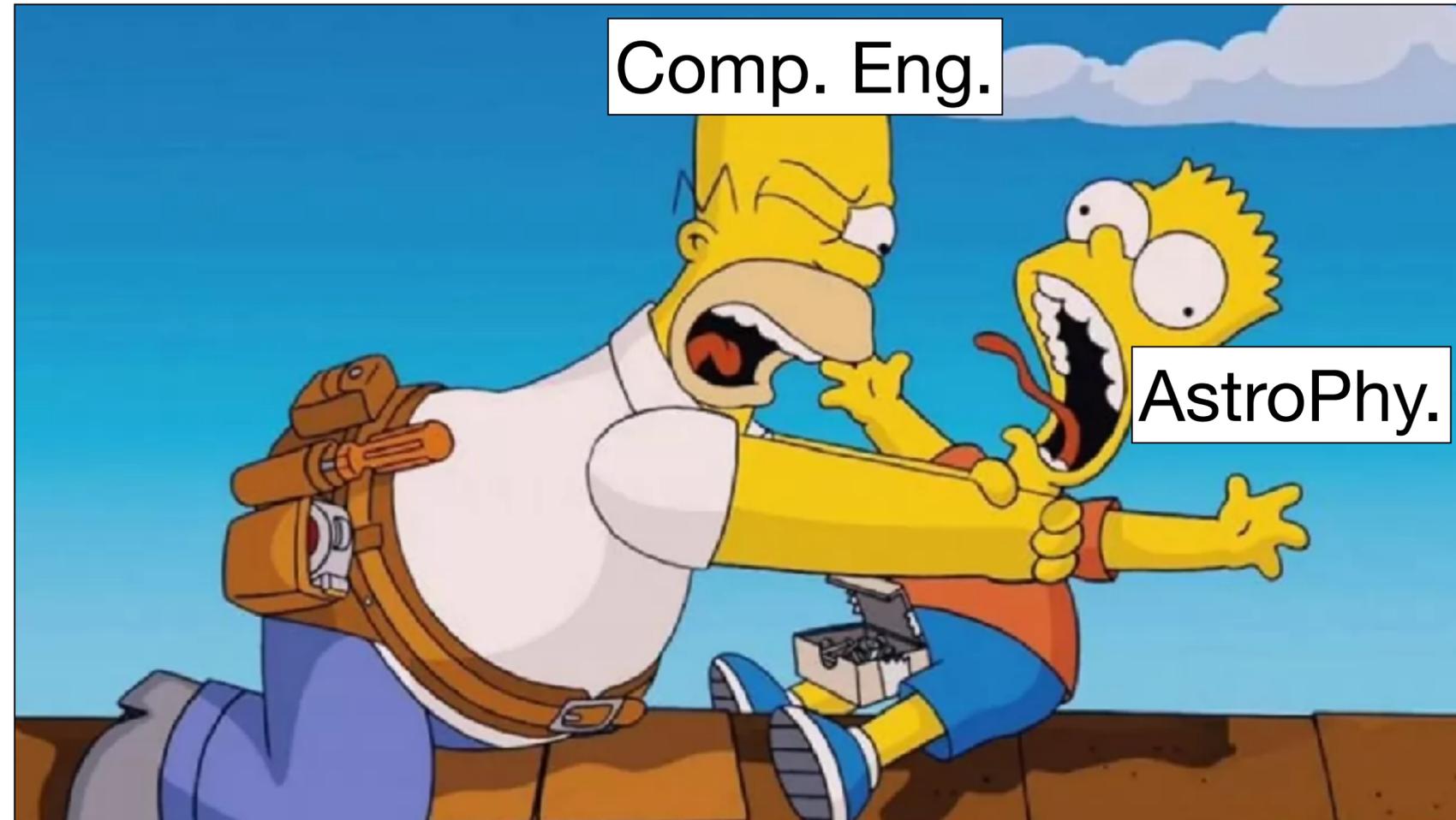


How to run Jupyter Notebook on INAF/OAS machines

A quick tutorial

by E. Bronzini

Note: the following material doesn't pretend to be exhaustive and/or formally correct, hence computer engineers might react as Homer



However, it works, and we do not really know exactly why (and this is how engineers usually work).

Access to login06 node (example for gruppo02)

```
ssh -X gruppo02@login06.iasfbo.inaf.it
```

Setup all change this number

```
source setup.login06.sh
```

CHANDRA	XMM	FERMI
ciao	heainit sas heainit	conda activate fermi

Launch a ***NEW*** Jupyter Notebook

```
jupyter notebook --no-browser &
```

Launch a NEW Jupyter Notebook

```
jupyter notebook --no-browser &
```

#In a different terminal window, type

```
#ssh -NfL port1:localhost:port2 gruppo##@login06.iasfbo.inaf.it
```

```
ssh -NfL 8891:localhost:8891 gruppo02@login06.iasfbo.inaf.it
```

change these numbers

Launch a NEW Jupyter Notebook

```
jupyter notebook --no-browser &
```

```
ssh -NfL 8891:localhost:8891 gruppo##@login06.iasfbo.inaf.it
```

#Now, go back to the previous window (where login06 is connected) and copy the url. In this case (all in one line)

```
http://localhost:8891/?  
token=8fb55f3fefe8360a4d63b56e7b06b7eef2018459fa2402eb
```

#Open your preferred browser and paste it. Now you can navigate in your folder

Close the Jupyter Notebook

#To safely close the notebook just close all (related) tabs in your browser. Then, come back to the your terminal window (connected to login06) and close it typing

`exit`

#Since the terminal window connected to login06 has been launched in detached mode, the notebook will be continue to run, and long-term processes will be executed with no problems (important for *Fermi-LAT* analysis). All variables will be saved.

Restore an OLD Jupyter Notebook

Access to login06 node

```
ssh -X gruppo02@login06.iasfbo.inaf.it
```

Check if a Jupyter Notebook process is active

```
jupyter notebook list
```

If a notebook is still running, make the connection between ports with `ssh -NfL ...` command using the correct port. Then, just copy and paste the url in your browser.

Stop *running* Jupyter Notebook

```
#jupyter notebook stop port2
```

```
jupyter notebook stop 8891
```

change this number

ISSUES

You might face this error when you run `ssh -NfL`

```
bind [127.0.0.1]:8888: Address already in use
```

```
channel_setup_fwd_listener_tcpip: cannot listen to port: 8888
```

```
Could not request local forwarding.
```

NO PANIC! It simply means that the port1 you set is already in use: something is running or you simply forgot to close it. In your terminal window, type

```
sudo lsof -i -P -n | grep LISTEN
```

this will show you up the ports in use currently. You will get something like

```
[...]  
ssh      87596      ettore    7u IPv6 0x8597dd2c513b2daf  0t0  TCP [::1]:8888 (LISTEN)  
ssh      87596      ettore    8u IPv4 0x8597dd2c558a95cf  0t0  TCP 127.0.0.1:8888 (LISTEN)
```

87596 is the PID of the process associated to the port 8888, kill the process typing

```
kill 87596 change this number
```