Abstract

This paper presents multi-objective Job scheduler using Genetic Algorithm which provides efficient utilization of resources by completing the different tasks in a minimum period of time. Grid is a kind of distributed system that provides the sharing of geographically distributed independent resources dynamically at runtime depending on their availability, capability, performance and cost. Scheduling is a key problem in evolving grid computational systems. Dealing with the multiple criteria in a heterogeneous and dynamic environment like Grid is very complex and computationally hard. There are ample approaches for Job scheduling like Genetic Algorithm (GA), Simulated Annealing (SA), Ant Colony optimization (ACO) and Particle Swarm Optimization (PSO) Algorithm. This paper presents Genetic algorithm for designing efficient multi-objective job schedulers by considering multiple parameter like makespan and flow time to find optimal/nearly optimal schedule. It searches solution space in parallel and solution can be found more quickly.

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Index Terms

Computer Science    Artificial Intelligence

Keywords

Genetic Algorithm (GA)  Scheduler  Makespan  Minimum completion time  Fitness  Flow Time.