

Course Title: Bootcamp – AWS Edition

Module 1: Introduction to Cloud Computing & AWS Fundamentals

- Cloud computing overview
- Public vs private vs hybrid cloud
- IaaS, PaaS, SaaS (with software examples)
- AWS global infrastructure
- AWS Management Console walkthrough
- Shared responsibility model

Hands-On

- AWS account setup
- Navigating core AWS services

Module 2: Compute & Storage Services on AWS

- EC2 concepts (VMs, AMIs, instance types)
- Launching and managing EC2 instances
- Elastic Block Storage (EBS)
- Object storage using S3
- Static website hosting on S3

Hands-On

- Launch EC2 instance
- Host a static webpage on S3

Module 3: Cloud Networking & Security Basics

- Virtual Private Cloud (VPC) basics
- Subnets, security groups
- IAM users, roles, and policies
- Authentication and authorization
- Best practices for cloud security

Hands-On

- Create IAM users
- Secure EC2 using security groups

Module 4: Backend Application Deployment on Cloud

- Deploying Python / Node.js backend on EC2
- REST API concepts
- Environment configuration
- Application logs and monitoring (CloudWatch intro)

Hands-On

- Deploy a simple backend service on EC2
- Test APIs using browser/Postman

Module 5: Serverless Computing with AWS Lambda

- Serverless architecture concepts
- AWS Lambda fundamentals
- Event-driven execution
- API Gateway overview
- Cost and scalability advantages

Hands-On

- Create Lambda functions
- Trigger Lambda using HTTP/API Gateway

Module 6: Cloud Databases & Data Handling

- Relational vs NoSQL databases
- DynamoDB fundamentals
- Data modeling for cloud applications
- CRUD operations via Lambda/API

Hands-On

- Store and retrieve application data using DynamoDB

Module 7: Cloud Monitoring, Scaling & Cost Awareness

- CloudWatch metrics & logs
- Auto-scaling concepts
- Load balancing (conceptual)
- Cloud cost estimation & optimization