Agridea: GeoAcorda with Docker Infrastructure

GeoMapFish User Group 29.8.2016

camptocamp

INNOVATIVE SOLUTIONS
BY OPEN SOURCE EXPERTS

Agenda

- Project GeoAcorda
- Project Context
- Docker Infrastructure
- Docker … and more @GeoAcorda
- CI / CD Workflow
- Sum Up and Experiences

Project GeoAcorda

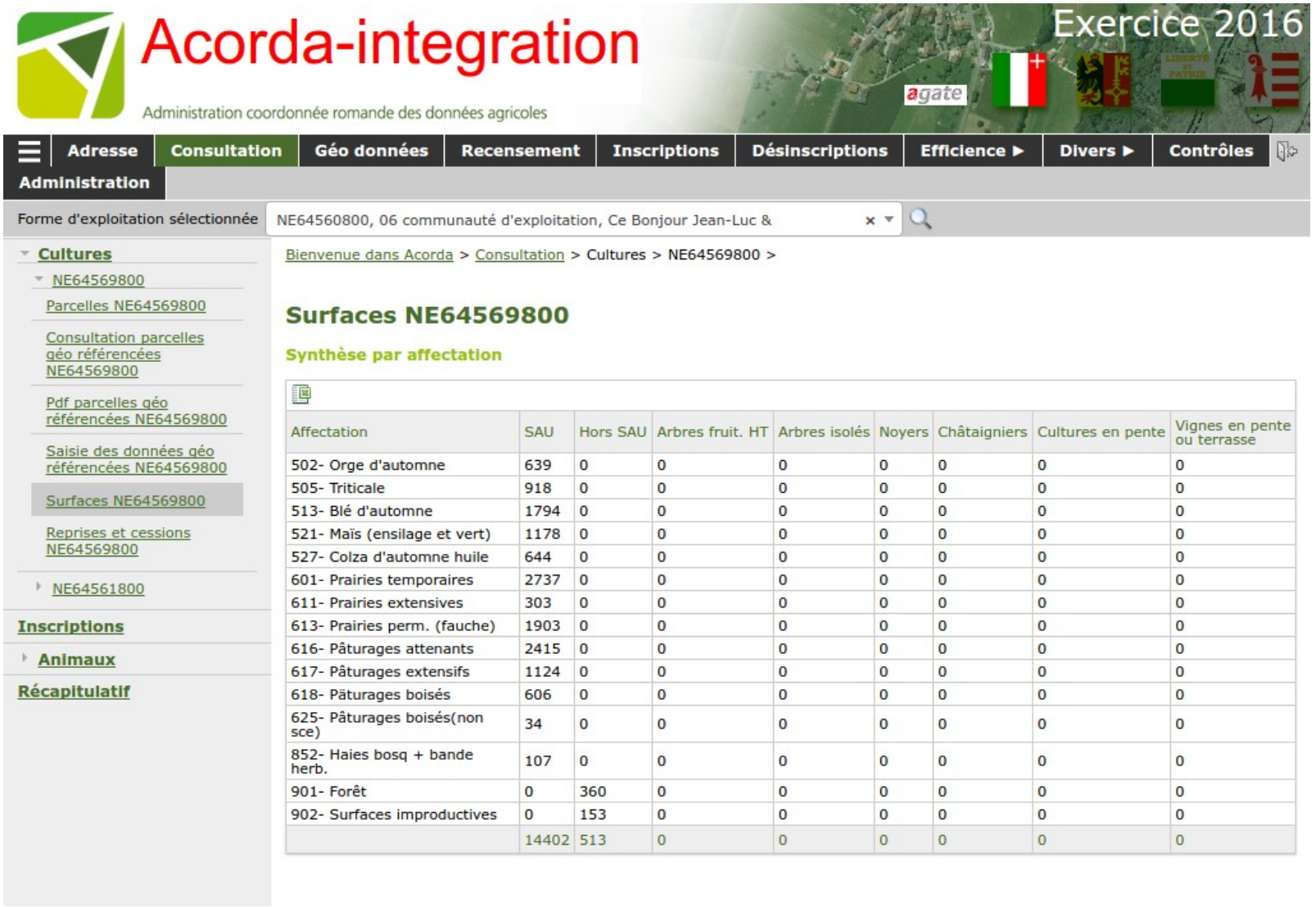
ACORDA
Administration coordonnée romande des données agricoles

- ACORDA = management of agricultural surfaces in Neuchâtel, Geneva, Vaud and Jura
- Each year, the farmers have to insert their plans for the coming season.
- The data is subject to a review process by the responsible administration at the canton.

