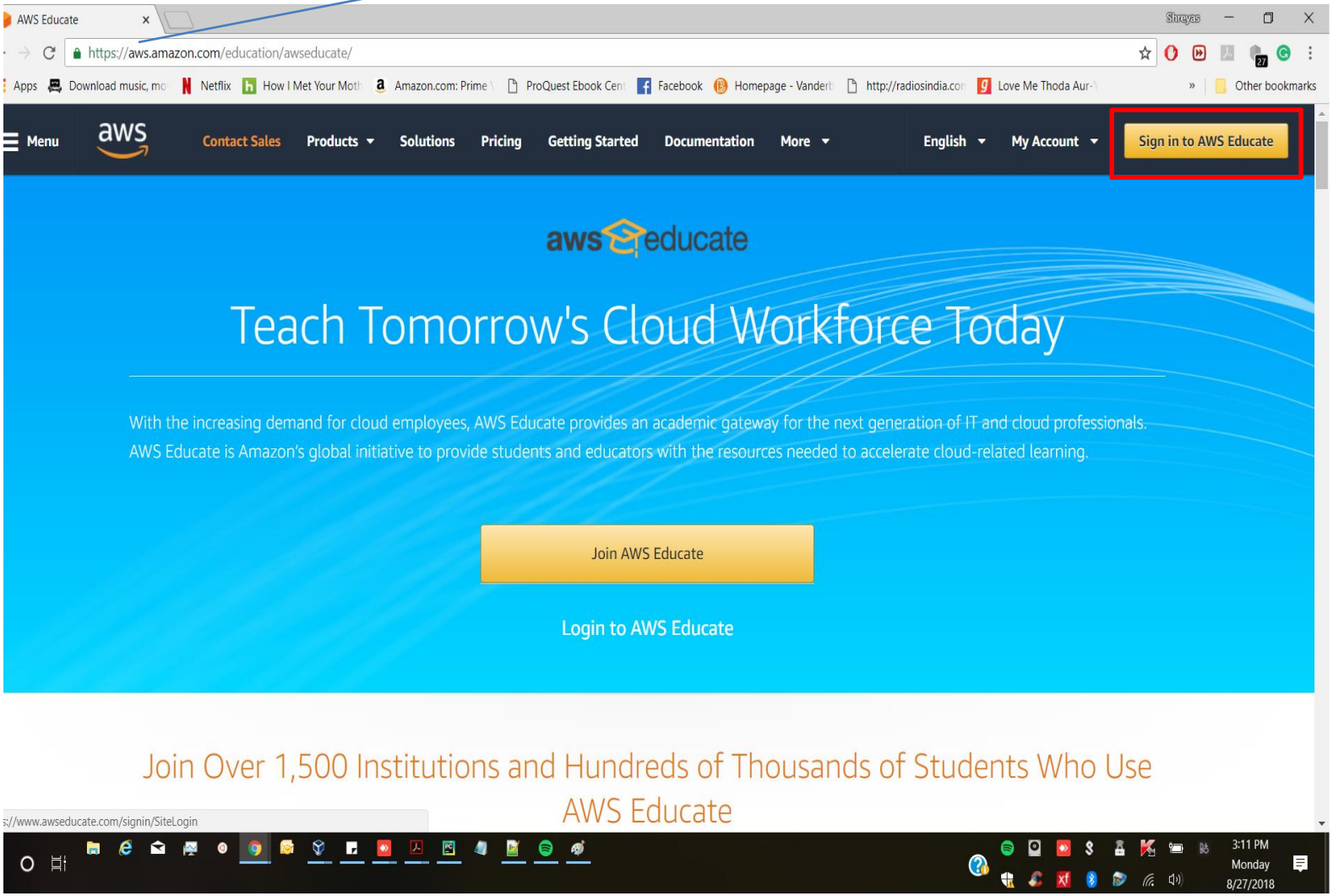
Getting started with AWS Educate Classroom

Resilient Distributed System

Fall 2019

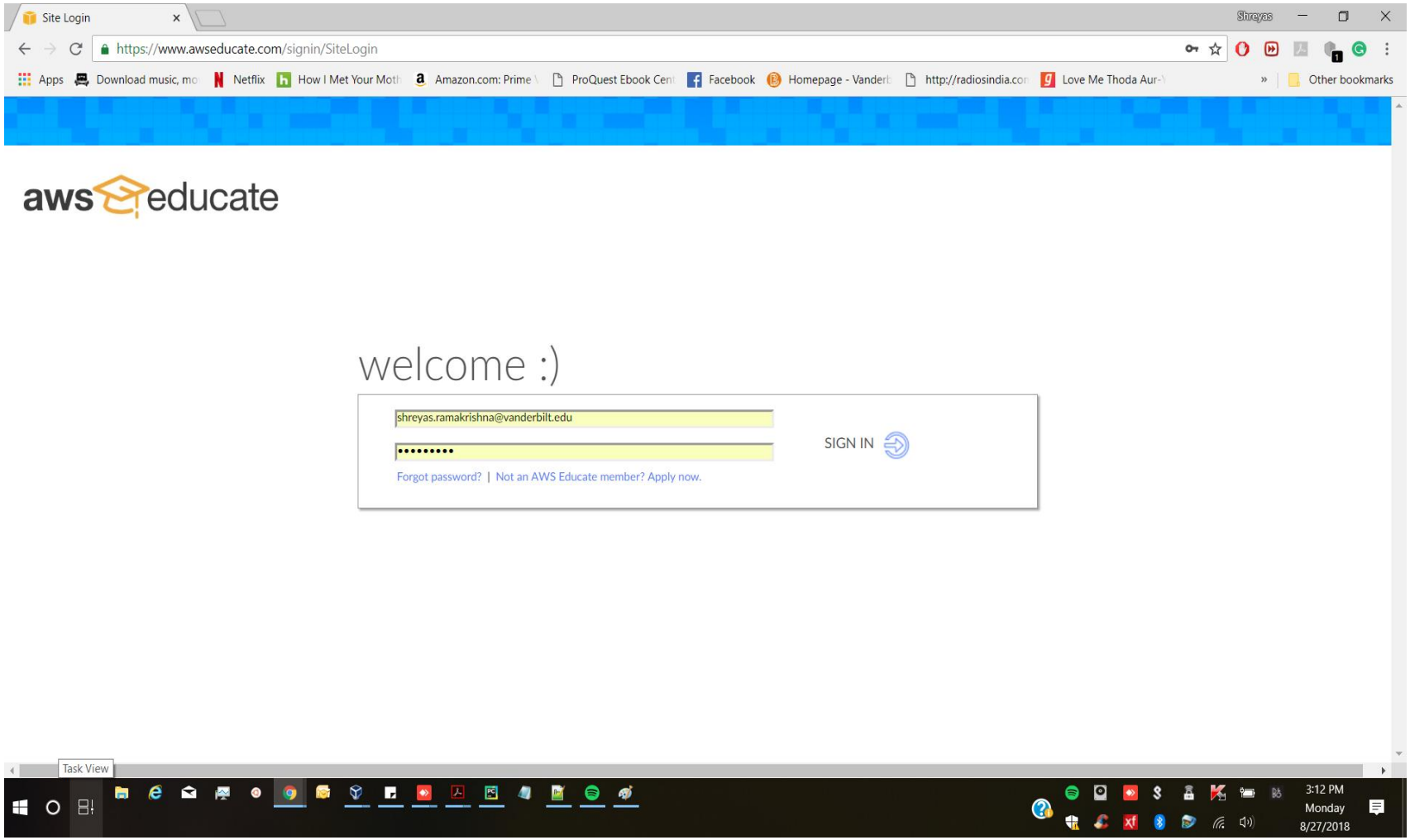
AWS Educate Landing Page

https://aws.amazon.com/education/awseducate/



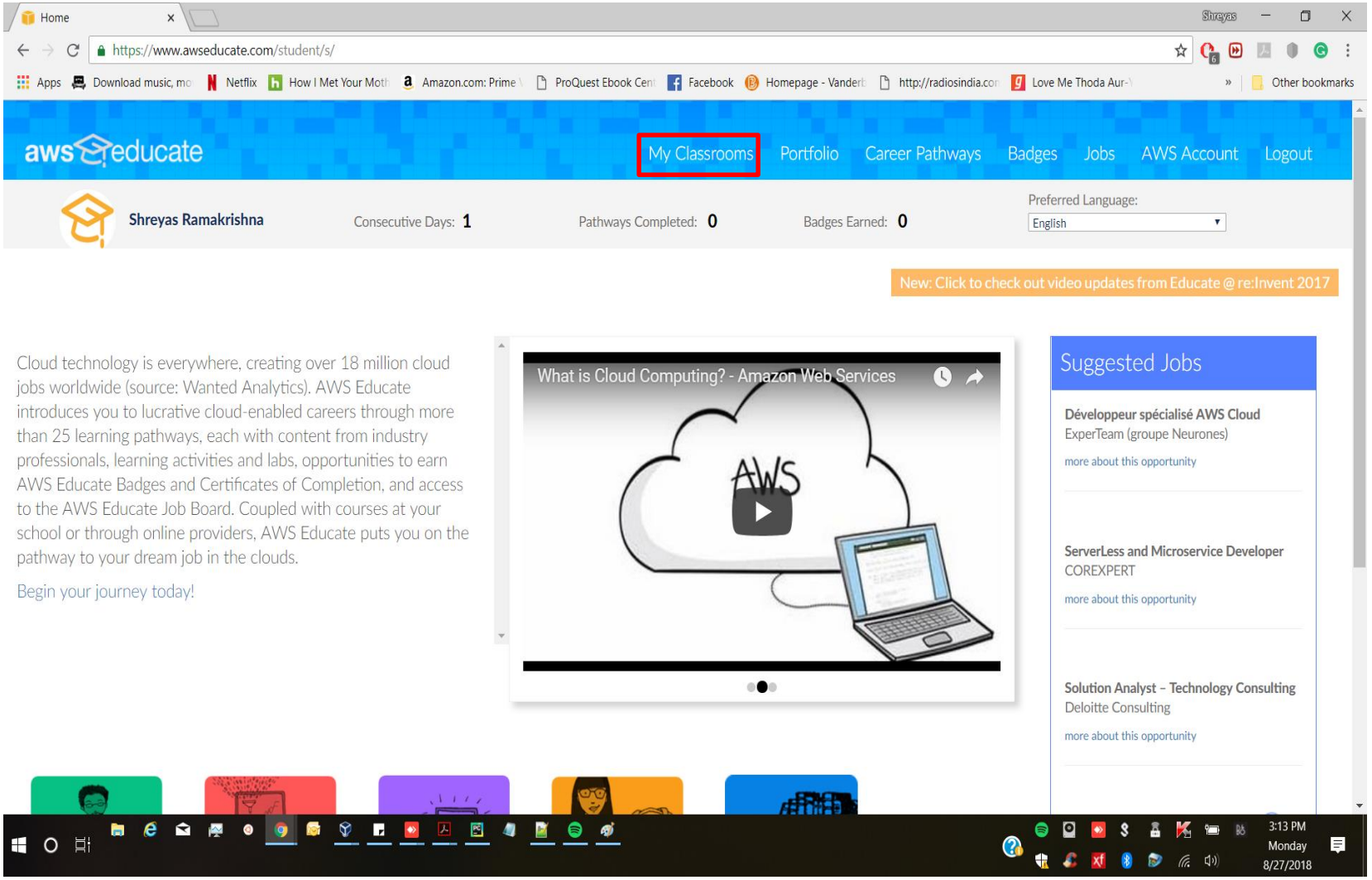
Sign into AWS Educate

- After you have clicked on "**Sign into AWS Educate**". It will land you into the page shown below.
- Here use your login details and click on "**sign in**"



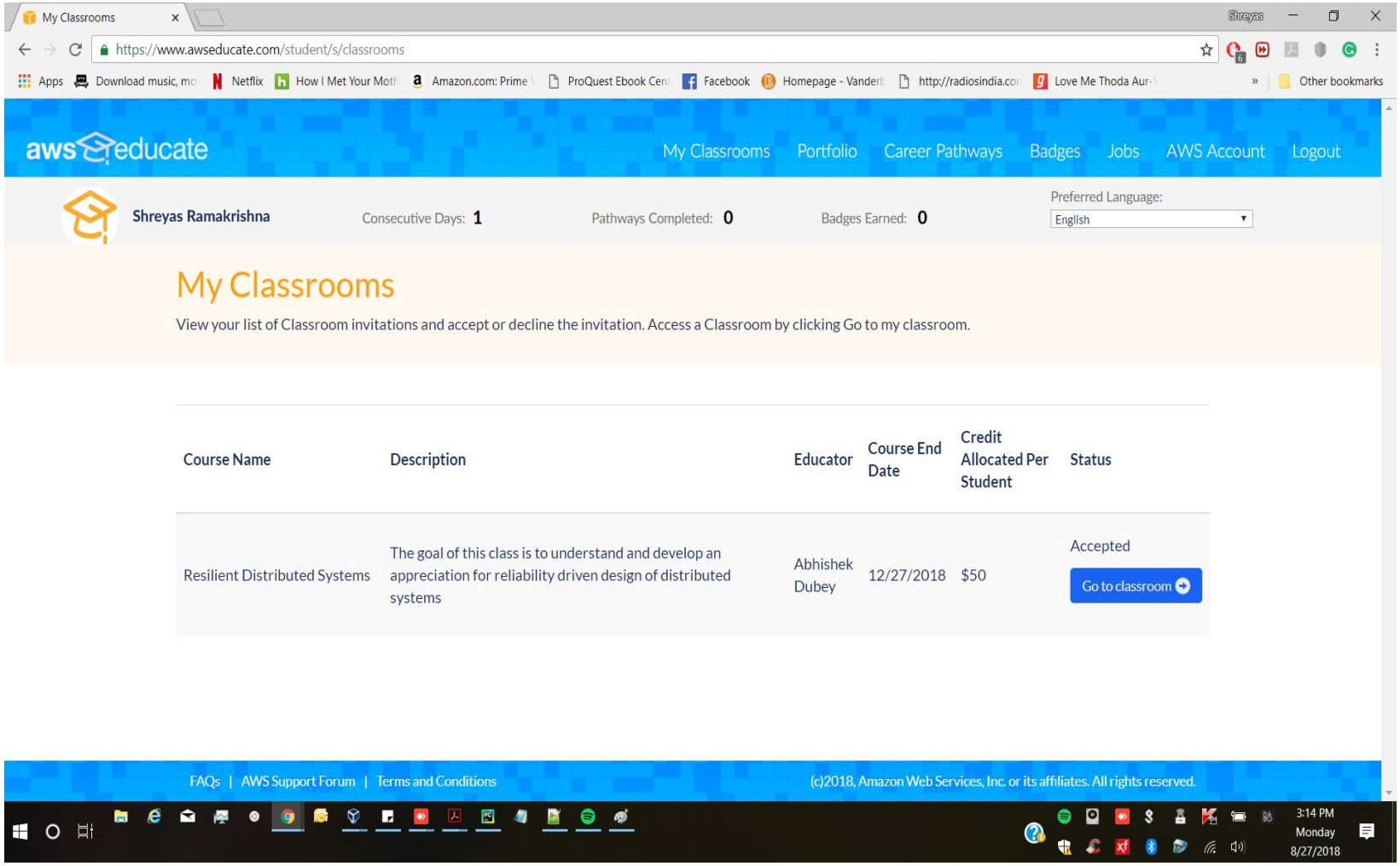
My classroom

- After signing in into aws educate, you will land into the page shown below.
- Here you need to click onto "**My Classrooms**"



