Topic 1
Support Tools and Environments

Bronis R. de Supinski, Matthias Brehm, Luiz DeRose, and Tom?s Margalef

Topic Chairs

Support tools and environments are vital to the production of efficient parallel and distributed applications. This year, eleven papers were submitted to this topic area, from which five were accepted as full papers.

As in previous years, many submitted papers focused on the internal behaviour of applications, including how to enhance cache locality, how to detect inefficiency patterns in MPI applications and how to profile performance effectively. The infrastructure of the tools ranges from profiling, analysis, and simulation to visualization tools for graphical representation and code development.

Automatic performance analysis that can detect bottlenecks related to code regions or to data structures were of particular interest. Pattern-based performance diagnosis is not only applied to master-worker computations, but also, in a distinguished paper, to patterns that arise from inefficiencies in one-sided communication. Another paper presents an automatic synthetic I/O workload in which multiple factor analysis describes the behaviour of the I/O subsystem

Other submitted papers this year focused on tools for grid and P2P infrastructures, particularly on resource management. An accepted paper with this focus presents a generic framework that enables run-time monitoring tools to be launched under the control of a resource management system. The crucial issues of process creation, tool creation, process monitoring and control and front-end/back-end coordination are addressed.

The qualified papers demonstrate significant tool improvement and maturation. We look forward to the stimulating discussions during session meetings that they will engender.