

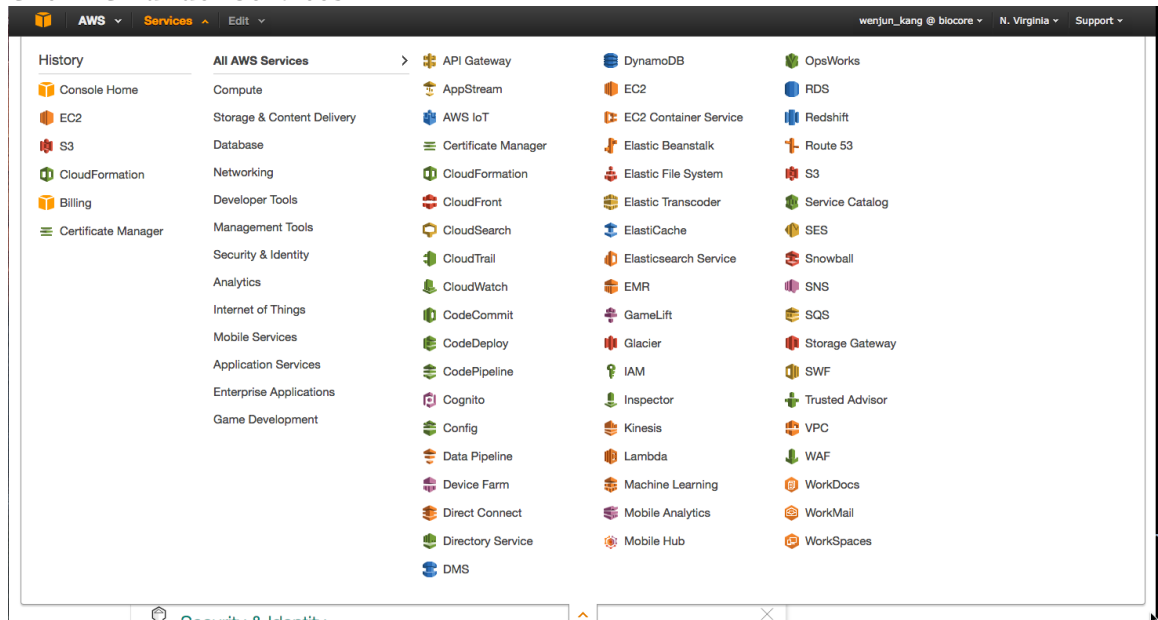
Launch Jupyter Notebook on Amazon Web Service (AWS) EC2 instance

What do you need?

