EUROPEAN ACADEMIC RESEARCH
Vol. II, Issue 2/ May 2014

Impact Factor: 3.1 (UIF)
DRJI Value: 5.9 (B+)

ISSN 2286-4822
www.euacademic.org

Ensuring Accountability for Data Sharing in the Cloud

KHALID MAHDI SALIH
Department of Computer Science
Sam Higginbottom, Iraq
ANCHIT SAJAL DHAR
Department of Computer Science
Sam Higginbottom, India

Abstract:

In cloud computing environment resources are shared among various clients and it's important for system provider to allocate the necessary resources for the clients. As the sizes of IT infrastructure continue to grow, cloud computing is a new way of virtualization technologies that enable management of virtual machines over a plethora of physically connected systems. Cloud computing enables highly scalable services to be easily consumed over the Internet on an as-needed basis a major feature of the cloud services is that users' data are usually processed remotely in unknown machines that users do not own or operate. While enjoying the convenience brought by this new emerging technology, users' fears of losing control of their own data (particularly, financial and health data) can become a significant barrier to the wide adoption of cloud services. Here the multi-layered architecture is proposed to address accountability of the data while sharing in the multi user, heterogeneous and distributed computing environment. The multi-layered architecture is evaluated and shows that the accountability of the data is ensured which increases the trust between the end user and the service provider.

Key words: Cloud Computing, Cloud Storage, Cloud Security

1. Introduction

Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network .It has the potential to change the IT industry. It enables cloud customers to remotely store their data into the cloud so as to enjoy the on-demand high quality application and services from a shared pool of configurable computing resources. Cloud Computing is the result of evolution and adoption of all the existing technologies and paradigms. The goal of cloud computing is to allow users to take benefit from all of these technologies, without the need for deep knowledge about or expertise with each one of them. Clouds enable customers to remotely store and access their data by lowering cost of hardware ownership while providing robust and fast services. As Cloud Computing becomes prevalent, sensitive information are being increasingly centralized into the cloud. In this, data owners may share their outsourced data with a large number of users, who might want to only retrieve certain specific data files they are interested in during a given session. One of the most popular ways to do so is through keyword-based search. Such keyword search technique allows users to selectively retrieve files of interest and has been widely applied in plaintext search scenarios. In a cloud the service providers offer their resources as services to the general public. Public clouds offer several key benefits to service providers, including no initial capital investment on infrastructure and shifting of risks to infrastructure providers. However, public clouds lack fine-grained control over data, network and security settings, which hampers their effectiveness in many business scenarios.

2. Review of Literature

In the recent years, the cloud computing and cloud storage become very popular, because provides the facility for store and

organize the information, and make this information available to other users remotely. It save a lot of resources like memory space system overhead etc.

[1] Cong Wang has wrote "Enabling Secure and Efficient Ranked Keyword Search over Outsourced Cloud Data" in 2012.

[2] Prof. Shucheng has wrote " Secure Data Sharing in Cloud Computing" in 2011.

[3] 2.3 Anup Mathew has wrote"Survey Paper on Security & Privacy Issues in Cloud Storage Systems" in 2012.

[4] Sudha S and Brindha K has wrote "Data Synchronization Using Cloud Storage" in 2012.

[5] Talasila Sasidhar has wrote "A Generalized Cloud Storage Architecture with Backup Technology for any Cloud Storage Providers" in 2012.

[6] Wenying Zeng has wrote "Research on Cloud Storage Architecture and Key Technologies".

[7] Victor Chang has wrote "Cloud Storage in a private cloud deployment: Lessons for Data Intensive research" in 2011.

[8] Ronny Seiger has wrote "SecCSIE: A Secure Cloud Storage Integrator for Enterprises".

[9] Mladen A. Vouk has wrote "Cloud Computing – Issues, Research and Implementations" in 2008.

[10] Idilio Drago has wrote "Inside Dropbox: Understanding Personal Cloud Storage Services".

3. Materials And Methods

Cloud computing is the delivery of computing services over the Internet. Cloud services allow individuals and businesses to use software and hardware that are managed by third parties at remote locations. Examples of cloud services include online file storage, social networking sites, webmail, and online business applications. The cloud computing model allows access to information and computer resources from anywhere that a

network connection is available. Cloud computing provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications.

a) Module Description – The following modules are introduced in to our application.

