



# Un Dev, un Ops et Git -

Seront-ils autorisés à casser la prod ?

*Fabrice Pipart | Senior Technical Expert | Amadeus IT*

*James Searby | Principal Engineer | Amadeus IT*





{RIVIERADEV}

# Introduction

Who are we?



# Who are we?

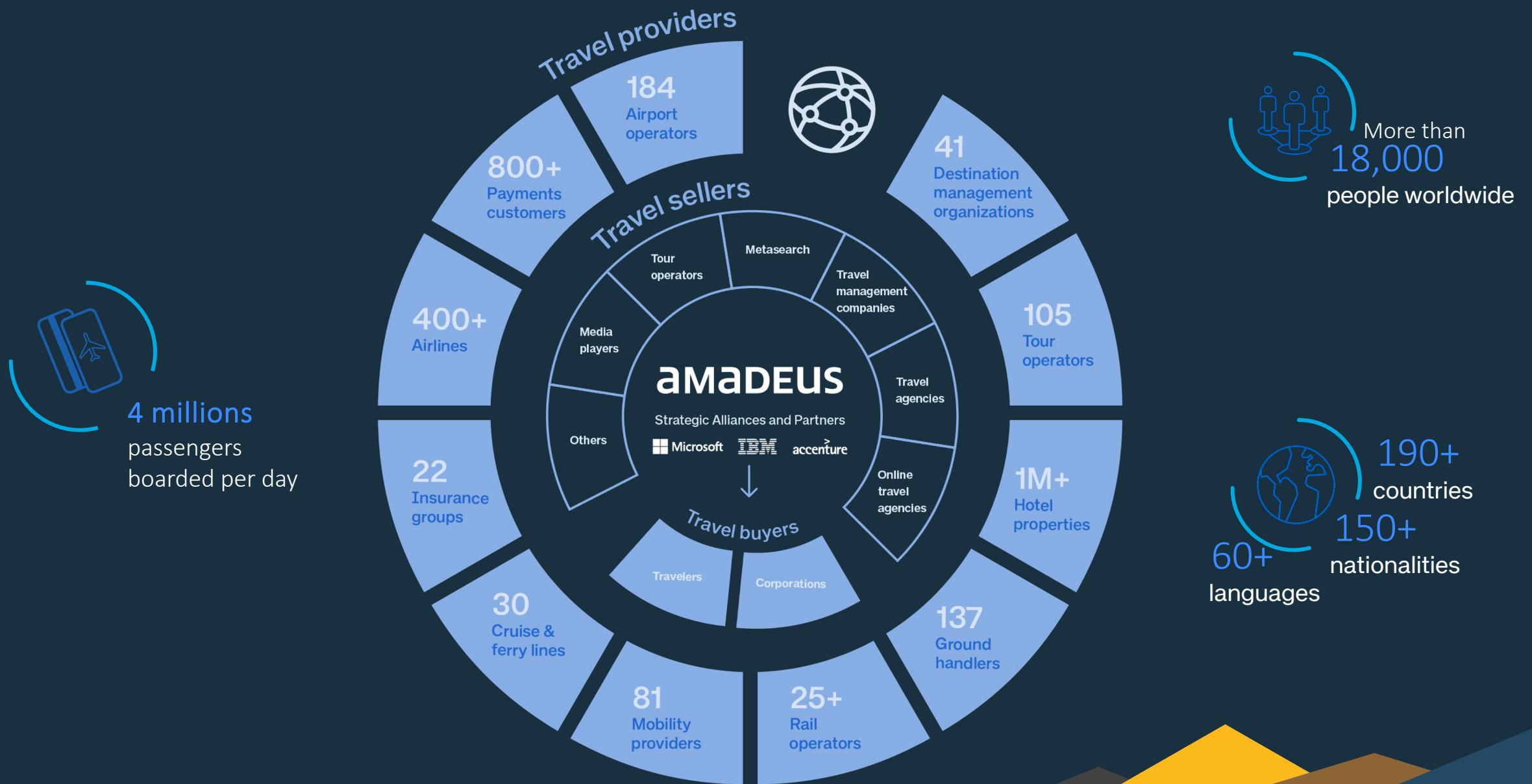
echo \$(whoami)

@FabricePipart

@jsearby06



# We provide solutions for the Travel Industry





# Previously in 2023 ...





# On est devenus célèbres en 2023



YouTube Search

RIVIERADEV

## Un Dev, un Ops et Git

A quelle vitesse réussiront-ils à réparer la prod?

Fabrice Pipart | Senior Technical Expert | Amadeus IT  
James Searby | Principal Engineer | Amadeus IT

{RIVIERADEV} QUARKUS WORLD TOUR

Riviera DEV 2023 - Fabrice Pipart, James Searby - Un Dev, un Ops et Git : Réparer la prod

118 views 13 Dec 2023

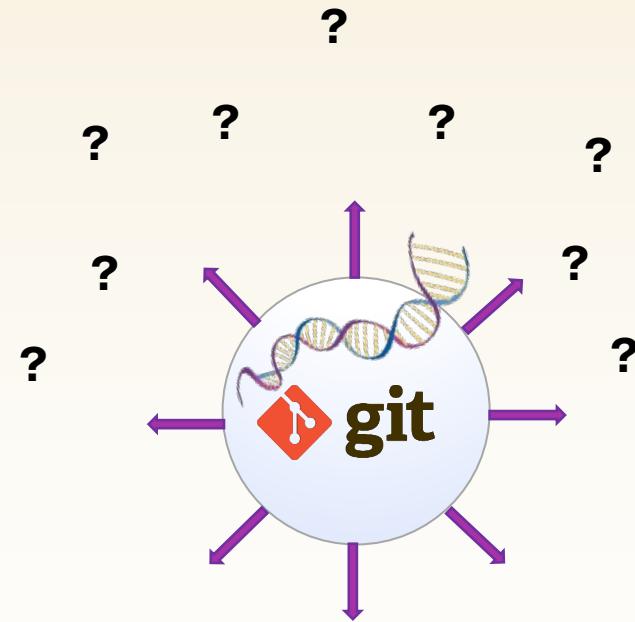
Titre complet : Un Dev, un Ops et Git : A quelle vitesse réussiront-ils à réparer la prod?

En 2023, quand il s'agit de nos opérations, on veut TOUT accélérer via de l'automatisation. Et on a le choix: DevOps, GitOps, SecOps, NimporteQuoiOps, ViteViteOps... Voyons ensemble toutes les bonnes recettes que nous avons mis en place à Amadeus pour accélérer nos opérations, les rendre plus sûres et moins sujettes aux erreurs humaines.

Quoi de mieux qu'une production HS pour illustrer ça? Venez voir comment un Dev peut saboter la prod et comment un Ops peut réparer tout ça avec une démo live pendant la présentation.

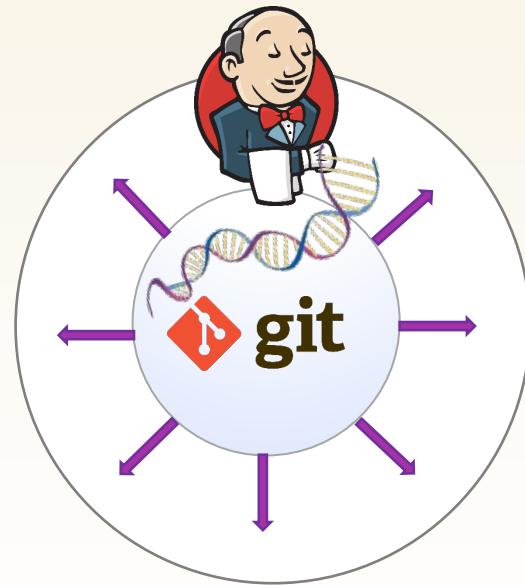
Les deux ingénieurs vous montreront comment mettre rapidement en prod le site de réservation d'une compagnie aérienne (Quarkus inside) en quelques minutes via une Pull Request et créer un namespace Kubernetes / OpenShift, des Secrets, déployer l'application et mettre en place la connectivité via Argo CD. Et tout ça en respectant les règles strictes et processus permettant d'éviter le prochain désastre.

# *Collaborate. As code.*



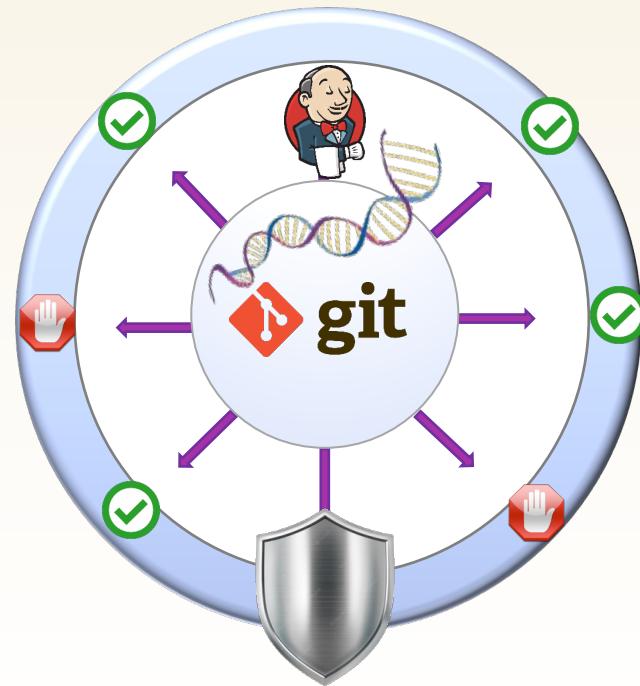
- Standard
- Contribution checklists
- Designed for collaboration
- Asynchronous reviews

