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CLOUD COMPUTING

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Abstract

Cloud computing is emerging as the latest BUZZ word in Information Technology. There is going to be a great shift from traditional network computing to cloud computing. The features of Cloud computing - Pay as you go and Virtualization has made it a long run in advance technologies. This paper is a brief survey based reading on "cloud computing" and it tries to address, related research topic. In the information technology world, the clouds keep rolling in. The paper will review about the flexible bandwidth of the cloud applications and its tools. This review paper will also tell the role of open sources in cloud computing. The point of discussion in Information Technology sector is that the mainstream adoption of cloud computing creates hindrance for many user. This paper will contradict this theory and let us know how cloud computing is going to change the scenario of network computing.

KEYWORDS

Cloud, virtualization, bandwidth, open source, bandwidth

1. INTRODUCTION

In early sixties J.C.R. Licklider proposed a plan which is now called as Internet Computing. The plan proposed by the Licklider approximately matched with what is today known as cloud computing but due to less number of resources and manpower, all the features were not achieved. The National Institute of Standards and Technology's (NIST) Information Technology Laboratory recognizes that cloud computing is an "evolving paradigm. [1] "Cloud Computing is a general term for anything that involves delivering hosted services over the internet. These services are broadly classified into three categories: Infrastructure as a service (IaaS), Platform as a service (PaaS) and software as a service (SaaS). The name cloud computing was inspired by the cloud symbol that is often used to represent the internet in flowcharts and diagrams".

1.1 Infrastructure as a Service: Infrastructure-as-a-Service like Amazon Web Services provides virtual server instance API to start, stop, access and configure their virtual servers and storage It [2] " is a provision model in which an organization outsources the equipment

used to support operations, including storage, hardware, servers and networking components. The service provider owns the equipment and is responsible for housing, running and maintaining it. The client typically pays on a per-use basis". Examples are Amazon EC2, Flexiscale, GoGrid.

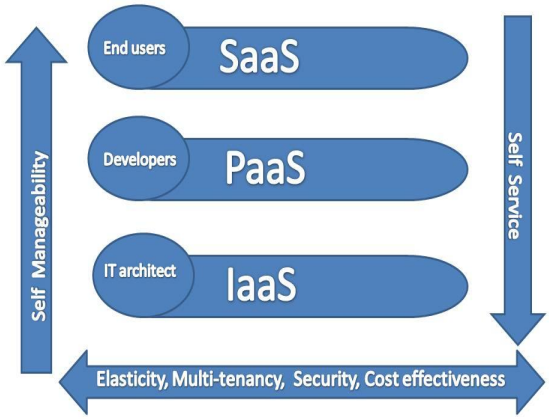

Figure 1 Cloud computing service models

Platform as a service: It provides developers with proprietary API's to make an application that will run in a specific environment. While a developer is free to create any application they wish, the app is locked to the platform used for its creation. It is a way to rent hardware, operating systems, storage and network capacity over the Internet. Examples are Facebook, Google App Engine, Force.com.

Software as a service: It is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet. Examples are Google Docs, Dropbox, Box.net, Salesforce.com.

1.2Deployment Models: There are four deployment models:

1.2.1 Private cloud: It is a proprietary network or a data center that supplies hosted services to a limited number of people. When a service provider uses public cloud resources to create their private cloud, the result is called a virtual private cloud

1.2.2Public Cloud: The cloud infrastructure is available to the public by cloud service provider. These services may be free or offered on a pay-per-usage model.

1.2.3Hybrid Cloud: It is the combination of one private cloud and one public cloud. In this an organization provides the resources in-house and has others provided externally.

1.2.4Community Cloud: In this the cloud infrastructure is shared by several organizations. It supports a specific community with shared concerns including security requirements, compliance considerations.

1.3 VIRTUALISATION: It is the cornerstone design technique for all cloud architectures. In cloud computing it refers primarily to platform virtualization or the abstraction of physical IT resources. Virtualisation allows servers, storage devices, and other hardware to be treated as a pool of resources rather than discrete systems, so that these resources can be allocated on demand. In non-cloud computing three independent platform exist for three different applications running on its own server. In the cloud the servers can be shared or virtualized.

