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Evolving OpenMP in an Age of Extreme Parallelism

5th International Workshop on OpenMP, IWOMP 2009
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Preface

OpenMP is an application programming interface (API) that is widely accepted as a de facto standard for high-level shared-memory parallel programming. It is a portable, scalable programming model that provides a simple and flexible interface for developing shared-memory parallel applications in Fortran, C, and C++. Since its introduction in 1997, OpenMP has gained support from the majority of high-performance compiler and hardware vendors. Under the direction of the OpenMP Architecture Review Board (ARB), the OpenMP specification is undergoing further improvement. Active research in OpenMP compilers, runtime systems, tools, and environments continues to drive OpenMP evolution. To provide a forum for the dissemination and exchange of information about and experiences with OpenMP, the community of OpenMP researchers and developers in academia and industry is organized under cOMPunity (www.compunity.org). This organization has held workshops on OpenMP since 1999.

This book contains the proceedings of the 5th International Workshop on OpenMP held in Dresden in June 2009. With sessions on tools, benchmarks, applications, performance and runtime environments it covered all aspects of the current use of OpenMP. In addition, several contributions presented proposed extensions to OpenMP and evaluated reference implementations of those extensions. An invited talk provided the details on the latest specification development inside the Architecture Review Board. Together with the two keynotes about OpenMP on hardware accelerators and future generation processors it demonstrated that OpenMP is suitable for future generation systems.

OpenMP 3.0 has been adopted rapidly, as is evidenced by the number of available compilers and the use of new features by application developers. The OpenMP workshop series has made important contributions to the development of the specification and its adoption. This year's contributions clearly indicate that this role will continue in the future.

June 2009

Matthias S. Müller
Barbara M. Chapman
Bronis R. de Supinski

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Table of Contents

Fifth International Workshop on OpenMP IWOMP 2009

Performance and Applications

Parallel Simulation of Bevel Gear Cutting Processes with OpenMP Tasks 1
Paul Kapinos and Dieter an Mey

Evaluation of Multicore Processors for Embedded Systems by Parallel Benchmark Program Using OpenMP 15
Toshihiro Hanawa, Mitsuhisa Sato, Jinpil Lee, Takayuki Imada, Hideaki Kimura, and Taisuke Boku

Extending Automatic Parallelization to Optimize High-Level Abstractions for Multicore 28
Chunhua Liao, Daniel J. Quinlan, Jeremiah J. Willcock, and Thomas Panas

Scalability Evaluation of Barrier Algorithms for OpenMP 42
Ramachandra Nanjegowda, Oscar Hernandez, Barbara Chapman, and Haoqiang H. Jin

Use of Cluster OpenMP with the *Gaussian* Quantum Chemistry Code: A Preliminary Performance Analysis 53
Rui Yang, Jie Cai, Alistair P. Rendell, and V. Ganesh

Runtime Environments

Evaluating OpenMP 3.0 Run Time Systems on Unbalanced Task Graphs 63
Stephen L. Olivier and Jan F. Prins

Dynamic Task and Data Placement over NUMA Architectures: An OpenMP Runtime Perspective 79
François Broquedis, Nathalie Furmento, Brice Goglin, Raymond Namyst, and Pierre-André Wacrenier

Scalability of Gaussian 03 on SGI Altix: The Importance of Data Locality on CC-NUMA Architecture 93
Roberto Gomperts, Michael Frisch, and Jean-Pierre Panziera

Tools and Benchmarks

Providing Observability for OpenMP 3.0 Applications 104
Yuan Lin and Oleg Mazurov

A Microbenchmark Suite for Mixed-Mode OpenMP/MPI 118
J. Mark Bull, James P. Enright, and Nadia Ameer

Performance Profiling for OpenMP Tasks 132
Karl Fürlinger and David Skinner

Proposed Extensions to OpenMP

Tile Reduction: The First Step towards Tile Aware Parallelization in OpenMP 140
Ge Gan, Xu Wang, Joseph Manzano, and Guang R. Gao

A Proposal to Extend the OpenMP Tasking Model for Heterogeneous Architectures 154
Eduard Ayguade, Rosa M. Badia, Daniel Cabrera, Alejandro Duran, Marc Gonzalez, Francisco Igual, Daniel Jimenez, Jesus Labarta, Xavier Martorell, Rafael Mayo, Josep M. Perez, and Enrique S. Quintana-Ortí

Identifying Inter-task Communication in Shared Memory Programming Models 168
Per Larsen, Sven Karlsson, and Jan Madsen

Author Index 183