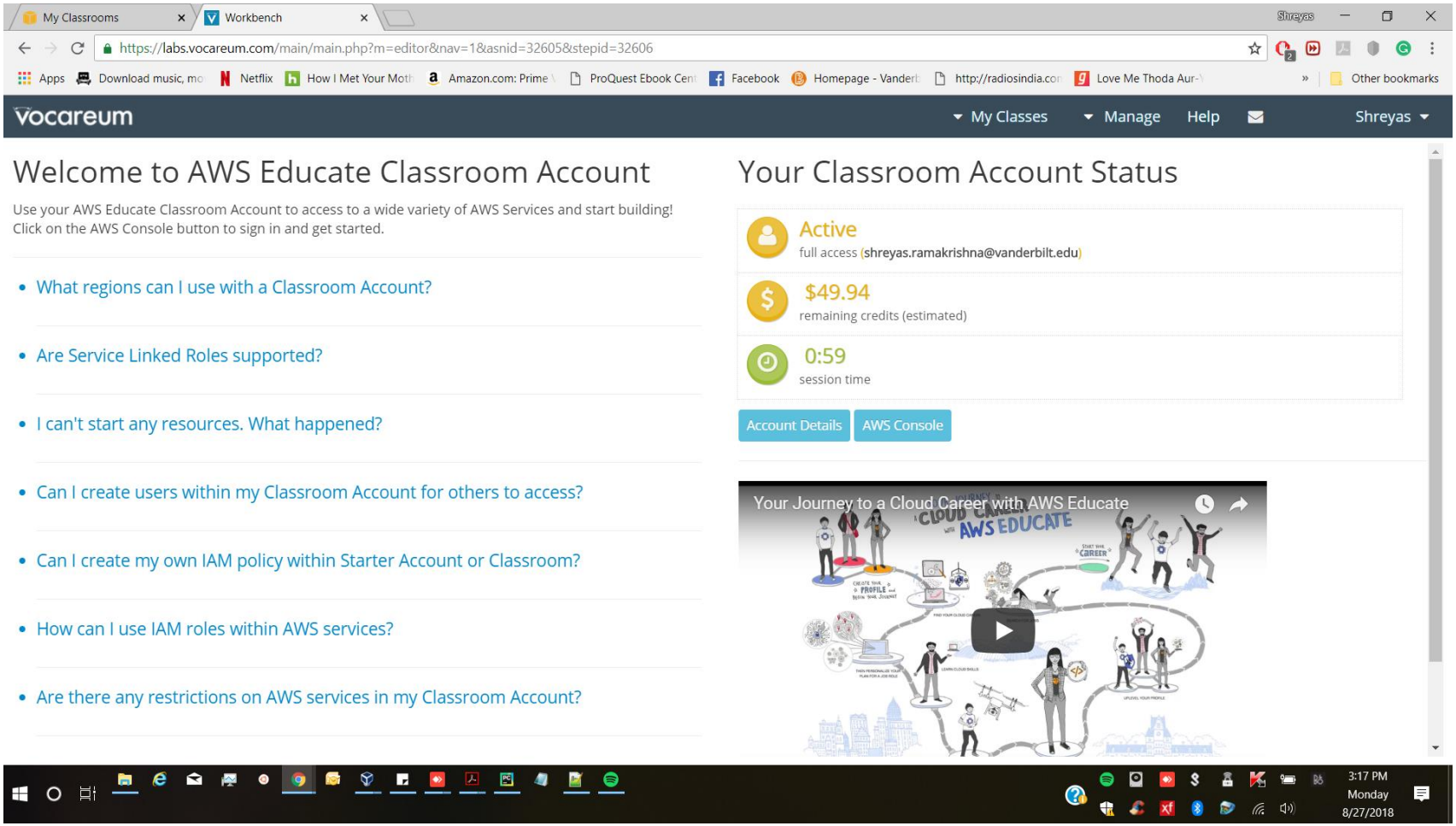
My classroom

- Once you click on "**My Classrooms**", you will get into the page below.
- You must have got the request from the professor to join the classroom.
- You will be getting $50 credit with this account.



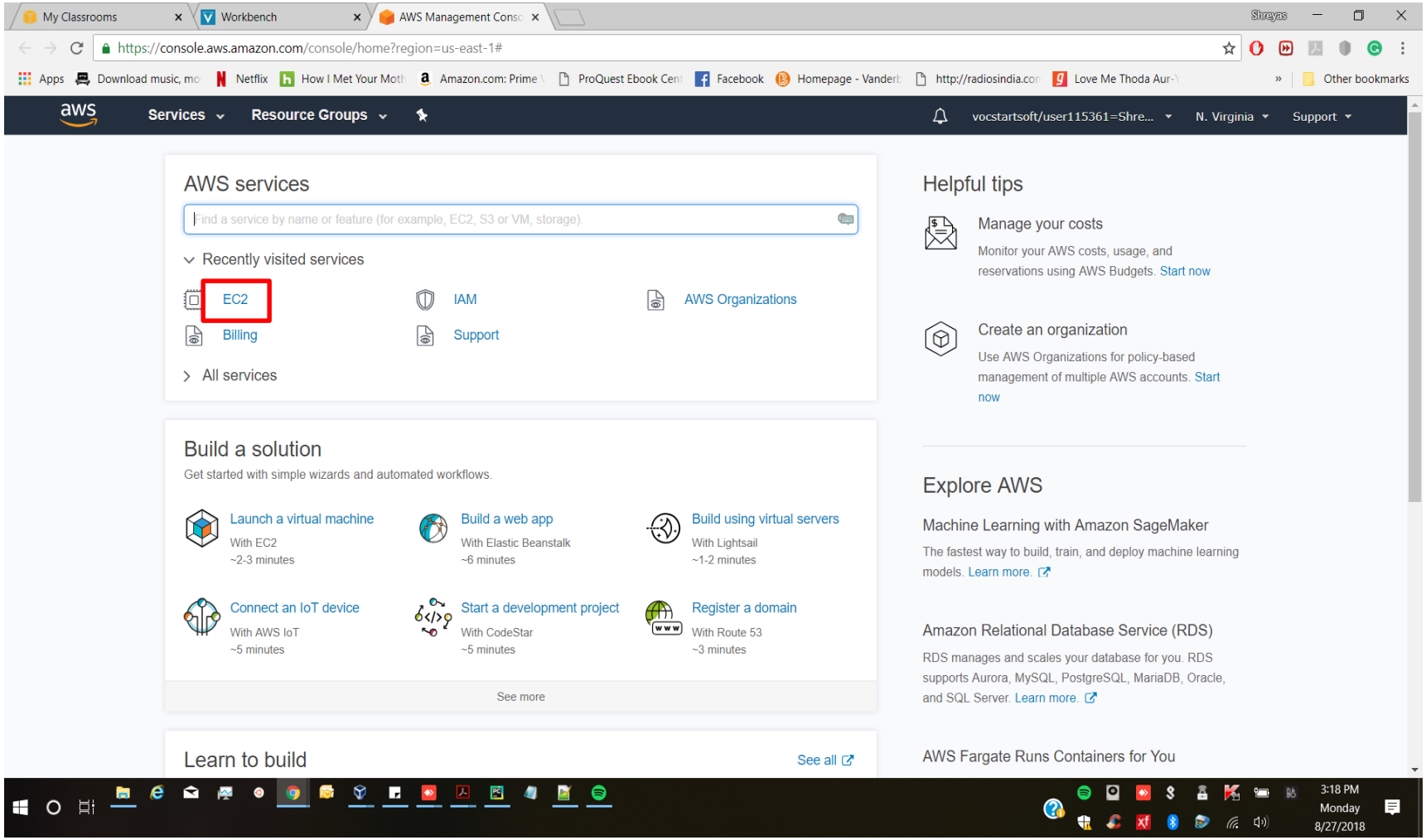
Go to classroom

- Once you click on "**Go to Classrooms**".
- You will be asked to continue. Just click on continue.
- This will open a new tab with Vocareum workbench.
- Now click on "**AWS Console**".



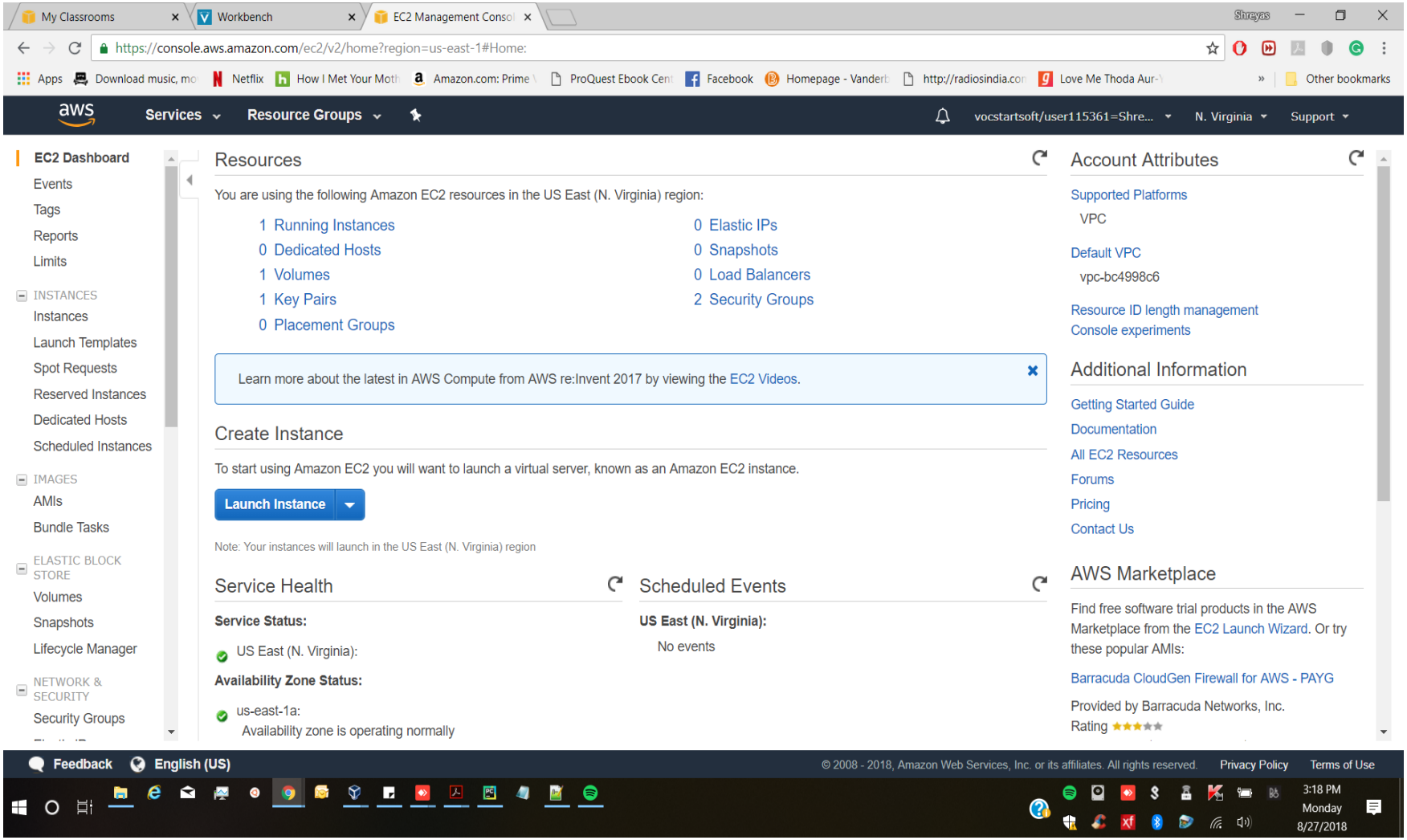
AWS Service Page

- Clicking on "**AWS Console**" will land you into the AWS services page.
- This is the page where you can actually begin using the AWS services.
- For the course we will use EC2 instance. Please click on it.



