Abstract

Grid computing is an emerging technology that involves coordinating and sharing of resources to carry out complex computational problems. Resource management and scheduling plays a crucial role in achieving high utilization of resources in grid computing environments. Due to heterogeneity of resources, scheduling an application is significantly complicated and challenging task in grid system. Most of the researches in this area are mainly focused on to improve the performance of the grid system. To achieve the performance in grid environment, many Job scheduling algorithms are implemented. Existing approaches of Grid scheduling doesn’t give much emphasis on the performance of a Grid scheduler. This paper
introduces an algorithm called Optimized Hierarchical Load Balancing Algorithm (OHLBA) for Job scheduling and Load Balancing. The proposed method is to dynamically create an optimal schedule to complete the jobs within minimum makespan. The main contributions are to balance the system load and minimize the makespan of jobs. Our proposed approach uses a Grid simulation toolkit (GridSim) to analyze the performance of OHLBA algorithm with other algorithms in terms of makespan and efficiency. Experimental results show the proposed algorithm can perform better in a Grid environment.

References


Index Terms

Computer Science

Information Technology
Keywords
Grid Computing  Job Scheduling  Load Balancing  Computational Grids  Resource Management