Data Sharing and Ensuring Distributed Accountability in the Cloud

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Abstract: **Cloud computing is the use of source computing and that are delivered as the service over a network typically on the internet and it gives highly scalable services to be freely consumed on the Internet. And it is needed basis and a major characteristics of the cloud services are user data are processed remotely in unknown machines and that users cannot operate. And it will become a substantial roadblock to a wide adoption of the cloud service systems. And to address this problem that we shall propose a highly decentralized answerability framework to keep track of a actual usage of the user data in the cloud. And the cloud information and user accountability and the framework was proposed in such works conducts automated loggings. And the distributed auditing of the relevant access performed by any of the entities, carried out at any point of time at any cloud service provider And the cloud has two major elements are logger and log harmonizer. This proposed methodology will also take concern about JAR file by converting the JAR into obfuscated code and addition to that an additional layer of security to the infrastructure and other than from which we are going to increase the security of user data by providing the data possessions for integrity verification of the cloud.**

Keywords: **Cloud computing, data sharing, Grid Computing, cloud deployment.**

I.   INTRODUCTION

The cloud computing is an evolutionary concept in the computing system and it unifies all the resources of multi computers to function as one(single) entity and allowing the construction of all massively scalable systems that are store, process and analysing the data of an organization and by combining the best practices of the Virtualization and Grid computing, Utility computing , Web technologies of the cloud computing and It is a resultant computing infrastructure that will inherits the agility of the Virtualization, scalability of Grid computing and the simplicity of the Web.

Application of the cloud computing can makes it enable to store large number of learning resources, those data and those services in a structured style to make them rich on the unite basis and to provide   multiple access through the SaaS(Software as a Service) and from sociological standpoint about delocalizing of hardware and software resources to changes cloud computing in the way the user works like he or she has to interact with the "clouds" online, instead of classical or traditional stand-alone mode. And the analysis cost benefits on Ownership of Total Cost (TCO) vs Desktop Virtualization (Cost per User per Month) was make done.   And in the analysis the findings of both analysis work was guaranteed very impressive in terms of a cost savings and other such benefits like relieve from the various burden of computing infrastructure maintenance.

 And the components of education like Lecturing staff, Laboratory(experiments) and Library(books) and Library can be a digital library presents just-in time to all other remotedly placed students and library's collection can was include various books, many periodicals, many newspapers, every manuscripts, different maps, prints, documents, e-books, databases and other formats of the library.

II. PURPOSE OF USING CLOUD COMPUTING

Definition of Cloud Computing:

Definitions of cloud is defined by many experts, but the NIST(National Institute of Standards and Technology) definition is a generally accepted standard. The cloud computing is the model for enabling convenient, and on demand network access to the shared pool of the configurable computing resources (such as networks resources, many servers, storage devices, related applications and required services) that are more rapidly provisioned and highly released with more minimal management effort or service provider interaction between the systems. It is simple, and cloud can be considered to be a collection of hardware, software and other resources that can be accessed over the Internet, and used to assemble a solution on demand (that is, at the time of the request) to provide a set of services back to the requester.

When analyzed the definitions, there is a consensus on few key points; (1) Cloud Computing ensure on-demand access to a pool of computing resources, (2) dynamically scalable services, (3) device and media independency, and (4) easier maintenance of applications due to do not need to be installed on users' computers. Cloud computing should be elasticity and scalability. Figure below, adapted [4] shows six phases of computing paradigms, from dummy terminals/mainframes, to PCs, networking computing, to grid and cloud computing.

In phase 1, many users shared powerful mainframes using dummy terminals.

In phase 2, stand-alone PCs became powerful enough to meet the majority of users' needs.

In phase 3, PCs, laptops, and servers were connected together through local networks to share resources and increase performance.

In phase 4, local networks were connected to other local networks forming a global network such as the Internet to utilize remote applications and resources.

In phase 5, grid computing provided shared computing power and storage through a distributed computing.