# Jenkins. To automate checks.



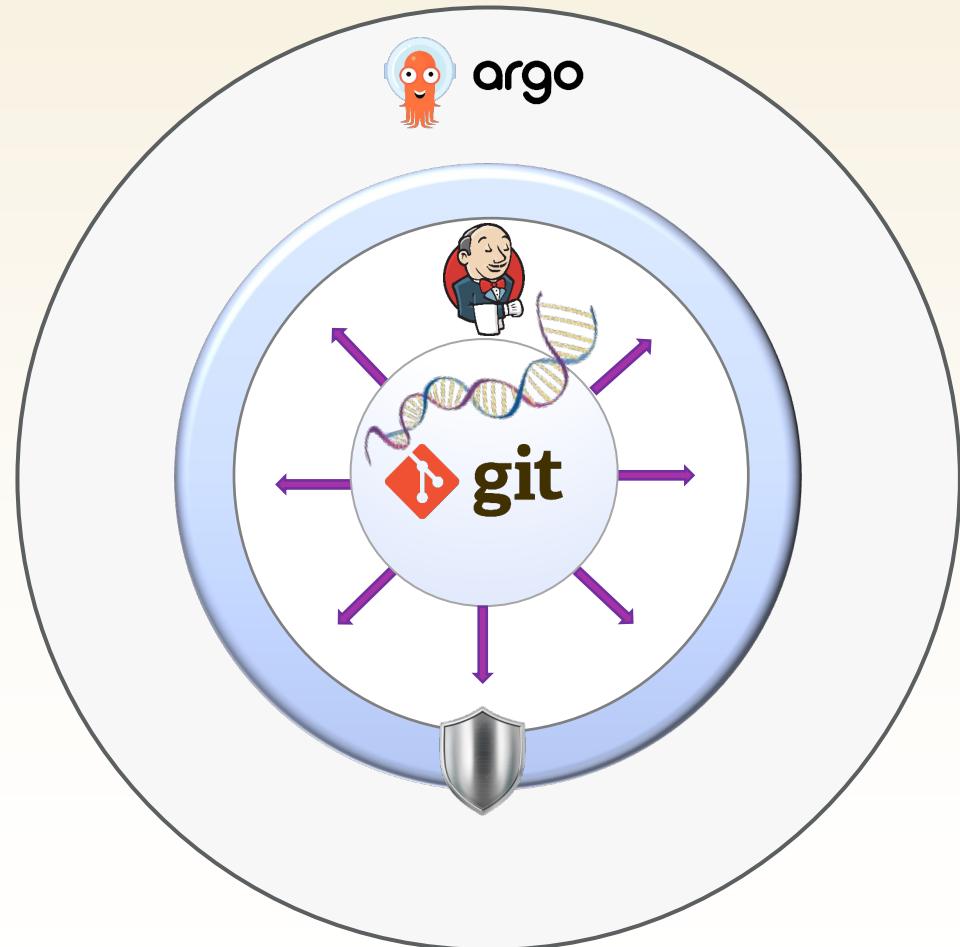
- Standard
- Trigger hooks
- Versatile
- Ease feedback loop
- Automation avoids mistakes

# Automatic checkpoints



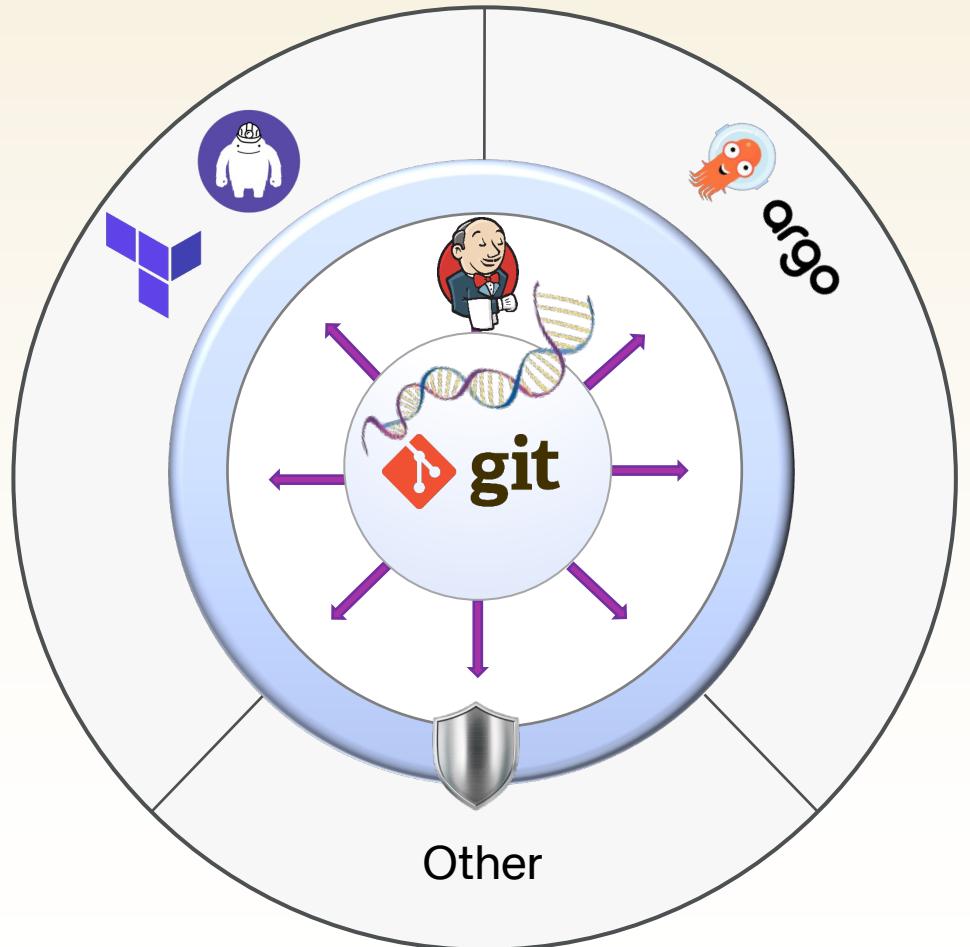
- Error checks
- Security checks
- Operational checks
- Freeze
- Audit trail
- Gatekeeping
- Replacement for prod boards

# Apply the declarative model



- Standard
- Leverages the declarative model
- Compares model and reality

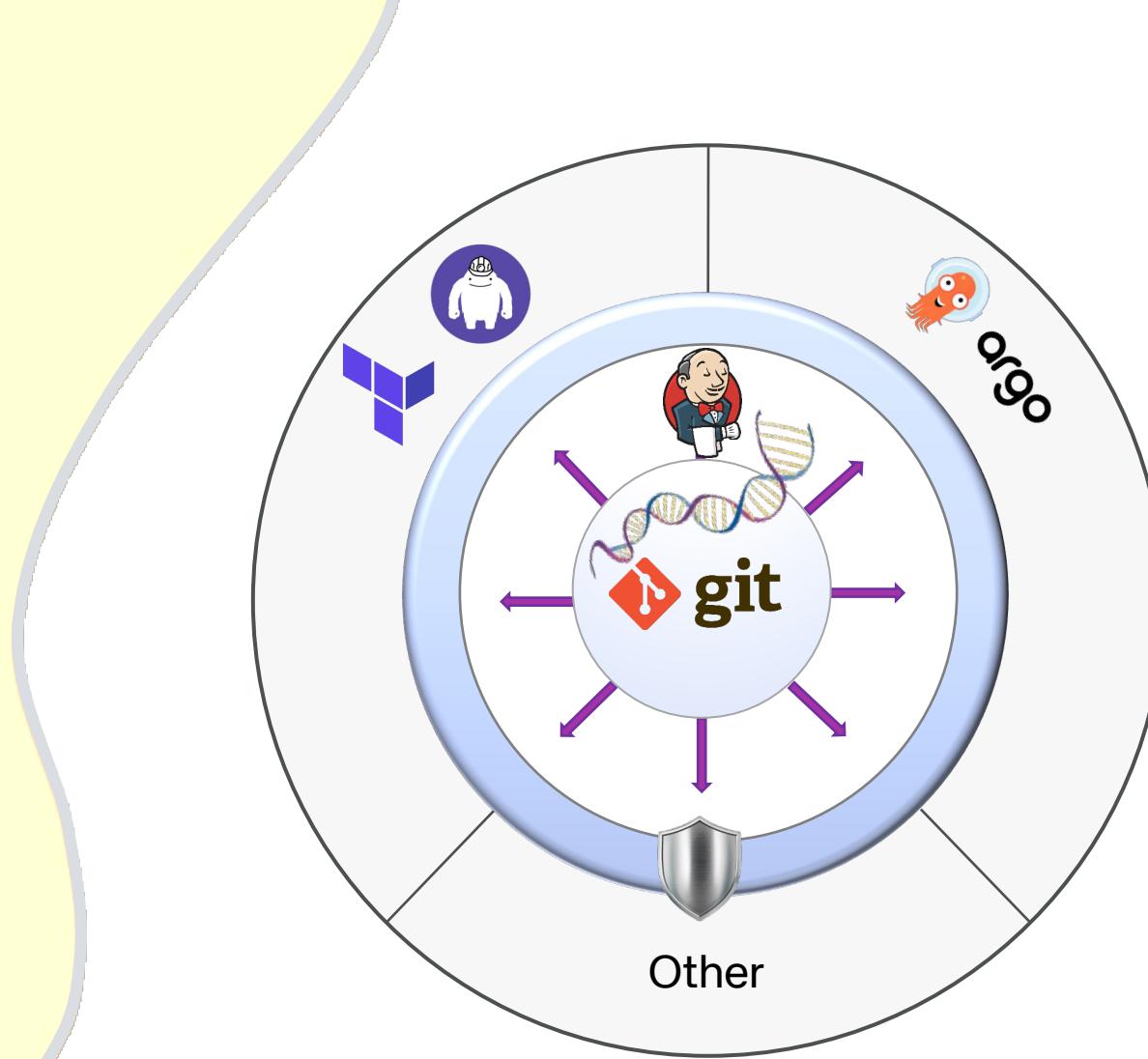
# *Factory. Of Anything.*



- Infrastructure
- Applications
- Security
- Anything...

