Lab Manual- Create EC2 Instance for Linux and Connect to it.

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Prepared By: Shweta Chavan

Prepared For:

Course:

Document Name: Lab Manual

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SECTION 1 OBJECTIVE

An instance is a virtual server in the AWS Cloud. With Amazon EC2, you can set up and configure the operating system and applications that run on your instance.
Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instance types comprise varying combinations of CPU, memory, storage, and networking capacity and give you the flexibility to choose the appropriate mix of resources for your applications.
EC2 Instance can even be launched with help of AWS CLI

Note: *When you sign up for AWS, you can get started with Amazon EC2 using the AWS Free Tier. If you created your AWS account less than 12 months ago,and have not already exceeded the free tier benefits for Amazon EC2, it will not cost you anything to complete this tutorial, because we help you select options that are within the free tier benefits. Otherwise, you'll incur the standard Amazon EC2 usage fees from the time that you launch the instance until you terminate the instance (which is the final task of this tutorial), even if it remains idle.*

SECTION 2 EC2 Instance types

It is important to select the right instance size and type for the working of our virtual machine perfectly. So, these are the types that are available within AWS.

General Purpose	Compute Optimised	Memory Optimised	Accelerated Computing	Storage Optimised
A1 – ARM based core and custom silicon	C4 – Compute - CPU intensive apps and DBs	R4 – RAM - Memory intensive apps and DB's	P2 – Processing optimised- Machine Learning	H1 – High Disk Throughput - Big data clusters
T2 – Tiny - Web servers and small DBs		X1 – Xtreme RAM - For SAP/Spark	G3 – Graphics Intensive - Video and streaming	I3 – IOPS - NoSQL DBs
M4 – Main - App servers and general purpose		z1d – High Compute and High Memory - Gaming	F1 – Field Programmable - Hardware acceleration	D2 – Dense Storage - Data Warehousing

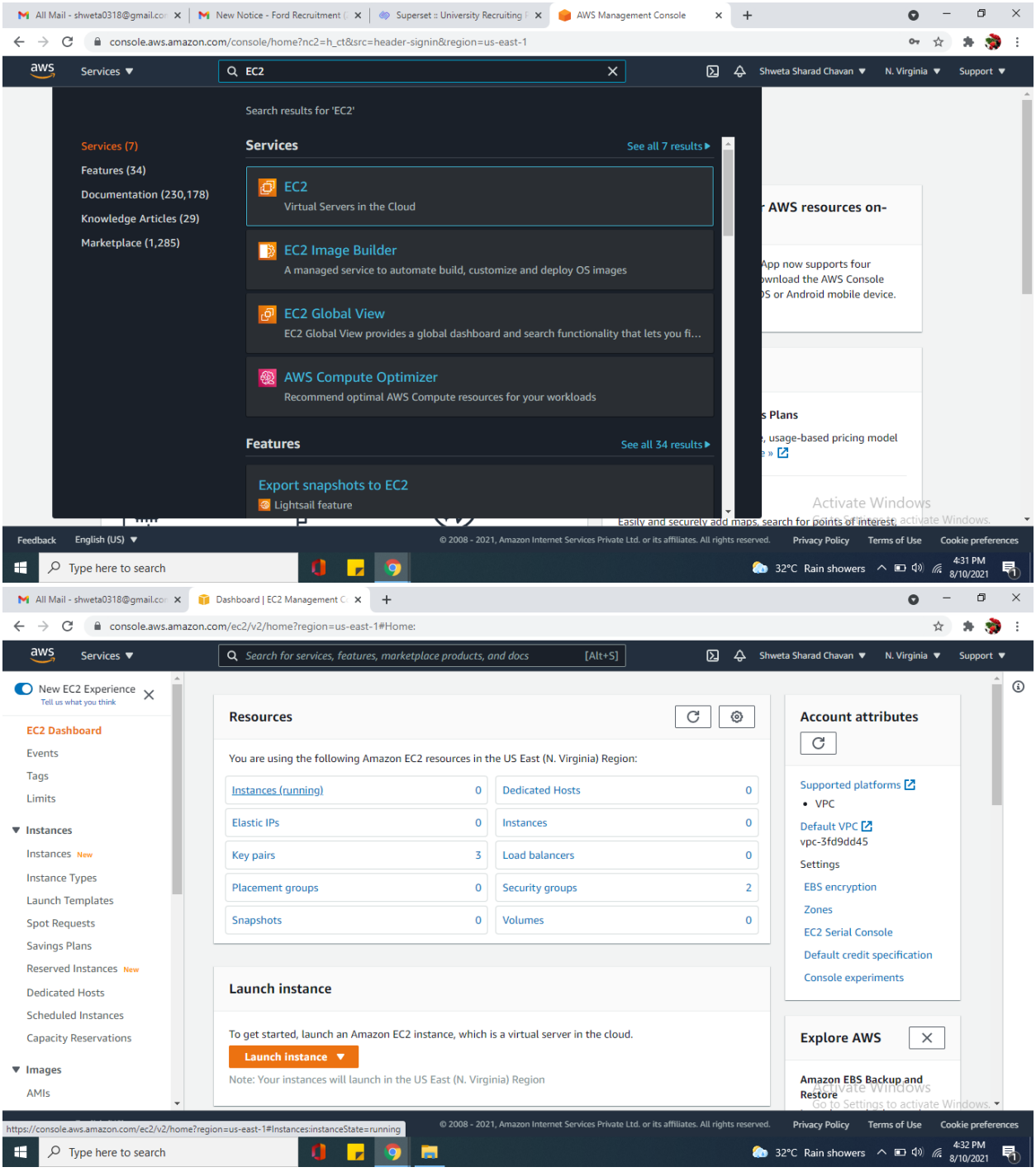
SECTION 3 PRE-REQUISISTE

- **Accounts in AWS**
- **A local Computer with 4 CPU, 16 GB RAM, 200 GB disk space**

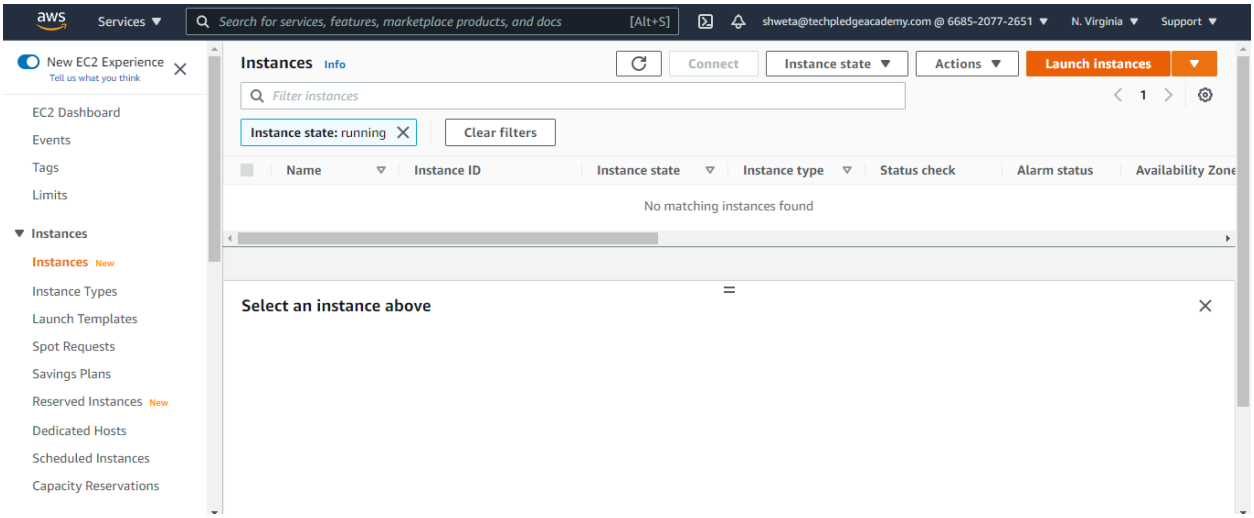
SECTION 4 CREATING A LINUX INSTANCE

To launch an instance

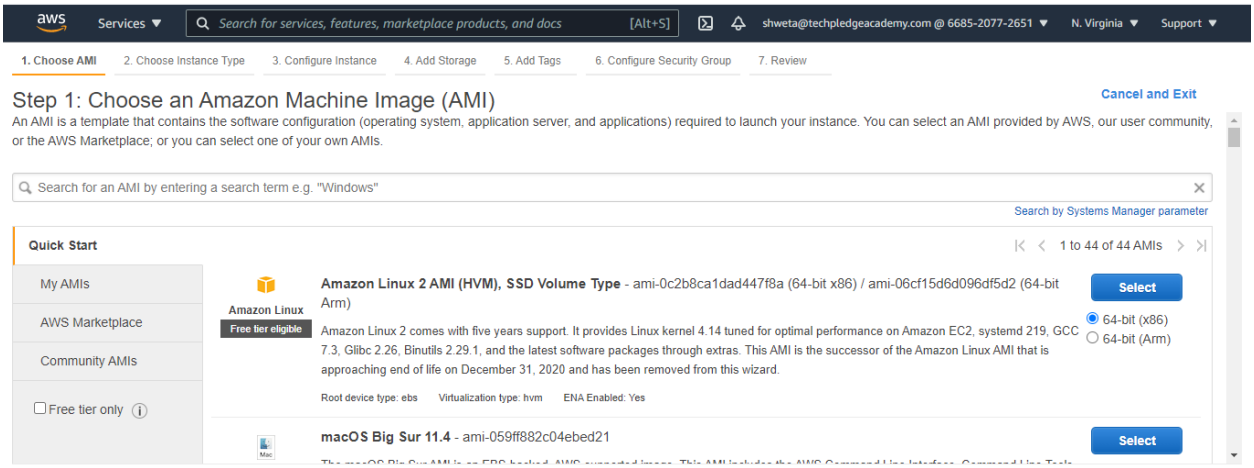
1. Open the Amazon EC2 console at ***https://console.aws.amazon.com/ec2/.***



