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A Survey on Data Security in Cloud Computing

Preeti Kumari Santosh Sharma

U.G. Student, Department of Information Technology, B.K. Birla College of Arts, Commerce and Science
(Autonomous), Thane, India.

ABSTRACT: Cloud computing is an Internet-based computing and the next stage in evolution of the internet. It has received significant attention in recent years but security issue is one of the main major inhibitor in decreasing the growth of cloud computing in world. It shifts the user data application software to large data centres i.e. Known as Cloud, which is remotely located, at which user does not have any control and the management of the data may not be completely secure and safe. However, this feature of the cloud computing introduce many security issues which need to be resolved and understood clearly. One of the most important and leading is security issue that needs to be addressed. Data Security concerns arising because both the user data and program are located in provider premises. In this study, an attempt is made to take survey on the research in this field. The results of survey are categorized on the basis of the type of approach and the type of validation used to validate users data.

KEYWORD: Cloud Computing, Cloud, Security ,Data Security, Security issues

I. INTRODUCTION

Cloud computing security refers to a broad set of policies, technologies, applications, and controls utilized to protect. Cloud security is important for both business and personal users. Everyone wants to know that their information is safe and secure and businesses have legal obligations to keep client data secure. There are many problems and challenges consequences of data breach, weak control plane and lack of cloud security architecture and strategy, etc. Use encryption, Avoid storing sensitive information and adding additional security measures. Protecting data in the cloud can be similar to protecting data within a traditional data center. Authentication and identity, access control, encryption, secure deletion, integrity checking, and data masking are all data protection methods that have applicability in cloud computing. cloud computing companies say that data is secure, but it is too early to be completely sure of that. Only time will tell if your data is secure in the cloud. Security of data and trust problem has always been a primary and challenging issue in cloud computing. The trust problem between cloud storage and customer can be solved, if users can check the integrity of data themselves instead of renting an auditing service to do the same.

II. OBJECTIVES

- To understand that data storage in cloud computing safe in future or not.
 - To analyse that storing data in cloud is secure or not and also trustable or not.
- We can use this objectives by checking through the survey analysis. We find the following hypothesis.

Hypothesis:

- 1.If data storing is secure in cloud computing using some better algorithm then it will be safe for the users for storing data.

III. LITERATURE REVIEW

(1)This paper illustrates cloud concepts and demonstrates the cloud capabilities such as scalability, elasticity, platform independent, low cost and reliability. The security problems in the cloud system were discussed. cloud computing had a very fast pace of development and shows good prospects and great potential Liu, Wentao et al.(2)This paper proposed cloud computing security for cloud services in the areas of assurance, identify management and data centric security should become the focus of vendor effort. Undue attempts at patching the growing number of holes on the corporate network security perimeter will be of lesser value Dorey, P.G.,&Leite,A et al.(3)The various security issues in communication, computational and Service Level Agreement were explored. The challenges related to it in all the three

layers, Virtual layer, Virtualization Layer, and Physical layer are addressed. Data related security issues were classified as issues on data at rest and issues on data in transmission Subramanian, N., & Jeyaraj et al. (4) This paper building a secure network infrastructure environment was the foundation of a cloud computing environment Sun, Panjun et al. (5) In this paper we had analysis fundamental concept of cloud computing and security issues in the cloud computing Sharma, Rajani & Trivedi, Rajender et al. (6) This paper discussed the risks and security threats to data in the cloud and given an overview of three types of security concerns. Virtualization is examined to find out the threats caused by the hypervisor. Similarly, threats caused by Public cloud and multitenancy have been discussed. One of the major concerns of this paper was data security and its threats and solutions in cloud computing Albugmi, Ahmed & Alassafi, Madini & Walters, Robert & Wills, Gary et al. (7) This paper surveyed different techniques about data security and privacy, focusing on the data storage and use in the cloud, for data protection in the cloud computing environments to build trust between cloud service providers and consumers Sun, Yunchuan & Zhang, Junsheng, Song, Yongping & Zhu, Guangyu et al. (8) This paper discussed the issue of data security in Cloud Computing. The author had firstly classify the data security issues according three dimensions: Cloud characteristics, data lifecycle, and data security attributes. The author had then identify the common solutions used to secure data for each category of this classification Kacha, Lynda & Zitouni, Abdelhafid et al. (9) In this paper data security challenges and solutions are provided for these challenges to overcome the risk involved in cloud computing R. Velumadhava Rao, K. Selvamani et al. (10) The proposed work, only the authorized user could access the data. Even if some intruder (unauthorized user) gets the data accidentally or intentionally if they captures the data also, they can't decrypt it and get back the original data from it Singh, Santosh & Manjhi, Pankaj & Tiwari, R. Et al. (11) The proposed security method could be improved and integrated into mechanisms that use machine learning algorithms, in order to develop a customizable mechanism for each organization, through the dynamic learning process, adapting to the type and the real needs of data security BRUMA, Lidia et al. (12) In this paper key security considerations and challenges which are currently faced in the Cloud computing were highlighted. Cloud computing had the potential to become a frontrunner in promoting a secure, virtual and economically viable IT solution in the future Verma, D. K., & Sharma, T. Et al.

