DAQ User Guide (&troubleshooting)

Common features

DAQ epicsArch - Archived Data

You can add/remove any data you want in the epicsArchive data group readout.

The path is /cds/group/pcds/dist/pds/tmo/misc/

The tmo file we use is epicsArch_tmo.txt. Let's look at two features of this

Adding a single variable to the file

Add a comment with a #

Power meter at IM2K4

Add a pointer name of your choosing with *

*IM2K4_XrayPower

For the **LCLS2 DAQ**, you should also specify which protocol is used to access the PV:

Add the pv name specifying whether it is read using channel access (ca), or pv access (pva) at the end

IM2K4:PPM:SPM:VOLT_RBV ca

For the **LCLS1 DAQ**, you only list the PV

IM2K4:PPM:SPM:VOLT_RBV

Add a whole file with a bunch of variables

You can made file with a subset of PVs, give it a meaningful name like epicsArch_vmi.txt for all the vmi variables to record. You can then reference that file with '<' in the main file as below.

MPOD/VMI information

< epicsArch_vmi.txt

LCLS2 DAQ

LCLS-II Data Acquisition and Analysis

LCLS1 DAQ

Online Analysis Tutorial (AMI) - presented at 2014 SSR/LCLS Users Meeting: LCLS Data Analysis Workshop

DAQ Overview and Online Analysis - presented at 2010 SSRL/LCLS Users Meeting : LCLS Data Analysis Workshop
Online Analysis Design - Matt's presentation for Jan 2012 DAQ Meeting

DAQ Troubleshooting

Trouble Shooting guide for scientists or first level responders.

Pedestals for detector correction

Operating the DAQ

- Editing a configuration
  - Example: Opal camera configuration
  - Changing a configuration while running
- Selecting detectors for readout
- Starting/stopping a run
- Watching progress of a run
- Running scans
  - Launching a Scan from DAQ Control GUI (deprecated)
  - Launching Scans Remotely (scripted)
- Running the sequencer
- Configuring the EVR
- Detector timing settings
- Recovering from errors: restarting the DAQ

AMI Online Monitoring

- Online Monitoring GUI
  - Using the Online Monitoring GUI
  - Writing a plug-in to the Online Monitoring GUI
  - Writing a user application (reads from shared memory) (deprecated old C++ psana)
  - Online Monitoring and Simulation Using Files (deprecated old C++ psana)
  - Writing a user application, offline analysis style (reads from a file) (deprecated old C++ psana)
- XTC playback (a.k.a Offline AMI)

Python Scripting

- Editing configurations - the 'pycdb' module
- Controlling the DAQ - the 'pydaq' module
- Monitoring the data - the 'pyami' module