2013 IEEE International Conference on Cloud Computing Technology and Science
CloudCom 2013
Table of Contents
Volume - 1

Message from the Cloud Computing Association - Volume 1 ..............................................................xiv
Message from the Program Chairs - Volume 1 .......................................................................................xv
Organization and Committees - Volume 1 ............................................................................................xvii
Program Committee - Volume 1 ..............................................................................................................xix
Sub-reviewers List - Volume 1 ................................................................................................................xxvi
Sponsors - Volume 1 .................................................................................................................................xxvii

Paper Session 1: Main + Big Data Tracks

Early Observations on Performance of Google Compute Engine for Scientific Computing
Zheng Li, Liam O’Brien, Rajiv Ranjan, and Miranda Zhang .................................................................1

Towards GPU-Accelerated Large-Scale Graph Processing in the Cloud
Jianlong Zhong and Bingsheng He ........................................................................................................9

Competitive K-Means, a New Accurate and Distributed K-Means Algorithm for Large Datasets
Rui Máximo Esteves, Thomas Hacker, and Chunming Rong .................................................................17

A Virtualization-Based Cloud Infrastructure for IMS Core Network
Feng Lu, Hao Pan, Xiao Lei, Xiaofei Liao, and Hai Jin ..........................................................................25

Paper Session 2: Architecture 1

AptStore: Dynamic Storage Management for Hadoop
K.R. Krish, Aleksandr Khaymski, Ali R. Butt, Sameer Tiwari, and Milind Bhandarkar .........................33

Identity Federation with VOMS in Cloud Infrastructures
Álvaro López García, Enol Fernández-del-Castillo, and Mattieu Puel .................................................42
ICOMF: Towards a Multi-cloud Ecosystem for Dynamic Resource Composition and Sealing .................................................................49

Ana-Maria Oprescu, Alexandru-Florian Antonescu, Yuri Demchenko, and Cees de Laat

VOLUME: Enable Large-Scale In-Memory Computation on Commodity Clusters .................................................................56

Zhiqiang Ma, Ke Hong, and Lin Gu

**Paper Session 3: Services 1**

Managing Service Performance in the Cassandra Distributed Storage System ...........................................................64

Maria Chalkiadaki and Kostas Magoutis

A Cognitive Platform for Mobile Cloud Gaming ........................................................................................................72

Wei Cai, Conghui Zhou, Victor C.M. Leung, and Min Chen

MELA: Monitoring and Analyzing Elasticity of Cloud Services .................................................................80

Daniel Moldovan, Georgiana Copil, Hong-Linh Truong, and Schahram Dustdar

Dynamic Workflow Reconfigurations for Recovering from Faulty Cloud Services ...................................................88

Luis Assuncao and Jose C. Cunha

**Paper Session 4: Virtualization**

Adding a Live Migration Model into SimGrid: One More Step Toward the Simulation of Infrastructure-as-a-Service Concerns .................................................................96

Takahiro Hirofuchi, Adrien Lèbre, and Laurent Pouilloux

Optimizing Live Migration for Virtual Desktop Clouds ................................................................................................104

Changyeon Jo and Bernhard Egger

An Analysis of Performance Interference Effects on Energy-Efficiency of Virtualized Cloud Environments .................................................................112

Renyu Yang, Ismael Solis Moreno, Jie Xu, and Tianyu Wo

Synchronized Co-migration of Virtual Machines for IDS Offloading in Clouds ...................................................120

Kenichi Kourai and Hisato Utsunomiya

**Short Paper Session A: Architecture**

A Resource Allocation Algorithm of Multi-cloud Resources Based on Markov Decision Process .................................................................130

G. Oddi, M. Panfili, A. Pietrabissa, L. Zuccaro, and V. Suraci

Towards the Automated Fast Deployment and Clone of Private Cloud Service: The Ezilla Toolkit .................................................................136

Hui-Shan Chen, Chang-Hsing Wu, Yi-Lun Pan, Hsi-En Yu, Chi-Ming Chen, and Kuo-Yang Cheng

Implementing a Resilient Application Architecture for State Management on a PaaS Cloud .................................................................142