User Module - Any person who want to use the cloud storage service can register with the application. User registration is a simple process. After registration any one can login and can use the facilities like file upload, searching, sharing, changing profile images etc.

File Upload Module - Here the user can store their own data as well as can download the data whatever is uploaded by some other user. If you upload the data on the cloud then other users can search your information and can download after your confirmation.

File Share Module- Here any user can search your files from the cloud storage then he/she will send a request on the owner for downloading the particular file. Then it is up to owner that he/she is allowing for that or not. If you not want to share your file then do not send the confirmation message, if you want for share you can send the confirmation message which contains a security key and by using that key any one can download your file.

Admin Module - The administrator can manage a registered user. The following tasks are performed by the administrator-

can block/unblock any registered user

can delete any registered user

can search any registered user

can send message to all the users of the cloud storage service

can see the message log

4. Conclusion

In this paper, we implement a secured cloud data share system, by which any registered user can share their data with other registered users of the cloud storage service. I try to maintain a security system, when any user wants to download the uploaded data the he/she should first take the permission of the owner of the data. Only when the owner of data is agreed then the user can download the data with the help of the security key send by the owner of the data.

Here I also try to maintain an admin part which is the management console of the cloud storage. The administrator has authority to manage the user and block, unblock etc.

5. Future Enhancements

I have developed this application for the web servers and this is most suitable for personal computers. In future it could be also designed for android based mobile phones and tablets. We can also do more work on the security features of the application. May be send the security code on the mobile phone of the registered users. This concept will increase the security of the system. We can also use some advance concepts like MVC and JQuery for enhancing the performance of the application.

6. Results and discussion

Before using the cloud service the user must register. After registration the user can login. Now the user can upload their file to the cloud storage with a keyword (keyword specifies the

type and category of the information which belongs to the uploaded file).The user can also search the information which is uploaded by some other user. If the required data is available so the logged in user can request for download. Now the next user can confirm the download request, if he/she is agreed for sharing the data. If download request is confirm then a confirmation message will send to the request user. In the confirmation message there is a download link, by clicking this link and providing the security key the user can download the particular file. User can also change their profile photo if he/she wants. We also work on Admin part, the administrator can delete user, block user or delete the user. The Admin can also broadcast the message to the entire registered user of cloud storage service.

The project is executed with high security, without login the user not access any kind of service. The logged in user cannot download a file directly. After confirmation of the owner of the file the logged in user can download with a security key. The system has been developed by using ASP.NET. It provides a lot of facility for designing a good user interface as well as server side programming. The data has implemented by using SQL-SERVER. Here we also use AJAX for designing the interactive user interface.

Acknowledgements

Thanks giving and praise be to god who made this a successful and practical completed the grace of happiness. But the happiness will be gold without glitter. If I did not state persons who have supported me to make it success. My sincere thanks are to all the esteemed faculty member of Sam Higginbottom Institute of Agriculture, Technology & Sciences (Deemed- to- be- university). Especially Dr. W.Jeberson as Head of Department of Computer Science & Information Technology. I would also like to thanks my supervisor Er.Anchit. S. Dhar, Assistant Professor For his valuable suggestions and encouragements would also express my thanks to Er.R. Dileep. K. & Er.S.T.Singh

my SAC members.

REFERENCES

Mathew, Anup. 2012. Survey Paper on "Security & Privacy Issues in Cloud Storage Systems." EECE 571B, Term Survey Paper, April 2012.

Rabbani, Md Masoom. 2013. "Enhancing Accountability for Distributed Data Sharing in the Cloud." *International Journal of Engineering and Technology (IJET)* 5(3).

Sasidhar, Talasila, Pavan Kumar Illa, and Subrahmanyam Kodukula. 2012. "A Generalized Cloud Storage Architecture with Backup Technology for any Cloud Storage Providers." *International Journal of Computer Application* 2(2).

Sudha, S. and K. Brindha. 2012. "Data Synchronization Using Cloud Storage." *International Journal of Advanced Research in Computer Science and Software Engineering* 2(11).

Zeng, Wenying. 2009. "Research on Cloud Storage Architecture and Key Technologies." ICIS 2009, November 24-26, 2009 Seoul, Korea.