Centre de Calcul de l'Institut National de Physique Nucléaire et de Physique des Particules

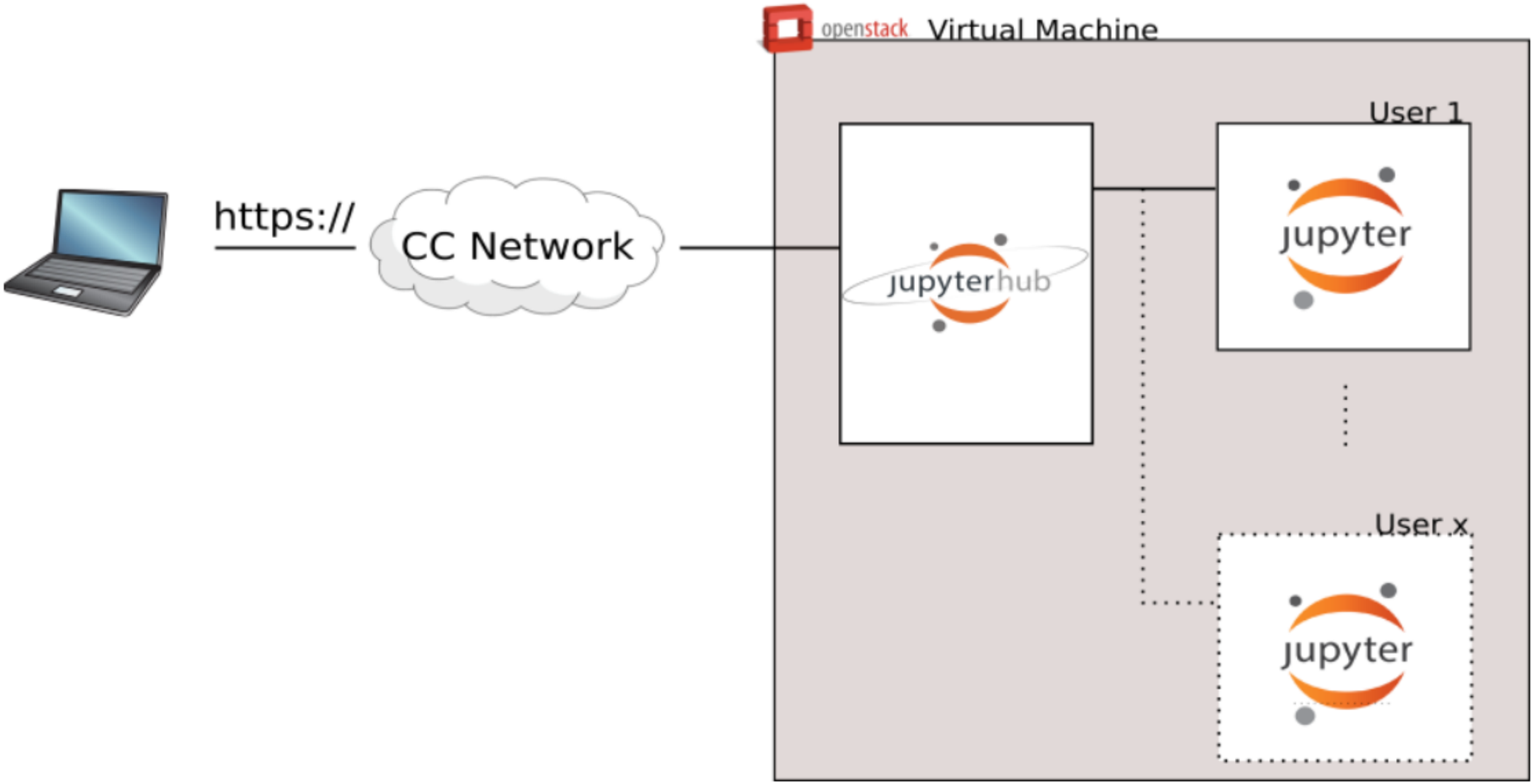
LSST WORKSHOP: SCHOOL & HACKATHON

JUPYTERHUB PLATFORM

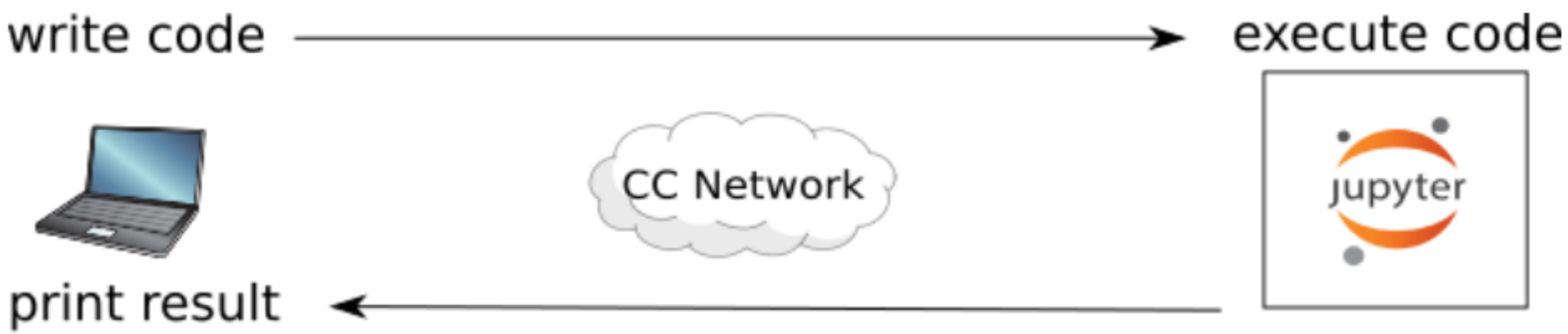
CCIN2P3

cnrs

Architecture



Workflow



AstropyExample Last Checkpoint: an hour ago (read only)

Control Panel | Logout

File | Edit | View | Insert | Cell | Kernel | Widgets | Help | Not Trusted | lsst-stack

Code

In [1]:
```
import numpy as np

import matplotlib
import matplotlib.pyplot as plt
%matplotlib inline
```

The following line is needed to download the example FITS files used here.

In [2]:
```
from astropy.utils.data import download_file
```

Viewing and manipulating FITS images

In [3]:
```
from astropy.io import fits
```

In [4]:
```
image_file = download_file('http://ccosvm0883.in2p3.fr:8080/bertrand/examples/wise-m51-band4.fits', cache=True )
```

```
Downloading http://ccosvm0883.in2p3.fr:8080/bertrand/examples/wise-m51-band4.fits [Done]
```

Opening FITS files and loading the image data

I will open the FITS file and find out what it contains.

In [5]:
```
hdu_list = fits.open(image_file)
hdu_list.info()
```

```
Filename: /mnt/users/bertrand/.astropy/cache/download/py3/93ef44a8b08d256791c650777f110ce4
