



System Monitoring for LHCb

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on behalf of the DIRAC team*





Monitoring in DIRAC/LHCb



Monitoring (Production)



Basic job parameters

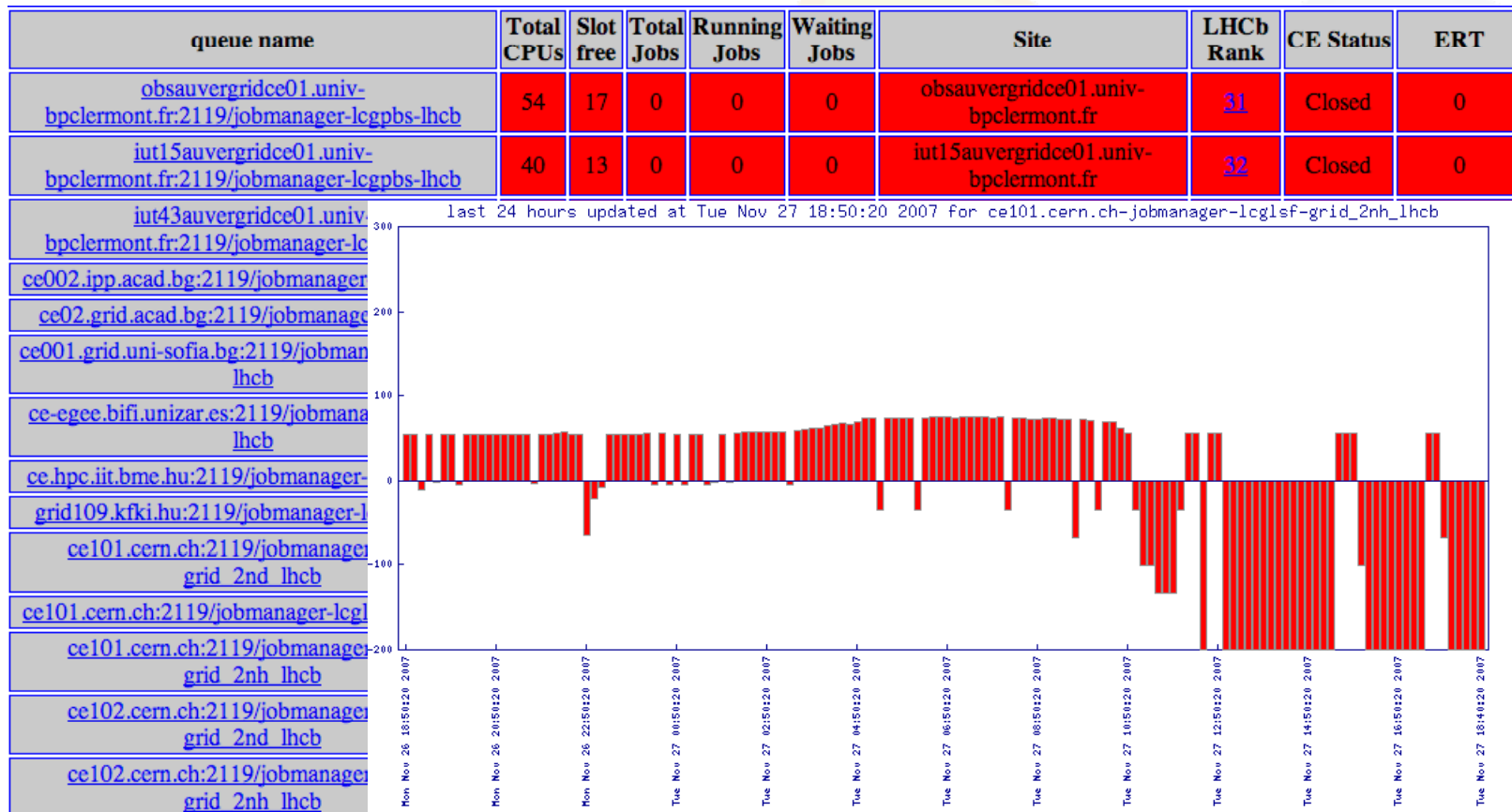
JobId	Status	Parameter Name	Value
1933780	out		
1933781	out		
1933782	out	ApplicationStatus	Job finished successfully
1933784	out		
1933785	out		
1933786	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0002/00001407_00027385_4.digi 1:13:00
1933787	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0001/00001407_00014800_4.digi 1:26:21
1933788	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0002/00001407_00028588_4.digi 1:09:40
1933789	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0000/00001407_00002615_4.digi 1:25:22
1933790	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0001/00001407_00015929_4.digi 0:44:59
1933791	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0002/00001407_00028246_4.digi 1:33:55
1933792	out		PIC /lhcb/production/DC06/phys-v3-lumi2/00001856/RDST/0000/00001856_00000041_1.rdst 2:05:39
1933793	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0001/00001407_00011386_4.digi 1:36:56
1933794	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0001/00001407_00011360_4.digi 1:05:40
1933795	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0000/00001407_00009065_4.digi 1:35:55
1933796	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0002/00001407_00025457_4.digi 1:57:10
1933797	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0001/00001407_00015898_4.digi 2:02:09
1933798	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0002/00001407_00025241_4.digi 1:30:41
1933799	out		PIC /lhcb/production/DC06/v1-lumi2/00001407/DIGI/0000/00001407_00009587_4.digi 0:56:39
1933820	out	Step 1 CPUTime	7149.66
1933821	out	Step 1 Evts	-1
1933822	out	Step 1 ExecTime	7592.15219283
1933823	out	Step 1 InputData	1439988446
1933824	out	Step 1 OutputData	5808250
1933825	out	Step 1 Status	Done
		Step 1 Type	DaVinci
		Step 2 CPUTime	11638.59
		Step 2 Evts	2415
		Step 2 ExecTime	12442.1985049
		Step 2 InputData	3712970
		Step 2 OutputData	1464989362
		Step 2 Status	Done
		Step 2 Type	Brunel





