Topic 3: Scheduling and Load Balancing

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Topic Committee

More than ever, parallelism is available today at every level of computing systems, including dedicated embedded systems, basic instructions and registers, hardware accelerators, multi-core platforms, computational grids, etc. Despite of lot of efforts and nice positive results obtained during the past years, such systems are still not fully exploited. Scheduling represents the use or optimization of resources allocation in parallel and distributed systems. There are many issues to study for a better share of the load, a better reliability, a better adaptivity under computing, bandwidth or memory constraints. They are all crucial for obtaining a better use of parallel and distributed systems. It is a big challenge to study related techniques provided at both application and system levels. At the application level, the choice of the adequate computational model, the design of dynamic algorithms that are able to adapt to the particular characteristics, the mapping of applications onto the underlying computing platforms and the actual utilization of the systems are particularly relevant.

This new edition of the topic in EuroPar provides a very good coverage of the various modern perspectives. The submitted papers covered many aspects of scheduling and load balancing from theoretical foundations for modeling or analyzing new policies under specific constraints to the design of efficient and robust strategies, experimental studies, applications and development of practical tools.

This year all the submitted papers have been evaluated by four reviewers, and finally seven papers were chosen to be included into the final program. They reflect the good and necessary synergy between theoretical approaches (models, analysis) and practical realization and tools (new methods, simulation results, actual experiments, specific tuning of some applications). Problems like minimization of energy consumption, malleability for achieving the maximum possible resource utilization, on-line policies, scheduling of MapReduce jobs show how this old field always creates new problems. The objects of study evolve from year to year and reflect the new trends in scheduling showing that this classical topic remains very active and challenging.

Finally we would like to express our gratitude to all our colleagues, experts in any field of scheduling for the time and effort spent in the reviewing process. Their good job could not be achieved without the support of the organizing committee which created a good balance between a gentle pressure and the trust and freedom they gave us within the scientific topics.

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