

LArIAT Online Computing Plans

During the Summary 2015 shutdown, DAQ and Gateway computers

- Patch kernels, system, libraries, security to latest SLF6
- Update CAEN drivers and libraries, if needed
- Note that lariat-daq01 is intended as DAQ hot spare, has spare CAEN A3818 PCI optical bridge
- Move DQM processes to new machines lariat-daq03
- Perhaps add one more lariat-daq04 depending on power capacity in that rack (separate hot spare for DQM)
- Review system configurations so that they are reproducible during emergency puppet reinstallation

- Are people happy with performance and features?
- What improvements would be good?
- Remember lack of \$\$

Electronics Issues

CAEN Digitizers hiccup regularly, both types

- Mismatches on event counters – one board misses one trigger, perhaps counter problem only
- Generic communications errors reported from boards; lack of access to proprietary info hinders
- Too rare to easily debug, have contacted CAEN
- Will study in detail once first beam run ends on July 4, 2015 (start of summer shutdown)
- Need quantitative review of errors (log files)
- Tell me if you have observed other issues!

More Electronics Issues

- Have persistent communications problems with W/C TDC controller – e.g. dropped bytes, configurations, etc. – need to demonstrate and convince Terry K.
 - Shall we try a new generation W/C controller?
- Need to validate the fine grained timing from the WUT – with LEMO connectors and NIM fanouts, resolution may be degraded to much for 100 *ps* resolution
- The wave forms from V1751 may be sufficient after fitting 1 ns samples to known shape – do we give up on WUT?

Data Acquisition Software

[Key element: “*KISS*” Keep It Simple, Stupid!]

- Do we need a more sophisticated XML editor?
 - Have changes stabilized?
- Dealing with ArtDaq issues
 - Verbosity obscuring real warnings and errors
 - Frequency core dumps
 - Sticky ports
 - What else do we want?
- Can/should the shifter’s life be made easier here?

Impossible LArIAT DAQ Issues

- Almost complete lack of spares of all DAQ boards
 - No V1740s, V1751s, WUT, V1495, V2718 spares
 - Have one A3818 (CAEN PCI bridge) spare
 - For V1495, could beg A/D, SeaQuest, DS-50 in a pinch
 - Collaborations needs to be aware we're teetering on the edge
- We have 32 spare channels on V1740 number 7
 - Would have to purchase LEMO adapter ~ \$1K
 - Need to make compelling case for purchase
 - Should be done now, due to long lead time