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Analysis on Cloud Computing

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***Abstract* :** Cloud storage enables users to remotelystore their data and enjoy the on-demand high quality cloud applications without the burden of local hardware and software management. Though the benefits are clear, such a service is also relinquishing users' physical possession of their outsourced data, which inevitably poses new security risks towards the correctness of the data in cloud. In order to address this new problem and further achieve a secure and dependable cloud storage service, we propose in this paper a flexible distributed storage integrity auditing mechanism, utilizing the homomorphic token and distributed erasure-coded data. The proposed design allows users to audit the cloud storage with very lightweight communication and computation cost. The auditing result not only ensures strong cloud storage correctness guarantee, but also simultaneously achieves fast data error localization, i.e., the identification of misbehaving server. Considering the cloud data are dynamic in nature, the proposed design further supports secure and efficient dynamic operations on outsourced data, including block modification, deletion, and append.

I. INTRODUCTION

CLOUD COMPUTING:

What is Cloud Computing?

Cloud computing is an umbrella term used to refer to Internet based development and services. The cloud is a metaphor for the Internet. A number of characteristics define cloud data, applications services and infrastructure:

Remotely hosted: Services or data are hosted on someone else's infrastructure. Ubiquitous: Services or data are available from anywhere. Commodified: The result is a utility computing model similar to traditional that of traditional utilities, like gas and electricity. You pay for what you would like.

Software as a Service (SaaS)

SaaS is a model of software deployment where an application is hosted as a service provided to customers across the Internet. SaaS is generally used to refer to business software rather than consumer software, which falls under Web 2.0. By removing the need to install and run an application on a user's own computer it is seen as a way for businesses to get the same benefits as commercial software with smaller cost outlay. Saas also alleviates the burden of software maintenance and support but users relinquish control over software versions and requirements. The other terms that are used in this sphere include *Platform as a Service* (PaaS) and *Infrastructure as a Service* (IaaS).

Cloud Storage

Several large Web companies (such as Amazon and Google) are now exploiting the fact that they have data storage capacity which can be hired out to others. This approach, known as 'cloud storage' allows data stored remotely to be temporarily cached on desktop computers, mobile phones or other Internet-linked devices. Amazon's Elastic Compute Cloud (EC^2) and Simple Storage Solution (S3) are well known example.

Data Cloud

Cloud Services can also be used to hold structured data. There has been some discussion of this being a potentially useful notion possibly aligned with the Semantic Web [2], though concerns, such as this resulting in data becoming undifferentiated [3], have been raised.

Opportunities and Challenges

The use of the cloud provides a number of opportunities:

- It enables services to be used without any understanding of their infrastructure.
- Cloud computing works using economies of scale. It lowers the outlay expense for start up companies, as they would no longer need to buy their own software or servers. Cost would be by on-demand pricing. Vendors and Service providers claim costs by establishing an ongoing revenue stream.
- Data and services are stored remotely but accessible from 'anywhere'.
- In parallel there has been backlash against cloud computing:

Use of cloud computing means dependence on others and that could possibly limit flexibility and innovation. The 'others' are likely become the bigger Internet companies like Google and IBM who may monopolise the market. Some argue that this use of supercomputers is a return to the time of mainframe computing that the PC was a reaction against.

Security could prove to be a big issue. It is still unclear how safe outsourced data is and when using these services ownership of data is not always clear.

- There are also issues relating to policy and access. If your data is stored abroad whose FOI policy do you adhere to? What happens if the remote server goes down? How will you then access files? There have been cases of users being locked out of accounts and losing access to data.

The Future

Many of the activities loosely grouped together under cloud computing have already been happening and centralised computing activity is not a new phenomena: Grid Computing was the last research-led centralised approach. However there are concerns that the mainstream adoption of cloud computing could cause many problems for users. Whether these worries are grounded or not has yet to be seen.

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Increased face of Innovation

Cloud computing can help to increase the pace of innovation. The low cost of entry to new markets helps to level the playing field, allowing start-up companies to deploy new products quickly andat low cost. This allows small companies to compete more effectively with traditional organizations whose deployment process in enterprise datacenters can be significantly longer. Increased competition helps to increase the pace of innovation — and with many innovations being realized through the use of open sources of tware, the entire industry serves to benefit from the increased pace of innovation that cloud computing promotes.

Benefit of Cloud Computing

There is a lot of benefit for the business looking for the service from the cloud service provider. Apart from the bundle of suits they have to offer, it focus all an escape from huge investment into IT infrastructure and operating cost. For applications that use the cloud essentially for running batch jobs, cloud computing makes it straight forward to use 1000 servers to accomplish a task in 1/1000the time that a single server would require. The New York Times example cited previously is the perfect example of what is essentially a batch job whose runtime as shortened considerably using the cloud. For applications that need to offer good response time to their customers, refactoring applications so that any CPU-intensive tasks are farmed out to 'worker' virtual machines can help to optimize response time while scaling on demand to meet customer demands. I T organization scan use the cloud to reduce the risk inherent in purchasing physical servers. Applications are developed more by assembly than programming. This rapid application development is the norm, helping to reduce the time to market, potentially giving organizations deploying applications in a cloud environment a head start against the competition.

