
Granularity analysis as a method of performance analysis of parallel/distributed applications

Jan Kwiatkowski
Wroclaw University of Science and Technology
Wroclaw, Poland
jan.kwiatkowski@pwr.wroc.pl

In the recent years there has been rapid development of new technologies related to the evolution of the technical possibilities offered by computer hardware - increasing calculation speed, decreasing communication time, increasing bandwidth communications, etc. Moreover, it can be observed increasing popularity of parallel processing by using multi-core processors, clusters, GPU and others. Therefore, performance evaluation of parallel programs is very important for the development of efficient parallel applications. In general, the performance analysis can be carried out analytically or through experiments. The paper focuses on the second approach. Independently on the used measurement methods during experimental performance evaluation of parallel programs, there the need to measure the run time of sequential and parallel programs, which is time consuming. In the paper the method which overcomes above problem is proposed. The Node Scala is a scalable online platform, which allows to separate and handle requests in a parallel distributed system. It was used as a test-bed for performed experiments that confirm that basing on granularity analysis is it possible to avoid time consuming experiments. Submitted:

Keywords: parallel processing, scalability of parallel applications, granularity concept.