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# RunPilot

Pilot is started by APF wrapper(<https://www.racf.bnl.gov/experiments/usatlas/griddev/AutoPyFactory>). You can get a copy of the wrapper. Here is an example to run pilot.

## Run pilot with ES

Here is an example I run ES on lxplus. Before run ES, you may need to define some ES tasks([https://twiki.cern.ch/twiki/bin/view/PanDA/EventServiceOperations#To\\_Test\\_The\\_Site](https://twiki.cern.ch/twiki/bin/view/PanDA/EventServiceOperations#To_Test_The_Site)) on one site. Then you can run on your local tasks without affecting prod tasks.

```
cd /tmp
dir=$(mktemp -d)
cd $dir
echo $dir

export ATLAS_LOCAL_ROOT_BASE=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase
source ${ATLAS_LOCAL_ROOT_BASE}/user/atlasLocalSetup.sh
localSetupRucioClients

source /cvmfs/atlas.cern.ch/repo/sw/local/setup-yampl.sh

export OSG_GRID=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase/x86_64/emi/current/
export VO_ATLAS_SW_DIR=/cvmfs/atlas.cern.ch/repo/sw
source $OSG_GRID/setup.sh

export RUCIO_ACCOUNT=$USER
rm -f pilot.tar.gz
# prod dev pilot
#wget http://project-atlas-gmsb.web.cern.ch/project-atlas-gmsb/pilotcode-dev.tar.gz -O
# pilot release candidate(pre-prod pilot)
#wget http://pandaserver.cern.ch:25085/cache/pilot/pilotcode-rc.tar.gz -O pilot.tar.gz
# prod pilot
wget http://pandaserver.cern.ch:25085/cache/pilot/pilotcode-PICARD.tar.gz -O pilot.tar
tar xzf pilot.tar.gz

#python pilot.py -s BNL_PROD -h BNL_PROD-condor -w https://pandaserver.cern.ch -p 254
#python pilot.py -s IN2P3-LPSC_CLOUD_MCORE -h IN2P3-LPSC_CLOUD_MCORE -w https://pandas
#python pilot.py -s $site -h $queue -w https://pandaserver.cern.ch -p 25443 -d $dir -v

# "-u ptest" is special option to test pilots. When a task is defined with 'prodSource
python pilot.py -s $site -h $queue -w https://pandaserver.cern.ch -p 25443 -d $dir -u
```

## Run pilot without wrapper

Here is an example.

```
cd /tmp/wguan
export OSG_GRID=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase/x86_64/emi/current/
export VO_ATLAS_SW_DIR=/cvmfs/atlas.cern.ch/repo/sw
source $OSG_GRID/setup.sh

#export COPYTOOL=gfal-copy
#export COPYTOOLIN=gfal-copy
#export RUCIO_ACCOUNT=wguan

rm -f pilot.tar.gz
wget http://project-atlas-gmsb.web.cern.ch/project-atlas-gmsb/pilotcode-dev.tar.gz -O
tar xzf pilot.tar.gz

#python pilot.py -s NERSC_Edison -h NERSC_Edison -w https://pandaserver.cern.ch -p 25
```

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```
python pilot.py -s NERSC_Edison -h NERSC_Edison -w https://pandaserver.cern.ch -p 25
```

### Run pilot example

Here is an example to start pilot on NERSC Edision.

```
#cat /project/projectdirs/atlas/pilot/RunPilot.sh
# if cvmfs
export OSG_GRID=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase/x86_64/emi/current/
export VO_ATLAS_SW_DIR=/cvmfs/atlas.cern.ch/repo/sw

# NERSC
# export OSG_GRID=/global/project/projectdirs/atlas/pilot/grid_env
# export VO_ATLAS_SW_DIR=/project/projectdirs/atlas

rm -f wrapper-0.9.10.sh
wget http://wguan-wisc.web.cern.ch/wguan-wisc/wrapper-0.9.10_hpc.sh -O wrapper-0.9.10

chmod +x wrapper-0.9.10.sh

# export COPYTOOL=gfal-copy
# export COPYTOOLIN=gfal-copy

./wrapper-0.9.10.sh --wrapperloglevel=debug --wrappergrid=OSG --wrapperwmsqueue=ANAL
```

In this example, setting up COPYTOOLIN and COPYTOOLIN environment is for staging input files from SE and staging out output log files to SE. I only tested gfal site mover on HPC cray system. "-d /scratch2/scratchdirs/wguan/Edison" is the pilot working directory. You need to change it to your writable directory.

### Run pilot example 2

Here is an example to start pilot using runpilot3-wrapper.sh, you can try it on Lxplus.

```
#cat RunPilot.sh
export OSG_GRID=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase/x86_64/emi/current/
export VO_ATLAS_SW_DIR=/cvmfs/atlas.cern.ch/repo/sw

rm -f runpilot3-wrapper.sh
wget https://raw.githubusercontent.com/ptlrv/adc/master/runpilot3-wrapper.sh -O runpi

chmod +x runpilot3-wrapper.sh

# define pilot code. If it's not defined, default one will be used.
# export PILOT_HTTP_SOURCES=http://project-atlas-gmsb.web.cern.ch/project-atlas-gmsb/

./runpilot3-wrapper.sh -s CERN-P1 -h CERN-P1-OpenStack -p 25443 -w https://pandaserv
```

### Run pilot on Grid

In ATLAS we are using condor to submit pilots to Grid. From this link <http://apfmon.lancs.ac.uk> you can find the production apf condor machines. There is another machine aipanda020 which is used for developing(pilot, apf). Here is an example on aipanda020.

```
[wguan@aipanda020 RemoteTests]$ cat Logs/gfal-copy/FZK-LCG2-all-prod-CEs/submit.jdl
CodeDir          = /data/wguan/Panda/pilot/RemoteTests
LogDir           = /data/wguan/Panda/pilot/RemoteTests/Logs/gfal-copy/FZK-LCG2-all-pro
notify_user      = wguan@cern.ch
grid_resource    = cream cream-ge-3-kit.gridka.de:8443/ce-cream/services/CREAM2 sge sl
```

### Run pilot without wrapper

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```
environment      = " COPYTOOL=gfal-copy "
x509userproxy    = /tmp/x509up_u23959_EU
executable       = $(CodeDir)/wrapper/runpilot3-wrapper.sh
arguments        = -s FZK-LCG2 -h FZK-LCG2-all-prod-CEs -p 25443 -w https://pandaserver
transfer_input_files = $(CodeDir)/wrapper/runpilot3-wrapper.sh
#globusrs1       = (jobtype=single) (queue=paul_test_q)
globusrs1        = (jobtype=single)
#+RACF_Group     = "dq2test"
universe         = grid
output           = $(LogDir)/$(Cluster).$(Process).output
error            = $(LogDir)/$(Cluster).$(Process).error
log              = $(LogDir)/$(Cluster).$(Process).log
stream_output    = False
stream_error     = False
notification     = Error
transfer_executable = True
should_transfer_files = YES
when_to_transfer_output = ON_EXIT_OR_EVICT
periodic_hold    = GlobusResourceUnavailableTime != UNDEFINED && (CurrentTime-GlobusRe
periodic_remove = (JobStatus == 5 && (CurrentTime - EnteredCurrentStatus) > 3600) || (
+Nonessential = True
copy_to_spool    = false

globusrs1 = (=atlasXL)
globusrs1 = (jobtype=single) (=atlasXL)
queue 1
```

-- WenGuan - 2015-02-24

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Topic revision: r7 - 2018-08-16 - WenGuan



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