Abstract

Grid Computing provides non-trivial services to users and aggregates the power of widely distributed resources. Computational grids solve large scale scientific problems using distributed heterogeneous resources. The Grid Scheduler must select proper resources for executing the tasks with less response time and without missing the deadline. There are various reasons such as network failure, overloaded resource conditions, or non-availability of required software components for execution failure. Thus, fault-tolerant systems should be able to
identify and handle failures and support reliable execution in the presence of failures. Hence the integration of fault tolerance measures with scheduling gains much importance. In this paper, a new fault tolerance based scheduling approach for scheduling statically available meta tasks is proposed wherein failure rate and the fitness value are calculated. The performance of the fault tolerant scheduling policy is compared with a non-fault tolerant scheduling policy and the results shows that the proposed policy performs better with less TTR in the presence of failures. The number of tasks successfully completed is also more when compared to the non-fault tolerant scheduling policy.

Reference

1. N. Malarvizhi, Dr. V. Rhymend Uthariaraj. (2009): A Minimum Time To Release Job Scheduling Algorithm in Computational Grid Environment, IEEE Fifth International Joint Conference on INC, IMS, IDC.


Index Terms

Computer Science

Grid Computing
A New Proactive Fault Tolerant Approach for Scheduling in Computational Grid

Key words

Fault tolerance
Failure rate

Grid scheduling

Meta task