Global Monitoring Tutorial

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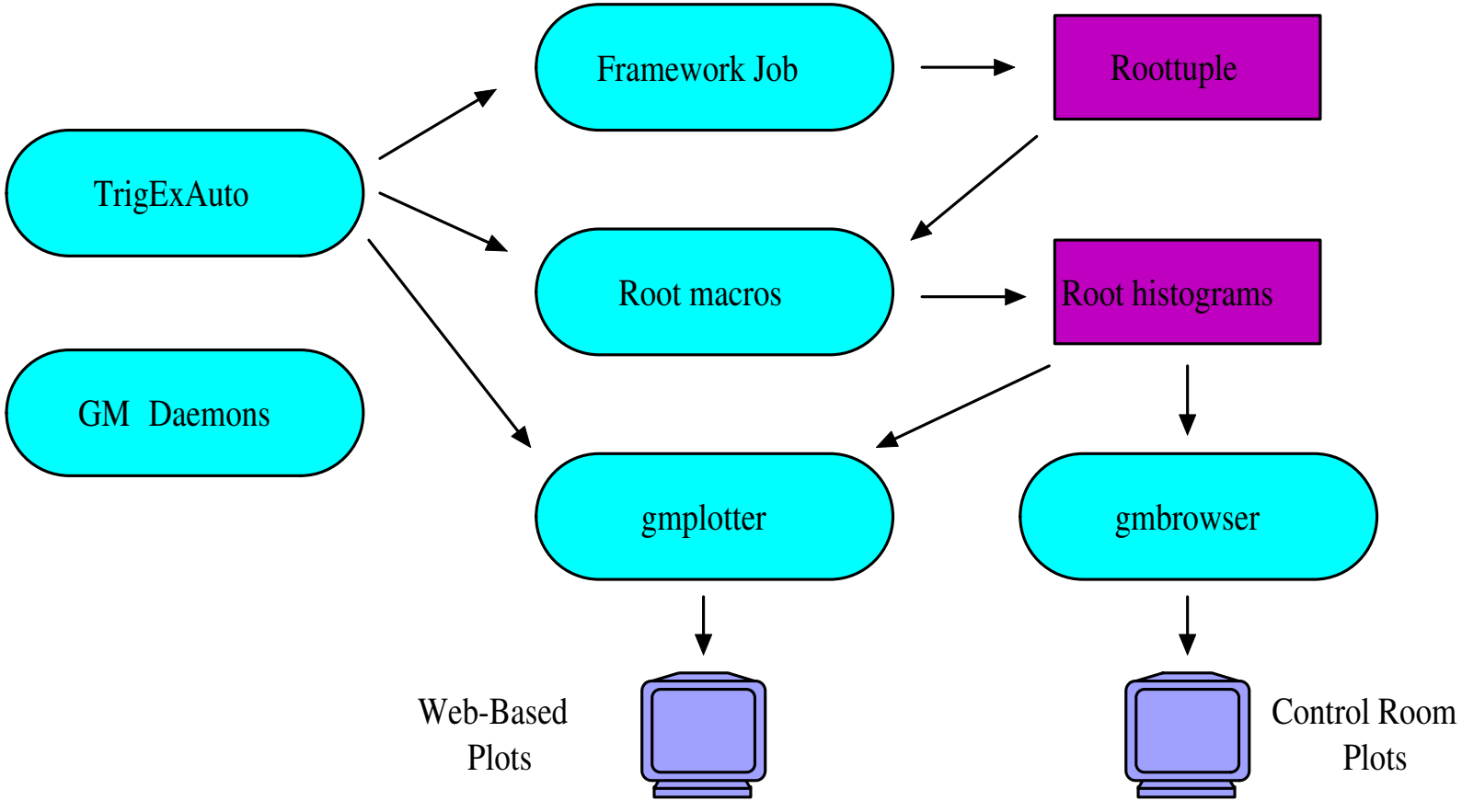
- Overview
- GM Responsibilities
- Troubleshooting

Overview


Framework Job
Roottuple
TrigExAuto
Root macros
Root histograms
GM Daemons
gmplotter
gmbrowser
Web-Based
Plots
Control Room
Plots

Overview

- Physics Examine
  - Runs RecoCert.
    - Four separate processes
    - Generic (on d0ol60)
    - Muon (on d0ol60)
    - Electron (on d0ol61)
    - Zero Bias (on d0ol26)
  - Currently only plot events from Generic process.
    - Electron and Muon processes will soon be monitored.
  - Reference histograms use prescale 15-20E30.
  - Process is quite slow: about 5 minutes before plots appear.
  - Only examine which checks global quality of data.

