

CHAPTER 10: THE CLOUD

10.1: THE CLOUD COMPUTING MODEL

Cloud Computing Model	Traditional Computing Model
On-demand self-service	Manual provisioning
Broad network access	Local access
Multi-tenancy	Dedicated resources
Resource pooling	Physical resources
Measured service	Fixed capacity

10.2: IaaS

Infrastructure as a Service (IaaS) provides virtualized computing resources over the Internet. It allows users to rent virtual machines, storage, and networking capabilities from a cloud provider. IaaS is the most basic level of cloud computing, where the user manages the operating system, applications, and data, while the provider manages the underlying hardware and network infrastructure.

10.3: PaaS and SaaS

Platform as a Service (PaaS) provides a cloud-based platform for developing, running, and managing applications. It abstracts the underlying infrastructure, allowing developers to focus on writing code. Software as a Service (SaaS) provides ready-to-use applications over the Internet, eliminating the need for installation and maintenance on the user's side.

Cloud computing offers several benefits, including scalability, flexibility, and cost efficiency. It allows organizations to scale their resources up or down based on demand, reducing the need for physical infrastructure. Additionally, cloud services are often pay-as-you-go, which can significantly reduce upfront costs.

However, cloud computing also presents challenges, such as security concerns, data privacy, and vendor lock-in. Organizations must carefully evaluate their cloud strategy and choose reputable providers to mitigate these risks.