

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

Class Activity No.: 03

Name: Meet Gandhi

Roll Number & Program: 1911076 & Comps

Aim: Creating Linux Instance and executing C++ programs using gcc.

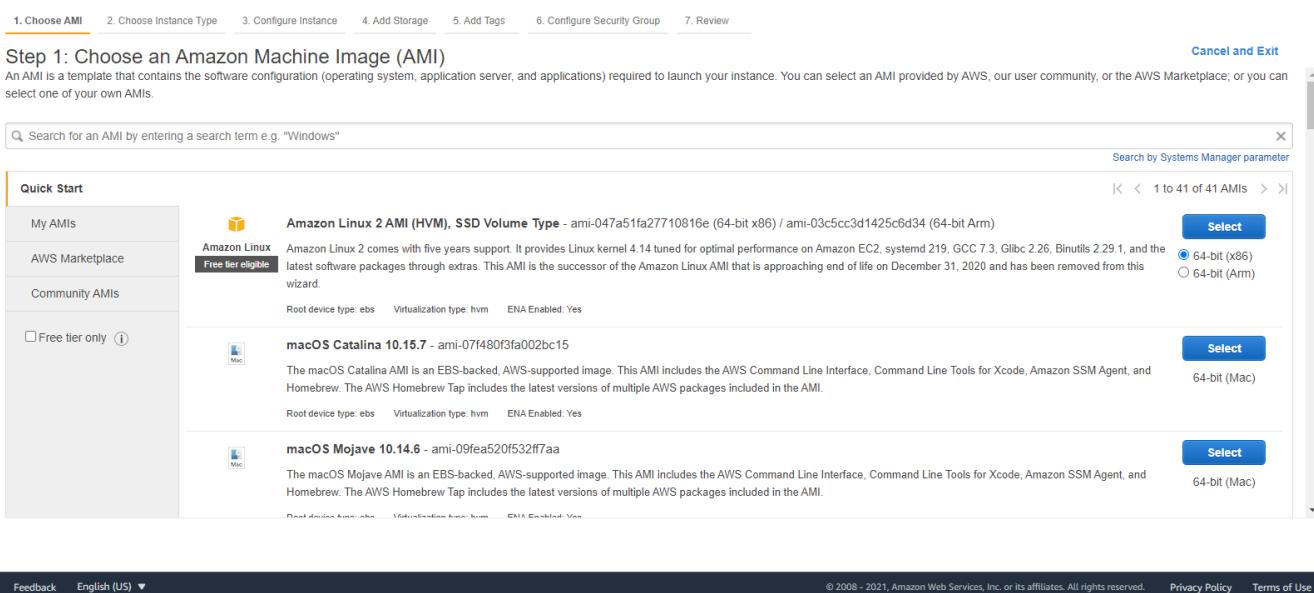
Resources needed: AWS EC2

Outcomes: CO2: Create instances of AWS services

After opening Aws Console as done in previous sessions, launch virtual machine and follow the steps:

Step 1: Choose an Amazon Machine Image (AMI)

Select “Amazon Linux 2 AMI (HVM), SSD Volume Type”



Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Search for an AMI by entering a search term e.g. "Windows"

