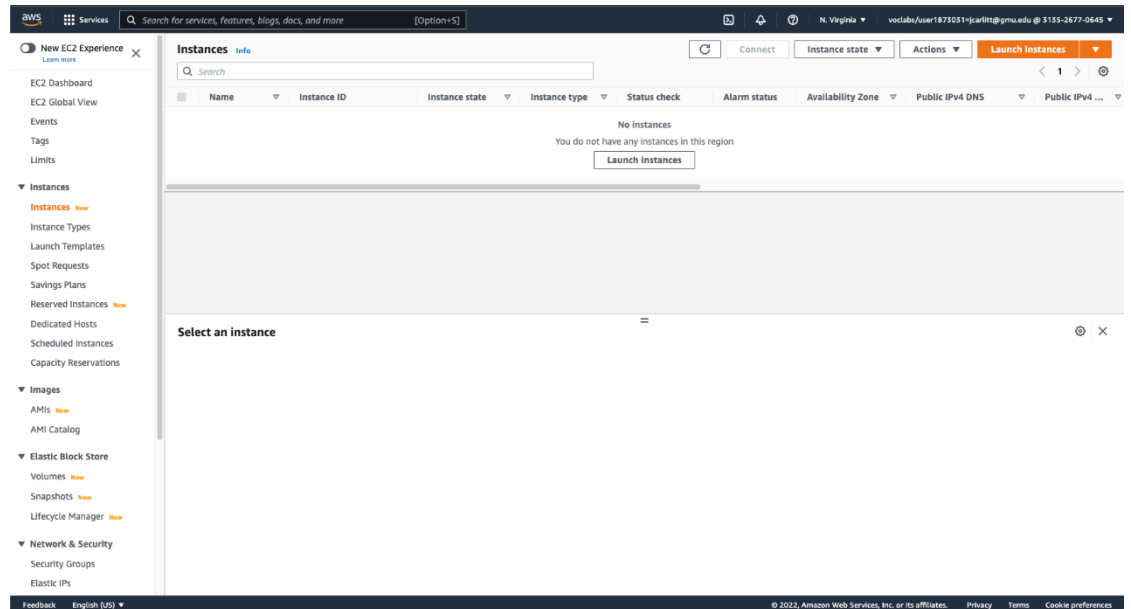


Reference Guide

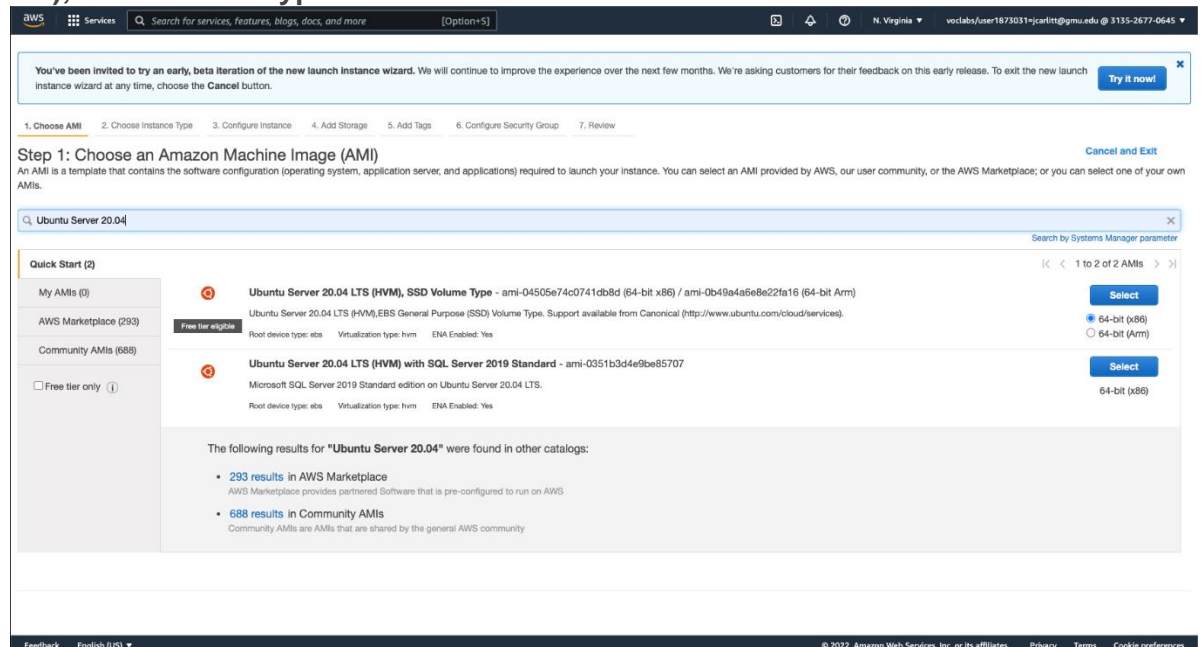
Creating EC2 Instance in AWS Academy Learner Lab

