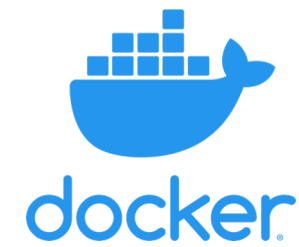


LISA DDPC activities

21/11/2022

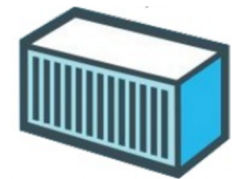
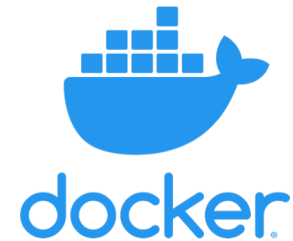
Cécile Cavet

Common Development Environment



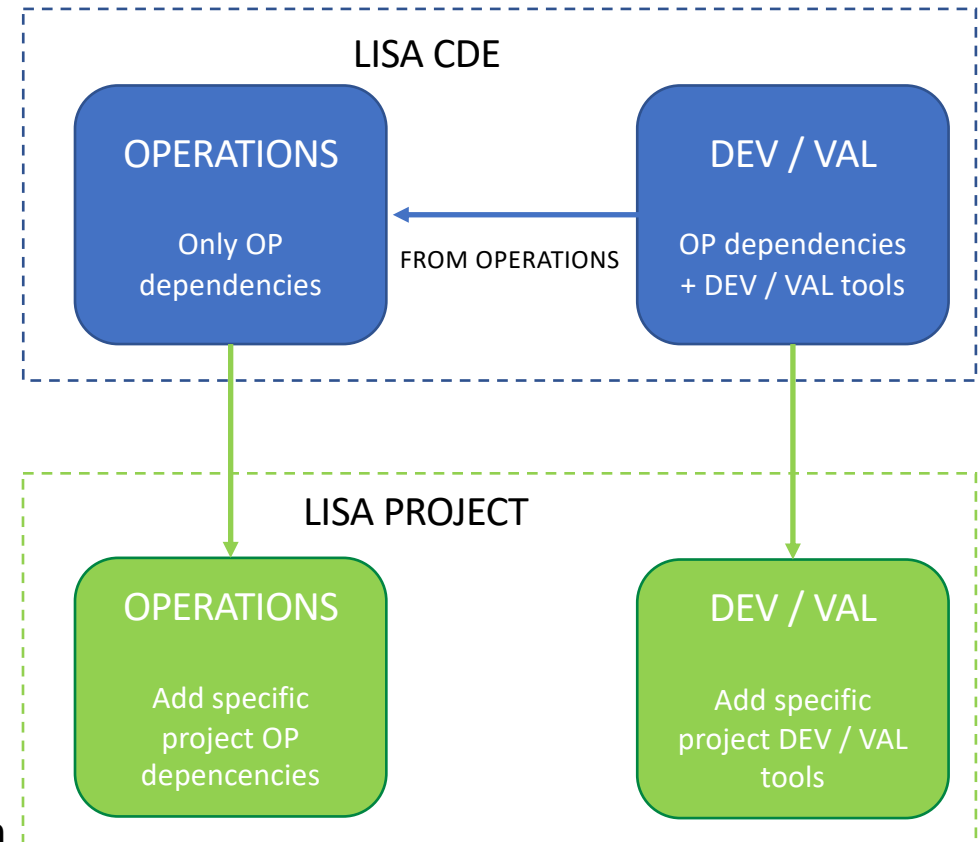
CDE

- Goal:
 - Provide a **Docker image** as a base image for all LISA projects
 - Automatically build with **CI best practices**:
 - linting
 - security
- Project:
 - <https://gitlab.in2p3.fr/LISA/lisa-cde>
 - Started in 2020, **no update since 1 yr**
 - Current release: **0.4.0** (01/09/22)
 - User documentation: <https://gitlab.in2p3.fr/LISA/lisa-cde/-/wikis/home>



CDE description

- 2 Docker images:
 - **Operations:** base image
 - Debian distribution
 - Libraries: Python, gcc, HDF5...
 - Lisa user: `/home/lisauser`
 - **Development/Validation:** FROM Operations
 - Libraries: linting, UT
 - Endpoints: Jupyter Lab web service or Bash



- User mode:
 - **Pull image** (GitLab registry)
 - or rebuild locally the image (not recommended)

The screenshot shows the 'Root image' repository in GitLab. It includes a 'Delete image repository' button, metadata (8 tags, Cleanup disabled, Last updated 9 months ago), and a table of image tags. A green arrow points from the text 'Pull image (GitLab registry)' in the previous block to the '0.3.0' tag in the table.

