

Cloud computing

Module -1

1- What is cloud computing?

- Cloud computing is the delivery of computing services over the internet, allowing businesses and individuals to use resources like storage, servers, databases, networking, software, and more, on a pay-per-use basis.

2-Describe cloud computing deploy model.

- **Private Cloud:** Cloud infrastructure is used exclusively by a single organization. It can be hosted internally (on-premises) or externally (by a third-party provider).
- **Public Cloud:** Services and infrastructure are provided over the public internet and shared across different organizations. It is managed by the cloud providers. users only pay for the resources.
- **Hybrid Cloud:** A mix of both public and private clouds, allowing data and applications to be shared between them. Organizations can keep critical data in the private cloud while using the public cloud for other services.
- **Community cloud:** the community cloud allows systems and services to be accessible by group of organizations.

3-What are components of cloud computing?

- Cloud Services:
- Infrastructure as a Service (IaaS): Provides virtualized computing resources like virtual machines, storage, and networks.
- Platform as a Service (PaaS): Offers a platform for developers to build, test, and deploy applications without managing the underlying infrastructure.
- Software as a Service (SaaS): Delivers software applications over the internet (e.g., Google Workspace, Microsoft 365), where users don't need to install or maintain them.

4-cloud computing advantage and disadvantage Advantages of Cloud Computing

- **Advantages of Cloud Computing:**
- Users pay only for the services they use, reducing the need for upfront investments in hardware, software, and infrastructure.
- Resources can be easily scaled up or down based on demand, which allows businesses to adjust their IT infrastructure without over-provisioning or under-provisioning.
- Cloud services can be accessed from anywhere with an internet connection, allowing for greater mobility and collaboration.
- Cloud providers handle system and software updates automatically, ensuring that users always have access to the latest features and security patches.
- **Disadvantages of Cloud Computing:**

- Storing sensitive data in the cloud raises concerns over data breaches, unauthorized access, and privacy violations. Security policies vary between providers.
- Cloud services can experience outages, and service disruptions may affect businesses that rely on the cloud for critical operations.
- With cloud computing, users may have limited control over infrastructure and operations, as the service is managed by the provider.
- Moving large volumes of data to and from the cloud can be expensive and time-consuming, especially if bandwidth is limited.