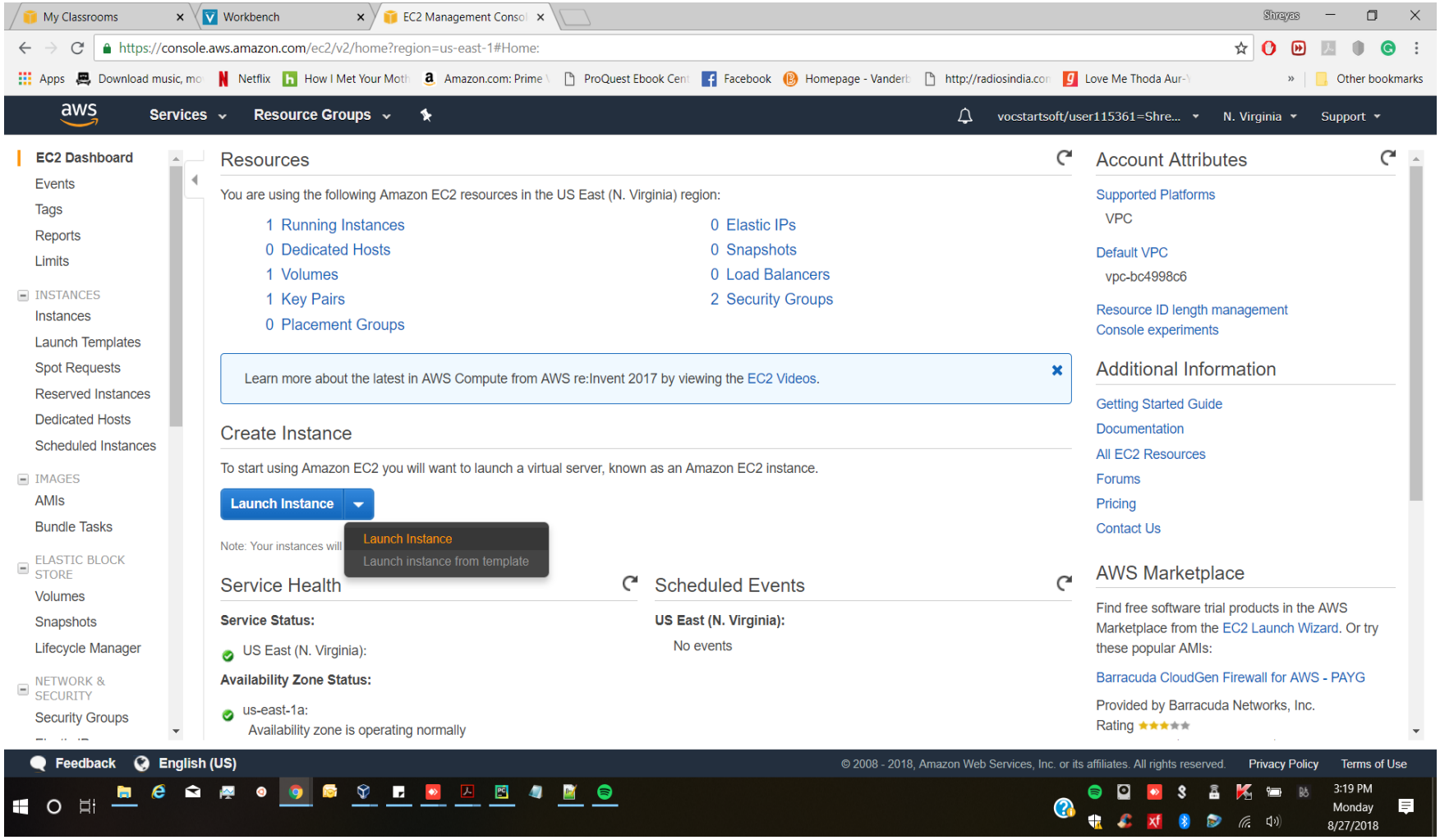
EC2 Dashboard

- Selecting "**EC2**" will lead you to the EC2 dashboard.
- You can see information about running instances, IP address's, etc.
- Once here, we can create our first instance



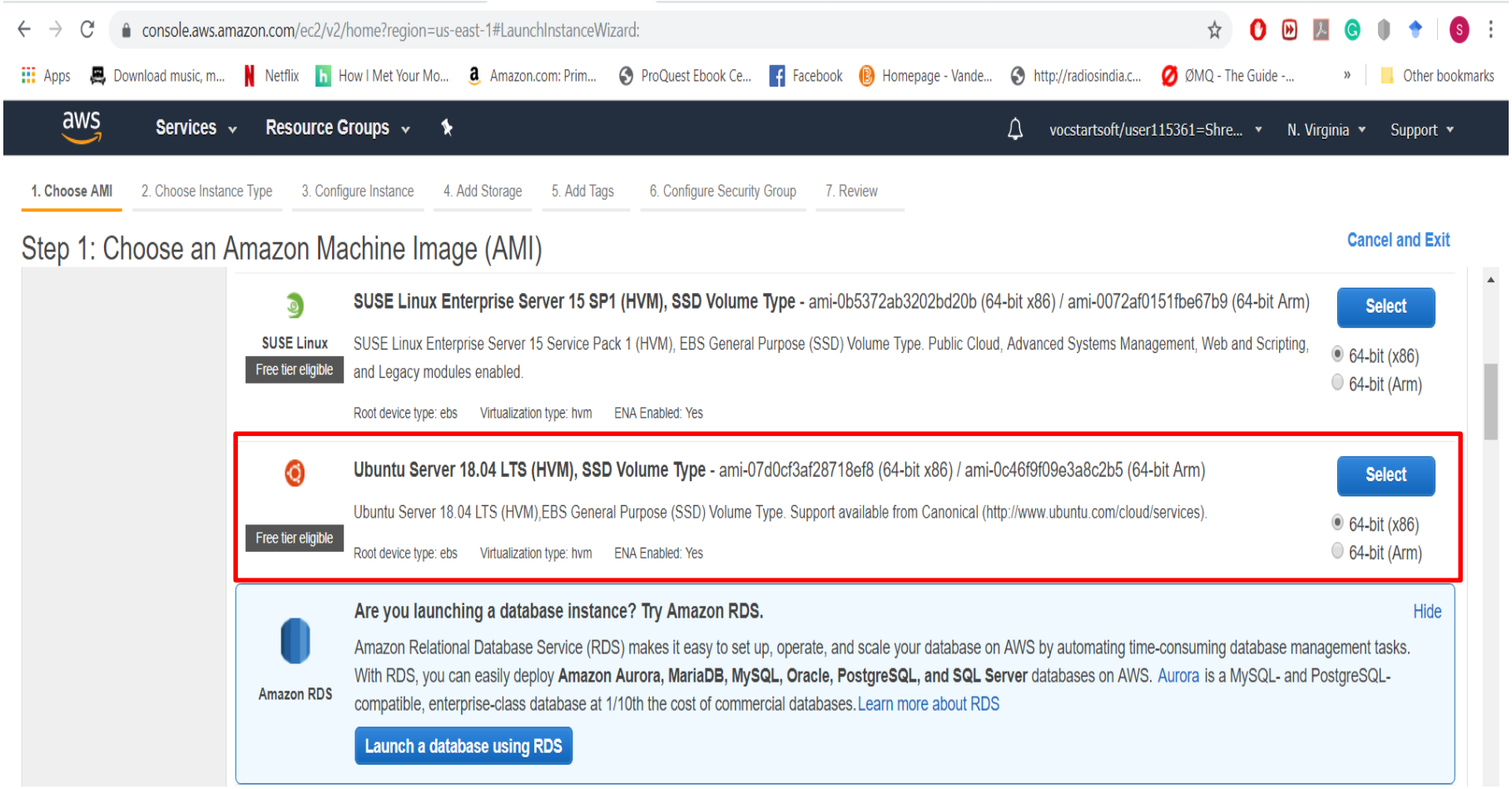
EC2 Dashboard

- Selecting "**EC2**" will lead you to the EC2 dashboard.
- Here click on "**Launch Instance**". (I already have one instance running, so it shows 1 running instance, if you are creating your first, then it will be 0)



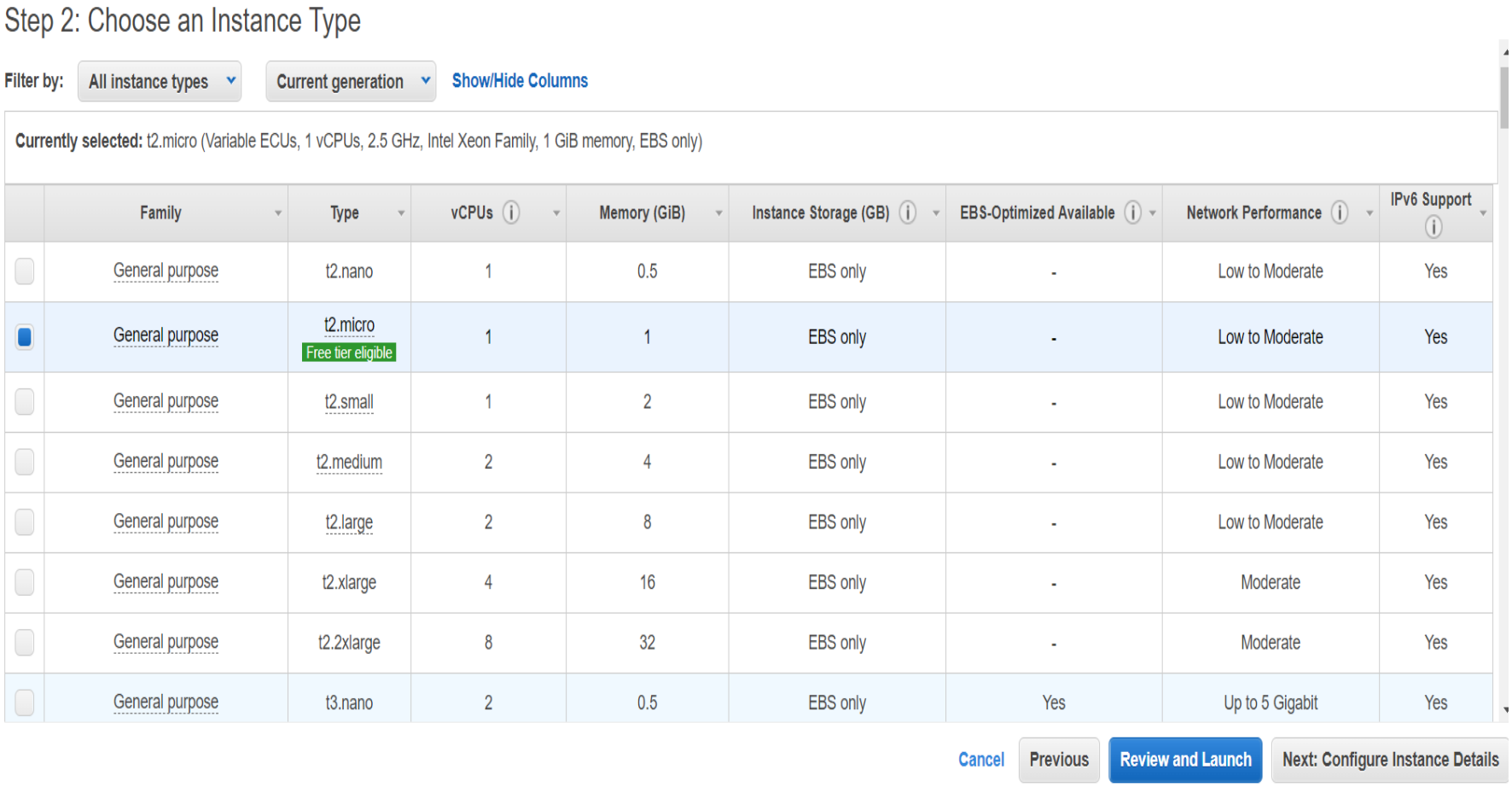
Choose your instance type

- First step is to choose the type of instance. This varies with your application.
- For the course you can select the "**free tier Ubuntu server 18.04**" instance.



Choose your instance type

- This shows all the available "**Ubuntu**" instance type.
- Here just select the default "**t2.micro**" instance. It is under free tier.
- Click on "**Next: Configure Instance Details**".



