HEPCG Work Package 3
Interactive Analysis

Status and Plans

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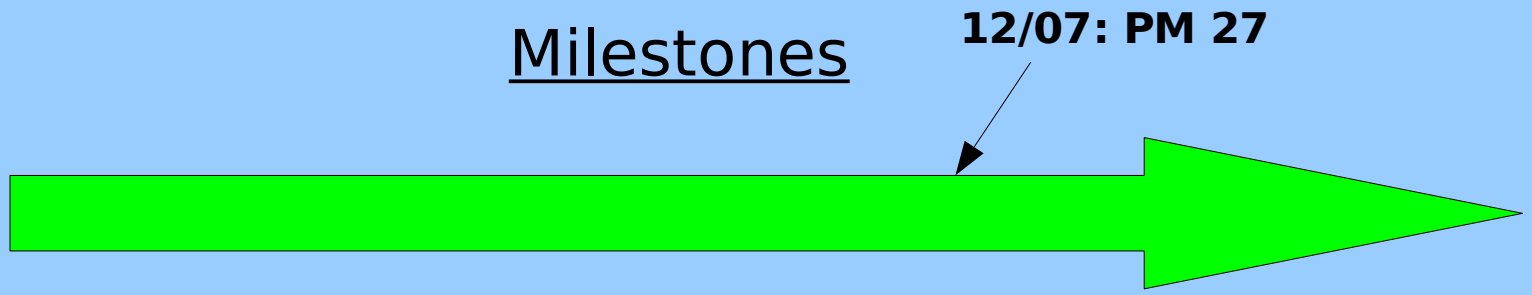
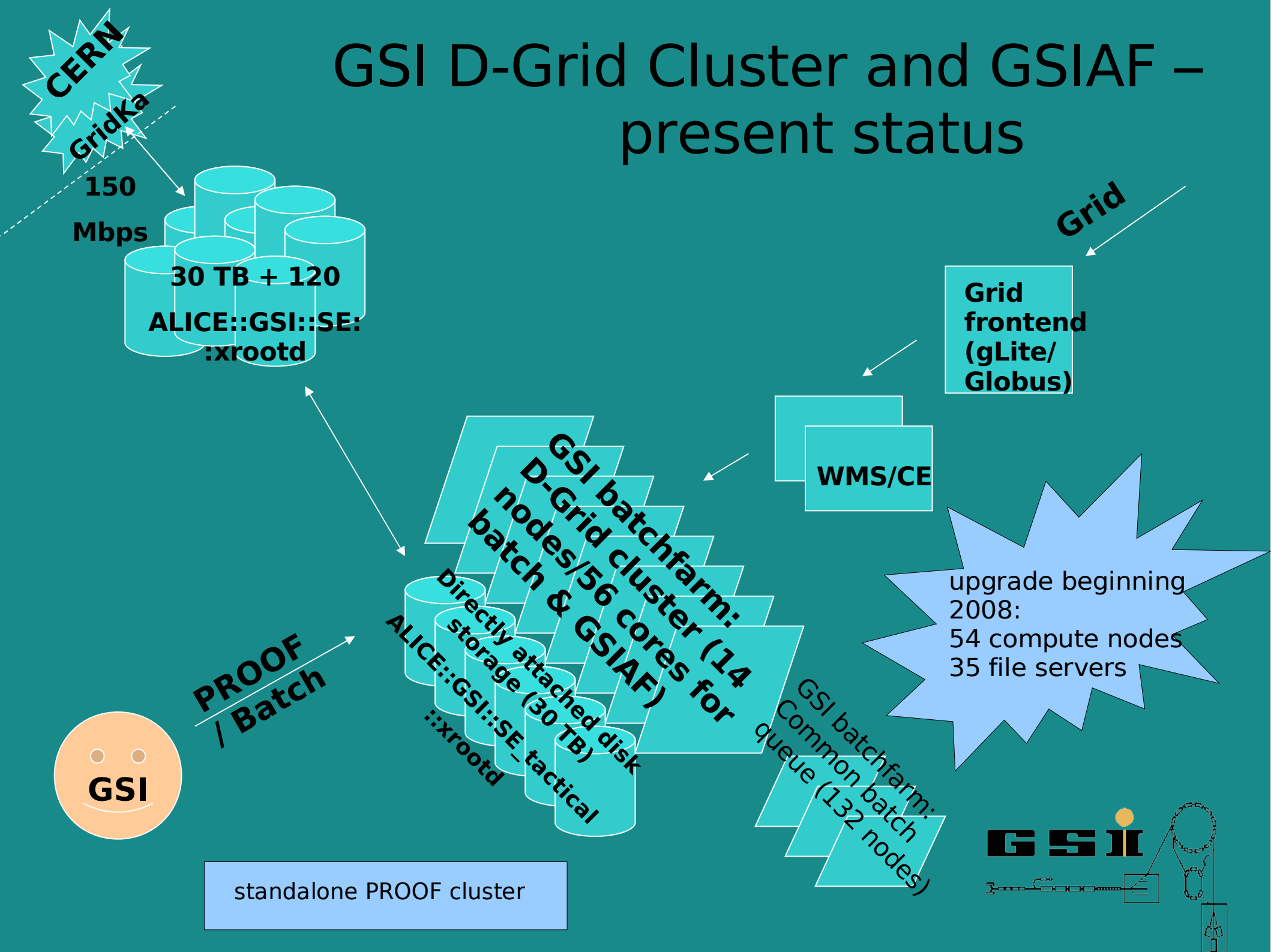
Milestones

