Balancing Load of Cloud Data Center using Efficient Task Scheduling Algorithm

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Abstract

Cloud computing is one of the most popular terms of today’s computer world. The pay-as-you-use model of cloud permits users to pay only according to their requirement. The enormous increase in popularity of cloud is due to its ubiquitous use through common hardware only. So it must provide high performance gain to the user and at the same time must be beneficial for the Cloud Service Provider (CSP). To achieve this goal many challenges have to be faced. Load balancing is one of them. To distribute the load evenly in cloud the resources and workloads must be scheduled efficiently. A variety of scheduling algorithms are used by load balancers to determine which backend server to send a request to. The selected server allocates resources and schedules the job dynamically on some virtual machine (VM) located on the same physical machine. In this paper, we have proposed a task scheduling algorithm which will distribute the task among all the available virtual machines in a way such that none of them become overloaded. Further we have simulated our algorithm in CloudAnalyst and compared it with the existing load balancing algorithms. Results show that the proposed method not only balances the load more efficiently but also improves the response time.
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Index Terms

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Keywords

Cloud Computing, Load Balancing, Task Scheduling, Virtualization