

# How **Pandas** use Python

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# Pamphile or @tupui

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- <https://github.com/tupui>

## Things I do

- SciPy
- SALib (and a hobbyist researcher)
- Steering Committee (general and SPEC)  
<https://scientific-python.org/>
- PyData Sphinx Theme
- NumFOCUS SDG and Security
- Stellar Community Fund Pilot

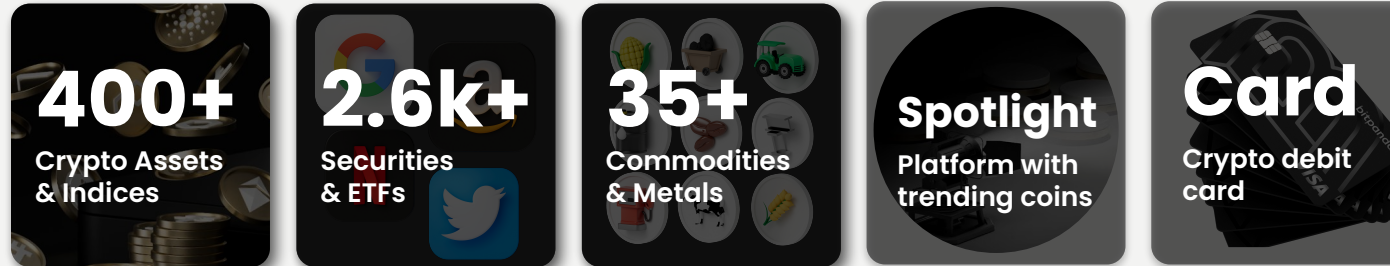
## E.g. with SPEC 7

- Deprecate the use of `random_state/seed` arguments in favor of an `rng` argument in all functions where users need to control pseudo-random number generation,
- Use `numpy.random.default_rng` to normalize the `rng` argument and instantiate a Generator, and
- Deprecate the use of `numpy.random.seed` to control the random state.

