

**Advanced Architecting on AWS**

**Course Length:** 3 Days

**Course Description:**

In this course, each module presents a scenario with an architectural challenge for you to solve. You will examine available AWS services and features as solutions to the problem. You will participate in problem-based discussions and learn about the AWS services that you could apply to meet the challenges. Over 3 days, the course goes beyond the basics of a cloud infrastructure and covers topics to meet a variety of needs for AWS customers. Course modules focus on managing multiple AWS accounts; hybrid connectivity and devices; networking, with a focus on AWS Transit Gateway connectivity; container services; automation tools for continuous integration/continuous delivery (CI/CD); security and distributed denial of service (DDoS) protection; data lakes and data stores; edge services; migration options; and managing costs. The course concludes by presenting you with scenarios and challenging you to identify the best solutions.

**Course Objectives:**

* Review the AWS Well-Architected Framework to ensure understanding of best cloud design practices by responding to poll questions while following a graphic presentation
* Demonstrate the ability to secure Amazon Simple Storage Service (Amazon S3) virtual private cloud (VPC) endpoint connections in a lab environment
* Identify how to implement centralized permissions management and reduce risk using AWS Organizations organizational units (OUs) and service control policies (SCPs) with AWS Single Sign-On
* Compare the permissions management capabilities of OUs, SCPs, and AWS SSO with and without AWS Control Tower to determine best practices based on use cases
* Discuss AWS hybrid network designs to address traffic increases and streamline remote work while ensuring FIPS 140-2 Level 2, or Level 3 security compliance
* Explore the solutions and products available to design a hybrid infrastructure, including access to 5G networks, to optimize service and reduce latency while maintaining high security for critical on-premises applications
* Explore ways to simplify the connection configurations between applications and high-performance workloads across global networks
* Demonstrate the ability to configure a transit gateway in a lab environment
* Identify and discuss container solutions and define container management options
* Build and test a container in a lab environment
* Examine how the AWS developer tools optimize the CI/CD pipeline with updates based on near-real-time data
* Identify the anomaly detection and protection services that AWS offers to defend against DDoS attacks
* Identify ways to secure data in transit, at rest, and in use with AWS Key Management Service (AWS KMS) and AWS Secrets Manager
* Determine the best data management solution based on frequency of access, and data query and analysis needs
* Set up a data lake and examine the advantages of this type of storage configuration to crawl and query data in a lab environment
* Identify solutions to optimize edge services to eliminate latency, reduce inefficiencies, and mitigate risks
* Identify the components used to automate the scaling of global applications using geolocation and traffic control
* Deploy and activate an AWS Storage Gateway file gateway and AWS DataSync in a lab environment
* Review AWS cost management tools to optimize costs while ensuring speed and performance
* Review migration tools, services, and processes that AWS provides to implement effective cloud operation models based on use cases and business needs
* Provide evidence of your ability to apply the technical knowledge and experience gained in the course to improve business practices by completing a Capstone Project

**This course is intended for:**

* Cloud architects
* Solutions architects
* Anyone who designs solutions for cloud infrastructures

**Prerequisites:**

* Knowledge and experience with core AWS services from the Compute, Storage, Networking, and AWS Identity and Access Management (IAM) categories
* Attended the Architecting on AWS classroom training.
* Have at least 1 year of experience operating AWS workloads

**Course Outline:**

* Module 1: Reviewing Architecting Concepts
* Module 2: Single to Multiple Accounts
* Module 3: Hybrid Connectivity
* Module 4: Specialized Infrastructure
* Module 5: Connecting Networks
* Module 6: Containers
* Module 7: Continuous Integration/Continuous Delivery (CI/CD)
* Module 8: High Availability and DDoS Protection
* Module 9: Securing Data
* Module 10: Large-Scale Data Stores
* Module 11: Large-Scale Applications
* Module 12: Optimizing Cost
* Module 13: Migrating Workloads
* Module 14: Capstone Project