Global Monitoring Tutorial

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- Prior to Shift
- Shift Duties
- End of Shift
- Common Problem and Troubleshooting
Prior to Shift

• **GM web page:**
  - [http://www-d0online.fnal.gov/www/groups/gm/GM.html](http://www-d0online.fnal.gov/www/groups/gm/GM.html)
  - Read the 'Know Issues' and 'Latest news' linked to the above page for any new information.
  - Many important stuffs are linked to the above page including the oncall pager and Cell number.
  - We frequently update our webpage but please let us know about any outdated information.

• **GM Logbook**
  - Please read the logbook before beginning your shift.
  - Web version of logbook also available with a feature to do run certification and run checklist.
Prior to Shift ..

- Make sure that you can login into online cluster including d0ol68, d0ol60 and d0ol75 machines.
- We will add you to the .k5 login file.
Shift Duties

- Log onto d0ol68
- ssh -X -l d0gm d0ol68
- setup the environment
- 'setup global_mon' (it also setups d0online)
- Type 'gmgui' (pop up the gmgui window, browsers and examines can be started using tabs on gmgui)
- Other informations like the run status, start time, etc. can also be obtained from gmgui.
- Start the Physics browser and examines.
- Start the Trigger browser and examine.
- Monitor data using the browsers.
- Data can also be monitored through the web plots.
Shift Duties..

- Be patient, it may take 5-10 minutes for examines to process the first event.
- In case of deviation from reference plots, talk to the detector shifter/captain/GM expert.
- Monitor Trigger rates
- Start lm Trigger (can be started from gmgui)
- Enter any discrepancy in data quality into logbook.
- Fill out the Runcheck list and run certification for each run.
GM Commands

- All the GM processes can be started using command lines also:
- Type 'gmhelp' to get list of all the available commands.
- Commands to start and stop the browsers and examines:
  - gmstartPhysEx_browser -> start the physics browser
  - gmstartTrigEx_browser -> Start the trigger browser
  - gmstartPhysEx -> start physics examine
  - gmstartTrigEx -> start trigger examine
  - gmstopPhysEx -> stops the physics examine
  - gmstopTrigEx -> stops the trigger examine
- The gmgui daemons can be restarted by typing 'gmresetdaemons'.
- This restarts jobs that checks global mon processes.
GMGUI

- Gives the current status of all the gm processes.
- Green means everything is fine and red means problem (obvious).

Welcome to Global Monitoring
The status of all the gm processes can also be seen at the status web page at http://www-d0online.fnal.gov/www/groups/gm/web_tools/status_page.php
Physics Examine

- **Runs four processes:**
  - Generic (run on d0ol60)
  - Muon (run on d0ol60)
  - Electron (run on d0ol61)
  - Zero bias (run on d0ol26)
- At present we plot the distributions of the events collected with generic process only.
- Events collected from muon and electron processes will also be available for monitoring soon.
- Currently the prescale of 15-20E30 is used for all DAQ prescales. (need not to change this prescale before starting the physics examine).
- Description of all the plots is given both on GM web page and is also linked to the physics browser.
- Web plots are produced using plotter process.
Physics Examine

Start PhysEx
Stop PhysEx
Start Browser
Stop Browser

 Prescale set 15_20E30 is good for all luminosities

Current Prescale = 15_20E30

Current Reference file = PhysEx_run205220_13.70_15_20E30.root

Running PhysEx Version 'p14.06.01'

STATUS

<table>
<thead>
<tr>
<th>Examines</th>
<th>Macros</th>
<th>Browser</th>
</tr>
</thead>
<tbody>
<tr>
<td>gen</td>
<td>gen</td>
<td>gen</td>
</tr>
<tr>
<td>muon</td>
<td>muon</td>
<td></td>
</tr>
<tr>
<td>elect</td>
<td>elect</td>
<td></td>
</tr>
<tr>
<td>zero_bias</td>
<td>zero_bias</td>
<td></td>
</tr>
</tbody>
</table>

MESSAGES

Physics Examine gen Processes running: PID 5295  May 23 11:43:22
Physics Examine gen Root Macros running: PID 5291  May 23 11:43:22
Physics Examine elec Processes running: PID 32026  May 23 11:43:22
Physics Examine elec Root Macros running: PID 956  May 23 11:43:22
Physics Examine muon Processes running: PID 5299  May 23 11:43:22
Physics Examine muon Root Macros stopped  May 23 11:43:22
Physics Examine zero_bias Processes stopped  May 23 11:43:22
Physics Examine zero_bias Root Macros stopped  May 23 11:43:22
Physics GM Browser running: PID 30992  May 23 11:43:22
Physics Examine gen Root Macros stopped  May 23 12:55:17
Physics Examine gen Processes stopped  May 23 12:55:36
Physics Examine elec Processes stopped  May 23 12:53:31
Physics Examine elec Root Macros stopped  May 23 12:54:06
Physics Examine muon Processes stopped  May 23 12:55:15

