GSIAF
"CAF" experience at GSI

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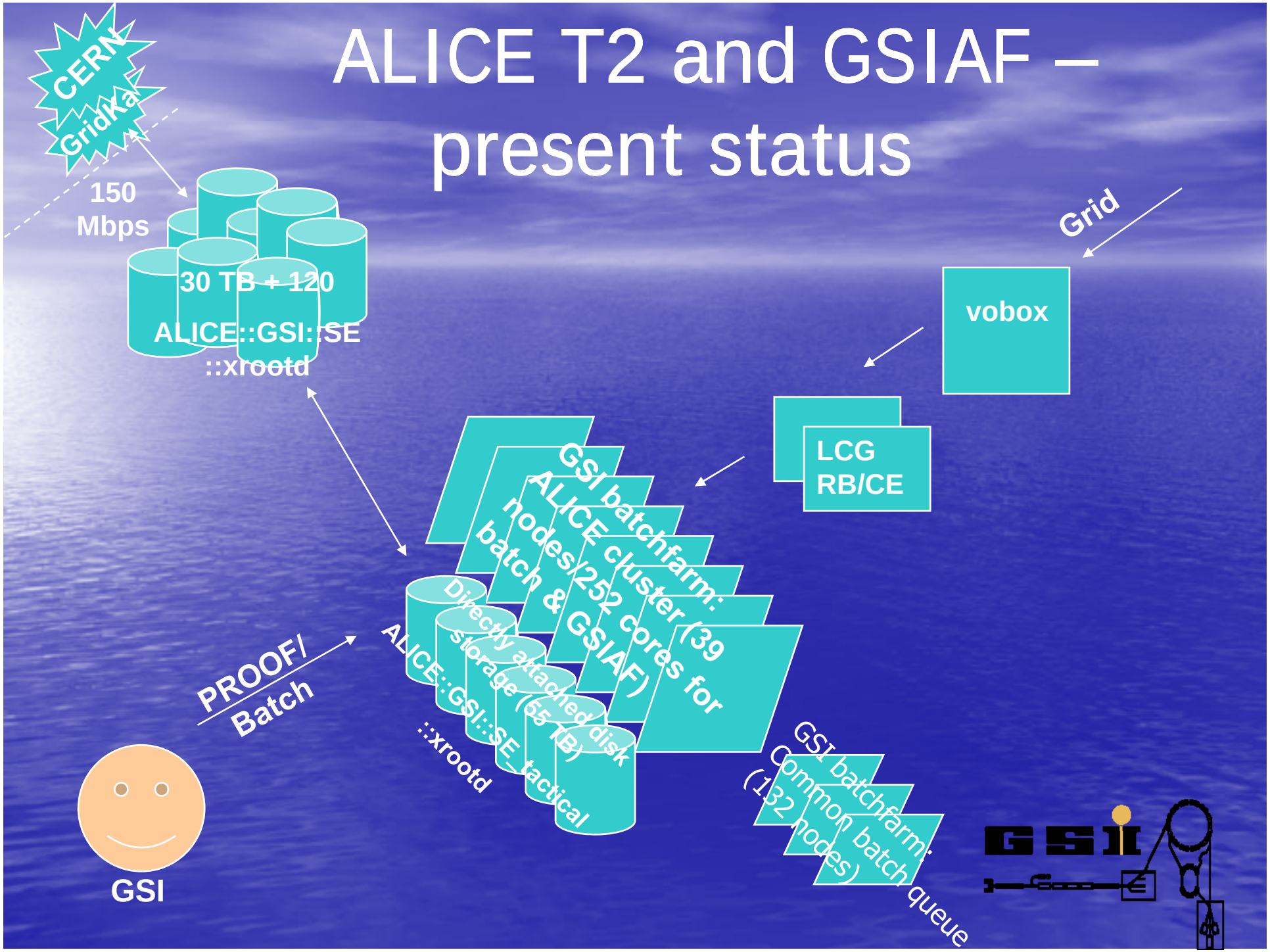
GSIAF

- Present status
- installation and configuration
- usage experience (see talk of M. Ivanov on Friday)
- Plans and outview
- Issues and problems

ALICE T2 and GSIAF – present status



Present Status

- ALICE::GSI:SE::xrootd
- > 30 TB disk on fileserver (8 FS a 4 TB each)
- + 120 TB disk on fileserver
  - –20 fileserver 3U 15*500 GB disks RAID 5
  - –6 TB user space per server