Image tags	Published	Digest
<input type="checkbox"/> 0.2.0	Published 8 months ago	Digest: 27ec57a
<input type="checkbox"/> 0.3.0	Published 2 months ago	Digest: 2dd4904
<input type="checkbox"/> 0.3.0-dev	Published 2 months ago	Digest: 773f678

Next steps

- Already used by several **LISA projects**:


- LDC, FoM, LISANode

- ~~INREP~~



- **Ideas for milestone 0.5.0 and others:**

- Singularity
- SonarQube

Ongoing Issues (open and assigned)  6

missing astropy to run lisabeta

#33 

missing packages to run INREP notebook

#28 Doing 

provide Singularity image for each Docker image of the LCE

#27 Doing 

update to debian:bookworm-slim

#25 Doing 

SonarQube

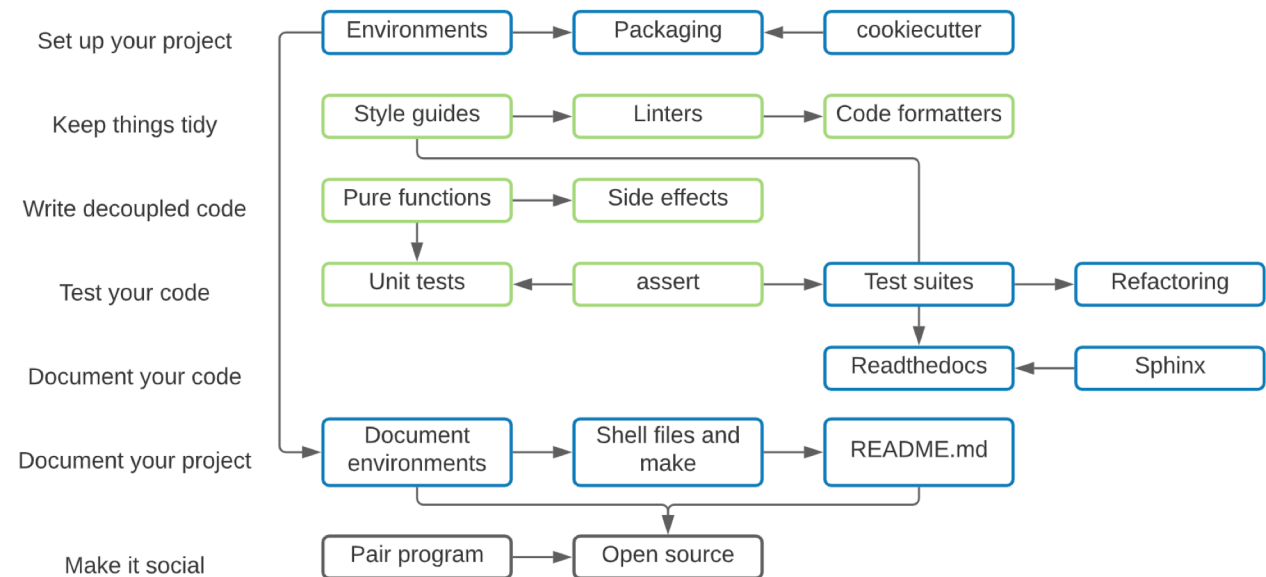
#14 Doing 

Avoid doing a push from branches other than Master

#10 Doing 

Autres idées

- Bonnes pratiques :
 - Architecture d'un projet Python
 - Workflow dev et règles de CI
- Templates de fichiers :
 - [.gitignore](#)
 - **CHANGELOG**
 - **LICENSE**
 - [README.md](#)
 - [MANIFEST.in](#)



