

Launch an EC2 Instance

1. Enter the name of the instance as below

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name
terraform_ec2 [Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

▼ Summary

Number of instances [Info](#)
1

Software Image (AMI)
Amazon Linux 2023 AMI 2023.7.2...[read more](#)
ami-0e449927258d45bc4

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

[Cancel](#) [Launch instance](#) [Preview code](#)

2. Select Amazon Linux OS

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI
ami-0e449927258d45bc4 (64-bit (x86), uefi-preferred) / ami-086a54924e40cab98 (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs [Free tier eligible](#)

Description

Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications.

Amazon Linux 2023 AMI 2023.7.20250414.0 x86_64 HVM kernel-6.1

Architecture	Boot mode	AMI ID	Publish Date	Username
x86_64	uefi	ami-0e449927258d45bc4	2023-07-20	ec2-user

▼ Summary

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ami-0e449927258d45bc4

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

[Cancel](#) [Launch instance](#) [Preview code](#)

3. Select t2.medium machine type

▼ Instance type [Info](#) [Get advice](#)

Instance type

t2.medium
Family: t2 2 vCPU 4 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0499 USD per Hour
On-Demand Linux base pricing: 0.0464 USD per Hour
On-Demand RHEL base pricing: 0.0752 USD per Hour
On-Demand Windows base pricing: 0.0644 USD per Hour
On-Demand SUSE base pricing: 0.1464 USD per Hour

☐ All generations [Compare instance types](#)

[Additional costs apply for AMIs with pre-installed software](#)

▼ Summary

Number of instances [Info](#)
1

Software Image (AMI)
Amazon Linux 2023 AMI 2023.7.2...[read more](#)
ami-0e449927258d45bc4

Virtual server type (instance type)
t2.medium

Firewall (security group)
New security group

[Cancel](#) [Launch instance](#) [Preview code](#)

4. Select the key pair

Make you have in your local machine downloads,
If not create new key pair and download the **.pem** key file

Key pair (login) Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

MyNewKeyPair

Create new key pair

Proceed without a key pair (Not recommended) Default value

MyNewKeyPair Type: rsa

ust1 Type: rsa

pri_inst Type: rsa

Summary

Number of instances Info

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.7.2...read more

ami-0e449927258d45bc4

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Cancel Launch instance

Preview code

5. Select the security group which has the following inbound ports open 22 port & 80 port

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group Select existing security group

Common security groups Info

Select security groups

secure1 sg-0af68490f6b31b9d3 X

VPC: vpc-0953385851523fa15

Compare security group rules

Summary

Number of instances Info

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.7.2...read more

ami-0e449927258d45bc4

Virtual server type (instance type)

t2.medium

Firewall (security group)

secure1

Cancel Launch instance

Preview code

Note : If you don't have an existing security group with the above ports or if you are unsure about ports create new security group and add the ports

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules Info

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0d4a981fad52fb333	SSH	TCP	22	C...	0.0.0.0/0
sgr-09a86fb44ac66cb1b	HTTP	TCP	80	C...	0.0.0.0/0

Add rule

Cancel Preview changes Save rules

6. Click on **Launch Instance**

7. Now connect the Instance using console connect option

The screenshot shows the AWS Management Console interface for connecting to an EC2 instance. The breadcrumb navigation is EC2 > Instances > i-0095fa905ae1751f6 > Connect to instance. The page title is 'Connect to instance' with an 'Info' link. Below the title, it says 'Connect to your instance i-0095fa905ae1751f6 (terraform_ec2) using any of these options'. There are four tabs: 'EC2 Instance Connect' (selected), 'Session Manager', 'SSH client', and 'EC2 serial console'. Under the 'EC2 Instance Connect' tab, the 'Instance ID' is 'i-0095fa905ae1751f6 (terraform_ec2)'. The 'Connection Type' section has two options: 'Connect using EC2 Instance Connect' (selected) and 'Connect using EC2 Instance Connect Endpoint'. The 'Public IPv4 address' is '13.218.247.130'. The 'Username' is 'ec2-user'. A note states: 'In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.' At the bottom right, there are 'Cancel' and 'Connect' buttons.