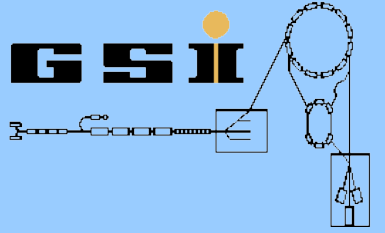


- Interactive Analysis
  - lokales PROOF Cluster (PM18)
  - PROOF auf dem Grid (PM24)
  - GUI (PM36)
  - Tests in user community (PM36)
  - Meilenstein 3.4.1 (dynamische Generierung von PROOF Clustern (PM24)
- Application Oriented Scheduling
  - Test der Jobumgebung (PM24)
  - Logging des Ressourcenverbrauchs bei Auswahl der Ereignisse (Event Listing) (PM24)
  - Logging des Ressourcenverbrauchs bei Analyse (PM24)
  - Simulation des Ressourcenverbrauchs (PM30)
  - Log Interface (PM30)
  - Meilenstein 3.2.1 - Prototyp (PM24)
- Automatischer Jobmanager
  - Basisfunktionalität (LMU)
  - Tests (LMU)
  - Meilenstein 3.3.1 – Prototyp (LMU)

GSI D-Grid Cluster and GSIAF – present status



Present Status



- Batch Farm/GSIAF and ALICE::GSI::SE_tactical::xrootd nodes dedicated to ALICE:
- 15 D-Grid funded boxes: each
  - 2*2core 2.67 GHz Xeon, 8 GB RAM
  - 2.1 TB local disk space on 3 disks + system disk

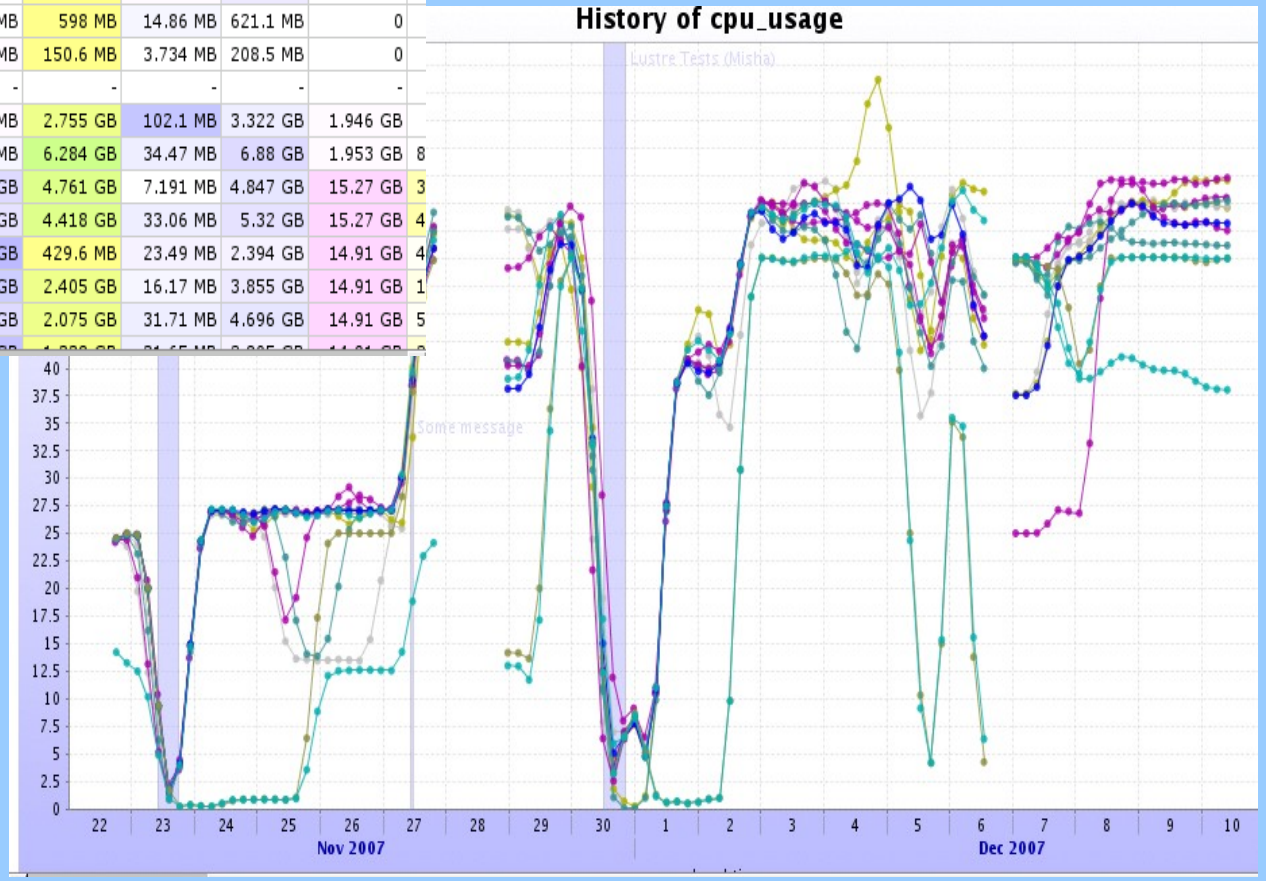
- on all machines: Debian Etch 64bit

Farm Monitoring (MonaLisa)