From <https://goodresearch.dev/setup.html>

Proto-DPC



kubernetes



Apache
Airflow



Proto-DPC

- started in 2014, last activity in 12/22
- Goals:
 - Deliver a common environment:
 - execution environment based on virtualization;
 - Manage pilot infrastructures:
 - heterogeneous computing resources ready to be used;
 - Use resource managers:
 - cloud/container orchestrator and cluster scheduler to monitor resources;
 - Execute a scientific workflow:
 - workflow manager system (WMS) to handle complex scientific pipeline

Technical solution exploration

- Infrastructure: Cloud, Kubernetes, HPC
- WMS: Airflow
- Storage: MinIO



kubernetes



Apache
Airflow

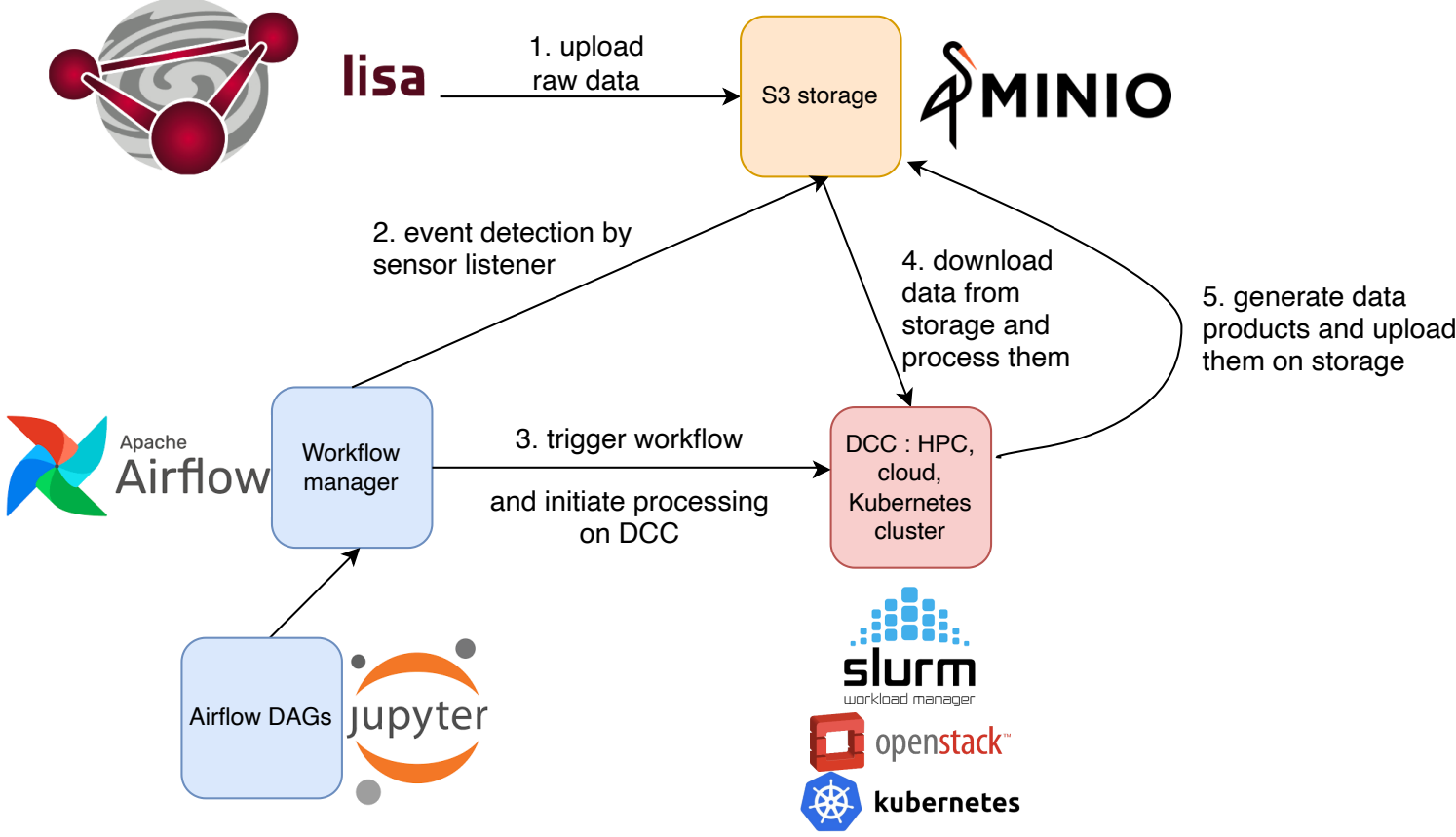
Pilot infrastructures

Table 1. Cluster types of pilot infrastructures

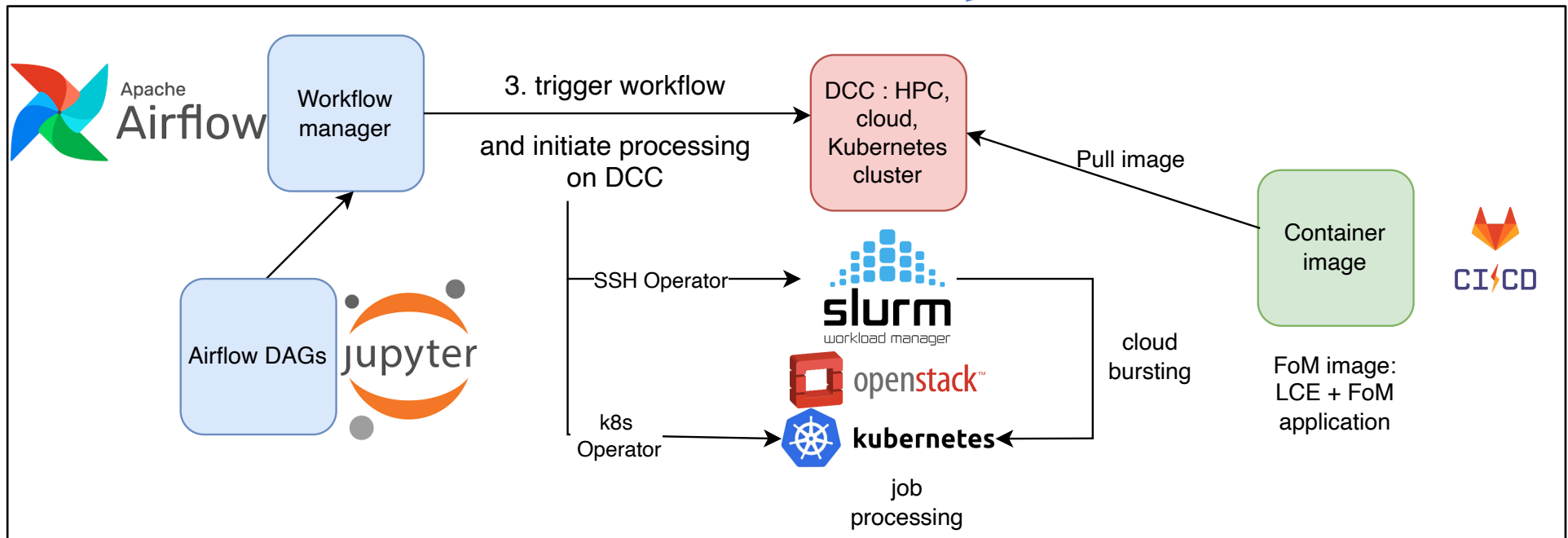
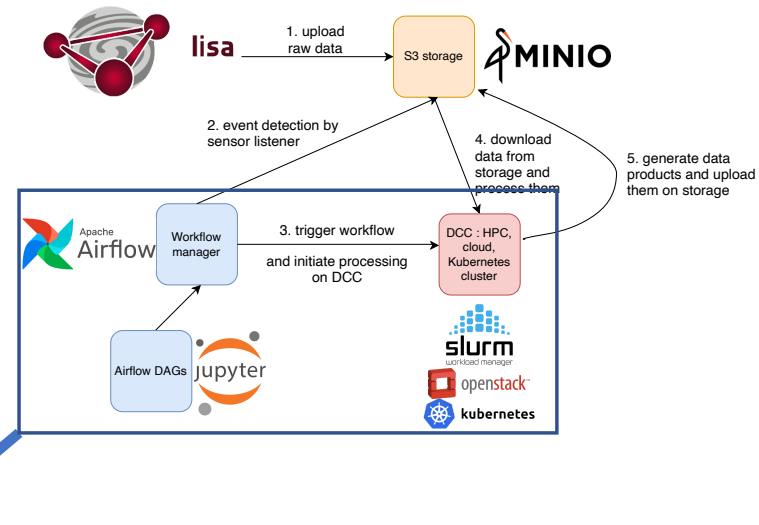
Types / Centers	cloud	container	HPC
IN2P3 labs	x	prototype	x
CC-IN2P3	x	WIP	x
CNES	-	WIP, planned in 2023	x
CSC	x	x	x