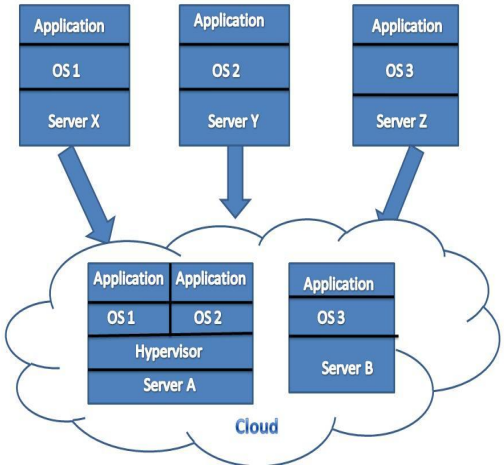

Figure 2-Virtualisation

1.4 PAY AS YOU GO: In the enterprise, cloud computing allows a company to pay for only as much capacity as is needed, and bring more online as soon as required. Because this pay-for-what-you-use model resembles the way electricity, fuel and water are consumed it's sometimes referred to as utility computing.

1.5 BENEFITS OF CLOUD COMPUTING:

Cost savings: Since the applications run in cloud, we do not need a high powered and a high priced computer to run cloud computing web-based applications. By enabling agencies to purchase only the computing services needed, instead of investing in complex and expensive IT infrastructure, agencies drive down the costs of testing, developing and maintaining new and existing systems.

Increased Storage: Since it is online so it offers more storage.

Highly automated: In case of web-based application, updates happen automatically and we get the latest version.

Flexibility: It offers more flexibility than past computing methods.

Mobility: In cloud computing we are no longer tied to a single computer or network.

1.6 CHALLENGES TO CLOUD COMPUTING: There are some notable challenges associated with cloud computing.

Security: It is a big issue. It is still unclear how safe out sourced data is and when using these services ownership of data is not always clear.

Loss of Control: There are quality problems with cloud service provider. There is no easy migration to other cloud service provider.

2. FUTURE WORK

2.1 Bandwidth: In traditional network, when we access some application and sue to increase in traffic, the system gets slower. But in cloud the bandwidth is flexible. The bandwidth management can be done with the scenario that is distributed hybrid cloud architecture .According to this scenario the enterprise will use the core applications on its private cloud while some other applications will be distributed on several private clouds, which are optimized for specific applications.

2.2 Open sources and Cloud computing: Many IT professionals believe that Cloud computing and open sources have separate corners in industry and are not interdependent on each other but in actual practices Open resources play vital role in the sustainability of Cloud Computing as it drives some of the technologies of cloud computing. The open source infrastructures and platforms like Eucalyptus and appsacle are used in cloud computing. Open source software plays a significant role in cloud computing by allowing its basic software elements to be created from easily accessible components. Appliances can be created by layering open source software into a virtual machine image. In the figure below, a database appliance is created by layering MySQL software on top of OpenSolaris operating system.

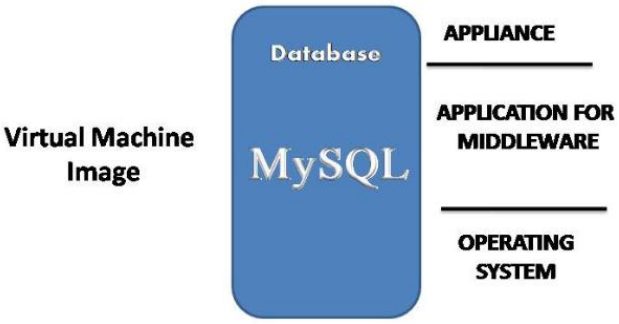

Figure 3-Creation of a database appliance by layering MySQL software

2.3 Tools availability: It is also believed in the IT industry that the main stream adoption of cloud computing would create hindrance for users across the world. That is why large scale IT companies are providing very less tools for cloud computing.

3. REFERENCES:

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