Future of Cloud Computing In It Field 2020

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Abstract: - **Many organizations taking their first tentative steps, but by 2020 cloud is going to be a major and permanent part of the enterprise computing infrastructure. Three years from now we are likely to see low power processor crunching many workloads in the cloud and supporting massively federated scalable software architecture.2020 cloud computing is likely to be a standard part of enterprise IT. To get an idea of the type of failures that cloud companies will be forced to deal with. It is helpful to look to supercomputing an area that uses many of the technologies and methods that eventually makes the way into the cloud.**

Key Words- **Cloud Computing Architecture, Hosting a cloud, Cisco.**

I. INTRODUCTION

Simply put, cloud computing is the delivery of computing services—servers, storage, databases, networking, software, analytics and more—over the Internet ("the cloud"). Companies offering these computing services are called cloud providers and typically charge for cloud computing services based on usage, similar to how you are billed for water or electricity at home.

The first cloud computing services are barely a decade old, but already a variety of organizations —from tiny startups to global corporations, government agencies to non-profits—are embracing the technology for all sorts of reasons. Here are a few of the thing you can do with the cloud:

- Create new apps and services
- Store, back up and recover data
- Host websites and blogs
- Stream audio and video
- Deliver software on demand
- Analyze data for patterns and make predictions

Cloud computing has been referred to as revolutionary, even magical. Like most trends in IT, cloud computing is a combination of a number of underlying trends that have long been in the works, a kind of evolutionary blend of our previous successes and failures. A key term driving the adoption of cloud computing has been the term "the cloud." In essence the concept of "the cloud" is as a metaphor for the Internet as an operational environment where applications are utilized over the Internet rather than through more traditional means such as a desktop Virtualization was the evolutionary missing link, one that gave computational resources a new found manageability and efficiency. For the first time "Virtual machines" would be able to not only scale horizontally (more resources added as needed) but vertically, whereby clones of application components could be replicated at will. This newfound freedom opened a world of possibilities. Freed from the constraints of the previous client/server models of the past, a new breed of service providers rose to take advantage of this flexibility. The rest of the paper is organized as follows. We present the literature survey, proposed model in section 2 and section 3 respectively, the proposed mechanism and the current state of this research. Lately, Conclusions and references are presented in section 4 and section 5.

II. LITERATURE SURVEY
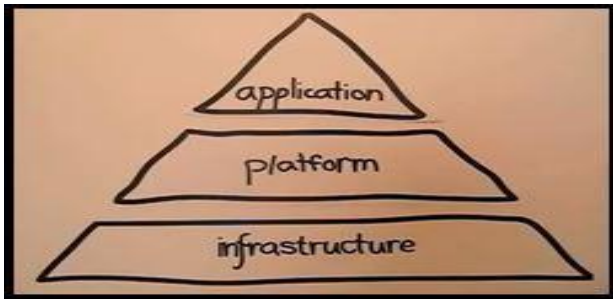
Cloud Computing Architecture:
Cloud computing architecture refers to the components and sub components required for cloud computing. These components typically refer to:

- Front end(fat client, thin client)
- Back end platforms(servers, storage)
- Cloud based delivery and a network (Internet, Intranet, Inter cloud).

Hosting a cloud:
There are three layers in cloud computing. Companies use these layers based on the service they provide.

- Infrastructure
- Platform
- Application

Three layers of Cloud Computing

At the bottom is the foundation, the Infrastructure where the people start and begin to build. This is the layer where the cloud hosting lives.

Now, let's have a look at hosting: Let's say you have a company and a website and the website has a lot of communications that are exchanged between members. You start with a few members talking with each other and then gradually the numbers of members increases.
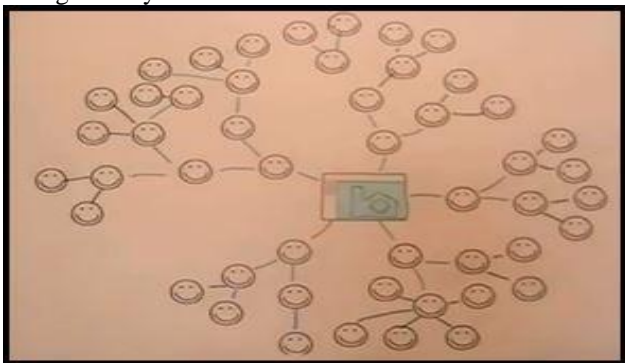
As the time passes, as the number of members increases, there would be more traffic on the network and your server will get slow down. This would cause a problem. A few years ago, the websites are put in the server somewhere, in this way you have to run around or buy and set number of servers. It costs a lot of money and takes lot of time. You pay for these servers when you are using and as well as when you are not using. This is called hosting.
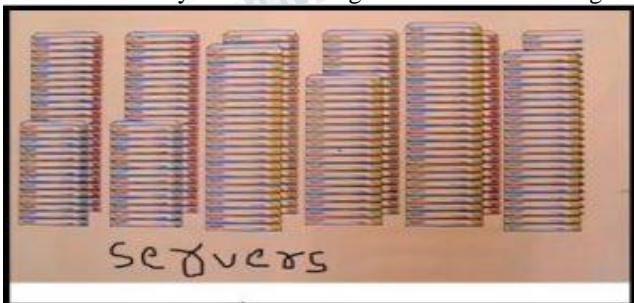

