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An Effective Resource Scheduling With Volume Discount in Cloud Computing

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Abstract: In this paper, we focus on how to schedule the cloud resource in an effective manner and also provide the volume discount to the cloud user. We proposed An Randomized Online Stack-centric Scheduling Algorithm to provide an efficient resource scheduling with low cost to the customer. Resource scheduling is the process of assigning available resources to the needed user request over the internet. Scheduler for cloud computing determine on which processing resources jobs of a workflow should be allocated.

Keywords: **Cloud Resource, Volume Discount, Scheduler.**

I. INTRODUCTION

Cloud computing is the latest distributed computing paradigm and it offers tremendous opportunities to solve large-scale scientific problems [1]. Its goal is to share resources among the cloud users, cloud partners, and cloud vendors over internet [2].With the exponential growth of cloud computing as a solution for providing flexible computing resource, more and more cloud applications emerge in recent years. For example, Google, Microsoft, Yahoo, and IBM are rapidly deploying data centers in various locations around the world to deliver cloud computing service. It is dynamic in nature because there are many user can request for the different cloud resources, so that resource scheduling is more essential for cloud computing. We have witnessed continuous and explosive growth of Cloud Computing in many sectors. The idea behind cloud computing is similar. The user can simply use storage, computing power, or specially crafted development environments, without having to worry how these work internally. Cloud computing is usually Internet-based computing. The cloud is a metaphor for the Internet based on how the internet is described in computer network diagrams. A well-known advantage in Cloud Computing is that, it reduce the amount of cost and with a managed service platform, cloud computing is much more reliable and consistent than in-house IT infrastructure.

Here we have focused on how the resources can be allocated to the customer in an effective manner. In addition to that we provide the Volume Discount to the Cloud User who exceeding the maximum cost limit so that user can enjoyed while purchasing the resources.

II. LITERATURE REVIEW

A. Formal Aspect-Oriented Method for Modeling and Analyzing Adaptive Resource Scheduling in Cloud Computing

The systematic method to address the reliability, running time, and failure processing of resource scheduling in cloud computing. Adaptive Resource scheduling algorithm is used. Petri nets are used to provide the effective scheduling. The operational semantics and related theories of Petri nets help prove its effectiveness and correctness. This paper investigates how to model and analyze the adaptive resource scheduling process of cloud com- putting. The contributions of this paper are threefold. First, we propose an adaptive resource scheduling strategy that cannot only be used for running time calculation of each job but also to guarantee the reliability of

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user request, thus reducing the number of invoked virtual machines of each job. Second, reflection mechanism is used to construct the resource scheduling model of cloud computing, the model considers the adaptive recovery of job, the basic relationships between jobs and the dynamic deadline of job, etc. Third, CTL (Computation Tree Logic) [3] is used to describe the properties of resource scheduling model, an adaptive resource scheduling algorithm is proposed to make user request dynamically re-optimize and re-distribute resources at runtime. In this paper it does not concentrate about the quality of service.

B. Deadline Based Resource Provisioning and Scheduling Algorithm for Scientific Workflows on Clouds

It proposes a resource provisioning and scheduling strategy for scientific workflows on Infrastructure as a Service (IaaS) cloud. Particle swarm optimization (PSO) is used. A particle represents an individual (i.e., fish or bird) that has the ability to move through the defined problem space and represents a candidate solutions to the optimization problem. At a given point in time, the movement of particles is defined by their velocity, which is represented as a vector and therefore has magnitude and direction. This velocity is determined by the best position in which the particle has been so far and the best position in which any of the particles has been so far. Based on this, it is imperative to be able to measure how good (or bad) a particle's position is; this is achieved by using a fitness function that measures the quality of the par- ticle's position and varies from problem to problem, depending on the context and requirements. It minimize the overall workflow execution cost while meeting deadline constraints. Here Scheduling performance is not fair.

