
CTR-707 DevOps in AWS

Overview

Course Duration: 5 Days

About This Course

The DevOps in AWS course provides a deep dive into automating software delivery processes using AWS. It covers CI/CD, infrastructure as code, monitoring, security, and best practices for implementing DevOps on AWS..

Audience Profile

This course is intended for DevOps engineers, system administrators, and developers who want to automate and streamline software delivery and infrastructure management using AWS.

At Course Completion

- Implement CI/CD pipelines using AWS services.
- Automate infrastructure management with AWS CloudFormation and other IaC tools.
- Monitor, log, and secure applications in a DevOps environment on AWS.
- Prepare for the AWS Certified DevOps Engineer – Professional exam.

Course Outline

Module 1: Introduction to DevOps and AWS

- Overview of DevOps Principles and Practices
- The Role of AWS in DevOps
- Key AWS Services for DevOps
- Setting Up the AWS Environment for DevOps
- Introduction to Infrastructure as Code (IaC)

Module 2: Continuous Integration and Continuous Delivery (CI/CD)

- Overview of CI/CD Concepts
- Introduction to AWS Developer Tools: CodeCommit, CodeBuild, CodeDeploy, CodePipeline
- Automating Builds and Tests with AWS CodeBuild
- Deploying Applications with AWS CodeDeploy
- Hands-On Lab: Setting Up a CI/CD Pipeline in AWS

Module 3: Infrastructure as Code (IaC) with AWS

- Introduction to AWS CloudFormation
- Creating and Managing AWS Resources with CloudFormation
- Automating Infrastructure Deployment with AWS CDK (Cloud Development Kit)
- Best Practices for Writing IaC Templates
- Hands-On Lab: Deploying Infrastructure Using AWS CloudFormation

Module 4: Configuration Management and Automation

- Introduction to Configuration Management Tools (Chef, Puppet, Ansible)
- Automating Configuration Management with AWS OpsWorks
- Using AWS Systems Manager for Configuration and Automation
- Patch Management and Inventory with AWS Systems Manager
- Hands-On Lab: Automating Configuration Management with AWS OpsWorks

Module 5: Monitoring and Logging in AWS

- Monitoring AWS Resources with Amazon CloudWatch
- Logging and Tracing Applications with AWS CloudTrail and AWS X-Ray
- Centralized Logging with Amazon Elasticsearch Service and Kibana
- Setting Up Alerts and Notifications
- Hands-On Lab: Implementing Monitoring and Logging for AWS Applications

Module 6: Security and Compliance in DevOps

- Overview of AWS Security Best Practices
- Managing Access and Permissions with AWS IAM
- Implementing Secure CI/CD Pipelines

- Compliance and Auditing with AWS Config and AWS Artifact
- Hands-On Lab: Securing DevOps Workflows in AWS

Module 7: Containerization and Orchestration

- Introduction to Docker and Containerization
- Running Containers on AWS with Amazon ECS and EKS
- Orchestrating Containers with Kubernetes on AWS
- Serverless Containers with AWS Fargate
- Hands-On Lab: Deploying a Containerized Application on AWS

Module 8: DevOps for Serverless Architectures

- Overview of Serverless Computing in AWS
- CI/CD for Serverless Applications with AWS Lambda
- Automating Serverless Deployments with AWS SAM and Serverless Framework
- Monitoring and Scaling Serverless Applications
- Hands-On Lab: Building and Deploying a Serverless Application

Module 9: Advanced DevOps Practices in AWS

- Automating Security and Compliance Checks
- Blue/Green Deployments and Canary Releases
- Auto Scaling and Load Balancing Strategies
- Disaster Recovery and High Availability in DevOps
- Hands-On Lab: Implementing Advanced DevOps Strategies in AWS

Module 10: Real-World DevOps Use Cases and Exam Preparation

- Real-World DevOps Use Cases in AWS
- Case Studies: Successful DevOps Implementations
- Final Project: Designing and Implementing a DevOps Workflow in AWS
- Review of Key Concepts for AWS Certified DevOps Engineer Exam
- Course Summary and Next Steps in AWS DevOps Path

work environment: AWS Management Console, AWS CLI, AWS CodePipeline, AWS CloudFormation, AWS Lambda, Amazon ECS, Amazon EKS

Prerequisites

- Familiarity with DevOps practices and tools.
- Basic knowledge of AWS services and cloud computing concepts.