

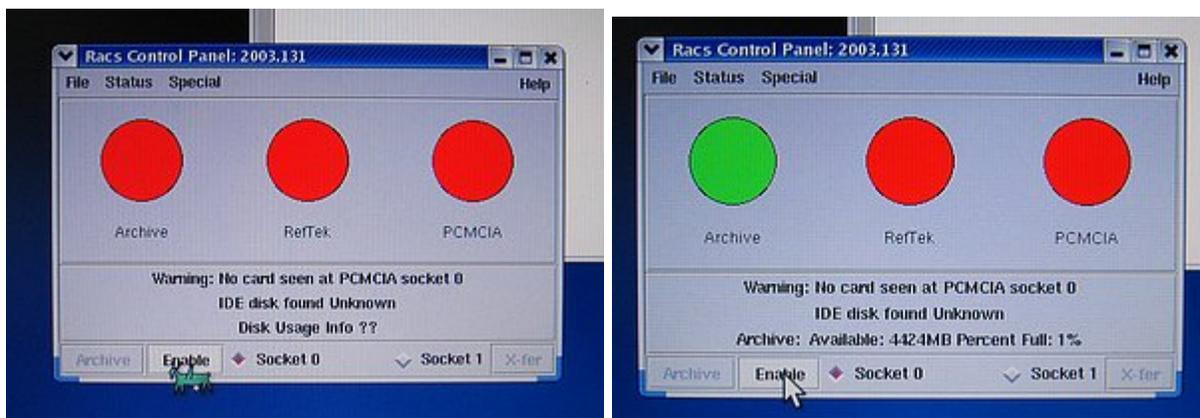
This is a very basic guide to handling RT-130 data after the CompactFlash disks or memory cards have been collected from the sites in the field. All of this may be done in the field to determine how well a site is performing before leaving the site.

1. **Start the Linux laptop.** Two (or more) choices for boot kernel may be displayed. Select the one that specifies that it is for RT-130 use. The computer should finish booting at the desktop and already logged into the "field" account. If not, login as "field". The password will be "passcal".

2. **Start RACS.** From the desktop click on the laptop-shaped icon in the row of icons along the bottom of the display.



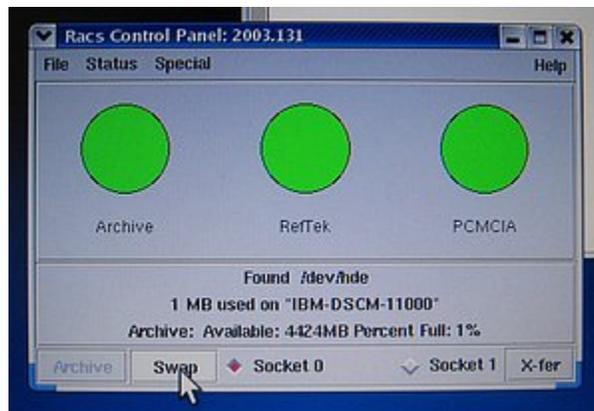
3. **Enable the RAID system.** A window displaying three red dots should appear. You may need to move the window up so you can see the buttons at the bottom. Click on the **Enable** button. The first red dot, labeled Archive, should turn green after 1 minute or less.



