

A Survey on Cost-Effective Multi-Cloud Storage in Cloud Computing

Rocha Dixit, Surendra Tipre, Niketan Tote, Deepika Deshmukh, Priya Pokale

Abstract— Using cloud storage customers can remotely store their data but cloud data storage redefines the security issues related to the user outsourced data. Single service provider is not sufficient for providing the high security to the customer's outsourced data. In order to achieving better privacy and availability user's data can be divided into the number of data blocks and can be distributed over the available service provider's. For successful retrieval of whole user data threshold number of service provider's should take part into it. In this paper, we proposed a secured cost-effective multi-cloud storage model in cloud computing which provide cost effective solution for the users outsourced data privacy and availability.

Index Terms— SCMCS , Cloud Computing , SP , Privacy , Availability

I. INTRODUCTION

Cloud computing has been envisioned as the next generation information technology architecture for data storage because of its various advantages like on demand services, location independent services, pay-per-service. It is beneficial for user to store their data remotely to the cloud without worrying of managing storage with the universal access to the data. As well as the various advantages of cloud computing it also brings the some disadvantages and challenges towards the users outsourced data. Privacy and availability are the major issues in cloud computing which we have to address.

It is very insufficient for user's outsourced data to depend on the single service provider for the better security and availability of his data. We can achieve the better privacy and availability by dividing user data into number of blocks and spread them among the available service provider in such way that retrieval of whole user data is only possible if threshold number of service provider takes part into it.

To address this issue we proposed the economical distribution of user's data into available service provider's in the market, to provide the privacy as well as the availability to user's outsourced data. We divides the customers data and Procedure for Paper Submission

Stored on multiple clouds as per the customers budget and also gives a decision to customer to which service provider's he must use for the data access. In this way customer can access the data with better quality of service in his budget.

Rocha Dixit, Assistant Professor, Department Of Computer Engineering, JSCOE Hadapsar Pune, India

Surendra Tipre, UG Student , Department Of Computer Engineering, JSCOE Hadapsar Pune, India

Niketan Tote, UG Student , Department Of Computer Engineering, JSCOE Hadapsar Pune, India

Deepika Deshmukh, UG Student , Department Of Computer Engineering, JSCOE Hadapsar Pune, India

Priya Pokale, UG Student , Department Of Computer Engineering, JSCOE Hadapsar Pune, India

Our approach will provides the better decision model for cloud computing customers that provides the better security by diving and distributing data to the multiple service provider's and acquiring better availability of data by maintaining data redundancy distribution of data. In this approach service provider cannot access any meaningful data by retrieving the data stored on their server.

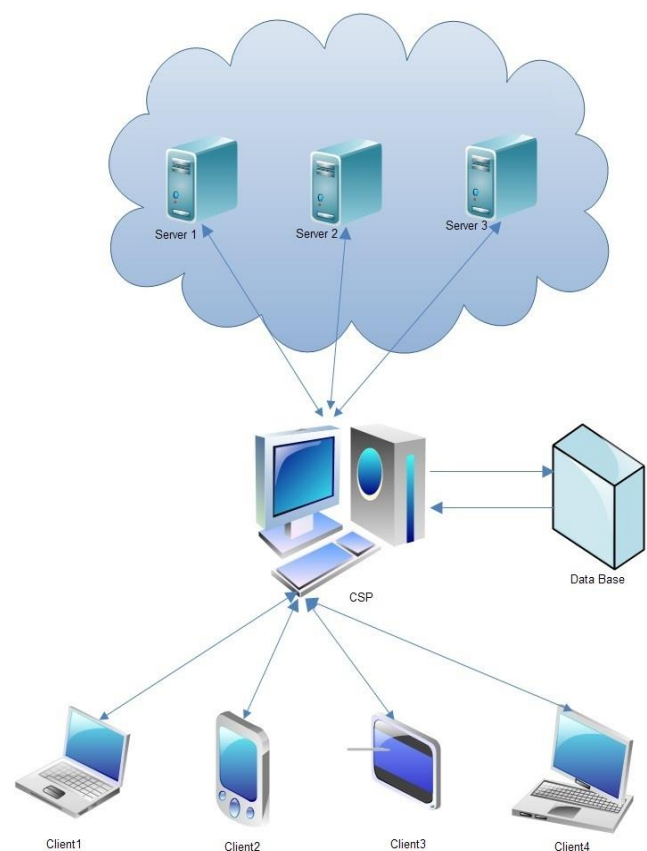


Fig. System Architecture

II. CLOUD SERVICES

The cloud computing provided the following services

A. IaaS:

Is a Infrastructure as a Service use a contracted as a pay-per-use fee .This is minimize the hardware requirement for example minimize the computing hardware servers, Networking devices etc.

