

Mastering AWS: From Fundamentals to Generative AI & Serverless

Duration: 40 hrs

Level: All Levels

Mode: OFFLINE

About this Course

In an era where Generative AI and Serverless architectures are rapidly transforming the tech landscape, a robust understanding of cloud infrastructure is paramount. This course positions Amazon Web Services (AWS) as the essential backbone for global digital transformation. We will embark on a comprehensive, project-based journey through the vast AWS ecosystem.

Starting with the foundational concepts of cloud computing and AWS, learners will progress through core services like compute, storage, and networking. The curriculum then dives deep into advanced topics, including the principles of DevOps and how to implement them effectively on AWS. Crucially, we will explore the integration of cutting-edge Generative AI services, enabling participants to build intelligent applications.

This course emphasizes practical application. Through a series of hands-on labs and a capstone project, you will gain the confidence to design, deploy, and manage scalable, resilient, and cost-effective solutions on AWS. Whether you are new to cloud computing or looking to deepen your expertise in modern architectures, this course provides the skills and knowledge to thrive in today's cloud-centric world.

By the end of this program, you will not only understand the breadth of AWS services but also be equipped to architect solutions that leverage the power of serverless computing and the innovation of generative artificial intelligence, making you an invaluable asset in any tech organization.

What You Will Learn

- Deploy and manage scalable applications on AWS using core services like EC2, S3, and VPC.
- Implement CI/CD pipelines and DevOps practices on AWS for efficient software delivery.
- Design and build serverless applications using AWS Lambda, API Gateway, and DynamoDB.
- Integrate Generative AI services (e.g., Amazon Bedrock, SageMaker) into cloud applications.
- Understand and apply Infrastructure as Code (IaC) principles using AWS CloudFormation or Terraform.
- Architect secure and cost-effective solutions on the AWS platform.
- Troubleshoot common AWS deployment and operational issues.
- Evaluate and select appropriate AWS services for specific business requirements.

Course Curriculum

Module 1: Module 1: AWS Fundamentals and Core Services

1. Introduction to Cloud Computing and AWS — 1.5 hrs
2. Compute Services: EC2 and Auto Scaling — 2 hrs
3. Storage Services: S3 and EBS — 1.5 hrs
4. Networking Basics: VPC and Security Groups — 1 hrs

Module 2: Module 2: Databases and Application Deployment

1. Relational Databases: RDS — 2 hrs
2. NoSQL Databases: DynamoDB — 2 hrs
3. Containerization with Docker and ECS/EKS — 2 hrs
4. Deployment Strategies — 1 hrs

Module 3: Module 3: DevOps and Infrastructure as Code

1. Introduction to DevOps on AWS — 1.5 hrs
2. Continuous Integration with AWS CodeCommit, CodeBuild, and CodeDeploy — 2.5 hrs
3. Continuous Delivery with AWS CodePipeline — 2 hrs
4. Infrastructure as Code with AWS CloudFormation — 2 hrs

Module 4: Module 4: Serverless Architectures

1. Introduction to Serverless Computing — 1.5 hrs
2. AWS Lambda: Functions as a Service — 2.5 hrs
3. API Gateway and EventBridge — 2 hrs
4. Serverless Data Storage and Orchestration — 1 hrs

Module 5: Module 5: Generative AI Integration on AWS

1. Introduction to Generative AI and AWS Services — 1.5 hrs
2. Amazon Bedrock: Foundation Models — 2.5 hrs
3. Amazon SageMaker for Custom ML Models — 2 hrs
4. Building AI-Powered Applications — 1 hrs

Module 6: Module 6: Advanced Topics and Best Practices

1. AWS Security Best Practices — 1.5 hrs
2. Cost Management and Optimization — 1.5 hrs
3. Monitoring and Logging with CloudWatch — 1 hrs
4. Case Studies and Future Trends — 1 hrs

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