

## **Wikiprint Book**

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## Computing centers and environments

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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.

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### 1. [IDRIS](#)

[IDRIS environment](#)

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### 2. [TGCC](#)

[TGCC environment](#)

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### 3. [CINES](#)

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

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### 4. [LSCE](#)

[LSCE computing environment](#)

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### 5. [IPSL](#)

[IPSL clusters CICLAD and ClimServ](#)

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### 6. [Shared files](#)

[Shared files in synchronized repository IGCM](#)

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## 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:
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, therefore 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 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 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.

## 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 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*

```