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# Confronts and Issues of Cloud Security

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***Abstract***— Cloud computing was an Internet based computing, where shared resources, software and information, are presented to computer and devices. This paper shows the cloud security, privacy and reliability when a third party processing sensitive data. Security is one of the main challenges that hinder the growth of cloud computing. We have also explained cloud computing strengths, weaknesses, and applicable areas in information risk management. A new encryption based on Attribute Based Encryption using as a function, digital signature and asymmetric encryption schemes has been proposed. Our proposed algorithm is simplified as an efficient algorithm to implement cloud critical application.

***Keywords***— Cloud Security; Privacy; Saas; Iaas; Paas; Attribute Based Encryption.

## 1. Introduction

Cloud computing is rapidly become a widely adopted paradigm for delivering service over the internet for protecting the confidentiality of the stored data must be encipher before uploading to the cloud by using some cryptographic algorithms. This paper we going to discuss about attribute based algorithm scheme and its categories. In the increasingly prevalent cloud computing, data centers playing a vital rolls at the major cloud infrastructure providers, such as Amazon, Google, and Microsoft.

### *1.1 Cloud Computing Architecture*

There are some cloud computing providers together with Amazon,Salesforce, Microsoft and other websites that are given that cloud computing services also facing countless safety problems for sensitive information access, data separation, isolation, substantiation, uniqueness supervision, policy integration, bugs exploitation, recovery, accountability, visibility under visualization, malicious insiders, management console security features, account access control, and multi-tenancy issues[2].

Cloud computing enhancing the collaboration, agility, scale, availability and provides the potential for cost reduction through optimization and efficient computing. Most specifically, cloud describing the use of a collection of distributed services, application, information and infrastructure comprising of pools of computing, network, information and storage resources. Cloud services based upon five principle characteristics that demonstrate relation and distinctions from conventional computing approaches.

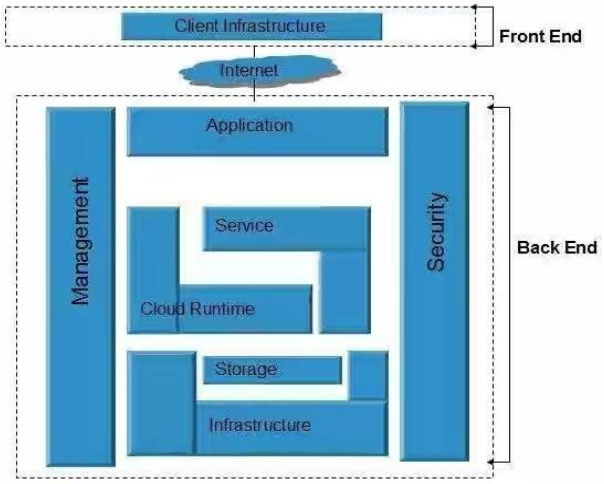


Fig. 1: Cloud Computing Architecture

## 2. Abstract of Infrastructure

The computation, network and storage infrastructure resource is abstracted from the application and information resources were a function of service delivery.

### *2.1 Resource Democratization*

The conceptual of communications acquiesces the idea of source democratization whether infrastructure, apps, or info and supply the ability for mutual possessions to be completed accessible and available to any person or something endorsed to exploiting them by homogeneous techniques for liability so [4].

### *2.2 Service Oriented Architecture*

The generalization of infrastructure for application and information yields well defined and loosely coupled system resource oriented democratization, the notion of utilizing those components in whole or part, unaided or with incorporation, presents a examine slanting part where property may be entrée and exploited in a typical way.

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*2.3 Elasticity/Dynamism*

The on-demand model of cloud provision and coupled with high levels of automation, virtualization, and ubiquitous, dependable and elevated speed association offer ability to quickly enlarge or indenture reserve portion to examine definition and need for using a self service model that scales to as needed capacity.

*2.4 Utility Model of Consumption*

The concept and democratic system service leaning and stretchy nature of cloud mutual with stretched mechanization, orchestration, stipulation for self-service then permit for energetic allotment of possessions supported on any number of prevailing input strictures.

## 3. Cloud Service Delivery Models

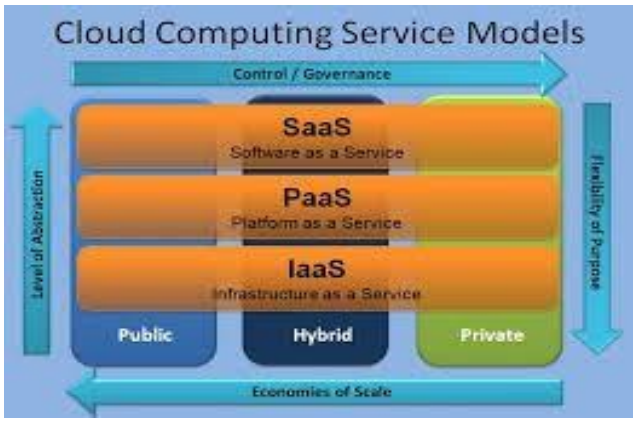


Fig.2: Cloud computing models

*3.1 Software as a Service (SaaS)*

The application areas are accessible from various client devices through either a thick client interface such as a web browser or a program interface. The consumer does not managing control the underlying cloud computing including the networks, servers, operating systems,stock up, or even personage app capabilities, with the possible exception only the limited client detailed app design situations.

*3.2 Platform as a Service (PaaS)*

The capability provided to the consumer was to deployed onto the cloud compute consumer- created or acquired applications created by computer languages, libraries, services, and apparatus sustained by the contributor. The consumer does not manage or control the underlying cloud including network, servers, operating systems, or storage, but has control over the deployed program and possible configuration settings for the applications hostingenvironment.

