International Journal of Research Instinct
(Peer-reviewed Journal)

ISSN ONLINE 2348-2095
Research Article

Cloud Computing: A study on importance and opportunities in cloud computing environment

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ABSTRACT

The cloud computing is a practice of working with network consisting of remote servers hosted on the internet instead of local server and personal computers to store, manage and process the data. It is also known as on-demand computing, a kind of internet based computing for the share of resources and data to computers and other devices on-demand. Further it is said to be as a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources. The process of cloud computing is further defined by IEEE that "It is a paradigm in which information is permanently stored in servers on the internet and cached temporarily on clients that include desktops, entertainment centres, table computers, notebooks, wall computers, hand-held sensors, monitors, etc.In short, the cloud computing means that the services in the cloud are being provided by enterprises and accessed by others via the internet often on a subscription basis. In this paper , a study on the importance and opportunities is described in detail and thereby helping the aspirants to know how it does and what opportunities is lying around the world to acquire the abundant jobs in this relevant fields.

HISTORY OF CLOUD COMPUTING

The evolution of cloud computing involves several phases which use grid and utility computing, Application service provision (ASP). Software as a Service (SaaS). The concept of delivering the computing resources through a global network is rooted in sixties. J.C.R.

Licklider introduced an Intergalactic Computing Network who was also responsible for development of ARPANET (Advanced Research Projects Agency Network) in 1969.

A renowned computer scientist Jhon McCarthy proposed an idea of computation being delivered as a public utility, similar to the service bureaus which date back to sixties. Cloud computing has developed along a number of lines, with Web2.0 being the most recent evolution. One of the first milestones in cloud computing history was the arrival of *Salesforce.com* in 1999, which pioneered the concept of delivering enterprise applications via a simple website. The services firm paved the way for both specialist and mainstream software firms to deliver applications over the internet. In 2002, the development of Amazon Web services provided a suite of cloud based services including services including storage, computation and human intelligence. Then in 2006, Amazon launched its Elastic Compute cloud (EC2) as a commercial web service that allows small companies and individuals to rent computers on which to run their own computer applications.

Amazon EC2/S3 was the first widely accessible cloud computing infrastructure service," said Jeremy Allaire, CEO of Brightcove, which provides its SaaS online video platform to UK TV stations and newspapers.

Another big milestone came in 2009, as Web 2.0 hit its stride, and Google and others started to offer browser-based enterprise applications, though services such as Google Apps.

"The most important contribution to cloud computing has been the emergence of **"killer apps"** from leading technology giants such as Microsoft and Google. When these companies deliver services in a way that is reliable and easy to consume, the knock-on effect to the industry as a whole is a wider general acceptance of online services.

PROS AND CONS OF CLOUD COMPUTING:

In practical, the company wishing to share resources and process data over network must go for a big investment to own infrastructure. Thanks to the invention of Cloud Computing, the companies especially the small traders need not own infrastructure. Instead, they can pay for the services provided as a rent.

An important benefit of using Cloud Computing is device and location independence which means that it enables the users to access the system no matter where they are located and what kind of device they are using.

One of the major selling points of the Cloud Computing is the lower cost. Companies will have lower technology based –capital expenditures, which enable companies to focus their money on delivering the Goods and Services that they specialize in. The sharing of cost and resources amongst several users also helpful to the users for efficiencies and cost saving around things like performance, load balancing and even locations(locating data centres and infrastructure in areas with lower real estate costs). It is also thought to affect reliability and scalability in positive way. One of the major concerns in cloud computing today is data security, though it improves security overall, there are concerns over the loss of control of sensitive data in its environment.

Finally, Cloud Computing results in better utilization of resources, which is good for the sustainability movement (i.e. green technology and clean technology).

In conclusion, it is generally said that the pros outweigh the cons by several positives.

THE COMPANIES USING TECHNOLOGY:

The Cloud Computing is one of today's hottest IT trends, because it's all about saving money and simplifying the lives of users. In real time, large pools of computer share the resources, enabling users to access services and solution provided through online as a subscription model. With it's richness of services and solution offering to the companies make them watch. One among them is Amazon, a largest online store, has been the forefront of the cloud computing movement. Google and Microsoft have also been working with this. And some of the other companies to watch for in this field are Yahoo!, IBM, Intel, HP and SAP.

