Exploring Cloud Deployment Models: A Critical Comparative Review

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ABSTRACT: The concept of "cloud computing" is becoming more common, but the terminology used to describe it can be confusing. Media coverage often oversimplifies it by stating that services are being made available in the "cloud" without examining what cloud computing really is and what it can offer. This paper provides a comprehensive analysis of the implementation models, features, and services associated with cloud computing.

I. INTRODUCTION

We can identify the cloud computing unit in 4 types, they are actually as complies with:-.

Public Cloud.

Different types of cloud computing models are available to users. These models are managed by cloud service providers, who offer services to customers on a pay-per-use basis.

Public Cloud:

This type of cloud is available to the general public and can be used freely. Some examples of public clouds are Amazon EC2, Google App Engine, etc. Although it is accessible to everyone, security and privacy concerns can arise.

Private Cloud:

This type of cloud computing model is used and managed by a single company. It is considered to be more secure than public clouds because only trusted employees within the organization have access to it. Examples of private clouds are IBM cloud, Microsoft cloud, and any institutional cloud.

Community Cloud:

In this cloud computing model, the infrastructure is shared by multiple organizations with the same goals and regulations. It is a cost-effective solution and is used by state-level authorities who need access to the same data.

Hybrid Cloud:

This model allows businesses to use private cloud infrastructure to store sensitive data while still taking advantage of the cost benefits of public cloud services. It enables organizations to connect a private cloud application to a public cloud software service.

Deployment Model	Scope of Services		Managed by		Security Level
Public model	General public and large industry groups		Cloud service provider		low
Private model	Single organization		Single organization		high
Community model	Organization those share the same policy, mission and same security aspects		Several organization or Cloud service providers		high
Hybrid model	Organization public	a n d	Organization public	and	medium

Table 1: Comparison of Cloud Computing Deployment models.

Using the Communications Services

Cloud-based communication solutions offer businesses the flexibility to enhance their capabilities, or even provide standalone offerings, and enable new interactive functionalities for existing companies.

These solutions allow businesses to incorporate communication functionalities directly into their service applications, such as Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) systems. For business users who are always on-the-go, these functionalities can be accessed through a mobile device, which can contribute to increased efficiency outside of the workplace.

These solutions are not limited to the support of business releases of Voice over Internet Protocol (VoIP) systems, collaboration tools, and conferencing systems for both voice and video. They can be accessed from any location and integrated into existing solutions to extend their capabilities, or provided as standalone services.

In terms of social media, cloud-based communication solutions provide click-to-call functionalities from social networking sites, access to Instant Messaging systems and video communications, which can enhance the interconnectivity of individuals within their social circles.

Accessing using Web APIs.

APIs, mostly Web 2.0 Friendly APIs, are used to access communication capabilities in a cloud-based setup. This enables functionality development outside the cloud to utilize the communication infrastructure within it (see Figure 1).
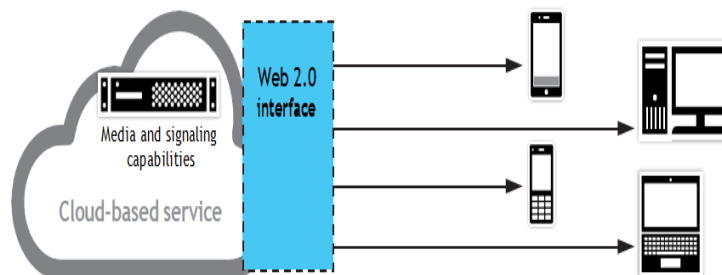

Figure 1: Web 2.0 Interfaces to the Cloud

Cloud-based solutions provide various interaction possibilities, which are limited by the media and signalling capabilities in the cloud. Today's media companies offer communication and control of audio and video over a range of codecs and transport designs. By using Web APIs, these complexities can be simplified, and media can be delivered

more efficiently to remote devices. APIs also enable the communication of other services, providing new options and helping to increase Average Revenue per Customer and accessory costs, especially for telecommunication companies.

II. CLOUD COMPUTING BENEFITS

The Distant Personal Computer Session Number is used to create several cloud desktop applications on Windows operating system, which offers more benefits than a regular computer. It is a session deployment where multiple cloud desktop operations can be used on a single Windows server. Cloud desktops can be accessed anywhere and anytime via the Internet or Intranet, making it convenient, affordable and efficient for businesses and individuals. One can use a cloud desktop as a personal mobile computer that is always available, 24 hours a day and 7 days a week, without the need to turn it off.

Using RDSH (Remote Desktop Session Host) technology, an organization can easily use one accounting software application as one license set up on one particular server, subject to the audit software application provider licensing system. The hosting server uses RDSH to establish multiple computer applications used by an organization for different team members located anywhere. Employees can access these different computer applications from anywhere and at any time using the Internet or Intranet. The multiple computer sessions work the same way as a dedicated computer, allowing an employee to perform their work without affecting the flexibility. Depending on the security model adopted by the company, the computer operation provides a secure environment and provides all the features of a dedicated computer.

