

Secret Notes

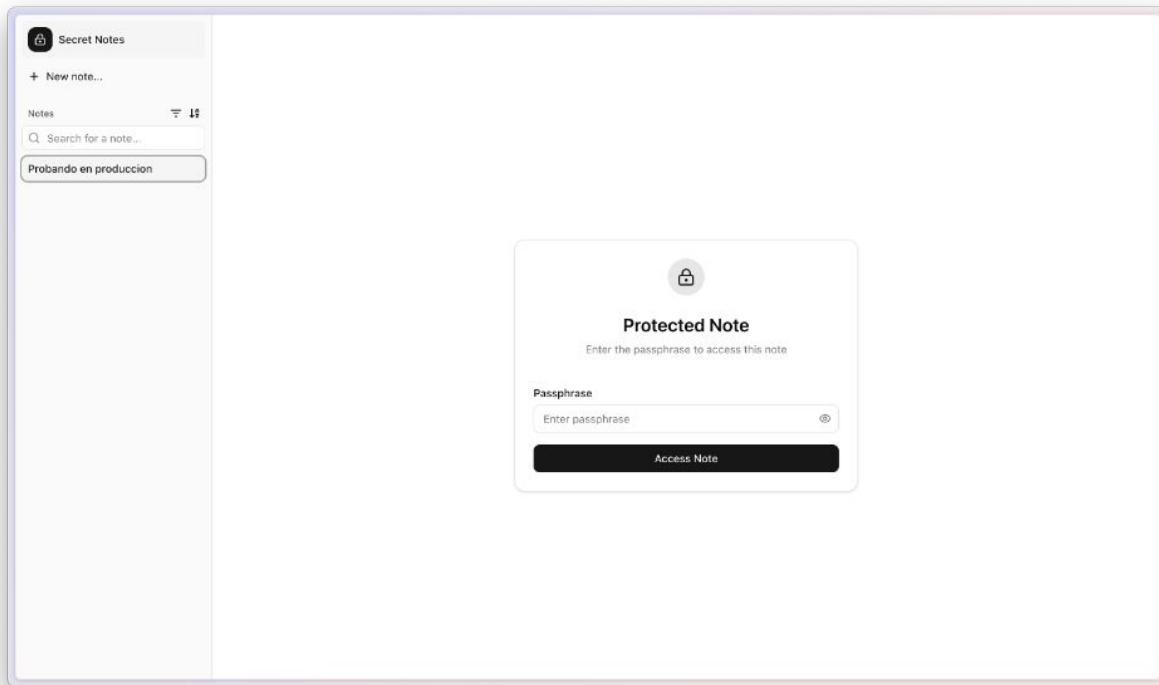
Semester Project | Final Presentation

Continuous Integration

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Project Overview

- Secure web app for encrypted note-taking
- End-to-end encryption with AES-256-GCM
- CI/CD, Docker, Cloud, Testing, and Analytics

