

LOAD BALANCING IN CLOUD COMPUTING USING TASK SCHEDULING:

Pooja Binawade¹,Niranand Khedkar², Sayali Bendre³, Mihir Kulkarni⁴

¹ Student, Computer Engineering, Sinhgad Academy Of Engineering, Maharashtra, India

² Student, Computer Engineering, Sinhgad Academy Of Engineering, Maharashtra, India

³ Student, Computer Engineering, Sinhgad Academy Of Engineering, Maharashtra, India

⁴ Student, Computer Engineering, Sinhgad Academy Of Engineering, Maharashtra, India

ABSTRACT

. In modern world Cloud Computing is one of the most promising and evolving areas of computer science and engineering and. Entire internet based activity has been covered by cloud computing. Like other technologies cloud computing is developing day by day and faces many problems as well as challenges. One of them is scheduling.Scheduling, it is a technique used to improve the overall execution time of the task or job. Task scheduling plays an important role in cloud computing systems.The aim is to schedule the tasks effectively so as to reduce the turnaround time and improve resource utilization

Keyword : - Cloud Computing,, Load Balancing, Task scheduling etc....

1. Introduction

In recent times and has got lots of attention from media as well as analysts because of the inter-connected and virtualized computers that are provisioned Cloud computing is anidea that allows user to access applications that actually at a remote location other than user`s computer or other internet-connected device/s. It has become one of the most talked about technologies opportunities it offers [1].Cloud computing is a large-scale distributed computing model, which depends on the economic size of the operator of cloud that is abstract, virtualized and dynamic.Virtualization greatly helps in effective utilization of resources and build an effective system.There is no exact definition of cloud but we can define cloud in various ways and by considering various means.According to R.Buyya that defines the cloud as “ Cloud is a parallel and distributed computing system which basically consist of a collection of dynamically and presented as one or more than one unified computing resources based on serviceLevel agreement (SLA) established through negotiation between the service providers of cloud and users [].A large number of resources, platforms for computation, data centers, data storages, networks, firewalls and software in form of services are provided by cloud.One of the main features of cloud is virtualization

2. Task Scheduling:

Task scheduling is acrucial task in cloud environment. In cloud computing, job scheduling problem is a biggest and challenging issue.Maintaining the efficiency and fairness among the jobs and reduce the execution cost and at the same timeimprove the performance and quality of service is the main aim of job scheduling algorithm.An efficient

job Scheduling strategy must aim to yield less response time so that the execution of submitted jobs takes place within a possible minimum time. There are various scheduling strategies which should take care of all these things. But no such strategy exists which is concerned with both the users point of view as well as service providers point of view .Cloud consists of a number of resources that are different with one other via some means and cost of performing tasks in cloud using resources of cloud is different so scheduling of tasks in cloud is different from the traditional methods of scheduling and so scheduling of tasks in cloud need better attention to be paid because services of cloud depends on them.Task scheduling plays a key role to improve flexibility and reliability of systems in cloud.Scheduling is nothing but the mapping of tasks and resources in accordance with some certain principles for achieving the desired goal.The scheduling of tasks in cloud means choose the best suitable resource available for execution of tasks or to allocate computer machines to tasks in such a manner that the completion time is minimized as possible

3. Description of cloudsystem, loadbalancing andgeneticalgorithm.

3.1 Cloud System

Mainly, cloud computing means storing and accessing data and programs over the internet as an alternative of the computer's hard drive. The cloud is just a comparison for the Internet. It goes back to the days of flowcharts and presentations that would represent the gigantic server-farm infrastructure of the Internet as unknown but a puffy, white cumulonimbus cloud, accepting connections and doling out info as it floats.

Cloud computing characterizes a real model shift in the way in which systems are arranged. The gigantic scale of cloud computing organizations was enabled by the popularization of the Internet and the enlargement of some large service companies. Cloud computing makes the long-held dream of utility computing possible with a pay-as-you-go, infinitely scalable, universally available system. With cloud computing, anybody can start very small and become big very fast. That's why cloud computing is radical, even if the technology it is constructed on is evolutionary.

3.2 Scheduling Server for Load balancing

Load Balancing is firstly distributed by cost. Because Cloud computing is costly. When someone pays, then the scheduling System gives high priority to the most paid user.

3.3 Genetic Algorithm & Equation

The load balancing abides by three rules such as the location rule, the distribution rule, and the selection rule. Here the work will process through a dynamic process after doing scheduling server. Firstly the tasks will be fixed a number. Afterward it will auto execute task number and size randomly. Then the task handled from a task slot, where the randomly generator are deposited for processed.