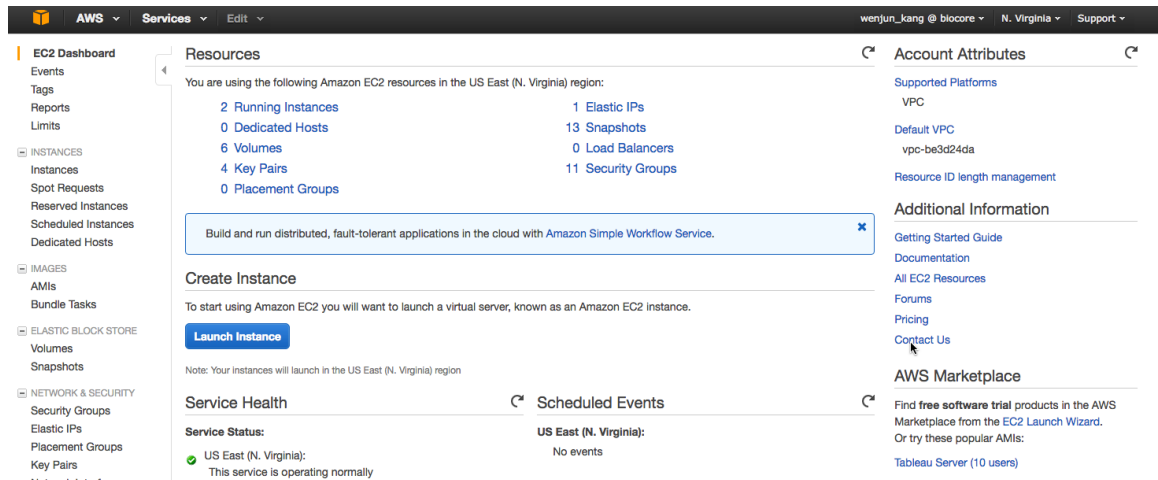
- An active AWS account

AWS Console and EC2 Instance Launch

- Login to your console by visiting <https://console.aws.amazon.com>
- Click EC2 under Services



- Click “Launch Instance” Button



- Choose an Amazon Machine Image (AMI): Ubuntu Server

- Choose Instance Type

AWS

Services

Edit

wenjun_kang @ biocore

N. Virginia

Support

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Tag Instance

6. Configure Security Group

7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by:

All instance types

All generations

Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<input checked="" type="checkbox"/>	Micro instances	t1.micro <div>Free tier eligible</div>	1	0.613	EBS only	-	Very Low
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro <div>Free tier eligible</div>	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.10xlarge	40	160	EBS only	Yes	10 Gigabit
<input type="checkbox"/>	General purpose	m4.16xlarge	64	256	EBS only	Yes	20 Gigabit
<input type="checkbox"/>	General purpose	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate

Cancel

Previous

Review and Launch

Next: Configure Instance Details

- Click “Review and Launch” Button

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Tag Instance

6. Configure Security Group

7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, launch-wizard-8, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details

Free tier eligible

Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-2d39803a

Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root Device Type: ebs Virtualization type: hvm

Edit AMI

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Edit instance type

Security Groups

Security group name

launch-wizard-8

Description

launch-wizard-8 created 2016-10-06T13:18:18.114-05:00

Type	Protocol	Port Range	Source
SSH	TCP	22	0.0.0.0/0

Instance Details

Edit instance details

Storage

Edit storage

Tags

Edit tags

Cancel

Previous

Launch

- Edit security groups by adding HTTPS and Custom TCP Rule for port 8888

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Tag Instance6. Configure Security Group7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group
☐ Select an existing security group

Security group name:ipython notebook

Description:ipython notebook

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	
SSH	TCP	22	Anywhere 0.0.0.0/0	
HTTPS	TCP	443	Anywhere 0.0.0.0/0	
Custom TCP Rule	TCP	8888	Anywhere 0.0.0.0/0	

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

CancelPreviousReview and Launch

- Click “Review and Launch” Button

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Tag Instance6. Configure Security Group7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, **ipython notebook**, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details

Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-2d39803a

Free tier eligible

Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
Root Device Type: ebs Virtualization type: hvm

Edit AMI

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Edit instance type

Security Groups

Security group nameipython notebook

Descriptionipython notebook

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ
SSH	TCP	22	0.0.0.0/0
HTTPS	TCP	443	0.0.0.0/0
Custom TCP Rule	TCP	8888	0.0.0.0/0

