RRNA: reliable soft real-time network aware grid scheduling algorithm using round trip time

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↑ ABSTRACT

Assigning jobs to optimum resources in a grid environment is the main aim of a grid scheduler. Communication cost has always been an important issue in grid environments. Proposing new scheduling algorithms to consider this cost accurately and allocate jobs to an optimum resource efficiently has always been of great importance. In this paper we have proposed a grid scheduling algorithm that is aware of the costs for different network paths. We have also considered soft real-time characteristics of jobs in our proposed algorithm. We have simulated and compared our algorithm with some key scheduling algorithms such as Least Load First (LLF), Random, and First Come First Served (FCFS) in Gridsim by considering soft real-time jobs. Results show the superiority of our scheduling algorithm due to its ability to predict network cost and to satisfy the demands of soft real-time tasks.