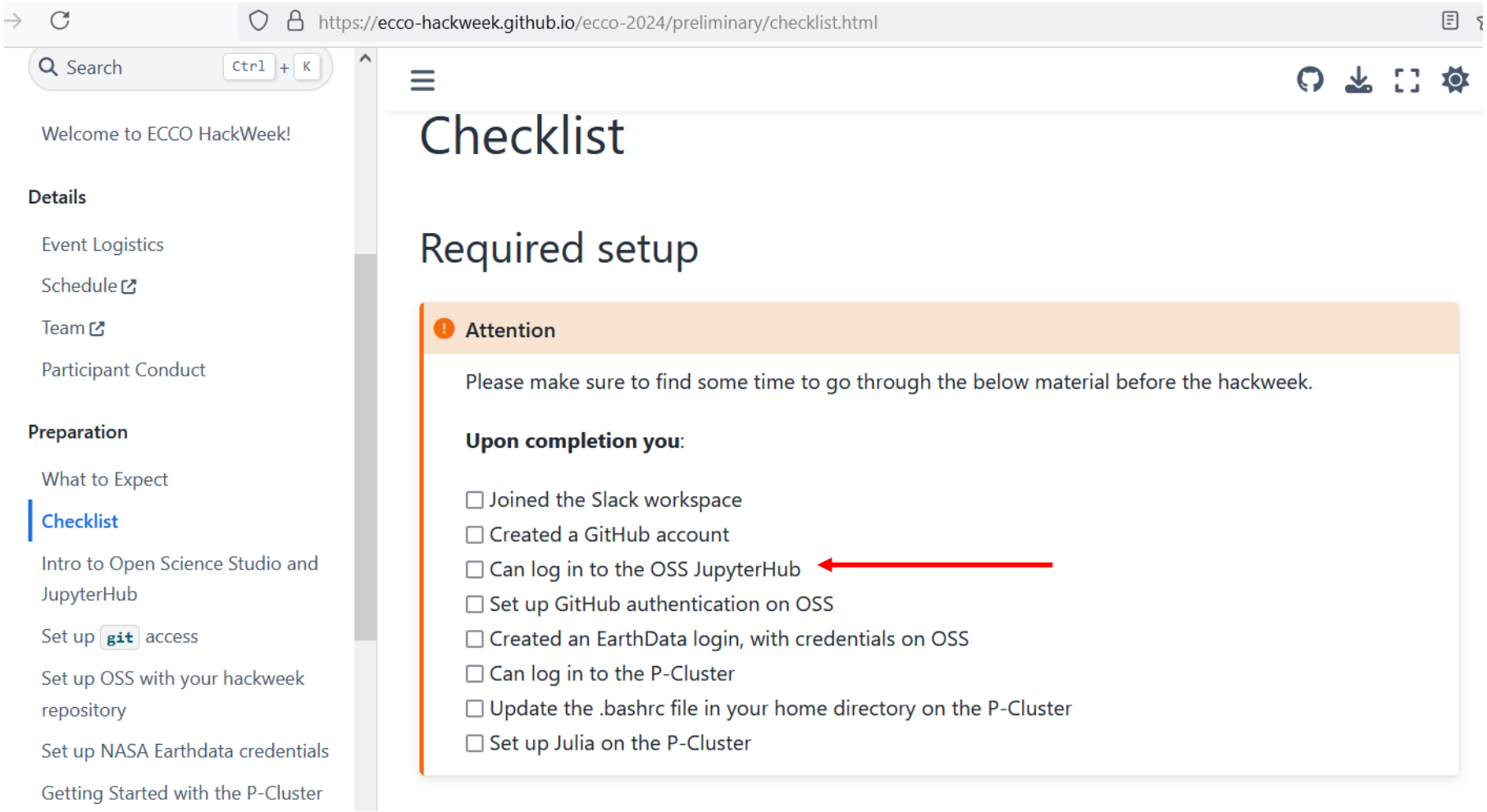
Setting up and working in the Open Science Studio

Outline

- “Check in” with the preparation checklist
- What is Open Science Studio (OSS)?
- Logging in to OSS
- Using *git* and GitHub to collaborate on coding projects
- Ou Wang will talk about the shared storage volume and high-performance computing cluster

