

AWS Learning Roadmap with Hands-On Practice

Phase 1: AWS Basics & Foundation

Concepts to Learn:

- What is Cloud Computing?
- What is AWS?
- AWS Global Infrastructure (Regions, AZs, Edge Locations)
- Free Tier Usage

Hands-On:

- Sign up for AWS Free Tier (<https://aws.amazon.com/free>)
- Explore AWS Console
- Set billing alerts to avoid charges (AWS Budgets)

Phase 2: Core Services - Compute, Storage, Networking

1. Amazon EC2:

- Launch an EC2 instance (Amazon Linux)
- Connect via SSH
- Install Apache/Nginx to host a basic HTML page

2. Amazon S3:

- Create a bucket, upload files
- Host a static website
- Configure public access with bucket policies

3. IAM:

- Create IAM user with specific permissions
- Use IAM with AWS CLI

4. VPC:

- Launch EC2 inside custom VPC

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- Configure subnets, route tables, and security groups

Practice Project 1:

- Host a static site using S3 and Route 53

Phase 3: Database & Serverless

5. Amazon RDS:

- Launch and connect to a MySQL/PostgreSQL database

6. DynamoDB:

- Create table, add and query items

7. Lambda:

- Write Hello World function
- Trigger from API Gateway or S3

Practice Project 2:

- Image Resizer: Upload to S3, trigger Lambda to resize

Phase 4: Web Apps & Deployment

8. Elastic Beanstalk:

- Deploy Flask or Node.js app

9. API Gateway + Lambda:

- Create REST API, connect to Lambda

Practice Project 3:

- Build a serverless contact form API

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Phase 5: Containers, DevOps & Monitoring

10. Docker on EC2:

- Install Docker, run and build containers

11. ECS / Fargate:

- Deploy containers without server management

12. CloudWatch & CloudTrail:

- Monitor logs and user activity

Practice Project 4:

- Containerized app on ECS Fargate with CloudWatch

Bonus Topics

- AWS Lex: Create a chatbot
- Step Functions: Orchestrate Lambdas
- CodePipeline: Setup CI/CD
- SNS/SQS: Messaging & Alerts