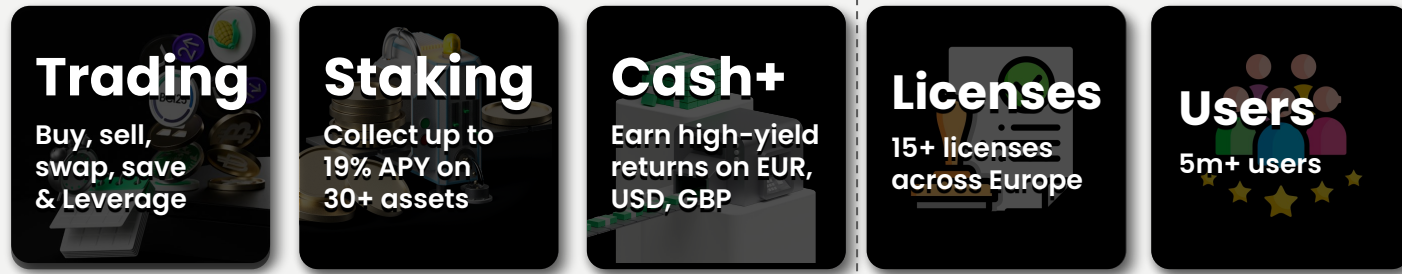


# Bitpanda at a glance

## Offering



## Functionality

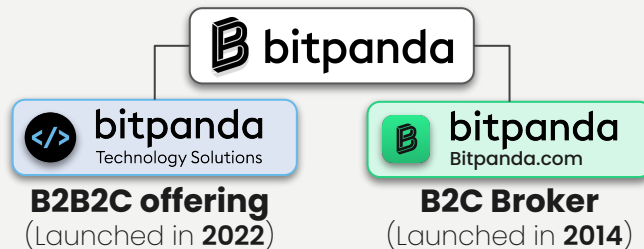


## Trusted

## Footprint

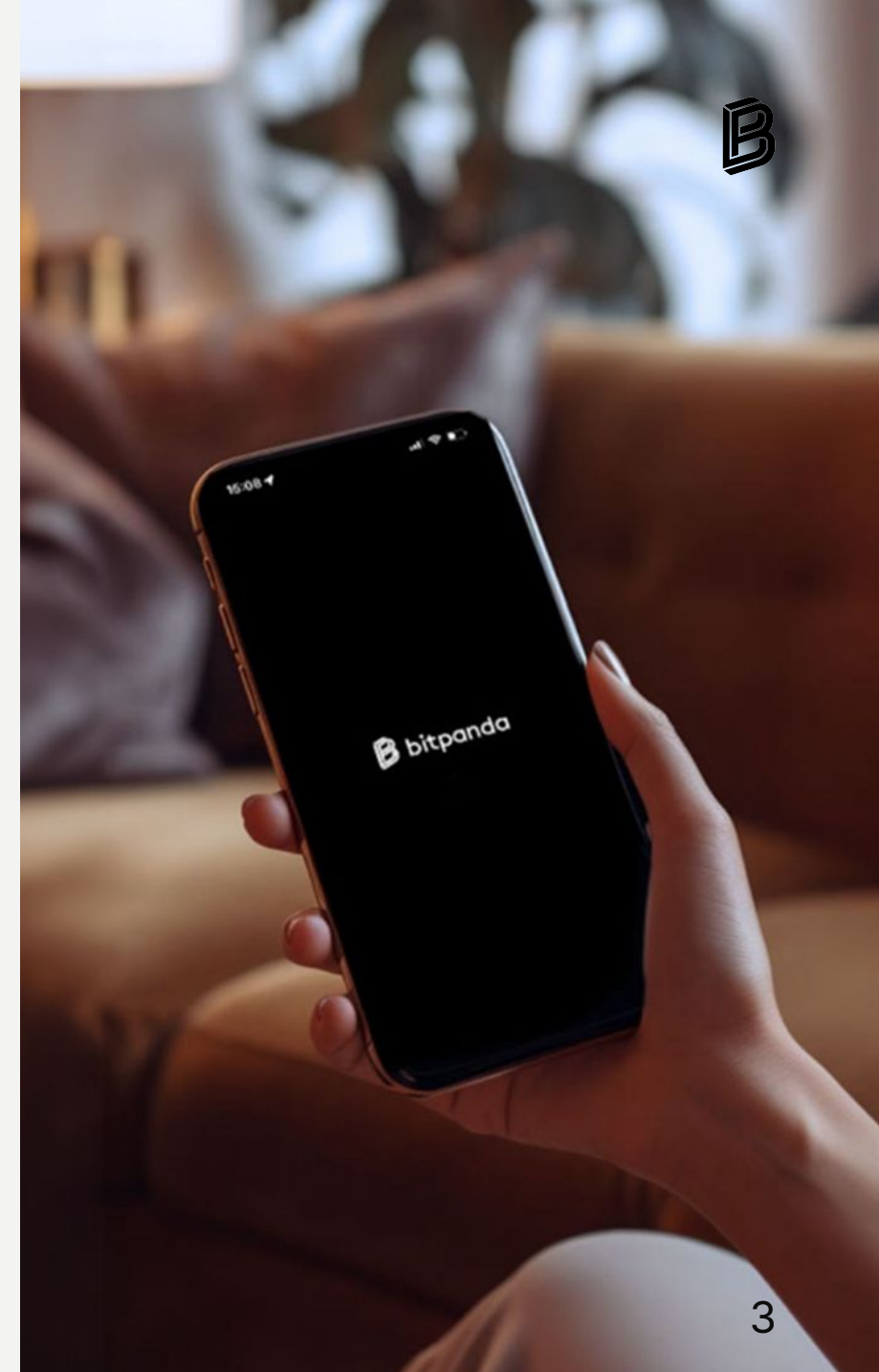
