

AWS MERN Microservices Deployment: Detailed Documentation

Step 1: Set Up AWS CLI and Boto3

Install AWS CLI and configure with credentials.

Install Boto3 using pip.

Step 2: Prepare the MERN Application

Containerize both frontend and backend using Dockerfiles.

Step 3: Push Docker Images to ECR

Build and push Docker images to Amazon ECR repositories.

Step 4: Version Control with AWS CodeCommit

Create CodeCommit repository and push MERN source code.

Step 5: Jenkins Continuous Integration

Set up Jenkins on EC2.

Create Jenkins pipeline to build and push images to ECR.

Step 6: Infrastructure as Code with Boto3

Use Boto3 scripts to create VPC, Subnets, Security Groups, and Auto Scaling Group.

Step 7: Deploy Backend on EC2 with ASG

Use Boto3 and UserData scripts to deploy backend as Docker container.

Step 8: Deploy Frontend on EC2

Deploy Dockerized frontend with Boto3 on EC2 instances.

Step 9: AWS Lambda for Automation

Create Lambda for tasks such as database backup to S3.

Step 10: Kubernetes Deployment (EKS)

Use eksctl to create EKS cluster and Helm to deploy MERN app.

Step 11: Monitoring and Logging

Set up CloudWatch monitoring, alarms, and log collection.

Step 12: Documentation

Document architecture, deployment, CI/CD, and monitoring.

Step 13: Final Checks

Validate accessibility, functionality, and monitoring.

Step 14: ChatOps Integration

Create SNS topics, Lambda functions, and integrate with Slack or Teams.