Note: If you are unable to connect to the instance using connect option, check the security group inbound rules whether you added the **22, SSH port**

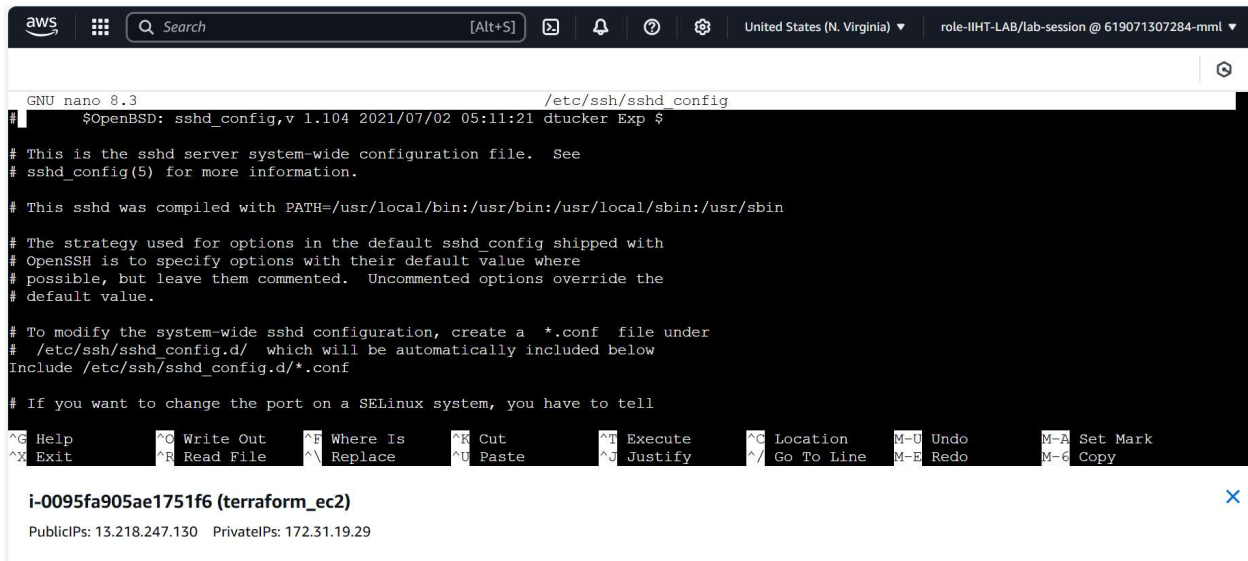
8. Enter `sudo su` for superuser privillages

9. Enter the following command to edit the sshd config file `nano /etc/ssh/sshd_config`

The screenshot shows a terminal window with the following text:
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023
Last login: Tue Apr 29 17:26:04 2025 from 18.206.107.29
[ec2-user@ip-172-31-19-29 ~]\$ sudo su
[root@ip-172-31-19-29 ec2-user]# nano /etc/ssh/sshd_config

Below the terminal window, the instance details are shown: **i-0095fa905ae1751f6 (terraform_ec2)**
PublicIPs: 13.218.247.130 PrivateIPs: 172.31.19.29

