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DevOps Engineering on AWS

Course Benefits & Agenda

Overview

DevOps Engineering on AWS teaches you how to use the combination of tools, practices, and cultural philosophy of DevOps to improve an organization's ability to develop, deliver, and maintain applications and services at high velocity on AWS. This course covers Continuous Integration (CI), Continuous Delivery (CD), microservices, infrastructure as code, monitoring and logging, and communication and collaboration.

Course Benefits

This course teaches you how to:

- List the advantages of small DevOps teams
- List the roles and responsibilities of the members of a typical small DevOps team
- Leverage AWS Cloud9 to write, run and debug your code as well as share your cloud-based IDE with your dev team.
- Build continuous integration/continuous delivery (CI/CD) pipelines including testing and security
- Develop Git branching strategies and integrate with CI/CD pipeline for various environments
- Use AWS CloudFormation to deploy development, test, and production environments for a software development project
- Design and implement an infrastructure on AWS that supports DevOps development projects
- Build a CI/CD pipeline for AWS CloudFormation templates

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- Establish collaboration by bringing together the workflows and responsibilities of development and operations
- Host secure, highly scalable private Git repositories with AWS CodeCommit
- Leverage Amazon Elastic Container Registry (Amazon ECR) to securely store Docker container images and integrate with AWS CodeBuild and Amazon Elastic Container Service (Amazon ECS).
- Automate build, test, and packaging code with AWS CodeBuild
- Integrate security in the CI/CD pipelines tools and services
- Implement common deployment strategies such as “all at once,” “rolling,” and “blue/green”
- Automate software deployments to Amazon Elastic Compute Cloud (Amazon EC2), on-premises computes, AWS ECS (Amazon EC2 /AWS Fargate), and AWS Lambda with AWS CodeDeploy
- Automate your release pipelines (build, test, deploy) with AWS CodePipeline
- Monitor an application and environment using AWS tools and technologies

Agenda

Day 1

Module	Topic
Module 1	Introduction to DevOps
Module 2	Infrastructure Automation
Module 3	AWS Toolsets
Lab 1	Using AWS CloudFormation to provision and manage a basic infrastructure
Module 4	CI/CD with Development Tools
Lab 2	Deploying an application to an EC2 fleet using AWS CodeDeploy

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Agenda

Day 2

Module	Topic
Module 5	CI/CD and Development Tools Continued
Lab 3	Automating code deployments using AWS CodePipeline
Module 6	Introduction to Microservices
Module 7	DevOps and Containers
Module 8	DevOps and Serverless Computing
Lab 4	Deploying a serverless application using AWS Serverless Application Model (AWS SAM) and a CI/CD pipeline
Module 9	Deployment Strategies
Module 10	Automated Testing

Day 3

Module	Topic
Module 11	Security Automation
Module 12	Configuration Management
Lab 5	Performing blue/green deployments with CI/CD pipelines and Amazon Elastic Container Service (Amazon ECS)
Module 13	Observability
Lab 6	Using AWS DevOps tools for CI/CD pipeline automations
Module 14	Reference Architectures (Optional depending on time)