

Accessing Jupyter Notebook Server in AWS from Local Browser

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Thu May 17, 2018

Local computer environment: macOS Sierra version 10.12.6

This tutorial assumed that you have finished the steps on <<**Launching & Connecting to an AWS Instance**>>

(<https://github.com/BryanBo-Cao/neuralnets-deeplearning/blob/master/Launching%20%26%20Connecting%20to%20an%20AWS%20Instance.pdf>), and an instance is already running in AWS.

In this article, I use **Art-Image.pem** as my private. Open the Terminal, navigate (cd) to the directory where the Art-Image.pem is located in. When you are trying to connect to an instance on your terminal, enter

```
ssh -i "Art-Image.pem" -L 8000:localhost:8888 ubuntu@ec2-*.us-west-2.compute.amazonaws.com
```

instead of

```
ssh -i "Art-Image.pem" ubuntu@ec2-*.us-west-2.compute.amazonaws.com
```

as mentioned in

<https://towardsdatascience.com/setting-up-and-using-jupyter-notebooks-on-aws-61a9648db6c5>

“-i Specifies an alternate identification file to use for public key authentication. Basically for this tutorial, I have my key in current directory.

“-L specifies that the given port on the local (client) host is to be forwarded to the given host and port on the remote side (AWS). This means that whatever is running on the second port number (i.e. 8888) on AWS will appear on the first port number (i.e. 8000) on your local computer. You should change 8888 to the port which Jupyter Notebook is running on. 99.9% of the time Jupyter will run on port 8888. Optionally change port 8000 to one of your choosing (for example, if 8000 is used by another process).

“

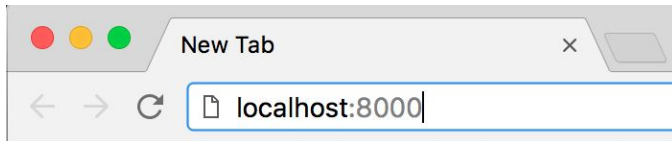
Run the jupyter server by entering

```
jupyter notebook
```

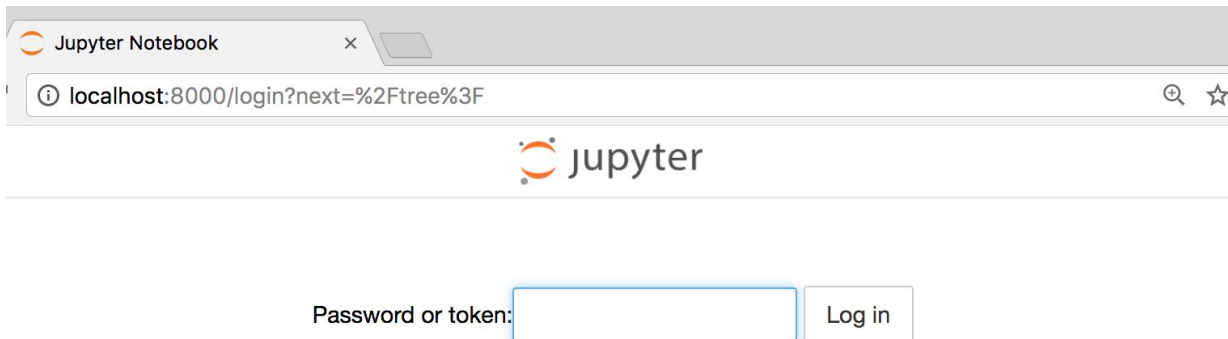
```
ubuntu@ip-[REDACTED]:~$ jupyter notebook  
[I 22:02:30.694 NotebookApp] Using EnvironmentKernelSpecManager...
```

Open a browser and enter

localhost:8000



Then you will see:



Token authentication is enabled

If no password has been configured, you need to open the notebook server with its login token in the URL, or paste it above. This requirement will be lifted if you [enable a password](#).

The command:

```
jupyter notebook list
```

will show you the URLs of running servers with their tokens, which you can copy and paste into your browser. For example:

```
Currently running servers:  
http://localhost:8888/?token=c8de56fa...  
:: /Users/you/notebooks
```

or you can paste just the token value into the password field on this page.