Note: only academic cloud for the time being

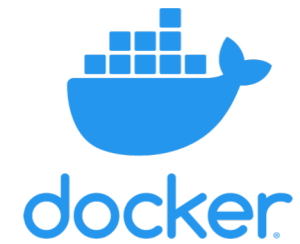
Storage event-driven workflow



Focus on DCC's operator



Web services



Web services

- LDC :
 - En prod depuis 2018 (démarré en 2015)
 - mises à jour 2 fois / an
 - Ajout de données + outils de visualisation lors des releases

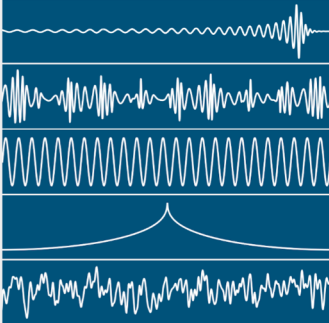
LDC Challenges Meetings Contact Admin Login Sign up

(the new) LISA Data Challenges

...or, as we call them, the **LDCs**—an **open, collaborative effort to tackle unsolved problems in LISA data analysis**, while developing software tools that will form the basis of the future LISA data system.

The LDCs are organized by the **LISA Consortium's LDC working group**. Please join us as we write code and specifications to generate challenge datasets, and we work together to search for gravitational-wave sources and estimate their parameters. If you prefer to explore by yourself, develop your algorithms (or improve ours), then submit your methods and results so we can learn from them.

The LDCs are supported by the LISA [LISA Data Processing Group \(LDPG\)](#) at [APC Paris](#).



Challenge 2b

Codenamed **Spritz** and [released on October 1, 2021](#), the third challenge seeks to introduce new researchers to LISA data analysis, to rehabilitate existing analysis codes, and to establish our process and standards.

We expect to collect Challenge-2b entries by October 1st, 2022.

[Learn more and download »](#)

Join us

The LDC working group consists of members (both full and associate) of the [LISA Consortium](#): apply [here](#) for Consortium membership, or through the LISA Consortium group at your institution.

Coming soon: LDC publication policies.

[Inquire about membership »](#)