Vibhu Saujanya Sharma and Aravindan Santharam
Detecting Performance Antipatterns before Migrating to the Cloud ................................................................. 148
Vibhu Saujanya Sharma and Samit Anwer

Short Paper Session B: Big Data

Map-Reduce for Calibrating Massive Bus Trajectory Data ................................................................. 152
Dapeng Li, Xiaohua Zhou, Qi Wang, and Mengdan Gao

Modeling the Performance of MapReduce under Resource Contentions and Task Failures ......................................................... 158
Xiaolong Cui, Xuelian Lin, Chunming Hu, Richong Zhang, and Chengzhang Wang

Quality-of-Data for Consistency Levels in Geo-replicated Cloud Data Stores ........................................ 164
Álvaro García-Recuero, Sérgio Esteves, and Luís Veiga

Short Paper Session C: Security and Privacy

A New Security and Privacy Framework for RFID in Cloud Computing ...................................................... 171
Süleyman Kardas, Serkan Çelik, Muhammed Ali Bingöl, and Albert Levi

Privacy Risk, Security, Accountability in the Cloud ..................................................................................... 177
Marianthi Theoharidou, Nick Papanikolaou, Siani Pearson, and Dimitris Gritzalis

Supporting Cloud Accountability by Collecting Evidence Using Audit Agents ........................................ 185
Thomas Ruebsamen and Christoph Reich

Short Paper Session D: Services

An SLA-Based Approach to Manage Sensor Networks as-a-Service .......................................................... 191
Valentina Casola, Alessandra de Benedictis, Massimiliano Rak, Giuseppe Aversano, and Umberto Villano

Dynamic Exception Handling for Partitioned Workflow on Federated Clouds ........................................... 198
Zhenyu Wen and Paul Watson

Short Paper Session E: Virtualization

Flow-and-VM Migration for Optimizing Throughput and Energy in SDN-Based Cloud Datacenter ................................................................. 206
Wei-Chu Lin, Chien-Hui Liao, Kuan-Tsen Kuo, and Charles H.P. Wen

Time-Aware VM-Placement and Routing with Bandwidth Guarantees in Green Cloud Data Centers ................................................................. 212
Aissan Dalvandi, Mohan Gurusamy, and Kee Chaing Chua

Maximizing Hypervisor Scalability Using Minimal Virtual Machines ...................................................... 218
Alfred Bratterud and Hårek Haugerud
Paper Session: Architecture 2

Automatic Parameter Configuration for Cloud Infrastructures by Design Pattern Extraction ................................................................. 224
   Tetsuya Uchiumi, Shinya Kitajima, Shinji Kikuchi, and Yasuhide Matsumoto

Appliance Management for Federated Cloud Environments .......................................................... 232
   Mohammed Airaj, Christophe Blanchet, Stuart Kenny, and Charles Loomis

Paper Session 5: Big Data 2

Cluster-Size Scaling and MapReduce Execution Times ............................................................................. 240
   Fan Zhang and Majd Sakr

Block Sampling: Efficient Accurate Online Aggregation in MapReduce ....................................................... 250
   Vasiliki Kalavri, Vaidas Brundza, and Vladimir Vlassov

Real-Time Handling of Network Monitoring Data Using a Data-Intensive Framework ............................ 258
   Aryan Taherimonfared, Tomasz Wiktor Wlodarczyk, and Chunming Rong

Improving the Shuffle of Hadoop MapReduce .................................................................................. 266
   Jingui Li, Xuelian Lin, Xiaolong Cui, and Yue Ye

Paper Session 6: Architecture 3

Flexible SLAs in the Cloud with a Partial Utility-Driven Scheduling Architecture ......................................... 274
   José Simão and Luís Veiga

Dynamic Optimization of SLA-Based Services Scaling Rules ........................................................................ 282
   Alexandru-Florian Antonescu, Ana-Maria Oprescu, Yuri Demchenko, Cees de Laat, and Torsten Braun

C2MS: Dynamic Monitoring and Management of Cloud Infrastructures ..................................................... 290
   Gary A. McGilvary, Jösep Rius, Íñigo Goiri, Francesc Solsona, Adam Barker, and Malcolm Atkinson

