



# iLCDirac: Status and Plans

— via Vidyo —

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# Section 1:



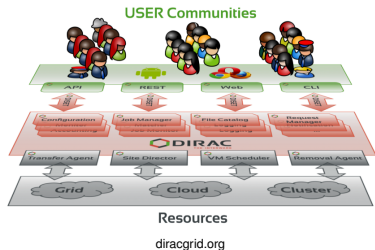
## 1 Introduction

# iLCDirac in a Nutshell



iLCDirac is based on the DIRAC interware originally developed for LHCb

- Dirac (Distributed Infrastructure with Remote Agent Control): High level interface between users and distributed resources
- iLCDirac: Additional functionality to provide simple interface for the users to the LC Software (Whizard, Marlin, Mokka, org.lcsim, SLIC, ROOT, ddsim)
- Central system for large scale productions



```
from DIRAC.Core.Base import Script
Script.parseCommandLine()
import UserJob, Marlin, DiracILC
d = DiracILC()
j = UserJob()
j.setOutputData("recEvents.slcio")
m = Marlin()
m.setVersion("ILCSoft-01-17-09")
m.setSteeringFile("Steering.xml")
m.setInputFile("SimEvents.slcio")
j.append(m)
j.submit(d)
```

# Section 2:



## 2 Status

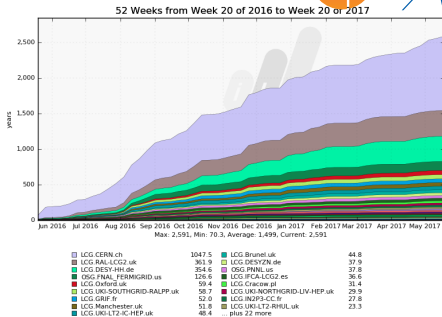
- iLCDirac version v26r0p8, based on DIRAC v6r15p27
  - ▶ Started validating DIRAC v6r17
- Same setup for iLCDirac servers:
  - ▶ Total of 100 Cores and 200 GB of Ram, SLC6 Virtual Machines, 2 × 3 Servers running Agents and Services: 8 Cores, 16 GB RAM; Split by DIRAC-System
  - ▶ 3 DIRAC DIP-Storage SEs: 4 Cores, 8 GB RAM, 1 TB Volume
  - ▶ All databases in CERN DB on Demand service
  - ▶ Web interface, CI, development, spares
- Unit test coverage of 58%; not including tests running jobs and file upload/download/removal

# CPU Usage



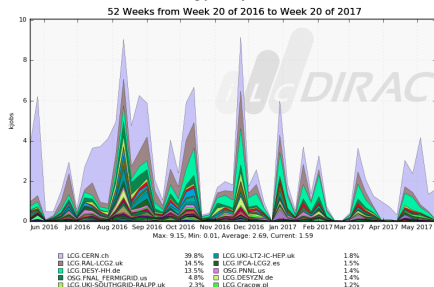
- 8 Million jobs since July '16, 2.5k CPU years
- Maximum of 15k jobs in parallel, no long saturation periods yet
- Running on WLCG and OSG grid sites
  - ▶ CREAM, ARC, HTCondorCE, Globus

CPU used by Site



Generated on 2017-05-23 12:34:20 UTC

Running jobs by Site



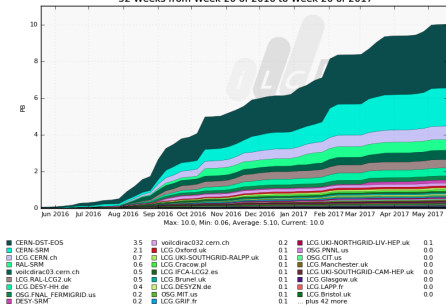
# Data Usage



- Only using Dirac File Catalog, no longer using LFC!
- 27 million files, 32 million replicas
- Transferred 8 PB since July '16. Mostly CLIC productions. Extensively using XROOT

Transferred data by Destination

52 Weeks from Week 20 of 2016 to Week 20 of 2017



Generated on 2017-05-23 12:42:43 UTC



# New Features:



- DDSim and Marlin: user provided DD4hep extensions by uploading tarball with libraries and components files
- Transformations:
  - ▶ Customised output file name convention for ILD productions (thanks to Akiya)
  - ▶ data transformations to move only files that have descendants: e.g., EOS to Castor for archiving once used in production
- using VOMS2CSAgent: automatic registration of users in iLCDirac
- Slic: Allow LD\_PRELOAD by uploading tarball



- SLIC: understood long-standing issues about random crashes at end of execution, memory corruption in a Geant4 destructor. `export MALLOC_CHECK_=0` is *not* a fix, as there was no other way, use `LD_PRELOAD` to overwrite its implementation
- KEK batch farm configuration of CPU normalisation was not compatible with DIRAC