Monitoring of Grid services

- View of sites available to LHCb
 - <http://cern.ch/santinel/cgi-bin/lcg-voview>
 - Web page reporting:
 - Job statistics, LHCb ranking (and past day history)





- Run daily, but frequency could increase
 - Regular jobs submitted through DIRAC
 - Jobs run as /Role=lcgadmin (sam account)

<input checked="" type="checkbox"/>	NA	no status available	0		
<input checked="" type="checkbox"/>	OK	normal status	55	LHCb CE-lhcb-install	LHCb SAM CE-lhcb-install
<input checked="" type="checkbox"/>	INFO	useful information	2	LHCb CE-lhcb-job-Boole	LHCb SAM CE-lhcb-job-Boole
<input checked="" type="checkbox"/>	NOTE	important information	0		

CI *****
 CI * SAM / DIRAC Job OS Test v1.0 *
 CI *****

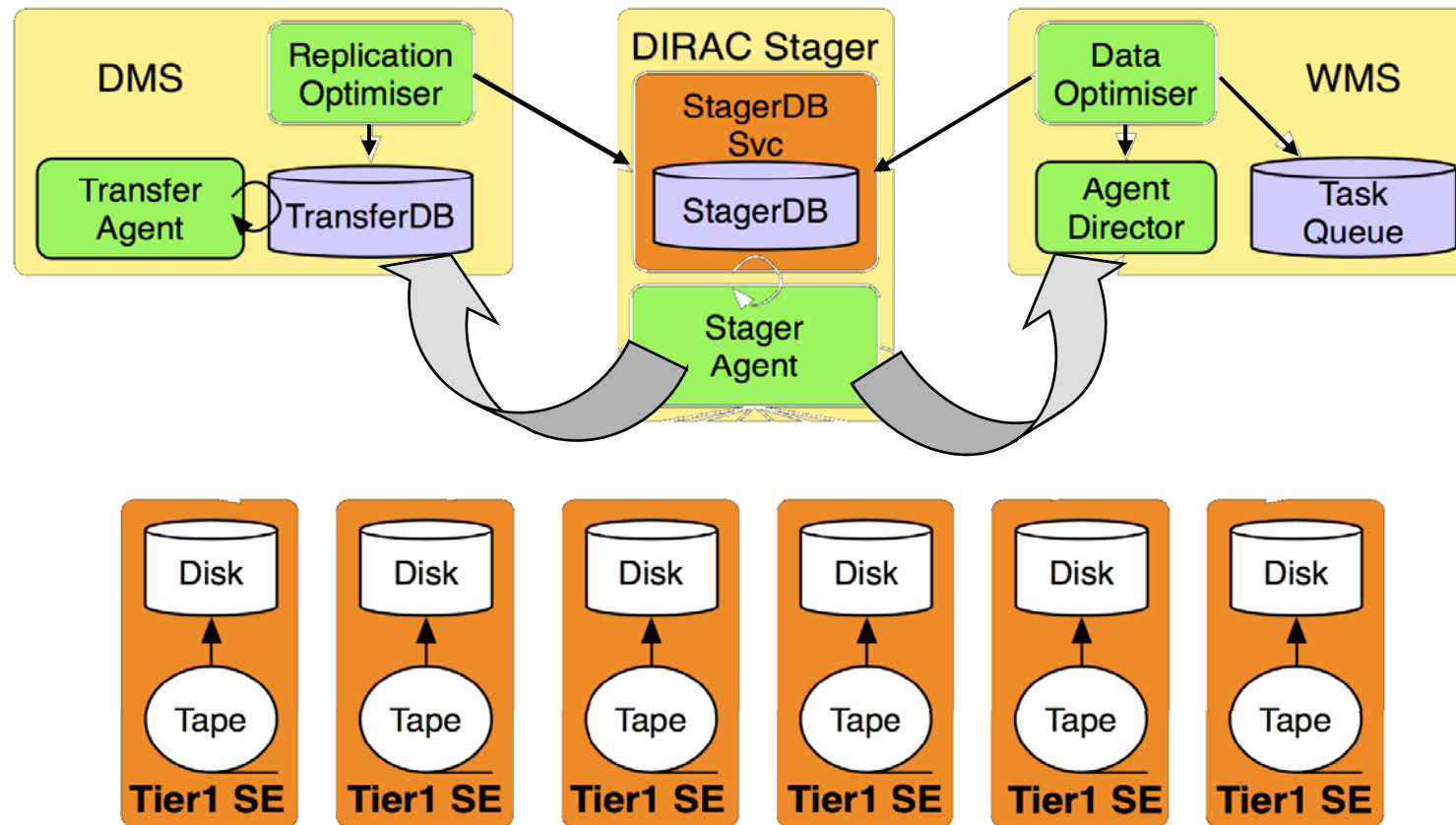
Voms proxy info: subject : /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=castella/CN=525694/CN=Gianluca Castellani/CN=proxy
 Sort b issuer : /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=castella/CN=525694/CN=Gianluca Castellani/CN=proxy/CN=proxy
 identity : /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=castella/CN=525694/CN=Gianluca Castellani/CN=proxy/CN=proxy
 type : limited proxy
 strength : 512 bits
 path : /tmp/globus-tmp.lxb8288.6312.0
 timeleft : 114:23:38
 === VO lhcb extension information ===
 VO : lhcb
 subject : /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=castella/CN=525694/CN=Gianluca Castellani
 issuer : /DC=ch/DC=cern/OU=computers/CN=lcg-voms.cern.ch
 attribute : /lhcb/Role=lcgadmin/Capability=NULL
 attribute : /lhcb/Role=NULL/Capability=NULL
 timeleft : 114:23:38