Overview

- Trigger Examine
  - Runs TrigSimCert
  - Automatically starts/stops.
    - No shifter intervention is required.
    - Selects correct prescale for reference histograms.
  - Should start soon after run starts.
    - Statistics should not be problem.
  - Some types of things have only been caught by the trigger examine.
    - i.e. L2 muon timing shifts.
    - Other trigger specific things have been caught before other groups were aware of them.

Useful information.

- GM web site:
  - http://www-d0online.fnal.gov/groups/gm/GM.html
  - Also from D0 Shift Captain's Web Page → Global Monitoring Page
- Recent GM problems or issues.
  - Available from GM web page.
  - Known problems.
  - Latest news.

GM Duties

- Start gmgui.
  - May already be running.
- Check status of Trigger Examine.
  - Should start and stop automatically.
- Start Physics Examine at beginning of run.
  - Stops automatically. Auto start soon.
- Monitor data.
  - gmbrowser or via web plots.
- Monitor trigger rates.
  - LmTrigger

Procedure

- Log onto d0ol68.
  - ssh -X -l d0gm d0ol68
  - setup global_mon
- Start gmgui.
  - gmgui
    - All processes can be started from GMgui.
    - All GMgui commands can also be typed in by hand.
    - Green buttons indicate things are all right.
      - For the Physics Examine the muon macro button is currently always red.

GMgui

Global Monitoring

File GM Chat

Main | Physics Examine | Trigger Examine | Run Certification | Run Checklist | Shift Help

Welcome to Global Monitoring

STATUS

Process	Last Status Change
PhysEx	Dec 3 11:37:42
PhysEx Browser	Dec 3 11:24:49
TrigEx	Jan 1 00:00:01
TrigEx Browser	Jan 1 00:00:00
LvTrigger Display	Jan 1 00:00:00

