One-Click Kubernetes Deployment - Cheatsheet (with Diagram)

Workflow Overview

- Trigger via GitHub Actions with parameters.

- Terraform provisions/destroys infra.

- Kubernetes deploys Node.js, NGINX, k8sGPT.
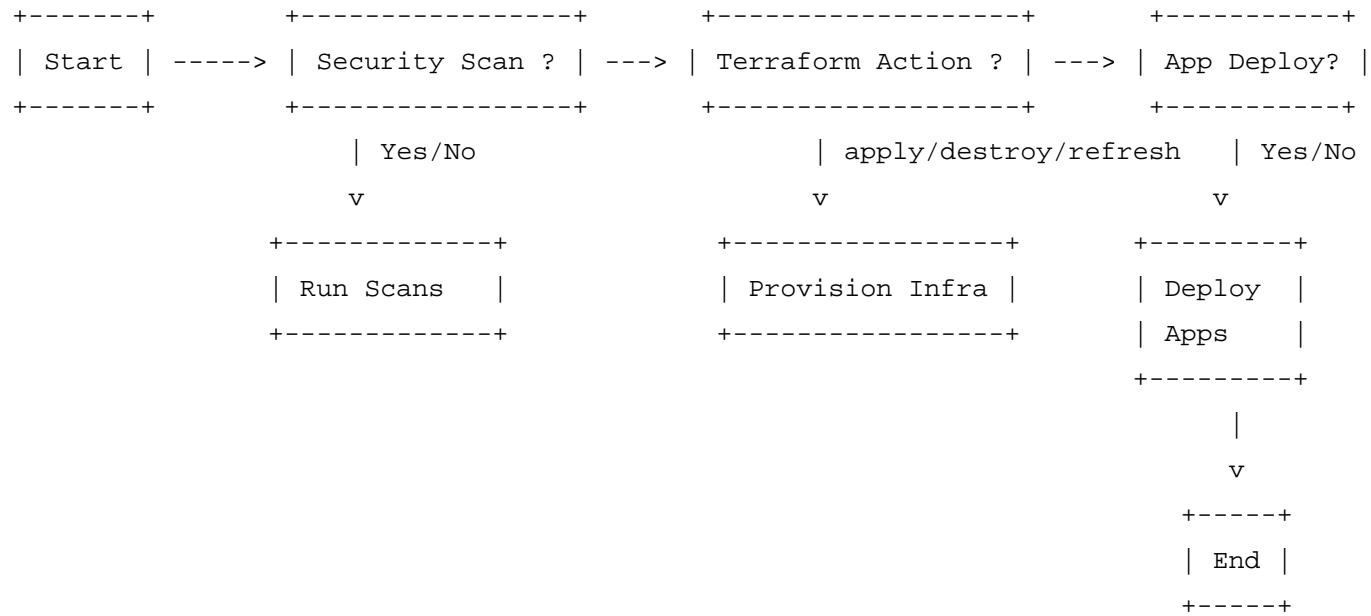
- Security scans optional.

Key Parameters

- environment: dev/test

- action: apply/destroy/refresh

- provider: google/openai

- run_security_scan / run_terraform / run_application_deployment
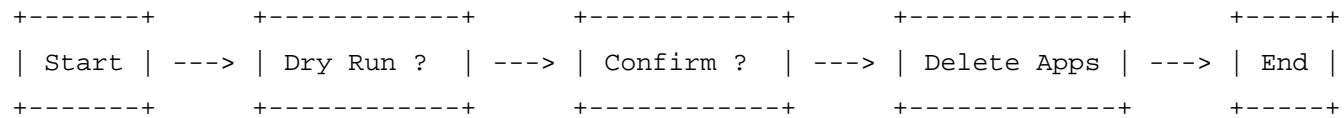
- dry_run & confirm for deletions

Safety Features

- Dry run + confirm required for deletions.

- Secrets in GitHub Secrets.

- RBAC enforced in cluster.

- Full audit logs.

Workflow Diagram

```
+-------+          +-----------------+          +-------------------+          +-----------+
| Start | -----> | Security Scan ? | ---> | Terraform Action ? | ---> | App Deploy? |
+-------+          +-----------------+          +-------------------+          +-----------+
                        | Yes/No                      | apply/destroy/refresh    | Yes/No
                        v                             v                          v
                  +-------------+              +-----------------+          +---------+
                  | Run Scans   |              | Provision Infra |          | Deploy  |
                  +-------------+              +-----------------+          | Apps    |
                                                                           +---------+
                                                                                |
                                                                                v
                                                                            +-----+
                                                                            | End |
                                                                            +-----+

Deletion Workflow:

+-------+          +-----------+          +-----------+          +-------------+          +-----+
| Start | ---> | Dry Run ? | ---> | Confirm ? | ---> | Delete Apps | ---> | End |
+-------+          +-----------+          +-----------+          +-------------+          +-----+
```

Stress Test Workflow

This workflow runs load/stress tests on applications deployed in Kubernetes.
Triggered via GitHub Actions with parameters for environment, duration, and target apps.

```
+-------+      +-----------------+      +-------------------+      +-----------+
| Start | ---> | Setup Cluster   | ---> | Run Stress Tests  | ---> | Collect   |
+-------+      +-----------------+      +-------------------+      | Results   |
                                                                  +-----------+
                                                                       |
                                                                       v
                                                                  +-------+
                                                                  | End   |
                                                                  +-------+
```