

Cloud Computing and its Growth

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Abstract - Cloud computing: It is a technology which uses the internet and servers to maintain data around the globe. It allows consumers to use applications without downloading them and access the file globally with internet access. This technology uses centralizing storage, memory, processing and bandwidth for accessing the data. Cloud computing provides the facility to access shared resources which help in cost saving and provide unlimited storage capacity it provide the common infra structure, offering services on demand over the network to perform operations.

Key Words: Cloud, Cloud Computing, Storage, Applications, Data Loss.

1. INTRODUCTION

For cloud computing the first requirement is data needs to be accessed over the internet/web. Cloud works in different ways as required by the users. Some choose SaaS generally known as Software as a Service, it enables the customer to use the provided applications hosted on the cloud infrastructure. In SaaS the customer or the user does not have any control over the cloud infrastructure. There's also PaaS generally known as Platform as a service, a category of cloud computing services that provides capacity to the customer to deploy the customer- created applications into the cloud infrastructure using the various language supported by the cloud provider. And the last is IaaS generally known as Infrastructure as a service, it is a category which allow the customer to provision processing, storage, network and other important software such as operating system and applications. Cloud computing is the means of delivering all IT from computer applications, software, business processes, messaging, and collaboration to the end users as a service wherever and whenever they need it. Cloud computing is a paradigm for delivering IT where fast provisioning is an important characteristics for computing resources, data application and IT. Google Apps is one of the best example of cloud computing as we can access them from any browser and can be deployed to the number of computers using the Internet. Although cloud service guarantees of best security standards however, there are some common issues of using cloud computing like the security issue, storing critical files on external service providers always threatens a risk. Cloud does not differentiate between common and sensitive data thus enable anyone to access those sensitive data. Thus, data integrity is one of major concern under security issue.

2. What is it?

- What is Cloud?

"The cloud" refers to servers that are accessed over the Internet, it is an extension of the internet with some level of inherent discipline and ethics. Cloud servers are located in data centers all over the world and the brokers negotiate the best deals and relationships between the cloud consumers and cloud providers. By using cloud users do not have to maintain their own server the provider manages the server.

- Components of cloud

Cloud service consumer (or end user) are known as clients, which interact with the system and demand for services as per their requirements. Clients can be categorized into thin

	Traditional Computing	Cloud Computing
Consumption	Dedicated	Shared
Ease of Use	Traditional hardware procurement	Self service
Scalability	New services added manually	Scale on-demand
Availability	Manual repair of system failure	Automated recovery due to integration / interoperable
Provisioning	Months	Minutes
Cost	Incremental CapEx purchases	Pay per use

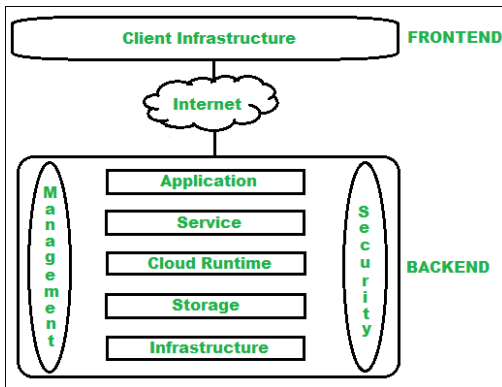
and thick clients, thin clients neither have hard drives nor have DVD ROM drives, and largely depend on the server while thick clients are self-sufficient in terms of accessories. Cloud service provider are the agents which host the servers in the cloud and deliver service to the end users.

Some examples of cloud providers are google, Sales Force, IBM, and Amazon. Internet medium it is the communication channel between the consumer and provider where services are redirected, internet provide the link between the consumer and the provider. Datacenter it is the collection of servers where all the data is stored. It consists of storage, network, and server.

