

Syllabus

Course Introduction

Getting Started

- Course Introduction
- About the Training Architect
- About the Exam
- What is a Solutions Architect?
- Introduction to the Well Architected Framework
- Course Features and Tools
- AWS Free Tier: Usage Tracking and Billing Widget

AWS Structure and Organization

AWS Account and Physical Organization

- Exploring the AWS Account and Services Layer
- Exploring the AWS Physical and Networking Layer
- Essential CSA Terminology
- Shared Security Responsibility Model and Attributes

Access Management

Interacting with AWS

- Console Tour and Navigation: Settings and Account Management

IAM (Identity and Access Management)

- IAM Essentials
- IAM Policies
- IAM Users
- IAM Groups
- IAM Roles
- IAM API Keys
- Identity Federation
- AWS Organizations

Learning Activity: Introduction to AWS Identity and Access Management (IAM)

QUIZ: AWS IAM Fundamentals for the Solutions Architect

Server-Based Compute Services

EC2 (Elastic Compute Cloud)

- EC2 Essentials
- EC2 AMIs and Virtualization
- EC2 Instance Types
- Instance Details and Bootstrapping
- EC2 Storage Options
- Security Groups and Key Pairs
- EBS Snapshots
- EC2 Placement Groups
- EC2 Purchasing Options

Learning Activity: Provisioning a Linux EC2 Instance in AWS

Learning Activity: Create a Custom AMI in AWS

Elastic File System (EFS)

- EFS Essentials

EC2 Quiz

QUIZ: AWS EC2 Fundamentals for the Solutions Architect

Virtual Private Cloud (VPC)

Introduction to AWS VPC Networking

- VPC Essentials
- VPC Network Routing Basics
- VPC Security Basics

Learning Activity: Building an AWS VPC from Scratch

QUIZ: AWS VPC Fundamentals for the Solutions Architect

High Availability

Highly Available and Fault Tolerant VPC Networking

- Elastic Load Balancing
- Serving Traffic To and From Private Subnets
- VPC Endpoints
- Autoscaling
- Making your Applications Stateless
- High Availability versus Fault Tolerance

Learning Activity: Create an Auto Scaling Group and Application Load Balancer in AWS

Learning Activity: Creating a Secure Web Application from Scratch with a Bastion Host, NAT Gateway and Application Load Balancer in AWS

QUIZ: High Availability on AWS for the Solutions Architect

DNS, CDN, and Failover Networking

- Route 53 Essentials
- Route 53 DNS Failover
- CloudFront

Learning Activity: Managing DNS Records with AWS Route 53

Learning Activity: Configuring an AWS CloudFront Distribution

QUIZ: AWS Route 53 and CloudFront Concepts for the Solutions Architect

Database Services

Database Concepts

- Database Terminology

RDS (Relational Database Service)

- RDS Essentials

Learning Activity: Creating and Configuring Secure AWS RDS Instances with Read Replicas and Backup Solutions

DynamoDB

- DynamoDB Essentials

Neptune

- Neptune Essentials

ElastiCache

- ElastiCache Essentials

Redshift

- Redshift Essentials

Databases Quiz

QUIZ: Databases on AWS for the Solutions Architect

Storage Services

S3 (Simple Storage Service)

- S3 Essentials
- S3 Components
- S3 Features
- Website Hosting with S3
- Glacier
- Transferring Data into S3

Learning Activity: Configuring Amazon S3 Buckets to host a Static Website with a Custom Domain

Learning Activity: Configuring AWS Backup and Archiving Solutions in S3 with Lifecycle Policies and Versioning

QUIZ: Amazon Storage Service Concepts for the Solutions Architect

Hybrid Environments

Hybrid Environments & VPC Peering

- Virtual Private Network (VPN)
- AWS Direct Connect
- VPC Peering

Learning Activity: Implementing VPC Peering on AWS

QUIZ: AWS Hybrid Environments for the Solutions Architect

Application and Messaging Services

SNS (Simple Notification Service)

- SNS Essentials

Learning Activity: Configuring SNS Push Notifications on S3 Bucket Events inside of the AWS Console

SQS (Simple Queue Service)

- SQS Essentials

Amazon MQ

- Amazon MQ Essentials

SWF (Simple Work Flow)

- SWF Essential

API Gateway

- API Gateway Essentials

Application Services Quiz

QUIZ: AWS Application Services for the Solutions Architect

Serverless Architectures

Service Oriented Architectures

- Introduction to Service Oriented and Serverless Architectures

Lambda

- Lambda Essentials

Learning Activity: Creating a Serverless Text Message Reminder Service in AWS using Lambda

QUIZ: Serverless Architectures on AWS for the Solutions Architect

Monitoring

CloudWatch & CloudTrail

- CloudWatch Essentials
- CloudTrail Essentials

Learning Activity: AWS Access Control Alerts with CloudWatch and CloudTrail

Network Flow Logs

- VPC Flow Logs and Access Logs

Monitoring Quiz

QUIZ: Monitoring on AWS for the Solutions Architect

Deployment Services

CloudFormation

- CloudFormation Essentials

Learning Activity: Deploying a Scalable Serverless API with AWS CloudFormation

Container Services

- Elastic Container Service (ECS) Essentials

Elastic Beanstalk

- Elastic Beanstalk Essentials

Learning Activity: Deploying a Simple Flask Application in the AWS Console with Elastic Beanstalk

Analytics

Kinesis

- Kinesis Essentials

Elastic MapReduce

- EMR Essentials

AWS Well Architected Framework

Operational Excellence Pillar

- Best Practices and Key Services for Operational Excellence

Reliability Pillar

- Design Principles and Key Services for Reliability
- Encryption Key Management on AWS
- Disaster Recovery Design Patterns

Learning Activity: Route 53 DNS Failover of Website from EC2 Instance to Static Website Hosted on S3

Security Pillar

- Design Principles and Key Services for Security

Performance Efficiency Pillar

- Design Principles and Key Services for Performance Efficiency

Cost Optimization Pillar

- Design Principles and Best Practices for Cost Optimization

Conclusion

Final Steps

- How to Prepare for the Exam

Practice Exam:

- AWS Certified Solutions Architect - Associate