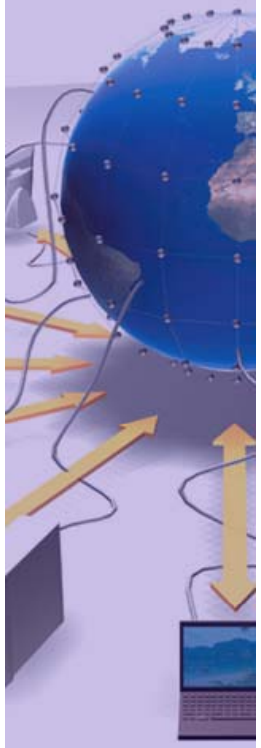

CCRC'08

Tools for measuring our progress

CCRC'08 F2F

5th February 2008

James Casey, IT-GS-MND

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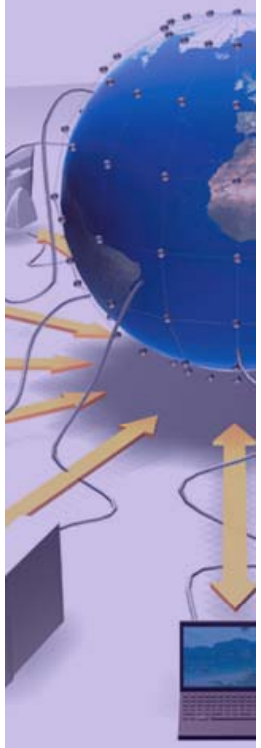
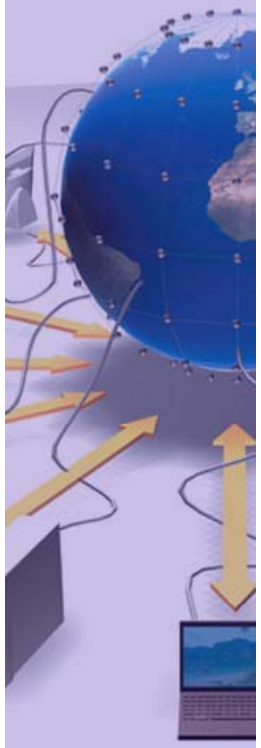
Overview



- Tracking the challenge
  - ‘Observations elog’
- Measuring MoU response times
  - ‘Logbook elog’
- Reconciling the experiment and infrastructure views
  - CCRC’08 ServiceMap
- Things to come…
  - Reporting MoU to the sites

SC4 Twiki



May 2006

- 29/05 12:00 SARA announce service downtime extending from 12:00 today until Wednesday 18:00. According to WLCG procedures, this intervention should have been announced one week in advance (See WLCG Management Board mintes of 16 May. Jamie (Announcement: srm.grid.sara.nl and ant1.grid.sara.nl will be down for maintenance from 12:00 CET today to 18:00 CET wednesday. This is due to a modification to our storage infrastructure.)

- 19/05 02:00 ASGC stable at 60 MB/s, even 70 MB/s for the last 8 hours. CNAF came back at 8 GMT and averaged ~180 MB/s except for a 2-hour dip. NDGF did 30 MB/s until 8 GMT, then averaged 70 MB/s except for a gap of a few hours. PIC stable at 50-60 MB/s except for a 3-hour gap due to a misconfiguration in their stage pools. RAL rose from an average of 70 MB/s to an average of 150 MB/s since 9 GMT, the pattern remaining bumpy, the error rates lower. SARA may have been left on accidentally. Their average rose from 40 to ~70 MB/s at 12 GMT. *Maarten*

- 18/05 01:20 CASTOR came back in the morning and around 12 GMT all channels were set active, even the ones that should have been left off. This was corrected a few hours later, after which a problem with the CASTOR DLF service caused all transfers to fail on SRM GET. This was fixed by Miguel, and the channels were re-enabled after the Champions League final. :) A problem was then spotted for one of the gridftp servers at PIC. *Maarten*

- 17/05 13:45 There was a problem in a Surfnet's device at CERN. Since few minutes the connections to RAL, TRIUMF, ASGC and SARA are up again. *Edoardo*

