CALICE/HCAL Software Status

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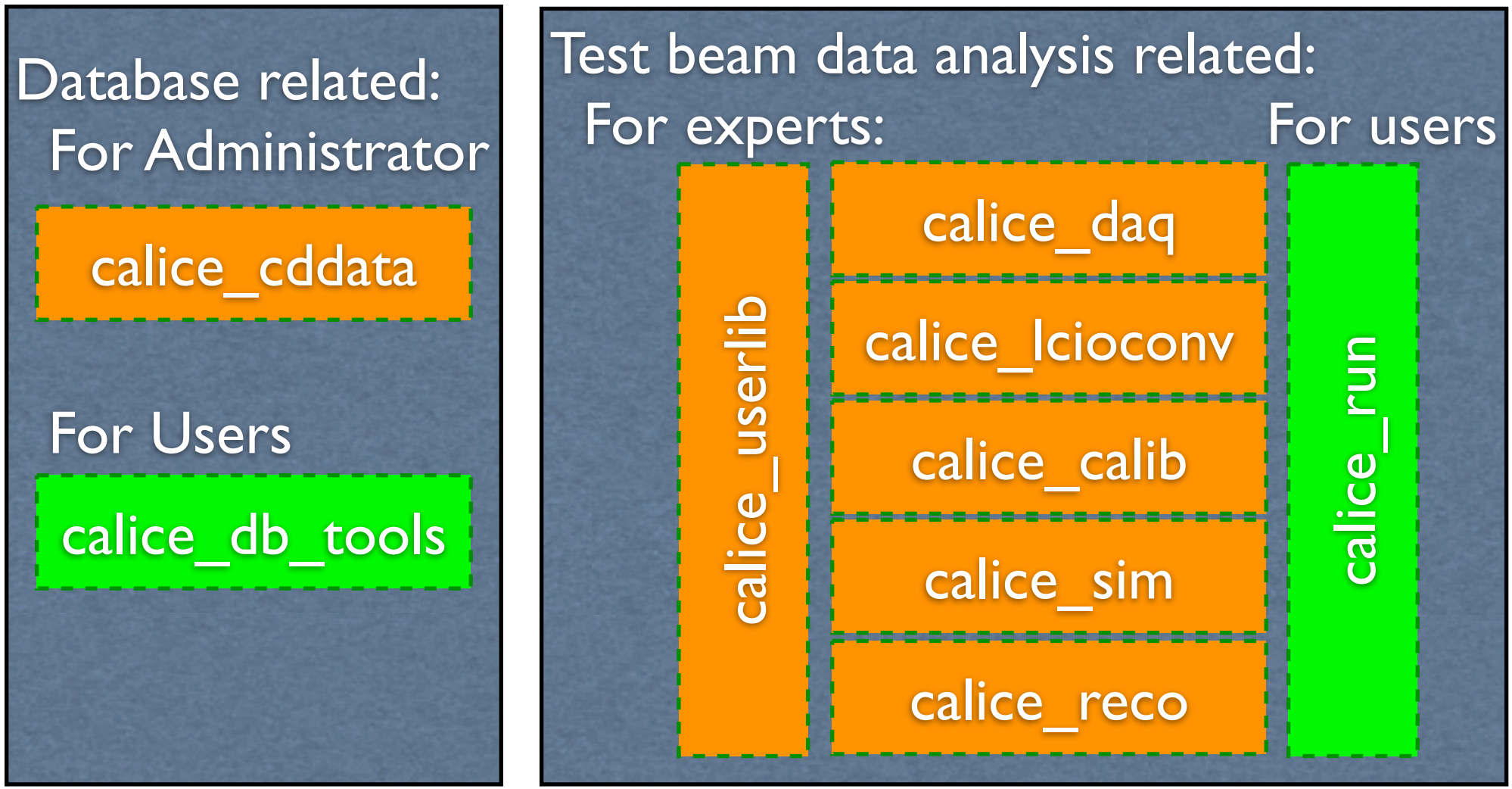
test beam data Processing

- CALICE test beam data taking,
- Data management
  - ➡ Save onto GRID storage element (SE),
  - ➡ Replicate to another site GRID SE
- Converts DAQ binary format into LCIO
  - ➡ Writes conditions data into database
- calibration constants extraction phase by experts, and write into database by database administrator
- Constructs raw data into CalorimeterHits
- Users start to analysis the data

CALCE soft packages



- CALICE analysis software packages and database toolkits are fully available on DESY AFS, which can be accessed by users from both AFS and NAF.
- CALICE reco, sim and lcioconv are available on the GRID for the mass production .