GSIAF Cluster

Machines status

	Machine status		CPU					Memory						
Machine	Online	Ping	load	usr	sys	nice	idle	Total	Used	Cached	Buffers	Free	Total	
grid1.gsi.de		0.024ms	0.15	1.51	0.809	0	97.68	4 GB	1.332 GB	956 MB	28.49 MB	2.668 GB	0	
grid13.gsi.de		0.371ms	1.24	25.08	27.85	0	47.07	1.194 GB	150.1 MB	592.9 MB	9.875 MB	1.048 GB	0	
grid19.gsi.de		0.343ms	0.01	0.35	0.033	0	99.62	1 GB	409.9 MB	563.5 MB	29.99 MB	614.3 MB	0	
grid29.gsi.de		-	-	-	-	-	-	-	-	-	-	-	-	
grid32.gsi.de		0.317ms	0	1.05	0.3	0	98.65	4 GB	184 MB	396.6 MB	12.27 MB	3.82 GB	0	
grid5.gsi.de		0.911ms	0.19	4.172	1.055	0	94.77	1 GB	403.1 MB	598 MB	14.86 MB	621.1 MB	0	
grid8.gsi.de		0.224ms	0.46	10.51	2.218	0	87.27	756.2 MB	547.7 MB	150.6 MB	3.734 MB	208.5 MB	0	
gsiaf.gsi.de		-	-	-	-	-	-	-	-	-	-	-	-	
lcg06.gsi.de		0.189ms	0.44	5.402	3.295	0	91.3	3.911 GB	603.3 MB	2.755 GB	102.1 MB	3.322 GB	1.946 GB	
lxb255.gsi.de		0.211ms	0	0.008	0.025	0	99.97	7.801 GB	942.8 MB	6.284 GB	34.47 MB	6.88 GB	1.953 GB	8
lxb256.gsi.de		0.245ms	3.08	31.63	0.234	0	68.13	7.801 GB	2.954 GB	4.761 GB	7.191 MB	4.847 GB	15.27 GB	3
lxb257.gsi.de		0.181ms	1.17	10.63	0.312	0	89.06	7.801 GB	2.481 GB	4.418 GB	33.06 MB	5.32 GB	15.27 GB	4
lxb258.gsi.de		0.228ms	6.72	52.19	7.058	0	40.76	7.801 GB	5.407 GB	429.6 MB	23.49 MB	2.394 GB	14.91 GB	4
lxb259.gsi.de		0.244ms	3.72	42.43	1.726	0	55.85	7.801 GB	3.946 GB	2.405 GB	16.17 MB	3.855 GB	14.91 GB	1
lxb260.gsi.de		0.324ms	3.8	43.04	2.298	0	54.66	7.801 GB	3.105 GB	2.075 GB	31.71 MB	4.696 GB	14.91 GB	5



D-Grid Ressources

green dot Script was not compatible to Globus 4.0.5
10.9.2007:

2007-09-10 17:08:08,243 ERROR rpprovider.ResourcePropertyProviderTask [Thread-11,timerExpired:159] Unhandled exception during execution of org .globus.mds.usefulrp.rpprovider.producers.SchedulerInfoElementProducer : java.lang.Exception: Exception while parsing child process stdout into valid XML document: org.xml.sax.SAXException: Fatal Error: URI=null Line=-1: Premature end of file. 2007-09-10 17:08:08,248 WARN rpprovider.ResourcePropertyProviderTask [Thread-11,timerExpired:164] Timer event canceled due to unhandled exception during execution of org .globus.mds.usefulrp.rpprovider.producers.SchedulerInfoElementProducer

