

Table of Contents

| | |
|------------------------|---|
| Required Software | 2 |
| Platform Notes | 2 |
| Installation | 2 |
| Verifying installation | 2 |
| Problems | 3 |

WRF4G can be installed in any Linux Computer. It provides the services needed to prepare, run and monitor experiments and it can manage many computing resources and use them at the same time to run different simulations of a WRF experiment.

Although in the following examples we will use the same computer to manage the experiments and to run them, usually scientists use a computer to prepare and manage the experiments (where WRF4G has to be installed) and different computing resources to run them (PBS or SGE Clusters, HPC infrastructures, stand-alone servers). We call **User Interface (UI)** to the computer where WRF4G is installed and **Computing Resources (CR)** to the nodes where a WRF experiment can run. In the following experiments the computer where the UI role is installed will act as CR.

Required Software

WRF4G needs the following software preinstalled on both UI and CR:

- **x86_64 Linux**
- **Python**, version ≥ 2.4 and < 3.0 .

Platform Notes

WRF4G has been run only in 64bits platforms and currently has been tested under the following O.S.:

- **Ubuntu 10.04 and 11.04**: No known issues.
- **Centos 5 and 6**: No known issues.
- **Debian 6.0**: No known issues.

Installation

Download and unpack the distribution file [?WRF4G.tar.gz](#) to the installation directory, for example your \$HOME directory.

```
[user@mycomputer~]$ cd $WRF4G_INSTALL_PATH (i.e cd $HOME)
[user@mycomputer~]$ wget www.meteo.unican.es/work/WRF4G.tar.gz
[user@mycomputer~]$ tar xzvf WRF4G.tar.gz
```

Setup the WRF4G user environment. (To avoid typing the export command every time you want to use WRF4G, it is advisable to copy these lines in \$HOME/.bashrc)

```
[user@mycomputer~]$ export WRF4G_LOCATION=$WRF4G_INSTALL_PATH/WRF4G
[user@mycomputer~]$ export PATH=$WRF4G_LOCATION/bin:$PATH
```

The installation process provides the UI with:

- A set of scripts that allows to prepare, submit and monitor experiments.
- The WRF4G framework. This framework is a set of daemon/services that manages:
 - The Computing Resources where WRF is going to run.
 - The database where the experiment information and status (realization, chunks, jobs) is stored.

Verifying installation

A video with the main steps can be downloaded from [?here](#)

- Start the WRF4G Framework. This command will start the services needed by WRF4G to run.

```
[user@mycomputer~]$ wrf4g_framework start
```

- List the computing resources available.

```
[user@mycomputer~]$ wrf4g_resources
HID PRI OS ARCH MHZ %CPU MEM(F/T) DISK(F/T) NODES(U/F/T) LRMS HOSTNAME
0 1 GNU/Linux2.6.32 x86_64 3000 0 1212588M/3891840M 136155G/225125G 0/1/1 FORK mycomputer
```

If you want to configure more resources, you could show [?Resources setup](#)

- Launch the test experiment in the machine where WRF4G is installed:
- Go to the folder where the experiment configuration files are located:

```
[user@mycomputer~]# cd $WRF4G_LOCATION/experiments/single_test
```

- Prepare and submit the experiment:

```
[user@mycomputer~]# wrf4g_prepare  
[user@mycomputer~]# wrf4g_submit
```

- Run `wrf4g_status` to see the status of the jobs:

```
[user@mycomputer~]# wrf4g_status -e test  
Realization Status  Chunks    Comp.Res  WN      Run.Sta  ext  %  
test               Done      3/3      mycomputer sipcl8  Finished  0 100.00
```

Problems

If you find any problem, please [?submit us a ticket!!](#)