



INTRODUCTION TO CLOUD COMPUTING

WHAT IS CLOUD COMPUTING ?

Cloud computing is a technology model that involves delivering various computing services over the internet. Instead of running applications or storing data on local servers or personal computers, cloud computing allows users to access these services and resources through the internet, typically via a web browser.



Where it can be implemented ?



**BUSINESS
APPLICATIONS**



**DATA STORAGE AND
BACKUP**



WEB HOSTING



**DEVELOPMENT AND
TESTING
ENVIRONMENTS**



**BIG DATA AND
ANALYTICS**

TYPES OF CLOUD COMPUTING SERVICES

Infrastructure as a Service (IaaS): IaaS provides virtualized computing resources over the internet. It offers fundamental building blocks like virtual machines, storage, and networking capabilities that users can access and manage remotely.

Platform as a Service (PaaS): PaaS offers a platform and environment that allows developers to build, deploy, and manage applications without dealing with the underlying infrastructure.

Software as a Service (SaaS): SaaS delivers complete software applications over the internet, accessible through a web browser or application interfaces. With SaaS, users can use software without the need to



Cloud computing is a broad term that encompasses various types of services and deployment models. The main types of cloud computing are:

- **Public Cloud:** In a public cloud, cloud services are provided over the internet by third-party providers. These services are made available to anyone who wants to use them. Public clouds are owned, managed, and operated by cloud service providers (CSPs). Examples of public cloud providers include Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP).
- **Private Cloud:** A private cloud is a cloud infrastructure that is solely dedicated to a single organization. It can be physically located on-premises (on-site) or hosted by a third-party service provider. Private clouds offer greater control, security, and customization compared to public clouds. They are ideal for organizations with specific compliance requirements or sensitive data.
- **Hybrid Cloud:** A hybrid cloud is a combination of public and private clouds, allowing data and applications to be shared between them. Organizations can use the public cloud for tasks that require scalability and flexibility while keeping sensitive data or critical applications in a private cloud for enhanced security and control. Hybrid clouds enable seamless integration between both environments.

USES OF CLOUD COMPUTING



Scalable Infrastructure



**Data Storage and
Backup**



**Application
Development and
Testing**



Big Data and Analytics



Internet of Things



**Artificial Intelligence
and Machine Learning**



**Collaboration and
Productivity Tools**

CLOUD ETHICS

Cloud ethics refers to the ethical considerations and principles that arise in the context of cloud computing. As cloud computing becomes increasingly integrated into various aspects of our lives and businesses, it brings forth several ethical concerns and challenges that need to be addressed. Some of the key cloud ethics considerations include:

- **Data Privacy and Security**
- **Data Ownership and Control**
- **Transparency and Accountability**
- **Fair and Equitable Access**



FUTURE OF CLOUD COMPUTING

Hybrid and Multi-Cloud Environments: The future is likely to see increased adoption of hybrid and multi-cloud strategies, where organizations use a combination of public cloud, private cloud, and on-premises infrastructure to meet their specific needs. This approach allows businesses to leverage the strengths of different cloud providers and maintain control over sensitive data.

Edge Computing Integration: As the internet of things (IoT) and edge computing continue to grow, cloud computing is expected to integrate more closely with edge devices and gateways. This integration will enable real-time data processing and decision-making, reducing latency and bandwidth requirements.

Serverless Computing: Serverless computing, also known as Function as a Service (FaaS), is likely to gain popularity. It allows developers to focus solely on writing code without managing servers, leading to greater development efficiency and cost optimization.

AI-Driven Cloud Services: Cloud providers will continue to enhance their offerings with AI and machine learning capabilities. AI-driven services will enable more intelligent and automated resource management, security, and data analytics.



COURSES BELONGS TO CLOUD COMPUTING

Cloud Computing Fundamentals: These courses provide an introduction to cloud computing concepts, architectures, and service models. They cover the basics of how cloud computing works and its benefits for businesses.

Cloud Service Providers: These courses focus on specific cloud service providers like Amazon Web Services (AWS), Red Hat Open Hybrid Cloud, Google Cloud Platform (GCP), and others. They teach how to use and manage cloud services on a particular platform.

Cloud Infrastructure and Networking: These courses delve into the technical aspects of cloud infrastructure, including virtualization, networking in the cloud, and managing cloud resources.

Cloud Security and Compliance: Courses in this category cover cloud security best practices, data privacy, compliance with regulations like GDPR, and risk management in the cloud.