Galaxy4Bioinformatics

schools

European prospects

Galaxy French Working Group

Elixir all-hands meeting, 2016, Barcelona
G4B schools embedded in the Elixir French Node

- **Biologists**
  - National NGS winter School (AVIESAN)
  - … Many training sessions using Galaxy in France

- **Bioinformaticians**
  - Galaxy4Bioinformatics (IFB bioinformatician school)
    - Many sessions: V1 (Roscoff), V2 (Nantes), V3 (Montauban)
    - 3 or 4 days
    - 10 trainers
    - 80 students …..(20/25 per session)
    - Students work on virtual machines

Elixir all-hands meeting, 2016, Barcelona
Module 1: configuration, installation, architecture

Focus on the technical architecture.

Step by step guiding through installation and configuration

The module covers the following points:

- Installation of Galaxy and its prerequisites
- General organization of configuration files
- Galaxy handlers setting
- Data lifecycle during execution of a job
- Usage of the administration interface
- Error tracing

Prerequisite:
Basic knowledge of Unix.
Module 2: Tool integrations

This module addresses to platform engineers and algorithm developers. Splitted in two parts: one theoretical and one practical. It aims to spread tool integration best practices:

- How to “wrap” a tool, from the basic ideal one to the nastiest:
  - Cheetah code, macro, dataset collections, variable outputs, html

- How to integrate wrappers in Galaxy

- How to use the Planemo framework to force good and correct integrations

- How to configure Galaxy for your tools:
  - Multi-threaded jobs
  - Reference data
  - Datatypes

Prerequisites:

- Knowledge in at least one script language
Module 3: Galaxy API

- Learn to use the Galaxy’s API through the Bioblend library (https://bioblend.readthedocs.org)
- Allows you to interact with different Galaxy’s elements (datasets, libraries, workflows, etc…) with the command line
- Course addressed to Galaxy server administrator
  - Automate administrator tasks (library creation, account creation, etc …)
  - Automate tool/workflow management
- Participants learn to:
  - Create and import data in a new data library
  - Create and import data in a new history
  - Launch a tool
  - Launch a workflow
Module 4: ToolShed

This module explains what is a ToolShed and how to use it:

- How to install tools from a toolshed
- Publish tools on a toolshed:
  - Simple tool
  - Tool suite and workflow
  - Tool with complex dependencies
- Publication with Planemo
- Start your own test ToolShed
European synergetic prospects

Extend the concept to Elixir partners:

- French G4B: a skeleton for an European G4B?
- IFB could provide 4 modules: Adding new modules?
- Extend / Adapt these modules for specific request?
- First edition: where / when?
- Trainees from all over Europe / More trainees
- Trainers from all over Europe / More trainers
- Good practices, advices