

ILCDIRAC

A GRID Solution for the LC Community

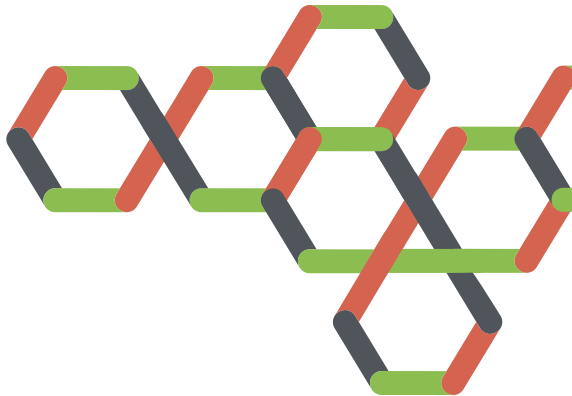
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* CERN PH-LCD

SiD Workshop, 15. October 2013

Outline

- 1 What is ILCDIRAC?
- 2 Status of the System
- 3 Contact and Support
- 4 Summary and Outlook



What is ILCDIRAC?

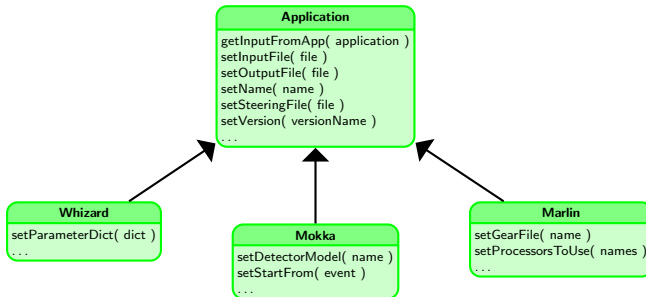
- Based on DIRAC (LHCb):
Full GRID solution: Workload management, File catalog with meta data, Production System
- High level interfaces for all linear collider applications to allow easy job definition
- Software management system to ensure availability of all application on all sites
- Overlay system to automatically retrieve files including pile-up
- Multiple VOs supported:
CALICE and ILC VO share many application and profit from ILCDIRAC
- More than 100 registered users, with about 20 active
- No more major developments, only bug fixes

ILCDIRAC is stable!



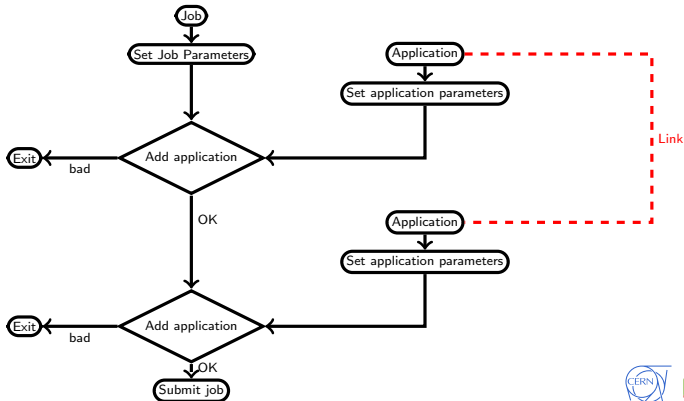
The Application Framework

- High level interface for all linear collider applications that streamlines job definition (14 applications)
- Linking of applications: output of one application can be used as input to another application



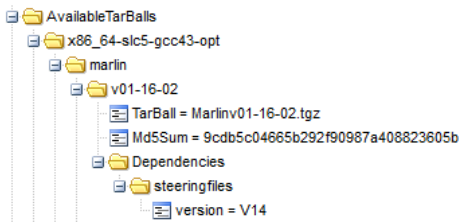
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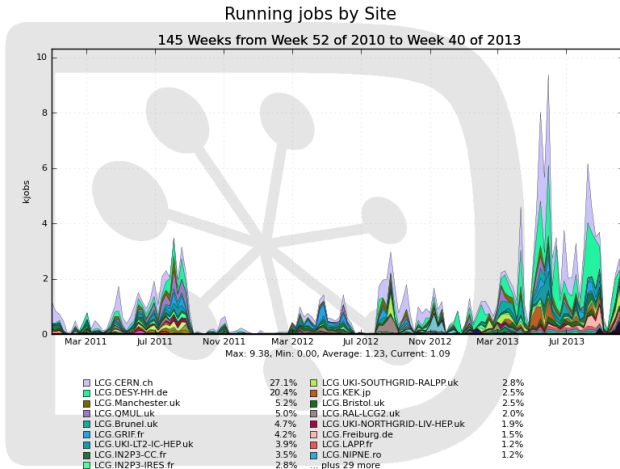