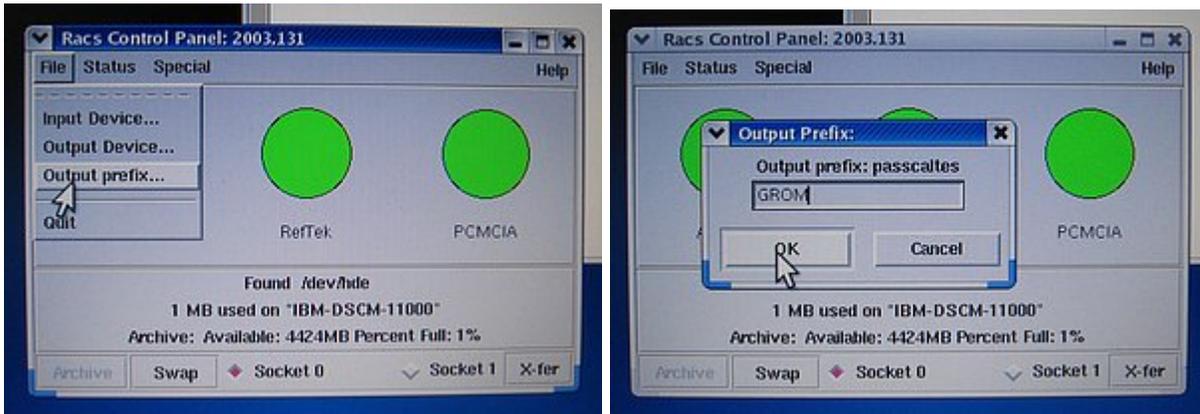
4. **Insert** one of the CompactFlash disks or memory cards into the PC Card Adapter and slide it into the **upper** PC Card slot (Socket 0) on one side or the other of the laptop. **You should hear two beeps** from the laptop. If you do not hear two beeps or if you hear a series of more than two beeps eject the card and try again. If after multiple tries you still do not hear two beeps then reboot the laptop and start over from step 1. This problem may occur after several cards have been read during one session, but usually just ejecting the card and reinserting it fixes the problem. DO NOT proceed until you get the two beeps (check the speaker volume, just in case). The program can get easily confused. So go slowly. If at any time it does start acting strangely about the only fix is to reboot the laptop.



5. **Enable the card.** Once the above step has been completed click the Enable button again. The remaining two red dots, labeled Reftek and PCMCIA, should turn green after a few moments. The Enable button will change to the Swap button. If this step fails (i.e. the program seems to fail to "see" the memory card) check the **Quick start rt-130...** under the Help menu item. There are a couple of settings that may have been set wrong that could be causing the problem.

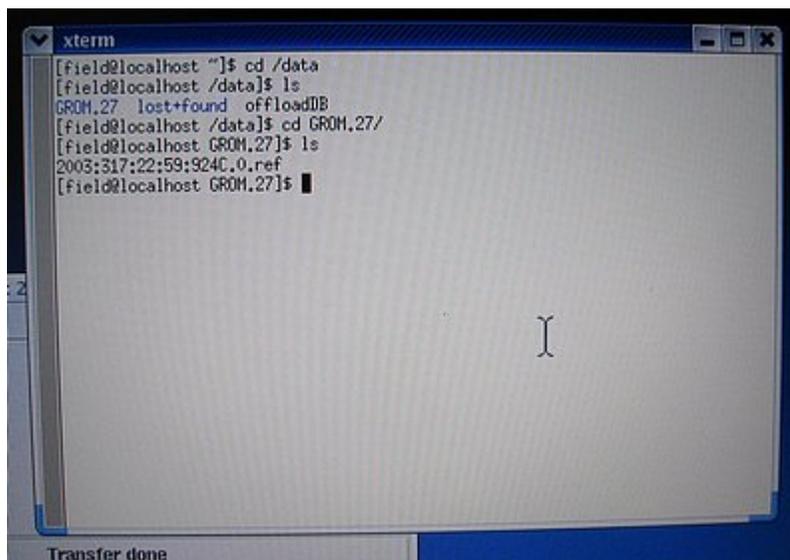


6. **Set the output prefix.** Pull down the File menu and select Output prefix... A dialog box will appear. Enter something meaningful into the text field and click OK. The word that you enter, plus the day-of-year number that the system will add, will be the name of the directory that will be created and where the raw data file read from the memory card will be placed. This directory will always be created in the /data directory. The name following the label "Output prefix:" will usually be whatever was last used. There are times when this default value is blank. If nothing is entered the system will create a directory named "<day number>", which will not show up with an ls command since a name beginning with a "." is hidden. If you cannot find your data check for a hidden directory in /data using ls -a.



7. **Transfer the data.** Click on the X-fer button and the transfer should begin. During the transfer the DAS serial number will be displayed. You should check to make sure that the DAS serial number matches the station that the card was taken from. The green Archive dot will flash while the data is transferred. It may take up to 20 minutes to read all of the data from a 1GB card. The transfer rate is about 1MB/sec plus processing time to create the raw data file.

8. **Check the transfer results.** When the transfer has been completed change directory to /data and check that the correct directory name was created, and that the ".ref" raw data file was created in that directory. The file name of the raw data file will contain the start time of the data (when acquisition was started) and the DAS serial number.