- 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

  Additionally 24 new boxes: each
  - –2*4core 2.67 GHz Xeon, 16 GB RAM
  - –2.0 TB local disk space on 4 disks including system

- on all machines: Debian Etch 64bit

installation

- shared NFS dir, visible by all nodes
  - xrootd (version 2.7.0 build 20070926-0000)
  - ROOT (5.17/04)
  - AliRoot (head)
  - all compiled for 64bit
- reason: due to fast software changes
- disadvantage: possible NFS stales
- tried to build Debian packages of the used software, but this process is too long lasting

configuration

- setup: 1 standalone, high end 8 GB machine for xrd redirector and proof master, Cluster: xrd data servers and proof workers, AliEn SE
- so far no authentification/authorization
- via Cfengine
  - platform independent computer administration system (main functionality: automatic configuration).
- xrootd.cf, proof.conf, TkAuthz.Authorization, access control, Debian specific init scripts for start/stop of daemons (for the latter also Capistrano for fast prototyping)
- all configuration files are under version control (subversion)

Cfengine – config files in subversion

https://subversion.gsi.de/gsi-admin/trunk/cfengine/inputs/cf.xrootd - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten

Adresse https://subversion.gsi.de/gsi-admin/trunk/cfengine/inputs/cf.xrootd Wechseln zu Links

```
# -*- cfengine -*-
#
# xrootd configuration
#
# $Id$
#

copy:

  # Install xroot/proof configuration files
  xrootd::
     $(configroot)/xrootd/xrootd.cf
         dest=/etc/xrootd/xrootd.cf
         server=cfmaster
         type=sum
         mode=0644

  xrootd::
     $(configroot)/xrootd/proof.conf
         dest=/etc/xrootd/proof.conf
         server=cfmaster
         type=sum
         mode=0644

   xrootd::
     $(configroot)/xrootd/TkAuthz.Authorization
         dest=/etc/xrootd/TkAuthz.Authorization
         server=cfmaster
```

Fertig Internet

Start 3 Internet ... Microsoft Po... X-Win32-Kon... 2 X-Win32 ... Rechner DE 12:5

monitoring via MonaLisa
http://grid5.gsi.de:8080

GSI Cluster Monitoring with MonALISA - GSIAF Cluster - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten

Adresse http://grid5.gsi.de:8080/stats?page=CLUSTER%2Ftable Wechseln zu Links

GSI Repository
- GSI Repository
- GSIAF Cluster
- Repository info
- XEN Cluster

close all

This page: bookmark, URL

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		0.023ms	0.64	4.532	0.808	0	94.66	4 GB	1.633 GB	1.607 GB	33.64 MB	2.367 GB	0
grid13.gsi.de		0.309ms	1.23	23.1	26	0	50.91	1.194 GB	177.8 MB	708.6 MB	9.473 MB	1.021 GB	0
grid19.gsi.de		0.895ms	0.05	0.067	0.033	0	99.9	1 GB	328.5 MB	629 MB	38.54 MB	695.7 MB	0
grid29.gsi.de		-	-	-	-	-	-	-	-	-	-	-	
grid5.gsi.de		0.448ms	0.04	3.675	1.292	0	95.03	1 GB	301.1 MB	693.6 MB	21.99 MB	723.1 MB	0
grid8.gsi.de		0.229ms	0.4	33.52	4.725	0	61.75	756.2 MB	530.3 MB	147.2 MB	2.551 MB	225.9 MB	0
gsiaf.gsi.de		-	-	-	-	-	-	-	-	-	-	-	
lcg06.gsi.de		5.68ms	0.68	10.88	4.051	0	85.07	3.911 GB	607.4 MB	2.402 GB	105.9 MB	3.318 GB	1.946 GB
lxb255.gsi.de		5.86ms	0	0.015	0.023	0	99.96	7.801 GB	927 MB	6.124 GB	31.78 MB	6.896 GB	1.953 GB
lxb256.gsi.de		0.244ms	1.04	10.98	2.546	0.019	86.45	7.801 GB	979.8 MB	882.8 MB	27.23 MB	6.844 GB	15.27 GB
lxb257.gsi.de		0.357ms	1.16	13.17	0.564	0.015	86.25	7.801 GB	1.169 GB	2.416 GB	29.8 MB	6.632 GB	15.27 GB
lxb258.gsi.de		0.205ms	6.03	50.56	4.487	0	44.96	7.801 GB	3.204 GB	3.762 GB	13.07 MB	4.597 GB	14.91 GB
lxb259.gsi.de		0.195ms	3.03	37.71	0.986	0	61.3	7.801 GB	1.84 GB	1.309 GB	28.7 MB	5.961 GB	14.91 GB
lxb260.gsi.de		6.04ms	4.42	50.5	2.676	0	46.82	7.801 GB	2.61 GB	2.127 GB	13.73 MB	5.191 GB	14.91 GB
lxb261.gsi.de		0.225ms	4.26	50.48	2.318	0	47.21	7.801 GB	2.709 GB	4.308 GB	28.6 MB	5.093 GB	14.91 GB
lxb262.gsi.de		0.232ms	3.04	37.91	2.47	0	59.62	7.801 GB	2.373 GB	3.17 GB	27.93 MB	5.428 GB	14.91 GB
lxb263.gsi.de		0.171ms	3.15	37.77	1.257	0	60.97	7.801 GB	1.959 GB	1.794 GB	28.72 MB	5.843 GB	14.91 GB
lxb264.gsi.de		0.317ms	3.36	37.57	1.876	0	60.56	7.801 GB	2.191 GB	2.497 GB	28.63 MB	5.61 GB	14.91 GB
lxb265.gsi.de		0.281ms	3.18	37.99	1.618	0	60.39	7.801 GB	1.878 GB	1.593 GB	25.43 MB	5.923 GB	14.91 GB
lxb266.gsi.de		0.352ms	4.44	51.28	4.252	0	44.46	7.801 GB	2.445 GB	2.871 GB	27.26 MB	5.356 GB	14.91 GB
lxb267.gsi.de		0.346ms	4.26	50.73	3.736	0	45.54	7.801 GB	3.335 GB	4.407 GB	14.57 MB	4.466 GB	14.91 GB
lxb268.gsi.de		0.318ms	4.39	50.5	2.275	0	47.22	7.801 GB	2.716 GB	3.255 GB	27.95 MB	5.085 GB	14.91 GB
lxb281.gsi.de		0.25ms	0.03	0	0.006	0	99.99	15.7 GB	705.6 MB	1.609 GB	27.12 MB	15.01 GB	29.81 GB
lxb283.gsi.de		0.204ms	3.25	37.36	0.609	0	62.03	15.7 GB	2.702 GB	4.021 GB	27.75 MB	13 GB	29.81 GB

Fertig Internet

Start 5 Internet ... X-Win32-Kon... X-Win32 - St... root@grid5:~ DE 09:44

GSIAF usage experience

- see talk of M. Ivanov on Friday at 10:00 "**Analysis Experience at GSIAF** "
- 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

GridKa School 2007

GridKa School 2007 - Agenda - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten

Adresse http://gks07.fzk.de/Agenda.html Wechseln zu Links

	room number 157	grid applications SAGA Tutorial room number 162	room: Aula
20:00	*"Kneipenabend"*		

Thursday, September 13			
9:00-9:45	Grid Access Manager (U. Biewer, IBM) abstract		
9:45-10:30	Research and Education on Microsoft HPC (Dr. Ingo Dahm, Microsoft) A Live Demonstration with Wolfram gridMathematica (Maryam Karbalai, Additive GmbH) MatLabMMA.zip abstract		
10:30-11:00	*Break*		
11:00-11:30	Grid Applications in D-Grid (W. Gentzsch, D-Grid) abstract		
11:30-12:00	Grid Business Models (J. Altmann, IU Bruchsal) abstract		
12:00-12:30	dCache (O. Synge, DESY) abstract		
12:30-14:00	*Break*		
14:00-19:00	Unicore course (R. Breu, FZ Juelich, and team) abstract room: Aula	dCache course (O. Synge, DESY, and team) abstract Installing dCache with dCache Yaim dCache Clients room number 157	PROOF (J.F. Grosse-Oetringshaus and Andreas Joachim Peters, CERN) abstract info tar-ball RGlite demo (Anar Manafov, GSI) abstract room number 162
20:00	*School dinner*		

