

Cluster Login Instructions



Login Instructions


Login Credentials

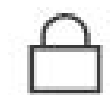
- Step 1:
 - Open the browser and enter the login URL: <https://axis-raplabhackathon.axisportal.io/apps>



- Step 2:
 - Enter your cluster login credentials

Log in to Axis User Portal





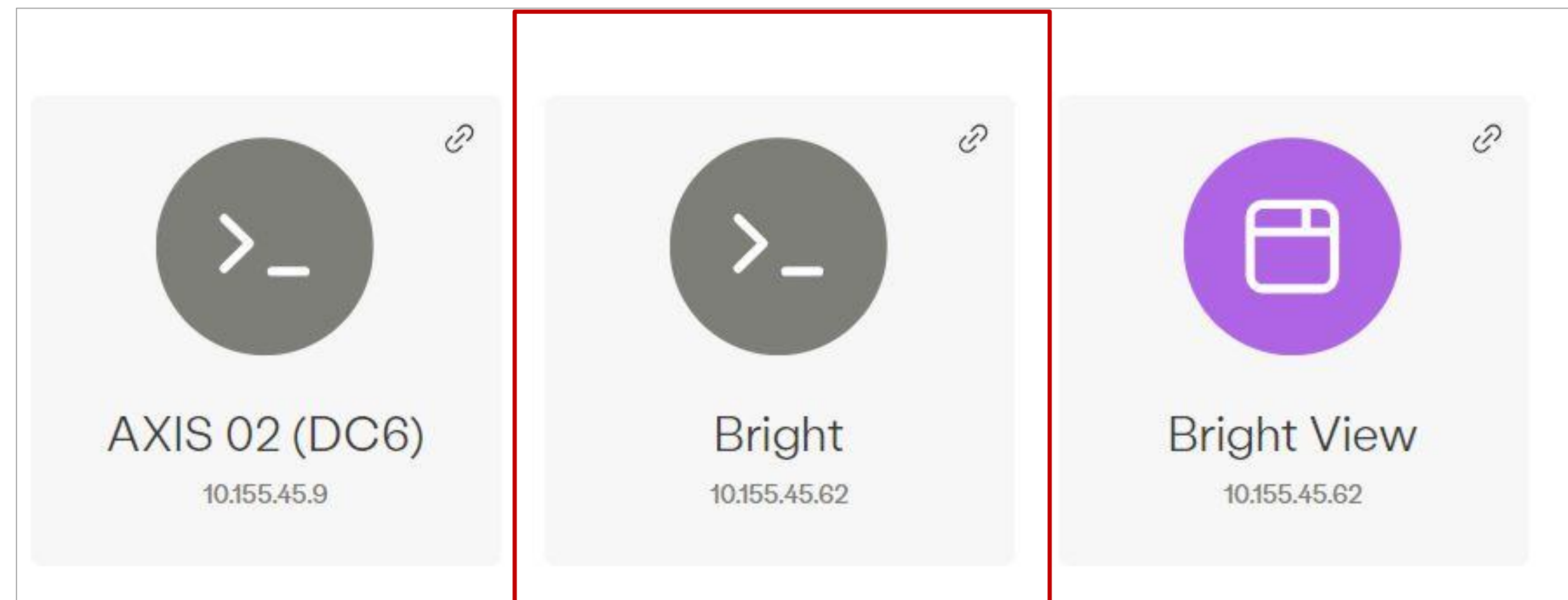
Next

[Forgot password?](#)