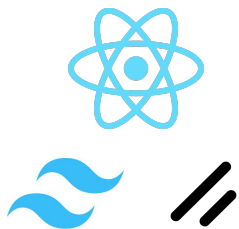


Tech Stack

Frontend: React 19, Tailwind CSS, Shadcn/ui

Backend: Fastify, PostgreSQL, TypeScript

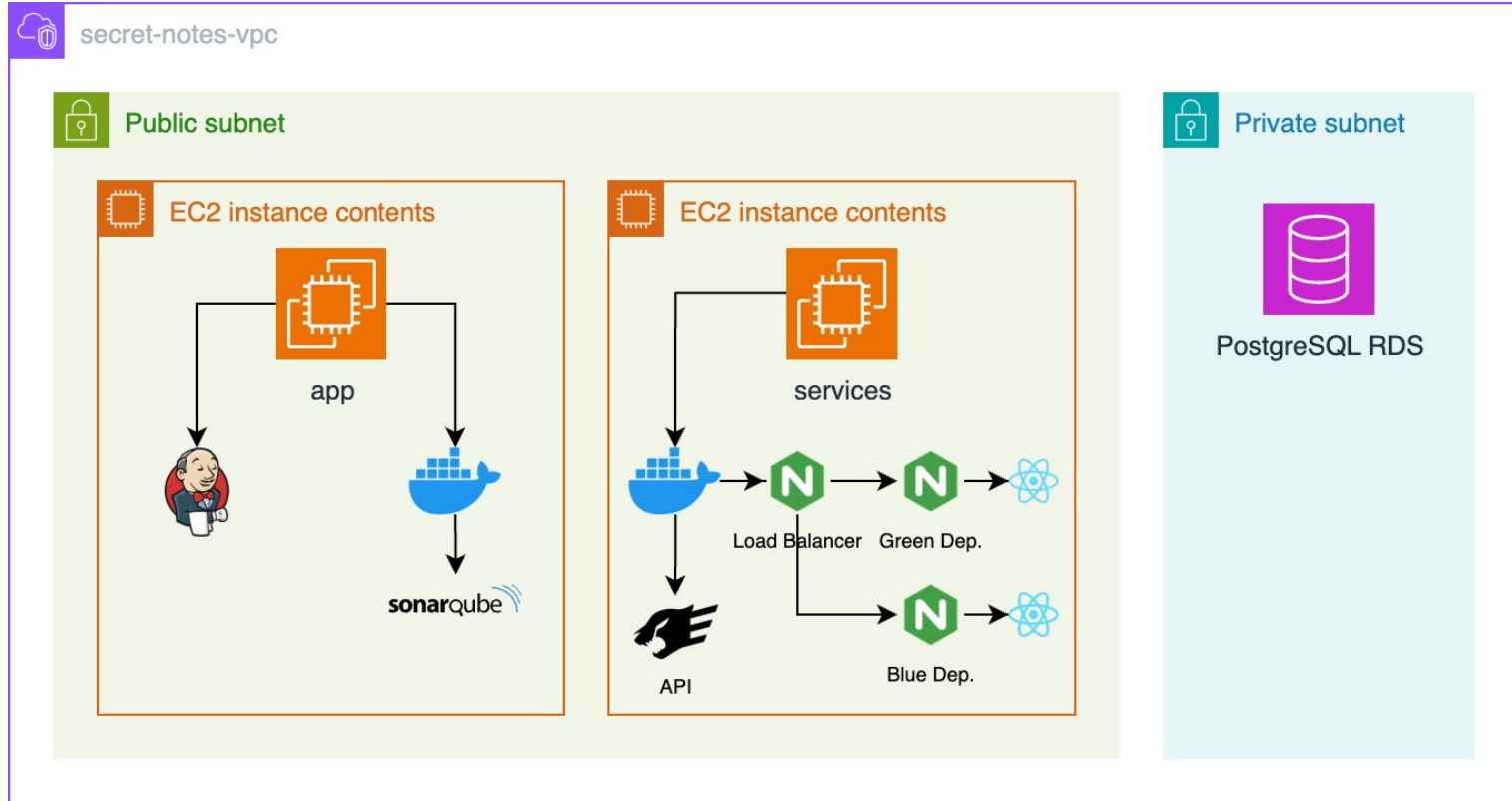
Tools: Docker, Jenkins, GitHub Actions, SonarQube, Snyk, PostHog



Application Architecture

- Frontend + Backend (Dockerized)
- Static frontend with environment variables at build time
- Fastify backend with dynamic runtime config
- 2 EC2 instances
 - Services (Jenkins, SonarQube)
 - App (Frontend/Backend)
- RDS PostgreSQL in private subnet

Application Architecture (cont.)



Self-Hosted CI/CD | Jenkins

- Multibranch pipeline
- Triggered by webhook from GitHub
- Changing variables handled with Jenkins' credentials
- Pipeline stored in `services/jenkins/Jenkinsfile.deploy`



Cloud-Hosted CI/CD | GitHub Actions

- Same stages as Jenkins. Similar functionality
- Triggered automatically on GitHub
- Changing variables handled with repository secrets
- Pipeline stored in `.github/workflows/ci.yaml`



Pipeline Stages

- 7 stages
 - Preparation
 - Linting
 - Unit Testing
 - Build
 - Delivery
 - Deploy
 - Cleanup
- Similar flow in Jenkins and GitHub Actions
- Email notifications on failures

Blue/Green Deployment

- Fulfilled using Docker Compose and three services:
 - NGINX Proxy
 - Frontend Blue Deployment
 - Frontend Green Deployment
- The CI Server follows this steps:
 - `./start-blue-green.sh`
 - Run E2E and performance tests
 - `./switch-blue-green.sh`

Demonstration

- We will make a change to the codebase
- We will push those changes to the master branch
- We will see the result of the GitHub Actions CI/CD
- We will rebase those changes to the deploy branch
- We will wait for the pipeline to complete
- We will verify the changes on the deployed webapp

Thank you!

If you have any questions, feel free to ask.