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RESEARCH ARTICLE

Optimal Multi Server Using Time Based Cost Calculation in Cloud Computing

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Abstract - As cloud computing becomes additional and additional standard, understanding the economic science of cloud computing becomes critically necessary. To maximize the profit, a service supplier ought to perceive each charge and business prices, and the way they're determined by the characteristics of the applications and also the configuration of a multi server system. The matter of best multi server configuration for profit maximization in an exceedingly cloud computing setting is studied. Our valuation model takes such factors into concerns because the quantity of a service, the work of AN application setting, the configuration of a multi server system, the service-level agreement, the satisfaction of a shopper, the standard of a service, the penalty of a low-quality service, the value of dealing, the value of energy consumption, and a service provider's margin and profit. Our approach is to treat a multi server system as AN M/M/m queuing model, such our improvement downside are often developed and resolved analytically. 2 server speed and power consumption models square measure thought-about, namely, the idle-speed model and also the constant-speed model. The likelihood density operate of the waiting time of a freshly arrived service request comes. The expected charge to a service request is calculated. The expected web business gain in one unit of your time is obtained. Numerical calculations of the best server size and also the best server speed square measure incontestable.

Keywords- Cloud computing, multi-server system, valuation model, profit, queuing model, time interval, server configuration, service charge, service-level agreement, waiting time

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I. Introduction

As cloud computing becomes additional and additional standard, understanding the economic science of cloud computing becomes critically necessary. To maximize the profit, a service supplier ought to perceive each service charge and business prices, and the way they're determined by the characteristics of the applications and also the configuration of a multi server system. The matter of best multi server configuration for profit maximization in an exceedingly cloud computing setting is studied. Our valuation model takes such factors into concerns because the quantity of a service, the work of AN application setting, the configuration of a multi server system, the service-level agreement, the satisfaction of a shopper, the standard of a service, the penalty of a low-quality service, the value of dealing, the value of energy consumption, and a service provider’s margin and profit. Our approach is to treat a multi server system as AN M/M/m queuing model, such our improvement downside are often developed and resolved analytically. 2 server speed and power consumption models square measure thought-about, namely, the idle-speed model and also the constant-speed model. The likelihood density operate of the waiting time of a freshly arrived service request comes. The expected charge to a service request is calculated. The expected web business gain in one unit of your time is obtained. Numerical calculations of the best server size and also the best server speed square measure incontestable. Cloud computing could be a large-scale distributed computing paradigm during which a pool of computing resources is on the market to users via the net. Computing resources, e.g., process power, storage, software, and network information measure, square measure described to cloud shoppers because the accessible utility services. Infrastructure- as-a-Service could be a process service model wide applied within the cloud computing paradigm. During this model, virtualization technologies are often accustomed give resources to cloud shoppers. The shoppers will specify the specified software system stack, e.g., in operation systems and applications; then package all of them along into virtual machines. The hardware demand of VMs also can be adjusted by the shoppers. Finally, those VMs are outsourced to host in computing environments operated by third-party sites closely-held by cloud suppliers. A cloud supplier is answerable for guaranteeing the standard of Services for running the VMs. Since the computing resources square measure maintained by the supplier, the entire price of possession to the shoppers are often reduced. In cloud computing, a resource provisioning mechanism is needed to provide cloud shoppers a group of computing resources for process the roles and storing the info. Cloud suppliers offer cloud shoppers 2 resource provisioning plans, specifically short on-demand and long-run reservation plans. Amazon EC2 and Go Grid square measure, for instances, cloud suppliers which provide IaaS services with each plans. In general, valuation in on-demand set up is charged by pay-per-use basis. Therefore, getting this on-demand set up, the shoppers will dynamically provision resources at the instant once the resources square measure required suiting the fluctuated and unpredictable demands. For reservation set up, valuation is charged by a former fee generally before the computing resources are used by cloud shopper. With the reservation set up, the worth to utilize resources is cheaper than that of the on-demand set up. During this manner, the patron will cut back the value of computing resource provisioning by victimization the reservation set up. for instance, the reservation set up offered by Amazon EC2 will cut back the entire provisioning price up to forty nine % once the reserved resource is absolutely used.

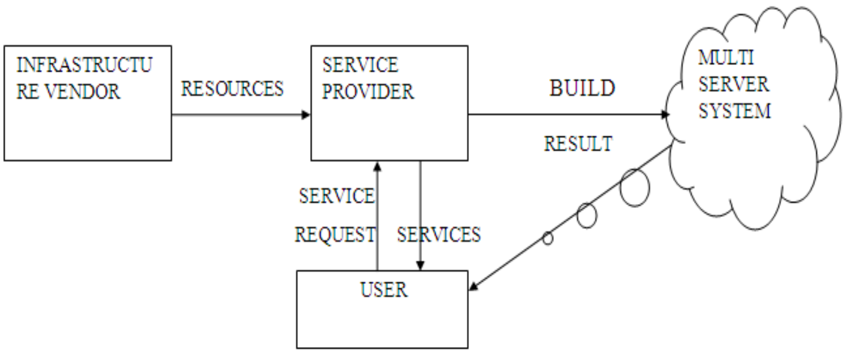

Figure 1: System Architecture

II. EXISTING SYSTEM

To increase the revenue of business, a service provider can construct and configure a multiserver system with many servers of high speed. Since the actual service time (i.e., the task response time) contains task waiting time and task execution time. More servers reduce the waiting time and faster servers reduce both waiting time and execution time.

