



CLOUD COMPUTING

AWS/AZURE/GCP

ON-PREMISE SERVERS

- **Physical Maintenance:** Companies had to maintain and manage their own hardware and infrastructure in-house.
- **Underutilization:** Purchased server capacity often went unused, leading to wasted resources.
- **Cost Inefficiency:** Despite low usage, companies still paid for the full infrastructure.
- **Manpower:** Dedicated IT teams were required to manage and troubleshoot the data centers.
- **24/7 Monitoring:** Constant surveillance was necessary to ensure servers were running efficiently without downtime.
- **Space:** Physical space was needed to house all the server equipment and infrastructure.

CLOUD COMPUTING SOLVES THESE AWS/AZURE/GCP

- **No Physical Maintenance:** Cloud providers manage the infrastructure, eliminating the need for companies to handle hardware maintenance.
- **Efficient Resource Utilization:** Cloud services allow you to scale resources based on actual usage, avoiding underutilization.
- **Cost Efficiency:** Pay-as-you-go pricing ensures you only pay for the resources you use, reducing unnecessary expenses.
- **Reduced Manpower:** Cloud providers take care of infrastructure management, reducing the need for large, dedicated IT teams.
- **24/7 Availability:** Cloud providers ensure high availability and monitoring, ensuring services run smoothly without the need for in-house teams.

HOW CLOUD COMPUTING IS REPLACING ON-PREMISE INFRASTRUCTURE

- Cloud computing replaces on-premise infrastructure by renting computing resources instead of owning them.
- Businesses no longer need to invest in expensive hardware or manage maintenance.
- Cloud providers like AWS, Azure, and Google Cloud offer pay-as-you-go models for resources.
- Similar to staying in a hotel, you only pay for what you use, without long-term ownership.
- This provides flexibility, scalability, and cost efficiency, making cloud computing a preferred choice over traditional data centers.

GROWING DEMANDS FOR CLOUD ROLES

- As cloud computing continues to evolve, the need for specialized professionals to manage, optimize, and secure cloud infrastructure is rising. Here are key roles in high demand:
- **Cloud Engineers**
- Cloud engineers design, build, and manage cloud infrastructure. They ensure smooth deployment, scaling, and maintenance of cloud-based applications.
- **DevOps Engineers**
- DevOps engineers bridge the gap between development and operations, automating processes, managing CI/CD pipelines, and ensuring efficient delivery of software.
- **SRE (Site Reliability Engineers)**
- SREs focus on ensuring system reliability and performance by using software engineering principles to automate infrastructure management and reduce downtime.
- **SecOps (Security Operations)**
- SecOps professionals are responsible for securing cloud environments, implementing security policies, monitoring vulnerabilities, and responding to security incidents.

AWS CLOUD SERIES FROM SCRATCH

EC2 (Elastic Compute Cloud), RDS (Relational Database Service), S3 (Simple Storage Service), Lambda, CloudFormation, AWS CLI (Command Line Interface), ECS (Elastic Container Service), EKS (Elastic Kubernetes Service), Fargate, IAM (Identity and Access Management), Roles, Groups, Users, Billing and Cost Management, Auto Scaling, EBS (Elastic Block Store), ELB (Elastic Load Balancing), CI/CD (Continuous Integration/Continuous Deployment), CodePipeline, CodeCommit, CodeDeploy, Advanced Concepts, PaaS (Platform as a Service), SaaS (Software as a Service), IaaS (Infrastructure as a Service).