

## **Kubediff: Migration between Kubernetes versions doesn't have to be error-prone**

New: Kuberikk

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Verification & conscious Verification anges

## ORACLE



JSON



K8s templates & resources

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What's MIGRATION?  $\bigoplus \longleftrightarrow \Longrightarrow$ 

- In Kubernetes (K8s) things change rapidly and we have to adapt. Old versions stop being supported, have bugs, new security vulnerabilities discovered and so on...
- Kubernetes updates require manually (or automatically) checking every possible file template. Thousands of files to check!
- Be ready to unexpected changes in short time, e.g. one never knows when security vulnerabilities appear.
- You have to adapt! You're lucky if only once per year.
- You may make a mistake – you're only human.

Static-side check

Automate validation



## Currently the most popular way is full of disadvantages

- You should check <u>manually</u> every possible change – review <u>manually</u> all the release notes
- Trying to re-deploy all existing definitions in new cluster version; wasting your time and resources
- Getting feedback <u>only after</u> everything has happened
- Unmeasured amount of work and verifications to be done
- <u>Unestimable</u> plans due to lack of feedback

## Server-side check

- Deploying old resources (when possible)
- Deploying converted resources
- Final validation a combination of OpenAPI and internal validation rules of the K8s server engine
- At the end you're having stable versions, performance and security fixes, new features, & patched bugs
  Kubernetes implementation doesn't facilitate static analysis to know the final version (last check is always in server side)



before server deployment

Smart converting between K8s versions

Catch potential changes and divergences

Feedback <u>before</u>, no surprise later

- Faster feedback
- Better planning

of templates

Sleep better



- Daily work planned without surprises
- Reduced errors you can spend time quietly with friends or family, not on the phone or at the laptop
- More time doing smart things at work and less time reading schematics that machines and computers should read
- Save money! Reduce migration time: developer's time & prelocated infrastructure or additional environments. It adapts to cloud or hybrid solutions; public, private, maintained by you, etc.
  - You can complement integration tests and CI/CD with static-side check to increase reliability of infrastructure

CERN: Adrian Karasinski, Antonio Nappi, Artur Wiecek Oracle: Garret Swart, Cris Pedregal