



SUMMIT
TECHNOLOGY GROUP

STGI Hackathon



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Modernization

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Problem Statement:

In this hackathon, your challenge is to create a basic cloud monitoring tool. It will collect, process, and display logs and metrics from a Kubernetes cluster (control plane as well as pods).

Kubernetes Cluster:

- Set up Minikube on your local machine.
- Deploy two applications:
 - App 1 with PostgreSQL.
 - App 2 with MySQL.

Log Collection:

- Use Fluent Bit, FluentD, or Logstash to collect logs from both apps and databases.

Authentication:

- Implement basic authentication for trusted log sources (e.g., Fluent Bit).

Backend Service:

- Develop a service to receive, process, and store logs in a time series database (e.g., InfluxDB).

Custom Dashboard:

- Build a web-based dashboard to visualize logs and metrics with search and filtering features.

- Docker and Minikube setup in the desktop.
- Minikube Kubernetes cluster with two applications. (application repositories will be provided, you just need to clone and build the docker image out of it.)
- MySQL and PostgreSQL databases are to be deployed in the same cluster.
- Kubernetes deployments and services are to be created for both apps.

Log Collection & Processing

- Tools: Fluent Bit/FluentD/Logstash for log collection.
- Logs sent to a backend service with basic authentication.

Backend Service:

- Processes and stores logs in a time series database (e.g., InfluxDB).
- Ensures logs are organized and easy to query.

Custom Dashboard:

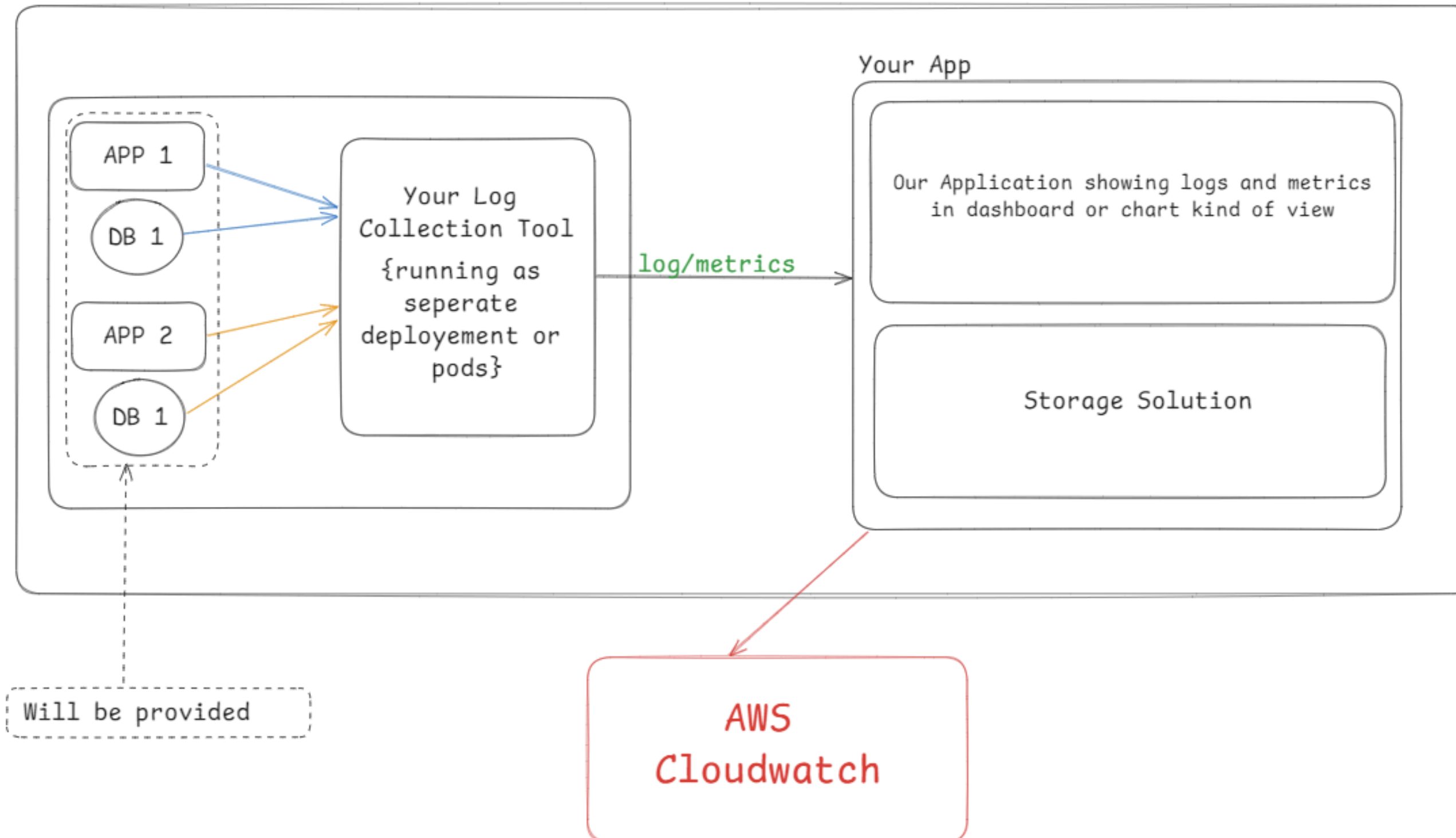
- Built from scratch for log visualization (React/Node.js/Django/etc.).
- Features: Search, filtering, and real-time metrics visualization (error rates, traffic, etc.).

AWS Integration:

- Logs collected from AWS resources.
- Combined view of AWS and Kubernetes pod logs for enhanced observability.

1. Platform successfully collects, processes, and visualizes logs from the Minikube cluster and AWS. {creds will be given}
2. Bonus Features: Simulated traffic monitoring, advanced search with filters.
3. Potential for future scaling and enhanced features.

Minikube CLuster



Thank you!!



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