Improving Region Wise Profitability in Cloud Service with Dynamic Pricing to Business Consumers

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Abstract:- **Cloud computing is the term used in the business market which is very popular in today's world. Consumers (users, third party providers) connected to cloud service without worrying about their hardware specification. A business service providers which acts as intermediate servers or proxy servers who purchase some of the resources from cloud servers and allocate to the customers. In this approach user can choose multiple servers to get maximum beneficial plans to their resources saved under cloud effectively. In this paper, we propose a new technique which is an improvement over existing algorithm so that we can improve the cloud server's revenue in all over the world by providing flexible rental charges depends on country regions. All these rental charges are dynamic based on usage of the customers in specific regions. Business providers can purchase from various providers and allocate to the users. So both consumers and service providers benefited. We can further improve the services in future by time basis i.e., business service providers will allocate the cloud based on time basis and usage type so that network traffic can be reduced and quality of service availability is more in all scheduled intervals.**

Keywords: Cloud service, network traffic, business providers, intermediate servers

1. INTRODUCTION

Cloud computing is a term used to provide different type of services to the users. It was evolved in 2000 and came into picture on 2008 onwards in the form of hybrid cloud and private cloud which is the first open source software for deploying private cloud and hybrid cloud. It mainly considers four issues:

- Scalability
- Cost efficiencies
- Security
- Flexibility

Cloud computing provides mainly three services Infrastructure as service (Iaas), Platform as a Service (PaaS) and Software as a Service (Saas) .In this paper we focus on infrastructure as a service. Cloud services are basically pay per use services whenever user needs the service then only it charges the amount. Depends on business needs [1] we can use different servers to register and pay as per the usage. In this scheme it was quite reliable and all files may present in different servers. The satisfaction of consumers and low quality service penalty are discussed in [2] and generate a model on idle speed and constant speed by considering the system as queuing model. In this paper we focus on service model with service level agreement(SLA) so that to improve the business in all over the world it generates a cost estimation model for country levels and provide better service to the consumers. In order to improve customer satisfaction level we have service level agreement (SLA) between customers and service providers. This mechanism enables guaranteed service quality and customer satisfaction to increase the customers for the business. According to [8] a novel optimization based profit maximization strategy for data centers for different cases with or without meter renewable generators, it was completely based on service level agreements. Dynamic pricing emerges as an attractive technique to attract the customers on demand .we can use genetic algorithm to iteratively optimize the pricing policy. Amazon has introduced "spot pricing" where it changes automatically on demand, but customers dislike price changes. So we focus on usage based pricing system. Few regions may not attract the offered packages of cloud servers so we offer pricing in different regions to improve the business. To improve the quality of service we may allocate servers dynamically on time basis .if servers having heavy network traffic, we allocate the requests to the rental servers which are idle at that moment of time. To benefit higher revenue, service providers will rent more servers to the users. Renting schemes to the consumers can be provided in different ways that can be in long term renting and short term renting. With utilizing these schemes we can achieve quality of service and greater resource utilization el[6] resource sharing is a great improvements for tenants ,it helps the service providers to increase the profitability and resource utilization

2. RELATED WORK

To estimate this model, cost benefit analysis is required. Service providers are benefitted in many aspects like by pricing or market demand. To do so service providers may set the higher prices in all regions in high. This static pricing is no more profitable to all circumstances and the quality of service may not be

achievable at all time. To improve the market statistics, they propose new scheme called as dynamic pricing. In dynamic pricing,, customers gets benefit able and also providers delay the pricing until the customer requests , once the request is arrived service providers can set the price based on the network traffic and allocated bandwidth.