No	RegionName	
1	SouthEasternEurope	B
2	SouthEasternEurope	BG
3	CentralEurope	B
4	CentralEurope	BU
5	CERN	CE
6	CERN	CE
7	CERN	CE
8	CERN	CE
9	CERN	CE
10	CERN	CE
11	CERN	CE
12	CERN	CERN-PROD
13	CERN	CERN-PROD
14	CERN	CERN-PROD
15	CERN	CERN-PROD





Data Management Monitoring



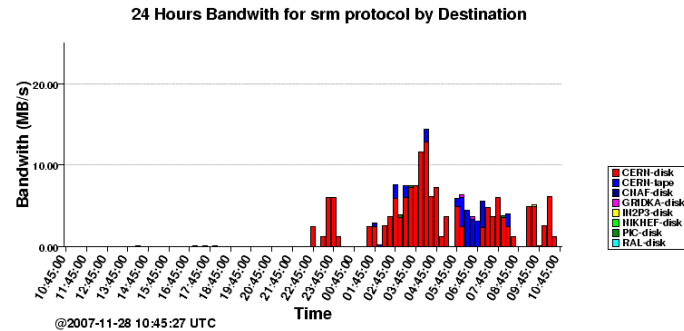
■ DIRAC stager

- handling all T1D0 pre-staging before submitting the jobs
- reporting errors (unavailable files) to IntegrityDB
- logging statistics on staging performance



Transfer monitoring

- Transfer rates, success, failures monitoring



- Transfer errors analysis

LHCb THCP LHCb DIRAC Transferlogs DIRAC

CERN CNAF GRIDKA IN2P3 NIKHEF PIC RAL

Summary of Transfer Errors for Today (2007-11-28)

Error Count	Error
7060	Total
1662	lcg_cp: No such file or directory
1653	Destination URL for copy is not retrieved .n.nError: lcg_cp: No such file or directory
958	Failed to get the source file size
685	Timeout: [1-9]
163	Failed to register in catalog LFC
107	File already exists
38	Destination URL for copy is not retrieved .n.nError: SE (SRM) service not found for host :
26	lcg_cp: Connection timed out
8	SRM Authorization failed
6	Destination URL for copy is not retrieved .n.nError: CGSI-gSOAP: Could not open connection ! .nlcg_cp: Connection timed out
6	CGSI-gSOAP: GSS Major Status: General failure
4	Destination URL for copy is not retrieved .n.nError: CGSI-gSOAP: Could not open connection ! .nlcg_cp: Connection refused
3	user has no permission to write into path
3	a system call failed (Connection timed out)
2	CGSI-gSOAP: Error reading token data: Success
1	lcg_cp: Protocol not supported
1	Destination URL for copy is not retrieved .*Failed : can not prepare to put
1	Destination URL for copy is not retrieved .n.nError: CGSI-gSOAP: Error reading token data: Connection reset by peer .n.nlcg_cp: Connection reset by peer
1	CGSI-gSOAP: Error reading token data: Connection reset by peer





- Propose to implement SAM reporting agents based on the IntegrityDB and the DIRAC syslog
 - reporting on performance of
 - SRM endpoint, file staging, missing files etc...
 - from: specific tests (SRM, FTS), running jobs, running transfers, stager...
 - some of these tests can be made critical (e.g. timeout on srmGet or excessive response time for srmGetMetaData)
 - additionally, a web portal will be made available to sites and LHCb production team in order to browse problems related to their site when details are needed
 - automatically detect faulty sites or SEs
 - possibility to temporarily ban them from the system
 - submit GGUS tickets or ring alarms
 - tests would still run in order to determine when they become available again
 - Status: being developed, in production for CCRC'08 February



- Many sources of information
 - DIRAC monitoring, dashboard, CE ranking...
 - Need to define procedures on how to use these tools
 - similar to an online controls and diagnosis system

- LHCb was pioneering the usage of VO-specific SAM job
 - We need now to improve on the reliability of the information
 - possibly increase the frequency
 - understand better reasons of failures
 - correlate with low availability of sites
 - Next step: add SAM sensors from all other available information
 - jobs, transfers, specific cron jobs