

# Neutrino Computing Cluster at CERN

Marzio Nessi (CERN), Nektarios Benekos (CERN),  
Theodoros Giannakopoulos (UoP), Christos Lezos (UoP)

<http://cenf.web.cern.ch/>  
<https://twiki.cern.ch/twiki/bin/view/CENF/Computing>  
<https://twiki.cern.ch/twiki/bin/view/CENF/NeutrinoClusterCERN>

# How to access Neutrino Computing Cluster(I)

To access Neutrino Computing Cluster

1. You need a CERN account
2. You need to subscribe to LXPLUS service
3. Contact [neutplatform.support@cern.ch](mailto:neutplatform.support@cern.ch)

In order to subscribe to LXPLUS go to

<https://resources.web.cern.ch/resources/Manage/ListServices.aspx>

Operating Systems > LXPLUS and Linux and follow the steps

# How to access Neutrino Computing Cluster(II)

- Open a terminal and SSH (Secure Socket Shell) to a LXPLUS node
  - `ssh <CERN login-id>@lxplus.cern.ch`
  - type your password
- In order to access the Neutrino Computing Cluster
  - `ssh neutplatform`
  - `ssh neutXX` (where XX = node identifier)

neutplatform is a DNS Round-Robin

# Software on Neutrino Computing Cluster

- HTCondor
  - The master node is: *neut.cern.ch*
  - Rest of the machines are worker nodes
  - More information:  
<https://twiki.cern.ch/twiki/bin/view/CENF/NeutrinoClusterCERN>
- CVMFS, XRootD, Python3.5, X11, Django, ...
  - More information can be found at:  
<https://twiki.cern.ch/twiki/bin/view/CENF/NeutrinoClusterInstalledSoftware>

# Network Attached Storage(I)

- All server nodes are connected to a Network Attached Storage (NAS), with 48 TB of storage and has the following structure
- users/
  - each user has a folder with his log-in id
- scratch/
  - scratch has 4TB storage available and the contents are deleted every Sunday at 09:00
- software/
  - contains some old versions of DUNE/LArSoft and other folders

# Network Attached Storage(II)

- In order to check how much space you have used on your NAS folder you can use the following script
  - /mnt/nas00/users/check-quota.sh

```
[tgiannak@neut17 ~]$ /mnt/nas00/users/check-quota.sh
=====
Username          = 'tgiannak'
Available space   = '100MB'
Used space        = '6.9M /mnt/nas00/users/tgiannak'
(Approximate values)
=====
```

- You can also visit <http://neut01.cern.ch/nasmonitor/>

# Developed Software

We have developed a software that installs a LArSoft version

- The software is located at
  - /mnt/nas00/software/scripts/
  - /mnt/nas01/software/scripts/
- In order to run it you must be at the folder, so first access either one of the two locations
  - `cd /mnt/nas00/software/scripts/`
  - `php installVersion_cvmfs.php`

# How to use the software (I)

```
In order for the installation to be successful you must use bash shell
-----
Checking the shell you are using...

Your shell is /bin/bash

In order to change your shell you can type one of the following:
1. bash
2. /bin/bash
-----

Do you want to continue to the installation?(y/n): █
```



# How to use the software (II)

```
-----  
Checking connectivity...  
Connection for dune... OK  
Connection for fermilab... OK  
-----  
-----  
Searching versions....  
Versions found!  
-----  
  
Last 5 available versions:  
116. dune-v06_18_00  
117. dune-v06_18_01  
118. dune-v06_19_00  
119. dune-v06_20_00  
120. dune-v06_21_00  
  
Do you want to list all LArSoft/DUNE versions?(y/n): no  
  
What version you want to use?  
Please give the number of the version you want to use (e.g 0): 120  
  
Please give the path you want the DUNE to be installed at: /mnt/nas01/users/tgiannak/  
Do you want to install only dunetpc repository?(y/n): yes
```

# How to use the software (III)

```
-----  
INFO: Stage install / package successful.  
-----  
  
local product directory is /mnt/nas01/users/tgiannak/larsoft_v06_21_00/localProducts_larsoft_v06_21_00_e9_prof  
----- this block should be empty -----  
-----  
  
At the path /mnt/nas01/users/tgiannak/ a file named commands.txt was created!  
You need to run the commands that the file contains now and every time you log-in!  
[tgiannak@neut24 scripts]$ more /mnt/nas01/users/tgiannak/commands.txt  
source /cvmfs/dune.opensciencegrid.org/products/dune/setup_dune.sh  
source /cvmfs/fermilab.opensciencegrid.org/products/larsoft/setups  
setup git  
setup gitflow  
setup mrb  
source /mnt/nas01/users/tgiannak//larsoft_v06_21_00/localProducts_larsoft_v06_21_00_e9_prof/setup  
mrbslp
```