

e-Science and Software Sustainability in France

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Plan

Current situation in France about:

- e-Science
- software sustainability (national scope initiatives)



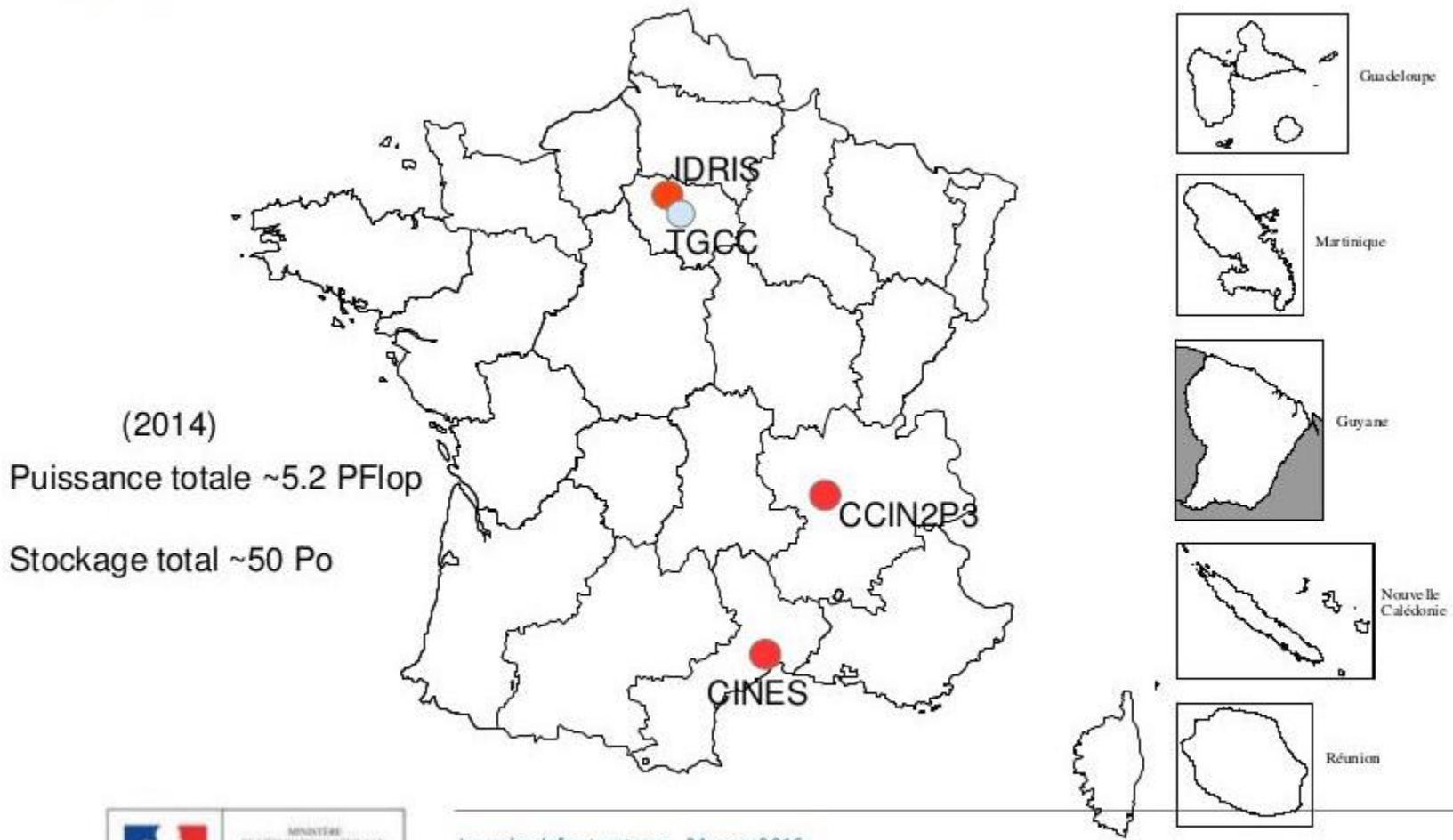
e-Science evolution in France

- The French Ministry of Higher Education and Research is currently working on the next organisation of the e-infrastructures and e-services for research.
- It will take into account:
 - the large volume of users, (165 000 researchers and PhD students and more than 1.16 million other staff, more than 15 million pupils and students),
 - 3 domains: computing and research data for research, administration and management, training,
 - variety of services,
 - variety of constraints.