Step 2: Choose an Instance Type

Filter by: All instance types | Current generation | Show/Hide Columns

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

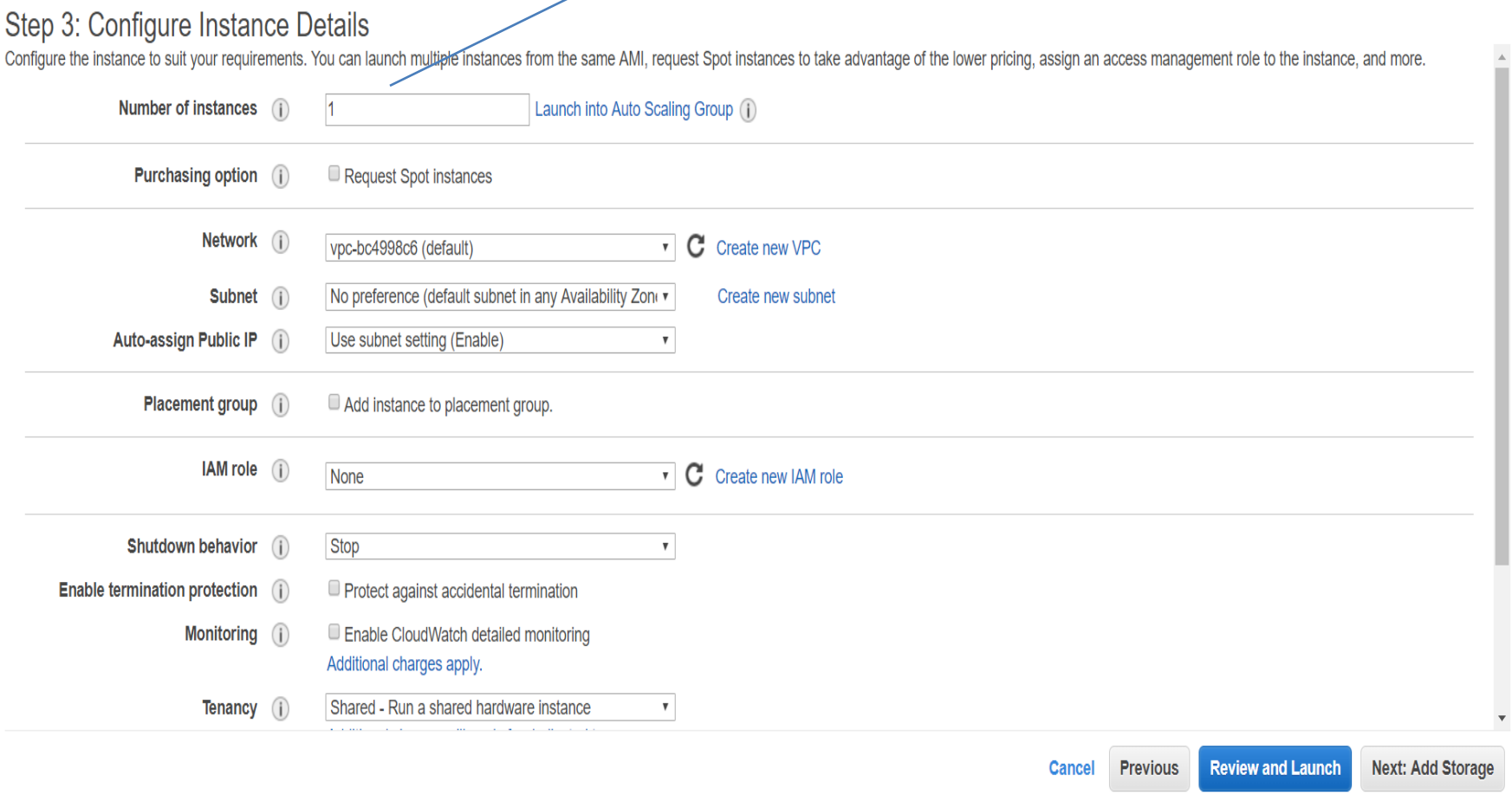
	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
☐	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
☑	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
☐	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
☐	General purpose	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel | Previous | Review and Launch | Next: Configure Instance Details

Configure Instance Details

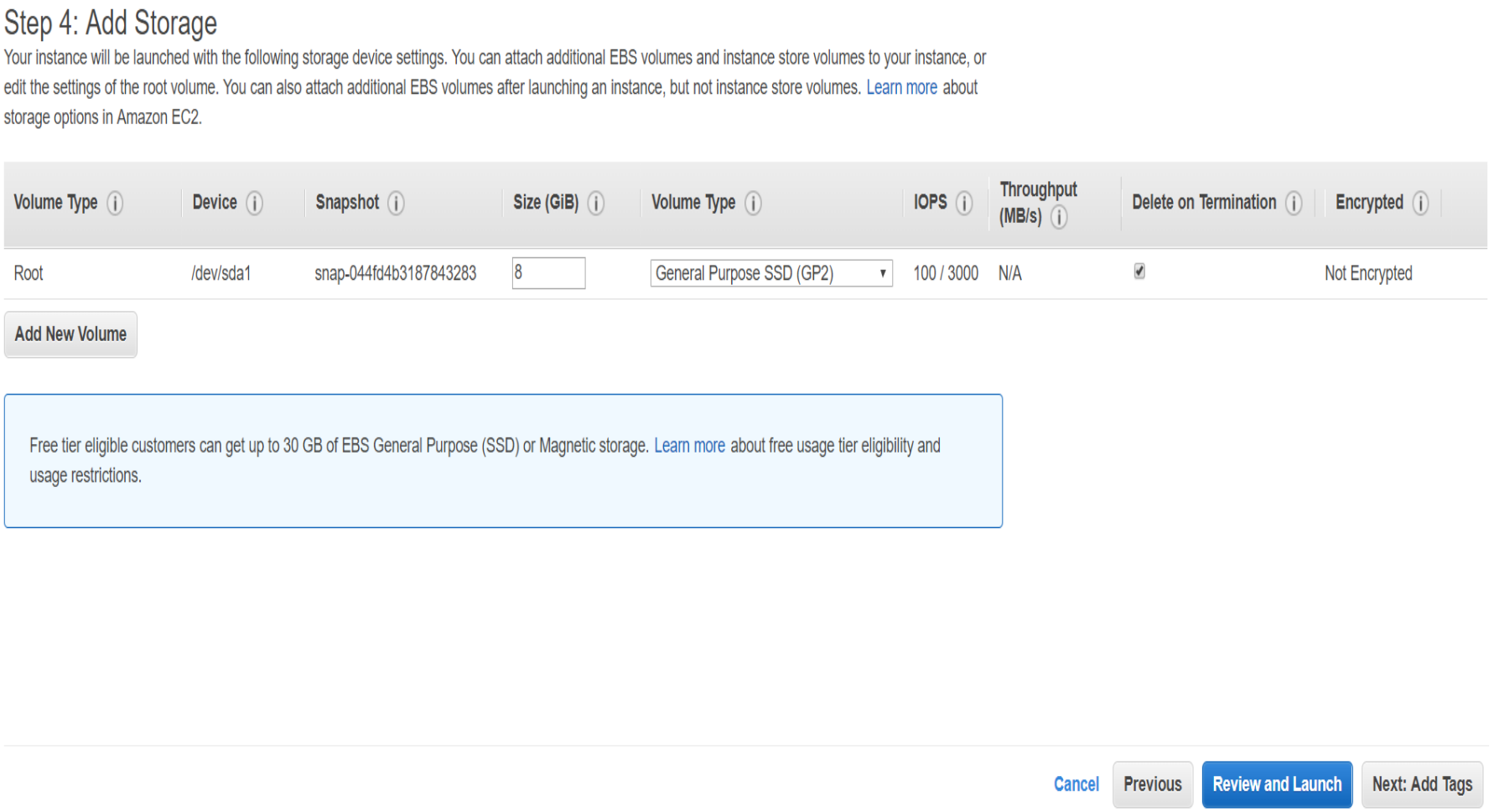
- Just leave this as it is.
- Click on "**Next: Add storage**"

Select the number of EC2 instances you want.



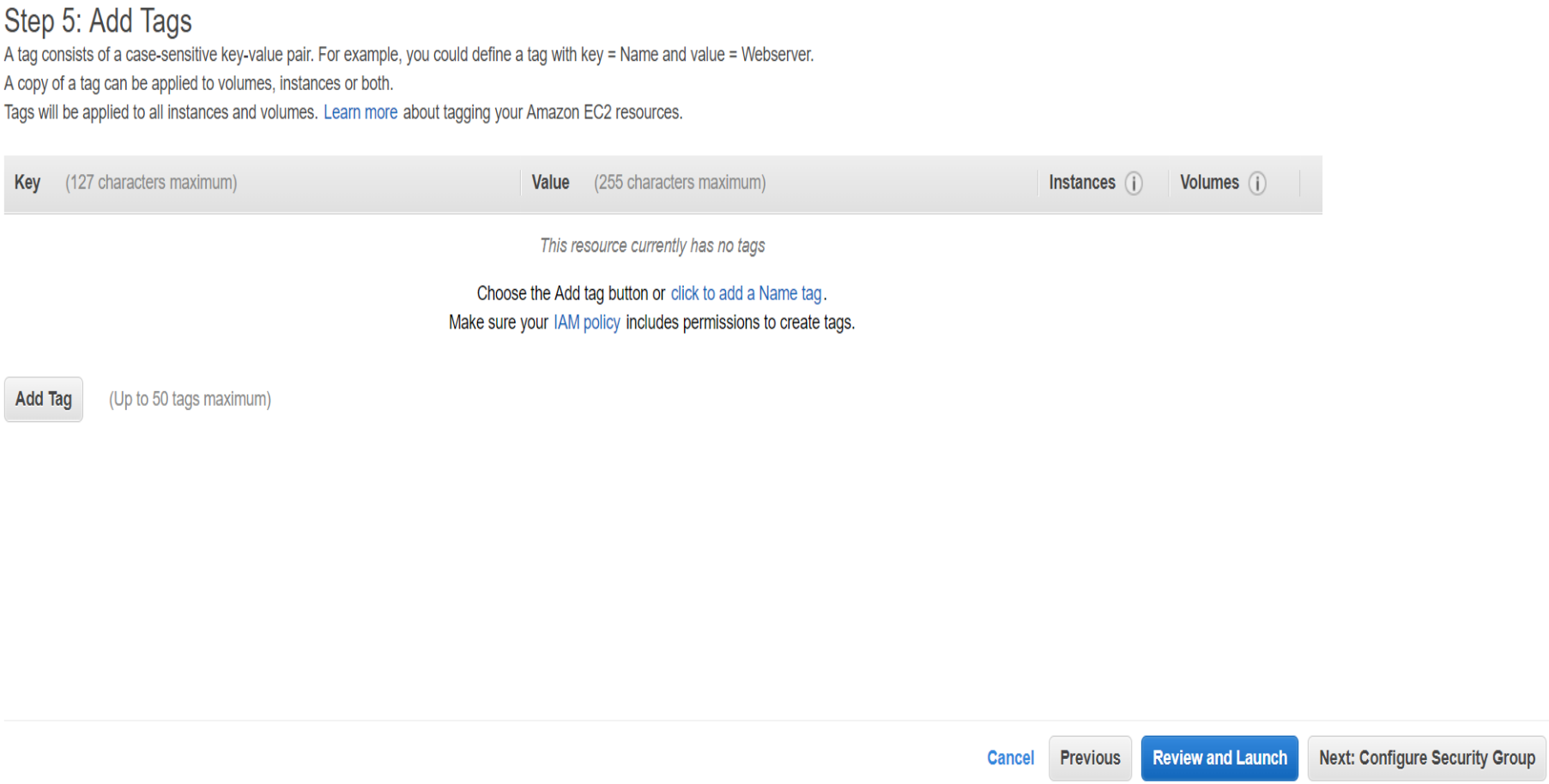
Add Storage

- Just leave this as it is. We can use the basic instance for our assignments
- Click on "**Next: Add Tags**"



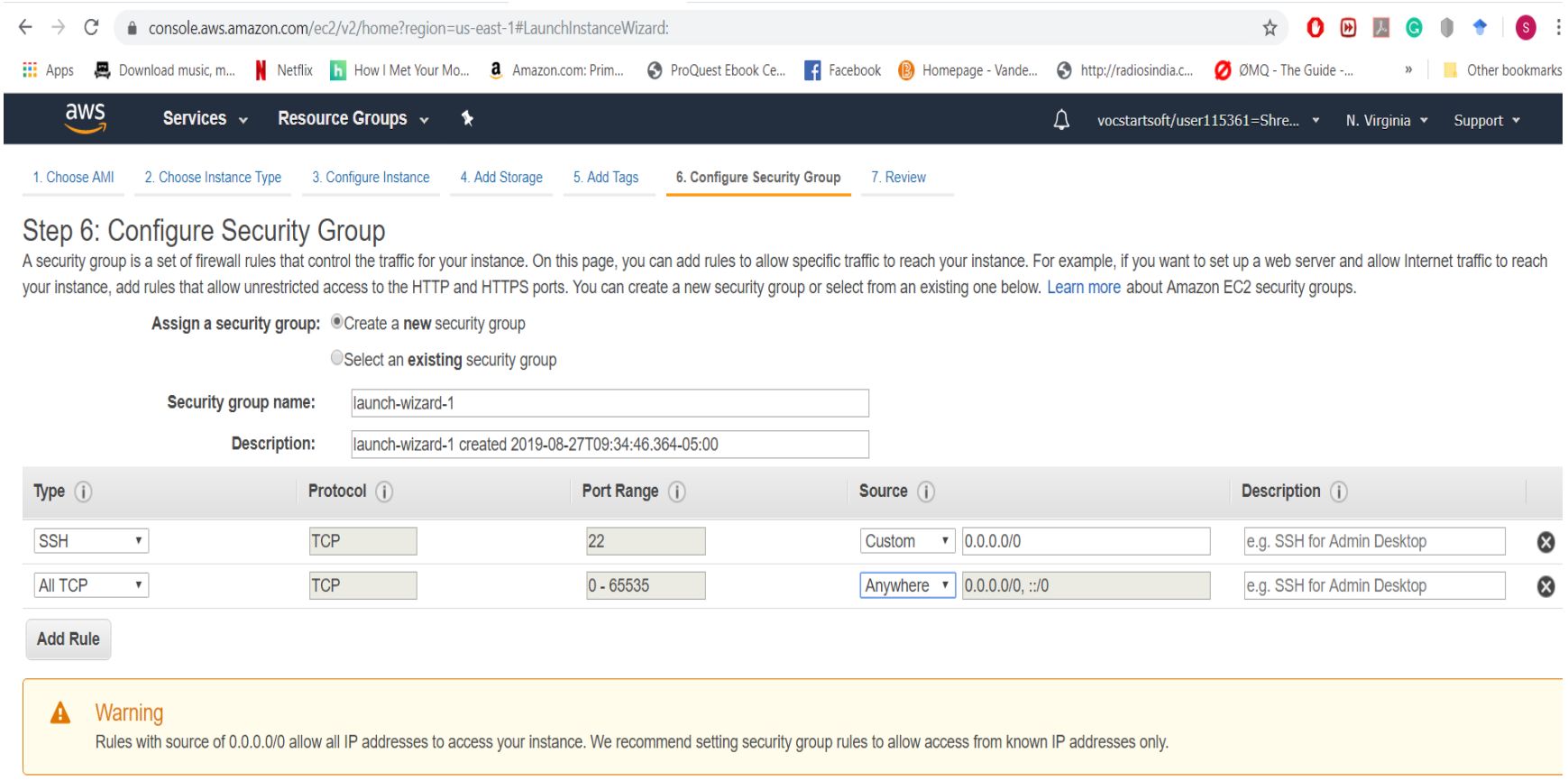
Add Tags

- Just leave this as it is.
- Click on "**Next: Configure Security Group**"



