



# // INTRODUCTION TO GITOPS – A NEW AGE OF AUTOMATION?

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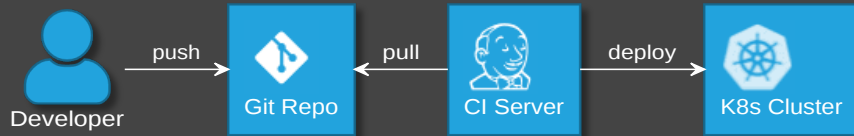


# Agenda

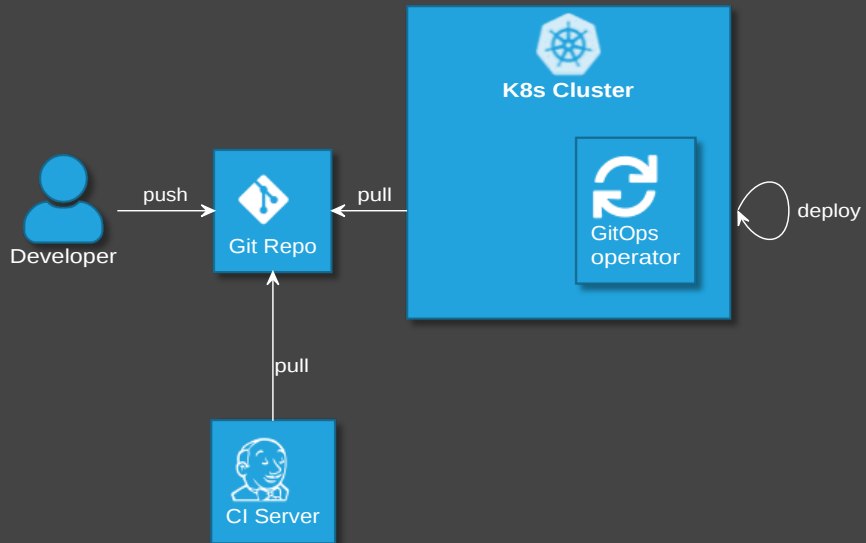
- What is GitOps?
- Where can it be used?
- How can it be used?
- What challenges arise?

# What is GitOps?

# "Classic" Continuous Delivery ("CICDs")



## GitOps



# GitOps Principles



- 1 The principle of declarative desired state
- 2 The principle of immutable desired state versions
- 3 The principle of state reconciliation
- 4 The principle of operations through declaration

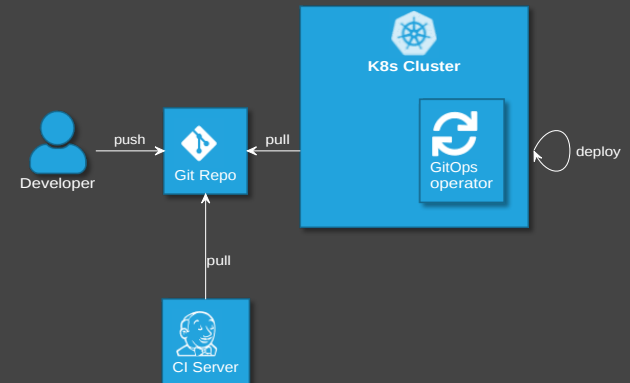
🔥 WIP!

🐙 [github.com/gitops-working-group/gitops-working-group/pull/48](https://github.com/gitops-working-group/gitops-working-group/pull/48)

📄 [hackmd.io/arwvV8NUQX683uBM3HzyNQem](https://hackmd.io/arwvV8NUQX683uBM3HzyNQem)

# Advantages of GitOps

- (Almost) no access to cluster from outside
- No credentials on CI server
- Forces 100% declarative description
  - auditable
  - automatic sync of cluster and git
- Enterprise: Accessing git is simpler (no new firewall rules)







**What can GitOps be used for?**



- grew up operating applications on Kubernetes and
- is now rising above it, operating clusters and other cloud infrastructure





**How can GitOps be used?**

# Demo

 [github.com/cloudogu/k8s-gitops-playground](https://github.com/cloudogu/k8s-gitops-playground)



# What challenges arise with GitOps?



For dev and ops

# Personal Conclusion

After migrating to and operating with GitOps in production for > 1 year

- Smoother CI/CD,
  - *everything* declarative
  - faster deployment
  - force sync desired state ↔ actual state
- But: security advantages only when finished migration
- A lot of potential ahead!



# GitOps experience distilled




- + Has advantages, once established
- Mileage for getting there may vary

# Adopt?

- Greenfield
  - Kubernetes AppOps: Definitely
  - Cloud Infra: Depends
- Brownfield: Depends

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 [cloudogu.com/gitops](https://cloudogu.com/gitops)

-  GitOps Resources (intro, tool comparison, etc.)
-  Discussions
-  Training

 [cloudogu/k8s-gitops-playground](https://github.com/cloudogu/k8s-gitops-playground)

 [cloudogu/gitops-build-lib](https://github.com/cloudogu/gitops-build-lib) 



Slides