Starting lab 2 in Azure

Please read fully before starting

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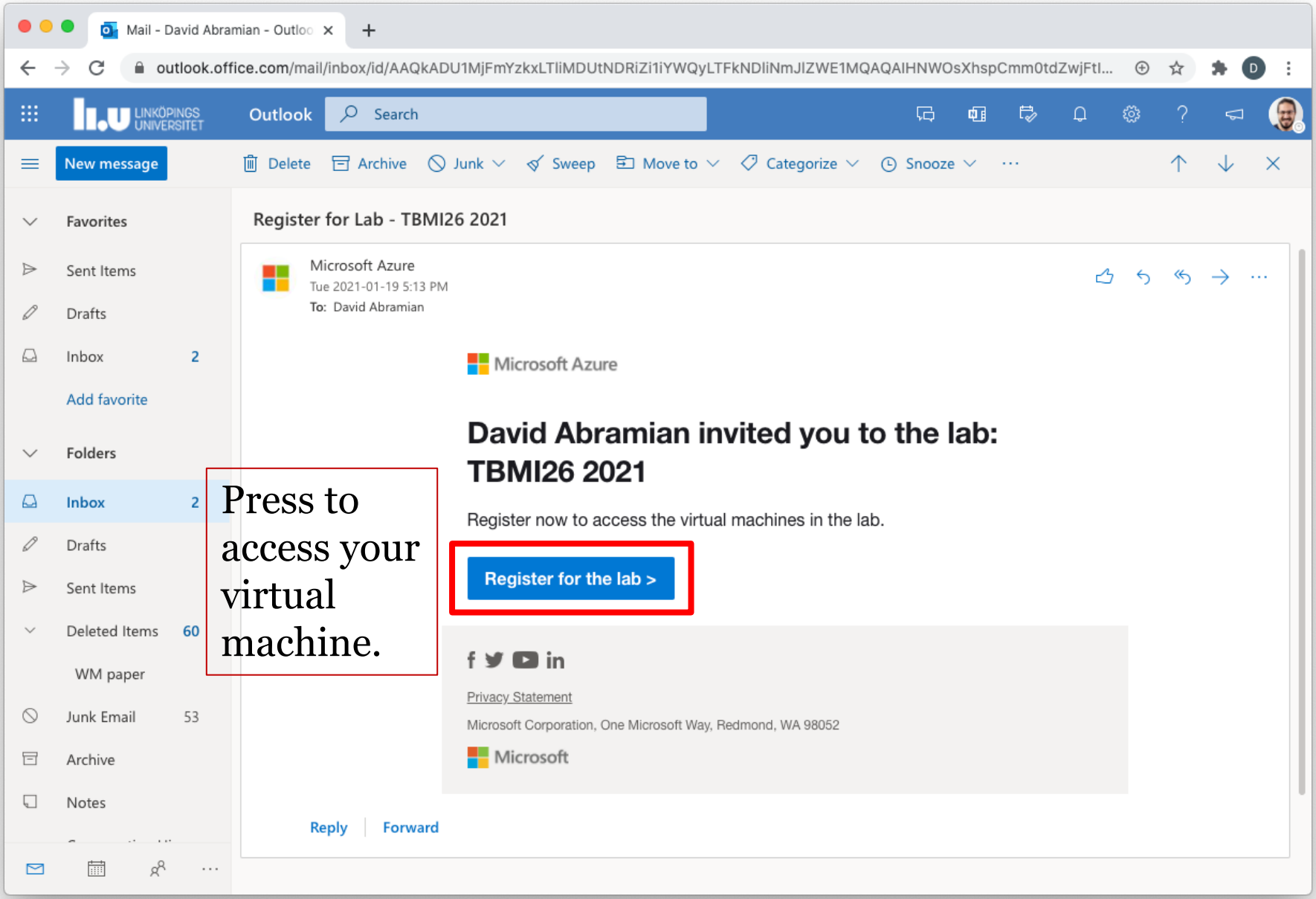
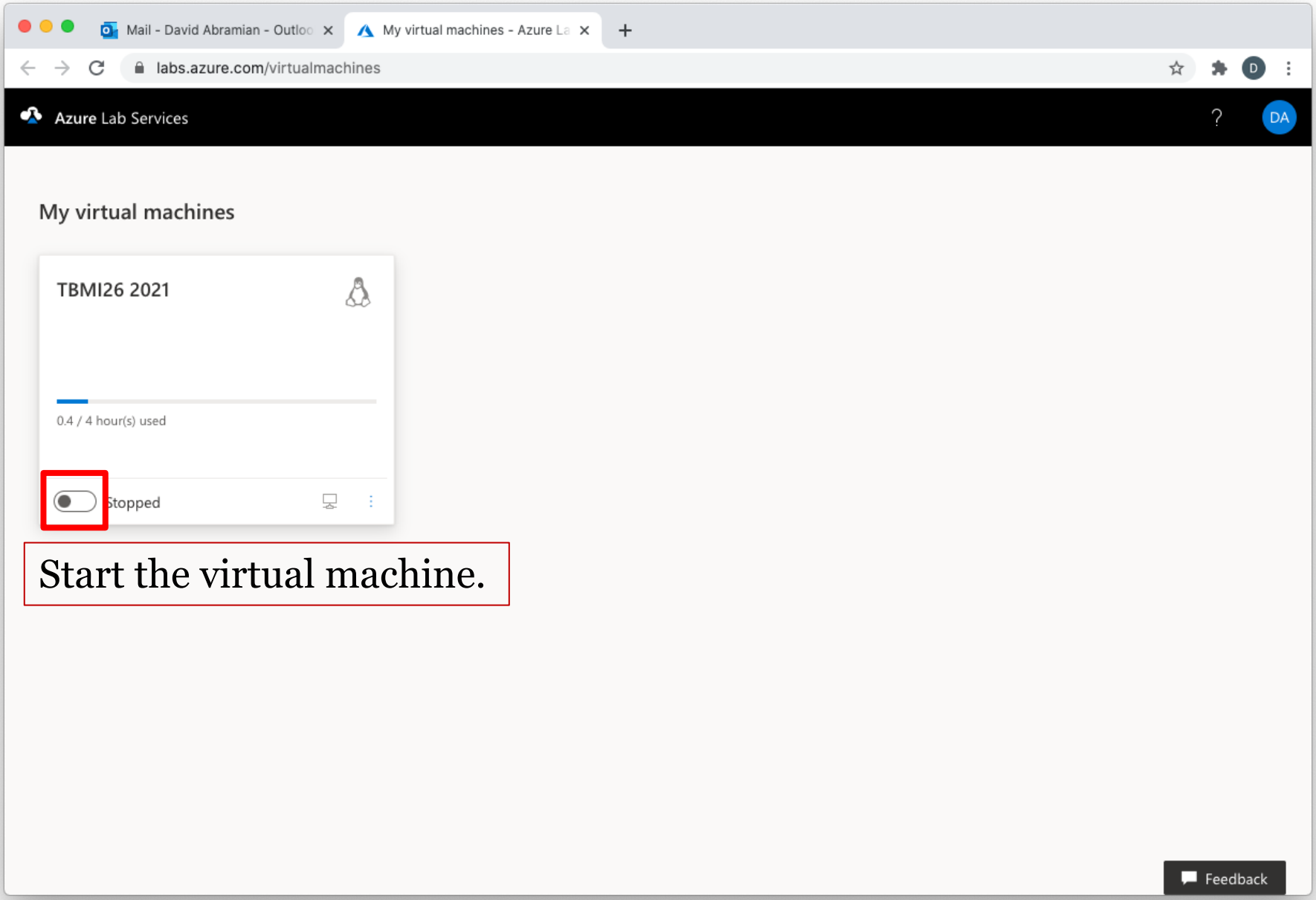
Joining the lab and starting the machines