Internet

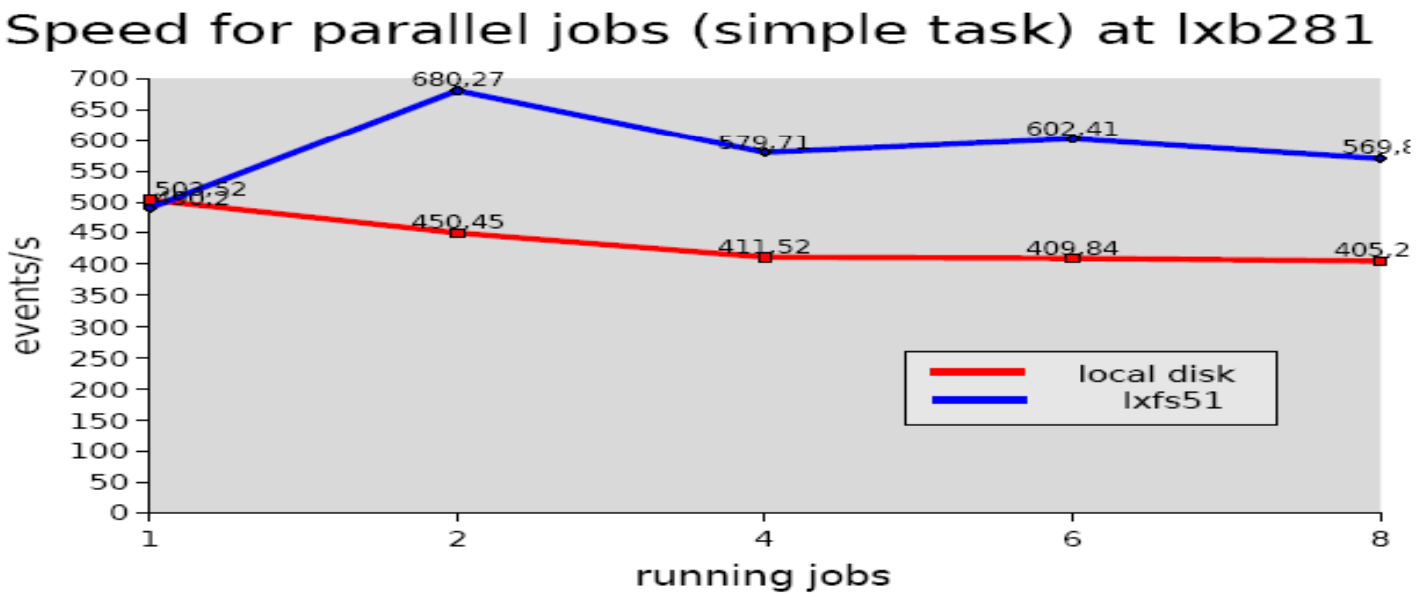
Start 4 Internet ... Microsoft Po... X-Win32-Kon... 2 X-Win32 ... Rechner DE 12:59

plans and outview

- Study coexistence of interactive and batch processes (PROOF analysis on staged data and Grid user/production jobs) on the same machines. Develop possibility to increase/decrease the number of batch jobs on the fly to give advantage to analysis. Currently at GSI each PROOF worker is an LSF batch node
- optimise I/O. Various methods of data access (local disk, file servers via xrd, mounted lustre cluster) are being investigated systematically.
- extend GSI T2 and GSIAF according to promised ramp up plan

systematic I/O tests still under investigation

Preliminary results



lustre: 1 job: 200 events/sec up to 8 jobs: 1200 events/sec

more tests are on the way (also PROOF analysis on lustre)

ALICE T2 – ramp up plans

http://lcg.web.cern.ch/LCG/C-RRB/MoU/WLCGMoU.pdf

Germany, GSI, Darmstadt	Pledged	Planned to be pledged			
	2006	2007	2008	2009	2010
CPU (kSI2K)	100	260	660	860	1100
Disk (Tbytes)	30	80	200	260	340
Nominal WAN (Mbits/sec)	100	100	1000	1000	1000