Project GeoAcorda

- ACORDA has been an attributive web form until now, despite the high relevance of geographical information.
- → Extend the web form ACORDA with a geographic interface

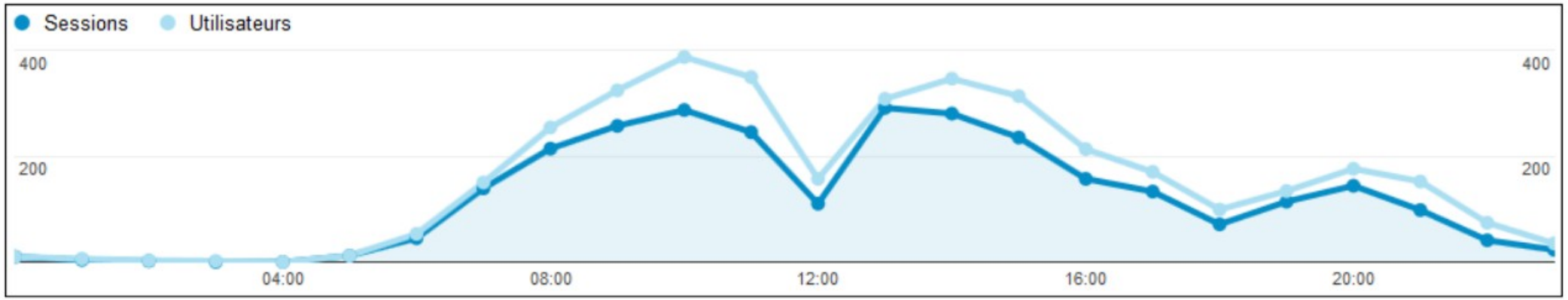
Project GeoAcorda



Affectation	SAU	Hors SAU	Arbres fruit. HT	Arbres isolés	Noyers	Châtaigniers	Cultures en pente	Vignes en pente ou terrasse
502- Orge d'automne	639	0	0	0	0	0	0	0
505- Triticale	918	0	0	0	0	0	0	0
513- Blé d'automne	1794	0	0	0	0	0	0	0
521- Maïs (ensilage et vert)	1178	0	0	0	0	0	0	0
527- Colza d'automne huile	644	0	0	0	0	0	0	0
601- Prairies temporaires	2737	0	0	0	0	0	0	0
611- Prairies extensives	303	0	0	0	0	0	0	0
613- Prairies perm. (fauche)	1903	0	0	0	0	0	0	0
616- Pâturages attenants	2415	0	0	0	0	0	0	0
617- Pâturages extensifs	1124	0	0	0	0	0	0	0
618- Pâturages boisés	606	0	0	0	0	0	0	0
625- Pâturages boisés(non sce)	34	0	0	0	0	0	0	0
852- Haies bosq + bande herb.	107	0	0	0	0	0	0	0
901- Forêt	0	360	0	0	0	0	0	0
902- Surfaces improductives	0	153	0	0	0	0	0	0
	14402	513	0	0	0	0	0	0

Project Context

- The solution has to be very user friendly
- The solution has to be fast
- **High service availability**
- **Peak of usage when the deadline is approaching**



Project Context

- High service availability and usage peaks make a very flexible scaling and deployement necessary
- We want to have a transparent, coherent and microservices-based infrastructure

Why Docker?

- High availability → simple deployement

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- Separation of services vs. limited number of servers → Docker allows to do both

Why Docker?

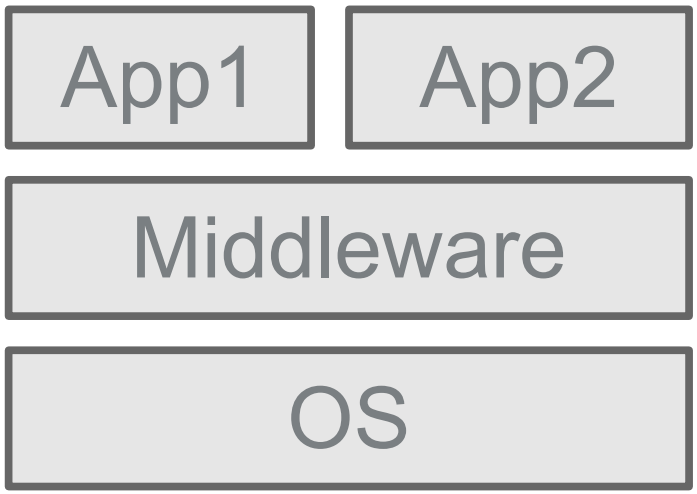
- High availability → simple deployement
- Microservices → migration in small steps
- Transparency while deploying → a project manager can guide the deployement on integration / production
- Documentation of a big distributed project → use automatic documentation
- Separation of services vs. limited number of servers → Docker allows to do both
- Run everywhere → locally, on the cloud, in your infrastructure

Docker Infrastructure

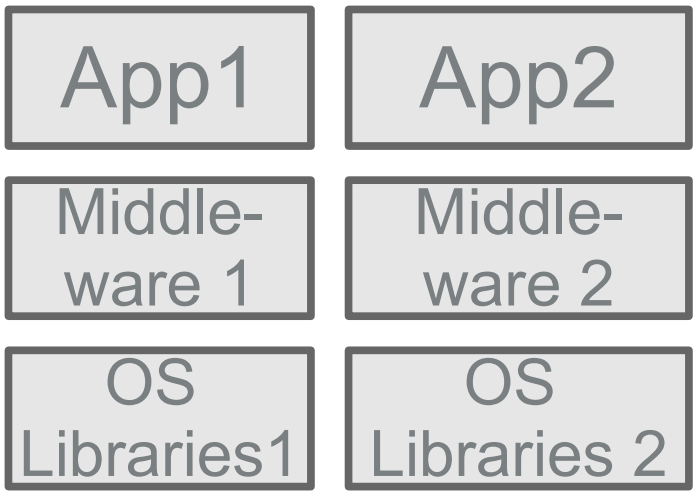
- What is Docker?
  - Container Infrastructure
  - Container = application code, middleware libraries and OS libraries (like a VM, but without the Kernel)
  - The Container uses the Kernel of the host
  - A ***registry*** contains the docker ***images*** which allow to build the ***containers***, which are orchestrated into a ***composition***