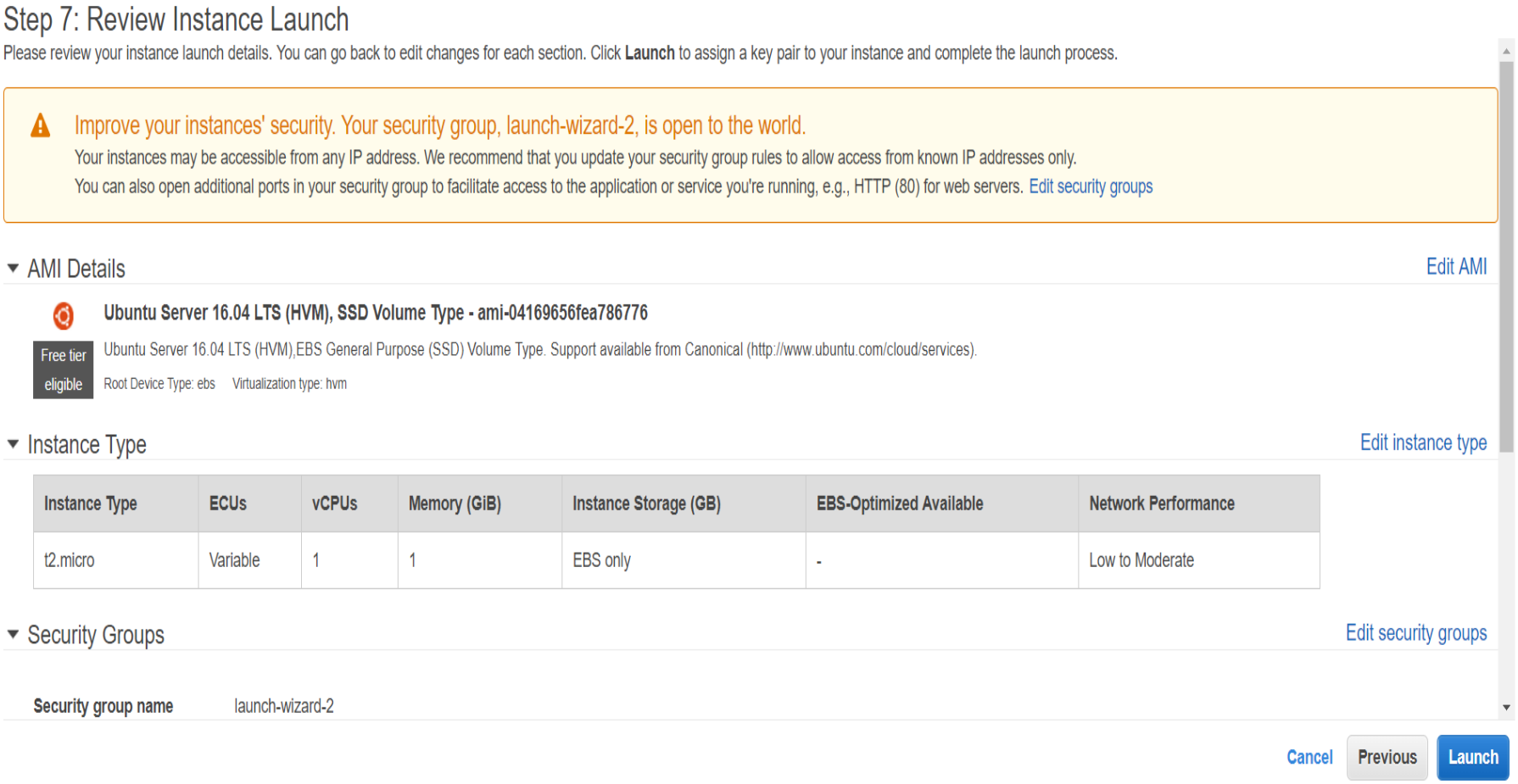
Configure Security Group

- Here you can add "**ALL TCP**" from your IP and any other address to be accessing the Instance. This will open up all the TCP ports.
- SSH TCP Port 22 for ssh access.
- For now you add these two to your security group.
- You can make changes later depending upon your application.
- Click on "**Next: Review and Launch**"



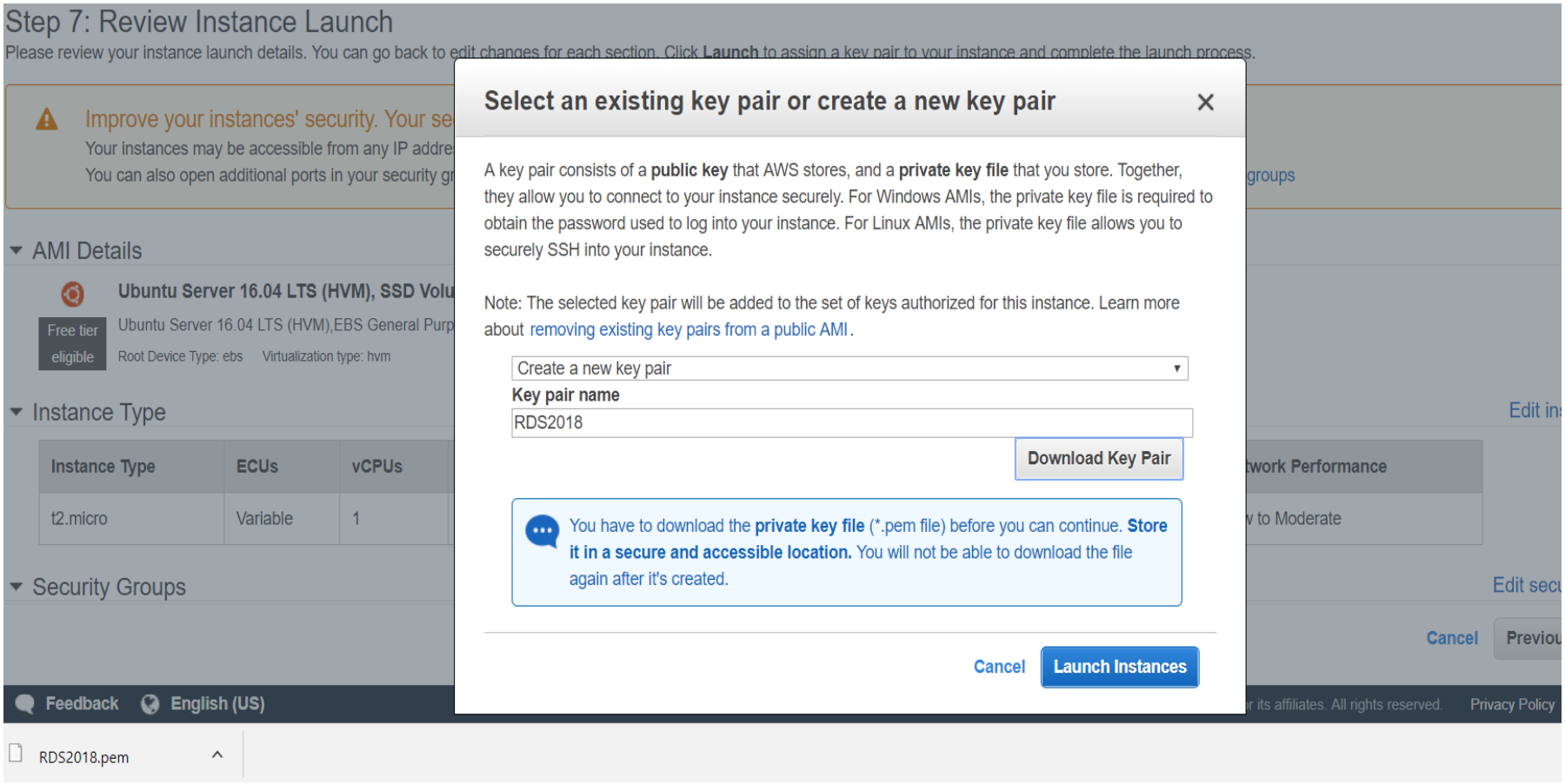
Review Instance Launch

- So after you have finalized your instance details, you can launch it
- After you click on “Review and Launch”, you will land into the page shown below.
- Now just “**Launch**” your instance.



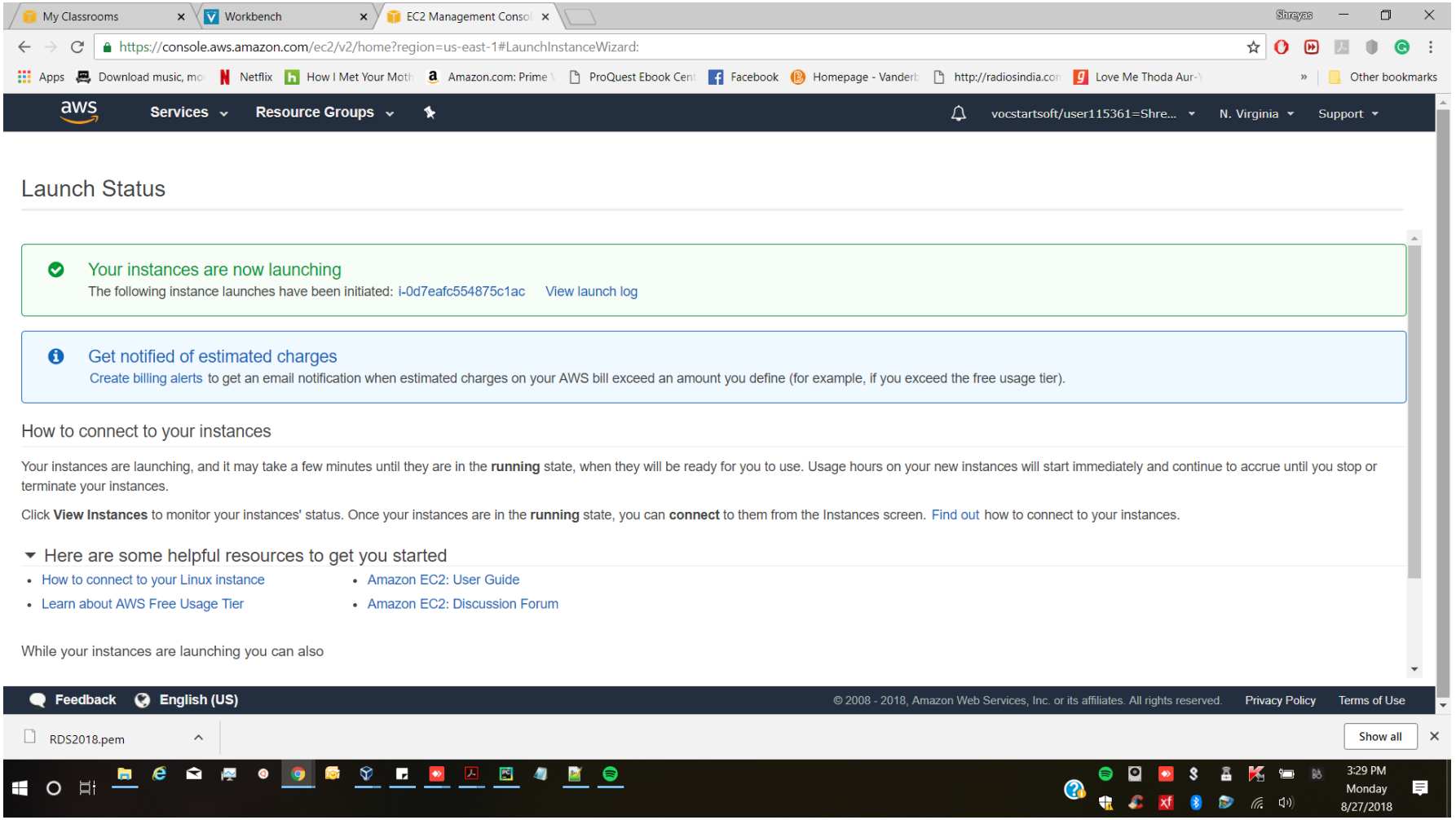
Creating a key pair

- Before you can launch your Instance, you need to create a key pair.
- Just name a key pair, I have named mine “RDS2018”
- Now **download your key pair** and save it somewhere. You will need it at a later time for login.
- You will use this key to login into any instance you create in the future.



