

Overview of Cloud Computing

Jay Kumar¹

B. Tech (CSE) Student, Dronacharya College of Engineering, Gurgaon, Haryana¹

Abstract: - “Cloud” is a collective term for a large number of developments and possibilities. It is not an invention, but more of a “practical innovation”, combining several earlier inventions into something new and compelling. Much like the iPod is comprised of several existing concepts and technologies (the Walkman, MP3 compression and a portable hard disk), cloud computing merges several already available technologies: high bandwidth networks, virtualization, Web 2.0 interactivity, time sharing, and browser interfaces. Cloud Computing is a popular phrase that is shorthand for applications that were developed to be rich Internet applications that run on the Internet (or “Cloud”). Cloud computing enables tasks to be assigned to a combination of software and services over a network. This network of servers is the cloud. Cloud computing can help businesses transform their existing server infrastructures into dynamic environments, expanding and reducing server capacity depending on their requirements. A cloud computing platform dynamically provisions, configures, reconfigures, and deprovisions servers as needed. Servers in the cloud can be physical machines or virtual machines. Advanced clouds typically include other computing resources such as storage area networks (SANs), network equipment, firewall and other security devices.

I. INTRODUCTION

The Cloud Computing is defined as storing and accessing of data and computing services over the internet. It doesn't store any data on your personal computer. It is the on-demand availability of computer services like servers, data storage, networking, databases, etc. The main purpose of cloud computing is to give access to data centers to many users. Users can also access data from a remote server.

Scope and Career Growth

It is arising as an essential element of today's IT world. Giants, as well as small organizations, have deployed cloud within their capacity. IT professionals are being hired if they know their way with 'the cloud'.

Aspirants motivated to diving into Cloud computing can choose from a variety of career paths such as Cloud engineers, architects, developers, and security experts. Jobs in the Cloud Computing stream include noticeably high salaries, comparable to other IT jobs. Even entry-level jobs have quite a good paycheck, making the sector very productive. -

It is growing more and more popular, numerous companies are shifting their systems to cloud computing. It is just about a decade old, and already a wide range of organizations, from small startups to global giants, are adopting it due to its various benefits and ease in developing applications.

II. HOW CLOUD COMPUTING WORKS

Assume that you are an executive at a very big corporation. Your particular responsibilities include to make sure that all of your employees have the right hardware and software they need to do their jobs. To buy computers for everyone is not enough. You also have to purchase software as well as software licenses and then provide this software to your employees as they require. Whenever you hire a new employee, you need to buy more software or make sure your current software license allows another user. It is so stressful that you have to spend lots of money.

III. USE OF CLOUD COMPUTING

1. Video Streaming Platforms

We use on-demand streaming services for watching sports, television, movies, and even live events, among other things. They're all based entirely on the development of cloud computing technology. The end-users benefit from affordable services even though providers use expensive hardware and software in their processes. That's possible

through fragmenting the service so that anyone can afford it. In this case, we're looking at several servers that cooperate to facilitate streaming services. They also have recovery technologies to correct any transmission errors, maintain a consistent video stream (and keep it synchronized in real-time), and so on.

2. File Hosting Services

As mentioned, most storage services that are designed to store data and create backup copies are based on the cloud model. This makes it possible to upload and download files, which enable users to access and control file systems remotely, as well as **synchronize** files in real-time across multiple devices. The possibility of synchronizing data, moreover, is one of the most appreciated features by users who travel and need to have their documents and business data up-to-date at all times.

3. Secure Storage of Personal Data

Here we have apps that memorize and store passwords, which can synchronize data through cloud servers. Providers have multiple solutions to guarantee security, depending on the service. Most often, they rely on **strong cryptography (also called end-to-end)**, which ensures that no one but the owner has access to the passwords.

4. Backup Solutions for Systems, Sites, and Software

Most of the systems used for backup (like making backup copies necessary for recovering data) are now based on cloud computing. The cloud almost entirely eliminates the need for repetitive manual backup operations (which is absolutely essential for all systems). Most platforms currently provide various features that help users plan and automatically create secure backup copies regularly and with no effort. In this case, cloud computing allows end-users to save significant working hours in a year.

5. Chatbots

As we've said in a previous article, cloud computing, together with advanced algorithms, can create interactive chatbots. It's a cost-effective tool that enables companies to enhance sales funnels and upgrade online assistance services to become automated and easier to manage. A chatbot has the ability, through direct communication with a virtual operator, to anticipate the questions of a potential customer. Moreover, it can direct users toward the right answer, which can be an FAQ page, a specific business proposal, or the classic Contact us page, where they can get in touch with the sales department.

IV. BENEFITS OF CLOUD COMPUTING

Cloud computing has gained popularity at a rapid pace because it offers a number of benefits. It's more cost-effective than on-site server installations and can provide faster service than a traditional installation.

In addition, cloud computing models are easy to scale. The cloud extends alongside an organization's fluctuating needs, making it easy to accommodate real-time changes in computing power needs. The cloud is also very reliable, offering dependable data backup for disaster recovery and business continuity. Businesses that leverage cloud environments do not need to maintain complex hardware, nor do they need to build solutions from scratch. The cloud allows teams to get projects up and running as soon as they receive executive sign off.

V. CONCLUSION

To conclude, Cloud computing is the latest technology that promises immense benefits however there is lot of research which is still required in this area as many of the concerns related to security and privacy issues are not been answered by the experts and remains open. However, there are lot of research and investment in the area by the Information technology giants like Microsoft, Google, Cisco, IBM in this area and the day is not far when the cloud will wide spread adopted and all the security and privacy issues will be handled. This report discussed about the various types of cloud service models and the risk associated with each of that. Apart from it, famous DDOS attack of 2013 also discussed and weakness of application layer is leading to attacks. I would like to say that I look forward for these types of discussion

where I get a platform to gain more from the knowledge and experiences of people around me. It is expected that the use of cloud computing would increase in the coming time

- There are many more players in the on-demand market that many reports acknowledge
- These range from basic infrastructure offerings (IaaS), through platform support (PaaS) to full applications (SaaS)

The long-term cost of ownership may at first not seem to add up, but take into consideration other factors such as reduced risk and added value and for many organizations on-demand services make a lot of sense.

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