A Review on Resource Scheduling Models to Optimize Quality of Service Parameters in Grid Computing using Meta-heuristics

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Authors:
Dinesh Prasad Sahu
Karan Singh
Shiv Prakash

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Abstract

Computational Grid (CG) is a wide network of computational resources that provides a distributed platform for high end compute intensive applications. The resources in the computational grid are usually heterogeneous and being a highly heterogeneous system, Computational Grid poses a number of constraints. It is difficult to allocate and schedule the applications properly to achieve the benefit of the grid resources from the applications point of view, as the resources are heterogeneous and dynamic in nature. There are no common scheduling strategies that fulfill all the needs with respect to both, user and the system. The available scheduling implementations consider specific characteristics of the available resources and the application. The complexity of application, user requirements and system heterogeneity prevents any scheduling procedure in achieving its best performance. The aim of a grid scheduling algorithm is to find an appropriate set of resources and maintain its user-demanded Quality of Service (QoS) requirements. Scheduling in CG is an NP-hard problem which requires an efficient solution. The problem, considered in this work, is task scheduling in Computational Grid (CG). Task scheduling in CG is a complex problem as many QoS parameters and system constraints are involved. This paper deliberates over the problem
and various tools used in order to solve this problem.

References


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**Index Terms**

Computer Science

Information Science

**Keywords**

Scheduling  Computational Grid  QoS Parameters  Meta-heuristics