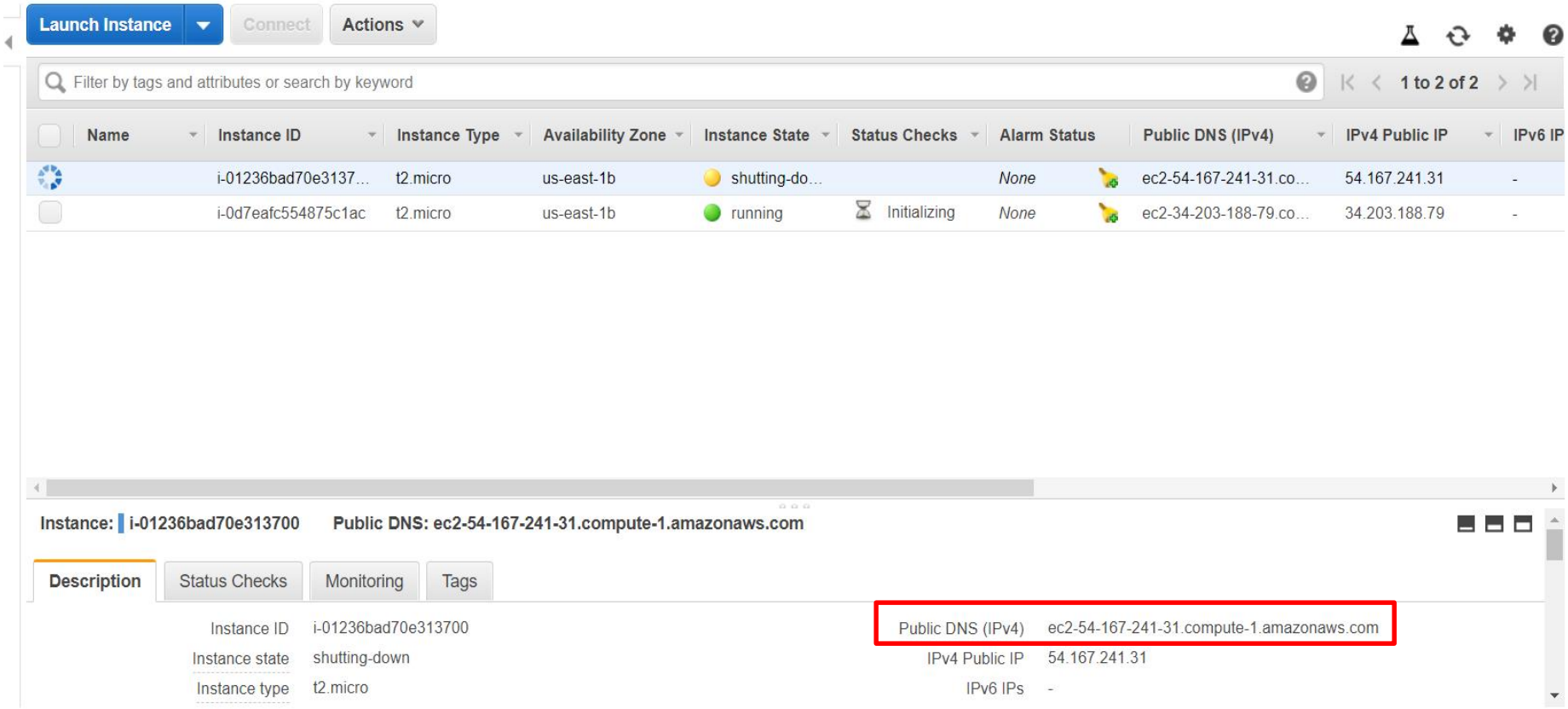
Launch Instance

- After you have created a key pair and saved it, launch your instance.
- On the bottom right you see "**View Instances**", select it.
- This will take you back to EC2 dashboard.



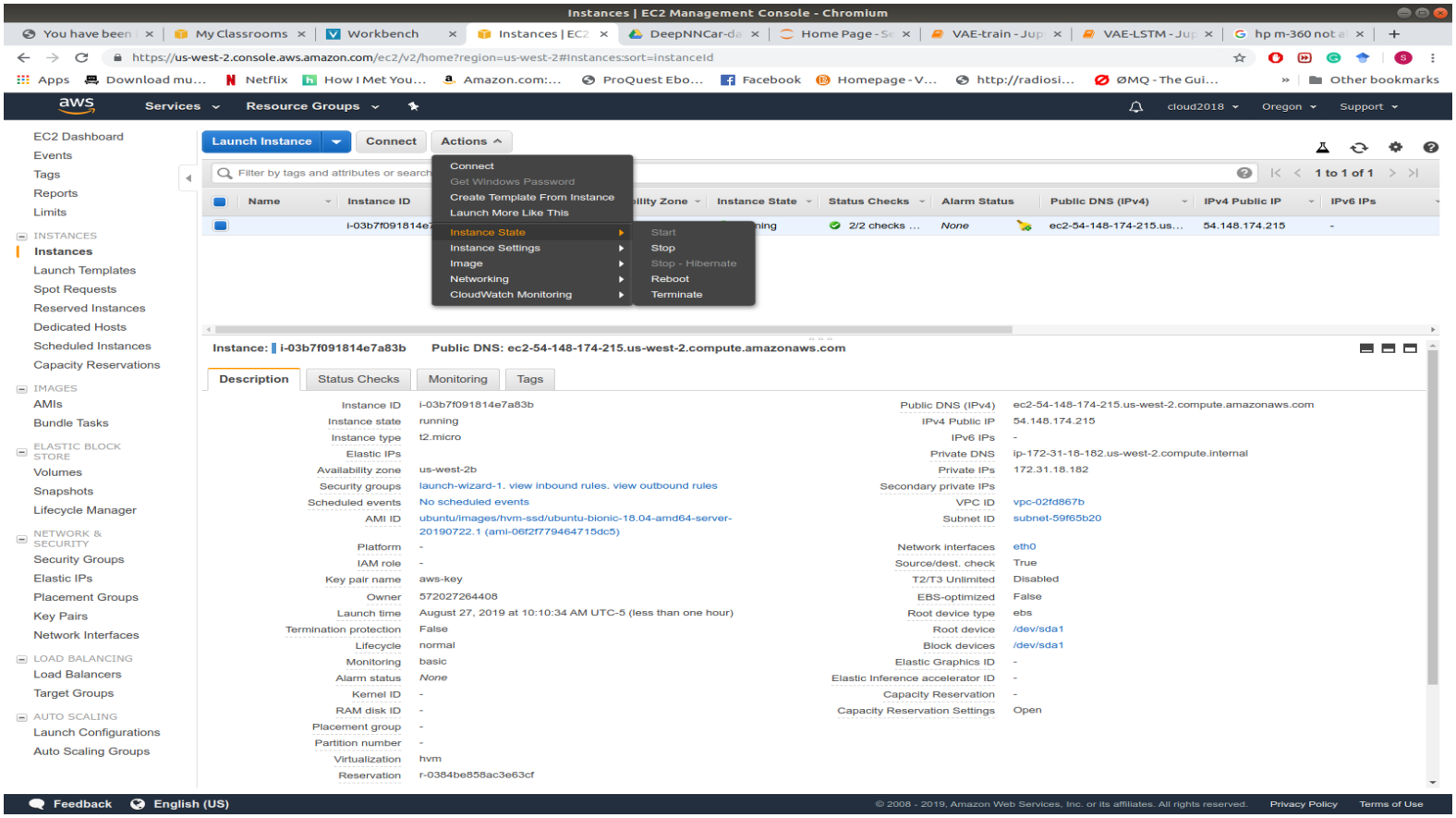
EC2 Dashboard

- You can see your instances on the dashboard.
- Once you have launched your instance, it may take some time for initializing before you can use it.
- **Public DNS** is important, as you need it along with your key pair to login into your instance.



Stopping EC2 Instance

- Always remember to stop your aws instance after work.
- To start or stop EC2 instance go to: Actions → Instance State → Stop



SSH for connecting to EC2 instance (Ubuntu)

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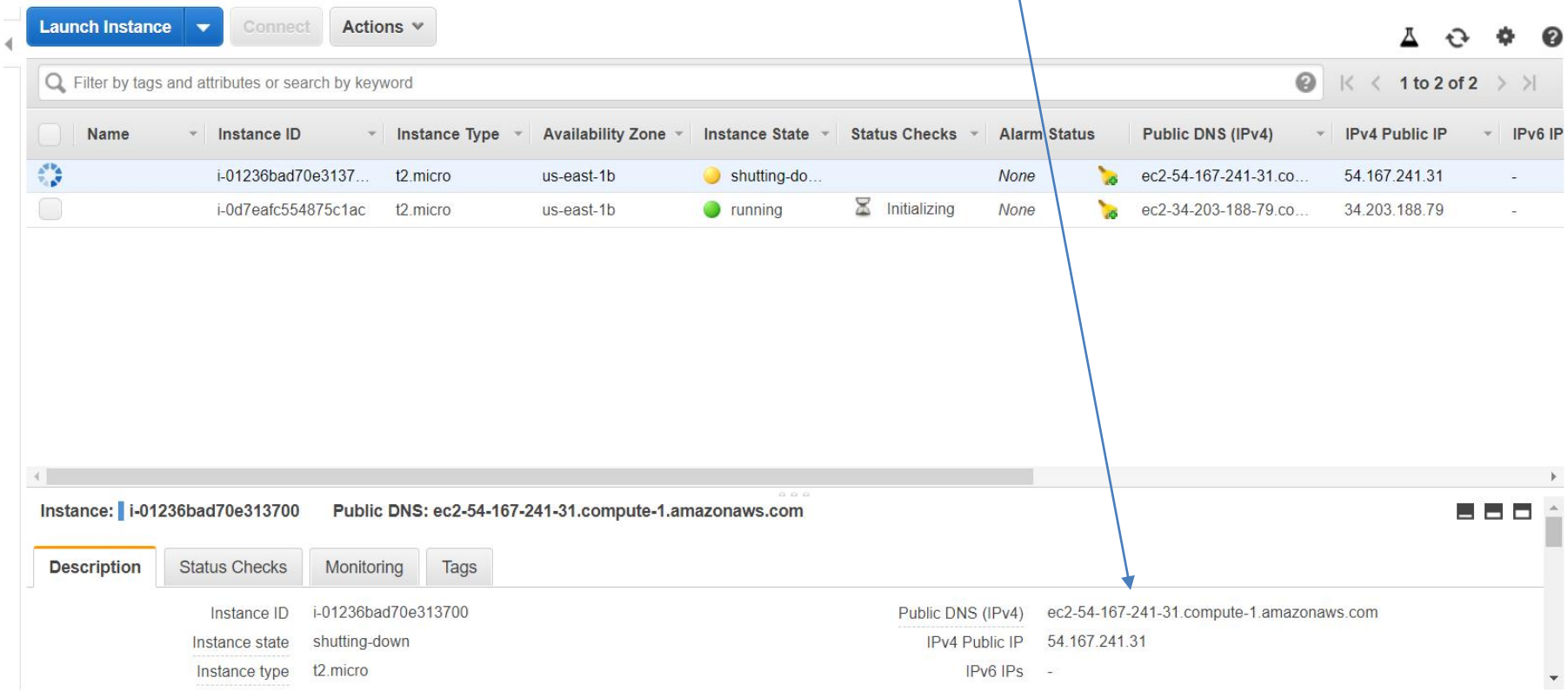
SSH to EC2 instance

- Open a terminal on your Ubuntu Desktop/VM.
- Type: **ssh –i aws-key.pem ubuntu@ec2-18-236-163-10.us-west-2.compute.amazonaws.com**
- This will get you access to the EC2 instance.



PUTTY for connecting to EC2 instance (Windows)

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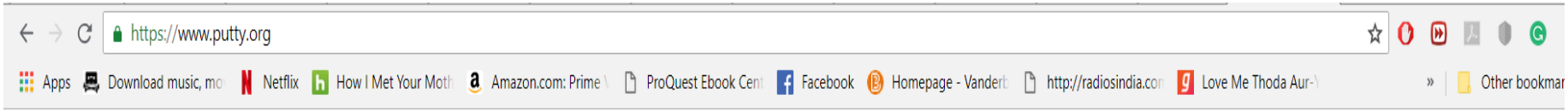
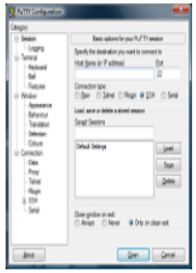
Download PUTTY

- Putty is used to connect to your EC2 instance.
- Download it from https://www.putty.org/





Download PuTTY

PuTTY is an SSH and telnet client, developed originally by Simon Tatham for the Windows platform. PuTTY is open source software that is available with source code and is developed and supported by a group of volunteers.

You can download PuTTY here.

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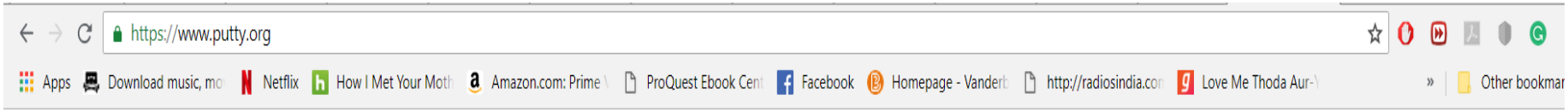