Mail - David Abramian - Outloo
outlook.office.com/mail/inbox/id/AAQkADU1MjFmYzkxLTliMDUtNDRiZi1iYWQyLTFkNDliNmJlZWE1MQAQAIHNWOsXhspCmm0tdZwjFtI...
LINKÖPINGS UNIVERSITET
Outlook
Search
New message
Delete
Archive
Junk
Sweep
Move to
Categorize
Snooze
Favorites
Sent Items
Drafts
Inbox 2
Add favorite
Folders
Inbox 2
Drafts
Sent Items
Deleted Items 60
WM paper
Junk Email 53
Archive
Notes
Register for Lab - TBMI26 2021
Microsoft Azure
Tue 2021-01-19 5:13 PM
To: David Abramian
Microsoft Azure
David Abramian invited you to the lab: TBMI26 2021
Register now to access the virtual machines in the lab.
Register for the lab >
Privacy Statement
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052
Microsoft
Reply
Forward
Press to access your virtual machine.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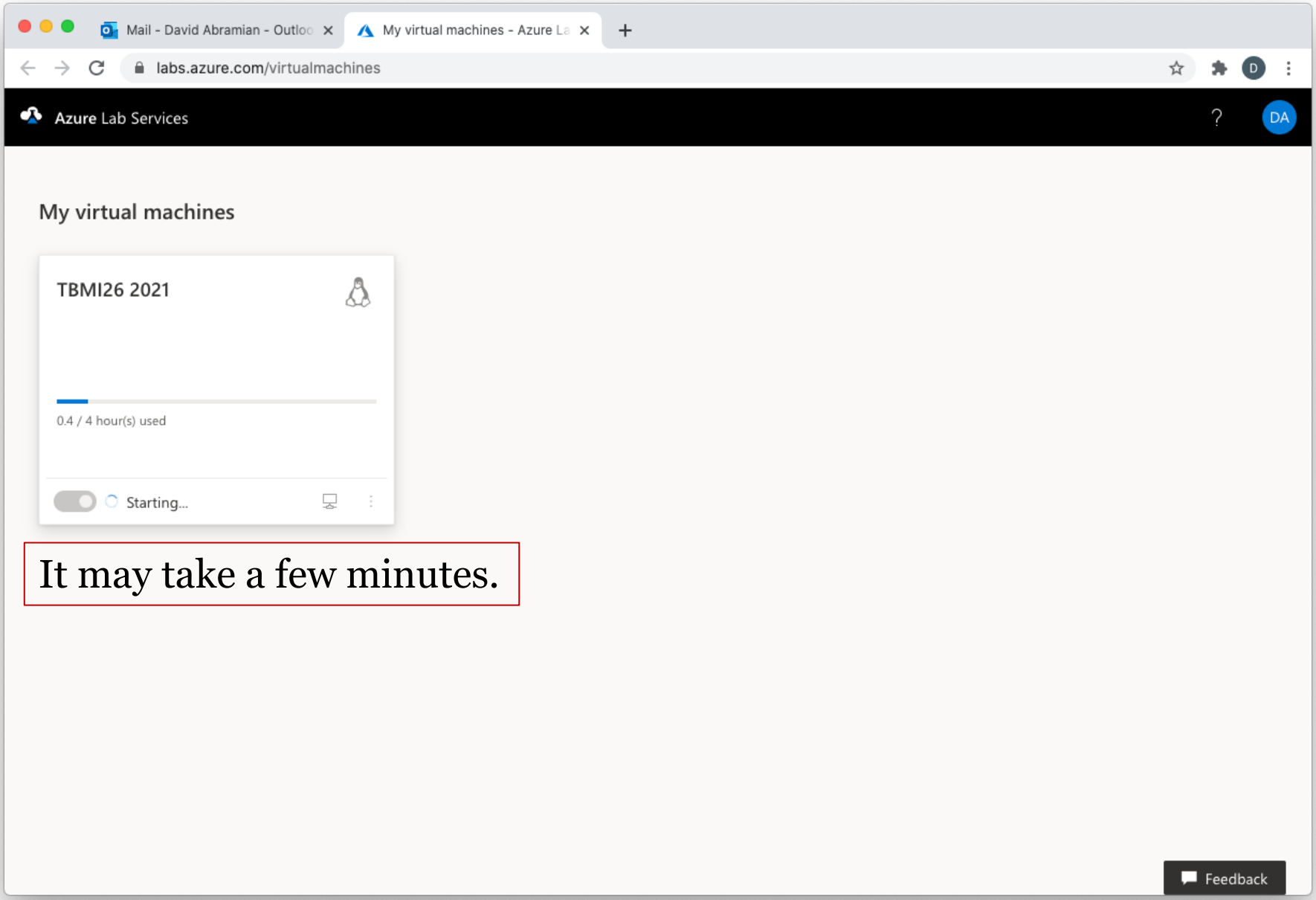
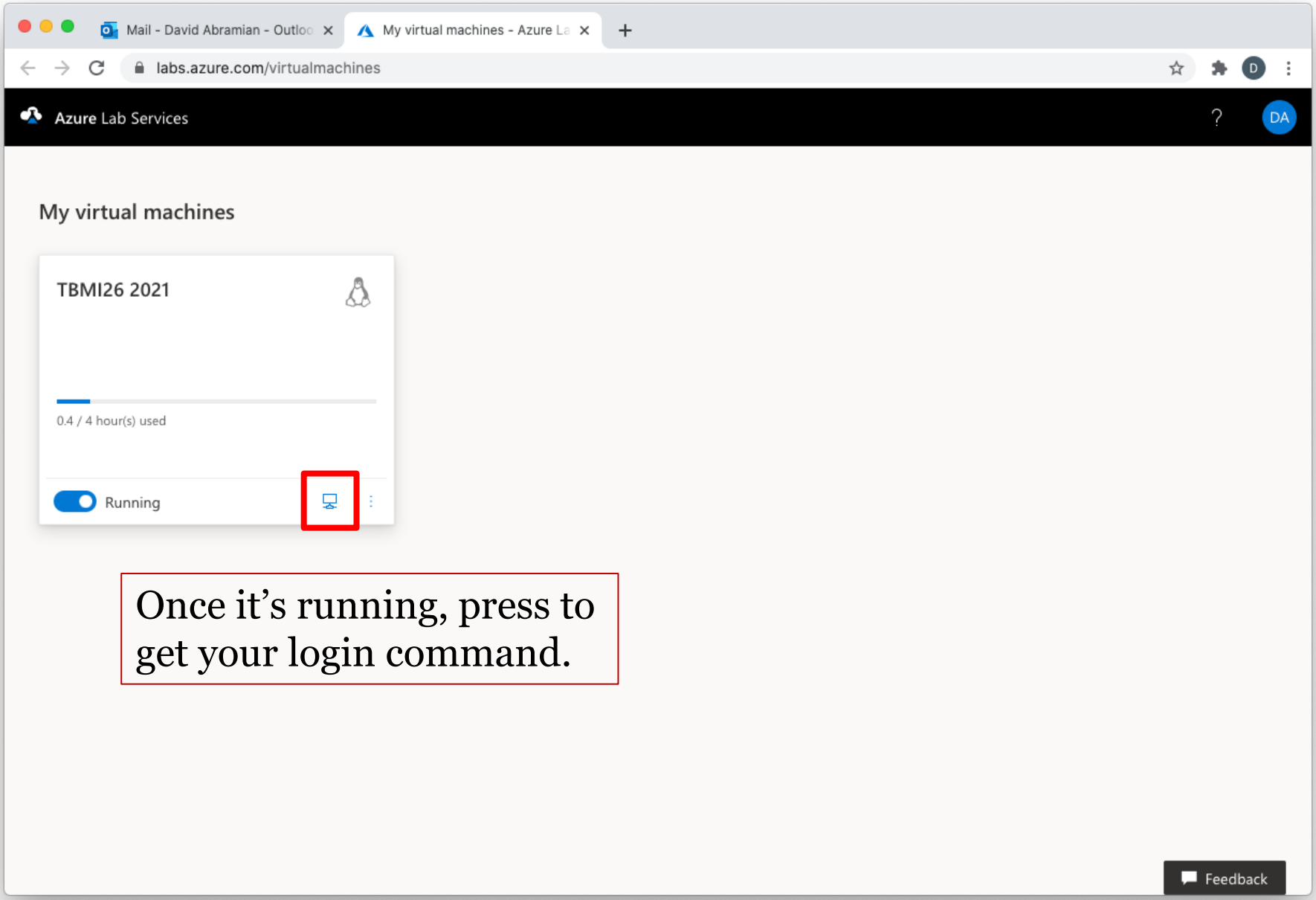
My virtual machines - Azure La
labs.azure.com/virtualmachines
Azure Lab Services
DA
My virtual machines
TBMI26 2021
0.4 / 4 hour(s) used
Stopped
Start the virtual machine.
Feedback



