

Wikiprint Book

Title: 1. IDRIS

Subject: Igcmg_doc - Doc/ComputingCenters

Version: 38

Date: 06/26/24 22:05:36

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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. [LSCE](#)

[LSCE computing environment](#)

4. [IPSL](#)

[IPSL computing environment](#)

5. [Shared files](#)

[Shared files](#)

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

6.1. Compiling

6.1.1. Choosing a target in AA_make.gdef

The `ins_make` script from `modipsl` will probably not recognize the local PC to create makefiles. You must then choose or create a new target in the `util/AA_make.gdef` file, adapt it to its new computing environment (compiler, options, netcdf path, etc), and create a new makefile with

```
./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 models.

6.1.2. 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:
modipsl/modeles/LMDZ/arch/arch-gfortran.path
modipsl/modeles/ORCHIDEE/arch/arch-gfortran.path
modipsl/util/AA_make.gdef (section gfortran)

# 3. Change default compiling to sequential run mode in main makefile.
```

```
In modipsl/config/LMDZOR_v5.2/AA_make
change "--parallel mpi" into "--parallel none" at 3 places.
The name of the executables changes also, therefor change "_phylmd_para_orch.e" into "_phylmd_seq_orch.e" at 2 places

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

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

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

6.1.3. An example for IOIPSL and ORCHIDEE

To compile IOIPSL and ORCHIDEE, for instance, we recommend the gfortran compiler with the gfortran target in AA_make.gcf. You must check and adapt the NetCDF path before creating new makefiles with `./ins_make -t gfortran`.

```
cd modipsl/util
vi AA_make.gdef # Check the following lines:
#-Q- gfortran  NCDF_INC = /usr/local/include
#-Q- gfortran  NCDF_LIB = -L/usr/local/lib -lnetcdf
./ins_make -t gfortran
```

6.2. Simulation with libIGCM

When using libIGCM on a local PC, the parameters of the default system described in the libIGCM_sys/libIGCM_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 libIGCM_sys_default.ksh and it has the default path `/home/${LOGIN}/IGCM`.

6.3. Installing rebuild

The output of most 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 rebuild. The rebuild tool is called in the post-processing phase by libIGCM. 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 libIGCM or in the post-processing phase.

Installation

```
cd modipsl/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 libIGCM, add the path to your rebuild in libIGCM_sys/libIGCM_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*
```