

Wikiprint Book

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Computing centers and environments

The supported machine types (also called computing environment) that can be used with the IPSL Climate Modeling Center tools and models are described in this chapter.

1. [IDRIS](#)

[IDRIS environment](#)

2. [TGCC](#)

[TGCC environment](#)

3. [CINES](#)

[CINES environment](#) (work in progress in september 2015).

4. [LSCE](#)

[LSCE computing environment](#)

5. [IPSL](#)

[IPSL clusters CICLAD and ClimServ](#)

6. [Shared files](#)

[Shared files](#)

7. How to use the IPSL models and tools with a local PC

7.1. Compiling

7.1.1. Choose a target in AA_make.gdef

The ins_make script from modipsl will probably not recognize your local PC to create makefiles. You must choose an existing or create a new target in the util/AA_make.gdef file. Adapt this target to your computing environment (compiler, options, path to netcdf, etc), and create a new makefile specifying this target:

```
./ins_make -t new_target
```

Please refer to the model managers of your model configuration to learn more about how to compile the IPSL models on a local PC and which compilers can be used with the specific models you need.

7.1.2. Example for installing LMDZOR_v5.2 sequential mode with gfortran

```
# 1. Install configuration LMDZOR_v5.2 in a new modipsl
svn co http://forge.ipsl.jussieu.fr/igcmg/svn/modipsl/trunk modipsl
cd modipsl/util; ./model LMDZOR_v5.2
```

```
# 2. Adapt the path to your netcdf which must also be compiled with gfortran, in 3 files:
modips1/modeles/LMDZ/arch/arch-gfortran.path
modips1/modeles/ORCHIDEE/arch/arch-gfortran.path
modips1/util/AA_make.gdef (section gfortran)

# 3. Change default compiling to sequential run mode in main makefile.
In modips1/config/LMDZOR_v5.2/AA_make
change "-parallel mpi" into "-parallel none" at 3 places.
The name of the executables changes also, therefore change "_phylmd_para_orch.e" into "_phylmd_seq_orch.e" at 2 places

# 4. Recreate makefiles with target gfortran
cd modips1/util
./ins_make -t gfortran

# 5. Compile as usual
cd modips1/config/LMDZOR_v5.2; gmake
```

Note 1: for installing in parallel mode with MPI, do as above but adapt the files arch-gfortran.path, arch-gfortran.fcm and AA_make.gdef with suitable compile options. You can use target gfortran_CICLAD in AA_make.gdef as example. Do not do point 3 above.

Note 2: for older version of ORCHIDEE, such as in LMDZOR_v5, the files in modeles/ORCHIDEE/arch do not exist. Compile options in AA_make.gdef is used for ORCHIDEE in this case.

The v6 configurations cannot be compiled in sequential mode because XIOS do not compile or run without the MPI library.

7.2. Simulation with libGCM

When using libGCM on a local PC, the parameters of the default system described in the libGCM_sys/libGCM_sys_default.ksh file will be used. You may have to change this file to match your system.

A minimum subset of files located on the shared IGCM account must be downloaded and installed. This directory is called R_IN in libGCM_sys_default.ksh and it has the default path /home/\${LOGIN}/IGCM.

7.3. Installing rebuild

The output of old version of the models (ORCHIDEE, LMDZ, INCA, REPROBUS) must be recombined to the total horizontal domain when simulation is done in parallel mode.

The tool for this is called *rebuild*. The rebuild tool is called in the post-processing phase by libGCM. rebuild is a fortran code included in IOIPSL. rebuild must be installed and compiled on the local machine. The rebuild can then be used interactively outside libGCM or in the post-processing phase.

Installation

```
cd modips1/util
./model IOIPSL_PLUS
# Modify AA_make.gdef for the compiling as above
./ins_make -t new_target
cd ../modeles/IOIPSL/tools
gmake
```

For use with libGCM, add the path to your rebuild in libGCM_sys/libGCM_sys_default.ksh.

Use in interactive mode

rebuild can also be used interactively. For example create the global file sechiba_history.nc as following :

```
./rebuild -h
./rebuild -o sechiba_history.nc sechiba_history_00*
```