

A Survey on Challenges of G-Cloud and Cloud Computing

Dr. Ganga Shirisha M S.
Asst Prof, Dept of Computer Science,
SSA Govt. First Grade College(Auto), Ballari,
Karnataka. (India)

Abstract— Today Gcloud is a very common term and is a kind of Internet-based computing, where shared storage, data and information are provided to computers and other devices on-demand. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources. In today's life hardware technologies and network bandwidth are developing continuously it result in the development of the internet. For achieving the high reliability we can use low power hosts by using a new concept called cloud computing. But there are many challenges in cloud computing filed also. Cloud computing is an internet based development filed in which virtual resources are used and it is dynamically scalable. In this paper we focus on the various challenges occurred in cloud computing.

Keywords-. Hardware technology, reliability, cloud computing, challenges

I. INTRODUCTION

Government Cloud Computing (also called G-cloud) is a U.K. government programme to promote government-wide adoption of cloud computing. Cloud computing is a big word in distributing computing industries. Some people arise the question that cloud computing is going to change the IT industry. So for this we have to first understand what is cloud computing? How it is different from grid computing and service-oriented computing? What are the main issue and challenges for the cloud computing user and provides? For answering these questions in this paper we focus on different challenges arise in cloud computing [1].

A digital network like WAN, internet etc is connected for accessing the multiple server based resources. For solving the problem of wide data access, from anywhere there is a solution called cloud computing. Cloud users may access the server resources using a computer, note book, pad computer, smart phone, or other device. In cloud computing, applications are provided and managed by the cloud server and data is also stored remotely in the cloud configuration. There is no need for user to download and install applications on their own device or computer; all processing and storage is maintained by the cloud server. The on-line services may be offered from a cloud provider or by a private organization [7].



Figure 1.1: G-Cloud Computing scenario

Figure 1.1 give the brief knowledge about cloud computing. The advantages of the cloud computing is given below:

1. It Cloud computing provides multiple solutions of the data usages
2. It give the facilities of automatic backup
3. It is very flexible. We can set the environment according to the requirement
4. Modern based integration, cloud computing environment also focus on the latest technologies and trends.
5. It has the benefits of automatic updates
6. We can access mobile and web from anywhere.

II. FEATURES OF G-CLOUD AND CLOUD COMPUTING

G-Cloud, Cloud storage and cloud computing are different terms. Cloud storage is used to store the data and cloud computing is related to do the digital tasks. Instead of using remote server storage space alone, we are using processing power to get something done. Cloud computing is basically use for large amount of data rather than a small data. So it is beneficial for business than individuals.

In most cloud computing applications, data is sent to remote processors via the Internet, the process is completed, and the resulting data is sent back. A frequent example is SaaS or Software as a Service, where you use a software interface but the bulk of software activity is carried out remotely instead of by your own computer [8].

There are many features of cloud computing exists. Some of them are as follows:

1. **Server Management:** server management is a key feature of cloud computing. Cloud computing requires vast banks and excellent server management. It's no wonder that companies like Amazon have had great success in offering servers for basic cloud computing activities, ideal for small businesses. Larger companies may prefer cloud computing that uses a more specialized cloud hosting provider or their own servers.
2. **Processing Power:** While cloud storage focuses on hard drive space, cloud computing is all about processing power. Cloud computing may not require as much hard drive space, but it does need robust processors to keep applications running smoothly.
3. **Virtualization Capabilities:** Virtualization assign to many different processes that allow software to control hardware, often at a distance. The name comes from the ability to create "virtual" spaces on servers for software, data management, desktops, and more. They look and act like the real thing, but they are digital constructs. This is a foundational concept for cloud computing, and allows for some impressive approaches to IT management.
4. **Targeted to Specific Business Needs:** Cloud computing tends to have limited focus than cloud storage. Most cloud computing explore to offer specific solutions for businesses, like marketing capabilities, data processing, and so on [8].

III. CHALLENGES OF CLOUD COMPUTING

There are many challenges in cloud computing filed. Some of them are describe below:

1. Security and Privacy

Security is the first challenge in the cloud computing filed. Because security in the cloud computing is manage through third party and assurance much like in traditional outsourcing arrangements. There are many additional challenges with this

security challenge. Because many cloud computing users make their own proprietary standards and security technologies, and implement differing security models, which need to be evaluated on their own merits. In a vendor cloud model, it is ultimately down to use customer organizations to ensure that security in the cloud meets their own security policies through requirements gathering provider risk assessments, due diligence, and assurance activities (CPNI Security Briefing, 2010). So it is expected that the organizations which faces the security challenges want the same cloud services. There exist some internal and external threats presents and it need to risk reduction or risk acceptance [2].

