ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2016

Study of Cloud Computing Models

Avi Patidar

Student, Dept. of Comp. Science & Elex, Chameli Devi Group of Institutions, Indore, RGPV, MP, India

ABSTRACT: Cloud computing is a type of Internet-based computing that provides shared computer processing resources and data to computers and other devices on demand. It is a model for enabling ubiquitous, se, on-demand access to a shared pool of configurable computing resources (e.g., computer networks rvers, storage, applications and services), which can be rapidly provisioned and released with minimal management effort. Cloud computing and storage solutions provide users and enterprises with various capabilities to store and process their data in third-party data centers that may be located far from the user–ranging in distance from across a city to across the world. Cloud computing relies on sharing of resources to achieve coherence and economy of scale, similar to a utility (like the electricity grid) over an electricity network.

KEYWORDS: Cloud Computing, SaaS, Paas, IaaS.

I. INTRODUCTION

Cloud computing refers to applications and services offered over the Internet. These services are offered from data centers all over the world, which collectively are referred to as the "cloud." This metaphor represents the intangible, yet universal nature of the Internet. The idea of the "cloud" simplifies the many network connections and computer systems involved in online services. In fact, many network diagrams use the image of a cloud to represent the Internet. This symbolizes the Internet's broad reach, while simplifying its complexity. Any user with an Internet connection can access the cloud and the services it provides. Since these services are often connected, users can share information between multiple systems and with other users. Examples of cloud computing include online backup services, social networking services, and personal data services such as Apple's Mobile Me. Cloud computing also includes online applications, such as those offered through Microsoft Online Services. Hardware services, such as redundant servers, mirrored websites, and Internetbased clusters are also examples of cloud computing. A cloud service has three distinct characteristics that differentiate it from traditional hosting. Platform-as-a-service in the cloud is defined as a set of software and product development tools hosted on the provider's infrastructure. Developers create applications on the provider's platform over the Internet. PaaS providers may use APIs, website portals or gateway software installed on the customer's computer. Force.com, (an outgrowth of Salesforce.com) and GoogleApps are examples of PaaS. Developers need to know that currently, there are not standards for interoperability or data portability in the cloud. Some providers will not allow software created by their customers to be moved off the provider's platform. In the software-as-a-service cloud model, the vendor supplies the hardware infrastructure, the software product and interacts with the user through a front-end portal. SaaS is a very broad market. Services can be anything from Web-based email to inventory control and database processing. Because the service provider hosts both the application and the data, the end user is free to use the service from anywhere.

II. WHAT IS CLOUD COMPUTING

Cloud computing is emerging at the convergence of three major trends — service orientation, virtualization and standardization of computing through the Internet. Cloud computing enables users and developers to utilize services without knowledge of, expertise with, nor control over the technology infrastructure that supports them. The concept generally incorporates combinations of the following:
Infrastructure as a service (IaaS) Platform as a service (PaaS) Software as a service (SaaS)
Users avoid capital expenditure (CapEx) on hardware, software, and services when they pay a provider only for what they use. Consumption is billed on a utility (e.g. resources consumed, like electricity) or subscription (e.g. time based, like a newspaper) basis with little or no upfront cost.

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2016

III. CLOUD VENDORS

There are many companies who are into the market offering various ranges of services on Cloud Computing. The major players are Vmware, Sun Microsystems, Rackspace US, IBM, Amazon, Google, Microsoft, and Yahoo. Cloud services are also being adopted by individual users through large enterprises including Vmware, General Electric, and Procter & Gamble. The vendor hosts and manages the infrastructure required with the respective technology.

IV. CLOUD AS A SERVICE TO CUSTOMER

The cloud computing that are evolving as a service in the cloud are being provided by big enterprises with a heavy investment with resource and technology which are accessed by others via the internet. The resources are accessed in this manner as a service – often on a subscription basis. The users of the services being offered often have very little knowledge of the technology being used. The users also have no control over the infrastructure that supports the technology they are using.

