



# Jupyter on NeSI

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## Jupyter on NeSI - introduction

- NeSI supports Jupyter for interactive supercomputing
  - Create notebooks that contain live code, equations, visualisations and explanatory text
- NeSI's Jupyter team
  - Yuriy Halytskyy, Marko Laban, Chris Scott, Thomas Berger, Jun Huh, Nancy Lin, Blair Bethwaite
- JupyterHub + JupyterLab
- Some use cases for Jupyter on NeSI
  - Data analysis and visualisation
  - Machine learning
  - Interacting with Slurm scheduler, e.g. workflows
  - Terminal access (browser based instead of SSH)
  - Proxying and managing web apps running on the HPC

# Jupyter on NeSI

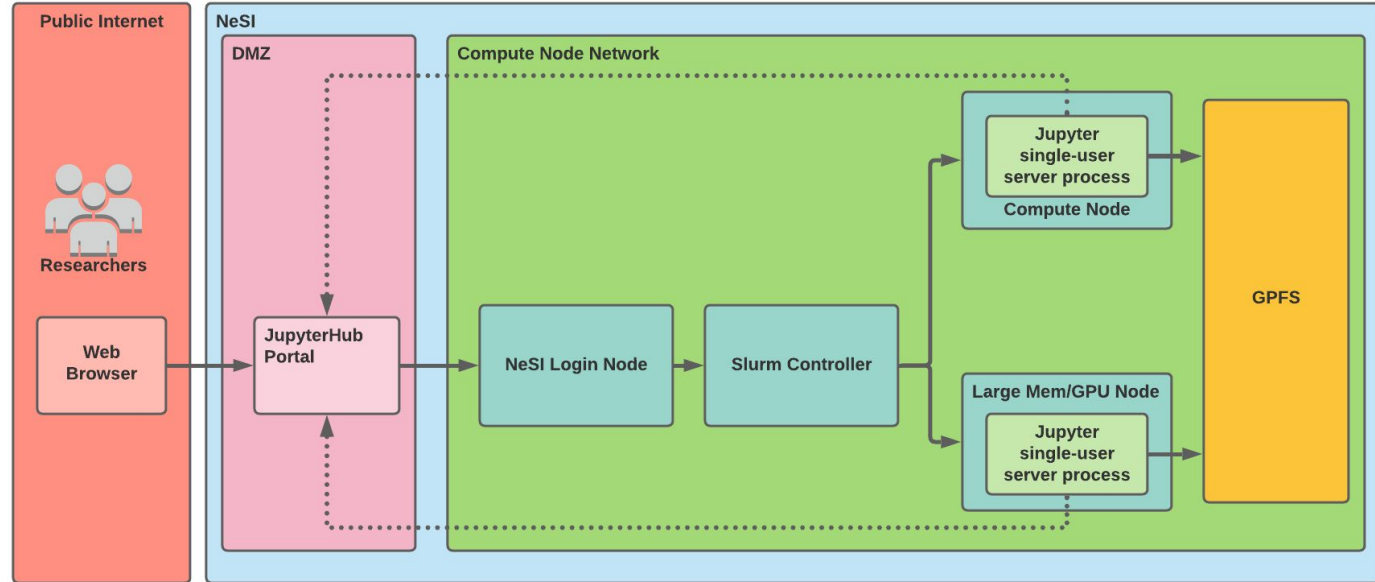
The image shows a web browser window displaying the JupyterLab Launcher interface. The browser's address bar shows the URL `jupyter.nesi.org.nz/user/csco212/lab?`. The interface is organized into three main sections:

- Notebook:** This section contains four interactive buttons for creating notebooks:
  - Python 3.8.1 (gimkl-2018b)
  - Anaconda3 2019.03 (gimkl-2018b)
  - Python 3.7.3 (gimkl-2018b)
  - R 3.6.1 (gimkl-2018b)
- Console:** This section contains four interactive buttons for creating console environments:
  - Python 3.8.1 (gimkl-2018b)
  - Anaconda3 2019.03 (gimkl-2018b)
  - Python 3.7.3 (gimkl-2018b)
  - R 3.6.1 (gimkl-2018b)
- Other:** This section contains four utility buttons:
  - Terminal
  - Text File
  - Markdown File
  - Show Contextual Help

At the bottom of the browser window, the system status bar shows `0 $ 0` and `Mem: 91.18 MB`. The word `Launcher` is visible in the bottom right corner of the interface.

- Authentication
    - Users can login with their NeSI credentials
    - Custom Authenticator obtains a Kerberos ticket
  - Spawning
    - BatchSpawner knows how to talk to Slurm but...
    - JupyterHub is firewalled
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# Jupyter architecture



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## Summary

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Very brief introduction to Jupyter on NeSI - please follow up if interested

<https://jupyter.nesi.org.nz> - early access phase - get in touch if you'd like to try it out

<https://support.nesi.org.nz/hc/en-gb/articles/360001555615-Jupyter-on-NeSI>