PROPER 2010: Third Workshop on Productivity and Performance – Tools for HPC Application Development

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Foreword

The PROPER workshop addresses the need for productivity and performance in high performance computing. Productivity is an important objective during the development phase of HPC applications and their later production phase. Paying attention to the performance is important to achieve efficient usage of HPC machines. At the same time it is needed for scalability, which is crucial in two ways: Firstly, to use higher degrees of parallelism to reduce the wall clock time. And secondly, to cope with the next bigger problem, which requires more CPUs, memory, etc. to be able to compute it at all.

Tool support for the user is essential for productivity and performance. Therefore, the workshop covers tools and approaches for parallel program development and analysis, debugging and correctness checking, and for performance measurement and evaluation. Furthermore, it provides an opportunity to report successful optimization strategies with respect to scalability and performance.

This years contributions reflect this spectrum nicely. The invited paper by Torsten Höfler proposes to combine the so far disjoint approaches from performance modeling and tool based performance analysis. The paper by Chee Wai Lee et.al. presents an online extension to the TAU tools. Robert Schöne et.al. introduce a plug-in mechanism for adding new performance counter sources to the VampirTrace run-time measurement system. Judit Giménez et.al. propose a combined profiling and event tracing solution which is demonstrated with the Paraver tools. Christian Iwainsky et.al. present an in-depth analysis of memory access behavior on Intel Nehalem-EX CPUs. Stas Negara et.al. present the challenges of automatic transformation of MPI codes to adaptive MPI. Stefano Masini et.al. discuss the use of Python for HPC.

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