offline software status

- calice_userlib:
  - updated for new framework and new TDC used in CERN 2010 WHCAL test beam
- calice_lcioconv:
  - updated for new hardware TDC, and a calice sw version v04-02 has been released for convsion of CERN 2010 WHCAL test beam data

offline software status

- calice_calib:
  - fitMip: add additional choise between using either fast Fourier transfer function or direct numerical computation of integral function
  - ExtractSaturationCurveProcessor: Updated for CERN 2010 WCAL test beam
  - ExtractIntercalibrationProcessor: Updated for CERN 2010 WCAL test beam

offline software status

- calice_sim:
  - digitization:
    - AhcDigitizationProcessor and AhcGangingProcessor:
    - fixed memory leakage and improved the performance
  - TriggerSim: implemented trigger simulation for FermiLab 2008/2009

offline software status

- calice_reco:
  - SiPMCalibrationProcessor:
    - set cellIDEncoding for digitized Monte Carlo hits
  - Optimize loop performance, to check the input is data or MC on the first event only
  - fixed memory leakage and improved the performance
  - new showerStartClusterProcessor in recoAnalysis

offline software status

- calice_reco:
  - TBTrack:
    - New tracking codes was developed for new TDC of CERN2010 WHCAL test beam
    - New fit constants structure was introduced (database for new structure?)

offline software status

- PrimeryTrackFinder:
  - This processor has been updated and improve the shower starting layer finding algorithm

offline software status

- database related: (got a lots of update for CERN 2010 WHCAL test beam)
  - calice_db_tools: (for users)
  - displayRunInfo:
    - add run range for “desylab”
    - add info for CERN 2010 WHCAL test beam
  - extractGainAverage: updated for CERN 2010
  - extracteGainVsTemp: updated for CERN 2010

offline software status

- database related: (got a lots of update for CERN 2010 WHCAL test beam)
  - calice_cddata: (for database administrator experts)
  - createTriggerAssignment: update for CERN 2010 WHCAL test beam, and add "triger_assigment_cern_tb_2010_15_09.txt" into code folder
  - update correct check value for CERN 2010 WHCAL test beam trigger

offline software status

- database related: (got a lots of update for CERN 2010 WHCAL test beam)
  - calice_cddata: (for database administrator experts)
  - ahc_map:
    - createHcalMapping: updated for using the new database folder "HcalModuleLocationReference" instead of old "HcalModuleLocation"

offline software status

- database related: (got a lots of update for CERN 2010 WHCAL test beam)
  - calice_cddata: (for database administrator experts)
  - ahc_map:
    - HcalImplicits.hh:
      - nominalPosX: updated, now using “0”
      - nominalPosY: updated, now using “0”
      - a switch for absorber Fe/W was implemented
      - now it works for both Fe/W HcalMapping

offline software status

- database related: (got a lots of update for CERN 2010 WHCAL test beam)
  - calice_cddata: (for database administrator experts)
  - ahc_map:
    - connection:
      - HcalMapping (0123)
      - description (4567)
      - LocationRefence (4567)
      - Now database and calice software using the identical number for them

offline software status

- database related: (got a lots of update for CERN 2010 WHCAL test beam)
  - calice_cddata: (for database administrator experts)
  - ahc_map:
    - dbfillExample:
    - a new example folder was created within the code, it proved examples how to write gain, IC, mip into database, and tag database folder ...

offline software status

- calice_run:
  - has been updated for central conversion jobs of CERN 2010 WHCAL test beam.
  - this package is most active part of calice software, each update for any processor, any database tag, any release version ilc software and calice software, all the information will go into here.
  - calice software users normally will start from here

Summary and outlook

- Hcal new framework performance improved:
  - reconstruction job runs at ~50hz
  - memory usage: from few Gb to few hundreds Mb
- Last release version v04-02:
  - works for CERN 2010 WHCAL test beam central conversion
- Current development phase for CERN 2010 WHCAL:
  - calibration constants analysis by experts
  - conditions database built by database administrator
  - the reconstruction run in the development phase and database "HEAD" version.
- TBTrack: CERN 2006/2007, FNAL 2008/2009, CERN 2010

Summary and outlook

- current development “calice_pro_test”:
  - ilcsoft v01-10
  - 32bit on afs /64bit on NAF
  - root verion 5.27.06
- most active developers:
  - Alex, Angela, Boris, Daniel, Marina, Muennich, Nils, Roman, Shaojun ...
- CALICE SW contacts:
  - https://twiki.cern.ch/twiki/bin/view/CALICE/SoftwareResponsibles