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"STATS: Uma Ferramenta para Escalonamento Estático de Tarefas em Programas MPI"

The message-passing interface (MPI) software environment is an effort from many organizations to define a message-passing standard. Some implementations of MPI produce scheduling of processes without considering the characteristics of the parallel programs such as execution times and precedence relationship among the processes. In order to reduce the execution times of programs, we present in this work a tool for STATic Scheduling of processes in MPI programs, called STATS, based on heuristics such as several versions of list scheduling, ETF (Earliest Time First) and CPFD (Critical Path Fast Duplication). Additionally, we solved the process replication problem in MPI programs. This fact allowed the use of scheduling heuristics based on replication. We executed test programs that were modeled by several types of graphs. These experiments showed that the use of STATS reduced the execution times of MPI programs in most cases.