

CMSSW installation on your laptop

This is a short summary of the procedures described in Installing software using apt, which I applied to install CMSSW on my laptop. Basically the procedure can be divided in three parts:

- Step 1: Setting up your installation area
- Step 2: Configuring the APT utility
- Step 3: Installation of CMSSW - or update

Some definitions:

- APT: The Advanced Packaging Tool

Some more documentation:

- Official CMSSW aptinstaller Guide
- CMSSW On Ubuntu

Requirements: SLC 5, Ubuntu X, (Scientific Linux 4 for older versions)

Step 1: Setting up your installation area

After you have decided where you will host the CMSSW, you need to define a couple of environment variables:

- VO_CMS_SW_DIR=/my_installation_area/x/y/z/
- SCRAM_ARCH=slc4_ia32_gcc345 (for SLC4)
- SCRAM_ARCH=slc5_ia32_gcc434 (for SLC5 32 bits)

I made a script to help me with this:

- prepare_installarea.sh: Prepare installation area

```
source prepare_installarea.sh /opt/CMSSW/local
```

Step 2: Setting up apt-get

After having prepared your installation area, the next step is to configure **apt-get** so it can see the CMSSW source code. Once again, a little script can help you with the process:

- set-aptget-env.sh: apt-get configuration script

You need to run this script everytime you need to update/install software.

Step 3: Getting the software

In principle, step 1 is required when performing a first time installation. However, steps 2 and 3 need to be executed when updating a package or a new CMSSW release. Update the source list:

```
<aosorio@aosorio-t61> apt-get update
Get:1 http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345 release [1695B]
Fetched 1695B in 0s (159kB/s)
Hit http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345/cms pkglist
Hit http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345/cms release
Hit http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345/lcg pkglist
```

```
Hit http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345/lcg release
Hit http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345/external pkglist
Hit http://cmsrep.cern.ch cms/cpt/Software/download/cms/apt/slc4_ia32_gcc345/external release
Reading Package Lists... Done
Building Dependency Tree... Done
<aosorio@aosorio-t61>
```

You can see what releases are available with **apt-cache search cmssw**

```
<aosorio@aosorio-t61> apt-cache search cmssw
cms+cmssw+CMSSW_1_2_0_SL4 - CMS Software Package cmssw version CMSSW_1_2_0_SL4
cms+cmssw+CMSSW_1_3_0 - CMS Software Package cmssw version CMSSW_1_3_0
cms+cmssw+CMSSW_1_3_0_SLC4_pre1 - CMS Software Package cmssw version CMSSW_1_3_0_SLC4_pre1
....
cms+fwlite+CMSSW_1_6_7_FWLITE - CMS Software Package fwlite version CMSSW_1_6_7_FWLITE
cms+fwlite+CMSSW_2_0_10_FWLITE - CMS Experiment package SpecChecksum:4e6fb2dca055bad4e44b8406104c
cms+fwlite+CMSSW_2_1_4_FWLITE - CMS Experiment package SpecChecksum:a1939f31a2ca47a5c6277d5a2db1d
cms+fwlite+CMSSW_2_1_7_FWLITE - CMS Experiment package SpecChecksum:3a1a4302f79e27fd3f5ad2cc2bf34
```

If you now want to install CMSSW 3_3_6 for example then do:

```
<aosorio@aosorio-t61>apt-get install external+fakesystem+1.0
```

and:

```
<aosorio@aosorio-t61>apt-get install external+fakesystem+1.0-cms
```

The previous step only needs to be done once. Finally you can proceed to install the wanted software release:

```
<aosorio@aosorio-t61> apt-get install cms+cmssw+CMSSW_3_3_5
Reading Package Lists... Done
Building Dependency Tree... Done
....
```