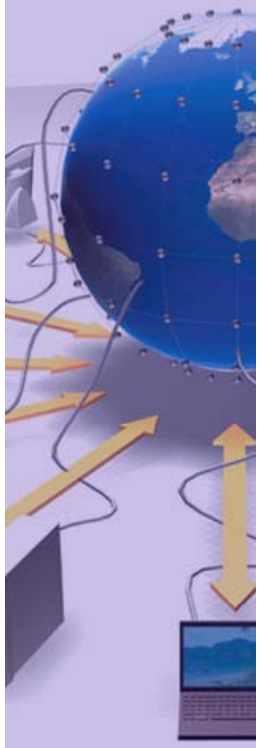
On 05/16/06 15:18, Bly, MJ (Martin) wrote: > *We understand that the OPN link to RAL is down due to a fibre cut somewhere between France and Belgium. _Martin_*

- 17/05 01:30 Business as usual until about 12 GMT, when a CERN-wide power cut stopped everything in its tracks. CASTOR hopefully will be back Wed. morning. All channels have been switched off. The one for DESY will remain off to avoid interference with a big CMS data replication. *Maarten*

- 16/05 01:20 ASGC doing 50 MB/s most of the time, with instabilities due to kernel crashes, possibly related to XFS. The latest CERN kernel will be tried next. CNAF averaging 170 MB/s. DESY averaging 160 MB/s. NDGF had a dip lasting 9 hours due to transfers stuck on a pool node and possibly some other issues. The channel did 80 MB/s for the last 2 hours, maybe to try and make up for the bandwidth lost? RAL came back around 12 GMT and did about 150 MB/s for a few hours, then sunk to 70 MB/s for the last 4 hours, with an error rate that has peaks and valleys. *Maarten*

- 15/05 00:30 ASGC recovered from yesterday's problems and did 50 MB/s or better the last 8 hours, with a very low error rate. CNAF averaged 170 MB/s until 15 GMT and 150 MB/s from then on. DESY doing 160-170 MB/s. NDGF very flat at 60 MB/s with *zero* errors! *Maarten*

Problems with the twiki



- Hard to generate reports from a twiki
- Statistics extraction is manual
  - Messages/Incidents per day, per site, …
- Everyone has to poll
  - No feeds
- No categorization
- No threading
- Want it to be write-once, read-many
  - No changing history !

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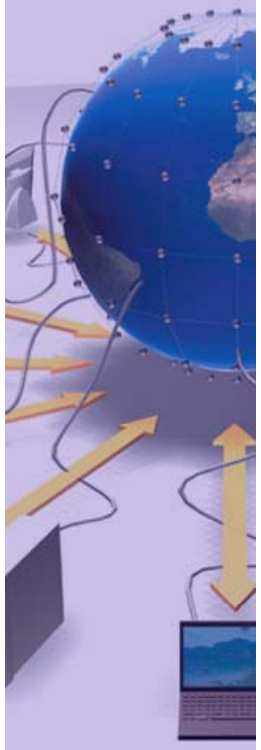
Solution



We believe elog gives us these features

- Let's use CCRC'08 to test it
  - Fallback solution could be a standard blog
- I'd encourage everyone to use if
  - Also secretary of CCRC'08 daily meeting will add items of interest that arise

…Demo…

https://prod-grid-logger.cern.ch/elog/CCRC'08+Observations/

RSS feed : https://prod-grid-logger.cern.ch/elog/CCRC'08+Observations/elog.rdf

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MoU response times

- We've agreed to try and measure MoU metrics during CCRC'08
  - To evaluate if we can actually do it !

https://prod-grid-logger.cern.ch/elog/CCRC'08+Logbook/

Service	***Maximum delay in responding to operational problems***			***Average availability measured on an annual basis***	
	Service interruption	Degradation of the capacity of the service by more than 50%	Degradation of the capacity of the service by more than 20%	During accelerator operation	At all other times
Acceptance of data from the Tier-0 Centre	12 hours	12 hours	24 hours	99%	n/a
Networking service to the Tier-0 Centre during accelerator operation	12 hours	24 hours	48 hours	98%	n/a
Data-intensive analysis services, including networking to Tier-0, Tier-1 Centres	24 hours	48 hours	48 hours	98%	98%
All other services – prime service hours	2 hour	2 hour	4 hours	98%	98%
All other services – other times	24 hours	48 hours	48 hours	97%	97%

