Distributed system updates

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Overview

- GANGA as user tool for Grid resources access
- Data distribution, FTS
- CNAF resource upgrade status

GANGA dev. team and support

- Ganga is supported by HEP

-Support for development work

Science & Technology Facilities Council

GridPP
UK Computing for Particle Physics

EGI

-Core team:

- F.Brochu (Cambridge), U.Egede (Imperial), J. Elmsheuser (Munich), K.Harrison (Cambridge), H.C.Lee (ASGC Taipei), D.Liko (CERN), A.Maier (CERN), J.T.Moscicki (CERN), A.Muraru (Bucharest), W.Reece (Imperial), A.Soroko (Oxford), CL.Tan (Birmingham), D.Vanderster (CERN)

UNIVERSITY OF BIRMINGHAM

UNIVERSITY OF CAMBRIDGE

Imperial College London

Ganga introduction

- Please see the slides uploaded from GANGA tutorial by

  Jakub T. Moscicki (KUBA), CERN

- Thanks Kuba!

GANGA test status at CNAF

- GANGA centralized installation in sw area
- Automatic configuration at startup
- Per site template development
- SuperB specific submission script development
- Distributed and local submission test sessions
- Data access on local SE and remote SE in progress

Submission steps e.g.

In [1]: **templates**

Out[1]:

Registry Slice: templates (22 objects)

---

fqid	status	name	subjobs	application	backend
0	template	INFN-T1		Executable	LCG
1	template	GRIF		Executable	LCG
2	template	UKI-LT2-QM		Executable	LCG
3	template	SLAC		Executable	LCG
4	template	UKI-SOUTHG		Executable	LCG
5	template	UKI-SOUTHG		Executable	LCG
6	template	IN2P3-CC		Executable	LCG
7	template	INFN-PISA		Executable	LCG
8	template	GRISU-UNIN		Executable	LCG
9	template	INFN-BARI		Executable	LCG
10	template	INFN-FERRA		Executable	LCG

In [2]: **gridProxy.create()**

Enter GRID pass phrase:

Your identity: /C=IT/O=INFN/OU=Personal Certificate/L=CNAF/CN=Armando Fella

Creating temporary proxy ..... Done

Contacting voms-02.pd.infn.it:15009 [/C=IT/O=INFN/OU=Host/L=Padova/CN=voms-02.pd.infn.it] "superbvo.org" Done

Creating proxy ..... Done

Your proxy is valid until Mon Apr 4 14:49:21 2011

Ganga.GPIDev.Credentials : INFO GridProxy creation/renewal successful.

Out[7]: True

Submission steps e.g. II

In [3]:j = **Job(templates[0](10))**

In [4]:
j.application=Executable(exe=File('/home/SUPERB/afella/gangauser/tt.sh'),args=['argomento1','argomento 2','argomento3'], env={“MYVAR”:”myvalue”})

In [5]**:j.submit()**

Ganga.GPIDev.Lib.Job : INFO submitting job 5

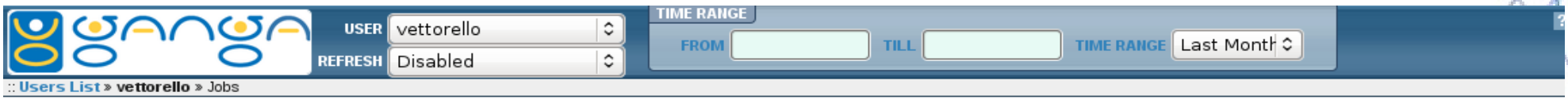
In [6]: **jobs**

Out[6]:

Registry Slice: jobs (6 objects)

fqid	status	name	subjobs	application	backend
0	new			Executable	LCG
1	completed			Executable	LCG
2	completed	INFN-T1	1	Executable	LCG
3	new	INFN-T1		Executable	LCG
4	new	INFN-T1		Executable	LCG
5	submitted	INFN-T1		Executable	LCG

GANGA web monitor



Data | Charts

Search:

Time	User	Id	Subjobs	Status	Application	Backend	Execution Host	Name
2011-03-22 12:35:47	vettorello	100	2	submitted	Executable	LCG		
2011-03-22 12:34:26	vettorello	99	1	submitted	Executable	LCG		
2011-03-22 10:46:45	vettorello	96		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	
2011-03-22 10:39:18	vettorello	97	3	submitted	Executable	LCG		
2011-03-22 10:15:16	vettorello	95		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	
2011-03-19 16:57:58	vettorello	94	3	submitted	Executable	LCG		bulk
2011-03-19 16:44:57	vettorello	93	3	submitted	Executable	LCG		bulk
2011-03-19 16:31:15	vettorello	92	3	submitted	Executable	LCG		bulk
2011-03-05 10:59:50	vettorello	0	1	submitted	Executable	LCG		2010_Favaro - GRIF
2011-03-05 10:57:58	vettorello	0	1	submitted	Executable	LCG		2010_September_test - INFN-CAGLIARI
2011-03-04 18:55:44	vettorello	91		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	Template GRIF
2011-03-04 18:01:45	vettorello	90		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	Template GRIF
2011-02-28 16:46:06	vettorello	86		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	VICTORIA-LCG2-SL4
2011-02-28 15:52:13	vettorello	82		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	VICTORIA-LCG2
2011-02-26 12:36:13	vettorello	79		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN-PISA
2011-02-26 12:35:10	vettorello	78		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN-NAPOLI-ATLAS
2011-02-26 12:14:50	vettorello	76		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	UKI-LT2-QMUL
2011-02-26 12:09:43	vettorello	75		submitted	Executable	LCG	bbr-ui.cr.cnaf.infn.it	GRIF
2011-02-26 11:54:21	vettorello	67		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN PISA
2011-02-26 11:27:42	vettorello	73		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN-LNL-2
2011-02-26 11:02:50	vettorello	71		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN FERRARA
2011-02-26 10:56:47	vettorello	69		submitted	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN FERRARA
2011-02-26 10:32:31	vettorello	66		submitted	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN PISA
2011-02-26 10:12:28	vettorello	65		submitted	Executable	LCG	bbr-ui.cr.cnaf.infn.it	INFN PISA
2011-02-26 02:12:10	vettorello	59		finished	Executable	LCG	bbr-ui.cr.cnaf.infn.it	

Showing 1 to 25 of 143 entries

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New Snapshot

To do, conclusion

- Ganga env and procedure simplification
- Specific data access configuration in SuperB env
- User analysis purpose “Bookkeeping” DB **(proposal)**
  - **Job recovery, resubmission**
  - **Submission profiling**
  - **Monitoring**
- GANGA plugin development for SuperB **(proposal)**
  - Databases interaction for
    - Resource discovery
    - Data access management, etc.

Reference, material

- http://mailman.fe.infn.it/superbwiki/index.php/How_to_Grid/How_to_GANGA#Using_GANGA

  (under construction)

- https://twiki.cern.ch/twiki/bin/view/LHCb/GangaTutorial1
- http://ipython.github.com/ipython-doc/dev/index.html
- http://ganga.web.cern.ch/ganga/

Data distribution, online

- Production job transfer the output where it is expected to be and a replica at CNAF
  - **Need a pre production data distribution plan (to discuss)**
  - **Need to identify the minimum consistent set of data can be tagged as “to be transferred to QMUL”**
    - **E.g.: the FastSim request?**
      - **--> Definition of a target site per request**
  - **Under the carpet: SuperB data structure definition**
    - **Discussion on Computing planning session paralle 5 on Wednesday from 9:00 to 11:00**

Data distribution, off line

- Mass data movement management via FTS
- Superbvo.org has been enabled at CNAF end point FTS
- CNAF – IN2P3 bidirectional channels are under configuration
- Ready to start with transfer test in 10 days

- http://egee-jra1-dm.web.cern.ch/egee-jra1-dm/FTS/

CNAF FTS monitor I

Filter jobs submitted in the last 1 h for VO All Show failing channels only

Jobs statistics (submitted last 1 h)