Cancel and Exit

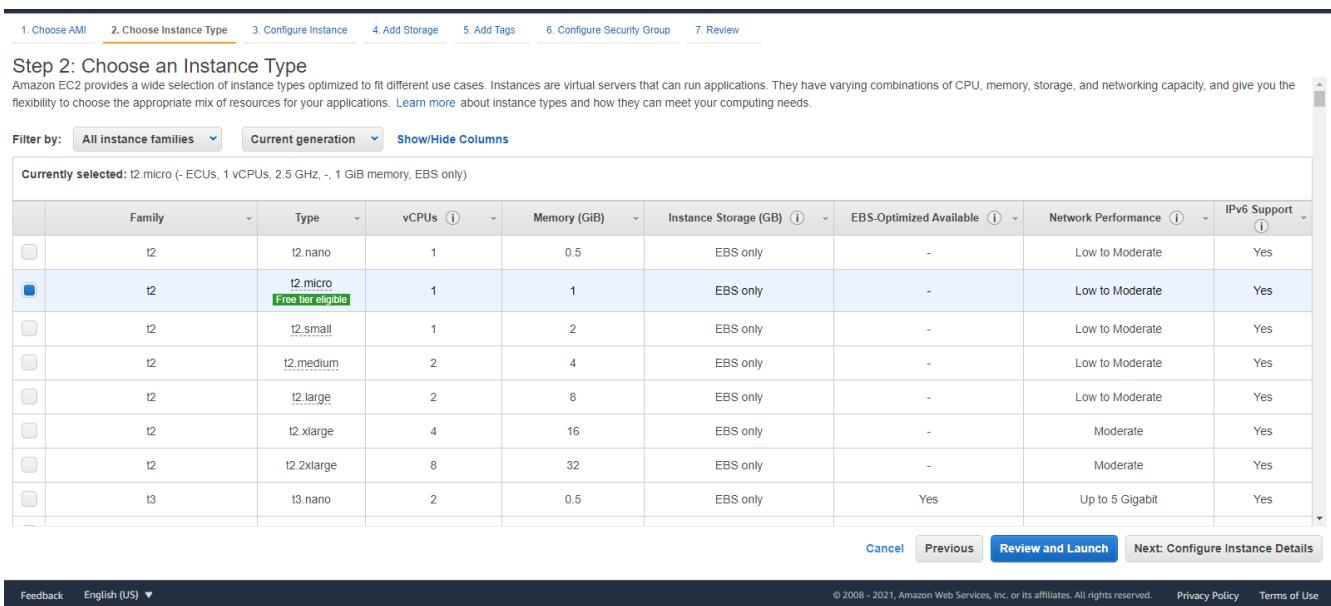
Quick Start

My AMIs	Amazon Linux	Free tier eligible	Community AMIs
	Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-047a51fa27710816e (64-bit x86) / ami-03c5cc3d1425c6d34 (64-bit Arm)		
	Amazon Linux comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.		
<input type="checkbox"/> Free tier only ⓘ	macOS Catalina 10.15.7 - ami-07f480f3fa002bc15		
	The macOS Catalina AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.		
	macOS Mojave 10.14.6 - ami-09fea520f532ff7aa		
	The macOS Mojave AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.		

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Step 2: Choose an Instance Type

Select “t2.micro”



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 families ▾ Current generation ▾ Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

Family	Type	vCPUs ⓘ	Memory (GiB) ⓘ	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ	IPv6 Support ⓘ
t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2.micro	1	1	EBS only	-	Low to Moderate	Yes
	t2.small	1	2	EBS only	-	Low to Moderate	Yes
	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
	t2.large	2	8	EBS only	-	Low to Moderate	Yes
	t2.xlarge	4	16	EBS only	-	Moderate	Yes
	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
	i3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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Step 3: Configure Instance Details

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

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	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	<input type="text" value="vpc-cba80eb6 (default)"/>	<input type="button" value="Create new VPC"/>
Subnet	<input type="text" value="No preference (default subnet in any Availability Zone)"/>	<input type="button" value="Create new subnet"/>
Auto-assign Public IP	<input type="checkbox"/> Use subnet setting (Enable)	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	<input type="button" value="Open"/>	
Domain join directory	<input type="text" value="No directory"/>	<input type="button" value="Create new directory"/>
IAM role	<input type="text" value="None"/>	<input type="button" value="Create new IAM role"/>
CPU options	<input type="checkbox"/> Specify CPU options	
Shutdown behavior	<input type="button" value="Stop"/>	
Stop - Hibernate behavior	<input type="checkbox"/> Enable hibernation as an additional stop behavior	

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

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Step 4: Add Storage

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-0a03896cf2695e901	<input type="text" value="8"/>	<input type="button" value="General Purpose SSD (gp2)"/>	100 / 3000	N/A	<input checked="" type="checkbox"/>	<input type="button" value="Not Encrypted"/>
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](#)

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Step 5: Add Tags

Click on “Add tag”

Enter key and value

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		LinuxEC2		<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](#)

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Step 6: Configure Security Group

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. 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: launch-wizard-3
Description: launch-wizard-3 created 2021-02-20T23:31:50.038+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 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](#)

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Step 7: Review Instance Launch

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 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.

Important Free Tier message for you

Improve your instances' security. Your security group, launch-wizard-3, 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](#)

Don't notify me often [Close](#)

AMI Details
Amazon Linux 2 AMI (HVM), SSD Volume Type
Free tier eligible
Amazon Linux 2 comes with five years of complimentary support. AMI is the successor of the Amazon Linux 1 AMI.
Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Storage	Network	Usage
t2.micro	-	1	1	EBS only	-	Low to Moderate

[Edit instance type](#)

Security Groups

Security group name	Description
launch-wizard-3	launched 2021-02-20T23:31:50Z/2021-02-20T23:31:50Z

[Edit security groups](#)

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

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Now :

I. Connect Instance

New EC2 Experience [Learn more](#)

EC2 Dashboard [New](#)

Events
Tags
Limits

Instances [New](#)

Instances [New](#)

Instance Types

Instances (1/3) Info

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Win19EC2	i-021601e88d0a9a412	Stopped	t2.micro	-	1/1 h...	us-east-1e	-
Launch instances	bd112a2ba4234	Running	t2.micro	-	No alarms	us-east-1e	ec2-18-204-5-222.co...
Launch instance from template	0a58067ac2ca7f	Stopped	t2.micro	-	1/1 h...	us-east-1d	-

