

Performance Tuning on Parallel Systems: All Problems Solved?

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Abstract

Performance tuning of parallel programs, considering the current status and future developments in parallel programming paradigms and parallel system architectures, remains an important topic even if the single CPU performance is doubling every 18 months. Based on a brief summary of state of the art parallel programming techniques, new performance tuning aspects will be identified. The main part of the paper concentrates on how to deal with these aspects by means of new performance analysis and tuning concepts. First tool developments are presented where part of these concepts are already implemented. Finally, an existing scientific parallel application will be presented with respect to its performance tuning stages which were carried out at our center.