



**HAL**  
open science

## Galaxy France: an example of a national UseGalaxy server

Clea Siguret, Thomas Chaussepied, Romane Libouban, Eva Mercier, Julien Seiler, Bérénice Batut, Gildas Le Corguillé, Anthony Bretaudeau

### ► To cite this version:

Clea Siguret, Thomas Chaussepied, Romane Libouban, Eva Mercier, Julien Seiler, et al.. Galaxy France: an example of a national UseGalaxy server. GCC 2024 - Galaxy Community Conference, Jun 2024, Brno, Czech Republic. pp.1-15, 10.7490/f1000research.1119767.1 . hal-04644627

**HAL Id: hal-04644627**

**<https://hal.science/hal-04644627v1>**

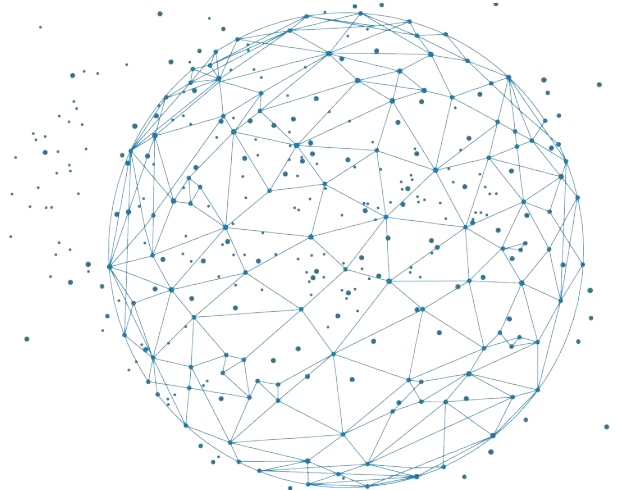
Submitted on 11 Jul 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License



