CLOUD COMPUTING: All You Need To Know

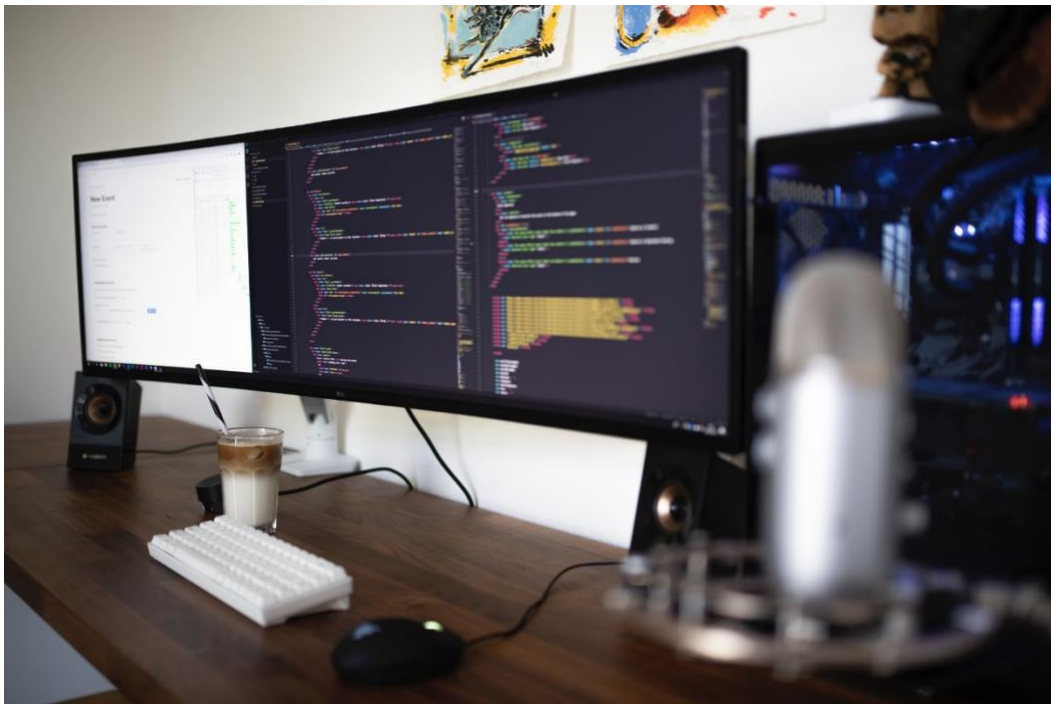

Photo Credit: Caspar Camille | Unsplash

Cloud computing has grown to become a major technology and trend for organizations of all sizes in almost every industry. Most business, organizations and enterprises are making their move towards cloud technology. In fact, this is not just a shift, rather, a transition from conventional software approaches to modern methods like Software-as-a-Service (SaaS)

Companies are turning to cloud providers including Amazon Web Services, Google Cloud, and Microsoft Azure for cloud infrastructure to provide modernized computing, networking, and storage facilities.

It's really simple why they do that: Instead of investing in expensive hardware and having to run and maintain a data centre in-house, they turn to well-structured platforms that are experienced in providing such services.

WHY CLOUD COMPUTING IS THE FORWARD

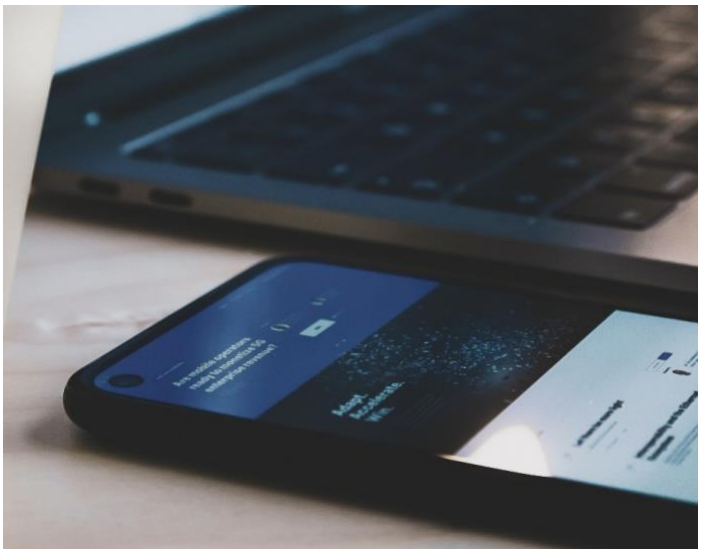

Photo credits: Signmud | Unsplash

Nowadays, most businesses, whether small-scale, mid-scale or large-scale, are implementing cloud computing methodologies for data storage, disaster recovery, software development, testing, big data analytics, virtual desktops, software deliveries, web applications, and for so much more purposes. But for many that are not following this positive trend, it's because they see this technology as something terribly expensive, far-fetched and complex. So briefly, I'll walk you through the basics advantages of cloud computing.

Absence of Huge Servers

Photo Credits: Taylor Vick

With the methodologies of cloud computing, there is no need to maintain huge servers in large equipment rooms. It's called the cloud for a reason. Cloud computing solves the problem of taking out an expanse of physical space from your already strained office space for data storage.

In essence, this technology eliminates the huge budget on buying hardware and software services, as well as setting up and operating data centres. It hereby minimizes the cost required for the maintenance of power, storage space and several other infrastructures.