# Auditable ?

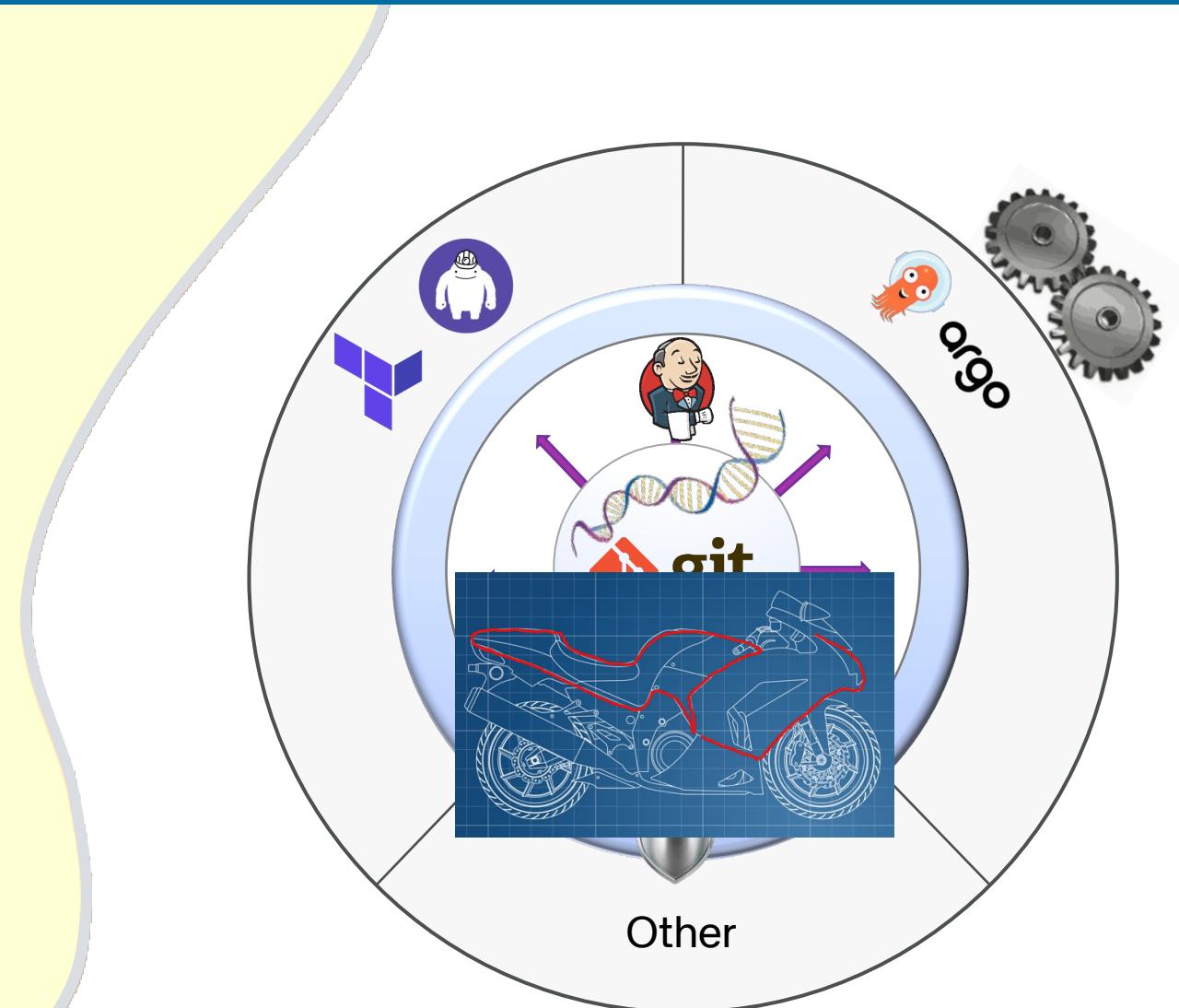
All changes  
clear and  
traceable



- Git Blame
- Git Diff
- Audit trail

# Resilience ?

Auto repair  
from a  
temporary  
issue

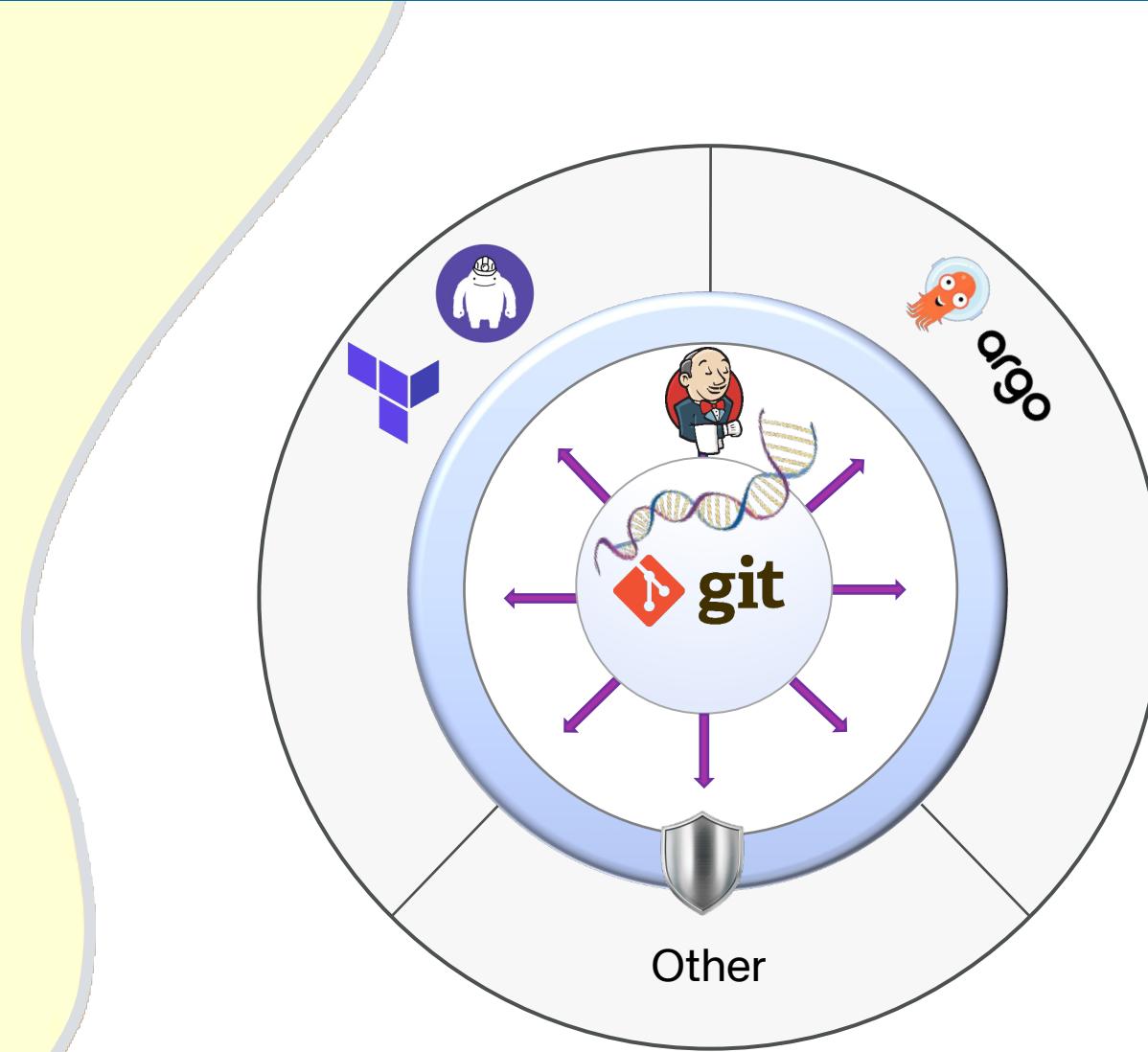


Self healing



# Recoverability ?

Things.  
Go.  
Wrong.



git revert !

# *Let's go GitOps !*





# ***Recovery first!***



The screenshot shows a dark-themed terminal application window. At the top, there's a navigation bar with icons for back, forward, search, and file operations. The title bar reads "makemake-sandbox-conf". Below the title bar is a file list with items like "nl (Index)", "values.yaml", "prod.yaml (Working Tree)", "prod.yaml X", and "prod-dg". The main content area displays a YAML configuration file with sections for "hosting" and "instances". The "instances" section contains fields like "customer", "flowType", "instanceName", "replicas", "httpAppPath", and "httpContentPath". The bottom half of the window is a terminal window showing a git session. It has tabs for "PROBLEMS", "OUTPUT", "DEBUG CONSOLE", "TERMINAL" (which is selected), "PORTS", and "...". The terminal shows commands like "git log -1 --oneline", "git revert 77aa723", and "git push main". It also shows a status bar at the bottom with icons for file operations and system status.

```
apps > digital-hosting-saas > chart > values > prod.yaml > {} hosting > [ ] instances > {} 2 > # replicaCount
  1   hosting:
  2     instances:
  3       customer: af
  4       flowType: servicing
  5       instanceName: servicing
  6       replicas: 4
  7       httpAppPath: /prd/ /applicationblueprints/
  8       httpContentPath: ""
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS ...

zsh + - 16:51:50

```
git log -1 --oneline
77aa723 (HEAD -> main, origin/main, main/main) Reapply "0.3.28"
git revert 77aa723
[main 2955c50] Revert "Reapply "0.3.28"""
1 file changed, 1 insertion(+), 1 deletion(-)
```

git push main

# *Let's investigate*



\$git blame  
Ruining friendships  
since 2005

apps / digital-hosting-saas / chart / values.yaml MODIFIED

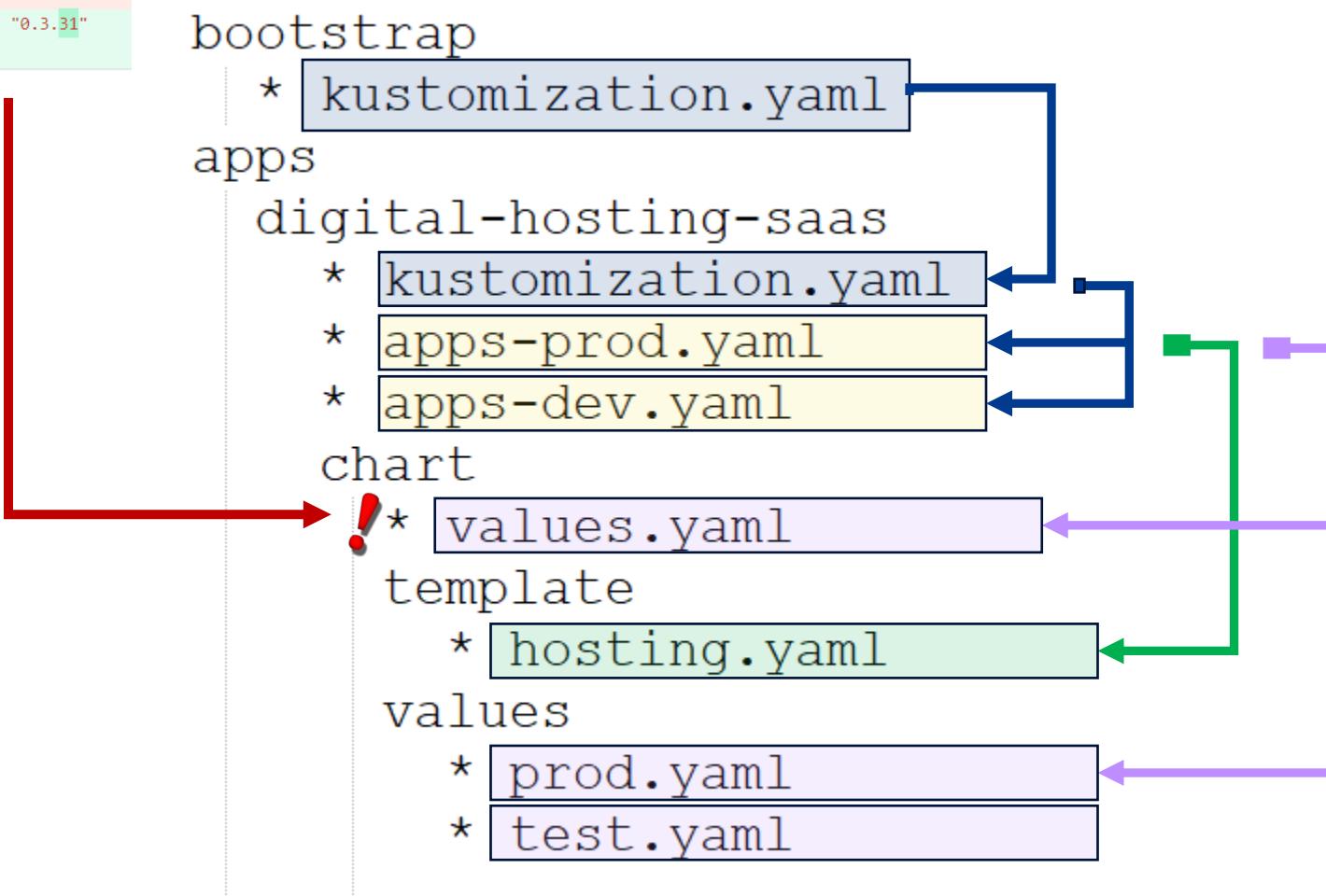
1 1	hosting:
2 2	namespace: rivieradev
3 -	chartVersion: "0.3.30"
4 -	instances: []
3 +	chartVersion: "0.3.31"
4 +	instances: []

# Let's investigate



apps / digital-hosting-saas / chart / values.yaml MODIFIED

