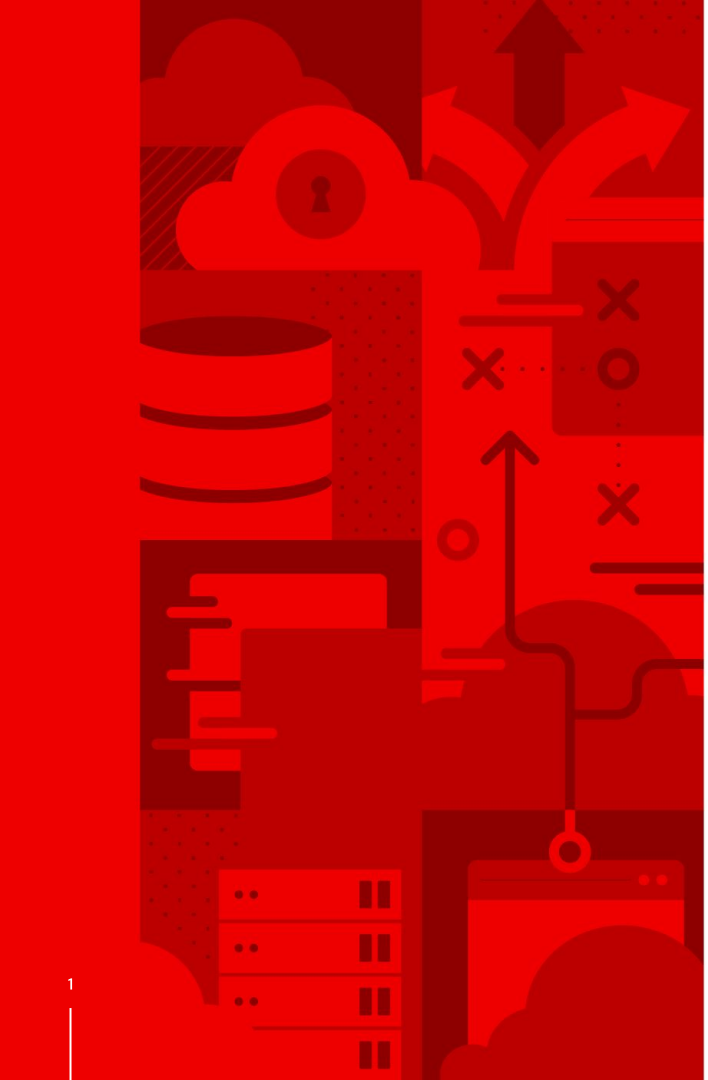


Thoth

build-watcher

Fridolin Pokorny <fridolin@redhat.com> & Thoth team
https://thoth-station.ninja/
Red Hat AICoE, Project Thoth
2021

Red Hat

YouTube recording

https://www.youtube.com/watch?v=bSkjSU0S5vs

Thoth's build-watcher

- Watch application builds happening inside clusters and automatically submit them to Thoth

