



AN APPROACH TOWARDS RELIABILITY OF DATA IN CLOUD STORAGE

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ABSTRACT:

Cloud is kind of centralized database where numerous clients accumulate their data, recover data and possibly adjust data and it is a representation where user is made available services by Cloud Service Provider on the basis of pay per use. Data centres nowadays are one of the main requirements for the increasing services of information technology and have a significant responsibility in cloud computing. Cloud Storage is the method of storing the end-user or client information in the distantly located cloud servers and is one of the increasing trends in field of IT and experience from the concern of security within it. The architecture of Multi Agent System for integrity of Cloud data storages was developed from the notion of Multi Agent system in artificial intelligence entitled as network of loosely-coupled entities that effort collectively to discover solutions for the exertions which are further than the awareness of single entity. Architecture layer of Multi Agent system known as cloud zone comprises of five agents but for the most part extensively used agents intended for reliability are agents of Cloud Service Provider Agent and Backup Agent of Cloud Data Integrity. Data encoding is one of the fundamental methodologies intended for the principle of integration of data being conveyed.

Keywords: Cloud, Cloud Storage, Multi Agent System, Data encoding.

1. INTRODUCTION:

Cloud computing put up on established trends and offers a variety of services that can profit its customers, by means of providing quick access to their data, scalability, data storage, data recovery and guard against various hackers, and usage of the network and infrastructure conveniences. Even if the utilization of cloud computing has rapidly improved; the safety of cloud computing is still considered the most important issue in the environment of cloud computing. Broad range of the internal and external pressures for data reliability exists even though the cloud infrastructures are considerably more dominant and consistent than personal computing strategies [4]. By taking a variety of kinds of data in the data safety, the difficulty of checking correctness of data is still became a challenging one. Along with the extensive enthusiasm on cloud computing, though, concerns on data security with cloud storage are arising due to unpredictability of the service and malicious attacks from hackers. Recently more and more proceedings on cloud service outage or server fraud with major cloud infrastructure providers are reported. Well-organized methods which permit on-demand data accuracy confirmation on behalf of cloud

users have to be considered in order to attain the assurances of cloud data integrity and accessibility and apply the excellence of cloud storage service [8]. Data centres nowadays are one of the main requirements for the increasing services of information technology and have a significant responsibility in cloud computing. The end-users make available their data to cloud to access it whenever necessary on the rental source, therefore, the data provided is accumulated at data centers of cloud identified as cloud data storages. Cloud data storages are present at various locations and accumulate the complete information present on cloud. Cloud data storages are also one of the increasing trends in field of IT and experience from the concern of security within it [1]. Even though there are many security issues related to Data centers or data storages but one of the most important issue is integrity of the data. Cloud Storage is the method of storing the end-user or client information in the distantly located cloud servers. Storage is attaining of attractiveness intended for the outsourcing of routine management of information. Therefore monitoring of integrity of data in cloud storages is as

necessary for any data centre, to pass up any corruption of data corruption.

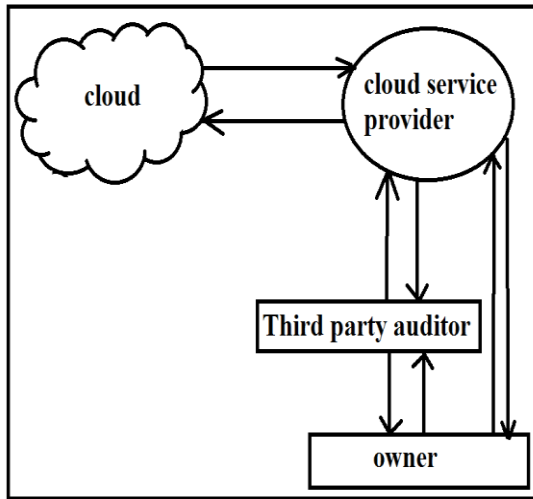


Fig1: An overview of cloud data storage

2. METHODOLOGY:

The reliability within cloud storage can be of two things specifically, integrity of data being transmitted from Cloud data storages in addition to integrity of Cloud data storages. The method intended for providing both types of integrity and method for providing integration collectively are present. The architecture of Multi Agent System for integrity of Cloud data storages was developed from the notion of Multi Agent system in artificial intelligence entitled as network of loosely-coupled entities that effort collectively to discover solutions for the exertions which are further than the awareness of single entity. It is put

