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# **Welcome to the CERN-Tier0 Analysis Facility (CAF) for (p)DUNE Users TWiki Home page**

# General

(p)DUNE Analysis Facility located at CERN-Tier0 to provide fast response to latency critical activities:

- Diagnostic of detector problems
- Prompt alignment and calibration
  - ◆ export new constants to Tier-0 and other computing centers worldwide (FNAL) for future data reprocessing
- performance services
- Hot physics analysis

The task of the (p)DUNE Tier-0 system is to perform the prompt reconstruction of the raw data coming from the on-line data acquisition system, and to register raw and derived data with the File Transfer Service (FTS [↗](#)) system, which then distributes them to the FNAL centre and beyond.

# Introduction

- You need to be CERN registered and have a CERN account.
  - ◆ About the Account Management service [↗](#)
    - ◇ Information for newcomers [↗](#)
    - ◇ Information for End Users [↗](#)
    - ◇ Information for Supervisors, Team Leaders and Group Administrators [↗](#)
  - ◆ Keep in mind: AFS is being phased out (end of 2017) at CERN, you might want to look into CERNBOX or EOS [↗](#) as a storage solution. To activate your CERNBox personal storage space (1 TB, up to 1 million files and the maximum size of a single file is 8GB, hosted in the CERN Computer Center): login to <https://cernbox.cern.ch> [↗](#) (using your CERN account and password). More info here.
  - ◆ For NP Project and its prototype experiments follow the link.
  - ◆ FYI : There is also client for mobile phones and fixed computers that allow sync. For installation and configuration use the link [↗](#)
- Be aware you must choose **np-comp** UNIX computing group
  - ◆ <https://resources.web.cern.ch/resources/Manage/Linux/Settings.aspx?login=> [↗](#)
- Registered to the corresponding e-group (depending on which protoDUNE activity you're member):
  - ◆ np02-t0comp-users [↗](#) or
  - ◆ np04-t0comp-users [↗](#) or
  - ◆ np-comp [↗](#) if you do not belong to none of the above.
- if you want to access Neutrino Platform experiment(s) EOS space, follow this link.
- For any problem you may have, please send email to neutplatform computing support [✉](#)


# Tier0-core/nodes/EOS access

Neutrino Platform and the prototype experiments at CERN, NP02/ NP04, have dedicated cores and space from CERN Tier0. By now what it is available : 1 PB EOS, 6 PB tape and 1500 cores and from August onwards NP will provide 3 PB of EOS disks space. The machines are the normal batch worker nodes, 2 GB memory per core, and the jobs will run together with other jobs on the batch farm. The batch system is based on HTCondor<sup>?</sup>. The CPUs are a mix of new and not so new, typically less then 3 years old. The typical machine size is 8 cores. For more information how to access NP experiments EOS space, follow this link.

## Software Installation

### Submitting jobs to NP Tier0 cores

After login to lxplus cluster, you can proceed with install larsoft/dunetpc with the same way as in neutplatform cluster. See instructions 1, 2.

You can have a set of examples scripts located at the NP gitlab repository<sup>?</sup>. If you have problems accessing it let me  know.

To submit the condor job:

```
condor_submit nptest_htcondorjob.sub
```

Have a look at the self-explanatory comments of the scripts.

To examine the running jobs, you have several options.

The closest analog to "bpeek" (lxbatch system) is "condor\_tail <jobID>" , which can be used to inspect the standard **out** (or other files condor knows about) of running jobs.

Or you can use "condor\_ssh\_to\_job <jobID>" which drops you into the same sandbox as the running allowing you to inspect as you see fit.

You can also have EOS **for** the input/output/log.

Keep in mind: "condor\_submit -spool" will just take your files and submit them to the schedd, and won't write to them in the meantime.

You then can retrieve them when your job completes using "condor\_transfer\_data".

You can move output files at the end of your command by just having the script you submit as the "executable" do it **for** you

To monitor batch NP02/NP04 jobs , follow the link1, link2 respectively.

A collection of useful HTCondor commands, one can find here. For more information have a look at the Quick Start Guide<sup>?</sup> form CERN HTCondor.

# CAF system accounts

Specific CAF subsystem accounts and job priorities scheduler/queues:

## For the HTCondor schedds:

The standard condor\_schedds that IT has are also not available for login because they hold people's credentials - but are load-balanced, so in principle should be fine. There is an option later, if we all agree/want, to run our own schedd (I'm in favor of this option). This can be handy if, for example, lots of production jobs are submitted from the same machine - the local schedd gives a much faster response.

## CAF batch groups with priority shares

The following lxbatch batch groups with priority shares are available for the systems and combined performance groups. The batch group managers are responsible for adding and removing members.

Detector system	Batch group name (bugroup)	Batch group manager
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Performance group	Batch group name (bugroup)	Batch group manager
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# Data Model

# Useful Commands



# Monitoring

CERN's HTCondor monitoring is [here](#). The following monitoring link [can show](#) if we have users using our resources.

## Batch Monitoring for NP02

HTCondor monitoring for NP02 [can be found here](#)

## Batch Monitoring for NP04

HTCondor monitoring for NP04 [can be found here](#)

# Operations

# EOS and TAPE

- For more information how to access NP experiments EOS space, follow [this link](#).
- For more information how to access NP experiments CASTOR (CERN Advanced STORAge manager), a data tape storage system used at CERN, follow [this link](#).


# Miscellanea

- [Service Status for Computing](#)
- [Service Availability Overview](#)

## Useful links


# Contacts

Tier-0 contacts:

- Tier-0 expert-on-call phone:
- E-mail: np-tz-ops at cern.ch 

In case of problems with the on-call phone, contact the experts directly:

- Nektarios Benekos:

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## Major updates:

-- NectarB - 2017-02-03

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This topic: CENF > NeutrinoPlatformCAF  
Topic revision: r15 - 2018-03-05 - NectarB



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