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A Surprising Progression and Future Dependability on Cloud Computing

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ABSTRACT

As the end user computing revolt invade midlife, it is inhaling a breath of new air from a relatively new technology called cloud computing. Cloud computing is enlarging and advancing at an alarming rate. It is at speed shifting the environment of not the IT industry, but also day-to-day business and even human lives. Cloud computing is a style of computing in which IT-related capabilities are provided as a service, allowing users to access technology enabled services from the internet without knowledge of, expertise with or control over the technology infrastructure that support them. It gives a advanced model for IT usage delivery and usually requires over a network, on demand, self service access, which is dynamically scalable and elastic, utilizing pools of often virtualized resources. Through these features, cloud computing has the potential to improve the way businesses and IT operate by offering fast start-up, flexibility, scalability and cost efficiency. The biggest change with the cloud revolution involves moving the data centre offsite to a third party and buying services rather than maintaining on-site applications. At the same time, it means IT no longer manages servers and applications directly. This extends the revolution as end users can now build a server, set up a web site and go, without any input or control from IT.

Keywords : Cloud Computing; Cloud Platforms; IT; On-Site Applications; Revolution; Technologies.

I. INTRODUCTION

Cloud computing is the practice of using a network of remote servers hosted on the internet to store, manage, and process data, rather than a local server or a personal computer. The origin of the term cloud computing originated to drive from the practice of using drawings of stylized clouds to denote networks in diagrams of computing and communications systems [1]. The cloud symbol was used to represent the internet as early as 1994. Although it feels like cloud computing has arrived all of a sudden, the reality is that it has gone through decades of slow evolution. Cloud computing is known as the third revolution after PC and internet in IT. The platform idea of cloud computing first began during the 1960 by an American computer scientist named John McCarthy where he proposed that in the future computers may someday be organized as a public utility. Cloud computing is a complete new technology. It is the development of parallel computing, distributed computing grid computing, and is the combination and evolution of Virtualization, Utility computing, Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS). Cloud is a metaphor to describe web as a space where computing has been pre installed and exist as a service; data, operating systems, applications, storage and processing power exist on the web ready to be shared. To users, cloud computing is a Pay-per-Use-On-Demand mode that can conveniently access shared IT resources through the Internet. Where the IT resources include network, server, storage, application, service and so on and they can be deployed with much quick and easy manner and least management and interactions with service providers. Cloud computing can much improve the availability of IT resources and owns many advantages over other computing techniques. Users can use the IT infrastructure with Pay-per-Use-On-Demand mode; this would benefit and save the cost to buy the physical resources that may be vacant [2].

II. SERVICE MODELS IN CLOUD COMPUTING

In this Model, Cloud provides install and operate application software in the cloud and cloud users access the software from cloud customers. The cloud users do not manage the cloud infrastructure and platform on which the application is running. This extrusion ate the need to install and run the application on the cloud users own computers simplifying maintenance and support. To accommodate a large number of cloud users, cloud applications can be multicenter that is any machine service more than one cloud user organization. It is common to refer to special types of cloud based application software with a similar naming convention: desktop as a service, business process as a service, test environment as a service, communication as a service. The pricing model for SaaS applications is typically a monthly or yearly flat fee per user so price is scalable and adjustable if users are added or removed at any point [3].

A. Infrastructure as a Service (IaaS)

It is one of basic cloud model, it often offers additional resources such as images in a virtual machine, and image-library and file based storage, firewalls, load area network, and software bundles. IaaS cloud providers supply these resources on-demand from their large pools installed in data centers. For wide area connectivity, customers can use either the internet or dedicated virtual private networks. Cloud providers typically bill IaaS services on a utility computing basis: cost reflects the amount of resources allocated and consumed.

B. Platform as a Service (PaaS)

Here cloud providers deliver a computing platform typically including operating system, programming language execution environment, database, and web server. Application developers can develop and run their software solutions on a cloud platform without the cost and complexity of buying and managing the hardware and software layers. Thus, PaaS allows customers to develop new application using APIs deployed and configurable remotely, and the platforms offered include development tools, configuration management, and deployment platforms.

C. Network as a Service (NaaS)

A category of cloud services where the capability provided to the cloud service user is to use network/transport connectivity services and inter-cloud network connectivity services. NaaS is the vision of providing the VN abstraction as a service such that this VN abstraction can be instantiated, operated, cloned, moved, and repurposed as desired by the user in cloud computing style.

The prime benefit of NaaS is the i) agility in deployment ii) scalability and elasticity of service iii) full automation iv) savings and productivity v) custom policies in its own virtual network which leads to vi) enterprise network innovation vii) work with any hardware, or even a mixed vendor hardware viii) VM mobility ix) multi-tenancy with isolation x) fault-localization with which a fault in one VN (due to policy configuration or otherwise) does not cascade to affect the whole network infrastructure [4]An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it.

III. DEPLOYMENT MODELS IN CLOUD COMPUTING

A. Private Cloud

A private cloud is designed to offer the same features and benefits of public cloud systems, but removes a number of objections to the cloud computing model including control over enterprise and customer data, worries about security, and issues connected to regulatory compliance. A private cloud is deployed with in a corporate firewall and runs on premise IT infrastructure. Private cloud is more expensive compared to the public cloud since the operating and bandwidth costs are to be maintained by the organization, but this cloud is more secure than the public cloud [5].