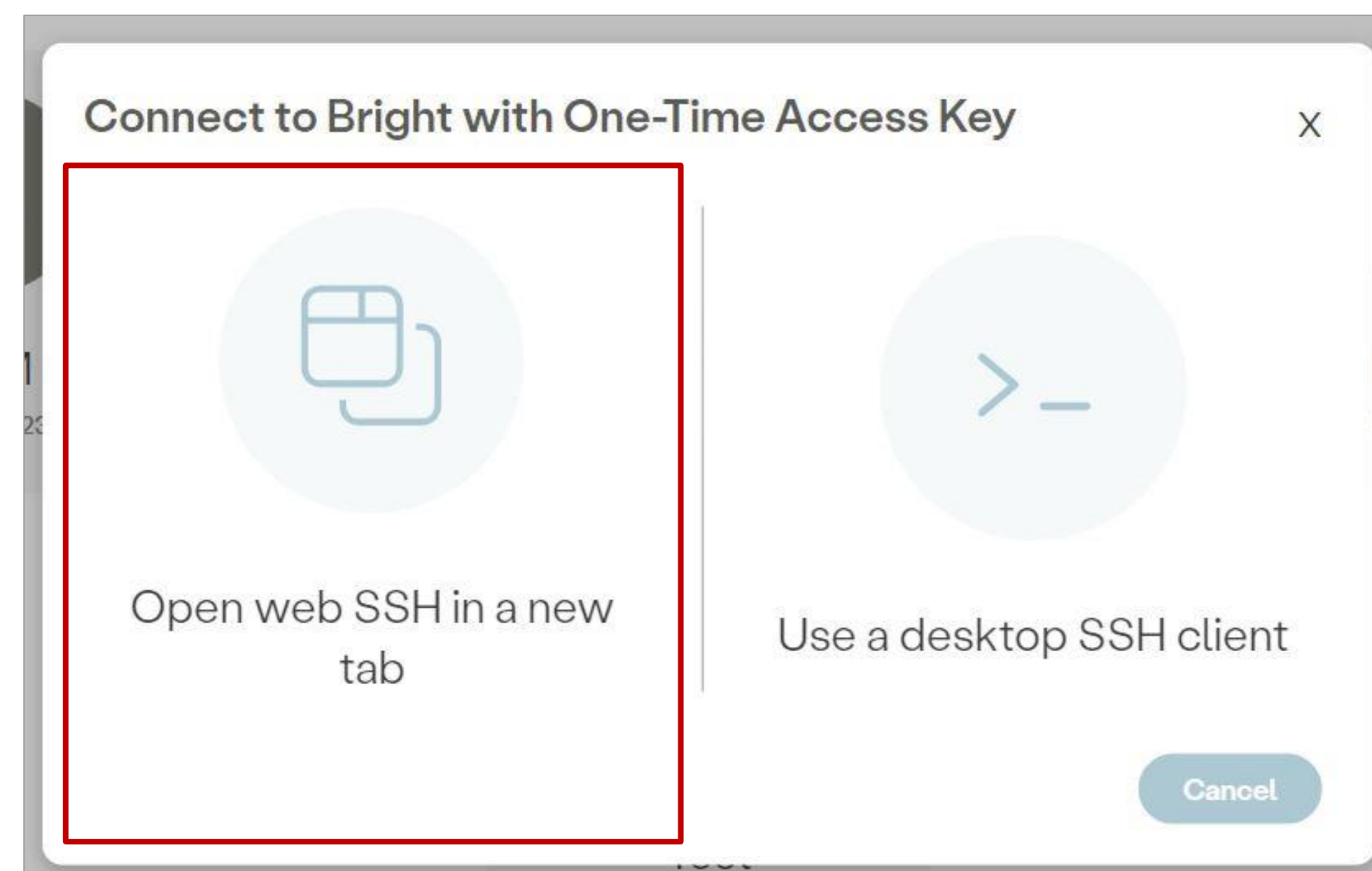
Login Instructions

Select Bright option

- Step 3:
 - Click on **Bright**



- Step 4:
 - Click on **Open web SSH in a new tab**



```
axis-raplabhackathon.axisportal.io/SshClient
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-71-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

Expanded Security Maintenance for Applications is not enabled.

