

Analysis of Fault Tolerance on Grid Computing in Real Time Approach

Authors : Parampal Kaur, Deepak Aggarwal

Abstract : In the computational Grid, fault tolerance is an imperative issue to be considered during job scheduling. Due to the widespread use of resources, systems are highly prone to errors and failures. Hence, fault tolerance plays a key role in the grid to avoid the problem of unreliability. Scheduling the task to the appropriate resource is a vital requirement in computational Grid. The fittest resource scheduling algorithm searches for the appropriate resource based on the job requirements, in contrary to the general scheduling algorithms where jobs are scheduled to the resources with best performance factor. The proposed method is to improve the fault tolerance of the fittest resource scheduling algorithm by scheduling the job in coordination with job replication when the resource has low reliability. Based on the reliability index of the resource, the resource is identified as critical. The tasks are scheduled based on the criticality of the resources. Results show that the execution time of the tasks is comparatively reduced with the proposed algorithm using real-time approach rather than a simulator.

Keywords : computational grid, fault tolerance, task replication, job scheduling

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