LDC software

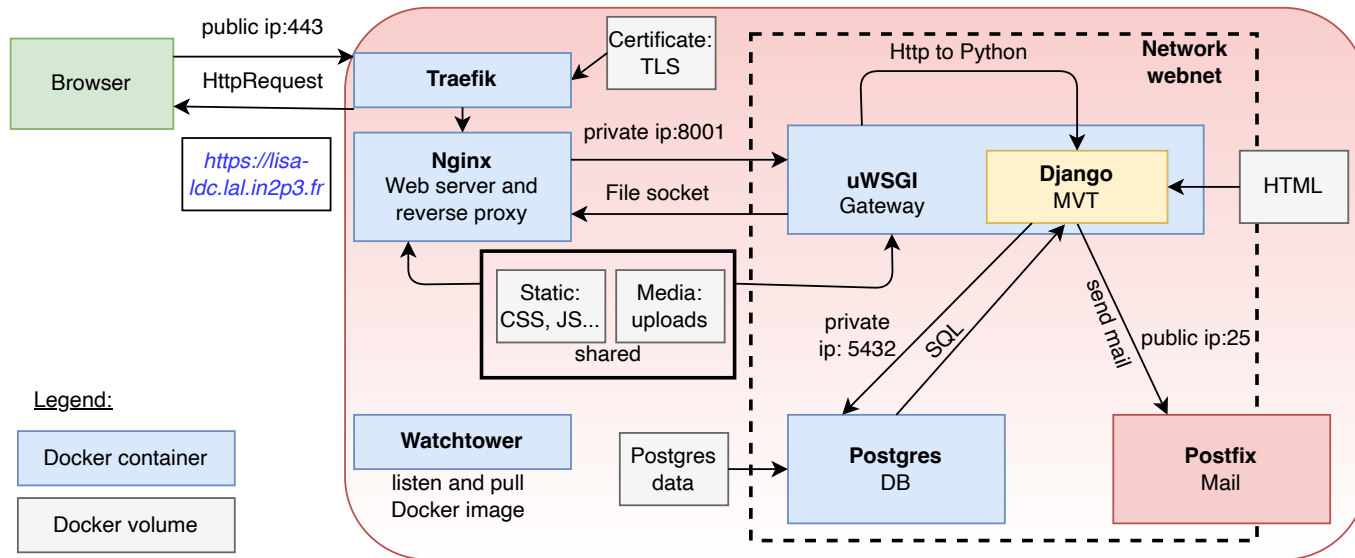
We periodically [release](#) all software developed by the working group to build and analyze datasets. Working-group members have read/write access to our [code repository](#).

Coming soon: LDC tutorials and example codes.

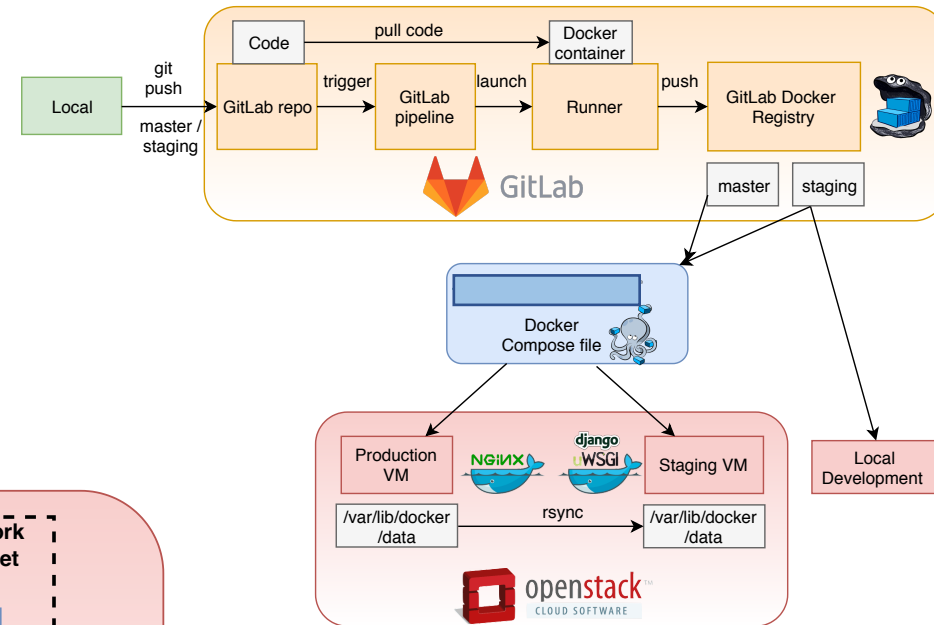
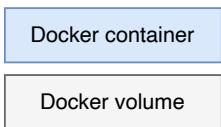
[Login to get our code »](#)

Web services: architecture

- Infrastructure :
 - 2 VM OpenStack : prod et pré-prod
 - Docker + Compose
- Stack :



Legend:



Vers k8s

