



Software for PED studies

# FCC @ iLCDirac: setting the context

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FCC Software Meeting  
CERN, Zoom

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# Why iLCDirac?



- Currently still using home-made solution (HTCondor, EOS, ...)
  - Served well CERN-based productions (CDR , Spring 2021, Winter 2023)
- Inclusion of non-CERN resources desired
  - Main requirements: central file catalogue, replication, remote access
  - Major development for the in-house system
- iLCDirac: LC community DIRAC instance
  - Workload management, file catalogue used by LHCb, Belle II, BES III, JUNO, ILC/CLIC, ...
  - Already serving another VO (CALICE)
- FCC @ iLCDirac
  - Re-activated FCC VO
    - Associated CERN FCC resources to FCC VO (HTCondor, EOS area)
  - Added steering applications of interest for FCC workflows
  - Storage organisation based on LC and LHCb experience

# FCC @ iLCDirac : adding resources



- Grid model
  - Sites can decide to add resources to the VO
  - CPU + storage, storage only
- First integration of external site: CNAF (storage only)
  - Can replicate files between CERN-EOS ad CNAF
  - Common catalogue view, Remote access enabled

Enable sharing of public productions through optimisation of computing resources

```
lxplus:~$ source /cvmfs/clicdp.cern.ch/DIRAC/bashrc
lxplus:~$ dirac-proxy-init -g fcc_user
lxplus:~$ dirac-dms-lfn-replicas /fcc/user/g/ganis/edm4hep_test_output.root
LFN                               StorageElement URL
=====
/fcc/user/g/ganis/edm4hep_test_output.root  CNAF-DISK      davs://xfer-archive.cr.cnaf.infn.it:8443/fcc/user/g/ganis/edm4hep_test_output.root
                                           CERN-DST-EOS  gsiftp://eospublicftp.cern.ch/eos/experiment/fcc/prod/fcc/user/g/ganis/edm4hep_test_output.root

lxplus:~$ source /cvmfs/sw.hsf.org/key4hep/setup.sh
lxplus:~$ root -l
root [0] TFile *f1 = TFile::Open("davs://xfer-archive.cr.cnaf.infn.it:8443/fcc/user/g/ganis/edm4hep_test_output.root")
(TFile *) 0x2ec28b0
root [1]
```

# FCC @ iLCDirac : status



- Grid model
  - Sites can decide to add resources to the VO
  - CPU + storage, storage only
- Specific FCC documentation building up in FCC ReadTheDocs
  - [4 - Distributed Computing](#)
- DIRAC ReadTheDocs every useful as reference
  - [User Guide](#)

The screenshot shows a web page titled "User Guide" with a green header and footer. The header contains "Home » User Guide" and "previous | next | modules | index". The main content area has a blue header "User Guide" and a paragraph: "This page is the work in progress. More material will come soon." Below this is another paragraph: "A number of DIRAC tutorials is collected in the DIRAC project GitHub repository." A list of links follows: "Getting Started", "Web Portal Reference", "Web Portal User guide", "Commands Reference", "Tutorials", "HOW-TO Guides", and "Glossary". The left sidebar contains navigation links: "Previous topic", "DIRAC Documentation", "Next topic", "Getting Started", "This Page", "Show Source", and "Quick search".

The screenshot shows a section titled "4. Distributed computing" with a blue header "FUTURE CIRCULAR COLLIDER" and a search bar. The "CONTENTS:" section lists: "1. First Steps", "2. Generators, Fast Simulation and Analysis", "3. Full Detector Simulations", "4. Distributed computing", and "5. Developing FCCSW". The "4. Distributed computing" section is expanded, showing sub-sections: "4.1. Getting started with FCC distributed computing", "4.2. FCC DIRAC example workflows", "4.3. Structure for /eos/experiment/fcc/prod", and "5. Developing FCCSW". The "Contents:" section lists: "4.1. Getting started with FCC distributed computing", "4.1.1. Registering to the FCC VO", "4.1.2. Enabling DIRAC", and "4.1.3. The web portal". The main text area contains two paragraphs: "These pages provide - and dissect - examples of workflows to be run on distributed resources with the DIRAC Interware system through iLCDirac, the extension developed by the Linear Collider community and used also by CALICE." and "The procedure to be enabled to use the FCC resources through DIRAC is first described. Additional information about the use of iLCDirac can be found in the CLIC and ILC dedicated Wiki pages." Below this is another paragraph: "Unless specified, in the rest of this section the word DIRAC refers to the iLCDirac extension introduced above."

# Practical aspects



- FCC VO activated at CERN and at CNAF
  - Standard VO registration procedure
  - 22 registered users to date
- HTCondor FCC resources connected to FCC VO
  - Dedicated group (fcc-cg) and pool accounts created (fcc001...fcc020)
- Defined EOS endpoint for submitted jobs
  - **/eos/experiment/fcc/prod**, connected/mapped to fcc001
  - Access strictly controlled by e-group
    - **fcc-eos-access**: read, no deletion
    - **fcc-eos-write-prod**: write, deletion
      - Only fcc00x in the egroup
    - **fcc-eos-admin-prod**: full permission (fccsw service account)
  - Area can only be written by submitted tools/jobs

# Today's meeting



- Status of Things
  - Transformations
  - Workflows
  - Comparison with with what have done so far
    - Changes in FCCAnalysis, if needed
  - ...
- Prepare for next steps