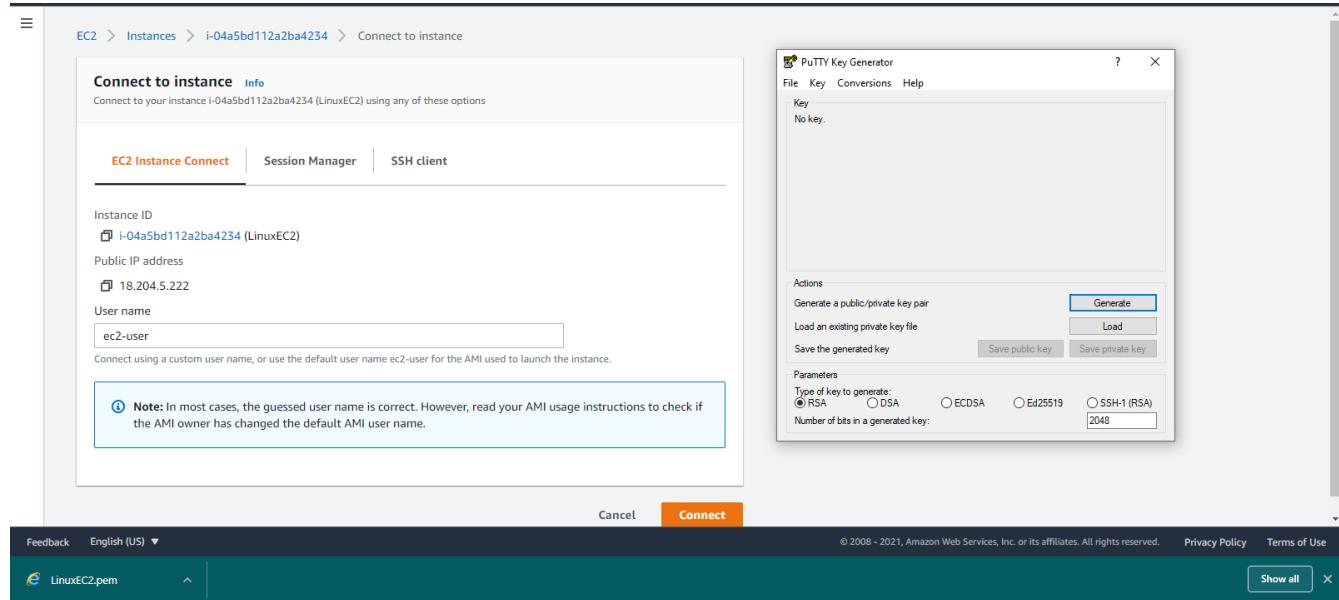
Actions [Launch instances](#)

Connect

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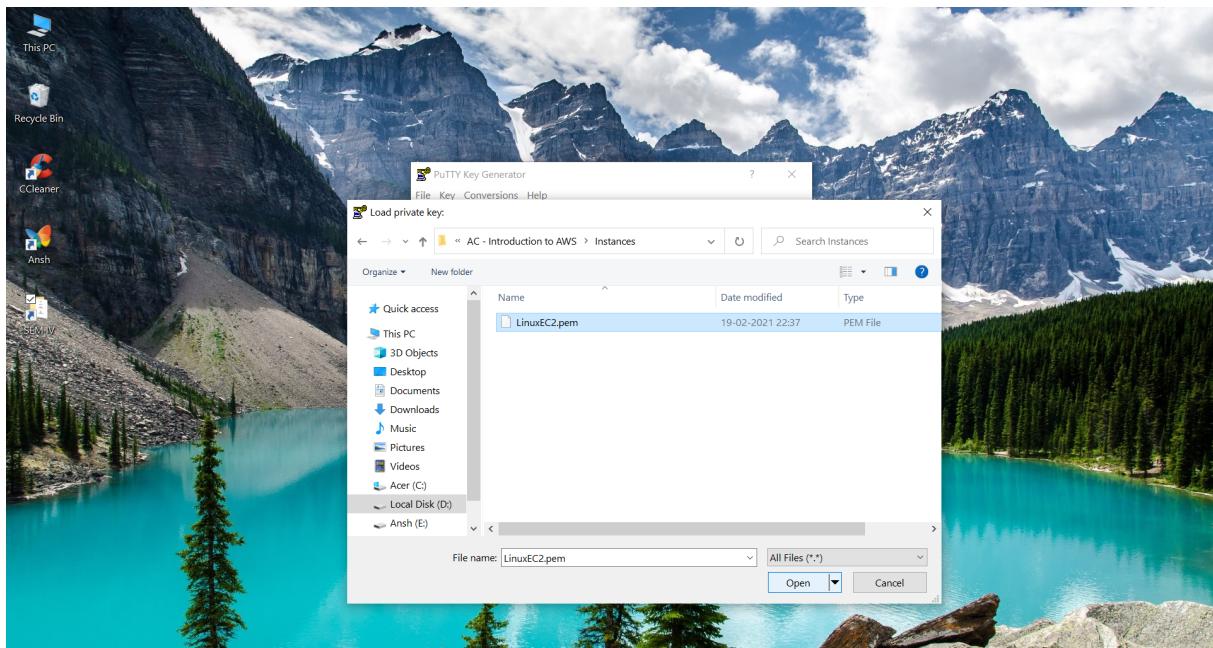
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2. Open PuTTYgen



