MARS environment : exercises to play with

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1 Environment

Please read mars_envir_manual.pdf at first

1.1 Prepare MARS environment

a-define environment variables inside .cshrc or in a env_MARS_V9.XX file.
b-echo $HOMEMARS
c-source .cshrc or source env_MARS_V9.XX
d-echo $HOMEMARS
e-mkconfdir

1.2 Understanding of the environment

open 3 windows; cd $UDIR , cd $CDIR, cd $RDIR respectively

- mkconfdir test 01

see the changes in each window

- compare the directories in $UDIR/test/test-01 with $HOMEMARS directories

- make install

changes ? (WORK linked to $UDIR ; smallf90 in $UDIR is empty ; code into $CDIR)

- getfile WORK/parametres.F90

ls -l to see the source and the link

- make

the executable is under $RDIR, smallf90 contains all compiled routines

1.3 Impact of the third argument for mkconfdir command

- mkconfdir test 02 3

differences ? ($RDIR rank_0 rank_1 rank_2)

- modify imax and jmax parametres.F90_rank1 parametres.F90_rank2

after each compilation, check if imax and jmax are correct by visualization of smallf/parametres.F90

1.4 Remove a configuration

rm -R in $UDIR, $CDIR, $RDIR

1.5 Use of a test case

- run the test case gravity adjustment

Follow directives in mars_envir_manual.pdf pages 52–53
mkconfdir TEST 01
cd $UDIR/TEST/TEST-01
set TESTCASE = 'use' in makefile
set TEST = casgravadj (for instance) in makefile
add the good CPP keys in Makefile.caparmor / Makefile.linux
gmake install ; gmake
cd $RDIR/TEST/TEST-01
mars_exe

- visualize the results
- add CPP key "key_no_bottom_stress"
- compile, run and check for the differences
- get the casgravadj.F90 file edit and modify this test case ...

1.6 Differences between mkconfdir try and TRY ?

Play with mkconfdir and check

1.7 Create a new config knowing that there are 2 ranks and that head file is named head.BISC

mkconfdir BISC V9.05 2

2 Access to the code and updates

2.1 Test the access to the MARS code

create and go to a new directory named "SVNTEST" : mkdir SVNTEST; cd SVNTEST

- Define HTTPSVNROOT environment variable :

(csh environment)
setenv HTTPSVNROOT https://forge.ifremer.fr/svn/mars3d
setenv extranet_login bl056b7 (type yours !)
source .cshrc

- From a machine on which SubVersioN software is installed, type :

svn --username $extranet_login export $HTTPSVNROOT/trunk/WELCOME

- edit WELCOME/welcome.txt file

- remove welcome.txt and .svn files, then the WELCOME directory

2.2 Get a version of the MARS code

from SVNTEST directory

- Which versions are available ?

svn --username $extranet_login ls $HTTPSVNROOT/tags

- Get one of these versions

svn --username $extranet_login export $HTTPSVNROOT/tags/V7.71

- Get the last version

svn --username $extranet_login export $HTTPSVNROOT/trunk

The trunk contains all the revisions (evolutions) of the code. The tags contain different versions of the code; a version is the code at a precise revision. The file $HOMEMARS/../DOC/list_version lists the correspondance between the revision numbers and the version number like V9.XX (for update purpose)

- remove all your directories under SVNTEST

rm -rf *

2.3 Run a test case with version V8.18

How to use a test case ? see the mars_envir_manual.pdf (from internet site) and/or exercise 1.5

- Define HOMEMARS variable

setenv HOMEMARS /home11/caparmor/mars/CODE_MARS/CODE_MARS_V8/V8.18/Mars_Agrif2

- Create a configuration and run a test case

mkconfdir TEST V8.18
cd $UDIR/TEST/TEST-V8.18
set TESTCASE = 'use' in makefile
set TEST = casgravadj (for instance) in makefile
add the good CPP keys in Makefile.caparmor / Makefile.linux
gmake install ; gmake
cd $RDIR/TEST/TEST-V8.18
mars_exe

- Modify the test case

add modification in casgravadj.F90 :
print*, "I am in gravity adjustment test case ..." at the begining of the executable part (line 74)
add modification in output.F90 (subroutine output_mng) :
print*, "TEST 1 at the begining of output_mng" (line794)
print*, 'TEST 2 after tdebsor(nb) =MAX(tdebsor(nb),t)' (line 811)
print*, 'TEST 3 four lines before fin du traitement des sorties moyenne ' (line 1288 up to isor(nb)=0)
print*, 'TEST 3 two lines before fin du traitement des sorties moyenne ' (line 1288 down to isor(nb)=0)

2.4 Update the test case

Update the gravity adjustment test case from V8.18 to V9.06

- Define HOMEMARS variable to use the new version

setenv HOMEMARS /home11/caparmor/mars/CODE_MARS/CODE_MARS_V9/V9.06/Mars_Agrif2

- Create a new configuration

mkconfdir TEST V9.06
cd $UDIR/TEST/TEST-V9.06
set TESTCASE = 'use' in makefile
set TEST = casgravadj (for instance) in makefile

- Get your old configuration

edit makefile ; set PREV_CONFIG = yourpath/TEST/TEST-V8.18
gmake copyconfig
compare the Makefile.caparmor with Makefile.caparmor_ref and introduce all the new things

- Install the new version

Open $HOMEMARS/../DOC/list_version and find out the revision numbers relative to the old MARS version and of the new MARS version (left column).

69 V8.18
85 V9.06

- Update the user's routines (routines which you have modified in V8.18)

gmake update "OLDREV=XXX" "NEWREV=XXX"
gmake update "OLDREV=69" "NEWREV=85"

read the list of conflicted files
If none, compile and run
If some, resolve conflicts by hand. You can see the conflicting parts with cmpfile command : cmpfile output.F90. You are comparing your updated file with the $HOMEMARS. Conflicting parts are specified by
<<<<<<<working (user's routines) ======= merge (new code)>>>>>>>
ps : for a realistic configuration, pay attention to the input files: namelists and *.dat files. Compare files in both version. If required, update manually each file.

- Compile and run