Edit security groups

Instance Details

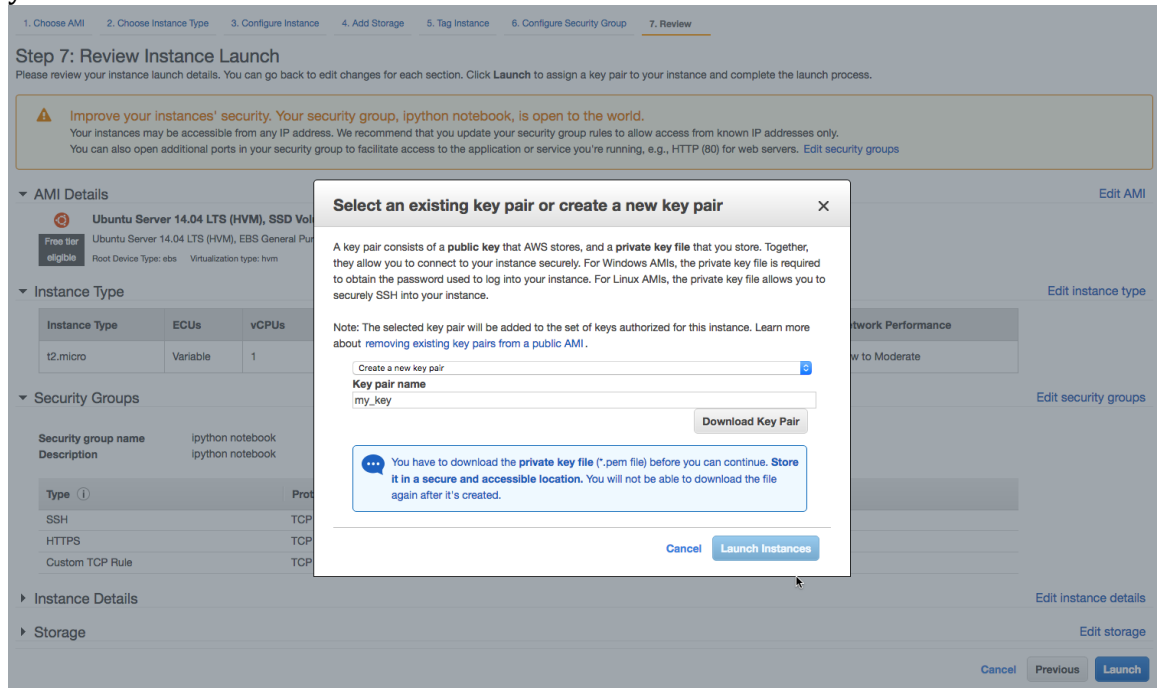
Edit instance details

Storage

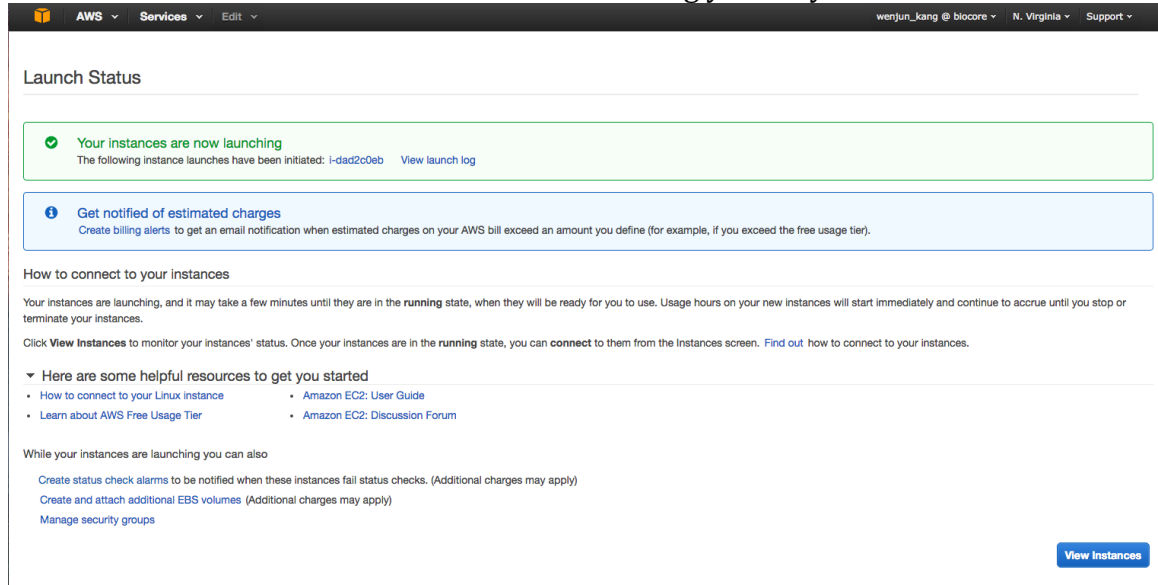
Edit storage

CancelPreviousLaunch

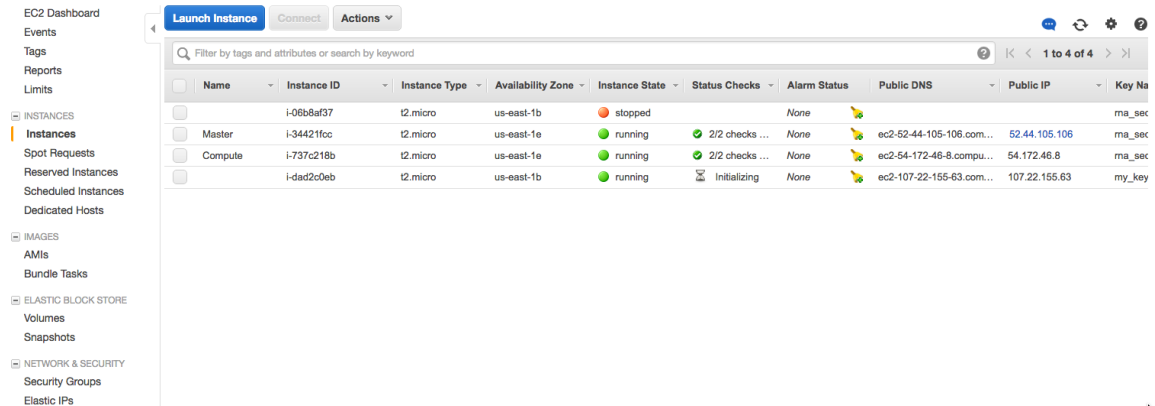
- Click “Launch” button and then create a new key and download the key to your local machine



