✨

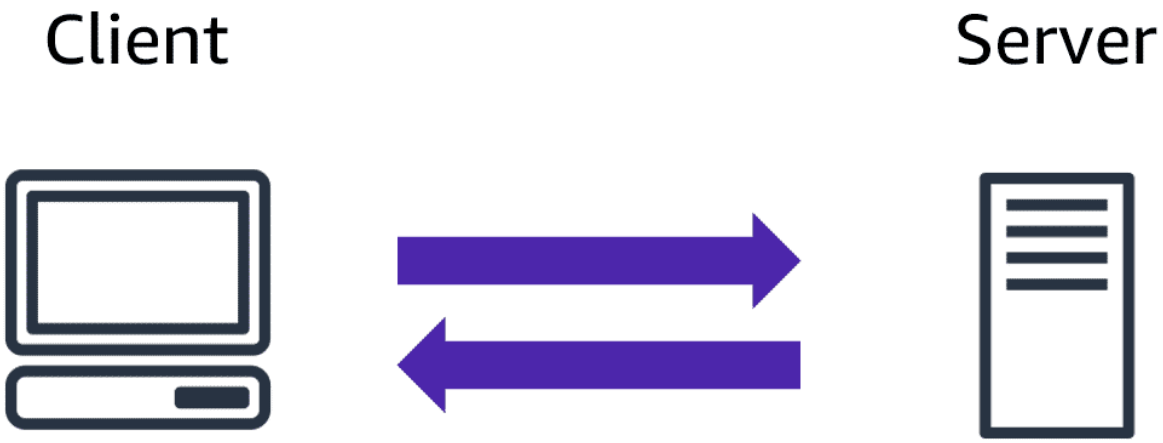
# Module 1

### Client-Server Module

> 💡 Key value: Pay for what you need

In computing, a client can be a web browser or a desktop application that a person interact with it to make a request to computer servers.

A server can services such as Amazon Elastic Compute Cloud or (Amazon EC2), a type of virtual server.




## Cloud Computing

Cloud computing is the on-demand delivery IT resources over the internet with pay-as-you-go pricing.

Instead of buying, owning, and maintaining physical data centers and servers, you can access technology services, such as computing power, storage, and databases

on an as-needed basis form.

# Types of cloud computing

## 1. Infrastructure as a Services(IaaS)

It typically provides access to networking features, computers, and data storage space. It gives you the highest level of flexibility and management control over your IT resources.

## 2. Platform as a Service (PaaS)

It removes the need for you to manage underlying infrastructure and allows you to focus on the deployment and management of your applications.

It helps you to be more efficient as you don’t have to worry about capacity planning, software maintenance, patching, etc.

## 3. Software as a Service (SaaS)

It provides you with a complete product that is run and managed by the service provider. In this you only need to think about how you will use the particular software.

# Cloud computing deployment models

## 1. Cloud-based deployment

In a cloud-based deployment model, you can migrate existing applications to the cloud or you can design and build new applications in the cloud.

You can build those applications on low level infrastructure that requires you IT staff to manage.

1. Run all parts of the application in the cloud
2. Migrate existing applications to the cloud
3. Design and build new applications in the cloud

## 2. On-premises Deployment

It is also known as a private cloud deployment. In this model, resources are deployed on premises by using virtualization and resources management tools.

1. Deploy resources by using virtualization and resource management tools.
2. Increase resource utilization by using application management and virtualization technologies.

### Hybrid Deployment

In this deployment, cloud-based resources are connected to on-premises infrastructure.

1. Connect cloud-based resources to on-premises infrastructure.
2. Integrate cloud-based resources with legacy IT applications.

## Benefits of cloud computing

1. A ability of cloud computing is the ability to focus less on these tasks and more on your application and customers (**Stop spending money to run and maintain data centers**)
2. With cloud computing you don’t have to predict how much infrastructure capacity you will need before deploying an application.
3. Benefit from massive economies of scale
4. Increase speed and agility