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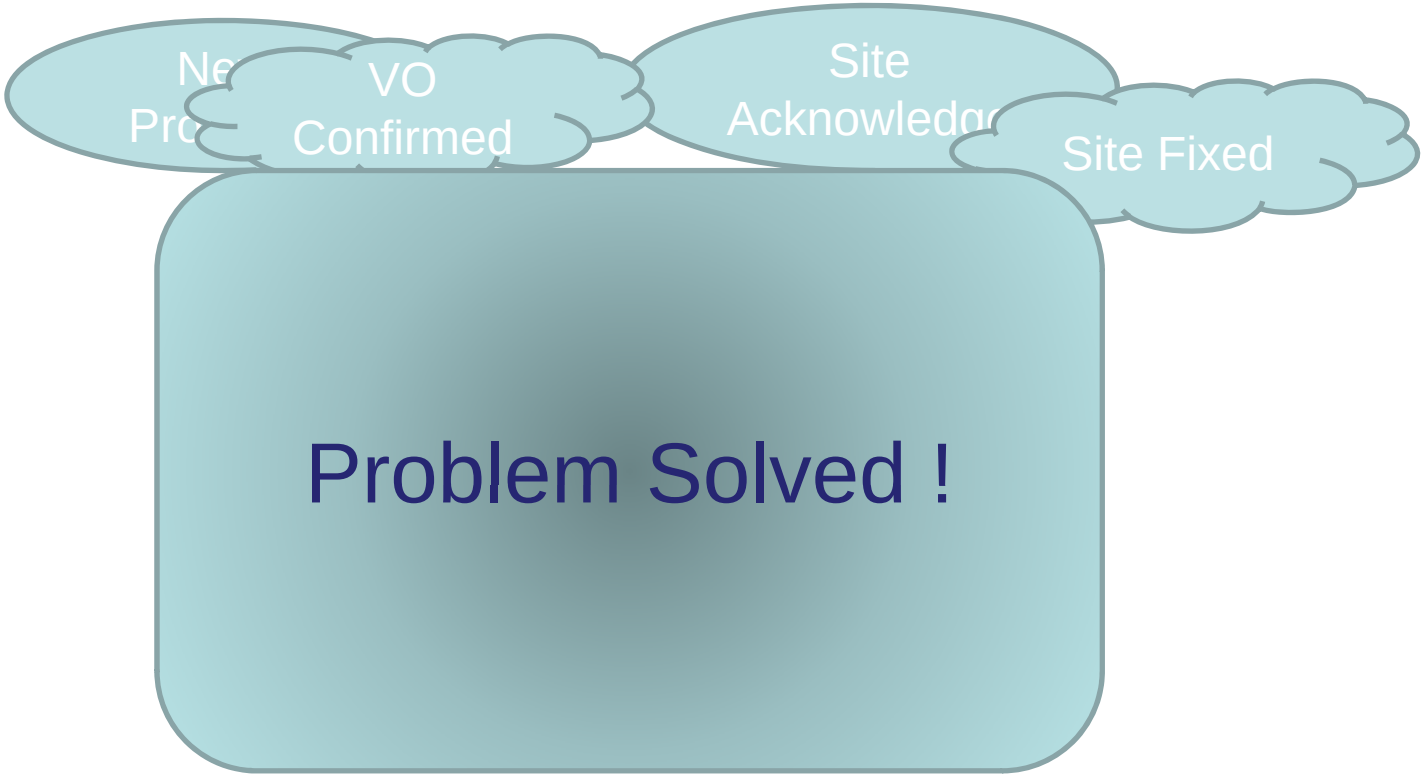
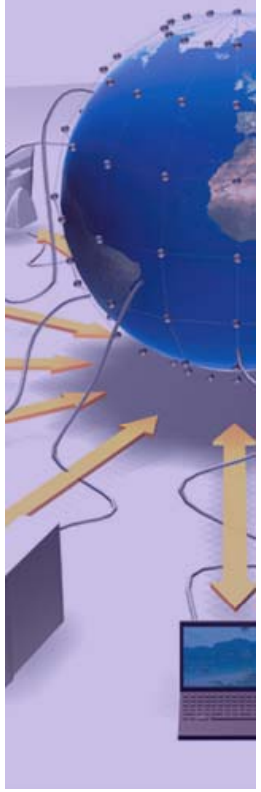
Response time reporting workflow