Virtual Machine Placement Optimization Supporting Performance SLAs ............................................... 298
   Ankit Anand, J. Lakshmi, and S.K. Nandy

Paper Session 7: HPC and IoT 1

   Abhishek Gupta, Laxmikant V. Kale, Filippo Gioachin, Verdi March, Chun Hui Suen, Bu-Sung Lee, Paolo Faraboschi, Richard Kaufmann, and Dejan Milojicic

Budget-Constrained Resource Provisioning for Scientific Applications in Clouds .................................. 315
   Hamid Mohammadi Fard, Thomas Fahringer, and Radu Prodan

MapReduce Processing on IoT Clouds ................................................................................................... 323
   Ichiro Satoh
Towards Computational Offloading in Mobile Device Clouds .................................................. 331

Abderrahmen Mitbaa, Khaled A. Harras, and Afnan Fahim

Paper Session 8: Security 1

A Secure Conjunctive Keywords Search over Encrypted Cloud Data Against
Inclusion-Relation Attack ........................................................................................................... 339

Ke Cai, Cheng Hong, Min Zhang, Dengguo Feng, and Zhiquan Lv

Monitoring Personal Data Transfers in the Cloud .................................................................. 347

Anderson Santana de Oliveira, Jakub Sendor, Alexander Garaga, and Kateline Jenatton

A Metamodel for Measuring Accountability Attributes in the Cloud ...................................... 355

David Nuñez, Carmen Fernandez-Gago, Siani Pearson, and Massimo Felici

ClouDedup: Secure Deduplication with Encrypted Data for Cloud Storage ............................. 363

Pasquale Puzio, Refik Molva, Melek Önen, and Sergio Loureiro

Paper Session 9: Security 2

A Framework for Realizing Security on Demand in Cloud Computing .................................... 371

Pramod Jamkhedkar, Jakub Szefer, Diego Perez-Botero, Tianwei Zhang, Gina Triolo, 
and Ruby B. Lee

Mutant Apples: A Critical Examination of Cloud SLA Availability Definitions .......................... 379

Giles Hogben and Alain Pannetrat

Anomaly Detection in IaaS Clouds .............................................................................................. 387

Frank Doelitzscher, Martin Knahl, Christoph Reich, and Nathan Clarke

When Dynamic VM Migration Falls under the Control of VM Users ........................................ 395

Kahina Lazri, Sylvie Laniepce, and Jalel Ben-Othman

Paper Session 10: Services 2

Merkat: A Market-Based SLO-Driven Cloud Platform ............................................................... 403

Stefania Costache, Nikos Parlavantzas, Christine Morin, and Samuel Kortas

Innesto: A Searchable Key/Value Store for Highly Dimensional Data ...................................... 411

Mahdi Tayarani Najaran and Norman C. Hutchinson

Cloud Support for Latency-Sensitive Telephony Applications .................................................. 421

Jong Yul Kim and Henning Schulrinne

Short Paper Session I: Services and Applications

Risk-Driven Proactive Fault-Tolerant Operation of IaaS Providers ........................................... 427

Jordi Guı̈art, Mario Macias, Karim Djemame, Tom Kirkham, Ming Jiang, 
and Django Armstrong

Cooperative Scheduling Anti-load Balancing Algorithm for Cloud: CSAAC ............................. 433

Cheikhou Thiam, Georges Da Costa, and Jean-Marc Pierson
Vehicle Witnesses as a Service: Leveraging Vehicles as Witnesses on the Road in VANET Clouds .........................................................................................................................439

Rasheed Hussain, Fizza Abbas, Jhunggab Son, Donghyun Kim, Sangjin Kim, and Heekuck Oh

Short Paper Session K: Virtualization and Architecture

Resource-Aware Scaling of Multi-threaded Java Applications in Multi-tenancy Scenarios .........................................................................................................................................445

José Simão, Navaneeth Rameshan, and Luís Veiga

A Comparative Look at Adaptive Memory Management in Virtual Machines ..........................................................................................................................452

José Simão, Jeremy Singer, and Luís Veiga

An Architectural Model for Deploying Critical Infrastructure Services in the Cloud ........................................................................................................458

