ABSTRACT

PERFORMANCE ANALYSIS OF MATRIX MULTIPLICATION IN HIGH CAPABILITY COMPUTATION ENVIRONMENTAL (CUDA-GPU)

By

ACHMAD YUSUF VIDYAWAN

The increase of number and size of data, resulted the increase in the user needs for the ability of a computer to process large data measure. The new paradigm, parallel computing, is proposed to handle the problems which teaches that substantial-job can be split up into marginal-job by increasing the number of workers. One of the method is cluster computing which is using more than one processor to handle single process. Even it showed a significant increase in computing than the conventional one, the high price to build a cluster system becomes a constraint.

This study uses one of parallel computing method that is GPU computing and compares the result to cluster computing. GPU computing uses Graphics Processing Unit (GPU) to compute in parallel. The result of this study shows that by using GPU computing the use of processor can be maximized, and it shows that it has more capability in matrix multiplication than cluster computing.

Keywords : cluster computing, CUDA-GPU, matrix multiplication, parallel computing