It may take a few minutes.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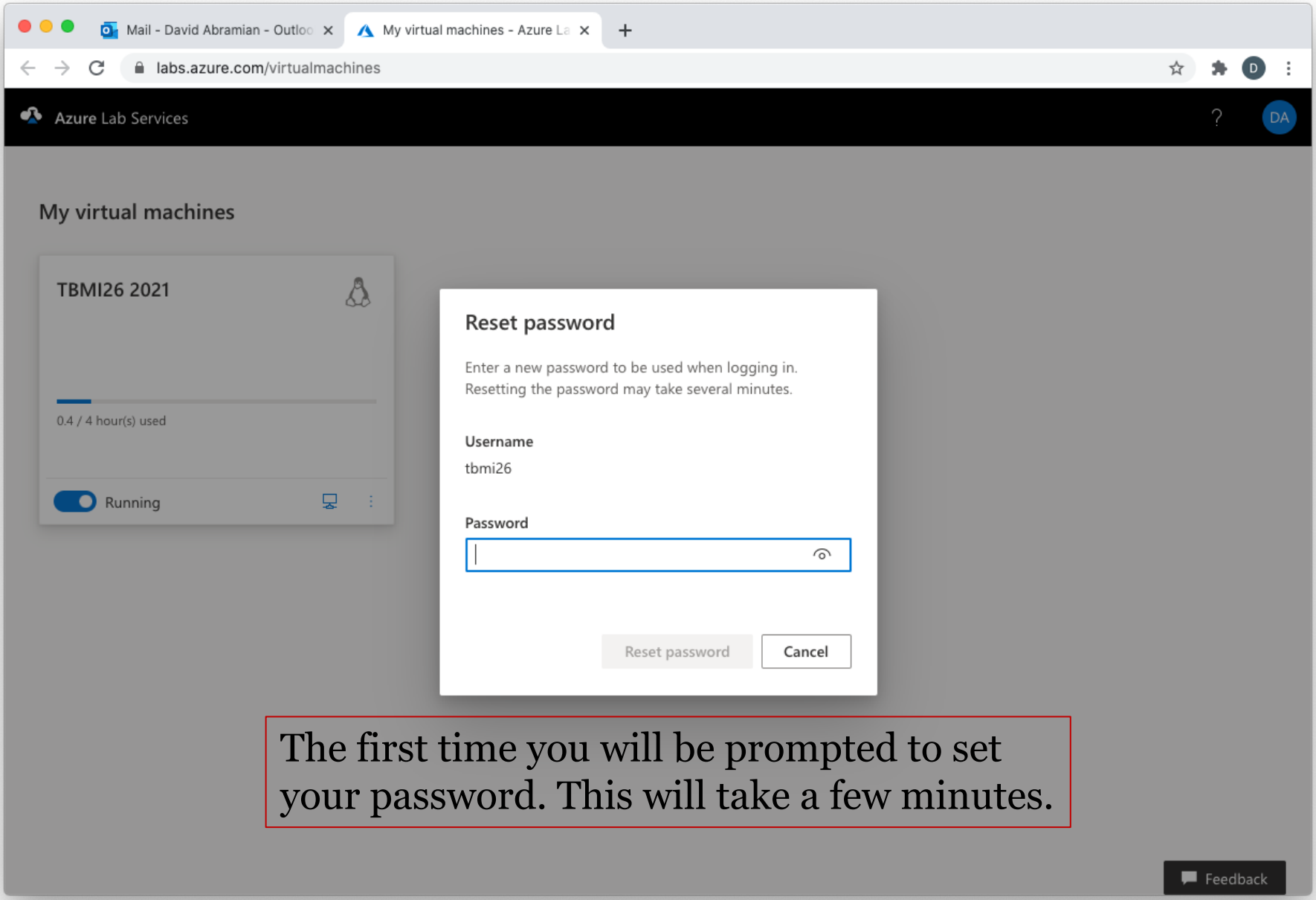
DA
My virtual machines
TBMI26 2021
0.4 / 4 hour(s) used
Running
Once it's running, press to get your login command.
Feedback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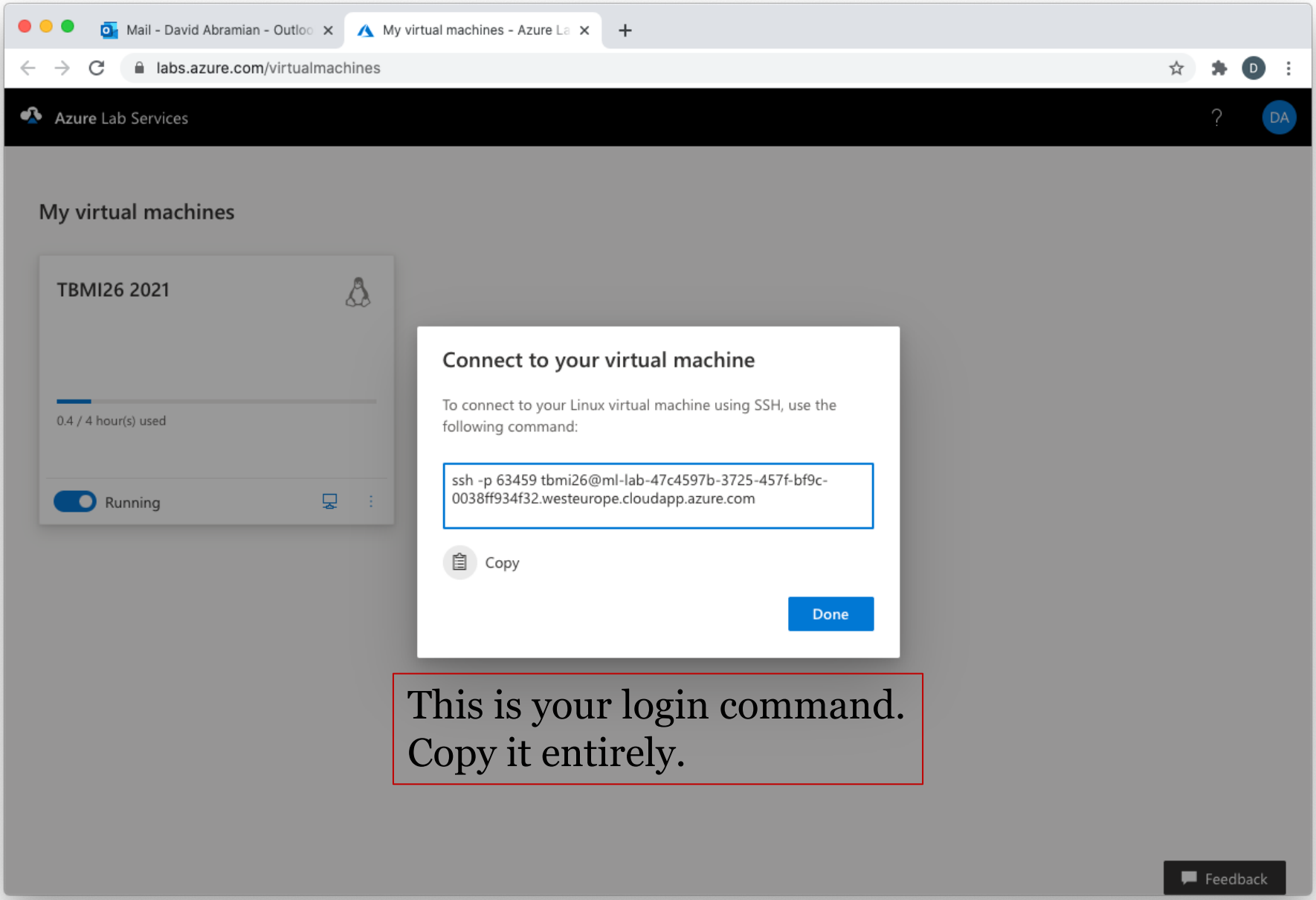
Azure Lab Services
DA
My virtual machines
TBMI26 2021
0.4 / 4 hour(s) used
Running
Reset password
Enter a new password to be used when logging in.
Resetting the password may take several minutes.
Username
tbmi26
Password
Reset password
Cancel
The first time you will be prompted to set your password. This will take a few minutes.
Feedback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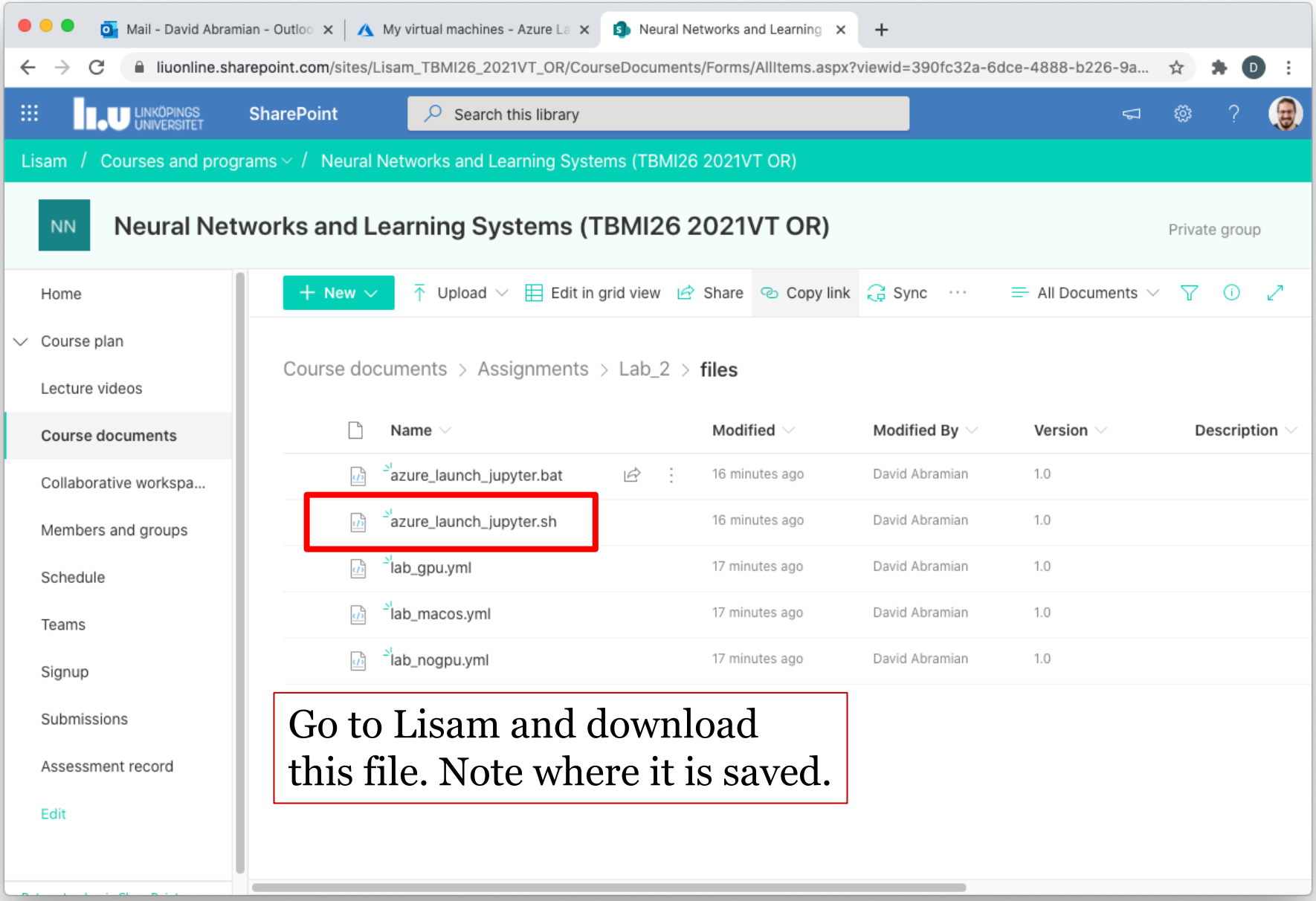
Azure Lab Services
DA
My virtual machines
TBMI26 2021
0.4 / 4 hour(s) used
Running
Connect to your virtual machine
To connect to your Linux virtual machine using SSH, use the following command:
ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
Copy
Done
This is your login command.
Copy it entirely.
Feedback

