

# AWS Certified Solutions Architect – Associate (SAA-C03)

Course Duration ~50 Hours · Exam-Aligned Curriculum

Secure — 30%

Resilient — 26%

High-Performing — 24%

Cost-Optimized — 20%

**In short:** This is an instructor-led certification program mapped 1:1 to the official AWS Certified Solutions Architect – Associate (SAA-C03) exam guide. You master the four exam domains — designing secure, resilient, high-performing, and cost-optimized architectures — through hands-on labs, real-world scenarios, the AWS Well-Architected Framework, full-length mock exams, and a capstone architecture project. On completion you are ready to pass SAA-C03 and take on Cloud Solutions Architect and Cloud Engineer roles.

|                        |                                             |                       |                                     |
|------------------------|---------------------------------------------|-----------------------|-------------------------------------|
| <b>Exam code</b>       | SAA-C03                                     | <b>Level</b>          | Associate                           |
| <b>Format</b>          | 65 questions (50 scored + 15 unscored)      | <b>Question types</b> | Multiple choice & multiple response |
| <b>Duration</b>        | 130 minutes                                 | <b>Passing score</b>  | 720 / 1000                          |
| <b>Recertification</b> | Every 3 years                               | <b>Recommended</b>    | ~1 year hands-on AWS experience     |
| <b>Delivery</b>        | Pearson VUE test center or online proctored |                       |                                     |

## Domain 1: Design Secure Architectures

30%

### ESTIMATED TIME

14–15 Hours

#### 1.1 Design secure access to AWS resources

- IAM users, groups, roles, policies; least-privilege authorization models
- MFA and root-user best practices; AWS STS, role switching, cross-account access
- Multi-account security: AWS Organizations, AWS Control Tower, Service Control Policies (SCPs)
- Federated access & IAM Identity Center; resource policies; directory federation
- AWS global infrastructure (Regions, AZs) and the shared responsibility model

#### 1.2 Design secure workloads and applications

- Secure VPC design: security groups, NACLs, route tables, NAT gateways
- Public/private subnet segmentation; secure application access
- App config & credential security (AWS Secrets Manager); AWS service endpoints
- Security services: Amazon Cognito, GuardDuty, Macie, AWS Shield, AWS WAF
- Mitigating external threats (DDoS, SQL injection); securing VPN & Direct Connect

#### 1.3 Determine appropriate data security controls

- Encryption at rest (AWS KMS) and in transit (ACM/TLS); key policies & rotation
- Certificate renewal; data backups & replication
- Data access, lifecycle, retention, classification, governance & compliance

### HANDS-ON

- Build cross-account access with IAM roles, SCPs, and MFA
- Encrypt data with KMS and provision TLS certificates with ACM

**Assessment:** Quiz + Lab

**Domain 2: Design Resilient Architectures**

26%

**ESTIMATED TIME**

12–13 Hours

**2.1 Design scalable and loosely coupled architectures**

- Multi-tier, microservice, event-driven architectures; horizontal vs vertical scaling
- Loose coupling: Amazon SQS, SNS/pub-sub, Amazon EventBridge, AWS Step Functions
- API management (Amazon API Gateway); caching strategies; CDN/edge accelerators
- Containers (Amazon ECS, EKS, Fargate) and serverless (AWS Lambda, Fargate)
- Storage types (object/file/block); read replicas; purpose-built AWS services

**2.2 Design highly available and/or fault-tolerant architectures**

- Multi-AZ / multi-Region HA; Amazon Route 53; load balancing (ALB)
- Disaster recovery: backup & restore, pilot light, warm standby, active-active failover; RTO/RPO
- Mitigating single points of failure; immutable infrastructure; failover strategies
- Durability & availability of data; service quotas & throttling; AWS X-Ray visibility

**HANDS-ON**

- Decouple a workload with SQS, SNS, and EventBridge
- Deploy a Multi-AZ, auto-scaled architecture behind an ALB with Route 53 failover

**Assessment:** Quiz + Lab**Domain 3: Design High-Performing Architectures**

24%

**ESTIMATED TIME**

11–12 Hours

**3.1 High-performing & scalable storage**

- Amazon S3, EFS, EBS; hybrid storage; object/file/block characteristics; scaling for future needs

**3.2 High-performing & elastic compute**

- EC2 Auto Scaling, AWS Auto Scaling; Lambda, Fargate, ECS/EKS; AWS Batch, EMR
- Right-sizing instance types & Lambda memory; decoupling for independent scaling

**3.3 High-performing database**

- Amazon Aurora, RDS, DynamoDB; read replicas; Amazon ElastiCache caching
- Engine selection (MySQL vs PostgreSQL); proxies; relational vs non-relational vs in-memory
- Capacity planning & Provisioned IOPS

**3.4 High-performing & scalable networking**

- Amazon CloudFront, AWS Global Accelerator; subnet tiers, routing, IP addressing; ALB
- AWS VPN, Direct Connect, PrivateLink; global/hybrid/multi-tier topologies

**3.5 High-performing data ingestion & transformation**

- Amazon Kinesis streaming; AWS Glue transformation; AWS DataSync, Storage Gateway transfer
- Amazon Athena, AWS Lake Formation, QuickSight; building/securing data lakes; CSV → Parquet

**HANDS-ON**

- Accelerate delivery with CloudFront and Global Accelerator
- Cache a database with ElastiCache and add read replicas

**Assessment:** Quiz + Lab

**Domain 4: Design Cost-Optimized Architectures**

20%

**ESTIMATED TIME**

9–10 Hours

**4.1 Cost-optimized storage**

- S3/EFS/EBS/FSx selection; S3 lifecycle & storage tiering; HDD vs SSD; backup/archival
- Lowest-cost data transfer; cost tools (Cost Explorer, AWS Budgets, Cost & Usage Report), cost allocation tags

**4.2 Cost-optimized compute**

- Spot Instances, Reserved Instances, Savings Plans; ALB vs NLB vs GWLB
- Horizontal vs vertical scaling, EC2 hibernation; Lambda vs EC2 vs Fargate
- Right instance family/size; AWS Outposts hybrid

**4.3 Cost-optimized database**

- DynamoDB vs RDS, serverless; read replicas & caching; backup/retention & snapshot frequency
- Engine selection; schema/data migration; columnar/time-series formats

**4.4 Cost-optimized networking**

- NAT gateway cost strategies (shared vs per-AZ); Direct Connect vs VPN vs internet
- Minimizing transfer costs (VPC endpoints, Global Accelerator, peering, AWS Transit Gateway); CDN/edge caching; throttling

**HANDS-ON**

- Model savings with Spot, Reserved Instances, and Savings Plans
- Cut transfer costs using VPC endpoints and S3 lifecycle tiering

**Assessment:** Quiz + Lab**Exam Readiness & Capstone****ESTIMATED TIME**

4–5 Hours

**TOPICS**

- AWS Well-Architected Framework review across all pillars
- Domain-by-domain exam strategy; scenario analysis and elimination techniques
- Time management and SAA-C03 question patterns

**HANDS-ON**

- Capstone: design a secure, resilient, cost-optimized architecture
- Full-length timed mock exams with detailed review

**Assessment:** Capstone Project + Mock Exams