3. CLOUD COMPUTING ARCHITECTURE

Cloud architecture refers to the components and some components required for cloud computing. They consist of Front-end platform and Back end platform. The Front-end users are the cloud clients. These clients comprise servers, fat clients, and thin clients. These clients interact with the cloud data storage through an application with a web browser, or through a virtual machine. It consists of interfaces and applications that are necessary to use the

cloud computing platforms like web browser. The back-end platform means to the cloud itself. It stores of all the resources required to provide cloud computing services. It comprises of vast data storage, virtual machines, security mechanism, services, deployment models, servers. It is the online network storage where data is stored and can be accessible to multiple clients.



Cloud Architecture is built on a very important assumption, which is true. The assumption is that the demand for resources is not always same from client to cloud. Because of this the servers of cloud are unable to run at their full optimality. To avoid this state, server virtualization technique is applied. This accordingly increases the data storage to multiple times in cloud compared with a regular system. The Redundancy of data is crucial, which is a must-have attribute of cloud, but there is also a particular current concern about the increasing potential for the raiding of online bank accounts as e-banking become more popular.

4. TYPES OF MODELS

4.1 DEPLOYMENT MODELS

There are four types of deployment model: public, private, hybrid and community clouds. Also there are various cloud like multi clouds, poly clouds and other models, but they are not so famous in use. Cloud technology is providing users with so many benefits, these benefits are divided according to the requirement of the user. Most organizations use cloud facilities to minimize expenditure and regulate operating costs.

4.1.1) PUBLIC CLOUD

Public cloud is a cloud in which the cloud infrastructure and computing resources are made available to the general public over a public network. Public cloud also offer to resource pooling, self-service, service accounting, elasticity, multi-tenancy to arrange the solutions, deployment, and securing the resource and application. Some famous public clouds are Google, Amazon, Microsoft, etc. This cloud service is open for use to everyone. In public cloud 'public' does not mean: that it is free, even though it can be free or fairly inexpensive to use. A user data is publicly visible and public cloud vendors typically provide an access control mechanism of public cloud application.

4.1.2) PRIVATE CLOUD

There is little to no difference between a public and a private model from the technical point of view, as private clouds are deployment made inside the company's firewall and traditionally run by on-site servers. Private cloud is also known as internal cloud. Private clouds offer some of the benefits of a public cloud computing environment, such as elastic on-demand capacity, self-service provisioning, and service-based access. Private cloud is suitable when the traditional requirements, such as control, security, and resiliency, are more emphasized by an organization with the restricted and designated user access and authorization. Private cloud removes the capital expenses and operating costs.

4.1.3) COMMUNITY CLOUD

A community cloud model simply resembles a private one, the only difference is the number of users. In the case of a community one, several organizations with similar backgrounds share the same infrastructure and related resources. Example of such a community is where organizations/firms are their along with the financial institutions/banks. A multi-tenant setup developed using cloud among different organizations that belongs to a particular community or a group having similar computing demands and requirement. In joint businesses and organizations etc., community cloud is the perfect solution. Thus, community-based cloud users need to know and analyses the business demand first.

4.1.4) HYBRID CLOUD

A hybrid cloud is made up of a public and private cloud. This is the model where consumer takes the non-critical application or information and compute requirements to the public cloud while keeping all the critical information and application data in control. The hybrid model is used by both public and private clouds simultaneously. It is an intermediate step in the evolution process, providing businesses on ramp from their current IT environment into the cloud. It offers the best of both cloud worlds- the scale and convenience of a public cloud and the control and reliability of on-premises software and infrastructure- and let them move fluidly between the two on the basis of their needs.

4.2) SERVICE MODELS

4.2.1) Infrastructure as Service

In infrastructure as a service, an organization outsources the infrastructure related to the storage, hardware, servers and networking components to the service provider. It is also known as HaaS i.e. hardware as a service. In IaaS the client typically pays on a per-use basis to the service provider. Common characteristics and components of IaaS include utility computing service, billing model, virtualization, policy-based services and network connectivity. Use of IaaS is quite rational as it is cost effective and makes us free from huge investment on hardware. With IaaS one can configure the required resources as per the requirements and the user can increase or decrease capacity within minutes. The IaaS service provider ensures that the infrastructural needs of the

machine are continuously met. With the faster availability of IaaS and infrastructure delivered as a service, it frees the organization to focus their time and resources in bringing innovations in application and solutions.

