JHU Small Radio Telescope
Switching between Modes of operation
Linux Console Mode vs. High School Cosmology Modes

The JHU Small Radio Telescope, located on the roof of the Bloomberg Center for Physics and Astronomy, is used by diverse groups.

One large group are students in the Physics Advanced Lab course (AS173.308), who operate the SRT from its computer console. That computer, victor.pha.jhu.edu, is usually reached by VNC. This mode of operation usually runs from January to the end of April each year.

Another large group are public users who operate the computer via the High School Cosmology website at https://srt-web.vercel.app/telescope.

These two modes of modes of operation are incompatible, and the SRT computer has to be switched to one mode from one mode to the other. This document describes the steps needed to make the switch.

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1. Logon to the SRT console at victor.pha.jhu.edu via VNC
2. Open up a terminal, and go to /home/student/srt
    >   Prepare to edit srt.cat (e.g. nano srt.cat) where you make four changes:
        >   Un-comment COMMAND /home/student/web_app.cmd.txt
        >   Comment out COMMAND /home/student/srt/cmd.txt
        >   Un-comment DATADIR /home/student/web_app
        >   Comment out DATADIR /home/student/data.
    >   You can use the nano editor to make these changes:

```
[[student@victor srt]$ nano srt.cat
```

>   That will open the "nano" editor. The changes after editing are shown below:

```
GNU nano 2.3.1                      File: srt.cat

* sample d1.cat file
* first word is key word




COMMAND /home/student/web_app/cmd.txt
*COMMAND /home/student/srt/cmd.txt



          / should equal   blent
DATADIR /home/student/web_app/
*DATADIR /home/student/data/
*RECORD 1 SPEC PCLD


^G Get Help      ^O WriteOut      ^R Read File     ^Y Prev Page     ^K Cut Text      ^
^X Exit          ^J Justify       ^W Where Is      ^V Next Page     ^U UnCut Text     ^
```

>   Write out (i.e. save) the changes in the file and exit the editor.

Then we can follow Daniel's instructions on Github (https://github.com/SRT-High-School-Comsmology-Project/srt-backend#srt-backend) in his README:

3. On the SRT console, in the terminal window, go to /home/student/srt-backend-main
    >   Execute "source venv/bin/activate"
    >   Execute "nohup python3 main.py &"

```
[student@victor ~]$ ls
data       Downloads              OldStuff   run_srtn        Templates
Desktop    nohup.out              Pictures   srt             varlogmessages.txt
Documents  notes_on_USB_install   Public     srt-backend-main  web_app
[student@victor ~]$ cd srt-backend-main
[student@victor srt-backend-main]$ ls
data_classes      email_controller.py  nohup.out     README.md      srt_controller.py
db_controller.py  main.py              __pycache__   requirements.txt  venv
[student@victor srt-backend-main]$ source venv/bin/activate
(venv) [student@victor srt-backend-main]$ nohup python3 main.py &
[1] 12977
nohup: ignoring input and appending output to 'nohup.out'
(venv) [student@victor srt-backend-main]$
```

>   Check that the program main.py is working by executing ps aux | grep main.py:

```
[student@victor srt-backend-main]$ ps aux | grep main.py
student  12977  0.1  0.6 739088 26784 ?       Sl   Jun10   1:42 python3 main.p
student  28611  0.0  0.0 112716   980 pts/1   S+   11:34   0:00 grep --color=auto main.py
[student@victor srt-backend-main]$
[student@victor srt-backend-main]$
```

At this point the terminal can be exited and closed and you can disconnect from VNC. The SRT computer should process commands sent to it from the High School Cosmology website.

Switching the Hopkins Small Radio Telescope (SRT)
FROM: High School Cosmology Mode (via https://srt-web.vercel.app/telescope)
TO: Linux console mode (via victor.pha.jhu.edu:5901)

1. Log in to the SRT console and open up a terminal.
2. In the terminal, find the program main.py by executing ps aux | grep main.py. Once found, kill the program:

```
[[student@victor srt-backend-main]$ ps aux | grep main.py
student  12977  0.1  0.6 739088 26784 ?        Sl   Jun10   1:43 python3 main.py
student  28728  0.0  0.0 112716   980 pts/1    S+   11:44   0:00 grep --color=auto main.py
[[student@victor srt-backend-main]$ kill 12977
[[student@victor srt-backend-main]$ ps aux | grep main.py
student  28738  0.0  0.0 112716   976 pts/1    S+   11:44   0:00 grep --color=auto main.py
[student@victor srt-backend-main]$ ▯
```

3. Go to /home/student/srt
    Prepare to edit srt.cat (e.g. nano srt.cat) and make four changes:
    Comment out "COMMAND /home/student/web_app/cmd.txt"
    Comment in "COMMAND /home/student/srt/cmd.txt"
    Comment out "DATADIR /home/student/web-app/"
    Comment in "DATADIR /home/student/data/"
    Like so:

```
[[student@victor srt]$ nano srt.cat

GNU nano 2.3.1                        File: srt.cat

⊞ sample d1.cat file
* first word is key word
* STATION: latitude longitude west in degrees


*COMMAND /home/student/web_app/cmd.txt
COMMAND /home/student/srt/cmd.txt


*DATADIR /home/student/web_app/
DATADIR /home/student/data/


^G Get Help    ^O WriteOut    ^R Read File    ^Y Prev Page    ^K Cut Text
^X Exit        ^J Justify     ^W Where Is     ^V Next Page    ^U UnCut Text
```

    WriteOut (i.e. save) the changes to the srt.cat file, and exit the editor.

Now the SRT computer will operate from the terminal and commands from the High School Cosmology website will not work.