2. From the console dashboard, choose Launch Instance.

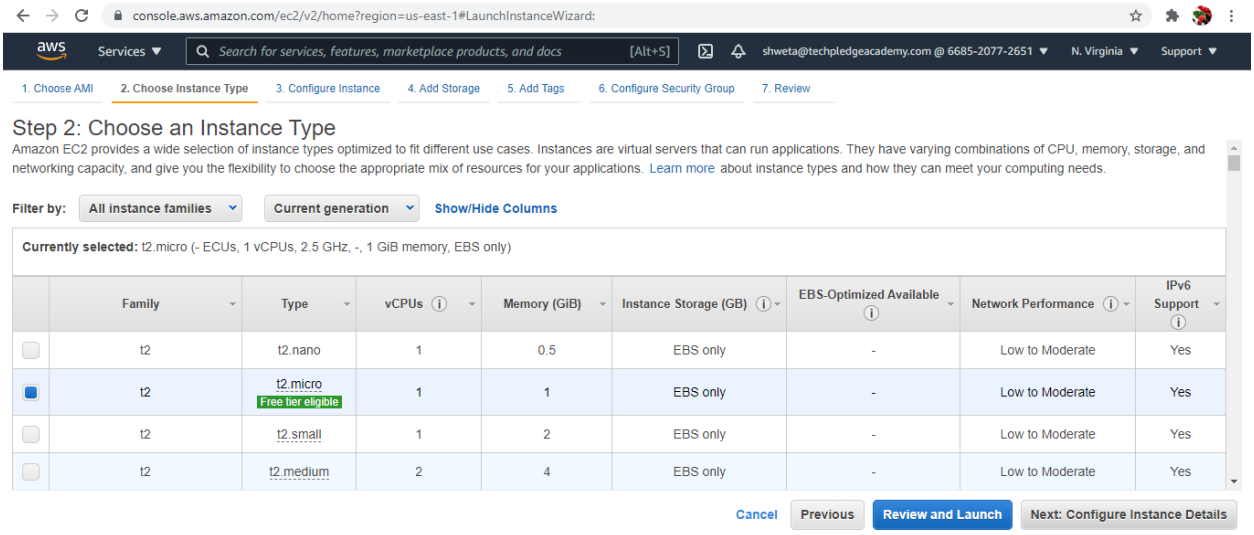


3. The Choose an Amazon Machine Image (AMI) page displays a list of basic configurations, called Amazon Machine Images (AMIs), that serve as templates for your instance. Select an HVM version of Amazon Linux 2. Notice that these AMIs are marked "Free tier eligible."

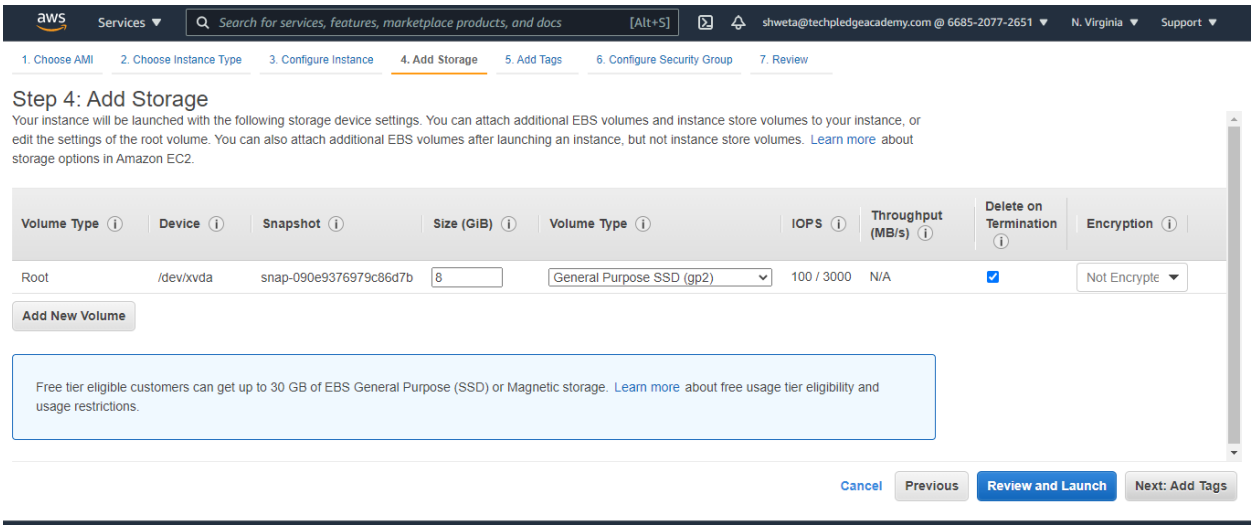


4. On the Choose an Instance Type page, you can select the hardware configuration of your instance. Select the t2.micro instance type, which is

selected by default. The t2.micro instance type is eligible for the free tier..



5. Configure the instance detail for training purpose keep all default , move next add storage keep default in add tags give a name linux machine and click on Configure Security Group.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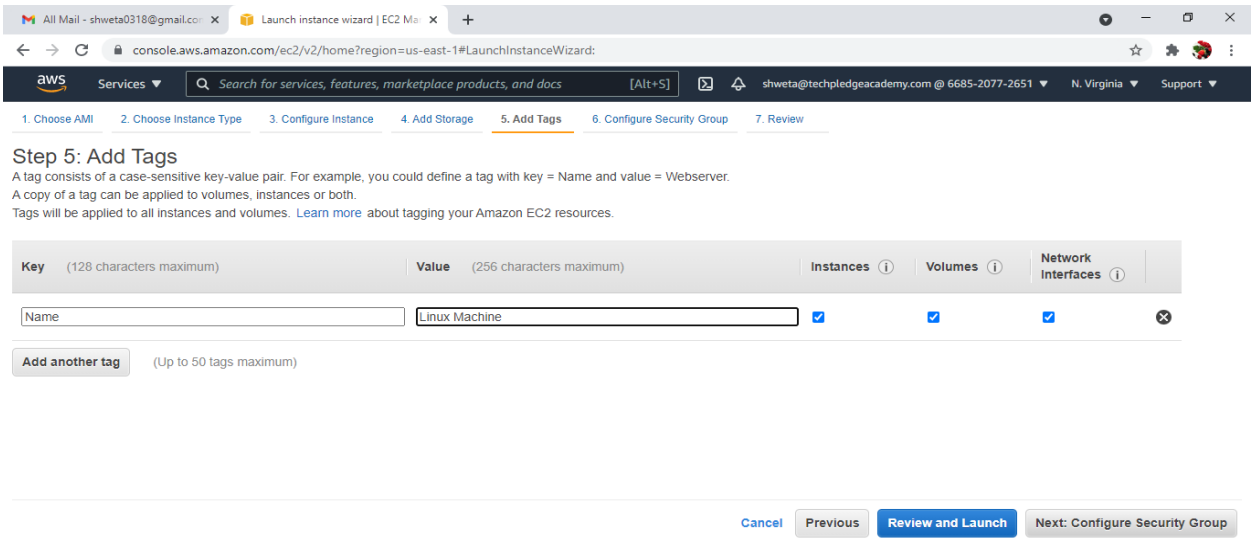
Support
1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your 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/xvda
snap-090e9376979c86d7b
8
General Purpose SSD (gp2)
100 / 3000
N/A
Not Encrypte
Add New Volume
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.
Cancel
Previous
Review and Launch
Next: Add Tags