1. Log into the AWS Learner application
2. Traverse to the EC2 Instance page.



a.

3. Select Launch Instances
4. Search for the Ubuntu Server 20.24 Instance and select the first one: **Ubuntu Server 20.04 LTS (HVM), SSD Volume Type**



a.

5. Select the t3.large for example, and click "Next: Configure Instance Details"

Step 2: Choose an Instance Type

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t3.large (- ECU, 2 vCPUs, 2.5 GHz, ~ 8 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.micro	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes
<input checked="" type="checkbox"/>	t3	t3.large	2	8	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.xlarge	4	16	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.2xlarge	8	32	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3a	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

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

a.

6. Now edit the number of instances (in this example we are doing 2), and change the subnet to your region (us-east-1), and select the IAM role to be LabInstanceProfile. Then click “Next: Add Storage”

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances: 2 Launch into Auto Scaling Group

You may want to consider launching these instances into an Auto Scaling Group to help you maintain application availability and for easy scaling in the future. Learn how Auto Scaling can help your application stay healthy and cost effective.

Purchasing option: ☐ Request Spot instances

Network: vpc-06e1acc6da26c8af4 (default) Create new VPC

Subnet: subnet-0ad3bfa7723ebb90e | Default in us-east-1a Create new subnet

Auto-assign Public IP: Use subnet setting (Enable)

Hostname type: Use subnet setting (IP name)

DNS Hostname: ☒ Enable IP name (IPv4 (A record)) DNS requests

☒ Enable resource-based IPv4 (A record) DNS requests

☐ Enable resource-based IPv6 (AAAA record) DNS requests

Placement group: ☐ Add instance to placement group

Capacity Reservation: Open

Domain join directory: No directory Create new directory

IAM role: LabInstanceProfile Create new IAM role

CPU options: ☐ Specify CPU options

Cancel Previous **Review and Launch** Next: Add Storage

a.

7. Within Add Storage, change the size to 16 since we have money on this account. Click “Next: Add Tags”

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-017a6eae5d90437c4	16	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GiB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

▼ **Shared file systems**

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

[Add file system](#)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

a.

8. Within Add Tags, click the add tag button. Once you do that, you should see this screen. Once entered, click "Next: Configure Security Group"

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)	Value (256 characters maximum)	Instances	Volumes	Network Interfaces
name	HW2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

a.

9. Click, select create a new security group and allow for traffic anywhere on ports 8080, 80, 443, and 22. Once complete, click "Review and Launch" button.

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:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Anywhere 0.0.0.0:::0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Anywhere 0.0.0.0:::0	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Anywhere 0.0.0.0:::0	e.g. SSH for Admin Desktop
Custom TCP I	TCP	8080	Anywhere 0.0.0.0:::0	e.g. SSH for Admin Desktop

[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.

[Cancel](#) [Previous](#) [Review and Launch](#)

a.

10. Review the configurations and click launch.

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.

