Helpnote 1 - Jupyter on HEP Cluster

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We use the following terms:

- Server Side: The Manchester HEP cluster at `<hostname>`
- Client Side: Your local machine

Set up python

For this we use the `cvmfs` library which is already installed and mounted on the HEP cluster. To activate what we need, log on to the server side and run

```
source /cvmfs/larsoft.opensciencegrid.org/products/setup
```

```
setup python v3_9_2
```

As we will need serveral libraries, now is a good time to check if this worked and do some setup at the same time. Run

```
pip install numpy scipy matplotlib ipython jupyter pandas uproot awkward
```

This should now work - if not, lets see.

Start the notebook

On the server side execute

```
python -m notebook --no-browser --port=7800
```

This should fire up the notebook on the server side. In the upcoming dialoge there will be a note giving you the token you need later.

On the client side now run

```
ssh -N -f -L localhost:8001:localhost:7800 <username>@<hostname>
```

where `<username>` and `<hostname>` should be replaced by your corresponding credentials and the hostname of the HEP cluster you work on.

Now open your browser and navigate to `http://localhost:8001/`. Here the notebook should appear. Enter the token mentioned before from the server side and you should be up and running.