C. Efficient Qos Based Resource Scheduling Using PAPRIKA Method for Cloud Computing

Based on the QOS parameter the resources can be allocated. Pair-wise rankings of all possible alternatives (PAPRIKA) is used. The proposed system performs task based scheduling of resources by using a multi-criteria decision making method called potentially all pair-wise rankings of all possible alternatives (PAPRIKA). This system takes multiple QoS parameter values for both tasks and resources. Using PAPRIKA method, finds priority for resources. Here, both resource and task QoS parameter values are taking and creating resource matrix and task matrix respectively [4]. For calculating priority for the resources, multi-criteria decision making method is using. PAPRIKA method particularly applies to additive multi-attribute value models with performance categories such as points. It is based on the fundamental principle that an overall ranking of all possible alternatives represent able by a given value model. Creating a threshold value for all the QoS parameters and doing pair-wise comparison of all QoS parameters of resources and finding priority for each resource. After finding the priority by using pair wise comparison, arranging the resources in the order. Taking the first task from the task line and finding the user satisfaction of that task with all resources [4].This method is not suitable for all the cases.

III. EXISTING SYSTEM

Most of the concepts in cloud computing, scheduling of resources is one of the important concepts .From the analysis of the literature survey we can say that, Resources cannot be efficiently scheduled in cloud computing .The main drawback in existing paper is that, it cannot produce volume discount to the cloud users. In that it concentrates only on long time reservation cloud users because of that most of the other cloud user will be affected. The cloud users doesn't able to utilize the maximum amount of resources with low cost.

Disadvantages

- It doesn't concentrate the cloud user for full utilization of resources.
- Fail to produce the Volume Discount for Cloud users
- Resource Scheduling is not much effective.

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- The Customer needs are can't be satisfied.
- Resource cost is very high.
- A cloud user can't be treated in same level.

IV. PROPOSED SYSTEM

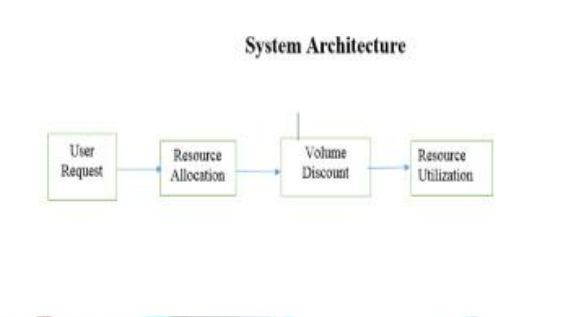
In this paper we introduce an efficient online scheduling algorithm. The basic idea of our online algorithm is to stack the processing times of multiple jobs whenever possible and run the jobs with the maximum possible resource in order to reduce the total cost. Online task scheduling is required in many cases, because the cloud service provider or service broker may not have information of all tasks in advance and has to make decision with information available so far the basic idea of our online algorithm is to sequentially allocate jobs in the order they are submitted. It makes local optimal schedule on allocating each job, using information available so far. When the scheduler allocates the processing time for a job, It always allocates the job with its maximum possible resource. Also, when scheduling the workload of Job, we consider the time intervals within the range in such the order that the interval with the highest scheduled workload comes first. After allocating as much workload as possible to the current time interval, we go on to the next interval until all of the workload of Job is accommodated. If multiple time intervals have the same density, online Algorithm selects a random interval from them to proceed. Such randomization offers an opportunity for the current task in consideration to be processed along with future unknown incoming tasks

Advantages

- Effective resource scheduling can be achieved.
- Maximum cost saving can be achieved.
- Quality of service is improved

SYSTEM ARCHITECTURE

The system Architecture is described given below, it consists of user request, Resource Allocation, Volume Discount, and Resource Utilization. First the user login into their own cloud account. If they are not having an account ask them to create a new account. Then depends on the request the cloud provider allocates the maximum space for the requested user. Then the user utilizes the available space for their own needs. Then the user will get the discount for their requested resource. [7] proposed a system which is an innovative congestion control algorithm named FAQ-MAST TCP (Fast Active Queue Management Stability Transmission Control Protocol) is aimed for high-speed long-latency networks. Four major difficulties in FAQ-MAST TCP are highlighted at both packet and flow levels. The architecture and characterization of equilibrium and stability properties of FAQ-MAST TCP are discussed.