```
1 1   hosting:  
2 2     namespace: rivieradev  
3  -     chartVersion: "0.3.30"  
4  -     instances: []  
3 +     chartVersion: "0.3.31"  
4 +     instances: []
```

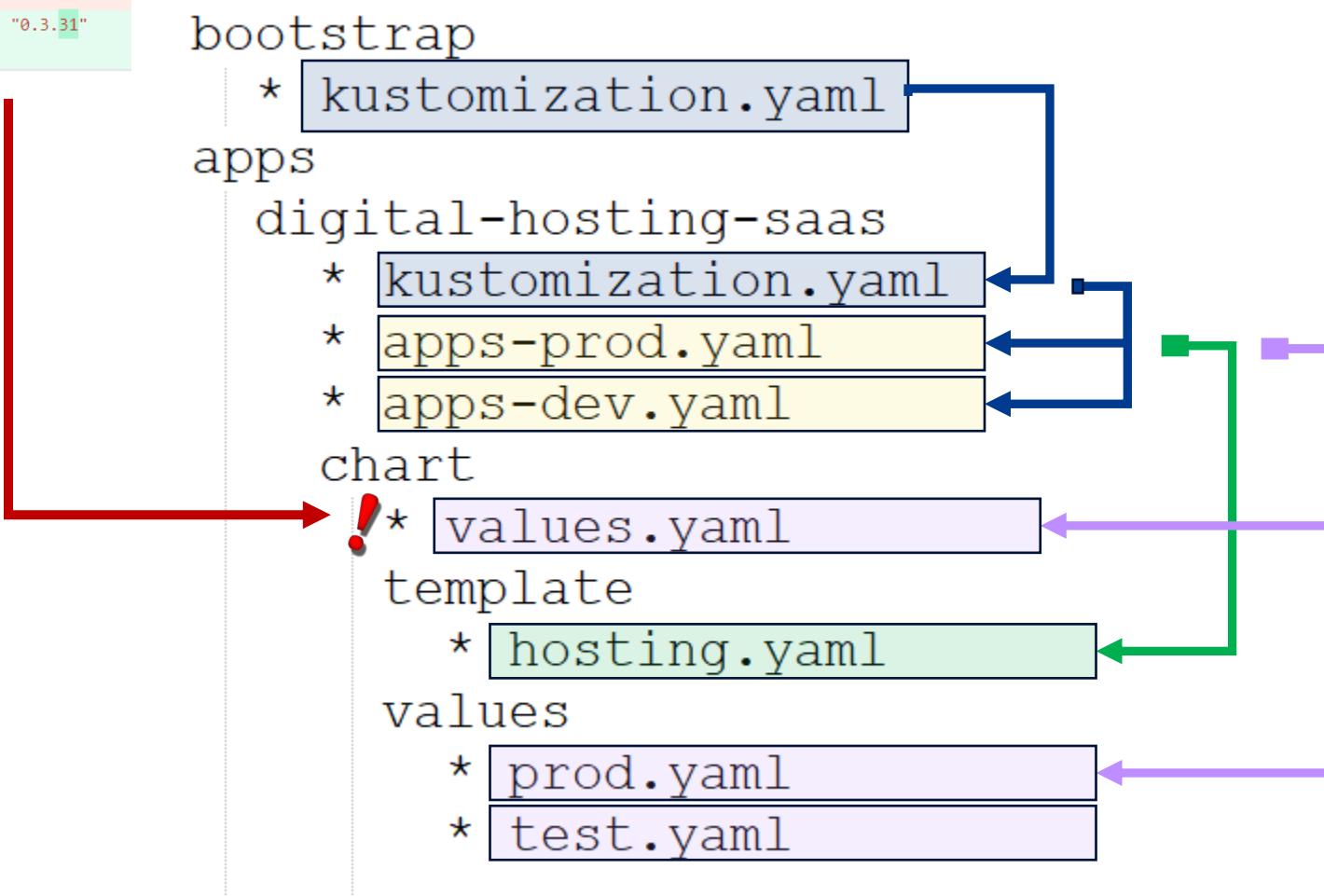


# Let's investigate



apps / digital-hosting-saas / chart / values.yaml MODIFIED

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1 1   hosting:  
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```

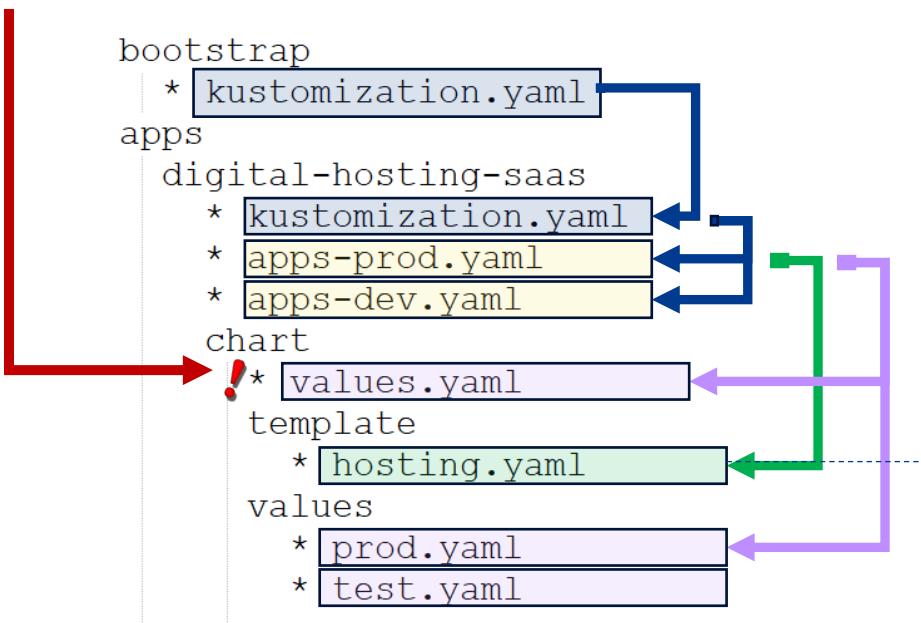


# Let's investigate



apps / digital-hosting-saas / chart / values.yaml MODIFIED

```
1 1     hosting:  
2 2         namespace: rivieradev  
3 -         chartVersion: "0.3.30"  
4 -         instances: []  
3 +         chartVersion: "0.3.31"  
4 +         instances: []
```



```
hosting.yaml
```

```
spec:  
  
project: sandbox-conference  
syncPolicy:  
    automated:  
        prune: true  
        selfHeal: true  
        allowEmpty: false  
  
source:  
repoURL: 'https://repository.../helm-aekacs'  
targetRevision: {{ $chartVersion | quote }}  
helm:  
    valueFiles:  
        - values.yaml  
        - values/prod.yaml  
        - values/{{ $cluster }}.yaml  
    values: |  
        {{- toYaml . | nindent 8 }}  
chart: digital-hosting-saas  
  
destination:  
name: {{ $cluster | quote }}  
namespace: {{ $namespace | quote }}
```

# Let's investigate

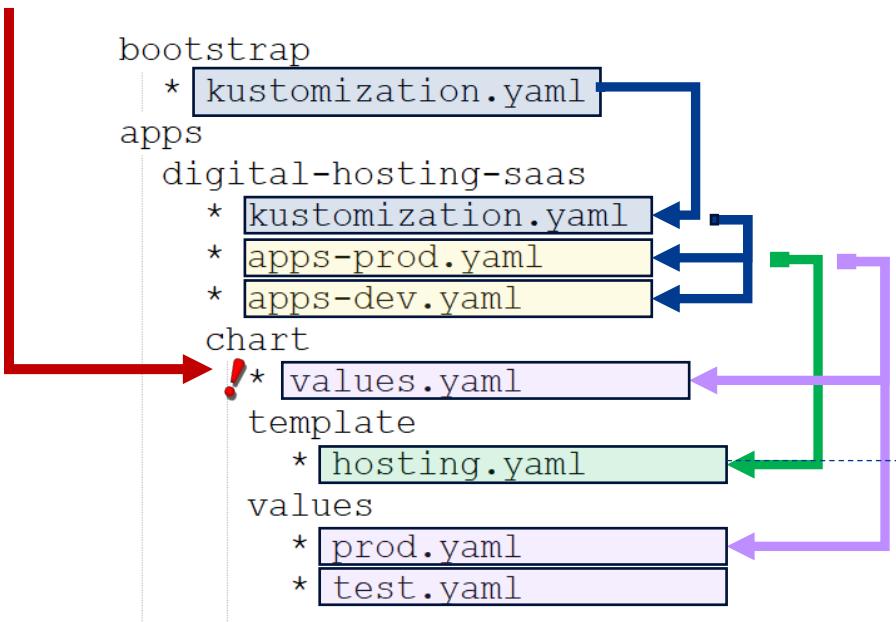


apps / digital-hosting-saas / chart / values.yaml MODIFIED

