



DIRAC testbed

Bruno Santeramo – 12/07/2012



SVN repository for SuperB DIRAC testbed



- Browse code via web
 - <https://sbrepo.pd.infn.it:8911/projects/WebUi/browser/trunk/DIRAC>
- HowTo use SVN for DIRAC related tasks:
 - http://mailman.fe.infn.it/superbwiki/index.php/Dirac_testbed/HowTo/SVN_repo
- Wiki access needs a SuperB membership account
 - SVN acces requires webuiDeveloper LDAP group membership
- Please, subscribe SuperB distributed computing mailing list (superb-distrcomp@lists.infn.it)
 - <https://lists.infn.it/sympa>



DIRAC wiki section



- Howto install DIRAC client (mandatory)
 - http://mailman.fe.infn.it/superbwiki/index.php/Dirac_testbed/HowTo/client_installation
- Using DIRAC client via command line
 - http://mailman.fe.infn.it/superbwiki/index.php/Dirac_testbed/HowTo/client_via_CLI
- Registration in SuperB DIRAC
 - http://mailman.fe.infn.it/superbwiki/index.php/Dirac_testbed/registration
- Submitting jobs
 - http://mailman.fe.infn.it/superbwiki/index.php/Dirac_testbed/HowTo/submitting_jobs
- Basic data management operations
 - http://mailman.fe.infn.it/superbwiki/index.php/Dirac_testbed/HowTo/basic_data_management
- asap will be filled simulation production use case wiki page

**final goal: DIRAC able to fully perform a
simulation production**



DIRAC API



- DIRAC offers a powerful set of API
 - We need a good quality documentation to speed up development
- API documentation
 - <http://diracgrid.org/files/docs/CodeDocumentation/API/index.html>
 - Epydoc generated – updated – maintained by developers



Integrating SBK with DIRAC



- SBK, aka SuperB Bookkeeping DataBase
 - http://mailman.fe.infn.it/superwiki/index.php/Distributed_Computing/Bookkeeping_DB
- How interact with SBK ?
 - SQLAlchemy
 - Psycopg
 - REST interface (mid-term)
- When DIRAC will interact with SBK ?
 - Production definition → write
 - Request creation → write
 - Jobs submission → write
 - Job status record → write
 - Jobs log registration → write



SBK operations



- DIRAC webportal must replicate all WebUI features
- DIRAC/WebUI operations
 - Production creation → write
 - Production data retrieve → read
 - Request creation → write
 - Request data retrieve → read
 - Bulk job creation → write
 - Bulk job submission → read data for Severus
- Severus job wrapper
 - Job status report → write
 - Job Log registration → write



SQLAlchemy proposal



- <http://www.sqlalchemy.org/>
- MIT licensed
- SQLAlchemy
 - object-relational mapper (ORM)
 - *provides the data mapper pattern, where classes can be mapped to the database in open ended, multiple ways*
 - Object model and database schema cleanly decoupled development
- Most elegant and powerful solution
- Easy to use ? To be tested
 - <http://www.rmunnn.com/sqlalchemy-tutorial/tutorial.html>
- N.B. DIRAC Webportal developed in pylons (now pyramid), easy and well documented integration between pylons and SQLAlchemy



Psycopg proposal



- <http://initd.org/psycopg/>
- LGPL3 licensed
 - Other licenses available (<http://initd.org/psycopg/license/>)
- Python DB API 2.0 implementation
- DB data mapping:
 - Tuples → records, lists → array, dictionaries → hstore
- Less powerful than SQLAlchemy
- No object mapping embedded
- Need less learning time?



REST interface proposal



- http://mailman.fe.infn.it/superbwiki/index.php/Distributed_Computing/REST_interface
- GPL licensed
- allows to perform SELECT, INSERT, UPDATE and DELETE queries via http
- DB interaction via curl (python should execute bash command)
- Work in progress
- Development of general REST interface to PostgreSQL

Open task:

- Evaluate SBK $\leftrightarrow$ DIRAC interactin ways:
 - Import SQLAlchemy in DIRAC python environment
 - Import psycopg in DIRAC python environment
 - Create a SuperB specific module to import needed libraries?
- Submit DIRAC job using Severus as wrapper (should fill properly SBK automatically)
- Retreive DIRAC repo of other Vos
 - Should be useful as examples
- Any suggestions ?



BACKUP SLIDES

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)



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_sbk5/
- **SuperB resources (google Doc)**
_ <https://docs.google.com/spreadsheet/cc?key=0AsjxRpEZ2zEIdHU2cjh4YTdrajdYdlNmajdBVGZWLWc#gid=0>
- **SuperB Production Shifter Guide wiki page**
_ http://mailman.fe.infn.it/superbwiki/index.php/Distributed_Computing/Production_Shift_Guide



Contacts



- Bruno Santeramo
 - Email: bruno.santeramo@ba.infn.it
 - Skype: bruno.santeramo
- Giacinto Donvito
 - Email: giacinto.donvito@ba.infn.it
 - Skype: giacinto_it
- Armando Fella
 - Email: armando.fella@pi.infn.it
 - Skype: armando.fella
- Luca Tomassetti
 - Email: luca.tomassetti@fe.infn.it
 - Skype: luca.tomassetti
- Mailing list SuperB distributed computing
 - Email: superb-distrcomp@lists.infn.it



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