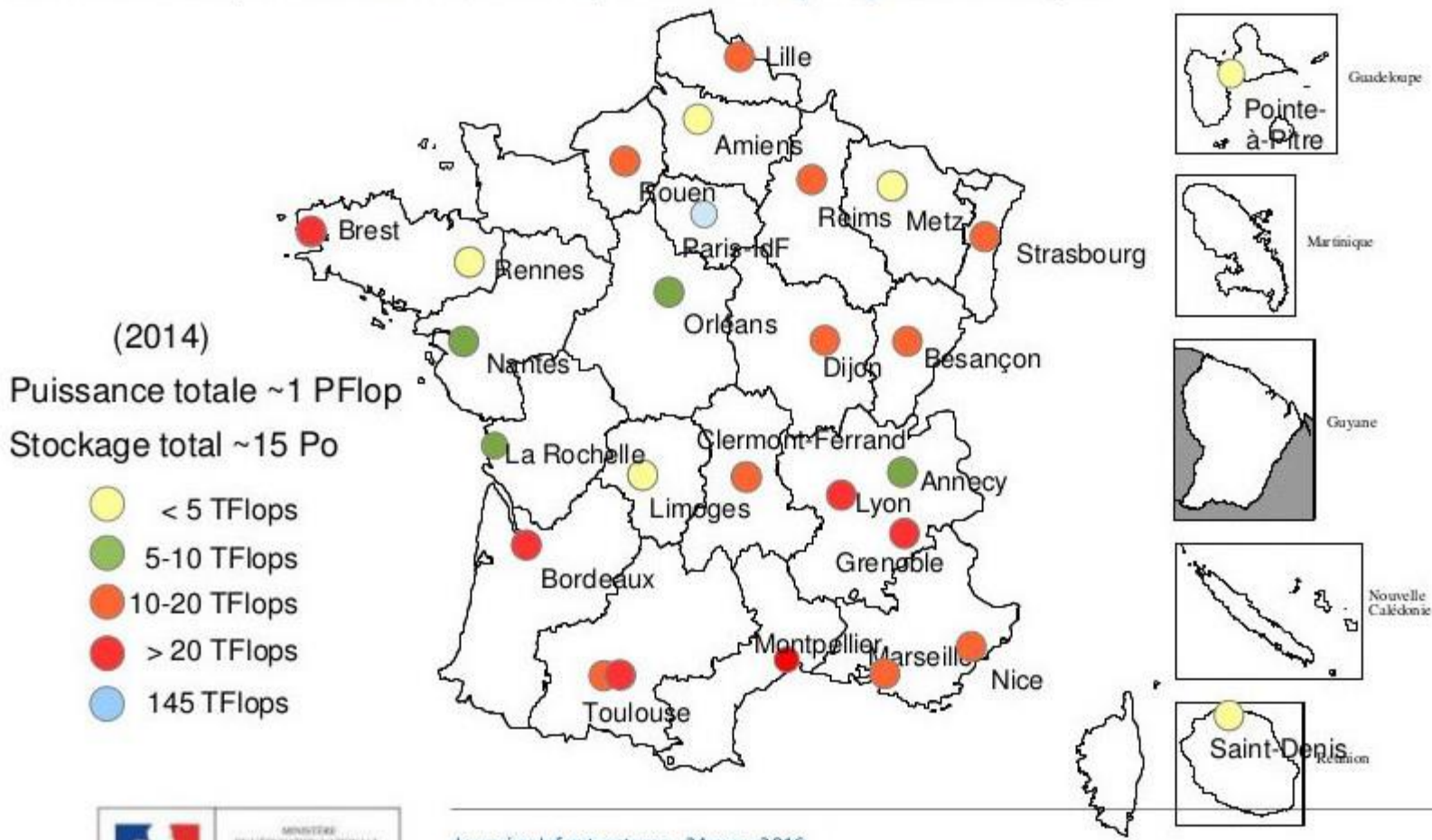
currently in progress



Rely on 4 Datacenters at national level (HPC and HTC)



Rely on 13 Datacenters at regional level



Current status

- The reflection on the digital strategy is now on track
- Announcements and concrete actions are foreseen for 2016



Research software sustainability

Software sustainability in research cannot append without reliable basis services such as:

- trusted, secured and reliable repositories to host development projects (open or restricted way) such as forges
- free and open source licences complying with national laws and suitable for international collaborations
- tools to disseminate, find and access software easily
- environments to share skills, experience and best practices in a trusted way
- dedicated experts to disseminate software to industry