Docker Infrastructure

- What is Docker?
  - Common approach :



Docker approach :



  - A container can share disk usage, RAM and CPU with other containers

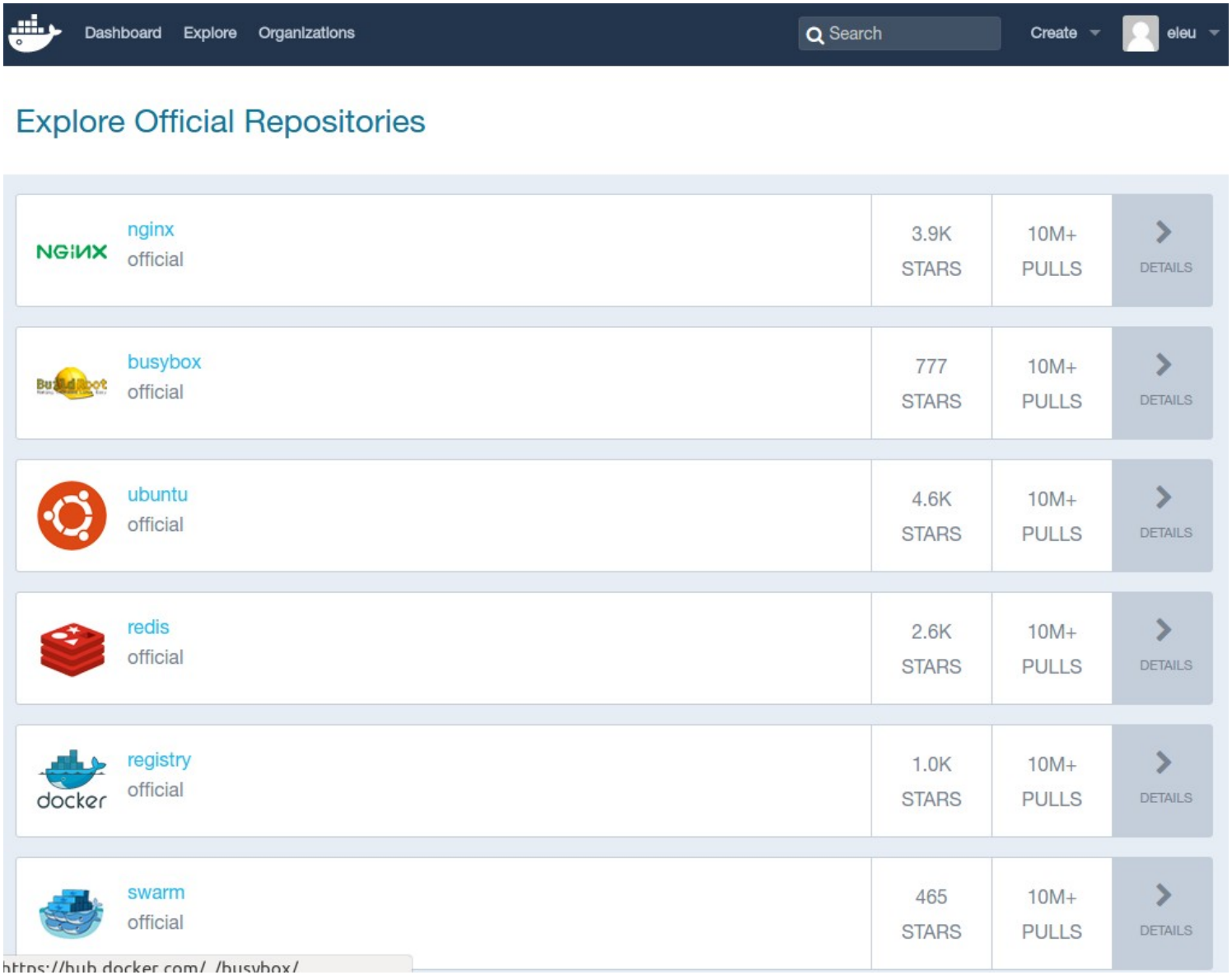
Docker … and more @GeoAcorda

- Tools for Continous Delivery / Continuous Integration Workflows
  - Registry :
    - Dockerhub for **public** images
    - Camptocamp Dockerhub account for **private** images
  - Build tools
    - Test + build, f.e. **Travis**, Jenkins
  - Run tools
    - Docker compose (for 1 server)
    - **Rancher (for several servers)**