Marcus Schöller, Roland Bless, Frank Pallas, Jens Horneber, and Paul Smith

Short Paper Session M: Architecture

Automatic Fault Diagnosis in Cloud Infrastructure ........................................................................................................................................................................467

Qian Zhu, Teresa Tung, and Qing Xie

Towards Performance Prediction for Public Infrastructure Clouds: An EC2 Case Study ........................................................................................................475

John O’Loughlin and Lee Gillam

A Self-Organizing Architecture for Cloud by Means of Infrastructure Performance and Event Data ..................................................................................................481

Martin Serrano, Manfred Hauswirth, Nikos Kefalakis, and John Soldatos

Short Paper Session N: Security and Privacy Applications

E-Id Authentication and Uniform Access to Cloud Storage Service Providers ................................................................................................................487

João Gouveia, Paul Andrew Crocker, Simão Melo de Sousa, and Ricardo Azevedo

Key Update Mechanism for Network Storage of Encrypted Data ........................................................................................................................................493

Dai Watanabe and Masayuki Yoshino

Cloud Computing for Brain Segmentation Technology ........................................................................................................................................499

Victor Chang

Short Paper Session G: High-Performance Computing and IoT

Porting Grid Applications to the Cloud with Schlouder ..................................................................................................................................................505

Etienne Michon, Julien Gossa, Stéphane Genaud, Marc Frincu, and Alexandre Burel

Enabling Virtual, Cloud-Based Sensors in Assisted Living Environments ..................................................................................................................513

Martin Franke, André Wuttig, and Thomas Schlegel
Short Paper Session H: Security and Privacy

Adapting Workflows Using Generic Schemas: Application to the Security of Business Processes .......................................................................................................................................................................................... 519

Ronan-Alexandre Cherrueau, Mario Südholt, and Omar Chebaro

On the Security of Tenant Transactions in the Cloud .................................................................................................................................................................................................................................................. 525

Vijay Varadharajan and Udaya Tupakula

Secure Cloud-Based Volume Ray-Casting .................................................................................................................................................................................................................................................. 531

Manoranjan Mohanty, Wei Tsang Ooi, and Pradeep K. Atrey

Paper Session: Architecture 4

Monitoring and Reconfiguration for OCCI Resources .................................................................................................................................................................................................................................................. 539

Mohamed Mohamed, Djamel Belaid, and Samir Tata

An Architecture for Evaluating Distributed Application Deployments in Multi-clouds .................................................................................................................................................................................................................................................. 547

Antonis Papaioannou and Kostas Magouatis

Paper Session 12: Services 3

A Framework for Self-Healing and Self-Adaptation of Cloud-Hosted Web-Based Applications .................................................................................................................................................................................................................................................. 555

João Paulo Magalhães and Luís Moura Silva

Cross-Border Risk Factors of Cloud Services: Risk Assessment of IS Outsourcing to Foreign Cloud Service Providers .................................................................................................................................................................................................................................................. 565

Patrick Lübbecke, Tobias Anton, and Richard Lackes

Time-Based Evaluation of Service-Based Business Process Elasticity in the Cloud .................................................................................................................................................................................................................................................. 573

Mourad Amziani, Kais Klai, Tarek Melliti, and Samir Tata

Brokering Algorithms for Optimizing the Availability and Cost of Cloud Storage Services .................................................................................................................................................................................................................................................. 581

Yaser Mansouri, Adel Nadjarian Toosi, and Rajkumar Buyya

Paper Session 13: Virtualization, HPC, and IoT

A Holistic Model for Resource Representation in Virtualized Cloud Computing Data Centers .................................................................................................................................................................................................................................................. 590

Mateusz Guzek, Dzmitry Kliazovich, and Pascal Bouvry

Prevent VM Migration in Virtualized Clusters via Deadline Driven Placement Policy .................................................................................................................................................................................................................................................. 599

Ming-Han Tsai, Jerry Chou, and Jye Chen

Providing Desirable Data to Users When Integrating Wireless Sensor Networks with Mobile Cloud .................................................................................................................................................................................................................................................. 607

Chunsheng Zhu, Victor C.M. Leung, Hai Wang, Wei Chen, and Xiulong Liu
Paper Session 14: Architecture, Big Data, Services, and Applications