Is allow user to consume infrastructure as a service .Iaas only provides basic security and application is moving into the cloud will need higher levels of security provided at the service.

B. PaaS:

Is a Platform as a service is software and developments tool hosted on the service providers servers. It provides the complete software development life cycle management. Platform as a service cloud layer works, PaaS used the virtual system for catalyst the server. To used the virtual system for the purpose of to protected the malicious code. It maintaining the Integrity and authentication of a system.

C. SaaS:

Is a Software as a Service is a distribution software model. Is a application level service to provide the software middleware for the infrastructure and Platform. PaaS is a licensing model, it provide business software functionality. It support associated complexity of installation, SaaS is designed to support many concurrent user. Access using web browser for Internet.

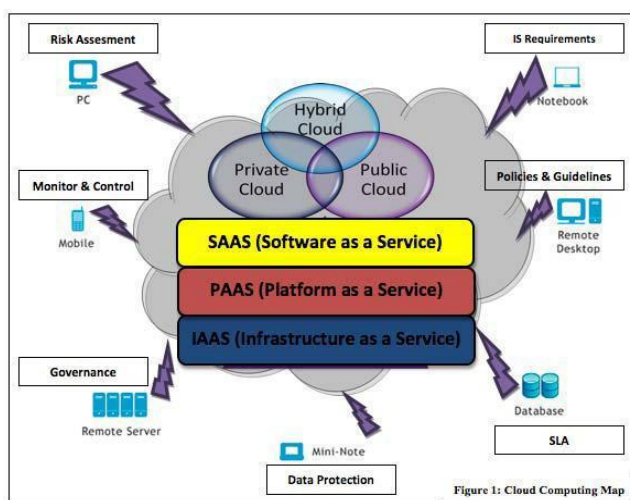


Fig. Cloud Development Model

III. LITERATURE SURVEY

Paper Title	Author	Advantages	Disadvantages
1.Cloud Computing Security Issues and Challenges	Venkatesh. P Department of Computer Science and Engineering Saveetha School of Engineering, Thandalam, Chennai, Tamil Nadu, India	1.Scalability 2.Flexibility 3.Efficiency	1.Cloud Development Model. 2.Cloud Computing Service Delivery Models
2. A Report Based on Cost & Secured Data used Multi Cloud Storage in Cloud Based Resources.	Ms. T.K. Anusuya M.C.A., M.Phil. Head, PG Department of Computer Science Bon Secours College for Women, Thanjavur. shivshreemahathi@gmail.com	1.Lower Cost. 2. Agility. 3. Faster Development	1.Dose not provide Flexibility and Scalability.

3.PaaS: Privacy Aware Data Storage and Processing in Cloud	WassimItaniAymanKayssi Ali Chehab Department of Electrical and Computer Engineering American University of Beirut Beirut 1107 2020, Lebanon {wgi01, ayman, chehab}@aub.edu.lb	1.Secure Storage. 2.Data Privacy. 3.Use Third Party.	1.Cost High.
4.Cloud Computing With Real Life Case Studies And A New Approach Of Solving Security Issues And Putting Data In Cloud	1.G.Rakesh Reddy,Assistant Professor,VIIT,ShadNagar 2.Dr.M.B.Raju,Principal at VidyaVikas,Hyderabad 3.Dr.B.RamanaNai k, Professor,VVIT,Hyderabad	1.Need Basic Scale UP And Scale Down. 2.Scalable And Elastic. 3.Uses Internet Technology.	1.Loss of physical control
5. Privacy Preserving Public Auditing for Secure Cloud Storage.	Cong Wang, Student Member, IEEE, Sherman S.-M. Chow, Qian Wang, Student Member, IEEE, KuiRen, Member, IEEE, and Wenjing Lou, Member,	1.Privacy 2.Feasibility 3.Security	1.Without Checking Integrity

Cloud computing generally refers to the online services like online software application, data storage and processing powers which are pay per use services. Cloud computing is mostly use for dynamically increase the processing capabilities or add capabilities. Cloud computing has the potential to become a frontrunner in promoting a secure, virtual and economically viable IT solution in the future.

A huge amount of data being retrieved from geographically distributed servers, and non localized data handling, creates such a change in technological. One of the prominent services provided in cloud computing is the cloud data storage.