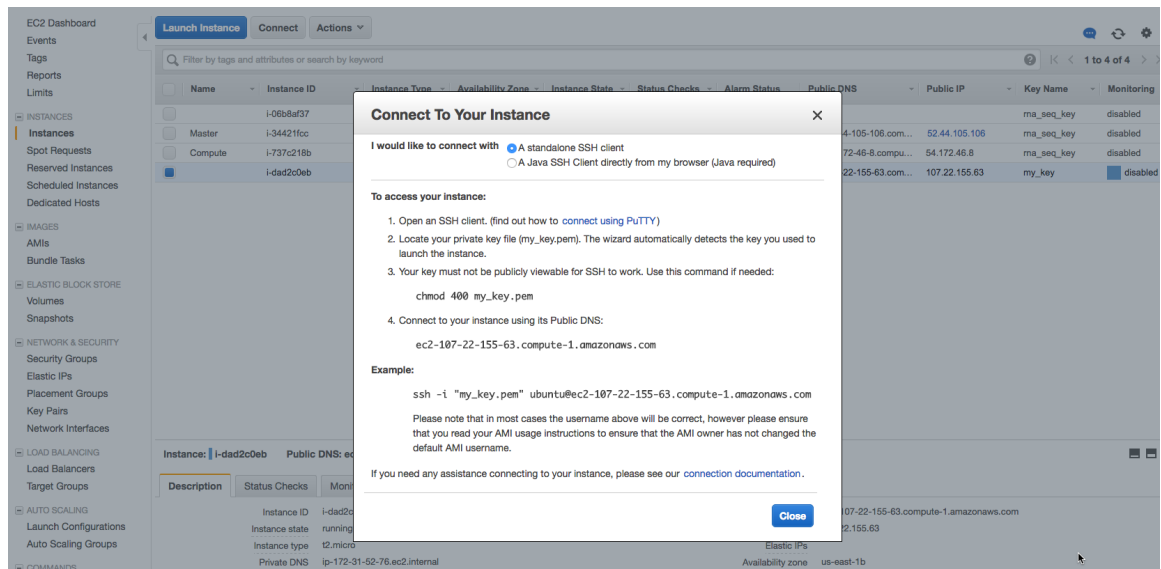
- Click “Launch Instances” button after downloading your key



- Click “View Instance” button (You may only see one instance)



- After your VM initializing, you can select the instance using the checkbox on the left and click “Connect” to see the instruction on how to connect to your VM.



