World Academy of Science, Engineering and Technology
International Journal of Information and Communication Engineering
Vol:8, No:03, 2014

Hierarchical Queue-Based Task Scheduling with CloudSim

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Abstract : The concepts of Cloud Computing provide users with infrastructure, platform and software as service, which make those services more accessible for people via Internet. To better analysis the performance of Cloud Computing provisioning policies as well as resources allocation strategies, a toolkit named CloudSim proposed. With CloudSim, the Cloud Computing environment can be easily constructed by modelling and simulating cloud computing components, such as datacenter, host, and virtual machine. A good scheduling strategy is the key to achieve the load balancing among different machines as well as to improve the utilization of basic resources. Recently, the existing scheduling algorithms may work well in some presumptive cases in a single machine; however they are unable to make the best decision for the unforeseen future. In real world scenario, there would be numbers of tasks as well as several virtual machines working in parallel. Based on the concepts of multi-queue, this paper presents a new scheduling algorithm to schedule tasks with CloudSim by taking into account several parameters, the machines' capacity, the priority of tasks and the history log.

Keywords : hierarchical queue, load balancing, CloudSim, information technology
Conference Title : ICCIIT 2014 : International Conference on Communication, Internet and Information Technology
Conference Location : Madrid, Spain
Conference Dates : March 27-28, 2014