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AN EXPOSURE TOWARDS MANAGING OF RESOURCES IN GRID COMPUTING

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ABSTRACT:

The environment of cloud computing is speedily fetching importance as an effective means of computing resources. In our work, complexity of optimal multi-server configuration in support of profit maximization within the environment of cloud computing was studied. In our work we consider a multi-server system as an M/M/m queuing representation, with the intention that our optimization difficulty can be solved systematically. To take advantage of the profit, a service contributor has to recognize service charges as well as business costs, and the way they are determined by characteristics of applications as well as configuration of a multi-server system. The representation relating to pricing within the system of cloud computing system includes numerous considerations, for instance amount of a service, workload of an application environment, service-level agreement, user satisfaction, the cost of renting and the cost of energy expenditure

Keywords: Cloud computing, Multi-server system, Pricing model, Optimization, Profit maximization.

1. INTRODUCTION:

The technology of cloud computing is capable to make available the most energy-efficient means of managing computing resources as well as computing services. Since the expertise of cloud computing become increasingly popular, understanding of the economics of cloud computing has turned out to be critically significant [1]. Understanding of the economics of cloud

computing paradigm will turn out to be significantly essential. One of the most striking settings of cloud computing environment is a three tier structure which comprises of infrastructure vendors, service providers, as well as consumers. The three parties are what's more represents cluster nodes, managers of cluster, as well as consumers in cluster computing systems as well as resource providers, service providers, in grid computing systems. Similar to other business, the pricing representation of a service provider inside cloud computing is on the basis of two components, to be precise, the income as well as the cost. The model of pricing within cloud computing system includes numerous considerations, for instance amount of a service, workload of an application environment, service-level agreement, user satisfaction, the cost of renting and the cost of energy expenditure. The profit is income minus cost and to maximize profit, provider of a service has to recognize both service charges as well as business costs, and especially, how they are determined by characteristics of applications as well as configuration of a multi-server system [2][3]. In our work, we learn the difficulty of optimal multi-server configuration in support of profit maximization within the environment of cloud computing.

2. METHODOLOGY:

Cloud computing is rapidly fetching significance as an effective means of computing resources. The technology of cloud computing has turned information technology into usual commodities and utilities by means of pay-per-use pricing representation. There are numerous altered service performance metrics within service-level agreements. Our performance metric in our work is the task response time that is to say, time taken to finish a task, which comprise task waiting time as well as task execution time. The service-level agreement is assured time to complete a service, which is a stable times the accepted length of a service. When the actual length of a service is within service-level agreement, service will be entirely charged. On the other hand, if genuine length of a service exceeds service-level agreement, service charge will be minimized. The longer the actual length of a service is, more the reduction of service charge is. In general there is consequence for a service provider to violate a service-level agreement. When actual service time goes beyond certain limit, a service will be

completely free with no charge. Notice that service charge concerning a service request is a random variable and we are concerned in its expectation. A service provider rent resources from the vendors of infrastructure, builds suitable multi-server systems, and makes available a variety of services to users. A consumer submit a service request in the direction of a service provider, receives the desired result from the service provider with convinced service-level agreement, and pays for service on the basis of amount of service as well as quality of the service. The provider of cloud computing service serves users' service requests by means of usage of a multi-server system, which is constructed by infrastructure vendor in addition to rented by service provider. A service provider can construct several systems of multi-server for several domains of application; so that service requests concerning different nature are send to various multi-server systems [4]. Each multi-server system hold numerous servers, and such a multi-server system can be committed to provide one type of service requests as well as applications. Our approach is to consider a multi-server system as an M/M/m queuing representation, with the intention that our optimization difficulty can be solved systematically.

3. AN OVERVIEW OF PROPOSED MULTISERVER MODEL:

The system of cloud computing distributes hosted services above the Internet by means of managing of centralized resources, so that accesses to databases, information, and the entire resources are offered to consumers on-demand. While the paradigm of cloud computing turn out to be increasingly popular, understanding of the economics of cloud computing has turned out to be critically significant. To make the most of the profit, a service contributor has to recognize service charges as well as business costs, and the way they are determined by characteristics of applications as well as configuration of a multi-server system. The difficulty of optimal multi-server configuration in support of profit maximization within a cloud computing environment is considered in our work. Our pricing representation takes several factors into considerations such as workload of an application environment, service-level agreement, user satisfaction, service provider's margin as well as profit, the cost of renting and the cost of energy

expenditure, multi-server system configuration, service quality and the consequence of a substandard service. Our approach is to consider a multi-server system as an M/M/m queuing representation, with the intention that our optimization difficulty can be solved systematically. The provider of cloud computing service serves users' service requests by means of usage of a multi-server system, which is constructed by infrastructure vendor in addition to rented by service provider. In our work, we study the difficulty of optimal multi-server configuration in support of profit maximization within the environment of cloud computing. The structural design detail of the multi-server system can be relatively flexible. Users to be exact customers of a service provider submit service requests that are applications as well as tasks to a service provider, and the service provider serves requests to be precise run applications and carry out the tasks on a multi-server system [5]. Consider a system of multi-server system containing m identical servers. In our work a multi-server system is considered as an M/M/m queuing system which is detailed. There contains a Poisson stream of service requests by means of inter arrival times which are autonomous as well as identically distributed. A multi-server system preserves a queue by unlimited capacity meant for waiting tasks when the entire servers are active. The first-come-first-served queuing order is accepted. Observe that even though an M/G/m queuing scheme has been measured, M/M/m queuing mock-up is the only representation that accommodate an analytical as well as closed form expression of possibility density function of waiting time of a recently arrival service request. The provider of service have to continue waiting time towards a low level by providing adequate servers and rising server speed, and be willing to restore to a customer in case the waiting time go beyond convinced limit [6].

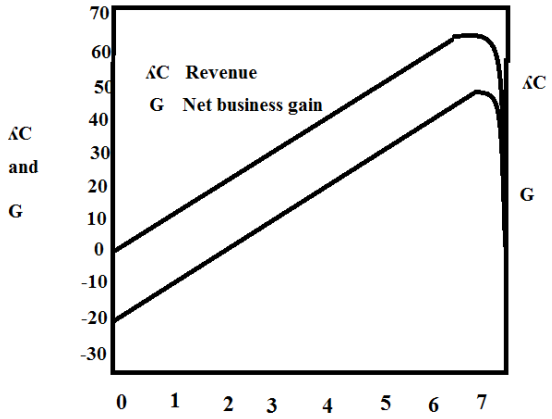

Fig1: An overview of Revenue and net business gain

4. CONCLUSION:

Cloud computing technology distributes hosted services over Internet by means of managing of centralized resources, so that accesses to databases, information. Pricing illustration of a service provider inside cloud computing is on the basis of two components, to be precise, the income as well as the cost. In our work, we gain knowledge of the difficulty of optimal multi-server configuration in support of profit maximization within the environment of cloud computing. Our approach is to believe a multi-server system as an M/M/m queuing representation, with the intention that our optimization difficulty can be solved systematically. Performance metric that was considered in our work is the task response time that is to say, time taken to finish a task, which comprise task waiting time as well as task execution time. Our pricing illustration takes several factors into considerations such as workload of an application environment, service-level agreement, user satisfaction, service provider's margin as well as profit, the cost of renting and the cost of energy expenditure, multi-server system configuration, service quality and the consequence of a substandard service. The complexity of optimal multi-server configuration in aid of profit maximization within a cloud computing environment is considered in our work.

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