10. You can see the **sshd_config** file opened in the nano editor



```
GNU nano 8.3 /etc/ssh/sshd_config
# $OpenBSD: sshd_config,v 1.104 2021/07/02 05:11:21 dtucker Exp $

# This is the sshd server system-wide configuration file. See
# sshd_config(5) for more information.

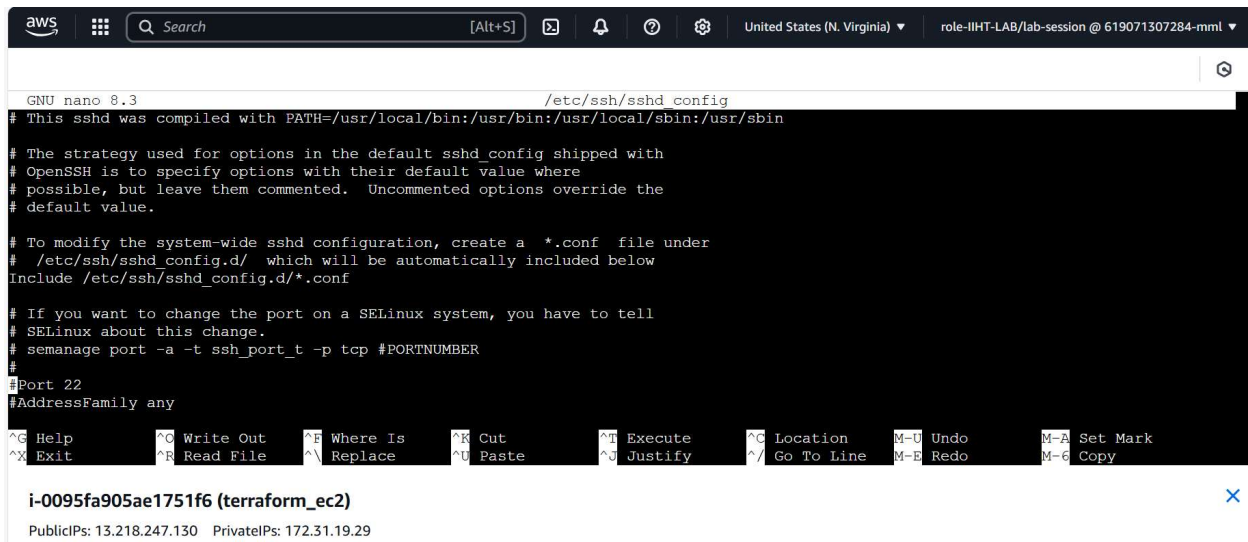
# This sshd was compiled with PATH=/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented. Uncommented options override the
# default value.

# To modify the system-wide sshd configuration, create a *.conf file under
# /etc/ssh/sshd_config.d/ which will be automatically included below
Include /etc/ssh/sshd_config.d/*.conf

# If you want to change the port on a SELinux system, you have to tell
# SELinux about this change.
# semanage port -a -t ssh_port_t -p tcp #PORTNUMBER
#
#Port 22
#AddressFamily any
```

11. Scroll down a little and you can find the Port 22 commented down



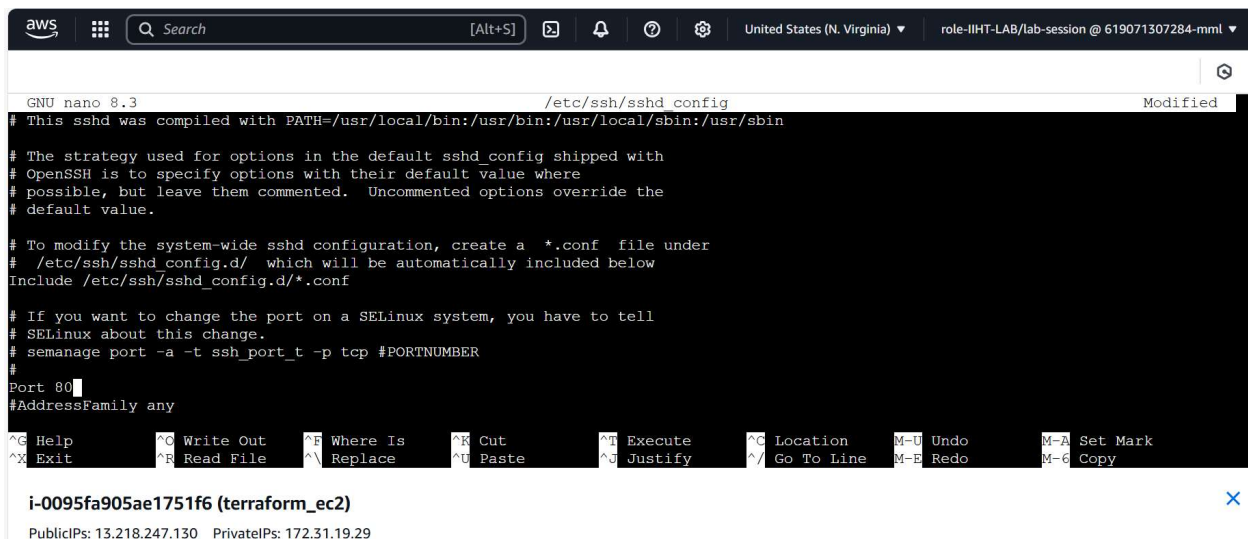
```
GNU nano 8.3 /etc/ssh/sshd_config
# This sshd was compiled with PATH=/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented. Uncommented options override the
# default value.

# To modify the system-wide sshd configuration, create a *.conf file under
# /etc/ssh/sshd_config.d/ which will be automatically included below
Include /etc/ssh/sshd_config.d/*.conf

# If you want to change the port on a SELinux system, you have to tell
# SELinux about this change.
# semanage port -a -t ssh_port_t -p tcp #PORTNUMBER
#
#Port 22
#AddressFamily any
```

