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HIGH SECURITY FOR INFORMATION IN THE CLOUD

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Abstract: In recent years, rapid development of the Cloud computing and its increasing popularity has driven many cloud service provider in the market. Cloud service providers have their own servers, different cloud infrastructure and APIs and methods to access the cloud resources. Cloud computing is an emerging technology that refers to applications & services offered over the internet, these services are offered from data centres all over the world, which collectively are referred to as the "cloud". It was success due to large to customers' ability to utilize the responsibilities as per requirement with a pay-as-you go worth model, which has confirmed as acceptable in many aspects. With Less expenditure and maximum flexibility make progress around to the cloud convincing. Lock in is particularly difficult. Vendor lock-in is a situation in which a customer using product or service. Vendor lock-in is usually result of quality of being a Owner technologies that are incompatible with those of competitors. However, it can also be caused by insufficient process or contract constraints, among other things.
Keywords: ***Cloud Computing, Meta Cloud, SLA, DSL.***

I. INTRODUCTION

The cloud computing is internet based technology that enables small business and organizations to use highly sophisticated computer applications. Cloud computing is the use of computing resources that are deliver of the service over a network. The name comes from the common use of cloud shaped symbol as an abstraction for the complex infrastructure it contains in system. An excessive number of cloud providers is sudden rapid outflow the market with a confusing body of services, such as compute services e.g., Amazon Elastic Compute Cloud (EC2) and VMware vCloud, or key-value stores, e.g., Amazon Simple Storage Service (S3). The reason for the success of cloud computing is the possibility to use services on-demand with a pay as you go pricing model, which proved to be convenient in many respects. Because of low costs and high flexibility, migrating to the cloud is indeed compelling. Ratherthan advantages of cloud computing, many companies hesitate to "move into the cloud", mainly because of issues related to availability of service, data lock-in, and legal uncertainties. Lock-in is particularly problematic for the following reasons. Firstly, even though availability of public clouds is generally high, eventual outages still occur. If this is the case, businesses locked into such a cloud is essentially at a standstill until the cloud is back online. Secondly, public cloud providers generally do not guarantee particular service level agreements, i.e., businesses locked into a cloud have no guarantees that this cloud will continue to provide the required Quality of Service (QoS) future. Thirdly, the terms of service of most public cloud providers allow the provider to unilaterally change pricing of their service at any time. Hence, a business locked in a cloud has no long term control over their own IT costs. At the core of all of these problems, we can identify a need for businesses to permanently monitor the cloud they are using, and to be able to rapidly "move to other cloud", i.e., migrate to a different cloud if monitoring discovers problems or estimations fore- see issues in the future issues by sending mail or SMS from owner to user. However, migration is currently far from trivial. Evidently, some of these services are conceptually comparable to each other, others are vastly different, but all of them are, ultimately, technically incompatible and follow no standards but their own. To further complicate the situation, many companies are not build on public clouds for their cloud computing needs, but combine public offerings with their own private cloud, leading to so-called hybrid cloud setups. Here we introduce the concept of a meta cloud consisting of a combination of design time and runtime components. Meta cloud abstracts away from technical incompatibilities of existing offerings, thus mitigating vendor lock-in. It helps to find the right set of cloud services for a particular use case, and supports an applications initial deployment and runtime migration.

Cloud computing products and services can be classified into 4 major categories:
They are:
1. Application as service (AaaS)
2. Platform as a Service (PaaS)
3. Infrastructure as a service (IaaS)
4. Software as a Service (SaaS)

1. Application as s service (AaaS):
These are the first kind of cloud computing services that came into being. Under this, aservice is made available to an end-user. The end-user is asked to create an account with the serviceprovider and start using the application. One of first famous application was web-based emailservice by Hotmail started in 1996. Scores of such services are available now on the web.

2. Platform as a Service (PaaS):
Cloud vendors are companies that offer cloud computing services and products. One of theservices that they provide is called PaaS. Under this a computing platform such as operating systemis provided to a customer or end user on a monthly rental basis. Some of the major cloud

computingvendors are Amazon, Microsoft, and Google etc.

3. Infrastructure as a service: (IaaS)
The cloud computing vendors offer infrastructure as a service. One may avail hardwareservices such as processors, memory, networks etc. on agreed basis for specific duration and price.

4. Software as a service (SaaS):
Software package such as CRM or CAD/CAM can be accessed under cloud computingscheme. Here a customer upon registration is allowed to use software accessible through net and useit for his or his business process. The related data and work may be stored on local machines or withthe service providers. SaaS services may be available on rental basis or on peruse basis.

