CS436 Term Project Report 1

Team Members:

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GitHub Repository: https://github.com/ygzgrdmr/CS436-Term-Project

We are setting up the Infinity Search Solo application on Google Cloud, beginning with cloning its GitLab repository. We will automate resource provisioning using Terraform, managing components like GKE and Cloud SQL. The deployment process is visualized through a flowchart, outlining steps from Docker configuration to monitoring. Additionally, an ER diagram details the relationships between entities like Docker Containers, Cloud Build, and the Load Balancer, ensuring a clear understanding of the architecture and data flow.

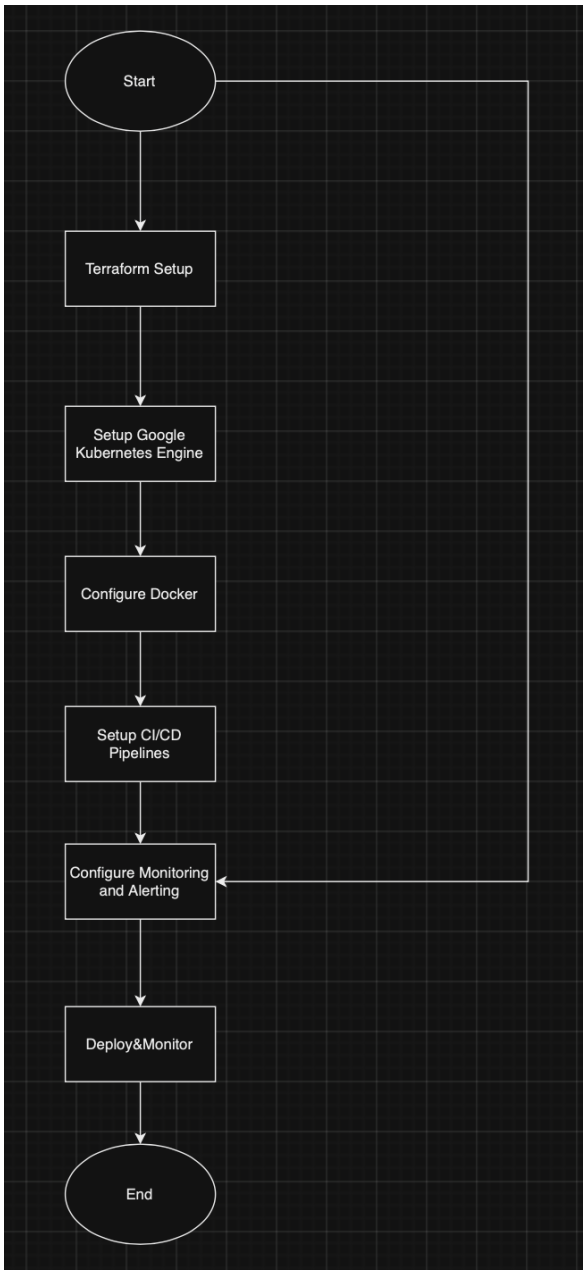
Repository:

We're deploying the Infinity Search Solo, a self-hostable metasearch engine, on Google Cloud. The application's code is stored in a GitLab repository which we will clone to begin the setup process.

Link of repo: https://gitlab.com/infinitysearch/infinity-search-solo

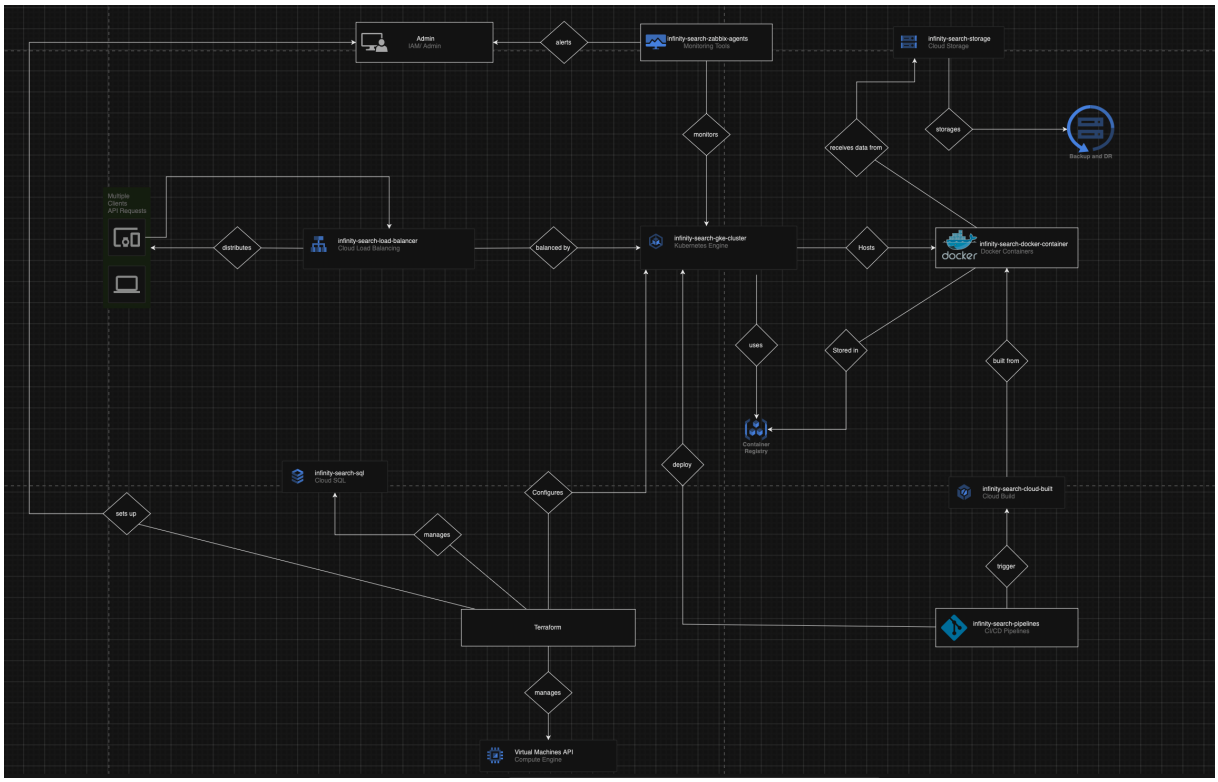
Flowchart:

To visualize the deployment process, we created a flowchart detailing each step from setting up Terraform to deploying on Google Kubernetes Engine (GKE). It includes steps like configuring Docker, setting up CI/CD pipelines, and implementing monitoring tools.



ER Diagram:

The ER diagram illustrates the relationships between various entities involved in the deployment. It includes Terraform managing the Cloud SQL and GKE Cluster, as well as interactions between Docker Containers, Cloud Build, and the Container Registry, with a Load Balancer managing client requests to the GKE Cluster.


Admin
IAM/ Admin
alerts
infinity-search-zabbix-agents
Monitoring Tools
infinity-search-storage
Cloud Storage
monitors
receives data from
storages
Backup and DR
Multiple
Clients
API Requests
distributes
infinity-search-load-balancer
Cloud Load Balancing
balanced by
infinity-search-gke-cluster
Kubernetes Engine
Hosts
infinity-search-docker-container
Docker Containers
uses
Stored in
built from
Container
Registry
deploy
infinity-search-sql
Cloud SQL
Configures
infinity-search-cloud-built
Cloud Build
sets up
manages
trigger
Terraform
infinity-search-pipelines
CI/CD Pipelines
manages
Virtual Machines API
Compute Engine