In phase 6, clound computing provided shared computing storage and support within the distributed computing.
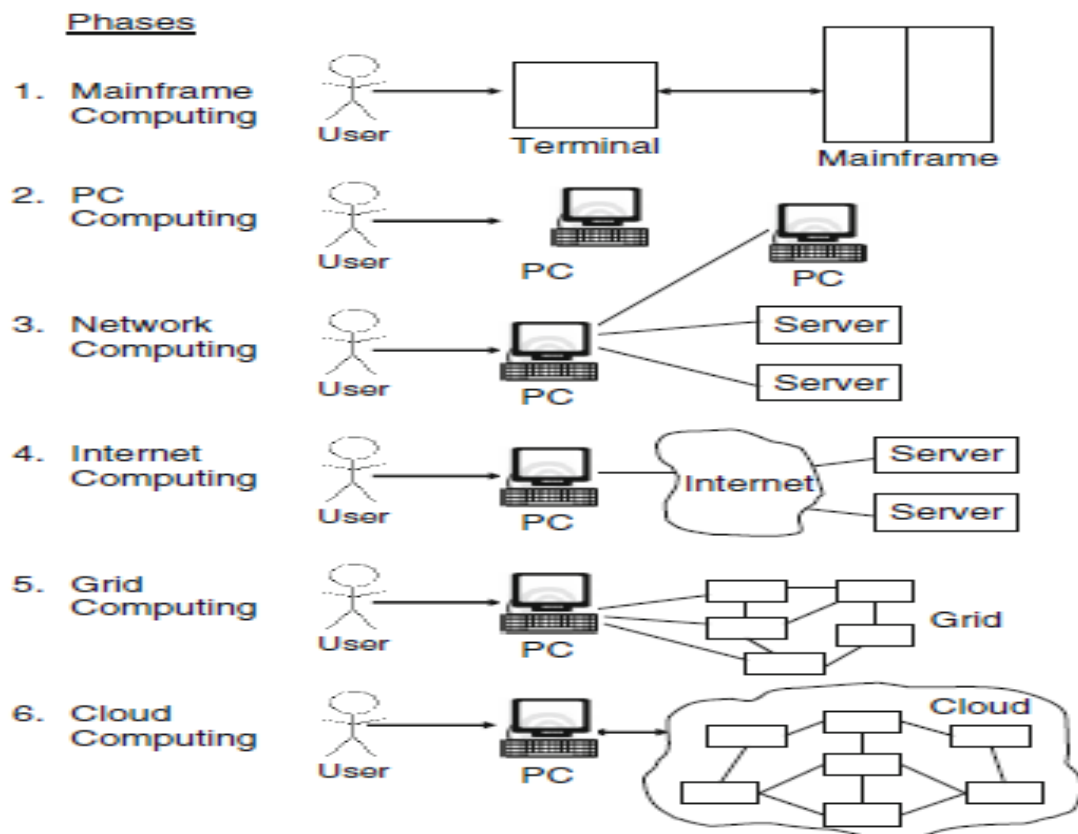

Fig.1.six phases of computing paradigms

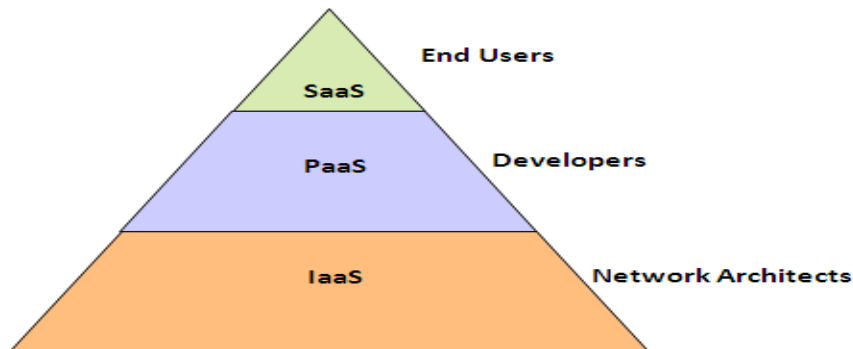## III.   CLOUD PLATFORMS AND SERVICE DEPLOYMENT MODELS