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



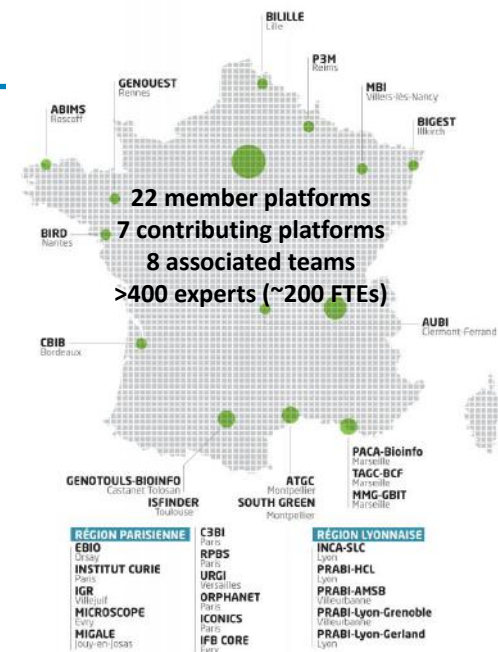
4 Po storage



8396 cpu threads



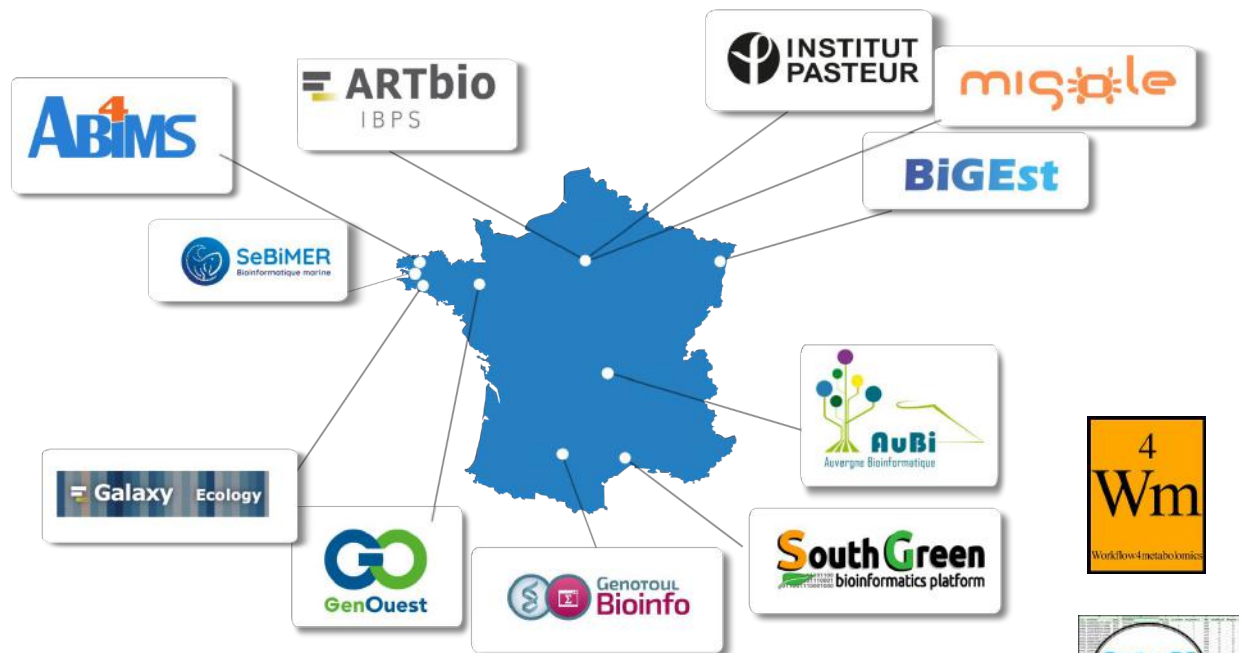
6 GPU cards  
NVidia A100





## 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

## 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

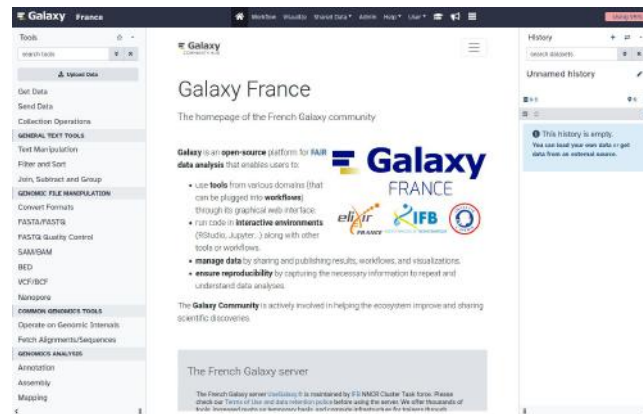


19k+ taught Students

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](https://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 <a href="https://usegalaxy-fr.gi...">https://usegalaxy-fr.gi...</a>
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 <a href="https://status.galaxyproject.org">status.galaxyproject.org</a>	✓

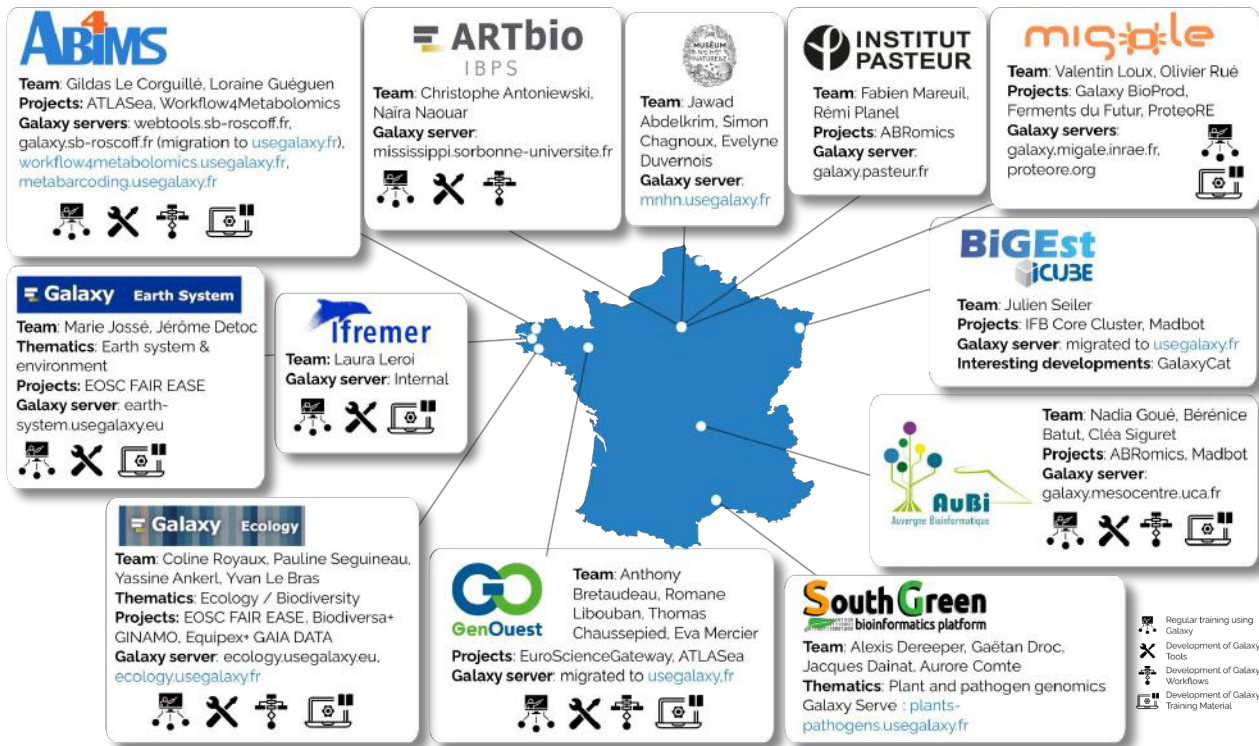
*Loose requirements to be considered part of the usegalaxy.\* group:*