**30+ countries**  
In Europe

## Business model

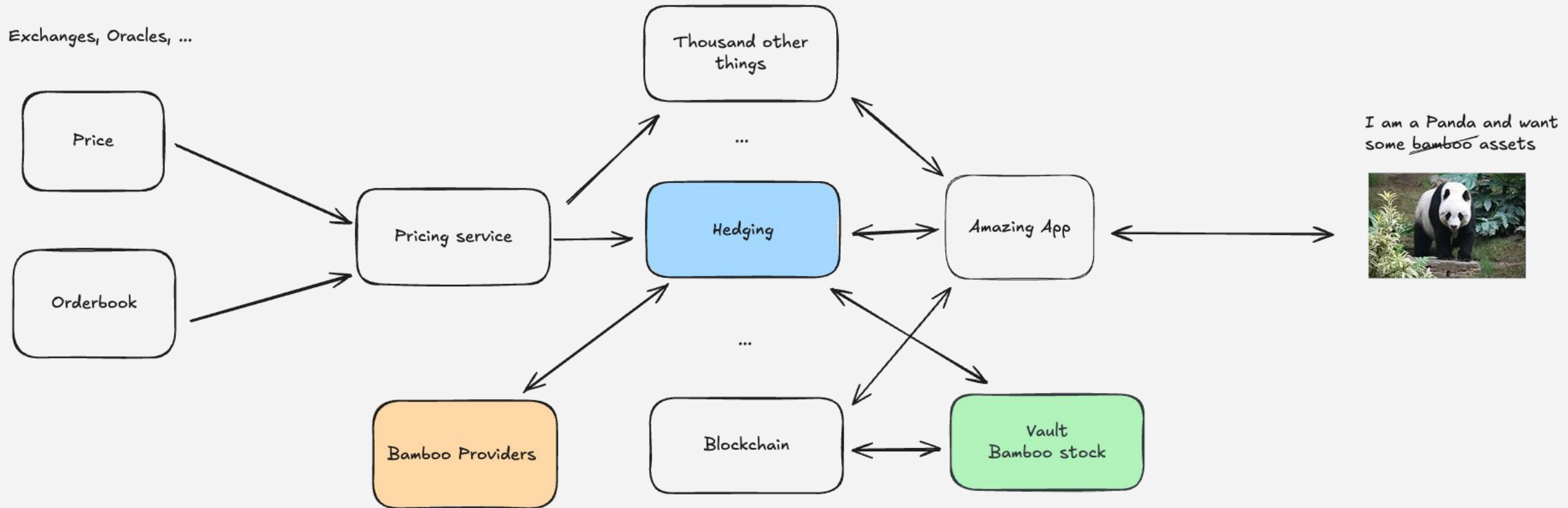


## Our workforce

**700+ employees**  
From +50 nationalities



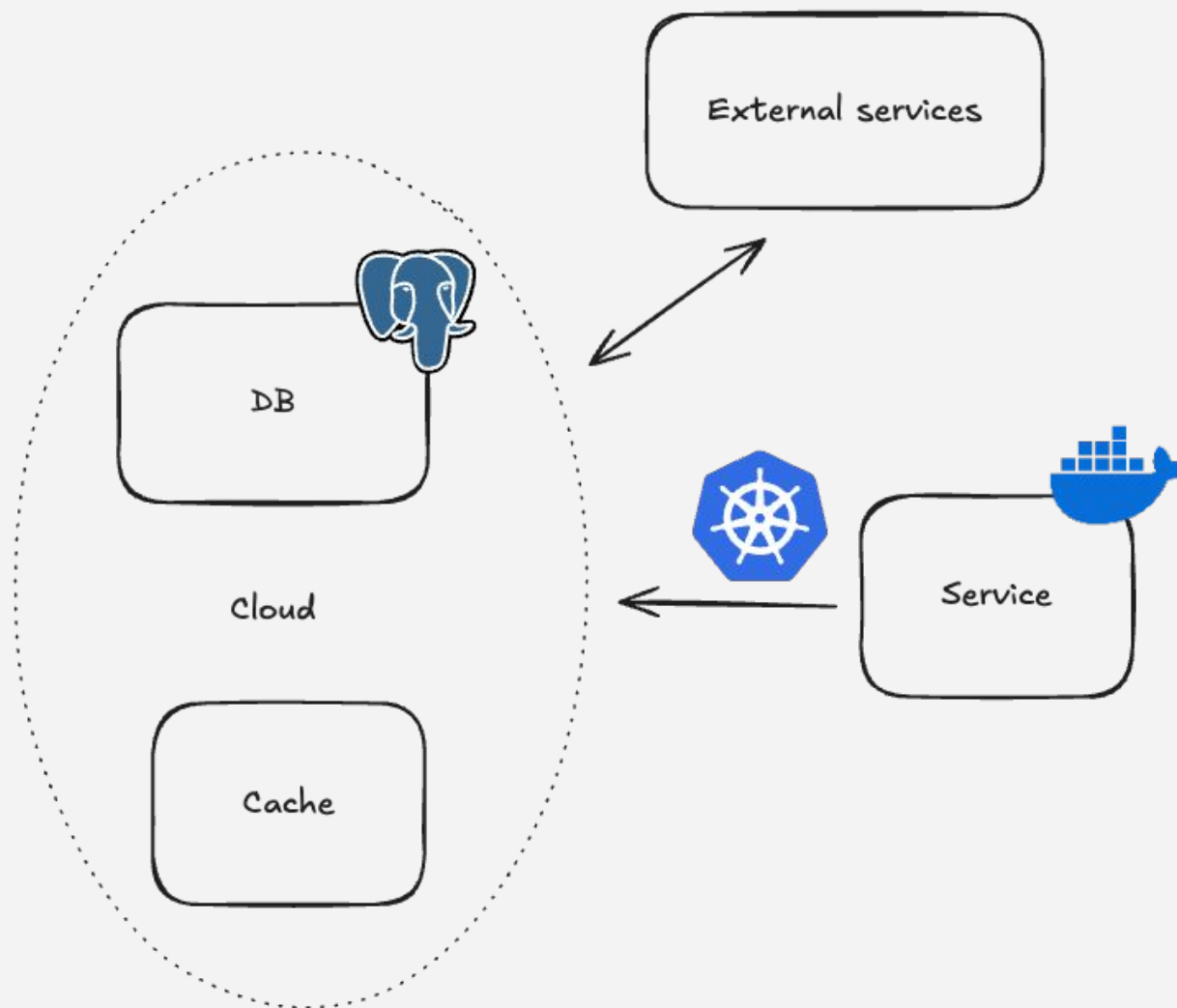
# What Pandas do?



