

Load allocation model for scheduling divisible data grid applications.

ABSTRACT

Problem statement: In many data grid applications, data can be decomposed into multiple independent sub-datasets and distributed for parallel execution and analysis. **Approach:** This property had been successfully employed by using Divisible Load Theory (DLT), which had been proved as a powerful tool for modeling divisible load problems in data-intensive grid. **Results:** There were some scheduling models had been studied but no optimal solution has been reached due to the heterogeneity of the grids. This study proposed a new optimal load allocation based on DLT model recursive numerical closed form solutions are derived to find the optimal workload assigned to the processing nodes. **Conclusion/Recommendations:** Experimental results showed that the proposed model obtained better solution than other models (almost optimal) in terms of Makespan.

Keyword: Data grid; Scheduling; Divisible load theory.