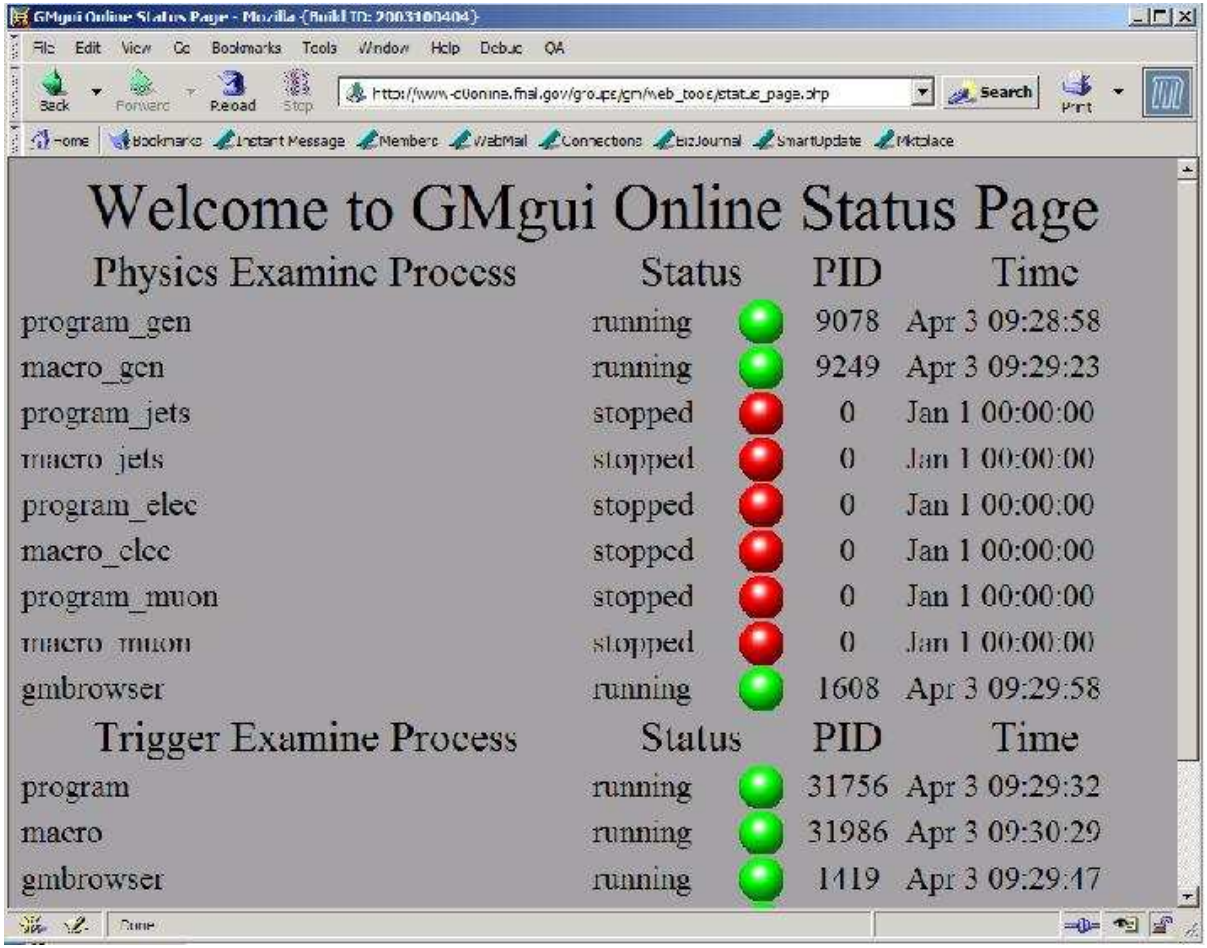
MESSAGES

test run	201249	ended	Dec 3 11:24:04
calib run	201250	started	Dec 3 11:24:27
calib run	201250	ended	Dec 3 11:25:49
test run	201251	started	Dec 3 11:26:34
test run	201251	paused	Dec 3 11:26:55
test run	201251	resumed	Dec 3 11:27:05
test run	201251	ended	Dec 3 11:30:15
test run	201247	ended	Dec 3 11:30:25
test run	201252	started	Dec 3 11:31:05
test run	201252	paused	Dec 3 11:32:07
test run	201252	resumed	Dec 3 11:33:02
test run	201252	ended	Dec 3 11:36:48
test run	201253	started	Dec 3 11:37:47

Problems/Comments please email msanders@fnal.gov, echeu@fnal.gov and mackin@fnal.gov | Fri Dec 3 11:37:58 2004