Logging in with Linux/Mac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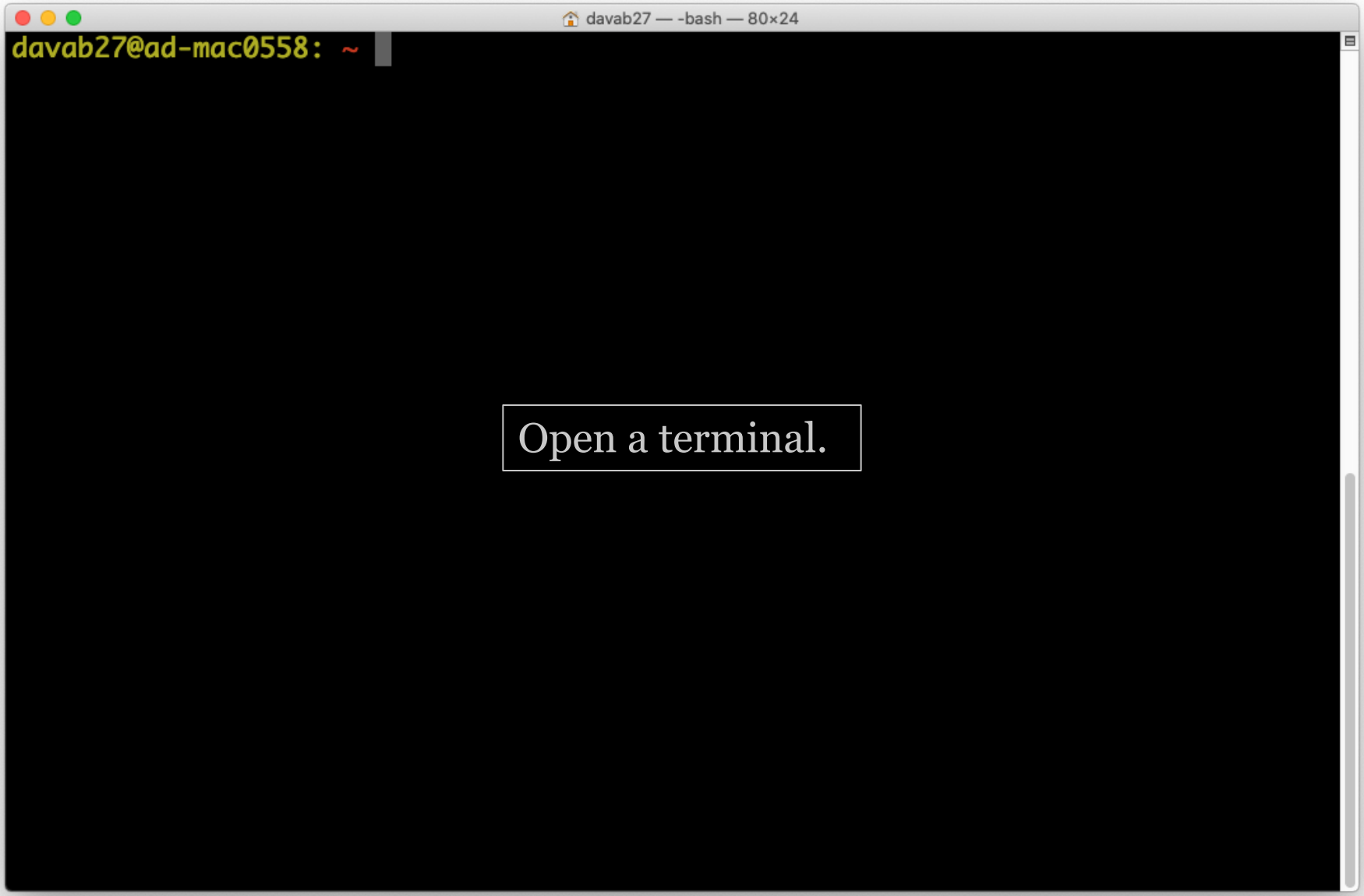
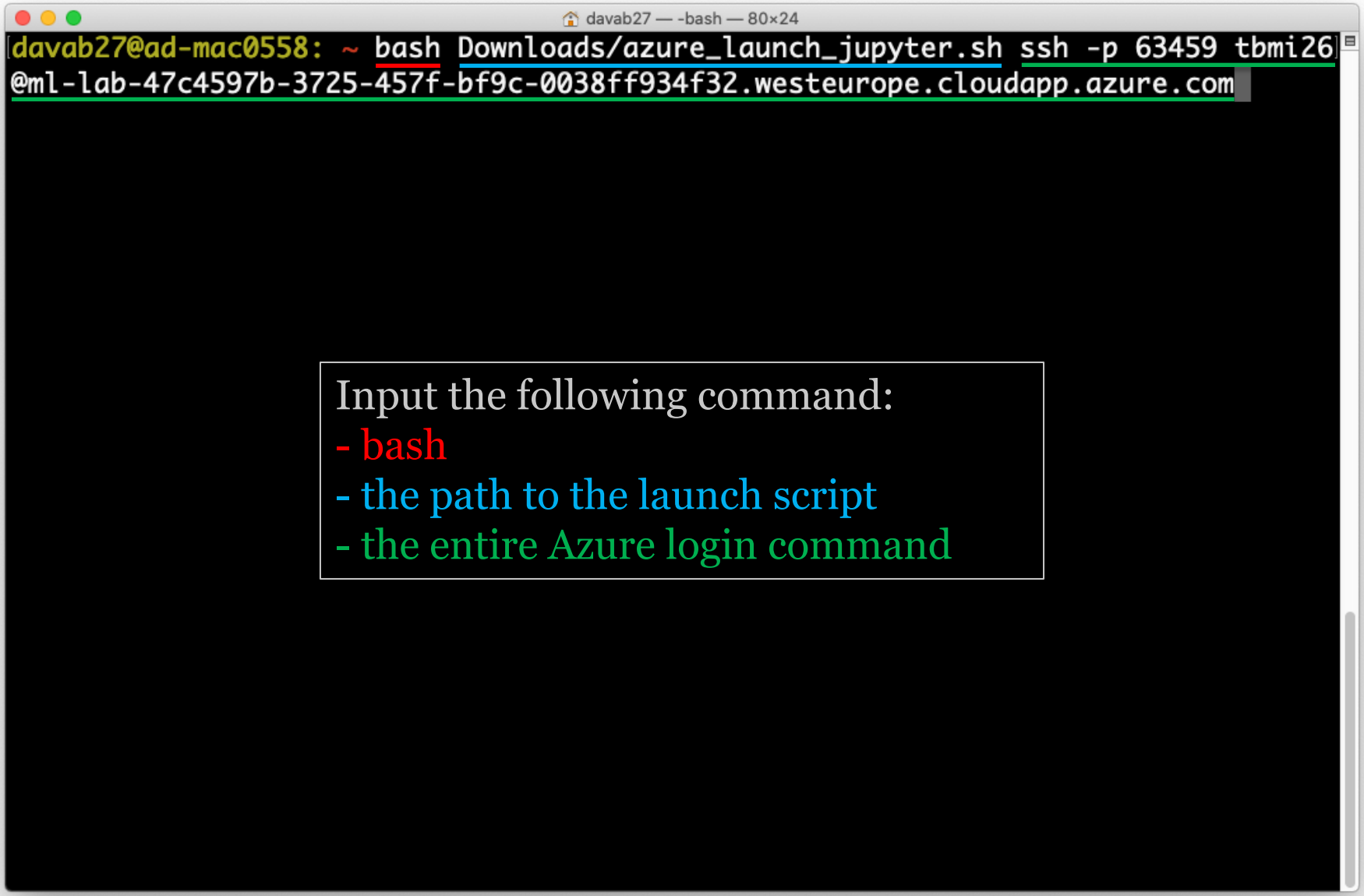
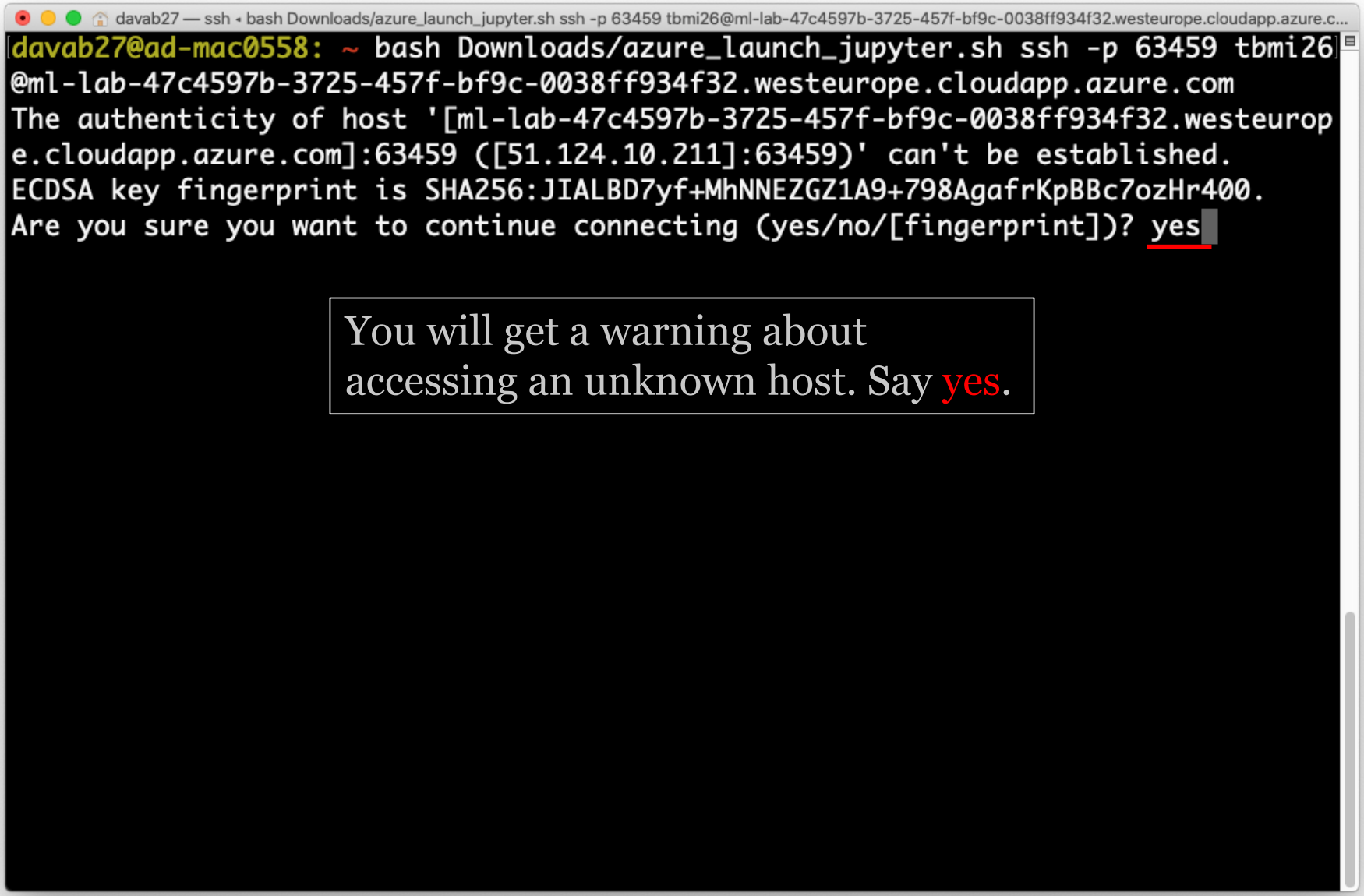
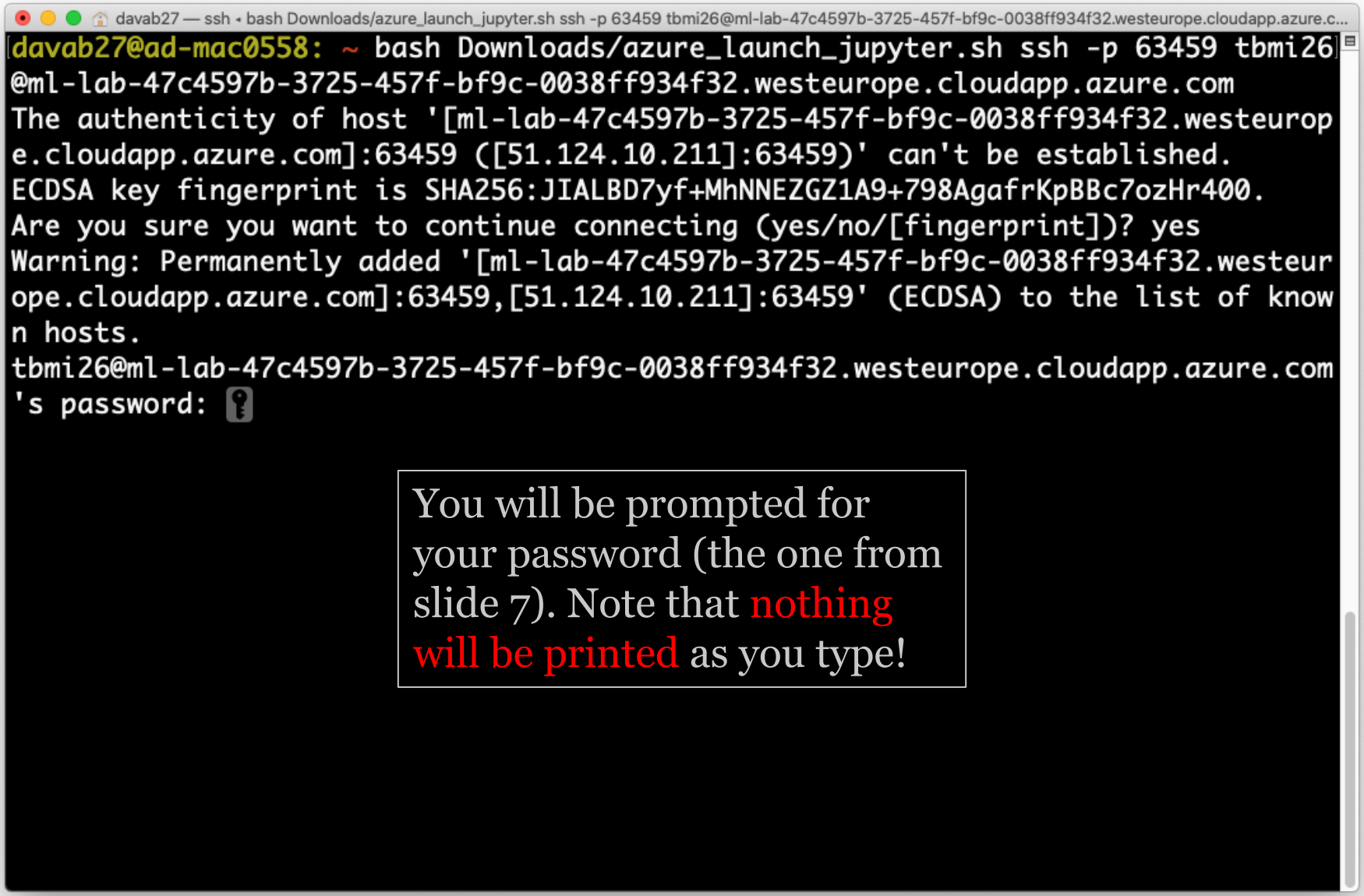
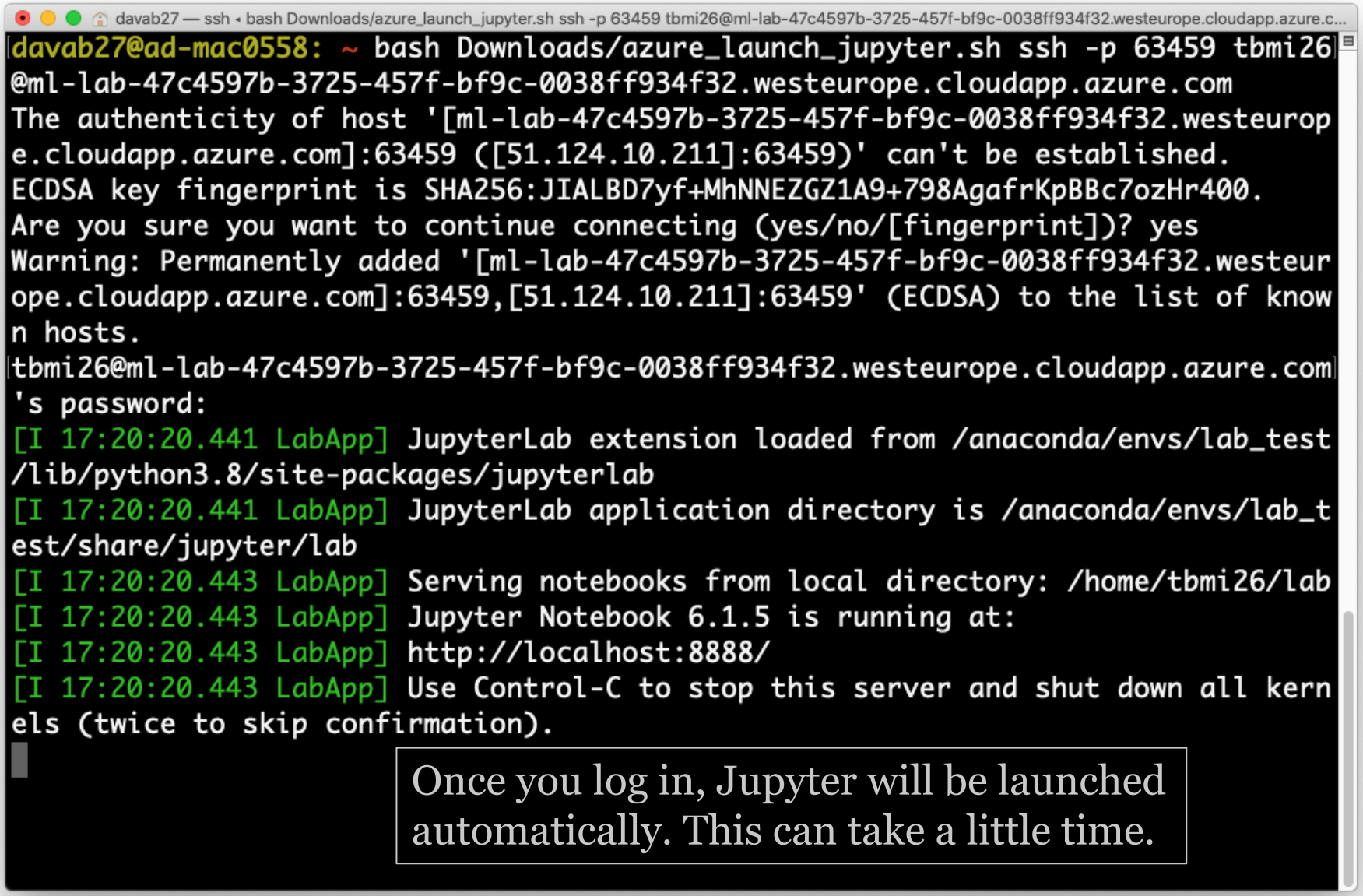
Teams
Signup
Submissions
Assessment record
Edit
New
Upload
Edit in grid view
Share
Copy link
Sync
All Documents
Course documents > Assignments > Lab_2 > files
Name
Modified
Modified By
Version
Description
azure_launch_jupyter.bat
16 minutes ago
David Abramian
1.0
azure_launch_jupyter.sh
16 minutes ago
David Abramian
1.0
lab_gpu.yml
17 minutes ago
David Abramian
1.0
lab_macos.yml
17 minutes ago
David Abramian
1.0
lab_nogpu.yml
17 minutes ago
David Abramian
1.0
Go to Lisam and download this file. Note where it is saved.


