Parallelization of algorithms to solve a three-dimensional Sudoku puzzle

Mikhail Mayorov, Paula A. Whitlock

Research has been conducted on solving a Sudoku puzzle on a the six faces of a cube. Parallel algorithms were developed using simulated annealing and a backtracking method. The simulated annealing algorithm was implemented on a distributed network using MPI. The backtracking algorithm was implemented using Unified Parallel C on a Partitioned Global Address Space (PGAS) Cray XE6m. Comparisons of the two approaches will be presented. The properties of the simulated annealing solution of the three- dimensional Sudoku puzzle are discussed.