21 updates can be applied immediately.
20 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

24 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

Your Hardware Enablement Stack (HWE) is supported until April 2025.

Welcome to Bright Cluster Manager 9.2

Based on Ubuntu Focal Fossa 20.04
Cluster Manager ID: #00000

Use the following commands to adjust your environment:

'module avail'          - show available modules
'module add <module>'    - adds a module to your environment for this session
'module initadd <module>' - configure module to be loaded at every login
                        (Note: initadd is available only for Tcl modules)

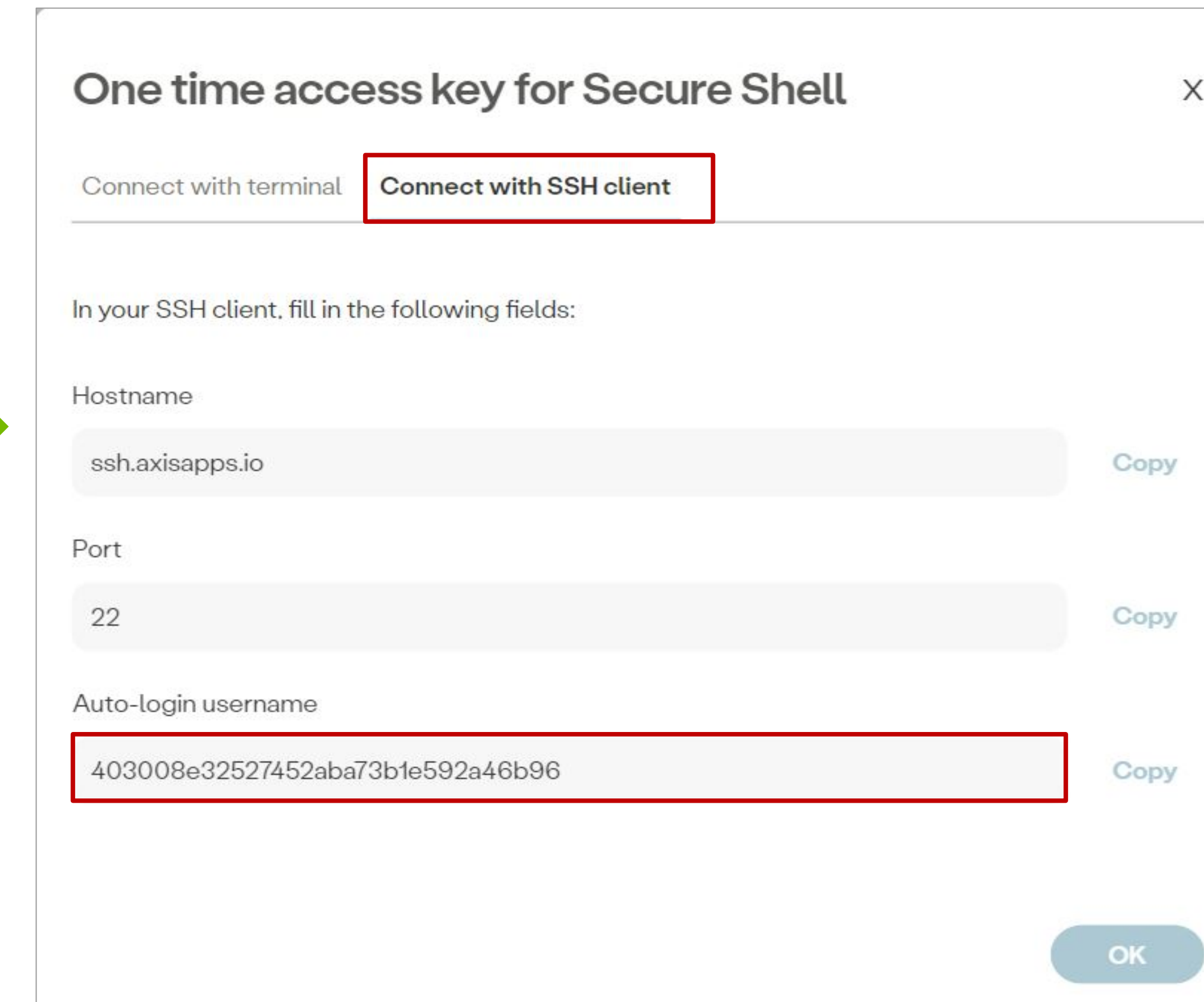
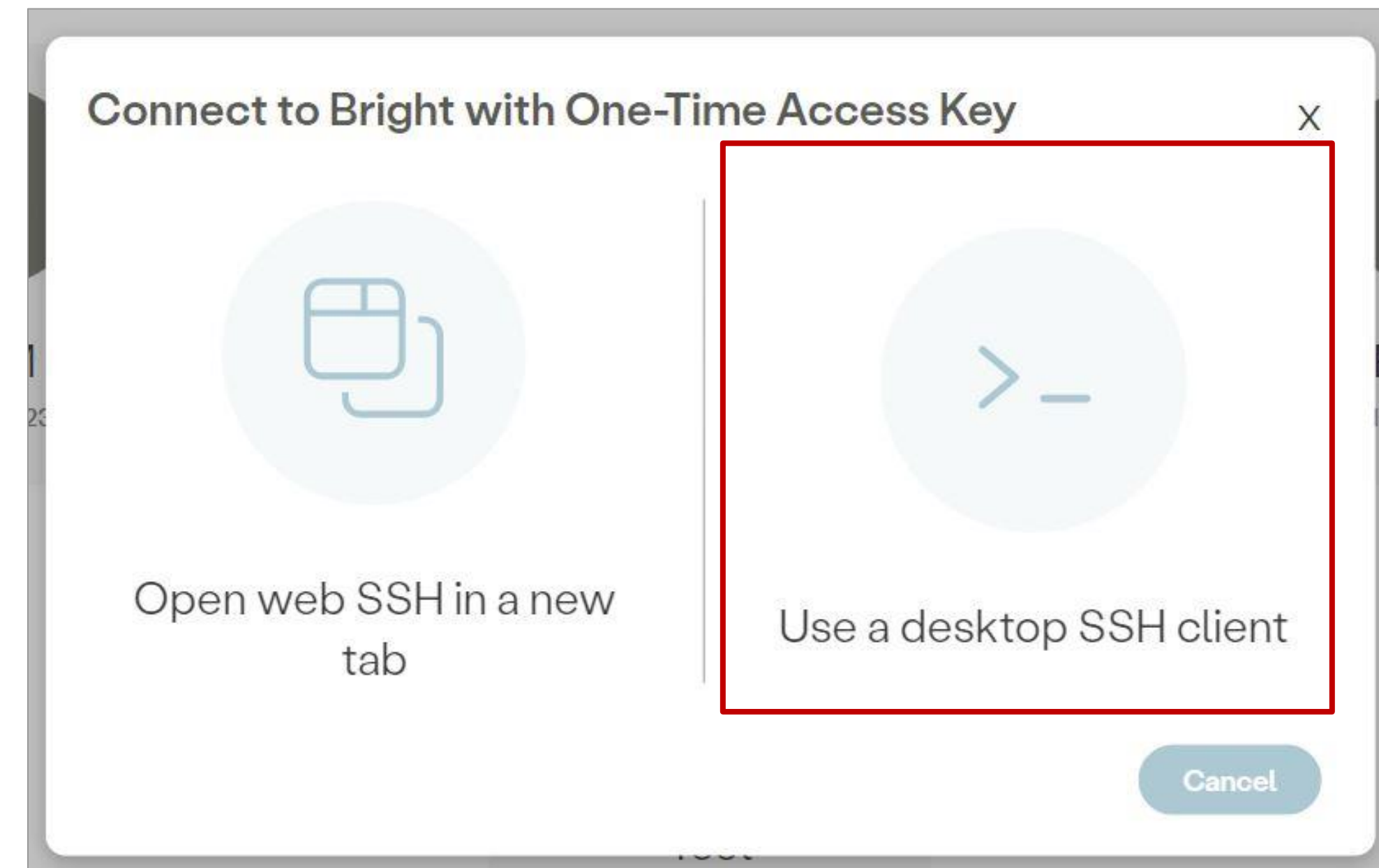
-----
Last login: Fri Jun 23 06:25:10 2023 from 10.155.45.9

i@curiosity:~$
i@curiosity:~$
i@curiosity:~$
```