The preparation checklist

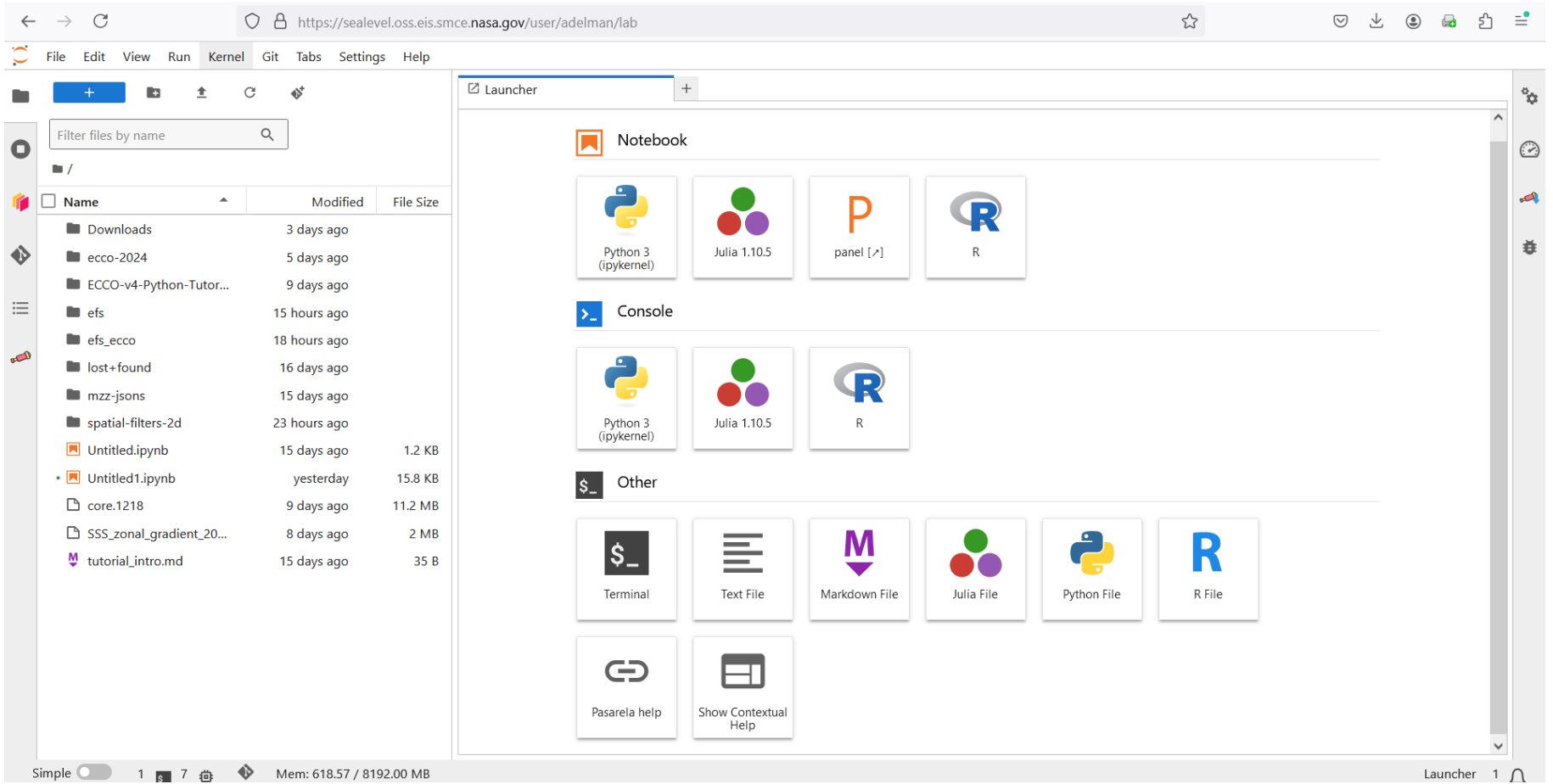
- Don’t worry if you haven’t done all of these…but try them before the afternoon session



- If you haven’t tried logging in to OSS (https://sealevel.oss.eis.smce.nasa.gov), get your laptop ready to try it now!

What is Open Science Studio (OSS)?

