

# CloudMart: an E-commerce Store

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# Project Overview

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What is CloudMart?

- CloudMart is a modern AI-powered e-commerce store.
- Deployed using AWS, Docker, Kubernetes, and CI/CD.
- Features AI Assistants via Amazon Bedrock and OpenAI.

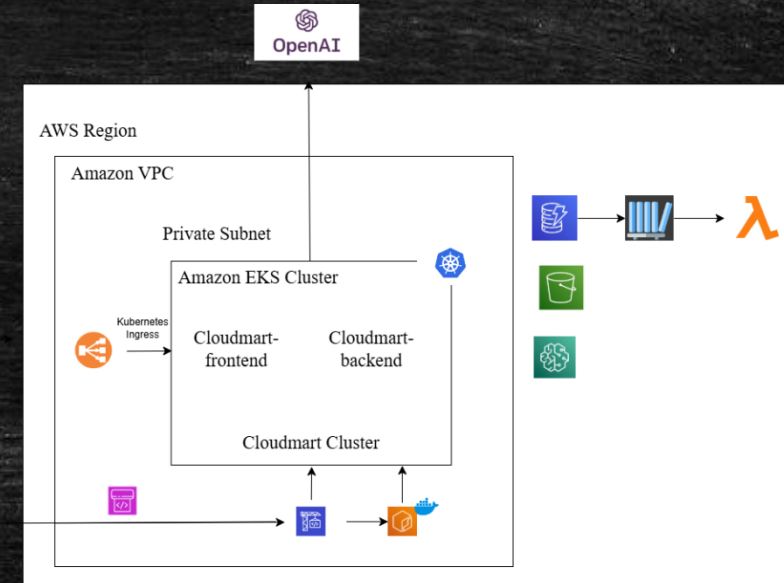


# Cloud Infrastructure

Tools: Terraform, AWS EC2, IAM, S3, DynamoDB

Provisioned Components:

- EC Instance with IAM Role (EC2 Admin)
- S3 Bucket (Initial testing)
- DynamoDB Tables (products, orders, tickets)
- Lambda function for product listing





# Containerization

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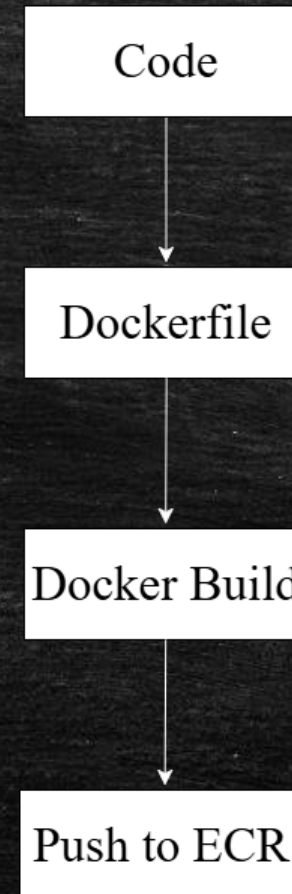
Tools Used: Docker, Amazon ECR

Backend: Node.js Express API (Port 5000)

- Used .env file with OpenAI and Bedrock variables

Frontend: Vite + Vue.js (Port 5001)

- Connected via service to backend API





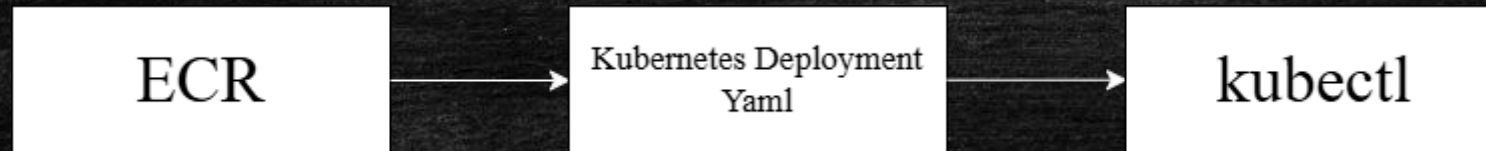
# Kubernetes Deployment

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Tools: eksctl, kubectl, IAM Service Account

Deployed Components:

