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A Review on Cloud Computing: Pros & Cons

[1] **Neeraj Sharma,** [2] **Ajad Bhagat Singh,** [3] **Anshu,** [4] **Anshika Paliwal**

[1] Asst. Professor
Computer Science Engineering
Arya Institute of Engineering and Technology, Jaipur
[2] Asst. Professor
Computer Science Engineering
Arya Institute of Engineering, Technology and Management, Jaipur
[3] Research Scholar
Computer Science Engineering
Arya Institute of Engineering and Technology, Jaipur
[4] Research Scholar
Computer Science Engineering
Arya Institute of Engineering and Technology, Jaipur

Abstract: There are so many who believe that cloud computing would revolutionize the whole ICT business by utilizing virtual storage and online computer storage for efficient data management. However, the concept of cloud computing remains "vague" due to its exaggeration by bloggers and newspapers that concentrate on market adaptation technology. In this paper, we'll talk about cloud-related issues that require ongoing study and improvement.
Keywords: Cloud Computing, Cloud, Cloud Computing: issues, Benefits of cloud

1. Introduction.

- It allows us to pay only for the resources we use, which are hosted by third-party companies such as AWS and Google Cloud.
- In cloud computing, "cloud" refers to "data center."
- An approach that enables simple, on-demand network access to shared pools of computing applications that are readily provided and released with minimal effort is the essence of cloud computing.
- The technical definition covers cloud architecture, deployment, strategies, and security.
- Five essential elements may be examined to clarify the notion of cloud computing.
- Resource pooling: Attempts to provide services to several clients by utilizing a virtualized or multi-tenant architecture with various resources allotted dynamically.
- Wide area network access: This is a resource that is widely used and made available across a network.

2. Literature Review

- Amazon Web Services' webpage (AWS).
- Google Cloud, located at cloud.google.com.
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3. Major Services Of Cloud Computing

The forms of services that are provided by the cloud computing today are:

- Software as a Service
- Platform as a Service
- Infrastructure as a Service
- Desktop as a Service

3.1 SaaS (Software as a Services)

Software as a Service (SaaS) is a cloud computing concept that charges users to host and access software applications online.

The following are the key elements of SaaS.

- SUBSCRIPTION-BASED: Customers pay a regular subscription charge to use software that is hosted and managed by the SaaS provider, as opposed to purchasing and installing software on individual PCs.
- MULTI-TENANCY: Software as a service (SaaS) providers frequently employ a multi-tenant model, wherein a number of clients share a codebase and infrastructure.

This reduces costs and improves the efficiency of upgrades and maintenance.

3.2 PaaS (Platform as a Services)-

Platform as a Service (PaaS), a c concept that enables the user to purchase hardware and software resources via the Internet from the service providers.

The aids often used while building apps.

Resources are hosted on the PaaS provider's infrastructure.

PaaS therefore spares developers from the headache of configuring internal resources required to construct or run a new application.

It does not take over a company's whole software development infrastructure.

Technology as a Service another name for IaaS is (HaaS).

It is a cloud-based layer.

Users can contract out a number of IT infrastructure elements, including servers, virtual machines, networking, computation, and storage.

These materials are available to internet users on a pay-per-use basis.

For a certain period of time, traditional hosting providers rent out hardware that has already been set up for IT infrastructure.

Regardless of actual usage, the customer paid for labor and installation.

Customers are only charged for services that are actually utilized, and they may easily adjust configurations to accommodate changing demands thanks to the IaaS cloud platform layer.

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The following services are offered by IaaS providers:

- Computer: End users can access virtual main memory and virtual central processing units (CPUs) through computing as a service.
- Storage: The IaaS provider's back-end storage is where files are stored.
  It does not take over the whole software development infrastructure.
  These are the services that PaaS offers: collaboration among members of the development team; Web service integration.
- Network: The Vms may access networking components such as switches, routers, and bridges using (NaaS).
- Load balancers provide infrastructure layer load balancing.

