TRACS Complete Installation under Linux **in 5 minutes and 7 steps**
(August 2016)

**The following guidelines will properly work if the right packages and software versions are chosen.

Due to FEniCS libraries dependencies, it is recommended to use Ubuntu 14.04 LTS

1. If the system is recently fresh installed:

- ❿ *sudo apt-get update*
- ❿ *sudo apt-get install build-essential*
- ❿ *sudo apt-get install cmake*
- ❿ *sudo apt-get install git*

2. Test gcc version, must be >= than 4.8

- ❿ *gcc –version*

3. Installing ROOT**:**

It is preferable to run pre-build binaries of ROOT on la Linux system:

- ↘ *wget https://root.cern.ch/download/root_v6.06.06.Linux-ubuntu14-x86_64-gcc4.8.tar.gz*
- ↘ *sudo cp root_v6.06.06.Linux-ubuntu14-x86_64-gcc4.8.tar.gz /usr/local*
- ↘ *cd /usr/local*
- ↘ *sudo tar -xvzf root_v6.06.06.Linux-ubuntu14-x86_64-gcc4.8.tar.gz*

Modify .bashrc for ROOT:

- ❿ Add the following 3 environment variables to your .bashrc file; This file should be in your home directory.

export ROOTSYS=/usr/local/root
export PATH=$ROOTSYS/bin:$PATH
export LD_LIBRARY_PATH=$ROOTSYS/lib:$LD_LIBRARY_PATH

- ❿ Refresh source: *source .bashrc*

4. Installing FeniCS

Getting the right repos for older FEniCS version:

- ✦ *sudo add-apt-repository ppa:fenics-packages/fenics-1.5.x*
- ✦ *sudo apt-get update*
- ✦ *sudo apt-get install -y fenics*
- ✦ *sudo apt-get dist-upgrade*
- ✦ *sudo apt-get install -y ipython-notebook*
- ✦ *sudo apt-get install -y paraview*

Cleaning Fenics ppa repositories:

- ↘ *sudo add-apt-repository --remove ppa:fenics-packages/fenics-1.5.x*
- ↘ *sudo apt-get install ppa-purge*
- ↘ *sudo ppa-purge ppa:fenics-packages/fenics-1.5.x* (To be sure but redundant)

5. Installing VTK and Qt4 libraries

- ↘ *sudo apt-get install libvtk5-dev python-vtk libvtk-java tcl-vtk libvtk5-qt4-dev*

6. Install doxygen

- ↘ **sudo apt-get install doxygen**

7. Setting up, compiling and executing TRACS in your home directory:

- ↘ *git clone –b master https://github.com/JulesDoc/Tracs*
- ↘ *cd TRACS/src*
- ↘ *ffc -l dolfin Poisson.ufl* (Not necessary but recommended)
- ↘ *ffc -l dolfin Gradient.ufl* (Not necessary but recommended)
- ↘ *cd ..*
- ↘ *mkdir build*
- ↘ *cd build*
- ↘ *cmake ..* (Some warnings may appear, keep smiling)
- ↘ *make -j2* (or make -jN...depends on your Number of cores)
- ↘ **mv ../src/files2move2bin/* ./bin/**
- ↘ **cd bin/**
- ↘ **./TRACS # for Command line version**
- ↘ **./TRACS-GUI # for Grafical User Interface version**
- ↘ **./interface_test # for the TRACS interface demo (CLI)**