All Mail - shweta0318@gmail.com
Launch instance wizard | EC2 Ma
console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:
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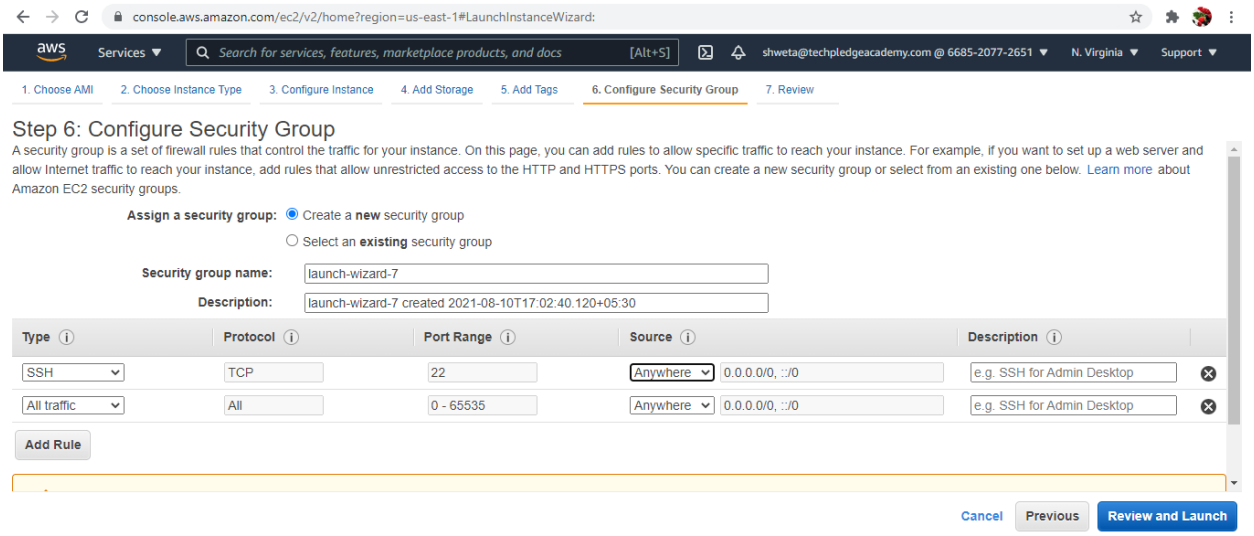
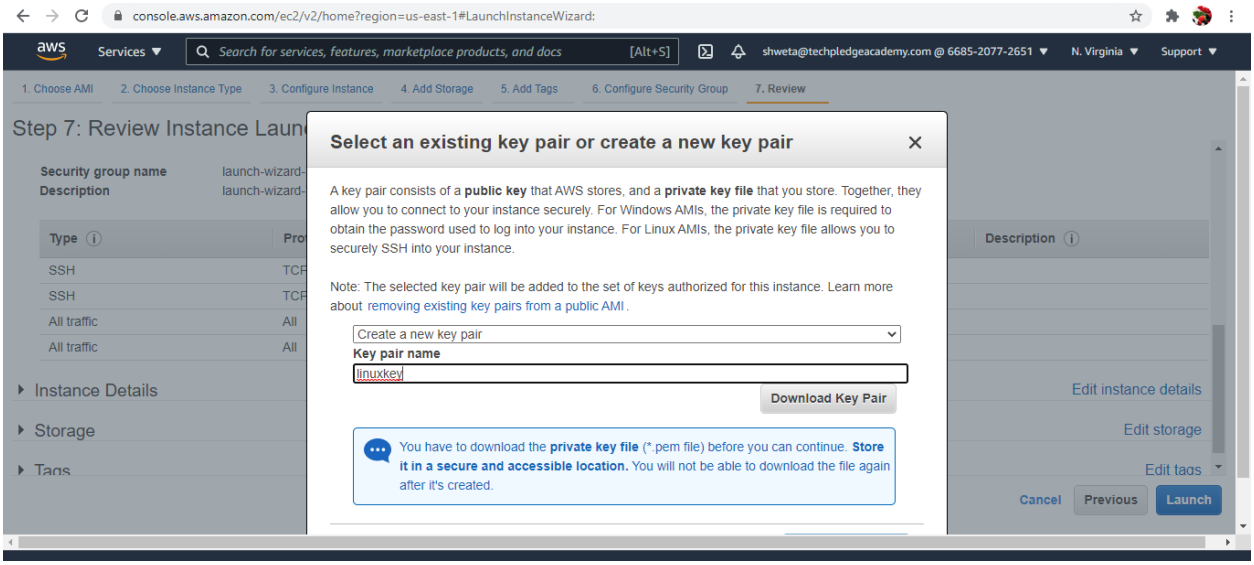
N. Virginia
Support
1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 5: Add Tags
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.
A copy of a tag 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
Linux Machine
Add another tag
(Up to 50 tags maximum)
Cancel
Previous
Review and Launch
Next: Configure Security Group

6. On Step 6 Configure Security Group , Create a new security group name it and describe it then click review and launch



7. On the Review Instance Launch page, choose Launch.When prompted for a key pair, select Create a new key pair and give key pair name and download the key pair.



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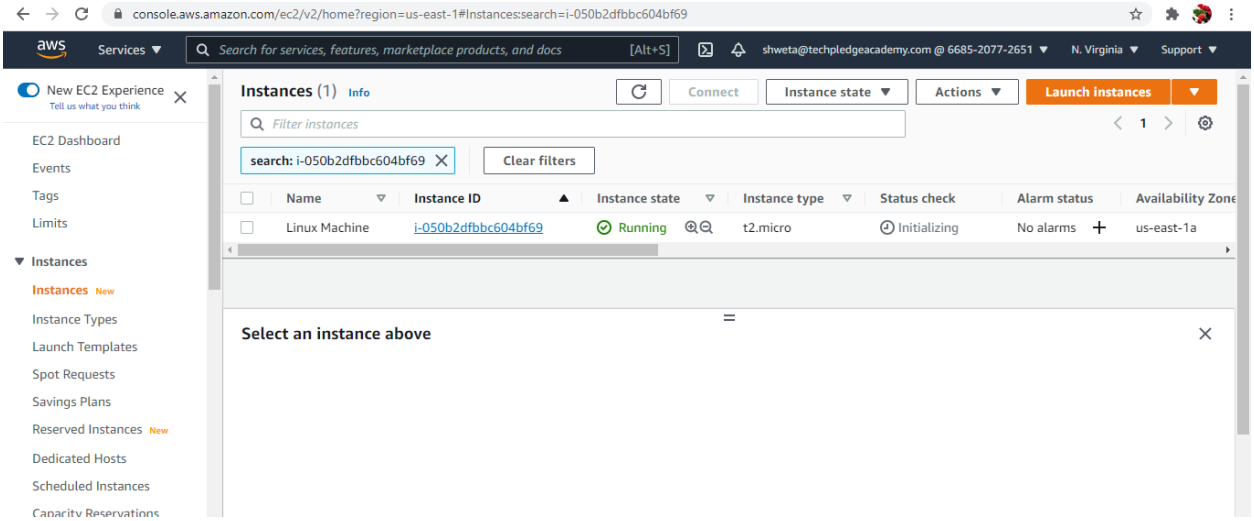
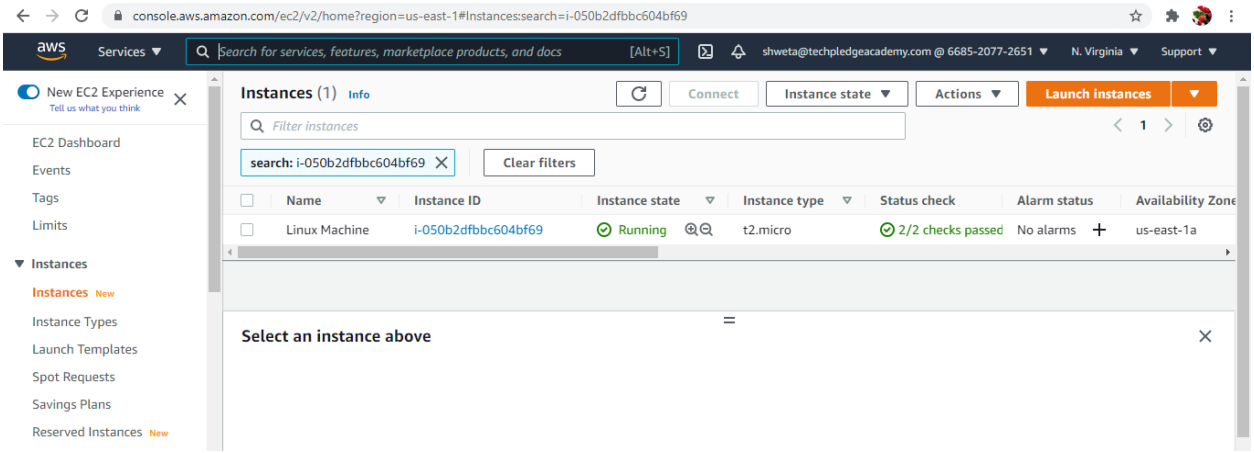
8. On the Instances screen, you can view the status of the launch. It takes a short time for an instance to launch. When you launch an instance, its initial state is pending. After the instance starts, its state changes to running and it receives a

public DNS name.



9. It can take a few minutes for the instance to be ready so that you can connect to it. Check that your instance has passed its status checks; you can view this information in the Status check column.



SECTION 5 CONNECT TO LINUX INSTANCE

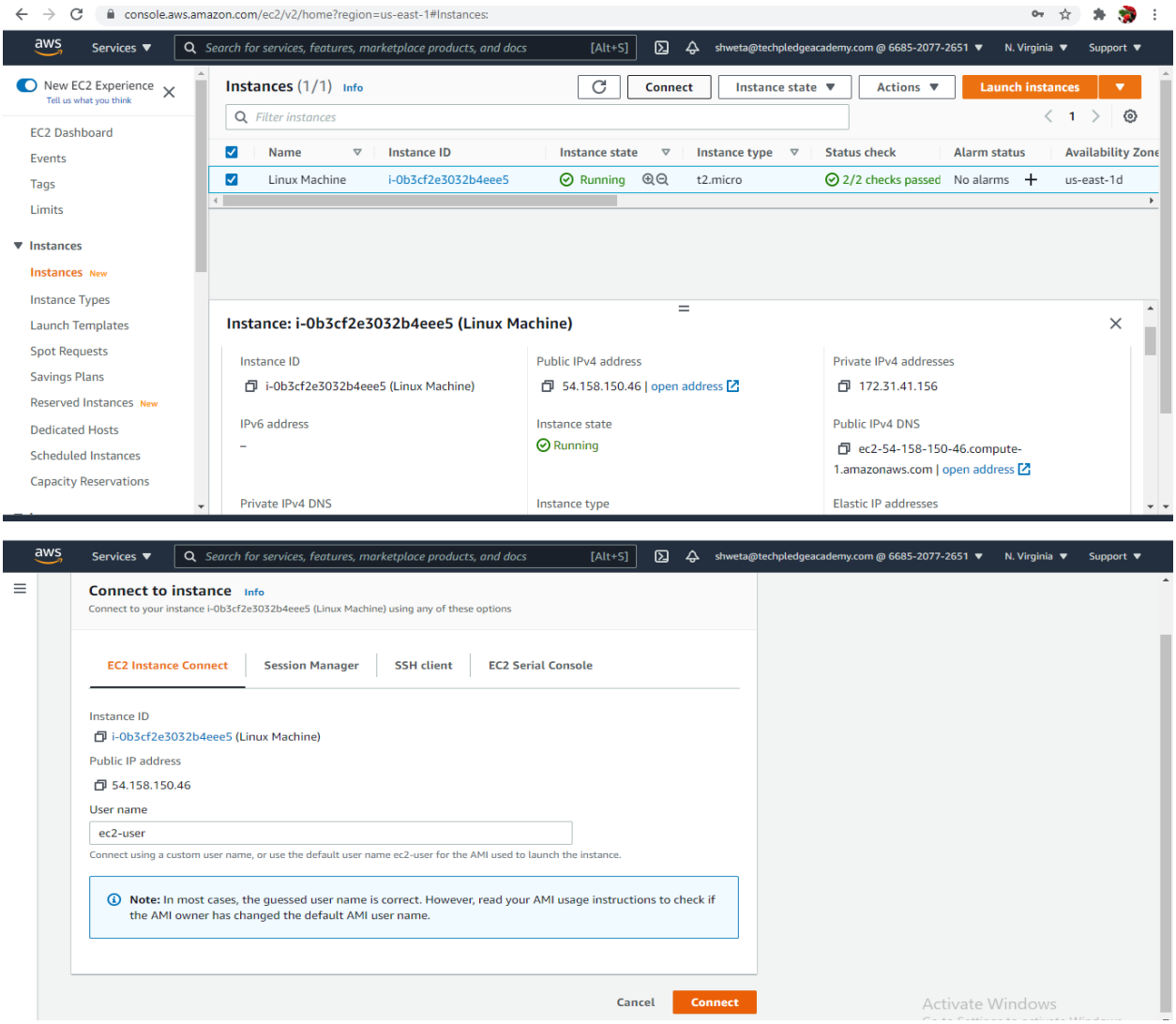
A] If your local computer operating system is Linux or macOS X

Connect Linux Instance using the Amazon EC2 console (browser-based client)

You can connect to an instance using the Amazon EC2 console (browser-based client) by selecting the instance from the console and choosing to connect using EC2 Instance Connect. Instance Connect handles the permissions and provides a successful connection.

