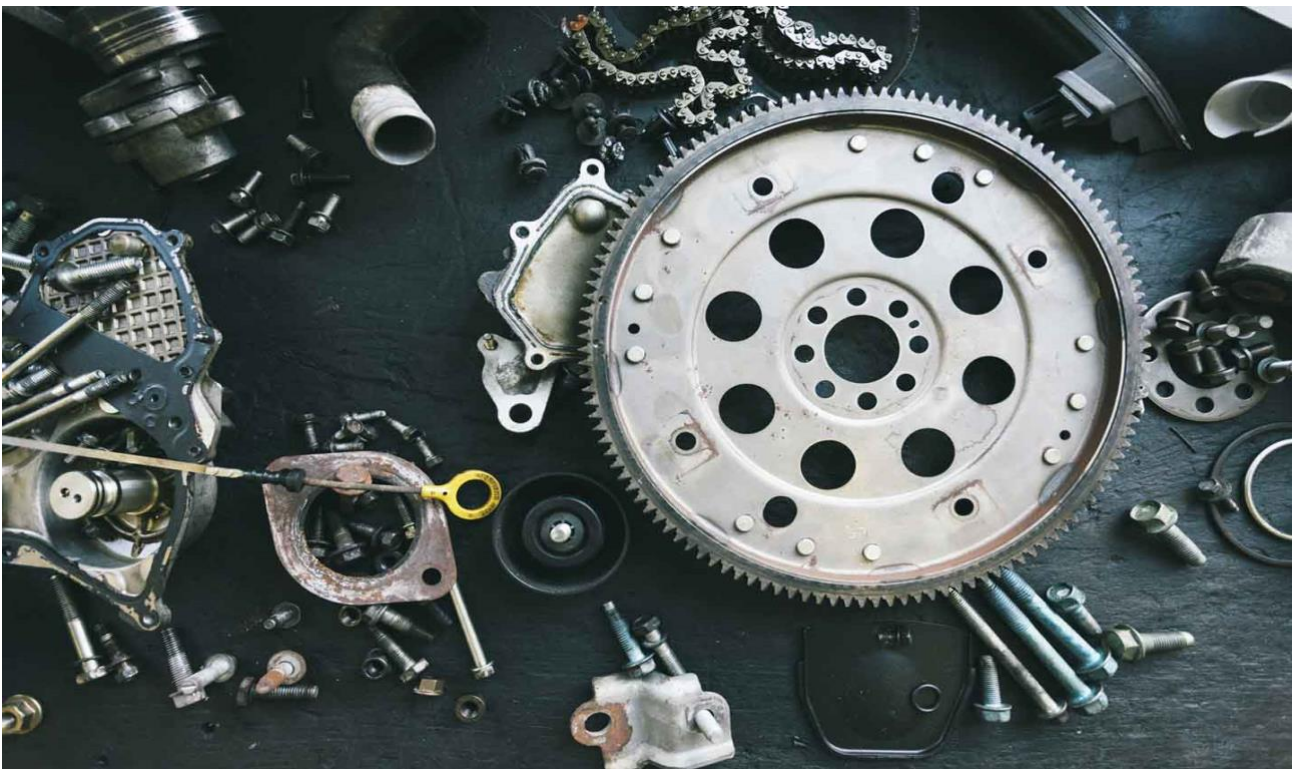


EXAM READINESS GUIDE

AWS Solutions Architect - Associate



About the Exam

AWS Digital and Classroom Training

Exam Readiness: AWS Certified Solutions Architect – Associate (Digital)

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Domain 1: Design Resilient Architectures

Storage on AWS

- ⇒ **Object Storage** (Internet accessible unlimited storage)
 - ⇒ [Simple Storage Service \(S3\)](#)
- ⇒ **Block Storage** (Volumes attached to EC2 instances)
 - ⇒ [Elastic Block Store \(Persistent Block-level Storage\)](#)
 - **SSD Based Volumes**
 - Provisioned IOPS SSD
 - General Purpose SSD
 - **HDD Based Volumes**
 - Throughput Optimized HDD
 - Cold HDD
 - ⇒ [Instance Store \(Ephemeral/temporary Block-level Storage\)](#)
- ⇒ **File/Network Storage** (Mountable drives accessed via network protocols)
 - ⇒ [EFS](#) (Cloud-native NFS File system)
 - Linux based workloads
 - NFS 4.0 and 4.1
 - ⇒ [FSx for Windows File Server](#)
 - Fully managed file storage built on Windows Server
 - ⇒ [FSx for Lustre](#)
 - Fast and scalable shared storage to power your compute workload

Load Balancing on AWS

- ⇒ **Application Load Balancer**
 - ⇒ Operates at Layer 7
 - ⇒ Routes traffic based on content of the requests
 - ⇒ Uses TLS ciphers to decrypt/encrypt data

⇒ **Network Load Balancer**

- ⇒ Operates at Layer 4
- ⇒ Load balancing of TCP Packets
- ⇒ For high performance applications

⇒ **Classic Load Balancer**

- ⇒ Previous generation (legacy) Load Balancer
- ⇒ HTTP, HTTPS and TCP
- ⇒ Used for EC2-Classic network (legacy)

AWS Well Architected Pillars

- ⇒ **Security**
- ⇒ **Reliability**
- ⇒ **Operational Excellence**
- ⇒ **Performance Efficiency**
- ⇒ **Cost Optimization**