3. Load an existing key pair

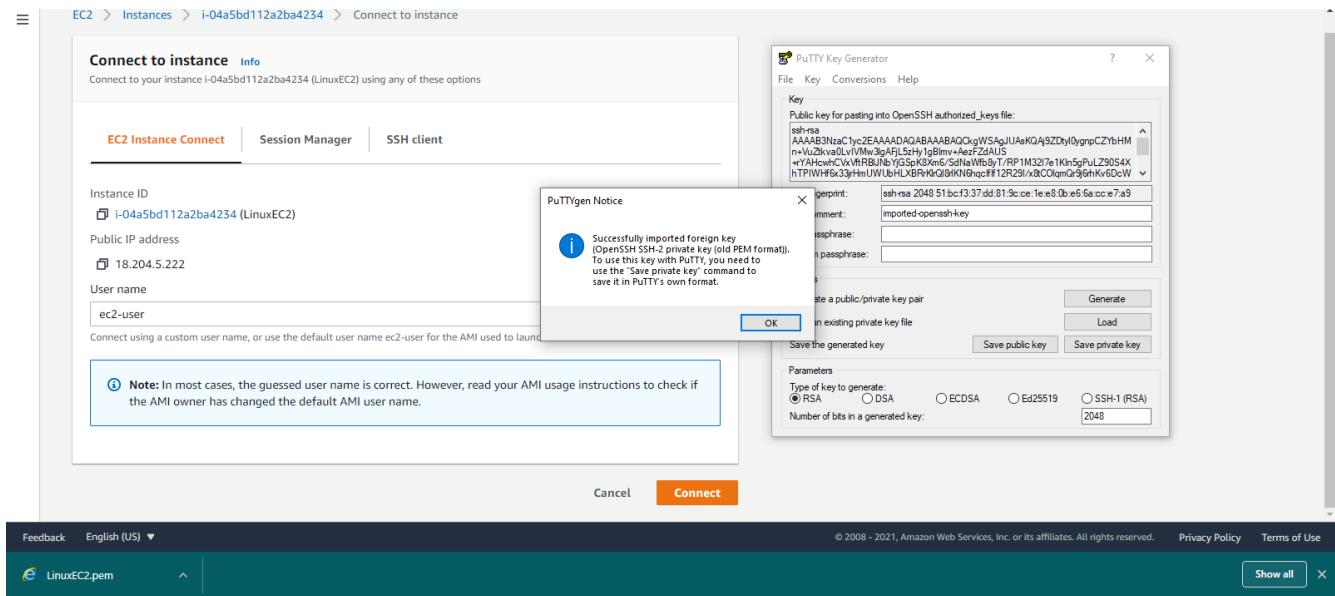
Browse through your computer and open your .pem file



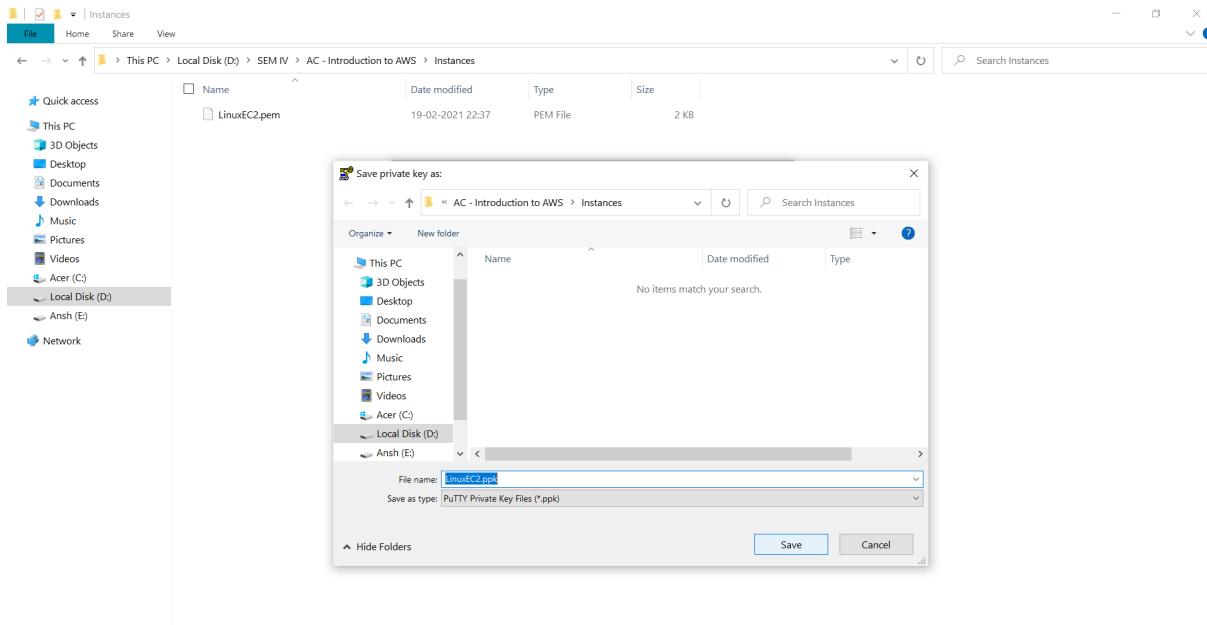
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4. You will get a prompt. Click on OK



