Hall C DAQ

From HallCWiki

Contents

How to kill/reset/restart the DAQ, or, "The DAQ is dead, now what..."

If you are connected to the appropriate DAQ vncsession

If you are connected to the appropriate DAQ vncsession (*see below*), and CODA has hung, or gotten into a funny state, then bring the terminal window at lower left to the foreground and type the following:

```
% kcoda
```

Wait for a bit (10 sec). Then restart coda by typing this in the same terminal:

```
% startcoda
```

You will then have to complete the 'standard' CODA steps:

1. Choose 'Platform:Connect' from the CODA Run Control GUI menu bar.
2. Click on the 'Tools' icon.
3. Then you should be able to start a run as usual.

- *Make an hclog and document the error you saw (screen snapshot, etc) if you choose to do this.*

If the kcoda/startcoda process doesn't work

If the system does not restore using the kcoda/startcoda procedure, then you may need to reboot the ROCs

following this process

```
Hall_C_DAQ#If_you_need_to_reboot_a_ROC.
```

Be patient, then try the kcoda/startcoda procedure as discussed in that section.

If the CODA vnc session disappeared and 'go_shms_daq/go_hms_daq' doesn't work

```
NOTE: Ask a DAQ expert and/or the RC before you do this.  It really should never be needed.
```

If everything disappeared and 'go_shms_daq/go_hms_daq' doesn't work then you can bring things up from scratch outside the VNC session.

SHMS or COIN Mode

```
% ssh coda@cdaql4
```

In that terminal, run:

```
% startcoda
```

HMS

```
% ssh coda@cdaql5
```

In that terminal, run:

```
% startcoda
```

NOTES

'udpSend write failure' warnings are generally not a problem (ROC5, ROC6, ROC8)

This is generally a temporary error associated with a scaler process in the ROCs metioned. It will reset itself once CODA is running again. *Note that you should **not** see this error in the middle of an ongoing run however.*

If the Event Builder (EB) process keeps dying when you try to start a run

This often means there is a memory issue on one of the linux ROCs. It is simplest to follow the Reboot ROCs procedure to resolve this.

How to bring up the DAQ screens on a workstation

The DAQs run inside their own VNC sessions. They can be brought up on any of the Hall C Counting House machines by running these commands logged in as the 'cdaq' user:

SHMS Single Arm

```
% go_shms_daq
```

- The following run parameters should be the defaults for SHMS single arm running:
  - Expid: SHMS
  - Session: SHMS

- Configuration: SHMS_all

HMS Single Arm

```
% go_hms_daq
```

- The following run parameters should be the defaults for HMS single arm running:
  - Expid: HMS
  - Session: HMS
  - Configuration: HMS_all

COIN Mode

```
% go_shms_daq OR go_coin_daq (they do the same thing)
```

- The following run parameters should be the defaults for COIN mode running:
  - Expid: SHMS
  - Session: SHMS
  - Configuration: COIN_all

Switching between COINCIDENCE Mode and Single Arm DAQs

Switching to Coincidence Mode from the Single Arm configuration

Coincidence mode basically adds the HMS crates to the SHMS DAQ. You should first shut down both single arm DAQs

```
% kcoda  # In SHMS DAQ session
% kcoda  # In  HMS DAQ session
```

Then switch to COIN mode in the SHMS DAQ session, and start CODA

```
% go_COIN_DAQ_Enable
```

You will be prompted to reboot/power-cycle the HMS crates. Do so following Hall_C_DAQ#If_you_need_to_reboot_a_ROC. Then restart the DAQ in the SHMS DAQ session:

```
% startcoda
```

You should see more terminals pop up on the right associated with the additional DAQ components.

Connect to the Platform as usual, then switch the Session to **COIN_all** in the Run Control GUI using the *Configurations:Sessions* menu item.

- The following run parameters should be the defaults for SHMS+HMS coincidence running:
  - Expid: SHMS
  - Session: SHMS
  - Configuration: COIN_all

Switching Back to Single Arm DAQs

```
% kcoda
% go_COIN_DAQ_Disable
```

You will be prompted to reboot/power-cycle the HMS crates. Do so following Hall_C_DAQ#If_you_need_to_reboot_a_ROC. Then restart the DAQ in the SHMS DAQ session:

```
% startcoda
```

You should see more terminals pop up on the right associated with the additional DAQ components.

Start up the single Arm DAQs as usual. You will need to restore the single-arm CODA session type for the SHMS DAQ. See Hall_C_DAQ#SHMS_Single_Arm

If the system is being fussy. Reboot *ALL* of the crates following Hall_C_DAQ#If_you_need_to_reboot_a_ROC. Then try *startcoda* again.

