ANWESH: International Journal of Management and Information Technology
4 (1), March 2019, 27-29
http://www.publishingindia.com/anwesh

Cloud Computing - Recent Trends in Information Technology

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Abstract: Nowadays many new mechanization's are emanating in a world. As current century is 20th century usually referred as computer world there are many developments takes place in computer science. Computer is used world wide for variety of purposes like from learning basic education up to storing all data on it. In today's world people are becoming techno savvy they are using technologies for each and every day to day activities. Even government of India has also taken an initiative for online business transactions. They try towards how maximum people in the country will do financial transactions online by providing cash backs on online transactions. Government tries to make all business transactions transparent by linking Aadhar card of an individual with his/her bank account. As we know that while handling various transactions government has to store all data about all population of country also it needs very huge database storage. Such requirement for huge storage can be easily satisfied by Cloud Computing. Cloud Computing permits user for storing data on distant devices rather than storing data on hard drive or local devices. It makes use of distributed operating environment. This paper describes basics about Cloud Computing, its working, benefits about using the cloud and conclusion.

Keywords: Cloud Computing, Elasticity, IaaS, PaaS, SaaS, Virtualization.

I. Introduction

There are many methods to deliver services in Information Technology (IT) one among these methods is Cloud Computing. In this method instead connecting directly to the World Wide Web in order to provide or deliver various services resources are accessed with the help of internet dependent tools and applications. Usually all files are stored on hard drive or local storage devices but Cloud Computing allow the user to store files on remote database. For gaining access this remote data / information device needs to connected with internet using web based application or tools. So that software on device can process it. Cloud Computing is a technology which focuses on sharing of computing resources in order to attain consistency and state capitalism of standards same as public utility. The term Cloud Computing was come in fame in a year 2006 when Amazon.com had released their elastic compute cloud product. Symbol of cloud refers to web of operating environment in the standard ARPANET in beginning of 1977 and CSNET in 1981 they are forefather of internet. As rain is scattered in the sky in the form of cloud in Cloud Computing term cloud refers to distributed operating environment. To use Cloud Computing user does not need to have in depth knowledge about it. An important method which provides legal power to Cloud Computing is visualization. Visualization mechanism isolates a material operating device into many more visual devices which can be utilized and handled very easily to do variety of operations. Visualization gives lightness to devices necessary to increase the speed of various operations performed in Information Technology and lowers the ransom by enabling infrastructure utilization. User can issue resources as per their need using the process of automatic computing. Cloud Computing shares its characteristics with client-server model, grid computing, fog computing, green computing etc.

Fig. 1

II. Cloud Computing

A. Definition

Cloud Computing is a common term used to denote delivery of corporate or IT services with the help of web based tools and applications in remote operating environment. It is named

Cloud Computing because the data being used is located in "the cloud" and can be accesses by user irrespective of his/her location and operating device.

The environment given by Cloud Computing permits workers to work remotely. Corporate houses supplying cloud service allows their employees to put in their files and applications on distant servers and then retrieve them through internet.

B. Few Examples of Cloud Computing Services

Some vendors are offering Cloud Computing services without any cost whereas some vendors required to do paid subscription. Following are some vendors providing variety of cloud service:

Amozon EC2 (Elastic Compute Cloud), Google App Engine, Google Apps and Microsoft Office Online, Apple iCloud and Digital Ocean.

C. Types of Cloud

Cloud can be classified in either of two ways one based on type of deployment model it uses and another based on type of service Cloud Computing provides. Depending on deployment model of cloud can be categorized as private, public, hybrid and community cloud.

i. *Public Cloud*: In public cloud complete operating system is deployed in the area of Cloud Computing company which provides various cloud services. In short location is isolated from the user and user does not have any control over system. Public cloud makes use of shared resources due to which it gives great performance but easily susceptible to various cyber attacks.

ii. *Private Cloud*: Private cloud provides all the services that are offered by public cloud only difference is that it makes use of consecrated private Hardware's for deployment. Private cloud means one-on-one cloud indicating that cloud network is solely used by particular client / organizer. In private cloud corporate houses also have a choice of on-site cloud which allows them to deploy cloud in their own premise instead of deploying it in the area of cloud service provider like public cloud. On-site cloud increases storage cost but consumer will have their own control over system.

iii. *Hybrid Cloud*: Hybrid cloud is combination of both private cloud and public cloud. It allows consumer to use private as well as public cloud as per their requirement. E.g. by using public cloud consumer can communicate for business transactions where as they can provide security to their data using private cloud. Usually people interrelate conventional public cloud facility with bouncy measure-ability and capacity to invariable shuffle in demand.

iv. *Community Cloud*: Community cloud permit various corporate houses to share infrastructure of cloud between them along with shared data and anxiety in managing data.