Software Management

- Applications and versions defined in configuration system
- Reference tar balls stored on dedicated storage element
- Job takes care of installation if necessary
- Use shared software area if possible
- Locking of shared area to avoid conflicting installations
- Dependencies are supported
- Default steering files are deployed as dependency



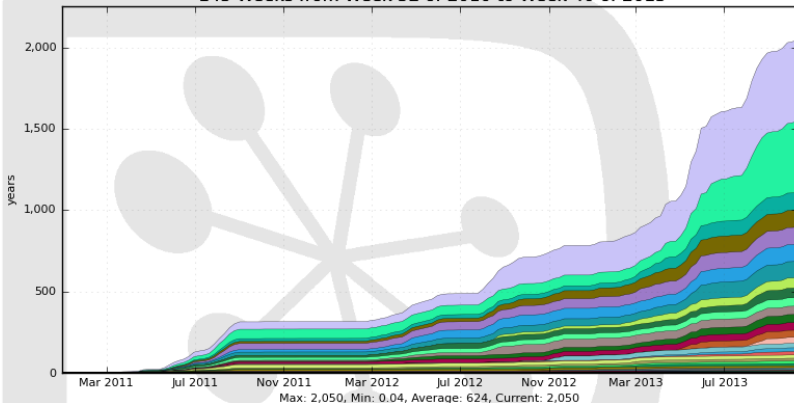
- Successfully used in several mass production campaigns: CLIC CDR, SiD DBD, ILD DBD (user jobs only), CLIC Higgs Paper
- ILD is now adopting ILCDIRAC also as production system



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CPU used by Site

145 Weeks from Week 52 of 2010 to Week 40 of 2013

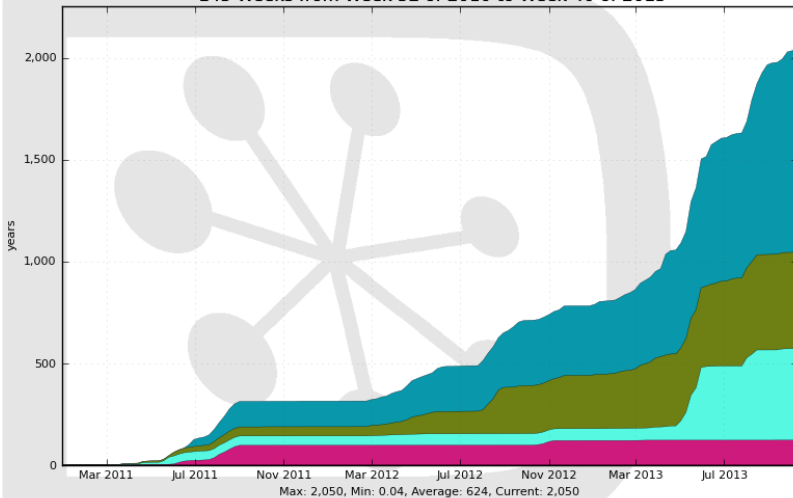


LCG.CERN.ch	499.8	LCG.IN2P3-IRES.fr	51.9
LCG.DESY-HH.de	441.8	LCG.RAL-LCG2.uk	51.0
LCG.Brunel.uk	107.2	LCG.Bristol.uk	50.0
LCG.Manchester.uk	105.4	LCG.UKI-NORTHGRID-LIV-HEP.uk	47.1
LCG.QMUL.uk	105.3	LCG.KEK.jp	43.9
LCG.GRIF.fr	104.8	LCG.Freiburg.de	36.3
LCG.UKI-LT2-IC-HEP.uk	100.7	LCG.FNAL_GPGRID_1.us	28.4
LCG.UKI-SOUTHGRID-RALPP.uk	62.5	LCG.NIPNE.ro	23.0
LCG.IN2P3-CC.fr	60.5	... plus 28 more	

