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Procedure to run on the FNAL Batch System

The main idea is to submit a script using condor tools. that runs a python file with few arguments.

The tar file attached with this wikipage has all the scripts needed: `fnalBatch.tgz`. Once this file is downloaded, you can get untar it by issuing the command:

```
tar -xzvf fnalBatch.tgz
```

From among the scripts, there is a script called `submit_mc.sh` that runs taking arguments from a text file called `private_mc_files.txt`. The aim from this script and text file, is to run on different datasets while just adding lines in the text file, for example:

```
1 RELVALTTBAR /relval/CMSSW_4_2_5/RelValTTbar/GEN-SIM-RECO/START42_V12-v1/0113
```

The number **1** in the first column means you want to run on this dataset (if you put **0**, the line will be ignored). The second column is only a tag to be used later to differentiate different scripts/root files. The third column points to the dataset.

When you run the scrip `submit_mc.sh`, another script will be created and it called: `sub_RELVALTTBAR`, its content is as follows:

```
universe = vanilla
Executable = run_all.sh
Requirements = Memory >= 199 &&OpSys == "LINUX"&& (Arch != "DUMMY" )&& Disk > 1000000
Should_Transfer_Files = YES
WhenToTransferOutput = ON_EXIT
Output = sleep_$(Cluster)_$(Process).stdout
Error = sleep_$(Cluster)_$(Process).stderr
Log = sleep_$(Cluster)_$(Process).log
notify_user = chaouki7@FNAL.GOV
Arguments = RELVALTTBAR /store//relval/CMSSW_4_2_5/RelValTTbar/GEN-SIM-RECO/START42_V12-v1/0113
Queue 1
```

Then `submit_mc.sh` will run it using the command:

```
condor_submit sub_RELVALTTBAR
```

And that is it... Once the job is finished an e-mail is sent to the e-mail you specify through the variable: `notify_user`.

But in the background, there are few things one needs to know in order to customize the setup. The script `sub_RELVALTTBAR` contains another script called `run_all.sh`, which includes the name of the python file to be run under CMSSW The content of `run_all.sh` is:

```
#!/usr/bin/env sh
#
source /uscmsst1/prod/sw/cms/bashrc prod
```

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```
export SCRAM_ARCH=slc5_amd64_gcc434
cd /uscms/home/chaouki7/work/CMSSW_4_2_5/src
eval `scramv1 runtime -sh`

export MYDIR=/uscms_data/d2/chaouki7/CrabSubmit/testFnal/
export OUTPUT=/uscms_data/d2/chaouki7/CrabSubmit/testFnal/
mkdir -p ${OUTPUT}
cd $MYDIR

export FR=$1
export MSOURCE=$2
export MaxEvt=-1
export MLIST="listToProcess${FR}.list"
export MYFILES=filesToRun${FR}.txt

rm -rf ${MYFILES} ${MLIST}
ls -l /pnfs/cms/WAX/11/$MSOURCE | grep root | awk '{print $9}' >> $MYFILES

MYFILE=0
for MLINE in `cat $MYFILES`; do
    MYFILE=$(( ${MYFILE}+1 ))
    export MFILE="${MSOURCE}/${MLINE}"
    echo $MFILE >> $MLIST
done

export MYNTUP=privateMC_${FR}.root
echo "----> running cmsRun whelicity_sub_cfg.py print files_load=$MLIST output=${MYNTUP} maxEvents=${MaxEvt}"
cmsRun whelicity_sub_cfg.py print files_load=$MLIST output=${MYNTUP} maxEvents=${MaxEvt}
```

Therefore the command that is run in the background is:

```
./run_all.sh RELVALTTBAR /store//relval/CMSSW_4_2_5/RelValTTbar/GEN-SIM-RECO/START42_V12-v1/0113
```

You can/have to change the following:

- Directory where CMSSW is installed
/uscms/home/chaouki7/work/CMSSW_4_2_5/src
- Directory where you have copied the files and also where you want the output to be saved (
/uscms_data/d2/chaouki7/CrabSubmit/testFnal/)
- Your python file whelicity_sub_cfg.py

The python file needs to have the **options** enabled for example:

```
import FWCore.ParameterSet.Config as cms
import sys, os
import FWCore.ParameterSet.VarParsing as VarParsing
#####
process = cms.Process("ANALYSISNTUPLE")

options = VarParsing.VarParsing ('standard')

# setup any defaults you want
options.output = 'default.root'
options.maxEvents = -1 # -1 means all events

# get and parse the command line arguments
options.parseArguments()

.....

process.source = cms.Source("PoolSource",
    fileNames = cms.untracked.vstring(options.files)
```

)

.....

```
process.aodDump = cms.EDAnalyzer('WHelicityMeasurement',
    rootFileName = cms.untracked.string(options.output),
    .....
```

These are the commands that are useful to run CMSSW jobs using the FNAL batch system

- To check the status of the jobs use: `condor_q -submitter $USER`

```
-- Submitter: chaouki7@fnal.gov : <131.225.191.68:53231> : cmslpc02.fnal.gov
ID      OWNER      SUBMITTED      RUN_TIME ST PRI SIZE CMD
265337.0 chaouki7      3/16 11:44      0+06:56:16 R  0  976.6 CMSSW.sh 431 1
265337.1 chaouki7      3/16 11:44      0+06:55:39 R  0  976.6 CMSSW.sh 432 1
265337.2 chaouki7      3/16 11:44      0+06:53:12 R  0  976.6 CMSSW.sh 433 1
265337.3 chaouki7      3/16 11:44      0+06:51:28 R  0  976.6 CMSSW.sh 434 1
265337.4 chaouki7      3/16 11:44      0+06:49:16 R  0  976.6 CMSSW.sh 435 1
```

- To delete a job use: `condor_rm 265337.1` (for a particular job) or `condor_rm 265337` (for a particular block of jobs)

-- Chaouki B - 16-Mar-2012

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Topic revision: [r3](#) - 2012-03-18 - unknown



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