Abstract

In grid computing environment, the efficiency of computing node is affected by several factors such as node utilization, allocation of jobs etc. The incoming job is allocated to appropriate node in such a way that the node utilization is maximized and a well-balanced load across all the participating computing nodes that enhances the overall performance of grid computing. This paper presents an amended hybrid approach for scheduling sequential task. The proposed approach uses combination of first-come-first-served (FCFS) and genetic algorithm (GA). A sliding-window technique is presented to initiate alteration between the FCFS and GA, to offers a rapid task assignment. For GA we initially generate random population and use straightforward encoding. The proposed method is evaluated in the terms of makespan value and node utilization with a varying set of simulation cases and parameters after then it is compared with a well design first-come-first-server (FCFS) and hybrid genetic algorithm (HGA). Experimental results have shown significant improvement compared to the both FCFS and HGA algorithms. The result gives minimized makespan value with increased node utilization for both homogeneous and heterogeneous types of nodes.
Load Balancing Approach for Scheduling Sequential Task in Grid Computing Environment

References


Index Terms
Load Balancing Approach for Scheduling Sequential Task in Grid Computing Environment

Computer Science

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