

# AWS 1-Year Roadmap for Junior Cloud/DevOps Engineer

## Month 1: AWS Basics & Identity Management

- Get Familiar with AWS Console & CLI: Free Tier, CLI setup.
- IAM: Users, Groups, Roles, Policies, MFA, least privilege.
- AWS Global Infrastructure: Regions, AZs, Edge Locations.

Mini-Project: Create IAM users and test access.

## Month 2: Compute Essentials

- EC2: Launch instances, security groups, key pairs, EBS volumes, snapshots.
- Auto Scaling & Load Balancing: Scaling policies, ALB vs NLB.
- Lambda Basics: Simple function with S3/CloudWatch trigger.

Mini-Project: Web server on EC2 with Load Balancer and Auto Scaling.

## Month 3: Networking Foundations

- VPC: Subnets, route tables, NAT Gateway vs Internet Gateway, SG vs NACLs.
- Route 53: Domains, DNS routing.
- Elastic IP & VPC Peering basics.

Mini-Project: Custom VPC with public/private subnets and NAT Gateway.

## Month 4: Storage Fundamentals

- S3: Buckets, versioning, lifecycle, replication, static website hosting + CloudFront.
- EBS: Volume types, snapshots.
- EFS: Shared file systems.

Mini-Project: Host static website on S3 with CloudFront & HTTPS.

## Month 5: Databases

- RDS: MySQL/PostgreSQL basics, backups, Multi-AZ, replicas.
- DynamoDB: Tables, partition/sort keys, queries.
- ElastiCache basics.

Mini-Project: Deploy WordPress on EC2 + RDS.

## Month 6: Monitoring & Logging

- CloudWatch: Metrics, dashboards, alarms, logs.
- CloudTrail: Security auditing.
- Trusted Advisor & Config.

Mini-Project: Alarms for EC2 CPU, notify via SNS.

## Month 7: Automation & IaC

- CloudFormation: Templates, stacks.
- AWS CLI & SDK automation.
- Intro to Terraform (optional).

Mini-Project: Deploy VPC + EC2 web server using CloudFormation.

Month 8: Serverless & Event-Driven Architectures

- Advanced Lambda: Env variables, layers.
- API Gateway: REST endpoints.
- SQS & SNS: Messaging.
- Step Functions basics.

Mini-Project: Serverless photo upload app (S3 + Lambda + DynamoDB + API Gateway).

Month 9: Containers & Deployment

- ECS: Fargate vs EC2 launch types.
- EKS: Intro to Kubernetes.
- Elastic Beanstalk: Simplified deployments.
- CI/CD: CodePipeline, CodeBuild, CodeDeploy.

Mini-Project: Deploy containerized app on ECS with CI/CD.

Month 10: Security & Cost Management

- KMS: Encryption keys.
- Secrets Manager & Parameter Store.
- Budgets & Cost Explorer.
- Well-Architected Framework.

Mini-Project: Enable encryption, set budgets & alerts.

Month 11: Advanced Networking & Performance

- CloudFront: CDN configuration.
- PrivateLink, Transit Gateway, VPC Endpoints.
- Global Accelerator overview.

Mini-Project: Optimize multi-region web app with CloudFront & Route 53.

Month 12: Capstone & Real-World Practice

- Multi-tier Application: VPC, EC2 behind ALB, RDS, S3 for assets.
- CI/CD pipeline for deployments.
- Apply cost & security best practices.
- Review common interview questions.