To connect to your instance using the browser-based client from the Amazon EC2 console

1. Open the Amazon EC2 console at *https://console.aws.amazon.com/ec2/*.
2. In the navigation pane, choose **Instances**.
3. Select the instance and choose **Connect**.
4. Choose **EC2 Instance Connect**.
5. Verify the user name and choose **Connect** to open a terminal window.


console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:
aws
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Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Filter instances
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Linux Machine
i-0b3cf2e3032b4eee5
Running
t2.micro
2/2 checks passed
No alarms
us-east-1d
Instance: i-0b3cf2e3032b4eee5 (Linux Machine)
Instance ID
i-0b3cf2e3032b4eee5 (Linux Machine)
Public IPv4 address
54.158.150.46 | open address
Private IPv4 addresses
172.31.41.156
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-54-158-150-46.compute-1.amazonaws.com | open address
Private IPv4 DNS
Instance type
Elastic IP addresses

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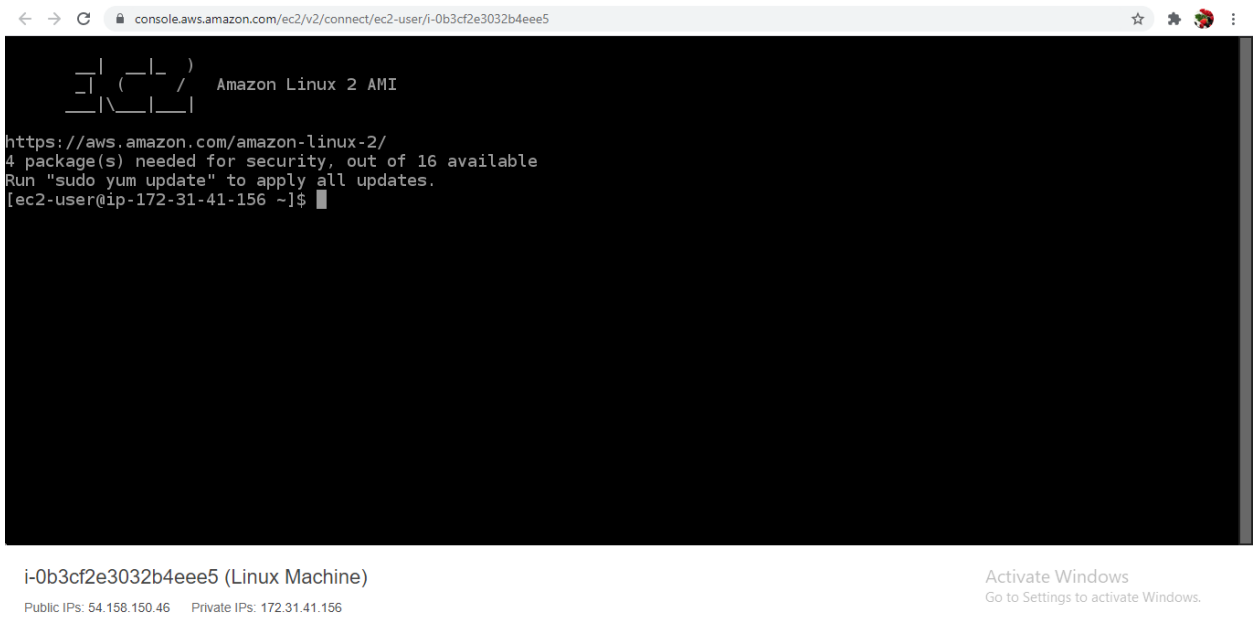
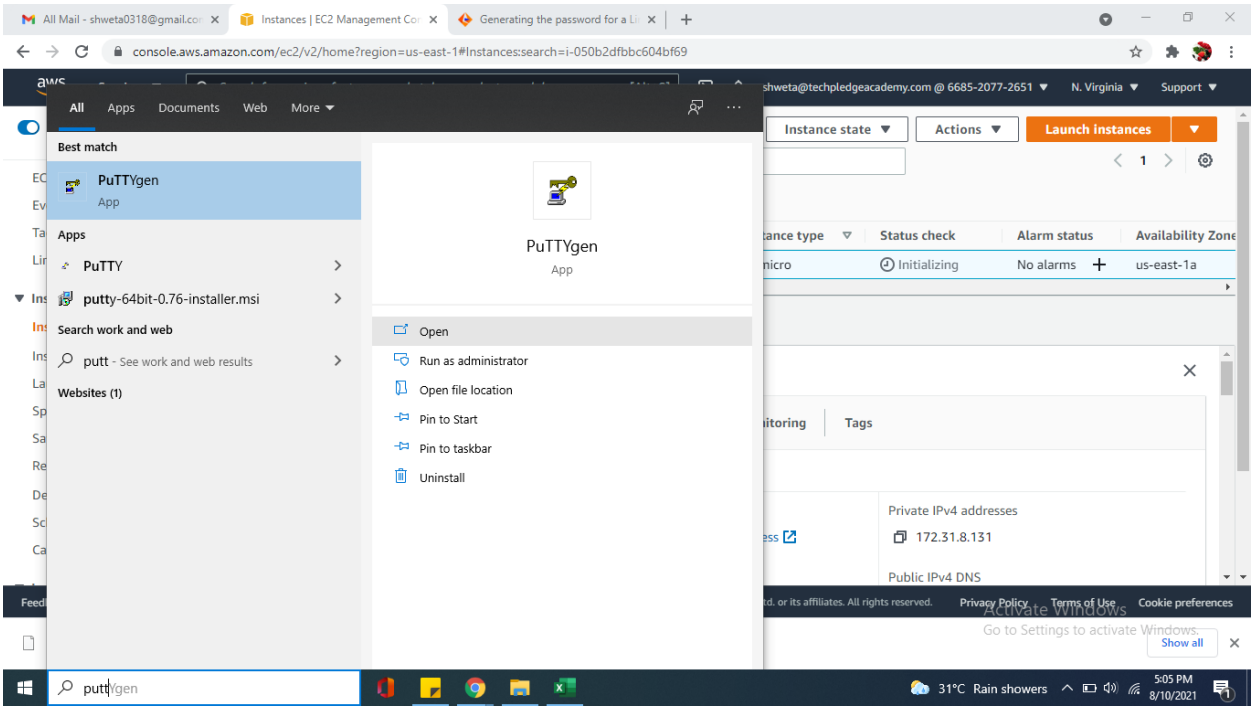
Support
Connect to instance Info
Connect to your instance i-0b3cf2e3032b4eee5 (Linux Machine) using any of these options
EC2 Instance Connect
Session Manager
SSH client
EC2 Serial Console
Instance ID
i-0b3cf2e3032b4eee5 (Linux Machine)
Public IP address
54.158.150.46
User name
ec2-user
Connect using a custom user name, or use the default user name ec2-user 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
Activate Windows



B] If your local computer operating system is Windows

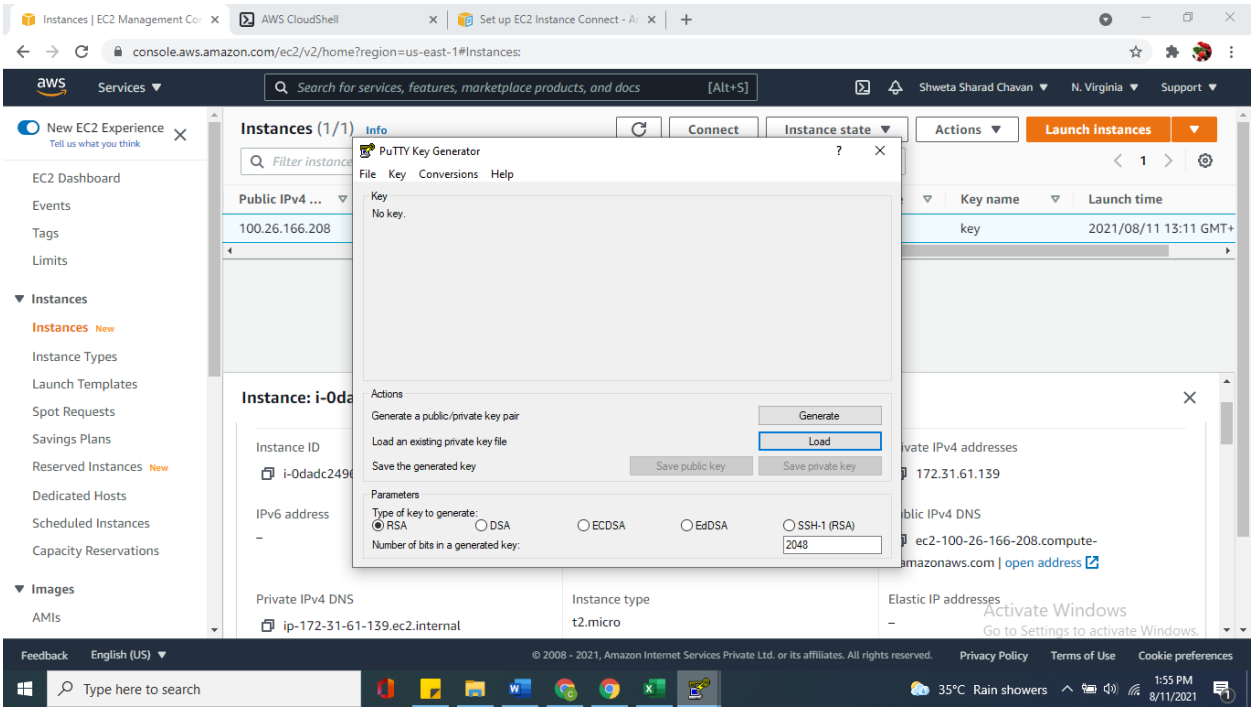
Connect to your Linux instance from Windows using PuTTY

