Wikiprint Book

Title: 1. Important tools used in the IPSL climate modeling framework

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External tools

1. Important tools used in the IPSL climate modeling framework

The following tools are used for all steps from setup to post processing. They must be available on the computing machine (except forge).

The common account configuration files allow you to access the proper version of the tools (e.g. `module load`).

1.1. Forge

The forge.ipsl.jussieu.fr machine is a forge ■trac

- Welcome page of the User guide as TracWiki and its attached documents
- Source code archives with the ■svn server
- Problem tracker (tickets)

1.2. Remote and secure connections

- `ssh` and associated commands (`scp`, `rsync`, protocole `svn+ssh`)

1.3. Shell

- bash : recommended for interactive mode
- ksh : used in batch scripts
- awk gnu (`[g]awk`)
- make gnu (`[g]make`)

1.4. Version control

- Official website: ■subversion
- Basic command: svn
- Online subversion manual: ■http://svnbook.red-bean.com/index.en.html

1.5. C++ compilers

1.6. Fortran compilers

To learn how to use Fortran, see e.g.

- Michel Olagnon's Fortran 90 List: ■http://www.ifremer.fr/ditigo/molagnon/fortran90/engfaq.html
- IDRIS training (the latest is available in English only): ■http://www.idris.fr/data/cours/lang/fortran/choix_doc.html

Some Fortran compilers :

- Portland
- Intel
- NAG
- gfortran
- g95

1.7. FORTRAN libraries

- ■NetCDF4 parallel
- ■HDF5 parallel
- MPI/OpenMP

1.8. Generating executables

Default for compiling the models: FCM.

1.9. Batch manager

- slurm and slurm ccc_*
- torque-maui
- LoadLeveler

1.10. Mail program

- mail[x]

1.11. NetCDF tools

- nco
- cdo

2. Tools for analyze and visualization of NetCDF files

- ferret
- NCL
- ncview
- IDL
- SAXO

3. A few tips for further reading

3.1. Unix

Google "Unix Tutorial" is a good starting point.

- Unix introduction
  Linux Documentation: http://www.tldp.org/guides.html
  - Advanced Bash-Scripting guide. Mendel Cooper : http://tldp.org/LDP/abs/html/
  - Bash guide for beginners.Machtelt Garrels http://tille.garrels.be/training/bash/
- Portable shell programming : http://www.gnu.org/software/autoconf/manual/autoconf.html#Portable-Shell

3.2. Text editors

3.2.1. Emacs

- Official website: http://www.gnu.org/software/emacs/

3.2.2. vi and vim

- vim documentation : http://www.vim.org/docs.php

3.3. Programming and scripting languages

3.3.1. Python

- Python and CDAT tips: http://www.johnny-lin.com/cdat_tips/
- Python and memory management:
  - problem http://www.evanjones.ca/python-memory.html
  - mailing list archive: http://mail.python.org/pipermail/python-list/

- model validation tool: http://motherlode.ucar.edu:8080/thredds/cdmValidate.html