

Understanding Cloud Computing

- **Cloud Computing:** The delivery of computing services—including storage, processing, and software—over the internet (“the cloud”).
- **On-Premises Computing:** Hosting and managing servers and IT infrastructure locally within an organization.
- **Server:** A computer or system that provides resources, data, or services to other computers over a network.
- **Latency:** The time delay between a request and the response in a cloud or network environment.
- **Redundancy:** The duplication of critical systems or data to improve reliability and availability.
- **Scalability:** The ability of a system to handle increasing workloads by adding resources (vertical scaling) or distributing workloads (horizontal scaling).
- **Elasticity:** The ability of cloud systems to automatically scale resources up or down based on demand.
- **High Availability (HA):** The design of systems to ensure continuous operation with minimal downtime.
- **Cloud Service Models:** Categories of cloud services based on user control and vendor responsibility, including IaaS, PaaS, and SaaS.
- **Infrastructure as a Service (IaaS):** Cloud services providing virtualized computing resources such as servers, storage, and networks.
- **Platform as a Service (PaaS):** Cloud services providing tools and environments for developing, testing, and deploying applications.
- **Software as a Service (SaaS):** Cloud-delivered applications accessible via the internet, managed entirely by the provider.
- **Function as a Service (FaaS):** A serverless cloud service model where developers run functions without managing infrastructure.
- **Serverless Computing:** A model where cloud providers manage infrastructure, and users focus only on code execution.
- **Public Cloud:** A cloud deployment model where services are delivered over the public internet and shared across organizations.
- **Private Cloud:** A cloud deployment model dedicated to a single organization, offering more control and customization.
- **Hybrid Cloud:** A mix of public and private cloud environments, allowing workloads to move between them.
- **Multi-Cloud:** The use of multiple cloud providers to optimize performance, cost, or reliability.
- **Community Cloud:** A cloud infrastructure shared by several organizations with common goals or compliance needs.
- **Data Center:** A physical facility housing servers and infrastructure for cloud and on-premises computing.
- **Cloud Governance:** The policies and frameworks that ensure secure, compliant, and efficient use of cloud services.
- **Cloud Security:** Practices and technologies designed to protect cloud-based systems, data, and infrastructure.
- **DevOps (in Cloud):** A set of practices combining software development and IT operations to accelerate deployment on cloud platforms.
- **Cloud Architect:** A professional responsible for designing and managing cloud environments.
- **Cloud Engineer:** A practitioner who builds, maintains, and optimizes cloud infrastructure.
- **SecOps:** Security-focused operations ensuring compliance and protection in cloud systems.
- **Disaster Recovery (Cloud):** Cloud-based solutions to restore systems and data after outages or failures.
- **Major Cloud Providers:** Leading cloud platforms including Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP).
- **Case Study (Cloud):** Real-world examples of how organizations use cloud computing for scalability, stability, and innovation.