- Edinburgh now allows the ILC VO
- Site is running CentOS7 so we can test the next OS already
  - ▶ Some issues with DIRAC LCG-Bundles to be solved

# Section 3:



## 3 Plans

- Try to use FTS3 for file transfer
  - Need FTS server with XROOT support enabled
- Improve data management productions
  - Error handling, resetting files



- Finalise PandoraCalibration system started by Jan Ebbing
  - ▶ Use calibration script to calculate constants
  - ▶ More efficient running of many small reconstructions running over fixed set of events

# Section 4:



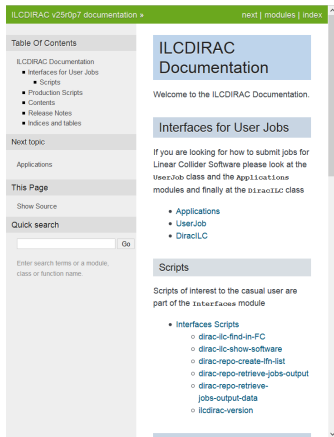
## 4 Support and Documentation

## ■ If case of fire:

- 1 [twiki.cern.ch/twiki/bin/view/CLIC/DiracForUsers](https://twiki.cern.ch/twiki/bin/view/CLIC/DiracForUsers)
- 2 Consult documentation:  
<http://lcd-data.web.cern.ch/lcd-data/doc/ilcdiracdoc/>
- 3 Read [https://twiki.cern.ch/twiki/bin/view/CLIC/DiracUsage#Error\\_report\\_support\\_request](https://twiki.cern.ch/twiki/bin/view/CLIC/DiracUsage#Error_report_support_request)
- 4 Submit a ticket to the issue tracker  
<https://its.cern.ch/jira/browse/ILCDIRAC>
- 5 Email: [ilcdirac-support@cern.ch](mailto:ilcdirac-support@cern.ch)

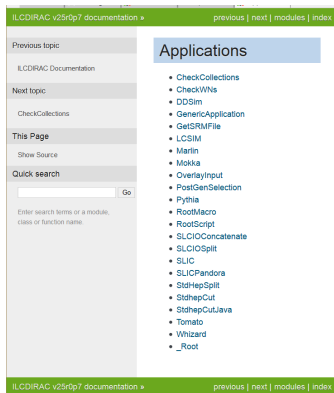


- <http://lcd-data.web.cern.ch/lcd-data/doc/ilcdiracdoc/>
- Information about commands (scripts) including options
- API, examples for all applications



The screenshot shows the ILCDIRAC v250p7 documentation website. The page has a green header with the text "ILCDIRAC v250p7 documentation" and navigation links for "next", "modules", and "index". On the left side, there is a "Table Of Contents" section with a tree structure: "ILCDIRAC Documentation" containing "Interfaces for User Jobs" (with sub-items "Scripts", "Production Scripts", "Contents", "Release Notes", and "Indices and tables"), "Next topic", "Applications", "This Page", "Show Source", and "Quick search" (with a search input field and a "Go" button). The main content area on the right features a blue header "ILCDIRAC Documentation", a welcome message, a section for "Interfaces for User Jobs" with a paragraph of introductory text and a list of links for "Applications", "UserJob", and "DiracILC", and a section for "Scripts" with a paragraph and a list of links for "Interfaces Scripts" including "dirac-lic-find-in-FC", "dirac-lic-show-software", "dirac-repo-create-lfn-list", "dirac-repo-retrieve-jobs-output", "dirac-repo-retrieve-jobs-output-data", and "ilcdirac-version".

- <http://lcd-data.web.cern.ch/lcd-data/doc/ilcdiracdoc/>
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ILCDIRAC v25r0p7 documentation » previous | next | modules | index

Previous topic  
ILCDIRAC Documentation

Next topic  
CheckCollections

This Page  
Show Source

Quick search  
 Go

Enter search terms or a module, class or function name.

## Applications

- CheckCollections
- CheckWNs
- DDSim
- GenericApplication
- GetSRMFile
- LCSIM
- Marlin
- Mokka
- OverlayInput
- PostGenSelection
- Pythia
- RootMacro
- RootScript
- SLICConcatenate
- SLICOSplit
- SLIC
- SLICPandora
- StdHepSplit
- StdHepCut
- StdHepCutJava
- Tomato
- Whizard
- \_Root

ILCDIRAC v25r0p7 documentation » previous | next | modules | index

# Section 5:



## 5 Summary

# Summary



- iLCDirac running stable
- Adopted by detector concepts and users
- Continuing effort for high availability, usability, efficiency