Enabling Grids for E-science in Europe

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Workload management system testing : - what exists - further testing planned

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- Some initial general remarks
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- Plans to test WMS components in future
  - What to test further
  - Tools

some initial remarks

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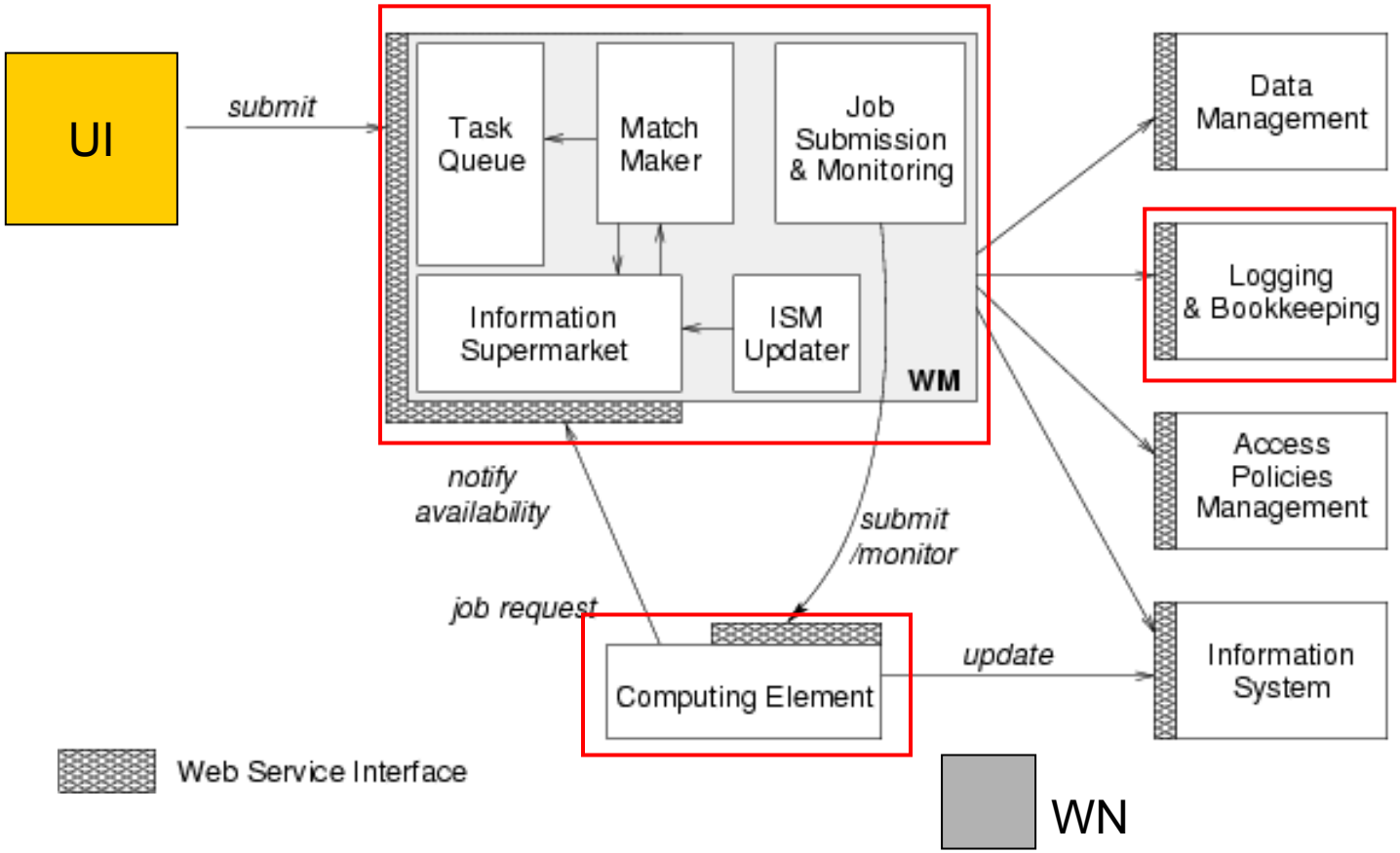
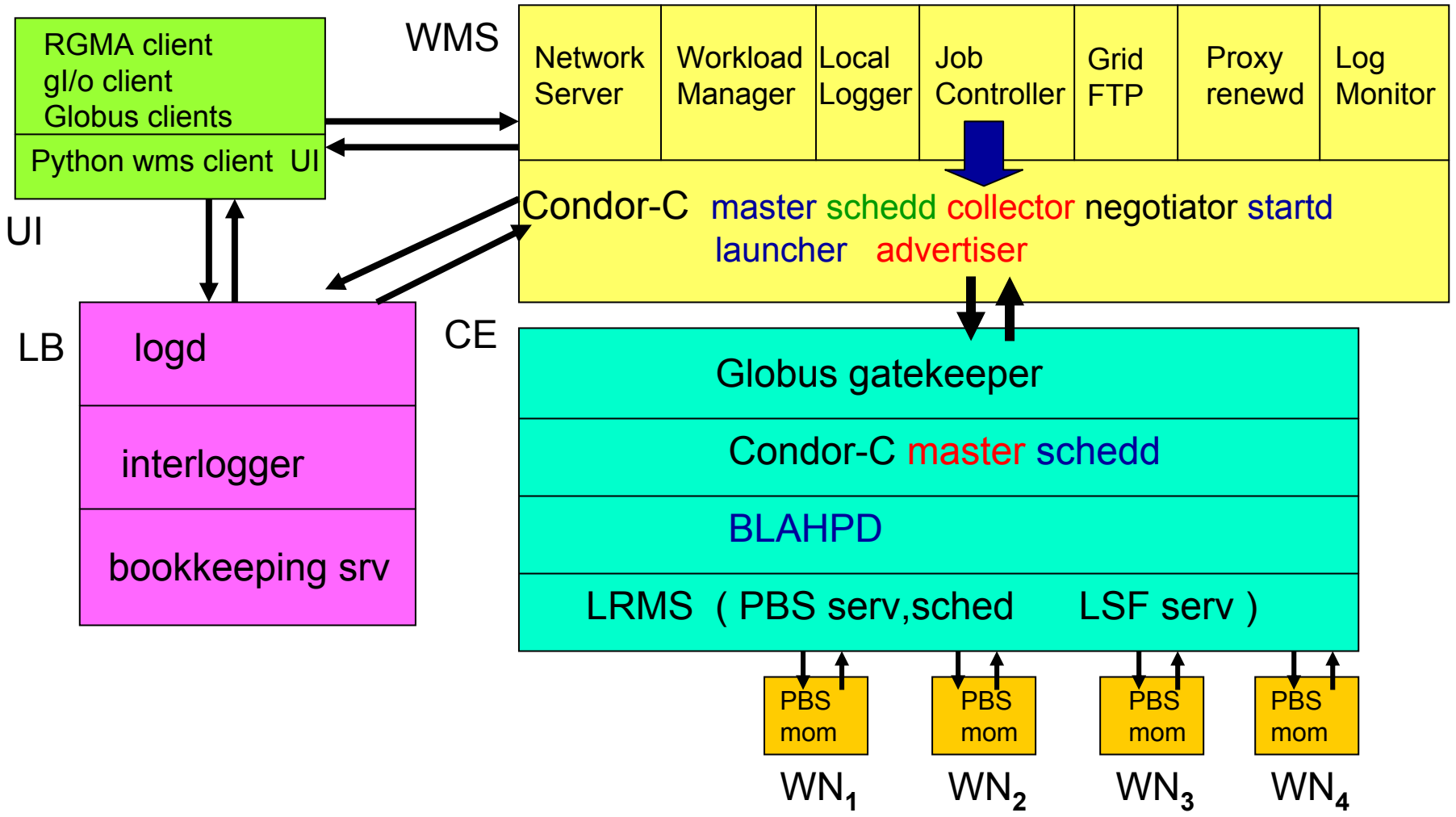
- Initially (*2 months ago*) following « webwritings » instructions
  - tarballs, modified executables from spread sources, cut & paste ad-hoc procedures…. [i.e. the *real original prototype taste*]
  - non standard paths and locations
- Now :
  - S/W versioning OK
  - build system fully in place
  - pure RPMs installations
  - « 2 click away » installations for a given Iteam build:
    - ./glite-ce-install.sh
      - Downloads and installs all required RPMs
    - $GLITE_LOCATION/etc/<glite-service>/config/scripts/glite-ce-config
      - Configures all services on the machine and starts daemons
  - Still a few minor points by hand – config scripts still need improvement

