

# AWS DevOps Training: Automation and Infrastructure as Code (IaC)

## Module 1 – Introduction to Cloud Operations on AWS

- Overview of Cloud Operations
- AWS Global Architecture
- AWS Shared Responsibility Model
- Core Services Used in Operations
- Operational Best Practices
- Cloud Resource Lifecycle

## Module 2 – Identity and Access Management with IAM

- Introduction to AWS IAM
- Users, Groups, and Roles
- IAM Policies
- Permission Management
- Principle of Least Privilege
- Multi-Factor Authentication (MFA)
- Security Best Practices

## Module 3 – AWS Resource Management and Inventory

- Discovering AWS Resources
- Overview of AWS Systems Manager
- Overview of AWS Config
- Inventory and Compliance
- Centralized Resource Management
- Configuration Auditing
- Change Tracking

## Module 4 – Managing Core AWS Services

- Administering Amazon EC2
- Managing Amazon VPC
- Public and Private Subnets
- Security Groups
- Managing Amazon S3 Buckets
- Networking Best Practices
- Securing Resources

## Module 5 – Infrastructure as Code with AWS CloudFormation

- Introduction to Infrastructure as Code
- CloudFormation Concepts

- Templates and Resources
- Parameters and Variables
- Automated Infrastructure Deployment
- Updating Environments
- Infrastructure Version Management

## Module 6 – Automating AWS Operations

- Introduction to Operations Automation
- Operations as Code
- Automating Recurring Tasks
- Resource Lifecycle Management
- Deployment Automation
- Maintenance Automation
- Operational Best Practices

## Module 7 – Monitoring and Observability with Amazon CloudWatch

- Introduction to Amazon CloudWatch
- Metric Collection
- Creating Dashboards
- Log Management
- Alerts and Notifications
- Performance Analysis
- Incident Troubleshooting

## Module 8 – High Availability and Resilience

- High Availability Concepts
- Auto Scaling
- Load Balancing with Elastic Load Balancing
- Multi-Availability Zone Architecture
- Failure Management
- Operational Continuity
- Resilience Best Practices

## Module 9 – Security and Auditing of AWS Environments

- Security Auditing
- Access Monitoring
- Audit Log Management
- Compliance and Governance
- Protecting Critical Resources
- Security Incident Management
- AWS Security Best Practices

## Module 10 – Storage, Backup, and Recovery

- Amazon EBS
- Amazon S3

- Data Lifecycle Management
- Automated Backups
- AWS Backup
- Disaster Recovery Planning
- Data Protection

## **Module 11 – AWS Cost Optimization**

- Principles of Cloud Financial Optimization
- Analyzing AWS Usage
- Reducing Unnecessary Costs
- Resource Right-Sizing
- Amazon S3 Storage Classes
- Reservations and Savings
- FinOps Best Practices

## **Module 12 – AWS Cloud Operations Capstone Project**

- Conducting a Complete Audit of an AWS Environment
- Implementing Monitoring and Alerts
- Automating Backups
- Configuring Auto Scaling
- Performing Compliance and Security Analysis
- Optimizing Costs
- Documenting Operations
- Presenting the Final Solution