IV. METHODOLOGY

We took an online survey with the help of Google form. The link of the form was circulated in social media platform. The questionnaires in the form were designed to test the proposed hypothesis and result.

Participants

To test the proposed hypothesis, this study used two conditions i.e.,

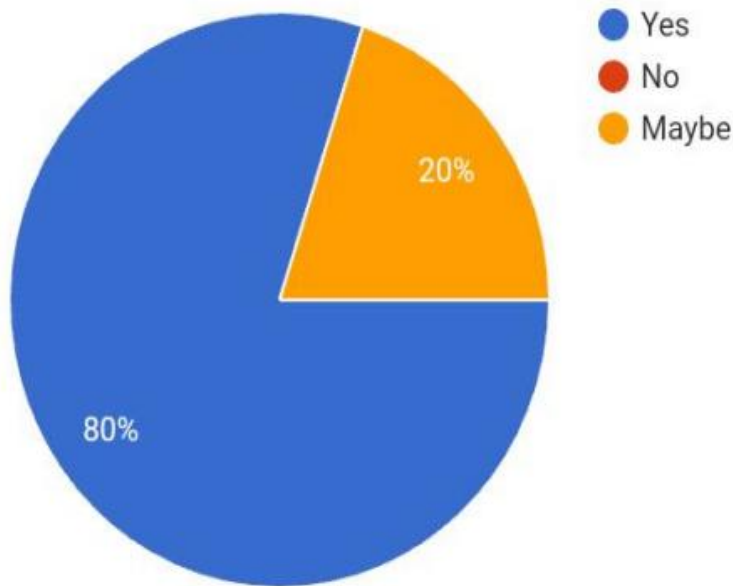
- (a) Data storage in cloud will secure or trustable for people.
- (b) Data storage in cloud will be add extra security for people.

Total 40 participants data was collected from different city. All the 40 participants in which 55% male and 45% female.

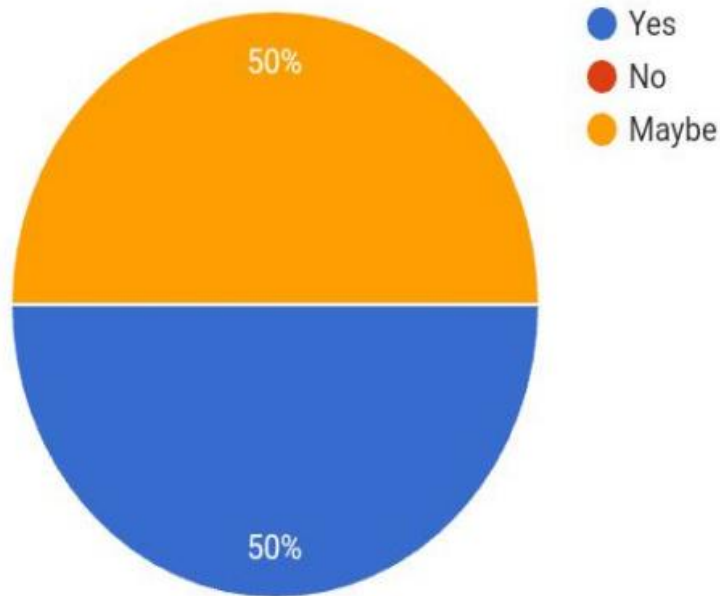
A. Measures

Participants were asked to indicate their agreement on a two scale (1=YES, 0=NO).

Male reply on the data storing in cloud computing is secure or not in future?



Female reply on the data storing in cloud computing is secure or not in future?



V. EXPERIMENT

-Calculated by Chi-square test with two scales(YES/NO)

-After performing the chi-square test got χ^2 tabulated=0.077 and χ^2 calculated=9.438 at the significant level of 95%

-Here χ^2 tabulated < χ^2 calculated therefore we accept the hypothesis i.e. Students are interested to know about data cloud computing that will positively increase their number.

VI.RESULT

In this section, We first explain our experimental setting and next, we discuss the results of our simulations performed information propagation through survey analysis calculated using Chi-square test which is resulted in stating that the participants are trust about data security in cloud computing. The result also explains that there is a vast difference between number of male before and after use of cloud. Therefore, the hypothesis is accepted.

VII.CONCLUSION

Increased use of cloud computing for storing data. The trend of improving the ways of storing data in the cloud. Some believe that cloud to be an unsafe place for storing data. But few people find it safer than their own security provisioning, especially small businesses that do not have resources to ensure the necessary security themselves. Data available in the cloud can be at risk if not protected in a rightful manner in cloud. The security problems in the cloud system are discussed. Cloud computing has a very fast pace of development and shows good prospects and great potential. The cloud computing is related to many areas of information management and services. The cloud computing provider must make variety of measures to protect the security in order to effectively solve these problems.

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