

Advanced Developing on AWS

AWS Classroom Training

Course description

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 four-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 level: Advanced
- Duration: 3 days

Activities

This course includes presentations, group exercises, and hands-on labs.

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.

Advanced Developing on AWS

AWS Classroom Training

Prerequisites

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

Advanced Developing on AWS

AWS Classroom Training

Course outline

Day 1

Module 1: The cloud journey

- Common off-cloud architecture
- Introduction to Cloud Air
- Monolithic architecture
- Migration 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: 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

Day 2

Module 5: 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

Advanced Developing on AWS

AWS Classroom Training

Module 6: Polyglot Persistence & Distributed Complexity

- Polyglot persistence
- DynamoDB best practices
- Distributed complexity
- Step functions

Day 3

Module 5: Resilience and Scale

- Decentralized data stores
- Amazon SQS
- Amazon SNS
- Amazon Kinesis Streams
- 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