Warning Your instance configuration is not eligible for the free usage tier
To launch an instance that is eligible for the free usage tier, check your AMI selection, instance type, configuration options, or storage devices. [Learn more about: free usage tier eligibility and usage restrictions.](#)

[Don't show me this again](#)

AMI Details [Edit AMI](#)

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-04505e74c0741db8d
Ubuntu Server 20.04 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

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance
t3.large	-	2	8	EBS only	Yes	Up to 5 Gigabit

Security Groups [Edit security groups](#)

Security Group ID	Name	Description
sg-0bb031fc3473c5792	default	default VPC security group

All selected security groups inbound rules

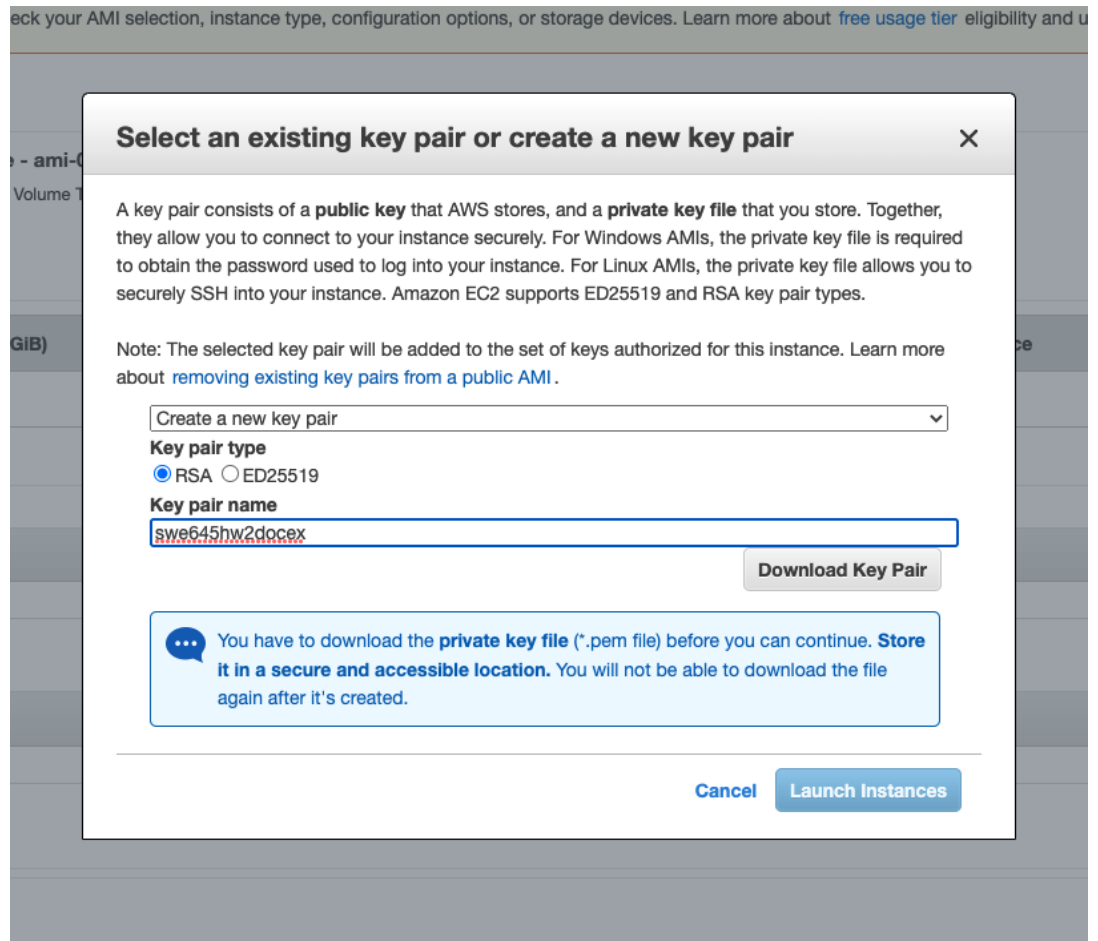
Type	Protocol	Port Range	Source	Description
All traffic	All	All	sg-0bb031fc3473c5792 (default)	

Instance Details [Edit instance details](#)

[Cancel](#) [Previous](#) [Launch](#)