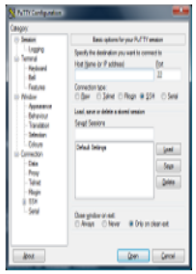

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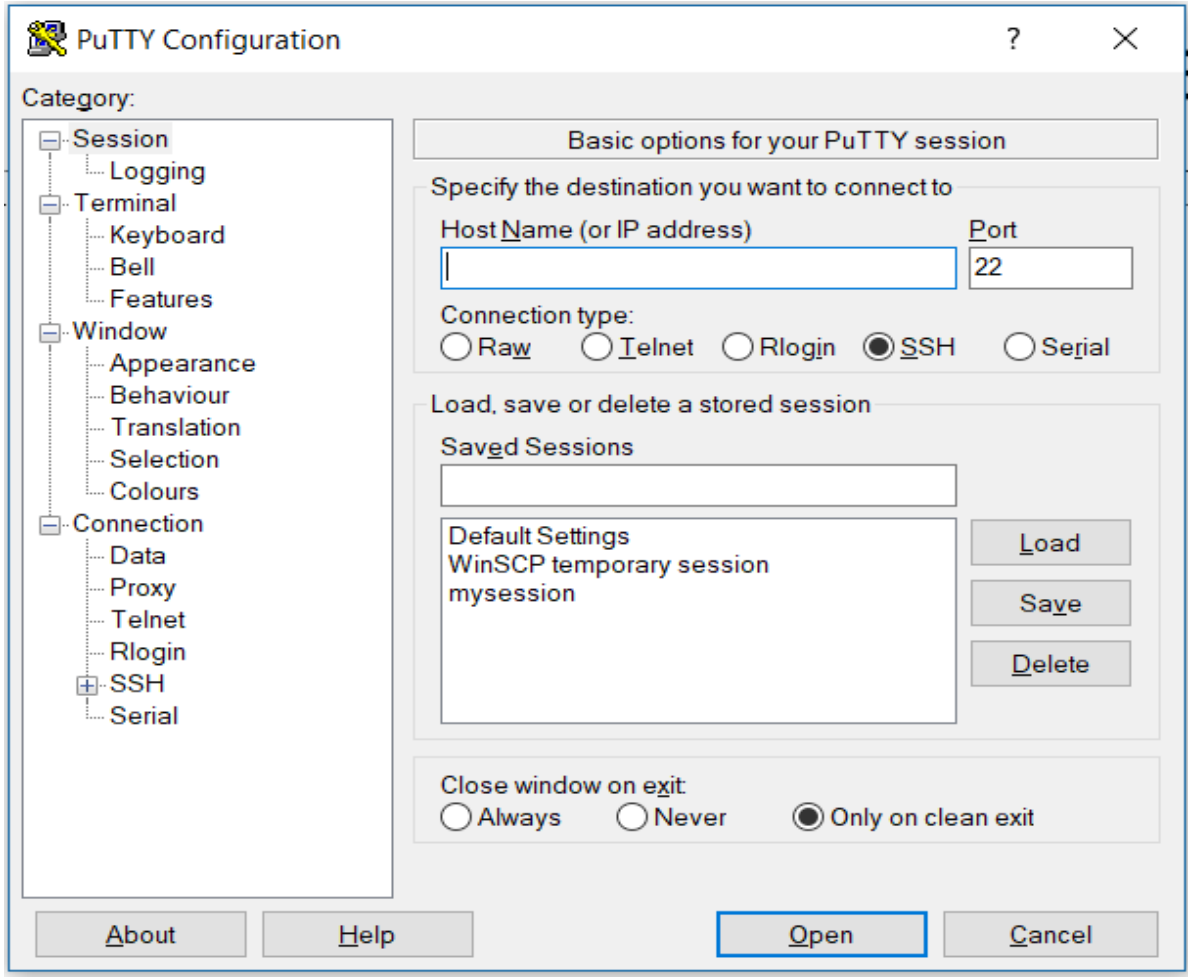
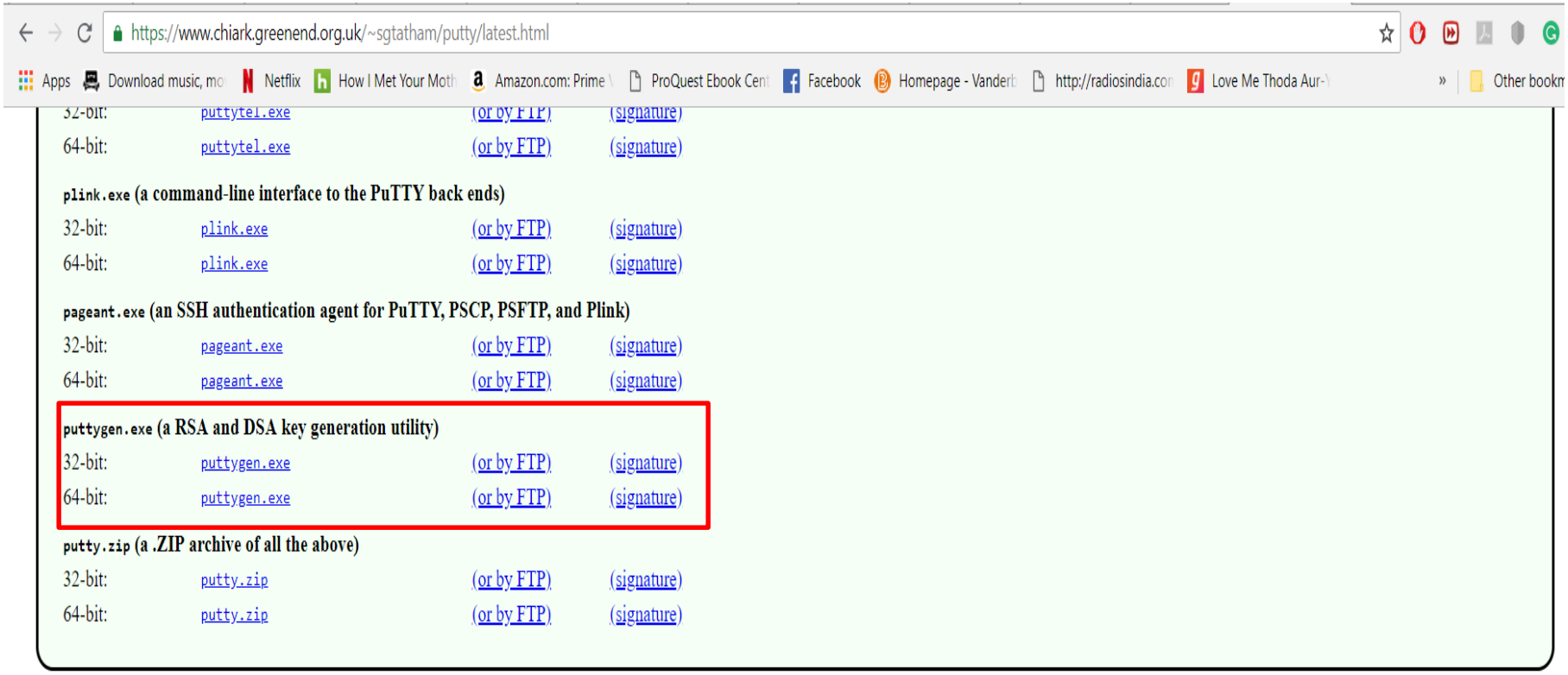
PuTTY

- Once you have downloaded PuTTY successfully, it looks like this.



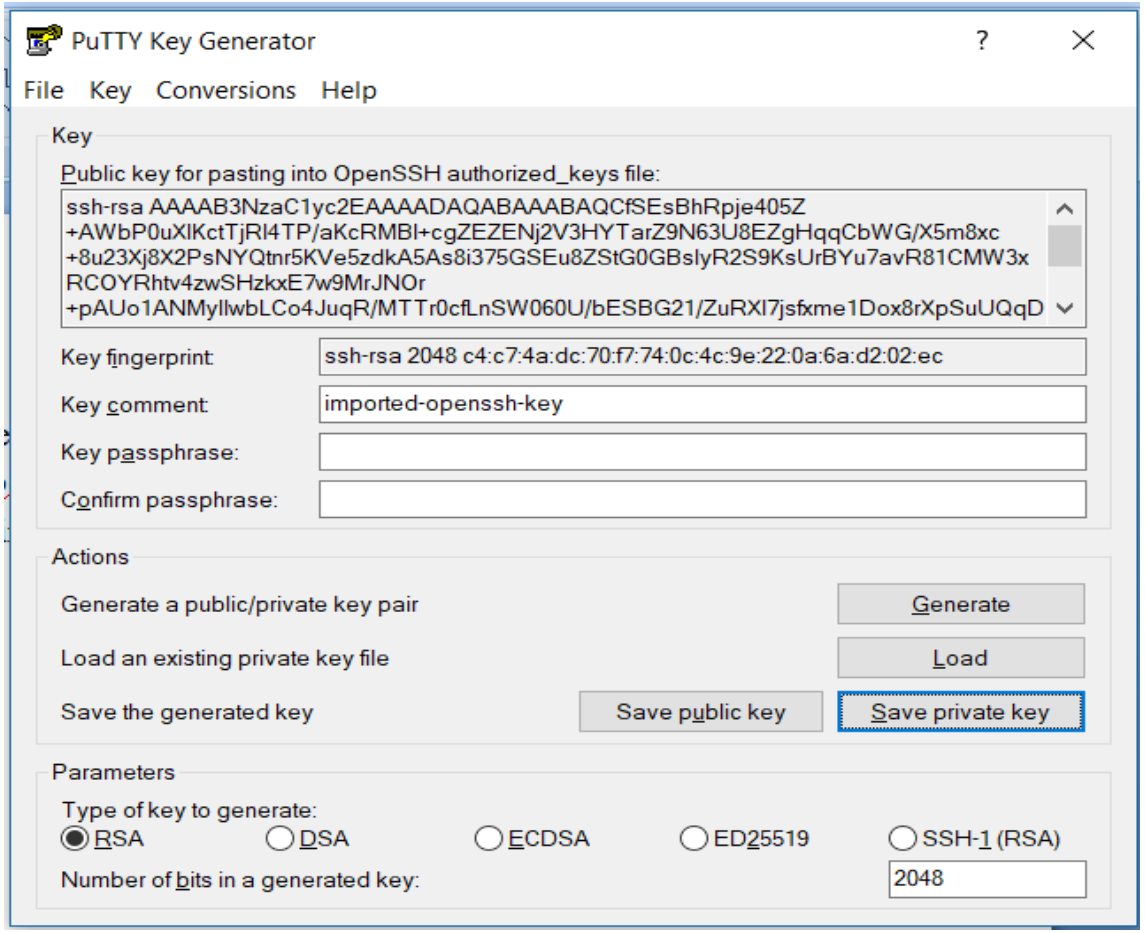
Download Puttygen for private key

- The key which was generated by aws (RDS2018.pem) will not be recognized by putty.
- You need to convert this into a private key for logging into the instance.
- For converting the default public key to a private key, you need to use a tool called **puttygen**.
- Download from https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html



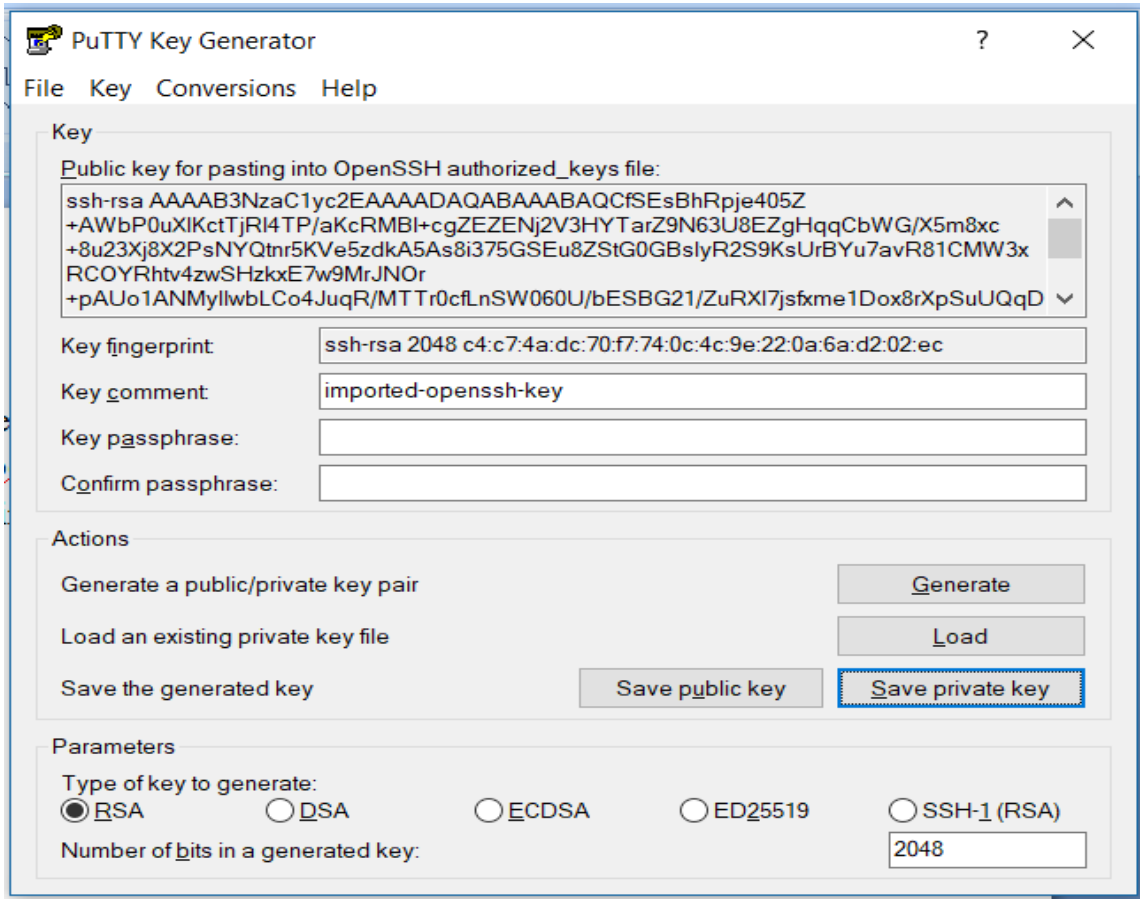
Generating Private key

- After downloading Puttygen, we can convert the default key to a private key.
- The default key has extension .pem and we will convert it into .ppk
- Open Puttygen, it looks like the image shown below.



