Cloud computing delivers computing resources such as servers, storage, and software over the internet. Instead of maintaining physical infrastructure, organizations rent resources from cloud providers on demand.

Cloud service models include Infrastructure as a Service, Platform as a Service, and Software as a Service. Providers like Amazon Web Services, Microsoft Azure, and Google Cloud operate global data centers.

Cloud computing supports scalability, flexibility, and cost efficiency. It enables rapid deployment of applications and supports advanced workloads such as machine learning and big data analytics.

Security in the cloud is a shared responsibility between providers and customers. Challenges include data privacy, vendor lock-in, and internet dependency. Despite this, cloud adoption continues to grow rapidly.