



DIRAC testbed

Bruno Santeramo – 28/06/2012



Testbed Infrastructure

DIRAC testbed Infrastructure

3 servers: 64bit VM – 2 GB Ram

site	host	gLite	OS	DIRAC	purpose
INFN-T1	bbrbild01.cr.cnaf.infn.it	3.2.0	SL 5.4	v6r1p11	production
	sb-serv04.cr.cnaf.infn.it	3.2.0	SL 5.4	v6r3p17	test
INFN-BARI	gridtest-05.ba.infn.it	3.2.0	SL 5.7	v6r1p11	test

SuperB configured resources

- 23 gLite sites
- 1 OSG site
- 50 Computing Elements
- 19 Storage Elements
- 1 DIRAC File catalog
- 2 FTS server
- 4 FTS channels

DIRAC tested components

Framework: Core system of DIRAC

DataManagement: Storage elements and data management, file catalog, FTS transfers

WorkloadManagement: Jobs management

Accounting: Monitoring functionalities

Configuration: Computing Elements automatic discovery and configuration



Performed test



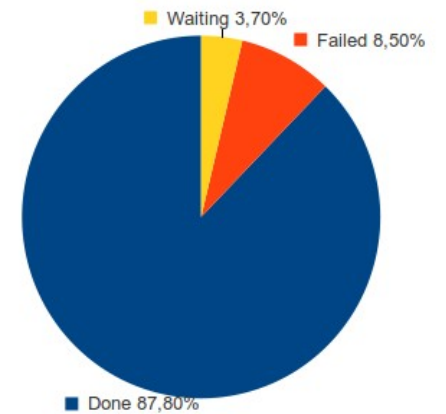
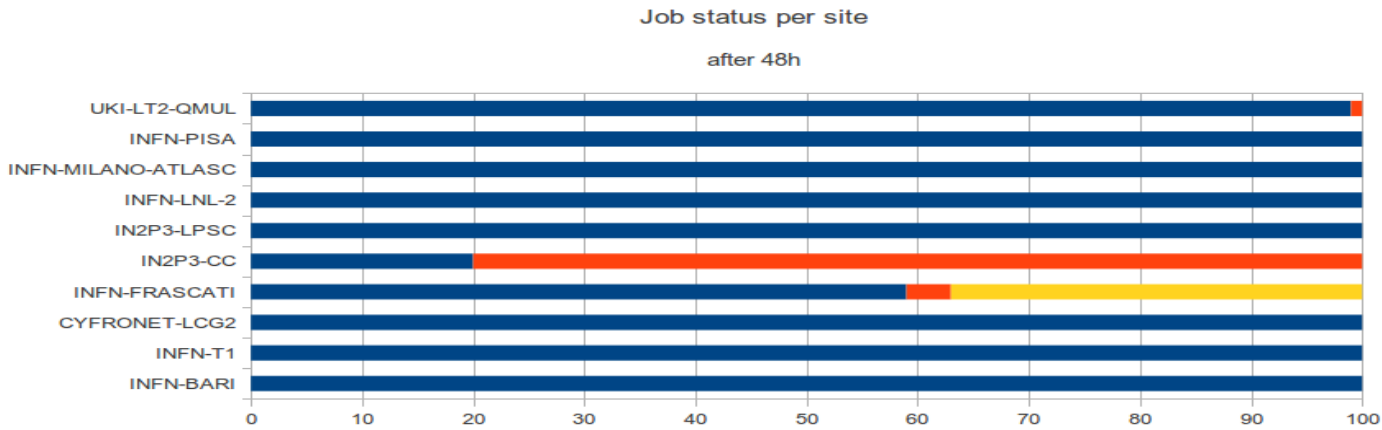
- Dirac File Catalogue (DFC) capabilities
- Mass data transfer via FTS
- Use cases:
 - User analysis
 - MonteCarlo production
 - 10 sites – 100 jobs per site – 10.000 events – about 3 hours per job
 - 5 input files (about 3 GB) on DFC replicated on several SEs
 - Stageout @ CNAF SE – output registered on DFC
 - Stageout failover tested
 - In case of CNAF SE failure, output saved on different SE



