

## **Abstract**

Grid continues to grow in line with the rapid growth of distributed computing. His ability to unite the resources available in the world need a guarantee of adequate network resources. Moreover when the Grid to run Tightly coupled applications, ie applications that can run in parallel and have a high association between a process with other processes. Of course this requires large enough network resources. This study shows what happens when the Grid to run parallel applications that are tightly coupled. Application used is the square matrix multiplication. The more limited the available of network resources, will affect the performance of Grid to complete the job. One of the influential network resource is bandwidth. The smaller the available bandwidth, then the longer time required to complete the work Grid. Conversely the greater the available bandwidth, the faster the time needed.

Keywords: grid computing, globus, tightly coupled, mpi, bandwidth.