

**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