In cloud computing, customers have to pay for data storage services. This service does not only provides flexible and scalable data storage, it also provides customers with the benefit of paying only for the block of data they needs to stored for a particular amount of time, without any worries about of efficient storage mechanism and maintainability issues and challenges with large amounts of data storage. Along with these various advantages, cloud data storage also redefines the security issues based on customer’s outsourced data (Data which is not stored on customer’s server). Since cloud service providers are separate market entities. Security and privacy are most common issues need to be addressed in cloud computing. Cloud computing has done major advancements to the IT industry. Cloud computing brought up rapid enhancement in to the industries and business. The most important and common security and privacy issues

related to the user outsourced data which is processing on remote machine that are not managed by customer. With cloud computing user can see virtual infrastructure built on non-trusted physical hardware and operating environment. The cloud customer should be able to control and manage the different privacy techniques important to protect sensitive outsourced data.

Customers should be aware through a secure privacy auditing process of all the operations carried out to secure the storage and processing of their sensitive data. Paas allows for the secure storage, processing, and auditing of user's confidential data by using cryptography. Using tamper-proof cryptographic coprocessors provides a secure and trusted execution domain in the computing cloud that is physically and logically protected from unauthorized access. Cloud is just internet based: email exists somewhere on some another machine, we don't know where the exactly exists. We have some servers that store email, videos, and pictures, anything else where is that server and where exist we don't know. That data is stored on cloud on server or server of servers. When we want that data we just access the data with the internet this is the power of cloud.

Clouds are very beneficial for business activities like for data storage, online applications. Cloud computing combine the virtualization and internet connectivity for accessing the services and applications. The problem with the cloud computing is security. In India for online tatkaal ticket booking is a major problem for customers. Thus with the help of cloud computing we can solve these issues. Thus maintaining security is a main challenge of cloud computing. Cloud Computing has been envisioned as the next-generation information technology (IT) architecture for enterprises and business due to its long list of advantages in the IT history like on-demand services, anywhere network access, location independent resource services, rapid resource elasticity and pay per use. Since cloud service providers (CSP) are separate administrative entities, data outsourcing is actually relinquishing user's flexible control over their data. The correctness of the user outsourced data in the cloud computing is being put at risk due to the following reasons. One most fundamental aspect of this is that data is being centralized or outsourced to the cloud. As users no longer physically possess the storage of their outsourced data, traditional cryptographic techniques for the purpose of data security cannot be directly adopted.

IV. CONCLUSIONS

In this paper we proposed a secured cost-effective multi-cloud storage in cloud computing for data security in cloud computing. In this System we utilize the AES(Advance Encryption Standard) Algorithm. Our third party decision model provides the decision for user's data storage with the better security and quality of service for data storage with the customer available budget

REFERENCES

- [1] Amazon.com, "Amazon s3 availability event: July 20, 2008", Online at <http://status.aws.amazon.com/s3-20080720.html>, 2008.
- [2] "A Mordern Language for Mathematical Programming", Online at <http://www.ampl.com>

- A. Cavoukian, "Privacy in clouds", *Identity in the Information Society*, Dec 2008.
- [3] R. Gellman, "Privacy in the clouds: Risks to privacy and confidentiality from cloud computing", Prepared for the World Privacy Forum, online at http://www.worldprivacyforum.org/pdf/WPF_Cloud_Privacy_Report.pdf, Feb 2009.
- [4] W. Itani, A. Kayssi, A. Chehab, "Privacy as a Service: Privacy-Aware Data Storage and Processing in Cloud Computing Architectures," Eighth IEEE International Conference on Dependable, Autonomic and Secure Computing, Dec 2009.
- A. Shamir, "How to share a secret", *Commun. ACM* 22, 11(November 1979).
- [5] S. H. Shin, K. Kobara, "Towards secure cloud storage", Demo for CloudCom2010, Dec 2010.
- [6] W. Itani, A. Kayssi, A. Chehab, "Privacy as a Service: Privacy-Aware Data Storage and Processing in Cloud Computing Architectures," Eighth IEEE International Conference on Dependable, Autonomic and Secure Computing, Dec 2009.
- [7] A. Dimakis, V. Prabhakaran, and K. Ramchandran, "Decentralized erasure codes for distributed networked storage," *IEEE/ACM Transaction on Networking (TON)*, vol. 14, no. SI, p. 2816, 2006.



Author 1. Prof. Rucha Dixit (ME CS)
Assistant Professor, Department of Computer Engineering



Author 2 . Surendra Tipre
UG Student, Department of Computer Engineering



Author 3 . Niketan Tote
UG Student, Department of Computer Engineering



Author 4 . Deepika Deshmukh
UG Student, Department of Computer Engineering



Author 5 . Priya pokale
UG Student, Department of Computer Engineering