



Compute4PUNCH

Discussion Container Registry

Manuel Giffels, 13.11.2023

Container Registry / CVMFS

Current Status

- Compute4PUNCH heavily relies on container technology to provide various software environments to the PUNCH communities
- Using GitLab container registry deployed at AIP
- Containers are built and pushed via GitLab CI/CD (daily rebuilds)
- Currently, no container versioning is supported
- Using CVMFS (`unpacked.cern.ch`) for scalable deployment on our compute sites
- Newly added container have to be manually added to unpacked once

Container Registry / CVMFS

C

Container Stacks

Project ID: 20

Star0

Fork0

4 Commits

2 Branches

0 Tags

113 KB Files

857 KB Storage

Contains all containers used on the compute4punch infrastructure

main

container-stacks /

+

History

Find file

Web IDE

Clone

Add htcondor-wn container image

Manuel Giffels authored 3 days ago

Unverified

55039408

Upload File

README

CI/CD configuration

Add LICENSE

Add CHANGELOG

Add CONTRIBUTING

Auto DevOps enabled

Add Kubernetes cluster

Configure Integrations

Name	Last commit	Last update
htcondor-wn	Add htcondor-wn container image	3 days ago
wlcg-wn	Add wlcg-wn to container-stacks	5 days ago
.gitlab-ci.yml	Enable docker builds using gitlab-ci	4 days ago

```
giffels@ekplx5:/cvmfs/unpacked.cern.ch> ll
total 5
drwxr-xr-x  4 cvmfs 22 Dez 17 17:12 ghcr.io
drwxr-xr-x  3 cvmfs 27 Mär 21 10:42 gitlab-p4n.aip.de:5005
drwxr-xr-x. 24 cvmfs 23 Mär 11 16:39 gitlab-registry.cern.ch
drwxr-xr-x.  2 cvmfs 40 Mär 20 21:02 logDir
drwxr-xr-x  5 cvmfs 28 Sep  2  2021 podmanStore
-rw-r--r--.  1 cvmfs 876 Aug 19  2020 README.md
drwxr-xr-x. 37 cvmfs 26 Feb  8 12:07 registry.hub.docker.com
drwxr-xr-x.  3 cvmfs 17 Aug 19  2020 util
```

```
--bash-4.2$ singularity exec /cvmfs/unpacked.cern.ch/gitlab-p4n.aip.de:5005/compute4punch/container-stacks/wlcg-wn:latest /bin/bash
Singularity> gfal
gfal-cat          gfal-legacy-bringonline gfal-legacy-unregister gfal-rename      gfal-stat      gfal2_
gfal-chmod        gfal-legacy-register   gfal-ls                gfal-rm         gfal-sum       gfalFS
gfal-copy         gfal-legacy-replicas  gfal-mkdir              gfal-save       gfal-xattr     gfalFS
Singularity>
```

Container Registry

2 Image repositories Expiration policy will run in about 16 hours

With the GitLab Container Registry, every project can have its own space to store images. [More information](#)

Filter results

Updated

compute4punch/container-stacks/htcondor-wn

7 Tags

compute4punch/container-stacks/wlcg-wn

9 Tags

Add punch4nfdi image #3

giffels wants to merge 1 commit into cvmfs:master from giffels:add-p4n-image

Conversation 0 Commits 1 Checks 0 Files changed 1

giffels commented 14 minutes ago

Dear all,

as agreed on Mattermost, I am sending a pull request to test the image pulling from gitlab-p4n.aip.de .

