Virtual Machine Process in Cloud Computing Environment

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Abstract

Cloud is emerging day-by-day in the distributed environment and facing innumerable tackles, one amongst is Scheduling. Job scheduling is a vital task in cloud computing as the customer has to pay for used resources depends upon the time and cost. In existence, scheduling algorithms are established in the job length and the speed of the resources. The job execution in the cloud necessities multiple nodes to execute the single job. This approach is to predict the which virtual machine is not working in the process.

Keywords: *Cloud Computing, Job Scheduling, Hierarchical Job Scheduling Algorithm (HJSA), Deadline, Application Splitting Jobs, Computational Algorithm.*

1. Introduction

Cloud computing is a system of both parallel and distributed environments. A cloud comprising of group of virtualized and integrated computers. To utilize a cloud service, the most significant issues are (1) time slot, and (2) price determination. The cloud resources are provisioned into virtual machine instancesby the cloud providers.

Scheduling is a major task in a cloud computing environment. Based on trusting the correctness of status of resource information, the tasks are scheduled in distributed systems. The resource providers (i.e., Data centers) submits this type of information to a centralized database. This is further manageable to cloud schedulers, where the information is complete and accurate.

Cloud-based application service contains web hosting, social networking, content delivery and more. To quantify the provision's performance, the scheduling and allocation policies are defined in the cloud computing environment. Cloud necessitates the hardware, software, and network. Cloud user have the requirements of QoS and its application have different performance and workflow. Currently, there is a rapid increasing in the growth of cloud providers. An individual providers increase their own profit in multi cloud environment. This does not maintain the efficiency of other customers or providers. The resources are frequently provisioned isolated in a virtualized environment. Resource provisioning is said to be better using the following services such as IaaS, PaaS, and SaaS. Describes the cloud scheduler that builds consistency checks on the cloud resources to ensure the resource optimization. This scheme is designed to authorize and schedule the job and provides the optimal resources. After authorizing the requests, it is further forwarded to the cloud scheduler by schedule request. Subsequently, the request returns back to the cloud user by service request.

2. Related Work

This section summarizes the relevant literature work in the workflow scheduling, price and time slot approaches for cloud services, and deadline constrained based workflow scheduling.The hierarchical job scheduling algorithm introduced to predict the optimum cost and time[1].

Fard et al introduced a pricing model and truthful systems for dynamic scheduling. This mechanism was employed for a single task in multi cloud environment. The workflow scheduling was optimized in terms of makespan and monetary cost. Eventually, the complexity, truthfulness and the efficiency were analyzed[2].*Amir et al* described a dynamic market based model for grid resource allocation. An efficient bidding algorithm was also introduced based on the strategies of myopic equilibrium. Depends upon the success rate, this system offers a better submission of bids and implementation in the grid system[3].*Son et al* contributed a new price and time-slot negotiation (PTN)function for cloud service. The utility function was employed for characterizing the various agent's satisfaction levels and time slots. The proposed burst mode was designed to improvise the negotiation speed and the aggregated use of price and time-slot. This provides an efficient tradeoff algorithm by managing the several proposals in a burst mode. The workflow scheduling, price and time slot approaches for cloud services, and deadline constrained based workflow scheduling. The workflow scheduling was optimized in terms of makespan and monetary cost.To schedule parallel jobs in data centers were enhanced using under-utilized node computing. The technique of virtualization yield better performance, system throughput and also the utilization of the cloud resources

3. A Hierarchical Job Scheduling Algorithm (HJSA) For Cost Optimization in Cloud Computing Environment

This section describes the proposed job scheduling methodology for optimizing the cost in a cloud environment. depicts the overall workflow of a hierarchical job scheduling approach in the cloud along with the properties of the virtual machines (VMs).The major components of the proposed work are explained as follows:

