Training: AWS
Advanced Developing on AWS

TRAINING GOALS:

The Advanced Developing on AWS course uses the real-world scenario of taking a legacy, on-premises monolithic application and refactoring it into a serverless microservices architecture. This three-day advanced course covers advanced development topics such as architecting for a cloud-native environment; deconstructing on-premises, legacy applications and repackaging them into cloud-based, cloud native architectures; and applying the tenets of the Twelve-Factor Application methodology.

Course objectives

In this course, you will:

- Analyze a monolithic application architecture to determine logical or programmatic break points where the application can be broken up across different AWS services
- Apply Twelve-Factor Application manifesto concepts and steps while migrating from a monolithic architecture
- Recommend the appropriate AWS services to develop a microservices based cloud-native application
- Use the AWS API, CLI, and SDKs to monitor and manage AWS services
- Migrate a monolithic application to a microservices application using the 6 Rs of migration
- Explain the SysOps and DevOps interdependencies necessary to deploy a microservices application in AWS

Intended audience

This course is intended for experienced software developers who are already familiar with AWS services.

CONSPECT:

- Module 1: The cloud journey
  - Common off-cloud architecture
  - Introduction to Cloud Air
  - Monolithic architecture
  - Migration to the cloud

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- 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: Walk through creating base infrastructure with AWS CloudFormation in the AWS console
- Hands-on lab 1: Deploy your monolith application using AWS Elastic Beanstalk

- Module 2: Gaining Agility
  - DevOps
  - CI/CD
  - Application configuration
  - Secrets management
  - CI/CD Services in AWS
  - Demonstration: Demo AWS Secrets Manager
- Module 3: Monolith to MicroServices
  - Microservices
  - Serverless
  - A look at Cloud Air
  - Microservices using Lambda and API Gateway
  - SAM
  - Strangling the Monolith
  - Hands-on lab: Using AWS Lambda to develop microservices
- Module 4: Polyglot Persistence & Distributed Complexity
  - Polyglot persistence
  - DynamoDB best practices
  - Distributed complexity
  - Step functions
- Module 5: Resilience and Scale
  - Decentralized data stores
  - Amazon SQS
  - Amazon SNS
  - Amazon Kinesis Streams

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- AWS IoT Message Broker
- Serverless event bus
- Event sourcing and CQRS
- Designing for resilience in the cloud
- Hands-on lab: Exploring the AWS messaging options

- Module 6: Security and Observability
  - Serverless Compute with AWS Lambda
  - Authentication with Amazon Cognito
  - Debugging and traceability
  - Hands-on lab: Developing microservices on AWS
  - Hands-on lab 8: Automating deployments with Cloud Formation

REQUIREMENTS:

We recommend that attendees of this course have:

- In-depth knowledge of at least one high-level programming language
- Working knowledge of core AWS services and public cloud implementation
- Completion of the Developing on AWS classroom training, and then a minimum of 6 months of application of those concepts in a real world environment

Difficulty level

CERTIFICATE:

The participants will obtain certificates signed by AWS (course completion).

TRAINER:

AWS Authorized Instructor (AAI)

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