



Advanced Architecting on AWS

Course ID #: 7000-734-ZZ-Z

Hours: 21

Course Content

Course Description:

In this course, you will examine available AWS services and features as solutions to the problem. You will gain insights by participating in problem-based discussions and learning 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:

In this course, you will:

- 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 SignOn
- 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 onpremises applications
- Explore ways to simplify the connection configurations between applications and highperformance 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
- And so much more!



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Prerequisites:

Architecting on AWS (recommended)

Target Audience:

This course is intended for cloud architects, solutions architects, and anyone who designs solutions for cloud infrastructures.

Topics:

Lesson 1: Reviewing Architecting Concepts

- Group Exercise: Review Architecting on AWS core best practices

Lab: Securing Amazon S3 VPC Endpoint Communications

Lesson 2: Single to Multiple Accounts

- AWS Organizations for multi-account access and permissions
- AWS SSO to simplify access and authentication across AWS accounts and third-party services
- AWS Control Tower
- Permissions, access, and authentication

Lesson 3: Hybrid Connectivity

- AWS Client VPN authentication and control
- AWS Site-to-Site VPN
- AWS Direct Connect for hybrid public and private connections
- Increasing bandwidth and reducing cost
- Basic, high, and maximum resiliency
- Amazon Route 53 Resolver DNS resolution

Lesson 4: Specialized Infrastructure

- AWS Storage Gateway solutions
- On-demand VMware Cloud on AWS
- Extending cloud infrastructure services with AWS Outposts
- AWS Local Zones for latency-sensitive workloads
- Your 5G network with and without AWS Wavelength

Lesson 5: Connecting Networks

- Simplifying private subnet connections
- VPC isolation with a shared services VPC
- Transit Gateway Network Manager and VPC Reachability Analyzer
- AWS Resource Access Manager
- AWS PrivateLink and endpoint services

Lab: Configuring Transit Gateways

Lesson 6: Containers

- Container solutions compared to virtual machines
- Docker benefits, components, solutions architecture, and versioning
- Container hosting on AWS to reduce cost
- Managed container services: Amazon Elastic Container Service (Amazon ECS) and Amazon Elastic Kubernetes Service (Amazon EKS)
- AWS Fargate

Lab: Deploying an Application with Amazon EKS on Fargate



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Lesson 7: Continuous Integration/Continuous Delivery (CI/CD)

- CI/CD solutions and impact
- CI/CD automation with AWS CodePipeline
- Deployment models
- AWS CloudFormation StackSets to improve deployment management

Lesson 8: High Availability and DDoS Protection

- Common DDoS attacks layers
- AWS WAF
- AWS WAF web access control lists (ACLs), real-time metrics, logs, and security automation
- AWS Shield Advanced services and AWS DDoS Response Team (DRT) services
- AWS Network Firewall and AWS Firewall Manager to protect accounts at scale

Lesson 9: Securing Data

- What cryptography is, why you would use it, and how to use it
- AWS KMS
- AWS CloudHSM architecture
- FIPS 140-2 Level 2 and Level 3 encryption
- Secrets Manager

Lesson 10: Large Scale Data Stores

- Amazon S3 data storage management including storage class, inventory, metrics, and policies
- Data lake vs. data warehouse: Differences, benefits, and examples
- AWS Lake Formation solutions, security, and control

Lab: Setting Up a Data Lake with Lake Formation

Lesson 11: Large-Scale Applications

- What edge services are and why you would use them
- ☺ Improve performance and mitigate risk with Amazon CloudFront
- Lambda@Edge
- AWS Global Accelerator: IP addresses, intelligent traffic distribution, and health checks

Lab: Migrating an On-Premises NFS Share Using AWS DataSync and Storage Gateway

Lesson 12: Optimizing Cost

- On-premises and cloud acquisition/deprecation cycles
- Cloud cost management tools including reporting, control, and tagging
- Examples and analysis of the five pillars of cost optimization

Lesson 13: Migrating Workloads

- Business drivers and the process for migration
- Successful customer practices
- The 7 Rs to migrate and modernize
- Migration tools and services from AWS
- Migrating databases and large data stores
- AWS Schema Conversion Tool (AWS SCT)

Lesson 14: Capstone Project

- Use the Online Course Supplement (OCS) to review use cases, investigate data, and answer architecting design questions about Transit Gateway, hybrid connectivity, migration, and cost optimization

Register for this class by visiting us at:

www.tcworkshop.com or calling us at 800-639-3535