2nd Cloud Control Workshop
Lund
September 25-26, 2013

The Cloud Control Workshops is an open series of scientific meetings for the Cloud Control project, funded by a VR framework grant during 2013 – 2016. The workshop is open to project participants and, by invitation, key people in the participants' near vicinity, with whom we see potential for collaborations or other synergies.

The aim of the workshop series is three-fold. First and foremost, it aims at fostering relations between individuals in order to enhance the potential for fruitful collaborations between project members in Lund and Umeå and between project members and other researchers. Secondly, it aims at knowledge transfer across people's fields of expertize. Thirdly, it aims at providing the fuel for new multi-disciplinary collaborations through a series of presentations and discussions on on-going research on cloud datacenter management and control theory for computing systems.

We strongly encourage participants to join all sessions, coffee breaks, lunches, and the workshop dinner, since they will all provide good opportunities for discussions across groups and research fields.

Location and direction:
The workshop is held in the Sony premises that are soon to be used by the recently established Mobile and Pervasive Computing Institute (MAPCI). The Sony premises are located at Mobilvägen (the new water tower) in Lund. The building is the red brick-building (named Greenland) that is located furthest to the west (closest to the highway). The workshop is held at the ground floor, just inside the reception.

Wednesday September 25

9.00 Coffee

9.45 Session 1: Workshop Opening
Chair: Karl-Erik Årzén

Welcome
Karl-Erik Årzén, Lund University

Welcome note from the host
Björn Landfeldt, Lund University and MAPCI

Workshop Background and Context
Erik Elmroth, Umeå University

Presentation of New Participants
Everyone not attending the 1st Cloud Control Workshop

10.30 Keynote: *Autoscaling for Online and Batch Applications in Heterogeneous Clouds*
Guillaume Pierre, IRISA/Université de Rennes

11.30 *Mobile and Telecom Cloud*
Johan Eker, Ericsson Research

12.00 Lunch

13.00 Session 2: Large-scale Resource Management
Chair: Erik Elmroth

Keynote: *Omega: flexible, scalable schedulers for large compute clusters*
John Wilkes, Google Inc.

14.00 *Brownout: A paradigm to Build Controllable Cloud Applications*
Part 1: theoretical contribution, Martina Maggio, Lund University
Part 2: implementation and evaluation, Cristian Klein, Umeå University

14.30 Plenum discussions on topics related to today's presentations

15.00 Coffee

15.30 Session 3: Discussions – Part 1
Chair: Maria Kihl
- Experiments, testbeds and simulators (Maria Kihl and P-O Östberg)
- Building the models (Anders Robertsson)
- Large-scale performance monitoring (Daniel Espling and Manfred Dellkrantz)

17.00 End of day 1 workshop sessions
19.30 Dinner at Grill & Meze Lounge, Saluhallen, Lund

Thursday September 26

9.00   Session 4
Chair: Francisco Hernandez

Cloudberry Datacenters – Building the Datacenter Silicon Valley (30)
Olov Schelén, Luleå University of Technology

Short discussion on Cloud Control – Cloudberry synergies to be exploited

Improving Cloud Infrastructure Utilization through Overbooking (15)
Luis Tomás, Umeå University

10.00 Coffee

10.30 Session 5
Chair: Anders Robertsson

Applications of Decentralized Prioritization (15)
P-O Östberg, Umeå University

Model-based Elasticity Control for Cloud Applications (15)
Manfred Dellkrantz and/or Jonas Dürango, Lund University

Energy Aspects of VM Provisioning - An Experimental Approach (15)
Selome Tesfatsion and/or Johan Tordsson, Umeå University

Continuous VM Rescheduling for Datacenter Defragmentation (15)
Wubin Li and/or Petter Svärd, Umeå University

Gossip-based VM Placement (15)
Mina Sedaghat, Umeå University

12.00 Lunch

13.00 Session 6
Chair: Johan Tordsson

New PhD student topics (3 x 10 minutes)

13.30 Discussions – Part 2
  - User-models for performance evaluation (Cristian Klein and P-O Östberg)
  - Distributed control for distributed or decentralized cloud management (Francisco Hernandez and Anders Robertsson)
  - Individual sub-project discussions (incl. new PhD stud topics)

15.00 Coffee

15.30 Session 7
Chair: P-O Östberg

Discussions – Part 3
  - Continued discussions on any topic previously left open
  - Controllable trade-offs in Storage SLAs (Cristian Klein and Francisco Hernandez)
  - Individual sub-project discussions (incl. new PhD stud topics)

16.30 *Short reporting from all discussion sessions (both days)*
Discussion group chairs

17.15 Workshop summary
Erik Elmroth

17.30 End of workshop