3. SYSTEM MODEL

3.1 Traditional Cloud System Model:

In this model, customers submits service requests and maintain service level agreement with service providers for obtaining quality of service. Services will be charged on demand as per the user requests and all are in static pricing

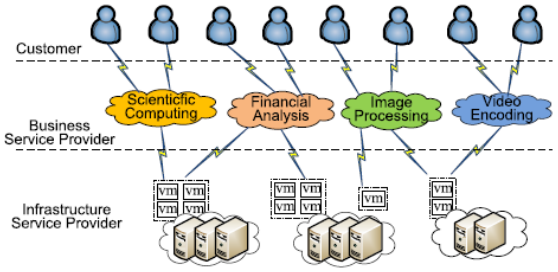

Fig. 1: Traditional Cloud system

3.2 Modified Multi Server Model

In this model, we have multiple servers, consumers can select different servers and get SLA for the service requests, in this approach the pricing for the servers are vary as per the requested region. Dynamically price will be changed based on search region information in country level database server. Multi server waits for the incoming request. all requests are handled in service request queue. Service brokers will navigate the request to targeted servers.

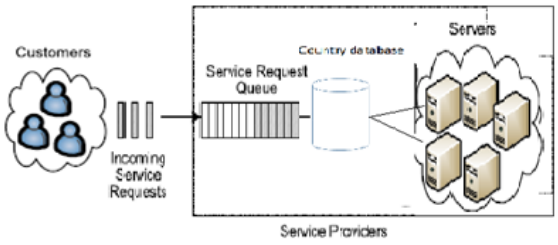

Fig. 2: Multi Server Cloud system

3.3 Simple Algorithm

Profitable and guaranteed quality service algorithm

1. A Multi server system with N servers running and waiting for the requests.
2. A Queue **Q** is initialized to empty requests are processed according to the queue.
3. Assign service request to available server.
4. Based on the region, consumers will get dynamic fair.
5. If server is busy waits in queue or rent a temporary queue TQ and execute the request.

4. COST MODELING

In organizations, cost was estimated based on two different criteria models, one is rental for physical resources and second is the utility cost of power consumption. Cost modeling is based on service level agreement called as policies. It is an analysis of benefit and cost. Risk analysis is usually handled using probability theory. Service level agreement contains from definition of services to termination of services and also contains violates penalty details. In this paper we focus on resource consumption model (physical resource) .this resource consumptions plans are categorized as long term plans and short term plans. But we will implement a plan which is moderate for all users meanwhile benefitted to the service providers. In this

Let's consider a sample graph which contains servers and country wise users .if we consider xyz server it has very low utilization of servers to maximize the amount we offers the consumers with less cost and also can offer rental to other cloud server providers to utilize the idle server if they has heavy network traffic.

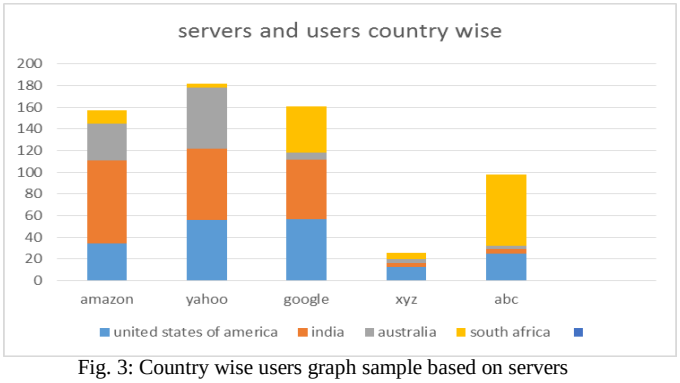

Fig. 3: Country wise users graph sample based on servers

5. CONCLUSION

To achieve the maximum availability of the service and also to increase the revenue in cloud environment we propose a dynamic pricing scheme depends on region wise allocation of the servers so that we can get maximum service and earn all over the world with maximum utilization of the servers. Service provider's gets maximum benefit in this scheme and in future it to improve the quality of service we can allocate the resource based on the timeslots. This cost benefit model will be scheduled in future to increase the business in all regions on demand with dynamic pricing schemes along with time basis. SLA provides the user satisfaction in all aspects. We have another scheme where we can rental the other servers whenever the traffic is high and use the idle servers at that moment of time by transferring request to idle servers.

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