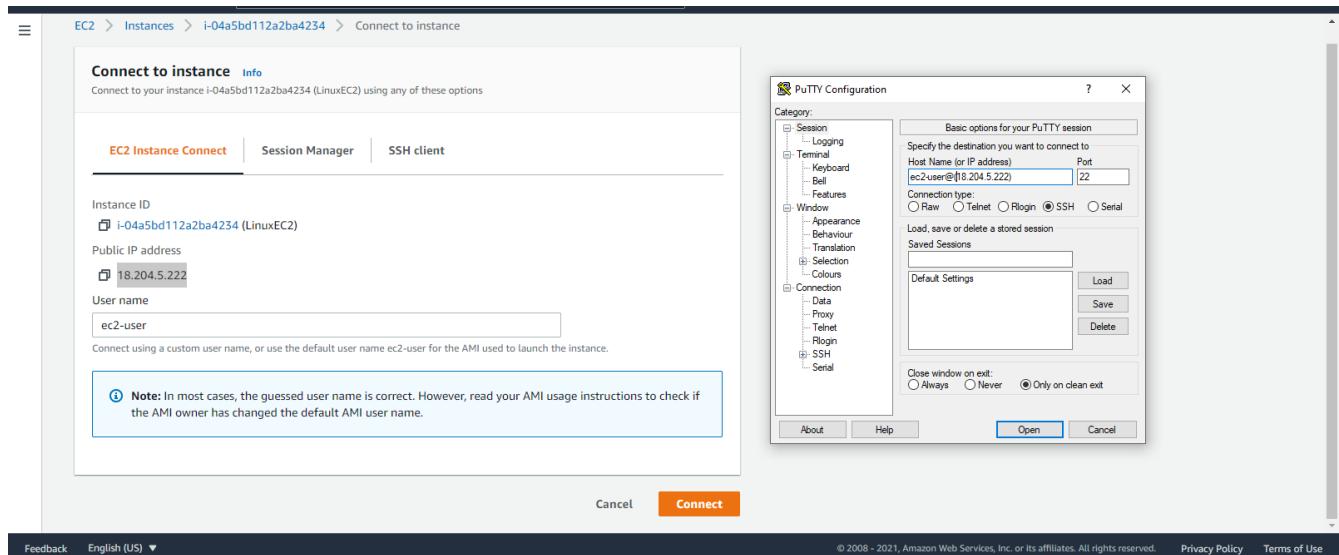
5. Save private key .ppk file.



