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Galaxy France: an example of a national UseGalaxy server

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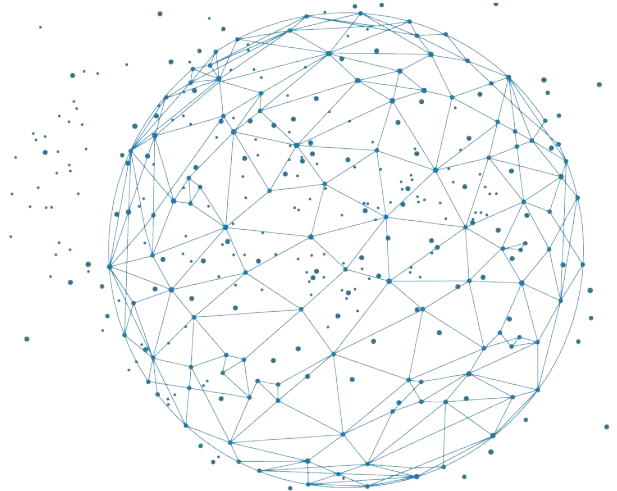
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An example of a national
UseGalaxy server



The French Institute of Bioinformatics - IFB / ELIXIR-FR

Services, training, innovative developments for life sciences

A **distributed** national infrastructure

IFB Core Cluster: a national HPC infrastructure for life science

Currently



52 To RAM



97 nodes



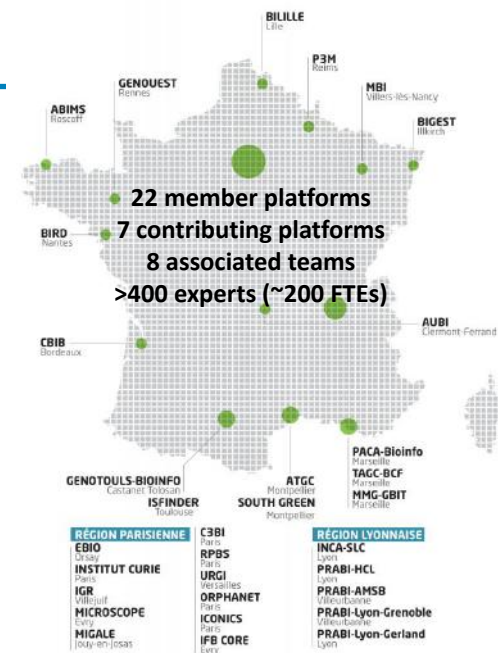
4 Po storage



8396 cpu threads



6 GPU cards
NVidia A100





The French **Galaxy Working Group** v1.0 - 2016-2019

Network of small scale server admins



Objectives:

1. Meeting every 2 months
2. Connect Galaxy users, developers, admins across France
3. Share knowledge
4. Training



1. Many small scale Galaxy instances
2. Many Galaxy administrators struggling
3. Some projects needing visibility



The solution

1. Many small scale Galaxy instances
2. Many Galaxy administrators struggling
3. Some projects needing visibility

One solution - One instance - One admin group 🙌



Galaxy

FRANCE



1. Many small scale Galaxy instances
2. Many Galaxy administrators struggling
3. Some projects needing visibility

One solution - One instance - One administrator



Galaxy

Galaxy
FRANCE

EUROPE

1. Many small scale Galaxy instances
2. Many Galaxy administrators struggling
3. Some projects needing visibility

~~One solution - One instance - One admin group~~ 🙅

So do we need a national server?

⇒ YES!



 **Galaxy**
EUROPE

 **Galaxy**
FRANCE

1. 🇫🇷 🥖 🥐 Support FR community
2. We already have the HPC resources (IFB)
3. Take our part of the load
4. Sovereignty / independence
5. “Proximity” aspects: treat data locally



UseGalaxy.fr

Launch: 2019



6.5k Users



4.5M Jobs



3k Active Users



1.5M+ Jobs



On the last year:

Host: Institut Français de Bioinformatique



1.7k+ Tools



20+ Interactive Tools



8.3k CPU Cores



52 TB of RAM



GPU Cards

Domain-centric Galaxy subdomains: Workflow4Metabolomics, ProteoRE, Covid19, Metabarcoding, Met4J, MNHN, Ecology, Plants-Pathogens

TiaaS: Since February, 2022



80 Events

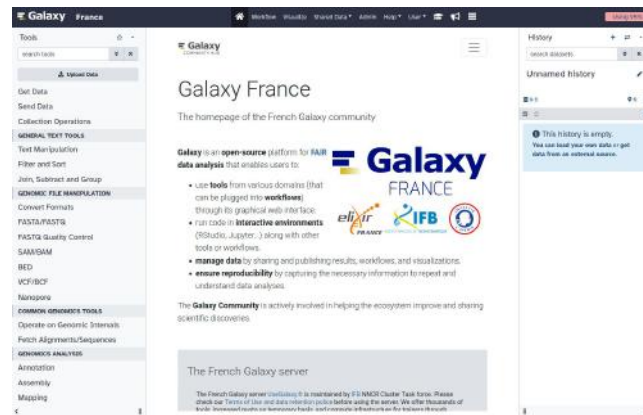


19k+ taught Students

Support



Online by the community



Team



Cléa Siguret



Thomas Chaussepied



Romane Libouban



Eva Mercier



Julien Seiler



Bérénice Batut



Gildas Le Corguillé



Anthony Bretaudeau



Infrastructure as Code

- Galaxy project Ansible roles
- GitLab.com repos with CI gitlab.com/ifb-elixirfr
- 3 infrastructures: dev, preprod and prod








