An Efficient And Cost Effective Data Storage And Regeneration of Files In Multi-Cloud Environment

Ms. Sonali A. Waman[1], Dr. Mininath R. Bendre[2]
Department of Computer Engineering
[1,2] Pravara Rural Engineering College, Loni , Maharashtra, 413736

Abstract- *Cloud can be used to store large application data sets. For cost-effectively storing large volume of generated data sets in clouds, development of storage strategies and bench marking approaches have done based on the pay-as-you-go model. But they are either impractical at run time or inadequately cost-effective for storage. In this system, a novel high cost-effective and practical storage strategy is proposed to achieve a Minimum Cost of Storing and Regenerating Datasets in Multiple Clouds. i.e. whether datasets should be stored or deleted, and furthermore where to store or to regenerate whenever they are reused. This minimum cost also achieves the best trade-off among computation, storage and bandwidth costs in multiple clouds. Comprehensive analysis and rigid theorems guarantee the theoretical soundness of the system. Here in this proposed strategy, it can automatically decide if at run time or not the storing of generated data must be done or not. Local-optimization for the trade-off between computation and storage is the primary objective of this strategy. Secondary objective is to take into consideration the users' preference on storage. In this system we manage both original and generated data storage. Also we use data compression for the efficient cost effective data storage in Cloud.*

Keywords- Data sets storage, computation-storage trade-off, Minimum Cost, cloud computing.

I. INTRODUCTION

Cloud computing is an internet based model for enabling convenient on demand network access to shared recourses [1]. It provides various services over internet such as software hardware, data storage, and infrastructure. Cloud computing providers deliver application via internet, which are access from desktop and mobile apps. Cloud computing technology grouped into three section: they are SaaS, PaaS, laaS [2]. SaaS (software as a service) it's an on demand application service. It eliminates the need of installing and running application on customers own computers. PaaS (platform as a service)it's an on demand platform service to host costumer application. It is a delivery of computer platform and solution as a service. IaaS (infrastructure as a service) in this user can benefit from networking infrastructure services, data storage and computing services. Rather than purchasing server, software, data centre space client can buy those resources as a fully outsourced service. To accessed these cloud services security and reliability we are using different models like: i) Using single service provider. ii) Using multiple service providers. The weakness of single service provider is that it can be easily be hacked by intruders and if the service provider fails or down for some technical reasons than client will not at all access his/her data.

II. LITERATURE SURVEY

In this paper, we presented an infinite horizon revenue maximization framework to tackle the dynamic pricing problem in an infrastructure cloud. The technical challenge compared to previous pricing work is that prices are charged on a usage time basis, and as a result the demand departure process has to be explicitly modelled. An average reward dynamic program is formulated for the infinite horizon case. Its optimality conditions and structural results on optimal pricing policies were presented [1]. It has been shown that as long as traffic sources adapt their rates to aggregate congestion measure in their paths, they implicitly maximize certain utility. In this paper we study some counter-intuitive throughput behaviours in such networks, pertaining to whether a fair allocation is always inefficient and whether increasing capacity always raises aggregate throughput. A bandwidth allocation policy can be defined in terms of a class of utility functions parameterized by a scalar that can be interpreted as a quantitative measure of fairness. An allocation is fair if is large and efficient if aggregate throughput is large. All examples in the literature suggest that a fair allocation is necessarily inefficient. We characterize exactly the trade-off between fairness and throughput in general networks [2]. In this paper, we have investigated the unique features and requirements of data sets storage in computation- and data intensive applications in the cloud. Toward practically achieving the minimum data sets storage cost in the cloud, we have developed a novel runtime local-optimization based storage strategy. The strategy is based on the enhanced linear CTT-SP algorithm used for the minimum cost benchmarking by taking into the consideration of users' (optional) preferences. Theoretical analysis, general random simulations,

and specific case studies indicate that our strategy is very cost-effective by achieving close to or even the same as the minimum cost benchmark with highly practical runtime efficiency [3]. We studied the dynamic pricing optimization problem for the service providers selling reusable products and made three main contributions. First, we proposed a comprehensive model that captures the dynamic and competitive features of the market. Second, we formulated providers' optimal pricing policies as an AE and developed an algorithm to solve it [4]. In the project, the unique features and requirements of data sets storage in computation and data intensive applications in the cloud has been investigated. In minimizing storage cost in cloud computing environment, a novel runtime local optimization based storage strategy has been developed. The strategy is used for the minimum cost benchmarking by taking into the consideration of user preferences. Theoretical analysis, general random simulations, and specific case studies indicate that the strategy is very cost effective by achieving close to or even the same as the minimum cost benchmark with highly practical runtime efficiency [5].