Enhanced Data Storage and Security

Photo Credits: Marcus Spiske

People can skip the approach of manually storing their information in hard discs, pen drives or any other external devices. With this enhanced storage, data theft becomes all the more difficult because the more cloud computing is integrated into your business, the less physical storage devices you have, and the less the possibility of a data breach.

The most annoying problem these days for every organization is data security; but with cloud computing, the path of destroying an organization's budget, secure information, and brand image through theft can be reduced to zero.

Unrestricted Geographic Accessibility

This technology offers the feature of gaining accessibility for processes and data at every location. So, this flexibility enhances the operation and performance of the next step. You could be a team of twenty working remotely from four different continents and it would be as easy as being in the same room, simultaneously working on and processing the same data. Also, there's no mix up in sharing of documents with one other, because cloud-dependent files having shared accessibility are always up to date. So, there is no room for file misplace or duplication.

CLOUD COMPUTING INFRASTRUCTURES

Listing out the advantages of cloud computing would not be complete without a proper definition of the infrastructures involved, as well as their respective roles.

Cloud computing components correspond to platforms such as front end, back end, and cloud-dependent delivery and the utilized network. So, a framework of cloud computing is broadly categorized into:

- servers
- Storage devices
- Applications

Servers

The cloud server is a strong physical or virtual platform for application and information-processing storage. Using virtualization software, cloud servers are built to separate a physical (bare metal) server into several virtual servers. To process workloads and store data, organizations use an infrastructure-as-a-service (IaaS), model. Via an online GUI, they can access virtual server functions remotely.

Storage Devices

Cloud storage is the infrastructure of cloud computing that allows data to be stored on an off-site storage facility where data is handled by a third party. This data is accessible via an API for web services.

Cloud infrastructure as a service (IaaS), just like with all cloud technology, is accessed over the internet via a cloud vendor's data center, which is responsible for maintaining and handling conventional on-premise hardware like servers and other storage devices as well as networking and visualization. This implies that the user has the freedom and control to handle applications, information, middleware, and other operating systems.

There are essential infrastructure services, such as network monitoring, security, billing, disaster recovery, and load balancing, with a cloud IaaS solution. There is also advanced automation and orchestration to simplify application efficiency and management as well as make it easier to install operating systems, deploy middleware, launch virtual machines, and build workload storage and backups.

Applications

A cloud application, or cloud app, is a software programme where cloud-based and local components function together. This model relies on remote servers for processing logic that is accessed through a web browser with an internet connection.

Usually, cloud application servers are located in remote data centers run by an infrastructure provider for third-party cloud services such as email, file storage and sharing, order entry, inventory management, word processing, customer relationship management (CRM), data collection, or financial accounting.

CLOUD COMPUTING SERVICES.

The wide range of services offered by cloud computing companies can be categorized into four basic types:

Public Cloud Services

Some examples of public cloud include those supported by Amazon, Microsoft, or Google.

The services and facilities offered by these firms are shared by all their clients. Usually, public clouds have vast quantities of space available, which translates into simple scalability. For software creation and joint projects, a public cloud is also suggested. Companies should develop their apps to be portable

so that a project that is tested in the public cloud can be transferred for output to the private cloud. As part of their service, most cloud providers bundle their computing services.

Public cloud examples range from access to a completely virtualized infrastructure that provides little more than raw processing power and storage (Infrastructure as a Service, or IaaS) to specialized software programs that are easy to implement and use (Software as a Service, or SaaS).

Private Cloud Services.

Private clouds typically exist behind a firewall and a single organisation uses them. For companies with very strict regulatory requirements, a fully on-site cloud could be the preferred option, although private clouds deployed via a colocation provider are gaining in popularity. Registered users, just like they do with a public cloud, can connect, use and store data in the private cloud from anywhere. The difference is that such computational resources can not be accessed or used by someone else. Both protection and control are offered by private cloud solutions, but these advantages come at a cost. Both software and storage are the responsibility of the corporation that manages the cloud, making this a less economical model when compared to the public cloud.

Hybrid Cloud Services

Hybrid clouds merge private clouds with public clouds. They are designed to allow seamless interaction between the two systems, with data and applications flowing seamlessly from one to the other.

The primary benefit of a hybrid cloud model is its ability to provide protection and control of a private cloud with the scalable computing capacity of a public cloud. Data can be safely stored behind private cloud firewalls and encryption protocols, then, when required, securely transferred into a public cloud environment. In the age of big data analytics, this is particularly helpful as industries such as healthcare must adhere to strict data privacy regulations while still using sophisticated artificial intelligence (AI) driven algorithms to extract actionable insights from huge masses of unstructured data.

Community Cloud Services.

Although not as commonly used as the other three models, community clouds are a collaborative, multi-tenant platform used by several distinct organizations to share the same applications. The users are typically operating within the same industry or field and share common concerns in terms of security, compliance, and performance.

In essence, a community cloud is a private cloud that functions much like a public cloud. The platform itself is managed privately, either in a data centre or on-premises. Authorized users are then segmented within that environment. These deployments are commonly used by government agencies, healthcare organizations, financial services firms, and other professional communities.

Conclusion.

Though cloud computing is an emerging technology, it is clear that it has the potential to upset previous conventional practices of data computing.

Owing to this technology, organisations will no longer need to expend large chunks of money in building their software and hardware infrastructural capabilities, but they could rather focus on effective provisioning of value and services.

It is therefore safe to say that cloud computing will revolutionize the future.