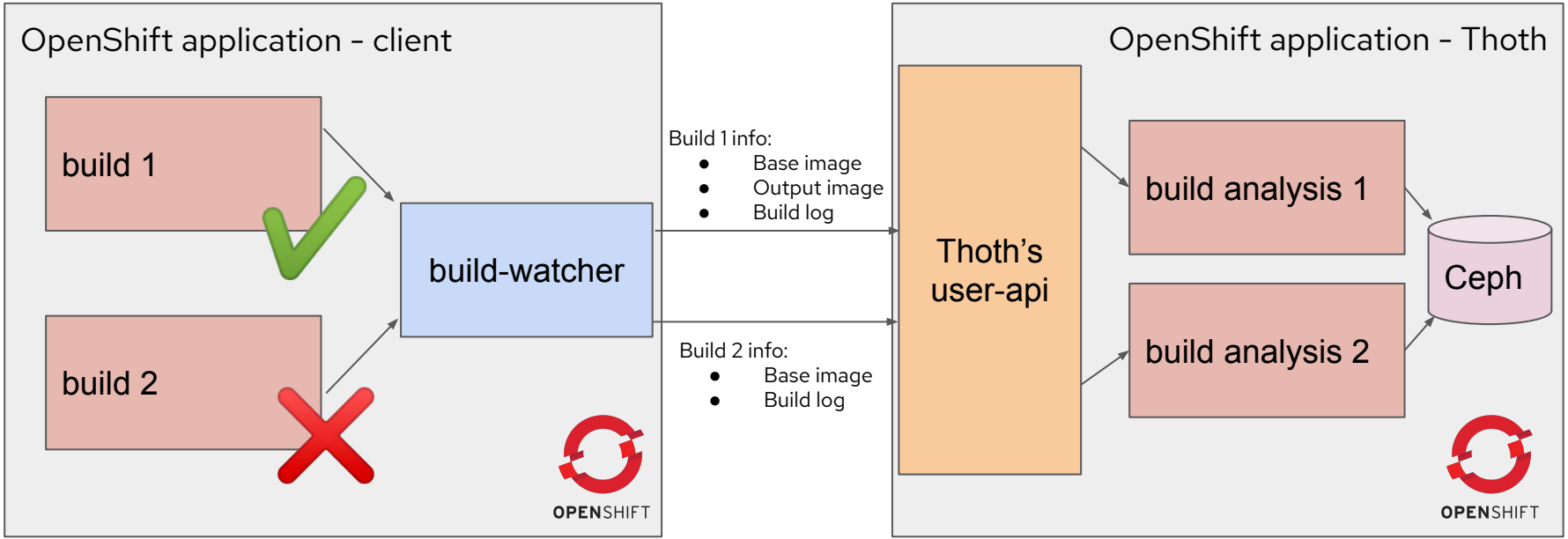
- Purpose:
  - Automatically aggregate "observations" to Thoth's knowledge base
  - Observations == information of successful and failed application builds

- Use the aggregated data to improve recommendations produced from Thoth's recommendation engine
  - Extend "database" of known application issues by implementing new pipeline units in Thoth's adviser

Thoth's build-watcher

- Thoth's build-watcher:
  - An application living inside a cluster deployment
  - Monitors events and checks for OpenShift builds
  - Automatically submits to a remote Thoth service:
    - base container image
    - resulting container image
    - build logs
  - Information sent is configurable
    - Any combination of the three stated can be submitted to Thoth's backend
- The data sent are automatically analyzed on Thoth's backend
  - Extracted information are stored on Ceph

