A DEVELOPER PLATFORM

INTRODUCTION FOR DEVELOPERS

PLATFORMS?


Google
Kubernetes Engine


Google
App Engine


Google Cloud Run


Azure Kubernetes Service (AKS)


Azure
DevOps


RED HAT
OPENSHIFT


Red Hat
JBoss Enterprise
Application Platform

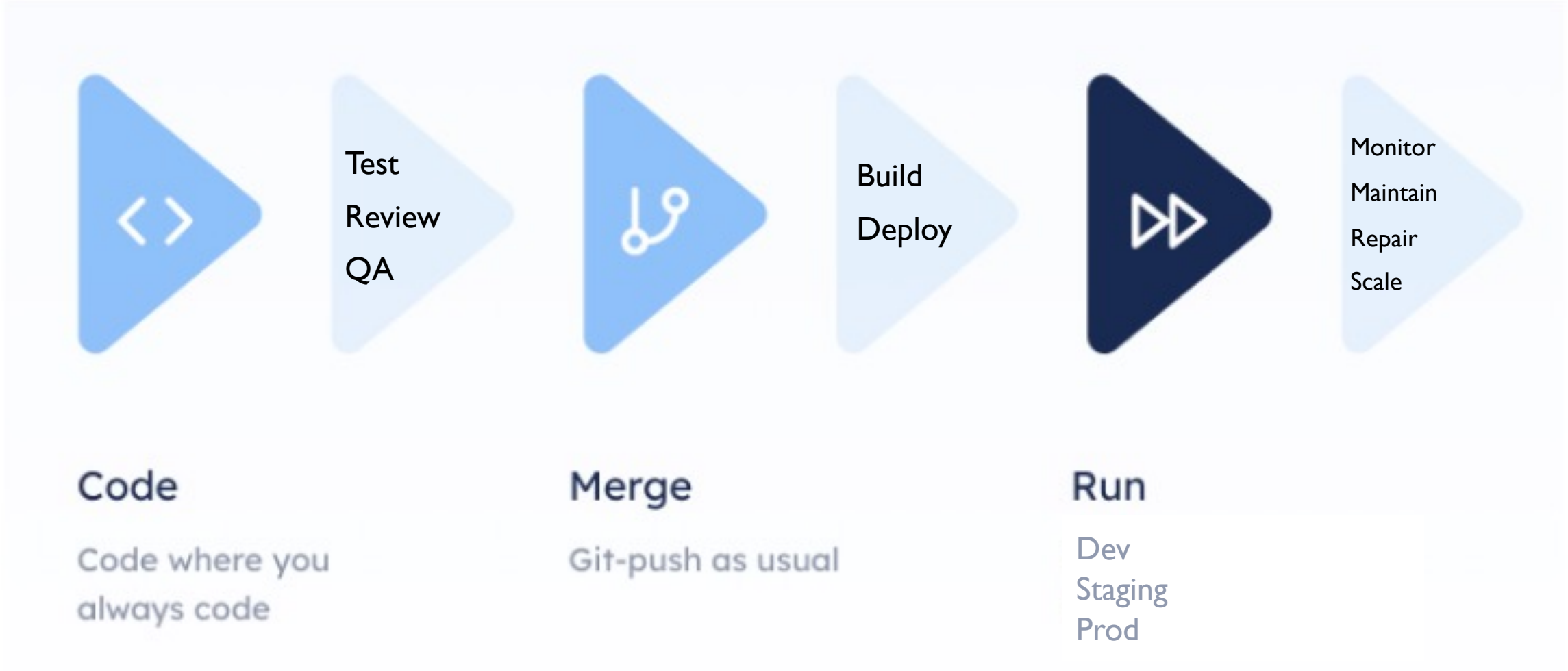

SAP
Cloud Platform


HEROKU

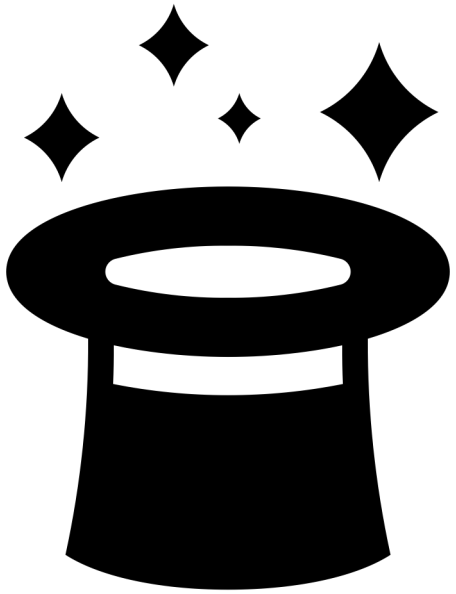

outsystems


JetBrains Space
EAP

Source: https://internaldeveloperplatform.org/what-is-an-internal-developer-platform/


