VIRTUAL MACHINE SCHEDULING MANAGEMENT ON CLOUD COMPUTING USING ARTIFICIAL BEE COLONY

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Abstract

Resource scheduling management design on Cloud computing is an important problem Scheduling model, cost, quality of service, time and conditions of the request for access to services are factors to be focused. A good task scheduler should adapt its scheduling strategy to the changing environment and load balancing Cloud task scheduling policy. Therefore, in this application, Artificial Bee Colony (ABC) is applied to optimise the scheduling of Virtual Machine (VM) on Cloud Computing. The main contribution of work is to analyse the difference of VM load balancing algorithm and to reduce the make span of data processing time. The scheduling strategy was simulated using Clouds tools. Experimental results indicated that the combination of the proposed ABC algorithm, scheduling based on the size of tasks, and the Longest Job First (LJF) scheduling algorithm performed a good performance scheduling strategy in changing environment and balancing workload which can reduce the make span of data processing time.

Keywords: *Artificial Bee Colony, Cloud Computing, Programming Management, Virtualisation Machine.*

Therefore, ABC algorithm is suitable for Cloud computing environment because the algorithm is able to effectively utilise the increased system resources and reduce makespan. Its performance is more prominent in scalability.

INTRODUCTION

Cloud computing is an emerging concept of information technology service. It consists of infrastructure and application services and focuses according to users' requirements. Cloud computing focus on release of consistent, sheltered, fault-tolerant, sustainable and scalable infrastructures for hosting internet-based application services. Quantifying the performance of scheduling and allocation policy on cloud infrastructure is an extremely challenging problem to tackle.

To make simpler this process, in this paper, we propose CloudSim: a new well-known simulation structure that enables flawless modelling and simulation of rising Cloud computing infrastructures and running services.

CONCLUSION AND FUTURE WORK

This paper presents a new optimisation approach for the efficient load scheduling while maintaining some client-specific objectives, under complex load conditions and the simulation result shows that it effectively utilises the resources while minimising latency and without compromising processing speed in Cloud. In the proposed algorithm, fitness values are concluded by minimising differences of requested load and served load, requested priority and served priority, and also minimising total execution error. Previous algorithms are not taking account of all the parameters that are load, execution error of VMs and priority. Using these parameters in objective function, we get improved performance. The simulation results also show that the proposed technique also fulfils the user-specific requirements such as priority execution and specific resource allocation.

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