Systems Operations on AWS

Duration: 3 Days; Instructor-led

WHAT YOU WILL LEARN

System Operations on AWS is designed to teach those in a Systems Administrator or Developer 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, as well as common techniques used throughout the industry for configuring and deploying systems.

PREREQUISITES

We recommend that attendees of this course have the following prerequisites:

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

METHODOLOGY

This course will be delivered through a mix of:

- Instructor-Led Training (ILT)
- Hands-on Labs

AUDIENCE

This programme is intended

- System Administrators
- Software Developers, especially those in a Developer Operations (DevOps) role

OBJECTIVES

This course teaches you how to:

- Use standard AWS infrastructure features such as Amazon Virtual Private Cloud (VPC), Amazon Elastic Compute Cloud (EC2), Elastic Load Balancing, and Auto Scaling from the command line
- Use AWS CloudFormation and other automation technologies to produce stacks of AWS resources that can be deployed in an automated, repeatable fashion
- Build functioning virtual private networks with Amazon VPC from the ground up using the AWS Management Console
- Deploy Amazon EC2 instances using command line calls and troubleshoot the most common problems with instances
- Monitor the health of Amazon EC2 instances and other AWS services
- Manage user identity, AWS permissions, and security in the cloud
- Manage resource consumption in an AWS account using tools such as Amazon CloudWatch, tagging, and Trusted Advisor
- Select and implement the best strategy for creating reusable Amazon EC2 instances
- Configure a set of Amazon EC2 instances that launch behind a load balancer, with the system scaling up and down in response to demand
- Edit and troubleshoot a basic AWS CloudFormation stack definition

COURSE CONTENTS

Module 1 – Introduction to Systems Operations on AWS

- System Operations
- Deploying Systems
- Monitoring Systems
- Fortifying Systems
- Securing Systems
- AWS Certified SysOps Administrator – Associate

Module 2 - Working with AWS Cloud Services

- Introduction to AWS Cloud Services
- Systems Operations Using the AWS Toolset
- AWS Software Development Kits
- AWS Internet of Things (IoT) an Mobile Software Development Kits (SDKs)

Module 3 – Security and AWS Identity and Access Management (IAM)

- Security on AWS
- Shared Responsibility Model
- AWS Security Responsibilities
- Customer Security Responsibilities
- AWS Global Infrastructure Security
- Physical and Environmental Security
- Business Continuity Management
- Network Security
- Network Monitoring and Protection
- AWS Compliance Program
- Securing your AWS Account with AWS Identity and Access Management (IAM)
- Securing your AWS Cloud Services
- Monitoring to Enhance Security
- AWS CloudTrail
- Amazon Virtual Private Cloud (Amazon VPC) Flow Logs
- Amazon CloudWatch
- AWS Config
- Amazon Inspector
- AWS Certificate Manager
- AWS Web Application Firewall (AWS WAF)
- AWS Trusted Advisor
- AWS Cloud Service-Specific Security
- Computer Services
- Networking
- Storage
- AWS Storage Gateway Security
- Database
- Application Services
- Analytics Services
- Deployment and Management Services
- Mobile Services
- Applications

Module 4 - Compute

- Introduction to AWS Compute Services
- Amazon Elastic Compute Cloud (Amazon EC2)
- Amazon EC2 Container Service (Amazon EC2)
- AWS Elastic Beanstalk
- AWS Lambda
- Amazon Lightsail
- AWS Batch

Module 5 – Networking

- Introduction to Networking on AWS
- Amazon Virtual Private Cloud (Amazon (VPC)
- AWS Direct Connect
- Load Balancing
- Virtual Private Network (VPN)
- Amazon Route 53
- Amazon CloudFront

Module 6 - Storage Systems

- Understanding different storage options
- Block Storage on AWS
- Object Storage on AWS
- Systems Operator Scenario: The Newspaper
- Additional Storage Solutions

Module 7: Databases

- Introduction to AWS Databases
- Monitoring Amazon RDS
- Non-Relational Databases
- Amazon DynamoDB
- Amazon Redshift
- Databases
- Monitoring Clusters
- Amazon ElastiCache

Module 8 – Application Deployment and Management

- Introduction to Application Deployment and Management
- Deployment Strategies
- Provisioning Infrastructure
- Deploying Applications
- Configuration Management
- Scalability Capabilities
- Monitoring Resources
- Continuous Deployment
- Deployment Services

Module 9 – Monitoring and Metrics

- Introduction to Monitoring and Metrics
- An Overview of Monitoring
- Amazon CloudWatch
- Amazon CloudWatch Events
- Amazon CloudWatch Logs

- Monitoring AWS Chares
- AWS CloudTrail
- AWS Config

Module 10 – High Availability

- Introduction to High Availability
- Amazon Simple Queue Service
- Amazon Simple Notification Service
- Highly Available Architectures
- Multi-Region High Availability
- Highly Available Connectivity Options
- Disaster Recovery