Advanced Developing on AWS
Duration: 24 Hours (3 Days)

Course Overview

The Advanced Developing on AWS course is designed for individuals who are familiar with software development and AWS services, aiming to enhance their skills in building and deploying scalable, reliable applications on the AWS platform. Throughout the course, learners will delve into a range of advanced topics, starting with a recap of core AWS fundamentals like global infrastructure and SDK usage, moving through Architectural styles, and exploring Migration strategies with a focus on Monolithic applications. The course emphasizes gaining agility through DevOps practices, transitioning from monolithic architectures to microservices, and implementing Polyglot persistence. Learners will also gain insights into designing Resilient systems, handling Distributed complexity, and ensuring Security and observability within their applications. By integrating services such as AWS Elastic Beanstalk, AWS Lambda, API Gateway, and Amazon Cognito, participants will learn how to handle real-world challenges of modern application development. The Advanced Developing on AWS course is a comprehensive program that empowers developers with the knowledge and tools to optimize their AWS-based applications for scalability, resilience, and maintainability.

Audience Profile

The Advanced Developing on AWS course is tailored for experienced developers aiming to enhance their cloud expertise and master AWS services. It is ideal for the following professionals:

- Experienced AWS Developers
- Cloud Solutions Architects
- DevOps Engineers
- Software Engineers transitioning to cloud-based environments
- IT Professionals with a software development background
- Systems Engineers with cloud experience
- Technical Leads managing cloud-based projects
- Application Developers seeking to leverage AWS for scalability and reliability
- Cloud Technical Consultants
- System Integrators working with AWS services
- Enterprise Architects planning cloud adoption or migration

Course Syllabus

Day 1

Module 1: The Cloud Journey

- Common off-cloud architectures
- Introduction to Cloud Air
- Monolithic architecture
- Migrating to the cloud
- Guardrails

- The six R's of migration
- The Twelve-Factor Application methodology
- Architectural styles and patterns
- Overview of AWS services
- Interfacing with AWS services
- Authentication
- Infrastructure as Code and Elastic Beanstalk
- Demonstration: Creating base infrastructure with AWS CloudFormation in the AWS console
- Hands-on Lab 1: Deploying your monolith application using AWS Elastic Beanstalk

Module 2: Gaining Agility

- DevOps principles
- CI/CD workflows
- Application configuration management
- Secrets management
- CI/CD services in AWS
- Demonstration: Using AWS Secrets Manager

Day 2

Module 3: Monolith to Microservices

- Microservices architecture
- Serverless solutions
- Exploring Cloud Air
- Developing microservices using AWS Lambda and API Gateway
- AWS Serverless Application Model (SAM)
- Strangling the monolith pattern
- Hands-on Lab: Developing microservices with AWS Lambda

Module 4: Polyglot Persistence and Distributed Complexity

- Polyglot persistence strategies
- DynamoDB best practices
- Addressing distributed system complexities
- Using AWS Step Functions

Day 3

Module 5: Resilience and Scale

- Decentralized data storage
- Amazon SQS
- Amazon SNS
- Amazon Kinesis Streams
- AWS IoT Message Broker
- Serverless event bus solutions
- Event sourcing and CQRS patterns
- Designing for resilience in the cloud
- Hands-on Lab: Exploring AWS messaging options

Module 6: Security and Observability

- Serverless compute with AWS Lambda
- Authentication with Amazon Cognito
- Debugging and traceability techniques
- Hands-on Lab: Developing microservices on AWS
- Hands-on Lab 8: Automating deployments with AWS CloudFormation