No Global Physics Run in progress

Web Status Page



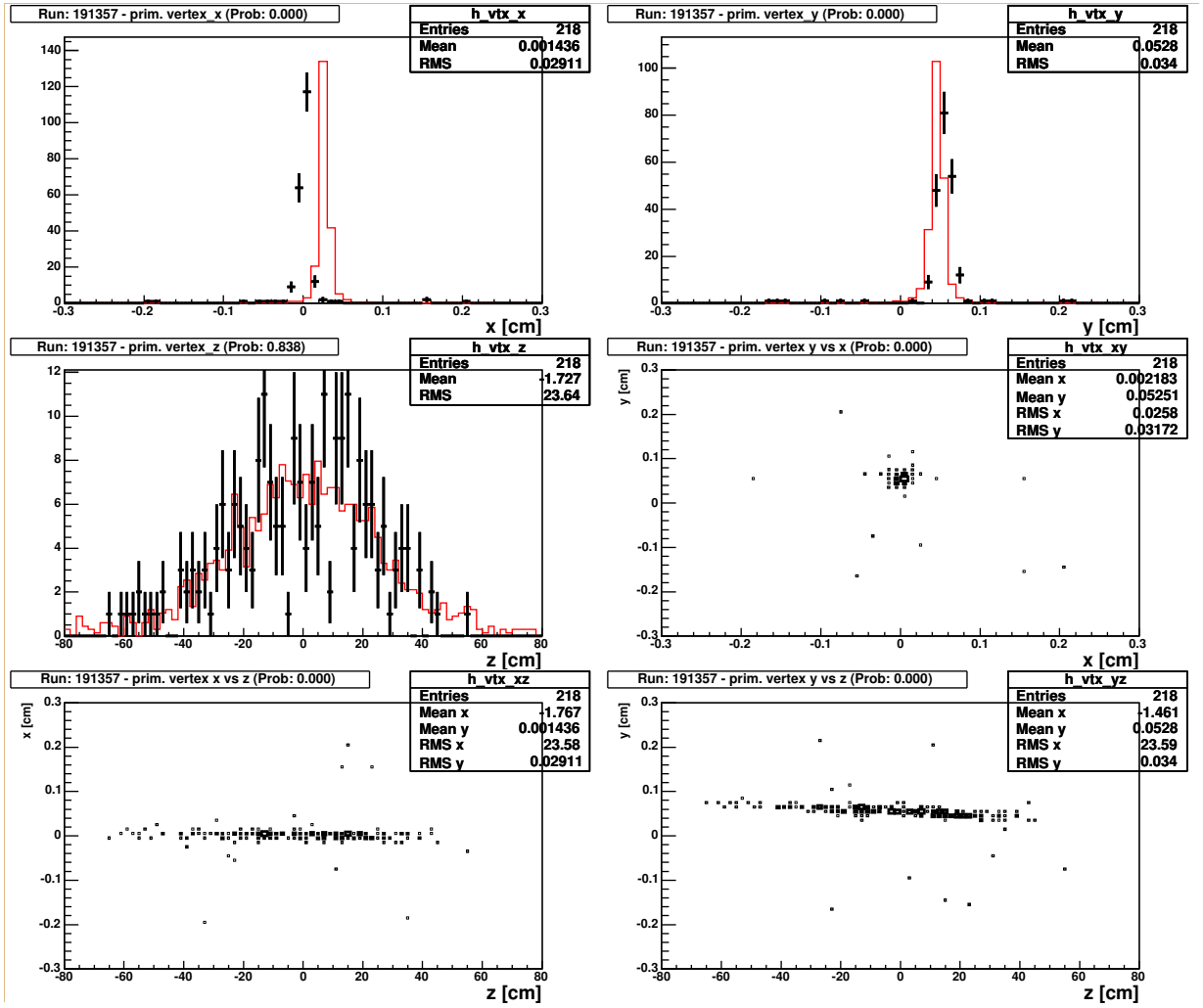
GMgui

- List of GMgui commands (type gmhelp):
  - gmstartPhysEx - to start physics examine and macros
  - gmstopPhysEx - to stop physics examine and macros
  - gmstartTrigEx - to start trigger examine and macros
  - gmstopTrigEx - to stop trigger examine and macros
  - gmstartPhysEx_browser - to start physics browser
  - gmstartTrigEx_browser - to start trigger examine browser
  - LmTrigger - to start the lmTrigger Trigger rates GUI
- The GMgui daemons can be restarted by typing gmresetdaemons
  - This restarts job that checks global mon processes.

Physics Examine

- Only one prescale is currently defined.
- Start Physics Examine
  - Use Physics Examine tab in gmgui.
- Start gmbrowser for Physics Examine.
  - If already running, no need to do anything.
  - Help buttons available on gmbrowser.
- After starting Physics Examine, please be patient.
  - Macro buttons will remain red until first event is processed by framework job ($\sim$ 5 minutes).

