Architecting on AWS

Length: 3 days
Format: Live Remote
Time: Day

About This Course

Architecting on AWS is for solutions architects, solution-design engineers, and developers seeking an understanding of AWS architecting. In this course, you will learn to identify services and features to build resilient, secure and highly available IT solutions on the AWS Cloud.

This class emphasizes on best practices using the AWS Well-Architected Framework, and guide you through the process of designing optimal IT solutions, based on real-life scenarios. The modules focus on account security, networking, compute, storage, databases, monitoring, automation, containers, serverless architecture, edge services, and backup and recovery. At the end of the course, you will practice building a solution and apply what you have learn.

Required Exams

Audience Profile

This course is intended for solutions architects, solution-design engineers, and developers seeking an understanding of AWS architecting.

Course Objectives

* Identify AWS architecting basic practices.
* Explore using the AWS management tools: The AWS Console, Command Line Interface (CLI), and CloudFormation in a lab environment.
* Examine the enforcement of accounts security using policies.
* Identify the elements that build an elastic, secure, virtual network that includes private and public subnets.
* Practice building an AWS core networking infrastructure.
* Determine strategies for a layered security approach to Virtual Private Cloud (VPC) subnets.
* Identify strategies to select the appropriate compute resources based on business use-cases.
* Practice building a VPC and adding an Elastic Cloud Compute (EC2) instance in a lab environment.
* Practice installing an Amazon Relational Database Service (RDS) instance and an Application Load Balancer (ALB) in the VPC you created.
* Compare and contrast AWS storage products and services, based on business scenarios.

* Compare and contrast the different types of AWS database services based on business needs.
* Practice building a highly available, auto-scaling database layer in a lab.
* Explore the business value of AWS monitoring solutions.
* Identify and discuss AWS automation tools that will help you build, maintain and evolve your infrastructure.
* Discuss network peering, VPC endpoints, gateway and routing solutions based on use-cases.
* Discuss hybrid networking configurations to extend and secure your infrastructure.
* Discuss the benefits of microservices as an effective decoupling strategy to power highly available applications at scale.
* Explore AWS container services for the rapid implementation of an infrastructure-agnostic, portable application environment.
* Identify the business and security benefits of AWS serverless services based on business examples.
* Practice building a serverless infrastructure in a lab environment.
* Discuss the ways in which AWS edge services address latency and security.
* Practice building a CloudFront deployment with an S3 backend in a lab environment.
* Explore AWS backup, recovery solutions, and best practices to ensure resiliency and business continuity.
* Build a highly available and secure cloud architecture based on a business problem, in a project-based facilitator-guided lab.

Outline

Day 1Module 0: Introductions & Course Map review * Welcome and course outcomes

Module 1: Architecting Fundamentals Review * AWS Services and Infrastructure
* Infrastructure Models
* AWS API Tools
* Securing your infrastructure
* The Well-Architected Framework

Module 2: Account Security * Security Principals
* Identity and Resource-Based Policies
* Account Federation
* Introduction to Managing Multiple Accounts

Module 3: Networking, Part 1 * IP Addressing
* Amazon Virtual Private Cloud (VPC), Patterns and Quotas
* Routing
* Internet Access
* Network Access Control Lists (NACLs)
* Security Groups

Module 4: Compute * Amazon Elastic Cloud Compute (EC2)
* EC2 Instances and Instance Selection
* High Performance Computing on AWS
* Lambda and EC2, When to Use Which
* Hands-On Lab: Build Your Amazon VPC Infrastructure

Day 2Module 5: Storage * Shared File Systems
* Shared EBS Volumes
* Amazon S3, Security, Versioning and Storage Classes
* Data Migration Tools

Module 6: Database Services * AWS Database Solutions
* Amazon Relational Database Services (RDS)
* DynamoDB, Features and Use Cases
* Redshift, Features, Use Cases and Comparison with RDS
* Scaling
* Caching and Migrating Data
* Hands-on Lab: Create a Database Layer in Your Amazon VPC Infrastructure

Module 7: Monitoring and Scaling * Monitoring: CloudWatch, CloudTrail, and VPC Flow Logs
* Invoking Events
* Elastic Load Balancing
* Auto Scaling Options and Monitoring Cost
* Hands-on Lab: Configure High Availability in Your Amazon VPC

Module 8: Automation * CloudFormation
* AWS Systems Manager

Module 9: Containers * Microservices
* Monitoring Microservices with X-Ray
* Containers

Day 3Module 10: Networking Part 2 * VPC Peering & Endpoints
* Transit Gateway
* Hybrid Networking
* Route 53

Module 11: Serverless Architecture * Amazon API Gateway
* Amazon SQS, Amazon SNS
* Amazon Kinesis Data Streams & Kinesis Firehose
* Step Functions
* Compare Amazon SQS to Amazon MQ

* Hands-on Lab: Build a Serverless Architecture

Module 12: Edge Services * Amazon CloudFront
* AWS Web Application Firewall (WAF), DDoS and Firewall Manager
* Compare AWS Global Accelerator and Amazon CloudFront
* AWS Outposts
* Hands-On Lab: Configure an Amazon CloudFront Distribution with an Amazon S3 Origin

Module 13: Backup and Recovery * Planning for Disaster Recovery
* AWS Backup
* Recovery Strategies