davab27 — -bash — 80×24
davab27@ad-mac0558: ~
Open a terminal.


davab27 — -bash — 80×24
davab27@ad-mac0558: ~ bash Downloads/azure_launch_jupyter.sh ssh -p 63459 tbmi26
@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
Input the following command:
- bash
- the path to the launch script
- the entire Azure login command

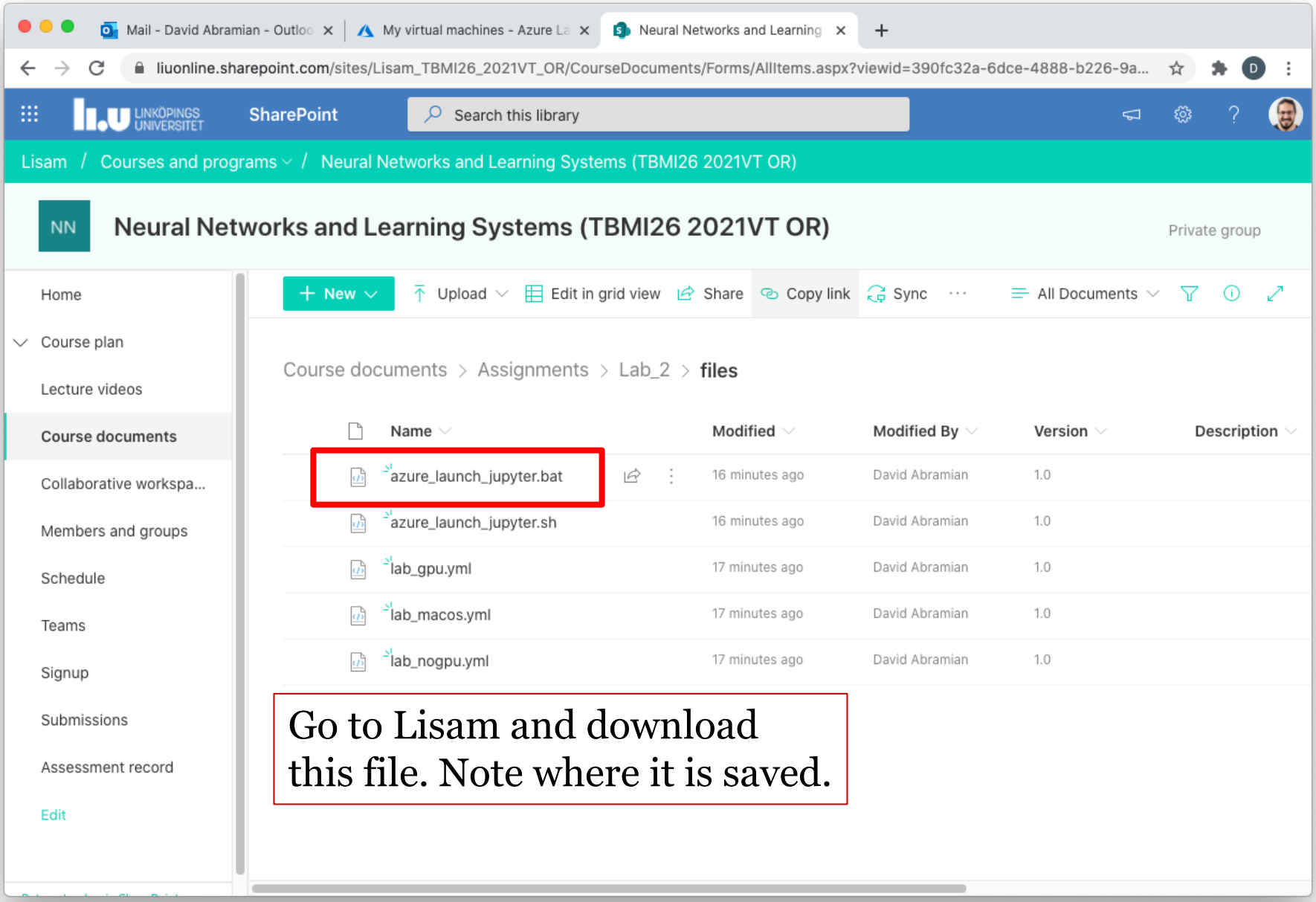

davab27 — ssh ◂ bash Downloads/azure_launch_jupyter.sh ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.c...
davab27@ad-mac0558: ~ bash Downloads/azure_launch_jupyter.sh ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
The authenticity of host '[ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com]:63459 ([51.124.10.211]:63459)' can't be established.
ECDSA key fingerprint is SHA256:JIALBD7yf+MhNNEZGZ1A9+798AgafrKpBBc7ozHr400.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
You will get a warning about accessing an unknown host. Say yes.


davab27 — ssh • bash Downloads/azure_launch_jupyter.sh ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.c...
davab27@ad-mac0558: ~ bash Downloads/azure_launch_jupyter.sh ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
The authenticity of host '[ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com]:63459 ([51.124.10.211]:63459)' can't be established.
ECDSA key fingerprint is SHA256:JIALBD7yf+MhNNEZGZ1A9+798AgafrKpBBc7ozHr400.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '[ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com]:63459,[51.124.10.211]:63459' (ECDSA) to the list of known hosts.
tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com's password:
You will be prompted for your password (the one from slide 7). Note that nothing will be printed as you type!



Once you log in, Jupyter will be launched automatically. This can take a little time.

