# Cloud Computing basics:

**Characteristics:**

* On demand self-service
* Ubiquitous network access
* Resource pooling
* Rapid elasticity
* Pay per use

**Delivery Models:**

* **SaaS –** Software as a Service (Salesforce; finished application that you rent and customize)
* **PaaS –** Platform as a Service (Google; deployment platform that abstracts the infrastructure)
* **IaaS –** Infrastructure as a Service(AWS)

**Deployment Models:**

* Private cloud (own the hardware cloud runs on; more secure; for your use alone)
* Public cloud (leveraging cloud services over open internet; elastic scaling)
* Hybrid cloud (combination of both)

**IaaS:**

In an infrastructure as a service model means that a third party provider hosts hardware, software, services, storage, and other infrastructure components on your behalf.

**Why IaaS?**

* Infrastructure services found in a traditional data center.
* Application and data hosting for existing enterprise workloads.
* Fastest growing type of cloud.
* Private, public or hybrid cloud deployment

**Examples:** AWS, GCP, Microsoft Azure

**SaaS:**

SaaS removes the need for organizations to install and run hardware and software within their own data centers, and eliminates the waves of hardware and software acquisitions as well a maintenance and software licensing.

**Examples**: Salesforce (Largest CRM system), Google apps for work (Automation on demand), Microsoft 365(MS Office over open internet).

**PaaS:**

PaaS cloud provides platform allowing users to develop, run, and manage applications without the complexity of building and maintaining infrastructure themselves.

**Why PaaS?**

* Provides complete development, testing and deployment platform.
* Reduces complexity of development and testing by placing developers in a limited environment.
* Supported by most IaaS could providers (AWS, Google, Microsoft).

**Example:** AWS’s Elastic beanstalk, Azure, Google App Engine