
Installation of Telemac-Mascaret Ensemble

This tutorial is based on the requirements and information found within the telemac mascaret website as well as the forums for windows-based systems, specifically windows 10. To install in other operating systems such as OSX or Linux based, the instructions should be similar except for the changes regarding directories, locations, and environment variables. If still you are unable to install in windows, consider using a virtual machine for the usage of telemac-mascaret.

Please refer to see more detail about these systems in the following links.

http://wiki.opentelemac.org/doku.php?id=installation_on_linux#get_the_source_code

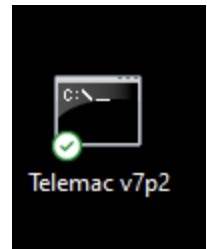
http://wiki.opentelemac.org/doku.php?id=installation_on_windows_with_cygwin

Automatic Installer

The automatic installer can be found in the following:

<http://www.opentelemac.org/index.php/component/jdownloads/summary/23-installation-files/170-automatic-installation-opentelemac-windows?Itemid=54>

After downloading and running the file, the required base programs will be added into the computer. Afterwards, if everything runs smoothly, the installer will download, compile and run TELEMAC2D, allowing the user throughout the process to select location for installation files, preferences, etc. Once the automatic installer has included all



Right click on the shortcut and go to properties. Afterwards, change the target, and start in option boxes to the address of the telemac folder. If working in disk C, the target should be in

```
C:\Windows\system32\cmd.exe /E:ON /V:ON /K set SYSTELCFG=C:\opentelemac-mascaret\v7p2\configs\systel_v7p2.cfg && PATH=C:\opentelemac-mascaret\v7p2\scripts\python27;!PATH!
```

Notice that it should be **separated by space** the additional target from the cmd. The start in should have the following address

```
C:\opentelemac-mascaret\v7p2
```

Double click on the shortcut and run the following command.

```
compile_telemac.py
```

Note that the automatic installation has been proven to work for windows systems previous to 10, so there is a chance it will not work, and manual setup will be required to move forward.

Manual Installation

If you have downloaded the automatic installation program, but it did not continue, then refer to the following link

http://wiki.opentelemac.org/doku.php?id=instructions_to_finish_installing_the_telemac_system_manually_after_a_failure_of_the_automatic_installation

This tutorial is based on the latter links as well as modifications done after many attempts of making it work.

Download requirements

The requirements for using telemac from versions 8 onwards are:

- Python 3.x.x
- Numpy 1.8.x onwards
- Fortran compiler

The requisites can be changed depending on the version of telemac to be installed. Moreover, you will need to use the linux-based(ish) program cygwin which has most of the prerequisites for the installation of telemac. Cygwin is a library that contains packages that are meant for Linux systems and have been adapted to Windows. For running, it is required to download the installer named setup-x86_64.exe and using a command line window, navigate to your downloads and open Cygwin. It works as a cmd interface called bash, which is again an adaptation of Linux based systems. Type the following command and it will install the version of telemac you require.

```
C:\Users\"Your name"\svn co http://svn.opentelemac.org/svn/tags/"version of telemac to install"
```

Make sure to change the versions by changing the numbers, for instance, v7p2, v8p1, etc. So far, the most stable release has been v7p2

```
Microsoft Windows [Version 10.0.19041.685]
(c) 2020 Microsoft Corporation. All rights reserved.
The system cannot find the path specified.

C:\Users\Carlo>svn co http://svn.opentelemac.org/svn/opentelemac/tags/v7p2r2 "C:\opentelemac-mascaret\v7p2" --username ot-svn-public --password telemac1*
A      C:\opentelemac-mascaret\v7p2\builds
A      C:\opentelemac-mascaret\v7p2\sources
A      C:\opentelemac-mascaret\v7p2\sources\mascaret
A      C:\opentelemac-mascaret\v7p2\sources\mascaret\Rezo
A      C:\opentelemac-mascaret\v7p2\sources\mascaret\Rezo\sing2.f90
A      C:\opentelemac-mascaret\v7p2\sources\mascaret\Rezo\calcul.f90
A      C:\opentelemac-mascaret\v7p2\sources\mascaret\Rezo\sing3.f90
A      C:\opentelemac-mascaret\v7p2\sources\mascaret\Rezo\cqlnj.f90
A      C:\opentelemac-mascaret\v7p2\sources\mascaret\Rezo\loilim.f90
```

Figure 1. Downloading of telemac using svn repository.

