

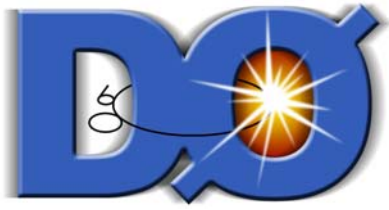


# Report from DØ on OSG

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For the DØ Collaboration





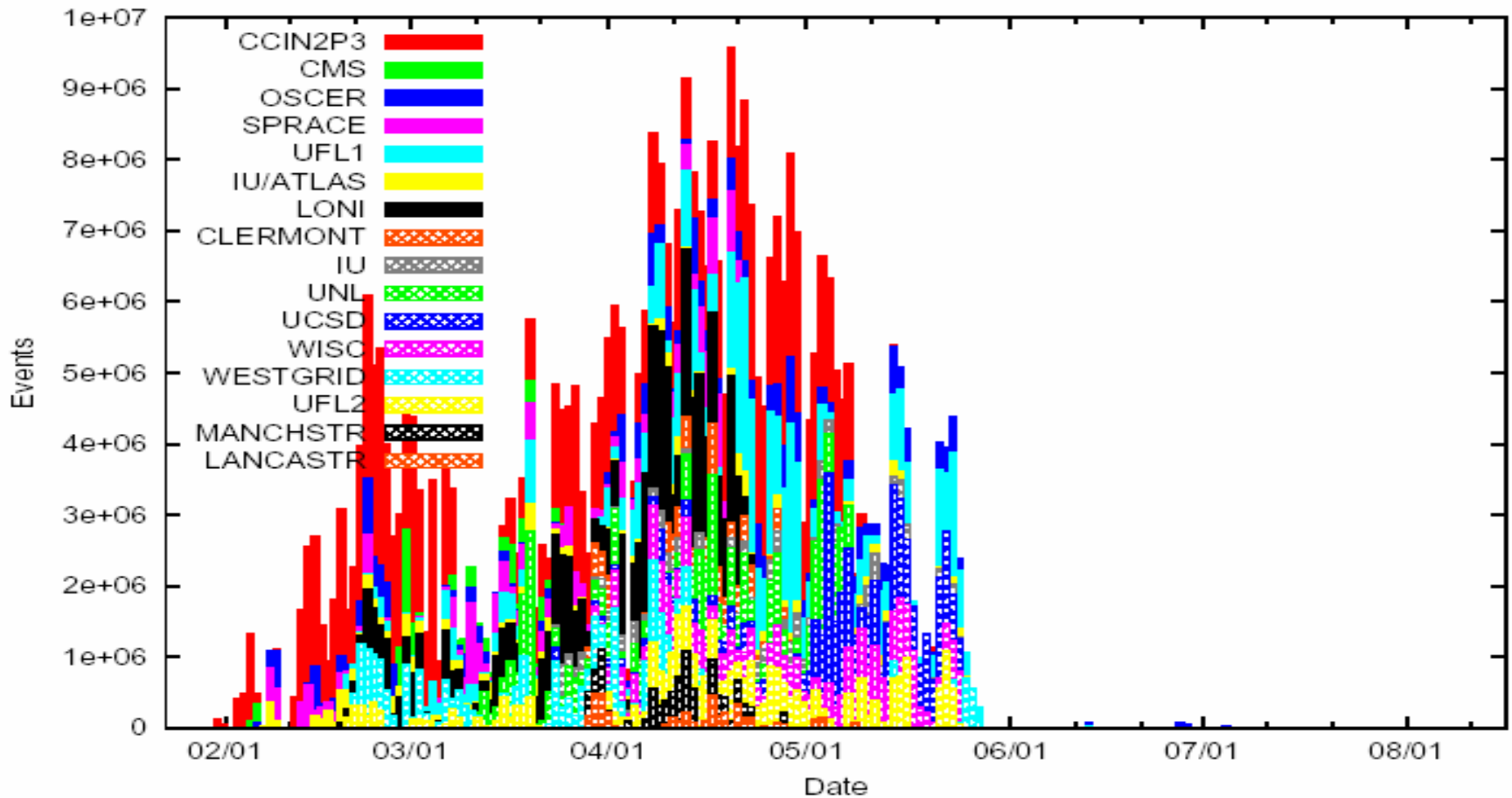
# Past use of OSG

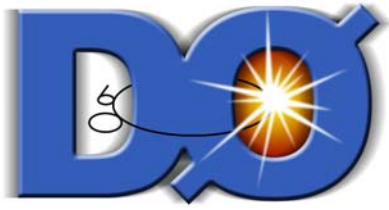
- Used for analysis in Top quark mass (300,000 CPU hours)
- Previously used minimally for MC generation
- First big use came from reprocessing of data in 2007.
  - It is completely finished.
  - Could not have been done without OSG resources (Thank you).
  - DØ learned a lot about using OSG



