Improving Max-Min scheduling Algorithm for Reducing the Makespan of Workflow Execution in the Cloud

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Abstract

Cloud computing has become a new paradigm that provides IT resources as a service based on the basis: pay-per-use over the internet. Scientific workflow applications can gain the advantage by running on cloud resources. However, the optimized of workflow scheduling algorithms is a challenge and still needed further work. This paper presents an improved Max-Min algorithm based on the Max-Min algorithm. It can minimize the makespan of workflow execution and increases the resource utilization. The algorithm tested using WorkflowSim with five workflows from the Pegasus workflow management system. The results show that this algorithm can achieve better than Max-Min in most of the cases.

References


Index Terms

Computer Science
Algorithms
Keywords

Cloud Computing, Scientific workflow, Scheduling algorithms, Max-Min, Makespan.