DDM Operation and Distributed Analysis

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Overview

- Distributing the Data
- Locating the Data
- Accessing the Data
- Storing User Data

Distributing the Data

- Last year data was distributed to several Tier-1 sites
  - BNL, Lyon, CERN, FZK
- This year we aim for all Tier-1
  - This operation is already going on
  - We still have to see how efficient we will be in achieving the objective
- After that we have to reach also the Tier-2's

How to find out if the data is at a particular ?

- Pages by Stephane for csc11 data
  - http://lapp.in2p3.fr/atlas/Informatique/Offline/LYONDISK_csc11/AOD/list_CC.html
  - Lyon, FZK, CERN
  - There exist similar pages also for BNL
- We need similar information also this year
  - If required, the ARDA group will set up some pages for the missing Tier-1 sites
- We hope to get similar information in a more scalable way from the ARDA dashboard with release 0.3)

Locating the Data

- Some definitions
- Datasets can be open/closed/frozen
  - It was reported that many datasets are open
- Closed of frozen datasets can be complete on a particular site
  - Its unclear which fraction of the data is available as complete

Is the information useful ?

- Incomplete
  - Zero files to all files
- Complete
- Sometimes data is on a site, but it is not registered

Possible solution

- Try to get as many closed datasets as possible
- Try to get as many complete datasets on sites as possible
- Synchronize the local catalogs with the central one
  - “Dataset Location Index”

Accessing the data

- Production system is downloading data using SRM and GridFTP
- For analysis of large datasets we need to access the data directly on the SE
- This is in particular important in the case of TAG based analysis and backnavigation general

Problems

- ATLAS Software needs to be compatible with the SE
  - A question of ROOT/POOL version
  - Patches – as has been performed for the dCache plugin - tend to be forgotten with newer versions
- Issues are documented on a Wiki page
  - https://cern.ch/twiki/bin/view/Atlas/IssuesWithPosixIO
- GANGA is shipping the plugin to the site in question in the next release
- DPM rfio and Castor rfio require a different library
  - But that's not sufficient as it is still not compatible with the rfio plugin
  - We need to backport the plugin

Backporting the RFIO plugin

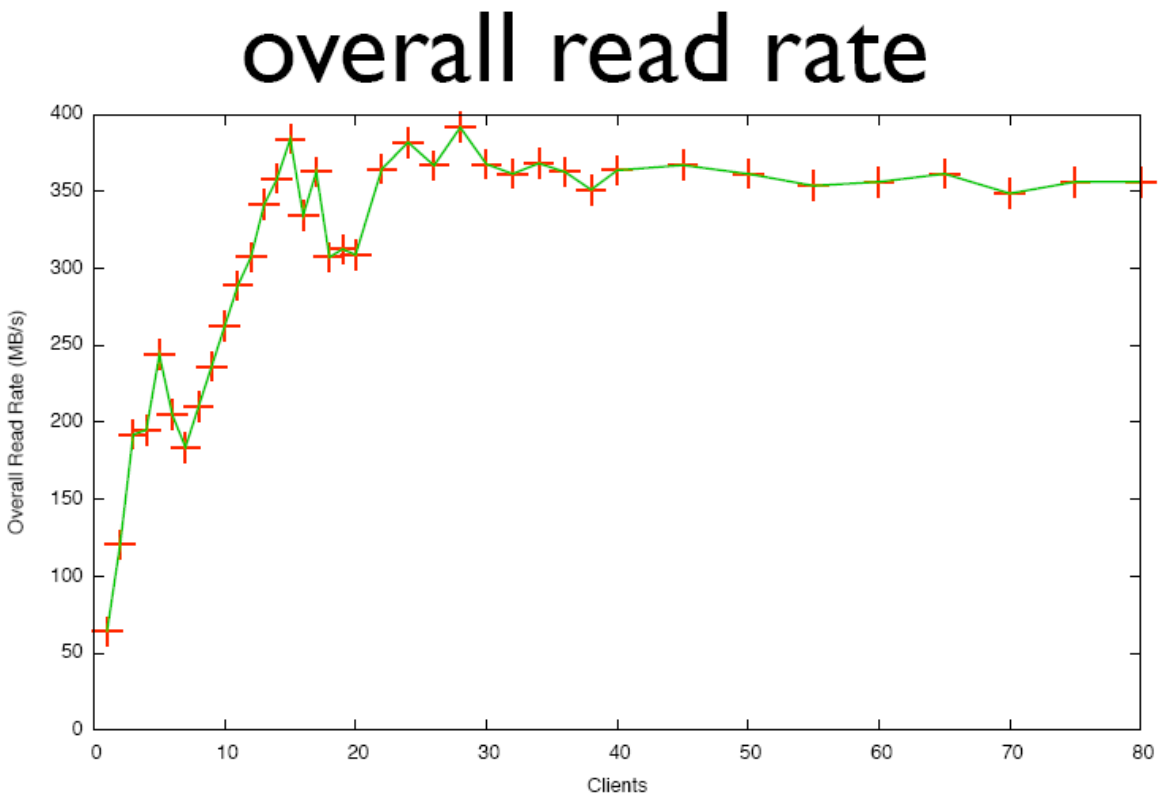
- Advantages
  - New syntax a la Castor-2
  - Large Files > 2GB
- Problems with DPM
  - A different URL format
  - Some problems querying the file attributes
  - Several patches required to make in work
  - Security context required, but Grid UI clashes since last week with Athena due to python version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

Simple performance test

- Standard Analysis Example
  - 10 files a 130 MB

- Local 14:02 min
- DPM 16:30 min
- Castor-2 20:29 min

DPM tests done in Glasglow



- Graem
- We will do together test with Athena

Storing User data

- PANDA & GANGA are storing user data on SE and are regsitering files in the DDM
- Few things are defined, except the naming of the dataset
  - user.DietrichLiko……

What about non-Tier-2 sites

- They have ATLAS dedicated SEs
  - They will not host the data on large scale
- It would be nevertheless of advantage to be able to register and transfer files
- They should be defined in DDM but not used for distribution of data
  - I assume production is a matter of policy
- Has to be decided together with prodsys