Docker … and more

- Dockerhub

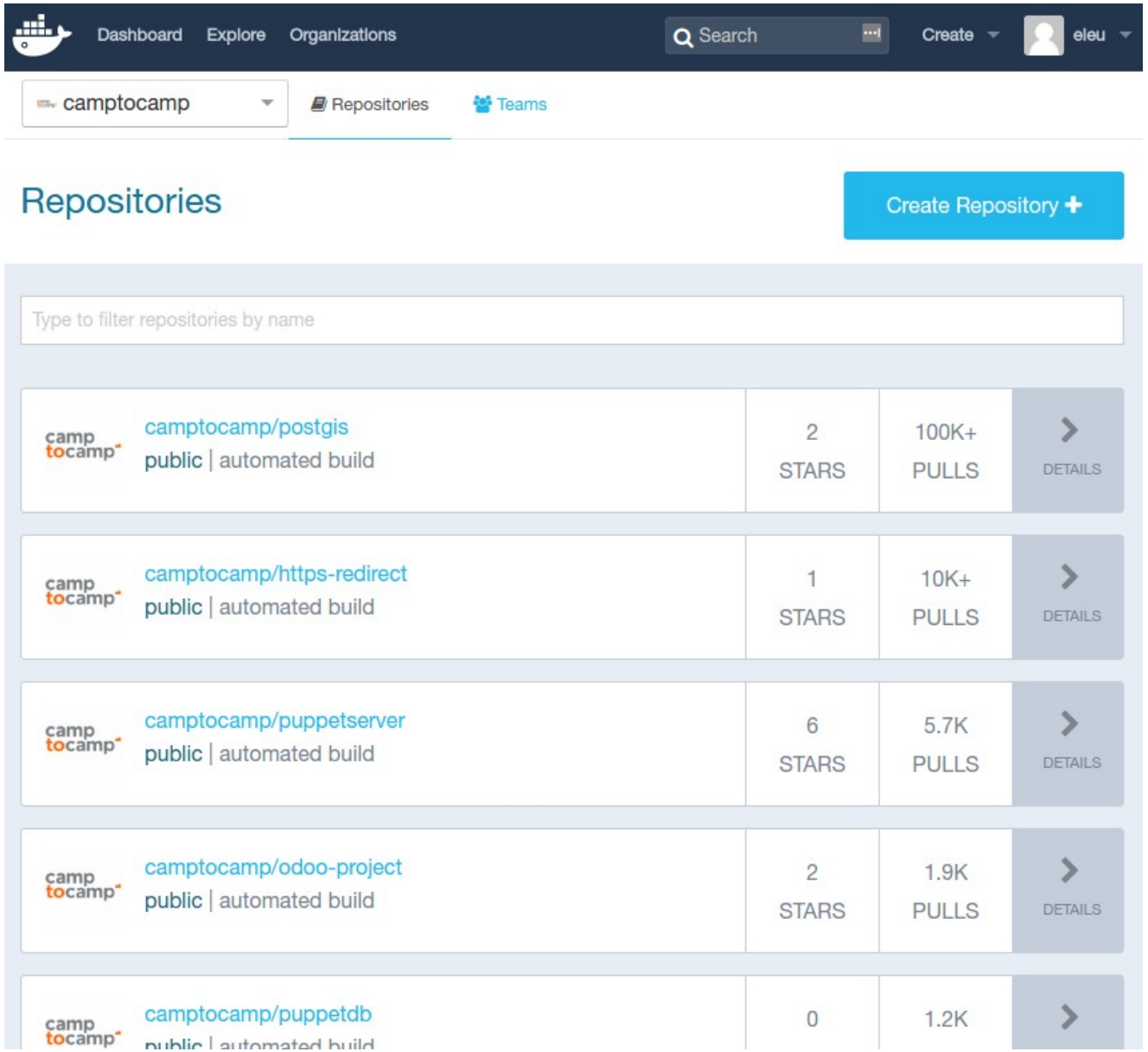
  Explore



Docker … and more

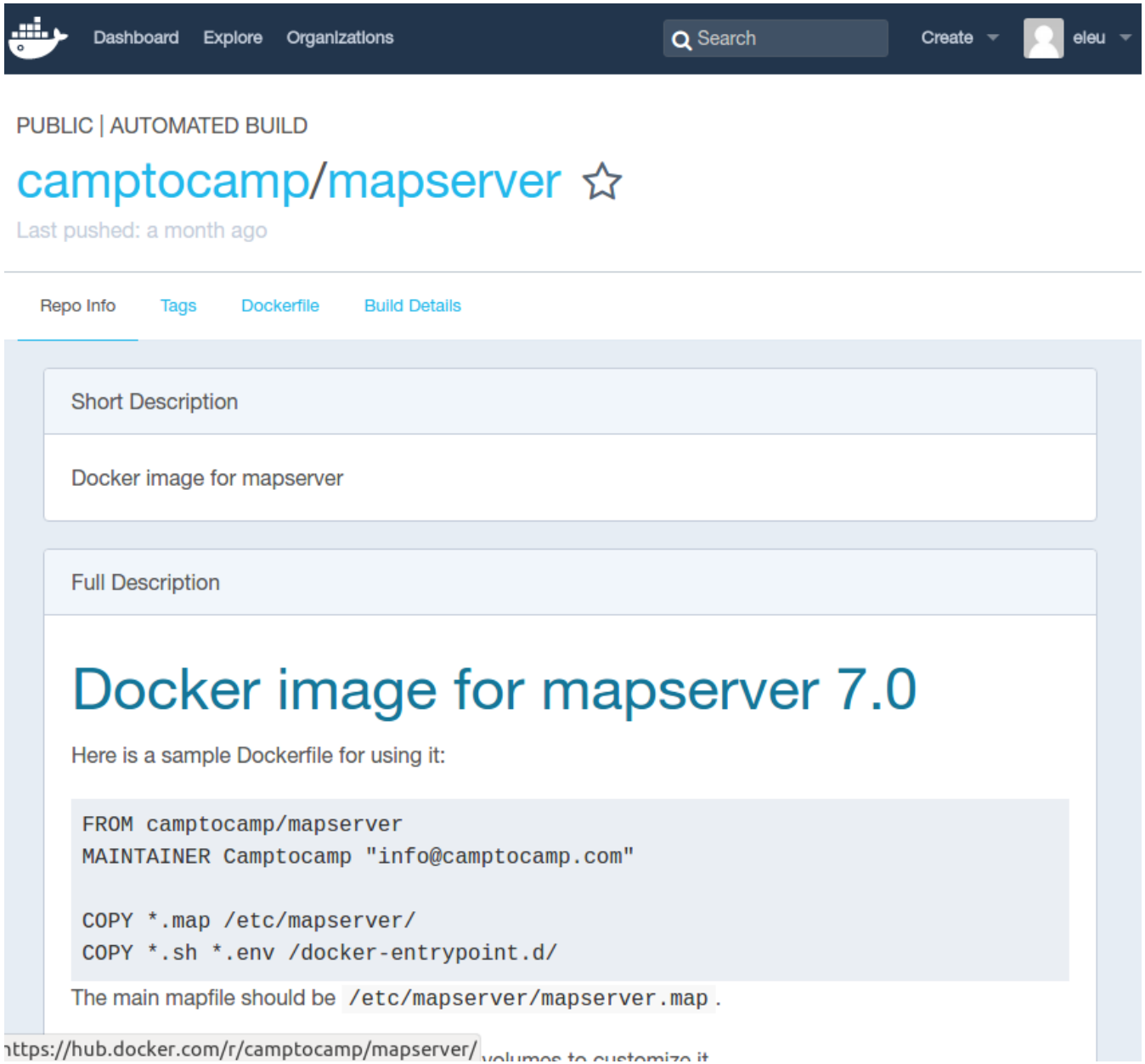
- Dockerhub

  C2C Images

