

MICE Online Monitoring User Documentation - Produced by Rhys Gardener

Version 1.0 Date 17/07/2013.

1. Setup the background process.

- Run the background process from the miceonlinemonitoring directory by opening a new terminal and running
 - cd OnlineMonitoring
 - cd miceonlinemonitoring
 - ./runOLMBG.sh

This script sets up some environment variables, then executes the miceOLM program.

Once running, this process/terminal should be left running in the background. When the DAQ is turned on, you should see the background process opening a new root file, and posting "Starting run "number" on "-date-".

What you should see in the terminal:

```
[miceraid5] bin > ./miceOLM
Saving histograms in ./
DataSrc: @miceraid5:
+++++++ Dump Processors ++++++
First Event processor is active, ptr : 0x1becec10
Start of run processor is active, ptr : 0x1becec30
End of run processor is active , ptr : 0x1becec50
Start of spill processor is not active
End of Spill processor is not active
Super Event Header processor is active, ptr : 0x1becef00
Event Header processor is not active
Equipment Header processor is active, ptr : 0x1becf060
Fragment processor for equipment V830 is active, ptr : 0x1becf000
Fragment processor for equipment DBB is active, ptr : 0x1becec70
2 active fragment processors
Particle event processor for equipment V1290 is active, ptr : 0x1becec70
Particle event processor for equipment V1724 is active, ptr : 0x1beceda0
2 active Particle event processors
+++++++
Start waiting for events to monitor from @miceraid5:
```

When the DAQ is turned on and the monitoring begins, then something like this message will appear:

```
Opening Root file ./04903.root
File ./04903.root opened succesfully.
Starting run 4903 on Wed Feb 13 14:23:18 2013
```

To run the miceOLM offline (using a local dataset) then run instead: `./bin/miceOLMOFF -d "path/to/data" -f "datarunnumber"`

for example, to load data stored as file "04903.000" in the TestData folder, do:

```
./bin/miceOLMOFF -d "/miceonlinemonitoring/TestData" -f "04903".
```

The DAQ should be set up to collect on the miceraid05 machine. If this is changed then run the OLM by:

- `./bin/miceOLM -f "machinename"` - or add the extension to the "runOLMBG" script.

N.B. If running OLM on miceraid5 (or the active DAQ machine) then the process can be executed directly from it's location in the bin folder.

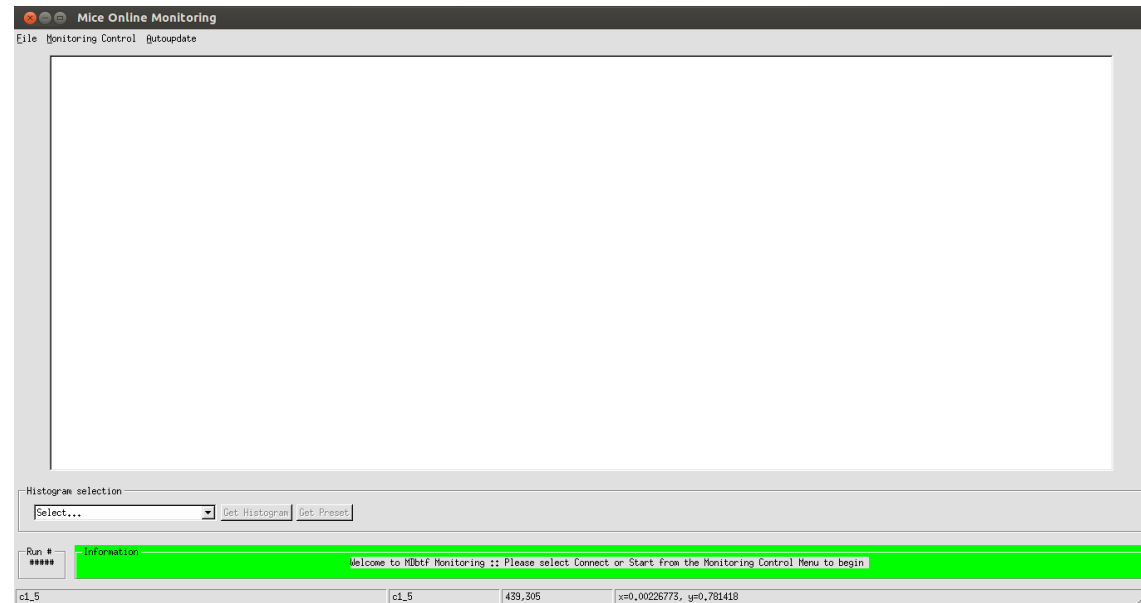
If an "Failed to connect infologgerReader: ..." error appears, then either the DAQ needs switching on, or the OLM is trying to connect to the wrong machine.

