PYTHON RUN SCRIPTS

For cycle 3

GOALS

python™

- Replace the current set of shell tools for controlling TM5 jobs with something "better"

  - readable/understandable

  - modifiable

  - portable

  - archive-able

IDEA

- Nothing changes from a user perspective

- Python under-the-hood

- More logical separation of settings

- Expand rc-file philosophy

- Many options for future...

NEW CODE

TM5/cy3/..

      runtm5.py

        base/py/..

           runtools.py

           rc.py

        rc/..

           machine.[machinename].rc

           source.rc

USAGE

- **runtm5.py** works equivalent to **run-tm5**

- It retrieves all settings for your machine (flags, libraries, includes, ...) from a **machine.xxx.rc** file

- It writes and archives an extensive log file

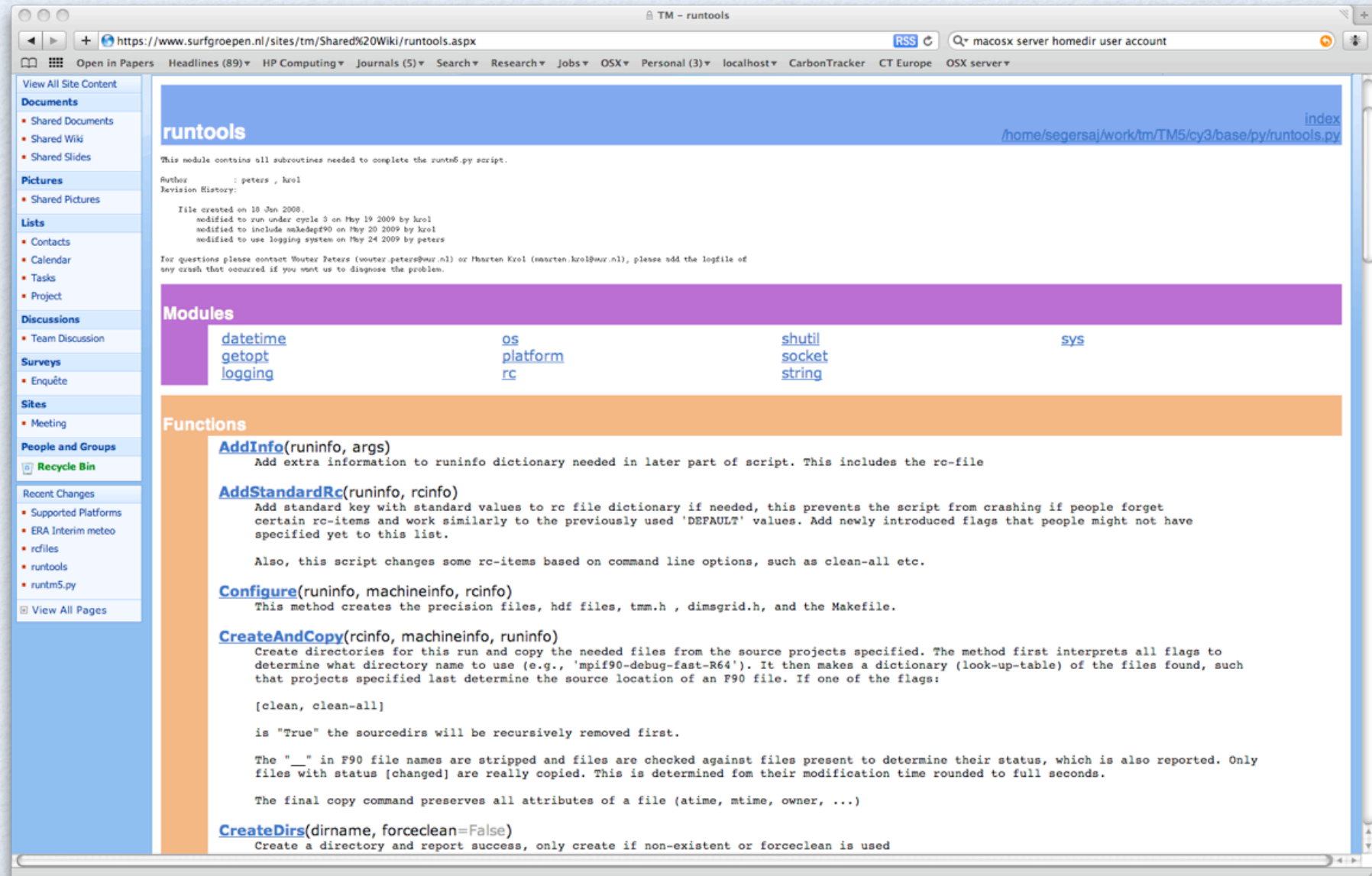- It has a "**-verbose**" mode to trace problems