2. Service Delivery and Billing

The second challenge in cloud computing industry is service delivery and billing. It is quite difficult to fix the costs of the services because of the on demand nature of the services. Assessment of the cost and budgeting is very difficult till customer provides some good and gives some offers. Both provider and user set the agreement but service level agreement of the provider is not satisfactory guaranteed. So business cannot switch to cloud without a forceful service provider guarantee [3].

3. Data Disposal

Cloud service provider generally provides data storage and for this they offer service objectives or guarantees of that data. Service providers give facilities to store large amount of data. To achieve this service providers keep many copies of that data. If customer wants to delete some data then according to industry standards the customer can request to delete the particular data. The cloud architecture specifically limits the involvement of the media. Media stores the data and the data owner can mandate the use of data sanitization techniques. The customer should always check their data properly before they send data on cloud environment [2].

4. Data management

Large data management is a very big challenge in the cloud computing field because there is continuously increasing the data of the applications so there is a problem to store the vast amount of data in the main memory. As a solution of this problem the database researches find the cloud computing techniques. It is cost effective and it can make a scalable parallel data management system. Which can provides the large amount of data to millions of users. Main objective of this topic is to give the description about the data management challenges and opportunities to store data in cloud computing [4].

5. Reliability

If a user store his/ her data on cloud then there is a big challenge for the providers to keep their data safe and reliable.

In terms of reliability, it all comes down to picking a provider that is reputable and proven. Understanding the Service Level Agreement (SLA) is crucial as some providers guarantee a 100% network uptime rate and reimburse users for

any downtime. What's important is that users try services before they commit. That way, if there are affected components within the operation of the cloud service or a server is lost, you can rest assured that the right support will be there to manage and compensate for any issues [5].

Apart of above basis there are some more challenges are given below:

Figure 1.1 shows the technology, usability and cultural challenges

- **Technology Challenge.** For getting the new technologies which give the better result many companies and funding agencies support financially. There is a big challenge to generate innovative better consequences. It should provide innovative and fast results. In this context, open-source is very important to create an open interoperable ecosystem, avoiding vendor lock-in, mostly at this initial stage of the market.
- **Usability Challenges:** how to use the store data on cloud? It is a big challenge in the context of usability of cloud data. Many different government agencies support the creation of legal framework for international data protection and they provide the privacy of that data. And the existing cloud services and middle ware can improve their services through the help of these agencies.
- **Cultural Challenges:** for providing the better result it is very important to take a look about user educations, knowledge and experience. It helps to spread the benefits of the cloud. . Public procurement should support the adoption of cloud, open standards and open source.

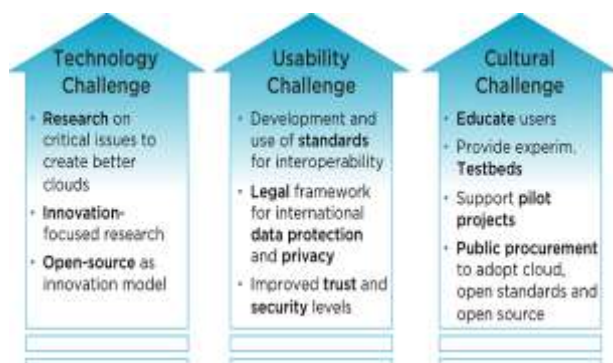


Figure 1.2 : Technology, Usability and cultural challenges [6]

technology services that use cloud computing. This paper describes the challenges faces in cloud computing environment. Cloud computing is a rapidly growing topic in the internet filed. As it is being wide it has many challenges for proving the safe and secure cloud computing services.

REFERENCES:

- [1] Tharam Dillon , Chen Wu and Elizabeth Chang, "Cloud Computing: Issues and Challenges", 2010 24th IEEE International Conference on Advanced Information Networking and Applications.
- [2] Jaydip Sen, "Security and Security and Privacy Privacy Privacy Issues in Cloud Computing", Innovation Labs, Tata Consultancy Services Ltd., Kolkata, INDIA.
- [3] <http://cloudtweaks.com/2012/08/top-five-challenges-of-cloud-computing/>.
- [4] http://link.springer.com/chapter/10.1007%2F978-3-642-29035-0_30
- [5] Nigel Beighton, By Rackspace, "What are the five most common challenges new cloud customers have".
- [6] <http://blog.cloudplan.org/2011/10/critical-components-of-government.html>
- [7] http://www.gazonindia.com/cloud_computing.html
- [8] <http://www.gadgetreview.com/cloud-storage-vs-cloud-computing-which-are-you-using>

IV. CONCLUSION

The UK Government G-Cloud is an initiative targeted at easing procurement by public-sector bodies in departments of the United Kingdom Government of commodity information