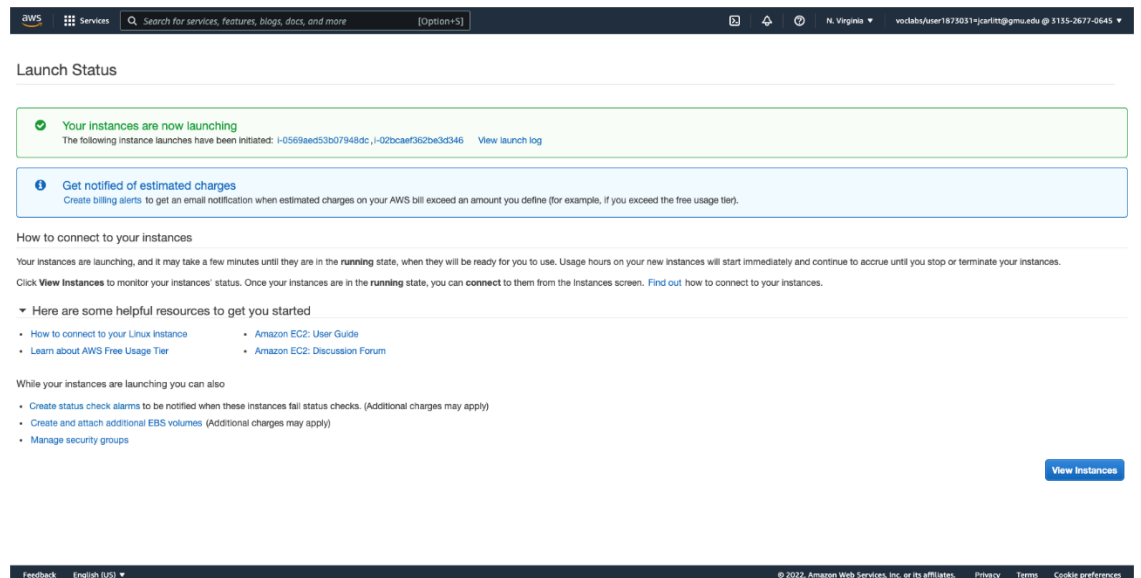
a.

11. You'll be brought to a popup that asks you to select the key pair. If you do not have one already, select the create option and **download the key pair .pem file (Make sure you keep this because you'll need it for future steps)**. Then click launch instances



a.

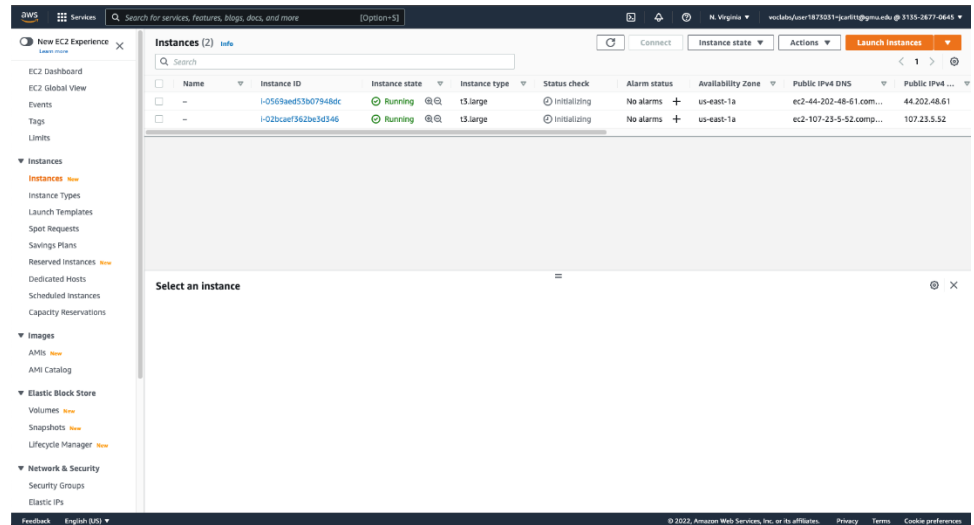
12. You'll be brought to this page once you have clicked launch instances. You can click view instances to view.



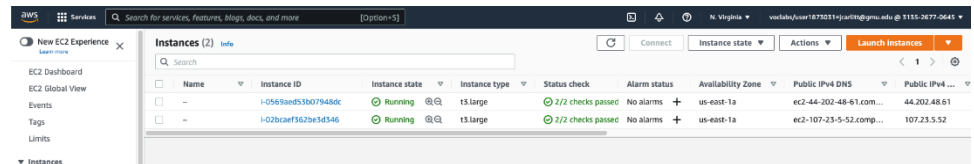
a.

13. It may take a few minutes for the various instances to be fully deployed and ready. But once they are, the Status check will be green.