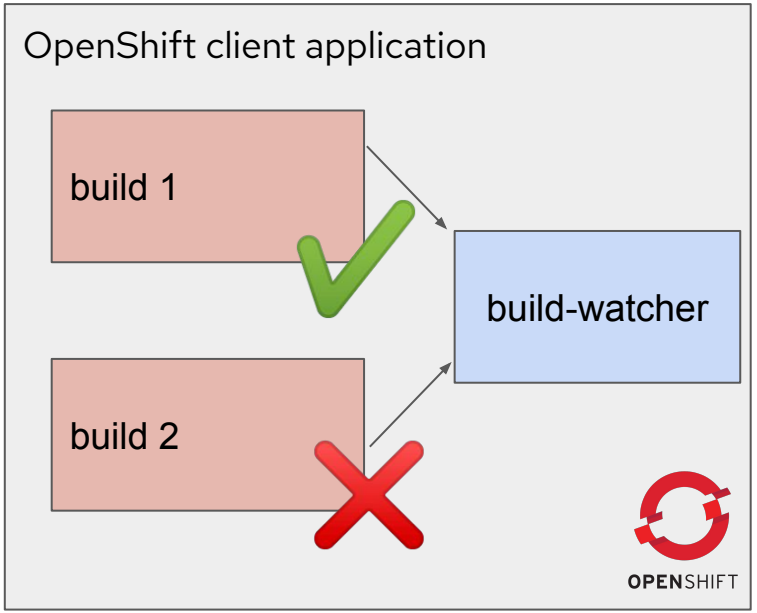
Architecture



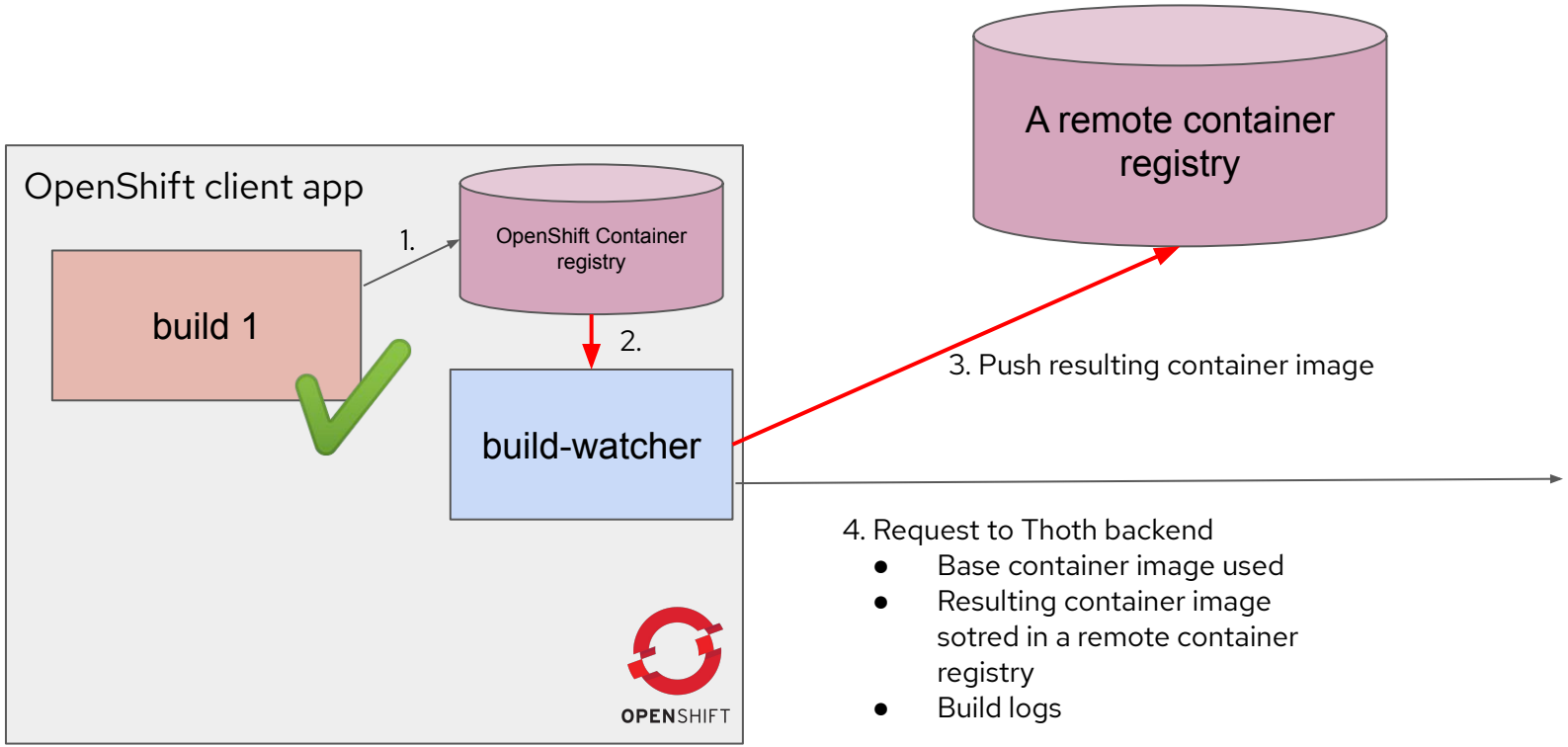
Thoth's build-watcher: client side

- Bot monitors builds happening in the namespace
- Aggregated information:
  - Base container image
  - Resulting container image (if any)
  - Build logs
- This information is sent to remote Thoth's user API

- An intermediate registry can be used for pushing container image from the cluster internal registry so it is accessible for container image analysis



