

# Developing on AWS

## AWS Classroom Training

### Course description

In this course, you learn how to use the AWS SDK to develop secure and scalable cloud applications using multiple AWS services such as Amazon DynamoDB, Amazon Simple Storage Service, and AWS Lambda. You explore how to interact with AWS using code and learn about key concepts, best practices, and troubleshooting tips.

- Course level: Intermediate
- Duration: 3 days

### Activities

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

### Course objectives

In this course, you will learn to:

- Set up the AWS SDK and developer credentials for Java, C#/.NET, and Python
- Interact with AWS services and develop solutions by using the AWS SDK
- Use AWS Identity and Access Management (IAM) for service authentication
- Use Amazon Simple Storage Service (Amazon S3) and Amazon DynamoDB as data stores
- Integrate applications and data by using AWS Lambda, Amazon API Gateway, Amazon Simple Queue Service (Amazon SQS), Amazon Simple Notification Service (Amazon SNS), and AWS Step Functions
- Use Amazon Cognito for user authentication
- Use Amazon ElastiCache to improve application scalability
- Leverage the CI/CD pipeline to deploy applications on AWS

### Intended audience

This course is intended for:

- Intermediate software developers

### 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

### Enroll today

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### Course outline

#### Day 1

##### **Module 0: Course Overview**

- Agenda
- Introductions
- Student resources

##### **Module 1: Introduction to AWS**

- Introduction to the AWS Cloud
- Cloud scenarios
- Infrastructure overview
- Introduction to AWS foundation services

##### **Module 2: Introduction to Developing on AWS**

- Getting started with developing on AWS
- Introduction to developer tools
- Introduction to management tools

##### **Module 3: Introduction to AWS Identity and Access Management**

- Shared responsibility model
- Introduction to IAM
- Use authentication and authorization

##### **Module 4: Introduction to the Lab Environment**

- Introduction to the lab environment
- Lab 1: Getting started and working with IAM

##### **Module 5: Developing Storage Solutions with Amazon Simple Storage Service**

- Overview of AWS storage options
- Amazon S3 key concepts
- Best practices
- Troubleshooting
- Scenario: Building a complete application
- Lab 2: Developing storage solutions with Amazon S3

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### Day 2

#### **Module 6: Developing Flexible NoSQL Solutions with Amazon DynamoDB**

- Introduction to AWS database options
- Introduction to Amazon DynamoDB
- Developing with DynamoDB
- Best practices
- Troubleshooting
- Scenario: Building an end-to-end app
- Lab 3: Developing flexible NoSQL solutions with Amazon DynamoDB

#### **Module 7: Developing Event-Driven Solutions with AWS Lambda**

- What is serverless computing?
- Introduction to AWS Lambda
- Key concepts
- How Lambda works
- Use cases
- Best practices
- Scenario: Build an end-to-end app

#### **Module 8: Developing Solutions with Amazon API Gateway**

- Introduction to Amazon API Gateway
- Developing with API Gateway
- Best practices
- Introduction to AWS Serverless Application Model
- Scenario: Building an end-to-end app
- Lab 4: Developing event-driven solutions with AWS Lambda

#### **Module 9: Developing Solutions with AWS Step Functions**

- Understanding the need for Step Functions
- Introduction to AWS Step Functions
- Use cases

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### Day 3

#### **Module 10: Developing Solutions with Amazon Simple Queue Service and Amazon Simple Notification Service**

- Why use a queueing service?
- Developing with Amazon Simple Queue Service
- Developing with Amazon Simple Notification Service
- Developing with Amazon MQ
- Lab 5: Developing messaging solutions with Amazon SQS and Amazon SNS

#### **Module 11: Caching Information with Amazon ElastiCache**

- Caching overview
- Caching with Amazon ElastiCache
- Caching strategies

#### **Module 12: Developing Secure Applications**

- Securing your applications
- Authenticating your applications to AWS
- Authenticating your customers
- Scenario: Building an end-to-end app

#### **Module 13: Deploying Applications**

- Introduction to DevOps
- Introduction to deployment and testing strategies
- Deploying applications with AWS Elastic Beanstalk
- Scenario: Building an end-to-end app
- Lab 6: Building an end-to-end app

#### **Module 14: Course wrap-up**

- Course overview
- AWS training courses
- Certifications
- Course feedback