

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: - www.journalijar.com</p> <h2>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</h2> <p>Article DOI: 10.21474/IJAR01/2844 DOI URL: http://dx.doi.org/10.21474/IJAR01/2844</p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal Homepage: http://www.journalijar.com Journal DOI: 10.21474/IJAR01</p>
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RESEARCH ARTICLE

A PROPOSED ARCHITECTURAL FRAME WORK FOR SECURE THE CLOUD DATA STORAGE TO PRODUCT MULTIMEDIA DATA.

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Manuscript Info

Manuscript History

Received: 19 November 2016
Final Accepted: 21 December 2016
Published: January 2017

Key words:-

Cloud, data, security, multimedia, architecture and Framework.

Abstract

In the modern communication era, the role of cloud computing is extensively utilized by most of the IT sector. In the characteristic of Data communication as well as data sharing among the consumers is conducting in different mode of communication mechsnaim. In the episode of data transmission and sharing is happen from the data storage for all the service providers. With irrespective of data access, each and every researchers focus on the safety measures of data transaction among different clients or between service providers and consumers. The data sharing by using clouds are generally carried out from the cloud data storage. In this research article deeply focusing a new architectural frame work for secure cloud data storage in the aspect of protect the multimedia data content by using the data compression mechanism. The entire work is divided into two sections, one of them is architectural framework and another one is implementation. The second one will carry as the continuation of this work.

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Introduction:-

The way of modern approach comprising to muddle up the concepts of cloud computing with the data compression mechanism in order to protect the multimedia content resided in the cloud storage. In general the data access of the cloud service providers are taken place with the help of cloud storage. The data resides in cloud storage is in the form encrypted text or any other format. It will easily interact by the third-party unauthenticated users and put a question mark for security. In order to apply the any one of the data compression mechanism on the cloud data storage, we can easily avoid such kind of interruption and protect the unauthorized data consumption in the cloud data transactions. The paradigm of the proposed work is clearly depicted by the following block diagram (Figure 1),

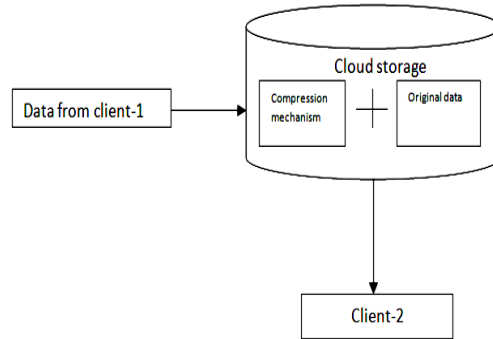


Figure 1:- Data sharing paradigm

Crucial data and submission may require an agency to undertake a negotiated service agreement in order to use a public cloud. Points of negotiation can negatively affect the economies of scale that a non-negotiable service agreement brings to public cloud computing, however, making a negotiated alternative less cost effective. As an alternative, the organization may be able to employ compensating controls to work around identified shortcomings in the public cloud service. Other alternatives include cloud computing environments with a more suitable deployment model, such as a private cloud, which offers an organization greater oversight and control over security and privacy [1].

Cloud computing encompasses both a server and a client side. With emphasis typically placed on the former, the latter can be easily overlooked. Maintaining physical and logical security over clients can be troublesome, especially with embedded mobile devices such as smart phones. Their size and portability can result in the loss of physical control. Built security mechanisms often go unused or can be overcome or circumvented without difficulty by a knowledgeable party to gain control over the device. More than ever the compression technique is used for saving disk space, reducing the time needed for communication or the time needed for data transfer and more. Data to be handled as well as software has been growing, and the amount of information communicated between systems has also been constantly increasing. The general communication between the cloud providers (CSP) and the clients are depicted in the following Figure 2.

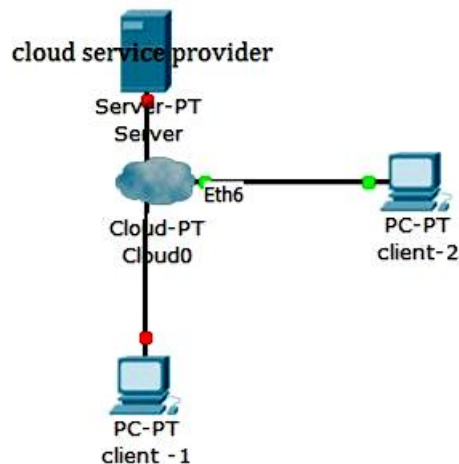


Figure 2:- Data communication between CSP and the clients

Related Work:-

Cloud computing is seen as the last revolution in information technology, providing cheaper services and agility and productivity of organizations. But, despite all the advantages there is still much discussion around the term Cloud Computing: what feature displays? What limitations in terms of storage, compression and security?

Data management in cloud computing and data storage is widely used and is available from different suppliers and different solutions. Can be used as a data repository or as infrastructure to support and implement applications

with the help of cryptography [1][2][3].

Cloud computing presents interesting features for all users with advantages at the level of storage cost, scalability, elasticity face to the constant needs of availability and quick access in different computing devices.

There are different types of services for cloud computing: Infrastructure-as-a-service (IaaS) where the cloud offers services of its infrastructure such as CPU, memory, and storage. Platform-as-a-service (PaaS) where it is available an execution environment for the user and Software-as-a-Service (SaaS) where the cloud provides a specific application accessible via browser in the form of encryption [4][5].