GSIAF usage experience

- real life analysis work of staged data by GSI ALICE group (1-4 concurrent users)
- 2 user tutorials for GSI ALICE users (10 students each training)
- GSIAF and CAF were used as PROOF clusters during PROOF course at GridKa School 2007
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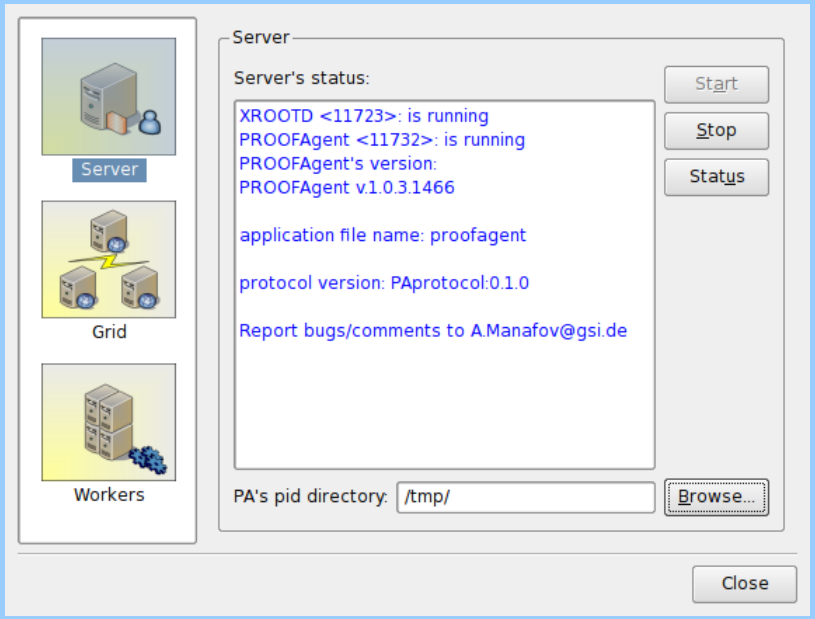
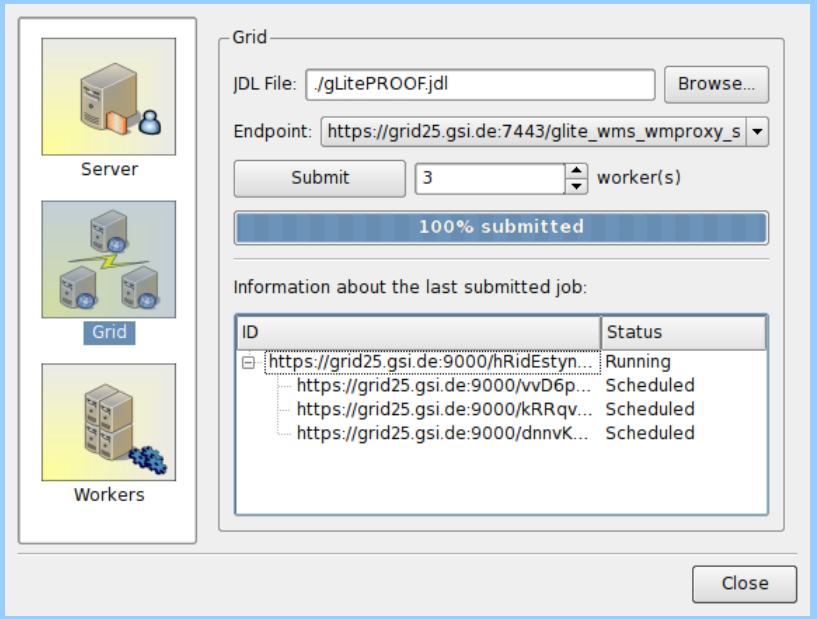
- ==> contineous improvement through user requests and debugging