There are six different forms that have been consolidated so far to understand how the services are being provided to the customers:

A. SAAS

This types of cloud computing delivers a single application through the browser to thousands of customers using a multitenant architecture. On the customer side, it means no upfront investment in servers or software licensing; on the provider side, with just one app to maintain, costs are low compared to conventional hosting. SaaS is also common for HR apps and has even worked its way up the food chain to ERP, with players such as Workday. And some who could have predicted the sudden rise of SaaS desktop applications, such as Google Apps and Zoho Office.

B. UTILITY COMPUTING

The idea is not new, but this form of cloud computing is getting new life from Amazon.com, Sun, IBM, and others who now offer storage and virtual servers that IT can access on demand. Early enterprise adopters mainly use utility computing for supplemental, non-mission-critical needs, but one day, they may replace parts of the datacenter. Other providers offer solutions that help IT create virtual datacenters from commodity servers, such as 3Tera's AppLogic and Cohesive Flexible Technologies Elastic Server on Demand. Liquid Computing's LiquidQ offers similar capabilities, enabling IT to stitch together memory, I/O, storage, and computational capacity as a virtualized resource pool available over the network.

C. WEB SERVICES IN THE CLOUD CLOSELY RELATED TO SAAS

Web service providers offer APIs that enable developers to exploit functionality over the Internet, rather than delivering full-blown applications. They range from providers offering discrete business services -- such as Strike Iron and Xignite -- to the full range of APIs offered by Google Maps, ADP payroll processing, the U.S. Postal Service, Bloomberg, and even conventional credit card processing services.

D. PLATFORM AS A SERVICE

Thi.s type of cloud computing deliver development environments as a service. You build your own applications that run on the provider's infrastructure and are delivered to your users via the Internet from the provider's servers. Like Legos, these services are constrained by the vendor's design and capabilities, so you don't get complete freedom, but you do get predictability and pre-integration. Prime examples include Coghead and the new Google App Engine. For extremely lightweight development, cloud-based abound, such as Yahoo Pipes or Dapper.net.

Platform as a Service, often simply referred to as PaaS, is a category of cloud computing that provides a platform and environment to allow developers to build applications and services over the internet. PaaS services are hosted in the cloud and accessed by users simply via their web browser.

Platform as a Service allows users to create software applications using tools supplied by the provider. PaaS services can consist of preconfigured features that customers can subscribe to; they can choose to include the features that meet their requirements while discarding those that do not. Consequently, packages can vary from offering simple point-and-

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2016

click frameworks where no client side hosting expertise is required to supplying the infrastructure options for advanced development.
The infrastructure and applications are managed for customers and support is available. Services are constantly updated, with existing features upgraded and additional features added. PaaS providers can assist developers from the conception of their original ideas to the creation of applications, and through to testing and deployment. This is all achieved in a managed mechanism.

As with most cloud offerings, PaaS services are generally paid for on a subscription basis with clients ultimately paying just for what they use. Clients also benefit from the economies of scale that arise from the sharing of the underlying physical infrastructure between users, and that results in lower costs.

V. BENEFIT OF CLOUD COMPUTING

There is a lot of benefit for the business looking for the service from the cloud service provider. Apart from the bundle of suits they have to offer, it focus all an escape from huge investment into IT infrastructure and operating cost. While their motivations vary, businesses of all sizes, industries, and geographies are turning to cloud services. According to Goldman Sachs, spending on cloud computing infrastructure and platforms will grow at a 30% compound annual growth rate (CAGR) from 2013 through 2018 compared with 5 percent growth for overall enterprise IT. Cloud adoption is accelerating faster than previously anticipated, leading Forrester to recently revise its 2011 forecast of the public cloud market size upward by 20 percent. Whether you're looking at Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS), or Platform-as-a-Service (PaaS), the predictions are the same: fast growth of the workloads placed in the cloud and an increased percentage of the total IT budget going toward cloud computing.

