

Enhanced Weighted Round Robin Algorithm to Balance the Load for Effective Utilization of Resource in Cloud Environment

Garima Sinha^{1,*}, Deepak Kumar Sinha²

¹IIMT Engineering College, Meerut, India

²IIMTU, Meerut, India

Abstract

Cloud computing contains basically virtualization, networking, distributing computing, software and web services over the cloud. Cloud computing provide basis on demand hosting computing resources and cloud services over the cloud or internet on pay per use basis. Due of high availability, fault tolerance, scalability, management simplicity and low cost Cloud computing currently become best method of computation over large scalable network environment .Efficient load balancing make cloud computing environment more efficient and also get better user satisfaction. The idea of this paper is to propose load balancing algorithm for utilization of resource efficiently and to compare the performance of projected algorithms with well-known load balancing algorithms. The newly proposed algorithm will consider size of cloudlet, expected completion time of tasks by virtual machine and runtime properties of virtual machines to map's the incoming request to virtual machine in impartially and efficiently. The response time of EWRR method is less in comparison of others methods. It has been found that EWRR having the better result in comparison of RR, Throttled, ACO and Hybrid response times which are 0.77, 2.20,8.31, 20.82 and 100 respectively. In this paper, by proposing a virtual machine load balancing algorithm that aims to improve the average response time and average processing time of the system in the cloud environment.

Keywords: Round Robin (RR) algorithm, virtual machine (VMs), load balancing, scalability, cloudlet, Data Center (DC), EWRR algorithm, RMCT, Throttled, Hybrid load balancing algorithm.

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Abbreviation.

LB- Load balancing, RR-Round Robin, VMs-Virtual Machines, DC-Data Center, EWRR-Enhance Weighted Round Robin

*Corresponding author. Email: Mailatgarima@yahoo.co.in

algorithm performs efficient than RR, RMCT, Throttled, ACO and Hybrid load balancing algorithm.

7. Future work

As part of future enhancement and recommendation is suggested to be done in future are: In the enhanced round robin load balancing algorithm while migrates job from ideally overfull virtual machines to minimum loaded virtual machine did not ensured transfer of the present status of the tasks between the virtual machines. So that, to have less reaction time and datacenter processing time it is better to transfer the status of tasks between virtual machine. Enhanced algorithm for WRR load balancing it is suitable to add the perception skill of handling tasks with priority.

8. Conclusion

Many cloud computing data center network architectures and task scheduling algorithms are stated in the cited works with their pluses and limitations. In the literatures explored in this paper Enhanced WRR load balancing algorithm had been an enhancement of RR load balancing algorithm which we proposed in this paper. An unpremeditated to RR Algorithm was proposed that improvements weighted robin algorithms to the next level by handling the unevenness of virtual machine loads in the network. The main drawback of RR load balancing algorithm was that it did not taken consideration of any size of the users requests to assign the appropriate virtual machine to the incoming request. It only decides the next virtual machine simply by using the rotational decision. This proposed procedure of the weighted RR load balancing algorithm considers the load of VMs, along with the processing capacity and length of the task, to decide which VM should be allocated with the next task to be processed. The enhanced WRR load balancing algorithm has the static algorithm assign the VMs based on the processing capacity of the VMs. Enhanced RR load balancing algorithm.

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