



CLOUD COMPUTING 2016

The Seventh International Conference on Cloud Computing, GRIDs, and
Virtualization

March 20 - 24, 2016

Rome, Italy

CLOUD COMPUTING 2016 Editors

Carlos Becker Westphall, Federal University of Santa Catarina, Brazil

Yong Woo Lee, University of Seoul, Korea

Stefan Rass, Universitaet Klagenfurt, Institute of Applied Informatics, Austria

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (4238) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (4238)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Impact of Cloud Computing on Enhancing the Use of Renewable Energy <i>Kwa-Sur Tam</i>	1
Towards Using Homomorphic Encryption for Cryptographic Access Control in Outsourced Data Processing <i>Stefan Rass and Peter Schartner</i>	7
Data Center Network Structure Using Hybrid Optoelectronic Routers <i>Yuichi Ohsita and Masayuki Murata</i>	14
The Impact of Public Cloud Price Schemes on Multi-Tenancy <i>Uwe Hohenstein and Stefan Appel</i>	22
A Novel Framework for Simulating Computing Infrastructure and Network Data Flows Targeted on Cloud Computing <i>Peter Krauss, Tobias Kurze, Achim Streit, and Bernhard Neumair</i>	30
Overcome Vendor Lock-In by Integrating Already Available Container Technologies - Towards Transferability in Cloud Computing for SMEs <i>Peter-Christian Quint and Nane Kratzke</i>	38
Cloud Data Denormalization of Anonymous Transactions <i>Aspen Olmsted and Gayathri Santhanakrishnan</i>	42
Modeling Non-Functional Requirements in Cloud Hosted Application Software Engineering <i>Santosshi Devata and Aspen Olmsted</i>	47
Enabling Resource Scheduling in Cloud Distributed Videoconferencing Systems <i>Alvaro Alonso, Pedro Rodriguez, Ignacio Aguado, and Joaquin Salvachua</i>	51
Energy Saving in Data Center Servers Using Optimal Scheduling to Ensure QoS <i>Conor McBay, Gerard Parr, and Sally McClean</i>	57
Model Driven Framework for the Configuration and the Deployment of Applications in the Cloud <i>Hiba Alili, Rim Drira, and Henda Hajjami ben ghezala</i>	61
Modeling Workflow of Tasks and Task Interaction Graphs to Schedule on the Cloud <i>Mahmoud Naghibzadeh</i>	69
Instruments for Cloud Suppliers to Accelerate their Businesses <i>Fred Kessler, Stella Gatzju Grivas, and Claudio Giovanoli</i>	76

How to Synchronize Large-Scale Ultra-Fine-Grained Processors in Optimum-Time <i>Hiroshi Umeo</i>	81
Dynamic Power Simulator Utilizing Computational Fluid Dynamics and Machine Learning for Proposing Task Allocation in a Data Center <i>Kazumasa Kitada, Yutaka Nakamura, Kazuhiro Matsuda, and Morito Matsuoka</i>	87
Analysis of Virtual Networking Options for Securing Virtual Machines <i>Ramaswamy Chandramouli</i>	95
Profiling and Predicting Task Execution Time Variation of Consolidated Virtual Machines <i>Maruf Ahmed and Albert Y. Zomaya</i>	103
Data Locality via Coordinated Caching for Distributed Processing <i>Max Fischer and Eileen Kuehn</i>	113
Enhancing Cloud Security and Privacy: The Cloud Audit Problem <i>Bob Duncan and Mark Whittington</i>	119
Enhancing Cloud Security and Privacy: The Power and the Weakness of the Audit Trail <i>Bob Duncan and Mark Whittington</i>	125
Online Traffic Classification Based on Swarm Intelligence <i>Takumi Sue, Yuichi Ohsita, and Masayuki Murata</i>	131
Comparing Replication Strategies for Financial Data on Openstack based Private Cloud <i>Deepak Bajpai and Ruppa K. Thulasiram</i>	139