3.1 Job Scheduling

Scheduling is the group of procedures for managing the workflow that to be accomplished by a computer system. In the existing distributed environment, there has been several types of scheduling algorithm. Job scheduling is one among them and the benefits behind this is to attain better throughput of the system. In cloud, job scheduling is a multi-faceted complexity and cost optimization is a major objective in the large scale environment.
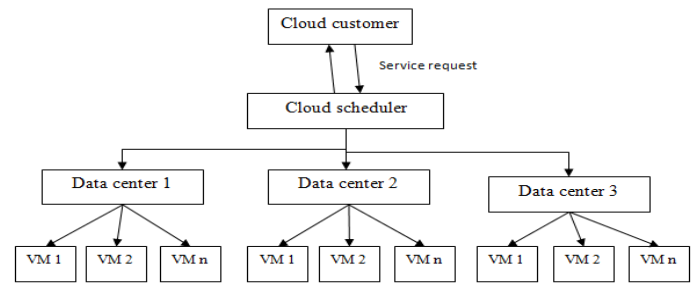

fig .1:Dataflow Diagram

The cloud provider assists to maximize their profit, whereas the customers optimize the cost. The jobs that require to be scheduled in the cloud increased proportionally as the number of cloud customers in the cloud environment increased. Therefore, a Hierarchical Job Scheduling Algorithm (HJSA) is introduced as crucial for scheduling the jobs on the cloud systems.
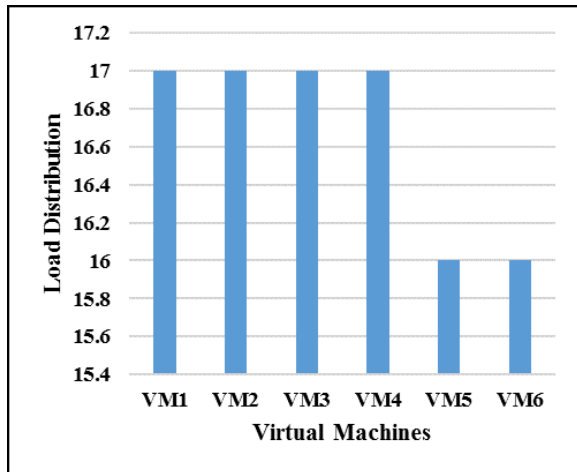
Fig:2

SERVER:

Login:

At first authentication process will done based on username and password.

Allocate VM machines:

The server allocate the VM machines for storing the user files.

Cost details:

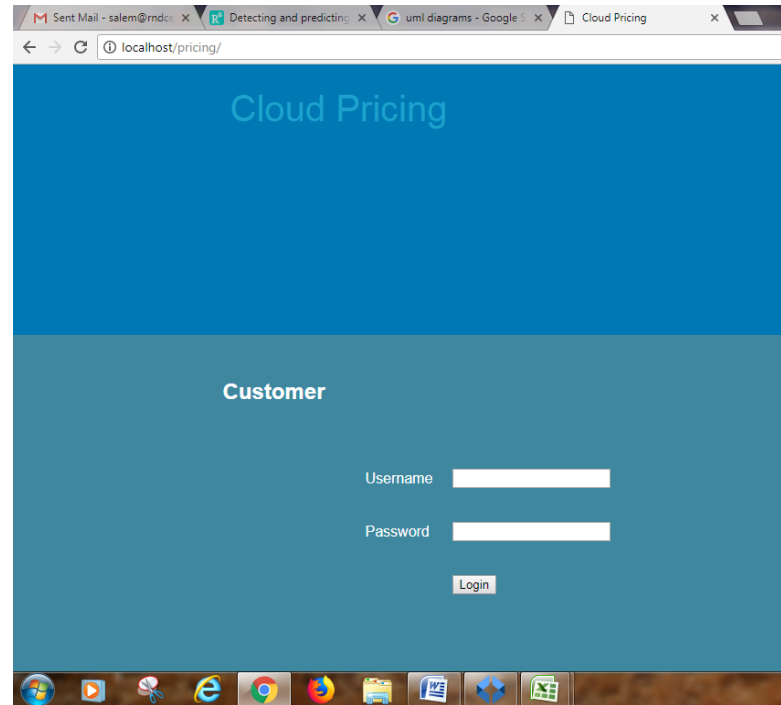The cost details of the file that can be uploaded by the user can be generated.