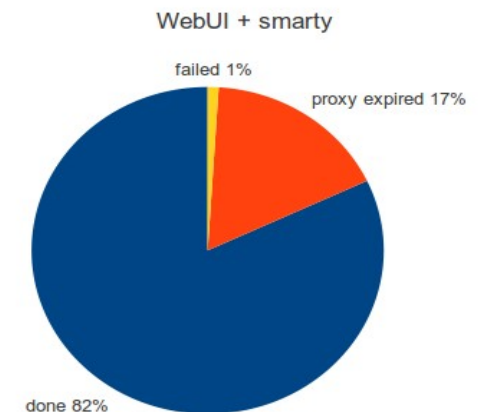
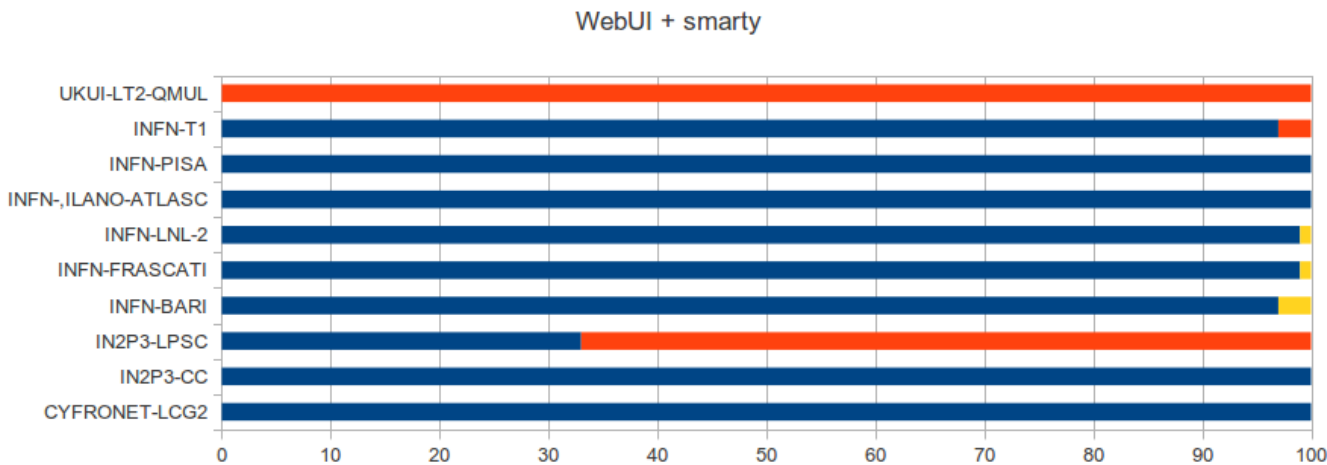
Production test: DIRAC vs WebUI



DIRAC



WebUI





Storage Elements Directory structure



Mapping DIRAC data storage into SEs

- SRM_PATH = <srm_path>

```
srm://storm-fe-superb.cr.cnaf.infn.it:8444/superbvo.org  
srm://storm-fe-superb.cr.cnaf.infn.it:8444/sb_analysis  
srm://storm-se-01.ba.infn.it:8444/superbvo.org
```

- DIRAC_BASE_DIR = /DIRAC/test{test_number}
 - _ test{test_number} subdirectory in order to maintain clean storage area on SE in testing phase
 - _ DIRAC stored data as seen via lcg-ls

```
srm://storm-fe-superb.cr.cnaf.infn.it:8444/superbvo.org/dirac/test{test_number}/superbvo.org  
srm://storm-fe-superb.cr.cnaf.infn.it:8444/sb_analysis/dirac/test{test_number}/superbvo.org  
srm://storm-se-01.ba.infn.it:8444/superbvo.org/DIRAC/test{test_number}/superbvo.org
```

N.B. Only at CNAF “DIRAC” in lower case



Simulation Production use case workplan



Major goal: setup a DIRAC system to fullfill the SuperB simulation production use case requirements