Software Defined Networking across Distributed Datacenters over Cloud ...............................................................615
   Mon-Yen Luo and Jun-Yi Chen

Improving MapReduce Performance by Streaming Input Data from Multiple Replicas ...........................................623
   Jiadong Wu and Bo Hong

Map-Side Merge Joins for Scalable SPARQL BGP Processing ............................................................................631
   Martin Przyjaciel-Zablocki, Alexander Schaeztle, Eduard Skaley, Thomas Hornung, and Georg Lausen

Decision Support for the Migration of the Application Database Layer to the Cloud ..............................................639
   Steve Strauch, Vasilios Andrikopoulos, Thomas Bachmann, Dimka Karastoyanova, Stephan Passow, and Karolina Vukojevic-Haupt

Paper Session 15: Services and Applications, Security and Privacy 2

Location, Location, Location: Data-Intensive Distributed Computing in the Cloud .................................................647
   Michael Luckeneder and Adam Barker

A Study of Competitive Cloud Resource Pricing under a Smart Grid Environment ...........................................655
   Xin Jin, Yu-Kwong Kwok, and Yong Yan

A Privacy-Preserving Fuzzy Keyword Search Scheme over Encrypted Cloud Data ..............................................663
   Dongsheng Wang, Shaojing Fu, and Ming Xu

Symmetrically-Private Database Search in Cloud Computing ...............................................................................671
   Samira Barouti, Dima Alhadidi, and Mourad Debbabi

Background Knowledge-Resistant Traffic Padding for Preserving User Privacy in Web-Based Applications .................679
   Wen Ming Liu, Lingyu Wang, Kui Ren, and Mourad Debbabi

PhD Consortium Part 1

Runtime Infrastructure Optimisation in Cloud IaaS Structures ...........................................................................687
   Kleopatra Chatziprimou, Kevin Lano, and Steffen Zschaler

Performance of Private Clouds in Health Care Organizations ..............................................................................693
   Richard Rauscher and Raj Acharya

A Distributed Snapshot Framework for Digital Forensics Evidence Extraction and Event Reconstruction from Cloud Environment ...................................................................................699
   Sameera Almulla, Youssef Iraqi, and Andrew Jones
PhD Consortium Part 2

Safer@Home Analytics: A Big Data Analytical Solution for Smart Homes ................................................................. 705
   Antorweep Chakravorty, Tomasz Wlodarczyk, and Chunming Rong

Towards a Model-Driven Solution to the Vendor Lock-In Problem in Cloud Computing ......................................................... 711
   Gabriel Costa Silva, Louis M. Rose, and Radu Calinescu

Access Control Enforcement on Query-Aware Encrypted Cloud Databases ........................................................................... 717
   Luca Ferretti, Michele Colajanni, and Mirco Marchetti

Access Control and Security Properties Requirements Specification for Clouds’ SecLAs ............................................................................. 723
   Asma Guesmi and Patrice Clemente

Author Index - Volume 1 .................................................................................................................................................. 730
2013 IEEE International Conference on Cloud Computing Technology and Science

CloudCom 2013

Table of Contents

Volume - 2

Message from the Cloud Computing Association - Volume 2 ................................................................. xi
Message from the Workshop Co-chairs - Volume 2 .................................................................................. xii
Organization and Committees - Volume 2 .................................................................................................. xiii
Workshop Organizing Committee - Volume 2 ............................................................................................ xv
Program Committee - Volume 2 .................................................................................................................. xvi
Sub-reviewers List - Volume 2 ...................................................................................................................... xxiii
Sponsors - Volume 2 ......................................................................................................................................... xxiv

RECC 2013 Workshop Session 1

Security as a Service Using an SLA-Based Approach via SPECS ................................................................. 1

Massimiliano Rak, Neeraj Suri, Jesus Luna, Dana Petcu, Valentina Casola, and Umberto Villano

Richer Requirements for Better Clouds ........................................................................................................... 7

Tom Kirkham, Brian Matthews, Keith Jeffery, Karim Djemame, and Django Armstrong

Cloud Computing for Research Collaborations (CRC) and CBA

Parallel Hierarchical Affinity Propagation with MapReduce ........................................................................... 13