into practice on basic structure of cloud and comprises of two main layers such as cloud resource layer and architecture layer of Multi Agent system [11]. At cloud resource layer as the name suggest consists of all the assets of storage servers similar to cloud and application servers which make available a platform to Cloud data storages. Architecture layer of Multi Agent system known as cloud zone comprises of five agents but for the most part extensively used agents intended for reliability are agents of Cloud Service Provider Agent and Backup Agent of Cloud Data Integrity [3]. To make available integrity of Cloud data storages the architecture of multi agent system implies several security policies by means of agent of Cloud Service Provider Agent whose main accountability is to backup information from the zone of Cloud and send usual security alerts whenever there is an error of human when data intended for cloud is entered, the bugs of software occur, some hardware fault resembling system crash, throughout the transmission of cloud information from one computer to an additional [9]. The architecture of multi agent system employs methodology of Prometheus intended for scheming the prototype and security of Java Agent

Development Framework intended for its functioning. Data encoding is one of the fundamental methodologies intended for the principle of integration of data being conveyed. Being one of the primary mechanisms of security provided for security of network, it is still for the most part extensively used mechanism with standard changes and addition in its functioning [7]. The most essential mechanism of data encoding made used in Cloud data storages intended for data integration is on the basis of hash values, specifically encrypting data by means of mechanism of encryption and subsequently using hash values at the side of server and client to make sure the reliability of data being transmitted. This mechanism make available assurance of consistent data transfer but not dependable retrievable of data. Architecture of Multi Agent system essentially makes use of two agents in layer of client side intended for data integrity, Cloud Service Provider Agent which cares for the backing up of information in the zone of cloud and produce standard alarms if any error takes place, but doesn't assurance any agreement as it only discusses concerning the data which is being entered into the storage of cloud ad not regarding the data

accessed by the clients frequently, specifically, if there is any unofficial access to data in addition to data is being entered in the format of accurate, subsequently the cloud will make available the data [2] [12]. To make sure that the data being entered is included in addition to data being accessed from cloud is also included, these two mechanisms were combined. This can be completed by means of inserting a concept of hash value in the agent of Cloud Service Provider Agent of architecture of Multi Agent system [5]. Backup Agent of Cloud Data Integrity is accountable for the upholding of cloud storage when information is entered into it, and if the information goes out of the storage of cloud the values of hash being used can be used to confirm the data being conveyed is in accurate format. Consequently the total process of consistent retrieval and consistent data transmission is definite at the same time.

3. FEATURES OF CLOUD COMPUTING:

Rapid Elasticity: In the direction of speedily scale out and quickly released to scale in quickly, the services of the cloud can possibly be provisioned elastically. The

capacity obtainable for provisioning seems to be frequently unlimited to the consumer and can possibly be obtained at any instance [10]. Resource Pooling: In order to provide multiple consumers by means of multiple tenant schemes the resources of computing provider are pooled mutually through the various resources of virtually assigned and reassigned in accordance to order of consumers. Processing, virtual machines and memory are the resources included and the pooling of the resource constructs the financial system of the extent. On demand self services: Without necessitating human interface with each service provider, the services of computer such as network, email and applications can be made available [6]. On demand self services consisting of Microsoft, web services and IBM were provided by the cloud service providers. Measured Service: By means of providing intelligibility for consumer in addition to provider, the resources of the cloud computing can possibly controlled and measured. By making usage of a metering capability the cloud computing controls and maximizes the usage of the resources.

4. CONCLUSION:

Cloud computing assurances lesser expenditures, speedy scaling, stress-free preservation, and provision accessibility everywhere and all times. To guarantee and construct confidence that the cloud can grip user data steadily is a significant encounter faced by the cloud computing. The end-users make available their data to cloud to access it whenever necessary on the rental source, therefore, the data provided is accumulated at data centers of cloud identified as cloud data storages. The architecture of Multi Agent System for integrity of Cloud data storages was developed from the notion of Multi Agent system in artificial intelligence entitled as network of loosely-coupled entities that effort collectively to discover solutions for the exertions which are further than the awareness of single entity. The architecture of multi agent system employs methodology of Prometheus intended for scheming the prototype and security of Java Agent Development Framework intended for its functioning.

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