Datacentre IT & Scientific Computing of CRCM (DISC) Platform

Platform manager: B Chetrit

"The evolution of research through *in silico* method and not just *in vivo* or *in vitro*, requires high-performance infrastructure for computing and storage.

Based on computer simulation or modeling, *in silico* research allow the testing of chemicals in the place of animal testing or *in vitro* assays. The results of existing tests are used to model, to predict and evaluate the properties of chemical substances on the human body and the environment. In this way, it is possible to predict and assess the nature of a particular chemical substance used in a specific context.

The potential benefits of *in silico* methods are huge, because they can reduce the need for animal testing, reduce research and production costs and delays, allow a large number of chemicals to be tested, increase the quality and quantity of information."

DISC is the computing and operating center for scientific data of the CRCM. It represents an exchange area and a vital gateway across users and national and international networks related to computing.

This platform provides a computing environment with strong means and support necessary for the conception of new tools, applications and methods, for the development of computing-based scientific projects.

The networks partners of the DISC platform are: MobyleNet (Bioinformatics and chemoinformatics tools), ReNaBi (Bioinformatics Computing Grid), ENMR (European Grid computing for computational tools related to NMR, Molecular Modelling, Molecular Docking, …).

In addition to user support, DISC proposes the following services:

- A high-performance computing infrastructure, allowing running and testing applications and codes in conditions of highly parallelized computation.
- An offer of virtualization to quickly deploy specific computing or development environments.
- Space for the storage and preservation of scientific data.
- Visualization tools for advanced remote displays from personal computers without high performance graphics card.
- Set of tools for management, development project, continuous integration, *technical debt* measurement.
- Assistance through its expertise in the development, adaptation and deployment of software

All provided services are available to all engineers and researchers from the CRCM and IPC teams and platforms, as well as their collaborators, at the national and international level, but also to industrial partners.

Equipment :

- Bioinformatics computer cluster 120 CPU-CORES, 2,2 TFLOPS
- Chemoinformatics computer cluster 248 CPU-CORES, 4 TFLOPS
- Virtualization and vizualisation cluster 3D 1,2 TFLOPS
- Saving dock HPFS - redundant NAS 2x144 TO in active/active replication
- Online file distribution service HPFS - redundant NAS 2x20 TO in active/active replication
- Router, Network Data Commutator 10GBs point to point.