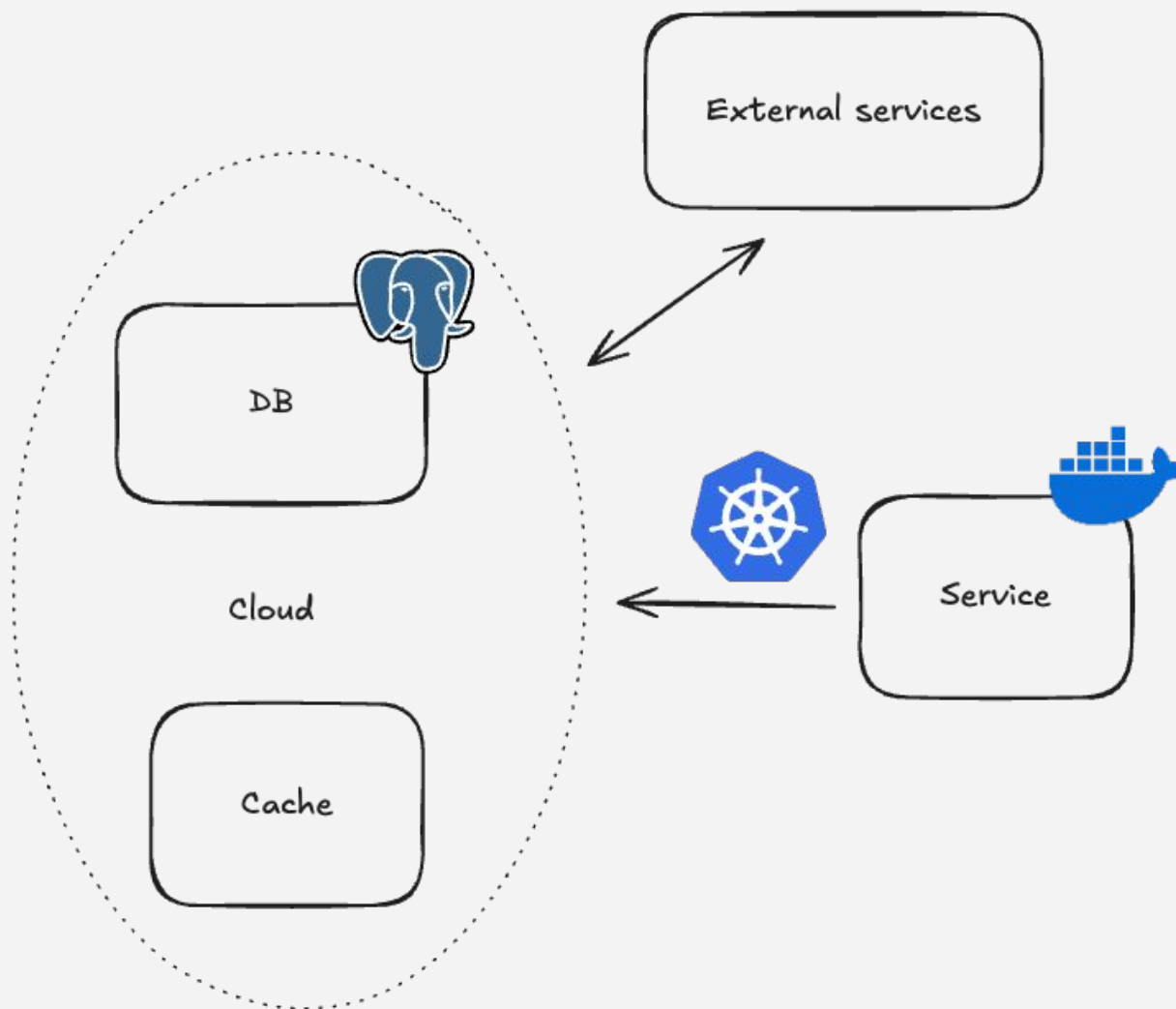
# Micro-services



# Micro-services

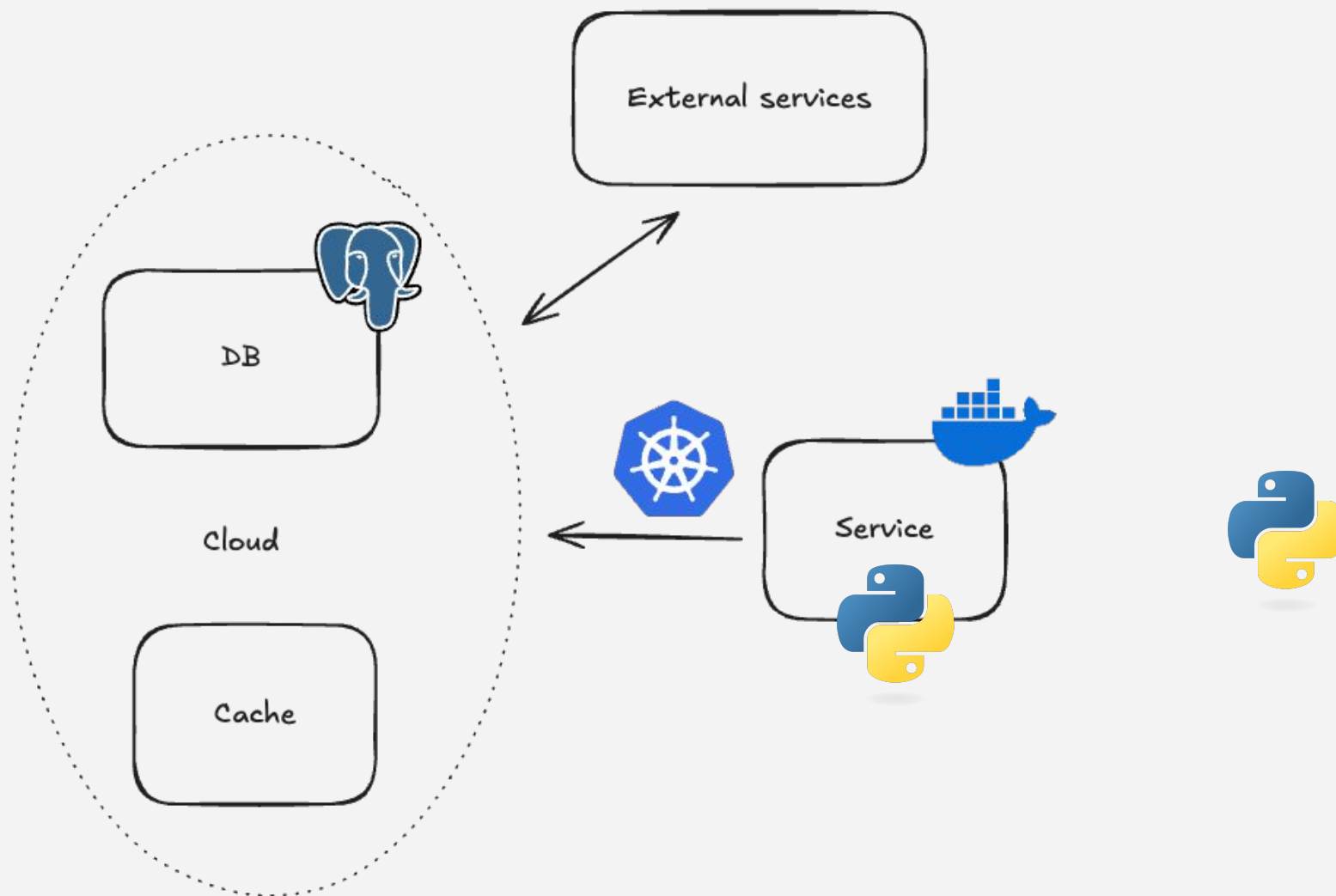


# Micro-services



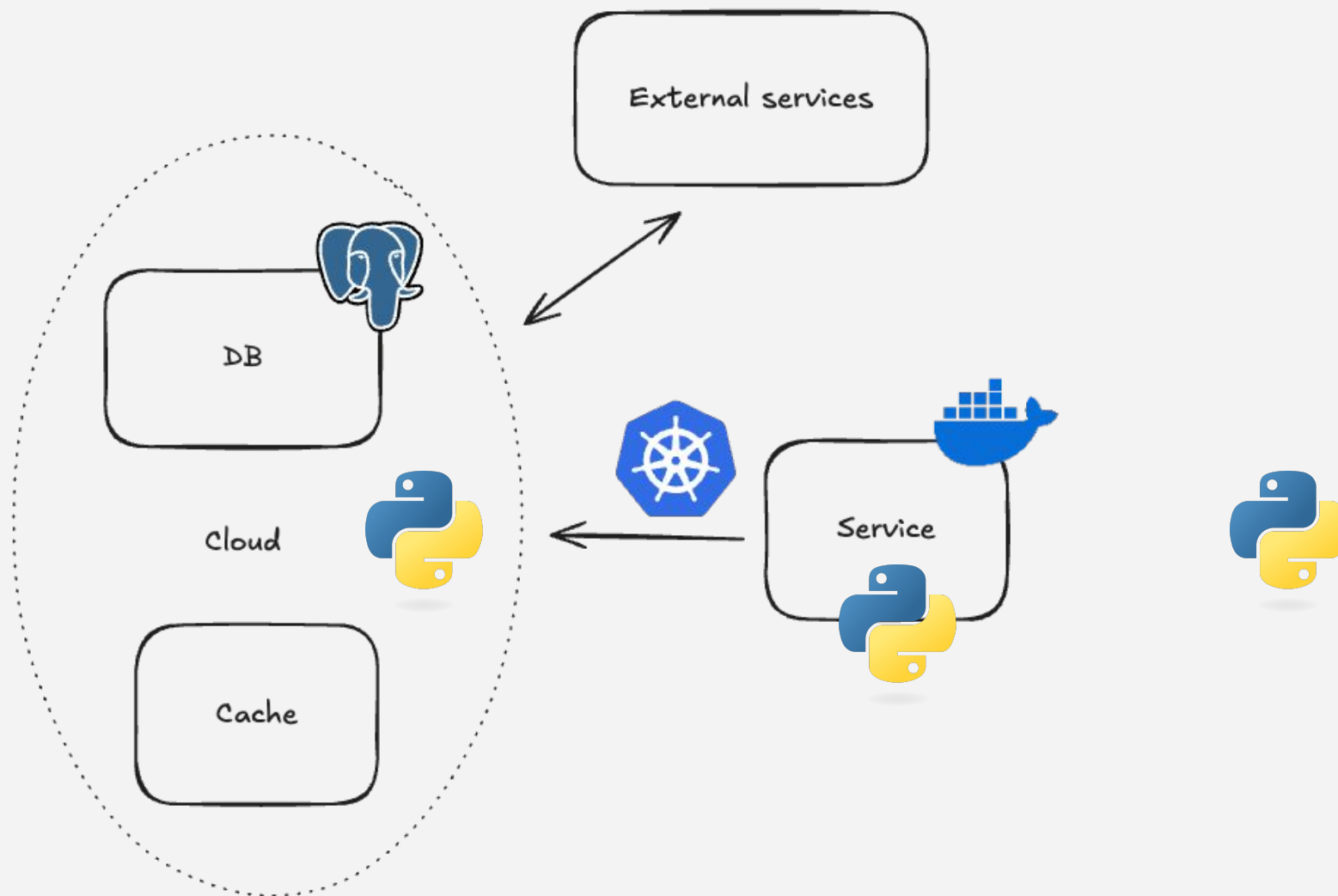


