

Table of Contents

Software HOWTO.....	1
How to quickly fetch and compile offline code, version 3_1_1, with CASTOR support.....	1
How to quickly fetch and compile offline code, version 4_2_4, with CASTOR support.....	1
How to browse output file in ROOT ?.....	1
How to use CASTOR storage ?.....	2
How to indent C++ code ?.....	2
How to manage jobs on lxbatch ?.....	2
How to correct strange behavior of Backspace key on lxplus ?.....	2
How to create and SSH tunnel from outer world to computers located at CERN:.....	3

Software HOWTO

How to quickly fetch and compile offline code, version 3_1_1, with CASTOR support

This instruction should work on SLC4 and SLC5. Assuming that you know what you are doing (read this before):

```
export RFIO_USE_CASTOR_V2=YES
export STAGE_HOST=castorpublic
export STAGE_SVCCLASS=default
export SCRAM_ARCH=slc4_ia32_gcc345
source /afs/cern.ch/exp/totem/soft/local_cmssw_slc4/cmsset_default.sh
scram project CMSSW CMSSW_3_1_1
svn co svn+ssh://svn.cern.ch/repos/totem/branches/CMSSW_3_1_1/cmssw/src CMSSW_3_1_1/src/
cd CMSSW_3_1_1/src
cp /afs/cern.ch/exp/totem/scratch/Release/tests/custom_g4/*.xml ../config/toolbox/slc4_ia32_gcc34
scram setup geant4
scram setup geant4core
scram b -j 4
scram b -j 4
scram b
eval `scram runtime -sh`
```

How to quickly fetch and compile offline code, version 4_2_4, with CASTOR support

This instruction should work on SLC5 (not tested on SLC4). Assuming that you know what you are doing (read this before):

```
export RFIO_USE_CASTOR_V2=YES
export STAGE_HOST=castorpublic
export STAGE_SVCCLASS=default
export SCRAM_ARCH=slc5_amd64_gcc434
source /afs/cern.ch/cms/cmsset_default.sh
scram project CMSSW CMSSW_4_2_4
svn co svn+ssh://svn.cern.ch/repos/totem/trunk/offline/cmssw/src CMSSW_4_2_4/src/
cd CMSSW_4_2_4/src
eval `scram runtime -sh`
scram b -j 4
```

If an error occurs, run following command until everything is OK (to exit, press `Ctrl-C`).

```
edmPluginRefresh
```

Finally:

```
scram b -j 4
scram b
```

How to browse output file in ROOT ?

SSH to lxplus

```
ssh -X lgrzanka@lxplus
```

Import some environmental variables:

```
source /afs/cern.ch/cms/sw/cmsset_default.sh
```

Change current dir to CMSSW workspace:

```
cd /afs/cern.ch/exp/totem/scratch/lgrzanka/tmp/test_more/CMSSW_3_1_1
```

Setup runtime:

```
eval `scram runtime -sh`
```

Enter root and type:

```
gSystem->Load("libFWCoreFWLite")
gSystem->Load("libTotemRPValidationValidationTools")
AutoLibraryLoader::enable()
```

To browse ROOT file use:

```
TBrowser t;
```

to plot some data from tree structure, RightClick on Event and choose StartViewer

To quit from ROOT use:

```
.q
```

How to use CASTOR storage ?

- `nsls` - list home castor directory
- `nsls /castor....`
- `nsls -l` - long listing
- `rfcop /castor/cern.ch/user/l/lgrzanka/file my/local/file .` - copy from CASTOR to local disk

How to indent C++ code ?

- Follow CMS coding rules [↗](#)
- Use emacs indentation [↗](#)

How to manage jobs on lxbatch ?

- Submit: `bsub`
- Check status: `bjobs`
- Kill: `bkill`

How to correct strange behavior of Backspace key on lxplus ?

If after pressing Backspace key you got something like `^?`, then type:

```
stty sane
```

and your console will behave well.

How to create and SSH tunnel from outer world to computers located at CERN:

Open terminal on you local PC and type for example:

```
ssh -N -L30137:pctotem31.cern.ch:8080 lgrzanka@lxplus.cern.ch
```

Above command will bind port 30137 on localhost (your own PC) with port 8080 of pctotem31.cern.ch via lxplus host. So, instead of using pctotem31.cern.ch:8080 settings you shall use localhost:30137 or 127.0.0.1:30137.

Remember that if you are normal user on your own PC, then you need to use high local ports (number > 10000).

You can also create SOCKS proxy:

```
ssh -D40137 lgrzanka@lxplus.cern.ch
```

-- LeszekGrzanka - 05-Oct-2010

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