

# SW & Computing Organization and progress at CERN

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## A few words about me

- CERN (Senior) Staff since 1995.
- One of the founding members of Geant4 and ATLAS and initiator of the ATLAS computing & simulation activities (with Marzio Nessi, none the less).
- Joined the Neutrino Platform in Feb. 2018, currently part-time (50% ATLAS, 50% Neutrino Platform).
- Mandated to re-organize CENF computing activities and to establish effective links with CERN/IT and with the DUNE computing and SW group, in particular for what concerns the protoDUNE computing model (taking over from Nektarios Benekos)
- Asked by Flavio to take over from Ruth Pordes as protoDUNE-SP liaison with CERN-IT, FNAL SCD and DUNE SW&C and contact in matter of SW development and Organization, including monitoring and responding to the resource needs and usage.

# Where to go?

- From 0 to 100mph in no time!
- Learn, learn and again learn...
- (re-)establish links with all parties involved
- Become active and intervene on the most urgent items in the list of things to do
- Please, bear with me...

# Tasks – (proto)DUNE SW

- Expertise in DUNE/protoDUNE reconstruction/analysis frameworks (LArSoft, ROOT, Geant4)
  - Collaborate with DUNE software and computing to ensure appropriate versions of the software are available on CERN resources for CERN physicists.
  - Provide local support, documentation, and training for the use of DUNE and pDUNE software to new entrants and short and long term visitors at CERN.
  - Coordinate and test to ensure releases of DUNE/pDUNE software work properly on the CERN resources.

# Tasks – Computing resources

- In collaboration with DUNE S&C, understand, monitor, define and implement policy for the use of the DUNE/pDUNE CERN Tier-0 resources – tape, disk and cpu - across all groups using them.
  - Help with installation, administration, and use of DUNE CERN IT services including getting and configuring (e-groups) CERN computing accounts, OpenStack virtual machines, Cloud Box, web servers etc.
  - Understand available resources on Castor (Tape) and monitor usage and needs.
  - Periodically monitor the use of the available EOS quota. Negotiate with the users for any needed cleanup or deletions and requests.
  - Understand any bottlenecks or over-competition for the use of the CERN Tier-0 batch resources and addressing the need for more or working with the users on the appropriate allocations. Include the batch submissions and the resources and the HT Condor and the use of this.
  - Monitor IT repositories like openstack, cloud, CERN box, CERNVM resources and look after those services. On behalf of the experiment support new users, and current users.

# Tasks – Liaison to CERN entities

- Act as a local CERN DUNE/pDUNE physics interface and liaison with CERN IT , CERN EP/SFT and other CERN groups as needed (e.g. beam instrumentation)
- Physics support for the installations, infrastructure, resources and users (including networks) and use of the Neutrino Platform clusters at Ideas2 and EHN1
- In touch with CERN IT and work with the IT Liaison and support of all the services needed by the physicists.

npcmp computing cluster (~2000 cores) is installed at EHN1 computing cooling room, 1st floor

CENTOS 7 is its main OS

System is using as Configuration management system: puppet + Foreman

Maintenance and support by 1 person (NB)

np-cmp-0103.cern.ch

Found 72 reports from the last 1 days

Details

Audits Reports **YAML**

Properties Metrics Templates NICs

Properties

Status OK

Monitoring [Dashboards](#)

Build Pending installation

Configuration Active

Domain [cern.ch](#)

IP Address 128.141.241.203

MAC Address 00:1d:09:69:81:f5

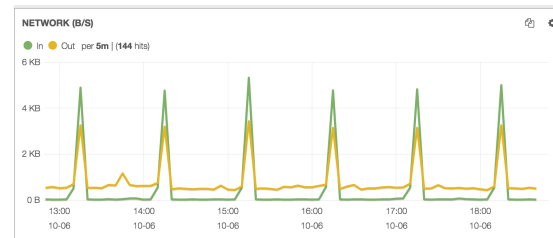
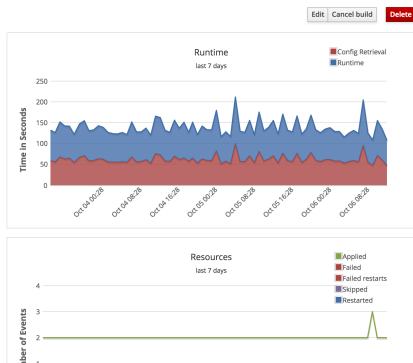
Puppet Environment [lbd\\_npcmp](#)

Host Architecture [x86\\_64](#)

Operating System [CentOS 7.3](#)

Host group [npcmp/workers](#)

Owner [np-cmp-admin](#)



np-cmp-0103.cern.ch

Show log messages:

All messages

[Back](#) [Delete](#) [Host details](#) [Other reports for this host](#)

Reported at 2017-10-06 18:22:51 +0200

Level	Resource	message
notice	Puppet	Hello world and welcome to the Neutrino cluster
notice	/Stage(main)/Hg_npcmp/Notify(hello world and welcome to the Neutrino cluster)/message	defined 'message' as 'Hello world and welcome to the Neutrino cluster'
notice	Puppet	Workers code
notice	/Stage(main)/Hg_npcmp:Workers/Notify(Workers code)/message	defined 'message' as 'Workers code'
notice	Puppet	Applied catalog in 20.82 seconds

Report Metrics

81% Config retrieval

Report Status

The donut chart shows 81% Config retrieval. The bar chart shows the number of events for various report statuses: Applied (3), Failed restarts (1), Skipped (1), and Restarted (1).

anchor	0.002
augeas	0.4446
concat_file	0.0017
concat_fragment	0.0254
config_retrieval	55.549
cron	0.0053
datacat_collector	0.021
exec	0.3709

Together with 1500 T0 cores we have ~3500 cores for data processing, monitoring, MCC, etc.. shared for both prototypes

# Urgent tasks – Interface to NP04 Slow Control

- Urgently needed to monitor the cryostat behaviour during final phases of the assembly
- To be available as soon as possible
- As a matter of principle, it is an almost straight copy of what developed for WA105
- Of course NOT!
- Now struggling to deliver a prototype in a few days
- Coming soon: online monitoring and counting room...





# Summary

- Increased awareness at CERN of the need to boost computing and SW efforts at the Neutrino Platform
- We are trying to re-establish all important links after a few problems made communication difficult
- Person-power is obviously the biggest obstacle we are facing and requires a "creative" approach
- An increased CERN commitment in C&SW is on the table and requires some careful planning and discussions