The management and monitoring of data is an essential requirement for organizations, since it allows the reduction of the risk of internal breaches and ensures the responsibility of administrators. Each type of cloud service provides security requirements for the organization and access to data and systems. Organizations that use cloud technology monetize their services extracting the greatest benefits of this new technology base.

These companies have embraced the cloud as a strategy that provides everything you need to create, operate, manage and allocate in the cloud with efficiency, speed and reliability. The system of cloud computing provides a computational power available to the needs of the user thanks to a dynamic scalability and to utilize the service for encryption [4][5].

However even considering the characteristics and advantages presented to maintain safe and reliable data presents itself as very problematic for users. The purpose of this thesis aims to design, implement and evaluate a system that allows access to management, kept in cloud storage. The proposed application is intended to be used as intermediate system, aggregating a set of components and services between the user and various public clouds of data storage, made available by internet providers and cloud service providers.

The Cloud Computing still motivates much discussion. The essence of its functioning, its boundaries, the development of new applications, becoming increasingly agile and collaborative, inspiring subjects for research [6].

As we enter the new century, it appears that the ability of data centers is limited and runs out [7][8]. The economy in sequences the trend of technological development and the solution is the adoption of grid services and/or utility computing as well as the use of virtualization to maximize the available resources.

As services and applications become more distributed, paradigms like Service-Oriented Architecture emerge in response to integration and service orchestration, and the organization and technologies used in data centers evolve.

Today the data centers that support environments and platforms for Cloud Computing components are designed to utilize more economical, safe, quick and easy replacement. Given these factors, software developers have come, to design applications that can address the needs of users, in a safe, efficient and cost-effective way to implement and/or maintain an infrastructure of Cloud Computing [10].

Proposed Work:-

Cloud storage services have grown and diversified significantly this development eventually promote the emergence of contract services and with the feature of allowing users to choose to acquire the one that is more suitable for him/her. Services are provided in a common environment by centralized cloud storage facilities.

As data volumes processed by large-scale distributed data intensive applications grow at high-speed, an increasing input/output pressure is put on the underlying storage service, which is responsible for data management. With the emergence of cloud computing, data intensive applications become attractive for a wide public that does not have the resources to maintain expensive large scale distributed infrastructures to run such applications.

The main objective of this dissertation is to propose and validate a solution to the problem of secure and efficient transmission and storage of multimedia content in public cloud environments using joint compression and encryption.

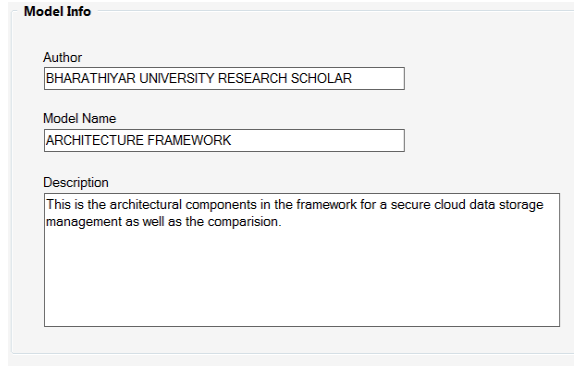


Figure 3:- the Interface

The architectural framework for the proposed work comprising the design specification in the aspect of Data transmission or communication in the first point of view is without compression and encryption, second one is with Compression and without Encryption , third one is with Encryption and without Compression, and the fourth one is With Encryption and Compression. The data analysis is performed with the help of the tool mental modeller 5.0. The interface is depicted in the above figure 3.

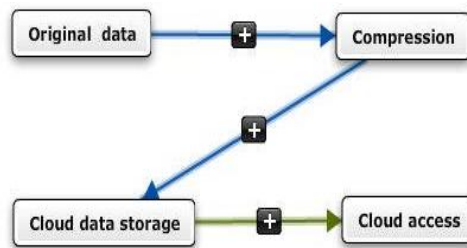


Figure 4:- Architectural Framework

From the figure 4, the components of the architectural frame work in order to prevent the unauthorized data access from the cloud storage management by the third party. The flow from the original data to the cloud services is clearly illustrated in this module. The module of compression is further classified in the following levels. It shown by the following figure 5.

Number of Concepts	4
Number of Connections	3
Density	0.1875
Number of Connections / Components	1.3333333333
Driver Components	Data with Compression and Encryption 0.5
Receiver Components	Data without compression and Encryption 0.25
Number of Ordinary	2
Complexity Score	1
Highest Centrality Variables	Data With Encryption and Without compression 0.75 Data with compression , without Encryption 0.5 Data with Compression and Encryption 0.5 Data without compression and Encryption 0.25

Figure 5:- Components of Compression Cloud Storage

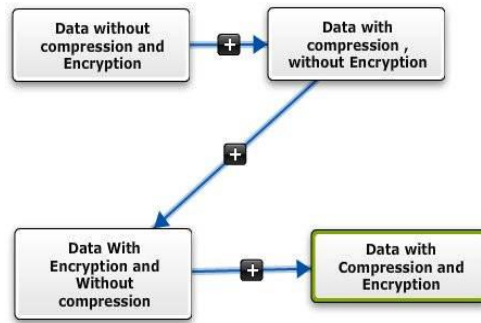


Figure 6:- Components comparison in the Compression

Iv. Conclusion And Future Work:-

As per the above discussions provides the information about the proposed architectural frame work in the cloud computing data access mechanism. Especially it's designed the secure access of multimedia data content from the cloud data storage. The Original data storage is redesigned in the aspect of compression and it will further sub classified with the features of encryption. The detailed approach for the utilization of this architecture in the continuation of this research work.

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