This problem is overcome by cloud hosting. With Cloud Computing, you have access to computing power when you needed. Now, your website is put in the cloud server as you put it on dedicated server. People start visiting your website and if you suddenly need more computing power, you would scale up according to the need.
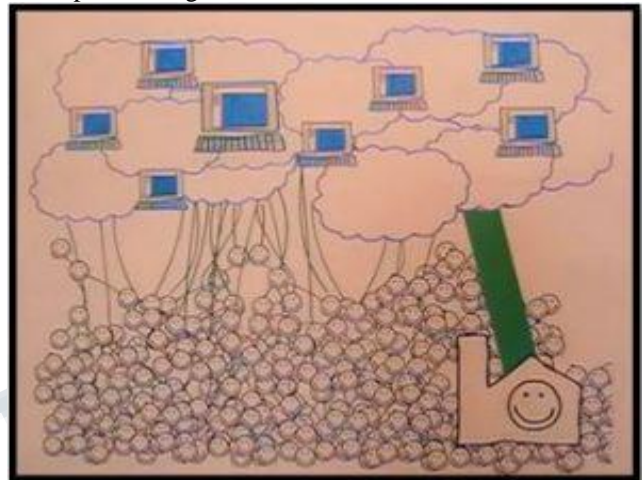
Scaling up in the cloud according to the need
Benefits of Cloud Hosting:
Scalability: With Cloud hosting, it is easy to grow and shrink the number and size of servers based on the need. This is done by either increasing or decreasing the resources in the cloud. This ability to alter plans due to fluctuation in business size and needs is a superb benefit of cloud computing especially when experiencing a sudden growth in demand.
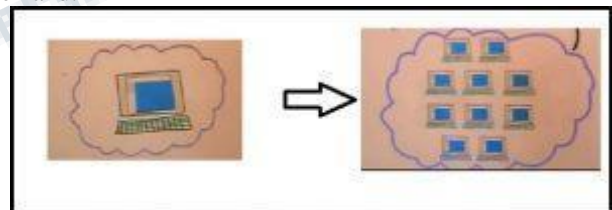
Instant: Whatever you want is instantly available in the cloud.

Save Money: An advantage of cloud computing is the reduction in hardware cost. Instead of purchasing in-house equipment, hardware needs are left to the vendor. For companies that are growing rapidly, new hardware can be a large, expensive, and inconvenience. Cloud computing alleviates these issues because resources can be acquired quickly and easily. Even better, the cost of repairing or replacing equipment is passed to the vendors. Along with purchase cost, off-site hardware cuts internal power costs and saves space. Large data centers can take up precious office space and produce a large amount of heat.

Moving to cloud applications or storage can help maximize space and significantly cut energy expenditures.

Reliability: Rather than being hosted on one single instances of a physical server, hosting is delivered on a virtual partition which draws its resource, such as disk space, from an extensive network of underlying physical servers. If one server goes offline it will have no effect on availability, as the virtual servers will continue to pull resource from the remaining network of servers.

Physical Security: The underlying physical servers are still housed within data centers and so benefit from the security measures that those facilities implement to prevent people accessing or disrupting them on-site

III. FEATURE OF CLOUD COMPUTING

To understand how does cloud computing work, imagine that the cloud consists of layers — mostly the back-end layers and the front-end or user-end layers. The front-end layers are the ones you see and interact with. When you access your email on Gmail for example, you are using software running on the front-end of a cloud. The same is true when you access your Face book account. The back-end consists of the hardware and the software architecture that fuels the interface you see on the frontend. Cloud computing also allows for a lot of flexibility. Depending on the demand, you can increase how much of the cloud resources you use without the need for assigning specific hardware for the job, or just reduce the amount of resources assigned to you when they are not necessary.

Even it will change the way of using the computer
The transition from being very 'personal hardware dependent' to a world where resources are shared among the masses is creeping up on us slowly and unobtrusively. Very many people have already transitioned to using a cloud environment for most of their time in front of the computer without even realizing it. The possibility of being able to access your data and software wherever you need it makes this transition very appealing to most people.

Are there problems with this concept? Of course there are. If for some reason your internet goes down, your access to your data also disappears. There are security concerns with the data and the risk that companies will use proprietary formats for the files and that require that you pay for a certain service monthly or you may lose access to your own data permanently. Even Cloud Computing will play a major role in IT field.

The IT Infrastructure will be crucially changed, as more applications are being moved to private or public clouds. Software developers will have to adjust the ways they create and deliver applications.

The need for IT support staff is reduced, thus diminishing the cost with desktop support. However, a new need is created, which is training the employees to work with and understand the new systems and applications.