Login Instructions

Copy the Hashcode

- Step 5:
 - Click on the option **Use a desktop SSH client**. Click on **Connect with SSH client** and copy the hashcode



The background of the slide is a black field filled with numerous thin, curved, and slightly blurred lines in shades of green and yellow. These lines appear to be moving or flowing, creating a sense of dynamic energy. On the far left, there is a solid, bright green vertical bar.

Running the NeMo Megatron Lab

NeMo Megatron-GPT Lab

Running the Lab Script and Port-forwarding (1/2)

- The Nemo Megatron lab contains the following hands-on notebooks:

- 1) Nemo Fundamentals
- 2) Question Answering
- 3) Prompt-Tuning/P-Tuning
- 4) The Megatron-GPT Language Model Inferencing
- 5) Challenge

Steps:

- From the browser terminal, run the sbatch script and press on the Enter key to submit job:

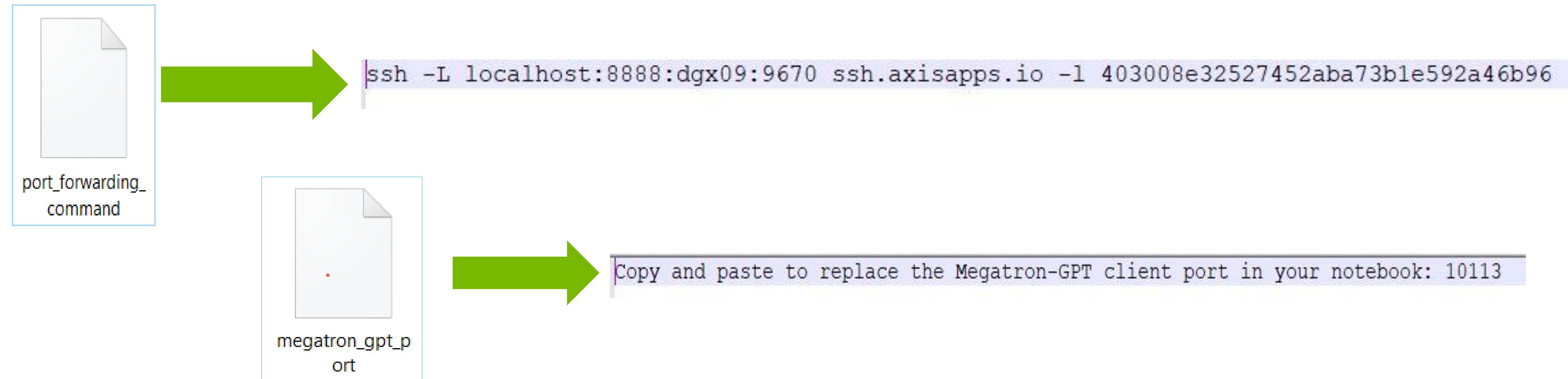
sbatch /bootcamp_scripts/NLP/sbatch-llm <hashcode>

```
yi@curiosity:~$ sbatch /bootcamp_scripts/NLP/sbatch-llm cad857f39ec14668b098892bef85cc3
```

NeMo Megatron-GPT Lab

Running the Lab Script and Port-forwarding (2/2)

- In approximately **8mins** a port forwarding (`port_forwarding_command`) and a megatron-gpt inferencing port (`megatron_gpt_port`) files will be created in your home directory.
 - To see the files created, type the command this into the terminal: `ls`
 - To display the **port_forwarding_command** file content, type the command: `cat port_forwarding_command`
 - To display the content of **megatron_gpt_port** file, type the command: `cat megatron_gpt_port`



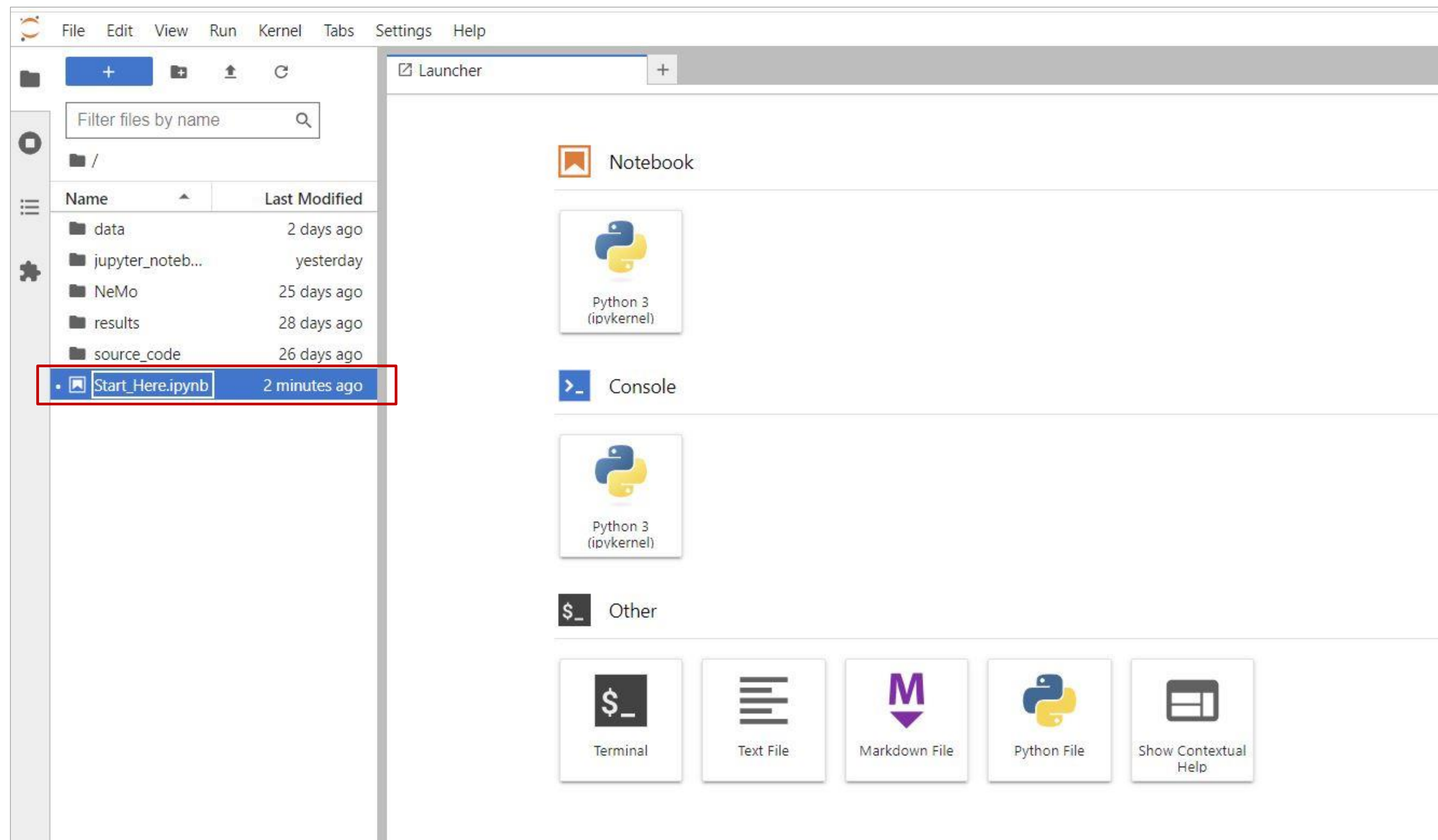
- Copy and paste the content of the port-forwarding file into your local machine or laptop terminal (e.g. `CMD prompt`, `PowerShell`, `Terminal`, etc.). Press on the Enter key.

```
Windows PowerShell
PS C:\Users\tadesuyi> ssh -L localhost:8888:dgx09:9670 ssh.axisapps.io -l 403008e32527452aba73b1e592a46b96
```