VI. REDUCE RUNTIME AND RESPONSE TIME

For applications that use the cloud essentially for running batch jobs, cloud computing makes it straightforward to use 1000 servers to accomplish a task in
1/1000 the time that a single server would require. The New York Times example cited previously is the perfect example of what is essentially a batch job whose run time was shortened considerably using the cloud. For applications that need to offer good response time to their customers, refactoring applications so that any CPU-intensive tasks are farmed out to 'worker' virtual machines can help to optimize response time while scaling on demand to meet customer demands. The Animoto application cited previously is a good example of how the cloud can be used to scale applications and maintain quality of service levels.

VII. CONCLUSION

Cloud computing is a newly developing paradigm of distributed computing. Virtualization in combination with utility computing model can make a difference in the IT industry and as well as in social perspective. Though cloud computing is still in its infancy but its clearly gaining momentum. Organizations like Google, Yahoo, Amazon are already providing cloud services. The products like Google App-Engine, Amazon EC2, Windows Azure are capturing the market with their ease of use, availability aspects and utility computing model. Users don't have to be worried about the hinges of distributed programming as they are taken care of by the cloud providers. They can devote more on their own domain work rather than these administrative works. Business organizations are also showing increasing interest to indulge themselves into using cloud services.

REFERENCES

[1] Vishnu patidar et al , "Analysis of Cloud Computing Security Issues in Software as a Service", Iternational Journal of Scientific International Journal of Scientific Research in Comp c Research in Computer Science and Engineering, Review Paper Volume-2, Issue-3 ISSN: 2320-7639
[2] Vishal Kadam, "Security in Cloud Environment", Iternational Journal of Scientific International Journal of Scientific Research in Comp c Research in Computer Science and Engineering, Volume-2, Issue-3 ISSN: 2320-7639.
[3] Makhan kumbhakr et al, "Performance Improvement of Software as a Service and Platform as a Service in Cloud Computing Solution", International Journal of Scientific Research in Computer Science , Vol Vol-1, Issue 1 ISSN: 2320 ISSN: 2320 ISSN: 2320-7639.

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2016

[4] Rajesh Shah et al," Analysis of Process Model in Software Development" , International Journal of Innovative Research in Computer and Communication Engineering, Vol. 4, Issue 7, July 2016.
[5] Undheim, A., Chilwan, A., Heegaard, P. (2011). "Differentiated Availability in Cloud Computing SLAs", Proc. GRID conference, pp. 129–136.
[6] Meng, X., Isci, C., Kephart, J., Zhang, L., Bouillet, E., Pendarakis, D. (2010). "Efficient Resource Provisioning in Compute Clouds via VM Multiplexing", Proc. ICAC conference, pp. 11–20.
[7] Zheng, Y., Shroff, N., Sinha, P. (2011). "Design of a Power Efficient Cloud Computing.
Andreas Klein, Christian Mannweiler, Joerg Schneider, and Hans D. Schotten. Access schemes for mobile cloud computing. In Eleventh International Conference on Mobile Data Management (MDM), 2010, pages 387–392, 2010.
[8]. Chetan S., Gautam Kumar, K. Dinesh, Mathew K. and Abhimanyu M.A. "Cloud Computing for Mobile World" .
[9]. Andreas Menychtas1, George Kousiouris1, Dimosthenis Kyriazis1, Theodora Varvarigou "Minimizing technical complexities in emerging cloud computing platforms" .
[10]. Dynamic job Scheduling in Cloud Computing based on horizontal load "Mousumi Paul1, Debabrata Samanta2, Goutam Sanyal3 Department of CSE" Vol 2 (5), 1552-1556, ISSN:2229-6093 [11]. V. Vijayalakshmi et al. / International Journal of Engineering Science and Technology (IJEST) "STUDY ON RECENT TRENDS AND OPPORTUNITIES IN CLOUD COMPUTING".
[11]. M.Sudha et. al. / (IJCSE) International Journal on Computer Science and Engineering "Investigation on Efficient Management of workflows in cloud computing Environment", Vol. 02, No. 05, 2010, 1841-1845.
[12]. Delvis Simmonds Alli Wahab Cameron UniversityPublic "Cloud Computing vs. Private Cloud Computing" .