II. RELATED WORK

Cloud computing provides several compelling features that make it attractive to business owners that includes, Noup-front investment: Cloud computing uses a pay-as you go pricing model. A service provider does not need to invest in the infrastructure to start gaining benefit from cloud computing. It simply rents resources from the cloud according to its own needs and pay for the usage. Lowering operating cost: Resources in a cloud environment can be rapidly allocated and de-allocated on demand. Hence, a service provider no longer needs to provision capacities according to the peak load. This provides huge savings since resources can be released to save on operating costs when service demand is low. Highly scalable: Infrastructure providers pool large amount of resources from data centers and make them easily accessible. A service provider can easily expand its service to large scales in order to handle rapid increase inLowering operating cost: Resources in a cloud environment can be rapidly allocated and de-allocated on demand. Hence, a service provider no longer needs to provision capacities according to the peak load. This provides huge savings since resources can be released to save on operating costs when service demand is low. Highly scalable: Infrastructure providers pool large amount of resources from data centers and make them easily accessible. A service provider can easily expand its service to large scales in order to handle rapid increase inLock in is considered as problem particularly. Even on the high availability of public cloud, a temporary suspension of operation occurs still. The terms and policies of public cloud may change at any time and hence by this the business locked into such a cloud has no middle and longer control on IT costs. The world of computation is becoming large and complex. Cloud computing is emerging as a popular model for computing. The main technical underpinnings of Cloud computing infrastructures and services include elasticity, virtualization, service-oriented software Cloud service consumers purchase Cloud services in the form of infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), or software-as-a-service (SaaS) and sell value added services (e.g., utility services) to end-users. Within the Cloud, the laws of probability give the service provider great leverage through statistical multiplexing of workloads and easier management, since a single software installation can cover the needs of many users. To some point, we can understand the Meta cloud based on a grouping of existing tools and concept, part of which we just examine. We can arrange these components based on whether they're important generally for cloud software developers throughout expansion time or whether they execute tasks throughout runtime. We explain their interaction utilizing the games gambling portal for a simple example. The Meta cloud API gives a combined programming interface to summary from the difference among source implementations of API. For users, utilizing this Application Program Interface prevent their request from being typically-wired to a particular cloud service sub mission. The API of Meta cloud can develop on available source cloud provider abstraction APIs, as previously mentioned. Even these deals mostly with the key value stores and computer services, in standard, all services can be covered that are theoretical more than one service to offer and whose specific APIs don't differ too much, theoretically. Resource template engineers explain the cloud services required to process an application utilizing resource templates. They can identify service categories with extra proper ties, and a model of graph explores the functional and interrelation dependency between services. Developers create the Meta cloud reserve templates utilizing a plain DSL (domain-specific language), hire them in a few words specify necessary resources. store definitions are based on a kind of masterpiece model; thus engineers can develop reusable and configurable template components, which use them and their groups to reuse and share general resource templates in various projects.

III. EXISTING SYSTEM

Cloud providers are flooding the market with a confusing body of services, including computer services such as the Amazon Elastic Compute Cloud (EC2) and VMware v Cloud, or key-value stores, such as the Amazon Simple Storage Service (S3).
Some of these services are conceptually comparable to each other, whereas others are vastly different, but they're all, ultimately, technically incompatible and follow no standards but their own. To further complicate the situation, many companies not (only) build on public clouds for their cloud computing needs, but combine public offerings with their own private clouds, leading to so-called hybrid clouds.
Businesses locked into such a cloud are essentially at a standstill until the cloud is back online. Moreover, public cloud providers generally don't guarantee particular service level agreements (SLAs) — that is, businesses locked into a cloud have no guarantees that it will continue to provide the required quality of service (QoS). Finally, most public cloud providers' terms of service let that provider unilaterally change pricing at any time. Hence, a business locked into a cloud has no mid- or long- term control over its own IT costs.

IV. PROPOSED SYSTEM

The problem with the existing system is that once an application has been developed based on one particular provider ‘s cloud services and using its specific API, that application is bound to that provider that is deploying it on another cloud would usually require completely redesigning and rewriting it. Such vendor lock-in leads to strong dependence on the cloud service operator. Here, we use the concept of a Meta cloud that incorporates the design time and runtime components. In Meta cloud would abstract away from previous offerings technical incompatibilities, thus explanatory vendor lock-in. It helps clients search the perfect set of cloud services for a specific use case and helps an application’s starting deployment and runtime migration. The proposed system allows users to audit the cloud storage with very lightweight communication and computation cost. It further supports secure and efficient dynamic operations on outsourced data, including managed control such as, Block modification, Deletion, Append, Security. At runtime, an important aspect of the meta cloud is application monitoring, that enables the Meta Cloud to decide whether it ‘s necessary to provision new instances of the application or migrate parts of it. Various vendors provide tools for cloud monitoring, ranging from system-level monitoring (such as CPU and bandwidth) to application-level monitoring to SLA (service level agreement) monitoring. With the Meta Cloud proposal customers are flexible to choose their best cloud service provider that acts according to their needs.

