Cloud Production Engineer Technical Assignment

Welcome to your next leap closer to the swamp! We're excited to see your creativity and technical skills in action. This assignment is designed to let you showcase your cloud development, deployment and communication abilities.

Overview

In our SaaS platform we manage lots of different versions for 5 microservices (Frog1, Frog2 … Frog5).

Our goal today: Ensure operations remain smooth, guarantee uptime, security and performance of every microservice in the platform. Each microservices upgraded to a new version every 30 minutes. After the version deployment, In a low (random) frequency, some versions currently running in production workloads are detected as less performant or secure and need to be replaced.

Implement the following microservices using Python or Go:

PondPulse: stateless app that randomly generates dummy data and exposes metadata for the 5 existing microservices. Expose the following data using simple CRUD REST APIs: randomly incremented applcaiton version, app name, state (healthy/ insecure/ slow).

FlyTrap: Service that detect perfomance and security bugs for our 5 microservices, tells PondPulse to modify the state of "healthy" apps to "insecure" or "slow"

DBRibbit: Polls PondPulse periodically and persists only the faulty versions to a local database.

Note: You do not need to deploy the 5 microservices, you can assume they exist.

Deployment

The 3 microservices above are Dockerized and deployed as cloud native applications in your local Kubernetes cluster. The final demonstration should rely on logs and metrics to show how each app performs and interacts with the rest.

Communication

Being able to clearly communicate is very valuable. Please share a public git repository with your solution.
During your development, document key assumptions, design decisions and the required information to easily onboard your team.
The main readme should include this and the instructions on how to run the solution (the more automatic and seamless, the better - make it easy and fun to showcase to others).
Feel free to also include any diagrams or drawings which help visualize the solution and your decisions.

At JFrog, we value innovation, creativity, and technical excellence. Feel free to add your unique touch to the assignment while ensuring it meets the specified requirements. Good luck 🐸