The effort to maintain the data is also diminished. However, moving the data to the cloud equates losing its physical control, as it is stored in the vendor's data center. Although clients might not be comfortable with this fact, they should understand that data in the cloud can be safer than being in-house. This brings us to our next point.
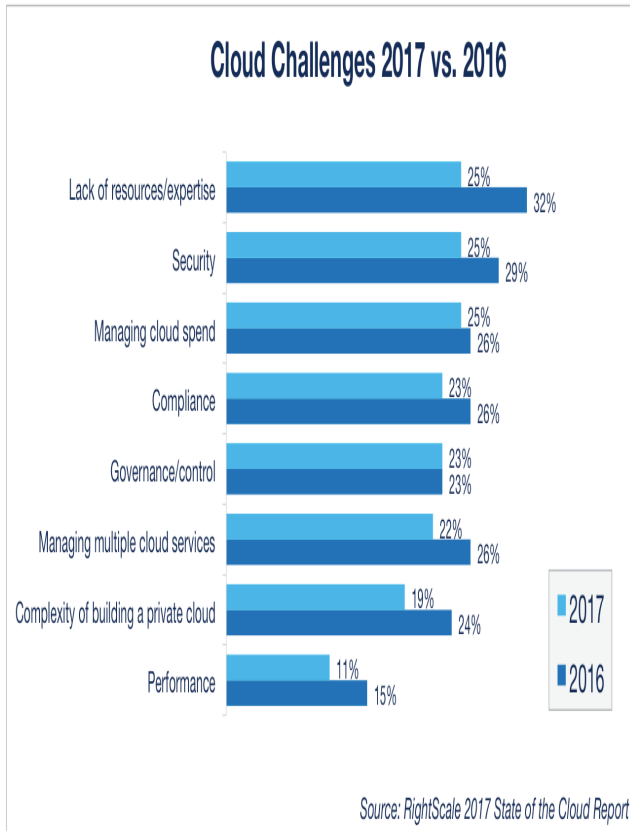
Security: Enterprise cloud providers that offer a managed cloud solution have security experts on staff managing the applications, with security options included. A best-practice method is to store the data in more facilities to make sure it is safe. I believe this is better than do-it-yourself.

Highly customizable software: Most of the software that companies use is not "cloud-ready". This is where the software developers intervene, by creating code especially designed for the cloud. Also, cloud providers should make their best in making this transition easy. However, once the applications are SaaS, the need for the IT department troubleshooting decreases.

Small and large organizations are utilizing the cloud to deliver responsive IT and innovate how they do business. At Micro Strategies, we assess your specific business demands and use our understanding of the cloud to design a customized, end-to-end, cloud strategy that will help you achieve your revenue and growth goals. Our dedicated team and comprehensive list of cloud services and offerings will make sure your personalized cloud solution helps you exceed expectations while providing maximum value.

Every cloud implementation demands its own unique needs and challenges. Through our strategic partnerships we have the ability to build a solution based on IBM's Soft Layer or Microsoft's Azure, so we can provide Public, Private, and

Hybrid combinations that ensure your business can take advantage of a cloud solution that moves you forward effectively and efficiently.

Cloud Challenges 2017 vs. 2016

Source: RightScale 2017 State of the Cloud Report

IV. CONCLUSION

In this paper, how cloud will appear in future the most organizations irrespective of size are already looking at the cloud as the first option. In next few years the predictions are mid-boggling Cisco. The latest market analysis by Cisco shows that within next three years more than four-fifths of all data center traffic, 83 percent, will be based in the cloud. Wherein most of this will be going to public cloud services, thus there will be more workloads (56 percent) in the public cloud than in private clouds (44 percent).

REFERENCES

[1] Agarwal, A. (2010, July 27). The legal issues around cloud computing. Retrieved February 10, 2014.

[2] Hurwitz, J., Bloor, R., Kaufman, M. & Halper F. (2009). Cloud computing for dummies. Hoboken, NJ: Wiley Pub.

[3] Miller, K. W. (2010). Ethical Analysis in the Cloud. IT Professional, 12(6), 7-9. doi:10.1109/MITP.2010.146

[4] Arutyunov, V.V. (2012). Cloud computing: Its history of development, modern state, and future considerations. Scientific and Technical Information Processing. 39(3). 173-178. doi: 10.3103/S0147688212030082

[5] Bilton, N. (2009, December 24). Is our data too vulnerable in the cloud? The New York Times. Retrieved February 12, 2014

[6] Dropbox,http://www.dropbox.com

[7] arkhill,Douglas F.1996. the challenge of the computer utility. Addison Wesley Publishing Company, ASIN:B000O121OS

[8] L. Albertson, "OpenStack vs. Ganeti", LinuxFest Nortwest 2017

[9] "Cloud Computing: Clash of the clouds".The Economist, 2009-10-15. Retrived 2009-11-03.

[10] Ananich, Anthony (February 20, 2016). "What is IaaS?" ananich pro. Retrieved 2016-02-20.

[11] "Compute Engine Pricing", cloud.google.com. Retrived 7 July 2014

[12] Steven Levy(April 1994). "Bill and Andy's Excellent Adventure 2" Wired.

[13] Internet History 1997.