All of the components that are being downloaded when installing the telemac-mascaret ensemble, among the most important ones being:

- Telemac2D
- Telemac3D
- Tomawac
- Mascaret
- Sisyphe

Notice that the program is **not installed** yet. If the deployment of the files has been carried successfully, you will find them into the location specified previously. Inside the installation directory, you will find the several folders, some containing documentation and others required for continuing with the installation of the programs.

```
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\t2d_geo_thermic.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\t2d_geo_thermic.cli
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\t2d_waq2d_thermic.f
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\t2d_waq2d_thermic.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\t2d_waq2d_thermic.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\t2d_waq2d_thermic.xml
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\waq_thermic_steer.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_thermic\waq_thermic_case1.txt
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\biomass_steer.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\geo_waq3d_biomass.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\t3d_waq3d_biomass.f
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\t3d_waq3d_biomass.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\t3d_waq3d_biomass.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\t3d_waq3d_biomass.xml
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_biomass\t3d_waq3d_biomass.cli
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\eutro_steer.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\geo_waq2d_eutro.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\t2d_waq2d_eutro.f
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\t2d_waq2d_eutro.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\t2d_waq2d_eutro.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\t2d_waq2d_eutro.xml
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_eutro\t2d_waq2d_eutro.cli
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\eutro_steer.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\geo_waq3d_eutro.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\t3d_waq3d_eutro.f
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\t3d_waq3d_eutro.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\t3d_waq3d_eutro.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\t3d_waq3d_eutro.xml
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq3d_eutro\t3d_waq3d_eutro.cli
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\o2_waq_steer.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\o2_waq2d_o2.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\t2d_waq2d_o2.f
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\t2d_waq2d_o2.sif
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\t2d_waq2d_o2.cas
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\t2d_waq2d_o2.xml
A      C:\opentelemac-mascaret\v7p2\examples\waqtel\waq2d_o2\t2d_waq2d_o2.cli
U      C:\opentelemac-mascaret\v7p2
Checked out revision 16241.
```

This PC > Local Disk (C:) > opentelemac-mascaret > v8p0r3				
Name	Date modified	Type	Size	
builds	1/7/2021 3:50 PM	File folder		
configs	1/7/2021 3:44 PM	File folder		
documentation	1/5/2021 1:52 PM	File folder		
examples	1/5/2021 4:27 PM	File folder		
optionals	1/5/2021 1:46 PM	File folder		
scripts	1/5/2021 1:45 PM	File folder		
sources	1/5/2021 1:45 PM	File folder		
makefile	1/5/2021 1:52 PM	File	3 K	
makefile.in	1/5/2021 1:44 PM	IN File	2 K	
NEWS.txt	1/5/2021 1:52 PM	Text Document	12 K	
README.txt	1/5/2021 1:52 PM	Text Document	2 K	

Figure 2. Downloaded folders.

You need to start the compilation by rearranging some of the Linux files so that they are in agreement with the type of installation that is being carried out—Windows. The files that are responsible for the compilation are the following:

- Configuration file “.cfg”
- Environment file “.sh”
- Compilation file “compile.py”

The names of the configuration and source file might vary depending on the type of environment that is being installed. To edit any of the files, use either Notepad or Notepad++ (recommend installing the latter due to its flexibility and usability, keeping memory regardless of the files opened). More information about the Linux installation files can be found here:

http://wiki.opentelemac.org/doku.php?id=installation_on_linux

Configuration file

The file is located in

C:\opentelemac-mascaret\“your version”\configs\

This file steers the installation. Here, the “#” comments out lines, while others are left to be available. Notice how on line 5 the configuration states that we will be using *win7gfors* which represents a basic serial configuration so that the program knows were to deploy which files.

```

1 # _____/
2 # _____/ TELEMAC Project Definitions / _____/
3 #
4 [Configurations]
5 configs: win7gfors
6 # win7tels win7gfors win7gforsdbg win7telsdbg
7 #
8 # _____/ windows 7 generals / _____/
9 [general]
10 #
11 root:      C:/opentelemac-mascaret/v8p0r3
12 version:   v8p0r3
13 language:  2
14

```

Figure 3. Configuration filed steered for windows.

