

# Architecting on AWS with AWS Jam

*AWS Classroom Training*

## *Course description*

This course focuses on the fundamentals of building IT infrastructure on the AWS platform. You will learn how to optimize the AWS Cloud by understanding AWS services and how they fit into cloud-based solutions. Best practices and design patterns are covered to help you architect optimal IT solutions on the AWS Cloud. Build and explore a variety of infrastructures through guided discussions and hands-on activity.

The final day is an AWS Jam, a gamified event, with teams competing to score points by completing a series of challenges according to established best practices based on concepts covered in the course. You get to experience a wide range of AWS services in a series of real-world scenarios that represent common operational and troubleshooting tasks. The end result is developing, enhancing, and validating your skillsets in the AWS Cloud through real-world problem solving, exploring new services, features, and understanding how they interoperate.

- Course level: Intermediate
- Duration: 4 days

## *Activities*

This course includes presentations, group exercises, hands-on labs, and team-based gamified challenge.

## *Course objectives*

In this course, you will:

- Make architectural decisions based on AWS architectural principles and best practices
- Leverage AWS services to make your infrastructure scalable, reliable, and highly available
- Leverage AWS Managed Services to enable greater flexibility and resiliency in an infrastructure
- Make an infrastructure based on AWS more efficient to increase performance and reduce costs
- Use the Well-Architected Framework to improve architectures with AWS solutions
- Work in a team environment to solve real AWS use-case challenges in an AWS Jam

## *Intended audience*

This course is intended for solutions architects, solutions design engineers, and anyone who needs to understand the scope of cloud infrastructures.

## *Prerequisites*

We recommend that attendees of this course have:

- Taken the *AWS Cloud Practitioner Essentials* [classroom](#) or [digital training](#)
- Working knowledge of distributed systems and multi-tier architectures
- Familiarity with general networking and cloud computing concepts

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## *Course outline*

### *Day 1*

#### ***Module 1: Introduction***

- The Well-Architected Framework
- AWS Global Infrastructure

#### ***Module 2: The simplest architectures***

- Amazon Simple Storage Service (Amazon S3)
- Amazon S3 Glacier
- Choosing AWS Regions for your architectures
- Hands-on lab: Hosting a Static Website

#### ***Module 3: Adding a compute layer***

- Amazon Elastic Compute Cloud (Amazon EC2)
- Amazon Machine Images (AMIs)
- Amazon Elastic Block Storage (Amazon EBS)
- Amazon Elastic File System (Amazon EFS)
- Amazon FSx

#### ***Module 4: Adding a database layer***

- Database layer considerations
- Amazon Relational Database Service (Amazon RDS)
- Amazon DynamoDB
- AWS Database Migration Service (AWS DMS)
- Hands-on lab: Deploying a Web Application on AWS

#### ***Module 5: Networking in AWS – Part 1***

- Amazon Virtual Private Cloud (Amazon VPC)
- Network security in the cloud
- Hands-on lab: Creating a VPC

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### *Day 2*

#### ***Module 6: Networking in AWS – Part 2***

- AWS VPN connections
- AWS Direct Connect (DX)
- VPC peering
- AWS Transit Gateway
- Load balancing on AWS
- Amazon Route 53

#### ***Module 7: AWS Identity and Access Management (IAM)***

- Account users and AWS IAM
- Federating users
- Amazon Cognito
- AWS Organizations

#### ***Module 8: Elasticity, high availability, and monitoring***

- Amazon CloudWatch
- AWS CloudTrail
- Amazon EC2 Auto Scaling
- Scaling your databases
- Hands-on lab: Creating a highly available environment

#### ***Module 9: Automation***

- AWS CloudFormation
- AWS Systems Manager
- AWS OpsWorks
- AWS Elastic Beanstalk
- Hands-on lab: Automating infrastructure deployment with AWS CloudFormation

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### *Day 3*

#### ***Module 10: Caching***

- Caching on AWS with Amazon CloudFront
- Session management
- Amazon DynamoDB Accelerator (DAX)
- Amazon ElastiCache

#### ***Module 11: Building decoupled architectures***

- On-premises and cloud acquisition/deprecation cycles
- Cloud cost management tools including reporting, control, and tagging
- Examples and analysis of the five pillars of cost optimization

#### ***Module 12: Microservices and serverless architectures***

- Amazon Elastic Container Service (Amazon ECS)
- AWS Fargate
- AWS Lambda
- Amazon API Gateway
- AWS Step Functions
- Hands-on lab: Implementing a serverless architecture with AWS Managed Services

#### ***Module 13: RTO/RPO and backup recovery setup***

- Disaster planning
- Data replication
- Recovery strategies
- AWS Storage Gateway

#### ***Module 14: Optimization and review***

- Best practices for optimization
- Review questions

### *Day 4*

#### ***AWS Jam***

- Participate in team based challenges in a real AWS environment
- Compete with your colleagues in a gamified, hands-on learning experience
- Apply your learning from the course on various AWS services