# **Cloud Computing Training at the French ELIXIR node (French Institute of Bioinformatics)**



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### Introduction

Cloud Computing presents a new approach that allows the use of elastic, distributed and highly scalable resources. The French Institute of Bioinformatics (IFB) has set up a Cloud Computing Infrastructure which offers services, software, databases and computing resources.

Education and Training are also key components of the IFB's-Infrastructure. IFBcore, the national hub of IFB, offers training courses to train the community to use the IFB Cloud for analyses, and also to teach methodologies and skills for proposing new bioinformatics services in the cloud.

The three modules build progressively attendees skills to address their general and advanced needs.

# The IFB Cloud – IBI

IBI training modules are dedicated to biologists and bioinformaticians. Through three sessions, participants learn how to use and add tools and resources on the IFB Cloud. At the end, they are self-sufficient to create a personal infrastructure corresponding to their needs and they are able to analyze large biological data. All training supports are accessible on the IFB's website. They include an academic presentation and practical examples about the main tools that are available on the IFB's Cloud. Some practical examples have been prepared by appliance developers.

The IFB Cloud is an appropriate environment :

- to test and validate tools or pipelines;
- to get teaching environment to train students in the use of bioinformatics tools.

## Conclusion

IBI sessions are regularly planed since January 2016, continuing a cloud training activity established in France since October 2010. Actually 76 participants through 7 sessions have been trained. Final evaluations are positives, attendees appreciate mostly the practical examples.

IFB runs the training session upon the IFB Cloud infrastructure. Trainers use the different images done by IFB's developers who contribute regularly to create new appliances in IFB Cloud marketplace. Some trainers also become image developers to adapt existing ones to the purpose of their training sessions.

#### Perspectives

The main goals of IBI training are to make life science researchers and engineers self-sufficient to use the IFB's bioinformatics services on the cloud.

But the largest part of these users are willing to focus on the analysis of their data and not on the way to use the infrastructure. And as we are aware that the increase of such usage went to promoting the scientific services themselves, we are strongly supporting scientific trainers willing to use the IFB cloud to run their own life science trainings.

To answer to these needs, we are working on making the usage and training of the cloud as simple as possible with **one-click deployments of a complex** application, simple login and security based on identity federation, online tutorial and videos, but also by promoting the use of virtual images with high level scientific interfaces, for example web portal or tools with a graphical user interface.

interface.

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