USAGE

- To compile your project, it uses a program **makedepf90**

- this determines all dependencies in your code to be used in a **Makefile**

- What code to in/exclude for each compiler directive (**with_mpi, with_budgets, without_deposition**, ...) is controlled by the **source.rc** file

- **source.rc** and **machine.xxx.rc** files are highly static and once configured on your system, will rarely change

SUPPORTED

- **runtm5.py** can do all that **run-tm5** can
- it runs on all unix systems as long as there is
  - **python** version 2.4 or up (standard after 2007)
  - **makedepf90** (install it yourself)
- ...this means it runs on all unix systems
- we have tested the code on
  - huygens, ecgate, wjet, macosx
- Wouter, Arjo, and Maarten will give phone and email support to all users
- The scripts have extensive documentation, online and inline

ONLINE SUPPORT

TM – runtools

https://www.surfgroepen.nl/sites/tm/Shared%20Wiki/runtools.aspx   RSS   Q macosx server homedir user account

Open in Papers   Headlines (89)▾   HP Computing▾   Journals (5)▾   Search▾   Research▾   Jobs▾   OSX▾   Personal (3)▾   localhost▾   CarbonTracker   CT Europe   OSX server▾

View All Site Content

Documents
- Shared Documents
- Shared Wiki
- Shared Slides

Pictures
- Shared Pictures

Lists
- Contacts
- Calendar
- Tasks
- Project

Discussions
- Team Discussion

Surveys
- Enquête

Sites
- Meeting

People and Groups
- Recycle Bin

Recent Changes
- Supported Platforms
- ERA Interim meteo
- rcfiles
- runtools
- runtm5.py

View All Pages

index
/home/segersaj/work/tm/TM5/cy3/base/py/runtools.py

runtools

This module contains all subroutines needed to complete the runtm5.py script.

Author   : peters , krol
Revision History:

    File created on 18 Jan 2008.
        modified to run under cycle 3 on May 19 2009 by krol
        modified to include makedepf90 on May 20 2009 by krol
        modified to use logging system on May 24 2009 by peters

For questions please contact Wouter Peters (wouter.peters@wur.nl) or Maarten Krol (maarten.krol@wur.nl), please add the logfile of any crash that occurred if you want us to diagnose the problem.

Modules

datetime	os	shutil	sys
getopt	platform	socket	
logging	rc	string	

Functions

AddInfo(runinfo, args)
    Add extra information to runinfo dictionary needed in later part of script. This includes the rc-file

AddStandardRc(runinfo, rcinfo)
    Add standard key with standard values to rc file dictionary if needed, this prevents the script from crashing if people forget certain rc-items and work similarly to the previously used 'DEFAULT' values. Add newly introduced flags that people might not have specified yet to this list.

    Also, this script changes some rc-items based on command line options, such as clean-all etc.

Configure(runinfo, machineinfo, rcinfo)
    This method creates the precision files, hdf files, tmm.h , dimsgrid.h, and the Makefile.

CreateAndCopy(rcinfo, machineinfo, runinfo)
    Create directories for this run and copy the needed files from the source projects specified. The method first interprets all flags to determine what directory name to use (e.g., 'mpif90-debug-fast-R64'). It then makes a dictionary (look-up-table) of the files found, such that projects specified last determine the source location of an F90 file. If one of the flags:

    [clean, clean-all]

    is "True" the sourcedirs will be recursively removed first.

    The "__" in F90 file names are stripped and files are checked against files present to determine their status, which is also reported. Only files with status [changed] are really copied. This is determined fom their modification time rounded to full seconds.

    The final copy command preserves all attributes of a file (atime, mtime, owner, ...)

CreateDirs(dirname, forceclean=False)
    Create a directory and report success, only create if non-existent or forceclean is used

ONLINE SUPPORT

Init()

Initialization of the runtm5.py job. Start logger, parse command line options and add jo[ ]
requested options. This dictionary looks like:

{ key : value }

pairs just like in the TM5 rc-file philosophy. New variables needed somewhere downstream
to this dictionary:

runfinfo[myvariable] = myvalues

where the 'myvariable' is a string by which the 'myvalues' (any type) will be referenced

One of the variables added is the full contents of the specified TM5 rc-file. These cont[ ]
of

{ key : value }

as read from your rc-file. Variables used in the rc-file (e.g., $METEODIR) are automatic[ ]

This method returns a runinfo object, which is a dictionary of all needed items to compl[ ]

EXAMPLE

- Maarten will demonstrate:
    - machine.mac-maarten.rc
    - source.rc
    - runtm5.py
    - runtm5.log
    - runtm5.py -verbose