CHANNEL	Ready	Active	Finished	FinishedDirty	Failed	Canceled
TOTAL	15		68		25	
BNL-CNAF			3			
BUDAPEST-CNAF		1				
CNAF-BUDAPEST			1			
CNAF-PISA			1			
CNAF-ROMA1CMS			1			
CNAF-STAR			12		9	
FNAL-CNAF			1			
FZK-CNAF			1			
IN2P3-CNAF			2			
LEGNARO-CNAF			1			
LNF-CNAF			9			
RAL-CNAF			4			
ROMA1CMS-CNAF			1			
SARA-CNAF		2			1	
STAR-BARI		3	2		2	
STAR-BUDAPEST			13		3	
STAR-CNAF		3	11		2	
STAR-LEGNARO		1			3	
STAR-MILANOATLASC			1			
STAR-PISA		1	1		1	
STAR-ROMA1CMS		2			4	
TAIWAN-CNAF		1			1	
TRIUMF-CNAF			1			

Alerts

OK	Warning	Error
Agent virgo is Stopped		
Agent pamela is Stopped		
All channels are 'Active'		
CNAF-STAR efficiency: 60 %		
PISA-CNAF efficiency: 0 %		
STAR-BARI efficiency: 60 %		
STAR-LEGNARO efficiency: 25 %		
STAR-PISA efficiency: 33 %		
STAR-ROMA1CMS efficiency: 0 %		
STAR-ZAWITSCORE efficiency: 46 %		
Request error on BDII		

[Home | Channels | Agents | Channels audit | About]

CNAF FTS monitor II

Filter by channel: IN2P3-CNAF for VO All Submit Query

Jobs | Transfers stats | Errors stats | Configuration

Current jobs

JOB ID	SUBMIT TIME	JOB STATE	VO NAME	SOURCE SE	DEST SE	STORAGE CLASS
10889f87-5c46-11e0-9278-e4a46766a1c4	01/04/2011 11:54:41 +02:00	Active	cms	ccsrm.in2p3.fr	storm-fe-cms.cr.cnaf.infn.it	

Ended jobs (finished in the last 24 hours)

JOB ID	SUBMIT TIME	JOB STATE	VO NAME	SOURCE SE	DEST SE	STORAGE CLASS
1aa7bf35-5c43-11e0-af8b-c8a6cec90c03	01/04/2011 11:33:30 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK
bae6a7a1-5c42-11e0-af8b-c8a6cec90c03	01/04/2011 11:30:49 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK
3744823f-5c3a-11e0-9278-e4a46766a1c4	01/04/2011 10:29:52 +02:00	Finished	cms	ccsrm.in2p3.fr	storm-fe-cms.cr.cnaf.infn.it	
de188e68-5c38-11e0-af8b-c8a6cec90c03	01/04/2011 10:20:13 +02:00	Finished	lhcb	ccsrm.in2p3.fr	storm-fe-lhcb.cr.cnaf.infn.it	LHCb_DST
d48d3906-5c32-11e0-af8b-c8a6cec90c03	01/04/2011 09:37:00 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK
45d7dded-5c32-11e0-af8b-c8a6cec90c03	01/04/2011 09:33:01 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK
• **SUBMIT_TIME:** 01/04/2011 09:33:01 +02:00 • **JOB_FINISHED:** 01/04/2011 09:33:41 +02:00 • **USER_DN:** /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=ddmadmin/CN=531497/CN=Robot: ATLAS Data Management • **STORAGE_CLASS:** ATLASDATADISK						
46783c9e-5c32-11e0-af8b-c8a6cec90c03	01/04/2011 09:33:02 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK
6c88390a-5c2f-11e0-af8b-c8a6cec90c03	01/04/2011 09:12:37 +02:00	Finished	cms	ccsrm.in2p3.fr	storm-fe-cms.cr.cnaf.infn.it	
1dfb362b-5c26-11e0-9278-e4a46766a1c4	01/04/2011 08:06:00 +02:00	Finished	cms	ccsrm.in2p3.fr	storm-fe-cms.cr.cnaf.infn.it	
bebfd82a-5c1f-11e0-834a-8da84b281046	01/04/2011 07:20:23 +02:00	Finished	lhcb	ccsrm.in2p3.fr	storm-fe-lhcb.cr.cnaf.infn.it	LHCb_DST
2077bdf8-5c1d-11e0-af8b-c8a6cec90c03	01/04/2011 07:01:38 +02:00	Finished	lhcb	ccsrm.in2p3.fr	storm-fe-lhcb.cr.cnaf.infn.it	LHCb_MC_M-DST
b2537883-5c18-11e0-834a-8da84b281046	01/04/2011 06:29:56 +02:00	Finished	cms	ccsrm.in2p3.fr	storm-fe-cms.cr.cnaf.infn.it	
bd956d15-5c15-11e0-9278-e4a46766a1c4	01/04/2011 06:08:46 +02:00	Finished	lhcb	ccsrm.in2p3.fr	storm-fe-lhcb.cr.cnaf.infn.it	LHCb_MC_M-DST
78b43783-5c15-11e0-9278-e4a46766a1c4	01/04/2011 06:06:51 +02:00	Finished	lhcb	ccsrm.in2p3.fr	storm-fe-lhcb.cr.cnaf.infn.it	LHCb_MC_M-DST
038608fc-5c11-11e0-9278-e4a46766a1c4	01/04/2011 05:34:56 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK
	01/04/2011 05:32:22 +02:00	Finished	atlas	ccsrm.in2p3.fr	storm-fe.cr.cnaf.infn.it	ATLASDATADISK