```

1 1   hosting:
2 2     namespace: rivieradev
3 -   chartVersion: "0.3.30"
4 -   instances: []
3 +   chartVersion: "0.3.31"
4 +   instances: []

```



hosting.yaml

```

repoURL: 'https://repository.helm.aekacs'
chart: digital-hosting-saas
chartVersion: "0.3.31"

```

```

digital-hosting-saas-0.3.31.tgz
digital-hosting-saas-0.3.30.tgz
digital-hosting-saas-0.3.31
digital-hosting-saas-0.3.30

```

digital-hosting-saas	Folders are different
>  templates	Identical
>  values	Identical
>  Chart.yaml	Text files are different
>  values.yaml	Text files are different

```

# Default values for digital-hosting-saas
# This is a YAML-formatted file.
# Declare variables to be passed into your application's environment
replicaCount: 2
replicaCount: 0

serviceName: digital-hosting-saas-service
serviceName: digital-hosting-saas-svc

resources:
limits:
  memory: 32Mi
  requests:
    cpu: 2m
    memory: 16Mi
resources:
limits:
  memory: 32Mi
  requests:
    cpu: 2m
    memory: 16Mi

```

# Let's investigate



apps / digit

hosting:

namespace: rivieradev

instances:

```
- customer: chocolatine
  flowType: booking
  instanceName: booking
  replicaCount: 2
  httpAppPath: /main-artifact-dir/prd/chocolatine/applicationblueprints/rivierachocol/bp-release-1.0.0.zip
  httpContentPath: ""
```

```
- customer: riviera
  flowType: servicing
  instanceName: servicing
  replicaCount: 2
  httpAppPath: /main-artifact-dir/prd/riviera/applicationblueprints/rivierabasel/bp-release-1.0.0.zip
  httpContentPath: ""
```

```
- customer: flycup24
  flowType: ssci
  instanceName: ssci
  replicaCount: 2
  httpAppPath: /main-artifact-dir/prd/flycup/applicationblueprints/_ssci_flycup/bp-release-1.23.24.zip
  httpContentPath: /main-artifact-dir/prd/flycup/applicationblueprints/rivieraflycup1/bp-release-1.0.0.zip
```

```
- customer: flyjo
  flowType: servicing
  instanceName: servicing
  replicas: 2
  httpAppPath: /main-artifact-dir/prd/flyjo/applicationblueprints/rivieraflypoj1/bp-release-4.0.0.zip
  httpContentPath: ""
```

# Let's investigate



apps / digit

```
hosting:
  namespace: rivieradev
  instances:

    - customer: chocolatine
      flowType: booking
      instanceName: booking
      replicaCount: 2
      httpAppPath: /main-artifact-dir/prd/chocolatine/applicationblueprints/rivierachocol/bp-release-1.0.0.zip
      httpContentPath: ""

    - customer: riviera
      flowType: servicing
      instanceName: servicing
      replicaCount: 2
      httpAppPath: /main-artifact-dir/prd/riviera/applicationblueprints/rivierabasel/bp-release-1.0.0.zip
      httpContentPath: ""

    - customer: flycup24
      flowType: ssci
      instanceName: ssci
      replicaCount: 2
      httpAppPath: /main-artifact-dir/prd/flycup/applicationblueprints/_ssci_flycup/bp-release-1.23.24.zip
      httpContentPath: /main-artifact-dir/prd/flycup/applicationblueprints/rivieraflycup1/bp-release-1.0.0.zip

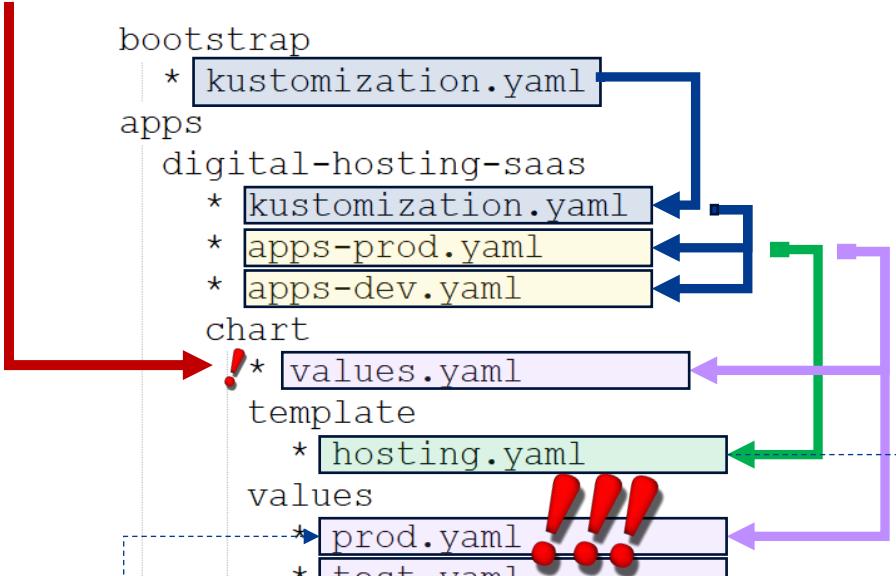
    - customer: flyjo
      flowType: servicing
      instanceName: servicing
      replicas: 2
      httpAppPath: /main-artifact-dir/prd/flyjo/applicationblueprints/rivieraflypoj1/bp-release-4.0.0.zip
      httpContentPath: ""
```



# Let's investigate

apps / digital-hosting-saas / chart / values.yaml MODIFIED

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2 2     namespace: rivieradev
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4 -   instances: []
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4 +   instances: []
```



hosting.yaml

```
repoURL: 'https://repository.helm.aekacs'
chart: digital-hosting-saas
chartVersion: "0.3.31"
```

```
digital-hosting-saas-0.3.31.tgz
digital-hosting-saas-0.3.30.tgz
digital-hosting-saas-0.3.31
digital-hosting-saas-0.3.30
```

digital-hosting-saas	Folders are different
>  templates	Identical
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# Default values for digital-hosting-saas
# This is a YAML-formatted file.
# Declare variables to be passed into your application's Helm charts.

