, South Korea, mikael@ajou.ac.kr

Vivek Somashekarappa Armellini Inc., Palm City, FL, USA, vsomashekar@gmail.com

Luis M. Vaquero Telefónica Investigación y Desarrollo, Madrid, Spain, lmvg@tid.es

David Villegas CIS, Florida International University, Miami, FL, USA, dvill013@cis.fiu.edu

Mladen A. Vouk Department of Computer Science, North Carolina State University, Box 8206, Raleigh, NC 27695, USA, vouk@ncsu.edu

Song Wu Services Computing Technology and System Lab; Cluster and Grid Computing Lab, Huazhong University of Science and Technology, Wuhan, China, wusong@mail.hust.edu.cn

Yun Yang Faculty of Information and Communication Technologies, Swinburne University of Technology, Hawthorn, Melbourne, Australia 3122,
yyang@groupwise.swin.edu.au

Yelena Yesha Computer Science and Electrical Engineering Department,
University of Maryland, Baltimore County, MD, USA, yeyesha@csee.umbc.edu

Yaacov Yesha Computer Science and Electrical Engineering Department,
University of Maryland, Baltimore County, MD, USA, yayesha@umbc.edu

Dong Yuan Faculty of Information and Communication Technologies, Swinburne University of Technology, Hawthorn, Melbourne, Australia 3122,
dyuan@groupwise.swin.edu.au

Gaofeng Zhang Faculty of Information and Communication Technologies,
Swinburne University of Technology, Hawthorn, Melbourne, Australia 3122,
gzhang@groupwise.swin.edu.au

Jinzy Zhu IBM Cloud Computing Center, China, jinzyzhu@cn.ibm.com

About the Editors



Borko Furht is a professor and chairman of the Department of Electrical & Computer Engineering and Computer Science at Florida Atlantic University (FAU) in Boca Raton, Florida. He is also Director of recently formed NSF-sponsored

Industry/University Cooperative Research Center on Advanced Knowledge Enablement. Before joining FAU, he was a vice president of research and a senior director of development at Modcomp (Ft. Lauderdale), a computer company of Daimler Benz, Germany; a professor at University of Miami in Coral Gables, Florida; and a senior researcher in the Institute Boris Kidric-Vinca, Yugoslavia. Professor Furht received a Ph.D. degree in electrical and computer engineering from the University of Belgrade. His current research is in multimedia systems, video coding and compression, 3D video and image systems, wireless multimedia, and Internet and cloud computing. He is presently Principal Investigator and Co-PI of several multiyear, multimillion-dollar projects, including NSF PIRE project and NSF High-Performance Computing Center. He is the author of numerous books and articles in the areas of multimedia, computer architecture, real-time computing, and operating systems. He is a founder and editor-in-chief of the *Journal of Multimedia Tools and Applications* (Springer). He has received several technical and publishing awards, and has consulted for many high-tech companies including IBM, Hewlett-Packard, Xerox, General Electric, JPL, NASA, Honeywell, and RCA. He has also served as a consultant to various colleges and universities. He has given many invited talks, keynote lectures, seminars, and tutorials. He served on the Board of Directors of several high-tech companies.



Armando J. Escalante is Senior Vice President and Chief Technology Officer of Risk Solutions for the LexisNexis Group, a division of Reed Elsevier. In this position, Escalante is responsible for technology development, information systems and operations. Previously, Escalante was Chief Operating Officer for Seisint, a

privately owned company, which was purchased by LexisNexis in 2004. In this position, he was responsible for Technology, Development and Operations. Prior to 2001, Escalante served as Vice President of Engineering and Operations for Diveo Broadband Networks, where he led world-class Data Centers located in the U.S. and Latin America. Before Diveo Broadband Networks, Escalante was VP for one of the fastest growing divisions of Vignette Corporation, an eBusiness software leader. Escalante earned his bachelor's degree in electronic engineering at the USB in Caracas, Venezuela and a master's degree in computer science from Stevens Institute of Technology, as well as a master's degree in business administration from West Coast University.