9. **Swap out the card.** Click on the Swap button on the RACS control panel. This will disable the card, and the PC Card slot. The Reftek and PCMCIA dots will turn red, and the Swap button will turn back into the Enable button. After the dots have turned red you may remove the memory card from the PC Card slot of the laptop. Go back to step 4 if you have more memory cards to read.

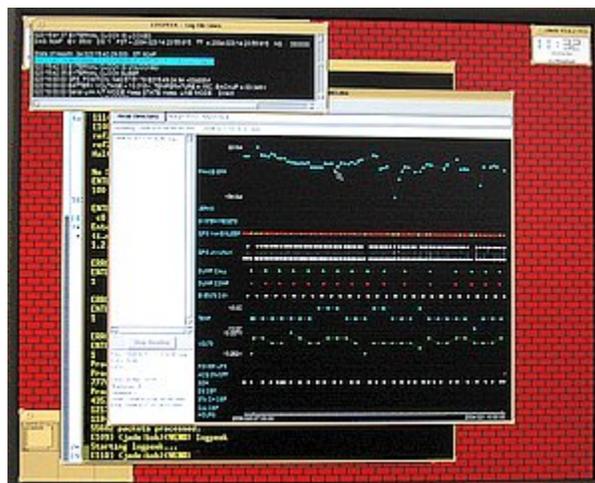


10. **Look at the data.** When finished downloading the data from the memory cards you can process the data to SEGY using the program ref2segy and a command like

```
ref2segy -f <.ref file name>
```

This will create files ending in .log, .run, possibly .err, and "R" sub-directories. There will be an "R" sub-directory (such as "R031.01") for each day that the time range of the .ref file covers. A CRITICAL error message will be displayed when the program starts which can be ignored. In some cases ref2segy may require information about the project that was not written to the raw data. It may ask for the sample rate of Data Stream 1 (enter the experiment's sample rate), the data format (enter **c0** (cee-zero), which stands for compressed, or **32** if the data was not compressed), the list of channels for data stream 1 (enter **1,2,3**), and the gain for each channel (enter the number **1** or **32** for each channel as appropriate).

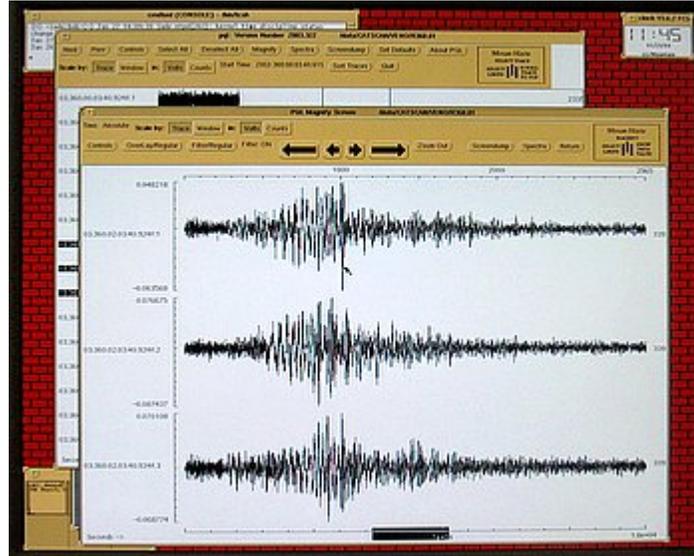
Run the program logpeek (just type "logpeek" on the command line in the same directory as the .ref files) to produce a graphical representation of the contents of the .log file. This will plot information such as timing information, GPS status items, battery voltages and DAS temperature.



Examine the trace data by changing directory to one of the "R" directories and using the program pql

pql <something>

<something> can be any combination of standard wildcards to examine any of the files you want to see. The files in the "R" directories ending in .1 are the trace files for the vertical channel, .2 for the N-S channel, and .3 for the E-W channel. There should be a trace file for each channel for each hour of the day.



**NOTES:**

- Generally speaking, the RACS program must be running, and the Archive dot must be green to "see" the /data directory. If you cd to /data, and see nothing using ls, check that the Archive dot is green first before you begin to panic.

(END)