From line 52 onwards, the configuration of the win7gfors is included. Make sure that your configuration follows the same distribution as the following page. The most important nametags are the configuration -c -O3 -cpp in the cmd_obj tag.

```

52 # _____/ windows 7 gfortran scalar / _____/
53 [win7gfors]
54 #
55 #cmd_obj:    gfortran -c -O3 -fopenmp -fconvert=big-endian -frecord-marker=4 <mods> <incs> <f95name>
56 cmd_obj:    gfortran -c -O3 -cpp -fopenmp -fconvert=big-endian -frecord-marker=4 <mods> <incs> <f95name>
57 cmd_lib:    ar cru <libname> <objs>
58 #cmd_exe:    gfortran -fopenmp -fconvert=big-endian -frecord-marker=4 -v -lm -o <exename> <objs> <libs>
59 cmd_exe:    gfortran -fopenmp -fconvert=big-endian -frecord-marker=4 -v -lm -o <exename> <objs> <libs>
60 #
61 #cmd_obj_c:   gcc -cpp -c <srcName> -o <objName>
62 mods_all:    -I <config>
63 #
64 sfx_obj:     .o
65 #

```

Figure 4. Configurations for correct installation.

Possible Issues

Make sure that the cmd_ob and cmd_lib include “gfortran -c -O3 -cpp” in the **beginning** of the configuration. If these tags are missing or incorrectly placed, then the files will be allocated on the wrong directories. A working configuration file can be found within the resources of the university.

Environment configuration file

It is in the same directory as the configuration file. There are 2 files that have the same shell names, one is a boilerplate that can be used to do the changes required to the file that is to be used. It is a template for a Linux environment that will position all the environment variables for telemac on the Windows system. The adaption of the file is done by replacing words by their local value. For instance, on line 15 the following pictures highlight the changes of directory on the template file and on the file to be used.

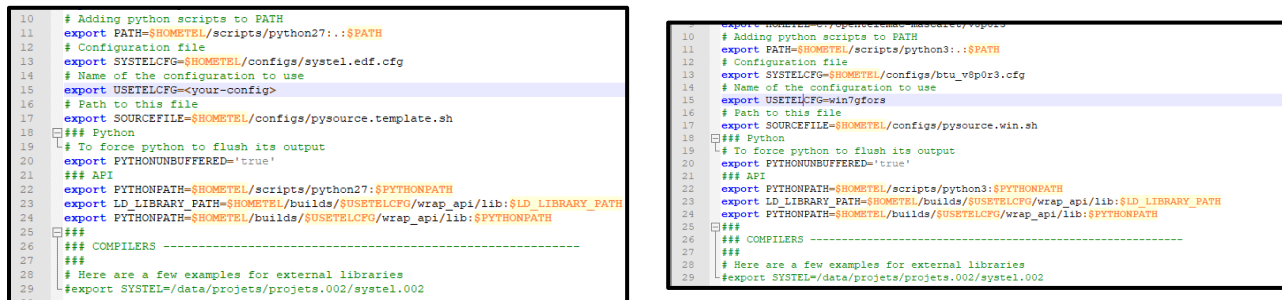


Figure 5. Shell file modified for installation.

Compilation

An important change should be done on line 11, which should specify the usage of python3x to run the compiler. Once this is done, go back to the Cygwin terminal, change to the location of the version and type the following command

```
cd c/opentelemac-mascaret/"your version"/
source pysource.win.sh
```

```
Carlo@LAPTOP-T3IJFHQ5 MINGW64 /c/opentelemac-mascaret
$ cd v8p2

Carlo@LAPTOP-T3IJFHQ5 MINGW64 /c/opentelemac-mascaret/v8p2
$ source configs/pysource.win.sh
```

Figure 6. Running the shell file.

