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RESOURCE ALLOCATION FOR TASK USING FAIR SHARE SCHEDULING ALGORITHM

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Abstract-*Cloud Computing is a major area where the business people and many organizations are using now-a-days. It provides a guaranteed service to the users. The main idea lies behind the cloud computing is that the information about the user is not necessary to be placed locally instead it is stored in the cloud. With the help of internet, the data can be accessed from the cloud whenever it is needed. In SCS algorithm, the resource allocation is performed mainly based on the time, which is based on the requested start and end time. If the time for the particular user is get over, then the remaining task will be allocated to the next resource. The major drawback in SCS algorithm is that overlapping of tasks. If suppose two or more tasks are assigned to the same resource, then the tasks get overlapped. In order to overcome this issue, fair share scheduling algorithm was proposed. In this algorithm, based on the need and the availability of the resource and the user the priority is assigned among the tasks.*

Keywords: **Quality of Service, SCS algorithm, Fair Share Scheduling algorithm**

INTRODUCTION

Cloud computing delivers on demand service to its clients and users. Consumers are able to get the resources and services as their needs. The supplier charges the users according to their usage. Cloud computing is otherwise called “pay as you go model”. Virtualization technology in Cloud Computing is used for sharing resources in the datacenter (DC).Cloud computing lowers the cost by renting the physical infrastructure from third party provider. Due to the elastic nature of cloud, they can rapidly access resources from the cloud providers when they need to develop the business. The remote convenience enables the user to access the cloud services from anywhere at anytime.

In cloud computing, generally Resource Allocation is a process of handing over the on hand resources to the needed cloud applications over the internet. Cloud resources consist of both physical and virtual resources. The virtualized resources can be requested through various parameters like processing, memory and the disk needs. The hardware and software resources are allocated through on-demand basis to the needed cloud applications.

EXISTING SYSTEM

Selection of resources and assignment of tasks are the fundamental methods in cloud computing. In Spectral Clustering Scheduling (SCS) algorithm, it is mainly focused on the tasks with fixed but not the strict time requirements as the requested start and end time. In this algorithm, scheduling is done only by taking the start and end time as constraints. The main advantage of this algorithm is that it reduces the overlapping time of tasks mapped to the appropriate resource. But the drawback is that it increases the overlapping time among various tasks assigned to different resources. In order to overcome this issue, fair share scheduling algorithm had been proposed.

PROPOSED SYSTEM

The main objective of the proposed system is to overcome the task overlapping and also to minimize the cost of utilization of resource. Resource allocation is the process of assigning available resources to the needed cloud application. In order to reduce resource contention and task overlapping, fair share scheduling algorithm is used. In this algorithm, QoS parameters taken into consideration are the time requirement, that is start

and finish time of the resources and the cost. This algorithm also takes an advantage by executing the task even if the needed resource is not available for other task for the corresponding duration. The proposed algorithm also satisfies the users QoS requirements and also the resource utilization efficiency.

The steps involved in fair share scheduling algorithm are:

Step1: Find the execution time for each cloudlets

Step 2: Find the cloudlet length

Step 3: Assign the cloudlets based on Broker ID -> VM Id

Step 4: Find Priority based on Execution Time

Step 5: Map the cloudlet to the internal cloud which has more priority

Step 6: Map the cloudlet to the external cloud which has less priority

Step 7: Finally calculate the profit.

CALUCULATION OF ESTIMATION TIME

$$Execution\,time = \frac{length}{Bandwidth} \times MIPS$$

$$Execution\,time = Start\,time - Dead\,time$$

COST ESTIMATION

$$Execution\,time = \frac{length}{Bandwidth} \times MIPS$$

$$Cost = Execution\,time \times MIPS$$

PERFORMANCE ANALYSIS

A sample graph was generated to compare the time deviation with task using SCS and FS algorithm.

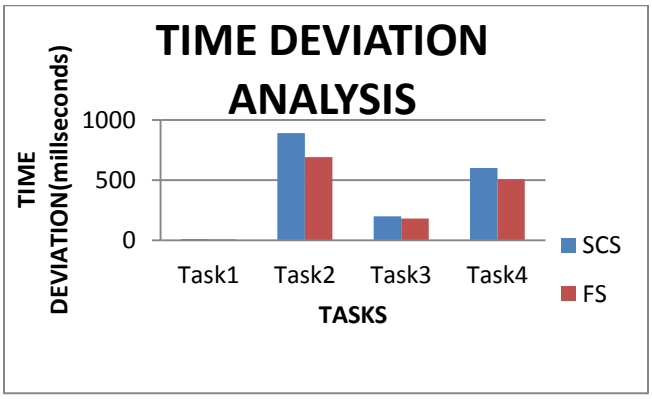

Figure 1: Time deviation of tasks

CONCLUSION AND FUTURE WORK

The cloud computing model allows us to access information and computer resources from anywhere that a network connection is available. The limitations of existing system is overlapping of task is more thereby it leads to time delay and cost is high. The proposed work produces the high quality scheduling solution in allocating the task to the resources.The analysis proves that maximize the resource utilization and minimize the task overlapping. Thus the implementation of the non overlapping measures between the task is measured. Scheduling is performed and complete the task on minimized time.The existing system focuses only on time as their QoS requirements. But the proposed system focuses on both time and cost as their QoS requirements. In future work, consider other QoS parameters as their QoS requirements to reduce the task overlapping and maximize the resource utilization efficiency.

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