Dillon Mark Rose, Jean Michel Rouly, Rana Haber, Nenad Mijatovic, and Adrian M. Peter

Introducing PRECIP: An API for Managing Repeatable Experiments in the Cloud ........................................ 19

Sepideh Azarnoosh, Mats Rynge, Gideon Juve, Ewa Deelman, Michal Nieć, Maciej Malawski, and Rafael Ferreira da Silva

Using Iterative MapReduce for Parallel Virtual Screening ............................................................................. 27

Laeeq Ahmed, Ake Edlund, Erwin Laure, and Ola Sjöuth
ESC Session 1
How to Govern the Cloud? Characterizing the Optimal Enforcement Institution that Supports Accountability in Cloud Computing ................................................................. 33
  Jens Prüfer
Defining “The Weakest Link” Comparative Security in Complex Systems of Systems .................................................. 39
  Wolter Pieters

UNICO Session 1
The IEEE Intercloud Testbed—Creating the Global Cloud of Clouds ................................................................. 45
  David Bernstein and Yuri Demchenko
OpenStack Federation in Experimentation Multi-cloud Testbeds ........................................................................ 51
  Juan Angel Lorenzo del Castillo, Kate Malichan, and Yahya Al-Hazmi
Scaling a Plagiarism Search Service on the BonFIRE Testbed ........................................................................ 57
  András Micsik, Péter Pallinger, and Dávid Siklósi

NetCloud 2013 Session 1
Towards an Operating System for Intercloud ........................................................................................................ 63
  Rudolf Strijkers, Reginald Cushing, Marc X. Makkes, Pieter Meulenhoff,
  Adam Belloum, Cees de Laat, and Robert Meijer
Network Virtualization Platform for Hybrid Cloud ................................................................................................ 69
  Dharmesh Kakadia and Vasudeva Varma
OpenNaaS Based Management Solution for Inter-data Centers Connectivity .......................................................... 75
  José Ignacio Aznar, Manel Jara, Adrián Roselló, Dave Wilson, and Sergi Figuerola
Open Cloud eXchange (OCX): Architecture and Functional Components .............................................................. 81
  Yuri Demchenko, Jeroen van der Ham, Canh Ngo, Taras Matselyukh, Sonja Filiposka,
  Cees de Laat, and Eduard Escalona

Cloud-BIM Services for the Built Environment Session 1
Built Heritage Digitization: Opportunities Afforded by Emerging Cloud Based Applications .................................................. 88
  Jonathan Scott, Richard Laing, and Graeme Hogg
Cloud and Computer Mediated Collaboration in the Early Architectural Design Stages:
A Study of Early Design Stage Collaboration Related to BIM and the Cloud .................................................. 94
  Marianthi Leon and Richard Laing
RECC 2013 Workshop Session 2

Towards Efficient Software Deployment in the Cloud Using Requirements Decomposition ................................................................. 100  
  Abdulaziz Alkhalid, Chung-Horng Lung, and Samuel Ajila

Towards A Generic Requirements Model for Hybrid and Cloud-based e-Learning Systems ........................................................................ 106  
  Rawad Hammad, Mohammed Odeh, and Zaheer Khan

New Instructional Models for Building Effective Curricula on Cloud Computing Technologies and Engineering ............................................ 112  
  Yuri Demchenko, David Bernstein, Adam Belloum, Ana Oprescu, Tomasz W. Wlodarczyk, and Cees de Laat

Developing a Conceptual Framework for Cloud Security Assurance ........................................................................................................ 120  
  Bob Duncan, David J. Pym, and Mark Whittington

Community Cloud: Concept, Model, Attacks and Solution .................................................................................................................... 126  
  Hasen Nicanfar, Qiang Liu, Peyman Talebifard, Wei Cai, and Victor C.M. Leung

ESC Session 2: Economics

Return on Security Investment for Cloud Platforms ............................................................................................................................. 132  
  Nikolaos Tsalis, Marianthi Theoharidou, and Dimitris Gritzalis

An Exact Placement Approach for Optimizing Cost and Recovery Time under Faulty Multi-cloud Environments ........................................ 138  
  Felipe Díaz-Sánchez, Sawsan Al Zahr, and Maurice Gagnaire