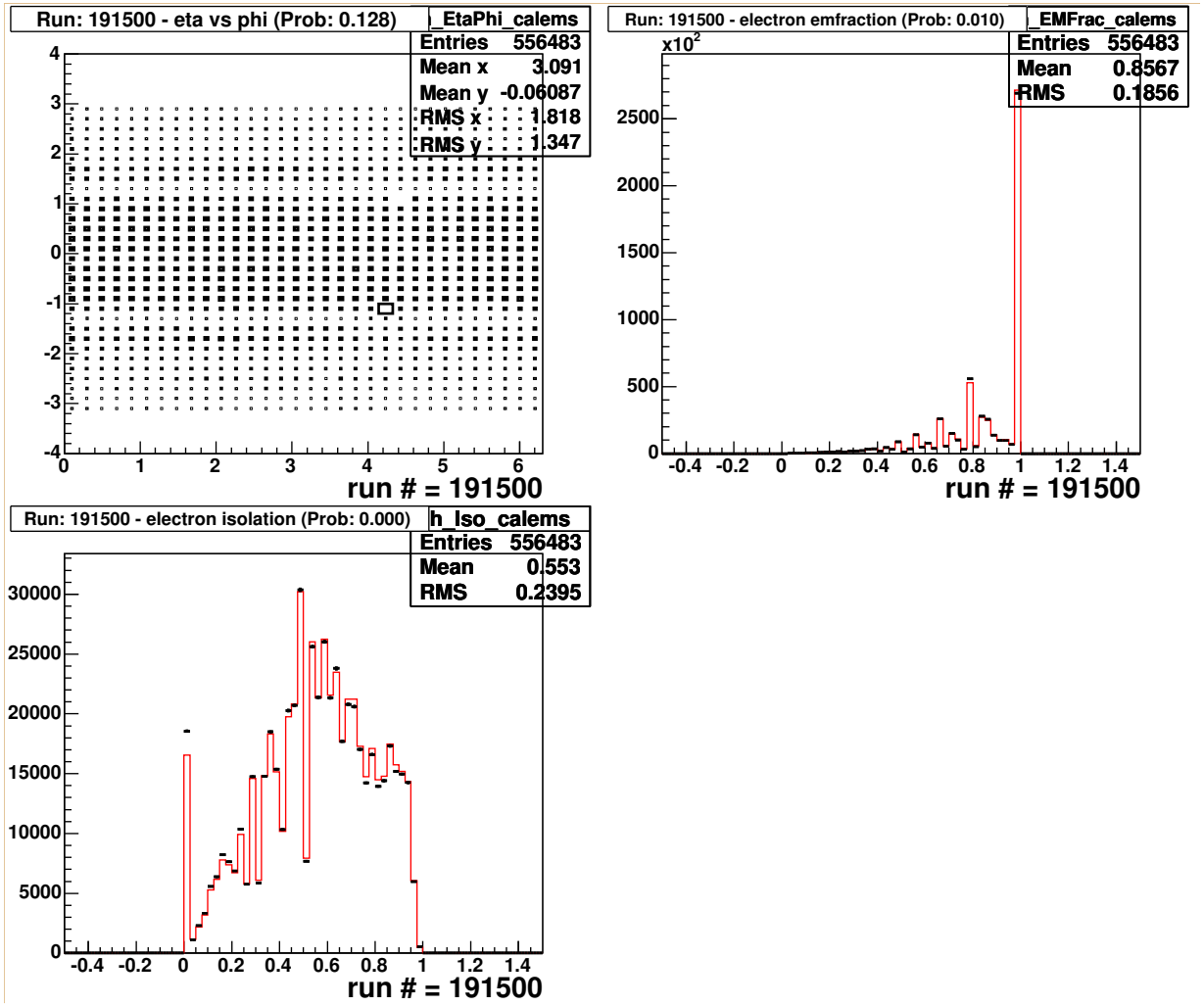
Physics Examine



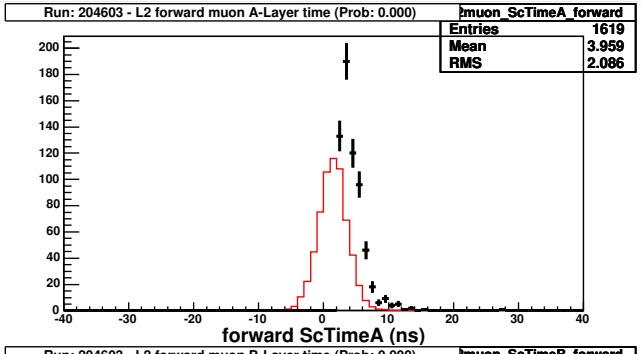
Trigger Examine

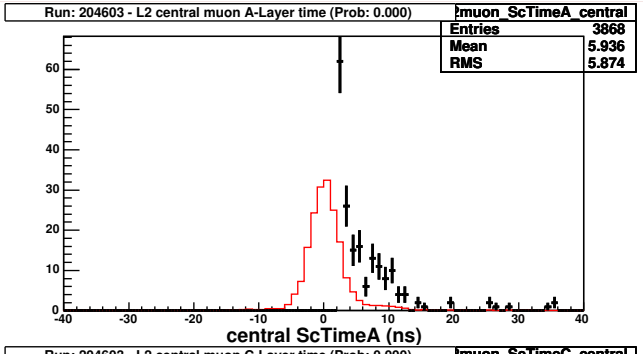
- Check that Trigger Examine is running.
  - Use Trigger Examine tab in gmgui.
- Start gmbrowser for Trigger Examine.
  - Starts browser in control room.
  - If already started, no need to do anything.
- Remote shifters.
  - Look at web plots OR plots via remote gmbrowser.

