How to submit jobs on the INFN-CNAF cluster

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Introdution

- 12 dedicated nodes on the CNAF HPC cluster which run in LSF → 32 cores per node with HT

  (more information will be provided during the next ABP-CWG meeting)

HOST_NAME	STATUS	JL/U	MAX	NJOBS	RUN	SSUSP	USUSP	RSV
hpc-201-11-01-a	closed	-	64	64	64	0	0	0
hpc-201-11-01-b	closed	-	64	0	0	0	0	0
hpc-201-11-02-a	closed	-	64	64	64	0	0	0
hpc-201-11-02-b	closed	-	64	64	64	0	0	0
hpc-201-11-03-a	closed	-	64	64	64	0	0	0
hpc-201-11-03-b	closed	-	64	64	64	0	0	0
hpc-201-11-04-a	closed	-	64	64	64	0	0	0
hpc-201-11-04-b	closed	-	64	64	64	0	0	0
hpc-201-11-05-a	closed	-	64	64	64	0	0	0
hpc-201-11-05-b	closed	-	64	64	64	0	0	0
hpc-201-11-06-a	closed	-	64	64	64	0	0	0
hpc-201-11-06-b	closed	-	64	64	64	0	0	0

Introduction

- For information about getting an account, please send an email to abp-cwg-admin@cern.ch

  Once your account has been setup, log in on the ssh client using the command

  [username]@bastion.cnaf.infn.it

Introduction

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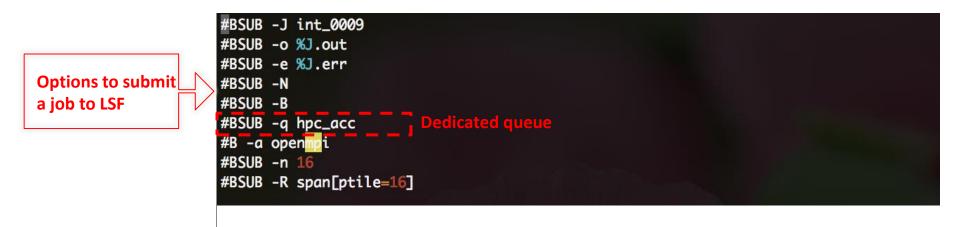
  [username]@bastion.cnaf.infn.it

Introduction

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  [username]@bastion.cnaf.infn.it

  ➢ To access to the cluster from bastion log into: ui-hpc2.cr.cnaf.infn.it

- Information on how to setup python (including mpi4py) without admin rights in the

  working folder can be fount at : https://github.com/PyCOMPLETE/PyECLOUD/wiki/Setup-

  python-(including-mpi4py)-without-admin-rights

```
(py2.7) [giadarol@ui-hpc2 sim_workspace_PyECPyHT]$ ls
BG017_HLLHC_450GeV_dipOFF_quadON_Qpscan_oct-2_damperON_ppbscan          PyECLOUD     python27
BG017_HLLHC_450GeV_dipOFF_quadON_Qpscan_oct-2_damperON_ppbscan_WRONG    PyHEADTAIL   python_src
download_and_install_PyECPyHT.sh                                        PyKLU        test_sims
example_PyECPyHT_CNAF_study                                             PyPARIS      virtualenvs
git                                                                     PyPIC
LHC_450GeV_dipOFF_quadON_Qp0_oct0_damperOFF_ppbscan_lengthscan          PySUSSIX
```

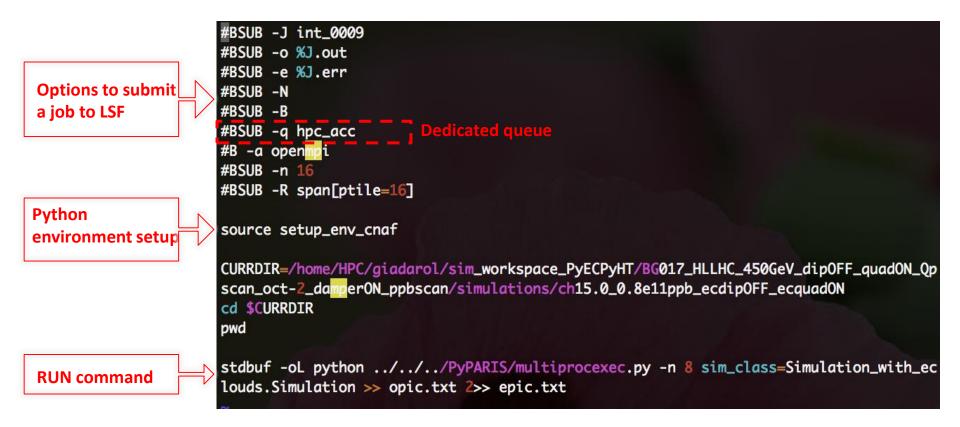# How to submit jobs

- Example for submitting single batch jobs

```
#BSUB -J int_0009
#BSUB -o %J.out
#BSUB -e %J.err
#BSUB -N
#BSUB -B
#BSUB -q hpc_acc
#B -a openmpi
#BSUB -n 16
#BSUB -R span[ptile=16]
```

Options to submit a job to LSF

Dedicated queue

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source setup_env_cnaf
```

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Dedicated queue

Python environment setup

How to submit jobs

- Example for submitting single batch jobs

Options to submit a job to LSF →

Python environment setup →

RUN command →

```
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#BSUB -o %J.out
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#BSUB -N
#BSUB -B
#BSUB -q hpc_acc        Dedicated queue
#B -a openmpi
#BSUB -n 16
#BSUB -R span[ptile=16]


source setup_env_cnaf


CURRDIR=/home/HPC/giadarol/sim_workspace_PyECPyHT/BG017_HLLHC_450GeV_dipOFF_quadON_Qp
scan_oct-2_damperON_ppbscan/simulations/ch15.0_0.8e11ppb_ecdipOFF_ecquadON
cd $CURRDIR
pwd


stdbuf -oL python ../../../PyPARIS/multiprocexec.py -n 8 sim_class=Simulation_with_ec
louds.Simulation >> opic.txt 2>> epic.txt
```

More information can be found at:
https://wiki.infn.it/strutture/cnaf/clusterhpc/using_the_cnaf_hpc_cluster

Thanks for your attention!