



Some DPM feedback from ATLAS

Dietrich Liko IT/PPS



Introduction

- ATLAS uses DPM on its LCG Tier-2's
- Bulk of ATLAS Analysis will be on Tier-2's
 - DPM is of great importance
 - We are not yet distributing simulation data to our Tier-2's on a regular basis
- For analysis we need to be able to do posix-like IO from our analysis program
 - Cannot copy all files to the WN
 - Sometimes we read only few events
- Some initial feedback on our usage



Access control

- We recently switched our production to use VOMS roles
 - We have now general ATLAS users and ATLAS production users writing data
- Initial problems due to wrongly set ACL
 - Being fixed new
- In the long term we will need a full unix like security model
 - secondary groups



ATLAS requirements

- 100 to 1000 files per job
- Moderate IO requirements for Athena AOD analysis
 - 2 MB/sec
 - One can scale that up with the number of CPUs
- Filesize will still increase
 - Today our AOD files have 130 MB
- Analysis of single events based on backnavigation could increase the load on SE dramatically



How should we do the IO

- Use the backdoor
 - Currently possible on many SE
 - Not on DPM: tURL and sURL cannot be trivially translated
- Use SRM in our own procedure
 - Better integration with ATLAS DDM
 - We can control what is happening (IS, SRM etc)
- Use GFAL
 - Would be for us the simplest solution
- Use root protocol
 - Profit from an alternative provided for ALICE (maybe)



Posix IO on DPM

- Use special library libDPM.so
- Problematic with the current version of Athena
 - Uses predefined version of root
 - 4.04.0.2f and 5.10.00e
- Some things are fixed in the latest ROOT version
 - Still new versions of RFIO plugin are being worked upon



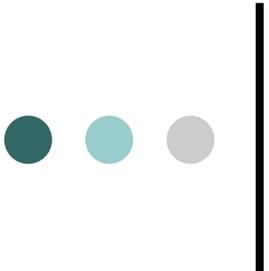
Backporting the RFIO plugin

- Advantages
 - New syntax a la Castor-2
 - Large Files > 2GB
- Problems with DPM
 - A different URL format
 - Some problems querying the file attributes
 - Several patches required to make in work
 - Security context required, but Grid UI clashes since last week with Athena due to python version
- In generally new ROOT IO plugins should be backported to agreed ROOT versions



Performance check

- Standard Analysis Example
 - 10 files a 130 MB
- Local 14:02 min
- DPM 16:30 min
- Castor-2 20:29 min



How are things working with GFAL ?

- GFAL support for Castor-2 syntax is broken
 - `gfal_testread srm://srm-durable-atlas.cern.ch/...` does not work
- Bulk of ATLAS data at CERN is on that area
- Has been reported
 - GGUS ticket 16016
 - It should have been fixed, but it is probably somewhere in certification ...



Also GFAL plugin broken

- Well, in the version of root we are using
 - Probably the same problem with the attributes ...
 - Has again to be backported ...
- No experience at the moment
 - IS, SRM and maybe LFC during the running of our analysis program
- We want to be careful
 - Is it sufficient reliable ?
 - Is it sufficient performant ?
- This are question to be answered in the next weeks



Summary

- We can use DPM now also for analysis
 - Using the RFIO plugin
 - We will verify GFAL in the next weeks
- New ROOT IO plugins should be backported to agreed ROOT versions
- IO requirements moderate at this point in time
 - Emphasis is on reliability
- On the longer term we will need a full security model with secondary groups
- We are looking also at other SEs including xrootd