- A platform developed by the Science Managed Cloud Environment (SMCE) group at NASA Goddard Space Flight Center (Greenbelt, MD)
- When you log into OSS (https://sealevel.oss.eis.smce.nasa.gov), a JupyterHub server is launched in the Amazon Web Services (AWS) Cloud, in the same region as ECCO output and other NASA earth science data

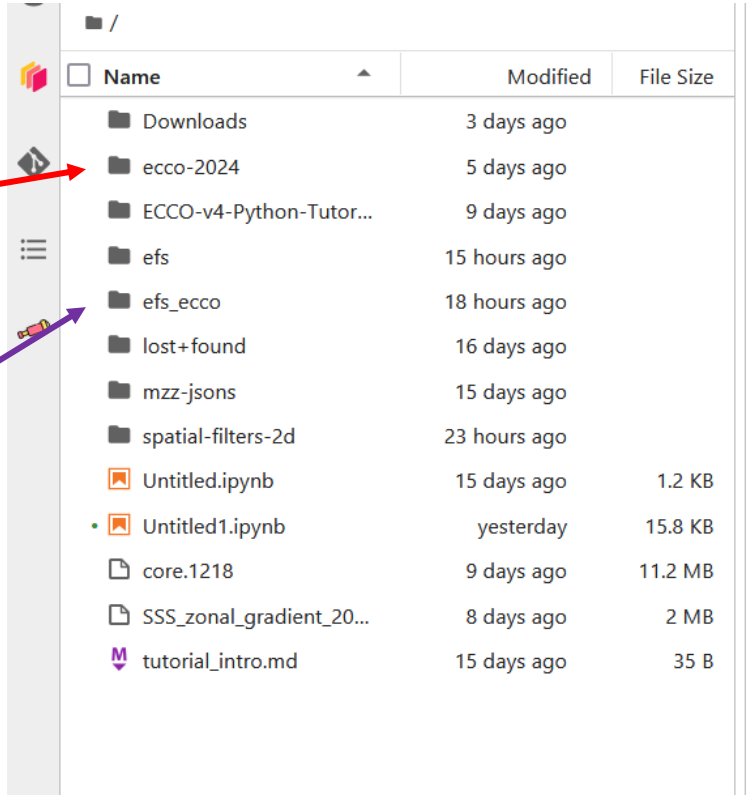


What is Open Science Studio (OSS)?

- Each user gets their own private filesystem, but also access to shared resources through */efs_ecco*
- OSS (especially in the *ecco-2024* project directory) is the place to store your Jupyter notebooks and any associated project files such as documentation and images

***ecco-2024*: once you clone this repository from GitHub, you will find all the ECCO Hackweek website info in this folder (including tutorials)**

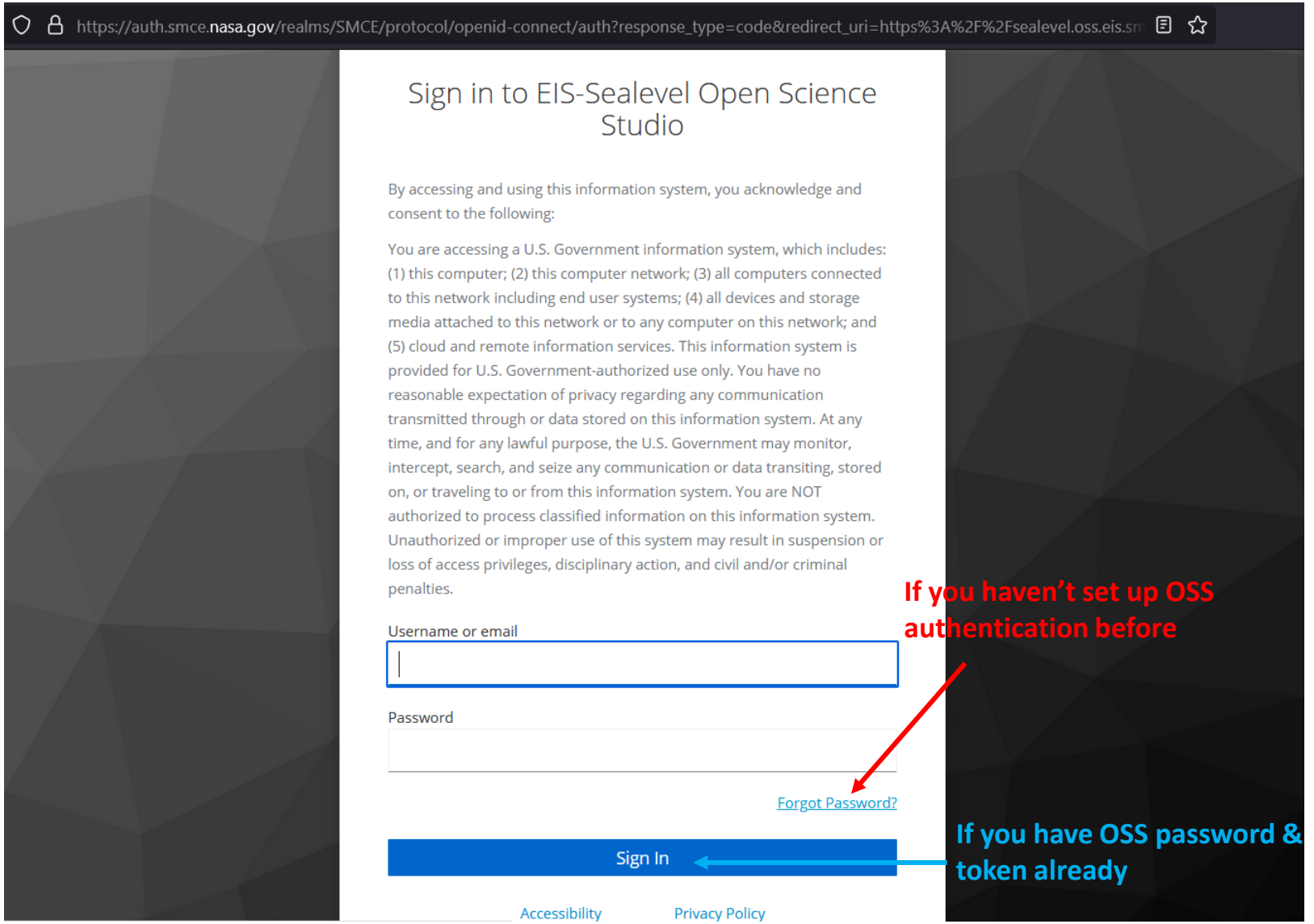
***efs_ecco*: shared storage volume (check that you have access to this)**