FUTURE SCOPE OF THE CLOUD COMPUTING

In the report on 2009, Gartner made it clear that Cloud Computing is an evolving concept which will likely take several years to mature. The following are the five predictions that reason the fast developments and emergence in the IT fields.

1. More applications availability on the cloud

It is predicted that by the end of 2016, almost all the applications, around 48 million applications will be available on the cloud. This makes sense when you consider that about 56 percent of enterprises consider cloud to be a strategic differentiator, and approximately 58 percent of enterprises spend more than 10 percent of their annual budgets on cloud services.

The Everest Group, in their recent Enterprise Cloud Adoption Survey, further argues that cloud adoption enables operational excellence and accelerated innovation.

2. Increased growth in the market for cloud

According to Gartner, the cloud is here, and it is accelerating globally. Based on their forecast for 2011-2017, Gartner expects adoption to hit $250 billion by 2017. In the fourth quarter of 2013, we saw this prediction supported by enterprises worldwide—enterprises that were increasingly relying on cloud to develop, market and sell products, manage supply chains and more. In the same forecast, Gartner also suggested that the worldwide software as a service (SaaS) market would grow at an astounding yearly growth rate of 20.2 percent! This means it will be growing from $18.2 billion in 2012 to $45.6 billion in 2017. With that kind of growth expected, it is no wonder that many are companies are rebranding anything that makes sense "as a service" to get a piece of the pie.

3. More hybrid cloud adoption

As more and more companies adopt cloud, it is expected that by the end of 2017, 58 percent of companies will have hybrid clouds. Simply put, it would be very difficult, if at all possible, to move everything wholesale to the cloud because of the complexity of today's environments. The hybrid cloud—a mix of on and off premises—offers the best of both worlds: a combination of strengths allowing organizations to achieve the performance of on-premises solutions yet also the management convenience of the cloud business model.

4. INCREASED DEVELOPMENT FOR THE CLOUD

More development is going to go to the cloud. According to Evans Data Corporation, there are more than 18 million software developers worldwide yet less than 25 percent are developing for the cloud today. We can expect that as cloud continues to be adopted, more developers will develop for the cloud—especially when you consider that 85 percent of the new software being built today is for cloud according to IDC's article,

"IT Cloud Services at the Crossroads: How IaaS/PaaS/SaaS Business Models are Evolving."

IDC concurs with Gartner regarding the growth of these IT services and suggests that 20 percent of all application revenue in 2014 will be generated by SaaS. IDC further suggests that there will be an increase in third-party, commercial and enterprise developers and

contributors to cloud application ecosystems, marketplaces and application programming interface (API) exchanges by 2017.

5. MORE INNOVATION BECAUSE OF CLOUD

Every year the competition in the cloud space goes on increasing so such competition give a way to better product, services and innovation. In the book titled "Crossing Chasm: Marketing and Selling Disruptive Products to Mainstream Customers" , Moore suggested that in order to compete the existing competitors to achieve mainstream success.

6.SKILLS REQUIRED TO BECOME CLOUD COMPUTING PROFESSIONAL

One who wants to be an Cloud Computing analysts is expected to have a knowledge and exposure in the following areas. They are

- BA/BS degree in engineering, computer science or related field;
- network and security architecture experience;
- experience with a cloud migration, data center migration, or server consolidation project;
- Knowledge of and experience with technologies such as Java, Web services, SOAP and Ajax;
- Communication, teamwork and problem-solving skills.

7.CONCLUSION:

Through this paper , a reader can very well understand the meaning and impact of the cloud computing today and the opportunities lying around the industries for on who seeks jobs in this field. This study also elaborately discusses the basic and necessary skills required for the aspirants to acquire the jobs available in these respective fields. In this paper, the topic on pros and cons of the cloud computing is described for readers to enable them to identify the problem and help them to make interest in this area to facilitate the research in future.

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