Logging in with Windows 10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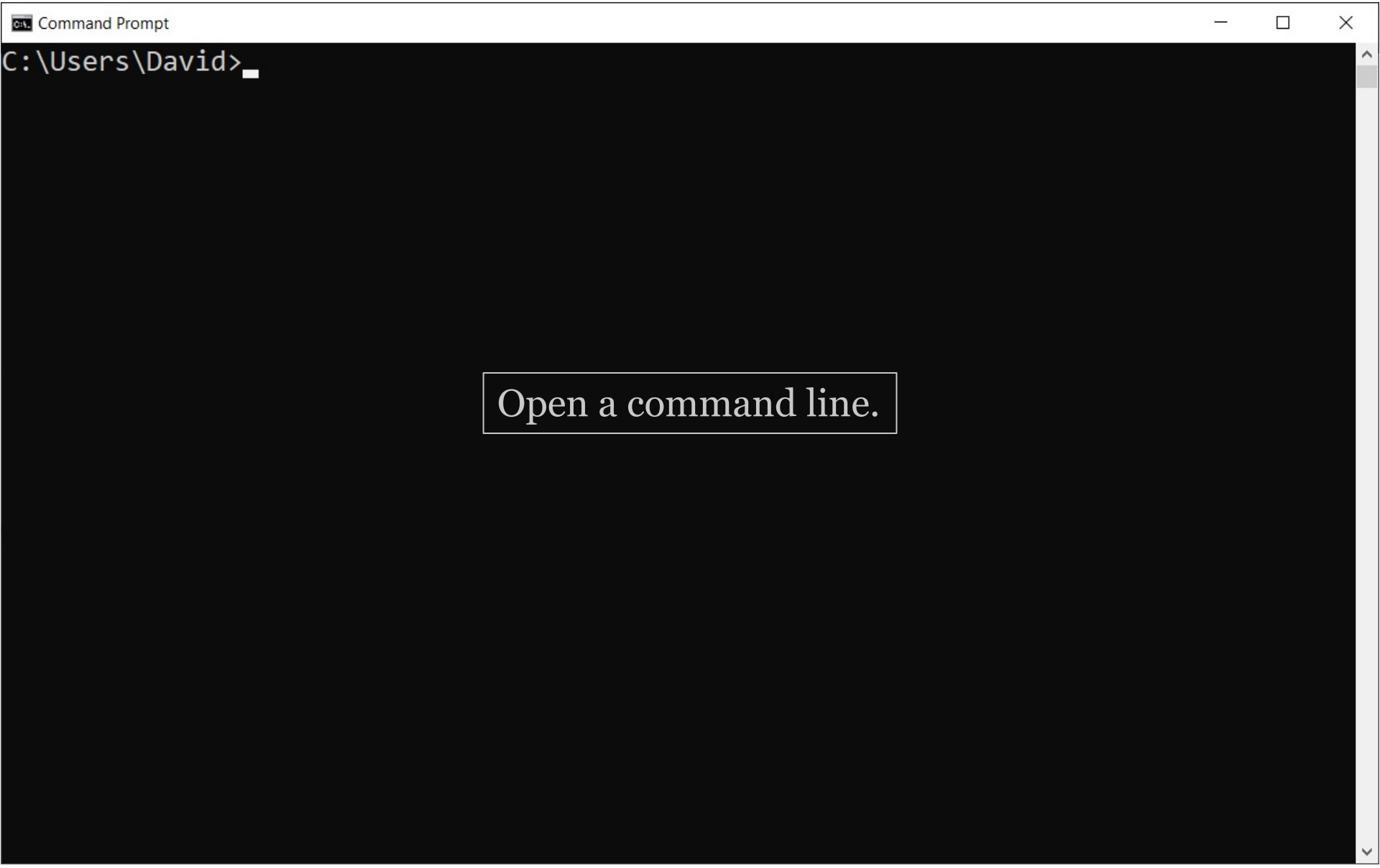
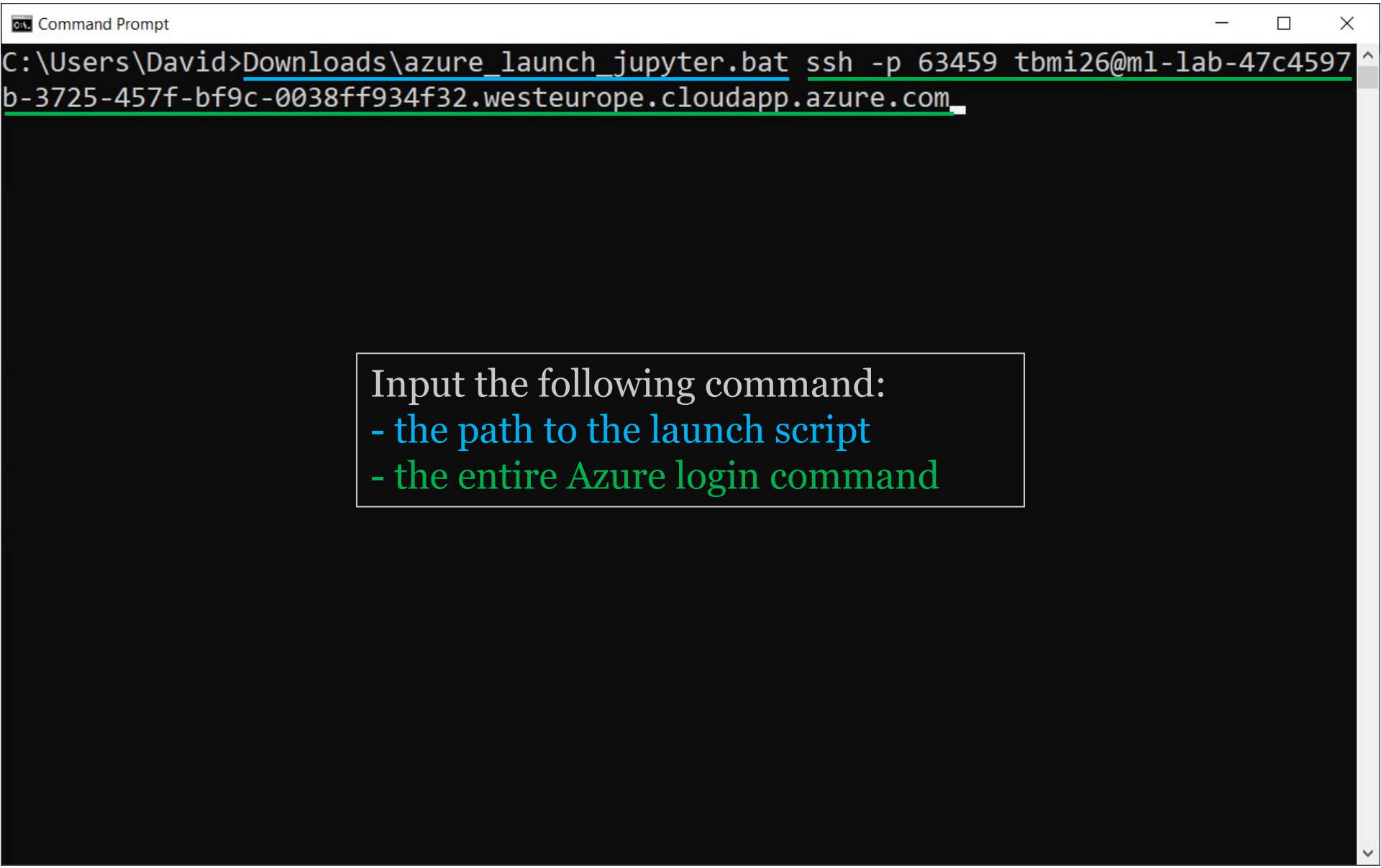
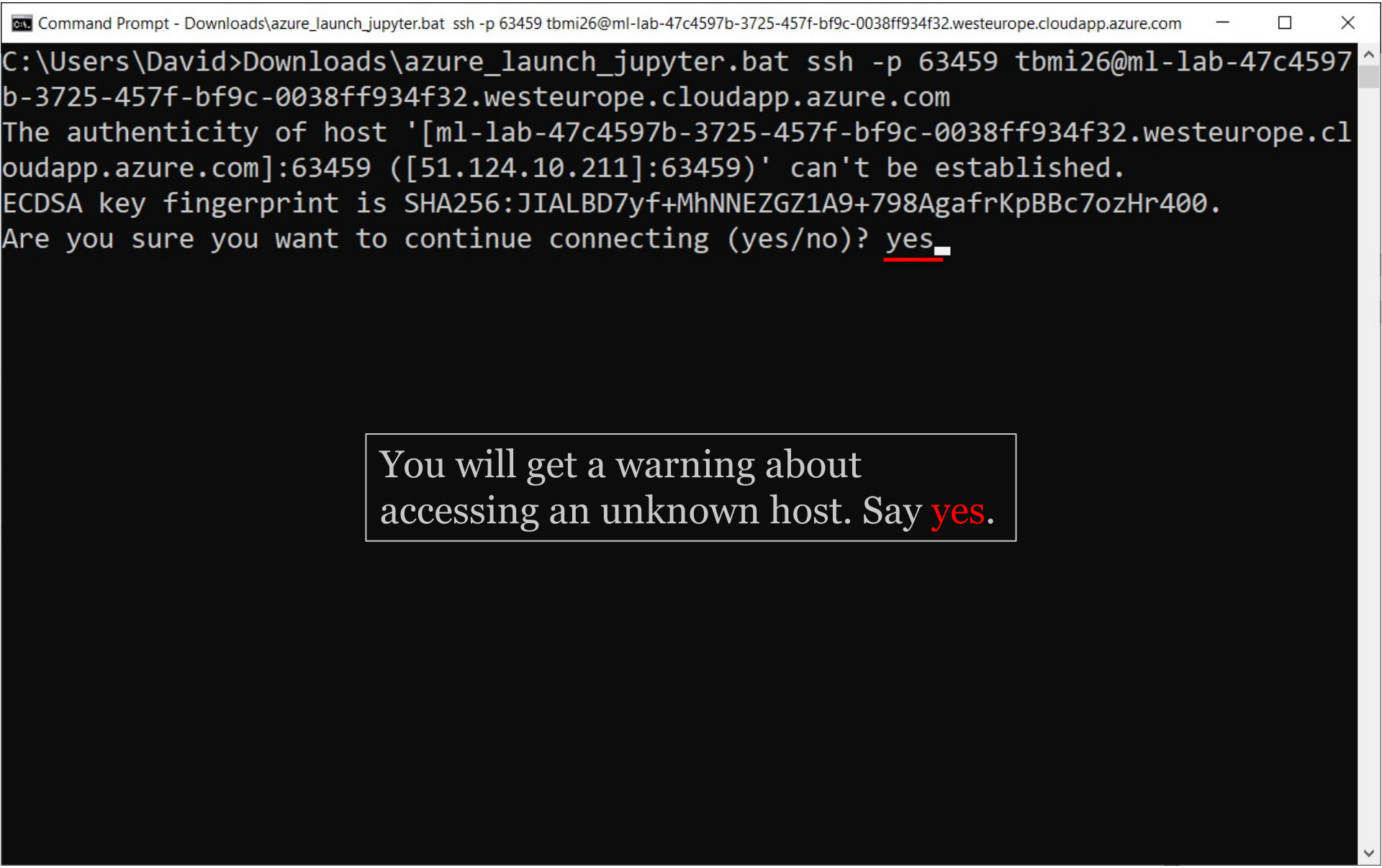
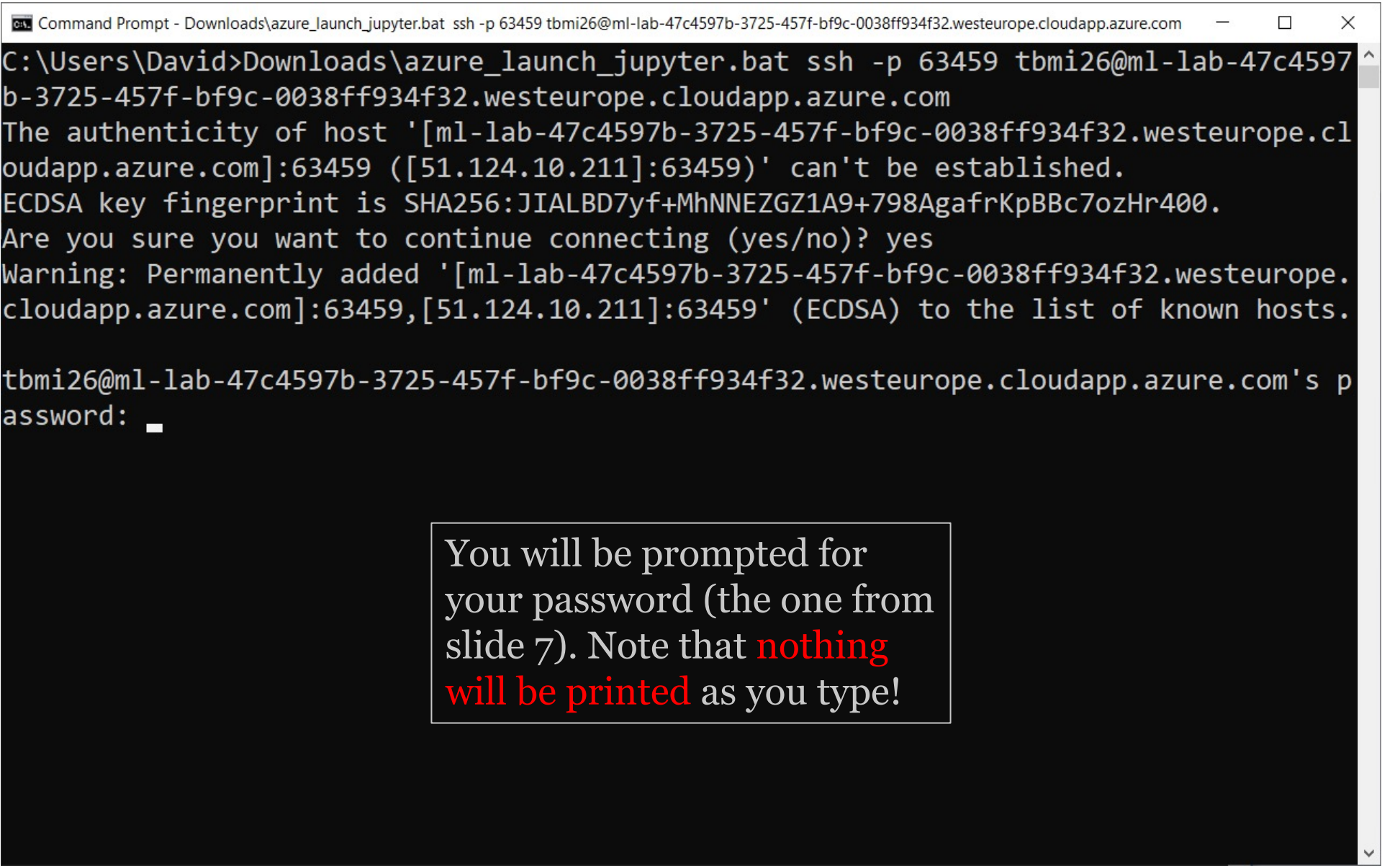
Members and groups
Schedule
Teams
Signup
Submissions
Assessment record
Edit
New
Upload
Edit in grid view
Share
Copy link
Sync
All Documents
Course documents > Assignments > Lab_2 > files
Name
Modified
Modified By
Version
Description
azure_launch_jupyter.bat
16 minutes ago
David Abramian
1.0
azure_launch_jupyter.sh
16 minutes ago
David Abramian
1.0
lab_gpu.yml
17 minutes ago
David Abramian
1.0
lab_macos.yml
17 minutes ago
David Abramian
1.0
lab_nogpu.yml
17 minutes ago
David Abramian
1.0
Go to Lisam and download this file. Note where it is saved.