Additional References

- ◆ [Amazon EBS FAQs](#)
- ◆ [Amazon S3 FAQs](#)
- ◆ [Whitepaper – AWS Storage Services Overview](#)
- ◆ [Amazon S3 storage classes](#)
- ◆ [AWS Well Architected Framework](#)
- ◆ [AWS Well Architected Labs](#)
- ◆ [Elastic Load Balancing Documentation](#)
- ◆ [Amazon Route 53 Documentation](#)
- ◆ [Amazon Glacier Documentation](#)
- ◆ [Amazon EFS FAQs](#)
- ◆ [Amazon CloudFront FAQs](#)
- ◆ [Amazon SQS FAQs](#)
- ◆ [Elastic Load Balancing FAQs](#)

Domain 2: Performant Architectures

S3 Features

- ⇒ [S3 Pricing](#)
- ⇒ [S3 Storage Classes](#)
- ⇒ [S3 Versioning](#)
- ⇒ [S3 Lifecycle Policies](#)

Databases on AWS

- ⇒ [Amazon RDS \(Relational Database\)](#)
 - ⇒ Microsoft SQL
 - ⇒ MySQL
 - ⇒ MariaDB
 - ⇒ Amazon Aurora
 - ⇒ Oracle
- ⇒ [Amazon DynamoDB \(NoSQL DB\)](#)
- ⇒ [Amazon Redshift \(OLAP / Data warehousing\)](#)
- ⇒ [Neptune \(Graph DB\)](#)

RDS Features (Scaling and High Availability)

- ⇒ Read Replicas
- ⇒ Multi-AZ
- ⇒ Automatic Backups
- ⇒ Manual Snapshots

Caching on AWS

- ⇒ CloudFront (Content Delivery Network)
- ⇒ ElastiCache (Database Caching)
 - ⇒ Memcached
 - ⇒ Redis

Elasticity and Scaling on AWS

⇒ Types of Scaling

- Vertical scaling
 - Scaling up and Down
- Horizontal Scaling
 - Scaling in and Out

⇒ Amazon EC2 Auto Scaling Features

- Launch or terminate instance based on predefined conditions
- Auto register new instances with ELB
- Launch Across AZs
- Integrate with ELB

⇒ Amazon EC2 Auto Scaling Components

- Launch templates / Configurations
- Auto Scaling Group
- Auto Scaling Plan

Monitoring, Investigation and Analysis on AWS

⇒ CloudWatch

⇒ CloudTrail

⇒ VPC Flow Logs

⇒ AWS Config

Domain 3: Security in AWS

Shared Responsibility Model

- ⇒ [Shared Responsibility Model Overview](#)

Identity and Access Management

- ⇒ **Users**
- ⇒ **Groups**
- ⇒ **Policies**
- ⇒ **Roles**
 - Temporary elevated privileges
 - Federated access
 - Application to service communication

Securing Data in AWS

- ⇒ **Data in Transit**
 - SSL/TLS over Web
 - IPSec (VPN / Direct Connect)
 - Secure API calls
- ⇒ **Data at Rest**
 - Access over HTTP or HTTPS
 - Audit (Object level and bucket level logging)
 - Access Control (ACLs/Bucket Policies/IAM Policies)
- ⇒ **Encryption**
 - Server-Side Encryption
 - Client-Side Encryption
- ⇒ [AWS KMS](#)
- ⇒ [AWS CloudHSM](#)

Networking in AWS

⇒ VPC Components

- [Subnets \(Can be Public and Private\)](#)
- [Internet Gateway](#)
- [Route Tables](#)
- [NAT Gateways](#)
- [Elastic Network Interfaces](#)
- [Elastic IPs](#)

⇒ VPC Security

- [Security Groups](#)
- [Network Access Control Lists \(NACLs\)](#)
- [Key Pairs](#)

References

- ◆ [AWS: Overview of Security Processes](#)
- ◆ [IAM Best Practices](#)
- ◆ [Best Practices for Managing AWS Access Keys](#)
- ◆ [Protecting Data Using Server-Side Encryption](#)
- ◆ [“Protecting Your Data in AWS” video](#)
- ◆ [Encrypting Data at Rest](#)
- ◆ [“Protecting Data Using Encryption” in Amazon S3 Developer Guide](#)
- ◆ [IAM Policies and Bucket Policies and ACLs! Oh, My! \(Controlling Access to S3 Resources\)](#)
- ◆ [Comparison of NAT instances and NAT gateways](#)
- ◆ [AWS re:Invent 2017: Creating Your Virtual Data Center: VPC Fundamentals \(NET201\)](#)

Domain 4: Cost-Optimized Architectures

AWS Pricing Model

- ⇒ Pay as you go
- ⇒ Pay less when you reserve
- ⇒ Pay less per unit by using more

S3 Pricing Considerations

- ⇒ Storage Class
- ⇒ Storage
- ⇒ Requests
- ⇒ Data transfer

EBS Pricing Considerations

- ⇒ Volume Type
- ⇒ IOPS
- ⇒ Snapshots
- ⇒ Volume Size

EC2 Pricing Considerations

- ⇒ Instance family and type
- ⇒ Instance purchase type (RI, Savings plan etc.)
- ⇒ Detailed Monitoring
- ⇒ Auto Scaling
- ⇒ Elastic IP Addresses
- ⇒ OS and Software titles

References

- ◆ [How AWS Pricing Works](#)

Domain 5: Operational Excellence

Operational Excellence Support Services

- ⇒ AWS Config
- ⇒ AWS CloudFormation
- ⇒ AWS Trusted Advisor
- ⇒ Amazon Inspector
- ⇒ Amazon VPC Flow Logs
- ⇒ AWS CloudTrail

References

- ◆ [Amazon CloudWatch documentation](#)
- ◆ [Amazon CloudWatch FAQs](#)

Additional Topics

- ⇒ [AWS Global Infrastructure](#)
- ⇒ [Service Quotas and Limits](#)
- ⇒ [Tagging Best Practices](#)
- ⇒ [AWS CLI](#)
- ⇒ [AWS Quick Starts](#)