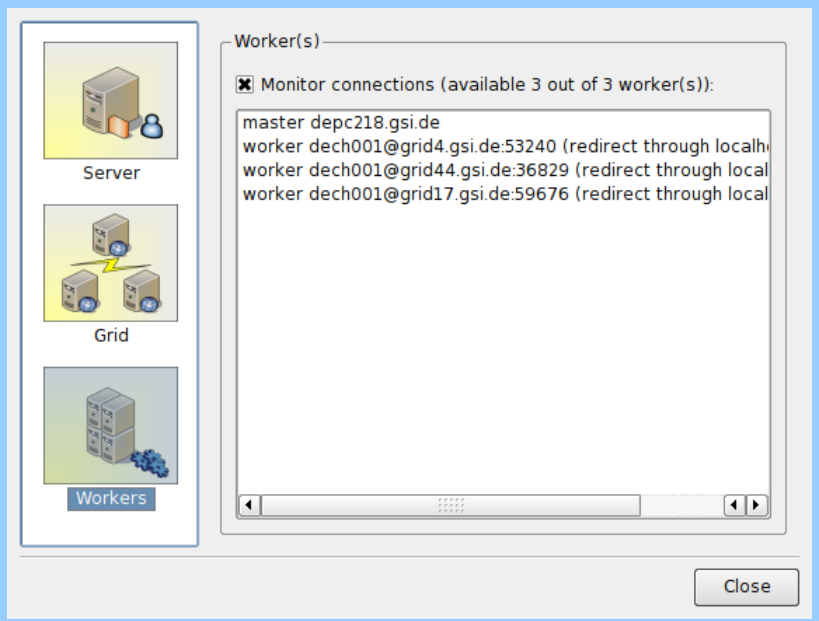
GridKa School 2007

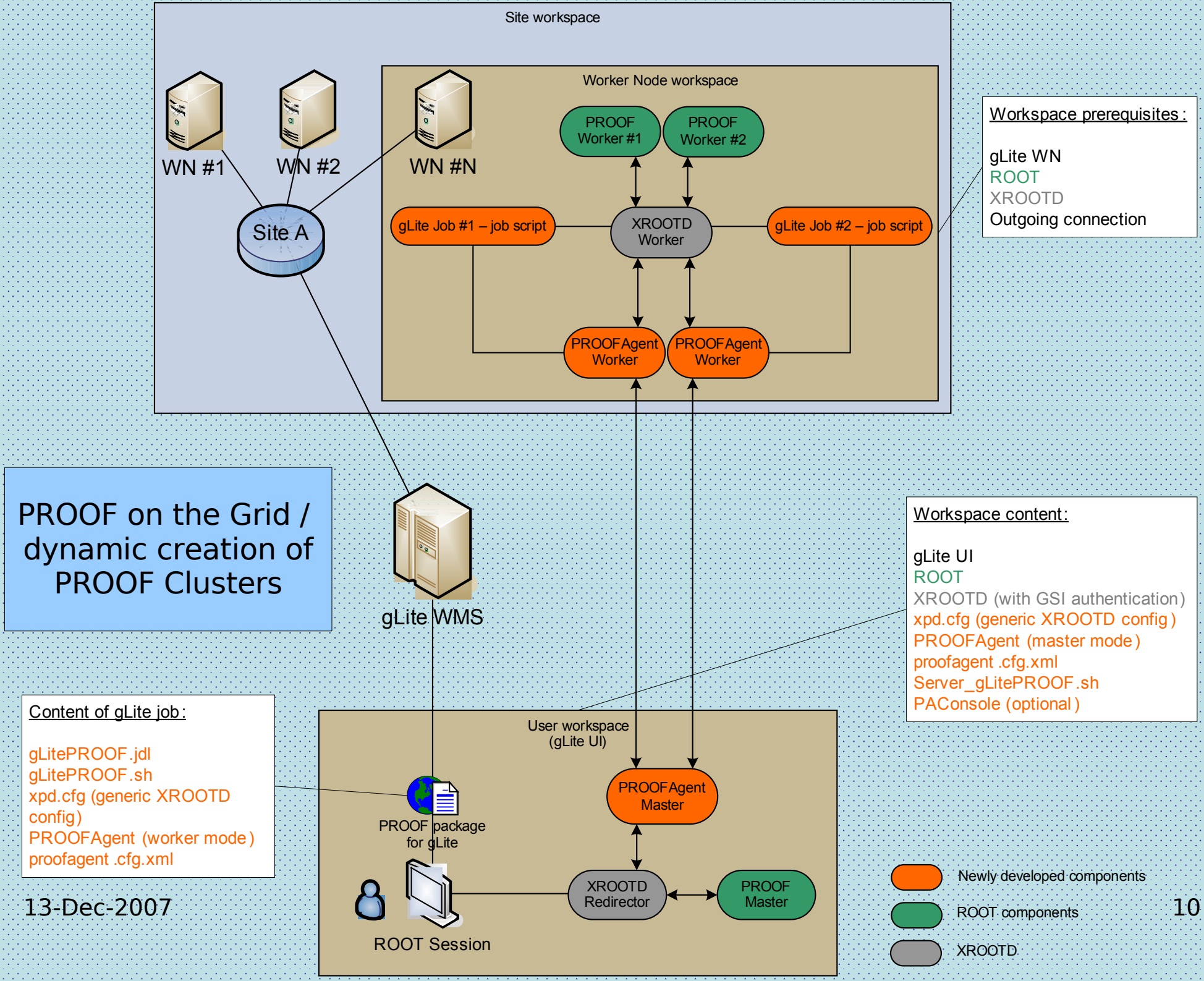
PROOF on the Grid (GUI)