Login to the VM: `ssh -i "yourpemfile.pem" ubuntu@xx.xx.xx.xxx` Where `xx.xx.xx.xxx` is the public IP address of the machine

```
Wenjuns-MacBook-Pro: ssh wkang$ ssh -i "my_key.pem" ubuntu@ec2-107-22-155-63.compute-1.amazonaws.com
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 3.13.0-91-generic x86_64)

 * Documentation:  https://help.ubuntu.com/

System information as of Thu Oct  6 18:38:15 UTC 2016

System load:  0.0               Processes:    98
Usage of /:   10.0% of 7.74GB   Users logged in:  0
Memory usage: 5%               IP address for eth0: 172.31.52.76
Swap usage:   0%

Graph this data and manage this system at:
https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

New release '16.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Thu Oct  6 18:38:18 2016 from 128.135.197.202
ubuntu@ip-172-31-52-76:~$
```

After connecting to the instance, following commands were used to install Anaconda **latest** version:

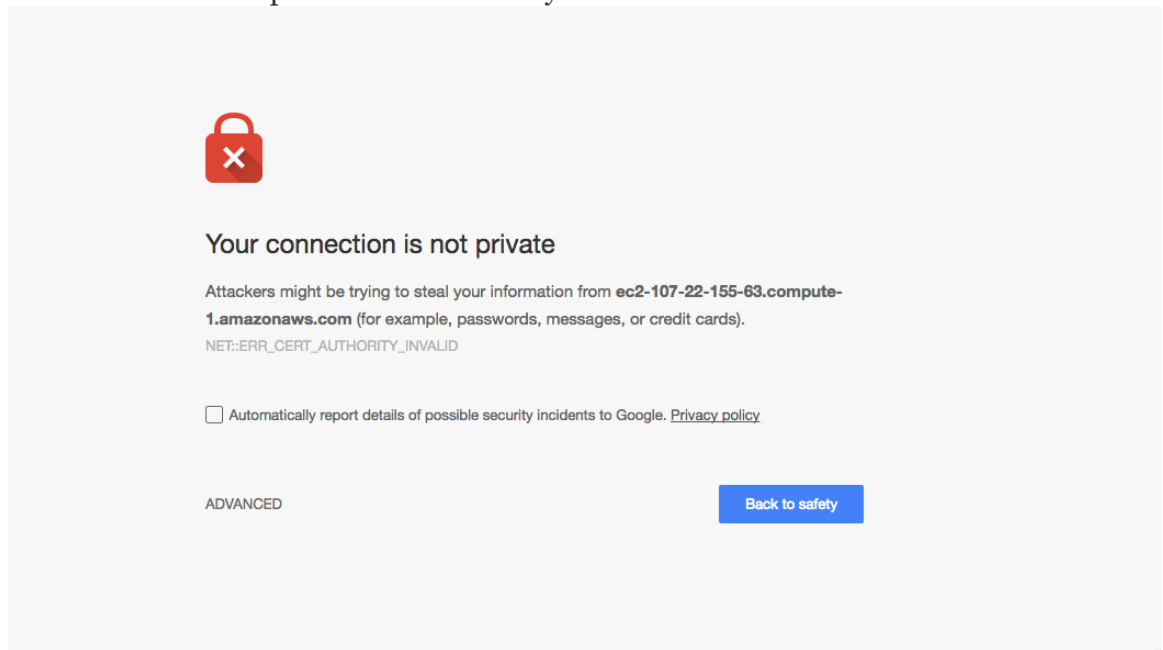
- `sudo apt-get install git`
- `git clone https://gist.github.com/c5be9ca652b0eac88e229011dac236f5.git nb`
- `. nb/jupyter_notebook_ec2.sh`

After the above step, we can start Jupyter notebook and access it remotely.