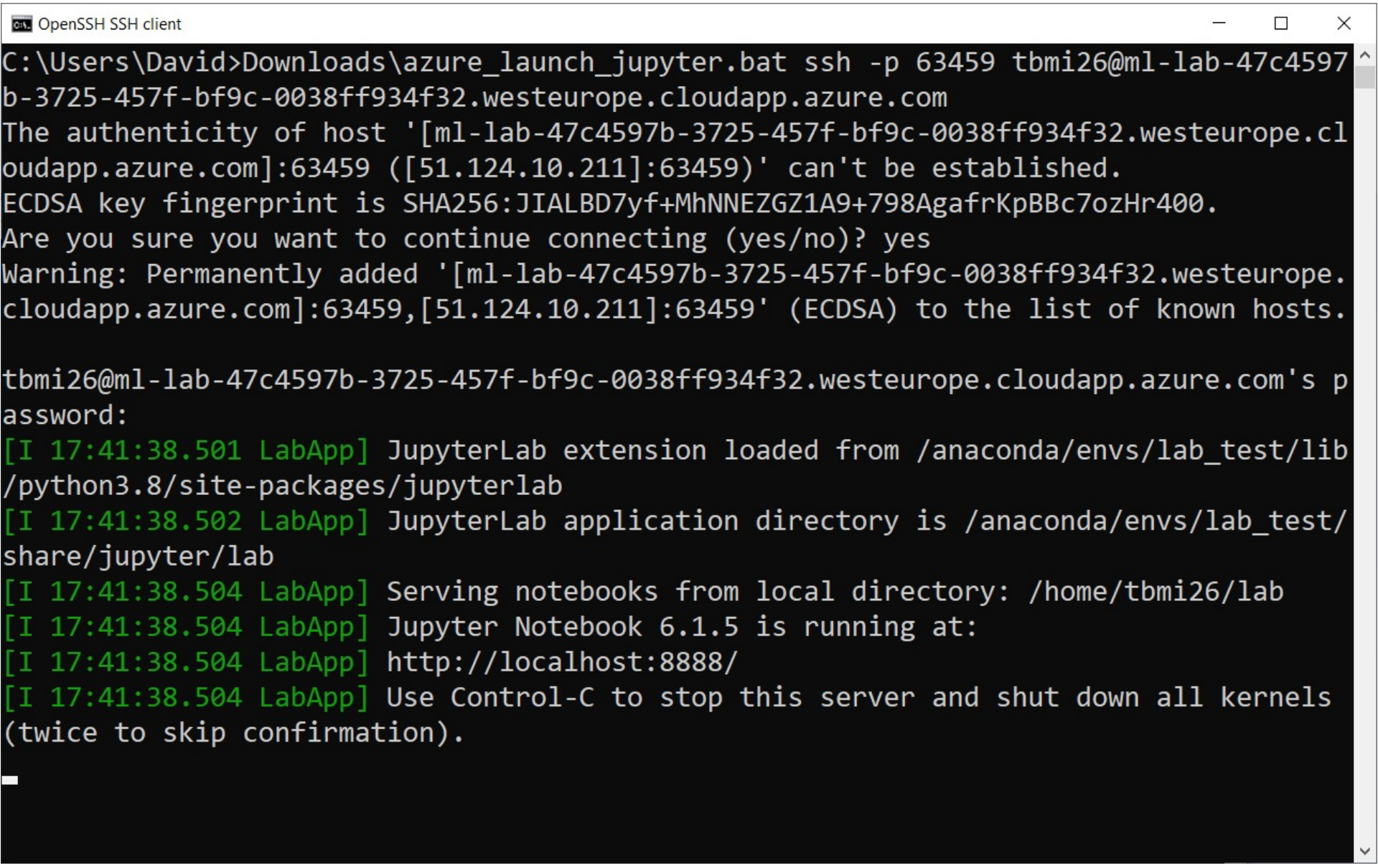

Command Prompt
C:\Users\David>
Open a command line.


Command Prompt
C:\Users\David>Downloads\azure_launch_jupyter.bat ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
Input the following command:
- the path to the launch script
- the entire Azure login command


Command Prompt - Downloads\azure_launch_jupyter.bat ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
C:\Users\David>Downloads\azure_launch_jupyter.bat ssh -p 63459 tbmi26@ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com
The authenticity of host '[ml-lab-47c4597b-3725-457f-bf9c-0038ff934f32.westeurope.cloudapp.azure.com]:63459 ([51.124.10.211]:63459)' can't be established.
ECDSA key fingerprint is SHA256:JIALBD7yf+MhNNEZGZ1A9+798AgafrKpBBc7ozHr400.
Are you sure you want to continue connecting (yes/no)? yes
You will get a warning about accessing an unknown host. Say yes.

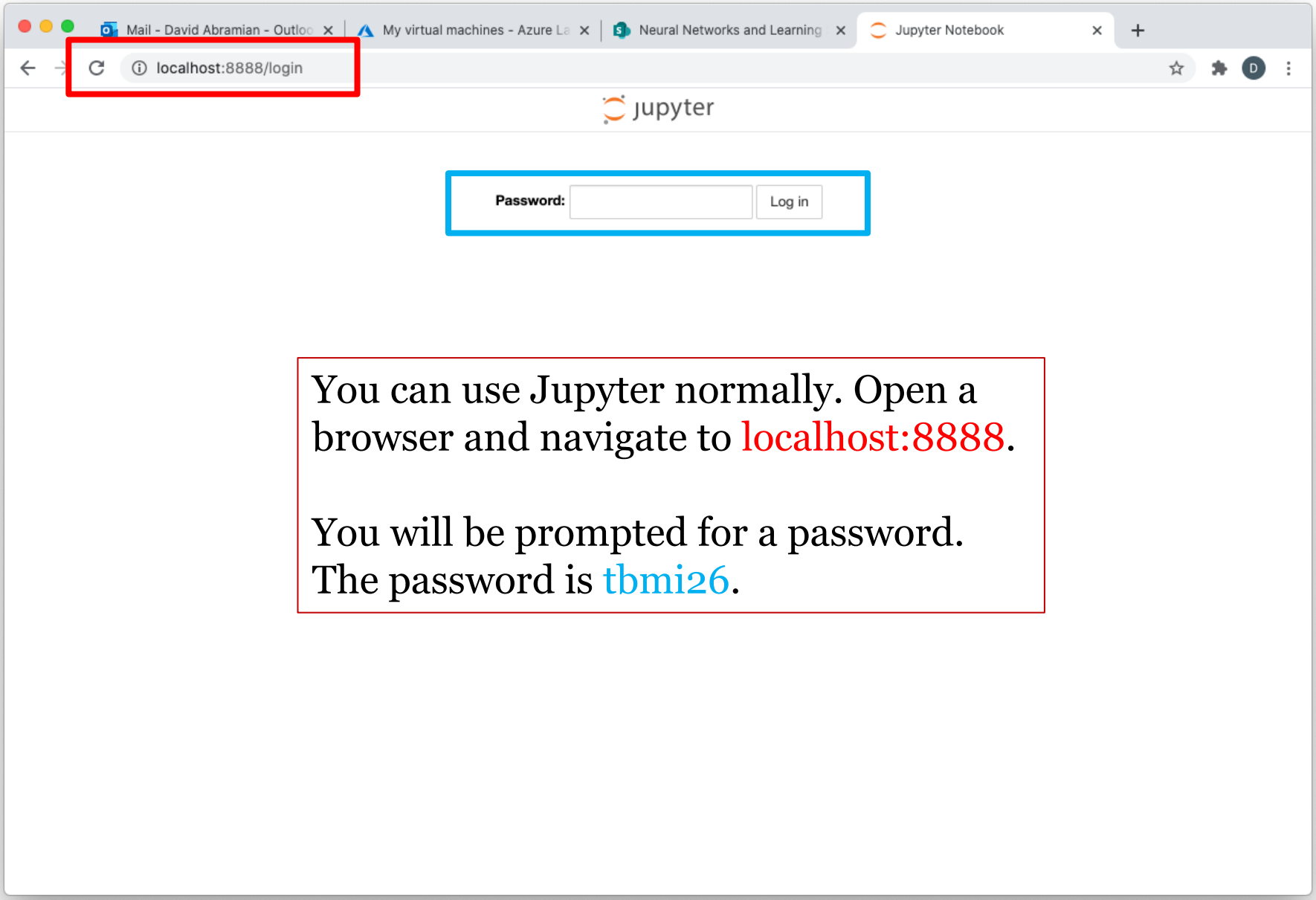


You will be prompted for your password (the one from slide 7). Note that nothing will be printed as you type!