Services2Cloud: A Framework for Revenue Analysis of Software-as-a-Service Provisioning ........................................................................ 144  
  Kenneth Johnson, Yuanzhi Wang, Radu Calinescu, Ian Sommerville, Gordon Baxter, and John V. Tucker

UNICO Session 2: Experimentation on Cloud Testbeds

A Feasibility Study of Host-Level Contention Detection by Guest Virtual Machines .................................................................................. 152  
  Giuliano Casale, Carmelo Ragusa, and Panos Parpas

Using the EXECO Toolkit to Perform Automatic and Reproducible Cloud Experiments ............................................................................ 158  
  Matthieu Imbert, Laurent Pouilloux, Jonathan Rouzaud-Cornabas, Adrien Lèbre, and Takahiro Hirofuchi

Planning Configuration Relocation on the BonFIRE Infrastructure .............................................................................................................. 164  
  Herry Herry and Paul Anderson
Affordable and Energy-Efficient Cloud Computing Clusters: The Bolzano Raspberry Pi Cloud Cluster Experiment .......................................................... 170

Pekka Abrahamsson, Sven Helmer, Nattakarn Phaphoom, Lorenzo Nicolodi,
Nick Preda, Lorenzo Miori, Matteo Angriman, Juha Rikkilä, Xiaofeng Wang,
Karim Hamily, and Sara Bugoloni

NetCloud 2013 Session 2
Non-tunneling Edge-Overlay Model Using OpenFlow for Cloud Datacenter Networks ............................................. 176

Ryota Kawashima and Hiroshi Matsuo
Semantic and Agnostic Representation of Cloud Patterns for Cloud Interoperability and Portability ......................................................... 182

Beniamino Di Martino, Giuseppina Cretella, and Antonio Esposito
Inter-cloud Networking Gateway Architecture .......................................................... 188

Marouen Mechtri, Djamal Zeghlache, Elyès Zekri, and Iain James Marshall
Back-Track Routing for Fat-Tree Based Data Center Networks .......................................................... 195

Jijun Cao, Kefei Wang, and Xin Wang
The Trusted Cloud Transfer Protocol .................................................................................. 203

Mathias Slawik

Cloud-BIM Services for the Built Environment Session 2
Challenges to BIM-Cloud Integration: Implication of Security Issues on Secure Collaboration .......................................................... 209

Abdul-Majeed Mahamadu, Lamine Mahdjoubi, and Colin Booth
Construction Health and Safety, BIM and Cloud Technology: Proper Integration Can Drive Benefits for All Stakeholders ........................................................................ 215

Liz Bennett and Lamine Mahdjoubi

Poster Papers
Access Control Enforcement on Query-Aware Encrypted Cloud Databases .......................................................... 219

Luca Ferretti, Michele Colajanni, and Mirco Marchetti

Kenn Slagter, Ching-Hsien Hsu, and Yeh-Ching Chung
Signing Cloud: Towards Qualified Electronic Signature Service in Cloud .......................................................... 224

Wojciech Kinastowski
Deployment Strategies for Distributed Applications on Cloud Computing Infrastructures .......................................................... 228

Jan Sipke van der Veen, Elena Lazovik, Marc X. Makkes, and Robert J. Meijer
### Using Clouds for Smart City Applications

*Albino Altomare, Eugenio Cesario, Carmela Comito, Fabrizio Marozzo, and Domenico Talia*

---

### Multi-layered Architecture for the Management of Virtualized Application Environments within Inter-cloud Platforms

*Omar Abdul-Rahman and Kento Aida*

---

### Pricing Intelligence as a Service for Cloud Computing

*Richard Greenwell, Xiaodong Liu, and Kevin Chalmers*

---

### Cost-Aware Client-Side File Caching for Data-Intensive Applications

*Yaning Huang, Hai Jin, Xuanhua Shi, Song Wu, and Yong Chen*

---

### On-Demand Automated Fast Deployment and Coordinated Cloud Services

*Hsi-En Yu, Yi-Lun Pan, Chang-Hsing Wu, Hui-Shan Chen, Chi-Ming Chen, and Kuo-Yang Cheng*

