

Working on the Irène machine

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Documentation under development

1. On-line users manual

- <https://www-tgcc.ccc.cea.fr/docs/irene.info.pdf> (you will need a TGCC login and password)

2. Job manager commands

- `ccc_msub job` -> submit a job
- `ccc_mdel ID` -> kill the job with the specified ID number
- `ccc_mstat -u login` -> display all jobs submitted by login
- `ccc_mpp` -> display all jobs submitted on the machine. `ccc_mpp -n` to avoid colors.
- `ccc_mpp -u $(whoami)` -> display your jobs.

3. Irene environment and files system

- Before working on Irène you can source the ipsl environment

```
source ~/p86ipsl/.envi_irene
```

--> Be careful this environment can be updated during next weeks according to TGCC recommendations

- Default compiler is intel/17.0.6.256 with default library MPI `mpi/openmpi/2.0.4`. **WARNING** : there is a bug in the compiler intel-17.0.4.196
- Computing nodes: the nodes of partition skylake have 48 cores each, which is 3 times more than the computing nodes from the standard partition of Curie;
- Filesystem accesses MUST be explicit: from the login nodes, you will see the WORK, SCRATCH, STORE spaces as you probably are used to. However, when submitting any job through `ccc_msub` or `ccc_mprun`, you must specify `-m work`, `-m scratch`, `-m store`, or combine them like in `-m work,scratch`; this constraint has the advantage that your jobs won't be suspended if a filesystem you don't need becomes unavailable;
- Compute nodes are diskless, meaning that `/tmp` is not hosted on a local hard drive anymore, but on system memory instead. It offers up to 16 GB (compared to 64 GB on Curie). Please note that any data written to it reduces the size of the memory that remains available for computations. In our case it changes the number of core use for post-treatment like `pack_output`.
- The default time limit for a job submission is 2 hours (7200s) contrary to 24h (86400s) on curie
- **The SCRATCH space purge policy has been simplified: any file that stays 60 days without being read or modified will be purged**, as well as any directory that remains empty for 30 days; the purge policy does not depend on disk occupation threshold any longer

4. How working with last LMDZOR_v6 or last LMDZORINCA_v6 ?

- `source ~/p86ipsl/.env_irene`
- XIOS : After download :update arch XIOS for IRENE

```
cd modipsl/modeles/XIOS/arch
svn update
```

- XIOS : use `netcdf-c/4.6.0` in `modeles/XIOS/arch/arch-X64-IRENE.env`
- XIOS : use `hdf5/1.8.20` in `modeles/XIOS/arch/arch-X64-IRENE.env`
- then you can work as on curie

5. Use an old configuration from Curie

- you need to update files `AA_make.gdef` and `w_h_i` in `util` directory

```
cd modipsl/util
svn update AA_make.gdef
svn update w_h_i
```

- you need to change your version of libIGCM

```
cd modipsl
mv libIGCM libIGCM_curie
svn co -r 1454 svn://forge.ipsl.jussieu.fr/libigcm/svn/trunk/libIGCM
```

- you need to download arch files for IRENE for LMDZ, ORCHIDEE, INCA

```
cd modipsl
mkdir modele_arch
cd modele_arch
svn co svn://forge.ipsl.jussieu.fr/orchidee/trunk/ORCHIDEE/arch/ ORCHIDEE_arch
svn co svn://forge.ipsl.jussieu.fr/inca/trunk/INCA5/arch/ INCA_arch
svn co svn://svn.lmd.jussieu.fr/LMDZ/LMDZ6/branches/IPSLCM6.0.15 LMDZ_arch
svn co svn://forge.ipsl.jussieu.fr/ioserver/svn/XIOS/branchs/xios-2.5 XIOS_arch
mv ORCHIDEE_arch/*IRENE* ../modeles/ORCHIDEE/arch/.
mv INCA_arch/*IRENE* ../modeles/INCA/arch/.
mv LMDZ_arch/*IRENE* ../modeles/LMDZ/arch/.
mv XIOS_arch/*IRENE* ../modeles/XIOS/arch/.
```

- make all modifications describe on previous part for XIOS arch files
- if you are working with INCA you need a file pre_proc_X64_IRENE.x

```
cd modipsl/modeles/INCA
cp pre_proc_X64_CURIE.x pre_proc_X64_IRENE.x
```

- create a new makefile

```
cd modipsl/config/**
mv Makefile Makefile_curie
../../util/ins_make
gmake clean
```

- now you can work as on Curie