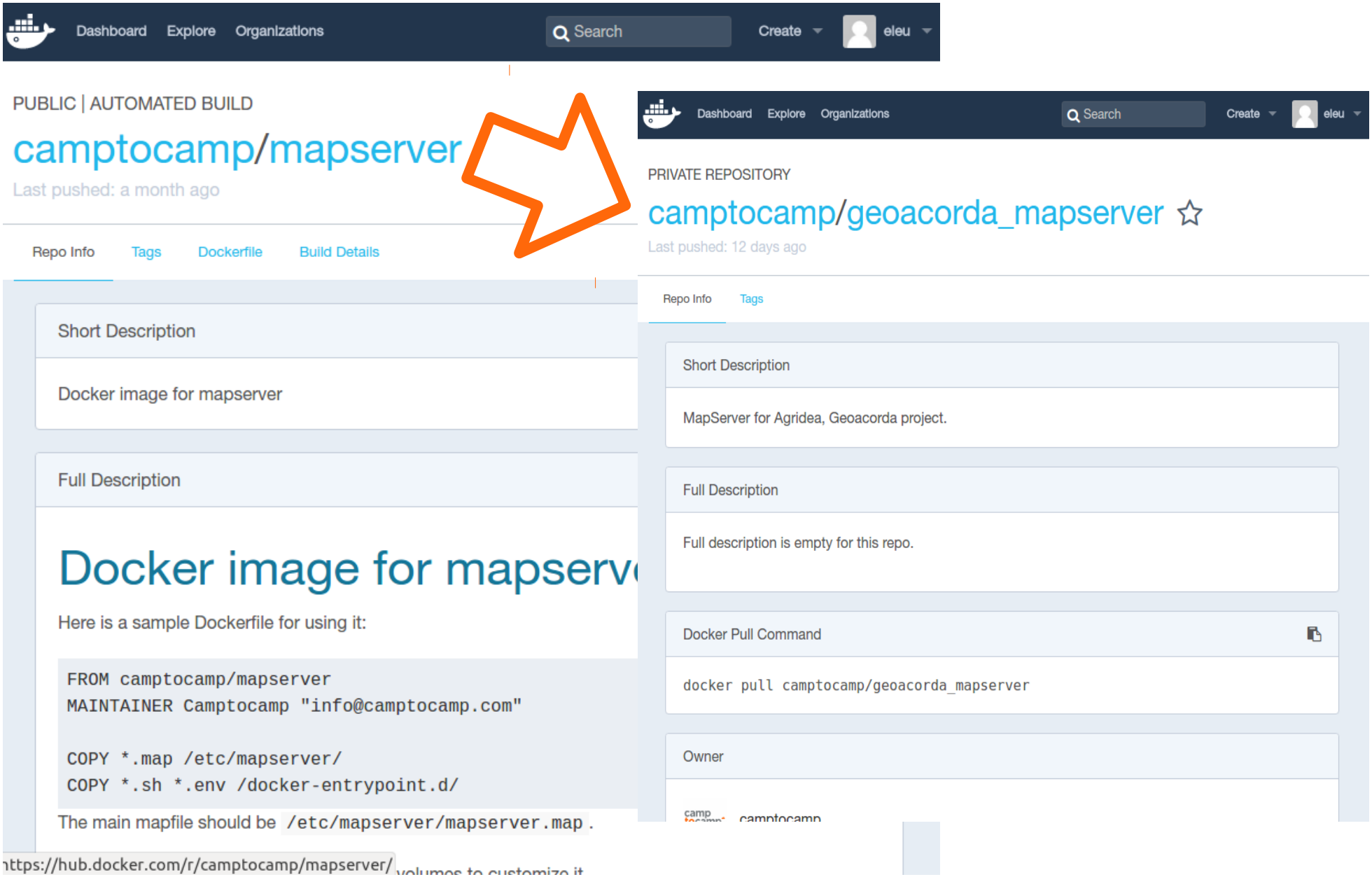


Docker … and more

- Dockerhub

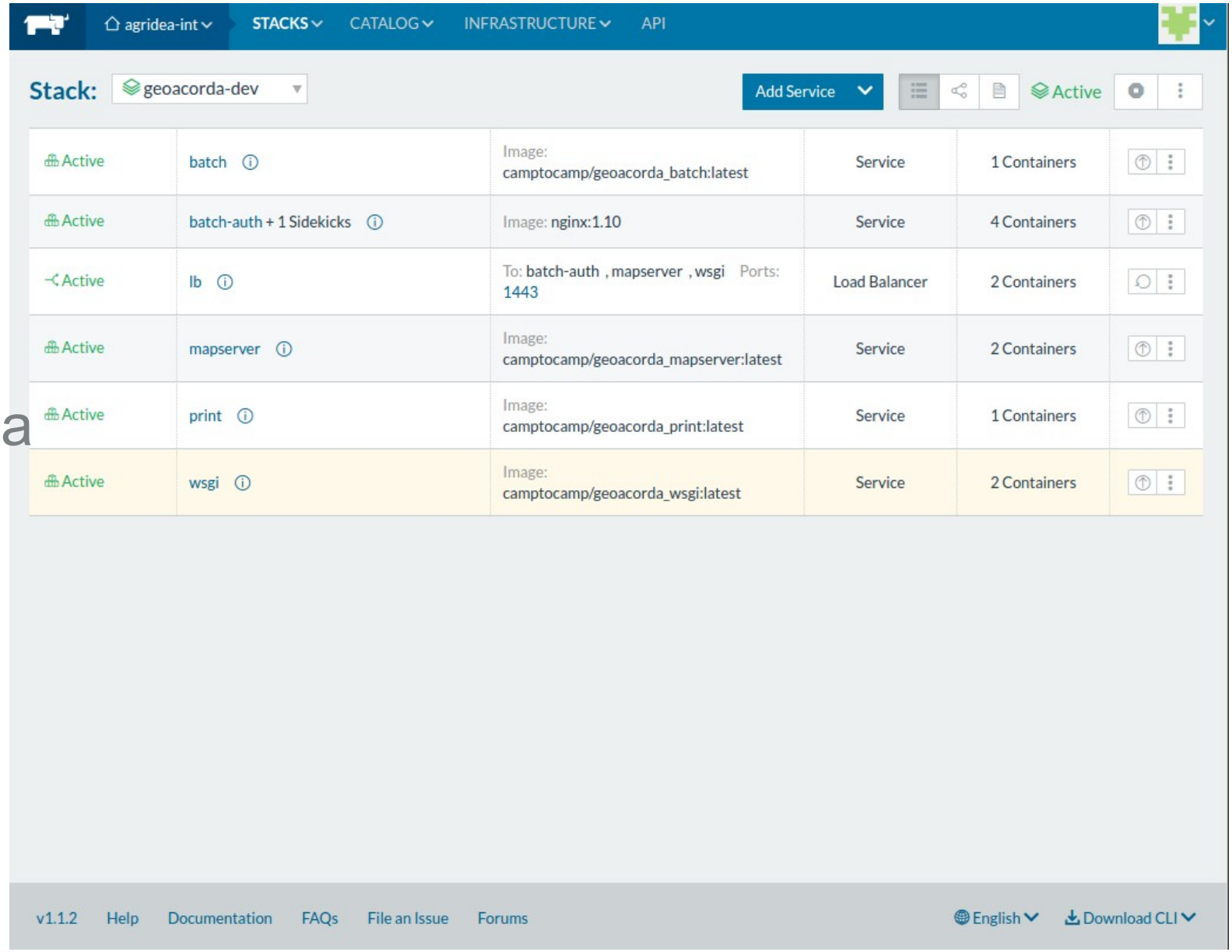


Docker … and more



Docker … and more

- Run tools