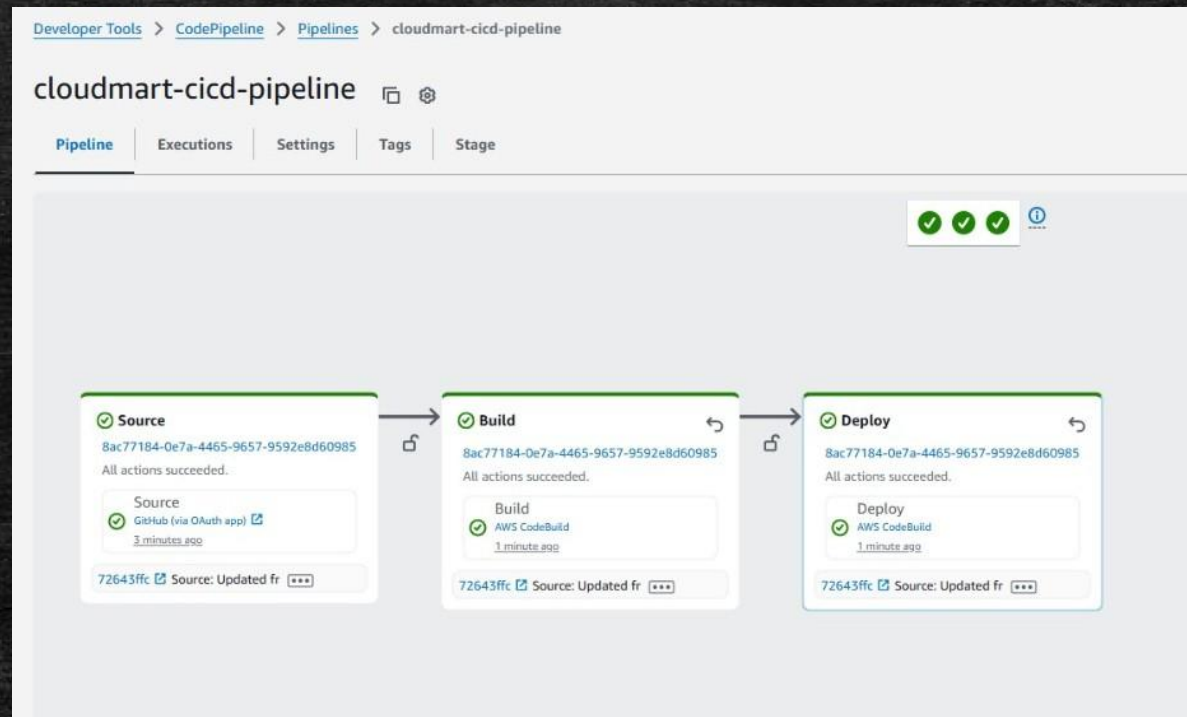
- cloudmart-backend-app & cloudmart-frontend-app
- LoadBalancer services for both apps





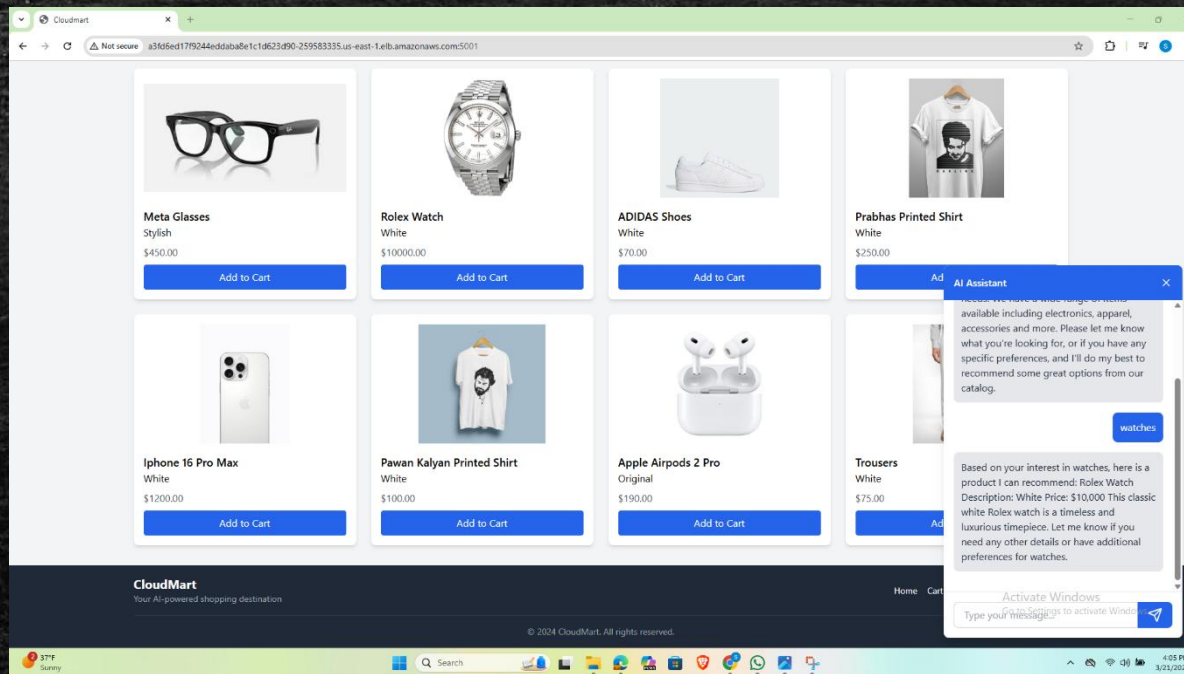
# Continuous Integration & Deployment

- AWS CodePipeline triggered on GitHub commit
- Docker build + push via CodeBuild
- Deployment using kubectl and imagedefinitions.json





