

**Advanced Developing on AWS**

**Course Number:** AWS-103  
**Duration:** 3 days

**Overview**

This Advanced Developing on Amazon Web Services (AWS) training course teaches attendees real-world scenarios of taking a legacy, on-premises monolithic application and refactoring it into a serverless microservices architecture. Students learn advanced development skills such as architecting for a cloud-native environment, deconstructing on-premises, applying the tenets of the Twelve-Factor Application methodology, and much more.

Accelebrate is an AWS Training Partner (ATP) and this hands-on official AWS Classroom Training course is taught by an accredited Amazon Authorized Instructor (AAI).

**Prerequisites**

All students must 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 course](file:////training/aws-developing) (or equivalent experience), and then a minimum of 6 months of application of those concepts in a real-world environment.

**Materials**

All AWS students will receive comprehensive courseware.

**Software Needed on Each Student PC**

A modern web browser and an Internet connection free of restrictive firewalls, so that the student can connect by SSH or Remote Desktop (RDP) into AWS virtual machines.

**Objectives**

* Analyze a monolithic application architecture to determine logical or programmatic breakpoints 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

**Outline**

* 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
  + Walk through creating base infrastructure with AWS CloudFormation in the
  + AWS console
  + Deploy your monolith application using AWS Elastic Beanstalk
* Gaining Agility
  + DevOps
  + CI/CD
  + Application configuration
  + Secrets management
  + CI/CD Services in AWS
  + Demo AWS Secrets Manager
* Monolith to MicroServices
  + Microservices
  + Serverless
  + A look at Cloud Air
  + Microservices using Lambda and API Gateway
  + SAM
  + Strangling the Monolith
  + Using AWS Lambda to develop microservices
  + Advanced Developing on AWS
  + AWS Classroom Training
* Polyglot Persistence & Distributed Complexity
  + Polyglot persistence
  + DynamoDB best practices
  + Distributed complexity
  + Step functions
* 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
  + Exploring the AWS messaging options
* Security and Observability
  + Serverless Compute with AWS Lambda
  + Authentication with Amazon Cognito
  + Debugging and traceability
  + Developing microservices on AWS
  + Automating deployments with Cloud Formation