Fig:3

USER:

Register:

The user register into the system by entering the details such as name, email, Dob, Contact number, etc.

Login:

The user login to the system by using username and password.

Upload/download file:

The user can download/upload file to the cloud server.

View cost details:

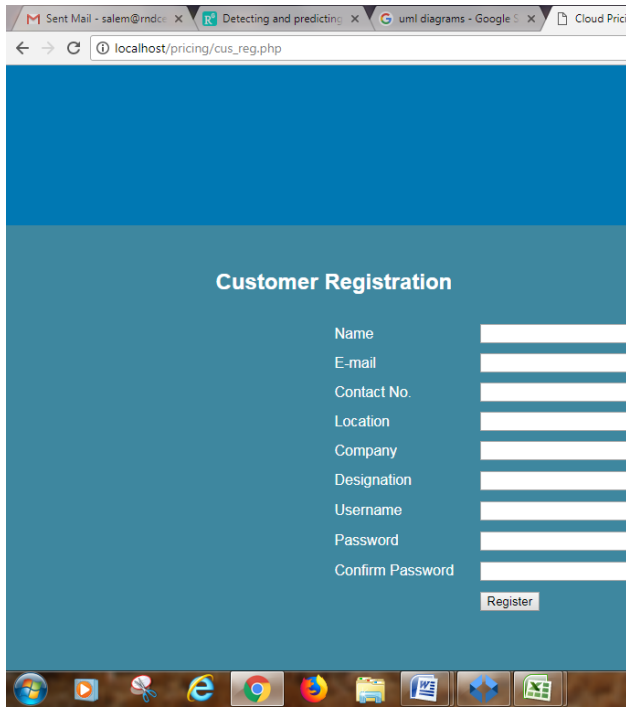The user can also view the cost of the file uploaded to the cloud.

Fig:4

Fig:5

CONCLUSION:

We propose a Hierarchical Job Scheduling Algorithm (HJSA) to schedule the job in server allocate virtual machine. This approach overcomes the prediction of optimal cost of the file uploaded to the cloud. The jobs are allocated to attain the deadline using application splitting jobs to the small level task. This approach also used to identify the not working virtual machine.
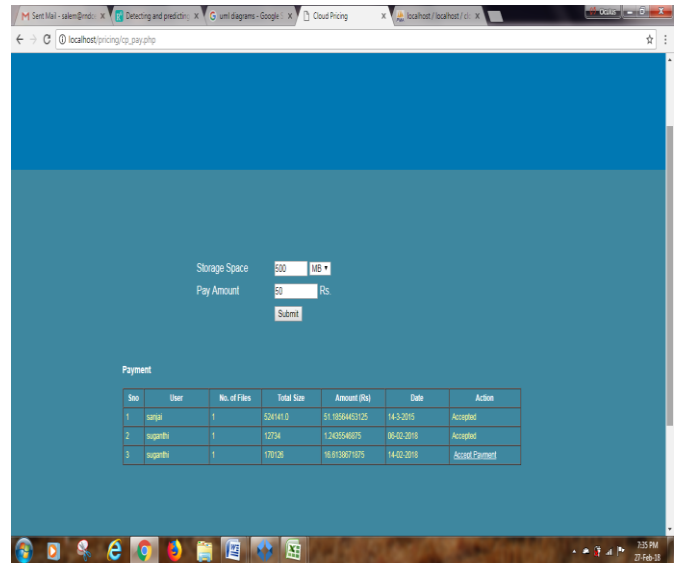
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