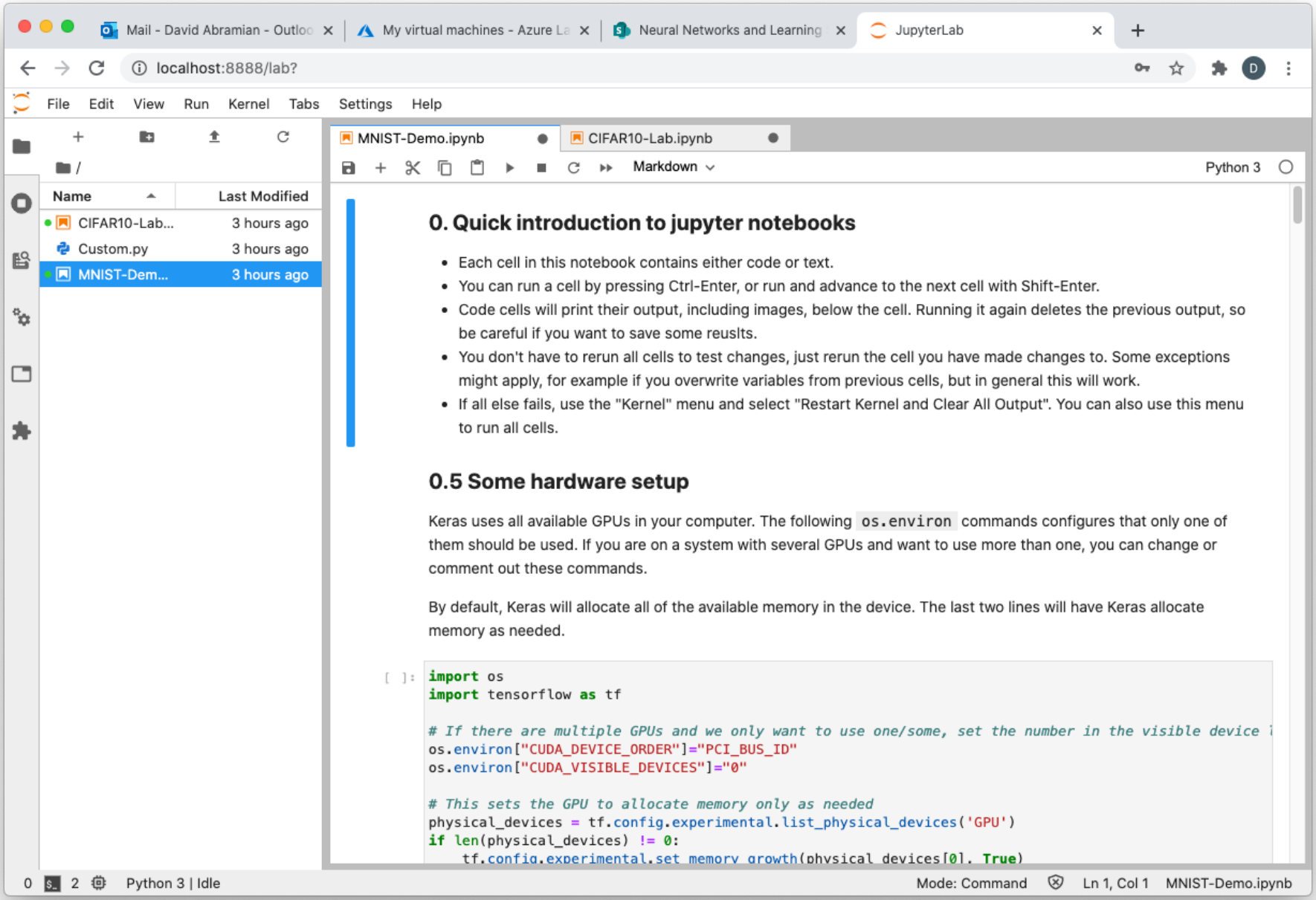
Once you log in, Jupyter will be launched automatically. This can take a little time.

Running the lab



You can use Jupyter normally. Open a browser and navigate to localhost:8888.

You will be prompted for a password. The password is tbmi26.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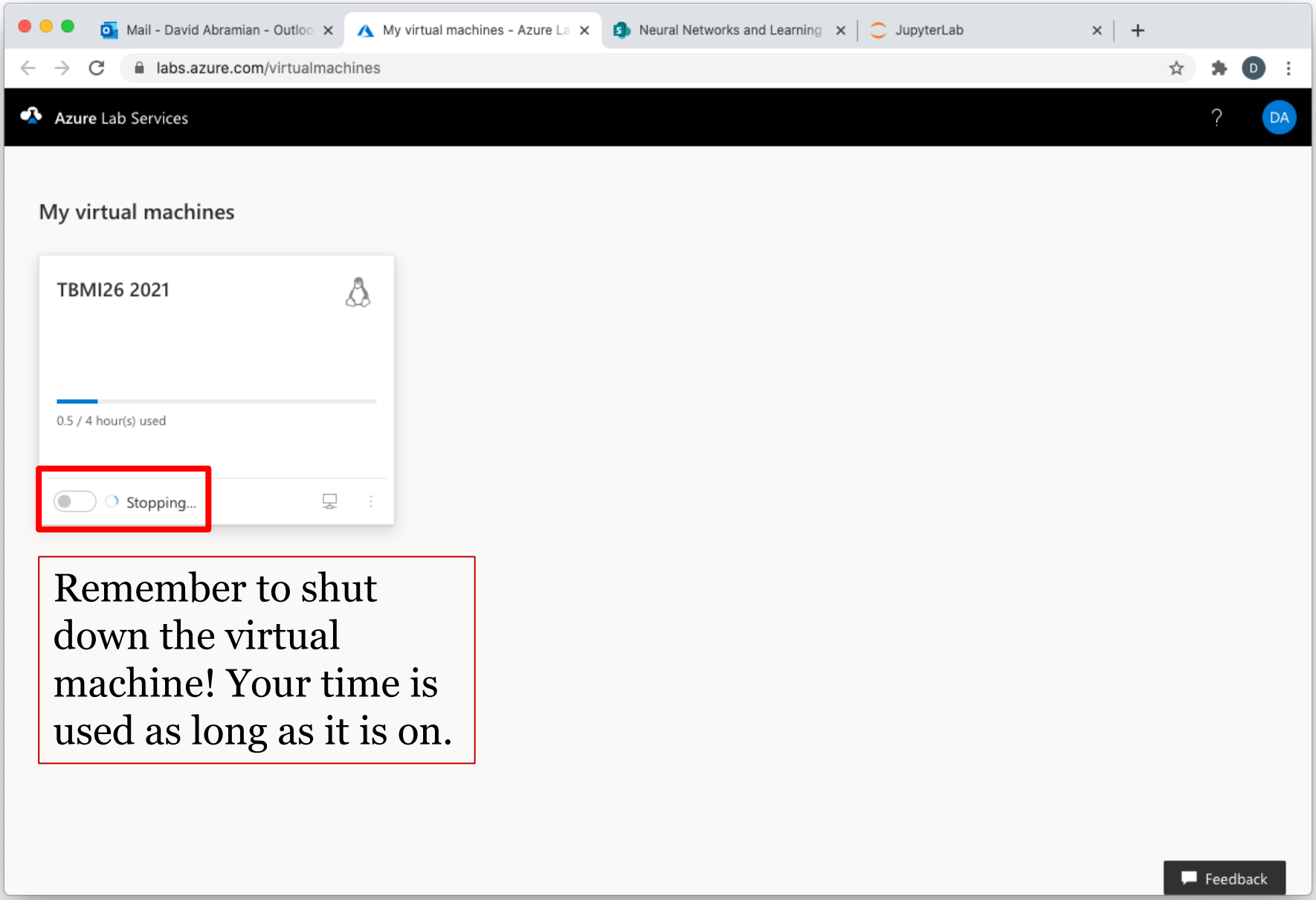
Neural Networks and Learning
JupyterLab
localhost:8888/lab?
File Edit View Run Kernel Tabs Settings Help
/
Name
Last Modified
CIFAR10-Lab...
3 hours ago
Custom.py
3 hours ago
MNIST-Dem...
3 hours ago
MNIST-Demo.ipynb
CIFAR10-Lab.ipynb
Markdown
Python 3
0. Quick introduction to jupyter notebooks
Each cell in this notebook contains either code or text.
You can run a cell by pressing Ctrl-Enter, or run and advance to the next cell with Shift-Enter.
Code cells will print their output, including images, below the cell. Running it again deletes the previous output, so be careful if you want to save some reuslts.
You don't have to rerun all cells to test changes, just rerun the cell you have made changes to. Some exceptions might apply, for example if you overwrite variables from previous cells, but in general this will work.
If all else fails, use the "Kernel" menu and select "Restart Kernel and Clear All Output". You can also use this menu to run all cells.
0.5 Some hardware setup
Keras uses all available GPUs in your computer. The following os.environ commands configures that only one of them should be used. If you are on a system with several GPUs and want to use more than one, you can change or comment out these commands.
By default, Keras will allocate all of the available memory in the device. The last two lines will have Keras allocate memory as needed.
[ ]:
import os
import tensorflow as tf
# If there are multiple GPUs and we only want to use one/some, set the number in the visible device
os.environ["CUDA_DEVICE_ORDER"]="PCI_BUS_ID"
os.environ["CUDA_VISIBLE_DEVICES"]="0"
# This sets the GPU to allocate memory only as needed
physical_devices = tf.config.experimental.list_physical_devices('GPU')
if len(physical_devices) != 0:
tf.config.experimental.set_memory_growth(physical_devices[0], True)
0 2 Python 3 | Idle
Mode: Command
Ln 1, Col 1
MNIST-Demo.ipynb

When you are done



Remember to shut down the virtual machine! Your time is used as long as it is on.