Abstract

Grid computing provides an environment to share software and hardware resources. On the one hand, environment of Grid computing is inherently large, complex, heterogeneous and dynamic and its state changes over time, on the other hand, incoming job to Grid show unstable behavior, which before that is not known and changes over time. As regards that scheduling in Grid has a vital role in overall system performance, the need to scheduling methods to adapt themselves to conditions in Grid, and regarding current state of the environment and jobs the scheduler must be able to make decisions. In this article, for the scheduling of computational Grid, we have used Autonomic Computing principles to enable Grid scheduler dynamically adapt itself to the environment and increase efficiency. Autonomic computing systems are inspired by biologically systems which their goal is to manage themselves with minimal involvement of managers. Autonomic computing is suitable for a computational Grid because of the large, heterogeneous, dynamic and autonomous nature of the Grid. The proposed method in this study, in terms of makespan, execution time and resource utilization has shown higher performance, compared to other methods and related numerous experiments.
References

An Adaptive Scheduling System for Computational Grid using Autonomic Computing


Index Terms

Computer Science Distributed Computing

Keywords

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