  - Rancher : Stack GeoAcorda



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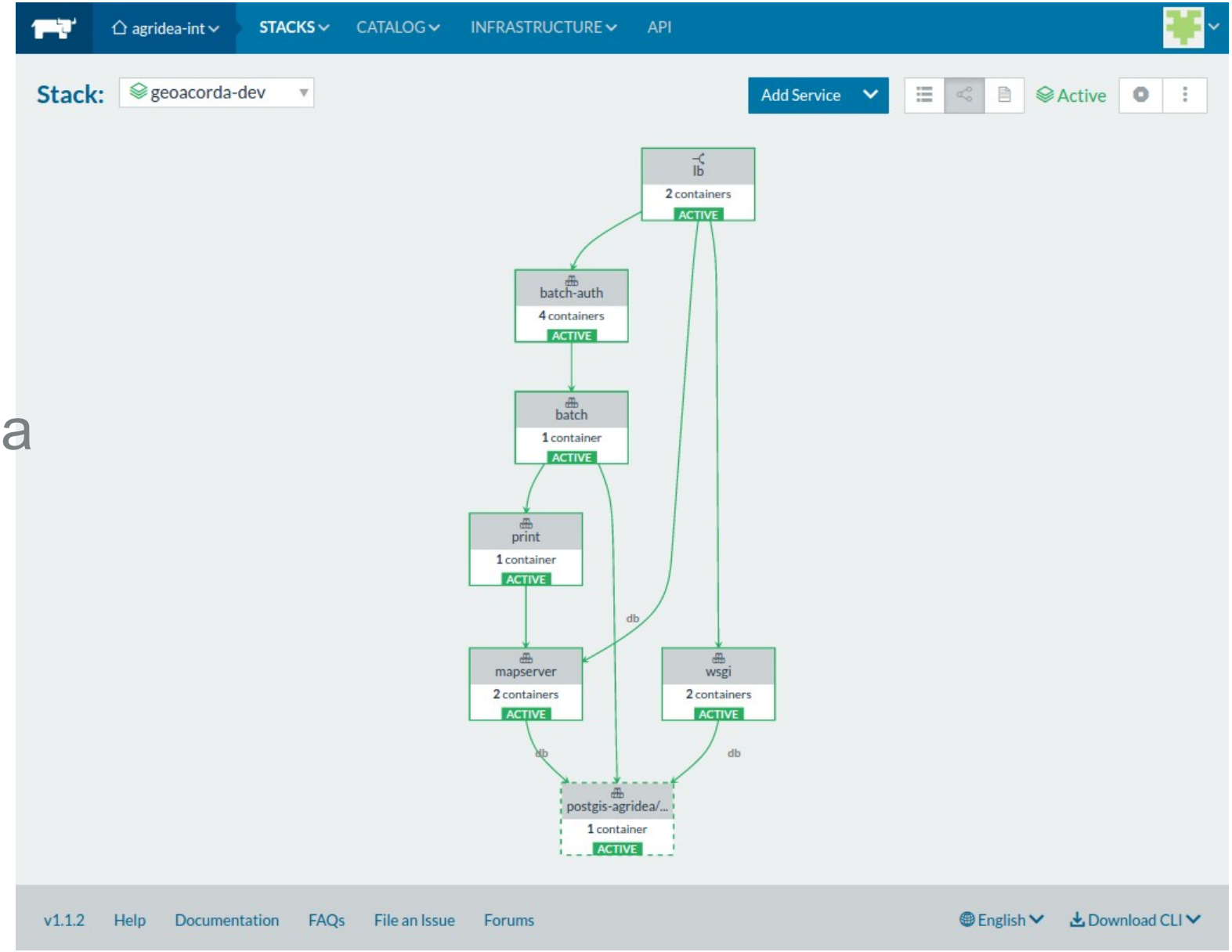
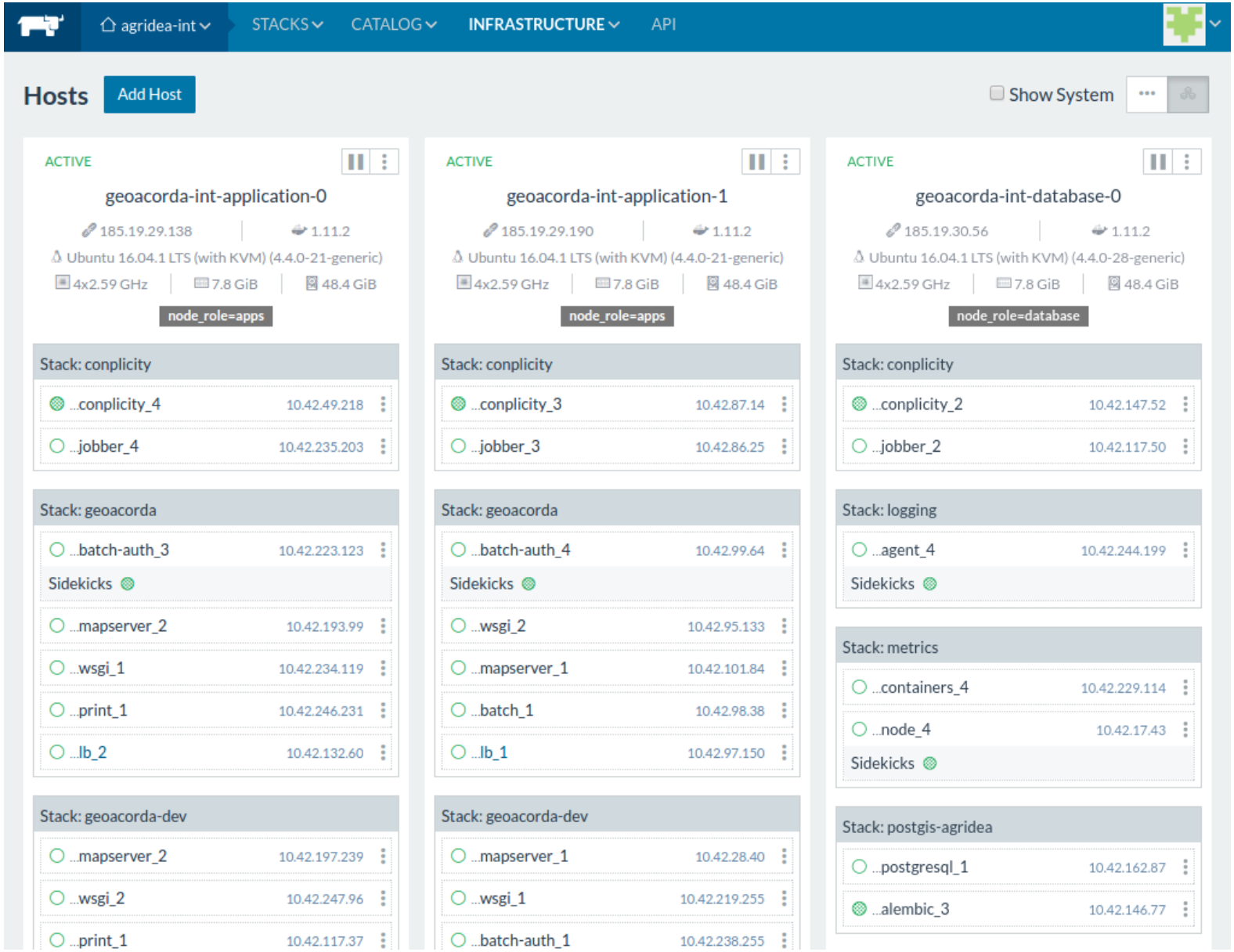
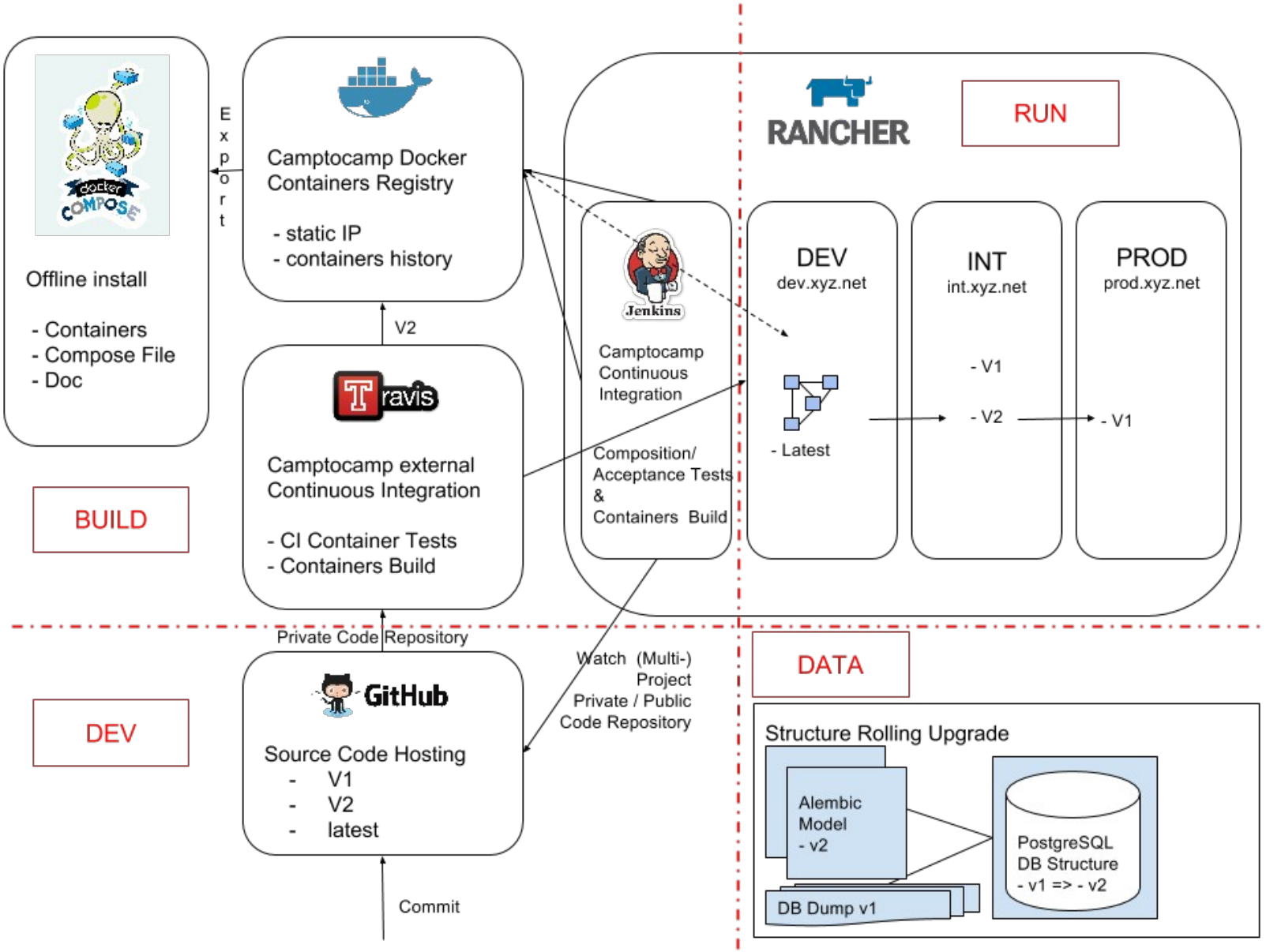


Docker … and more

- Run tools
  - Rancher : Hosts



CI / CD Workflow



Experiences

- Complete Infrastructure on local computer
- Be sure that the same version of libraries are used
- More control and visibility on what is deployed where
- Flexibility for scaling

Danke, Merci, Thanks

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