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Advanced OpenMP Programming

Host Performance and Accelerator Offloading

28–29 November, 2018

VŠB – Technical University of Ostrava
IT4Innovations building, training room

Lecturers

Christian Terboven, Tim Cramer (RWTH Aachen University, Germany)

OpenMP is a popular, portable, widely supported and easy-to-use shared-memory model. Developers usually find OpenMP easy to learn. However, they are often disappointed with the performance and scalability of the resulting code. This disappointment stems not from any shortcomings of OpenMP, but rather with the lack of depth with which it is employed.

Our tutorial addresses this critical need by exploring the implications of possible OpenMP parallelization strategies, both in terms of correctness and performance. We assume that attendees understand basic parallelization concepts and know the fundamentals of OpenMP. We focus on performance aspects, such as data and thread locality on NUMA architectures, false sharing, and exploitation of vector units, and present the directives for attached compute accelerators. All topics are accompanied with extensive case studies, and we discuss the corresponding language features in-depth.

Wednesday 28 November 2018

- 09:30–10:00 registration
- 10:00–11:30 Introduction to Parallel Programming with OpenMP | Lab: OpenMP
- 11:30–13:00 lunch break
- 13:00–14:30 Introduction to Parallel Programming with OpenMP | Lab: OpenMP
- 14:30–15:00 coffee break
- 15:00–16:30 Advanced OpenMP Programming | Lab: OpenMP
- 16:30–17:00 coffee break
- 17:00–18:00 Correctness and Performance Tools for OpenMP

Thursday 29 November 2018

- 09:00–10:30 Programming Accelerators with OpenMP
- 10:30–11:00 coffee break
- 11:00–12:30 Advanced OpenMP Programming | Lab: OpenMP
- 12:30–13:45 lunch break
- 13:45–15:30 Summary, Future OpenMP Directions and Q & A



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More information & registration:
training.it4i.cz/AdvOMP-11-2018