2. Loading the GUI

Open a new terminal and do

- cd OnlineMonitoring/
- cd miceonlinemonitoring/
- ./runGUI.sh

Once loaded, the user should be presented with something resembling the following screen:

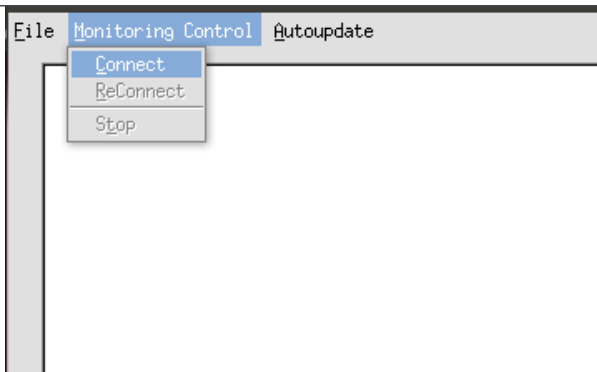


3. Using the GUI - Setting up communications

To begin communications between the GUI and the OLM, to allow histograms to be retrieved, do:

- Open the "Monitoring Control" menu.
- Hit "Connect"

This should result in the Histogram Selection list (below the main viewer) being populated.



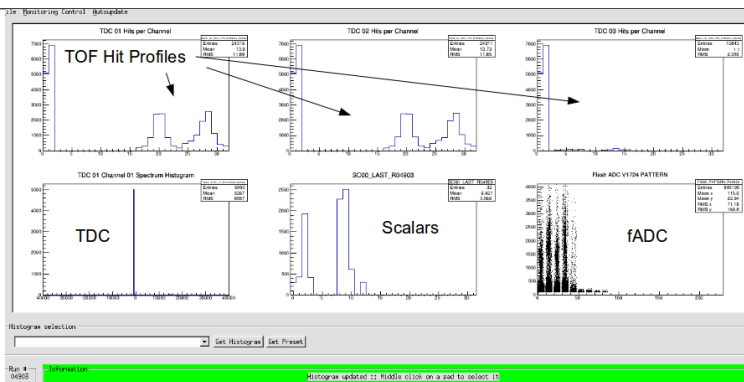
NOTE: The Histogram list won't be populated until the DAQ is switched on. If the GUI is loaded before the DAQ is turned on, then press "Reconnect" once the DAQ is turned on to populate the list of histograms and begin monitoring. The Background process won't need to be restarted. If the DAQ is restarted for whatever reason, it will be necessary to press reconnect to re-enable histogram updating.

Loading Preset

Preset selections of important Histograms can be loaded.

- Select "Get Preset" option - next to "Get Histograms"
- Presets are stored in the "Presets" folder.
- Select the "WallPreset.pst" file (this corresponds to the image on the wall in the MLCR).

One can create their own preset by creating a file listing 6 Histograms they want to view. Use the included .pst files as an example.



Note: This is from Default2.pst.

Default.pst contains the TDC00 histograms which relate to the trigger. Wall.pst loads the histograms matching the handout attached to the wall of the MLCR.

If a histogram requested from the preset is not loaded, then the DAQ is not collecting data from that channel and another histogram can be chosen to fill the space.

If the DAQ is restarted but the run number on some of the histograms is not updated, then it might be necessary to re-load the preset.

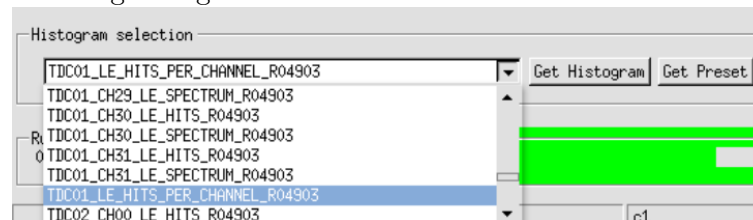
Loading individual Histograms into viewer.

-Note - EXPERT USERS ONLY - Unless you know what you are doing then use the presets provided.

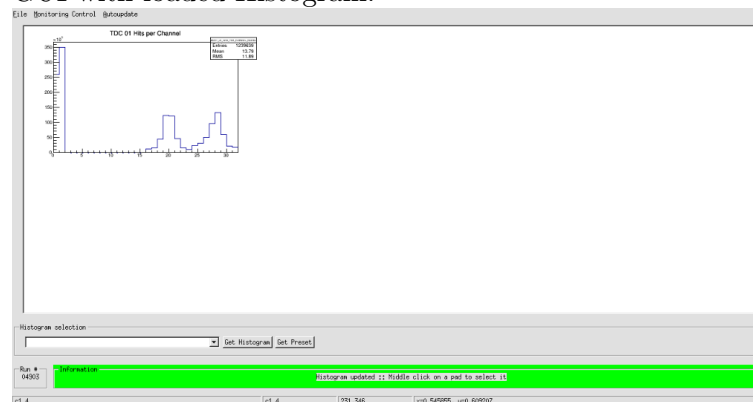
The user can load individual histograms to load into the viewer, instead of using the preset.

- The viewing canvas is split into 6 sections. Choose the section you want the Histogram loaded into by middle-clicking on the section.
 - This will stop any other histograms auto-updating until either auto-update is turned on again, or a new histogram is loaded.
- Select the histogram from the drop-down menu below the viewing area.
- Once selected, click "Get Histogram"
 - This loads the histogram into the viewer, and re-enables auto-updating.

Selecting histogram from the list:



GUI with loaded Histogram:



Note: Usually the user will load a preset selection of Histograms.

Switching Histograms

To switch a histogram in the viewer:

- Middle-click on the area next to the histogram that you want to replace
 - N.b. this should turn off autoupdating until a new histogram is selected.
- Select a new histogram from the list.
- Click "Get histogram"

This should replace the histogram with the new one.

If you decide after middle clicking on the area not to replace the histogram, just re-enable updating from the autoupdate menu at the top.