GSIAF will grow with a similar rate

issues and problems

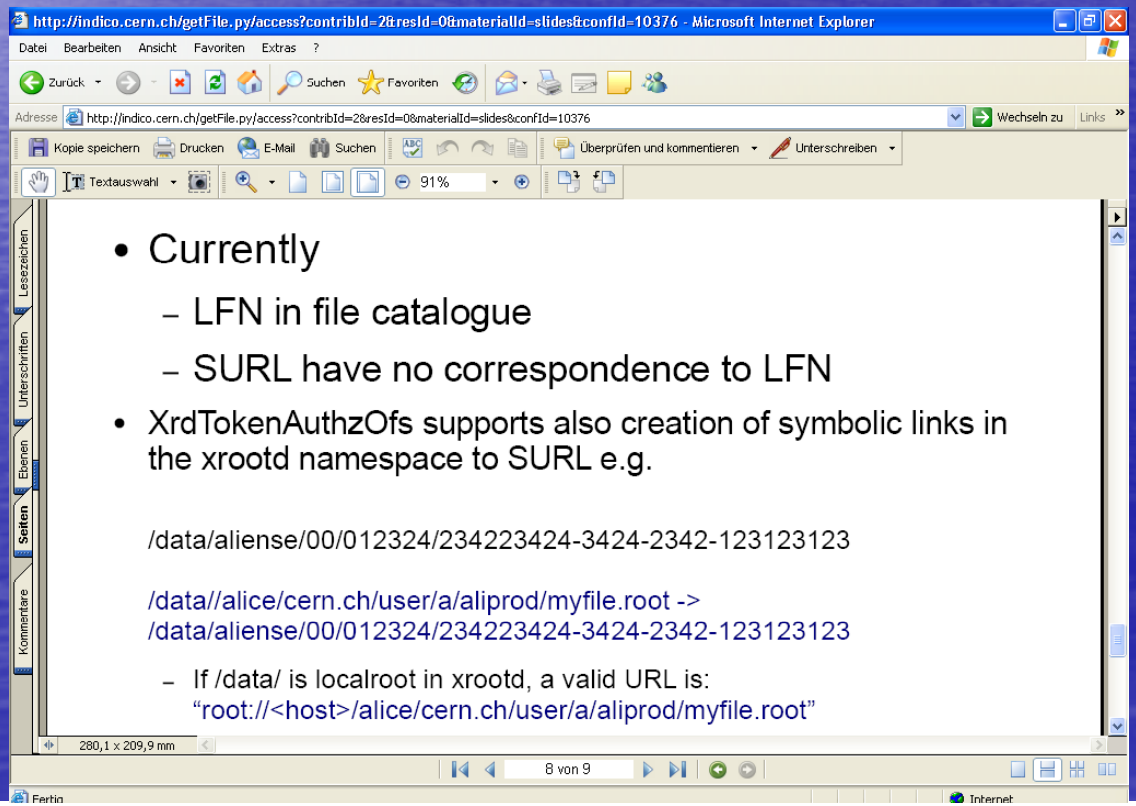
- instability of PROOF (or our setup). During the last user tutorial (10 users) we had to restart the PROOF master 3 times within 5 hours. It looks like a Reset of a messed up PROOF session can lead under certain circumstances to the end of the xrootd redirector.
- our first set of workers provide once in a while lengthy response times which is why PROOF refuses to connect and skips them as workers. This leads sometimes to hanging login sessions since PROOF does not seem able to skip WNs and continue at this stage. Reason: probably missing NIS cache
- helpful would be if in the xrootd log there would appear some key word like "error", e.g. if something goes wrong. This would facilitate finding problems like above significantly
- xrootd versioning in ROOT/AliEn/SLAC and software dependencies (AliRoot/ROOT/xrootd/AliEn)

POSIX

- GSI users want to know what files we have on the GSIAF cluster and want to be able to deal with their files in a POSIX like way.
- XrootdFS based and Fuse tested in collaboration with Andreas Petzold (TUD)
  - so far it seems to work only with individual data servers, not on the whole cluster

issues and problems

- how to bring data to GSIAF ?
- suggested method:
- see http://alien.cern.ch/twiki/bin/view/AliEn/HowToUseCollections
  - create a collection of files
  - mirror the collection (and the files in it) to the new SE.
- But during last exercise of the 231614 files in /alice/sim/2007/LHC07c/pp_minbias/ only 42191 seem to have landed at GSI

issues and problems

- how to bring data to GSIAF ? Since GSIAF is a working AliEn SE we would like to access the stored files directly on the SE (local disks) via the same names the files would have in the AliEn FC without additional staging from the closest SE.
- Do PROOF Datasets (see talk of Jan Fiete) actually work, now ? Is this a solution to our issue ?