# Micro-services

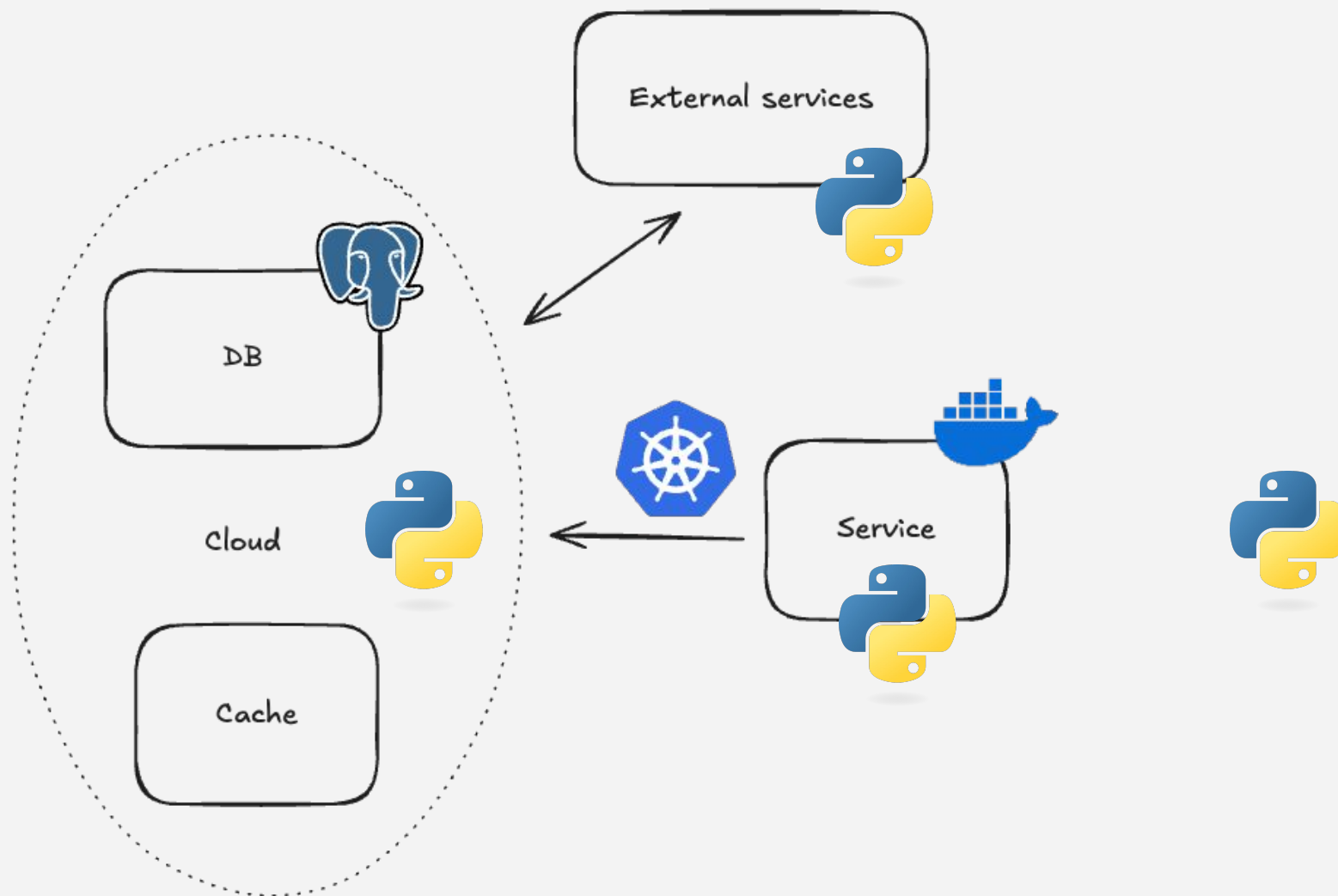




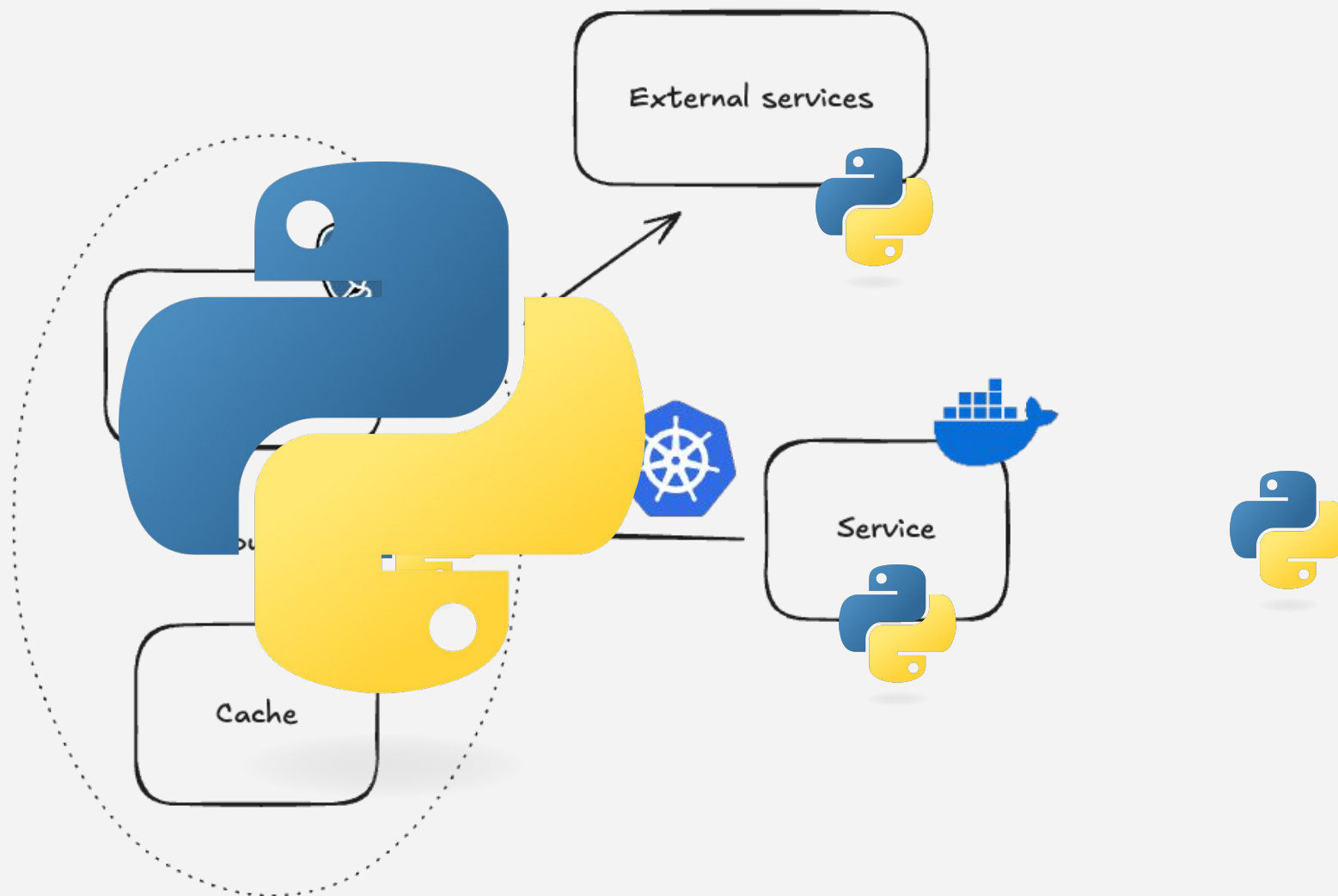
# Micro-services



# Micro-services



# Micro-services

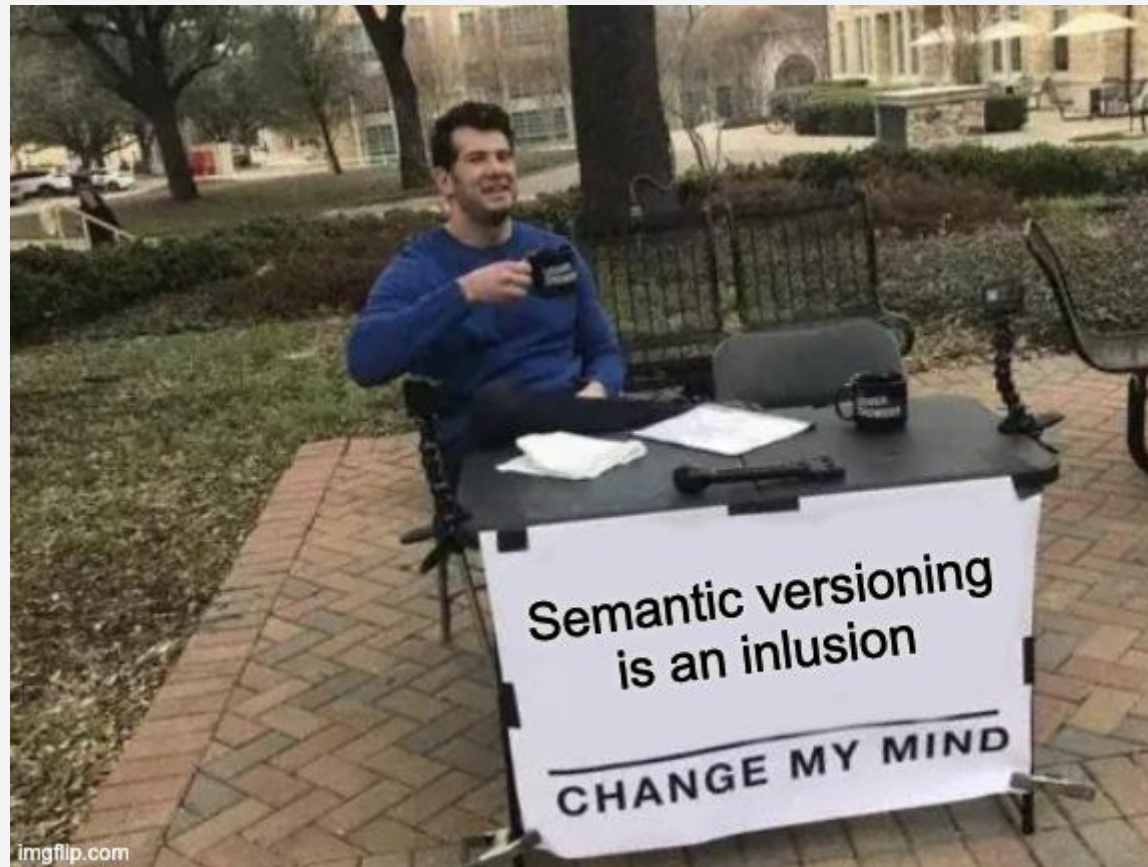


# Common stack

- ChatGPT (hard pass)
- Poetry
- Pylint, Black and/or Ruff
- FastAPI
- Pydantic
- Orjson
- Pytest
- Locust
- memray
- Docker and friends in the cloud



# To update or not to update?



# Poetry is still there...

- Lockfile
  - Strict dependency resolution
  - Slow
  - Opinionated (not Pythonic, not standart)
- 
- Everything you ever wanted and more, that it.