replicaCount: 2
replicaCount: 0

serviceName: digital-hosting-saas-service
serviceName: digital-hosting-saas-svc

resources:
limits:
  memory: 32Mi
  requests:
    cpu: 2m
    memory: 16Mi
resources:
limits:
  memory: 32Mi
  requests:
    cpu: 2m
    memory: 16Mi
```

*Houston ... We have a problem!*



**NOT AGAIN !!!!**

Immediate  
Post Mortem

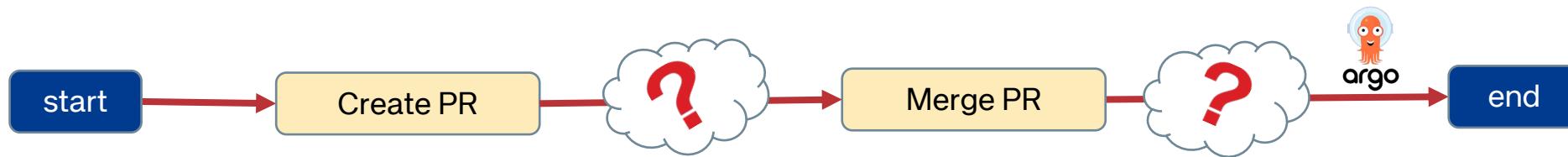


# Review of the current process

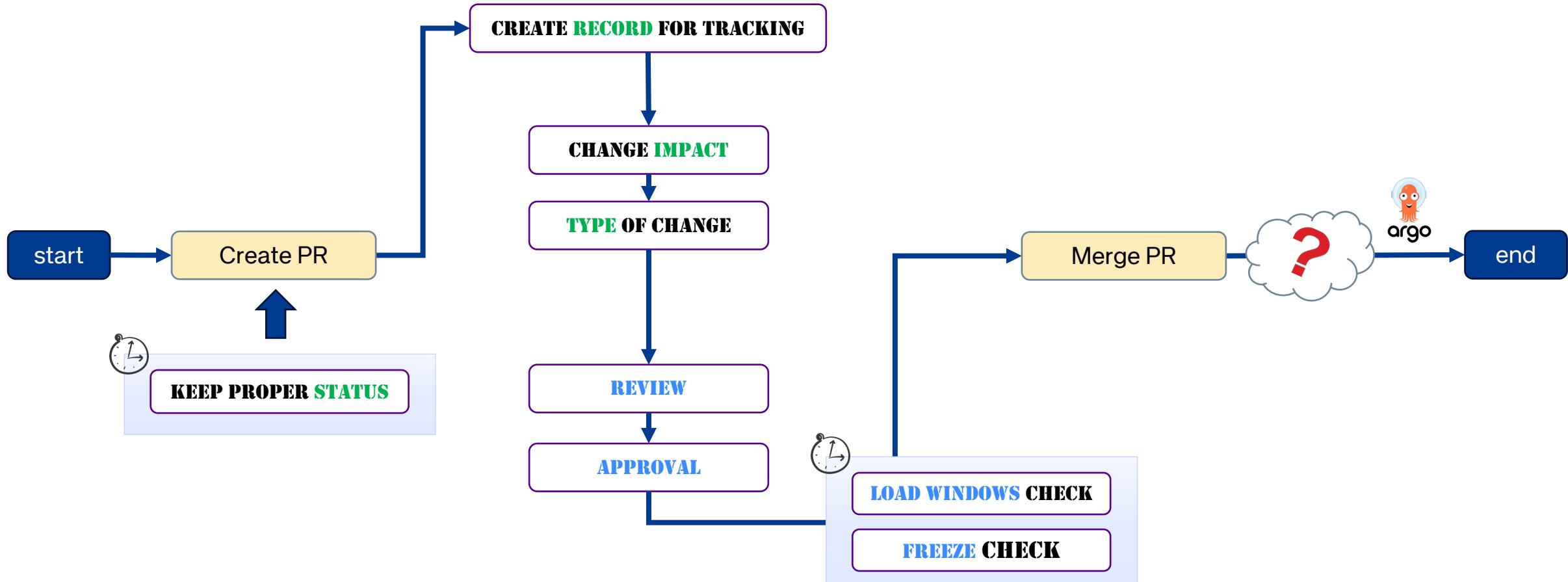


# *Requirement*

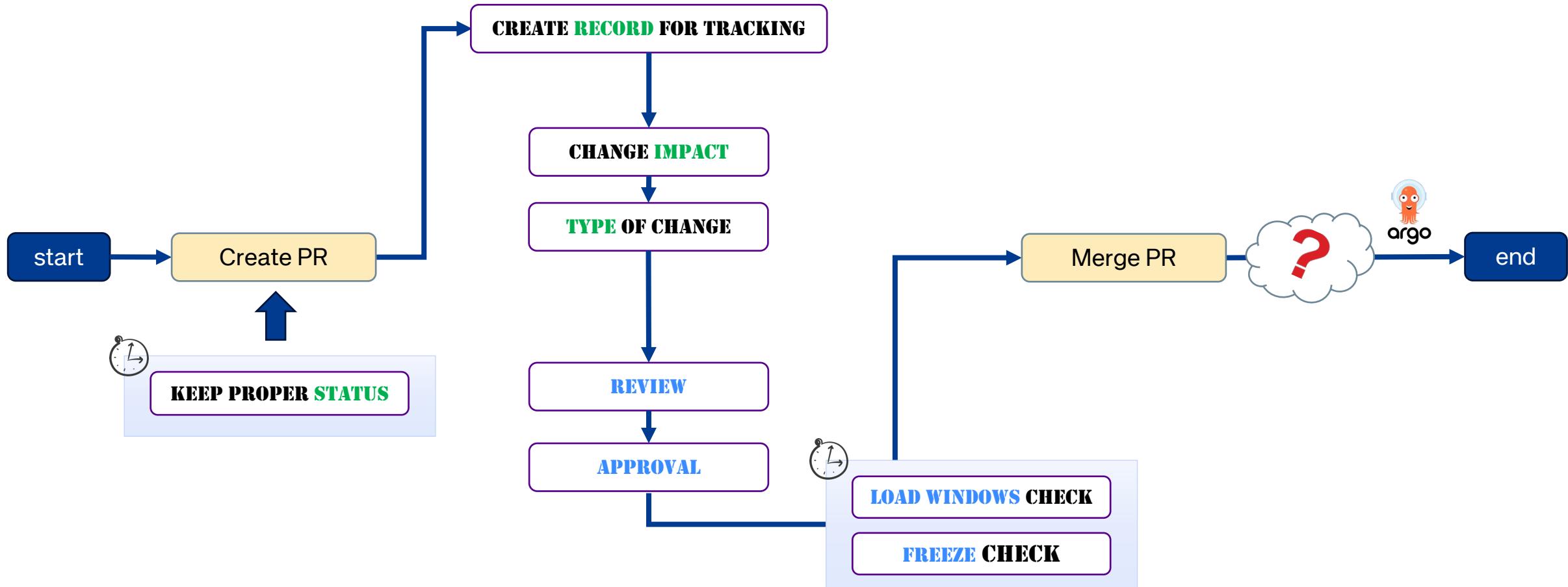
What Fabrice did !



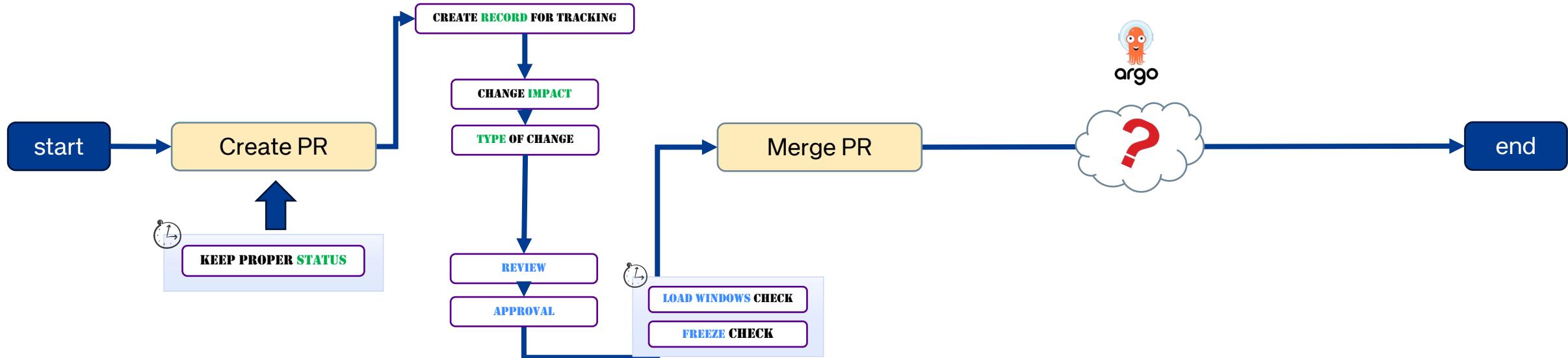
# Requirement



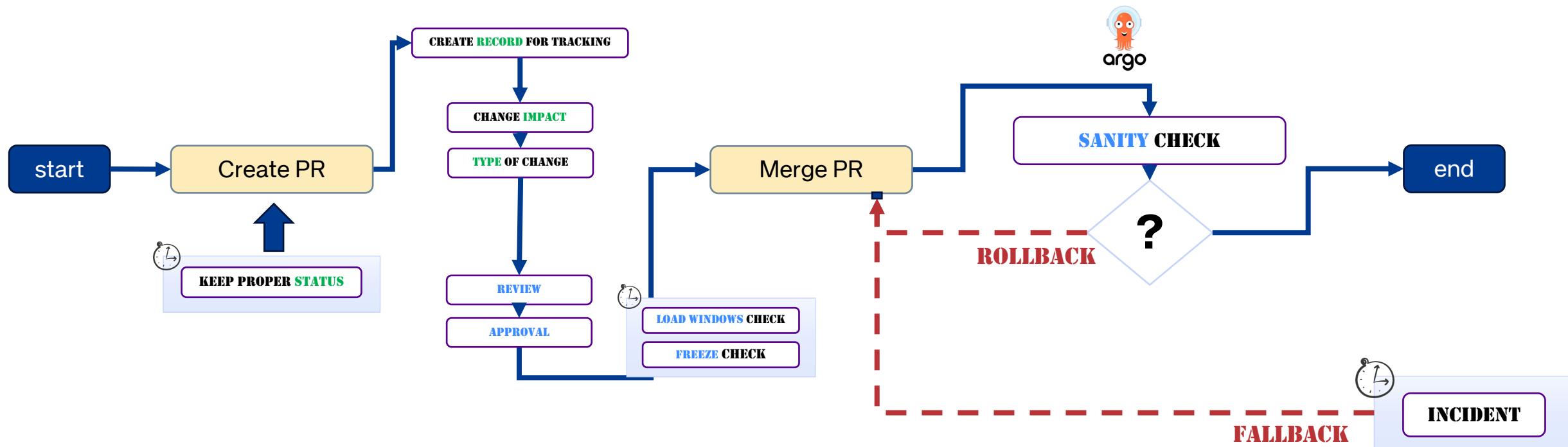
# Requirement



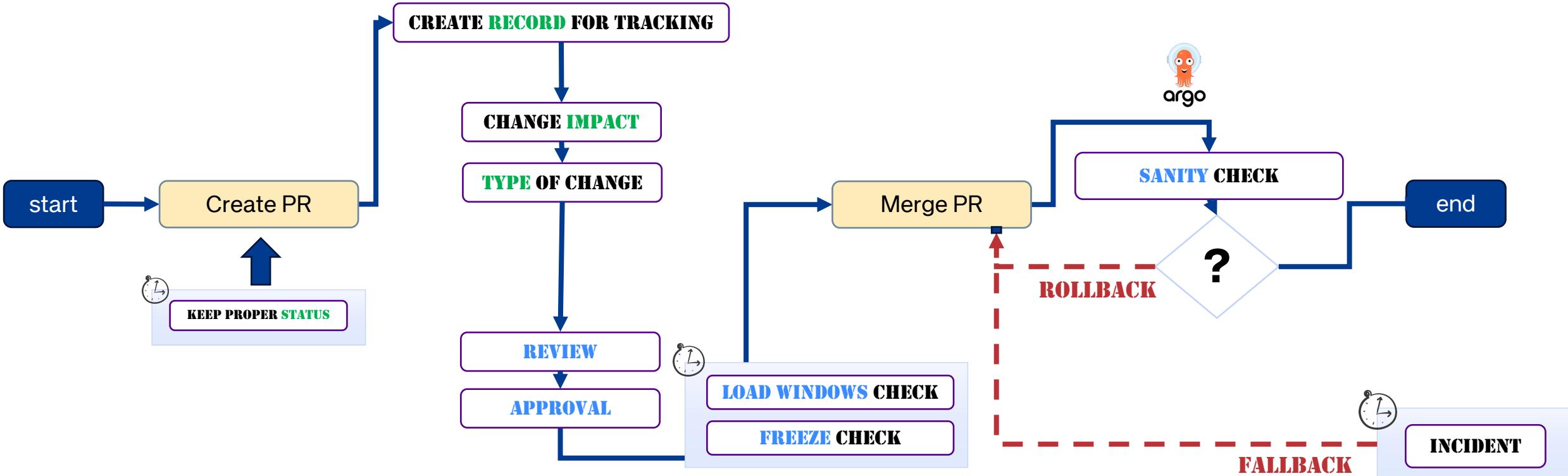
# Requirement



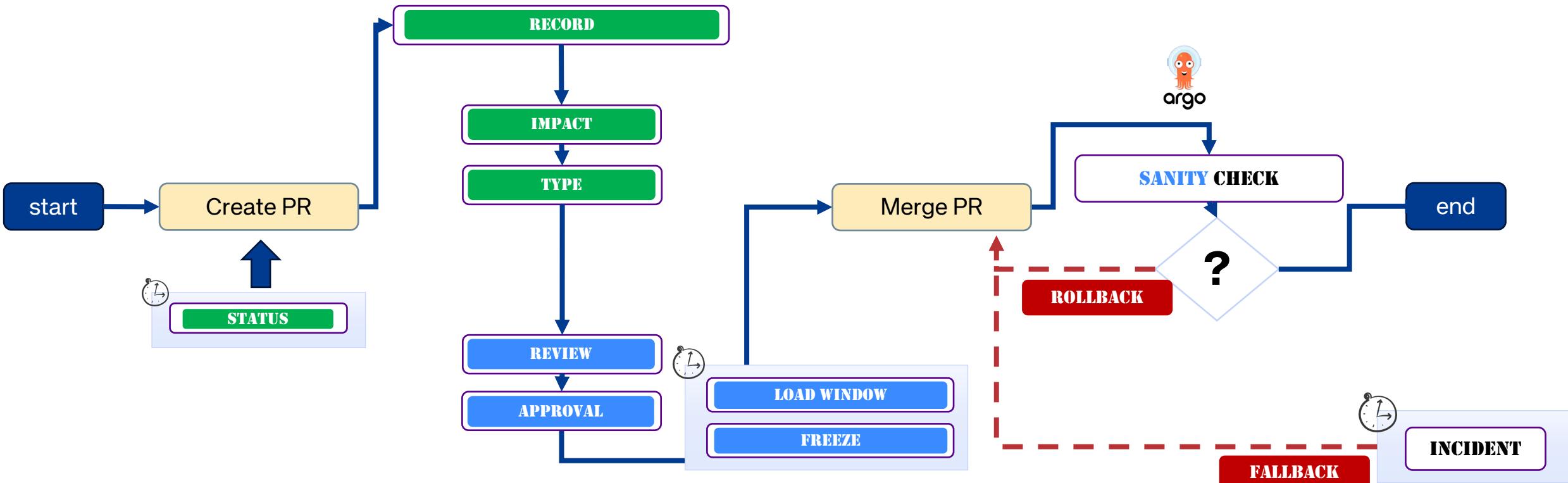
# Requirement



# Requirement



# Requirement



# A metaphor - What if a change was a roadtrip?



# *Houston ... We had a problem!*



**NEVER AGAIN !!!!**

We need to improve the review process

**REVIEW**

We need to have an automation that prevents mistakes