Sous-groupes et projets Projets partagés Inactif

🕒 Search (3 character minimum) 🔍

Nom ▼ ⌵

- 📁 cvmfs-stratum1 🌐
- 📁 data_manager 🌐
- 📁 galaxy 🌐
Fork of the Galaxy repository including code changes that have not been me...
- 📁 galaxy_transfert 🌐
- 📁 galaxycat 🌐
An online catalog for Galaxy instances and tools
- 📁 howto-admin 🌐
How to administer usegalaxy.fr
- 📁 infrastructure 🌐
Ansible playbooks and custom roles to deploy the usegalaxy.fr infrastrucur...
- 📁 tools 🌐
Ansible playbooks to manage tools on usegalaxy.fr subdomains
- 📁 welcome 🌐
Welcome page for usegalaxy.fr base and subdomains <https://usegalaxy-fr.gi...>
- 📁 workflows tests 🌐
Differents worklows are tested with planemo.

Embracing Galaxy best practices:

Federated auth 	✓
Sub-domains	✓
Training  Available on these Galaxies ▾	✓
CVMFS: Reference Data, Apptainer	✓
Tools: GxITs, Apptainer, GPUs	✓
 Total Perspective Vortex	✓
	✓
Homepage on 	✓
Monitoring on status.galaxyproject.org	✓

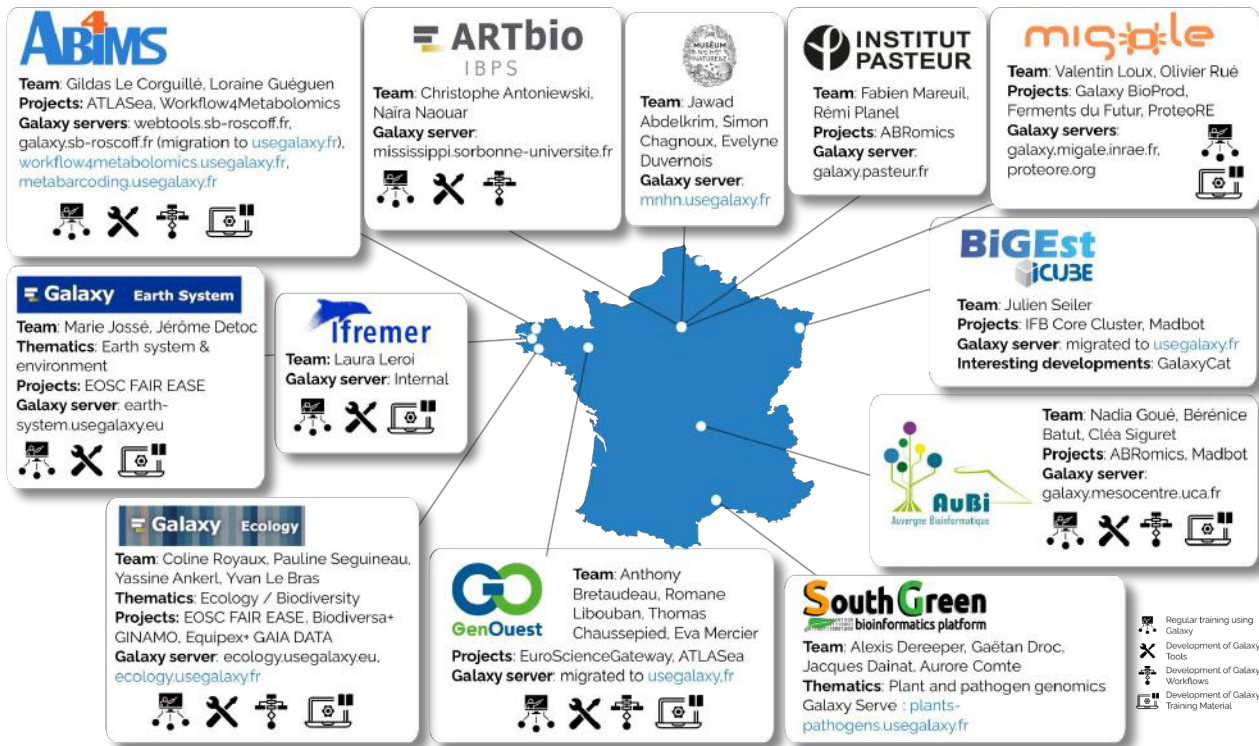
Loose requirements to be considered part of the usegalaxy. group:*

Updated	✓
Freely accessible	✓
Public infrastructure configuration	✓
Common Tools & Reference Data	✓
Functional	✓

