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An Optimal Dynamic Pricing Scheme Offers Querying Services To Maximize The Cloud Profit.

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ABSTRACT
Cloud computing is an emerging, innovative and a challenging task for researchers who undertake different dimensions. Cloud charges the price for the client submitted query as per their usage. Cloud needs a financial cautiousness to manage service of multiple users in versatile manner. Several Domain experts and researchers recommend various computing systems for the requirements of these users like cluster computing, grid computing, and cloud computing. Cloud computing is a technology that utilizes the internet and central remote servers to maintain data and applications. In order to provide quality services, cloud supports caching of data. Cloud management manages the multiple clients by providing the multiple services and resources in an economy way that provides more profits for cloud providers. This paper proposes an optimal pricing method which executes queries in the cloud cache and increase the profit for cloud providers.
Keywords: *Cloud computing, Cloud cache, Internet;*

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I. INTRODUCTION

An emerging tendency, delivering multiple services to multiple users at a time through the network is referred as cloud computing, which acts as a virtualization of resources that manages and maintains itself. Client doesn't need to purchase an infrastructure to run a service when it required, instead it provides an option to pay as-you-use basis. This is the platform where client can purchase computing resources and storage on a rental basis. It provides unlimited cache memory to store and execute customer data and program. Earlier people used computer as a utility. Later Computation and storage would be used as a public service provided by professionals and end users would not experience the joy of installation and administration. Cloud computing allow users to access required services much more effectively and efficiently at less cost. Since this is the service provided by many organizations, clients will not necessarily have to worry about its maintenance and associated updates [1]. Cloud providers operate their services on cloud to grown economically Strong by earning more profits. The quality of services depends on the resources utilized by the user. The operational cost of resources used can be transfer through user payments. The main objective of cloud is to optimize the user satisfaction and earn more profits. But the success of cloud providers depends on the optimization of both objectives, In general businesses prioritize profit. To maximize the profit of cloud we require a dynamic pricing scheme that guarantee user satisfaction and software should be stored permanently in servers and can be cached temporarily on the user side [5].

II. SYSTEM STRUCTURE

Cloud applications are functional in terms of maintaining large amount of data or information. Cloud provides quality query services with the support of caching. The users can query the cloud by paying the price for the infrastructure they use by dynamic pricing scheme which gives solution of optimal pricing scheme for a cloud cache

A. Existing system

Existing clouds focus on the provision of web services targeted to developers. There are two major challenges to define an optimal pricing scheme for the caching service in cloud.

i. First one defines a price demand dependency model, to achieve a feasible pricing solution, but not oversimplified model that is not representative.
ii. The second one defines a model that is adaptable to (i) Modeling errors (ii) time-dependent model changes and (iii) stochastic behavior of the application. The demand for

services, for instance, may depend in non predictable way on factors that are external to the socioeconomic situations.

Disadvantage

- Static pricing scheme cannot be optimal if the demand for services has deterministic seasonal fluctuations, then the static pricing scheme results in an unpredictable and, uncontrollable.[4]

B. Proposed system

The cloud caching service can maximize its profit using an optimal pricing scheme. The pricing scheme should be flexible to the user timely changes.

i. Price adaptivity to time changes

Profit maximization is pursued in a finite long-term horizon. The scope includes scheduling and redefining the available resources offline and taking unavailable resources online. Optimal Pricing optimization proceeds in iterations on a sliding time-window that allows online corrections on the predicted demand, by re-injecting real demand values at each sliding instantly and the iterative optimization allows re-defining the parameters in the price-demand model, if the demand deviates substantially than the predicted.

ii. System architecture

The cloud computing basically contains front end and the back end. Front end of the cloud computing system comprises the client's devices. Back end refers to the cloud which includes various machines, data storage systems and servers.

Fig: 1 Cloud service provider

III. IMPLEMENTATION

The most important stage is to give confidence on the system for the users that will work efficiently and effectively. The system can be implemented only after it is found to work accordingly to the given constraints. It involves careful investigations, planning, of the current system and its constraints on implementation.

- Query Execution
- Optimal pricing

a. Query Execution

The cloud cache is a full-fledged data base with a cache of data that reside permanently in back-end databases. The goal of the cloud cache is to offer inexpensive, efficient multi-user querying on the back-end, while keeping the cloud provider profitable. Service of queries submitted by the user can be performed by executing, either in the cloud cache or in the back-end database. Performance of a query is measured in terms of execution time. The faster the execution, the more data structures it uses, and therefore, it becomes more expensive. We assume that the cloud infrastructure provides sufficient amount of storage space for a large number of cache structures. Each cache structure has maintenance and building cost.

b. Optimal Pricing

Cloud may not have administration rights on existing back-end structures. Assume that if each structure is built from the scratch in the cloud cache. To build a column, the total building cost is the cost of transferring from the backend and combining with currently cached columns. For indexes, the building cost involves fetching the data across the Internet and then building the index in the cloud cache. While sorting is the most crucial step in building an index in cloud cache, the cost of building an index is approximately to the cost of sorting the indexed columns. Whereas In case of multiple databases, the cost of data movement is included in the building cost. The maintenance cost of a column or an index is the cost of using disk space in the cloud. Therefore, building a column or an index in the cloud cache is a one-time fixed cost, whereas their maintenance yields a storage cost that is linear with time.

IV. TESTING AND RESULTS

A. Test Case 1(shown in Fig 3)

Test Objectives: Test case to verify format of file.
TEST CONDITION Test case for file format
INPUT SPECIFICATION: If admin upload different format other than doc and pdf file or invalid format file.

Fig 3 Test case 1

Conclusion: it validates the format of file uploaded i.e. if the format of file is supported then administrator will be allowed to upload a file otherwise if the administrator upload non supported or invalid file format other than doc and pdf then it will displays 'Error-unable to upload file. Please try again'. Here the result is passed.

*B. **Test Case 2(shown in Fig 4)***

Test Objectives: Test case to verify the user.

TEST CONDITION: Recharge required amount for the user in order to download the required file

Fig 4 Test case 2

Conclusion: Test whether the amount paid matches with file cost or not in both free user and premium user accounts. If user recharges the amount less than the required file cost then it will display 'your paid amount does not match with file cost', and it doesn't allow user to download a file. But if the recharge is done which is equal to the file cost then it enables user to download the required file.

V. CONCLUSION

Recently more number of users is moving their computing lives from desktop to cloud computing, and rely on hosted web applications to store and access their data. There are several advantages that users would have if they would consider cloud computing as part of their business. Cloud computing uses the power of online connectivity to handle processing request, the data could be available for everyone and could be used for malicious purpose. This work proposes a novel pricing scheme designed for a cloud cache that offers querying services and aims at the maximization of the cloud profit. . The cloud caching service can maximize its profit using an optimal pricing scheme. Optimal pricing scheme imply a suitably simplified price demand model that incorporates the correlations of structures in cache services.

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