Software Overview

Topics
- MC production
- Computing reousces
- GRID
- Future events

Akiya Miyamoto

KEK

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MC Production for DBD

- Simulator model: ilcsoft-v01-14-01
  - Frozen in summer.
  - Initial samples with v01-14-00 were superseded after simulating almost all 1 TeV samples due to error in lorentz boost for crossing angle.
  - 500 GeV samples: ~ September due to a delay of producing 6f samples
  - No IP Z smearing except aa_lowpt samples.
    - aa_lowpt: smeared with σ_z=225um (1TeV), σ_z=300um (500GeV) gausian.
  - Mostly by ILD_o1_v05 model.
- Reconstruction: ilcsoft-v01-16 and ILDConfig/v01-16-p0[3-5]*
  - With aa_lowpt background overlaid.
- Production procedure
  - Processes and nb of events : base on requests from analysis group
  - Job submission : from DESY using a DB tool and a human resource there.
  - sim, rec, dst, dst-merged files: replicated to KEK SE, in LCG catalog
  - Little contributions of KEK CPU resources

After DBD production

- **Generator samples**
  - ◆ 250 & 350 GeV
    - Higgs, 2f, 4f, ttbar @ 350 samples have been generated
    - Planed to generated 1f, 3f, 5f, 6f, aa_2f, aa_4f, aa_lowpt samples

- **Simulation/Reconstruction**
  - ◆ Depends on demands/requests. Who does what analysis ?
    ILD official production after DBD has not been discussed yet.
  - ◆ Small scale productions for physics study or detector optimization could be made by each user.
  - ◆ Large scale production, which requires significant amount of CPU and storage, has to be discussed among group and planned properly in advance.

Computing resources

- **New KEKCC system since April 2012.**
  - Batch server : ~3000 nodes shared wiith Belle, T2K
    ILC batch queue users : 5~10% of total CPU usage
  - HSM system:
    - Shared with GRID: 200TB (~30% usage, mainly DBD samples)
    - non-GRID : 140TB (~ 50% usage)
  - Troubles:
    - ILC users crashed batch servers many time
      reason: too many small files/write many small file.

- **jlclogin2/jlccpuXX/jlccpuss0X**
  - In operation as it is with SL4.7 (very very old)
  - jlccpuss02: RAID crashed. Replacement of disk&RAID Card does not help

- **jlclogin3 (purchased last year)**
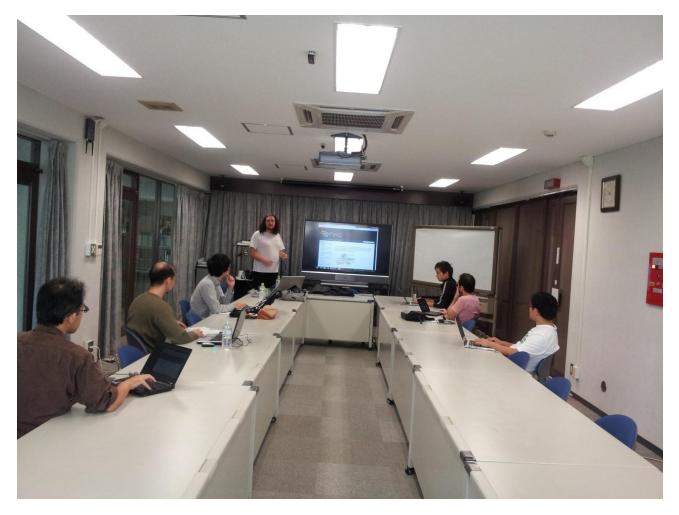 - Main user is FPCCD study. Large memory size (96GB)

GRID

- **KEKCC provides**
  - UI, SE, CE/WN for ILC VO.
  - Very useful for users to access GRID resources
  - Little usage of KEKCC GRID WNs.

- **ILCDirac**
  - SiD and CLIC use ILCDirac
  - ILD may shift to use ILCDirac for MCProduction
  - Dr. S.Poss – ILCDirac tutorial on 10 Oct.
    - → Easy to use GRID resources outside Japan (DESY, CERN, …)

ILCDirac

■ ILCDirac tutorial at KEKCC by Stephane Poss (CERN), 10 Oct. 2012.

GRID - Future

- Human resources in DESY to support ILC VO is disappearing.
    - ◆ ILC VO management : DESY ➔ Sharing among institutes ?
      Contact AM when you apply ILC VO member ship.
    - ◆ DESY resource for MC production may not be secured.
        - ➔ find new person ?
        - ➔ ILCDirac ? Needs a support team. CERN is willing to continue ILCDirac support
    - ◆ How KEK (or Japan) should contribute to ILC VO GRID. KEKCC resources are mainly for Belle/Belle2 and JPARC.

- Technical Issues
    - ◆ LCG file catalog vs DIRAC file catalog
      Keep consistency between them is not automatic. Consistent file deleting is a challenge. ➔ Switch to DIRAC catalog only ?

    - ◆ Some times, worker node setting is not what DIRAC assumes. As a result, infinite number of jobs are directed to that WNs.

LC Software expert meeting

- **31 Jan – 1-Feb., 2013 at CERN**

- **Preliminary agenda**

  - ✓ interface to geant4 simulation
    DD4Hep, LCDD (gdml) files vs. in memory conversion from TGeo to G4-Shapessensitive detectors

  - ✓ interface to reconstruction : GEAR-like API ; org.lcsim ; Reco-API - other ?

  - ✓ common tracking toolkit (tightly linked - but not restricted to AIDA WP2)

  - ✓ common PFA and Flavor Tag tools - future plans

  - ✓ GRID infrastructure for LC
    - common use of ILCDIRAC , management of ILC VO across the LC community, share of responsibilities between labs and groups

  - ✓ common software tools:
    - documentation - Wikis (Confluence) - portal - nightly builds, test infratructure - .... - common software releases, installations,

Lecture on ILCSoft

07 June 2012

iLCSoft講習会

Thursday 07 June 2012 from **09:00** to **16:00** (Asia/Tokyo)
at 3号館425号室

Description	この講習会では、KEKCC を使ってilcsoftの初歩的な使い方の説明をします。講習会に参加するには、以下のことが必要です。

- KEK中央計算機システム(KEKCC)、ilc_ilcグループのアカウントがあること
- 講習に使用するPCを持参すること。PCはKEK無線Lan に接続して、ssh でKEKCCにログインして、X window が使えること。

参加希望する人は、下の所より参加申し込みしてください。

Participants	Ryutaro Hamasaki; Tomohiro Horiguchi; Go Iwai; Katsushige Kotera; Akiya Miyamoto; Yohei MIYAZAKI; Tatsuya Mori; tomohisa ogawa; Kou Oishi; Yuji Sudo; Ogura Takayoshi; Hiraku UENO
Registration	Want to participate? Apply here

Was this useful ?
ILCSoft is relatively stable now. May be good time to learn.
Do we need more lectures ? When ? On what topics ?

Summary

- ■ ILD DBD production scheduled was delayed due to
  - delay of ILC TDR parameter → delay of generator samples
  - delay of fixing tracking code (Silicon trackers)
  But the production has completed successfully.

- ■ Now its time to develop a plan for next step
  - ◆ For participating Snowmass activity
  - ◆ International discussion is about to start

  - ◆ Further contributions (more than LCFIPlus, KalTest) to ILC software for the international community would be requested.