⇒ .fr on galaxyproject.org/use/ ✓



Galaxy Working Group v2.0



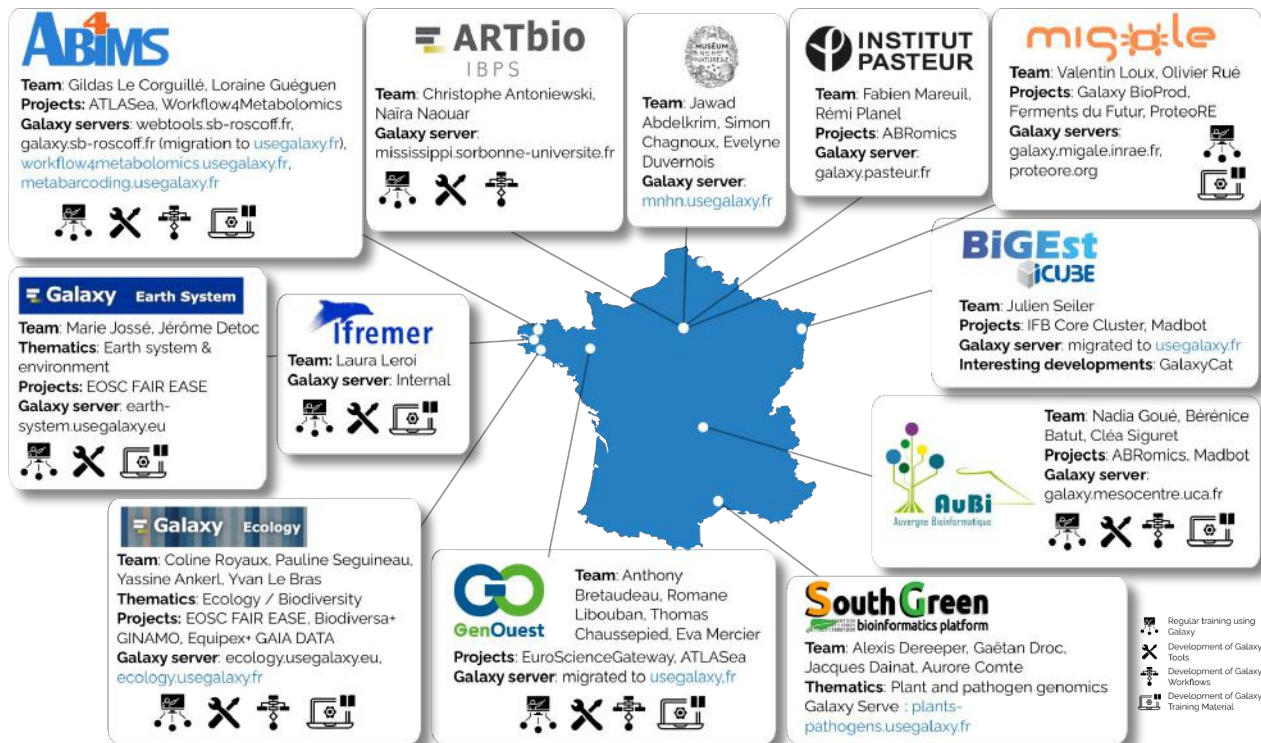
Objectives:

1. Meeting every 2 months
2. Connect Galaxy users, developers, admins across France
3. Share knowledge (ELIXIR, Galaxy Community, etc)
4. Support [UseGalaxy.fr](https://usegalaxy.org/)
5. Combat misconceptions about Galaxy within the French scientific community





Still a rich Galaxy ecosystem but with subdomains in UseGalaxy.fr



✓ So far, 6 small scale instances have migrated

Galaxy

FRANCE

Autonomous, guided, migration by the users themselves



- Regular training using Galaxy
- Development of Galaxy Tools
- Development of Galaxy Workflows
- Development of Galaxy Training Material



Recognition as a national resource (IFB roadmap, ELIXIR-FR SDP)

Contact point between French and International communities (WG 2.0)

Supports funded projects



Trainings (national, regional, masters, ...)



Key Usage Indicators

IDC

More Apptainer, more TPV

CVMFS stratus 1

Tools/subdomains synchronisation

Pulsar nodes, smart scheduling

SIGs (genome annotation, metagenomics, ...)

etc etc etc

(Galxie codebase  translation 



```
def traiter_les_résultats(soitmême, données_de_sortie: Dictionnaire[chaine, JeuDeDonnéesDeSortie]) -> Rien:
    # Croissant, bonjour
    tables_de_données_des_outils = soitmême.gestionnaires_de_données.application.tables_de_données_des_outils
    options = OptionsDeTraitementDuMachin(
        quoi=f"data manager '{soitmême.identifiant}'",
        chemin_du_gestionnaire_de_données=soitmême._chemin_du_gestionnaire_de_données,
        fichier_de_configuration_cible=soitmême.gestionnaires_de_données.nom_de_fichier,
    )
```

Merci !

(bonjour, croissants, lapins)

Team



Cléa
Siguret



Thomas
Chaussepied



Romane
Libouban



Eva
Mercier



Julien
Seiler



Bérénice
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