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Naoya Maruyama · Bronis R. de Supinski
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OpenMP: Memory, Devices, and Tasks

12th International Workshop on OpenMP, IWOMP 2016
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Proceedings

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Preface

OpenMP is a widely accepted, standard application programming interface (API) for high-level parallel programming in Fortran, C, and C++. Since its introduction in 1997, OpenMP has gained support from most high-performance compiler and hardware vendors. Under the direction of the OpenMP Architecture Review Board (ARB), the OpenMP specification has evolved up to the release of version 4.5. This latest version includes several refinements to existing support for heterogeneous hardware environments, many enhancements to its tasking model including the taskloop construct, and support for doacross loops.

The evolution of the standard would be impossible without active research in OpenMP compilers, runtime systems, tools, and environments. OpenMP is both an important programming model for multicore processors and a critical component of the most commonly used hybrid programming model for massively parallel, distributed memory systems. Since most of the growth in parallelism in Exascale systems is expected to arise within a node, these systems will increase the importance of OpenMP.

The community of OpenMP researchers and developers in academia and industry is united under cOMPunity (www.compunity.org). This organization has held workshops on OpenMP around the world since 1999: the European Workshop on OpenMP (EWOMP), the North American Workshop on OpenMP Applications and Tools (WOMPAT), and the Asian Workshop on OpenMP Experiences and Implementation (WOMPEI) attracted annual audiences from academia and industry. The International Workshop on OpenMP (IWOMP) consolidated these three workshop series into a single annual international event that rotates across Asia, Europe, and the Americas. The first IWOMP workshop was organized under the auspices of cOMPunity. Since that workshop, the IWOMP Steering Committee has organized these events and guided development of the series. The first IWOMP meeting was held in 2005, in Eugene, Oregon, USA. Since then, meetings have been held each year, in Reims, France; Beijing, China; West Lafayette, Indiana, USA; Dresden, Germany; Tsukuba, Japan; Chicago, Illinois, USA; Rome, Italy; Canberra, Australia; Salvador, Brazil; and Aachen, Germany. Each workshop has drawn participants from research and industry throughout the world. IWOMP 2016 continues the series with technical papers, tutorials, and OpenMP status reports. The IWOMP meetings have been successful in large part due to the generous support from numerous sponsors.

The cOMPunity website (www.compunity.org) provides access to the talks given at the meetings and to the photos of the activities. The IWOMP website (www.iwomp.org) provides information on the latest event. This book contains the proceedings of IWOMP 2016. The workshop program included 24 technical papers, two keynote talks, and advanced tutorials on OpenMP. All technical papers were peer reviewed by at least two different members of the Program Committee.

October 2016

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Contents

Applications

- Estimation of Round-off Errors in OpenMP Codes 3
Pacôme Eberhart, Julien Brajard, Pierre Fortin, and Fabienne Jézéquel
- OpenMP Parallelization and Optimization of Graph-Based Machine
Learning Algorithms 17
*Zhaoyi Meng, Alice Koniges, Yun (Helen) He, Samuel Williams,
Thorsten Kurth, Brandon Cook, Jack Deslippe, and Andrea L. Bertozzi*

Locality

- Evaluating OpenMP Affinity on the POWER8 Architecture 35
Swaroop Pophale and Oscar Hernandez
- Workstealing and Nested Parallelism in SMP Systems 47
*Larry Meadows, Simon J. Pennycook, Alex Duran, Terry Wilmarth,
and Jim Cownie*
- Description, Implementation and Evaluation of an Affinity Clause
for Task Directives 61
*Philippe Virouleau, Adrien Roussel, François Broquedis,
Thierry Gautier, Fabrice Rastello, and Jean-Marc Gratien*

Task Parallelism

- NUMA-Aware Task Performance Analysis 77
Dirk Schmidl and Matthias S. Müller
- OpenMP Extension for Explicit Task Allocation on NUMA Architecture 89
Jinpil Lee, Keisuke Tsugane, Hitoshi Murai, and Mitsuhsisa Sato
- Approaches for Task Affinity in OpenMP 102
*Christian Terboven, Jonas Hahnfeld, Xavier Teruel, Sergi Mateo,
Alejandro Duran, Michael Klemm, Stephen L. Olivier,
and Bronis R. de Supinski*
- Towards Unifying OpenMP Under the Task-Parallel Paradigm:
Implementation and Performance of the `taskloop` Construct 116
Artur Podobas and Sven Karlsson