Thanks and best regards,

Manuel

Add p4n image

Verified09387a4

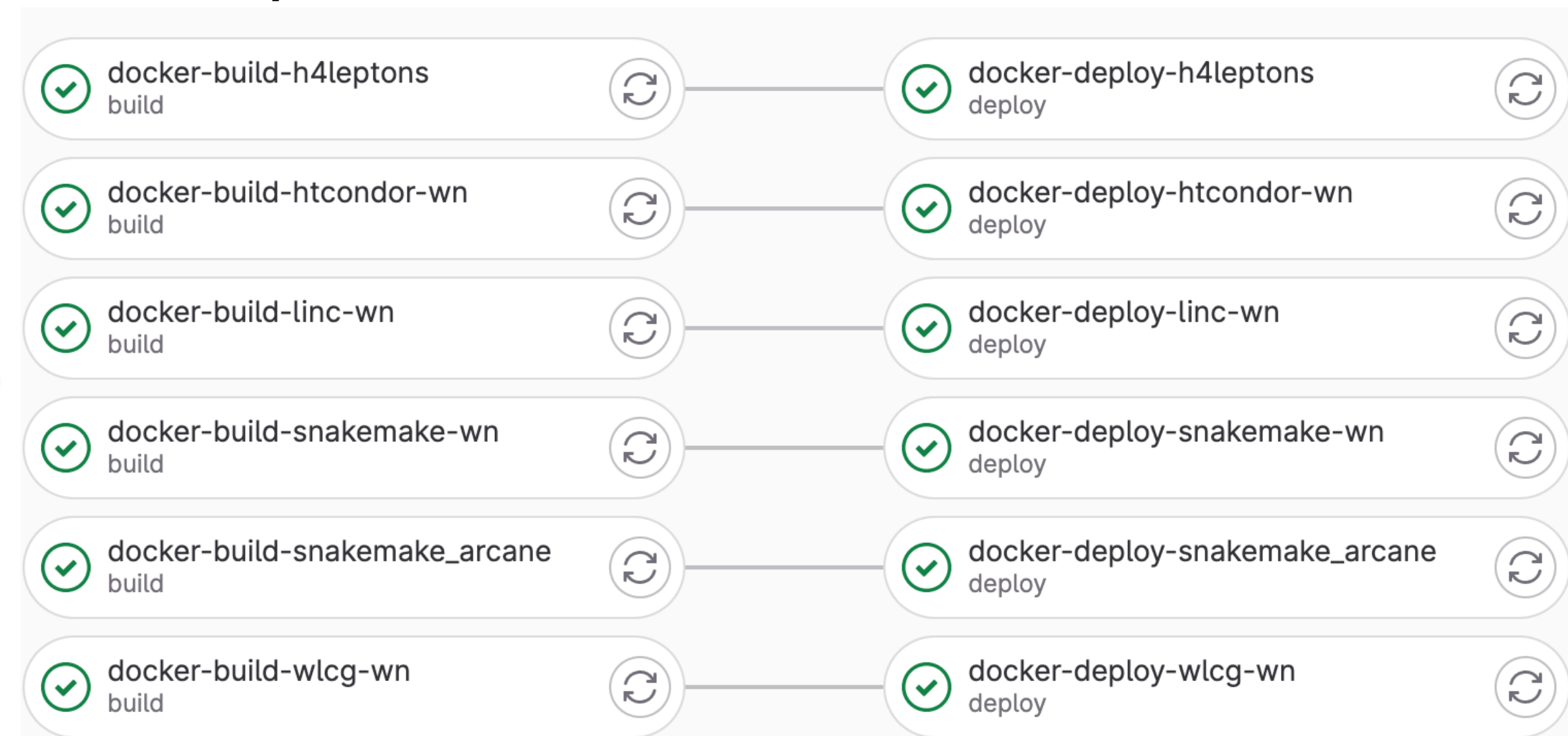
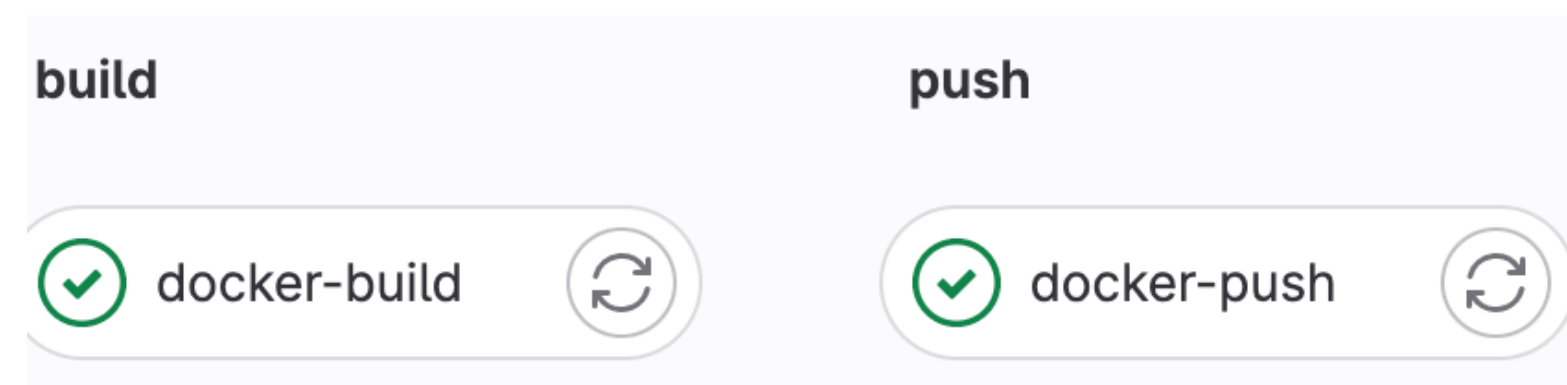
Container Registry / CI/CD

