AWS Certification Training - Solutions Architect

About Course

Sunshine Learning & Technologies, AWS Certification Training - Solutions Architect Training is molded by top industry experts to meet the industry benchmarks which gives you a strong foundation to appear for the AWS Certified Solutions Architect - Associate exam SAA-C03 exam. You will be able to effectively architect and deploy secure and robust applications using AWS. This AWS training course will help you identify the appropriate AWS service based on databases, network, storage, cost optimization, compute, and security requirements.

AWS Course Curriculum

Introduction to AWS

Topics:

- Classic Data Center
- Virtualization
- Cloud and Cloud Computing
- Cloud Computing Service Models
- Cloud Computing Deployment Models
- Service Comparison: AWS, Azure, and GCP
- Amazon Web Services (AWS) and its Benefits
- AWS Global Infrastructure
- AWS Regions and Replication of data between the Regions
- Availability Zones and High Availability
- PoP Locations
- Signup an AWS Free Tier Account
- Different Amazon Web Services
- Ways to access AWS: CLI, Console, and SDKs
- Explore Management Console and Configure AWS CLI
- AWS CloudShell

Hands-On:

- Signup an AWS Free Tier Account

- Explore Management Console and AWS CLI

Skills You Will Learn:

- Cloud Computing
- AWS Global Infrastructure
- Ways to access AWS
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Identity and Access Management in AWS

Topics:

- Threats to AWS Security
- AWS Shared Responsibility Model
- AWS Security Solutions
- Identity and Access Management (IAM)
- Managing Users with IAM
- Managing Permissions with Groups
- IAM Policy and its Elements
- IAM Roles
- Password Policy
- MFA
- Best Practices for IAM
- AWS Certificate Manager
- Accessing Billing and Alerts

Hands-On:

- Creating New Users on AWS Console
- Create Role for an Application
- Creating Policies for New User
- Creating an user group for a collection of IAM users
- Login to AWS Console via MFA
- AWS Artifact
- Skills You Will Learn:
- Secure Control Access to resources.
- Addition of extra security using MFA
- IAM Best practices

Amazon EC2

Topics:

- Compute Virtualization
- Amazon Elastic Compute Cloud (EC2) and Its Benefits
- Amazon Machine Image (AMI)
- Security Groups in AWS
- Authentication through Key-pair
- Hardware Tenancy – Shared vs. Dedicated
- Networking Layer in EC2: VPC
- Elastic Network Interface (ENI) and Its Attributes
- Public IP vs. Elastic IP
- instance Store
- Elastic Block Store (EBS), Its Features and Volume Types
- Solid State Drive: General Purpose SSD and Provisioned IOPS
- Hard Disk Drive: Throughput Optimized HDD and Cold HDD
- Snapshots
- Elastic File System (EFS) and Its Features
- Windows File Server
- Amazon FSx for Windows File Server
- Use case of Amazon FSx for Windows File Server
- Amazon FSx for Lustre

Hands-On:

- Creating an EC2 instance
- Creating a Custom AMI
- Host Your Website Inside EC2 instance
- Create an Elastic IP
- Attaching an EBS Volume Externally
- Creating a Snapshot
- Attaching an EFS Volume
- Skills You Will Learn:
- Scalable Computing Capacity
- Storing data in block-level storage
- File storage on Windows Serve

AWS Storage Options

Topics:

- Traditional Storage
- Need to Move to Cloud Storage
- Traditional vs. Cloud Storage Cost
- Cloud Storage
- Different Storage Options Available on AWS
- Simple Storage Service (S3) and Its Components
- Working of S3

- Bucket Policy
- Access Control List(ACL)
- Versioning
- S3 Replicate
- Cross-Region Replication (CRR) and Its Use Case
- Amazon S3 Transfer Acceleration
- Choice of Storage Classes on S3
- Lifecycle Policy of S3 Bucket
- AWS Backup
- CDN: CloudFront
- Storage Gateway

Hands-On:

- Hosting a Static Website on Amazon S3
- Versioning in AWS S3
- Replicating Data Across Regions
- S3 Transfer Acceleration
- Transfer and Retrieve Data from Glacier
- Build a Backup plan from scratch
- Accessing Website Using CloudFront
- Enable File Share using Storage Gateway
- Skills You Will Learn:
- Object storage through the web interface
- Content delivery network
- Accessing unlimited cloud storage

Load Balancing, Auto Scaling, and Routing using AWS
Topics:

- Elastic Load Balancer
- Network Load Balancer
- Application Load Balancer
- Gateway Load Balancer
- Advanced Features of ELB
- Benefits and Components of Application Load Balancer
- Load Balancer Troubleshoot
- Auto Scaling and its Benefits
- Auto Scaling Components
- Launch Configurations/ Launch Templates
- Scaling Policies
- Lifecycle of Auto Scaling
- Working on Load Balancer and Auto Scaling
- Scaling Policy

- Use Case of DNS
- Need of Route 53
- Route 53 and it's Working
- Various Routing Policies

Hands-On:

- Create a Network Load Balancer
- Create an Application Load Balancer
- Gateway load balancer
- Creating ASG with Launch Template
- Configuring health check-ups using Route 53
- Skills You Will Learn:
- Traffic load balancing
- Developing scaling solutions
- Accessing scalable DNS service
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Networking using AWS

Topics:

- Traditional and Virtual Network
- Virtual Private Cloud (VPC) and Its Benefits
- Default and Non-default VPC
- Major Steps to Configure VPC
- IP Address
- CIDR- Classless Inter-domain Routing
- Subnet
- Private and Public Subnet
- Internet Gateway and Route Tables
- Security Group with VPC
- NACL and Security Group
- NAT Gateway and NAT Instance
- Limitations of VPC Peering
- Transit VPC
- Transit Gateway
- VPC Endpoints
- AWS Private Link
- VPN and Direct Connect
- AWS Global Accelerator

Hands-On:

- To Create a Non-Default VPC
- Accessing the Internet Inside Private Subnet
- Connect Two Instances in Different VPCs

- Connect to an Application Hosted in Different VPC
- Skills You Will Learn:
- Launching resources in a virtual network
- Connecting instance in different VPCs
- Private connectivity between VPCs
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AWS Database Services

Topics:

- Database
- AWS Database Services – Use Cases
- Amazon RDS
- Read Replica
- IAM in Amazon RDS
- Difference Between SQL and NoSQL Databases
- Amazon DynamoDB and its Data Structure
- Amazon ElastiCache
- Memcached vs Redis
- Amazon RedShift and its features
- AWS Redshift Architecture
- Aurora Database
- Connection Management in Aurora
- Amazon Aurora Reliability
- Amazon Aurora Global Database
- Amazon Aurora Serverless
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Hands-On:

- Storing Data in AWS RDS
- Perform CRUD operations on No-SQL Database
- Creating an ElastiCache for Redis
- Moving an Airline Data From S3 to AWS Redshift
- Perform CRUD operations using CQL Editor
- Skills You Will Learn:
- Developing data storage solutions
- Discussing SQL and NoSQL Databases

Monitoring Resources and Governance in AWS

Topics:

- Cloud Monitoring Services
- Amazon CloudWatch
- Amazon Managed Grafana
- Amazon Managed Services for Prometheus

- CloudWatch Events and Logs
- Cloud Monitoring Service: AWS CloudTrail
- CloudTrail Use Cases
- AWS CLI
- AWS Organizations
- AWS License Manager
- AWS Control Tower
- AWS Health Dashboard
- AWS Compute Optimizer
- AWS System Manager

Hands-On:

- Creating a CloudWatch alarm
- Managing Amazon Managed Grafana workspaces
- Creating an Amazon Managed Service for Prometheus.
- Creating AWS CloudTrail events
- AWS Organizations
- Skills You Will Learn:
- Monitoring AWS resources
- Evaluate configurations of resources
- Centrally govern your environment

- ## Hands-On:

- Configuring access mechanism using Cognito
- Setup AWS Config to Evaluate Compliance
- Configure WAF to Protect Website from Attacks
- Amazon Inspector
- Amazon Macie
- Implementation of AWS GuardDuty
- Secrets Manager
- Skills You Will Learn:
- Building AWS Security Solutions
- Protecting Website from Attacks

- ## Application Services, Serverless Computing and Provisioning Infrastructure

Topics:

- Application Services
- Amazon Simple Email Service (SES)
- Amazon Simple Notification Service (SNS)
- Amazon Simple Queue Service (SQS)
- Dead-Letter Queues
- Simple Workflow Service (SWF)
- Amazon EventBridge
- Serverless Computing
- AWS Lambda
- AWS Serverless Application Model (SAM)
- AWS Step Functions
- Amazon States Language
- Elastic Beanstalk
- Concepts of Elastic Beanstalk
- AWS CloudFormation
- Templates and Stack in CloudFormation

Hands-On:

- Amazon SES
- Amazon SNS
- Amazon SQS FIFO queue
- Monitoring Instances using EventBridge and SNS
- Create a Lambda Function
- Creating and executing StepFunctions
- Deploying a Web Application Using Beanstalk
- Installation of LAMP Server in EC2
- Skills You Will Learn:
- Configuring scalable cloud email service
- Serverless computing
- Creating fully managed message queues

Cloud Analytics and Cost Management on AWS

Topics:

- What is Cloud Analytics?
- AWS Analytics Services
- Amazon Athena
- Amazon Kinesis
- Visualize Web Traffic Using Kinesis Data Stream
- Amazon Elasticsearch (Opensearch)
- Amazon QuickSight
- AWS Cost Management

- AWS Cost Management Services
- AWS Cost Explorer
- AWS Budgets
- AWS Cost Optimization

Hands-On:

- Analysing CloudTrail Logs Using Amazon Athena
- Creating Kinesis data stream
- Set up Kibana with Amazon OpenSearch Service
- Creating Budget and alerts for AWS Account
- Managing an AWS Account Cost
- Skills You Will Learn:
- Creating Budgets and Managing AWS account
- Seeing insights and meaningful data
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AWS Architectural Designs – I

Topics:

- AWS Well-Architected Framework
- Pillars of AWS Well-Architected Framework
- Resilience
- Design Highly Available and Fault-Tolerant Architectures
- Choose Appropriate Resilient Storage
- Designing Decoupling Mechanisms Using AWS Services
- Design a Multi-tier Architecture Solution
- Disaster Recovery (DR)
- Options to Implement DR Plans
- Design High-Performance Architecture
- Achieve Performance Efficiency
- Achieve Performance Efficiency by Monitoring
- Achieve Performance Efficiency by Performing Trade-offs

Hands-On:

- Architecting a website using the Serverless Technology
- Skills You Will Learn:
- Design High-Performance Architecture
- Disaster Recovery