

UCLA SSCERT

Social Sciences Center for Education, Research, and Technology

v0.14, last updated 24 May 2023.

JupyterLab

Running jupyter notebooks on SSCERT HPC (SSHPPC).

To tunnel out from SSCERT HPC is a multiple step process. As of this writing this has been tested on macOS 11 via terminal, and on Windows 11 with Powershell 7.

Load modules

The required Python version associated with the version of JupyterLab in these instructions is below. It is possible additional versions of JupyterLab are installed on SSCERT HPC, you would need to determine appropriate paths if you wish to use a different version.

```
module use /opt/ohpc/pub/eb-gcc103/modules/all
module load Python
module load JupyterLab
```

(optional) This loads Python 3.9.5, you can verify this by running Python3. After verifying Python version, please exit out of Python and return to the bash shell.

```
[brian@sms ~]$ python3
Python 3.9.5 (default, May  5 2023, 14:12:38)
[GCC 10.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Running Jupyter Lab

Request an interactive session with the appropriate number of CPU cores and memory that you need; this example uses 8 (-n 8) cores and 32GB memory.

```
srun -n 8 -N 1 --mem=32G --pty /bin/bash
```

Please which compute node is assigned, c2, c3, or c4 [compute node] as of this writing.

Start Jupyter Lab.

```
[brian@sms ~]$ jupyter lab --no-browser --port 8888
```

Please note you may set the port to whichever port you require, however this example uses the most common for this use, port 8888. Should you bind to a different port, please change the port number as appropriate throughout the rest of your setup.

Connecting to Jupyter Lab requires some additional SSH tunneling be setup next.

Please note the generated url, please note this will be unique every time you start Jupyter Lab. i.e. <http://localhost:8888/lab?token=fd2fe1fae10c0690e04d6b8e99ed6c9ae17483fa138ec6f1>

Connecting to Jupyter Lab

Open up a new ssh session in terminal. This must be a second, separate SSH session.

This will establish the necessary tunnels to connect from SSCERT HPC to your system's web browser.

Please note that [username] is your actual username, and [compute node] is the actual compute node you have connected to.

```
ssh -t -t [username]@128.97.184.10 -L 8888:localhost:8888 ssh [compute node] -L  
8888:localhost:8888
```

I.e. if your username is test, and the compute node you connected to is c1234, then your actual command would be:

```
ssh -t -t test@128.97.184.10 -L 8888:localhost:8888 ssh c1234 -L  
8888:localhost:8888
```

Once this is running, open your web browser, and visit the URL generated at the end of the *Running Jupyter Lab* section.

SSH clients and tunnels

macOS:

Reference:

<https://its.tntech.edu/display/MON/HPC+Sample+Job%3A+Jupyter+Notebook#HPCSampleJob:JupyterNotebook-TunnelingwithLinuxorMacOS>

Windows 10: Setting up Powershell 7 and SSH

Reference:

<http://www.hurryupandwait.io/blog/need-an-ssh-client-on-windows-dont-use-putty-or-cygwinuse-git>

Please reference: Option 1: Windows PowerShell

<https://alexanderlabwhoi.github.io/post/2019-07-24-slurm-win/>

Note that Option 3 (PuTTY) is not recommended in our testing, and as of this writing, SSCERT has not yet tested MinTTY.

How to install git (and ssh) in Windows PowerShell via *either* chocolatey *or* scoop.

<https://chocolatey.org/>

<https://scoop.sh/>