Status & Necessary Improvements (CI/CD Pipeline)

Current CI/CD is a half-baked set of scripts to have something ready to use

CI/CD requirements (my POV):










- Pipeline should build and push containers in parallel ✓
- Should support different versions of containers
- Take care of adding newly created containers to unpacked



Container Registry / CI/CD

Necessary Improvements: Support Container Versioning

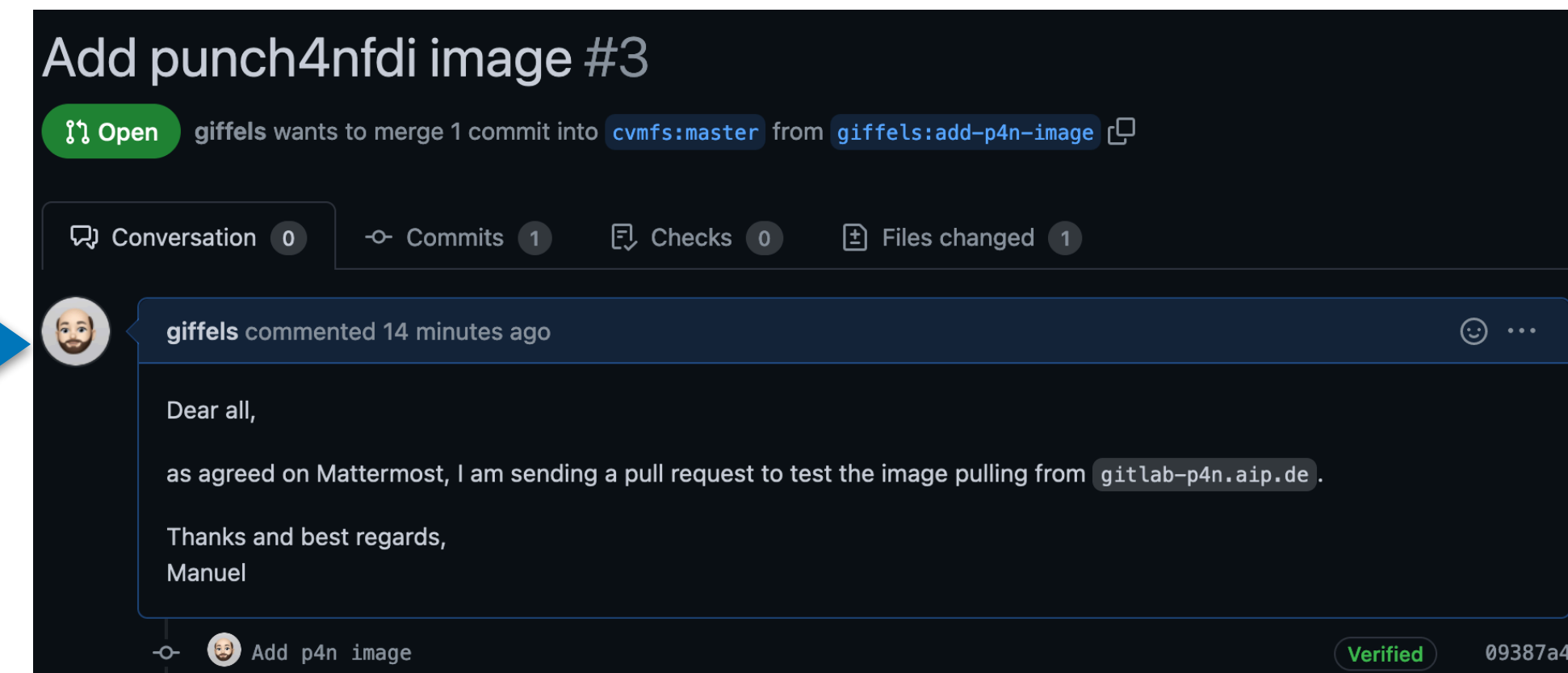
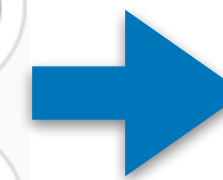
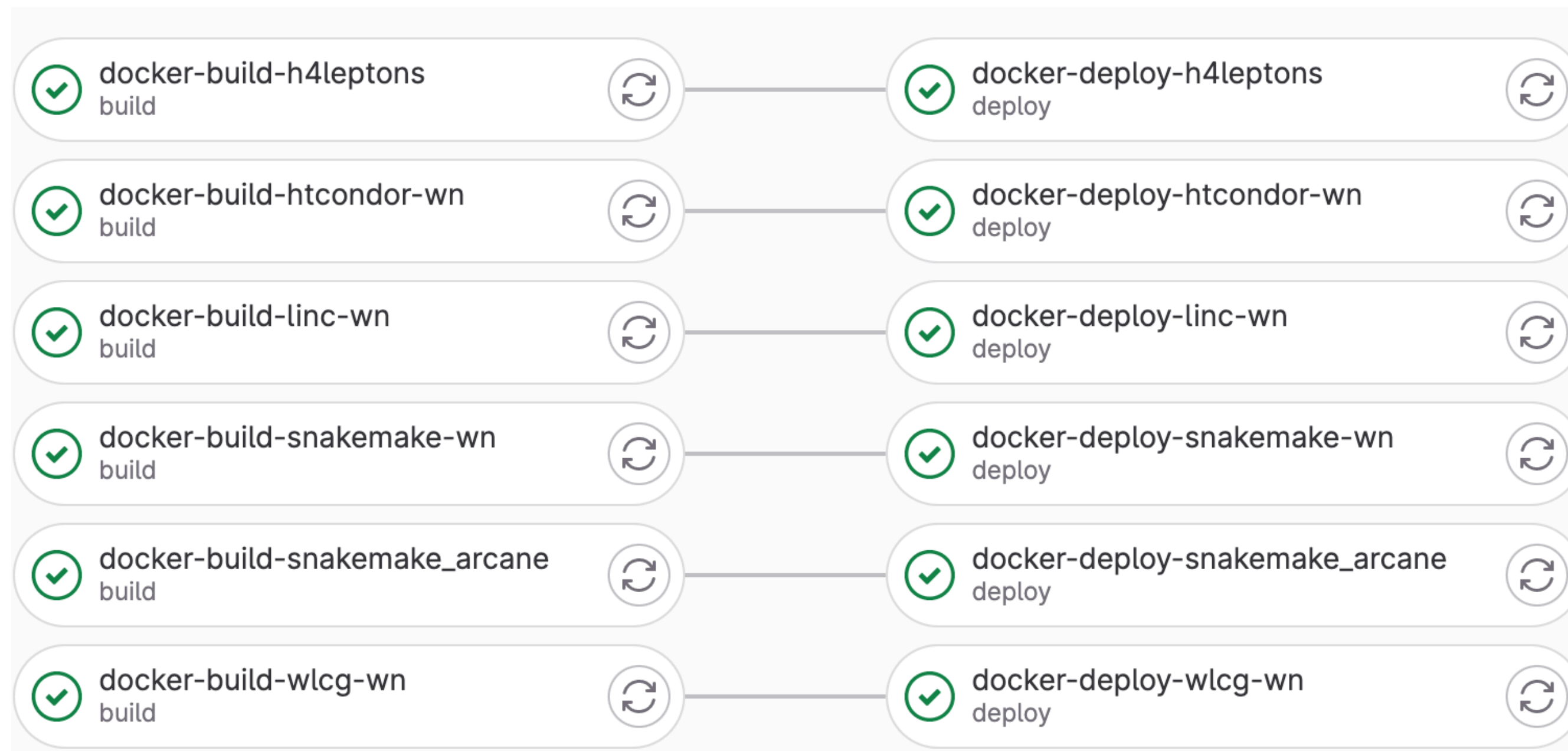
- All containers are currently hosted in one repository
- To support versioning, we should consider to move them to separate repositories in a GitLab sub-group
- Different versions could be realized by tags in GitLab

