



Improving EOS GitLab CI (x86 + ARM)

Lightning Talks

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What is EOS?

Understanding the system

Flexible



Adaptable & Scalable



High Capacity,
Low Latency



Secure



Sync & Share
(CERNBox)



Tape Storage Capable

What is EOS?

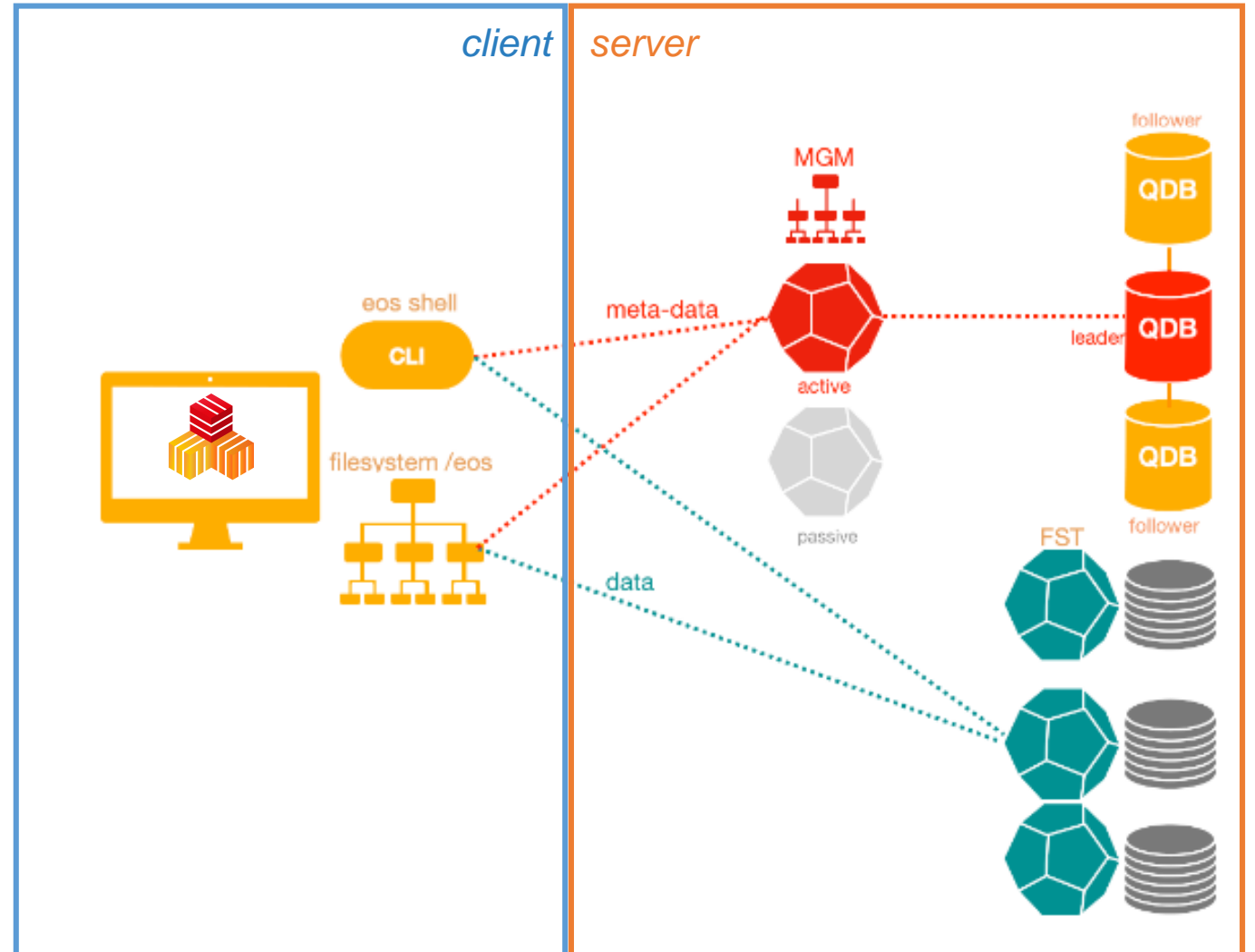
The client and the server



Client: command-line + mounted filesystem

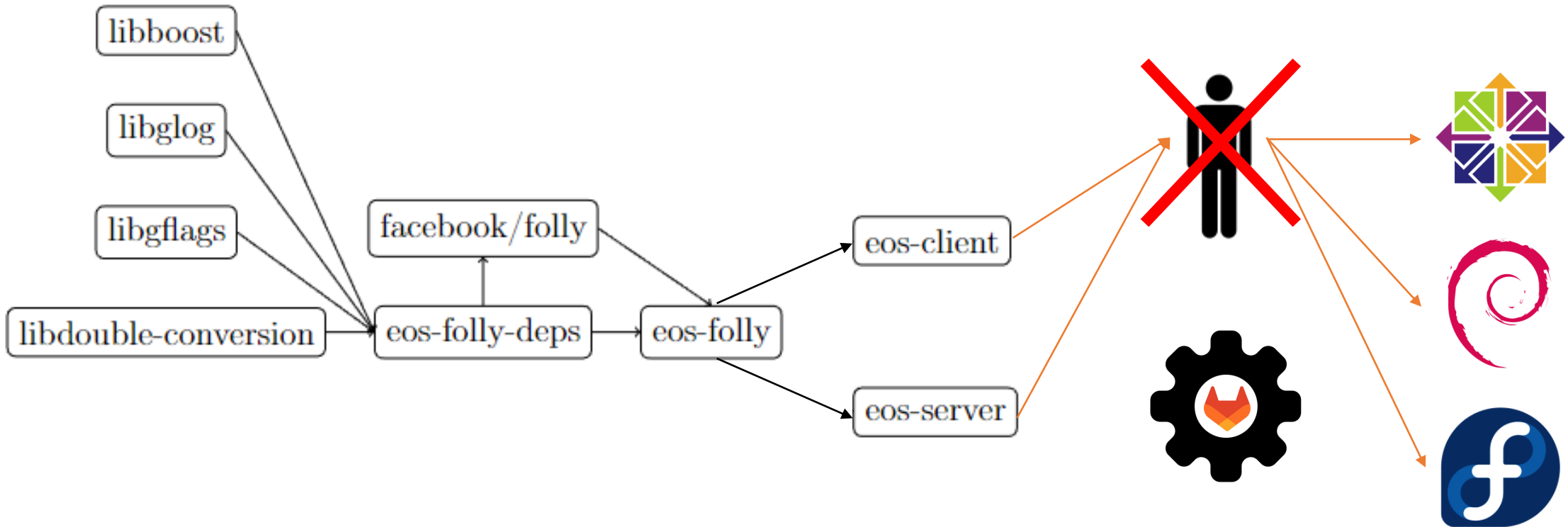


Server: metadata, data storage, and persistency



How to build?

The magic of GitLab



Build v1: Issues

Why am I doing this project again?



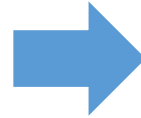
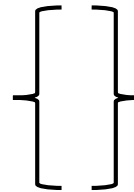
- Build v1 is archaic! (sorry, RPM fans)
- Need to support ARM + x86
- Grunt work of simplifying build process is inevitable, so start now



Build v2: Plan

The solution! Or at least, the path to one

```
#...
build_image:
stage: build
trigger:
  include:
  - project: 'ci-tools/docker-builder'
    file: '/ci.yml'
  strategy: depend
variables:
  TO: "${IMAGE_NAME_TAGGED}"
  CONTEXT_DIR: "/"
  CACHE_TTL: 360h0m0s # two weeks
#...
tag_latest:
stage: tag
needs:
  - test_x86_64
