

# Program

## 3<sup>rd</sup> Cloud Control Workshop

Hemavan  
February 10 – 13, 2014

### Monday February 10

#### **16.00 – 17.00 Workshop opening**

*Chair: Erik Elmroth*

Presentation of program, practicalities, and participants (60 minutes)

#### **17.00 – 17.30 Presentations 1**

Cloud resource management research – The Umeå University perspective (30)

Erik Elmroth, Umeå University

#### **17.30 – 19.00 Discussions 1**

*What are the key research challenges in the area of cloud resource management?*

Introduction (10)

Small-group discussions in parallel (20)

Discussions and structuring of research topics in joint session (60)

## Tuesday, February 11

### 8.00 – 9.30 Presentations 2

*Chair: Karl-Erik Årzén*

*Efficient and robust architecture for the Big Data cloud (30)*

Tor Skeie, Ernst Gunnar Gran, Simula, Oslo

*Multi scale mobile clouds (15)*

Björn Landfeldt, Lund University

*Ericsson cloud update (15)*

Johan Eker, Ericsson Research, Lund

*Hecatonchire: Enabling Multi-Host VMs by Resource Aggregation and Pooling (15)*

Petter Svärd, Umeå University

### 9.30 – 10.00 Coffee

### 10.00 – 12.00 Discussions 2

*Chair: Johan Tordsson*

Parallel sessions for 1.5 hours followed by 30 minutes joint summary

Topics for parallel sessions:

- Design of Infinite (telco, mobile) clouds  
(Johan Eker, Björn Landfeldt)
- New ways of managing highly (geographically) distributed data?  
(Tor Skeie, Ernst Gunnar Gran, Luis Tomás)
- What are the effects of VM resource pooling: New or disappearing problems?  
(Petter Svärd, Daniel Espling)

### 12.00 – 13.00 Lunch

13.00 – 15.30 Ad hoc meetings, individual preparation, or free activities

### 15.30 – 16.00 Coffee

### 16.00 – 17.00 Presentations 3

*Chair: Per-Olov Östberg*

*Energy Efficiency and Energy Models (30)*

Olaf Landseidel, Chalmers, Gothenburg

*Modeling aspects of computing systems (15)*

Alessandro Vittorio Papadopoulos, Politecnico di Milano, Italy

*Cloud Control with the Smith predictor (15)*

Manfred Dellkrantz, Lund University

### **17.00 – 19.00 Discussions 3**

*Chair: Martina Maggio*

Parallel sessions for 1.5 hours followed by 30 minutes joint summary

Topics for parallel sessions:

- Energy-aspects for resource management  
(Olaf Landseidel, Enrico Bini)
- Scaling down and out  
(Geir Horn)
- Experiment design (Maria Kihl)
- Simulations for the infinite/telco/mobile/carrier cloud (Johan Eker)

## Wednesday, February 12

### 8.00 – 9.30 Presentations 4

*Chair: Anders Robertsson*

*Statistical methods for workload modeling and prediction (40)*

Sara Sjöstedt de Luna, Oleg Seleznev, Umeå University

*How will your workload look like in 6 years? Analyzing Wikimedia's workload (10)*

Amardeep Mehta, Umeå University

*Workload Classification for Efficient Cloud Infrastructure Elasticity Control (15)*

Ahmed Ali-EIDin, Umeå University

*The straw that broke the camel's back: Safe cluster overbooking with application brownout (15)*

Luis Tomás, Umeå University

### 9.30 – 10.00 Coffee

### 10.00 – 12.00 Discussions 4

*Chair: Luis Tomás*

Parallel sessions for 1.5 hours followed by 30 minutes joint summary

Topics for parallel sessions:

- *Control of positive systems for VM relocation in Infinite clouds*  
(Anders Robertsson)
- Overbooking and load-mix management for improving server utilization  
(Johan Tordsson)
- *Controlling Memory*  
(Martina Maggio)

### 12.00 – 13.00 Lunch

13.00 – 15.30 Ad hoc meetings, individual preparation, or free activities

### 15.30 – 16.00 Coffee

### 16.00 – 17.00 Presentations 5

*Chair: Björn Landfeldt*

*Capturing the user's goals and preferences (30)*

Geir Horn, University of Oslo

*Network traffic measurements for virtualized systems (15)*

Anders Blomdell, Lund University

## **17.00 – 19.00 Discussions 5**

*Chair: Cristian Klein*

Parallel sessions for 1.5 hours followed by 30 minutes joint summary

Topics for parallel sessions:

- *Workload analysis for cloud resource management*  
(Ahmed Ali-EIDin)
- *Stability and convergence of large scale mapping under uncertainty*  
(Geir Horn)
- *After the Infinite Cloud, what would be the next research step? (If discussions get stuck - what are the killer applications for the Infinite cloud)*  
(Luis Tomás)
- *Getting started for youngsters - Creating collaborations and attracting grants*  
(Per-Olov Östberg)

## Thursday, February 13

### 8.00 – 9.00 Presentations 6

*Chair: Johan Eker*

*The Meta Data Center-project (20)*

Olov Schelén, Luleå University of Technology

*Application-driven resource optimization for cloud datacenters (15)*

Per-Olov Östberg, Umeå University

*Load-balancing self-adaptive cloud applications (15)*

Martina Maggio, Lund University

### 9.00 – 10.00 Discussions 6

*Chair: Maria Kihl*

Parallel sessions for 1.5 hours followed by 30 minutes joint summary

Topics for parallel sessions:

- Modeling/Profiling of applications/services  
(Luis Tomás)
- *Performance SLAs and differentiated QoS in the cloud - what is the right question?*  
(Cristian Klein, P-O Östberg)
- Workload generation  
(Ahmed Ali-EIDin)

### 9.30 – 10.00 Coffee

### 10.00 – 11.00 Discussions (continued)

(See description above)

### 11.00 – 12.00 Workshop closing

*Chair: Erik Elmroth*

Summary and opportunity for last minutes decisions regarding any follow-up activities.

Short discussion about the next workshop.

### 12.00 – 13.00 Lunch