---

### Impact of CPU Utilization Thresholds and Scaling Size on Autoscaling Cloud Resources

*F. Al-Haidari, M. Sqalli, and K. Salah*

---

### Towards Achieving Anonymity in LBS: A Cloud Based Untrusted Middleware

*Fizza Abbas, Rasheed Hussain, Junggab Son, Hasoo Eun, and Heekuck Oh*

---

### Towards Data Handling Requirements-Aware Cloud Computing

*Martin Henze, Marcel Großfengels, Maik Koprowski, and Klaus Wehrle*

---

### A Dynamic Complex Event Processing Architecture for Cloud Monitoring and Analysis

*Afef Mdhaffar, Riadh Ben Halima, Mohamed Jmaiel, and Bernd Freisleben*

---

### Privacy Control in Cloud VM File Systems

*Stéphane Betgé-Brezetz, Guy-Bertrand Kamga, Marie-Pascale Dupont, and Aoues Guesmi*

---

### Cloud Resource Monitoring for Intrusion Detection

*Sijin He, Moustafa Ghanem, Li Guo, and Yike Guo*

---

### Compliance-Preserving Cloud Storage Federation Based on Data-Driven Usage Control

*Tobias Wüchner, Steffen Müller, and Robin Fischer*

---

### How Advanced Cloud Services Can Improve Gaming Performance

*Artur Carvalho Zucchi, Nelson Mimura Gonzalez, Marcelo Risse de Andrade, Rosangela de Fátima Pereira, Walter Akio Goya, Karen Langona, Tereza Cristina Melo de Brito Carvalho, and Jan-Erik Mångs*

---

### Adaptive Live VM Migration in Share-Nothing IaaS-Clouds with LiveFS

*Nick R. Katsipoulakis, Konstantinos Tsakalozos, and Alex Delis*

---

### Intelligent MapReduce Based Framework for Labeling Instances in Evolving Data Stream

*Ahsanul Haque, Brandon Parker, Latifur Khan, and Bhavani Thuraisingham*
Extensible Video Processing Framework in Apache Hadoop

Chungmo Ryu, Daecheol Lee, Minwook Jang, Cheolgi Kim, and Euiseong Seo

Materialized View as a Service for Large-Scale House Log in Smart City

Shintaro Yamamoto, Shinsuke Matsumoto, Sachio Saiki, and Masahide Nakamura

Smart Home: Integrating Internet of Things with Web Services and Cloud Computing

Moataz Soliman, Tobi Abiodun, Tarek Hamouda, Jiehan Zhou, and Chung-Horng Lung

BonFIRE: The Clouds and Services Testbed

Konstantinos Kavoussanakis, Alastair Hume, Josep Martrat, Carmelo Ragusa,
Michael Gienger, Konrad Campowsky, Gregory Van Segbroeck,
Constantino Vázquez, Celia Velayos, Frédéric Gittler, Philip Inglesant,
Giuseppe Carella, Vegard Engen, Michal Giertych, Giada Landi, and David Margery

Accountability for Data Governance in Cloud Ecosystems

Massimo Felici, Theofrastos Koulouris, and Siani Pearson

The Hydra: A Layered, Redundant Configuration Management Approach for Cloud-Agnostic Disaster Recovery

Ke Huang and Kyrre Begnum

Content Espresso: A System for Large File Sharing Using Globally Dispersed Storage

Daisuke Ando, Masahiko Kitamura, Fumio Teraoka, and Kunitake Kaneko

Varanus: In Situ Monitoring for Large Scale Cloud Systems

Jonathan Stuart Ward and Adam Barker

An Approach for Dynamic Scaling of Resources in Enterprise Cloud

Kartheek Kanagala and K. Chandra Sekaran

Orchestration of Distributed Storage Targets through Storage Flows

Josef Spillner and Alexander Schill

Competitive Cloud Resource Procurements via Cloud Brokerage

Xin Jin, Yu-Kwong Kwok, and Yong Yan

A Systematic Review of Cloud Lock-In Solutions

Gabriel Costa Silva, Louis M. Rose, and Radu Calinescu

Author Index - Volume 2