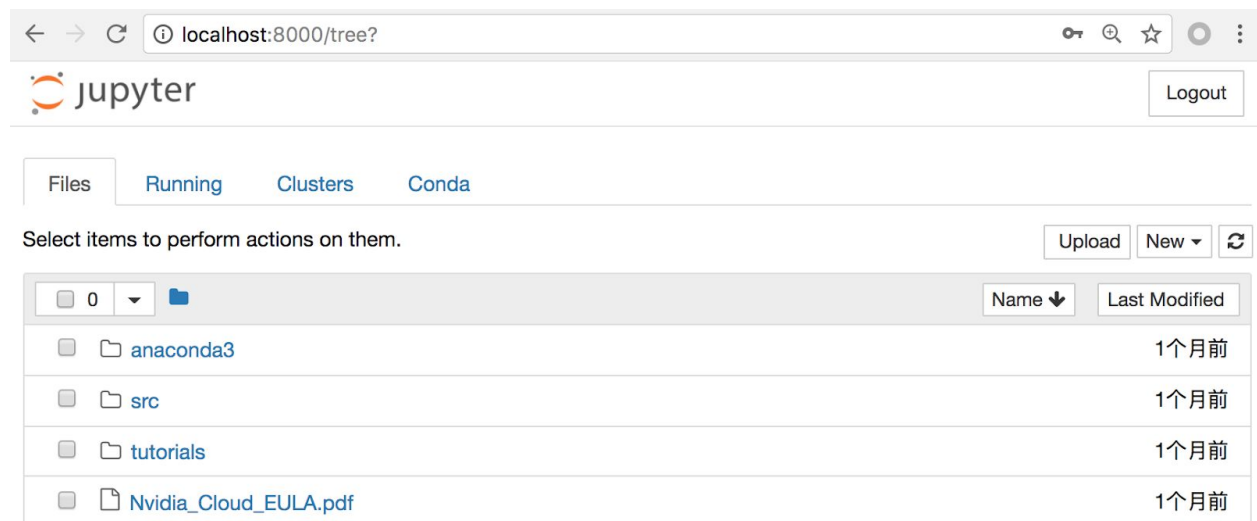
See [the documentation on how to enable a password](#) in place of token authentication, if you would like to avoid dealing with random tokens.

Cookies are required for authenticated access to notebooks.

```
ubuntu@ip-100.100.100.100:~$ jupyter notebook
[I 22:02:30.694 NotebookApp] Using EnvironmentKernelSpecManager...
[I 22:02:30.695 NotebookApp] Started periodic updates of the kernel list (every 3 minutes).
[I 22:02:30.701 NotebookApp] Writing notebook server cookie secret to /run/user/1000/jupyter/notebook_cookie_secret
[I 22:02:31.414 NotebookApp] [nb_anacondacloud] enabled
[I 22:02:31.419 NotebookApp] [nb_conda] enabled
[I 22:02:31.493 NotebookApp] ✓ nbpresent HTML export ENABLED
[W 22:02:31.494 NotebookApp] ✗ nbpresent PDF export DISABLED: No module named 'nbbrowserpdf'
[I 22:02:31.982 NotebookApp] sparkmagic extension enabled!
[I 22:02:31.985 NotebookApp] Serving notebooks from local directory: /home/ubuntu
[I 22:02:31.985 NotebookApp] 0 active kernels
[I 22:02:31.985 NotebookApp] The Jupyter Notebook is running at:
[I 22:02:31.985 NotebookApp] http://localhost:8888/?token=6447f59888eb7ae589e84c900b1ae087bdf05df6d90e54f4
[I 22:02:31.985 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[W 22:02:31.985 NotebookApp] No web browser found: could not locate runnable browser.
[C 22:02:31.986 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
http://localhost:8888/?token=6447f59888eb7ae589e84c900b1ae087bdf05df6d90e54f4
[I 22:02:31.986 NotebookApp] Starting initial scan of virtual environments...
[I 22:02:33.123 NotebookApp] Found new kernels in environments: conda_tensorflow_p27, conda_python2, conda_pytorch_p36, conda_mxnet_p27, conda_mxnet_p36, co
nda_theano_p27, conda_pytorch_p27, conda_cntk_p36, conda_cntk_p27, conda_python3, conda_theano_p36, conda_tensorflow_p36, conda_caffe2_p27
[I 22:04:39.185 NotebookApp] 302 GET / (127.0.0.1) 0.70ms
[I 22:04:39.237 NotebookApp] 302 GET /tree? (127.0.0.1) 1.22ms
```

Copy the token on your terminal and then you should be able to log in. When you see this page below, it means everything goes well and you could start to write you deep learning code with TensorFlow:

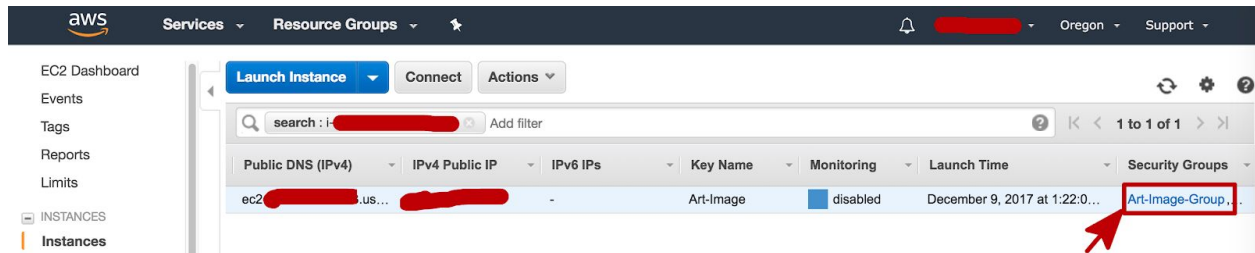


Good luck!

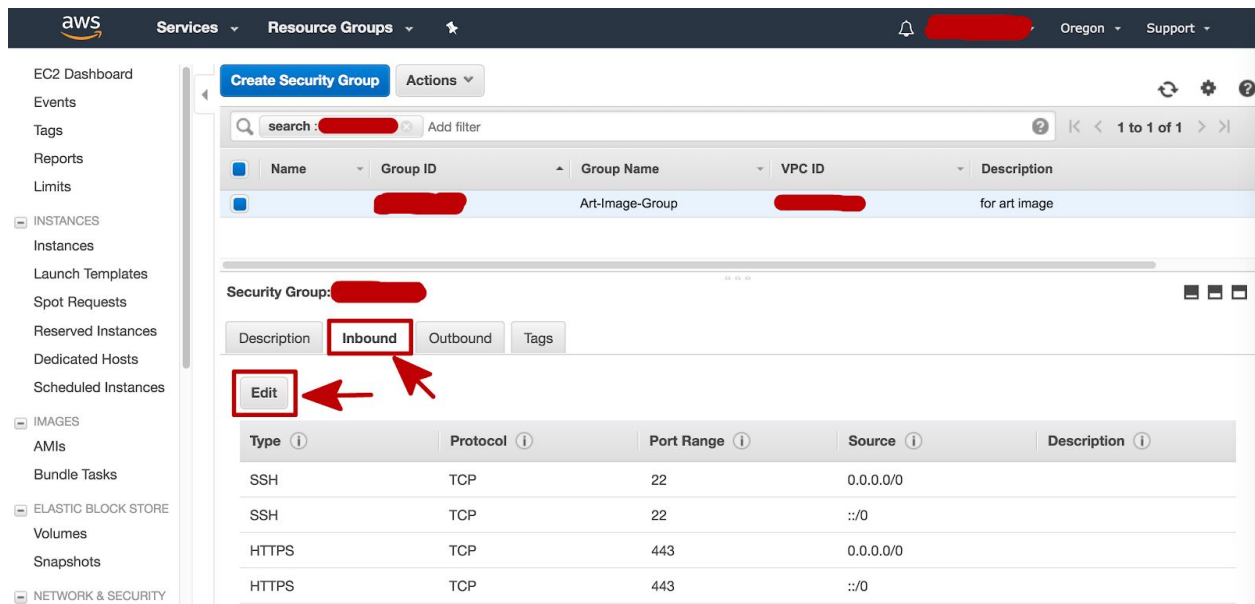
Troubleshooting

One thing that might need to be done is to set the Security Group.

On the instances page, scroll to the right most side and click the Security Group:



The Security Group that I am going to edit is “Art-Image-Group”. Select it by clicking the square box on the left of the Security Group and then click “Inbound” and then “Edit”:



Add these rules:

Type	Protocol	Port Range	Source
SSH	TCP	22	Anywhere
HTTPS	TCP	443	Anywhere

Edit inbound rules

Type ⓘ

SSH ▾

Protocol ⓘ

TCP

Port Range ⓘ

22

Source ⓘ

Anywhere ▾

0.0.0.0/0, ::/0

Description ⓘ

e.g. SSH for Admin Desktop

✕

Type ⓘ

HTTPS ▾

Protocol ⓘ

TCP

Port Range ⓘ

443

Source ⓘ

Anywhere ▾

0.0.0.0/0, ::/0

Description ⓘ

e.g. SSH for Admin Desktop

✕

Add Rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel

Save

Reference:

<https://www.youtube.com/watch?v=q1vVedHbkAY>

<https://towardsdatascience.com/setting-up-and-using-jupyter-notebooks-on-aws-61a9648db6c5>