200
200
200
200

ier-1 centres,

ted

Problem Report: Issue ID #42 : 2008-02-01 10:30 :
MoU Area: CERN-PROD/ Distribution of data to Tier-1 Centres
Time to First Response : 1:00
Time to Problem resolved : 1:29
Time to VO confirmation : 2:23

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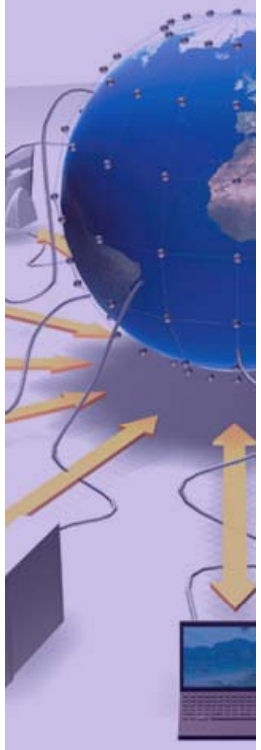
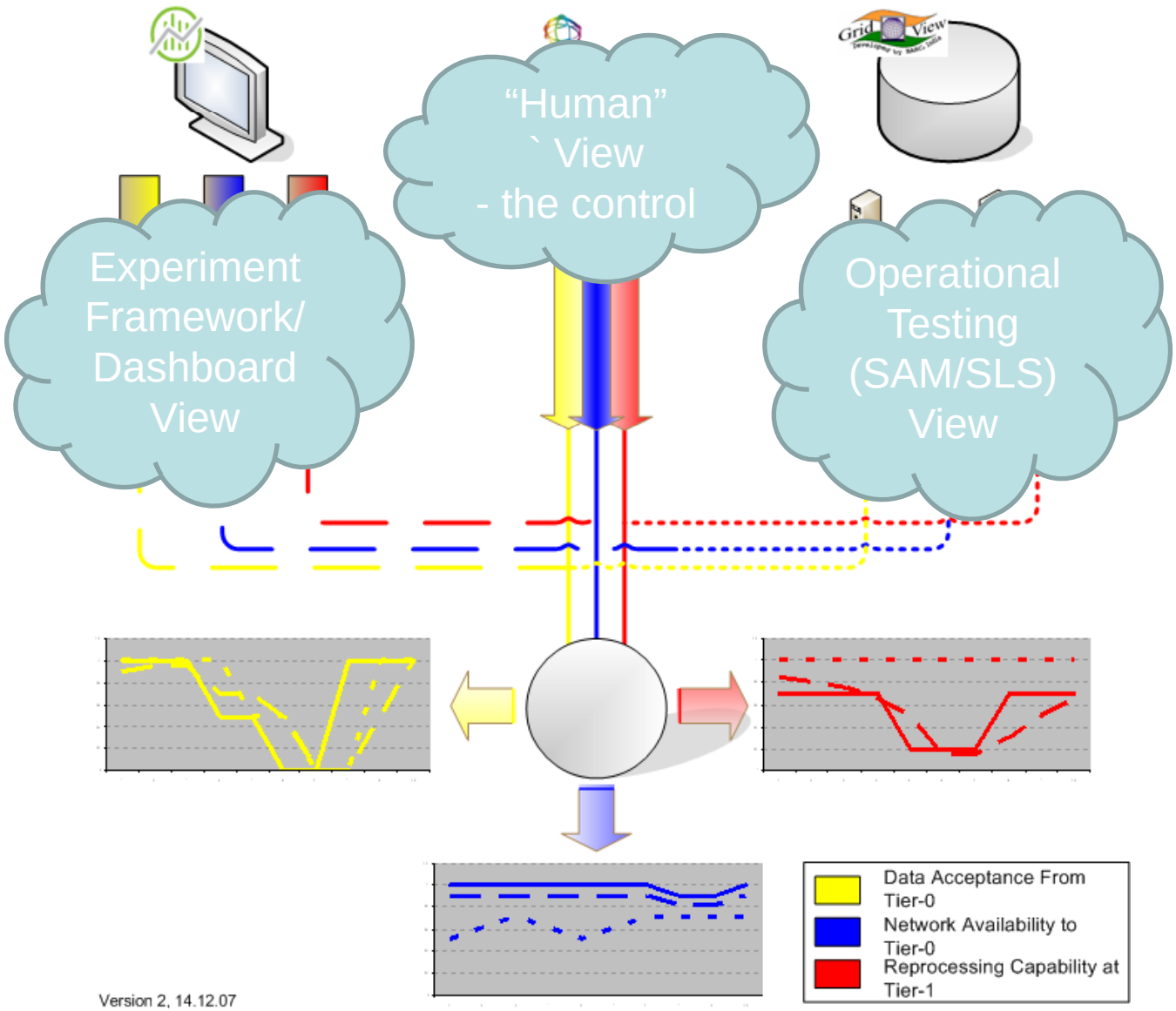
Measuring MoU availability