B. Community Cloud

It is specially used for organizations that shares infrastructure between several companies from a specific community with common concerns, whether managed internally or by a third party or hosted internally or externally. The non-government organizations will not have access to this cloud. The cloud could be located in-house or on public cloud based on the needs of the companies/entities. The costs are divided into few users than a public cloud to realize its cost saving potential.

C. Public Cloud

In this model services givers fix up their computing tools accessible online for the public such as applications and depository. These services may be free or presented on a pay-per-service model. It is systematized where various entities have very much alike requirements and look for use in common with other frameworks so as to machine. In addition, it can be economically drawing attention as the resources utilized and common in the society are already used. Fig1 presents the overview of public cloud [6].

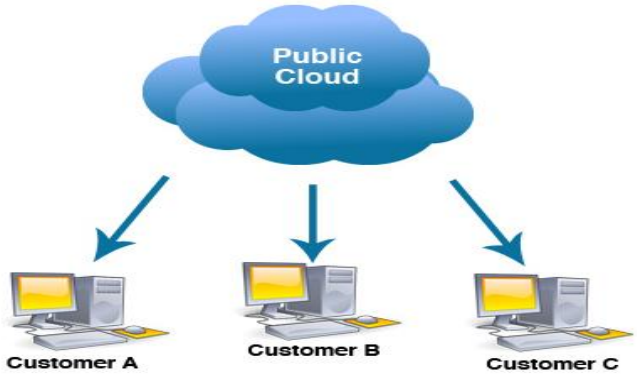

Figure 1: Overview of Public Cloud.

D. Hybrid Cloud

These are increasingly being used by corporations where there is a need to maintain some of their applications on their internal infrastructure, but also need the scalability and cost benefits of the public cloud. Cloud bursting is the term normally used for this type of environment where internal applications are deployed on private cloud for normal usage while internet applications are deployed on the public cloud to handle variable loads.

IV. FUTUTRE OF CLOUD COMPUTING

The future of cloud computing will most likely depict a merger of cloud based software products and on premises compute to create a hybrid IT solution that balances the scalability and flexibility associated with cloud and the security and control of a private data centre. In the current cloud market, the benefits of leveraging the infrastructure of a large cloud provider can be beneficial in many ways. The cost structure works like a utility that provides for an operating expense model with no upfront infrastructure costs. The ability to scale rapidly works well for companies with high growth demands. With these benefits come some limitations. Your experience is limited by the speed and reliability of your internet connection, which can affect your business. Cloud also introduces additional security concerns in a world where data privacy is increasingly vulnerable. As companies make sense of what is available to them and major technology vendors adjust their business models to allow for flexible consumption payment models to purchase on premises infrastructure, the balance between cloud and in house technology should find its balance. The variable element of this hybrid IT future and the most compelling use for cloud will be the software companies that offer their products only as cloud solutions, which will diversify a customer's cloud needs to multiple platforms based on their preferred software vendors. Fig 2 shows the dependability on cloud in future [7].

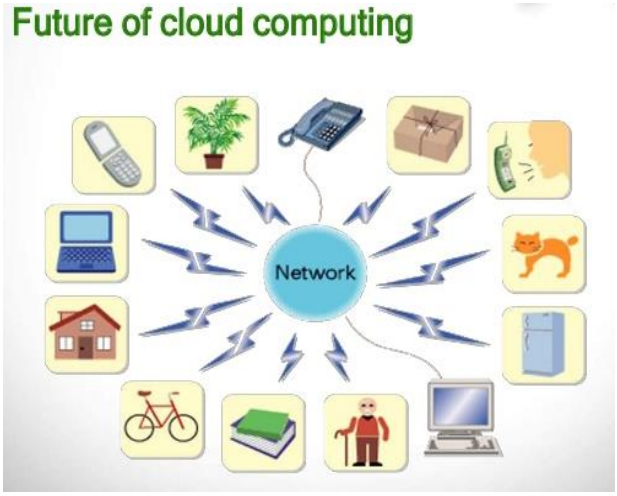

Figure 2: Dependability of life on Cloud Computing in Future.

V. CONCLUSION

It is concluded that in last few years there is revolutionary progression in cloud computing. Therefore, it is the time to give cloud computing serious and favourable consideration. Cloud computing in one form or other, can help reshape the IT landscape for the benefits of all, whether individuals or corporate of all sizes and shapes. Widespread adoption of cloud computing will also help close the prevailing digital divide, particularly in under developed and developing nations. It might even help save our planet by providing a greener computing environment. It can bring about strategic, transformational and even revolutionary benefits to future computing enterprises. It also offers immediate and pragmatic opportunities to improve efficiencies today, while cost effectively and

systematically setting the stage for strategic change. It empowers IT through flexible, automated infrastructure, new on-demand service models and new levels of IT efficiency. All this allows IT to shift resources from maintaining existing systems to invest in building innovative services that drive new revenue, improve operations and advance business goals.

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