

 Open access • Book • DOI:10.1007/978-3-319-24072-5

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Wolf Zimmermann, Massimo Villari, Kung-Kiu Lau




**Institutions:** Martin Luther University of Halle-Wittenberg

**Published on:** 01 Jan 2012 - European Conference on Service-Oriented and Cloud Computing

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# Service Oriented and Cloud Computing

4th European Conference, ESOCC 2015  
Taormina, Italy, September 15–17, 2015  
Proceedings

*Editors*

Schahram Dustdar  
Distributed Systems Group  
TU Wien  
Austria

Frank Leymann  
Institute of Architecture of Application  
Systems  
University of Stuttgart  
Baden-Württemberg  
Germany

Massimo Villari  
Faculty of Engineering  
University of Messina  
Messina  
Italy

ISSN 0302-9743                      ISSN 1611-3349 (electronic)  
Lecture Notes in Computer Science  
ISBN 978-3-319-24071-8              ISBN 978-3-319-24072-5 (eBook)  
DOI 10.1007/978-3-319-24072-5

Library of Congress Control Number: 2015948156

LNCS Sublibrary: SL2 - Programming and Software Engineering

Springer Cham Heidelberg New York Dordrecht London  
© IFIP International Federation for Information Processing 2015

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# Preface

Service-oriented computing – together with web services as its major implementation platform – has become the most important paradigm for distributed software development and application for a number of years now. The former ECOWS (European Conference on Web Services) conference series addressed key issues of service-oriented computing, in particular web services, in nine successful conferences until 2011. In the meantime, as services are increasingly used remotely, i.e., in the “cloud”, the focus of the conference series has shifted slightly. Accordingly, ECOWS was re-launched in 2012 as the “European Conference on Service-Oriented and Cloud Computing” (ESOCC) in Bertinoro, Italy, addressing the state of the art and practice of service-oriented computing and cloud computing. The second European Conference on Service-Oriented and Cloud Computing, ESOCC 2013, was held in Málaga, Spain, in September 2013. Following the third conference of the series in Manchester, UK, on September 2–4, 2014, this fourth iteration took place in Taormina (Messina), Italy, on September 15–17, 2015.

This volume contains the technical papers presented at the conference. The conference consisted of multiple tracks: Research Track, Industrial Track, and Work-in-Progress (WIP) Track. There were a total of 48 submissions from which 13 papers were selected for the research track (yielding an acceptance rate of 27 %), together with 2 short papers for the WIP track, and 3 papers accepted for the industrial track. The review and selection process was performed rigorously, with each paper being reviewed by at least three PC members (sometimes with the help of additional reviewers).

There were 2 excellent invited talks at the conference, given by Marco Aiello (Professor of Distributed Systems at the University of Groningen) and Eliot Salant (Manager, Virtualization and Systems Management at IBM Haifa Research).

Six workshops were co-located with the conference: the 3rd International Workshop on CLOUD for IoT (CLIoT 2015), the 5th International Workshop on Adaptive Services for the Future Internet (WAS4FI 2015), the 2nd Workshop on Seamless Adaptive Multi-cloud Management of Service-based Applications (SeaClouds), the 1st International Workshop on Cloud Adoption and Migration (CloudWay 2015), the 1st Workshop on Federated Cloud Networking (FedCloudNet), and the 1st International Workshop on Digital Enterprise Architecture and Engineering (IDEA). A PhD symposium was held on the same day as the workshops.

All in all, ESOCC 2015 was a successful conference, and we owe its success to many people: all the authors who submitted papers, and those who presented papers at the conference; all the PC members who took part in the review and selection process, as well as the additional reviewers they called on for help; all the invited speakers; the members of the Organizing Committee who chaired the industrial track, work-in-progress track, EU-projects track, workshops, and the PhD symposium, as well as the

people who helped organize these events. Last but not least, we are grateful to the Local Organizing Committee for their efficient organization and warm hospitality. To all of you: we say a heart-felt ‘Thank you’!

July 2015

Schahram Dustdar  
Frank Leymann  
Massimo Villari

# Organization

ESOCC 2015 was organized by the MDSLlab of the University of Messina.

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## **Abstracts of Invited Talks**

# Coordinating the Internet of Things by Service Composition

Marco Aiello

**Abstract.** Since its emergence, one of the most advertised opportunities offered by service oriented computing has been the possibility of composing loosely coupled services on a per need basis. Services, like Lego pieces, act as modular building blocks which are assembled when a given articulated user request comes and are ready to be reused for other requests. Over the years, the promise has been of reducing recoding and refactoring efforts while achieving scalability, run-time adaptability, and infinite reuse. After reviewing 12 years of personal experiences and research in dynamic service composition, going from initial work on composing trips based on a number of independent travel service operations to the more recent research in home and building automation where services often represent interconnected things in a defined physical space, I will introduce our current efforts in building dynamic service composition frameworks. In particular, I will present the RuG-planner which is able to defer composition decisions to run-time and to seamlessly make revisions in response to a constantly evolving execution environments.

# Challenges in Developing an Efficient Cloud Management Framework

Eliot Salant

**Abstract.** Cloud Computing has developed rapidly over the last ten years with world-wide spending on public and private cloud hosting passing the \$32bn. mark this year, and savings to businesses using the cloud are typically stated as better than 30 % due to the clouds ability to better take advantage of economies of scale. Yet, in actuality, in commercial data centres the utilization of resources still remain low. In this talk we will introduce the challenges in managing both the cloud infrastructure and the application more effectively to obtain better utilization of cloud ecosystem, including the challenges involved in multi-tenancy issues in placement of an application, sizing an application, adaptation of the infrastructure to improve workload performance and monitoring analytics of the ecosystem.

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