6. Now Open PuTTY
In Host Name Type Public IP address
You will find this IP address at EC2 Instance Connect

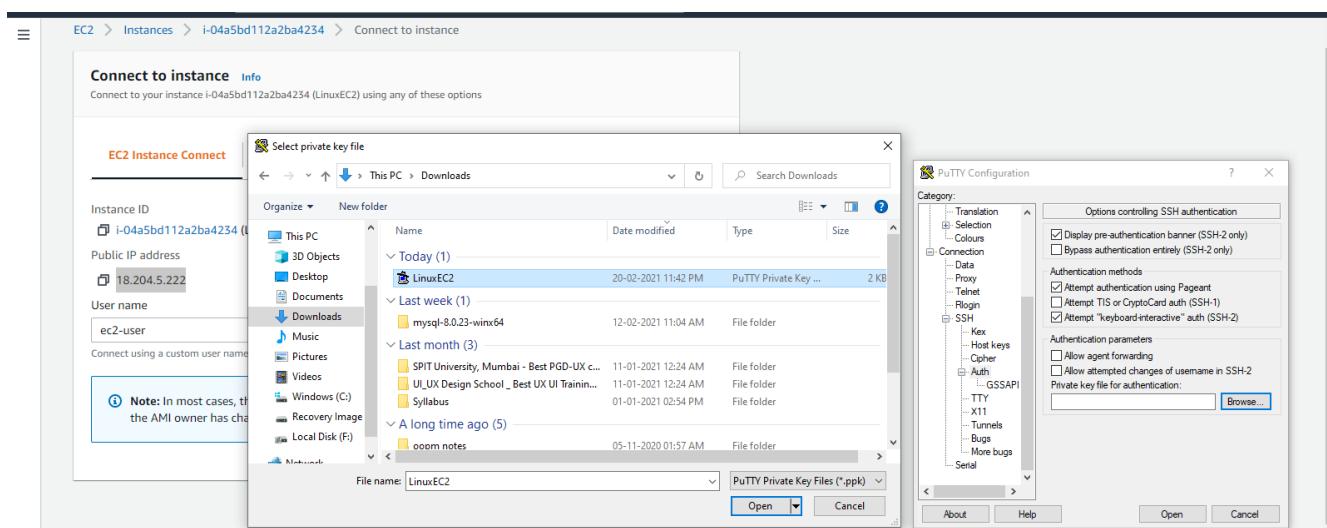
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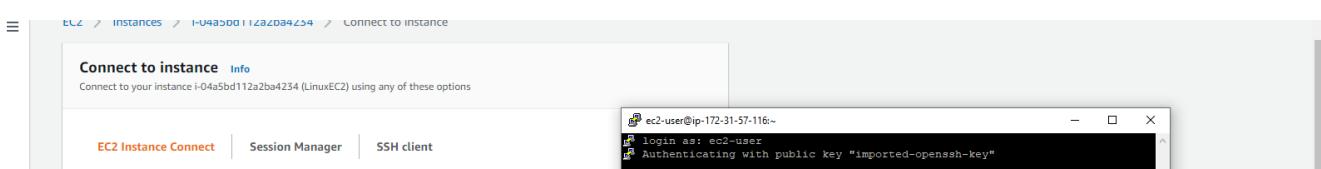


