

Review on Quality-Aware Cloud Service Selection based on Hybrid Method using Cloudsim Toolkit

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Abstract–Cloud computing is the technology which provides computing resources remotely rather than on local server to cloud users to complete its task .One of the most powerful area in cloud computing is quality of service. To provide quality of service we have used hybrid genetic algorithm having different population size. In this paper we presented a hybrid algorithm with Simplex Method and Genetic Algorithm in order to solve quality-driven selection. In this approach, we used a tree traversal sequence encoding scheme. The encoding is based on a tree combination template of services combination. We used populations with different sizes, have adopted for different composition scales, the efficiency of algorithm will be greatly improved. We also tested the nature of hybrid genetic algorithm through number of parameters like Input number of tasks, Populations size(different),Average number of candidate services for each task,Compute average fitness value of simple genetic,Average fitness value of hybrid genetic.

Keyword – Hybrid genetic algorithm, Genetic algorithm, Simplex method

1.1 INTRODUCTION

Cloud computing is a recently proposed and evolving paradigm that provides computing as a service that can be purchased when required by different types of clients following a pay-per-use model. In cloud computing cloud user access data from shared data centers and pay only for what they use. Cloud computing provides different services like Infrastructure as a service, Software as a service and Platform as a service.

1.2 QoS BASED CLOUD COMPUTING

In cloud computing environment there are inevitably many service providers to provide services with same functionalities and different QoS. These services can include tens of thousands composite services with same operations and different QoS. Therefore, in a service composition process, we need to choose service components from large services with same functions and different QoS based on user's QoS requirements.The service selection with global QoS constraints possesses a greatly large proportion in the issue of QoS-based cloud service selection. Choosing QoS-based cloud service plays an important role in the composite of cloud services. Genetic Algorithm is a type of approximate algorithm. It is a good method to solve optimization combinatory issues. But Genetic Algorithm is not beneficial for the local convergence. To enhance the local search capability of Genetic Algorithm itself, the combination of Genetic

Algorithm and some type of local search algorithms is mandatory to improve the local search capabilities of Genetic Algorithm.

1.3 CLOUD COMPUTING APPLICATION ARCHITECTURE

Cloud computing is the transfer of computing to a host of hardware infrastructure that is divided in the cloud. Cloud computing involves working functions on virtual servers that are allocated on this divided hardware infrastructure available in the cloud. There will be a grid engine, for managing the different requests coming to the virtual servers.This engine will take care of the development of numerous copies and also the preservation of goodness of the data that is saved in the infrastructure. The distinct workload management systems are hidden from the users. For the user, the processing is completed and the result is achieved.

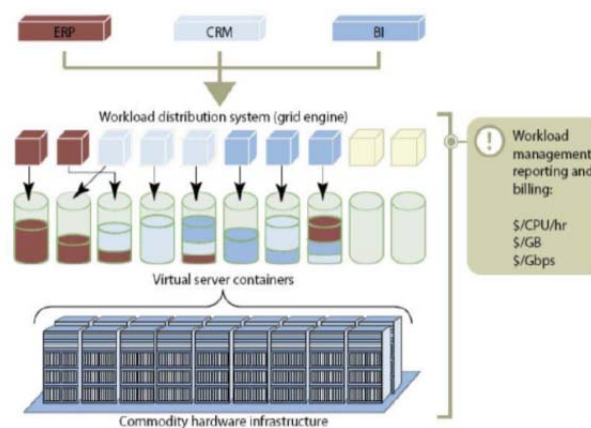


Figure 1 Basic cloud computing application architecture

1.4 PROPOSED WORK

In the previous base paper, the number of individuals in populations is same in the face of different combination sizes. The simple Genetic Algorithm and the hybrid GA used initialization parameters as follows. The population size is 500 The cross over possibility is taken 0.7 and the mutation possibility is taken 0.1. Based on the above preparation of test data, simple Genetic Algorithm and the hybrid GA were run respectively. The test results were analyzed from search capability

In our proposed work, we will use populations with different sizes, will be adopted for different composition scales, the performance of algorithm will be greatly improved. Therefore, the research work will focus on

examining the dynamic adaptive mechanism of population size. The other next step is to apply the proposed hybrid algorithm into a number of practical large-scale services computing environments, in order to improve the efficient and reliable operations of the hybrid GA further.

1.5 OBJECTIVE

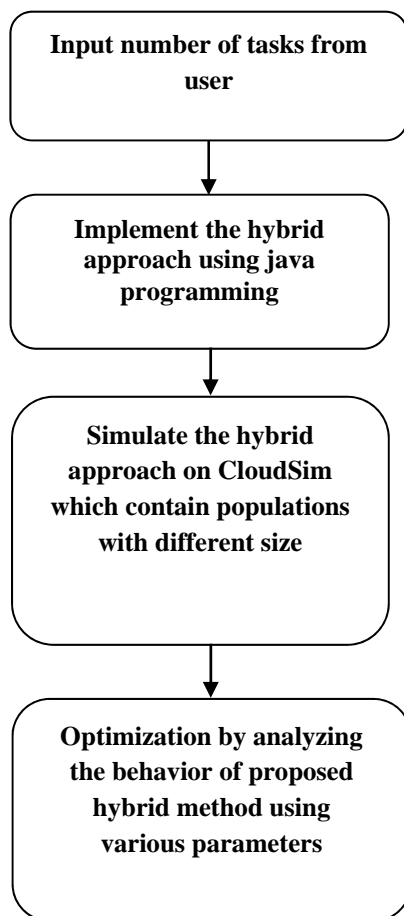
Objectives for this research work are:

- To optimize the performance of cloud architecture.
 - To integrate Simplex method with Genetic algorithm, and implement the hybrid approach using java programming.
 - To simulate the hybrid approach using CloudSim toolkit.
 - To analyse the behavior of the proposed method using various parameters:
- Input number of tasks
 - Populations size(different)
 - Average number of candidate services for each task
 - Compute average fitness value of simple genetic
 - Average fitness value of hybrid genetic

1.6 METHODOLOGY

Input: - Required parameters for cloudlets and vm's are taken from user.

Output: - Improves Quality of Services at cloud with better Computation Time, data processing time and throughput.



1.7 REQUIREMENT FOR PROPOSED WORK

- PC with Window XP/Vista/7 (32-bit) Operating System
- Intel Pentium IV Processor
- 512MB RAM
- 80GB HDD
- Java 7 SE
- Installing JRE (Java Runtime Environment) 6 or later
- Installing Eclipse IDE
- CloudSim Simulator
- IEEE Journals and other International Journals

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