# Daily production during reprocessing

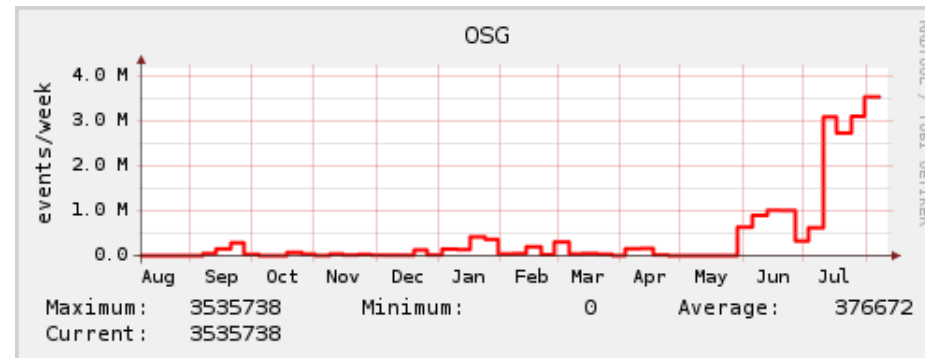
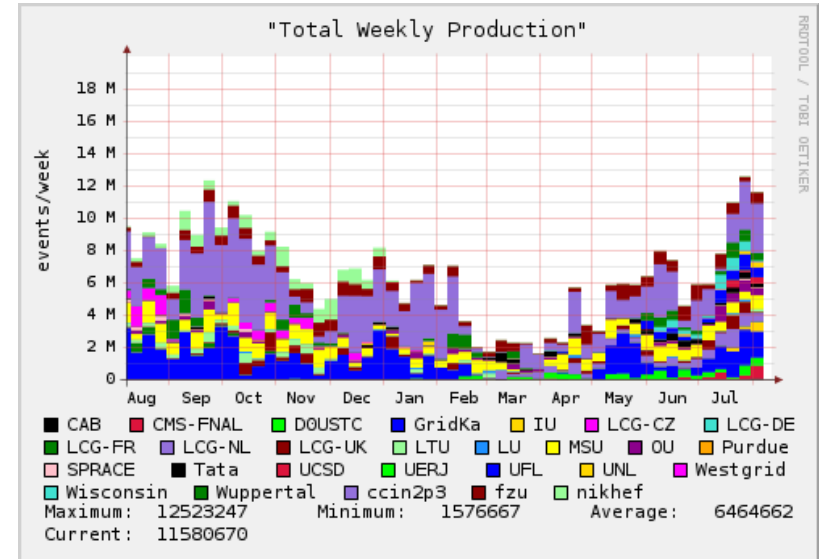
Daily Remote p20 Production to 17-Aug-2007

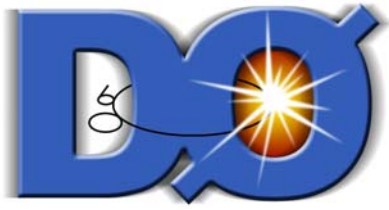




# Current use of OSG

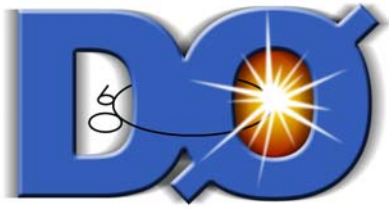
- Three main areas now DO using OSG
  - MC
    - Significant MC now being generated using OSG.
    - Reaching record levels of production, primarily due to OSG.
    - Now using a larger pool of resources. Good since we do not need to rely on only a few sites.