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

⇒ .fr on [galaxyproject.org/use/](https://galaxyproject.org/use/) ✓



## Galaxy Working Group v2.0



### Objectives:

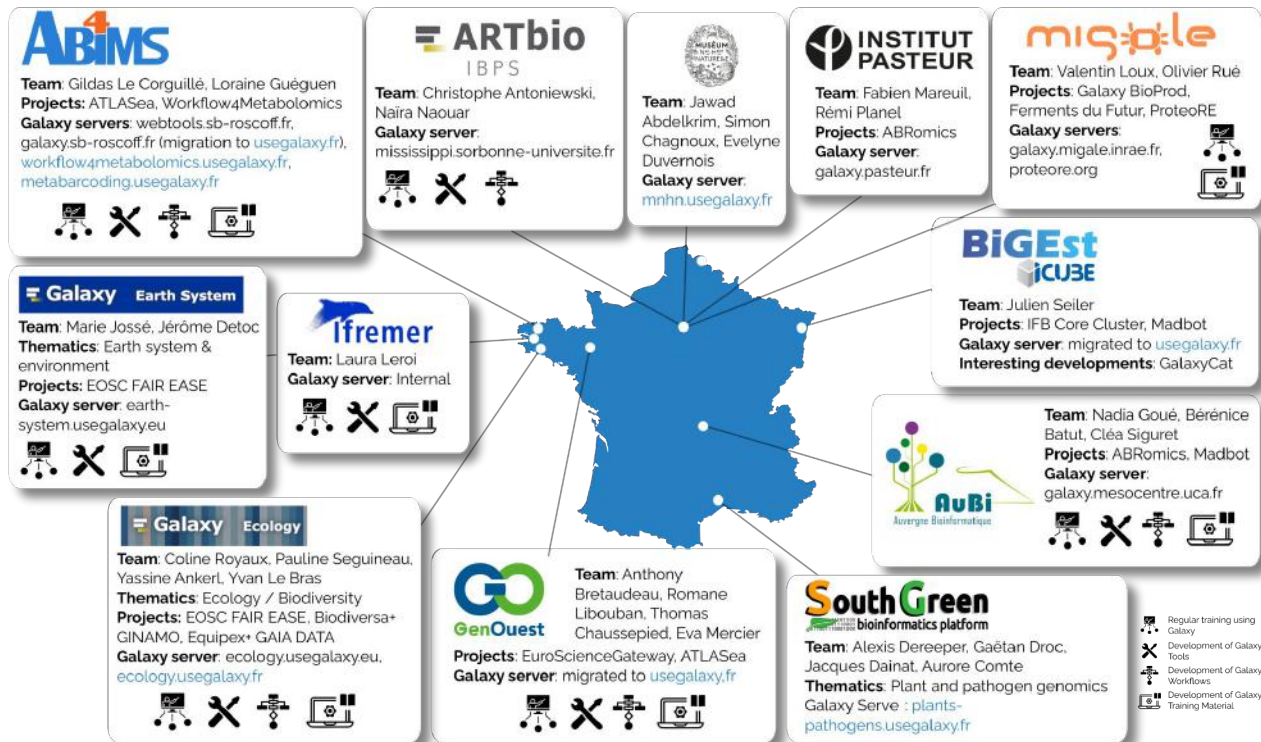
1. Meeting every 2 months
2. Connect Galaxy users, developers, admins across France
3. Share knowledge (ELIXIR, Galaxy Community, etc)
4. Support [UseGalaxy.fr](https://usegalaxy.org/)
5. Combat misconceptions about Galaxy within the French scientific community



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



## 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  
Batut



Gildas Le  
Corguillé



Anthony  
Bretaudeau