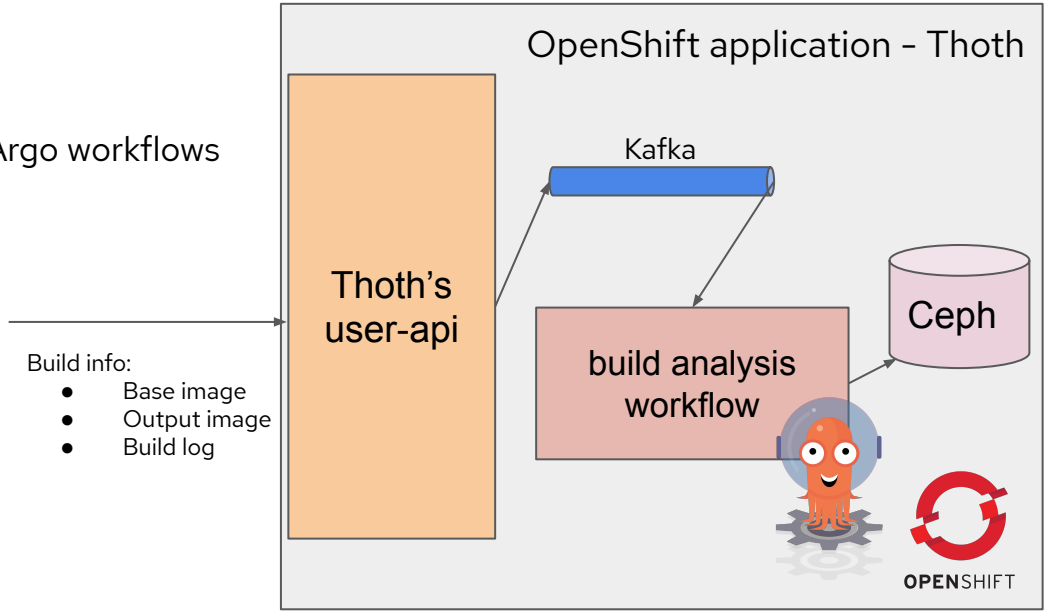
Thoth's build-watcher: client side



4. Request to Thoth backend
   - Base container image used
   - Resulting container image sotred in a remote container registry
   - Build logs

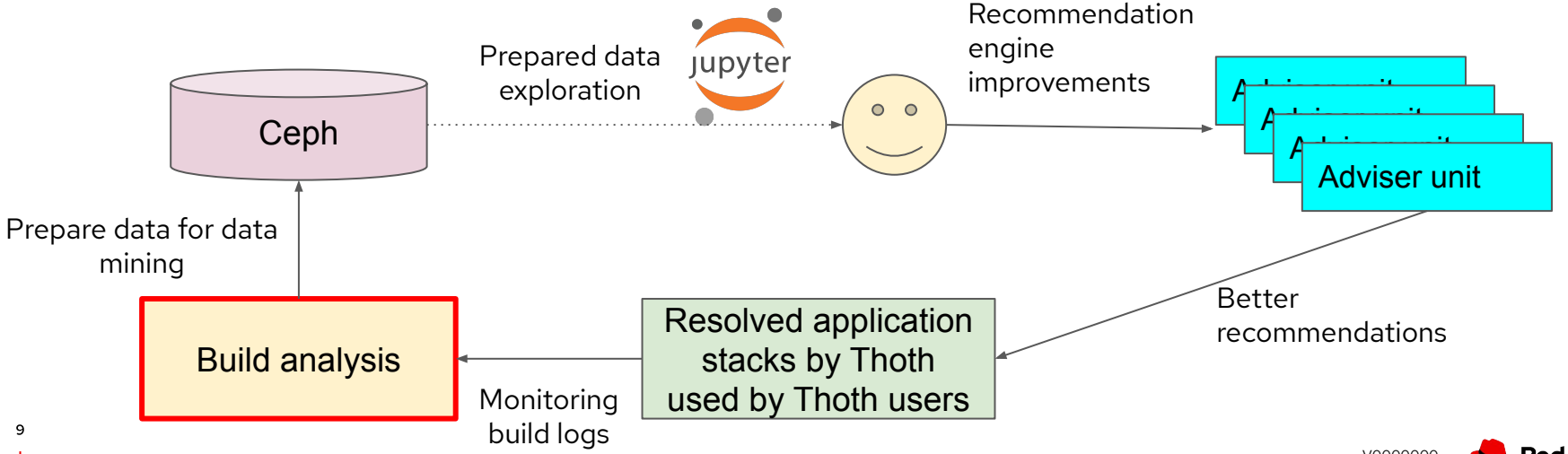
Thoth's build-watcher: server side

- Messaging used to propagate request
  - Proved scalability
- Build analysis workflow running using Argo workflows
- Argo workflows
- Results available on Ceph