Test
Review
QA
Build
Deploy
Monitor
Maintain
Repair
Scale
Code
Code where you always code
Merge
Git-push as usual
Run
Dev
Staging
Prod

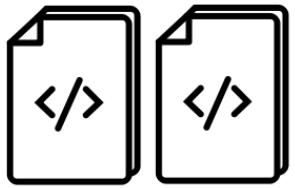
LET'S BUILD A FEATURE ON OUR PLATFORM



FUNDAMENTAL OBJECTIVE OF MODERN DEV-OPS

* As per my understanding

Desired State



Infrastructure As Code
Source Code
Deployment Manifests
Configurations

Actual State

Running Apps
VMs, Clusters
Storage
Networks, DNS, ……..

GIT-OPS

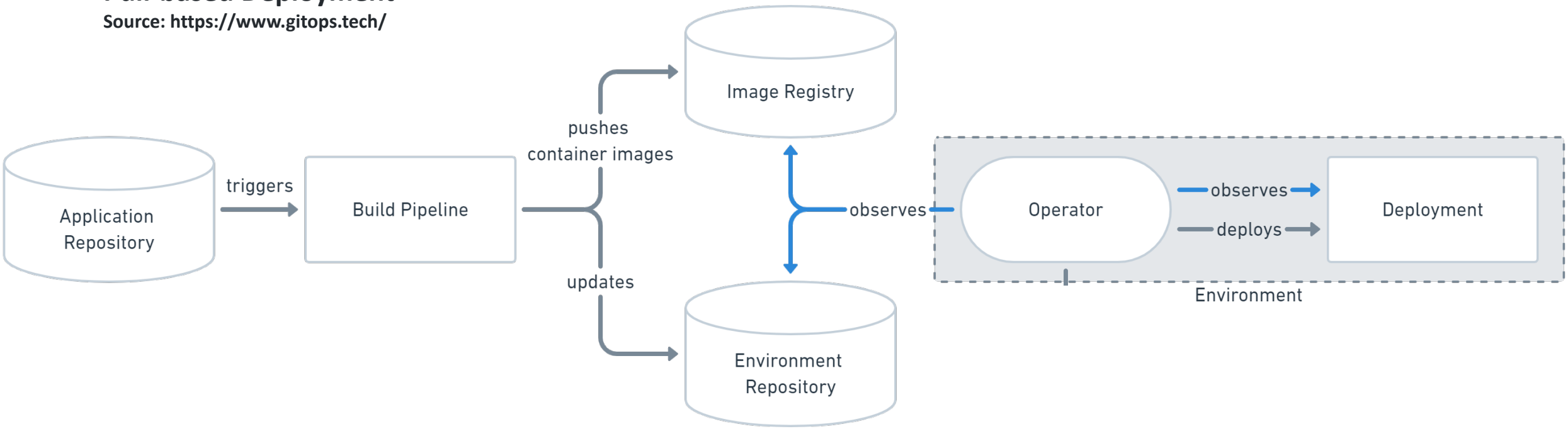
What is GitOps? – (definition from GitLab)
GitOps is an operational framework that takes DevOps best practices used for application development such as version control, collaboration, compliance, and CI/CD, and applies them to infrastructure automation.

- Set of principals that help manage your infrastructure/code/deployments automatically with minimum human overhead (once setup)
  - Use version control (i.e. git), preferably with standard workflows (git-flow, github-flow, one-flow)
  - Follow declarative specification for all things (i.e. infra as code, application manifests etc.)
  - Have Software Agents manage everything (syncing desired and actual state, builds, monitoring, CI/CD, testing)