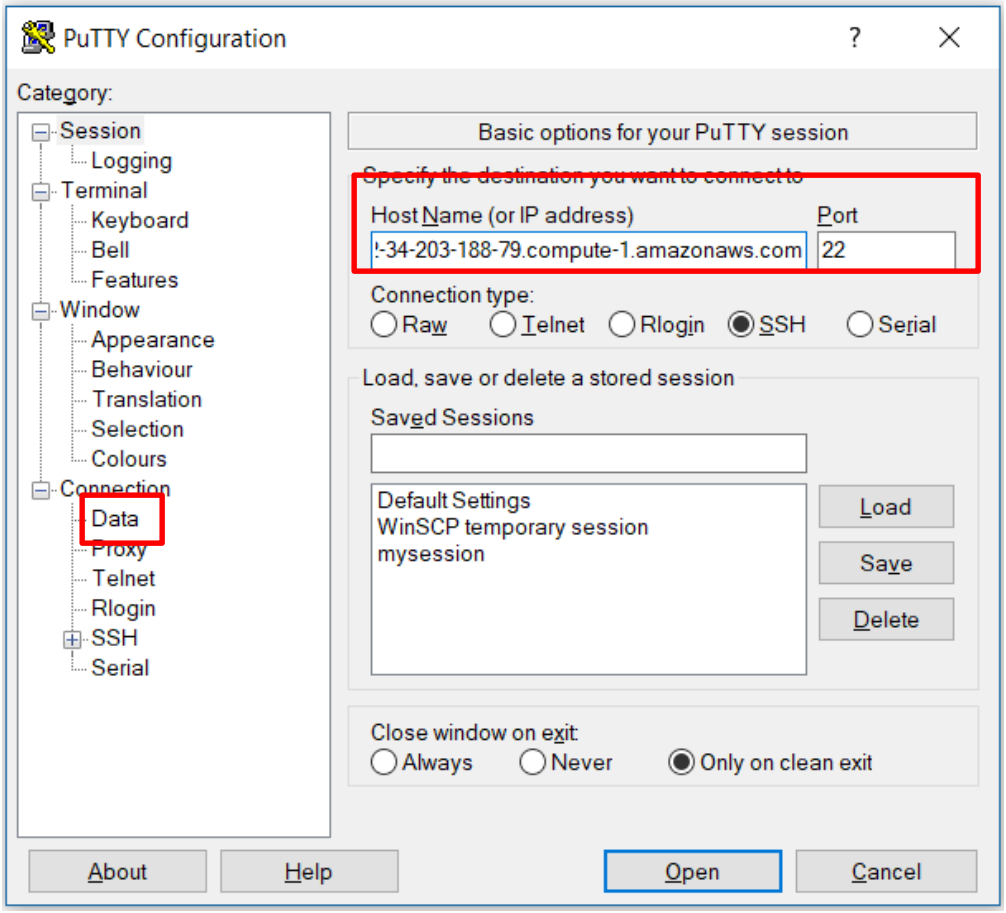
Generating Private key

- Here "**Load**" the .pem file (RDS2018.pem)
- Then select "**Save private key**", this will pop up a warning as you do not have a key phrase set up.
- I am not setting it up, you can set it up if you want. It is another wrapper of security.
- So you can save the .pem (RDS2018.pem) file. This file will be used for connecting to the EC2 instance.



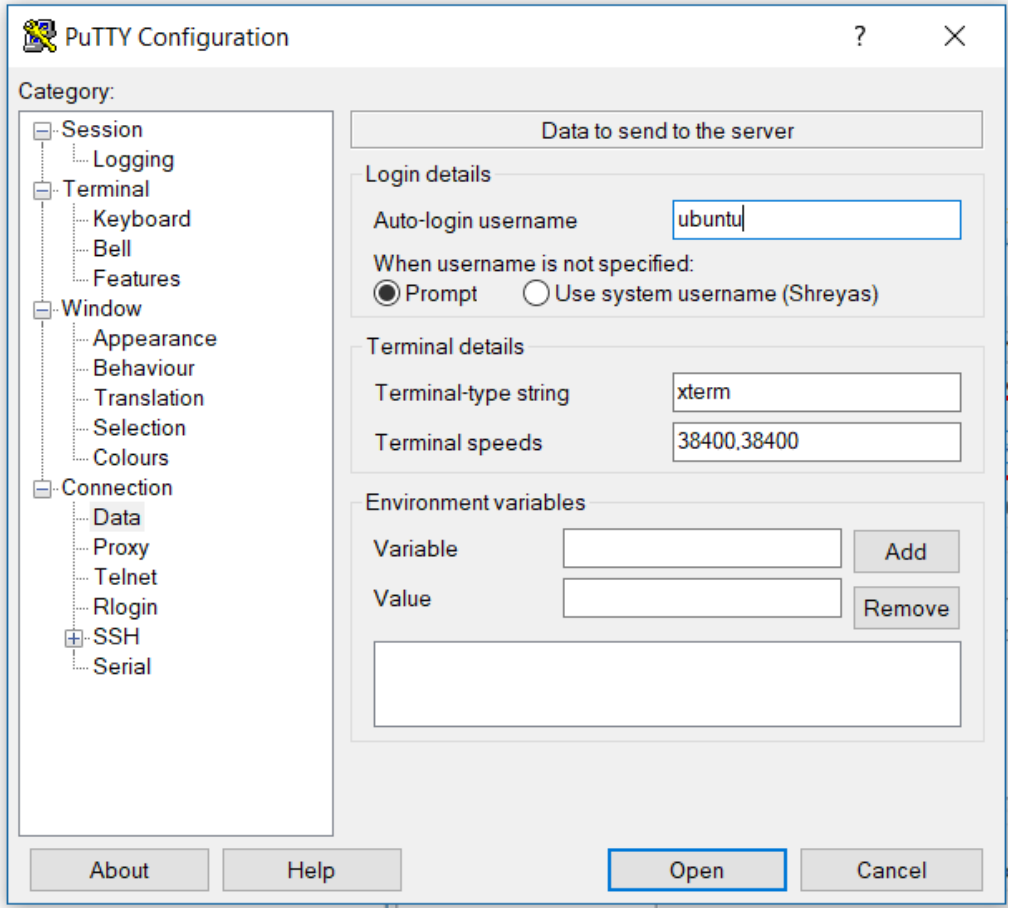
Logging into Instance

- In the Host Name block copy the Instance's Public DNS.
- Leave the Port number as it is.
- After entering the IP, now select data at the bottom left.



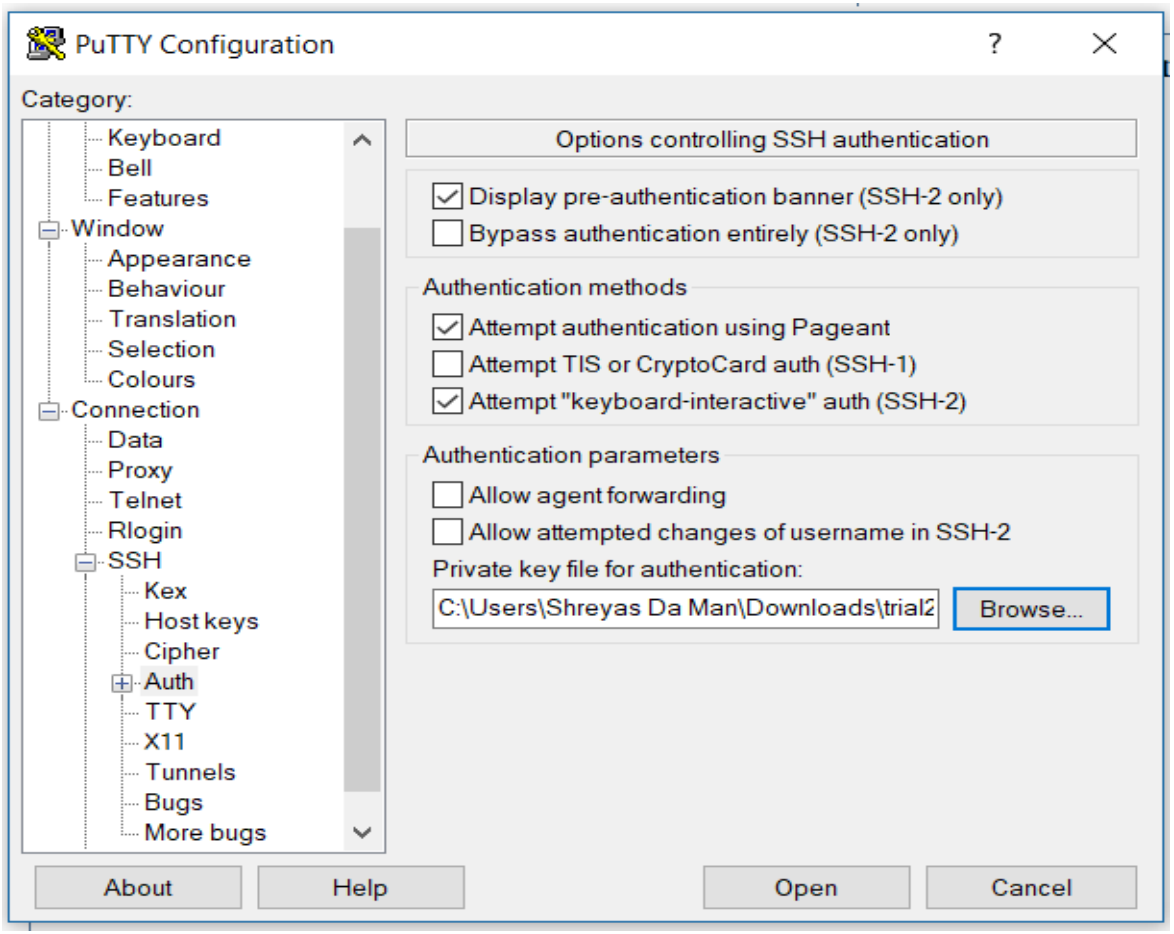
Logging into Instance

- After entering the host name, you will have to enter the user name.
- By default ubuntu instance has a username of "**ubuntu**".
- Enter this in the user name block.



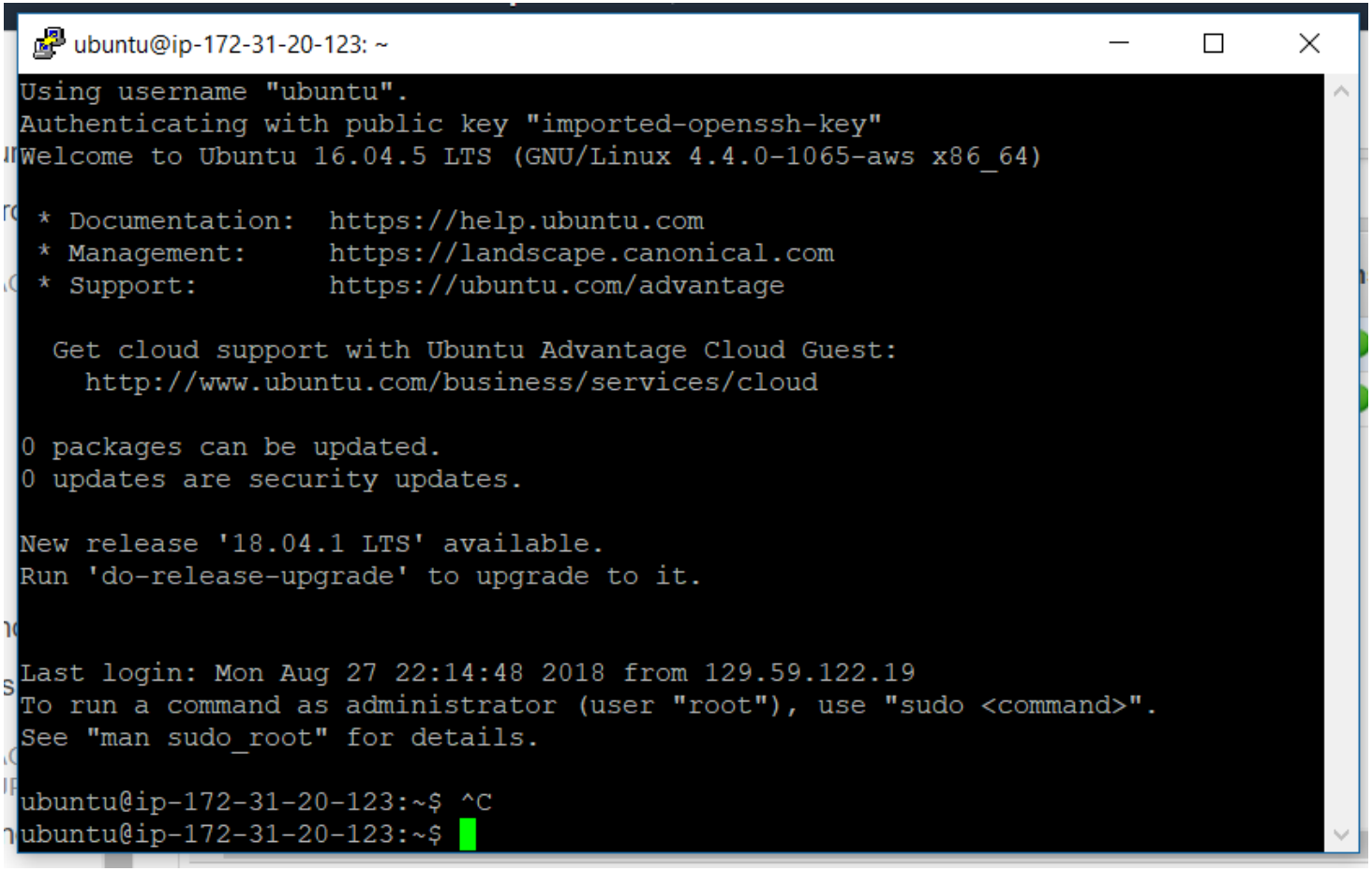
Getting back to Putty

- The .ppk key generated from puttygen will be used for connecting to your instance.
- Now expand on **SSH (click on +),** which is on the bottom left.
- From there select "**Auth**", here you need to add your .ppk file. Browse it.
- After adding the private key, click on "**open**"



Your EC2 instance

- If you have followed these slides correctly, then you will land into your EC2 instance as shown below.
- Now you just use it as any ubuntu image to do your assignments.



References

- Getting started tutorial from Amazon
  - https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2_GetStarted.html
- Connecting to EC2 instance using SSH
  - https://medium.com/@GalarnykMichael/aws-ec2-part-2-ssh-into-ec2-instance-c7879d47b6b2
  - Copying files between local machine and ec2 instance https://forums.aws.amazon.com/thread.jspa?threadID=64703
- Connecting to EC2 instance through PUTTY
  - https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html?icmpid=docs_ec2_console
  - https://www.youtube.com/watch?v=bi7ow5NGC-U
- Copying files from your laptop to EC2 instance
  - https://angus.readthedocs.io/en/2014/amazon/transfer-files-between-instance.html