Minimum CDT based Scheduling Algorithm versus FCFS in Grid Environment

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Abstract

To achieve the promising potentials of tremendous distributed resources, effective and efficient scheduling algorithms are fundamentally important. Unfortunately, scheduling algorithms in traditional parallel and distributed systems, which usually run on homogeneous and dedicated resources, e.g. computer clusters, cannot work well in the new circumstances. In this research paper, MJ_CDTmin [1] (multiple jobs based on the minimum cumulative departure time) algorithm is compared with the already existing FCFS (First Come First Serve) algorithm in terms of the execution time (in secs). Since there were no results for minimizing the execution time in for existing algorithms. Hence the comparison is done only for the proposed algorithms. This is achieved with the experimental test bed by specifying deadline, while submitting the jobs. Simulation was carried out by different number of jobs varying from 1000 to 10,000. In the experimental testing heterogeneous machines were used and tested for different number of tasks/jobs. During the experiment, the comparison was carried out by considering the six different values for the Service time (? ST?_k) of the jobs. The main aim of proposed scheduling algorithm is to increase the system efficiency and to satisfy the job requirements from the available resources. The experimental results showed a significant improvement in terms of a smaller makespan time as compared to the already existing FCFS scheduling algorithm.

Refer
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Index Terms

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Keywords

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