



# 5th Workshop on Runtime and Operating Systems for the Many-core Era (ROME 2017)

held in conjunction with Euro-Par 2017

Carsten Clauss and Stefan Lankes

## Idea

- Predecessor: MARC Symposium
- Topic: New hardware trends (e. g. SCC)  $\Rightarrow$  Consequences for the Runtime

## Summary of the CfP

- New approaches for operating systems on novel many-core architectures
- **Virtualization solutions** to deal with hardware limitations on many-cores
- Message-passing interfaces and middleware for many-core systems
- Heterogeneity- and/or hierarchy-aware many-core middleware
- Concepts and methods for exploiting deep memory hierarchies Operating system extensions for non-volatile memory support

## Thanks to the PC

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- Jens Breitbart, Robert Bosch GmbH
- Florian Kluge, Universität Augsburg
- Timothy G. Mattson, Intel Labs
- Jörg Nolte, BTU Cottbus
- Lena Oden, Jülich Supercomputing Centre
- Antonio J. Peña, Barcelona Supercomputing Center
- Swann Perarnau, Argonne National Laboratory
- Andreas Polze, Hasso-Plattner-Institute
- Pablo Reble, Intel Corporation
- Bettina Schnor, University of Potsdam
- Oliver Sinnen, University of Auckland
- Christian Terboven, RWTH Aachen University
- Josef Weidendorfer, TU München
- Carsten Weinhold, TU Dresden

## Session 1 (11:00 – 13:00)

- Welcome speech and announcements
- Balazs Gerofi: Diverse Workloads need Specialized System Software: An approach of Multi-kernels and Application Containers (keynote)
- Thomas Ilsche, Marcus Hähnel, Robert Schöne, Mario Bielert and Daniel Hackenberg - Powernightmares: The Challenge of Efficiently Using Sleep States on Multi-Core Systems
- Adrian Garcia-Garcia, Juan Carlos Saez and Manuel Prieto-Matias: Delivering fairness on asymmetric multicore systems via contention-aware scheduling

## Lunch

## Session 2 (14:00 – 16:00)

- Frank Feinbube, Max Plauth, Marius Knaust and Andreas Polze: Data Partitioning Strategies for Stencil Computations on NUMA Systems
- Robert Kuban, Randolph Rotta and Jörg Nolte: Help your Busy Neighbors: Dynamic Multicasts over Static Topologies
- Michael Voss: Expressing multiple levels of parallelism in C++ using Intel Threading Building Blocks (invited talk)

## Break

## Session 3 (16:30 – 17:30)

- Jose A. Pascual, Caroline Concatto, Joshua Lant and Javier Navaridas: On the Effects of Data-aware Allocation on Fully Distributed Storage Systems for Exascale (PISCES)
- Juan Piernas and Pilar González-Férez: Efficient Implementation of Data Objects in the OSD<sub>+</sub>-based Fusion Parallel File System (PISCES)
- Workshop Closing

## Talks

- Meet the session chair at coffee break before your session starts
- Send your slides to me (slankes@eonerc.rwth-aachen.de) to publish on the web-site  
Copy your slides on our laptop (MS Powerpoint & Adobe Reader)
- Test the equipment at coffee break
- 25 minutes per talk + 5 minutes questions

## Proceedings

- Informal proceedings:
  - ≡ URL: <http://europar2017.usc.es/#workshops>
  - ≡ Password: rome-w-17
- Camera-ready papers due: October 3, 2017

## Michael Voss

- Master and Ph. D in Electrical Engineering from the School of Electrical and Computer Engineering, Purdue University
  - ≡ Title of the Ph. D: A Generic Framework for High Level Adaptive Program Optimization
  - ≡ Supervisor: Prof. Rudolf Eigenmann
- He was Assistant Professor, Department of Electrical and Computer Engineering w/ cross appt. to Department of Computer Science University of Toronto, Toronto, Canada
  - ≡ Courses in Optimizing Compilers and Software Systems for Runtime Program Optimization
- Currently, Principle Engineer in the Software and Services Group at Intel.
- Architect of the Intel Threading Building Blocks flow graph API, a C++ API for expressing dependency, streaming, and data flow applications



## Balazs Gerofi

- Master's degree in Computer Science at the VU University in Amsterdam
  - ≡ Topic: Virtual File System (VFS) of the MINIX 3 operating system under the supervision of Prof. Andrew S. Tanenbaum
- Ph. D of Computer Science from the University Of Tokyo
  - ≡ Working under the supervision of Prof. Yutaka Ishikawa
  - ≡ Topic: Highly available Virtual Machines (VM), aiming at providing high performance and fault-tolerant execution at the same time
- Currently, research scientist in the System Software Research Team at RIKEN Advanced Institute for Computational Science (AICS)
- Research Interests
  - ≡ Operating Systems, High-Performance Computing, Virtualization, Fault Tolerant Computing

Thank you for your kind attention!

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