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CPU used by JobType

145 Weeks from Week 52 of 2010 to Week 40 of 2013

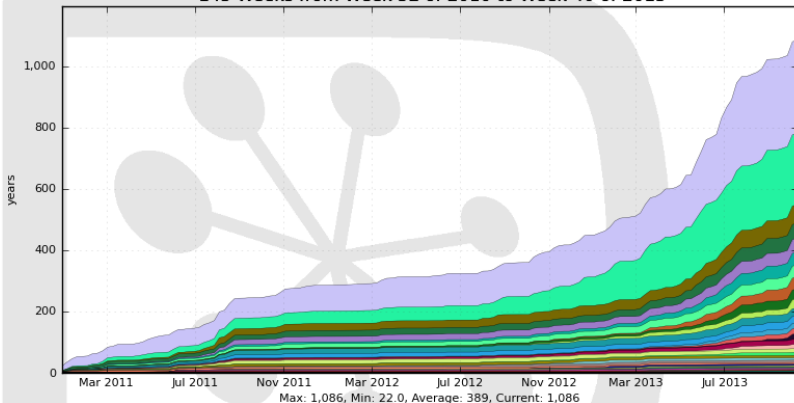


MCRReconstruction_Overlay	994.5	MCGeneration	451.7	Split	0.0
MCSimulation	481.2	MCRReconstruction	123.2	Merge	0.0

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CPU used by Site

145 Weeks from Week 52 of 2010 to Week 40 of 2013

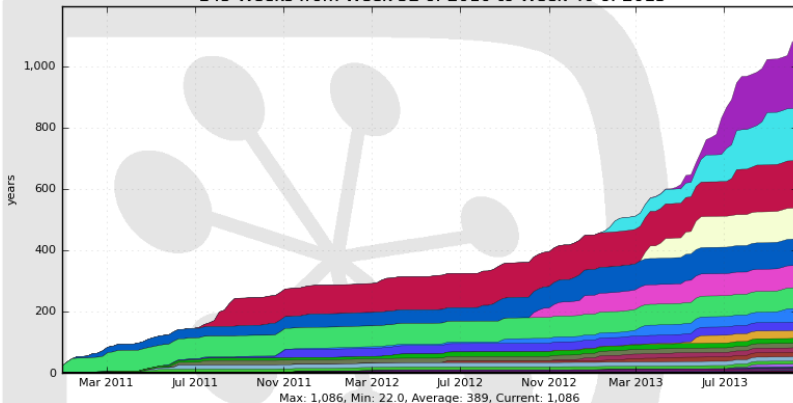


LCG.CERN.ch	305.1	LCG.UKI-SOUTHGRID-RALPP.uk	30.9
LCG.DESY-HH.de	232.9	LCG.UKI-LT2-IC-HEP.uk	24.6
LCG.Manchester.uk	60.4	LCG.GRIF.fr	23.1
LCG.IN2P3-CC.fr	49.0	LCG.NIPNE.ro	18.0
LCG.QMUL.uk	45.3	LCG.LAPP.fr	17.9
LCG.Brunel.uk	41.9	LCG.SCOTGRIDDURHAM.uk	17.6
LCG.IN2P3-IRES.fr	39.4	LCG.UKI-NORTHGRID-LIV-HEP.uk	16.7
LCG.KEK.jp	38.9	LCG.Freiburg.de	14.1
LCG.Bristol.uk	31.7	... plus 28 more	