CNAF operations

- SuperB available User Interfaces (LSF/Grid), SL5 x86_64
  - **bbr-serv08, bbr-ui --> ui01-spb, ui02-spb (short downtime in April)**
- Enforcing reliability actions for production services:
  - **Alarm sensors enabled for MySQL and Apache services**
  - **Auto restart mechanism of critical services activated**
  - **TSM backup for bookkeeping DB activated**
- Production area management
  - **Cleaning, ownership standard redefinition, other - In progress**
- CNAF anticipated 16TB/50TB added to gpfs_superb
- CNAF FTS (File Transfer Service) is configured at CNAF, the channel CNAF – IN2P3-CC is available.

CNAF operations II

- Downtime operations completed
  - **Two accounts for two experiments**
    - **babar login: [<username>-bbr] (new password sent via email)**
    - **superb login: [<username>] (new home area, bash)**
      - **SuperB home dirs are no more exported on WN (no impact on work capabilities)**
  - **New user areas**
    - **OLD /storage/gpfs_babar6/sb/<users>**
    - **NEW /storage/gpfs_superb/users/<users>**
  - **LSF and Grid submission are now available**
  - **Superb queues still available to both experiments**
- **The general CNAF operation plan aimed to move smoothly the experiment setup in a fully Grid compliant scenario**

Site setup status

- 18 sites are enabled for SuperB production nowadays
- The following are the information about the three new entries:
  - **Thanks to the site contacts for the valuable work**
  - **Ohio Supercomputer Center (OSC), http://www.osc.edu/**
    - **Contact: Rolf Andreassen**
    - **Status: Testing**
  - **INFN-Milano**
    - **Contact: tbd**
    - **Status: Start configuration works**
  - **Oxford University**
    - **Contact: Pete Gronbech, Kashif Mohammad**
    - **Status: Completed**
  - **Caltech Computing Center**
    - **Contact: Michael Thomas**
    - **Status: Completed**

Summary

- We propose GANGA as framework for users access to Grid resources
  - **Within April we will be able to setup a first GANGA system at CNAF to be tested by a small user group properly trained**
- We need to discuss data distribution policy
  - **We can distribute production files during production itself, can be ready within 30 days**
  - **We can transfer data offline via FTS can be ready for test within 20 days**
- SuperB resources at CNAF are now Grid work flow compliant
- **We can use the time in Computing Planning session to discuss the subjects, Wednesday the 6th, 9:00 – 11:00**