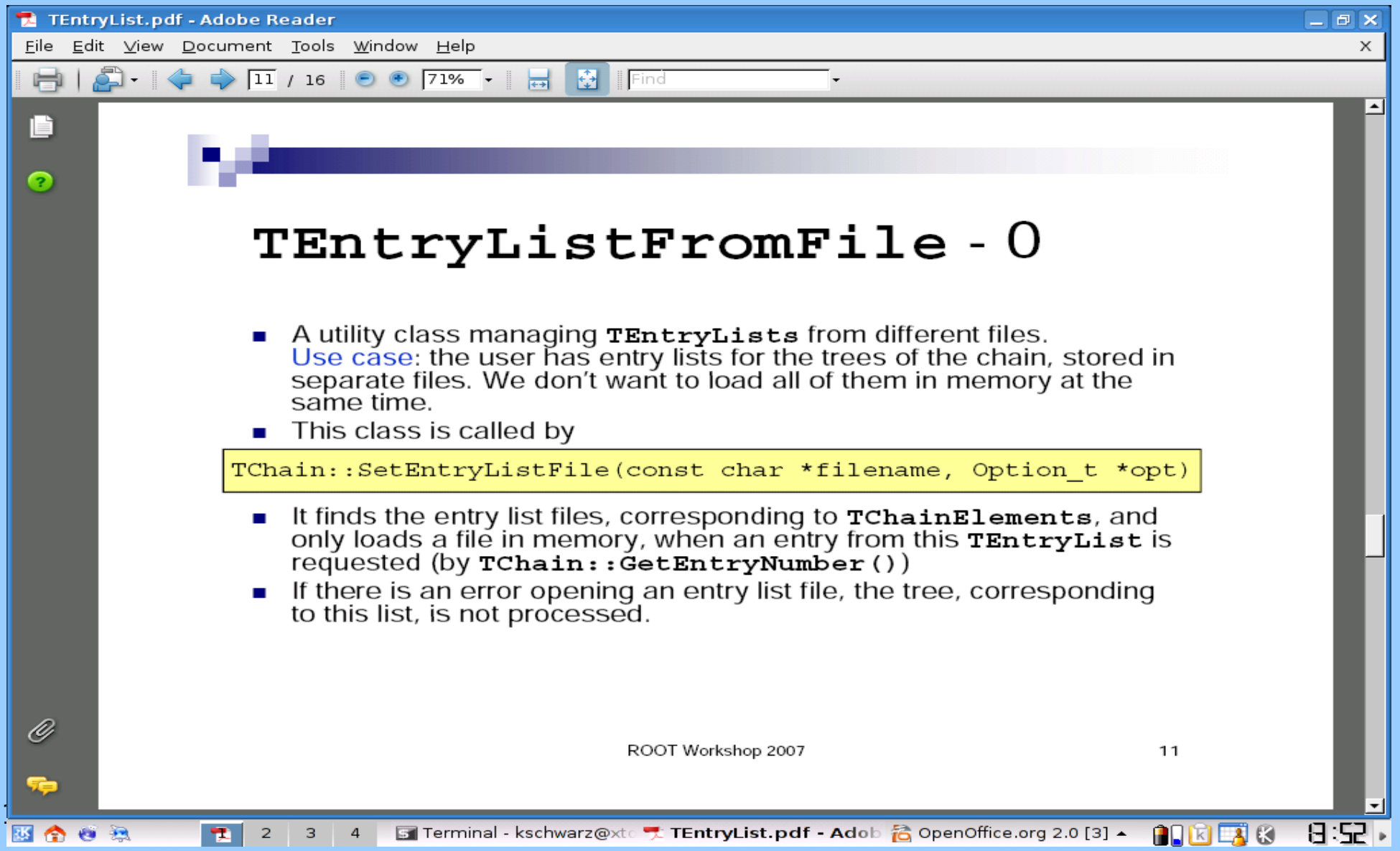


and ROOT gLite interface

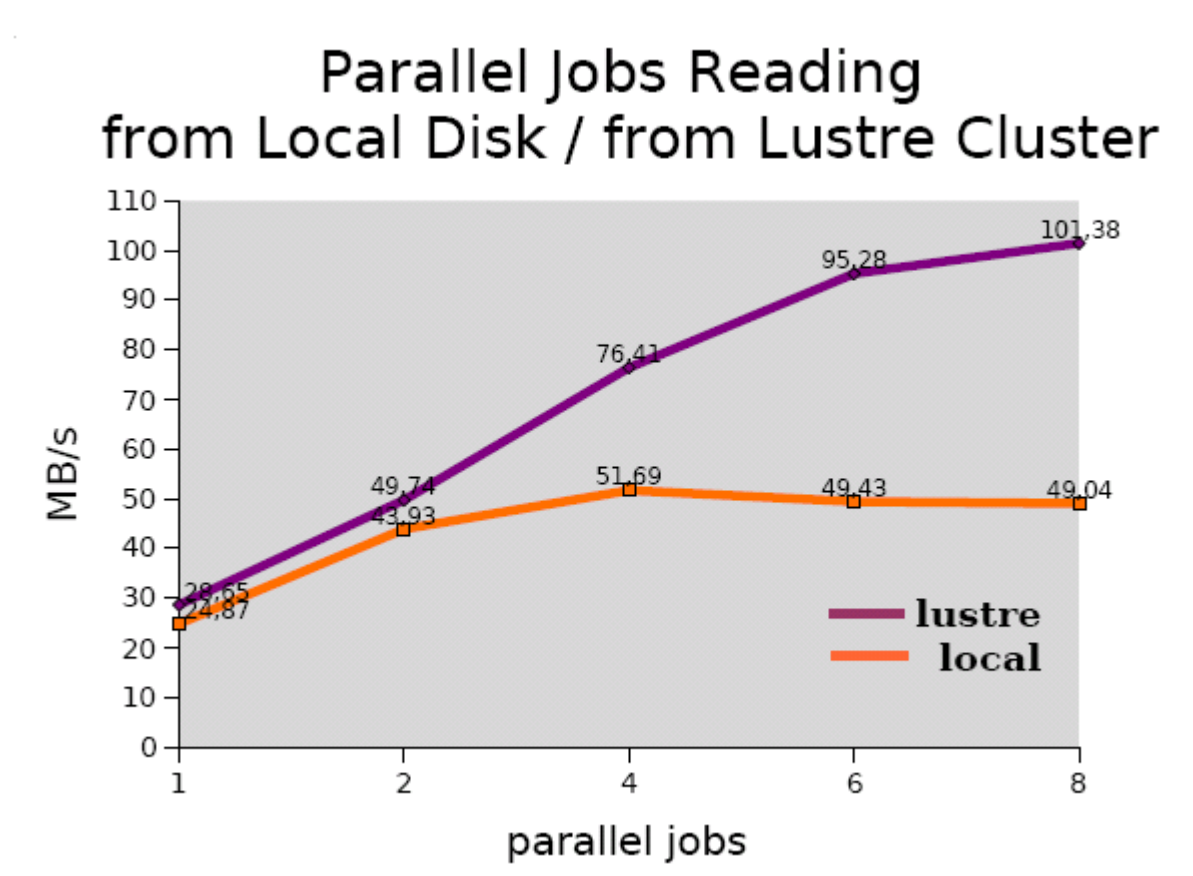



Site workspace
WN #1
WN #2
WN #N
Site A
Worker Node workspace
PROOF Worker #1
PROOF Worker #2
gLite Job #1 – job script
XROOTD Worker
gLite Job #2 – job script
PROOFAgent Worker
PROOFAgent Worker
Workspace prerequisites :
gLite WN
ROOT
XROOTD
Outgoing connection
PROOF on the Grid / dynamic creation of PROOF Clusters
gLite WMS
Workspace content:
gLite UI
ROOT
XROOTD (with GSI authentication)
xpd.cfg (generic XROOTD config)
PROOFAgent (master mode)
proofagent .cfg.xml
Server_gLitePROOF.sh
PAConsole (optional)
Content of gLite job :
gLitePROOF.jdl
gLitePROOF.sh
xpd.cfg (generic XROOTD config)
PROOFAgent (worker mode)
proofagent .cfg.xml
User workspace (gLite UI)
PROOFAgent Master
PROOF package for gLite
XROOTD Redirector
PROOF Master
ROOT Session
Newly developed components
ROOT components
XROOTD

