***Introductory Linux Scripts to get around QUEST***

Explanation in this font.

Actual code in THIS FONT AND COLOR.

Names of things are in <brackets>, which means it can be replaced with the name of your target, no need to include brackets.

**Log into QUEST**

ssh -X <username>@quest.northwestern.edu

You need XQUARTZ (if you have a mac) to get images to display.

**Directories**

“Directory” – essentially the name of a folder. You use a “path” to get to the directory – i.e. a list of folders to get to your place. For example, /projects/b1045/ is the directory to our group’s “workspace”.

Get to our project space on QUEST:

cd /projects/b1045/

Get to your home directory (your “desktop”):

cd ~

Find your current directory:

pwd

Get to last directory

cd -

**Lists**

list the contents of the directory (see all the files within the folder):

ls

See what file/directory was most recently modified with the current directory:

ls -ltr

**Open files**

Open the file:

vi <filename>

to exit vi –

:q! (if you dont want to add changes,)

:wq (if you want to write a new file),

:q (if you just opened the file and did nothing)

to modify the file:

i

to get out of writing:

hit escape button

Note: vi also has tricks, like searching for keywords or line numbers, so look that up!

**Running file**

to make executable:

chmod +x <name>.py

Run a python script:

python <name>.py

hit ctrl-c to cancel your accidental runs

**Copy files**

cp /dir/to/file/<file.txt> /dir/to/newdir/<rename.txt>

make backup copy:

cp /dir/to/file/<file.txt> /dir/to/file/<file.txt.bak>

move file or rename file (aka take it away from dir/to/file):

mv /dir/to/file/<file.txt> /dir/to/newdir/<rename.txt>

(to rename keep original directory)

**Random**

use to downloads files from websites

wget <url>

zip a file

gzip <file>

unzip a file

gunzip <file>

untar a file

tar -xvf <file>

***Conda Environments***

**Make a Conda environment**

1. Load in python into QUEST

module load python/anaconda3

2. Create conda environment, change <>

conda create -n <my-env> python**=3.6** anaconda

3. Load in environment. Once environment is set up, every time you log into quest put source activate <env>.

source activate <my-env>

4. Load in libraries to your environment. Make sure you’ve activated your environment before you being loading.

conda install <library>

**Download libraries into environment**

conda install -c conda-forge netCDF4 xarray cartopy ipykernel nc-time-axis

**Get into environment**

module load python/anaconda3

source activate <my-env>

**Active python session**

just type python after you’ve loaded in python

**GIT on QUEST**

To be continued….

***Jupyter Notebook***

<https://kb.northwestern.edu/running-jupyter-notebook-on-quest>

Log into quest and do the following steps.

Reminder: Explanation in this font. Actual code in THIS FONT AND COLOR.

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**Setting up Jupyter notebook**  
1) Load python  
module load python/anaconda3  
  
2) Activate environment (setup one if you dont have one yet, page 3)  
source activate <my-env>  
  
3) Install the environment within Jupyter  
python -m ipykernel install --user --name <my-env> --display-name "my-env"

4) Start a session:  
srun -A b1045 -p b1045 -N 1 --tasks-per-node=1 --mem-per-cpu=4G --time=04:00:00 --pty bash -l

5) Check session name:

hostname

(**remember** this output, will look something like qnode6020)

6) Run jupyter notebook on quest:  
jupyter notebook --port=<8622> --no-browser

(port number can be any 4 digits, choose a random set of 4 digits)  
  
6) **OPEN NEW TERMINAL WINDOW.** Log into your “tunnel” to the node so you can get to Jupyter notebook.

ssh -L <8622>:localhost:<8622> i <user>@quest.northwestern.edu ssh -N -L <8622>:localhost:<8622> <qnode6026>

6) Go to first terminal window, copy and paste the given webpage into your internet browser (i.e. Chrome).

**Running Jupyter notebook after everything is installed**

1) Load python  
module load python/anaconda3  
  
2) Activate environment (setup one if you dont have one yet, page 3)  
source activate <my-env>  
  
3) Start a session:  
srun -A b1045 -p b1045 -N 1 --tasks-per-node=1 --mem-per-cpu=4G --time=04:00:00 --pty bash -l

4) Start a session:  
srun -A b1045 -p b1045 -N 1 --tasks-per-node=1 --mem-per-cpu=4G --time=04:00:00 --pty bash -l