No.    Name      Type      Cards   Dimensions   Format
  0  PRIMARY    PrimaryHDU    59   (438, 438)   float32
```

Anaconda environment with 3 available "kernels"

Terminal Emulation

https://ccosvm0883/user/bertrand/terminals/1

Rechercher

CCIN2P3

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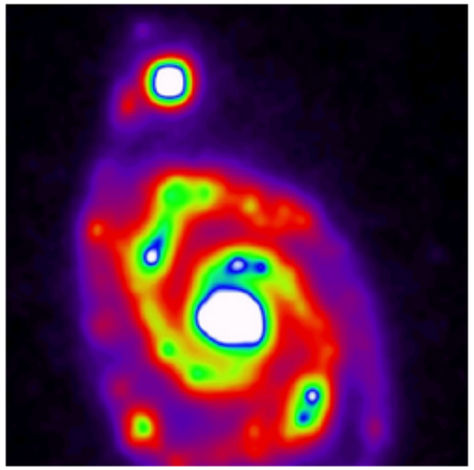
```
[bertrand@ccosvm0883 ~]$ ll
total 4
drwxr-xr-x 3 root root  156 Jun  9 15:40 examples
-rw-r--r-- 1 root root 3477 Jun  9 15:40 Welcome.ipynb
[bertrand@ccosvm0883 ~]$ git clone https://github.com/astropy/astropy-tutorials.git
Cloning into 'astropy-tutorials'...
remote: Counting objects: 2018, done.
remote: Total 2018 (delta 0), reused 0 (delta 0), pack-reused 2018
Receiving objects: 100% (2018/2018), 8.05 MiB | 4.88 MiB/s, done.
Resolving deltas: 100% (1046/1046), done.
[bertrand@ccosvm0883 ~]$ tar czvf my_backup.tar.gz .
[bertrand@ccosvm0883 ~]$ ll
total 10932
drwxr-xr-x 6 bertrand workshop     4096 Jun  9 16:28 astropy-tutorials
drwxr-xr-x 3 root     root          156 Jun  9 15:40 examples
-rw-r--r-- 1 bertrand workshop 11184913 Jun  9 16:30 my_backup.tar.gz
-rw-r--r-- 1 root     root         3477 Jun  9 15:40 Welcome.ipynb
[bertrand@ccosvm0883 ~]$
```