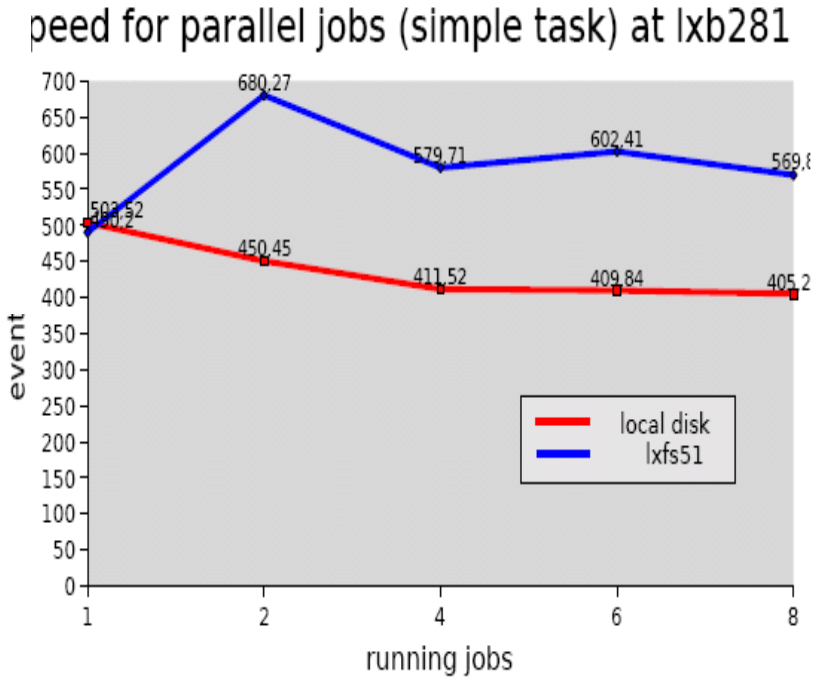
application oriented scheduling



optimised PROOF I/O

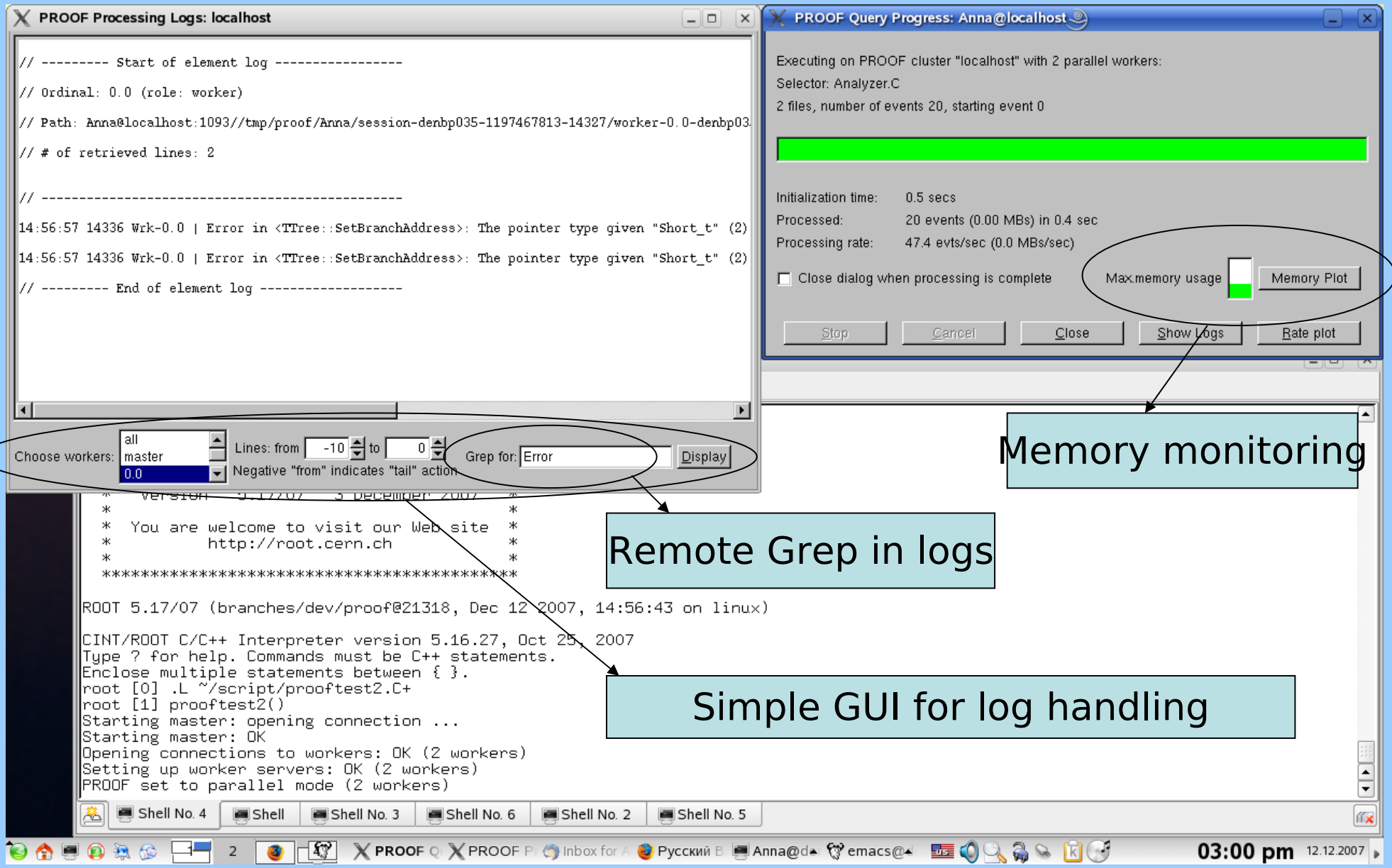


ROOT Files 1.2 GB



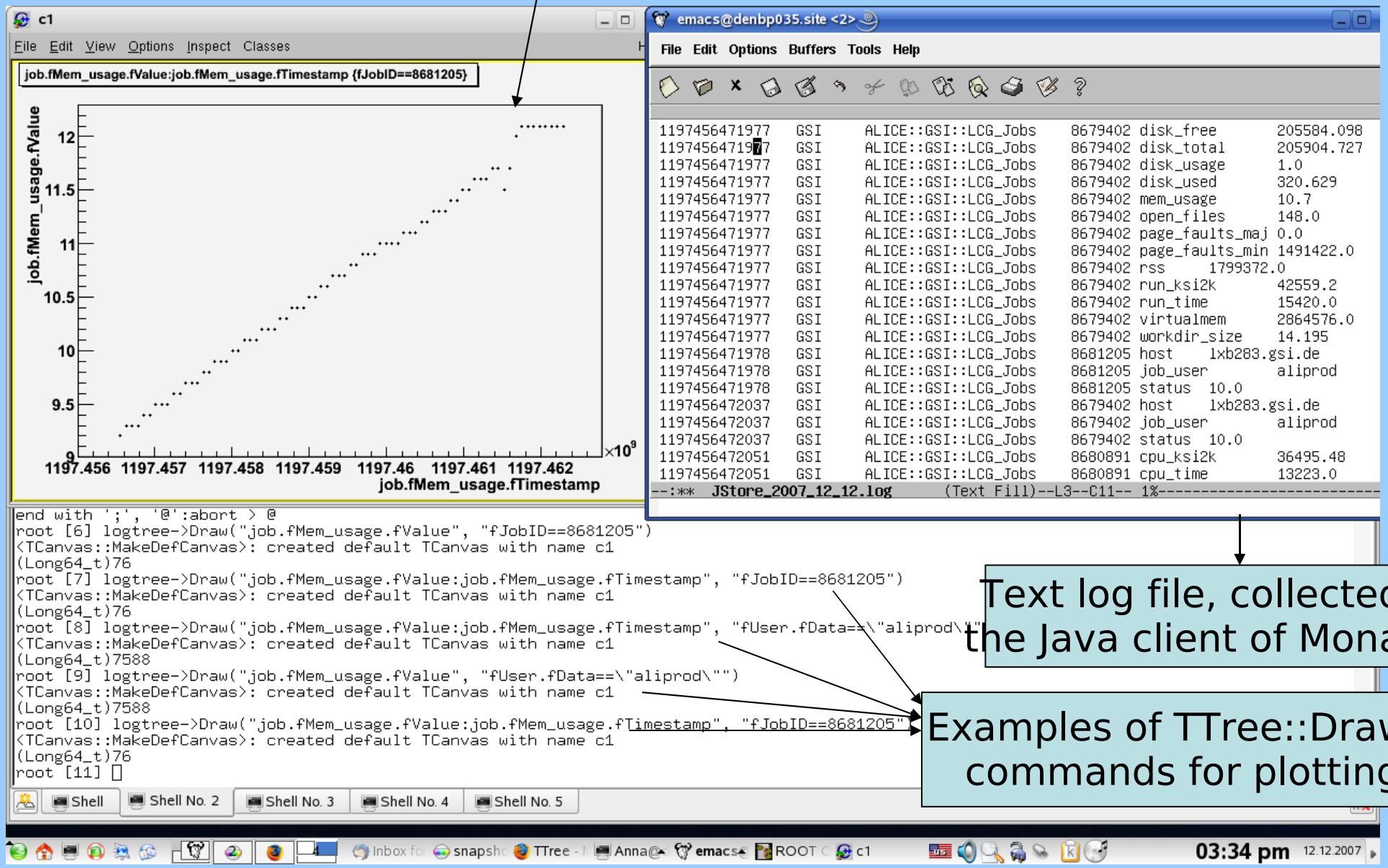
AliESDs: 3.5 MB

Identifying differences between local ROOT and PROOF jobs. Simplifying debugging and resource monitoring



Memory consumption against time for a given job

additional job information via ALICE MonaLisa repository. Output is stored in ROOT trees which can be browsed offline



Text log file, collected by the Java client of MonaLisa

Examples of TTree::Draw() commands for plotting

outview

- distribute RGLite via ROOT
- more discussion and testing with community concerning usage and setup of local and distributed PROOF clusters
  - implementation of new features after user feedback up to Release version
- proceed with PROOF log and debug interface until Release version will be published