Problems on existing system:

1. In single Sever System if doing one job another process waiting for another completion of server service, So it take time to late.
2. Due to increase the Service cost of cloud.

III.PROPOSED SYSTEM

We study the problem of optimal multiserver configuration for profit maximization in a cloud computing environment. Our approach is to treat a multiserver system as an M/M/m queuing model, such that our optimization problem can be formulated and solved analytically. We consider two server speed and power consumption models, namely, the idle-speed model and the constant-speed model.

ADVANTAGES:

1 .We calculate the expected service charge to a service request. Based on these results, we get the expected net business gain in one unit of time, and obtain the optimal server size and the optimal server speed numerically

2. To the best of our knowledge, there has been no similar investigation in the literature, although the method of optimal multicore server processor configuration has been employed for other purposes, such as managing the power and performance tradeoff.

IV. PROBLEM DEFINITION

As cloud computing becomes more and more popular, understanding the economics of cloud computing becomes critically important. To maximize the profit, a service provider should understand both service charges and business costs, and how they are determined by the characteristics of the applications and the configuration of a multiserver system. The problem of optimal multiserver configuration for profit maximization in a cloud computing environment is studied.

V. RELATED WORK

Multiple sporadic servers as a mechanism for rescheduling periodic tasks are applicable to today's computer environments. A developed simulation tool enables evaluation of its performance for various task sets and server parameters. By increasing the number of servers, aperiodic task response time is reduced; system utilization and the number of reschedulings are increased whereas periodic task execution is disrupted insignificantly. Proper selection of server parameters improves task response time, and decreases the number of unnecessary reschedulings. Simulation results prove model correctness and simulation accuracy. The simulator is applicable to developing rescheduling algorithms and their implementation into real environments.

Multi Server Model:

They have proposed a pricing model for cloud computing which takes many factors into considerations, such as the requirement of a check, the workload of an application environment, the configuration (m and s) of a multi server system, the service stage agreement c, the satisfaction (r and 0) of a consumer, the quality (W and T) of a service, the price of a low-quality service, the cost and mof renting, the cost (P and P) of energy utilization, and a service provider's margin and profit. The cloud caching service can maximize its profit using an optimal pricing scheme. Optimal pricing necessitate an appropriately simplified price-demand model that incorporates the correlations of structures in the cache services. Provides a multi-cloud service for an e-search application that achieves optimal pricing for the products available in different cloud services (like Amazon, Azure, eBay, etc)in a clustered environment. This work propose a novel pricing scheme designed for a cloud cluster that offers inter-querying services and aims at the maximization of the cloud profit. An appropriate price demand and formulate the optimal pricing problem.

Power Consumption Model:

In the existing literature, the power consumption of a server has been modelled in two different ways: offline and online. In the former case, Simple Power, Software Watt and Mambo estimate the power consumption of an entire server. Though these models use analytical methods based on some low-level information such as number of used CPU cycles. The main advantage is that they provide high accuracy. however, the offline nature of such models requires extensive simulation, which results in a important amount of time for estimating the power consumption. Accordingly, these models are infeasible for predicting the power consumption of highly dynamic environments like cloud computing data centres. To conquer this problem, an online (run-time) methodology is proposed. Such models are based on the information monitored through performance counters. These counters keep track of activities performed by applications such as amount of accesses (e.g. to caches) and switching activities within processors.

Server Configuration:

Plan Reservation- In reservation plan, the cloud uses reserve the cloud in advance for their requirements. In this way, the pay the payment of the reservation in on the spot. That is, when we will reserve the cloud space mean, at the time we pay the payment also.

Space Utilization- The space timing calculates by the reference of cloud usage. That is, the cost also calculates based on cloud space utilization and cloud usage

Analysis of Performance-We analyse and compare the performance offered by different configurations of the computing collect, focused in the execution of loosely coupled applications.

Task Scheduling:

Each and every user assigns the task to cloud, so that task will assign to the cloud in priority scheduling basis or if anyone cloud is free mean, user job assign to that cloud.

VI. CONCLUSION

They have proposed a pricing model for cloud computing which takes many factors into consideration, such as the requirement r of a check, the workload _ of an application Environment, the configuration (m and s) of a multi server system, the service level concurrence c, the satisfaction (r ands0) of a consumer, the quality (W and T) of a service, the price d of a low-quality service, the cost (_ and m) of renting, the cost (_, , P_, and P) of energy consumption, and a cloud service provider's margin and earnings a. By using an M/M/m queuing model, the formulated and solved the problem of optimal multi server configuration for profit maximization in a cloud computing environment. The discussion can be easily extended to other service charge functions.

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