

Working at IDRIS

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1. IDRIS presentation

The Institute for Development and Resources in Intensive Scientific Computing (IDRIS), founded in 1993, is a centre of excellence in intensive numerical calculations which serves the research branches of extreme computing.

Jean-Zay is the supercomputer currently installed and used at IDRIS. All of the IPSL models and tools are aimed to be supported and maintained at Jean-Zay.

See the full presentation on the official site for IDRIS on <http://www.idris.fr/eng/> and specific information about the Jean-Zay machine here : <http://www.idris.fr/eng/jean-zay/> . The site is also available in french.

2. How to install your environment at IDRIS

- Connection to IDRIS is possible with ssh command with a personal login from a registered machine. All forms to create or to modify an user account are available here: <http://www.idris.fr/eng/docs/formulaires-eng.html>
- The Jean-Zay machine at IDRIS can be used for our configurations. **Model execution and post processing can be done at Jean-Zay.**
- Note: the software [the Tina software installed at IDRIS](#) gives access to hourly, daily and weekly backups of your \$HOME files.

It is important to take the time to install a comfortable and efficient environment.

- We recommend to follow the example of the rpsl035 login's environment which is in bash. Don't use the default .bash_profile but use instead the ~rpsl035/.bash_login file. Copy this file to your home and remove the default .bash_profile.

```
ryyy999@jean-zay: rm $HOME/.bash_profile
ryyy999@jean-zay: cp $WORK/../../psl/commun/MachineEnvironment/jeanzay/bash_login $HOME/.bash_login
```

- The .bash_login file sources the file \$WORK/../../psl/commun/MachineEnvironment/jeanzay/env_jeanzay which loads libraries and post processing tools needed on our platform such as:

```
module load netcdf/4.7.0/intel-19.0.4-mpi
module load nco/4.7.9/intel-19.0.4-mpi
module load ncview/2.1.7/intel-19.0.4-mpi
```

If you do not have read acces to \$WORK/../../psl/commun, contact Anne Cozic or the plateforme team who will add read permission for your group

for [C-ESM-EP Atlas](#) you need to do these commands only once time on your account :

```
module load singularity
container=/gpfswork/rech/psl/commun/Tools/cesmep_environment/20230611_V3.0_IPSL8.sif
idrcontmgr cp $container
```

3. Repository with input files R_IN

The shared repository with input files is stored at jean-zay here: \$WORK/../../psl/commun/IGCM. This folder is noted using the variable R_IN in the comp.card in libIGCM configurations. The folder R_IN is the same and regularly synchronized between the computing centers TGCC, IDRIS, ESPRI mesocenter(ciclad/climserv) and LSCE(obelix). Contact the plateforme groupe if you don't have read access to these files with your login at jean-zay.

4. Compilation

Note that there is a specific front-end to perform compilations tasks. This front-end allows you to compile faster and in one go : default XIOS compilation may crash because of restricted interactive ressources per user on the standard front-end. You can access the compilation front-end by using ssh protocol :

```
ssh your_login@jean-zay-pp.idris.fr
```

After the compilation is successfully finished, you must go back to jean-zay standard front-end (jean-zay.idris.fr) to submit your job.

5. Accounting

To know the computing time used by your group (updated once a day):

```
plab999@jean-zay:~> idracct
```

idracct gives information about all your projects.

If you are working on several projects, your current project is referenced by the environment variable `IDRPROJ` (`echo $IDRPROJ`). You can change the value of `IDRPROJ` (`eval $(idrenv -d <other_project>)`) and run `idracct` again.

6. Things to know about file systems

6.1. WORK (\$WORK)

- The \$WORK Jean-Zay is large and permanent but it is not backed up.
- The \$WORK Jean-Zay can be extended (20 To for the group for example). The project investigator can ask an extension on the IDRIS's extranet. See: <http://www.idris.fr/extranet.html> or directly from an authorized IP : <https://extranet.idris.fr/>.

6.2. SCRATCH (\$SCRATCH)

- The \$SCRATCH is a semi-permanent space with a 30-day file lifespan, not backup-up
- Very large quotas per project

6.3. JOBSRATCH (\$JOBSRATCH)

is the temporary execution directory specific to batch jobs

- The \$JOBSRATCH is created automatically when a batch job starts and, therefore, is unique to each job
- It is destroyed automatically at the end of the job. Therefore, it is necessary to manually copy the important files onto another disk space (the WORK or the SCRATCH) before the end of the job.

6.4. STORE (\$STORE)

- The \$STORE has to be used for archiving big files
- It can be extended (300 To for the group for example). The project investigator can ask an extension on the IDRIS's extranet. See: <http://www.idris.fr/extranet.html> or directly from an authorized IP : <https://extranet.idris.fr/>.

6.5. [Quotas](#)

To check the used space and the size of the HOME, WORK and STORE:

```
# Quota HOME
ryyy999@jean-zay: idrquota -m

# Quota WORKDIR
ryyy999@jean-zay: idrquota -w

# Quota STORE
ryyy999@jean-zay: idrquota -s
```

7. Simulation outputs

Final simulation outputs are stored on Jean-Zay \$STORE space in `IGCM_OUT` directories.

LibIGCM will copy monitorings files on thredds node by using command `thredds_cp`. You can find all informations on thredds at Idris [here](#). You can access to data after on this website : https://thredds-su.ipsl.fr/thredds/catalog/idris_thredds/catalog.html

8. About Password

At IDRIS, you have a unique password for all computers. Password have to be changed one time per year. The command to change your password is `passwd`. You receive a mail 2 weeks before password expiration.

9. The IDRIS's machines

[Jean Zay](#) for computing part

To have information about the machines' state (if there will be a maintenance for instance), a mailing list was created by IDRIS. To subscribe, the documentation can be found on the [IDRIS extranet](#), or you can ask the Plateforme group.