Comparing Metrics from Dashboard and SAM/Gridview against the User Experience



Version 2, 14.12.07

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Mapping to MoU Services

Tier-1		Grid Service															
		ArcCE	BDII	CE	FTS	LFC	MYPX	OSGCE	RB	RGMA	SE	SRM	SRMv2	VOBOX	gCE	gRB	sBDII
MoU Category	Acceptance of data from Tier-0 *											•	•				
	Networking Services to Tier-0 *																
	Data-intensive analysis service, including networking to Tier-0	•		•	•			•							•		•
	All Other Services		•			•	•		•	•				•		•	

- Map grid services status (from SAM) to MoU categories
  - These are “custom” service availability calculations
- Use the CMS SAM portal framework as basis for implementing this
  - And send results direct to Tier-1 Nagios

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CMS SAM Portal

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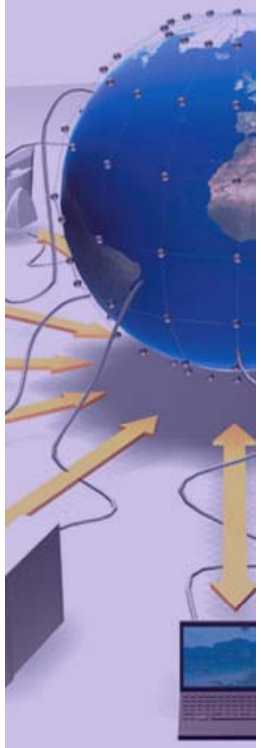


Legend:	NA	OK	MAINTENANCE	ERROR	WARNING	INFO	NOTE	CRITICAL

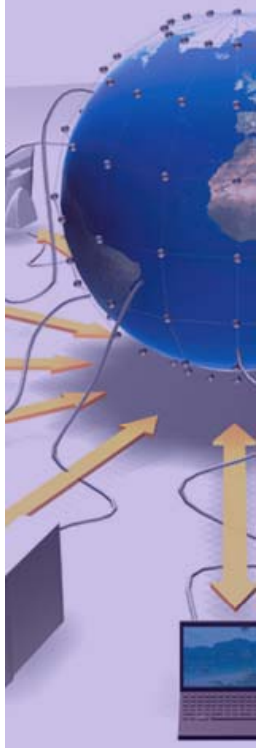
Note: brightest colors: test is 0 - 6 hours old, ... lightest colors: test is more that 24 hours old

Link to the table

Sitename	Service Type	Service Name	getmeta	del	get	getpfn	put
FZK-LCG2	SRM	gridka-dCache.fzk.de	ok	ok	ok	ok	ok
		pps-srm-fzk.gridka.de	warn	warn	warn	warn	warn
IN2P3-CC	SRM	ccsrm.in2p3.fr	ok	ok	ok	ok	ok
INFN-T1	SRM	castorsrm.cr.cnaf.infn.it	ok	ok	ok	ok	ok
		sc.cr.cnaf.infn.it	warn	warn	warn	warn	warn

Site	Data Acceptance	Networking	Analysis Services	All Other Services
FZK-LCG2	ok	ok	ok	ok
IN2P3-CC	ok	ok	ok	ok
INFN-T1	ok	ok	ok	error
RAL-LCG2	warn	warn	ok	ok
Taiwan-LCG2	error	ok	ok	ok
pic	error	ok	ok	ok
uscms-fnal-wc1	ok	ok	ok	ok

ServiceMap



- What's a ServiceMap?
  - It's a gridmap with many different maps, showing different aspects of the WLCG infrastructure
- What's the CCRC'08 ServiceMap?
  - Service 'readiness'
  - Service availability
    - For VO critical services
  - Experiment Metrics
- A single place to see both the VO and the infrastructure view of the grid