III. SYSTEM ARCHITECTURE

This minimum cost is a very important reference for cloud users in the following three aspects:

1) It can be used to design minimum cost benchmarking approaches for evaluating the cost effectiveness in clouds;
2) It can guide cloud users to develop cost effective storage strategies for their applications; and
3) It can demonstrate the constitution of different costs in clouds and help users to understand the impact of different workloads on the total cost.

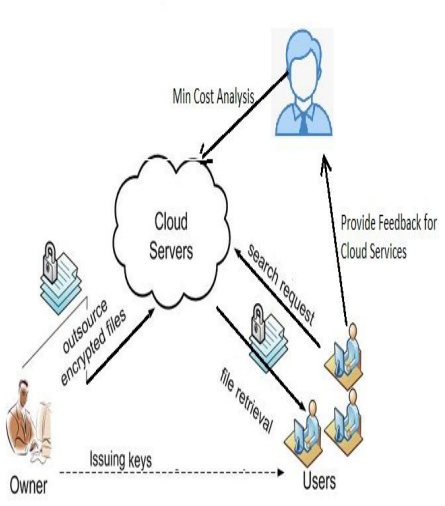

Fig. 1: System Architecture

IV. CONCLUSION

The end of this decade is marked by a paradigm shift of the industrial information technology towards a pay-per-use service business model known as cloud computing. Cloud data Storage redefines the security issues targeted on customer's outsourced data (data that is not stored/retrieved from the costumers own servers). In this work we observed that, from a customer's point of view, relying upon a solo SP for his outsourced data is not very promising, so we are switching toward multi cloud. The cloud computing security is still a major issue in cloud computing environment in addition the loss of service availability and data integrity are the major problem for the customer.

APPENDIX

CS = Cloud Server
PaaS = platform as a service
SaaS = software as a service
CT-SPP = Cost Transitive Tournament Shortest Path

ACKNOWLEDGMENT

It is matter of great pleasure for me to submit this Paper on ``An Efficient and Cost effective data storage and regeneration of files in multi-cloud environment'' as a part of curriculum for award of `Master in Computer Engineering' degree of Savitribai Phule Pune University. Firstly I would like to thank to my guide Dr. Mininath R. Bendre, for his agile and skillful guidance, continuous inspiration, supervision and discussion while working on this project and writing of this paper. I would also want to thank all the authors of various research papers referred while preparing this paper. My guide and college very much helped and inspired for knowledge gaining to continue my work in future.

REFERENCES

[1] Hong Xu, Baochun Li, "Maximizing Revenue with Dynamic Cloud Pricing: The Infinite Horizon Case"
[2] Ao Tang, Student Member, "Counter-Intuitive Throughput Behaviors in Networks Under End-to-End Control"
[3] Dong Yuan, Yun Yang, "A Highly Practical Approach toward Achieving Minimum Data Sets Storage Cost in the Cloud 2013"
[4] Jiang Rong, "Dynamic Pricing for Reusable Resources in Competitive Market with Stochastic Demand 2018"
[5] Sarika k b, "minimizing storage cost in cloud computing environment 2014"

[6] Dong Yuan, Yun Yang, ―A Highly Practical Approach toward Achieving Minimum Data Sets Storage Cost in the Cloud.

[7] S. Agarwala, D. Jadav, and L.A. Bathen, ―iCostale: Adaptive Cost Optimization for Storage Clouds,‖ Proc. IEEE Int'l Conf. Cloud Computing, pp. 436-443, 2011.

[8] M. Armbrust, A. Fox, R. Griffith, A.D. Joseph, R. Katz, A. Konwinski, G. Lee, D. Patterson, A. Rabkin, I. Stoica, and M.Zaharia, ―A View of Cloud Computing, Comm. ACM, vol. 53, pp. 50-58, 2010.

[9] R. Bose and J. Frew, ―Lineage Retrieval for Scientific Data Processing: A Survey,‖ ACM Computing Surveys, vol. 37, pp. 1- 28, 2005.