Geeratiya Srimool 2012: Discrete – Event Simulation Optimizer on a GPU Cluster. Master of Engineering (Computer Engineering), Major Field: Computer Engineering, Department of Computer Engineering. Thesis Advisor: Assistant Professor Putchong Uthayopas, Ph.D. 109 pages.

This thesis presents the concept of parallel programming on GPU cluster design for calculating the solution for discrete-event simulation. The simulation of business management such as, the inventory problem, the transportation problem. This simulation has the complex methodology to compute the best solution. As the consequent, it takes very long computation time when there is the large problem size.

So, this study experiment the parallel computing on GPU for solving inventory problem simulation. From the experiment, we can increase the speedup 4 times. So, we study the factors that affect the increasing speedup for parallel on GPU from the result. In order to develop parallel programming on GPU cluster for calculating the solution for transportation problem simulation. From the observation, we can increase the speedup 44 times.

Student's signature

Thesis Advisor's signature

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