

Open Science Grid



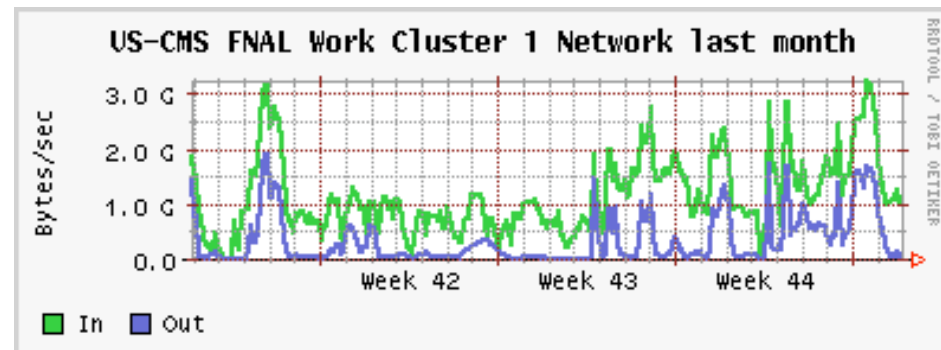
CMS Use of Storage

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OSG Consortium Meeting
August 23, 2006



In the CMS model

- ➔ Jobs are sent to the data
 - There is substantial storage at the Tier-2 centers and it is treated like a cache
 - 200TB of space at a nominal Tier-2 and 2.5-10Gb/s of networking
- ➔ Essentially all data is readable by members of the VO
 - Read access from the storage element to workers can be very a high rate
 - 200MB/s at a T2
 - 1600MB/s at FNAL T1
- Very secure authorization for reads is not as important as performance
 - We use local access for file reading: dcap, rfio, xrootd.





Writing

- ➔ File writing is done using SRM interface
 - Authentication is important
 - Files are typically staged-out from workers to local storage, we do not eliminate remote stage-out
 - Role and Group information is used to assign permissions to areas
- ➔ Files from local user applications as well as files transferred by the data management system are both handled through the SRM interface.



CMS uses a “trivial file catalog” (TFC) for data resolution on the site.

- ➔ The idea of the TFC is to use a consistent name space on all sites hosting CMS data to eliminate the need for more complicated services to resolve the mapping between logical and physical file names
- ➔ At each site there is a local site configuration file that indicates to CMS applications how to resolve a logical file name
 - For example:
 - if the local file name was
 - /store/preprod/2006/05/05/PreProdR3Minbias/0000/GUIDNAME
 - Then the local configuration file would indicate to append a head to the logical file to resolve the physical file
 - dcap://pnfs/cms/WAX/11/store/preprod/2006/05/05/PreProdR3Minbias/0000/GUI.
 - The name space is designed to scale by providing sufficient granularity that there are not too many entries in any directory



File Transfer Service is a service implemented by EGEE

- ➔ It sits on top of srm (srmcp and get and put are possible)
- ➔ Database that tracks transfers
 - It's purpose is to act as a throttle
 - Defined VO share of the transfers between two end points
 - Defined maximum average bandwidth
 - There are some stability issues with the DB, requests fill and tables need to be cleaned out
 - Rapid development