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CPU used by User

145 Weeks from Week 52 of 2010 to Week 40 of 2013



nalipour	223.0	homer	25.4	cblam	3.1	sailer	0.4
calanchad	170.3	blaising	16.0	jrouene	3.0	voutsina	0.4
jstrube	154.6	lweuste	14.8	igarcia	2.2	aespargi	0.3
amiyamo	101.0	tsuehara	14.8	jnardull	2.1	pschade	0.2
cgrefe	86.5	proloff	14.2	avetisyan	0.8	tprice	0.2
tjunping	72.2	ismiljan	13.7	killenb	0.7	bvormwald	0.2
sposs	67.9	pdouplet	10.4	sredford	0.5	slukic	0.1
alucacit	44.7	jmarshall	9.0	dprieur	0.4	apetr	0.1
amunnich	27.1	esicking	5.8	erik	0.4	...	plus 20 more

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- DIRAC file catalog (DFC) knows about all files produced using ILCDIRAC
- Most ILD DBD files migrated into DFC
- Production files have meta data and ancestry set:
 ⇒ searchable from the web interface and CLI
- Failover mechanism prevents data loss
- Automatic replication between sites with at least two replicas stored by default

Storage	Total	CLIC	ILC	# Files
CERN	1 PB	961 TB	40 TB	5 425 094
DESY	170 TB	0	160 TB	752 949
KEK	150 TB	76 GB	149 TB	644 365
RAL	147 TB	4 TB	89 TB	1 444 776
PNNL	25 TB	0	26 TB	739 509

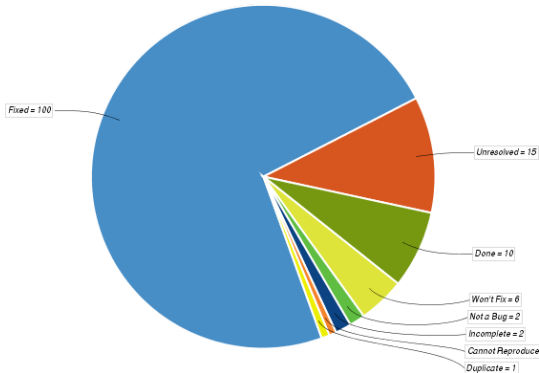
Getting Started

- (For now) ILCDIRAC requires dedicated registration in addition to registration with the ILC VO
- Mailing lists:
 - Registration: ilcdirac-register@cern.ch
 - Questions: ilcdirac-support@cern.ch
- Forum:
<http://forum.linearcollider.org/index.php?t=index&cat=22>
- Documentation:
<http://twiki.cern.ch/twiki/bin/view/CLIC/DiracUsage>

Any new user is welcome!

Bug Tracking

- JIRA is used for bug tracking:
<http://its.cern.ch/jira/browse/ILCDIRAC>
- JIRA tickets can be created directly from the web interface
⇒no account required



Report a Problem				
MinorStatus	ApplicationStatus	Site	JobName	LastUpdate [UTC]
Application	LCSIM CLIC_C...	LCG.DESY-HH.de	00002821_0000...	2013-10-15 16:14
Input Data Res...	Unknown	LCG.IN2P3-CC.fr	sidlo3_Z_uds_...	2013-10-15 15:26
Input Data Res...	Unknown	LCG.Manchest...	sidlo3_Z_uds_...	2013-10-15 15:18
Application	LCSIM CLIC_C...	LCG.DESY-HH.de	00002821_0000...	2013-10-15 15:14
Application	LCSIM CLIC_C...	LCG.DESY-HH.de	00002821_0000...	2013-10-15 14:14
Application	LCSIM CLIC_C...	LCG.DESY-HH.de	00002821_0000...	2013-10-15 14:15
Input Data Res...	Unknown	LCG.IN2P3-CC.fr	00002845_0000...	2013-10-15 16:27

Summary and Outlook

- ILCDIRAC is stable
- Complete GRID solution providing dedicated interfaces for all linear collider applications
- Has proven extremely useful in the mass productions for CLIC and SiD
- ILD is now adopting it as their production system
- Active support from the CERN LCD group

Thanks

Our thanks go to

- the GRID site administrators for fixing issues quickly
- the DIRAC developers for fast replies and discussions
- the users for useful and positive feedback