Playing with climate data using CLIMERI services

Martin Ménégoz, 14/04/2020

CLIMERI

"CLIMERI-France est **l'infrastructure nationale de modélisation du climat**. Elle a pour mission la réalisation des simulations numériques internationales programmées dans le cadre du Programme mondial de recherches sur le climat (**WCRP**) aux échelles globales et régionales et la mise à disposition de leurs résultats pour divers utilisateurs."

- Gouvernance

-> 1 comité de gouvernance, 1 comité d'orientation, 1 comité scientifique
-> Moyens de stockage de l'IPSL et de Météo-France
-> implications: CERFACS, IGE, Louvain-la-Neuve, EPOC, LOBS, LEGOS

- Financement:

-> ANR Convergence (2013-2017; http://convergence.ipsl.fr/), projet européen IS-ENES3 (https://is.enes.org/)
-> Gestion et entretien des infrastructures par l'IPSL et Météo-France
-> Possibilité de soutenir le projet via nos projets, et facturation au monde privé.

Data Access (IPSL, Météo-France)

- ssh -XY login@ciclad.ipsl.jussieu.fr

(cf. https://mesocentre.ipsl.fr/quick-start/

- Accés aux simulations, réanalyses, obs, etc…

MESO IPSL-UPMC		
Directory	*Limits*	*Backup*
/home	20Gb | 300 000 files	Daily sync /backupfs
/data	1To | 300 000 files	No
/climserv-home	Read-Only	N/A
/homedata	Read-Only	N/A

Notebook sur ciclad

- Module load climaf
- climaf-notebook

    -> and follow the instructions!

Notebook sur ciclad

- Module load climaf
- climaf-notebook

[mmenegoz@ciclad-ng ~]$ climaf-notebook

please do not run this on login node ciclad-ng use:
First, submit an interactive session then load module and run notebook:
You could cut and past the 3 command line under:
qsub -IVX -l mem=9g,vmem=9g,walltime=06:00:00
module load climaf
climaf-notebook

Documentation at http://convergence.ipsl.fr/data-analysis/ and
https://climaf.readthedocs.io/en/master/

CLIMAF
First, you need to ask for a port number

FIRST STEP: Open your port

- open a terminal on your computer (!! not on Ciclad, Loholt, Cerbere, Idefix... on your local machine)
- and connect to the Mesocenter with this blue command:

ssh -L 7172:ciclad20:7172 mmenegoz@ciclad2.ipsl.jussieu.fr

And keep this terminal open until the end of your jupyter session.

SECOND STEP:

- in the url below (returned by Jupyter), replace --> ciclad20 with --> localhost
- and paste in a browser on your computer (Chrome, Firefox...)

Example: this is what Jupyter should typically return:

http://ciclad17:7144/?token=fa3b97e0ecf84afa9954da15056e9c6aef8bf6353e64ba81&token=fa3b97e0ecf84afa9954da15056e9c6aef8bf6353e64ba81

And this is what you should copy and paste in your local browser:

http://**localhost**:7144/?token=fa3b97e0ecf84afa9954da15056e9c6aef8bf6353e64ba81&token=fa3b97e0ecf84afa9954da15056e9c6aef8bf6353e64ba81

Have fun!

(wait until Jupyter returns the url... it might take some seconds...)

CLIMAF

- Examples in the CLIMAF documentation:

https://climaf.readthedocs.io/en/master/_downloads/f0b33305bd13b8df60bdaae4f88b82ad/CliMAF_in_a_nutshell.html

- Martin example:

  https://github.com/mickaellalande/MC-Toolkit/blob/master/CLIMAF_martin/IPSL_snow_martin_example.ipynb

Contribute to MC-Toolkit using github

- git version system: https://git-scm.com/docs
  - github: https://github.com/ -> easy to handle for sharing, belonging to microsoft.
  - gitlab: https://gitlab.com/ -> adapted for teams who want to share and communicate; you need your own server.

- git clone https://github.com/mickaellalande/MC-Toolkit.git

Contribute to MC-Toolkit using github

Main git commands:

- git branch -> to know in which branch we are
- git pull -> to get the more recent version of the branch
- git checkout (-b) -> to move to one branch to another
- git status -> to know if our branch is up-to-date
- git log -> to display the last commits
- git add and git rm -> to add or remove files in the repository
- git commit −am -> to commit changes
- git push -> to push new developments to the repository
- git merge