

Developing on AWS

Course AWS-07

3 Days

Instructor-led, Hands on

Course Information

Developing on AWS course is designed for software developers who want to build scalable and efficient cloud applications using AWS services.

Through hands-on practice, you will learn how to develop, deploy, and manage cloud-based applications using AWS SDKs, the AWS CLI, and integrated development environments (IDEs). This course provides practical experience in configuring AWS Identity and Access Management (IAM), integrating storage solutions, leveraging microservices, deploying serverless applications, and implementing DevOps practices.

At Course Completion

By the end of this course, participants will have the skills to develop end-to-end cloud applications using AWS SDKs, CLI, and IDEs; manage permissions with AWS Identity and Access Management (IAM); perform CRUD operations on Amazon S3 and DynamoDB; implement serverless architectures with AWS Lambda; design microservices; develop APIs with API Gateway; and configure user authentication with.

Prerequisites

Before enrolling in this course, participants should have completed:

- AWS Technical Essentials or possess equivalent foundational knowledge of AWS core services.
- Additionally, a working knowledge of AWS core services is recommended. To ensure success in the course, participants should also have programming experience in at least one of the following languages: Python, .NET, or Java

Course Outline

Module 1: Course Overview

- This introductory module provides an overview of the course structure, logistics, and available student resources. It also covers the course agenda and includes participant introductions to foster engagement.

Module 2: Building a Web Application on AWS

- Explore the architecture of the web application you will build throughout the course. Learn about the AWS services required to develop, store, manage, and host your web application effectively.

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Module 3: Getting Started with Development on AWS

- Learn how to access AWS services programmatically using the AWS SDKs and AWS CLI. This module introduces programmatic patterns that enhance efficiency and explores the benefits of using AWS Cloud9 for cloud-based development.

Module 4: Getting Started with Permissions

- Gain an understanding of AWS Identity and Access Management (IAM), including its key components and how to configure permissions for a development environment. You will test IAM permissions, configure IDEs and SDKs, and interact with AWS services using SDKs and AWS Cloud9.

Module 5: Getting Started with Storage

- Learn the fundamentals of Amazon S3, including storage concepts, security options, and SDK dependencies. This module also covers how to connect to Amazon S3 and work with request and response objects.

Module 6: Processing Your Storage Operations

- Dive deeper into Amazon S3 operations by performing key bucket and object operations. Learn how to handle large and multiple objects, host a static website, and grant temporary access to objects. You'll also practice performing Amazon S3 operations using AWS SDKs.

Module 7: Getting Started with Databases

- This module covers the core concepts of Amazon DynamoDB, including its key components, how to connect to it, and how to construct and read request and response objects. You'll also review common troubleshooting exceptions encountered when working with DynamoDB.

Module 8: Processing Your Database Operations

- Develop programs to interact with DynamoDB using AWS SDKs. Perform CRUD operations on tables, indexes, and data while learning best practices for database interactions. The module also covers caching strategies for DynamoDB to improve performance.

Module 9: Processing Your Application Logic

- Learn how to develop AWS Lambda functions using SDKs, configure triggers and permissions, and deploy, test, and monitor functions for seamless execution within AWS environments.

Module 10: Managing the APIs

- Discover the key components of Amazon API Gateway and how to create API resources that integrate with AWS services. You'll configure request and response calls, test APIs, and deploy application endpoints using API Gateway.

Module 11: Building a Modern Application

- Explore microservices architectures and their advantages over traditional architectures. Learn different approaches to designing microservices applications, breaking down monolithic applications, and orchestrating Lambda functions using AWS Step Functions.

Module 12: Granting Access to Your Application Users

- Analyze the evolution of security protocols and learn how to implement authentication and authorization using Amazon Cognito. This module covers managing user access, securing serverless APIs, and integrating JWT tokens for user authentication.

Module 13: Deploying Your Application

- Understand the risks of traditional software deployment and the principles of DevOps methodology. Learn how to use AWS SAM (Serverless Application Model) for deploying serverless applications, exploring various deployment strategies along the way.

Module 14: Observing Your Application

- Differentiate between monitoring and observability, and explore why observability is essential in modern development. Learn how to use Amazon CloudWatch Application Insights for monitoring and AWS X-Ray for debugging and tracing application performance.

Module 15: Course Wrap-Up

- Conclude the course with a recap of key topics, an overview of AWS training courses and certifications, and an opportunity to provide course feedback.
- This structured learning path ensures that participants gain hands-on experience in developing, securing, deploying, and monitoring cloud-based applications on AWS.