Step 1:- Install PuTTY on your local computer



Step 2:-Convert your private key using PuTTYgen

1. From the Start menu, choose All Programs, PuTTY, PuTTYgen.
2. Under Type of key to generate, choose RSA.
3. Choose Load. By default, PuTTYgen displays only files with the extension `.ppk`. To locate your `.pem` file, choose the option to display files of all types.
4. Select your `.pem` file for the key pair that you specified when you launched your instance and choose Open. PuTTYgen displays a notice that the `.pem` file was successfully imported. Choose OK.
5. To save the key in the format that PuTTY can use, choose Save private key. PuTTYgen displays a warning about saving the key without a passphrase. Choose Yes. Give name to your file and private key file gets saved with .ppk extension


Instances | EC2 Management Co
AWS CloudShell
Set up EC2 Instance Connect - A
console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:
Services
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Limits
Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Images
AMIs
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Public IPv4 ...
Key name
Launch time
100.26.166.208
key
2021/08/11 13:11 GMT+
PuTTY Key Generator
File Key Conversions Help
Key
No key.
Actions
Generate a public/private key pair
Generate
Load an existing private key file
Load
Save the generated key
Save public key
Save private key
Parameters
Type of key to generate:
RSA
DSA
ECDSA
EdDSA
SSH-1 (RSA)
Number of bits in a generated key:
2048
Instance: i-0da
Instance ID
IPv6 address
Private IPv4 DNS
ip-172-31-61-139.ec2.internal
Instance type
t2.micro
172.31.61.139
ec2-100-26-166-208.compute-
amazonaws.com | open address
Elastic IP addresses
Activate Windows
Go to Settings to activate Windows.
Feedback
English (US)
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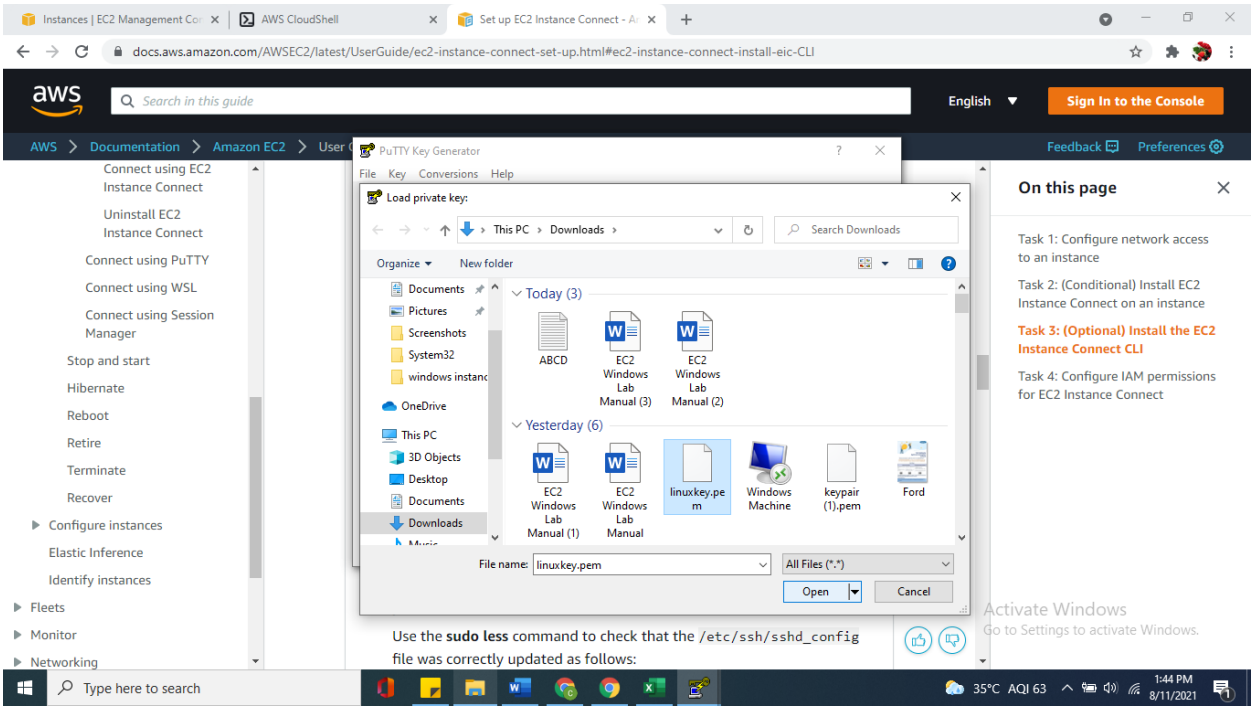
Privacy Policy
Terms of Use
Cookie preferences
Type here to search
35°C Rain showers
1:55 PM
8/11/2021


Instances | EC2 Management Co
AWS CloudShell
Set up EC2 Instance Connect - A
docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-connect-set-up.html#ec2-instance-connect-install-eic-CLI
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AWS
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User
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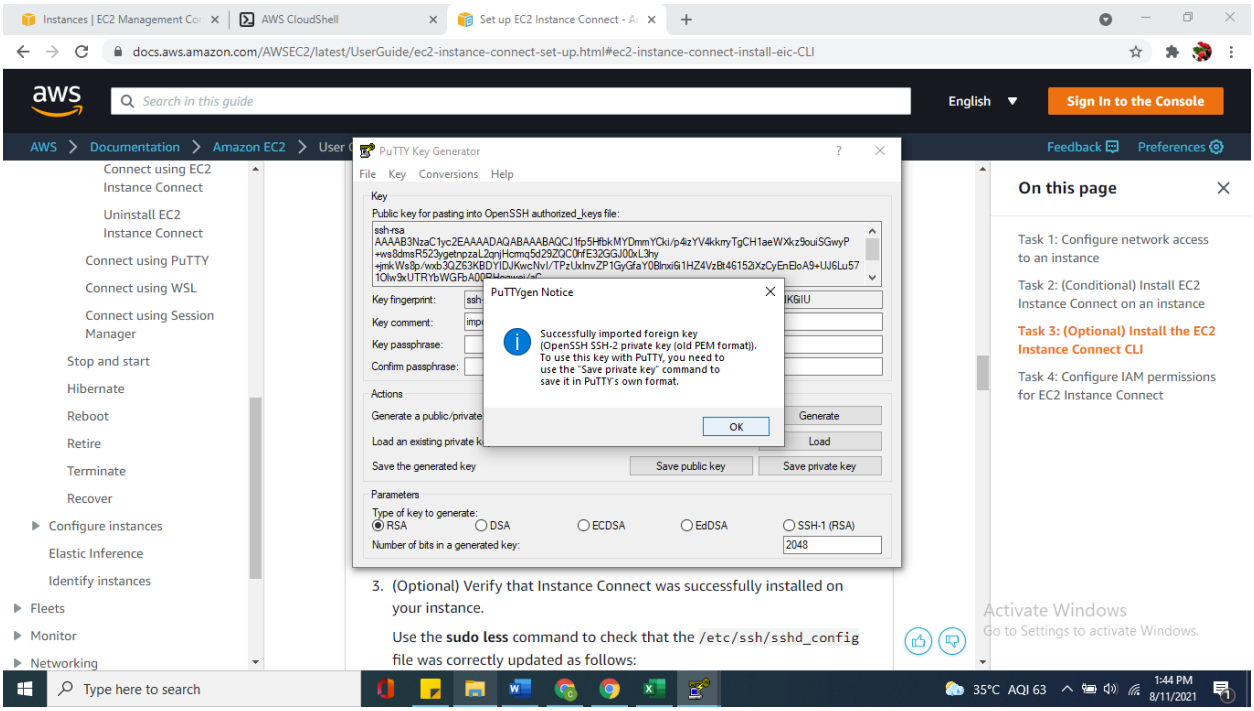
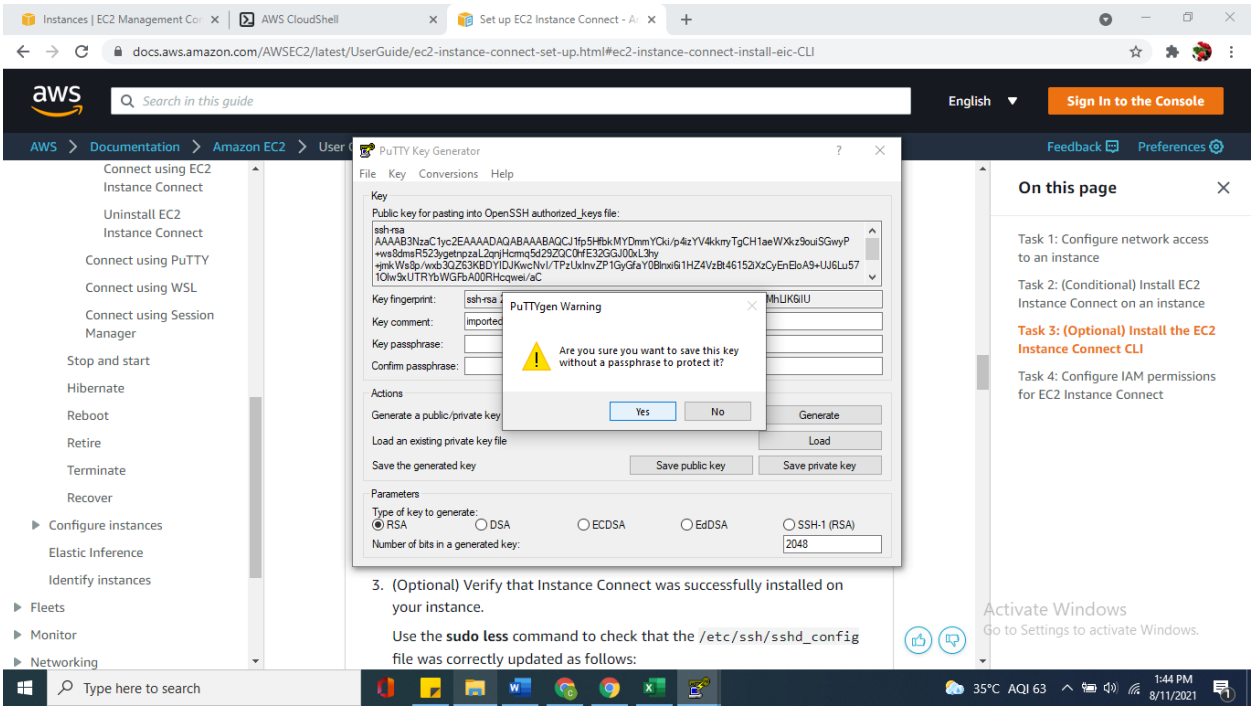
Preferences
Connect using EC2 Instance Connect
Uninstall EC2 Instance Connect
Connect using PuTTY
Connect using WSL
Connect using Session Manager
Stop and start
Hibernate
Reboot
Retire
Terminate
Recover
Configure instances
Elastic Inference
Identify instances
Fleets
Monitor
Networking
PuTTY Key Generator
File Key Conversions Help
Load private key:
This PC
Downloads
Search Downloads
Organize
New folder
Documents
Pictures
Screenshots
System32
windows instanc
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Today (3)
ABCD
EC2 Windows Lab Manual (3)
EC2 Windows Lab Manual (2)
Yesterday (6)
EC2 Windows Lab Manual (1)
EC2 Windows Lab Manual
linuxkey.pem
Windows Machine
keypair (1).pem
Ford
File name: linuxkey.pem
All Files (*.*)
Open
Cancel
On this page
Task 1: Configure network access to an instance
Task 2: (Conditional) Install EC2 Instance Connect on an instance
Task 3: (Optional) Install the EC2 Instance Connect CLI
Task 4: Configure IAM permissions for EC2 Instance Connect
Use the sudo less command to check that the /etc/ssh/sshd_config file was correctly updated as follows:
Activate Windows
Go to Settings to activate Windows.
Type here to search
35°C AQI 63
1:44 PM
8/11/2021