3.3 DaaS (Desktop as a Services)-

It is a cloud computing solution that enables a service provider to offer virtual desktops to end users via the Internet in return for a perimium license.

For small businesses that find it too costly or resource-intensive to build their own virtual desktop infrastructure, the vendor manages back-end maintenance.

Regular data maintenance, upgrades, backups, and archiving are all part of this management.

Security and desktop applications can be managed by cloud service providers, or customers can manage these service components independently.

DaaS desktops fall into one of two categories: persistent or non-persistent.

- Persistent desktop: Users may alter and save their desktop settings so that each time they log in, it will look the same. Persistent desktops may be more expensive than non-persistent desktops since they require more storage.
- Non-persistent desktop: When a user logs out, their desktop is deleted, serving merely as a way to access shared cloud services.

A sizable portion of the business community still rejects cloud computing, despite mounting evidence of its cost-benefits, business effectiveness, and competitive advantages.

Cloud computing has been around for at least 20 years. 69% of firms now utilize cloud technology, and 18% of businesses plan to adopt cloud computing solutions in the future, according to a poll conducted by International Data Group.

4. Advantages of Cloud Computing

- Savings in costs: 4,444 You're not alone if you're concerned about the expense of switching to the cloud: Twenty percent of businesses worry about the initial expenses associated with implementing cloud-based servers.
- Adaptability: Your business can only focus so much on each of its responsibilities.
- If your present IT solutions force you to spend an excessive amount of time on IT and data storage difficulties, you won't be able to concentrate on reaching company goals and satisfying consumer expectations.
- However, if you contract out all of your hosting and IT infrastructure to a third party, you will have more time to concentrate on the aspects of your company that directly affect your bottom line.
- Mobility: There are more than two types of smartphones and other devices that can access company data via cloud computing.
- With 6 billion cellphones in use worldwide, it's important to make sure that nobody is left behind.
- Staff with busy schedules, or who live a long way away from the corporate office, can use this feature to keep instantly up to date with clients and co-worker.

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- Observation: As the digital era advances, it's evident that the proverb "knowledge is power" has evolved into the more accurate and contemporary phrase "data is money.

Numerous businesses have profited from cloud computing since it lowers expenses and makes it possible to concentrate on core competencies rather than IT and infrastructure problems. Notwithstanding the widespread excitement surrounding the topic in the IT industry, cloud computing may have drawbacks, particularly for smaller businesses.

5. Disadvantages of Cloud Computing

- Downtime: One of the primary drawbacks of cloud computing that is frequently highlighted is downtime.
- Because cloud computing systems depend on the Internet, service outages are a regrettable risk that could materialize at any time.
- Security and privacy: When storing sensitive data and files with outside service providers, there are still dangers involved, even with cloud service providers that have the strictest industry standards and security certifications in place.
- Any discussion involving data should include security and privacy, particularly when handling sensitive data.
- The events at Code Space, where a data loss and eventual company collapse resulted from an attack on the AWS EC2 interface, are an event that will never be forgotten.
- Due to their dependence on distant cloud infrastructure,
- Limited flexibility and control: Since the cloud service provider owns, runs, and keeps an eye on the entire cloud infrastructure, users have very little say over it.
- Financial Considerations: The last disadvantage of cloud computing is cost.
- Small-scale, temporary cloud project adoption may be expensive.

However, the biggest benefit of cloud computing is reduced IT costs.

6. Final Say

Cloud computing will have an influence on a significant segment of the computer industry, including software developers and ISPs. Businesses may quickly provide their products to customers with cloud computing, all without worrying about server requirements or system setups. All the negatives may be improved by using certain alternatives wisely. because cloud computing has increased options for impoverished countries.

An automated layer called an API and additional cloud management servers handle all of the control plane activities associated with configuring, maintaining, and monitoring the virtual environment. This is one of the primary distinctions between cloud computing and virtualization.

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