Randomized Online Stack centric Algorithm

1. Initialization: an ordered list of time

   Instant I=∅;

2. While an task J_i arrives do
3. Insert time instants t_i^a and t_i^d into I;
4. time period in between two adjacent time instants in I, and mark them as Find all sub intervals and, each representing a unprocessed;
5. While $w_i > 0$ do
6. Select the unprocessed subintervals denoted by $[t_1,t_2]$,that has the highest task density

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V. IMPLEMENTATION

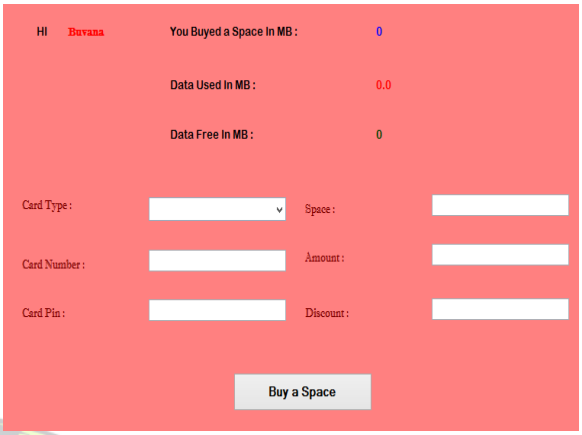
1. User login

The user want to login their Cloud Account then only they will get the needed resources from the Cloud. For that first the user want to register their details in the Cloud. Then the user login to their account by using their own Username and password.

If the user give the invalid username and password the admin do not allow the cloud user for buying a resource. The details which are given by the user can be store in the database. It can be used for future references. The resource consumption details will be displayed along by the given user name. The Cloud having the dynamic nature so that more users are login into the cloud account at the same time.

2. Resource Allocation

The user can allocate their needed resources by giving Request to the cloud provider. Initially the provider ask for the Amount of resources to the user. Then the user can enter their required resources. Then the user suggested to pay their amount. According to their requested resources by using their own cash Card pin number and password



The card type may be in any type such as debit card or credit card. It also show that the usage of data and free space. We can also see that how much data we bought at initially.

3. Volume Discount

In this module the user can get their discount based on their own requested amount of resources. Once the user enters the limited amount of resource the provider will provide the Discount for that requested user

4. .Resource Utilization

The user can use their allocated resources by uploading and downloading the data. When the user uploads the data which Exceeding the allocated resource then they

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will again ask For the Needed resource to the user. At that time also the Discount can be provided for the user who are buy additional Space.

RESULT

name	pass	card	pin	space	amount	discount
Kannan	13990	12324235	1234	90	9000	1.8
buvana	123	1234567890	1234	150	15000	3
kings	123	1234567890	1234	60	6000	1.2
kings	123	1234567890	1234	60	6000	1.2
fff	123	1234	1234	80	8000	1.6
Buvana	1234	1234567890	1234	150	15000	3
subha	123	12456879809	123	40	8000	0 %

VI. CONCLUSION

Thus we have proposed a Randomized Online Stack-centric Scheduling algorithm. The proposed method is to provide the effective scheduling and also allocate the maximum resource to the cloud user with low cost. Cloud is an emerging computing market where cloud providers, brokers, and users share, mediate, and consume computing resource. With the evolution of cloud computing, Pay-as-you-go pricing model has been diversified with volume discounts to stimulate the users' adoption of cloud computing. This paper studies how a broker can schedule the jobs of users to leverage the pricing model with volume discounts so that the maximum cost saving can be achieved for its customers.

VII. FUTURE ENHANCEMENT

Our future work is to implement this resource scheduling in real time cloud with the additional features. Then we can clearly understand that how a cloud broker can easily allocate the resources to the various users at a time.

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