3. (Optional) Verify that Instance Connect was successfully installed on your instance.

   Use the **sudo less** command to check that the `/etc/ssh/sshd_config` file was correctly updated as follows:



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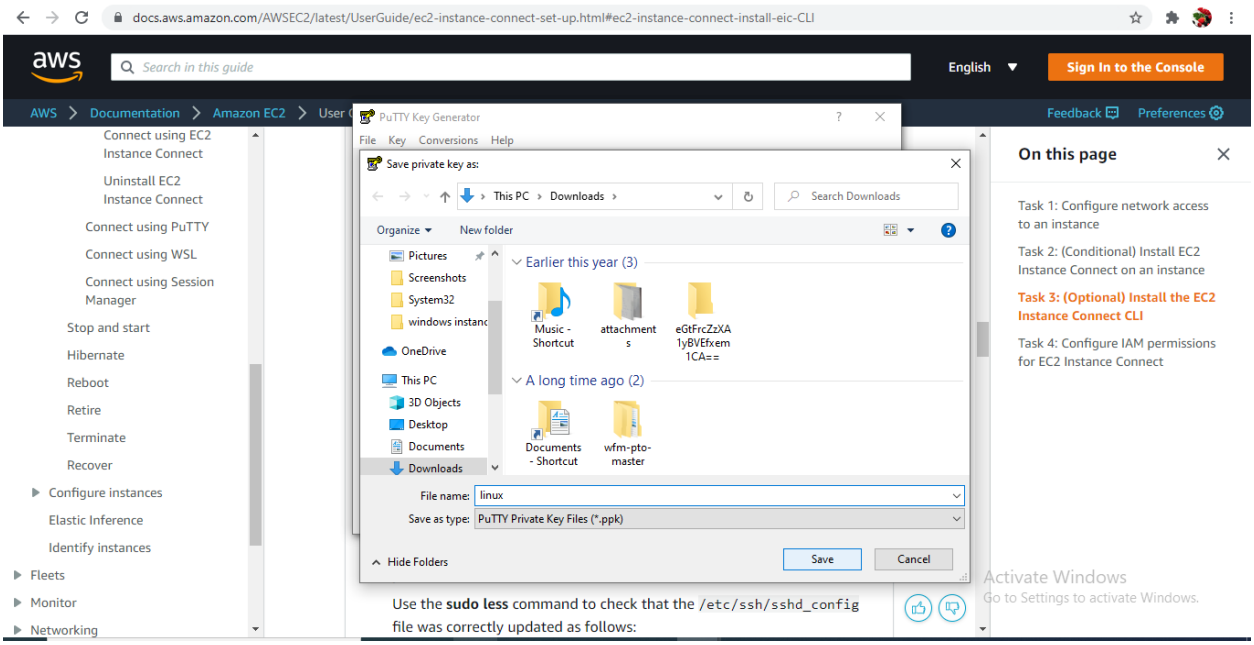
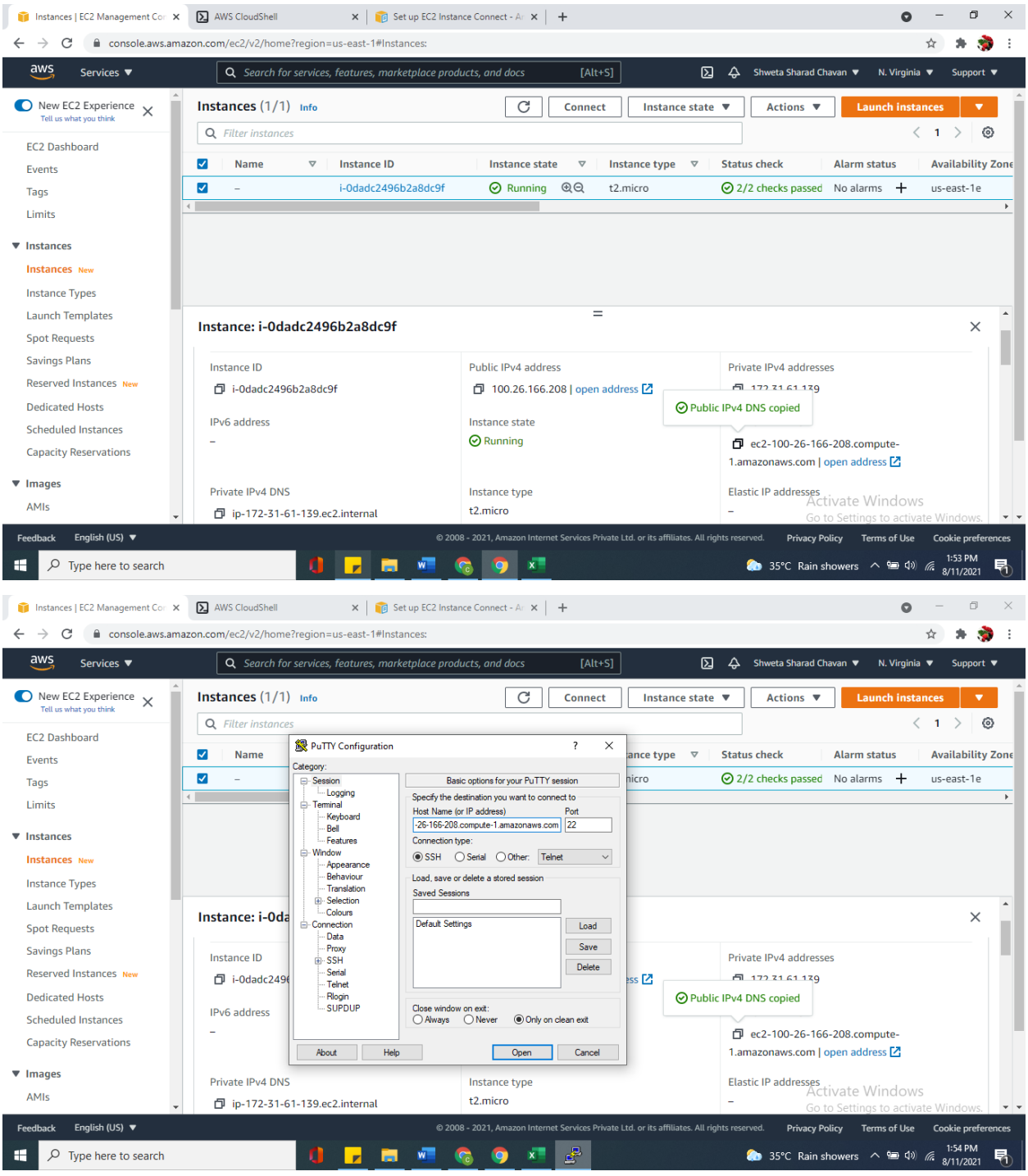


Step 3:-To connect to your instance using PuTTY

1. Start PuTTY
2. In the **Category** pane, choose **Session** and complete the following fields:
    a. In the **Host Name** box
        - (Public DNS) To connect using your instance's public DNS name, enter `my-instance-user-name`@`my-instance-public-dns-name`.

    b. Ensure that the **Port** value is 22.
    c. Under **Connection type**, select **SSH**.