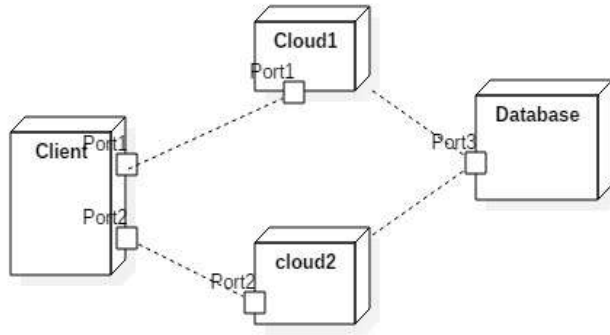


Fig 1. Deployment Diagram.

3.4. Study Of Existing Task Scheduling Algorithm

A. Deadline and Budget Distribution based Cost-Time Optimization Algorithm [13] –

This approach considered two constraints: deadline of executing the tasks and budget. This paper proposed (DBD-CTO) scheduling algorithm to schedule tasks in cloud computing environment. This algorithm the given deadline as well as at the same time achieve its goal or target by finishing the execution of tasks before minimizes the cost of computation that occur during execution.

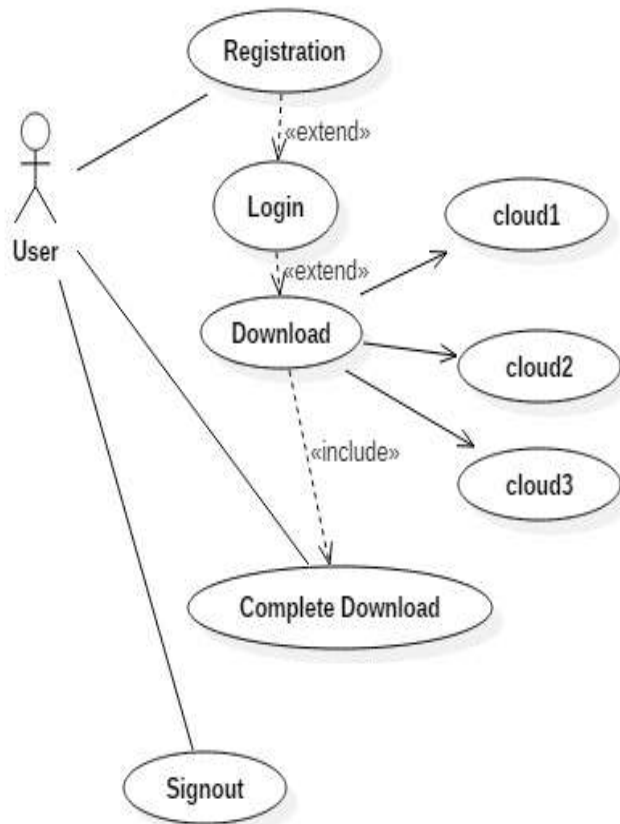


Fig 2. Usecase Diagram

4. CONCLUSIONS

Cloud computing system is used to scale the application by maximizing the concurrency and using the resources efficiently. The approach takes time utilization and resource utilization into consideration and hence results in high signification. The experiments need to be done for processors at various platforms and that reduces the execution time.

5. REFERENCES

- [1] Anthony T. Velte, Toby J. Velte, Robert Elsenpeter, "Cloud Computing, a Practical Approach".
- [2] Aasys, Virtualization Basics, Vol. 6, Issue 9, September 2008.
- [3] Pinal Salot, "A Survey of Various Scheduling Algorithm in Cloud Computing Environment", International Journal of Research in Engineering and Technology, Vol. 2, No. 2, 2013.
- [4] Nishant. S. Sanghani, R.J. Khimani, K.K. Sutaria, Pooja. P. Vasani, "Pre-emptable shortest job next scheduling in private cloud computing" Journal of Information ,Knowledge and research in computer engineering, Vol no. 02, Issue- 02, pp 385-388 , Nov 12-Oct 13.
- [5] Poonam Devi, Trilok Gaba, "Implementation of Cloud Computing By Using Short Job Scheduling" International Journal of Advanced Research in Computer Science and Software Engineering, Vol. no.3, Issue 7, pp 178-183, July 2013.

[6] R. Buyya, C. S. Yeo, S. Venugopal, J. Broberg, and I. Brandic, Cloud Computing and emerging IT

[7] A. Ebaid, R. Ammar, S. Rajasekaran, and T. Fergany, "Task clustering and scheduling with duplication using recursive critical path approach (rcpa)," in Signal Processing and Information Technology (ISSPIT), 2010 IEEE International Symposium on, dec. 2010, pp. 34–41.

[8] T. Chen, B. Zhang, X. Hao, and Y. Dai, "Task scheduling in grid based on particle swarm optimization," in Parallel and Distributed Computing, 2006. ISPD '06. The Fifth International Symposium on, July 2006, pp. 238–245. [9] M. Kashani and M. Jahanshahi, "Using simulated annealing for task scheduling in distributed systems," in Computational Intelligence, Modelling and Simulation, 2009. CSSim '09. International Conference on, sept. 2009, pp. 265–269.