*3.3 Infrastructure as a Service (IaaS)*

The potential to the user was to condition dispensation, warehouse, networks, and other elementary measuring possessions are the user is capable to arrange and scamper uninformed software, which can include operating systems and applications. The consumer do not change manage the essential cloud infrastructure but has organize over operating systems, storage, and exist applications; and possibly limited control of select networking components[5].

## 4. Disadvantages of Cloud Computing

In spite of is many benefits, as mentioned above, cloud computing also have its drawbacks. Businesses, especially little ones, need to be aware of these aspects before going in for that technology. The main problems involving in cloud computing:

*Technical issues:* Though it is true that information and data on the cloud can be accessed at each and any time and from anywhere, there are moments when the system can have some serious malicious function. Businesses should be knowingthe fact that this technology is always prone to outages and other technical issues. The other major issue of cloud was representing by security. Before adopting this technology, benefits should know that they would be surrendering all their company's sensitive information provider. This could potentially impose a greatest risk to thecompany. Prone to attack: Strong information in the cloud made the companies malicious to external hacking and threats, therefore there is always lurking possibility of stealth of sensitive data [6].

## 5. Methodology

*5.1 Classification of Attribute Based Encryption*

The term encrypts refers to converting the originaldata into human cannot readable form (encoding). There are many encryption algorithms presently available and has its own advantages. The attribute based encipher is a proven algorithm for cloud computing environment. The limitations of some of attribute based encipher method are to be analyzed. Attribute based encryption generally involves encrypt the attributes neither encrypting the whole data. Encipher in ABE is easy and secure and inexpensive compared to other encipher discussed. The ABE is safe because the enciphered data contains the attributes rather than the data. In case of any virusattacks the data never is loss. The limitation of the attribute based encipher is decryption of data is expensive. The attribute

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based encryption makes the application to be safe the performance of the ABE is high compared to other encipher methods. Thus attribute based encipher is the solution to all cloud applications in future. The cloud is moved to other generation computing with risk applications and current applications.

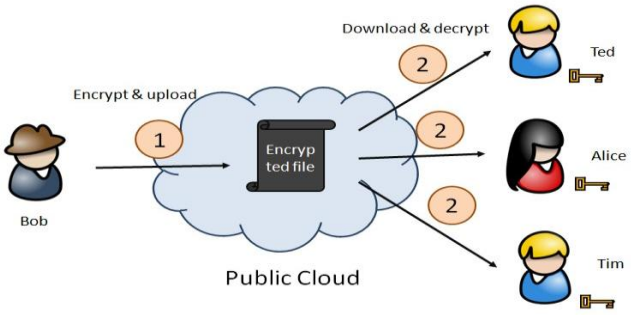


Fig.3: Encryption and Decryption

### *6.2 Related Work*

The ABE is proposed to solve the complex mechanism and access control over encryption data. Basically, ABE is public encipher key based one to many encipher that decrypt the cipher text only if the secret key associated with the user matches with encrypted key and most secret key. Decipher of data taking from directly by the server itself. Thereby performance was increased with effective encipher methodologies. Thus cloud is ready for the critical applications with outsourced decipher of data [7].

## 6. Conclusion

Cloud computing is a combination of different key technologies that have matured over long years. Cloud computing has a potential for cost and time savings to the enterprises, but the security risk is also enormous. In this paper an overview of cloud computing service delivery model, Software as a Service along with the security challenges, including both in traditional and cloud specific protection challenges associated with the model have been presented.

## 7. Future Work

In future, our work can be continued in several directions. First and foremost, extensive comparisons are needed between the different revocation schemes proposed for attribute-based encryption to understand better their performance between different circumstances.

## References

[1] Ren, Yulong, and Wen Tang, "A Service Integrity Assurance Framework for Cloud Computing Based On Mapreduce", Proceedings Of Ieee Ccis2012. Hangzhou: 2012, Oct.-Nov. 2012, pp 240 – 244

[2] N, Gonzalez, Miers C, Redigolo F, Carvalho T, Simplicio M, De Sousa G.T, and Pourzandi M. "A Quantitative Analysis Of Current Security Concerns And Solutions For Cloud Computing.". Athens: 2011., Dec. 1, 2011, pp 231 – 238

[3] Hao, Chen, and Ying Qiao. "Research Of Cloud Computing Based On The Hadoop Platform.". Chengdu, China: 21-23 Oct 2011, pp. 181 – 184.

[4] Y, Amanatullah, Ipung H.P., Juliandri A, And Lim C. "Toward Cloud Computing Reference Architecture: Cloud Service Management Perspective", Jakarta: 2013, 13-14 Jun. 2013, pp. 1-4.

[5] A, Katal, Wazid M, And Goudar R.H. "Big Data: Issues, Challenges, Tools And Good Practices", Noida: 2013, 8-10 Aug. 2013, pp. 404 – 409.

[6] Lu, Huang, Ting-Tin Hu, and Hai-Shan Chen. "Research On Hadoop Cloud Computing Model And Its Applications", Hangzhou, China:, 21-24 Oct. 2012, pp. 59 – 63.

[7] Wie, Jiang , Ravi V.T, And Agrawal G, "A Map- Reduce System With An Alternate API For Multi-Core Environments", Melbourne, VIC: 2010, International Journal of Network Security & Its Applications (IJNSA), 17-20 May. 2010, Pp. 84-93.

[8] K, Chitharanjan, and Kala Karun A, "A review on hadoop — HDFS infrastructure extensions.".JeJu Island: 2013, 11-12 Apr. 2013, pp. 132-137.

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