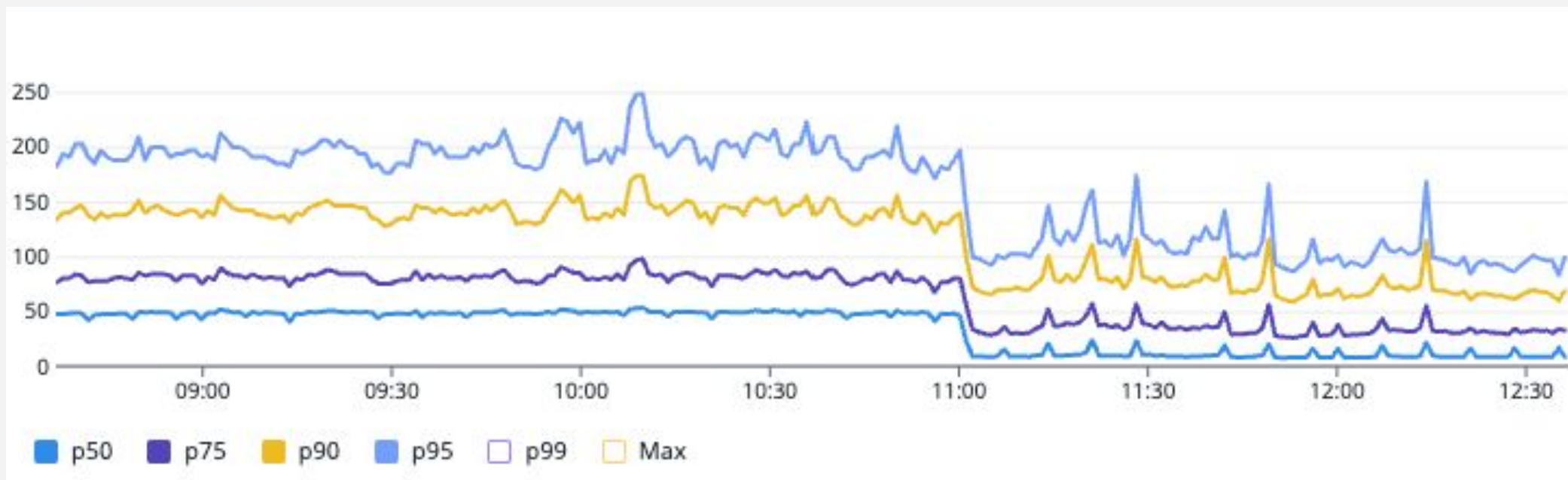


# Make it fast without breaking the bank

- Premature optimization is?
- Get to know the concurrency model in Python
- Async all the way, this is hard!
  - Level -1: async def
  - Level 1: Actually async with some awaitable functions
- ORM: use one, learn it well
- Pydantic: use it, learn it too
- Caching: Checkout Cashews! <https://github.com/Krukov/cashews>
- Benchmarking: Locust and integrate in your CI/CD
- Active monitoring: things do change overtime



# Not all JSON are equal



# Ship it!

- Multi-stage builds
- Caching is hard
- Secrets handling is hard
- Some security extras (uninstall tools, base image, etc.)

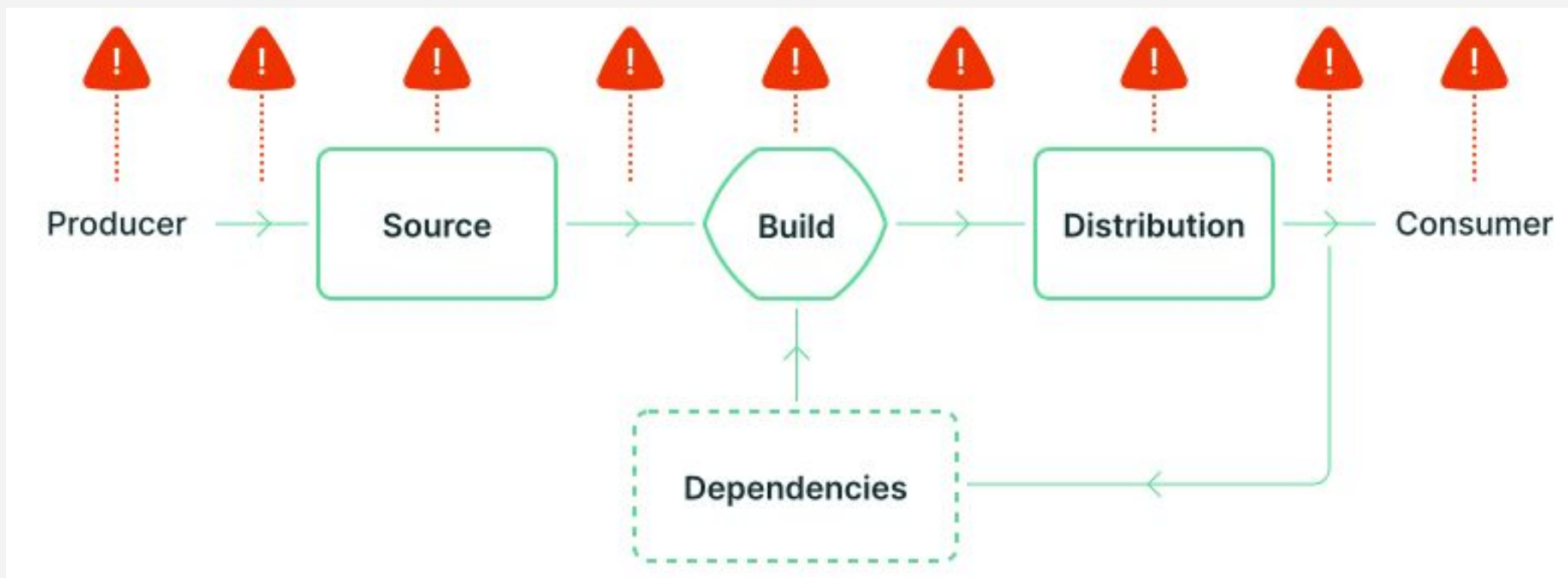


```
RUN --mount=type=cache,mode=0777,target=/root/.cache/pip pip install scipy
```



```
ARG SUPER_SECRET_TOKEN
```


## 101





# Going the extra mile

- SLSA
- SBOM
- CVEs
- Active Scans
- Fuzzy testing
- Threat modeling
- Security audits
- etc.

# Organization against confusion


 The Python Package Index Blog



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[organizations](#) [sustainability](#)

**Ee Durbin**  
PyPI Admin, Director of  
Infrastructure (PSF)

**Metadata**  
 April 23, 2023  
 3 min read

## Introducing PyPI Organizations

Today, we are rolling out the first step in our plan to build financial support and long-term sustainability of the Python Packaging Index (PyPI), while simultaneously giving our users one of our most requested features: organization accounts.

**Table of contents**

- Introducing Organizations
- Increasing sustainability and support
- Organizations are opt-in
- A basis for future features
- Get started today
- Acknowledgements