- Install/Configure DIRAC v6r5 in order to exploit the features related to general purpose workload management system flavour, aka non LHCb specific functionalities
 - Revision of v6r3 simulation production configuration
- DIRAC integration with SuperB Bookkeeping database
 - http://mailman.fe.infn.it/superbwiki/index.php/Distributed_Computing/Bookkeeping_DB
 - <https://bbr-serv09.cr.cnaf.infn.it:8443/phpPgAdmin/>
- Job wrapper refactoring
 - stagein, variables, application execution, stageout, sync DFC and LFC
- Extend DIRAC monitoring to cover SuperB specific requirements
 - https://bbr-serv09.cr.cnaf.infn.it:8443/~webui_sbk5/



Testbed evolution



site	host	OS	DIRAC release	purpose
INFN-T1	bbrbild01.cr.cnaf.infn.it	SL 5.4	v6r5	production
	sb-serv04.cr.cnaf.infn.it	SL 5.4	v6r3p18	test
	<new_machine>.cr.cnaf.infn.it	SL 6.2	v6r5	production
INFN-BARI	gridtest-05.ba.infn.it	SL 5.7	v6r5	test

- The new machine will join the testbed within ~15 days
 - Physical server – useful as DIRAC Head Node
 - Systems to install:
 - Framework, DataManagement, WorkloadManagement, Accounting, Configuration, (RequestManagement), (Transformation), (ResourceStatus)



DIRAC testbed wiki page



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Distributed Computing/Dirac testbed

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testbed infrastructure

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host	portal	OS	UI	Dirac	target	notes
bbrbuild01.cr.cnaf.infn.it	[1]	SL 5.4			Production	
sb-serv04.cr.cnaf.infn.it	[2]	SL 5.4		v6r3p17	test	
gridtest-05.ba.infn.it		SL 5.7			test	

[LHCb DIRAC webportal \(useful as example\)](#)

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Useful links



- **DIRAC official site**
_ <http://diracgrid.org/>
- **DIRAC official forum**
_ <https://groups.google.com/forum/?hl=en&fromgroups#!forum/diracgrid-forum>
- **DIRAC repository**
_ <https://github.com/DIRACGrid>
- **DIRAC testbed for SuperB wiki page**
_ http://mailman.fe.infn.it/superbwiki/index.php/Distributed_Computing/Dirac_testbed
- **DIRAC testbed webportals:**
 - _ bbrbuild01.cr.cnaf.infn.it
• <https://bbrbuild01.cr.cnaf.infn.it:8443/DIRAC/>
 - _ sb-serv04.cr.cnaf.infn.it
• <https://sb-serv04.cr.cnaf.infn.it:8443/DIRAC/>
- **Production WebUI**
_ https://bbr-serv09.cr.cnaf.infn.it:8443/~webui_sb5/
- **SuperB resources (google Doc)**
_ <https://docs.google.com/spreadsheets/ccc?key=0AsjxRpEZ2zEIdHU2cjh4YTdrajdYdlNmajdBVGZWLWc#gid=0>
- **SuperB Production Shifter Guide wiki page**
_ http://mailman.fe.infn.it/superbwiki/index.php/Distributed_Computing/Production_Shift_Guide



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BACKUP SLIDES



LHCb DIRAC

Distributed Infrastructure



1 FC combined
both LCG and DFC

4 setup
LHCb-Development
LHCb-Certification
LHCb-Production
LHCb-NewProduction

8 FTSEndpoints

1 LCF replica for each major site (Tier-1 ?)

10 Resource brokers

1 Logging server



Groups



Groups and Role in VO and DIRAC

Group/Role	Type	Description	VO share	DIRAC mapping
/superbvo.org	Standard User	Generic user group	0	sb_user
/superbvo.org/Role=ProductionManager	Production Manager	User role related to MC production management	20	sb_productionmanager
/superbvo.org/Role=SoftwareManager	Software Manager	VO Software administrator	0	sb_softwaremanager
/superbvo.org/Role=Analysis	Standard User	User role related to analysis task	0	sb_analysis
	DIRAC administrator	DIRAC administrator		dirac_admin
	DIRAC pilot job	Useful for DIRAC		sb_pilot

In this testing phase only **sb_user** and **dirac_admin** should be used