ATLAS Operations: post-LHC startup

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General Observations

- Running on the grid has been relatively smooth during and after data taking

  - Data distribution was normally quick around all sites

  - Reprocessing ran smoothly at T1s

  - Analysis has been working well at T2s

- There have been many minor problems, but these have mostly been resolved quickly by sites

- So we would like to say thank you to all sites for their efforts and stability

ATLAS EXPERIMENT

Jet Event at 2.36 TeV Collision Energy
2009-12-14, 04:30 CET, Run 142308, Event 482137
http://atlas.web.cern.ch/Atlas/public/EVTDISPLAY/events.html

CASTOR at CERN

- Focus on one issue of great importance

    - Performance and stability of CASTOR at CERN

- *Within all of this we want to acknowledge the excellent support from the CASTOR team, which has prevented many of the following problems from affecting ATLAS more severely*

srm-atlas downtimes

- Too many interventions

  - 'Transparent' interventions often have side effects

  - e.g., sudden introduction of checksums for disk files which were wrongly calculated

CASTORATLAS 2.1.9 upgrade.	EGEE/CERN/CERN-PROD/srm-atlas.cern.ch	OUTAGE	SCHEDULED	2010-01-06, 09:30:00 [Europe/Paris]	2010-01-06, 13:30:00 [Europe/Paris]	
CASTORATLAS and SRM-ATLAS transparent update	EGEE/CERN/CERN-PROD/srm-atlas.cern.ch	AT_RISK	SCHEDULED	2009-12-09, 10:00:00 [Europe/Paris]	2009-12-09, 13:00:00 [Europe/Paris]	
CASTORATLAS and SRM-ATLAS transparent update, [take 3]. Re-scheduled on short notice again for Monday since no beam.	EGEE/CERN/CERN-PROD/srm-atlas.cern.ch	AT_RISK	UNSCHEDULED	2009-12-07, 10:00:00 [Europe/Paris]	2009-12-07, 11:53:00 [Europe/Paris]	
Downtime to perform move of ORACLE DB Hardware and upgrade CASTORATLAS to 2.1.8-15	EGEE/CERN/CERN-PROD/srm-atlas.cern.ch	OUTAGE	SCHEDULED	2009-11-16, 09:00:00 [Europe/Paris]	2009-11-16, 10:31:00 [Europe/Paris]	
ATLAS SRM update, 2.7 to 2.8-2; disruptive intervention.	EGEE/CERN/CERN-PROD/srm-atlas.cern.ch	OUTAGE	SCHEDULED	2009-10-27, 08:55:00 [Europe/Paris]	2009-10-27, 09:30:00 [Europe/Paris]	

FIO SIRs

- Required 3 service incident reports covering 4 significant periods of degraded service for ATLAS

PostMortem08Jan10	08/12/2010	CASTORATLAS GRIDFTP checksum errors
PostMortem12Dec09	12/12/2009, 14/12/2009	SRM ATLAS high failure rate
PostMortem20Nov09	20/11/2009	SRM ATLAS high failure rate

GGUS Tickets Raised

- 14 GGUS tickets, most during data taking operations

Ticket-ID	Type	Concerned VO	Notified Site	Resp. Unit	Status	Date	Last Update	Info
54549	Team	atlas	CERN-PROD	ROC_CERN ▸involved	on hold	2010-01-08	2010-01-08 19:57	Bad data was encountered from CERN_PROD_DATADISK t...
54502	Team	atlas	CERN-PROD	ROC_CERN	verified	2010-01-06	2010-01-06 11:40	All the jobs failed on CERN/CERN-RELEASE
54446		atlas	CERN-PROD	ROC_CERN	solved	2010-01-04	2010-01-05 15:33	ANALY_CERN (Get error: Staging input file failed)
54196	Team	atlas	CERN-PROD	ROC_CERN	in progress	2009-12-17	2009-12-18 14:19	Failing lcg-cps from CERN
54073	Team	atlas	CERN-PROD	ROC_CERN	waiting for reply	2009-12-13	2009-12-17 17:50	RAL-LCG2_DATADISK Connection refused in RAL-LCG2_D...
54055	ALARM	atlas	CERN-PROD	ROC_CERN	verified	2009-12-12	2009-12-13 14:28	CERN-PROD REQUEST_TIMEOUT for ATLASDATADISK
53987		atlas	CERN-PROD	ROC_CERN	verified	2009-12-09	2009-12-10 10:56	Submission to lcgCEs with ATLAS pilot role fails
53932	Team	atlas	CERN-PROD	ROC_CERN	solved	2009-12-07	2009-12-07 17:16	Timeout errors on CERN-PROD_DAQ
53887	Team	atlas	CERN-PROD	ROC_CERN	verified	2009-12-05	2009-12-07 15:47	Transfers with CERN FTS2.2 fails since 6:30
53841		atlas	CERN-PROD	ROC_CERN	verified	2009-12-03	2009-12-14 14:50	Unreadable files in castor
53825	Team	atlas	CERN-PROD	ROC_CERN	verified	2009-12-03	2009-12-15 15:52	:CERN-PROD_DATADISK [INVALID_PAT H] File has no co...
53695	Team	atlas	CERN-PROD	ROC_CERN	reopened	2009-11-27	2009-12-13 15:50	Problematic FTS job : never finished after 3 days
53520	Team	atlas	CERN-PROD	GGUS	solved	2009-11-20	2009-11-20 20:23	I cannot submit ALARm ticket
53515	Team	atlas	CERN-PROD	ROC_CERN	solved	2009-11-20	2009-11-20 17:43	ALARM ticket : srm-atlas.cern.ch is down

ATLAS Usage of SRM

- ATLAS use CASTOR SRM for fewer activities than T1s

    - No deletion via SRM

    - No production at CERN

    - Very little grid based analysis

- So it should be more stable than T1s, not less!

Structural Issues

- CASTOR SRM seems unable to have trouble with more than a few hundred concurrent sessions

    - This seems to be inadequate for T0 export of data and other requests made against ATLAS's CASTOR instance, e.g., additional requests for user analysis sandboxes

    - User analysis activity is widespread, chaotic and currently impacts the same CASTOR instance as used by central operations

- xroot access at CERN still seems immature for internal use

Monitoring

- There is no sense of having adequate monitoring of CASTOR for ATLAS

  - Questions about when we have 'caused' overload when there has been no change in ATLAS workflow or operational rate

  - e.g., the number of SRM calls vs time, breakdown per DN, source host, dest host, type of call

Discussion

- We do not like interventions - we would like to avoid them unless there is a show stopping bug

- However, there seem to be structural problems with SRM which are not being addressed

  - Is SRM the future anyway?

- Is it sensible to support users on the same SRM infrastructure as the rest of ATLAS central activities

- Improvements in monitoring are vital to survive 2010 running

- Immediately: Need to rebalance FTS channels; get redundancy on T0 merge pool