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<http://cdms.physics.ucsb.edu/daqii/dagstopstartv0.5.pdf>
<http://cdms.physics.ucsb.edu/daqii/dagstopstartv0.5.doc>

Stopping and Restarting the Entire DAQ

Sometimes there is a need to take down and restart the entire CDMS DAQ. This should not be done casually, but if truly necessary, these are the instructions to do it.

Stopping the DAQ

1. Run the Shutdown Script.
 - a. Log in to the `control` computer. If you go to the electronics room, this can be done from any of the three terminals along the south wall; the middle one is control itself, while the other two can reach control by simply typing `control` from a terminal window. `control` is a script that logs you into the `control` computer. If you are on the surface, you can ssh into `cdmslong` via the command `ssh -x daq@131.212.67.91` (you must know the password or get it from a DAQ expert), then `ssh daq@builder` to get to builder (again, you must know the password) and then you can then type `control`.
 - b. Go to the `/home/daq/DAQPackage/scripts` directory of the control computer, for example by typing `cd DAQPackage/scripts` after logging into the control computer through the command `control`.
 - c. Run the shutdown script by typing `./Shutdown.script`
There may be error messages; ignore them.
2. Some processes will not be terminated gracefully by the Shutdown script. To stop the remaining processes on the DAQ machines, stay on the `control` computer, and then `rgang all `killall java;killall rmiregistry`` This will cause errors from the `datasrv` computer, where some processes are running under root rather than the daq account; ignore these errors.

That should stop the DAQ and all its processes.

Starting the Entire DAQ

1. On the control computer, go to the directory `/daq/DAQPackage/scripts` directory, and run the startup script by typing `./Startup.script`
2. Start the event builder.
 - a. Only when there has been a power cycle, remove and reload modules that communicate with the VME interface in the computers ``monitor``, ``vetocrate``, and ``tower1``, and the GPIB interface on the computer ``monitor``. Again, you can log into each of those machines from the ``control`` computer by typing the command `monitor`, `vetocrate`, or `tower1`. First, become the superuser on the respective machine (`su root`, ask for password if you don't know it), and then type the two commands `/sbin/rmmod sis1100` , `/sbin/insmod sis1100` . The first command removes the VME module, the second inserts it. On the ``monitor`` computer, also type `/sbin/rmmod nigpib` , `/sbin/insmod nigpib`. The first command removes the GPIB module, the second inserts it. You can check the modules that are present by the command `/sbin/lsmmod`, however, it is important to remove modules after a power cycle, even if `lsmmod` shows their presence, to clear out possible corruption. Remember to log out from each computer you log in to.
 - b. Select both `'Tower1'` and `'Veto crate'` on the runcontrol gui and click `'Start Nodes'`.
 - c. Click on `'Start Monitoring'` button and use the selection box to the right of the `'Start Monitoring'` button cycle through the config and run states to start the automatic monitoring of the experiment (detector thresholds, rates, and offsets etc).
3. Start the Run Control gui, and configure and start the run.
 - a. Physically go to the ``builder`` computer's screen, go to the `/home/daq/DAQPackage/scripts` directory, and enter

`java -jar gui.jar &` Answer 'yes' to the pop-up window.

- b. Go to the 'Experiment Mode' menu and set up the appropriate running conditions (low background, Barium, etc.)
- c. Go to the 'Tools' menu, select 'Configuration Control', select the run settings (You can view the run settings from prior runs by looking at the datasrv.cdms-soudan.org/Status_Page.html webpage and clicking on the 'FileNames.config' line for a recent run.), and press the 'Configure Now' button.
- d. Configure the run by clicking on the 'Config' button. It takes a while for the FEB boards to establish their settings, so Config takes a while. If you are impatient, you can watch the log file of the gpib part of the configuration, by tailing the file on monitor: go to the directory `/home/daq/DAQPackage/logs`, and then `tail -f gpib.log`.
- e. Start the run by clicking on the 'Run' button. If you are unsure that the run has actually begun, you can watch the event number in the upper right of the Run Control gui.