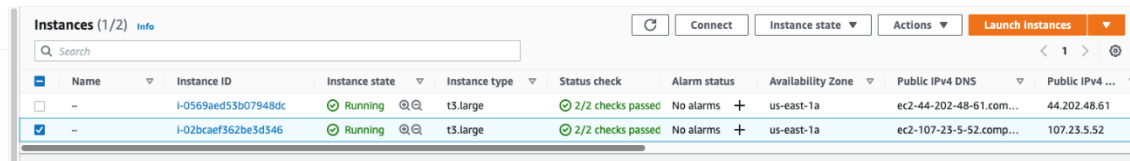
a. Unready view where they are still initializing.



- i.
- b. Ready state



- i.
- 14. Now we can connect to instance1. Select the instance1 and then click connect.



- i.
- b. You will be brought to this page upon clicking connect.

aws Services Search for services, features, blogs, docs, and more [Option+S]

EC2 > Instances > i-02bcaef362be3d346 > Connect to Instance

Connect to instance [Info](#)

Connect to your instance i-02bcaef362be3d346 using any of these options

EC2 Instance Connect | Session Manager | SSH client | EC2 Serial Console

Instance ID
i-02bcaef362be3d346

Public IP address
107.23.5.52

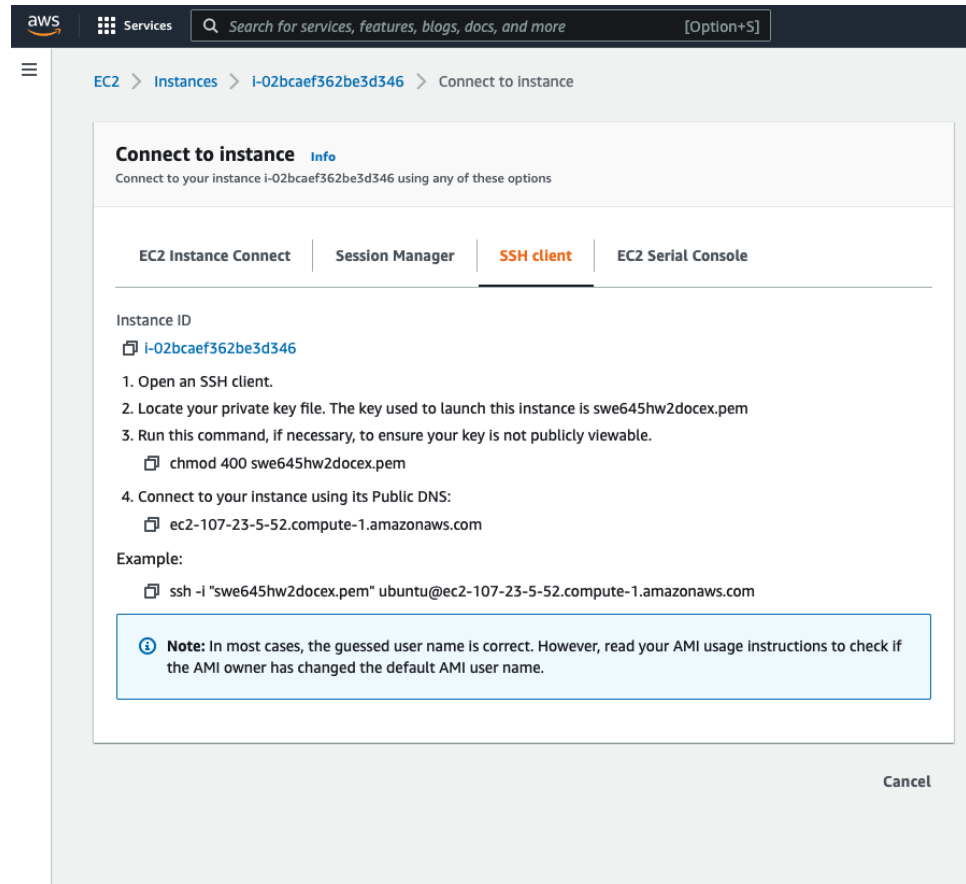
User name

Connect using a custom user name, or use the default user name ubuntu for the AMI used to launch the instance.

Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel **Connect**

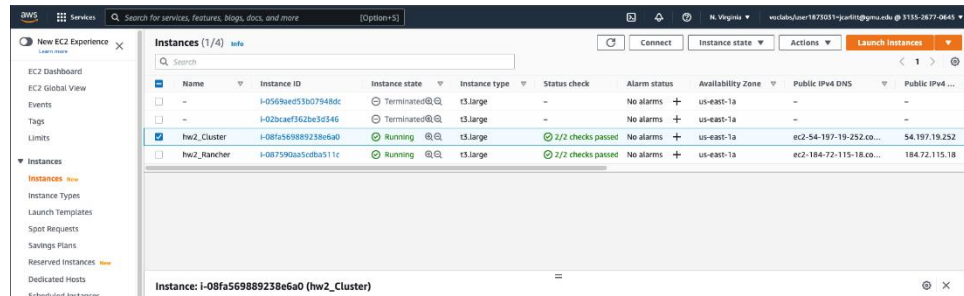
- i.
- c. If you have SSH capabilities, click that tab. Copy the ssh command and paste it into your terminal or PowerShell window.



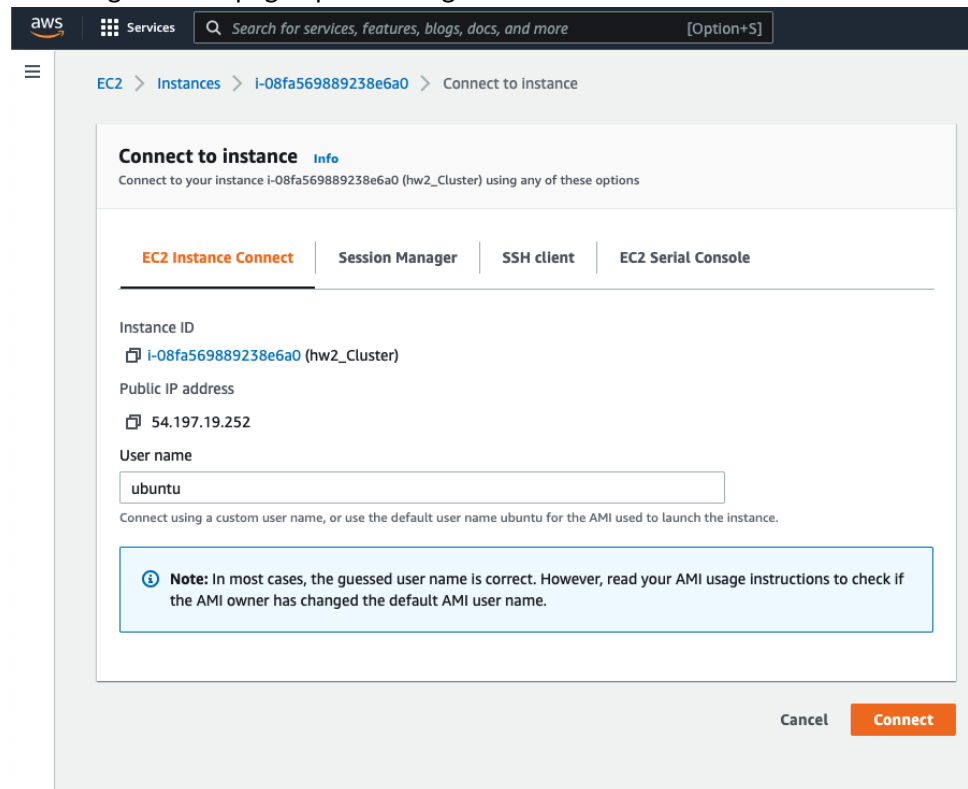
- i.
 - d. In your console, change directory (cd) to where your pem file is downloaded too. Run `chmod 400` on your pem file to tighten the security rules on it. Then paste that copied command into the line and hit enter to connect.
 - i. `cd </path/to/.pem file>`
 - ii. `chmod 400 swe645hw2docex.pem`
 - iii. `ssh -i <pem file name> ubuntu@<ec2 instance address>`
 - e. In the console, type yes for connecting