French academic research: a scattered landscape

20 main research institutes
 Part in the national budget
 distribution (2012):

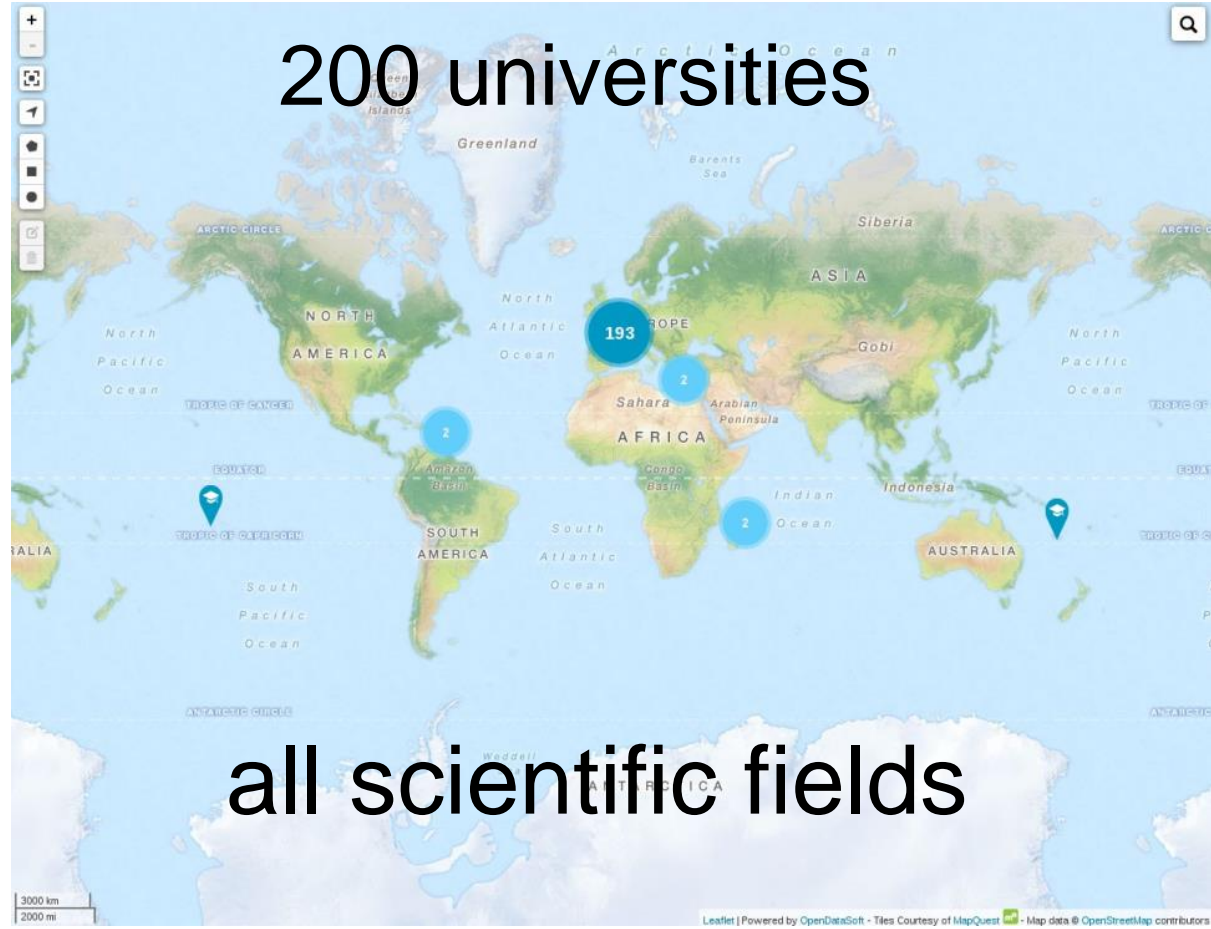
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http://publication.enseignementsup-recherche.gouv.fr/eesr/8/EESR8_R_29-les_depenses_de_recherche_des_principaux_organismes_publics.php

who are the research software users/producers?

- Researchers work in research units (smallest entities – variable size) that depend on multiple research organisms / universities
- There are 165 000 researchers and PhD students
- Research software users/producers work in the units
- Producers are generally "free" to organise their software production/diffusion
- Difficult to know who creates what or uses what!