ASTROPY & FIREFLY

Firefly widget needs a connection to a firefly server:
https://ccosvmlsst028/firefly

URL to your own fits files:
https://SERVERNAME.in2p3.fr:8080/USERNAME/FILEPATH



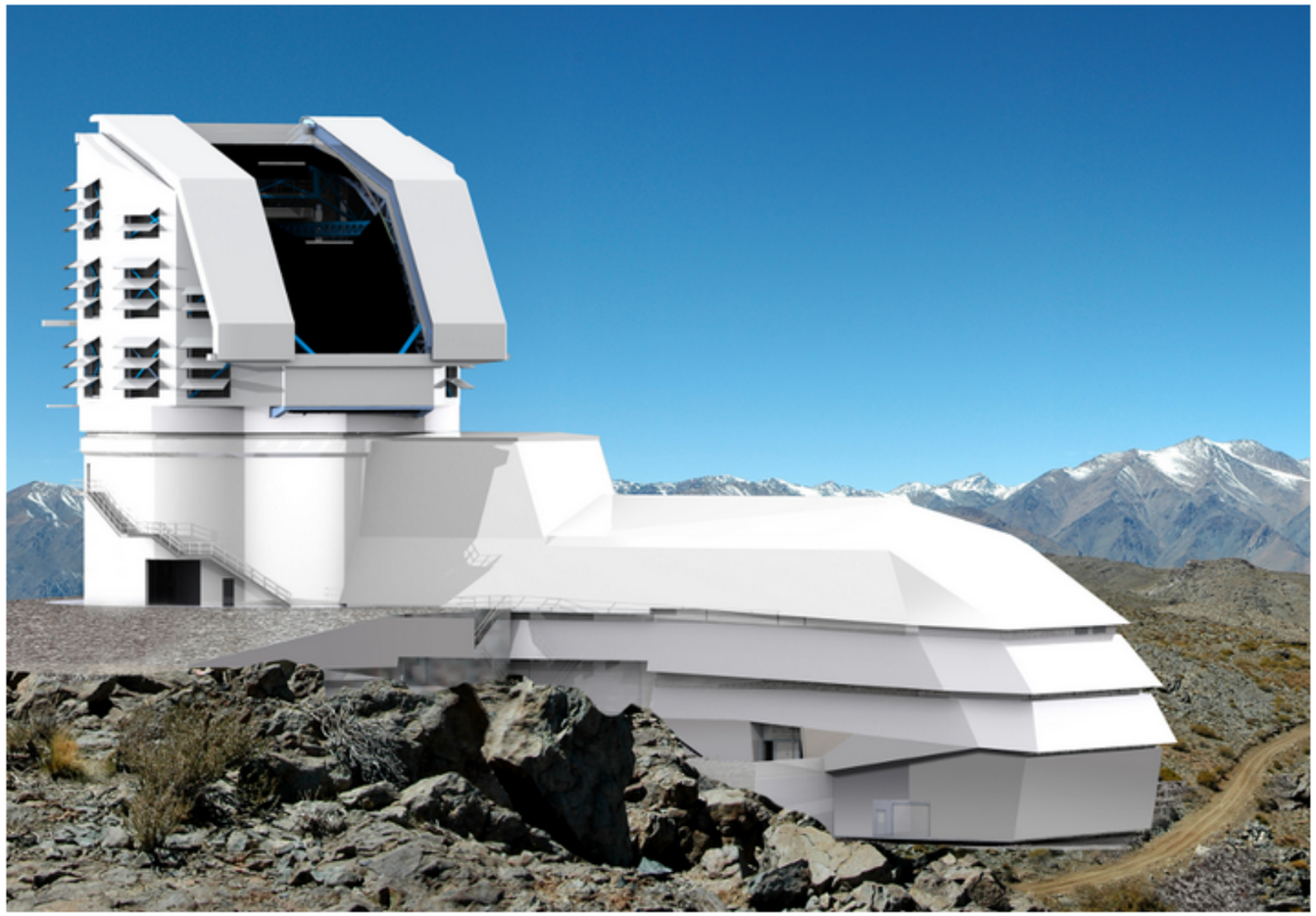
Do not use Safari (mac users)

Protocol is https but certificate for this session is home made

Take a look at the given examples for fits visualization

Keep your tickets during the entire session

Thanks for your attention and happy coding ;)

Any questions?

bertrand.rigaud@cc.in2p3.fr