Disadvantage of Cloud Computing

As any technology is a boon for an evaluation as the history is evidence, there are disadvantages too which cannot be ignored. Despite a fact cloud computing has so many features which can be awaiting a new horizon there a reals okey factors which cannot be ignored. Few have been summed up below:

Lack of connectivity causes 100% down time, whereas with traditional applications, lack of connectivity allows for some local function to continue until connectivity is restored.

The lack of industry-wide standards means that a usage surge can easily over whelm capacity without the ability to push that usage to another provider.

Companies providing computing services will over-sell these services similar to how bandwidth is over-sold based on average or "peak" usage, instead of "maximum" usage .ISP's typically operate at multiples of 5 to 1, where they sell them

5times more than they have incapacity, assuming users will not use more than 20% of their allotted resources. This works, until there is a popular You Tube video that every one wants to see at the same time....resulting in outages. Cloud computing is even more vulnerable to the peak-usage problem than internet band width.

"Denial of service "attacks, currently common, become easier. What's more they become harder to trace, as compromised" cloud resources" can be leveraged to launch the attacks, rather than compromised" individual pc's". Cloud computing is vulnerable to massive security exploits.

Currently, when a system is broken into, only the resources of that system are compromised. With cloud computing, the damages caused by a security breach are multiplied exponentially.

By "centralising" services, cloud computing increases the like lihood that a systems failure becomes" catastrophic", rather than" isolated".

No political approach has been made till date to control the uncontrolled factors to bring the service under the boundary lines of trust and ownership, as these services are beyond country lines.

Conclusion

The key motive to publish this paper is to give a glimpse of understanding on cloud computing as a technology for an ewera. Its potential is considered so vast that it is surely going to give up a new dimension for the generation to come.

So, in the long run, most of the companies (large, midsize or small) do not want to have the over head cost associated with running a large IT department that is solely involved in sustaining existing enterprise application.

Large companies do not have the risk tolerance to start using cloud computing immediately. Most CEO's and top IT Executives in large organizations will wait for the technology to mature before putting even the most non-essential applications on some one else's servers. It gives a new aspect to do a business without owing so much.

The concept is so new that work is still going on to cater the world with the best way for the companies having a technology appetite. There is a big push for cloud computing services by several big companies. Amazon. com has been at the fore front of the cloud computing movement.

Google and Microsoft have also been very publicly working on cloud computing offerings. Some of the other companies to watch for in this field are Yahoo!, IBM, Intel, HP and SAP.

Several large universities have also been busy with large scale cloud computing research projects. There is no end to the evolution until one stops thinking. In the future, more cloud adoption is certain, this year alone the move to the cloud by many business has been phenomenal, so much so that' some cloud business have grown by over 200%.

Large vendors see this as the growing model for software and services in the future so more focus by the vendors is afforded. Do not be surprised if the cloud bursts with offerings over the next 24 months.

REFERENCES

[1] Amazon Inc., "Amazon Elastic Compute Cloud (Amazon EC2),"Dec 2008, [Online] Available: http://aws.amazon.com/ec2/.

[2] GoGrid, "GoGrid cloud-server hosting," Dec 2008, [Online] Available: http://www.gogrid.com.

[3] A. Iosup, O. O. Sonmez, S. Anoep, and D. H. J. Epema, "The performance of bags-of-tasks in large-scale distributed sys tems," in HPDC . ACM, 2008, pp. 97–108.

[4] I. Raicu, Z. Zhang, M. Wilde, I. T. Foster, P. H. Beckman, K. I skra, and B. Clifford, "Toward loosely coupled programming on petascale systems," in SC . ACM, 2008, p. 22

[5] A. Iosup, C. Dumitrescu, D. H. J. Epema, H. Li, and L. Wolters, "How are real grids used? The analysis of four grid traces and
its implications," in GRID . IEEE, 2006, pp. 262–269.

[6] U. Lublin and D. G. Feitelson, "Workload on parallel supercomputers: modeling characteristics of rigid jobs," J.Par.&Distr.Comp., vol. 63, no. 11, pp. 1105–1122, 2003.

[7] D. G. Feitelson, L. Rudolph, U. Schwiegelshohn, K. C. Sevcik,and P. Wong, "Theory and practice in parallel job scheduling" in JSSPP, ser. LNCS, vol. 1291. Springer-Verlag, 1997, pp. 1–34.

[8] L. Youseff, R. Wolski, B. C. Gorda, and C. Krintz, "Paravirtualization for HPC systems," in ISPA Workshops ser. LNCS, vol. 4331. Springer-Verlag, 2006, pp. 474–486.

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