7. Now under SSH > Auth

Browse your .ppk file
And click on Open



8. A prompt will open

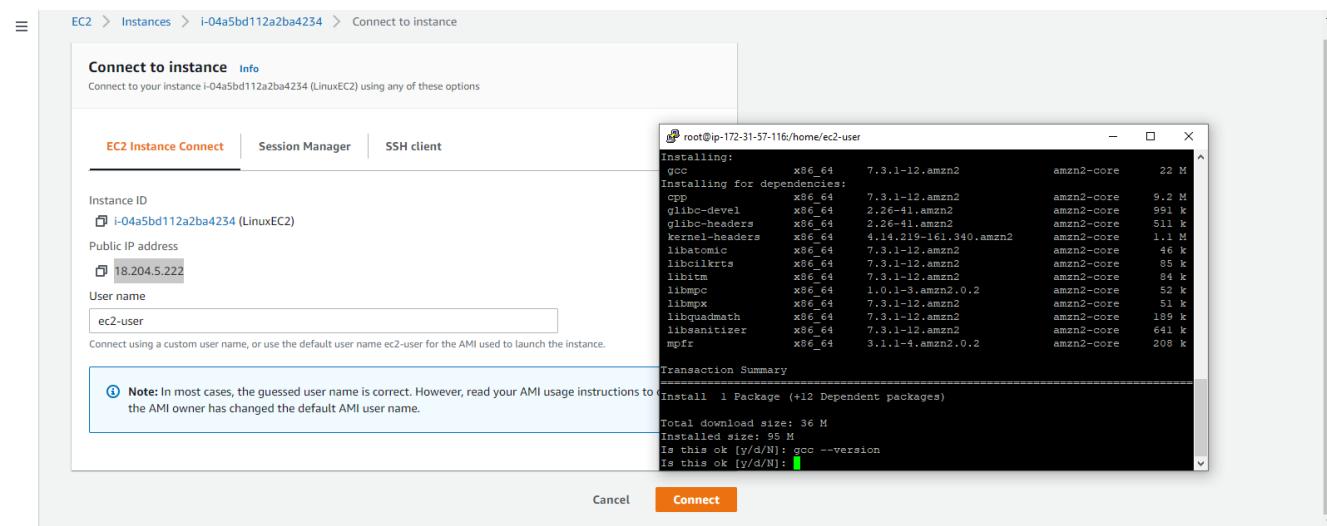


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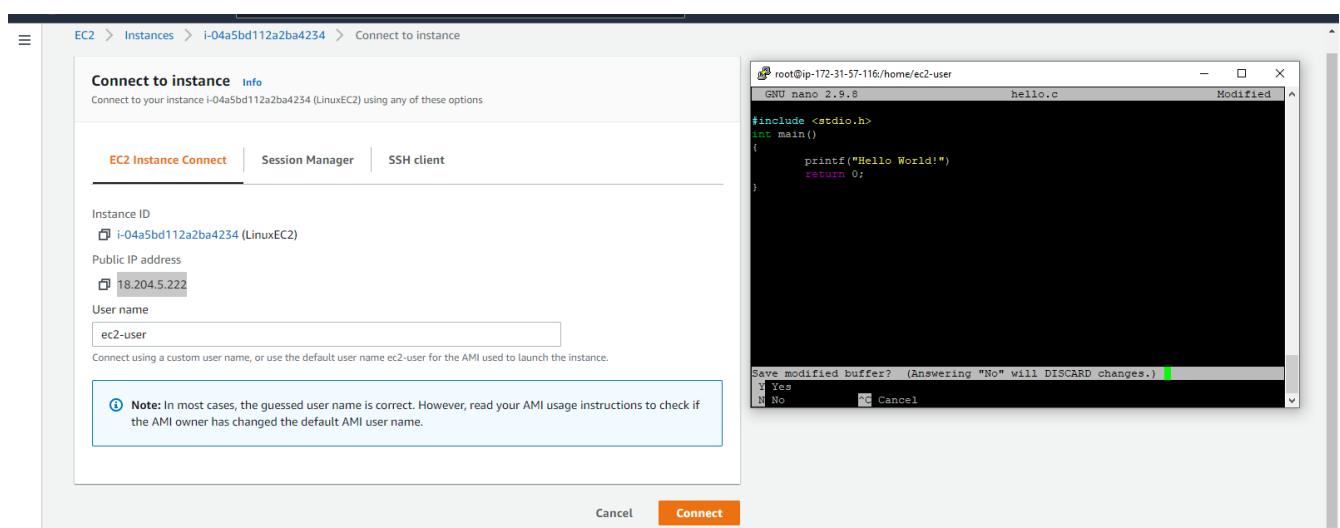
9. Enter following commands:

```
sudo su  
yum install gcc  
gcc --version
```



10. Enter *nano hello.c*

Type a sample program



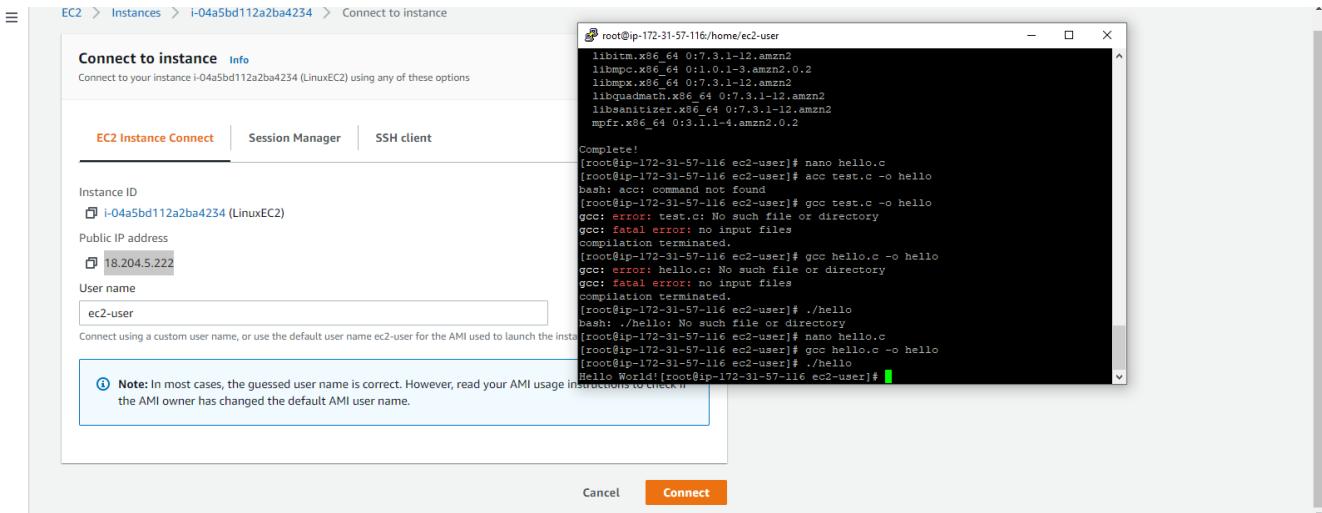
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II. Ctrl W to write to the file