If you need to reboot a ROC

If a ROC gets in a really bad state, its crate may need to be power cycled using the procedure and links below.

```
It pays to be a little patient with this process.  Stagger turning the crate power back on by 10--20 seconds.
For example, turn on hccrate01, wait 10s, turn on hccrate02, wait 10s, etc...
```

COIN mode

Coincidence (COIN) mode uses *both* the **SHMS** and **HMS** ROCs, so you will need to reboot **all** of them using the links in the two sub-sections below.

```
After you have power cycled all the ROCs, wait for 2--3 minutes then run kcoda; and startcoda.  If that doesn't work, call an Exper
```

- *Make an hclog when you do this!*

SHMS

The SHMS has four ROCs. You can contact their crates with these links using a browser from the **cdaq** account

- ROC02 (http://hccrate02) (Counting House Electronics Room)
- ROC04 (http://hccrate04) (SHMS Electronics Hut)
- ROC06 (http://hccrate06) (SHMS Electronics Hut)
- ROC08 (http://hccrate08) (Counting House Electronics Room)

Reboot them by clicking on the link, and cycling the power. **Wait for 10s after clicking the 'power' button *before* clicking it again**. The page will automatically refresh when it is ready.

```
After you have power cycled all the ROCs, wait for 2--3 minutes then run kcoda; and startcoda.  If that doesn't work, call an Exper
```

- *Make an hclog when you do this!*

HMS

The HMS has two ROCs. You can contact their crates with these links:

- ROC01 (http://hccrate01) (Counting House Electronics Room)
- ROC03 (http://hccrate03) (SHMS Electronics Hut)
- ROC05 (http://hccrate05) (Counting House Electronics Room) --- On APC switch. See note below.

The first two work the same as the SHMS crates.

ROC5/hccrate05 is on an APC switch. Pick the 'Outlet Status' Tab; click on *On* to the left of *hccrate05* on Outlet 1. Set the *Control Action* to *Reboot Delayed*, click the checkbox to the left of *hccrate05*, then click the *Next>>* button and click *Apply* on the next screen. *If* you know where hccrate05 is in the Counting House Electronics Room, you can power cycle it with the switch on the front panel. Turn it off, wait 5 seconds, and turn it back on.

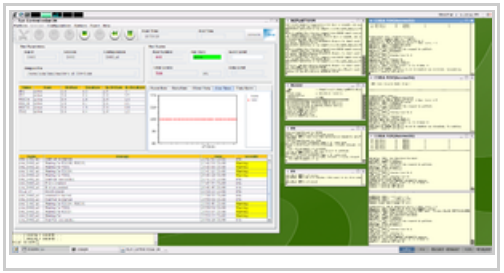
```
After you have power cycled all the ROCs, wait for 2--3 minutes then run kcoda; and startcoda.  If that doesn't work, call an Exper
```

- *Make an hclog when you do this!*

Live Time Display

If it isn't showing up (ie. after a kcoda/startcoda) then:

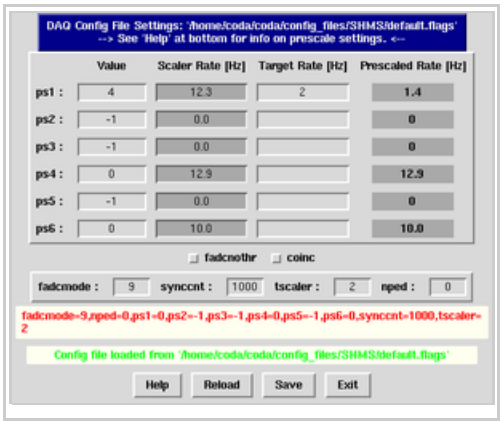
- Click on 'TS0x' in component list under 'Name' column on left of rcGUI
- Select Options:Chart:Add
- Seelct 'Live Time' tab



Setting Prescales

Run the prescale GUI using one of these commands from a terminal in the SHMS or HMS DAQ session:

```
% go_prescales_SHMS   -- OR -- go_prescales_HMS
```



How to pick a prescale value

The relationship between the prescale setting and the actual prescale value is somewhat complicated. You can click on the 'Help' button for details.

- The best way to do it is to type in the prescaled rate you *want* into the **Target Rate** field and hit return. The **Prescaled Rate** field will update to show you the rate the DAQ will be accepting.
  - You can try adding or subtracting '1' to the 'Value' field if you want to try to tweak the **Prescaled Rate** a bit.

```
NOTE: You MUST hit SAVE *before* starting the run!
```

If the scaler rates in the prescale GUI are not updating

This can happen after CODA gets in a funny state, for example.

- Quit the prescale GUI (Exit button)
- Run the GUI again (as above).

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