**FREEZE**





# Can we go even further?



# The hydration concept

Reviewer needs to know what actually changed



Nicholas Morey

morey-tech

Follow

Senior Developer Advocate  
@akuuity | Building cloud-native  
solutions and teaching others to  
do the same.

69 followers · 16 following

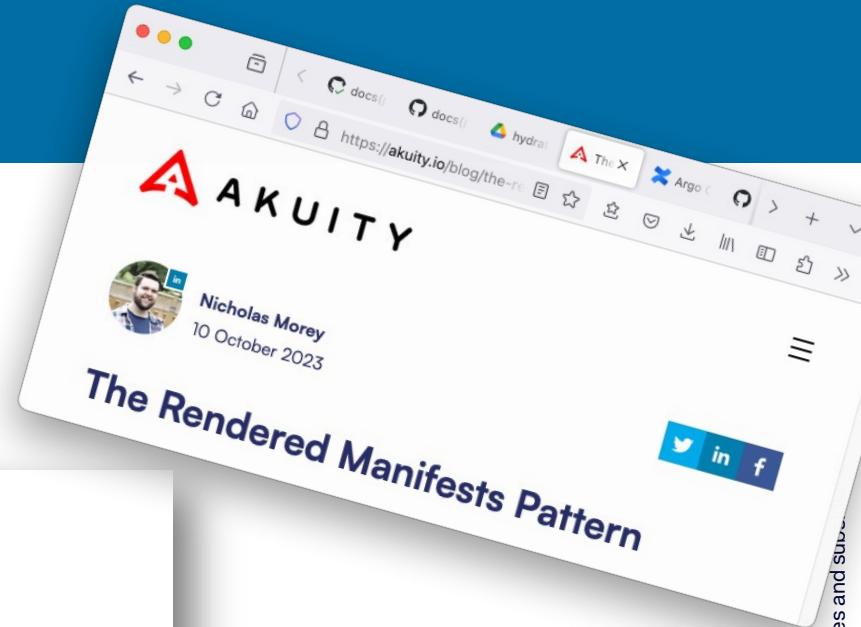
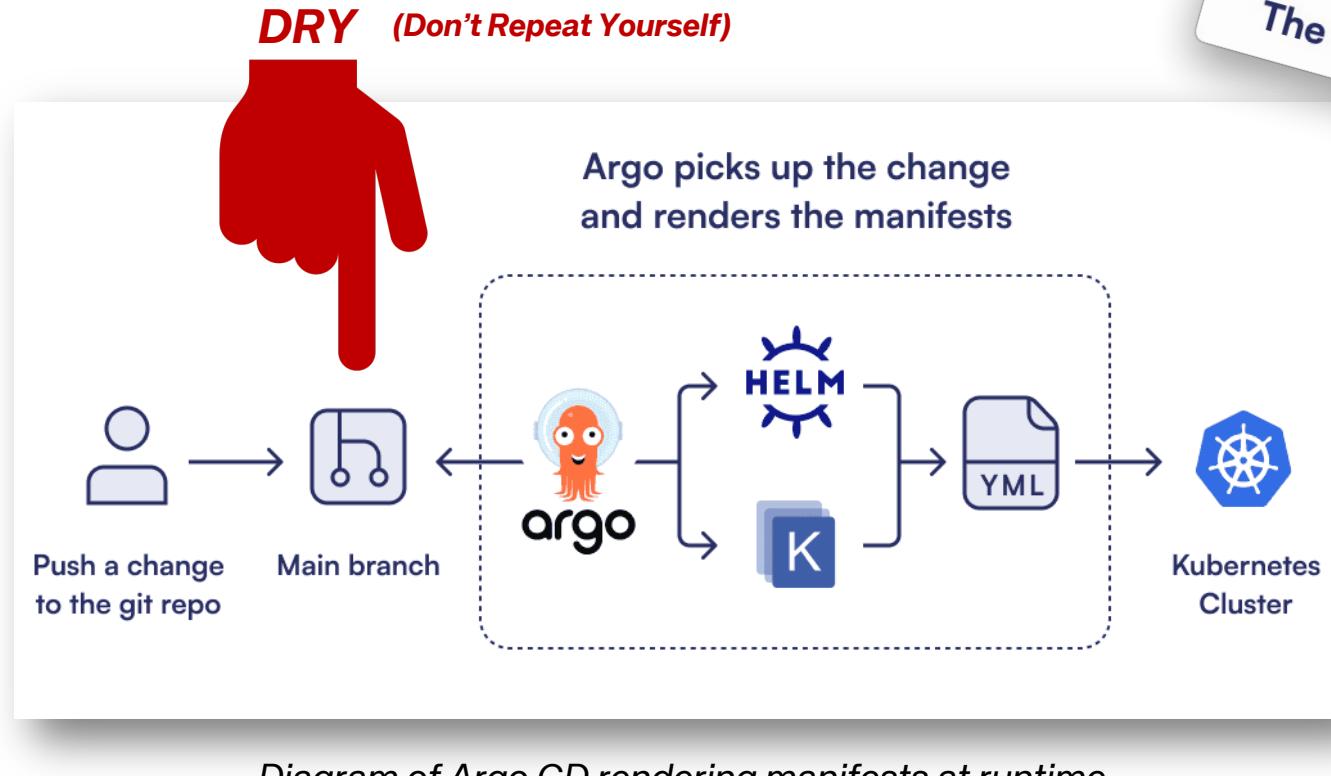
@akuuity

Canada

11:32 - 6h behind

gcdai6k@duck.com

in/nicholas-morey



# The hydration concept

Reviewer needs to know what actually changed



Nicholas Morey  
morey-tech

Follow  
Senior Developer Advocate  
@akuuity | Building cloud-native  
solutions and teaching others to  
do the same.

69 followers · 16 following

@akuuity  
Canada  
11:32 - 6h behind  
gcdai6k@duck.com  
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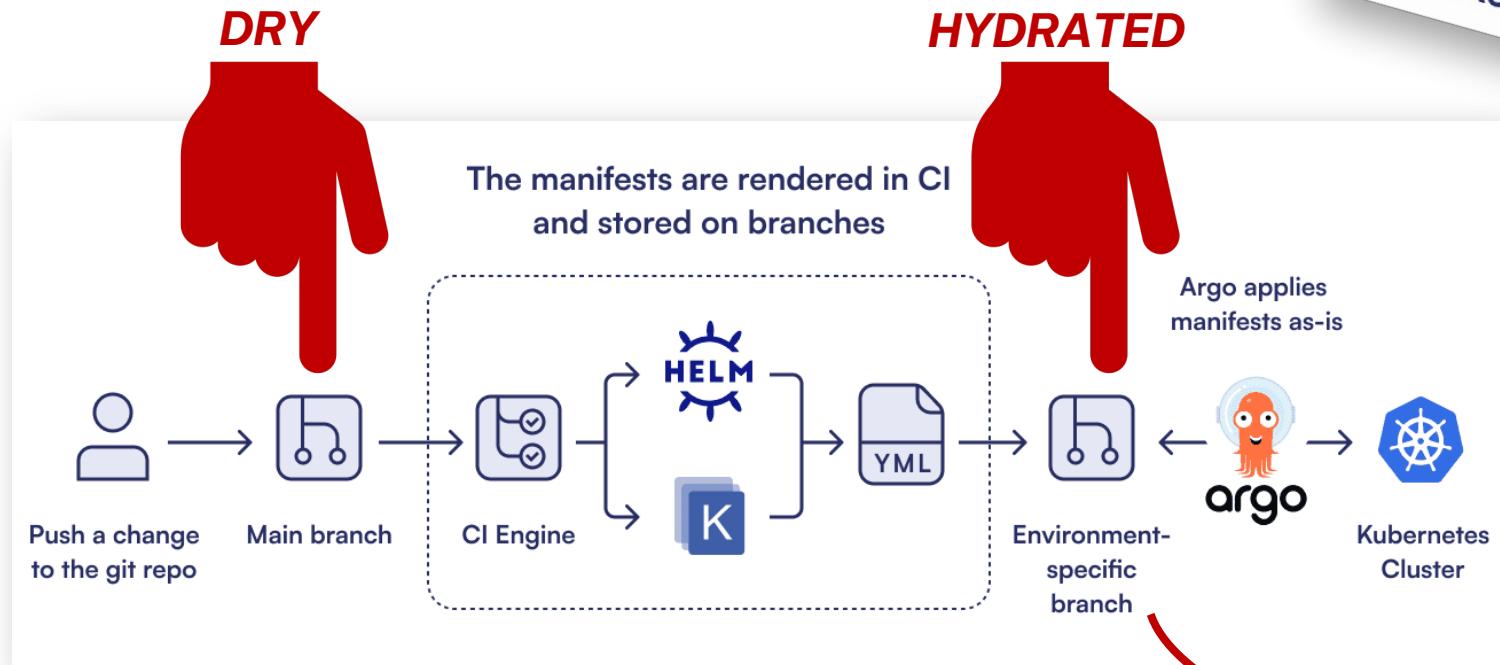
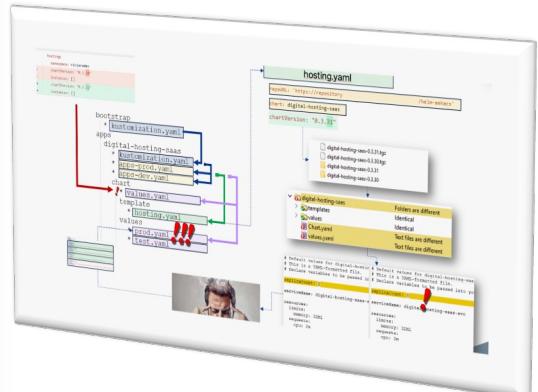
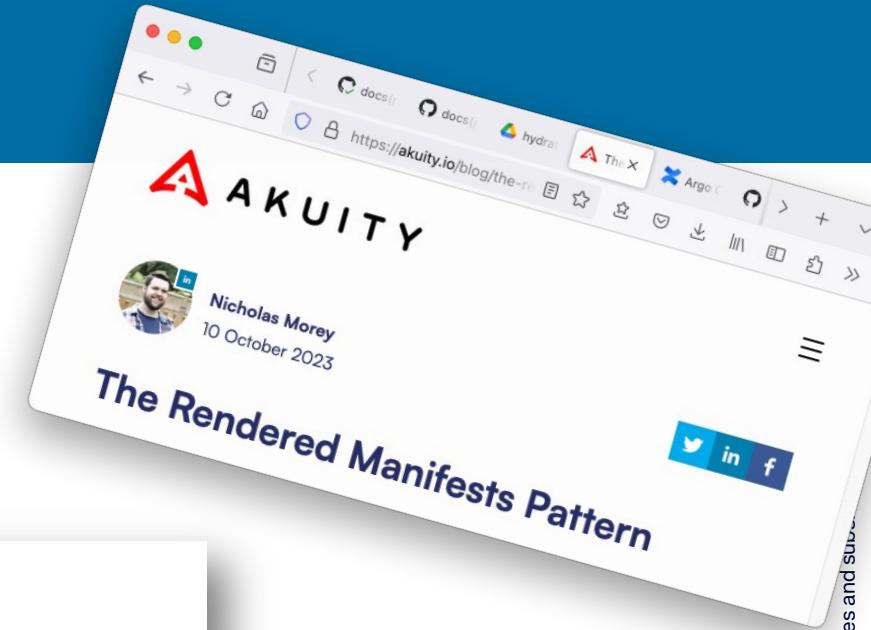


Diagram of Argo CD applying manifests rendered in CI

REVIEW

FREEZE



# The hydration concept

Reviewer needs to know what actually changed

