

Grand Challenge Status and Plans

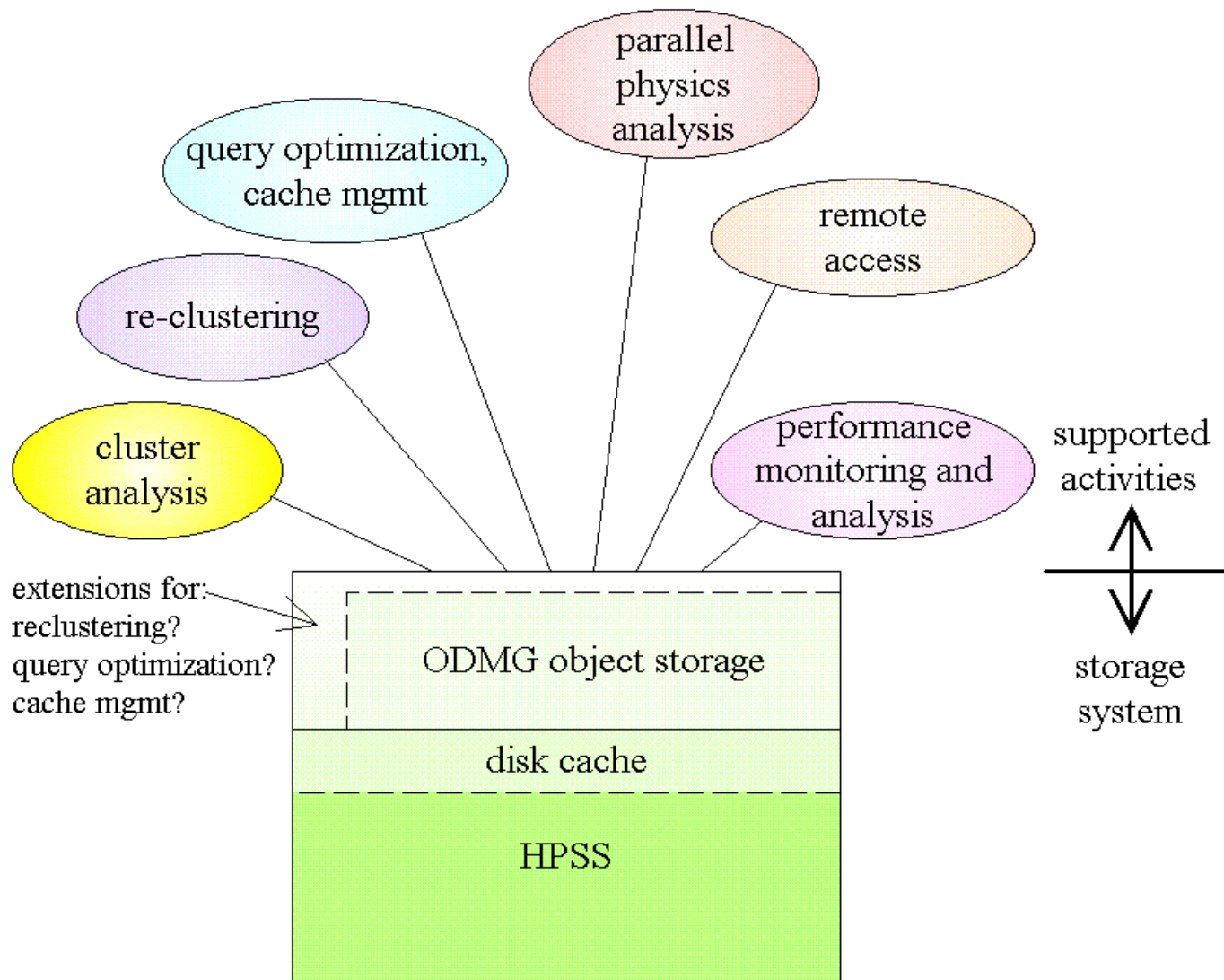
(<http://www-rnc.lbl.gov/GC/>)

prepared for
RHIC Computing Meeting
21 May 1997

D. Olson

Please send comments, questions, feedback to
[dlolson@lbl.gov](mailto:dolson@lbl.gov).

Grand challenge components



Work areas

- Data management
 - cluster analysis, reclustering, query optimization
- ODMG compliant persistent objects
- Simulations / Data production
- Performance analysis and monitoring
- Event-parallel computation
 - framework for query and event-parallel analysis
- Remote & Desktop access
 - desktop access on LAN and WAN for GB-scale clients
 - inter-center access for TB-scale clients

Data management status

- New hire in Arie's group (Henrik Nordberg)
- Example event object model schema being prepared for STAR and Babar (in OPM).
- OPM (schema & browser only) being installed on PDSF.
- Some NA49 event & track ntuples available so CS folks can get a "feel" for physics data.
- Working on API for clustering/reclustering.

ODMG persistent objects status

- Malon persistent object manager on PDSF.
- NA49 ntuples converted by Malon to show example of ODMG code.
- Setting up to get hands-on experience with Objectivity to understand issues.

Comments on Objectivity

- Reminder about GC proposal: The heart of the proposal describes a data storage and access solution comprised of ODMG compliant persistent objects with clustering analysis and reclustering in order to optimize efficient queries for data coming from tape.
- The recent positive experiences with Objectivity from RD45 and BaBar makes Objectivity look like a very good candidate for production quality persistent object manager for RHIC. This motivates one focus of activities in the grand challenge project to investigate Objectivity in order to understand its features and limitations as if it will become part of the RHIC data access solution.

Simulations status

- RQMD running on T3E.
- Have requested some CERN library for T3E.
- Need to prepare data production plan.
 - G. Odyniec working on STAR needs.
 - S. Sorensen, P. Yepes working on schema and format for event generator data.
- Plan to use NERSC T3E and RCF for simulation production.

Performance monitoring and analysis

- Goal is to measure performance during normal (and abnormal) operations to permit tuning and optimization.
- Needs more detailed specification.
- Useful to compare actual performance to reasonably simple simulation.
 - simulation needs to be prepared
- A good role for RCF?

Event-parallel computation

- STAF-based event analysis.
- Requires interface to ODMG storage supporting parallel access.
- This is a boundary task for the GC project and the experiments. GC project will demo parallel analysis but production quality parallel event analysis system is additional effort from experiments/RCF.

Remote & Desktop access

- Goal is to support GB-scale access to desktop and TB-scale access (transfer, migration, replication, ...) between centers.
- Needs more detailed specification.
- Objectivity federated DB is one possible solution.