# Current use of OSG

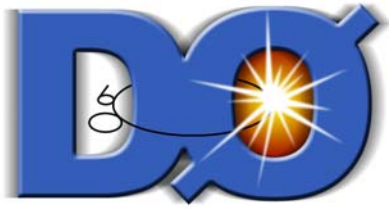
- Analysis.
- Earlier use was a very simple fortran code which use flat files for input/output.
- Now learning how to run "standard" DØ code on OSG so people can run analysis on OSG. Access to data/ databases etc.
- Running standard code has been proven to work by an individual
- Not yet a standard practice for analysis
- Partly because DØ has significant resources in our CAB system and average analyzer does not want to invest time to learn how to use at this time.
- Continuing to develop code/experience so in future using OSG for analysis is a real option
- Still under development stage and not yet in "production"



# Current use of OSG

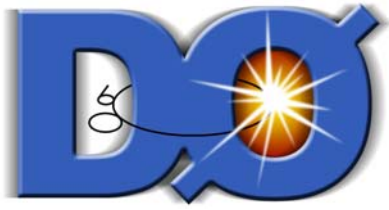
- Primary processing

- Current farm works well, but some of the code it uses is no longer being supported.
- Have 200 nodes setup on OSG on our CAB system for primary production through OSG. Use much of the infrastructure used for reprocessing.
- This has been very slow. Still not up and running in production mode after more than 2 months of effort.
- Myriad of issues. Getting certificates, having CAB nodes setup properly, having all daemons, code running properly on all nodes, disk space, hard coded time limits etc.
- Now very close to running. Critical DO gets this up and running soon. Behind in data processing by ~ 5 weeks. When OSG up and running, we will ~ double our resources. This will allow us to "catch up" in ~ 2-3 weeks. DO currently in a shutdown so not collecting data so both old farm and new OSG resources can be used.
- After it is proven that OSG can keep up with incoming data rates, will take down old farm and move to OSG so all of DO primary processing will be done on OSG.
- This should hopefully occur by the end of the shutdown which is Mid October



# Current issues

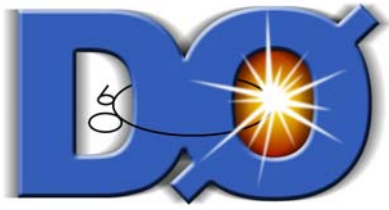
- Asked experts on MC/analysis/Processing what are the current issues with OSG
- Resource selector integrated and has been used, but not fully tested. Used minimally during reprocessing but only for 2 sites so did not stress test it.
- Pre-emption. Very inefficient for MC production. Causes a number of problems. Code is not setup for pre-emption. Can cause duplicate events, duplicate files etc. Lack of manpower so doubtful DØ will modify code to deal with pre-emption. Currently we just do not use sites that have pre-emption. Loss of potential resources



# Current Issues

- The biggest single issue that all experts commented on was Monitoring.
- All liked Mona Lisa and are very unhappy with it being deprecated. All claim current monitoring tools not sufficient for production monitoring.
- Especially true for primary processing of data.
- Even Mona Lisa was not completely satisfactory for primary processing work. Time consuming trying to determine why a job failed, understanding log files is not trivial, finding exactly where/why job failed can be time consuming.





# Conclusions

- DØ is using OSG much more and will continue to develop its code to continue to use OSG resources in the future.
- Since using OSG for primary processing of data, DØ will continue to use OSG for many years in the future.
- Only major issue for continued efficient use of OSG is monitoring.