

Developing Serverless Solutions on AWS

Course Duration: 24 Hours

Course Code: AWS-DSA01

1. Course Overview

This course is designed to provide learners with in-depth knowledge and practical skills required to develop, deploy, and manage serverless applications using AWS services. You will explore AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and other key serverless technologies to build scalable, cost-efficient, and secure applications. By the end of this course, you will be capable of designing serverless architectures and implementing production-ready solutions on AWS.

2. What You'll Learn

- Fundamentals of serverless computing and its advantages
- How to develop AWS Lambda functions using different programming languages
- Integration of Lambda with API Gateway, DynamoDB, S3, and other AWS services
- Error handling, monitoring, and debugging serverless applications
- Best practices for security, scalability, and cost optimization in serverless architectures
- Deployment and automation using AWS SAM (Serverless Application Model) and CI/CD pipelines

3. Target Audience

- Software developers looking to build scalable serverless applications
- Cloud architects interested in learning serverless design patterns

- DevOps engineers seeking to implement serverless workflows
- IT professionals aiming to gain practical AWS serverless experience

4. Pre-Requisites

- Basic understanding of cloud computing concepts
- Familiarity with AWS core services (EC2, S3, IAM)
- Programming knowledge in languages such as Python, Node.js, or JavaScript
- Experience with web application development is a plus

5. Course Content

Module 1: Introduction to Serverless Computing

- Overview of serverless architectures
- Benefits and use cases of serverless applications

Module 2: AWS Lambda Fundamentals

- Creating and deploying Lambda functions
- Lambda triggers and event sources
- Function configuration and execution

Module 3: API Gateway Integration

- Designing RESTful APIs using API Gateway
- Connecting API Gateway with Lambda functions
- Request/response transformation and mapping templates

Module 4: Data Storage with DynamoDB and S3

- Using DynamoDB for serverless applications
- Storing and retrieving data from S3

- Integrating Lambda with DynamoDB and S3

Module 5: Security and Monitoring

- IAM roles and policies for Lambda
- Logging and monitoring with CloudWatch
- Error handling and retries

Module 6: Deployment and CI/CD for Serverless Apps

- Introduction to AWS SAM and CloudFormation
- Automating deployments using CI/CD pipelines
- Best practices for versioning and environment management

Module 7: Advanced Serverless Patterns

- Event-driven architectures
- Step Functions for orchestrating serverless workflows
- Optimizing performance and cost in serverless applications