# Designing Superlative Multiserver Configuration for Profit Maximization and Satisfaction of Consumer in Cloud Computing

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***Abstract:*** Now a day's cloud computing is an emerging technology of business computing. An understanding the economics of cloud computing becomes critically important. To maximize the profit for cloud service provider, how to configure their cloud service platform under given market demand. A service provider must understand both quality of service charges and business price. But few existing works single resource renting scheme cannot guaranteed. Service Providers set the higher cost because they want to a more profit. So in these decreases the customer satisfaction. Solve these problems, in this paper establish the configuration of multiserver system, double quality resource guarantee renting scheme, its increase the customer satisfaction and maximize profit for service providers. Finally, taking the service-level agreement (SLA), a low quality of service, the price of energy consumption and service provider's profit. A using M/M/m Queuing model is tasks are important role for profit maximizations in cloud computing.

***IndexTerms* - Service level agreement (SLA); Multiserver system; Profit maximization; QOS (quality of service); Queuing model;**

## I. INTRODUCTION

Today's cloud computing is briskly becoming an effective and efficient way of cloud computing is delivery of resource and cloud computing services. Cloud computing is web based computing whether virtual shared servers provide a software as a service (SaaS), Infrastructure as a service (IaaS), Platform as a service (PaaS).

Cloud Computing is use of computing resource are hardware and software that as delivery of services over typically internet. Cloud Computing entrusts far away services with a user's data, computation and software.

The aim of cloud computing finding an effective resolution for the resource management. A pricing model in cloud computing includes many consideration, such as the requirement of a service, the size and speed of multiserver system. The service level agreement, the satisfaction of a customer, expected service time, the task waiting time and the task response time, distribution of s low quality service, the cost of renting, the energy consumptions and service provider's brim and profit.

The Cloud Computing uses the internet of large set of service typically running lower price buyer pc technology. A service provider must understand both quality of service charges and business price. How they are resolute by the characteristics of the applications and the designing of multiserver system.

## II. RELATED WORKS

In these papers introduce multiserver system. Today's cloud servers are not provides storage for every customers requests because they have only one server. So establish multiserver, these server role is customer send the storage requests to cloud. Existing servers is not have any storages. The services providers provide the storage to customers using multiserver system. Sometimes customers waiting a lot for receiving a storage because servers don't have any external storage in these decreases the customer satisfactions and minimize the profits of service providers that's situations service providers using multiserver system provides storage to customers. Increase the both satisfaction of customer as well as profit maximization of service providers. Designing a multiserver system using M/M/m queuing model. These queuing model acts like First Come First Serve techniques.

## III. LITERATURE SURVEY

### 3.1 An investigation into determinants of customer satisfaction.

**AUTHORS:** G. A. Churchill Jr and C. Surprenant.

The Authors investigate they model the process for two types of products, a durable and a nondurable goods, using experimental procedures in which three levels of expectations and three levels of performance are manipulated for each product in a factorial design. Each subject's perceived expectations, performance evaluations, disconfirmation, and satisfaction are subsequently measured by using multiple measures for each construct. The results suggest the effects are different for the two products. For the nondurable goods, the relationships are as typically hypothesized. The results for the durable goods are different in important respects.

### 3.2 An experimental study of customer expectations, efforts and satisfaction.

**AUTHORS:** R. N. Cardozo

Results of a laboratory experiment indicate that customer satisfaction with a product is influenced by the effort expended to acquire the product, and the expectations concerning the product. Specifically, the experiment suggests that satisfaction with the product may be higher when customers expend considerable effort to obtain the product than when they use only modest effort. This finding is opposed to usual notions of marketing efficiency and customer convenience. The research also suggests that customer satisfaction is lower when the product does not come up to expectations than when the product meets expectations.

### 3.3 Models of consumer satisfaction formation: An extension.

**AUTHORS:** D. K. Tse and P. C. Wilton

The authors extend consumer satisfaction literature by theoretically and empirically a examining the effect of perceived performance using a model first proposed by Churchill and Surprenant, b. investigating how alternative conceptualizations of comparison standards and disconfirmation capture the satisfaction formation process, and c. exploring possible multiple comparison processes in satisfaction formation. Results of a laboratory experiment suggest that perceived performance exerts direct significant influence on satisfaction in addition to those influences from expected performance and subjective disconfirmation. Expectation and subjective disconfirmation seem to be the best conceptualizations in capturing satisfaction formation. The results suggest multiple comparison processes in satisfaction formation.

## IV. PROBLEM DEFINITION

Service provider’s does want to set a higher retail price to get a higher profit circumference. But doing this decreases the customer satisfaction. Therefore, selecting a rational pricing strategy is more important for service providers.

We use M/M/m queuing model for optimal multiserver system configuration, quality of all service requests and reduce the wastage of resource.

## V. EXISTING SYSTEM

A service provider can build and designing a multiserver system with many servers of high expedition. Many existing they only taking the energy consumption price. The single resource renting scheme cannot guarantee the waiting time and response time.

The customer satisfaction calculated as actual QOS level and expected QOS level. A higher service price and larger response time is decreased the customer satisfaction and cannot change service level agreement. Thus users waiting time requests of service too long, its decreases the satisfaction of cloud users.

## VI. PROPOSED SYSTEM

The designing the multiserver system for profit maximization in cloud computing. Figure 1, Represents the designing three tier structure of cloud computing.

Clouds computing mainly using three Tier cloud structures are cloud customers, Business service provider (BSP), Infrastructure service provider (ISP).

A benefit of proposed system is using multiserver systems the waiting time requests of service too very short.

