Abstract

We present a study of parallel implementations of single source shortest path (SSSP) algorithms. In the last three decades number of parallel SSSP algorithms have been developed and implemented on the different type of machines. We have divided some of these implementations into two groups, first are those where parallelization is achieved in the internal operations of sequential SSSP algorithm and second are where an actual graph is divided into sub-graphs, and serial SSSP algorithm executes parallel on separate processing units for each sub-graph. These parallel implementations have used PRAM, CRAY super-computer, dynamically reconfigurable processor and Graphics processing unit as platform to run them.

References

time operations\textsuperscript{\textregistered}; Journal of parallel and distributed computing 49, pp. 4-12, 1998.
- Pedro J. Martin, Roberto Torres and Antonio Gavilanes, \textquote{CUDA Solutions for the SSSP problem\textsuperscript{\textregistered}}; LNCS 5544, pp. 904-913, 2009.
- K. Madduri, D. Bader, J. Berry and J. Croba, \textquote{An experimental study of a parallel shortest path algorithm for solving large-scale graph instances\textsuperscript{\textregistered}}; In workshop on Algorithm Engineering and Experiments (ALENEX), New Orleans, LA, January 2007.
- A. Fetterer and S. Shekhar, \textquote{A performance analysis of hierarchical shortest path algorithms\textsuperscript{\textregistered}}; IEEE, pp. 84-93, 1997.

**Index Terms**

Computer Science

Algorithms

**Keywords**

Parallel shortest path algorithm  Parallel algorithm  Graph algorithm  Dijkstra's algorithm