Name	Last commit	Last update
 caracaL_container	Reverted change by commenting out line that modifi...	4 months ago
 caracaL_container_new_stimela	Update file Dockerfile	3 months ago
 h4leptons	list samples and check files: retrieve-desy-output.sh	1 year ago
 htcondor-wn	Update HTCondor WN to RockyLinux 8	2 weeks ago
 linc-wn	Add LINC_COMMIT=master	1 year ago
 lqcd_analysis	Add Lqcd analysis container	3 months ago
 snakemake-wn	Add apptainer to snakemake-wn	8 months ago
 snakemake_arcane	Updated arcane Dockerfile to work well with singula...	9 months ago
 wlcg-wn	add davix to wlcg-wn container	4 months ago

Container Registry / CVMFS

Necessary Improvements: Automatized Initial Synchronization with unpacked

- So far the initial synchronization with `unpacked.cern.ch` has to be triggered by a pull request on GitHub
- Could be integrated into the CI/CD pipeline (I started looking into this, but got distracted)



Container Registry / GitLab

Current Satisfaction Level

- Currently the GitLab container registry is working just fine and covers all the basic needs of Compute4PUNCH
- Thank you AIP for hosting and maintaining it that well

Possible Improvements (my thoughts):

- CVE scanner to avoid deployment of software having critical bugs
- Container signing (to increase level of trust)?

Alternatives on the market:



What is your POV?
Time for Discussion