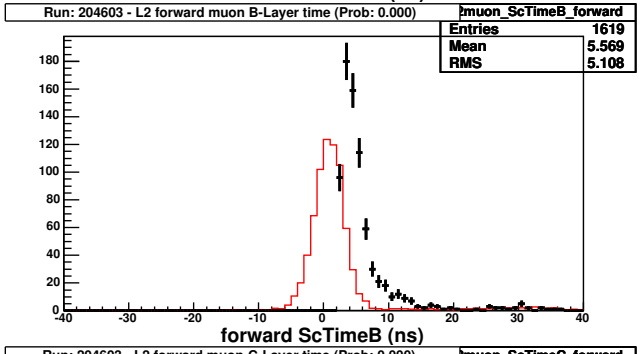
Trigger Examine

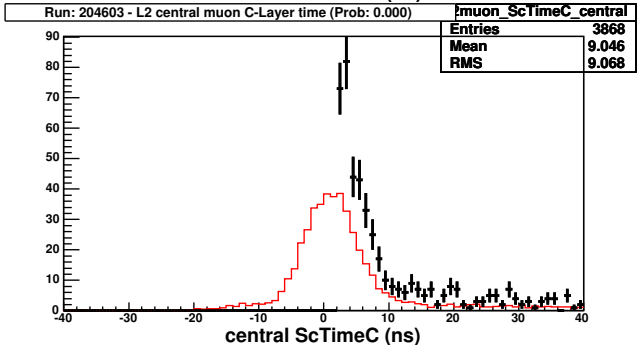


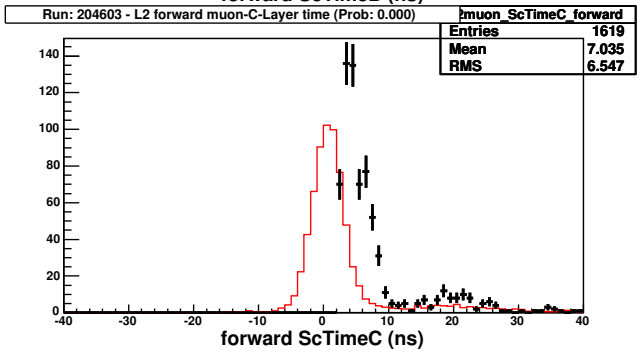
Trigger Examine







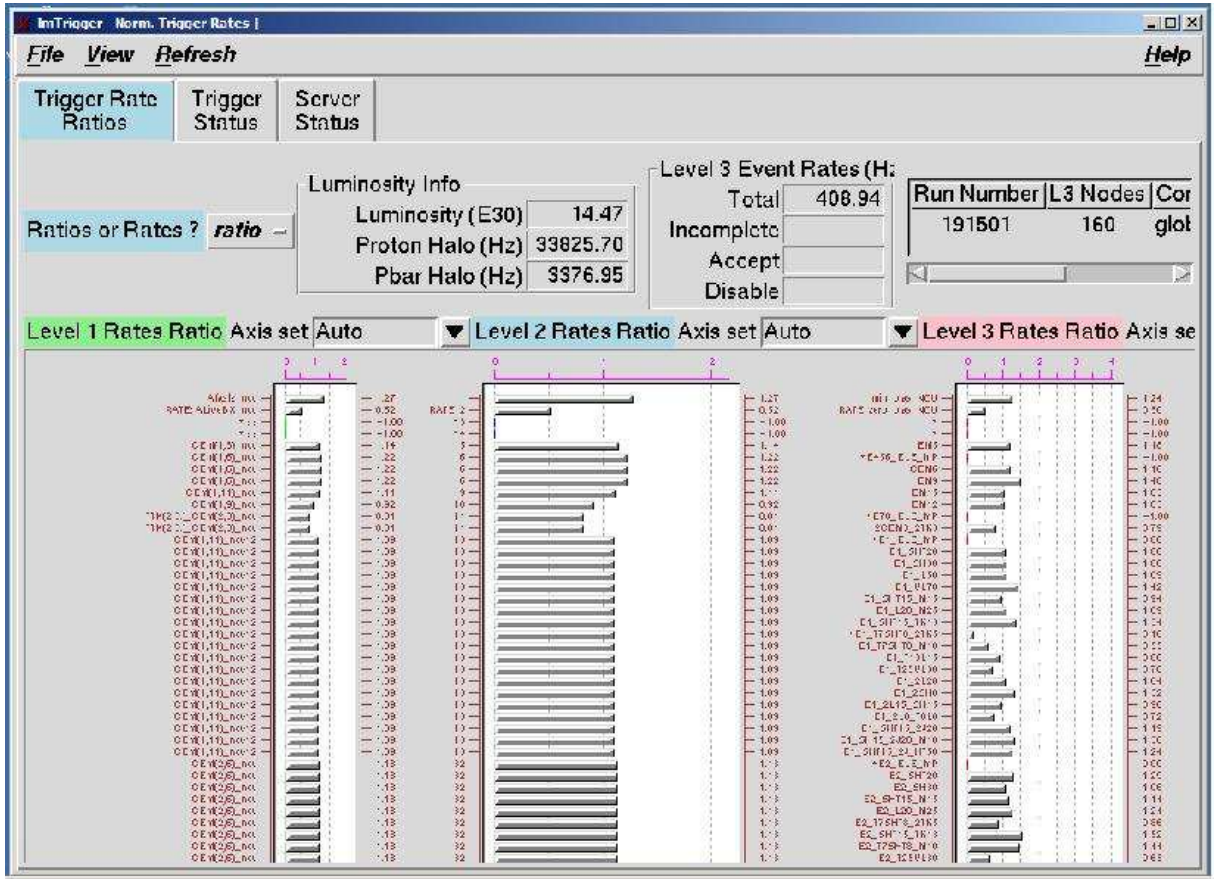




Procedure

- Monitor plots.
  - Use reference plots as guide.
  - Description of plots available on GM web page.
- Communicate problems.
  - Detector expert.
  - Note: you may have to page the L1/L2/L3 expert since some problems are specific to these groups.
  - Problems with GM tools → page GM expert.

LMTrigger


lmTrigger Norm. Trigger Rates
File
View
Refresh
Help
Trigger Rate Ratios
Trigger Status
Server Status
Ratios or Rates ?
ratio
Luminosity Info
Luminosity (E30)
14.47
Proton Halo (Hz)
33825.70
Pbar Halo (Hz)
3376.95
Level 3 Event Rates (H:
Total
408.94
Incomplete
Accept
Disable
Run Number
L3 Nodes
191501
160
Level 1 Rates Ratio Axis set
Auto
Level 2 Rates Ratio Axis set
Auto
Level 3 Rates Ratio Axis se

Troubleshooting

- gmgui buttons for starting/stopping examines are not working.
  - Something in the GUI is broken.
  - Enter commands by hand in terminal window.
- In Physics Examine some processes are running and some are not.
  - Start the Physics Examine again.
  - This will not stop currently running examines.
- Examines are running but status is red.