The authenticity of host 'ec2-184-72-115-18.compute-1.amazonaws.com (184.72.115.18)' can't be established.
 ECDSA key fingerprint is SHA256:8zr9DLN1K1T5ufQK30h7uQPstcrDXmk+WZfg3QUVVBw.
 Are you sure you want to continue connecting (yes/no/[fingerprint])? yes

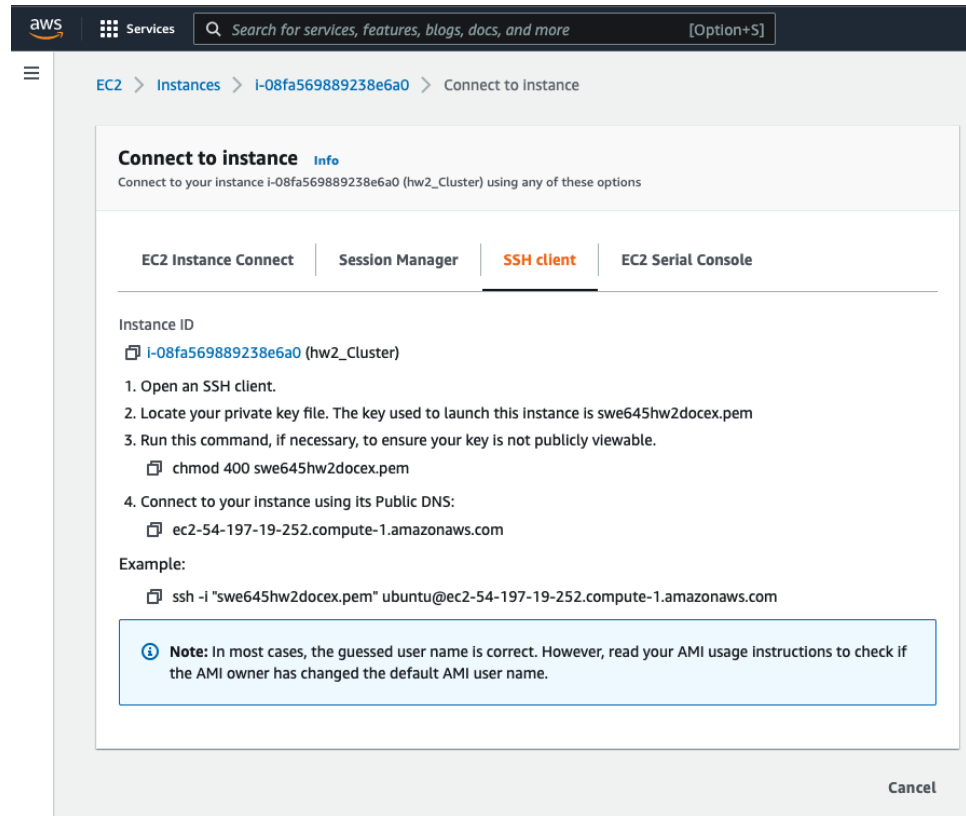
 - i.
 - f. Now that we are in the EC2 instance, update the instance by typing: `sudo apt-get update`
 - g. Once it is finished updating, install docker within the instance. Type: `sudo apt install docker.io`
15. Now we can connect to instance2. Select the instance and then click connect.



- a.
- b. You will be brought to this page upon clicking connect.



- i.
- c. If you have SSH capabilities, click that tab. Copy the ssh command and paste it into your terminal or PowerShell window.



- i.
- d. In your console, change directory (cd) to where your pem file is downloaded too. Run chmod 400 on your pem file to tighten the security rules on it. Then paste that copied command into the line and hit enter to connect.
 - i. cd </path/to/.pem file>
 - ii. chmod 400 swe645hw2docex.pem
 - iii. ssh -i <pem file name> ubuntu@<ec2 instance address>
- e. In the console, type yes for connecting

The authenticity of host 'ec2-54-197-19-252.compute-1.amazonaws.com (54.197.19.252)' can't be established.
 ECDSA key fingerprint is SHA256:lJSLpjHIBuAnIxfVUrzdZsgA77VDUdvsj2jDVwgbewc.
 Are you sure you want to continue connecting (yes/no/[fingerprint])? YES

 - i.
- f. Now that we are in the EC2 instance, update the instance by typing: sudo apt-get update
- g. Once it is finished updating, install docker within the instance. Type: sudo apt install docker.io