Welcome to the Workshop on Cloud Services, Federation, and the 8th Open Cirrus Summit held in conjunction with the International Conference on Autonomic Computing 2012 in San Jose, on 21 September 2012.

This workshop brings together researchers and practitioners to discuss the newest ideas and challenges in cloud services and federated cloud computing. The workshop consists of the presentation of peer reviewed papers to the workshop participants and the active discussion of topics related to the topic. Furthermore, we have planned a panel discussion.

The services offered by clouds are becoming critical for a wide variety of applications used by industry, education and government. There are now many examples of successful cloud services offered by public, private and community clouds. Many efforts exist that are creating cloud toolkits and frameworks to simplify the development and delivery of cloud services. The main purpose of this workshop is to bring together those responsible for designing, managing, and operating clouds services so that they can share experiences with each other. The workshop also welcomes users with requirements for new cloud services.

We are particularly interested in cloud services that can be used for federating clouds. Topics of interest include: Experiences, best practices, and lessons learned from operating cloud services; Testbeds for designing new cloud services; Cloud services for federating clouds; Management and provisioning of cloud services; Health and status monitoring of cloud services; Security of cloud services; Requirements for new cloud services; Reliability and fault tolerance of cloud services; Cloud services that span public and private clouds including the design of cloud services, Intercloud services, Federation services, Identity services Cloud bursting services, Cloud services for emerging applications; Applications utilizing such services; Cloud Software and Tools for IaaS, PaaS, Hadoop, and others.

This workshop builds upon the success of the prior Open Cirrus events and the prior Open Cloud Consortium and FutureGrid events but was expanded to include other organizations. The goal is to help building a community for those responsible for operating clouds and cloud testbeds, as well as those interested in designing new cloud services.

The workshop could have not been conducted without the committee that provided the peer review for all the papers. We like to thank them for their help and list them here in alphabetical order: Brandic, Ivona; Desai, Narayan; Desprez, Frédéric; Diaz, Javier; Fitzgerald, Steve; Fox, Geoffrey; Gavrilovska, Ada; Grossman, Robert; Keahey, Kate; Kozuch, Michael; Llorente, Ignacio M.; Lucas-Simarro, Jose Luis; McGeer, Rick; Milojicic, Dejan; Ramakrishnan, Lavanya; Riedel, Morris; Toews, Everett; von Laszewski, Gregor. The conference and submission site was managed by Gregor von Laszewski.

Enjoy the conference!

Gregor von Laszewski,
Robert Grossman,
Dejan Milojicic,
Michael Kozuch,
Rick McGeer
Table of Contents

Workshop on Cloud Services, Federation, and the 8th Open Cirrus Summit
21 September 2012, San Jose

Virtual Machine Placement

Optimizing VM Placement for HPC in the Cloud, Abhishek Gupta, Dejan Milojicic and Laxmikant Kale.

Virtualizing HPC applications using modern hypervisors, Alexander Kudryavtsev, Vladimir Koshelev, Boris Pavlovic and Arutyun Avetisyan.

Core Cloud Federation Software and Testbeds


A Mechanism to Measure Quality-of-Service in a Federated Cloud Environment, Shoumen Bardhan and Dejan Milojicic.


Platforms in a Federated Clouds

Infrastructure Outsourcing in Multi-Cloud Environment, Kate Keahey, Patrick Armstrong, John Bresnahan, David Labissoniere and Pierre Riteau.

Network-Aware Scheduling of MapReduce Framework on Distributed Clusters over High Speed Networks, Praveenkumar Kondikoppa, Chui-Hui Chiu, Cheng Cui, Lin Xue and Seung-Jong Park.

Applications in Federated Clouds

Federated Cloud based Big Data Platform in Telecommunications, Chao Deng, Ling Qian, YuJian Du, Meng Xu, ZhiGuo Luo and ShaoLing Sun.
Workshop Organization List

Proceedings of the Workshop on Cloud Services, Federation, and the 8th Open Cirrus Summit

Conference Chairs in Alphabetical Order:

Robert Grossman (University of Chicago)
Michael Kozuch (Intel Research, Pittsburgh, USA)
Gregor von Laszewski (Indiana University, USA)
Rick McGeer (Hewlett Packard, USA)
Dejan Milojicic (Hewlett Packard, USA)

Program Committee in Alphabetical Order:

Ivona Brandic (TU Viena, Austria)
Narayan Desai (Argonne National Laboratory, USA)
Frederic Desprez (INRIA, France)
Javier Diaz (Indiana University, USA)
Steven Fitzgerald (Eucalyptus, USA)
Ada Gavrilovska (Georgia Institute of Technology, USA)
Robert Grossman (University of Chicago)
Kate Keahey, (Argonne National Laboratory, USA)
Michael Kozuch, (Intel Research, Pittsburgh, USA)
Gregor von Laszewski (Indiana University, USA)
Adrien Lèbre (INRIA, France)
Ignacio Llorente (Universidad Complutense de Madrid, Spain)
Rick McGeer (Hewlett Packard, USA)
Dejan Milojicic (Hewlett Packard, USA)
Lavanya Ramakrishnan (Lawrence Berkeley Laboratory, USA)
Morris Riedel (Forschungszentrum Juelich, Germany)
Everett Toews (Rackspace, USA)