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Course Title

Cloud Infrastructure – Tools & Certification Bootcamp (AWS Developer Certification + Amazon RSO Certificates)

Course ID

CLOUD-ENG-401 (AWS)

Course Level

Intermediate (Certification + Practical Cloud Skills)

Duration

120 Hours (Bootcamp)

Includes instructor-led training, guided labs, hands-on cloud exercises, assignments, quizzes, mock certification exams, AWS practice tasks, and certification preparation.

Delivery Mode

Hybrid / Onsite + Online LMS Support

Course Description

This bootcamp prepares trainees for cloud infrastructure roles by providing hands-on training in AWS cloud services, deployment tools, and cloud security fundamentals. Learners will work with key AWS services including EC2, S3, IAM, RDS, VPC, Lambda, CloudWatch, and CloudFormation. The course also supports AWS Developer Associate certification preparation and Amazon RSO certification learning outcomes.

Course Objectives

By the end of this bootcamp, learners will be able to use AWS core services, configure IAM security, build VPC networking, deploy scalable cloud applications, manage storage and databases, and implement monitoring using CloudWatch. Participants will also gain experience in automation with CloudFormation and serverless development using Lambda. The course includes mock exams and practice labs aligned with AWS certification patterns.

Intended Audience

This course is designed for software engineering students, IT graduates, junior developers, cloud beginners, DevOps learners, and professionals seeking AWS certifications and job-ready cloud skills.

Prerequisites

Basic computer and networking knowledge is required. Familiarity with programming concepts is helpful but not mandatory. Learners should be comfortable using a laptop, internet tools, and basic command-line operations. A laptop with a minimum i5 processor and 8GB RAM (16GB recommended) and stable internet is required.

Tools & Platforms

Learners will work with AWS Management Console, AWS CLI, IAM Identity Center, EC2, S3, RDS, Lambda, CloudWatch, CloudTrail, VPC, CloudFormation, Elastic Beanstalk, CodeCommit, CodeBuild, CodePipeline, and AWS SDK basics. Additional tools include GitHub, VS Code, Postman (optional), Linux terminal, and LMS portal for assignments, resources, quizzes, and recorded sessions.

Course Outline (Modules & Topics)

Module 1: Introduction to Cloud Computing & AWS Overview

Cloud computing fundamentals, IaaS/PaaS/SaaS models, cloud advantages, AWS global infrastructure, regions, availability zones, and AWS shared responsibility model. Lab includes AWS account setup and console exploration.

Module 2: AWS Identity and Access Management

IAM users, groups, roles, policies, MFA setup, permission boundaries, access keys, and best practices for secure access control. Lab includes IAM role creation and secure policy implementation.

Module 3: AWS Compute Services

EC2 instance types, AMIs, key pairs, security groups, elastic IPs, launch templates, and autoscaling concepts. Lab includes launching EC2 instances and hosting a basic web application.

Module 4: AWS Storage Services

S3 buckets, objects, lifecycle policies, versioning, encryption, access policies, static website hosting, and EBS storage fundamentals. Lab includes hosting a static website on S3.

Module 5: AWS Networking Fundamentals

VPC setup, subnets, route tables, internet gateways, NAT gateways, security groups, NACLs, and networking best practices. Lab includes building a basic VPC architecture with public/private subnets.

Module 6: AWS Databases

Relational vs NoSQL databases, RDS setup, database backups, multi-AZ, read replicas, and DynamoDB fundamentals. Lab includes creating an RDS database and connecting with an application.

Module 7: Serverless Computing with AWS Lambda

Lambda concepts, triggers, execution roles, API Gateway integration, event-driven architecture, and serverless use cases. Lab includes creating a Lambda function for API-based operations.

Module 8: AWS Application Integration & Messaging

Overview of SQS, SNS, Event Bridge basics, and integration patterns for scalable applications. Lab includes creating message queues and event-driven workflows.

Module 9: Monitoring and Logging

CloudWatch metrics, alarms, logs, dashboards, and CloudTrail auditing. Best practices for monitoring infrastructure health and security tracking. Lab includes setting up alarms and log monitoring.

Module 10: Infrastructure as Code

Introduction to IaC, CloudFormation templates, stacks, parameters, outputs, and automated deployment. Lab includes deploying cloud infrastructure using CloudFormation.

Module 11: Deployment and DevOps Tools

Elastic Beanstalk deployment workflow, environment management, deployment strategies, and introduction to AWS CI/CD tools such as Code Commit, Code Build, and CodePipeline. Lab includes deploying a sample application with managed services.

Module 12: AWS Security Best Practices

Security fundamentals including encryption, KMS overview, secure storage policies, least privilege access, security monitoring, and compliance concepts. Lab includes applying security policies and encryption settings.

Module 13: Cost Management and Optimization

AWS pricing models, billing dashboard, cost explorer, budgets, reserved instances, and cost optimization strategies. Lab includes setting up budget alerts and cost tracking.

Module 14: High Availability and Scalability Concepts

Load balancing overview, scaling strategies, multi-region planning, disaster recovery concepts, backup strategies, and cloud architecture best practices. Lab includes deploying a scalable architecture sample.

Module 15: AWS Developer Associate Certification Preparation

Exam domains overview, real exam patterns, AWS developer services review, practice question-solving, scenario-based architecture questions, and certification-focused revision sessions.

Module 16: Amazon RSO Certification Preparation

Amazon RSO-aligned learning modules covering AWS operational readiness, infrastructure monitoring, cloud security compliance, operational best practices, incident handling basics, and AWS service support procedures.

Module 17: Hands-on Project

Learners will complete a real-world cloud project such as deploying a web application with EC2, S3, and RDS, including IAM roles, VPC networking, monitoring setup, and production-ready deployment structure. Project must include documentation and architecture diagram.

Module 18: Mock Exams, Interview Preparation & Final Assessment

Includes mock certification exam sessions, final evaluation test, AWS scenario-based interview questions, troubleshooting practice, and project presentation. Learners will also prepare LinkedIn-ready certification roadmap and portfolio documentation.

Assessment & Certification Readiness

Assessment will be based on quizzes, lab completion, assignments, cloud practice tasks, and final project evaluation. Mock exams will be conducted to ensure learners are prepared for AWS Developer Associate certification and Amazon RSO certification requirements.