Abstract

Scheduling of jobs and resource management are the important challenging work in a grid computing environment. Processing time minimization of the jobs arriving at any computer site in a grid computing system is one of the major objectives in the research area of computing. In this paper, we propose a decentralized grid system model as a collection of clusters. We then introduce a decentralized job scheduling algorithms which performs intra cluster and inter
cluster (grid) job scheduling. In this paper, we apply Divisible Load Theory (DLT) and Least Cost Method (LCM) to model the grid scheduling problem involving multiple resources within a intra cluster and inter cluster grid environment. The proposed decentralized hybrid job scheduling algorithm is an improved form of the DLT and LCM method. The result shows that the gap between the decentralized hybrid job scheduling algorithm and centralized job scheduling algorithm is widening as the number of jobs is increased.

Reference

An Effective Approach to Job Scheduling in Decentralized Grid Environment


Index Terms

Computer Science
Distributed Computing

Key words

Grid Computing
Job Scheduling
Heuristic

Algorithm
Load Balancing

Cluster
Coordinator Node
Worker Node