Ctrl X to exit and Y to save changes

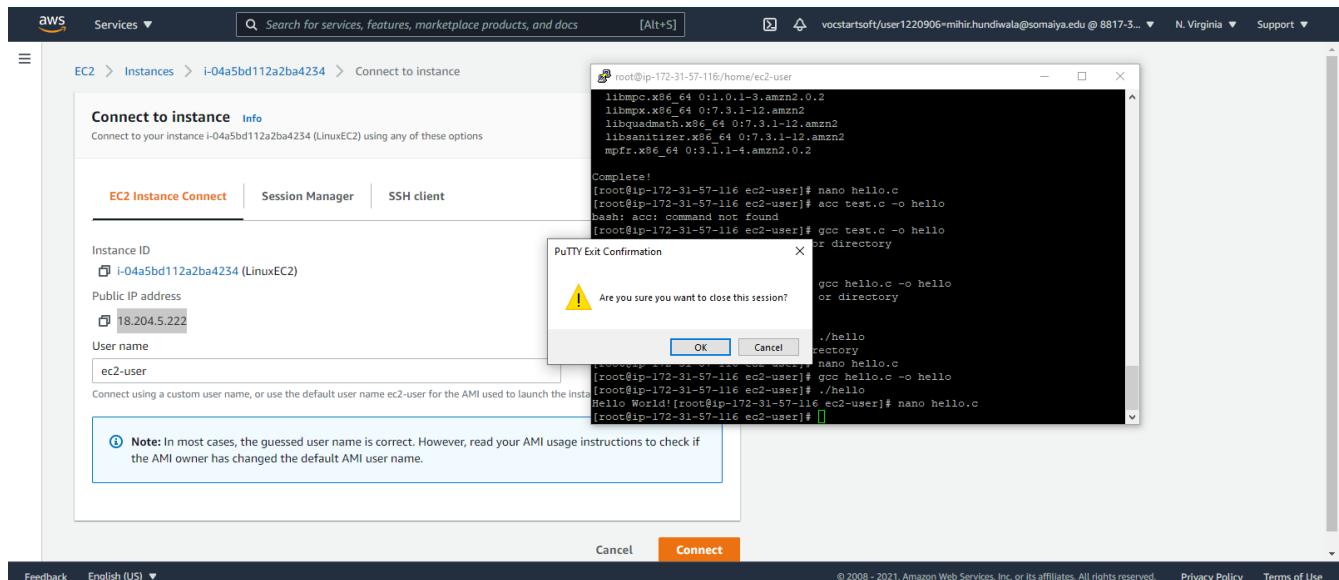
Now, type gcc hello.c –o hello



I2. Enter ./hello

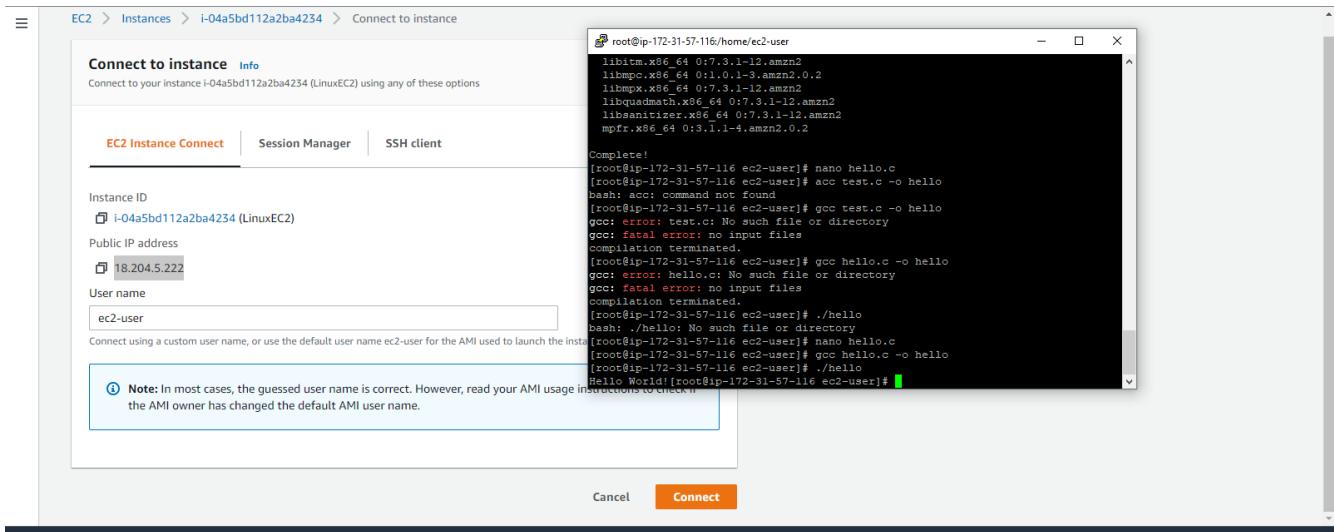
It generates the output

I3. Close



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14. Stop Instance

Conclusion:

Learned to make a Linux Instance and create and run a sample program in it.