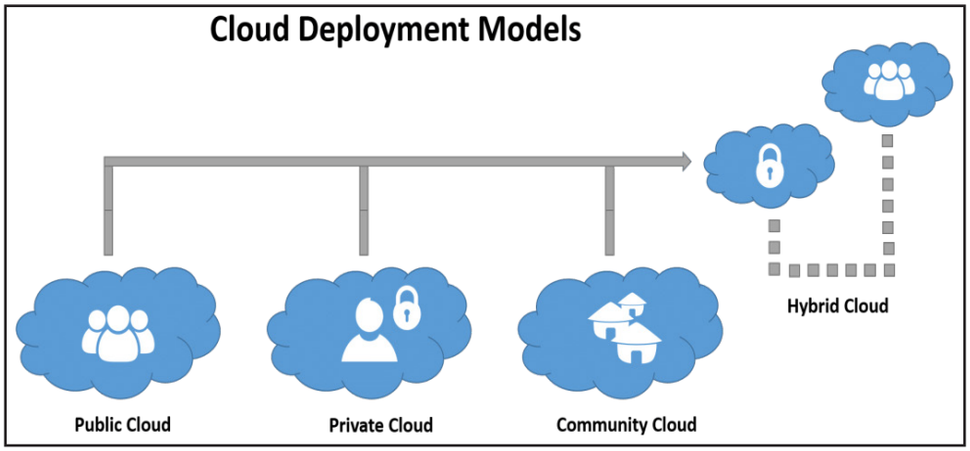

Fig. 2

Cloud Computing is nothing but a system which is composed of three main services containing Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS).

i. *Software-as-a-Service Model (SaaS)*: SaaS tells about at what time or situation consumer should lease or acquire connected routine rather than really buying it or deploying it on their own device. It is basic idea behind centralized computing whole businesses and yards of workers are using their computer applications as online leased goods. All operations and data storage are done through web-based tools and applications connected to internet. Combination of SaaS and PaaS results in Cloud Computing. For example, small real estate sales can not spend money on sales database. Instead real estate owner would lease access to secure online sales database and all real estate agents can retrieve data using their connected computers or hand-held devices.

ii. *Platform-as-a-Service (PaaS)*: It is difficult to manage PaaS as compared to managing other two types of Cloud Computing based on services it provided. The name Platform-as-a-Service indicates that resources are supplied through platform. Consumers will use this platform to develop and edit

applications depending on model supplied to them. It is very easy to develop, test and deploy applications in simple and cost effective way using PaaS. PaaS is generally used by large corporate houses having employees for it and wants to improve communication among their employees.

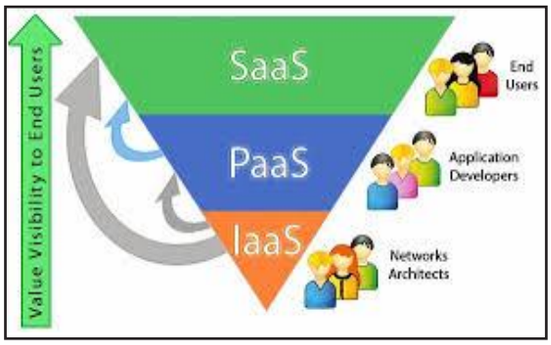

Fig. 3

iii. *Infrastructure-as-a-Service (IaaS)*: IaaS is responsible for infrastructure that is visualization, storage space and connection to internet. Consumer completely out-sourced facilities which will billed according to their utilization. Though vendor is amenable to manage visualization, storage space and connection to internet consumer should deal with data, applications, middleware and runtime.

III. Benefits of Cloud Computing

- Use of Cloud Computing reduces the cost of operation environment of various corporate houses.
- Using Cloud Computing businesses can easily recover from disaster.
- It provides better security as compared to conventional systems.
- Cloud Computing provides security against ransomware or malware.
- It allows to deploy service quickly within few seconds to speed up data operations.
- It allows retrieval of data from any location at any time.

IV. Conclusion

Cloud Computing in one of the emerging trend in technology that has great effect on the world. It provides with user or businesses many advantages which helps to reduce business cost. It also has some challenges or risk associated with that must be overcome to provide better security to user's data.

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