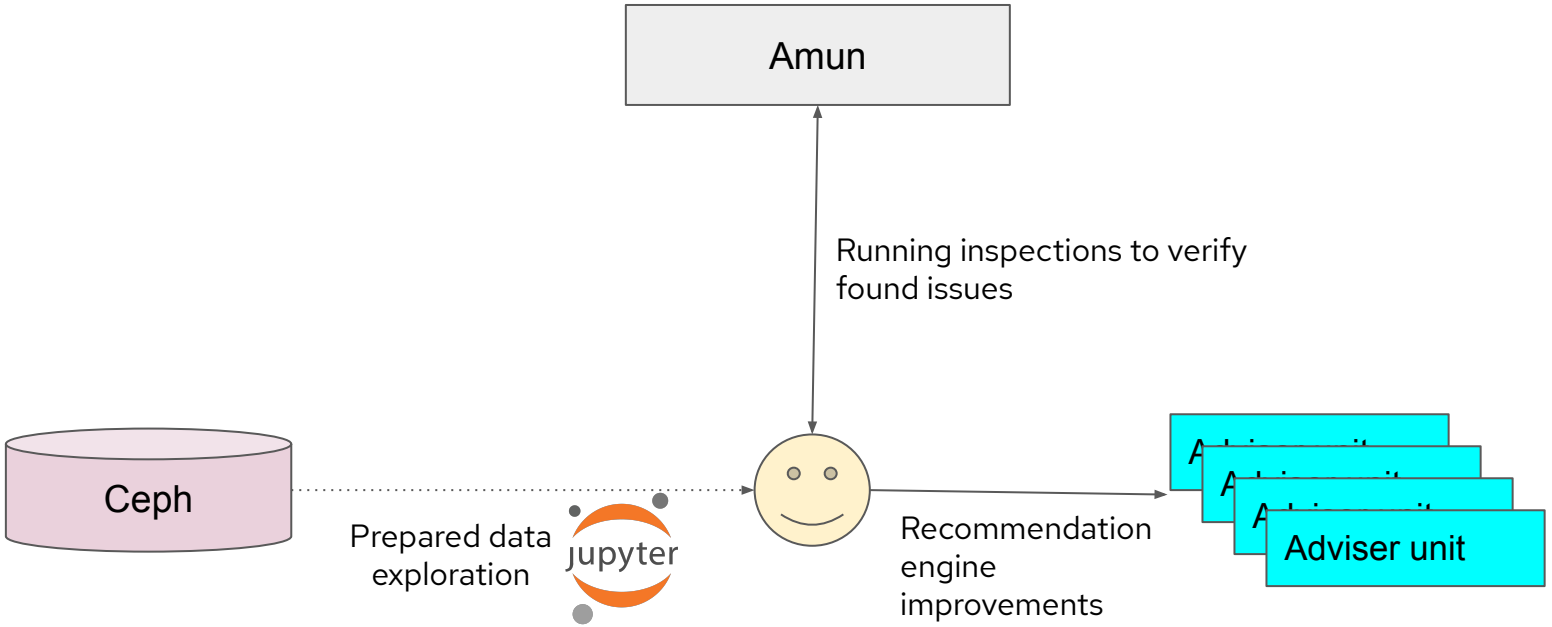


Thoth's build-watcher: data scientist & software engineer

- Results of analysis available on Ceph
  - Easily accessible using Jupyter Notebooks
  - thoth-storages adapters can be used to explore the data set
  - Constant improvement loop