Example:

- CNRS : 30 000 members ; more than 1000 research units shared with 1 or several other organisms.

no national software centre

but several initiatives with national scope



National scope initiatives

- SourceSup: national academic forge, since 2004
- CeCILL family licenses since 2005
- Plume project to share software information and skills and to build a software community (2006-2013)
- Professional networks (software and databases)
- Entities to link academic to Industry and SMEs
- Future work



SourceSup: national academic forge

"La forge Enseignement supérieur et Recherche"

- provided by CRU then Renater (NREN) since 2004
 - <https://sourcesup.renater.fr/>
 - hosts software development projects for academic research and universities and their collaborations
 - currently 489 visible hosted projects
 - open source technologies (subversion, git, Jenkins, Sonar, Nexus...)
 - authentication with the "federation Éducation-Recherche" identity federation (266 identity providers and catch all for external collaborations)
 - complete set of functionalities: link with Renater mailing lists server (Sympa*), possibility of project website, building, deploying and automating tools (Jenkins), code quality (Sonar), documentation management (Nuxeo)...
- There are other institutional or thematical forges

* Sympa is an open source mailing lists server created by CRU and provided as a service by CRU then Renater since 1997 for the research and universities members



CeCILL licenses

- the CeCILL family licenses developed by CEA, CNRS and Inria since 2005
 - <http://www.cecill.info/index.en.html>

"Today Free Software is important in the scientific community as well as in administrations and in the enterprise. Nevertheless, the use of licenses created in the US, such as the GNU General Public License raises some legal issues. These issues may lead to uncertainties that may prevent some companies and organisations to contribute Free Software.

To provide a better legal safety while keeping the spirit of these licenses, three French public research organisations, CEA, CNRS and Inria launched a project to write Free Software licenses conforming to French law. "

CeCILL-A is designed to be fully compatible with GNU GPL.



Plume:

to Promote economical, Useful and Maintained software For the Higher Education And THE Research communities.

- Plume mainly supported by CNRS 2006-2013
 - <https://www.projet-plume.org/>
 - The portal provides a software catalogue, mainly Free/Libre Open Source Software (FLOSS) that is used and/or produced in universities and national research organisations, laboratories or departments
 - 2200 members, 950 contributors, 18 themes, 1270 index cards, several keywords levels including institutes and user's classification),
 - based on open source technologies (Drupal...)
 - Actions: topical workshops and training sessions oriented to software development (tools, dissemination, IPR and licenses...) or targeting community building around software interest, cross-disciplines experience sharing...
 - Because of lack of resources the project was frozen in mid-2013, but the information and the platform are still online.



Plume & research software

- Several research units (ICJ, LAAS, LIGM) required research software descriptions in Plume to disseminate their software production
 - set up with the collaboration of the pilot units, extended progressively
- results:
 - 350 research software produced in French laboratories descriptions (1/3 translated in English)
 - actions on software dissemination (documentation, guidelines, about 10 workshops)
 - work on legal issues (French IPR laws and licenses)
- PLUME-FEATHER <https://www.projet-plume.org/en/> (2009-2013)



Professional networks

- DevLOG: software developers, officially supported by CNRS since 2011
 - <http://devlog.cnrs.fr/>
 - Mailing list: 1000 subscribers
 - Main actions: JDEV annual conference, topical workshops and training sessions (software development, dissemination, IPR and licenses...), community building, cross-disciplines experience sharing
- RBDD: databases professional network officially supported by CNRS since 2012
 - <http://rbdd.cnrs.fr/>
 - Mailing list: 350 subscribers
 - Main actions: recommendations, workshops and training sessions (databases and related tools development, dissemination, IPR and licenses, cross-disciplines experience sharing)
- Other professional networks are focused on regions, disciplines (scientific computation such as "Groupe Calcul"...) or institutes. They are federated at national level



Initiatives to link academic to industry and SMEs

- The Systematic cluster in Paris Region (Systems & ICT cluster) has 9 working groups (transport, digital trust and security...) with interest in software. Among them, the GTLL (Groupe Thématique Logiciel Libre) brings together academic organizations and industries to generate value and innovation with free/open source software.

<http://www.systematic-paris-region.org/en/get-info-topics/free-and-open-source-software>

It fosters links between laboratories and industry and allows better dissemination and adoption of research software by the industry and SMEs

- Research organisms and universities have technology transfer services (Industrial and Commercial Activities Department) that manages the relationship with industry and SMEs. These services can take into account research software activities (transfer, IPR issues...).



Future initiative

IdGC together with other CNRS laboratories and European partners have submitted a proposal about software and is waiting for financement

