

# Cloud Operation on AWS

Duration	Delivery Method	Level
3 days	Online / Instructor Led	Advanced

This course is designed to teach those in a systems administrator or Development Operations (DevOps) role how to create automatable and repeatable deployments of networks and systems on the AWS platform. The course covers the specific AWS features and tools related to configuration and deployment, in addition to best practices for configuring and deploying systems

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## Course Objectives

- Recognise the AWS services that support the different phases of Operational Excellence, a Well-Architected Framework pillar.
- Manage access to AWS resources using AWS Accounts and Organisations and AWS Identity and Access Management (IAM).
- Maintain an inventory of in-use AWS resources using AWS services such as AWS Systems Manager, AWS CloudTrail, and AWS Config.
- Develop a resource deployment strategy utilising metadata tags, Amazon Machine Images, and Control tower to deploy and maintain an AWS cloud environment.
- Automate resource deployment using AWS services such as AWS CloudFormation and AWS Service Catalog.
- Use AWS services to manage AWS resources through SysOps lifecycle processes such as deployments and patches.
- Configure a highly available cloud environment that leverages AWS services such as Amazon Route 53 and Elastic Load Balancing to route traffic for optimal latency and performance.
- Configure AWS Auto Scaling and Amazon Elastic Compute Cloud auto scaling to scale your cloud environment based on demand.
- Use Amazon CloudWatch and associated features such as alarms, dashboards, and widgets to monitor your cloud environment.
- Manage permissions and track activity in your cloud environment using AWS services such as AWS CloudTrail and AWS Config.
- Deploy your resources to an Amazon Virtual Private Cloud (Amazon VPC), establish necessary connectivity to your Amazon VPC, and protect your resources from disruptions of service.
- State the purpose, benefits, and appropriate use cases for mountable storage in your AWS cloud environment.
- Explain the operational characteristics of object storage in the AWS cloud, including Amazon

- Simple Storage Service (Amazon S3) and Amazon S3 Glacier.
- Build a comprehensive costing model to help gather, optimize, and predict your cloud costs using services such as AWS Cost Explorer and the AWS Cost & Usage Report.

### Pre-requisites

- Successfully completed the AWS Technical Essentials course
- Background in either software development or systems administration
- Proficiency in maintaining operating systems at the command line, such as shell scripting in Linux environments or cmd/PowerShell in Windows
- Basic knowledge of networking protocols (TCP/IP, HTTP)

### Course Content

#### Module 1: Introduction to Cloud Operation on AWS

- What is Cloud Operations
- AWS Well-Architected Framework
- AWS Well-Architected Too

#### Module 2: Access Management

- AWS Identity and Access Management (IAM)
- Resources, accounts, and AWS Organisation

#### Module 3: System Discovery

- Methods to interact with AWS services
- Tools for automating resource discovery
- Inventory with AWS Systems Manager and AWS Config
- Hands-On Lab: Auditing AWS Resources with AWS Systems Manager and AWS Config

#### Module 4: Deploy and update Resources

- Cloud Operations in deployments
- Tagging strategies
- Deployment using Amazon Machine Images (AMIs)
- Deployment using AWS Control Tower

#### Module 5: Automate resource deployment

- Deployment using AWS CloudFormation
- Deployment using AWS Service Catalog
- Hands-On Lab: Infrastructure as Code

#### Module 6: Manage resources

- AWS Systems Manager
- Hands-On Lab: Operations as Code

### **Module 7: Configure highly available systems.**

- Distributing traffic with Elastic Load Balancing
- Amazon Route 53

### **Module 8: Automate scaling.**

- Scaling with AWS Auto Scaling
- Scaling with Spot Instances
- Managing licenses with AWS License Manager

### **Module 9: Monitor and maintain system health cloud operations on AWS**

- Monitoring and maintaining healthy workloads
- Monitoring AWS infrastructure
- Monitoring applications
- Hands-On Lab: Monitor Applications and Infrastructure

### **Module 10: Data security and system auditing**

- Maintaining a strong identity and access foundation
- Implementing detection mechanisms  
Automating incident remediation