Table of Contents

Local installation of CMSSW framework

Some time ago I've found an instruction how to instruction how to install CMSSW on Ubuntu (and other distributions) which is quite similar to local installation of CMSSW on SLC linux.

CMSSW can be also installed on a linux machine from APT repository. Installation procedure works on SLC (despite the fact SLC uses native YUM package manager) and was also tested on some Ubuntu distributions. Here are two important sources of information: Instruction how to install CMSSW ⬈ and Notes on CMSSW on Ubuntu.

Step by step instruction to install CMSSW framework.

1. Adjust some environmental variables

```
export LANG=C
export LC_ALL=C
```

Old versions of CMSSW framework (i.e. CMSSW_3_1_1) could work only on SLC4 ("SLC4 compatible"), newer ones (i.e. CMSSW_4_2_4) only on SLC5 and newer ("SLC5 compatible")

SLC5 compatible	SLC4 compatible
export SCRAM_ARCH=slc5_amd64_gcc434	export SCRAM_ARCH=slc4_ia32_gcc345

Under Ubuntu: be sure that `/bin/sh` points to `/bin/bash`, not to `/bin/dash` (as described here)

```
sudo dpkg-reconfigure dash
```

2. Follow the instructions from here ⬈, adjust installation path:

```
export VO_CMS_SW_DIR=/home/grzanka/usr/cmssw
mkdir -p $VO_CMS_SW_DIR
cd $VO_CMS_SW_DIR
wget -O $VO_CMS_SW_DIR/bootstrap.sh http://cmsrep.cern.ch/cmssw/cms/bootstrap.sh
```

3. Following step will take some time. Under Ubuntu append to following command `-unsupported_distribution_hack` switch:

```
sh -x $VO_CMS_SW_DIR/bootstrap.sh setup -path $VO_CMS_SW_DIR -arch $SCRAM_ARCH
```

4. Not that in following step apt version (0.5.15lorg3.2-cms3) could be not the same every time, please check it:

```
source $VO_CMS_SW_DIR/$SCRAM_ARCH/external/apt/0.5.15lorg3.2-cms3/etc/profile.d/init.sh
apt-get update
```

5. Following step will install framework, might take some time (up to 1 hour), and consume up to 10 GB of disk space :

SLC5 compatible	SLC4 compatible
apt-get install cms+cmssw+CMSSW_4_2_4	apt-get install cms+cmssw+CMSSW_3_1_1

And it is done !

6. If you want to use it, just adjust path and type:

```
source /home/grzanka/usr/cmssw/cmsset_default.sh
```

Possible problems:

1. In case of problems with rpmts order during CMSSW_3_1_1 installation, you need to install few packages manually before installing CMSSW_3_1_1:

```
apt-get install external+gcc+3.4.5-cms
apt-get install lcg+root+5.22.00d-cms
apt-get install external+frontier_client+2.7.11 external+frontier_client+2.7.11-cms2
```

2. There is something weird with dependencies in CMS repo as CMSSW_3_1_1 is dependent on CMSSW_3_3_1

3. You may face error message like this: `ERROR: Release area "/home/users/berretti/SL/CMSSW311/slc4_ia32_gcc345/cms/pool/POOL_2_9_0_pre5-cms9" for "pool" is not available`. After that installation will finish like it was successful, but during TOTEM offline compilation you will see some libraries missing (like `/usr/bin/ld: cannot find -llcg_POOLCore`). The solution is to reinstall `cms+cmssw+CMSSW_3_1_1` package using command:

```
apt-get install --reinstall cms+cmssw+CMSSW_3_1_1
```

This topic: TOTEM > CompOfflineInstallation
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