- Outside of */efs_ecco*, **please avoid storing large data files on OSS**…total storage limit on OSS is 150 GB!

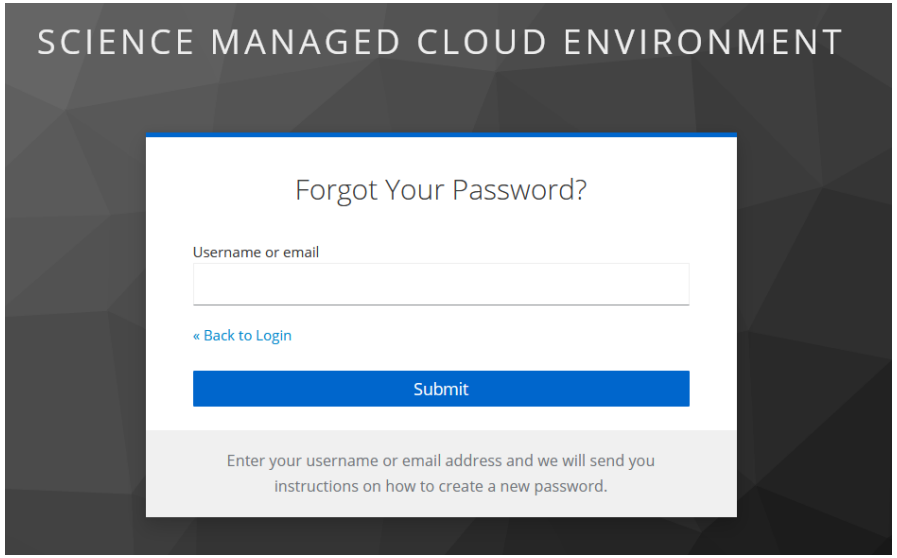
Logging in to OSS

- Go to https://sealevel.oss.eis.smce.nasa.gov – bookmark this page if you haven't yet!

