Heuristic task scheduling algorithms For optimal resource utilisation in grid computing

ABSTRACT

The demand for high computational power has developed more rapidly in the past few years. The ever-increasing lack of computational resources are less able to satisfy these needs, leading to the development of grid computing. This technology was able to fulfill the increasing demand for computational power, storage capacity, bandwidth availability and resources. Grid computing is considered as a distributed system that utilises resources from multiple geographically distributed computers. This system usually handles workloads that are not interactive and include huge amount of data. The current challenge facing researchers is to determine the optimal task scheduling method that provides optimal resource utilisation in this extremely heterogeneous environment. The main goal of this work is to present an evaluation of resources utilisation for certain heuristic scheduling algorithms in Grid Computing Environment. The results of the two experimental scenarios showed that suf rage algorithm produced the best resource utilisation among the three investigated heuristic scheduling algorithms.

Keyword: Grid computing; Min-Min; Max-Min; scheduling algorithms; Suffrage