A Case for Extending Task Dependencies	130
<i>Tom Scogland and Bronis de Supinski</i>	
OpenMP as a High-Level Specification Language for Parallelism: And its use in Evaluating Parallel Programming Systems	141
<i>Max Grossman, Jun Shirako, and Vivek Sarkar</i>	
Scaling FMM with Data-Driven OpenMP Tasks on Multicore Architectures . . .	156
<i>Abdelhalim Amer, Satoshi Matsuoka, Miquel Pericàs, Naoya Maruyama, Kenjiro Taura, Rio Yokota, and Pavan Balaji</i>	
Extensions	
Reducing the Functionality Gap Between Auto-Vectorization and Explicit Vectorization: Compress/Expand and Histogram	173
<i>Hideki Saito, Serge Preis, Nikolay Panchenko, and Xinmin Tian</i>	
A Proposal to OpenMP for Addressing the CPU Oversubscription Challenge	187
<i>Yonghong Yan, Jeff R. Hammond, Chunhua Liao, and Alexandre E. Eichenberger</i>	
Tools	
Testing Infrastructure for OpenMP Debugging Interface Implementations	205
<i>Joachim Protze, Dong H. Ahn, Ignacio Laguna, Martin Schulz, and Matthias S. Müller</i>	
The Secrets of the Accelerators Unveiled: Tracing Heterogeneous Executions Through OMPT	217
<i>Germán Llort, Antonio Filgueras, Daniel Jiménez-González, Harald Servat, Xavier Teruel, Estanislao Mercadal, Carlos Álvarez, Judith Giménez, Xavier Martorell, Eduard Ayguadé, and Jesús Labarta</i>	
Language-Centric Performance Analysis of OpenMP Programs with Aftermath	237
<i>Andi Drebes, Jean-Baptiste Bréjon, Antoniu Pop, Karine Heydemann, and Albert Cohen</i>	
Accelerator Programming	
Pragmatic Performance Portability with OpenMP 4.x.	253
<i>Matt Martineau, James Price, Simon McIntosh-Smith, and Wayne Gaudin</i>	
Multiple Target Task Sharing Support for the OpenMP Accelerator Model. . .	268
<i>Guray Ozen, Sergi Mateo, Eduard Ayguadé, Jesús Labarta, and James Beyer</i>	

Early Experiences Porting Three Applications to OpenMP 4.5 281
*Ian Karlin, Tom Scogland, Arpiih C. Jacob, Samuel F. Antao,
 Gheorghe-Teodor Bercea, Carlo Bertolli, Bronis R. de Supinski,
 Erik W. Draeger, Alexandre E. Eichenberger, Jim Glosli, Holger Jones,
 Adam Kunen, David Poliakoff, and David F. Richards*

Design and Preliminary Evaluation of Omni OpenACC Compiler
 for Massive MIMD Processor PEZY-SC 293
*Akihiro Tabuchi, Yasuyuki Kimura, Sunao Torii, Hideo Matsufuru,
 Tadashi Ishikawa, Taisuke Boku, and Mitsuhisa Sato*

Performance Evaluations and Optimization

Evaluating OpenMP Implementations for Java Using PolyBench. 309
Xing Fan, Rui Feng, Oliver Sinnen, and Nasser Giacaman

Transactional Memory for Algebraic Multigrid Smoothers 320
*Barna L. Bihari, Ulrike M. Yang, Michael Wong,
 and Bronis R. de Supinski*

Supporting Adaptive Privatization Techniques for Irregular Array
 Reductions in Task-Parallel Programming Models 336
*Jan Ciesko, Sergi Mateo, Xavier Teruel, Xavier Martorell,
 Eduard Ayguadé, and Jesus Labarta*

Author Index 351