  - test_aarch64
image: gitlab-registry.cern.ch/ci-tools/docker-builder/tools
variables:
  # No need to clone the repo
  GIT_STRATEGY: none
  # We don't need artifacts from previous steps
dependencies: []
script:
  # always update latest tag to this release
  - crane tag "${IMAGE_NAME_TAGGED}" "latest"
  - crane validate --remote "${IMAGE_BASE_NAME}:latest"
  # update semantic tags according to version
  - _MAJOR_VER=$(echo "${CI_COMMIT_TAG}" | cut -d'.' -f1)
  - _MINOR_VER=$(echo "${CI_COMMIT_TAG}" | cut -d'.' -f2)
  # tag :X
  - crane tag "${IMAGE_NAME_TAGGED}" "${_MAJOR_VER}"
  - crane validate --remote "${IMAGE_BASE_NAME}:${_MAJOR_VER}"
  # tag :X.Y
  - crane tag "${IMAGE_NAME_TAGGED}" "${_MAJOR_VER}.${_MINOR_VER}"
  - crane validate --remote "${IMAGE_BASE_NAME}:${_MAJOR_VER}.${_MINOR_VER}"
only:
  - main
```



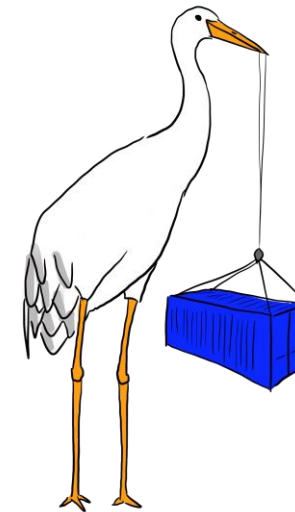
Build v2: Obstacles

Can't have a project without hiccups

- Build Docker images from Docker?
 - **Kaniko**
- Simplest way to build in parallel with GitLab?
 - **“ci-tools/docker-builder”**
(courtesy Alex Iribarren)
- How to merge separate arch images?
 - **Crane**