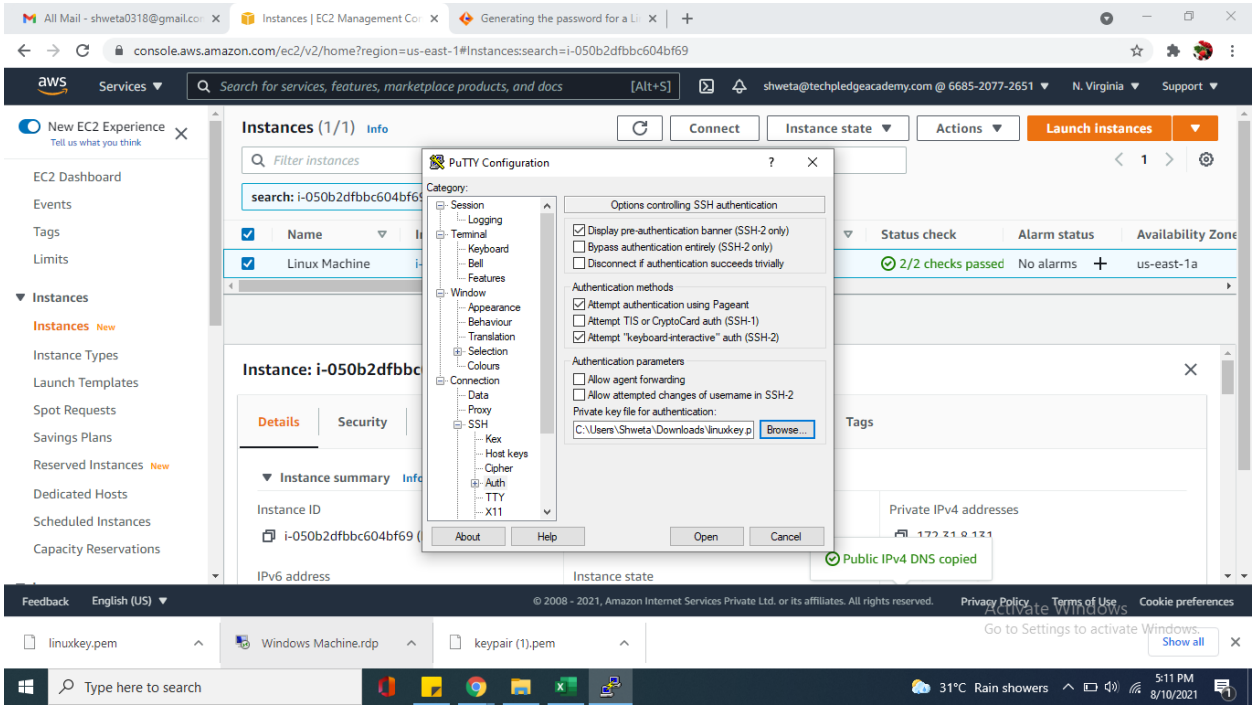
3. In the **Category** pane, expand **Connection**, expand **SSH**, and then choose **Auth**. Complete the following:

    a. Choose **Browse**.

    b. Select the `.ppk` file that you generated for your key pair and choose **Open**.

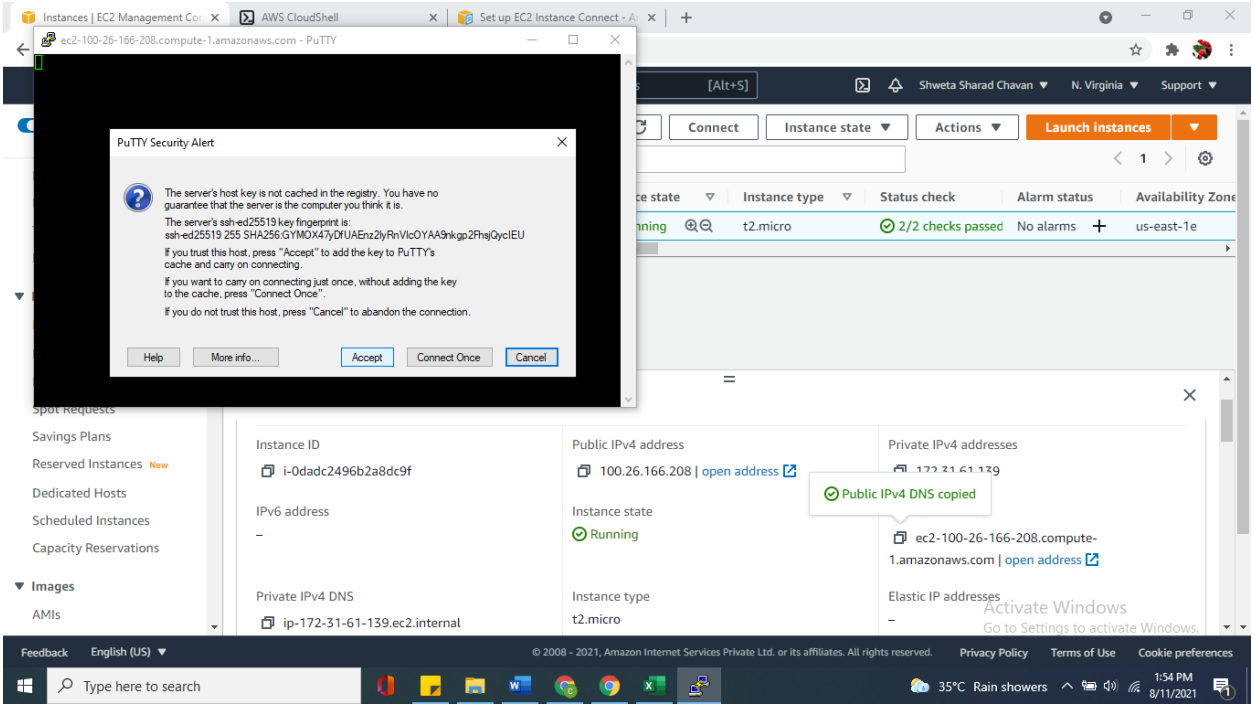
c. (Optional) If you plan to start this session again later, you can save the session information for future use. Under **Category**, choose **Session**, enter a name for the session in **Saved Sessions**, and then choose **Save**.

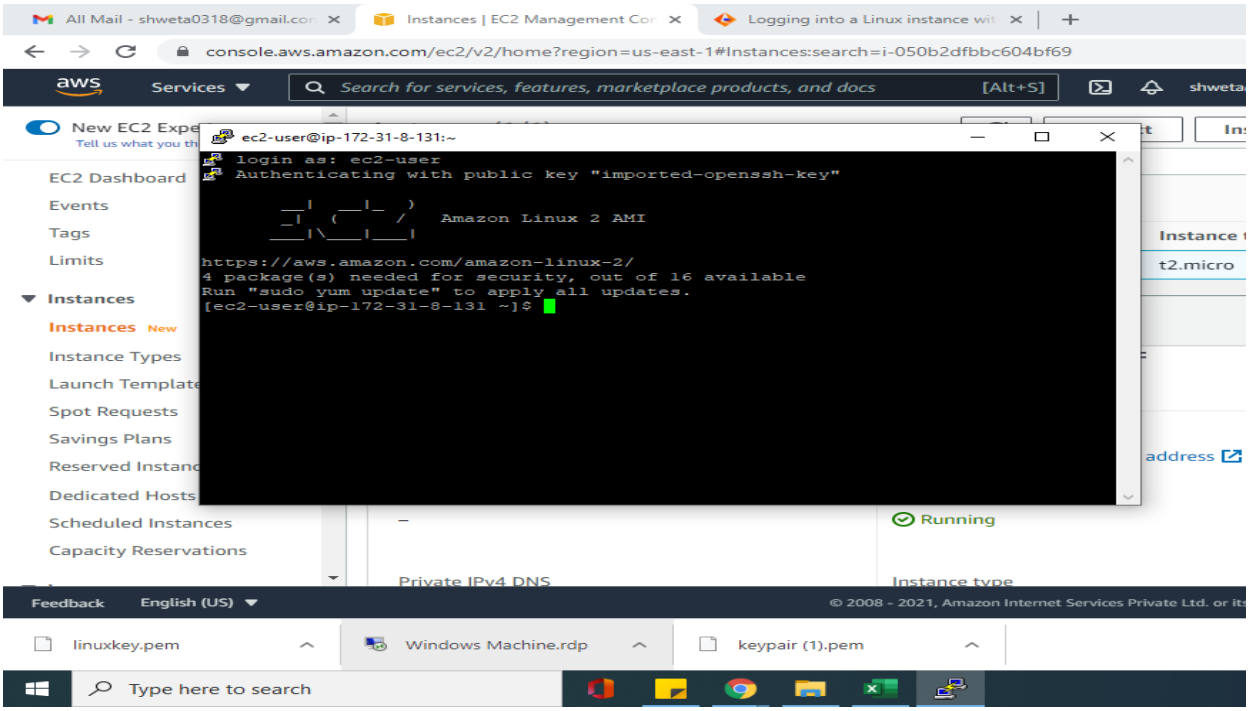
d. Choose **Open**.



4. If this is the first time you have connected to this instance, PuTTY displays a security alert dialog box that asks whether you trust the host to which you are connecting. Choose **Yes**. A window opens and you are connected to your

instance.





SECTION 6 Clean Up Your Instance

After you've finished with the instance that you created ,you should clean up by terminating the instance if no more required.

Note:

Terminating an instance effectively deletes it; you can't reconnect to an instance after you've terminated it.