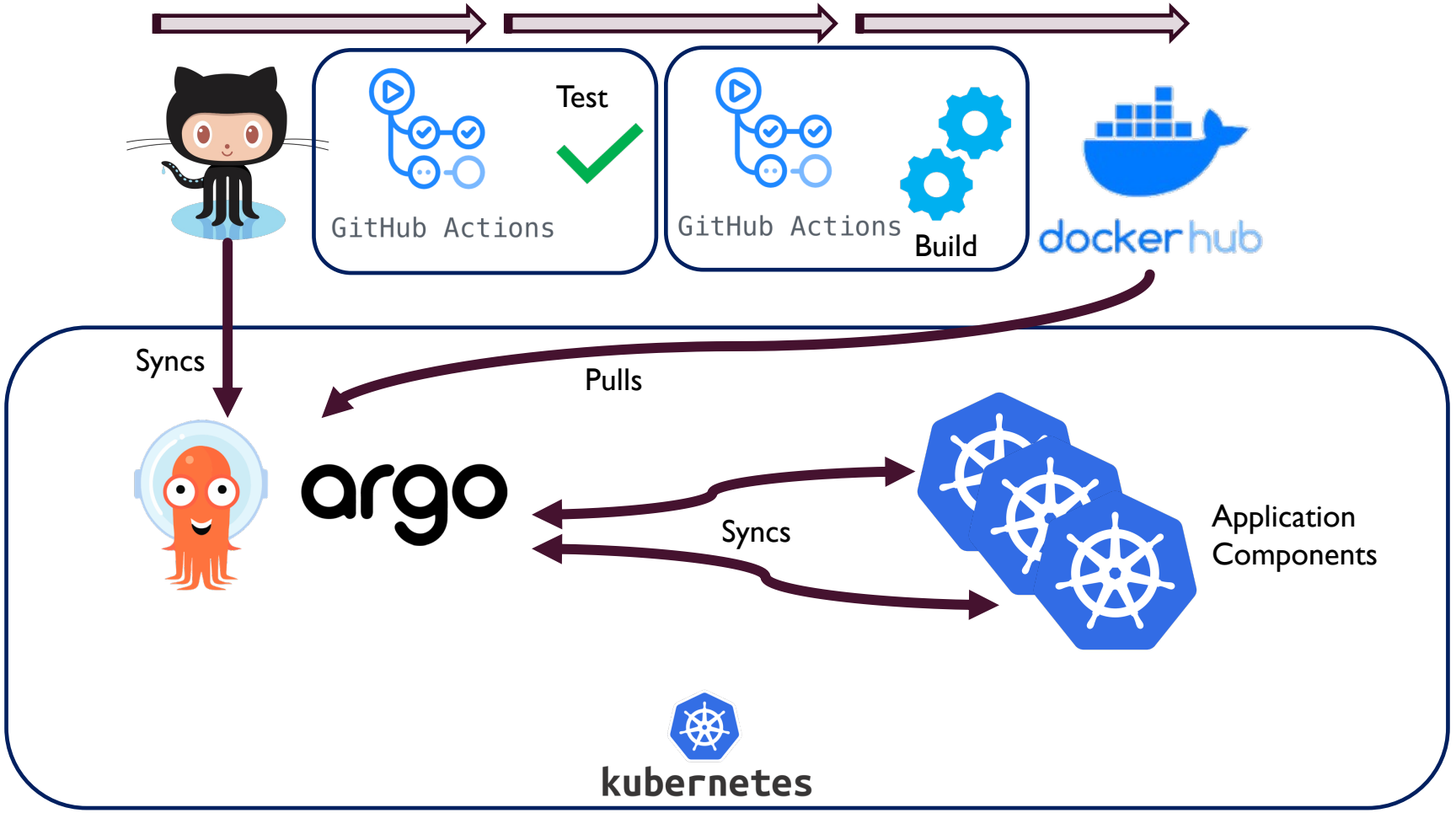
AN IMPLEMENTATION OF GIT-OPS

Pull-based Deployment

Source: https://www.gitops.tech/



WHAT JUST HAPPENED



HOW AND WHAT IS THE PLATFORM?

- Kubernetes cluster provisioned using Terraform from a custom Magnum Cluster Template
- Storage Provisioner for Cinder
- Setup cert-manager for X.509 certificate management with Let'sEncrypt as CA
- Setup internal NGINX Ingress Controller, with auto provisioning cluster wide DNS hostname, or more if needed
- Optional setup of a Rook Ceph storage cluster
- actions-runner-controller (ARC) for self-hosted on demand GitHub workflow runners, providing an internal CI, test and code build platform
- Argo CD (continuous delivery) for the workloads on the cluster

https://github.com/mumeraltaf/openstack-kubernetes