Analyze the interrelationship between customer satisfaction and profit, and build a profit optimization model considering customer satisfaction.

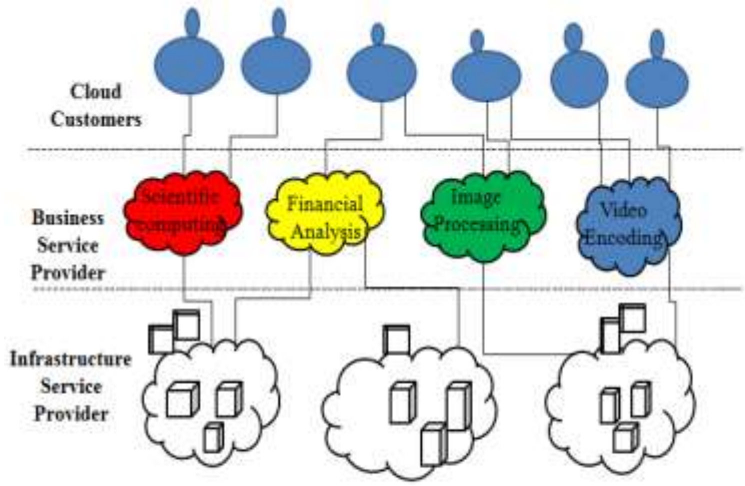


**Figure 1 - Three-tier cloud structure**

**6.1 Implementing four components are:-**

**6.1.1 Cloud Service Provider**

In this components, First customer have to register their details and after registering the account activation mail will be send to the customer mail id. Then customer can login into the their cartridge and he/she will select the cloud server according to the storage limit and plan then the request will send to the Business Service Provider after request granted customer can upload files in the allocated storage.

Cloud service provider receives the results from the business service providers along with requirement of a service, Quality of service and Service level agreement (SLA) and then uploads the file to obtained server.

**6.1.2 Business Service Provider**

Business service providers (BSP) tasks a is proceeds infrastructure provider for dealing their physical resources is gain. A Service provider the charges from customers for process of their service request is price. The gap between gain and price is become a profit.

During these service distributors through of a cloud intercessor as a result of they are going to role in an important between cloud customers and infrastructure distributors.

In these components, Business Service Provider will view all the customer requests details and activate their accounts then the account activation mail will send to the customer. Business Service Provider also can view the server storage details allocated to the customer.

**6.1.3 Infrastructure Service Provider**

Infrastructure service provider (ISP) a task is distributes the fundamental hardware and software facilities. A Business service provider proceeds rents for resources to infrastructure providers and then infrastructure service providers provide the cloud storage to business service providers and prepare a set of services in the form of virtual machine (VM). Infrastructure service provider is a view the file details and storage server details of cloud service providers.

**6.1.4 Service-Level Agreement**

A service level agreement (SLA) is a condense between a service provider either internal or external and the end user that defines the level of service expected from the service provider. SLAs are output-based in that their purpose is specifically to define what the customer will receive. SLAs do not define how the service itself is provided or delivered. The SLA an Internet Service Provider (ISP) will provide its customers is a basic example of an SLA from an external service provider**.**

**VII. SYSTEM ARCHITECTURE**

Cloud computing customers that server is busy then customer has to wait till the present user complete the job which leads to more queue length and increased of waiting time. Overcome these problems using M/M/m queuing model.

Customer submit requests that the incoming service requests cannot immediately processed after they arrived, firstly requests placed in the queue then it handled by available server. Queuing model follows First-Come-First-Servers (FCFS) techniques.

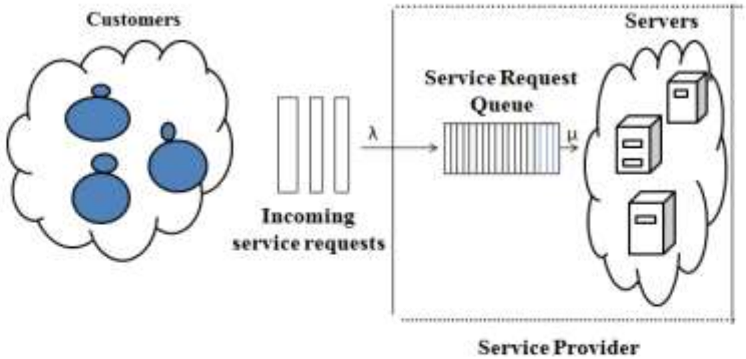


**Figure 2 - The multiserver system model (M/M/m queuing model).**

What are Steps following working of queuing model are:-

Step 1: The multiserver queuing system running is server and waiting for the requests.
Step 2: Initially queue is empty.
Step 3: when service requests arrive and first server checks which server is available free then assign the services that server.
Step 4: if server is not available then hold the service requests to end of the queue and keeping the waiting time.
Step 5: when server become idle and queue is empty waiting for new service requests.
Step 6: if in case queue is empty take the initial requests and then assign the tasks to idle server.
Step 7: when a request is completed deadline requests are proved and rent a temporary server execute the sever requests and release the server.

## VIII. CONCLUSION

In these paper accordingly using M/M/m Queuing model the drawback of cloud server configuration and minimizations of price in cloud computing. It is environment can be proved. Optimal multiserver configurations is mainly designing on double quality renting scheme, service level agreement (SLA), price of power consumption service providers profit maximizations and increases the customer satisfaction. Moreover, a group of calculations are conducted to compare the profit and optimal configuration of two situations with and without considering the affection of customer satisfaction on customer demand. The results show that when considering customer satisfaction, our model performs better in overall.

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