Nothing will prompt into screen, because the only work of the shell file is to allow the configuration file to run correctly. Once all the environment variables are set, then change into the python 3 folder and run

```
cd c/opentelemac-mascaret/"your version"/python3
compile.py
```

A new screen will appear highlighting stating “my work is done” for the configuration. On the same directory, right after these finishes, run the following code

```
compile_telemac.py
```

```
C:\opentelemac-mascaret\v8p2\scripts\python3>compile.py

Loading Options and Configurations

C:\opentelemac-mascaret\v8p2\scripts\python3>

My work is done

C:\opentelemac-mascaret\v8p2\scripts\python3>
```

The compilation will take place for around 25 to 30 minutes, although this will vary depending on the specifications of the computer.

Figure 7. Running configuration and compilation files.

Possible issues

During the installation, due to the change in versions of some of the programs that are focused on the manipulation of scientific calculations (for instance gcc: an optimizing compiler for support of various programming languages) this might become issues during the compilation. Specifically addressing the latter, if an error describing corruption due to gcc, go to

```
C:\opentelemac-mascaret\your version\sources\utils\partel\mod_hash_table.f
```

And change the lines pertaining to 226 to 231, like in the picture. Some versions of telemac have not been tested out for the new versions of the programs mentioned previously. Once changed, rerun the installation following the steps previously mentioned.

If other issues are encountered during the installation process, recall that since it is an open-source software, there are dedicated channels of help for the users based on the experiences of other users and the developers. You can find more about this in:

<http://www.opentelemac.org/index.php/assistance/>

Running a Simulation

Name	Date modified	Type	Size
balzano	1/5/2021 2:24 PM	File folder	
bj78	1/5/2021 2:28 PM	File folder	
bowl	1/5/2021 2:03 PM	File folder	
breach	1/5/2021 2:09 PM	File folder	
break	1/5/2021 2:09 PM	File folder	
bridge	1/5/2021 2:34 PM	File folder	
bumpcri	1/5/2021 2:03 PM	File folder	
bumpflu	1/5/2021 2:03 PM	File folder	
canal_med	1/5/2021 2:03 PM	File folder	
canalalgae	1/5/2021 2:22 PM	File folder	
cavity	1/5/2021 2:36 PM	File folder	
cinetiques	1/5/2021 2:28 PM	File folder	
clotilde	1/5/2021 2:15 PM	File folder	
cone	1/5/2021 2:23 PM	File folder	
confluence	1/5/2021 2:02 PM	File folder	
conical_island	1/5/2021 2:25 PM	File folder	
convergence	1/5/2021 2:14 PM	File folder	
culm	1/5/2021 2:02 PM	File folder	
dambreak	1/5/2021 2:18 PM	File folder	
delwaq	1/5/2021 2:29 PM	File folder	
digue	1/5/2021 2:25 PM	File folder	
donau	1/5/2021 2:28 PM	File folder	
dragforce	1/5/2021 2:02 PM	File folder	
estimation	1/5/2021 2:28 PM	File folder	
estu_gir	1/5/2021 2:02 PM	File folder	
flotteurs	1/5/2021 2:02 PM	File folder	
friction	1/5/2021 2:29 PM	File folder	
gouttedo	1/7/2021 1:54 PM	File folder	
gouttedo_med	1/5/2021 2:23 PM	File folder	

Once the compilation is finished, you can run sample simulations to test if everything is working properly. Inside the following directory, find examples of different applications for telemac2d, 3d, sisyphe, tomawac, etc.

```
C:\opentelemac-mascaret\"Your version"\examples\telemac2
```

Inside the telemac interface, run the following command (note that this is the simplest geometry-hydrodynamic simulation and other examples are available for testing):

```
cd C:\opentelemac-mascaret\"Your version"\examples\telemac2\t2d_gouttedo
telemac2d.py t2d_goutted.cas -ncsize=4
```

If the tag “My work is done” appears on screen, then everything is correct. If not, revise the steps taking previously and/or the documentation on the telemac website.