You can check what installations you have installed (after setting up the CMSSW environment):

```
<aosorio@aosorio-T61> scramv1 list CMSSW
```

```
Listing installed projects....
```

```
-----
| Project Name | Project Version | Project Location |
-----
CMSSW          CMSSW_3_3_5      --> /opt/CMSSW/local/slc5_ia32_gcc434/cms/cmssw/CMSSW_3_
```

```
Projects available for platform >> slc5_ia32_gcc434 <<
```

Additional Configuration

You will need to set the environment by modifying (or adding) to your shell configuration file the following lines:

- bash (~/.bashrc or ~/.bash_profile)

```
#CMSSW environment
source /opt/CMSSW/local/cmsset_default.sh
export CVSROOT=$USER@cmscvs.cern.ch:/cvs_server/repositories/CMSSW
export CVS_RSH=ssh
```

- cshell (~/.cshrc)

```
#CMSSW environment
source /opt/CMSSW/local/cmsset_default.csh
setenv CVSROOT ${USER}@cmscvs.cern.ch:/cvs_server/repositories/CMSSW
setenv CVS_RSH ssh
```

You are now ready to use CMSSW!

Ubuntu Notes

Ubuntu is not officially supported by the CMSSW team. Anyhow, we tried installing CMSSW in Ubuntu 8.04, 9.04, 9.10. Here are a few notes:

- The first thing to realise is that Step 1: setting up the installation area is not possible. The recommended way (see the above Twiki page) to proceed is to get it from someone that has installed it in SLC5 (if you have it in a secondary partition or a virtual machine should help).
- In our case we made a copy -on usb stick- to our Ubuntu users. We all had the same installation area "/opt/CMSSW/local"
- **NEW** You can get download this installation area from here: <http://hep.uniandes.edu.co/cms/CMSSW/Installation/local.tgz>
- This allowed Ubuntu users to proceed as normal with the installation of the CMSSW

Now, once we had running CMSSW (cmsrel, cmsenv) a few problems were found:

- "[: 71: ==: unexpected operator": Ubuntu comes with **sh** pointing to **dash** instead of **bash** (Ubuntu forums). The solution is to simply change this symbolic link to the one compatible with the CMSSW scripts (known side effect: Synaptic and dpkg stops working):

```
[aosorio@aosorio-T61] cd /bin/
[aosorio@aosorio-T61] ls -l sh
lrwxrwxrwx 1 root root 4 2010-07-22 18:38 sh -> dash
[aosorio@aosorio-T61] sudo rm sh
[aosorio@aosorio-T61] sudo ln -s bash sh
[aosorio@aosorio-T61] ls -l sh
lrwxrwxrwx 1 root root 4 2010-07-22 18:38 sh -> bash
```

- A recommended way to be able to switch between dash and bash is to define in your shell configuration two aliases. The following is an example to put in your .bashrc file:

```
# dash / bash switches
alias fixCMSSW='sudo rm /bin/sh ; sudo ln -s /bin/bash /bin/sh'
alias unfixCMSSW='sudo rm /bin/sh ; sudo ln -s /bin/dash /bin/sh'
```

- **UPDATED** Compilation problems (only in Ubuntu 9.10 and 10.04+):
 - ♦ **/usr/include/stdio.h**: There is a solution by editing this file (follow the instructions in here [CMSSW On Ubuntu](#)).
 - ♦ An different approach is to simply get this file from someone that has Ubuntu 8.04, making a backup copy of the stdio.h file in 9.10 to stdio.h.old
 - ♦ In Ubuntu 10.04 there is also a compilation problem with **/usr/include/locale.h**. Once again, a quick and possible solution is to make a copy from an old version and replace the one that comes with the Ubuntu 10.04 (of course, after you make a backup of such file i.e.

locale.h.old).

- ◆ You can these two files from here:
 - ◇ stdio.h: stdio.h from Ubuntu 8.10
 - ◇ locale.h: locale.h from Ubuntu 8.10
- ◆ This allowed us to make working version of CMSSW under Ubuntu 10.10! Enjoy !!!

After all this fixes we were able to run CMSSW smoothly under Ubuntu

This topic: Main > CMSUniandesGroupLaptop

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