Fig.2.Cloud service models

A. Essential Cloud Characteristics:

- Measured service

- Ondemand self-service

- Broad network access

- Location independence

- Rapid elasticity

- Resource pooling

B. Cloud Service Models:

- Software as a Service (SaaS) ☐☐Use provider's applications over a network

- Platform as a Service (PaaS) ☐☐Deploy customer-created applications to a cloud

- Infrastructure as a Service (IaaS) ☐☐Rent processing, storage, network capacity

C. Cloud Deployment Models:

- Public-Sold to the public, mega-scale infrastructure

- Private-enterprise owned or leased

- Hybrid-composition of two or more clouds

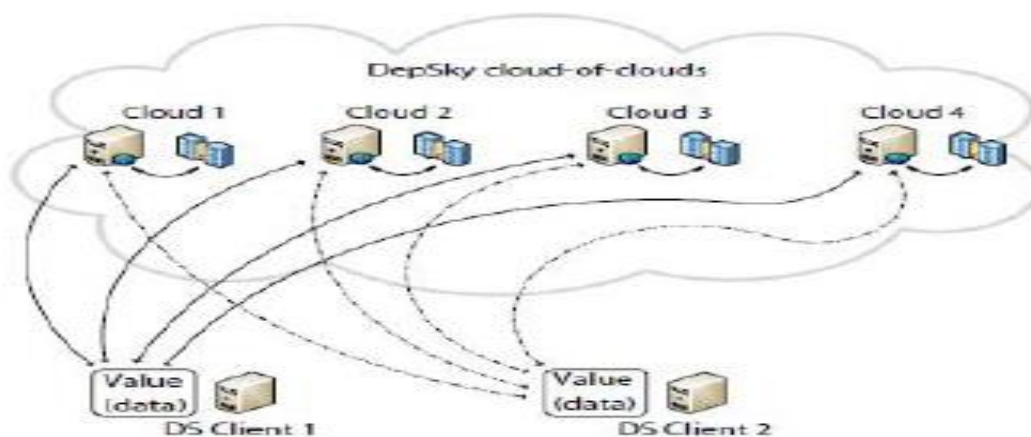- Community-shared infrastructure for specific community

Fig.3. DepSky Architecture

IV.   DEPLOYMENT OF THE CLOUD COMPUNTING MODELS:

Public cloud:

 The infrastructure of cloud is provisioned for open use by the public. And it may be owned, managed, operated by a business, by an academic, or by the government organisation, or by some combination of them in the cloud system.

Private Cloud:

The infrastructure of cloud is provisioned and exclusively use by a single organisation or multiple consumers and it may be owned, operated, and managed by the organisation, or a third party, or some combinations of above mentioned, and it may existon or off primises.

Community cloud:

The infrastructure of cloud is provisioned to exclusive use by a one specific community of consumers of different organisations that have shared concerns of the cloud system.

Hybrid cloud:

The infrastructure of cloud is a composition of two or three or more distinct cloud Infrastructures such as private, public or community, that remains unique entities, but they are bound together by standardized/ proprietary technology that are enables data and application portability of the system.
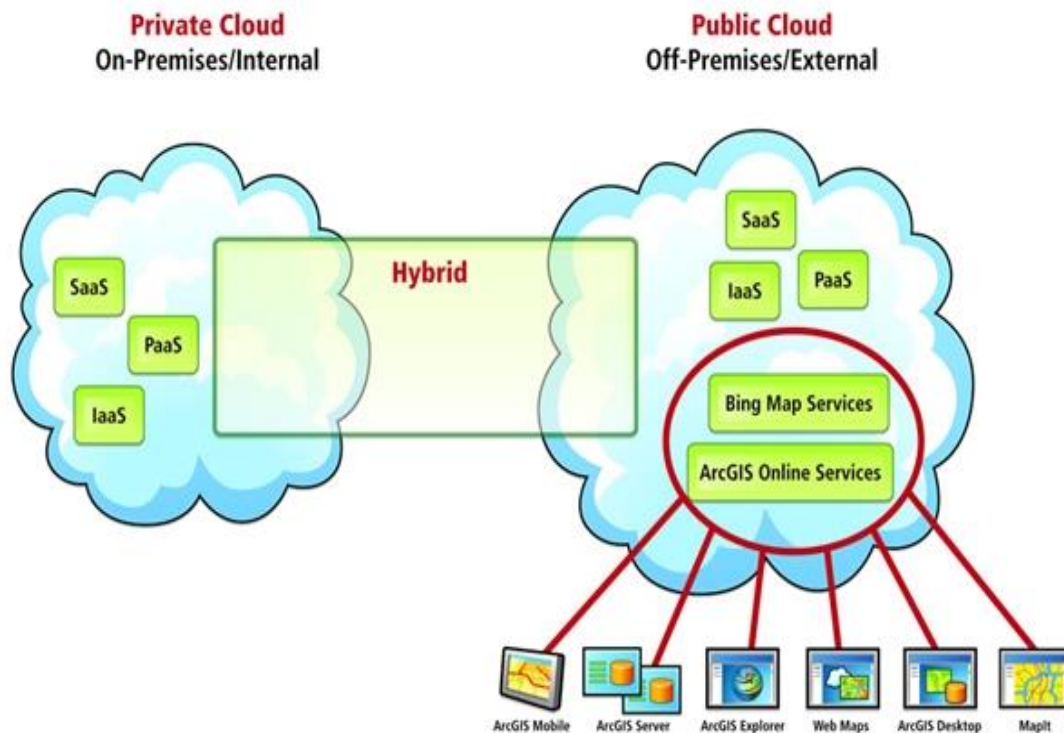
Fig.4.Cloud Deployment Model