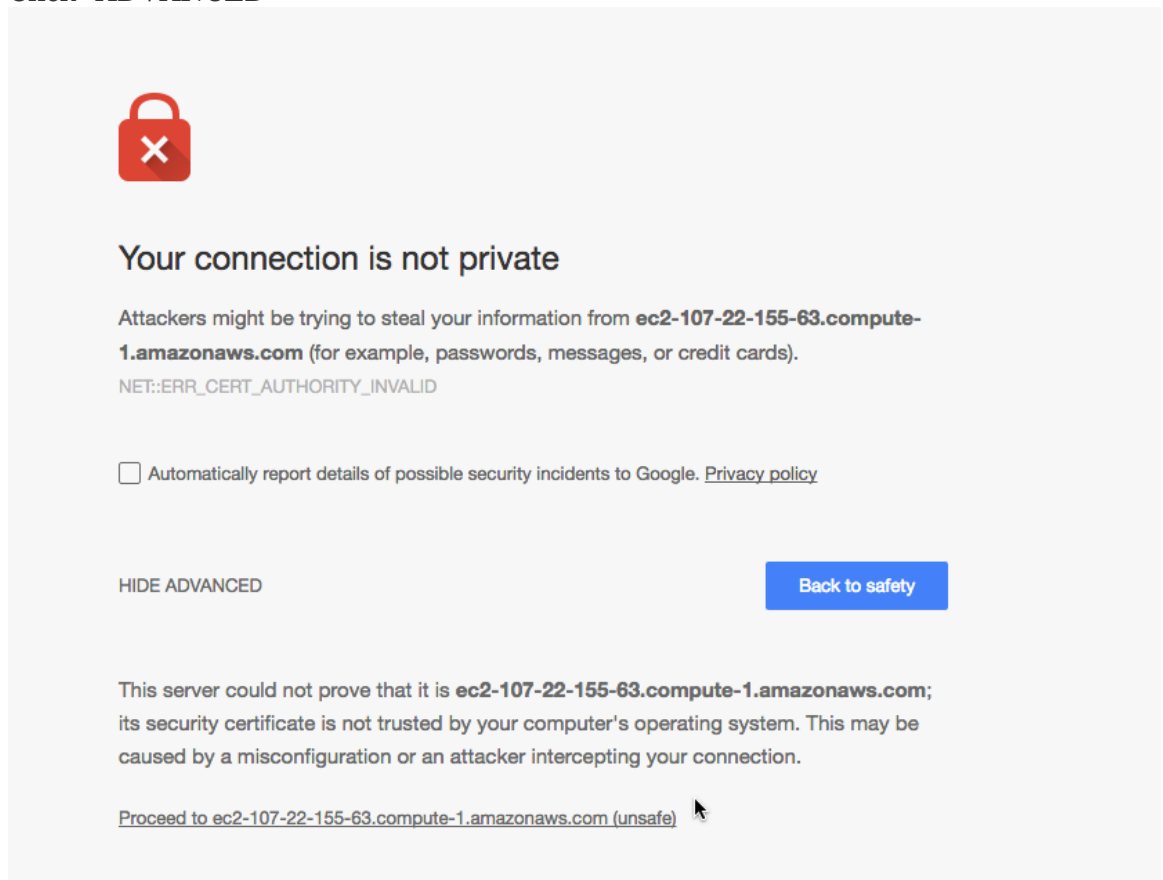
- `cd; mkdir notebook; cd notebook`
- `jupyter notebook --certfile=~/.certs/mycert.pem --keyfile ~/.certs/mycert.key &`

On your browser:

- Visit: <https://<ec2-xx-xx-xx-xxx.compute-1.amazonaws.com>:8888/> where xx-xx-xx-xxx is the public IP address of your machine.




- Click “ADVANCED”






- Click “Proceed to”
 jupyter

Password: 

- Type in the password you have created to login
 jupyter

Files **Running** Clusters Conda

Select items to perform actions on them. 

☐  

Notebook list empty.

- You have your Jupyter Notebook running
- After your work done and saved you data, you can terminate the VM from your AWS console by first select your VM, click “Actions” and then click “Terminate” in “Instance State” tab.