  - First try killing gmgui and restarting it. This will not affect examine processes.

Troubleshooting

- If status remains red,
  - Reset GM daemons. Often there is a message indicating that one or more of the daemons has died.
  - Ocassionally, you may have to reset the daemons more than once.
- Plots not updating.
  - Make sure that macros are running.
  - If not, the stop and restart the appropriate examine.
- Browser is not getting displayed.
  - Often many instances of the browser are running.

Troubleshooting

- Browser is not getting displayed (cont).
  - Log onto either d0ol68 (physics) or d0ol75 (trigger)
    - Kill browser processes (killall gmbrowser)
    - Start new browser:
      - gmstartPhysEx_browser
      - gmstartTrigEx_browser
- Web plots not updating.
  - Check status of appropriate gmplotter.
  - Restart if necessary.
- All available commands can be listed using gmhelp.

End of shift

- Add entry to logbook (use CAP logbook).
- May want to communicate problems with next captain.
  - Also please e-mail the GM expert and echeu@fnal.gov about any GM problems.
- Ensure that GM tools are running.

Getting Help

- Web site.
  - GM Shift Instructions/GM Remote Shift Instructions.
  - Expert help.
- Page Expert.
  - (630) 266-0550
  - (520) 991-0586 (cell)
- E-mail E. Cheu or M. Naimuddin
  - echeu@fnal.gov/nayeem@fnal.gov