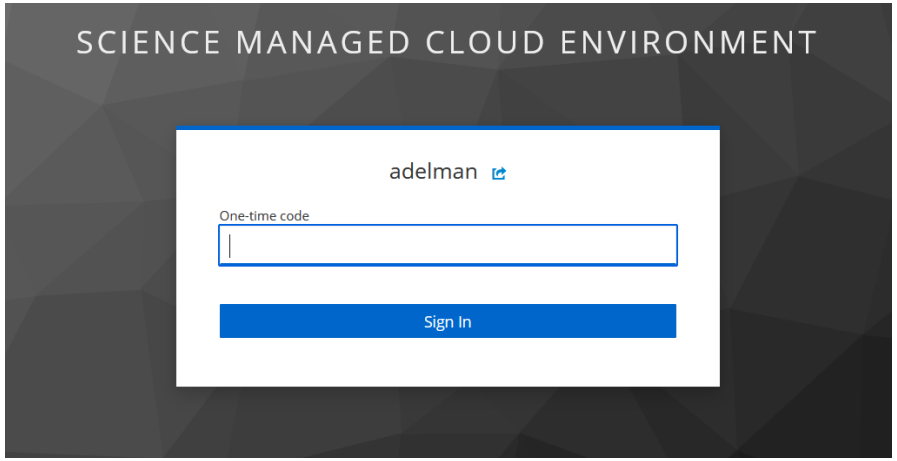


Logging in to OSS - https://sealevel.oss.eis.smce.nasa.gov

- If you are setting up authentication, you should get a prompt to send you an e-mail
- Then you will be asked to set up a password, and an app-based token (scan a QR code in Microsoft Authenticator, Google Authenticator, or similar app)

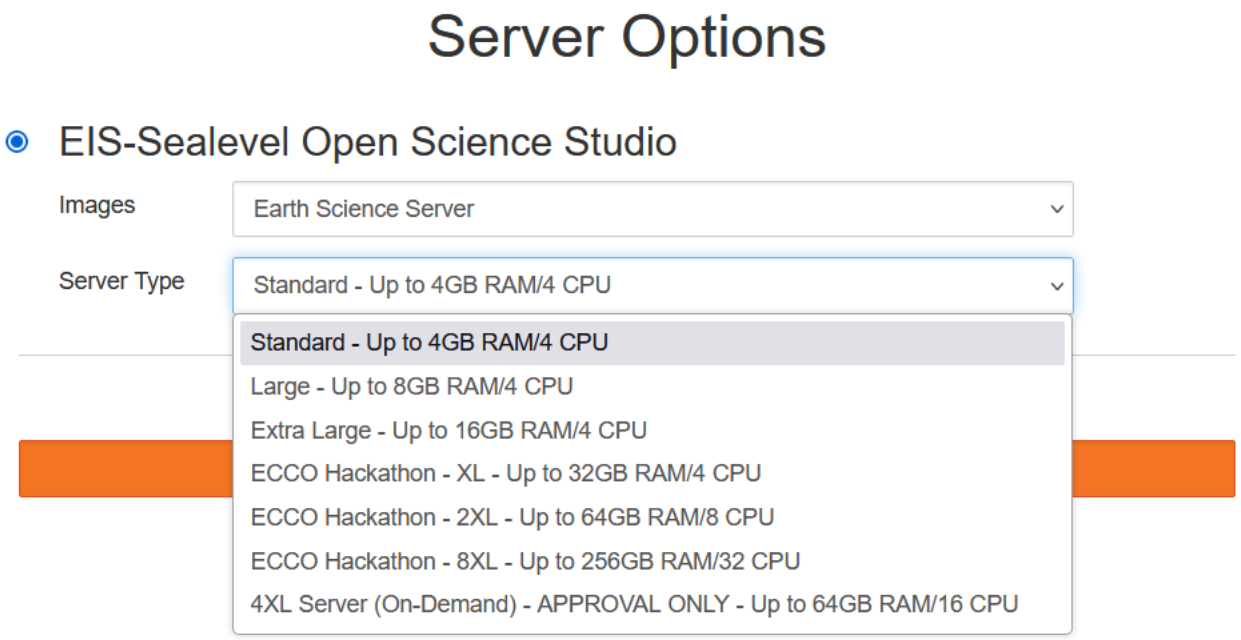


- After you set up two-factor authentication, when you go to the URL above, you will enter a password to sign in, and then your app-based token on the second screen