NeMo Megatron Lab

Running the Lab

- Run the notebooks via the browser :
 - Open a new tab on your browser at <http://localhost:8888>
 - Click on the `Start_Here.ipynb` notebook



NeMo Megatron Lab

Start with Nemo Fundamentals

- Under the “NeMo Megatron,” Click on [Nemo Fundamentals](#).

Table of Content

The following contents will be covered:

1. Data preprocessing
 - A. Overview of QA Dataset
 - a. Introduction to QA
 - b. Brief on QA Dataset
 - B. Common Preprocessing Techniques for Raw Text Data
 - C. QA Text Data preprocessing
 - a. SQuAD Dataset Structural Format
 - b. Text Data Source
 - c. Manual QA Extraction
 - d. Automatic QA Generation with T5 model
 - D. Exercise
 - E. Summary
2. Deployment
 - A. RIVA Deployment
 - B. Challenge
3. NeMo Megatron
 - A. Nemo Fundamentals
 - B. Question Answering
 - C. Prompt Tuning/P-Tuning
 - D. Megatron-GPT 1.3B: Language Model Inferencing
 - E. Challenge



Troubleshooting

- Everyone can only run 1 job at a time.
- The jobs will run for 12 hours so you do not need to re-submit the sbatch script. All you need is the content of the “`port_forwarding_command`” to reconnect to the cluster.
- Each person will get access to 1 GPU only.
- The Hash key is valid for 24 hours.
- Do not use VPN or eduroam
- The access will be revoked by the end of the day.

If you get the following error in the final Step :

```
bind [127.0.0.1]:8888: Address already in use
channel_setup_fwd_listener_tcpip: cannot listen to port: 8888
Could not request local forwarding.
```

You will need to change the port 8888 in your ssh command to some other port, examples would be 8890, 8900 etc.

For example: `ssh -L localhost:8890:dgx05:9538 ssh.axisapps.io -l 7aab57129c95450cb80c4df5c13836bd`

Troubleshooting

- Useful commands:
 - Check the number of jobs submitted via `queue --me`
 - Cancel the submitted job via `scancel {job id}`
 - Check the slurm output via `cat slurm-{job id}.out`
- To check if the new “`port_forwarding_command`” has been created, run `ls port_forwarding_command`
- Type the commands instead of copy-pasting to avoid errors.
- Please direct the questions to the “**cluster-support**” channel on the Slack.