WMS functional components



Workload software components



WMS components tested so far

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- CE - installed,configured,tested with release I20042029
- CEmon - not yet tested.
- WMS - installed,configured,tested with release I20042029
- LB - installed,configured,tested with release I20042029
- WN - although an LSF recipe exists, tested only as PBS client.
  LSF via Quattor ASAP (already available on the prototype tb)

Documentation

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- **No official gLite documentation available yet**
- Some recipes available on the web, referring to manual installation available from JRA-1 WMS website
- Updated doc on all supported classAds /JDL is missing yes (or just 1:1 with edg? -)
- Some first documentation on API recently made available

Computing Element

- Documentation
  - The LSF based web recipe available at **http://egee-jra1-wm.mi.infn.it/egee-jra1-wm/lsfnode_install.shtml** requires some updates, PBS and Torque not available
- Installation and configuration
  - Post-installation script available – needs quite some refinement
- Bugs and Issues
  - LCAS voms plugins related problems [5454] - SOLVED
    - Gridsite 1.0.2 recompiled (X509_supported_extension unresolved)
    - Gridsite 1.0.2 need to be rebuild using the globus libs instead of -I /usr/include/openssl
  - LCMAPs / LCMAPs directories for plugins - SOLVED
- Concerns:
  - Gridsite 1.0.2 support or newer Gridsite (1.1.x) – if not already solved

Workload Management System node

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- Bugs and Issues
  - Bugs in old blahph versions : SOLVED
  - Wrong boost library dynamically linked – (wm , ns daemons not starting) [bug # 5364] SOLVED
  - Cannot locate condor_schedd : PENDING [bug 5525]
- Concerns and Problems

- The Condor problem is currently a serious one, preventing further functional tests. contact to developers activated
- Some instability in the network server **observed on the prototype testbed**

“Houston, we have a small problem here..”

- [lxb1409] ~/prototipo > glite-job-status https://lxb1410.cern.ch:9000/5Bl4goIOG4YwpZKzs-qvGQ

```
**************************************************************
BOOKKEEPING INFORMATION:

Status info for the Job :
https://lxb1410.cern.ch:9000/5Bl4goIOG4YwpZKzs-qvGQ
Current Status:     Done (Failed)
Exit code:          0
Status Reason:      Got a job held event, reason: Error locating schedd
83d10d60de59ca9a5d2e344c2b2978e5@lxb1422.cern.ch
Destination:        lxb1422.cern.ch:2119/blah-pbs-short
Submitted:          Thu Nov 11 00:18:12 2004 CEST
**************************************************************
```

LB server, Worker Node

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- Documentation
  - Manual install guide available for LB server
  - No doc on how to install and configure Worker Nodes
- Bugs and Issues
  - The bkserver start script is missing “&” – shell gets blocked
  - Careful working PBS configuration is quite painful and demanding

First basic Test Cases

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- Defined first 9 basic tests for the Workload System
  - Valid proxy
  - Hello World
  - 100 simple jobs without resubmission
  - 100 simple jobs with resubmission
  - Very large input / output data files (2 jobs with a 1 GB file in input/output sandbox – compute checksums and compare)
  - 100 long lasting jobs , no resubmission, to check myproxy's behaviour
  - Basic matchmaking : require a specific input file
  - Basic matchmaking : require a specific RunTimeEnvironment
  - Structured matchmaking : use many different classads matching at least on CE and InputData set

Many existing Test Code sources

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- LCG certification test suite (Gilbert Grodidier & LCG certification team)
  - General LCG certification test suite
  - **http://grid-deployment.web.cern.ch/grid-deployment/tstg/certification/040225-040045/**
- EDG WP8 perl suite (Jean-Jacques Blaising)
  - Extracts info from the InfoSys on grid structure
  - Submits jobs simulating a generic HEP application and retrieves output
- Many different existing scripts inherited from the EDG era / WP8
  - Bash
  - Python
  - Perl
- EDG site certification test suite
- INFN EDG TSTG install and config test suite
- EDG TSTG test suite

