

ABSTRACT

Along with advances in computer technology as a solution to the need of a growing problem faced due to the assumption that computing is considered to be faster in solving a problem than the manual way. Therefore needed a fast computational process, one solution is to parallel computing in which computing is done simultaneously by utilizing multiple independent computers simultaneously which is commonly used when a very large capacity required to process large amounts of data as well. This solution becomes an option for sequential computing has many limitations. Matrix multiplication is a complex problem if ordernya has reached thousands and using the sequential completion will take a long time.

Matrix solution method used is the conventional method and Strassen. Conventional methods are created, implemented using MPI (Message Passing Interface) on a computer with a number of different processes for each trial-order matrix. Strassen method is created by partitioning the matrix into submatrices each of size 2×2 .

From the experimental results, for the order of 1024×1024 matrix multiplication, Strassen method is slower 88.32% and use 35% more memory than conventional methods. For the order of 2048×2048 matrix multiplication, Strassen method is slower 84.8% and use 49.13% more memory than conventional methods.

Key words: matrix, conventional method, Strassen method, MPI