

KOENIG SOLUTIONS • COURSE OUTLINE

AWS Certified DevOps Engineer – Professional (DevOps Engineering on AWS)

Learn to automate infrastructure, build CI/CD pipelines and secure deployments using AWS DevOps tools and services.

3 Days

24 HOURS

16

MODULES

48

TOPICS

6

HANDS-ON ACTIVITIES

COURSE OVERVIEW

The AWS Certified DevOps Engineer – Professional course is designed for individuals aiming to enhance their skills in DevOps and cloud computing on the AWS platform. This comprehensive course targets system administrators and software developers who want to master the art of using AWS services and tools for automating software development, deployment, and infrastructure management tasks. By engaging in this course, participants will learn to apply the core principles of the DevOps methodology to improve the software development lifecycle, ensuring faster delivery and higher quality. They will gain hands-on experience with AWS CloudFormation, AWS Ropeworks, AWS Code Commit, AWS CodeBuild, AWS Code Pipeline, and AWS Code Star. Learners will also explore various deployment strategies, including blue/green and A/B testing, and understand how to implement configuration management and Automated testing to ensure robust and efficient CI/CD pipelines. The course includes practical exercises that give participants the opportunity to apply what they've learned in real-world scenarios, solidifying their knowledge and preparing them for the challenges of a DevOps engineering role in an AWS environment.

Who Should Attend

The AWS Certified DevOps Engineer – Professional course is designed for IT professionals seeking to leverage DevOps practices on AWS. Target Audience:

System Administrators experienced with AWS

Experienced Software Developers

DevOps Engineers

IT Professionals with knowledge of programming (C#, Java, PHP, Ruby, Python)

Cloud Solutions Architects

Operations Support Staff

Technical Project Managers

Professionals interested in automating AWS infrastructure

Individuals with experience in administering Linux or Windows systems

AWS Cloud Practitioners looking to specialize in DevOps

Quality Assurance Engineers

Security Professionals interested in Descope

Professionals who have completed Systems Operations on AWS or Developing on AWS courses

LEARNING OBJECTIVES

- Explain core DevOps principles and the AWS approach to DevOps
- Apply AWS CloudFormation to automate infrastructure provisioning
- Configure AWS toolkits such as AWS CLI, AWS SAM CLI and AWS CDK
- Build CI/CD pipelines using AWS Code Commit, CodeBuild and Code Pipeline
- Deploy containerized applications with Amazon ECS, ECR and EKS
- Implement serverless workflows using AWS Lambda and Step Functions
- Compare deployment strategies including blue/green and A/B testing
- Assess security, configuration management and observability in pipelines

COURSE SYLLABUS

16 Modules, 48 Topics

DAY 1

00

Course Overview

TOPICS

Course objective · Suggested prerequisites · Course overview breakdown

01

Introduction to DevOps

TOPICS

What is DevOps? · The Amazon journey to DevOps · Foundations for DevOps

02

Infrastructure Automation

TOPICS

- Introduction to Infrastructure Automation
- Diving into the AWS CloudFormation template
- Modifying an AWS CloudFormation template
- **Demonstration:** AWS CloudFormation template structure, parameters, stacks, updates, importing resources, and drift detection

03

Hands-on lab

AWS Toolkits

TOPICS

Configuring the AWS CLI · AWS Software Development Kits (AWS SDKs) · AWS SAM CLI · AWS Cloud Development Kit (AWS CDK) · AWS Cloud9 · **Demonstration:** AWS CLI and AWS CDK

04

Hands-on lab

Continuous Integration and Continuous Delivery (CI/CD) with Development Tools

TOPICS

- CI/CD Pipeline and Dev Tools
- **Demonstration:** CI/CD pipeline displaying some actions from AWS Code Commit, AWS CodeBuild, AWS Code Deploy and AWS Code Pipeline

DAY 2

04

Hands-on lab

Continuous Integration and Continuous Delivery (CI/CD) with Development Tools

TOPICS

AWS Code Pipeline · **Demonstration:** AWS integration with Jenkins

05

Introduction to Microservices

TOPICS

Introduction to Microservices

06

DevOps and Containers

TOPICS

- Deploying applications with Docker
- Amazon Elastic Container Service and AWS Fargate
- Amazon Elastic Container Registry and Amazon Elastic Kubernetes Service
- **Demonstration:** CI/CD pipeline deployment in a containerized application

07

Hands-on lab

DevOps and Serverless Computing

TOPICS

- AWS Lambda and AWS Fargate
- AWS Serverless Application Repository and AWS SAM
- AWS Step Functions
- **Demonstration:** AWS Lambda and characteristics
- **Demonstration:** AWS SAM quick start in AWS Cloud9

08

Deployment Strategies

TOPICS

Continuous Deployment · Deployments with AWS Services

09

Automated Testing

TOPICS

- Introduction to testing
- **Tests:** Unit, integration, fault tolerance, load, and synthetic
- Product and service integrations

10

Security Automation

TOPICS

- Introduction to Descope
- Security of the Pipeline
- Security in the Pipeline
- Threat Detection Tools
- **Demonstration:** AWS Security Hub, Amazon GuardDuty, AWS Config, and Amazon Inspector

11

Configuration Management

Hands-on lab

TOPICS

- Introduction to the configuration management process
- AWS services and tooling for configuration management

12

Observability

Hands-on lab

TOPICS

Introduction to observability · AWS tools to assist with observability

13

Reference Architecture (Optional Module)

TOPICS

Reference architectures

14

Course Summary

TOPICS

Components of DevOps practice · CI/CD pipeline review · AWS Certification

Practise What You Learn

#	MODULE	ACTIVITY
03	AWS Toolkits	Using AWS CloudFormation to provision and manage a basic infrastructure
04	Continuous Integration and Continuous Delivery (CI/CD) with Development Tools	Deploying an application to an EC2 fleet using AWS Code Deploy
04	Continuous Integration and Continuous Delivery (CI/CD) with Development Tools	Automating code deployments using AWS Code Pipeline
07	DevOps and Serverless Computing	Deploying a serverless application using AWS Serverless Application Model (AWS SAM) and a CI/CD Pipeline
11	Configuration Management	Performing blue/green deployments with CI/CD pipelines and Amazon Elastic Container Service (Amazon ECS)
12	Observability	Using AWS DevOps tools for CI/CD pipeline automations

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Hands-on exercises throughout the course
- Delivery by certified instructors and subject matter experts
- Course completion certificate from Koenig

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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