For example, an employee can create and print invoices, manage other documents, send emails, browse the Internet, watch videos, and perform any task similar to working on a physical computer, without affecting other employees working on the same machine. This saves the organization the cost of buying dedicated hardware-based computers for each employee, saves the cost of buying separate accounting software licenses for each employee, saves maintenance costs and provides convenience and mobility benefits to enhance productivity.

For example, converting one Windows machine into multiple laptops provides more productivity benefits, cost savings, access to resources available anywhere and anytime, mobility benefits, license cost savings, power savings, and reducing the burden of IT resources.

Software as a Service (SaaS) utilizes the benefits of renting software from a cloud computing vendor at an affordable price rather than purchasing it at a higher price. A vendor can offer SaaS as a managed service on a rental basis, making it affordable and reducing routine maintenance costs. Software as a Service (SaaS) reduces the software acquisition risk of an organization, enabling it to quickly achieve business goals.

For example, the Information Technology department of a company would be able to use Software as a Service (SaaS) to quickly meet the organization's business goals without worrying about software upgrade issues and maintenance resource availability. Software as a Service (SaaS) has the potential to enable the IT team to act as computing providers, helping the organization to achieve business goals without purchasing software, which is a very attractive benefit of cloud computing.

There are different options for using Storage as a Service, such as public and private service. The private service provides a dedicated environment within the company's environment, and the public service is provided by various vendors. STaaS (Storage as a Service) is highly scalable and easy to manage, becoming a popular choice for cloud computing storage. Small businesses and individuals can enjoy the cost-saving and scalability benefits of Storage as a Service. One can benefit by storing, archiving, and retrieving data seamlessly and cost-effectively. It is a rapidly growing area of IT where businesses and individuals are willing to work with vendors who offer attractive Storage as a Service solutions in the current cost-saving environment, offering more benefits than traditional computing.

Some of the major advantages of cloud computing are considerably cheap compared to conventional computing price.

Organizations, as well as individuals, really feel that using cloud computing they have the ability to lessen IT structure cost as well as minimized IT functions prices. Cloud computing is very economical compared to conventional computing considering that it is a lot more registration as well as lease based style. The standard computing needs to put in for obtaining information, needs lengthy setup methods and also places maintenance burden of expensive information. When matching up to conventional computing, cloud computing does certainly not demand high-power and also high expense computing, all resources may be affordable and reliable. Cloud computing is online facilities-based and also is Net located matched up to conventional computing which is bodily infrastructure located which does not supply much better scalability.

Wheelchair benefits of cloud computing make it excellent for any time and also anywhere get access to. For instance, accessing details whenever required and any place demanded, the team can access relevant information coming from the property, access relevant information coming from customers' offices or maybe coming from a mobile phone such as a BlackBerry or even apple iPhone, can work collaboratively on reports and files on the move are a few of examples of cloud computing mobility advantages. Cloud computing is sustainable to supply IT modern technologies anywhere anytime as a mobile system, duplicates the abilities of conventional computing in a far better way, enables updates and adjustments including additions and deletions of apps in smart technique barely readily available in traditional computing. Cloud computing makes it possible to get access to info coming from anywhere while the traditional computer is a fixed area located. One of the destinations for users to relocate to cloud computing is actually that they can utilize various devices including mobile devices to accessibility discussed records anywhere anytime make it much more attractive than traditional computing.

Cloud computing offers many advantages over traditional computing, including cost-effectiveness, mobility, scalability, and reliability. One of the major benefits of cloud computing is that it is much cheaper than traditional computing, as it follows a subscription and lease-based model. In contrast, traditional computing requires expensive hardware and software installations, which can be difficult to maintain.

Cloud computing is also more mobile than traditional computing, as it allows users to access data from anywhere at any time. This makes it easy for teams to collaborate on projects and access important information from their homes, offices, or even on the go using mobile devices like iPhones and Blackberries.

Another advantage of cloud computing is that it offers better scalability, allowing users to scale up or down as needed to meet changing demands and workloads. This helps organizations to save time and money by only using the resources they need when they need them.

Cloud computing is also more reliable than traditional computing, as it uses redundant servers to ensure that data is always available even if one server fails. This makes it a great choice for businesses that need to ensure that their data is always accessible and secure.

Finally, cloud computing is more energy-efficient than traditional computing, which makes it a popular choice for outsourcing services. Its efficiency, scalability, and flexibility make cloud computing a great choice for businesses and individuals looking to take advantage of the many benefits of cloud computing.

III. CONCLUSION

The shift from client-server to solution positioning has led to an improvement in code composition and reusability. Although this method has been around for years, it is now the standard approach to reducing costs and identifying best practices for improving business efficiency. This has resulted in advancements in the software development industry's design techniques, components, and architecture. Furthermore, the widespread adoption of cloud computing is transforming the management of information and technology resources. This paper provides a comprehensive analysis comparing different cloud computing deployment models.

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