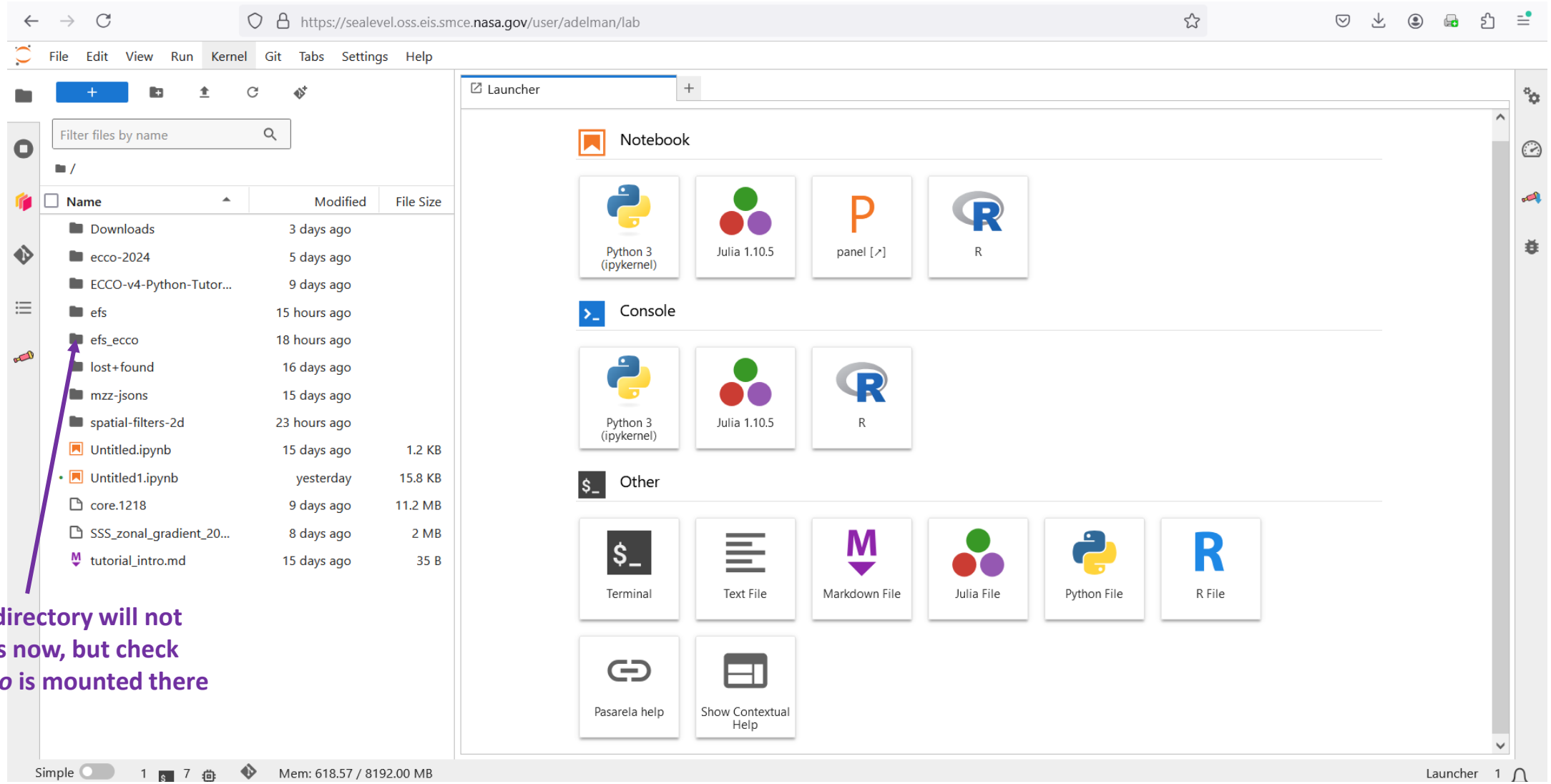


Logging in to OSS – server selection

- Once logged in to OSS you will see a screen to launch your personal server on the OSS JupyterHub
  - Smaller servers (especially **Large** and **Extra Large**) are sufficient for experimenting with and running most notebooks
  - Larger **ECCO Hackathon** servers could be helpful for running notebooks that use a lot of memory
    - For example, calculations with global full-depth monthly ECCOv4 output during all 26 years



Logging in to OSS - https://sealevel.oss.eis.smce.nasa.gov



Your home directory will not look like this now, but check that *efs_ecco* is mounted there

Using *git* and GitHub

- The ecco-2024 GitHub repository (https://github.com/ECCO-Hackweek/ecco-2024) is the place that we will use to share notebooks, code, etc. that project teams have written
- The git command line interface tool allows you to manage code edits locally as well as interact with online GitHub repositories
- Note there are 3 tutorials to help you get set up with and start using git!
  - **Set up *git* access**: how to authenticate with GitHub
  - **Set up OSS with your hackweek repository**: *git clone* the ecco-2024 repository
  - **Using git for version control -> Using *git* to edit and publish code**:

    Get acquainted with some of the most commonly used commands

    (*git clone*, *git branch*, *git pull*, *git add*, *git commit*, *git push*)