

# Introduction to Cloud Computing

- Cloud computing is a technology that allows users to store, manage, and process data on remote servers through the internet instead of using a local computer or physical storage device.
- In simple words, cloud computing means accessing computing services such as storage, servers, databases, networking, and software over the internet.
- Today many people use cloud services for storing files, sharing documents, and running applications online.
- A common example is Google Drive, which allows users to store files online and access them from any device.

## Characteristics of Cloud Computing

- Cloud computing has several important characteristics:

### 1. On-Demand Self Service

- Users can access computing resources whenever they need them without human interaction with the service provider.

### 2. Broad Network Access

- Cloud services can be accessed from different devices such as smartphones, laptops, and tablets using the internet.

### 3. Resource Pooling

- Cloud providers serve multiple customers using shared resources.

### 4. Rapid Elasticity

- Cloud resources can be increased or decreased quickly depending on user needs.

## Types of Cloud Computing

### 1. Public Cloud

- Public cloud services are provided over the internet and are available to anyone who wants to use them.
- Example services include Google Drive and Dropbox.

### 2. Private Cloud

- Private cloud is used by a single organization and provides more security and control.

### 3. Hybrid Cloud

- Hybrid cloud combines both public and private cloud services.

# Cloud Service Models

## Infrastructure as a Service (IaaS)

- Provides virtual servers and storage.

## Platform as a Service (PaaS)

- Provides a platform where developers can build applications.

## Software as a Service (SaaS)

- Provides software applications over the internet.
- Example: Microsoft Office 365

# Advantages of Cloud Computing

- Cost-effective because no physical hardware is required
- Easy access from anywhere with internet
- Data backup and recovery
- High storage capacity
- Automatic software updates

# Disadvantages of Cloud Computing

- Requires a stable internet connection
- Data security concerns
- Limited control over infrastructure
- Possible service outages

# Applications of Cloud Computing

- Cloud computing is widely used in many industries such as:
- Education for online learning platforms
- Healthcare for storing medical records
- Business for data storage and management
- Entertainment for streaming services
- Many companies depend on cloud computing to improve efficiency and collaboration.