

AWS Certified Solutions Architect – Professional

Level: Professional

Duration: 50–60 Hours

Course Overview:

The AWS Certified Solutions Architect – Professional certification validates advanced technical skills and experience in designing distributed applications and systems on the AWS platform. This course is ideal for professionals with at least two years of hands-on experience in designing and deploying cloud architecture on AWS.

Course Objectives:

- Design and deploy dynamically scalable, highly available, fault-tolerant, and reliable applications on AWS.
 - Select appropriate AWS services to design and deploy applications.
 - Migrate complex, multi-tier applications on AWS.
 - Design and deploy enterprise-wide scalable operations on AWS.
 - Implement cost-control strategies.
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Course Outline:

Module 1: Introduction and Exam Overview

- Certification benefits and requirements
- Exam structure and domains
- Recommended knowledge and prerequisites

Module 2: High Availability and Business Continuity

- Multi-AZ and Multi-Region architectures
- Disaster recovery strategies
- Scalable and resilient design patterns
- Elastic Load Balancing and Auto Scaling

Module 3: Cost Optimization

- Cost-optimized architectures
- AWS pricing models
- Reserved Instances vs. Spot Instances
- Resource tagging and billing

Module 4: Deployment Management

- CloudFormation and Infrastructure as Code (IaC)
- AWS OpsWorks, Elastic Beanstalk
- Blue/Green deployments and canary testing
- CI/CD pipelines with AWS Code* tools

Module 5: Network Design

- Advanced VPC design and peering
- AWS Direct Connect and VPN
- Network access control lists (ACLs) and security groups
- Designing hybrid network environments

Module 6: Data Storage and Databases

- Storage solutions: S3, EBS, EFS, Glacier
- Database options: RDS, DynamoDB, Aurora, Redshift
- Data replication and consistency
- Backup and recovery strategies

Module 7: Security and Compliance

- AWS Shared Responsibility Model
- IAM roles, policies, and federated access
- Encryption using KMS and CloudHSM
- Logging and auditing with CloudTrail and AWS Config

Module 8: Scalability and Elasticity

- Auto Scaling groups and lifecycle hooks
- Elastic architecture design
- Serverless computing (Lambda, Step Functions)
- Event-driven and microservices architecture

Module 9: Migration and Hybrid Architectures

- Application migration strategies
- AWS Migration Hub and Server Migration Service (SMS)
- Hybrid environments with AWS Outposts and Snowball
- Application portfolio analysis

Module 10: Monitoring and Automation

- Monitoring with CloudWatch, X-Ray, and CloudTrail
- Automated deployments and scaling
- Lambda functions for automation
- AWS Config rules and auto-remediation

Module 11: Practice Exam and Review

- Exam tips and strategies
- Practice questions by domain
- Mock exam and explanation
- Final Q&A and recap

Target Audience:

- Solutions Architects
- DevOps Engineers
- Cloud Architects
- IT Professionals preparing for AWS professional certification

Prerequisites:

- AWS Certified Solutions Architect – Associate (recommended)
- 2+ years of hands-on experience in AWS environment
- Strong knowledge of AWS services and architectural best practices