4.2.2) Platform as Service

Platform-as-a-Service (PaaS) it provide the customer to run and develop and manage the applications without maintaining the infrastructure. In PaaS we use IDEs i.e. is integrated development environment which are often expensive. Some vendors providing PaaS platform are Google Apps engine (GAE), window Azure, Open shift.

4.2.3) Software as Service

SaaS (software as a service): these refers to software that's made available as a web-based service. These software can be accessed remotely and don't need any additional hardware. Also we don't have to install any software, setup, maintenance or upgrades. Any online platform where we can work and store our data is the example of software as a service.

5. ADVANTAGES OF CLOUD COMPUTING

Some of the possible advantages of cloud computing:

1. Cost saving: It helps us to save substantial capital cost as it does not need any physical hardware investments. Users will save cash for cost like software updates, management and data storage. It is a cheaper to maintain the software and also save precious time.

2. Strategic edge: Cloud helps us to access the latest applications any time without wasting our time and money on installations.

3. High speed: Cloud computing allows us to deploy our service quickly in fewer clicks. This faster deployment allows us to get the resources required for our system within fewer minutes. As per their needs they can easily scale up or scale down. As all data are stored on a centralized location, data is more organized which is easy to manage. The transactions are recorded, if something goes wrong so it can easily track activities of their employees.

4. Reliability: Through cloud computing we can always get instantly updated about the changes.

5. Mobility: People who are working on the premises or at the remote locations can easily access all the cloud services. All they need is internet connectivity.

6. Unlimited storage capacity: Cloud computing offers limitless storage capacity.

7. Easy to acquire knowledge: It allows us to save lots of money in implementing any new system and making arrangements for it. As people are used to cloud applications

like Gmail, Google Docs, so it is most likely to be understood by the users.

6. DISADVANTAGES OF CLOUDCOMPUTING

Some of the possible disadvantages of cloud computing:

1. Performance can vary: When we are working in a cloud environment, our application is running on the server which simultaneously provides resources to other businesses that can affect the performance of our shared resource.

2. Technical issues: Cloud technology is always prone to an outage another technical issues.

3. Security threat in the cloud: Before adopting cloud technology, we should be well aware of the fact that we will be sharing all our company's sensitive information to a third-party cloud computing service provider. Hackers might access this information.

4. Internet connectivity: Good internet connectivity is must in cloud computing. We cannot access cloud without an internet connection. When its offline, you're offline. You cannot even log in to your own accounts or data. A dead internet connection means no work.

5. Lack of support: These companies fails to give proper support to the customers. However, they want their user to depend on FAQs or online help.

6. Security: Privacy is a tough issue with the cloud computing server. These accounts are password protected, security servers through which all data being transferred. Must pass and data encryption technique.

7. GROWTH

Cloud computing is the upcoming biggest thing in technology with both new and old methods for the development and Maintaining. A report given by IT research and advisory firm Gartner states that in India alone the market for cloud-based services will rise by a triple times. Even a small startup is switching to cloud because of its benefits. India's IT giants are becoming professional at going in early, at the planning stage, and defining what their corporate customers ought to be doing to take advantage of emerging technologies.

Popularity Of Cloud Accounting Software



CONCLUSIONS

So, it is really extraordinary and we're probably already using it, either for business or personal means, here's what we've learned from taking a look at the pros and cons:

- Cloud computing is a really cheap for all to have all the resources they need in once place.
- Now it is easier to access things from longer distances.
- Can store a large number of data without carrying any hardware device.

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