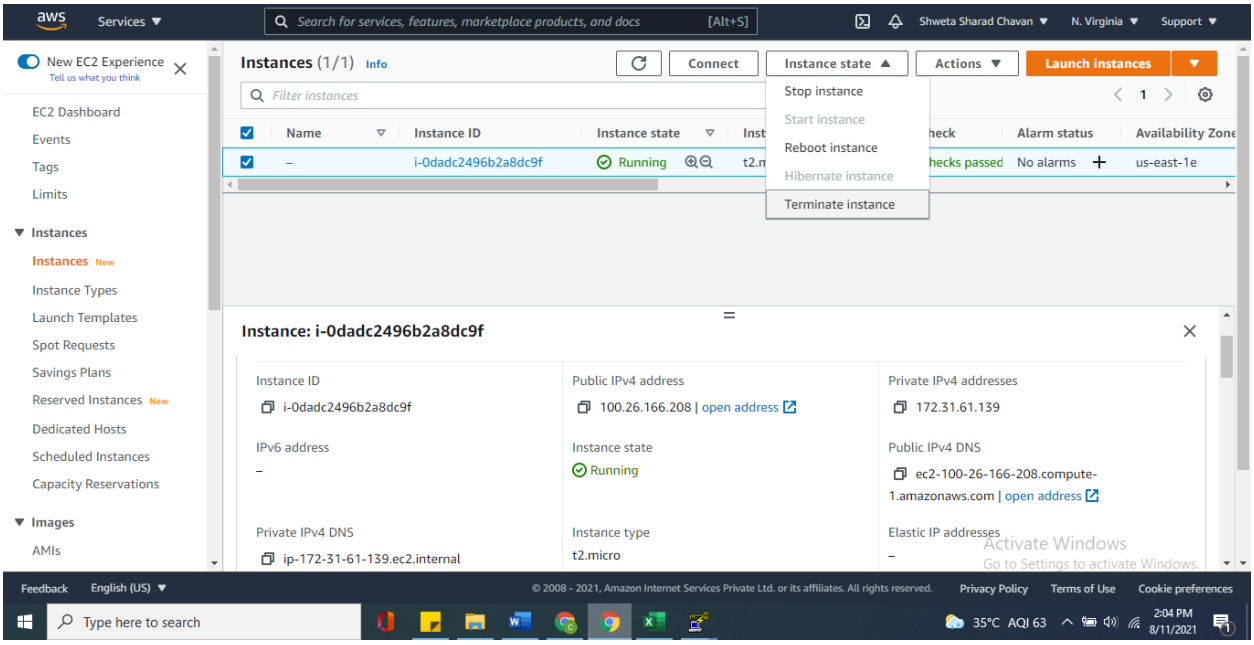
If you launched an instance that is not within the AWS Free Tier, you'll stop incurring charges for that instance as soon as the instance status changes to shutting down or terminated. To keep your instance for later, but not incur charges, you can stop the instance now and then start it again later.

To terminate your instance

Step 1: In the navigation pane, choose **Instances**. In the list of instances, select the instance.

Step 2: Choose **Instance state**, **Terminate instance**.

Step 3: Choose **Terminate** when prompted for confirmation.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Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Images
AMIs
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Filter instances
Stop instance
Start instance
Reboot instance
Hibernate instance
Terminate instance
Name
Instance ID
Instance state
Alarm status
Availability Zone
i-0dadc2496b2a8dc9f
Running
No alarms
us-east-1e
Instance: i-0dadc2496b2a8dc9f
Instance ID
i-0dadc2496b2a8dc9f
Public IPv4 address
100.26.166.208 | open address
Private IPv4 addresses
172.31.61.139
IPv6 address
Instance state
Running
Public IPv4 DNS
ec2-100-26-166-208.compute-1.amazonaws.com | open address
Private IPv4 DNS
ip-172-31-61-139.ec2.internal
Instance type
t2.micro
Elastic IP addresses
Activate Windows
Go to Settings to activate Windows.
Feedback
English (US)
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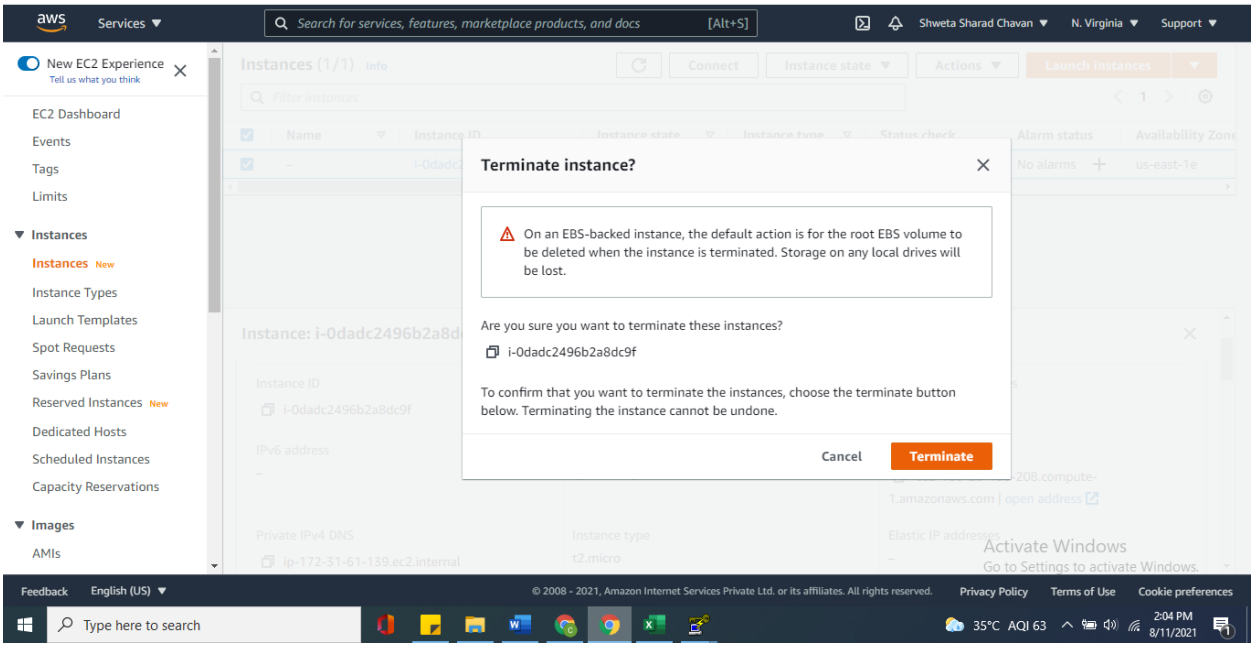
Cookie preferences
Type here to search
35°C AQI 63
2:04 PM
8/11/2021


Services
Search for services, features, marketplace products, and docs [Alt+S]
Shweta Sharad Chavan
N. Virginia
Support
New EC2 Experience
Tell us what you think
EC2 Dashboard
Events
Tags
Limits
Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Images
AMIs
Terminate instance?
On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.
Are you sure you want to terminate these instances?
i-0dadc2496b2a8dc9f
To confirm that you want to terminate the instances, choose the terminate button below. Terminating the instance cannot be undone.
Cancel
Terminate
Activate Windows
Go to Settings to activate Windows.
Feedback
English (US)
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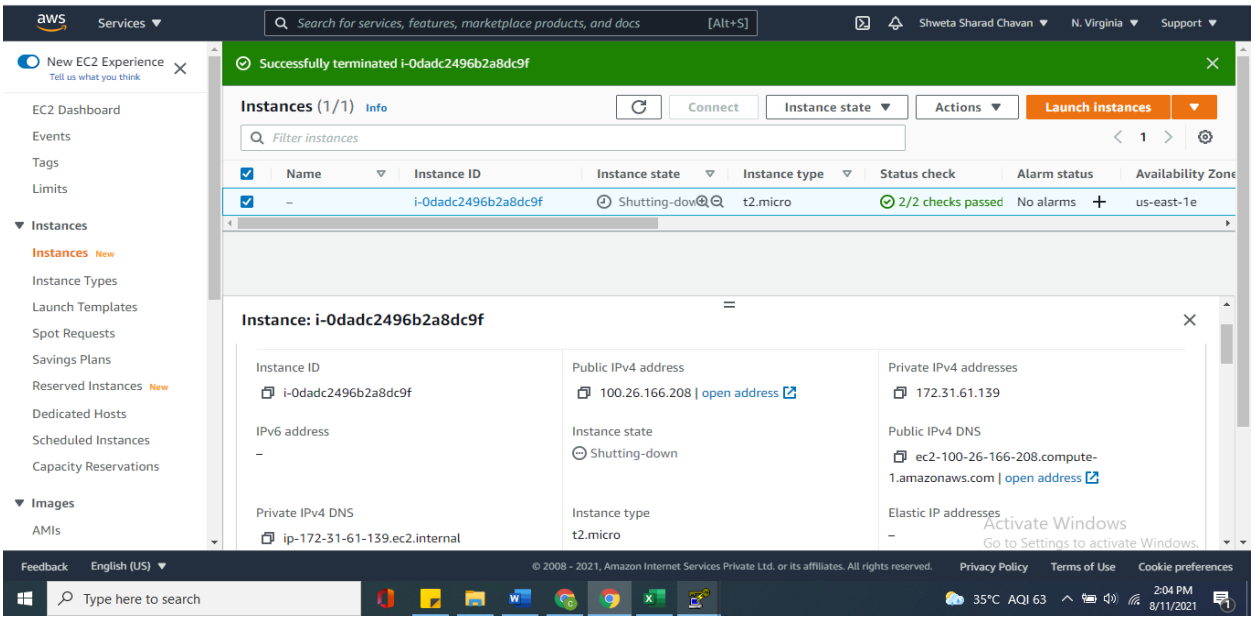

Amazon EC2 shuts down and terminates your instance. After your instance is terminated, it remains visible on the console for a short while, and then the entry is automatically deleted. You cannot remove the terminated instance from the console display yourself.