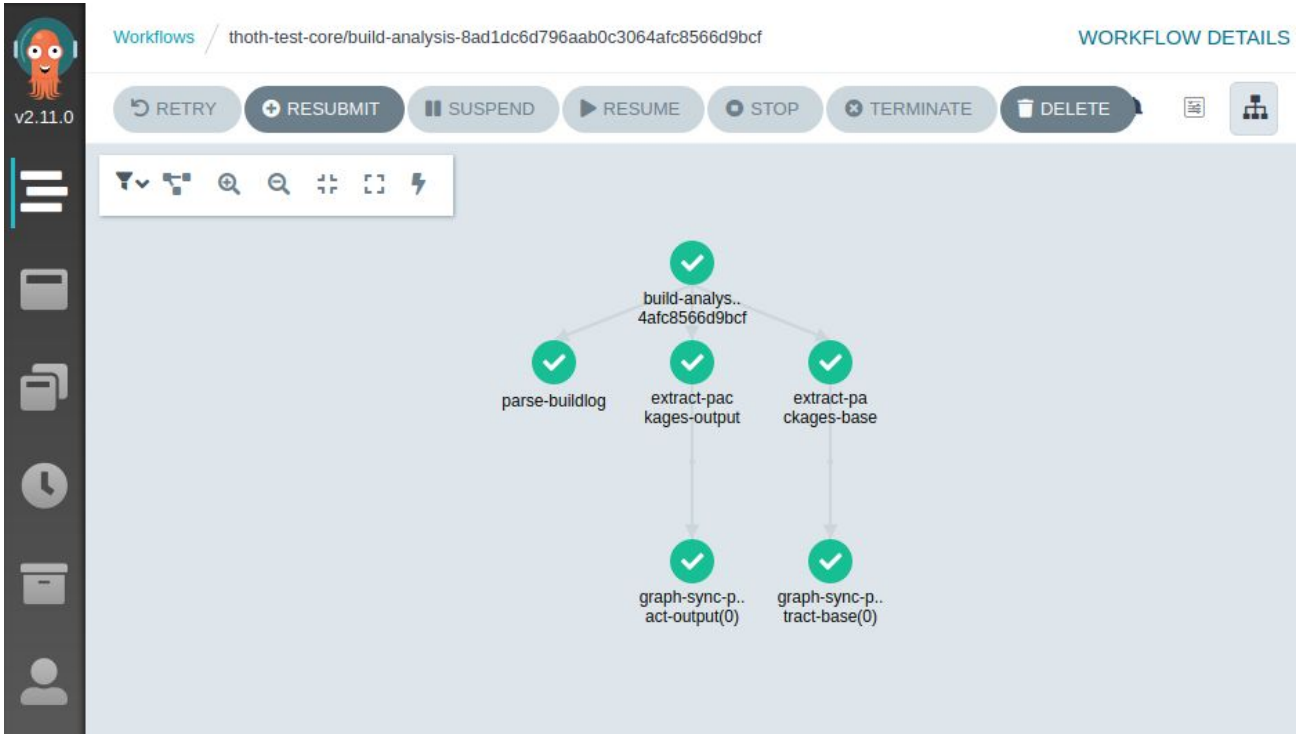
Thoth's build-watcher: data scientist & software engineer



Thoth's build-watcher: build analysis

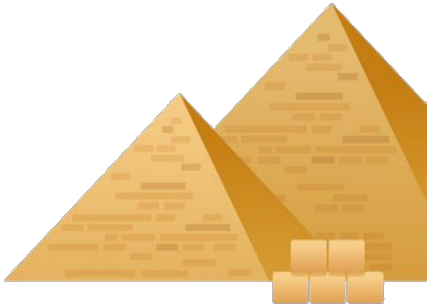
- Analyzers run
  - package-extract - https://github.com/thoth-station/package-extract
    - Extract packages from container images
      - Base container image
      - Output container image
  - buildlog-parser - https://github.com/thoth-station/buildlog-parser
    - Parse build logs produced
    - Parse all the relevant information
    - Using micropipenv output
      - https://github.com/thoth-station/micropipenv/
      - `ENABLE_MICROPIPENV=1` in Python Source-To-Image

Thoth's build-watcher: build analysis



Thoth's build-watcher: build analysis

- See README file in the thoth-station/build-watcher repo for installation instructions
  - https://github.com/thoth-station/build-watcher/
- Use micropipenv in the installation process
  - 💥`ENABLE_MICROPIPENV=1`💥
- Do not hesitate to contact Thoth team



Thanks for your attention!

https://github.com/thoth-station

https://twitter.com/thothstation

https://www.youtube.com/channel/UCIUIDuq_hQ6vlzmqM59B2Lw

References

Website https://thoth-station.ninja/

Twitter https://twitter.com/thothstation

GitHub https://github.com/thoth-station


linkedin.com/company/red-hat


youtube.com/user/RedHatVideos


facebook.com/redhatinc


twitter.com/RedHat

Red Hat