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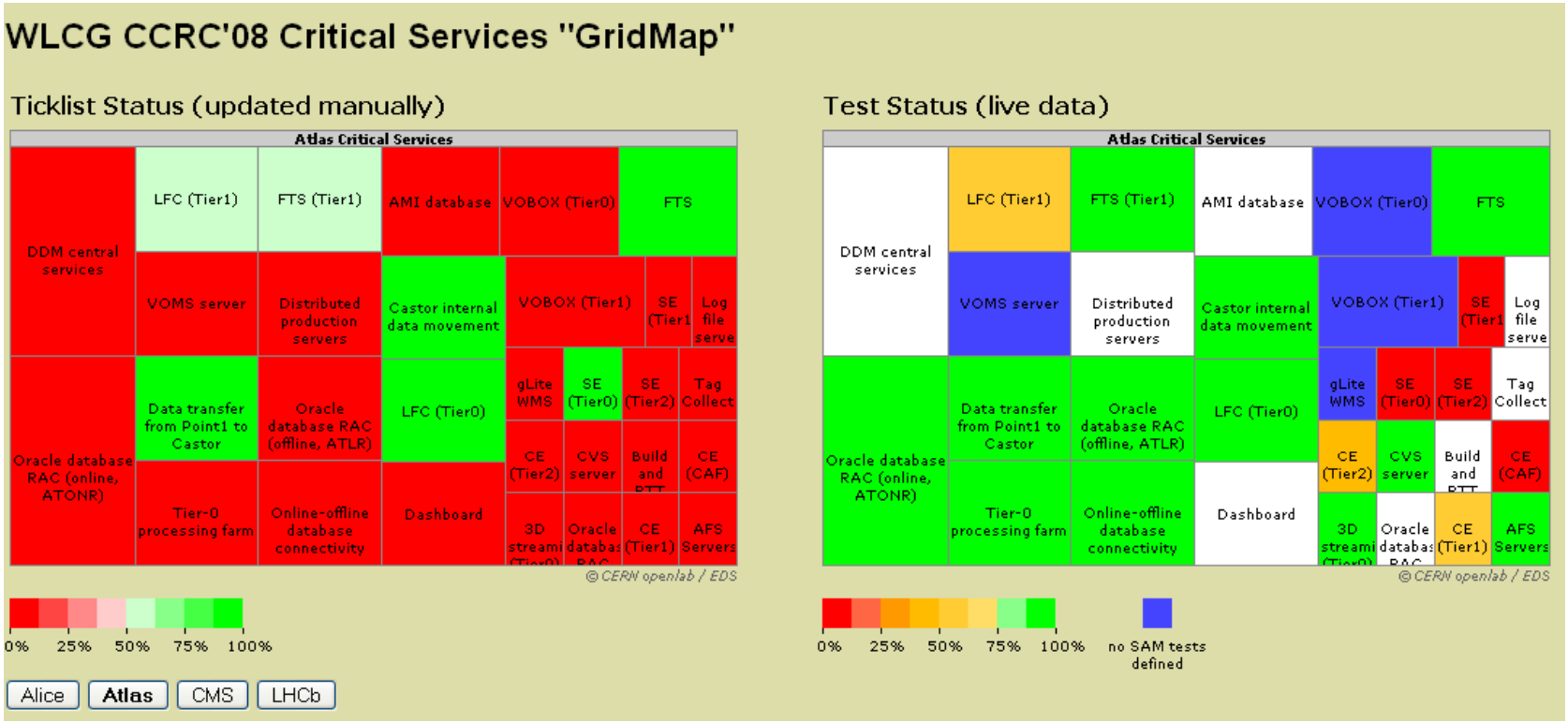
CCRC'08 ServiceMap



…Demo…

http://gridmap.cern.ch/ccrc08/servicemap.html

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Service Readiness

#	Question	Comments
1	High-level description of service available?	with architecture diagam
2	Middleware dependencies and versions defined?	OS deps, M/W deps, platforms supported
3	Code released and packaged correctly?	Repository + Tagging process, rpms/tarballs
4	Certification process exists?	
5	Automatic Configuration code exists?	e.g. Yaim, NCM, …
6	Admin Guides available?	Installation, monitoring, problem determination
7	Disk, CPU, Database, Network requirements defined?	
8	Monitoring criteria described?	
9	Problem determination procedure documented	
10	Support chain defined (2nd/3rd level)?	
11	Backup/restore procedure defined?	
12	Suitable hardware used	
13	Monitoring implemented	
14	Test environment exists	
15	Problem determination procedure implemented	
16	Automatic configuration implemented	
17	Backup procedures implemented and tested	