V.   PROPOSED EDUCATIONAL CLOUD INFRASTRUCTER PROTOTYPE

1. Collaboration Application:

Moving email and PIM (personal information manager) for managed service providers of some unique methodologies.And IDC says that more than 66 percent of survey respondents believes in the collaboration applications such as email, chat, call conferencing and so many collaborative file sharing solutions such as a SharePoint are great fit to a cloud service because they reduce costs of the application process in the short term. For collaboration application GMAIL apps come in handy without any charges. For our International conference I have uploaded spreadsheet for collaboration work where any person involves in maintaining the office work is done online.

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2. Web Serving:

Moving and replaceble web servers, process management and analytical tools to the cloud is also at the most top of a list to prioritized list, because this can reduce maintenance costs highly and reliance on subscription models and it can also improves the rapidness of the deployment. Cloud Sever is the key part of the computing platform to ensure its scalability. All the resource can be store at this cloud server which includes online videos, audios, pictures, and course wares etc. This web server infrastructure in cloud computing can share resources for educational and research purposes.

3. Cloud Backup:

Companies are like Asigra are supports moving disaster recovery and back-up to the cloud and also as IDC says, in such spite of cloud security concerns, 60 % of enterprises are still considering the moving back-up off-site to the cloud services to protect against to a natural disasters, some IT mishaps, power of outages and other unfore seen catastrophic events and the drop Box is a free service to take back up of our data in cloud environment it enable synchronize with any device wherever drop box is install. A cloud backup service canbe enabling on university campus to safeguard of student, staff, and lecture data.

4. Business Applications:

Which are hosted in the cloud are more probably provides promising cloud service and the most interesting topic to a computer science education that because it will give businesses the option for pay as they go and it while providing the big-impact benefits of the latest technology advancements and the involvement of the students in these kind of projects with real type of customers is mutually beneficial for students, faculty and businesses.

5. Personal Productivity Applications:

Some web centres such as CIchannelinsider.com was predicts that hosted mobile services through carriers and some mobile software providers and document-editing applications such as those from DataViz and Quick office are also expected to gain traction. Mobile phone is widely used among student and staff application or service develop in university campus can be used in mobile device also which means every time we are connected to university campus. A university mini Facebook would be a great deal to share and update news among the student and staff.

VI.   CONCLUSION

Cloud computing is a solution to many problem of computing. Even we are in IT ages complication of computing has created much disaster to computer world. Lots of crisis has happen in business world as well as in academic environment. Data security, storage, processing power is limited while using traditional computing. Data are also in risk and not available all time. But by using of cloud computing the entire problem is solve. Computer in academic environment must have the latest hardware and software. Due to cost many couldn't fulfill the availability of resource to student and staff by using cloud computing in academic environment we can solve all the issue. Cloud computing is new technology suitable for any environment.

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