

DAQ Status

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FNAL

Overview

- Lots of bug fixes since March
 - Increased stability
 - Diagnostic messages (more improvements on the way)
- M. Austin updated documentation!!!
 - More volunteers are always welcome
- All detectors are reading out
- VirGen boards are tested
 - 4/6 are in, waiting for parts for the rest

VirGen: VME Interrupt Generator

- Generates interrupts, records time stamps, sends reinder interrupts if software missed one
- 4 interrupt lines available
- Tested in the TPC crates with synchronized clocks
 - Boards work without glitches
 - Makes TPC code much more stable

Why VirGen?

- Interrupt TPC crates
 - Otherwise TPC software has to poll to find out when it has a trigger
- Interrupts are sometimes lost by the kernel
 - Conflicts with network traffic?
- Create various trigger types
 - Physics, end-of-spill, muon, others?

Problems (some with solutions)

- Lost interrupts in Linux kernel
 - Not clear why, solved with VirGen
- Wait with semaphore operation does not always work
 - User/kernel space problems?
 - Solved with a kludge
- Memory leak in readout process (very new)
 - Current limit to TPC readout stability
 - 94k events at 20Hz with pulser
 - First item on the to-do agenda

Remaining Tasks

- Interface rcd to monitoring programs
 - hv_monitor, ACNet, APACS, CAMAC crate, etc
- Enable rc-GUI to monitor (and control?) voltages, beam cherenkov pressure, etc
- Print log messages to rc-GUI screen (debugging tool for shifters)
- Create web-based search engine for taken runs
 - Don't have to wait for DB!