Problems/Comments please email msanders@fnal.gov, echau@fnal.gov and mackin@fnal.gov

Global Physics Run 206055 started: May 23 12:49:42

Md Naimuddin
Physics Examine ..
Trigger Examine

- Runs on d0ol75.
- Automatically starts and stops when global run begins or ends. (It need not be started by the shifter)
- Uses all the available DAQ prescales (prescale selected automatically).
- To check whether trigger examine is running or not, use 'gmcheckTrigEx' command.
Trigger examine

### Status

<table>
<thead>
<tr>
<th>Process</th>
<th>Last Status Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>program</td>
<td>May 23 12:50:02</td>
</tr>
<tr>
<td>macro</td>
<td>May 23 12:50:17</td>
</tr>
<tr>
<td>TrigExAuto</td>
<td>May 23 11:43:20</td>
</tr>
<tr>
<td>browser</td>
<td>May 23 11:43:20</td>
</tr>
<tr>
<td>plotter</td>
<td>May 23 12:50:12</td>
</tr>
<tr>
<td>Local TrigEx</td>
<td>May 23 11:43:28</td>
</tr>
</tbody>
</table>

### Messages

- **TrigEx program processes has stopped** May 23 11:43:28
- **TrigEx macro processes has stopped** May 23 11:43:28
- **TrigEx TrigExAuto process is running: PID 2966** May 23 11:43:28
- **TrigEx browser process is running: PID 4083** May 23 11:43:28
- **TrigEx plotter process is running: PID 28532** May 23 11:43:28
- **TrigEx LocalTrigEx process is running: PID 27186** May 23 11:43:28
- **TrigEx program process is running: PID 28712** May 23 11:43:28
- **TrigEx plotter process has stopped** May 23 11:43:28
- **TrigEx plotter process is running: PID 36796** May 23 11:43:28
- **TrigEx program process is running: PID 1661** May 23 11:43:28
- **TrigEx plotter process has stopped** May 23 11:43:28
- **TrigEx plotter process is running: PID 1339** May 23 11:43:28
- **TrigEx program process is running: PID 1892** May 23 11:43:28
Trigger Examine ..
Lm Trigger

Shows the ratios of the trigger rates to a reference run.
Run Certification
Run Checklist

Global Physics Run Number: [Field]
Trigger Version: [Field]
PhysEx Start Time: May 23 12:55:54
Events Processed in PhysEx: 473
PhysEx Stop Time: [Field]
Comments: [Field]

TrigEx Start Time: May 23 12:50:02
Events Processed in TrigEx: [Field]
TrigEx Stop Time: [Field]
Comments: [Field]

Monitoring Trigger Rates on LmTrigger: [Yes, No]
Run Certified: [Yes, No]

Problems/Comments please email msanders@fnal.gov, echu@fnal.gov and mackin@fnal.gov
Mon May 23 12:57:07 2005
Global Physics Run 200855 started: May 23 12:49:42
End of Shift

- Add entry into the logbook for end of shift summary.
- Also may want to communicate with the next shifter.
- Make sure that all the gmtools are running.
Common Problems and Troubleshooting

- Gogui tabs for starting/stopping the examines or browsers are not working.
- Use command line option.
- In physics examine, some processes are running and some are not running.
- Start the physics examine again. (It will not affect the running ones).
- Examines are running fine but Gogui shows red status for them.
- The present gogui might be outdated so kill it and start a new one. (killing gogui does not have any effect on running processes).
- Even after this, if the status remains the same then most probably daemons might have crashed (you can see this in message box of gogui). Reset the daemons.
  - Resetting the daemons once might kill the other running ones so may be sometime needed to reset the daemons twice.
Troubleshooting..

- Browser is not getting displayed
  Most likely many instances of browser is running in the background. Login into d0ol68(physical) or d0ol75(Trigger) and kill all the running browsers and start a new one.
- Plots are not updating?
  Make sure that macros are running. If not, then stop and restart the examines.
- Web plots are not updating?
  Make sure that cycling has not been held in browser. Also, check the plotter process running. If not, then login into d0ol60(physical) or d0ol75 (trigger) and execute the scripts startPhysEx_gmplotter.sh or startTrigEx_gmplotter.sh from cd $GM_SCRIPTS_DIR.
  'gmhelp' command will give all the available commands.
Getting Help

- **GM webpage:**
  - All the instructions and common troubleshooting is listed at gm webpage.
  - Also see 'expert help'.

- **GM logbook:**
  - put the comments/problems in logbook and look for any annotating messgaes.

- **Page Expert:**
  - (630)-266 0550 (24X7)
  - Email any one/all of us:
    - Elliott Cheu: echeu@fnal.gov
    - Michiel Sanders: msanders@fnal.gov
    - Md Naimuddin: nayeem@fnal.gov