The Meta cloud support flexibility and avoid vendor lock in and helps to

1. Find the optimal combination of cloud services for a certain application with regard to QoS for the users and price for hosting.
2. Develop a cloud based application once, then run it anywhere, including support for runtime migration.

V. SYSTEM DEVELOPMENT

1. Registration: Owner, User, TTP (trusted third part), CSP(cloud service provider) have to sign up by giving their credentials like id, name, email id, password etc...to register in the cloud, then only they has to right of entry in the database.
2. Login: Owner, User, TTP, CSP must login with their username and password after the registration.
3. Upload File: In this module Owner uploads a file (along with meta data) into cloud, before it gets uploaded, it subjects into Validation by TTP. Then TTP sends the file to CSP.CSP decrypt the file by using file key. If CSP tries to modify the data of the file, He can’t modify it. If he made an attempt the alert will go to the Owner of the file. It results in the Cloud Migration.
4. Cloud Migration: The advantage of this Meta cloud is, if we are not satisfied with one Cloud Service Provider, we can move to second cloud. In second cloud, they cannot modify/corrupt the real data, if they made an attempt, they will fail.
5. Sending SMS (Short Message Service) and mail: Owner will send the mail to end user, in addition owner will send SMS along with file description key, so as to end user can download the file. If user doesn’t have internet connection he cannot receive the mail or else if the user couldn’t see the mail Owner sends SMSto the users who are registered earlier while uploaded the file into the correct cloud.

VI. RESULTS

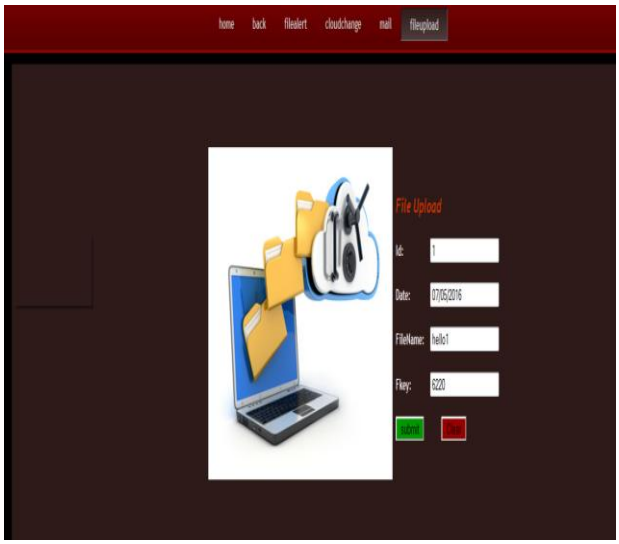

Fig 6.1: File uploading

Owner uploads a file (along with meta data) into cloud, before it gets uploaded, it subjects into Validation by TTP. Then TTP sends the file to CSP.CSP decrypt the file by using file key. If CSP tries to modify the data of the file, he can’t modify it. If he made an attempt, thenthe alert message will go to the Owner, which results in the Cloud Migration.

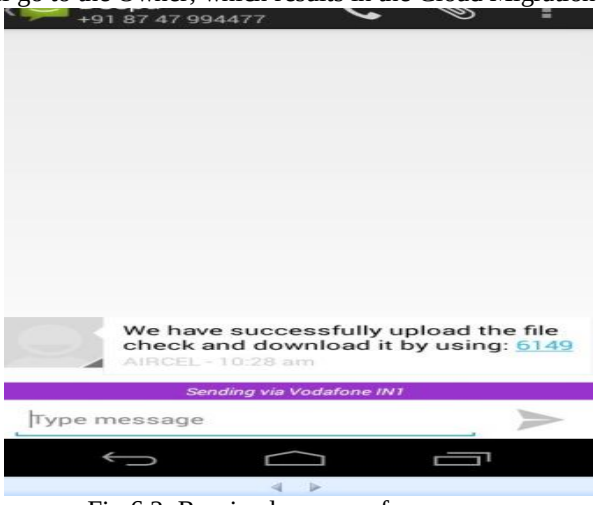

Fig 6.2: Received message from owner

If CSP tries to modify the original data owner will migrate the cloud. Once the migration is done, the alert message will go to the user by owner.

VII. CONCLUSION

The Meta cloud will help us to move from one cloud to another cloud. This helps the customers to choose appropriate cloud services for particular appropriate use case. If user faces any problems with the security issues like original data modification by the CSP. If CSP tries to modify

the original data then owner will migrate cloud by sending mail and an SMS to the user along with the decryption key, where user can download the text file with the Foreignkey sent by the owner through mail. If in case, the User does not get access to his mail, then he can access the SMS that was sent by the owner.

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