LCG certification and testing suite

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- Very comprehensive Perl OO test suite implemented for the LCG certification
  - Ranging from configuration tests, functionality, stress tests
  - Very effectively completed by a presentation logic to display all results on the web in a "click-and-get-further-information" approach
  - First basic tests already ported to GLITE and executed
- Example : testing the gatekeeper on the CE:
  - > cd /afs/cern.ch/user/g/grodid/public/grid/LCG
  - > source /afs/infn.it/project/datamat/ui/setup_ui.csh
  - > grid-proxy-init -valid 100:0
  - > setenv CRON_JOB_OLD yes
  - > opt/edg/bin/MainScript --forcingVO=egee --TList=DNS
  - > opt/edg/bin/MainScript --forcingVO=egee --TList=CEGate

G Deployment - Mozilla {Build ID: 2004042109}

Edit View Go Bookmarks Tools Window Help Debug QA

grodid 041007-000151 -- TSTG Functional Tests

Achieved from: lxb1751.cern.ch with: MainScript.in 1.25 Tags: v0_1_14 v1_3_32

Testing Group (TSTG)
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. Tests

Deployment
e

Test Overall Duration: 25816 sec.
TarBall available in file: lxb1751.cern.ch:/tmp/grodid/041007-000151_RTest/tarex.tgz
Results available at URL: http://grid-deployment.web.cern.ch/grid-deployment/tstg/validation/041007-000151_RTest
Main Log File available in: HERE

Row Number	Title	Detailed Results	Main Log File	Detailed Documentation	Test Duration
1	DNS	01_DNS-ReverseDNS	[OK]	Description	0 sec
2	PXRenew	02_ProxyRenewal	[OK]	Description	2493 sec
3	US_script	03_UserStorm	[OK]	Description	331 sec
4	US_jdl	04_UserStorm	[OK]	Description	329 sec
5	FTP	05_GridFTP	[OK]	Description	387 sec
6	RMS_All	06_RMSetupTest	[OK]	Description	1416 sec
7	RMS_lcgcr	07_RMSetupTest	[OK]	Description	72 sec
8	CEGate	08_GlobusGatekeeper	[FAIL]	Description	983 sec
9	CECycle	09_CECycle	[OK]	Description	436 sec
10	RB_val	10_PileStorm	[OK]	Description	1167 sec
11	CalStormR3	11_Sleep	[OK]	Description	922 sec
12	CalStormR0	12_Sleep	[OK]	Description	981 sec
13	JS_sleep	13_JobStorm	[OK]	Description	631 sec
14	JS_multi	14_JobStorm	[OK]	Description	594 sec
15	CStorm	15_CopyStorm	[OK]	Description	430 sec
16	GS_All	16_GfalStorm	[OK]	Description	1220 sec
17	GS_Castor	17_GfalStorm	[OK]	Description	527 sec
18	KStorm	18_CheckStorm	[OK]	Description	581 sec
19	DS_All	19_DataStorm	[OK]	Description	1458 sec
20	DS_lcgcr	20_DataStorm	[OK]	Description	878 sec
21	DS_Castor	21_DataStorm	[OK]	Description	571 sec

Further Tests to be implemented

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- Input data files on multiple SEs
- Stress Tests
- Very structured match making

- Full coverage of main bugs regression tests

- Further level of functionality :
  - DAGs and dependencies,
  - MPI & interactive jobs,
  - checkpointing,
  - GUI (when provided)

- Exploit different scheduling policies
  - Make clear how to proceed to test it : user side / wms configuration

Next steps

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- LSF deployment in the testing testbed
  - Currently only have pbs
- Complete Integration of the missing components
  - InfoSys : RGMA , WMS Purchaser, CEmon
  - DM : Brokerinfo-like functionality
  - GAS developments (unified access point) and accessing services through it
- Further testing and refinement of post-installation scripts with iTeam

Most relevant bugs to be closed asap

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- Condor-c [5525]
  - Most jobs are currently aborted
- Gridsite 1.0.2 [5454]
  - A quick and dirty workaround hack exist.
    This problem should anyhow by now already have been solved in CV
    It needs to be tested.
- Missing bits and pieces of code, provided by no RPM [5099]
  - rpm -q --whatprovides /opt/glite/globus-conf/grid-functions
    - file /opt/glite/globus-conf/grid-functions is not owned by any package

Conclusions

- The workload system as a whole is getting there
- Some workload components still affected by critical pending bugs
- The development of a comprehensive integrated test suite on WMS is in late : systematic, comprehensive development and re-writing/porting of test suites just started.
- feedback provided in many forms both to the developers and the iTEAM
- Also the adoption of Quattor will ease the deployment of the releases on the testing testbed