What's In Store For ROOT I/O

Summary

July 21, 2011

Current Priorities (v5/32)

- Bug Fixes / Support

- Parallel File Merge

- TClonesArray extensions (*short*)

- Continue optimization of the TStreamerInfo::ReadBuffer

ATLAS

◆ Find why AutoFlush and TTC don't reduce HDD reads/time sufficiently

◆ Rewritten basket optimization function

   ◆ Have a global switch for basket optimization

     ◆ ATLAS has been caught by inadvertent basket optimization, when TTrees, which should not be optimized and not take 30 MB of memory, reach 30MB and their memory footprint increases. It's harder to manually switch AF fro almost all TTrees OFF than switching in ON for a few TTrees.

   ◆ Maybe it would be helpful to make bmin/bmax configurable.

   ◆ Make minimal compression (hardcoded to '1' configurable to allow switching OFF branch compression if gains are too small.

   ◆ No unreasonable basket sizes (see backup slides)

◆ A new tool to merge, re-order, re-optimize files

   ◆ Or just add this functionality to hadd

◆ TTC on reading multiple TTrees

◆ Parallel read/write

◆ Parallel unzip

◆ Regular ROOT - experiments meetings. Specially at new releases, informing us on implications of updates/changes.

CMS

- I/O Customization framework: nested objects

- Improved tooling to diagnose "speed issues".

- Study and improve OptimizeBaskets

- TTreeCache

  - Used in fast-merging.

  - On by default.

- Pluggable framework for cache policies.

- New ROOT I/O format to reduce file size

- Continue improvement of de-serialization speed.

Proposed Revised Plan for v5.32

ROOT Team

- Parallel File Merge

- TClonesArray extensions

- I/O Customization: Nested Objects.

Contributed / CMS

- Test asynchronous-prefetch

- OptimizeBasket update

Contributed / ATLAS

- Testing on storage system

- TTreeCache Startup and training period.