# Bedrock & OpenAI Assistants



Bedrock (Claude Sonnet):  
Product Recommendation via  
Lambda

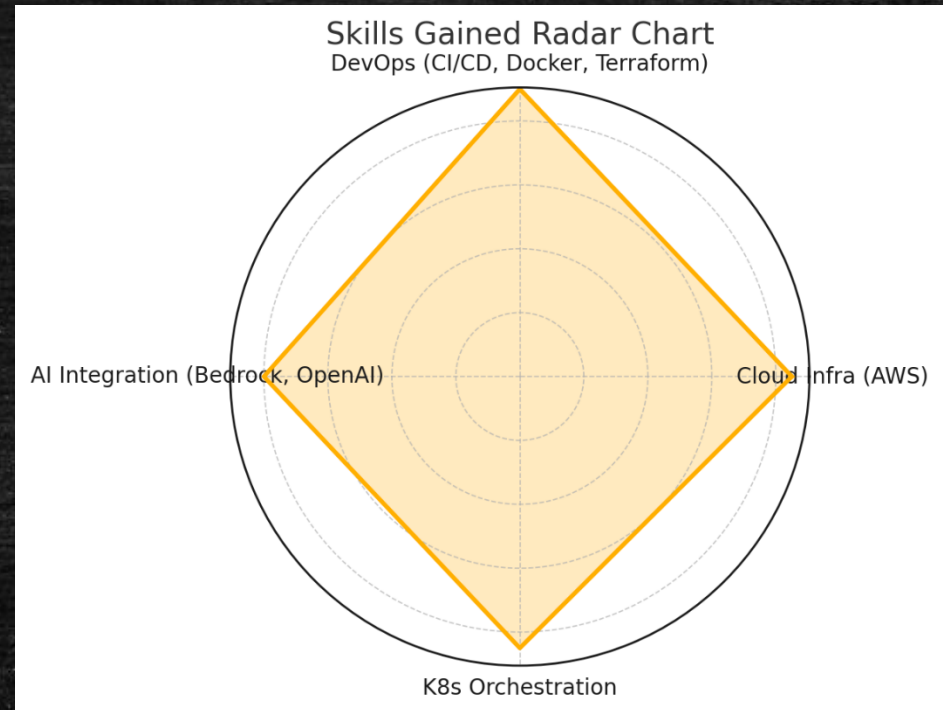
OpenAI (GPT-4o): Customer  
Support Assistant



# Skills Gained through CloudMart

## Categories & Tools:

- Cloud Infra: AWS EC2, IAM, S3, DynamoDB
- DevOps: Terraform, Docker, GitHub Actions, CodePipeline
- AI Integration: Amazon Bedrock, OpenAI Assistants
- Kubernetes: EKS, Ingress, LoadBalancer, kubectl

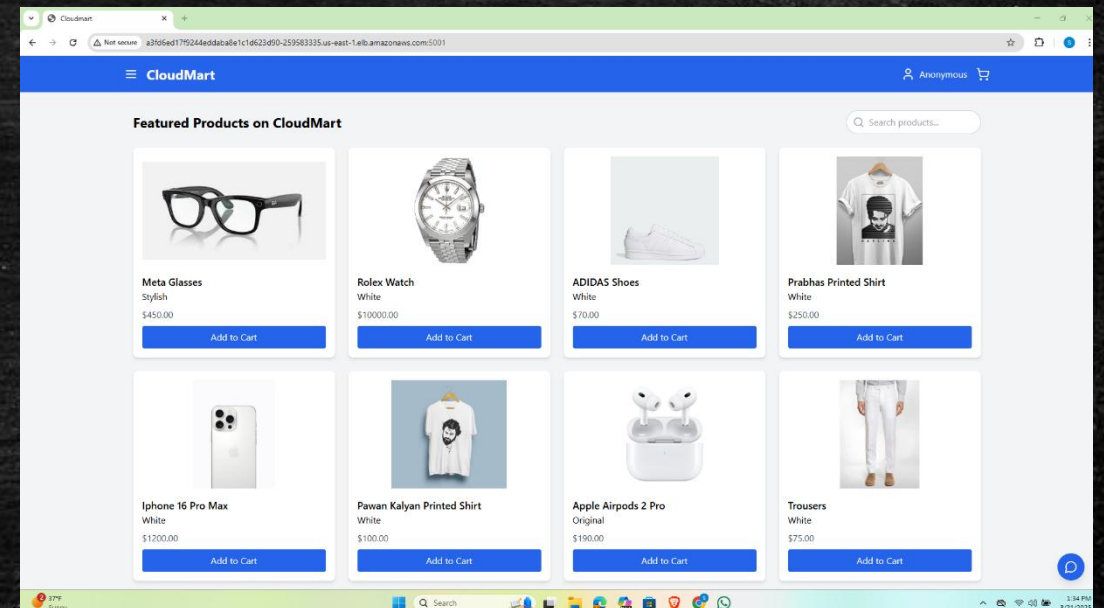




# Product Experience Review

## User Experience:

- Search, browse, and add-to-cart interface
- AI recommendation visible via Claude
- OpenAI chat assistant available on frontend





# Conclusion

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## Key Achievements:

- Fully automated deployment using Terraform + Docker + CI/CD
- Real-time AI Assistant integration with Bedrock and OpenAI
- Kubernetes orchestration in EKS

Challenges: IAM configuration, Bedrock setup, YAML deployment edge cases



Thank You