Cloud Computing with AWS

Section 1: Introduction to IT Infrastructure

- What is IT Infrastructure?
- Components: Servers, Storage, Network, Applications
- Traditional IT setup vs modern approaches
- Key challenges in managing infrastructure

Section 2: On-Premises vs Cloud Infrastructure

- Definition of On-Premises Infrastructure
- Definition of Cloud Infrastructure
- Pros and Cons of On-Prem vs Cloud
- Cost, Scalability, Maintenance Comparison
- Use cases for both models

Section 3: Introduction to AWS Cloud

- What is AWS?
- History and Evolution of AWS
- Global Infrastructure: Regions & Availability Zones
- Types of Cloud Services: IaaS, PaaS, SaaS
- AWS Shared Responsibility Model

Section 4: AWS Cloud Services Tour

- Overview of Core Services:
- - Compute: EC2, Lambda
- - Storage: S3, EBS
- - Database: RDS, DynamoDB
- - Networking: VPC, Route 53, ELB
- - IAM and Security
- AWS Management Console Walkthrough
- Real-world Use Cases

Section 5: AWS Free Tier & Account Setup

- Creating an AWS Free Tier Account
- Understanding Free Tier Limits
- Setting up Billing Alerts
- Multi-Factor Authentication (MFA) setup
- Basic Security Best Practices

Section 6: EC2 + Load Balancing + Auto Scaling

- What is EC2?
- Launching Linux & Windows EC2 Instances
- Connecting to EC2 via SSH
- Installing Software on EC2
- Elastic Load Balancer (ELB) setup
- Configuring Auto Scaling Groups (ASG)
- Health Checks and High Availability

Section 7: Amazon S3 (Simple Storage Service)

- What is S3?
- Creating Buckets and Uploading Files
- S3 Storage Classes
- Bucket Policies & Access Control
- Static Website Hosting with S3
- Access via AWS CLI & SDK (Programmatic Access)
- S3 Versioning and Lifecycle Policies

Section 8: Amazon RDS (Relational Database Service)

- What is RDS?
- Supported Databases (MySQL, PostgreSQL, Oracle, etc.)
- Creating and Configuring an RDS Instance
- Backup, Monitoring & Snapshots
- Connecting EC2 to RDS
- High Availability with Multi-AZ

Section 9: IAM (Identity and Access Management)

- What is IAM?
- Creating IAM Users & Groups
- Attaching Policies
- IAM Roles and Use Cases
- Identity Federation Overview
- Best Practices for Security

Section 10: AWS Elastic Beanstalk (PaaS)

- What is Elastic Beanstalk?
- Supported Languages & Platforms
- Deploying Web Applications
- Environment Management
- Auto-scaling & Monitoring with Beanstalk

Section 11: AWS Lambda (Serverless Computing)

- What is Serverless Architecture?
- Introduction to AWS Lambda
- Creating Lambda Functions (Python/Node.js)
- Triggering with S3, API Gateway, CloudWatch
- Permissions with IAM Roles
- Monitoring & Debugging

Section 12: Route 53 (DNS Management)

- What is Route 53?
- Registering Domains via Route 53
- DNS Record Types (A, CNAME, MX, etc.)
- Hosting a Website with Route 53 + S3/EC2
- Routing Policies: Simple, Weighted, Latency-based
- Health Checks and Failover

=== Learn Here.. Lead Anywhere..!! ===