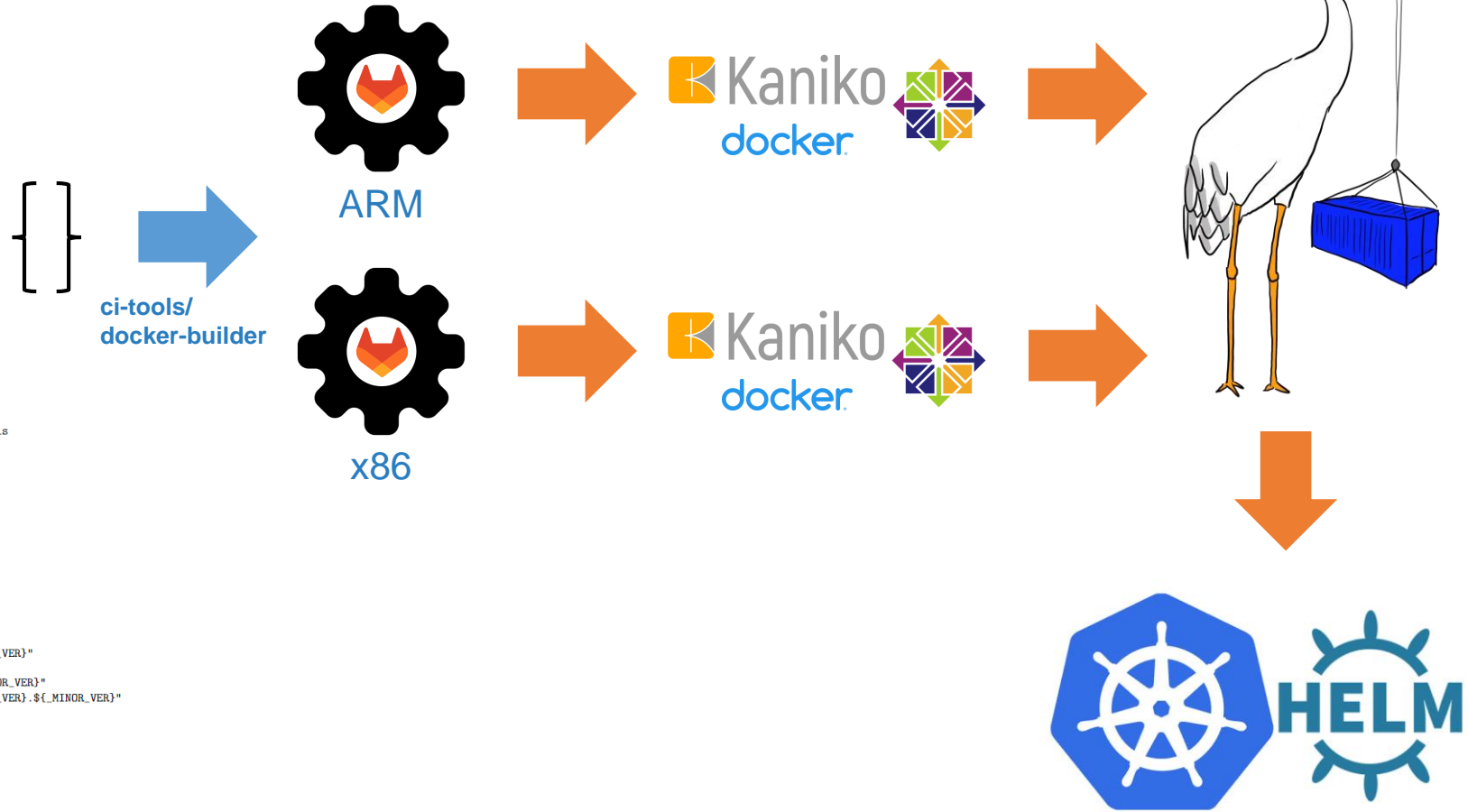
, (thanks, Google!)



Build v2: Complete

The delivered solution! 😊

```
#!/bin/sh
build_image:
stage: build
trigger:
  include:
    - project: 'ci-tools/docker-builder'
      file: '/ci.yml'
  strategy: depend
variables:
  TO: "${IMAGE_NAME_TAGGED}"
  CONTEXT_DIR: "./"
  CACHE_TTL: 360h0m0s # two weeks
#...
tag_latest:
stage: tag
needs:
  - test_x86_64
  - test_aarch64
image: gitlab-registry.cern.ch/ci-tools/docker-builder/tools
variables:
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  # update semantic tags according to version
  - MAJOR_VER=$(echo "$CI_COMMIT_TAG" | cut -d'.' -f1)
  - MINOR_VER=$(echo "$CI_COMMIT_TAG" | cut -d'.' -f2)
  # tag :X
  - crane tag "$IMAGE_NAME_TAGGED" "$MAJOR_VER"
  - crane validate --remote "${IMAGE_BASE_NAME}:${MAJOR_VER}"
  # tag :X.Y
  - crane tag "$IMAGE_NAME_TAGGED" "${MAJOR_VER}.${MINOR_VER}"
  - crane validate --remote "${IMAGE_BASE_NAME}:${MAJOR_VER}.${MINOR_VER}"
only:
  - main
```





Thank you!

Questions?

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