Key:
Software Readiness
Service Readiness
Site Readiness

- Measure of how ‘production-ready’ a service :
  - In terms of software, service and deployment
- Manually edited (under SVN control) by responsibles
  - EIS team, service managers, deployment team

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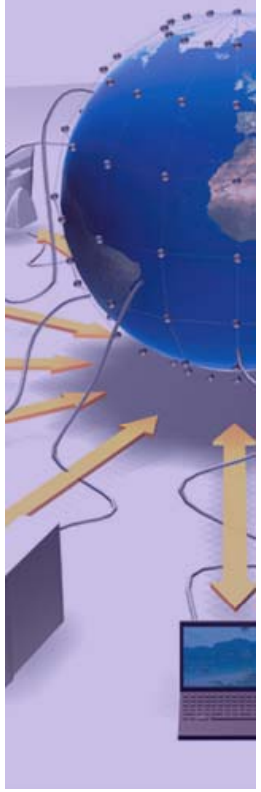
Experiment metrics

Transfer to Tier-0	Recording Raw data to CASTOR		Processing at Tier-0	Transfer from Tier-0 to Tier-1
Processing at Tier-1	Monte Carlo at T1	Analysis at Tier-1	Transfer to Tier-2	Data recording at Tier-1
Monte Carlo at Tier-2	Analysis at Tier-2	Transfer to Tier-1		Transter to T2



- Show the VO view of the infrastructure
- Two extra ‘maps’
  - Reliability (e.g successful data transfer, jobs, …)
  - Metrics (MB/s, events/s, …)
- Need interaction with experiments to create these two views
- Note that this is very similar structure to MoU view
  - perhaps we merge the two, and report to sites on this structure ?

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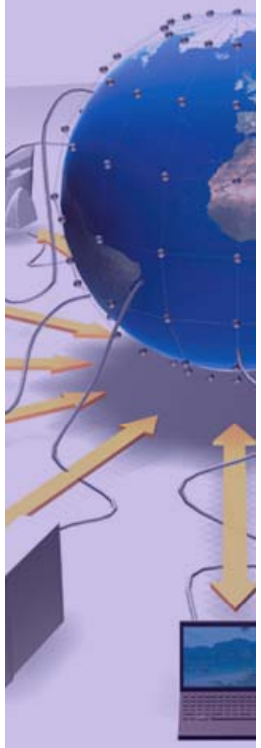
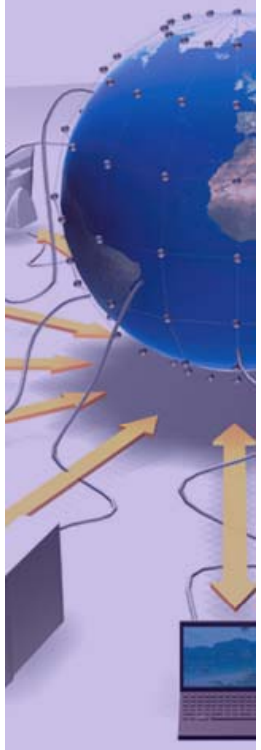
Summary



- CCRC'08 is a good opportunity to try some new operational tools
  - And evaluated them in a 'real-world' mode
- The CCRC'08 ServiceMap seems to give a useful view of the grid
  - Need to iterate on what is useful to show
  - And fill in the white spaces…
- Next Steps
  - MoU calculation and reporting to sites
- Feedback on all the tools welcome !

Links to tools



- CCRC’08 ServiceMap

  http://gridmap.cern.ch/ccrc08/servicemap.html

- CCRC’08 Observations logbook

  https://prod-grid-logger.cern.ch/elog/CCRC'08+Observations/

  RSS feed : https://prod-grid-logger.cern.ch/elog/CCRC'08+Observations/elog.rdf

- Reponse tracking logbook

  https://prod-grid-logger.cern.ch/elog/CCRC'08+Logbook/

  RSS feed : https://prod-grid-logger.cern.ch/elog/CCRC'08+Logbook/elog.rdf

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