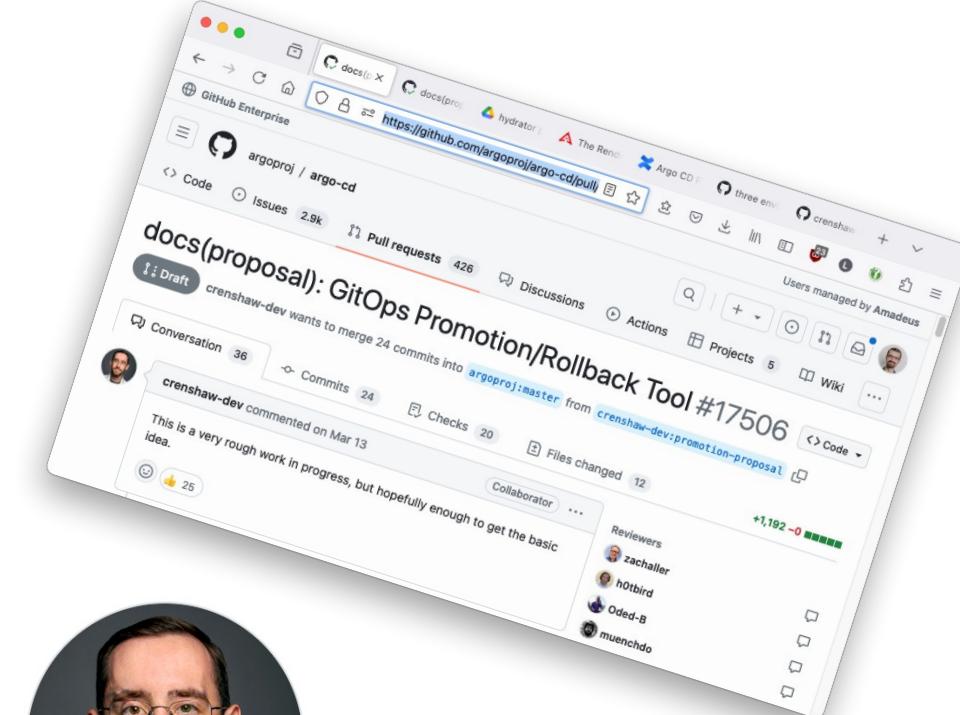
**Let's work with the  
Open Source  
community!**

Michael Crenshaw  
crenshaw-dev · he/him  
Follow Sponsor  
120 followers · 17 following  
Intuit  
@crenshawdotdev@hachyderm.io

https://github.com/argoproj/argo-cd/pull/17755

# The promotion concept

We all (?) have several environments for our applications



Michael Crenshaw  
crenshaw-dev · he/him

Follow

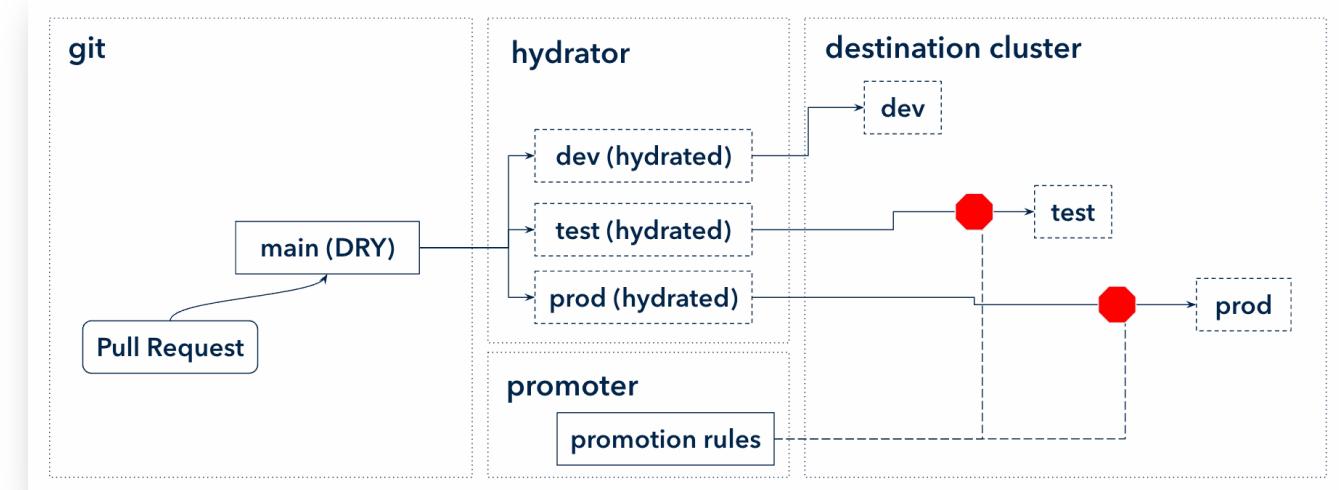
Sponsor

120 followers · 17 following



@crenshawdotdev

@crenshawdotdev@hachyderm.io



<https://github.com/argoproj/argo-cd/pull/17506>

NO REGRETS

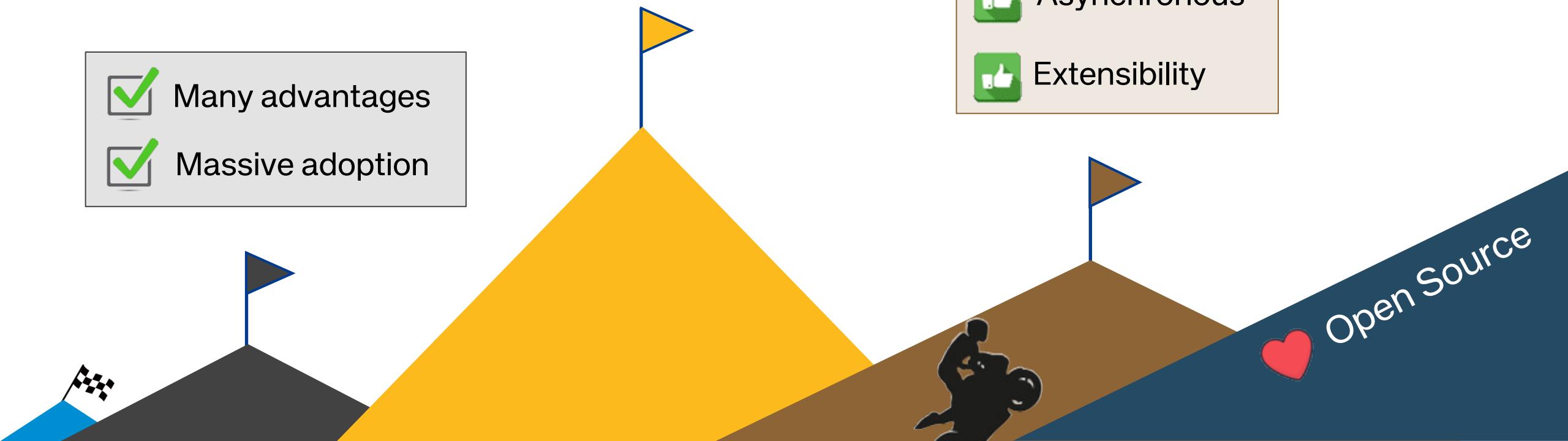
# Key - Takeaways



- Many advantages
- Massive adoption

- 😐 Complex reviews
- 😐 Impact detection

- 👍 Hydration
- 👍 Asynchronous
- 👍 Extensibility





<https://github.com/argoproj/argo-cd/pull/17755>



<https://openfeedback.io/rivieradev24/0/209>

# aMADEUS

Amadeus. It's how travel works better.

**TRU - ALT-ENG**



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