12. Uncomment (remove the “#”) before the Port 22 and change the 22 to 80



```
GNU nano 8.3 /etc/ssh/sshd_config Modified
# This sshd was compiled with PATH=/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented. Uncommented options override the
# default value.

# To modify the system-wide sshd configuration, create a *.conf file under
# /etc/ssh/sshd_config.d/ which will be automatically included below
Include /etc/ssh/sshd_config.d/*.conf

# If you want to change the port on a SELinux system, you have to tell
# SELinux about this change.
# semanage port -a -t ssh_port_t -p tcp #PORTNUMBER
#
Port 80
#AddressFamily any
```

Note: Be cautious while editing this file, since this is a config file, any mistake leads to errors.

13. Save the sshd_config file
Click **Ctrl + O** to save the file
14. Exit the editor
Click **Ctrl + X** to exit the editor

Installing Terraform on the ec2 Instance

Before doing this come to the home directory of the machine by entering following command

cd /home/ec2-user

1. Run the following command to install **unzip** package
sudo yum install -y unzip

```
aws [Search] [Alt+S] United States (N. Virginia) role-IIHT-LAB/lab-session @ 619071307284-

[root@ip-172-31-19-29 ec2-user]# sudo yum install -y unzip
Amazon Linux 2023 Kernel Livepatch repository                               162 kB/s | 15 kB   00:00
Package unzip-6.0-57.amzn2023.0.2.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-19-29 ec2-user]#
```

2. Run the following command to download the terraform zip file

curl -LO https://releases.hashicorp.com/terraform/1.11.4/terraform_1.11.4_linux_amd64.zip

You should find a zip as shown below when you run **ls** command.

```
aws [Search] [Alt+S] United States (N. Virginia) role-IIHT-LAB/lab-session @ 619071307284-

[root@ip-172-31-19-29 ec2-user]# sudo yum install -y unzip
Amazon Linux 2023 Kernel Livepatch repository                               162 kB/s | 15 kB   00:00
Package unzip-6.0-57.amzn2023.0.2.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-19-29 ec2-user]# curl -LO https://releases.hashicorp.com/terraform/1.11.4/terraform_1.11.4_linux_amd64.zip
% Total    % Received % Xferd Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left   Speed
100 26.5M  100 26.5M    0     0  53.4M      0 --:--:-- --:--:-- --:--:--  53.4M
[root@ip-172-31-19-29 ec2-user]# ls
terraform_1.11.4_linux_amd64.zip
[root@ip-172-31-19-29 ec2-user]#
```

3. Unzip the download zip file using the following command
unzip terraform_1.11.4_linux_amd64.zip

```
[root@ip-172-31-19-29 ec2-user]# unzip terraform_1.11.4_linux_amd64.zip
Archive:  terraform_1.11.4_linux_amd64.zip
  inflating: LICENSE.txt
  inflating: terraform
[root@ip-172-31-19-29 ec2-user]# ls
LICENSE.txt  terraform  terraform_1.11.4_linux_amd64.zip
```


4. Move the folder to usr/local/bin
`sudo mv terraform /usr/local/bin/`

```
[root@ip-172-31-19-29 ec2-user]# sudo mv terraform /usr/local/bin/
```

5. Check terraform installation by entering the following command
terraform version

```
[root@ip-172-31-19-29 ec2-user]# terraform version
Terraform v1.11.4
on linux_amd64
[root@ip-172-31-19-29 ec2-user]#
```

Now try connecting to your ec2 instance from your local machine

1. Open git bash or Powershell and try connecting to ec2 instance using ssh
2. Navigate to the folder where you have your public key of the instance (key pair associated to the instance)
3. Enter the following command
`ssh -i <key_pair_name> -p 80 ec2-user@<public-ip-of-ec2-instance>`
example: `ssh -i my_ec2_key.pem -p 80 ec2-user@13.218.247.130`

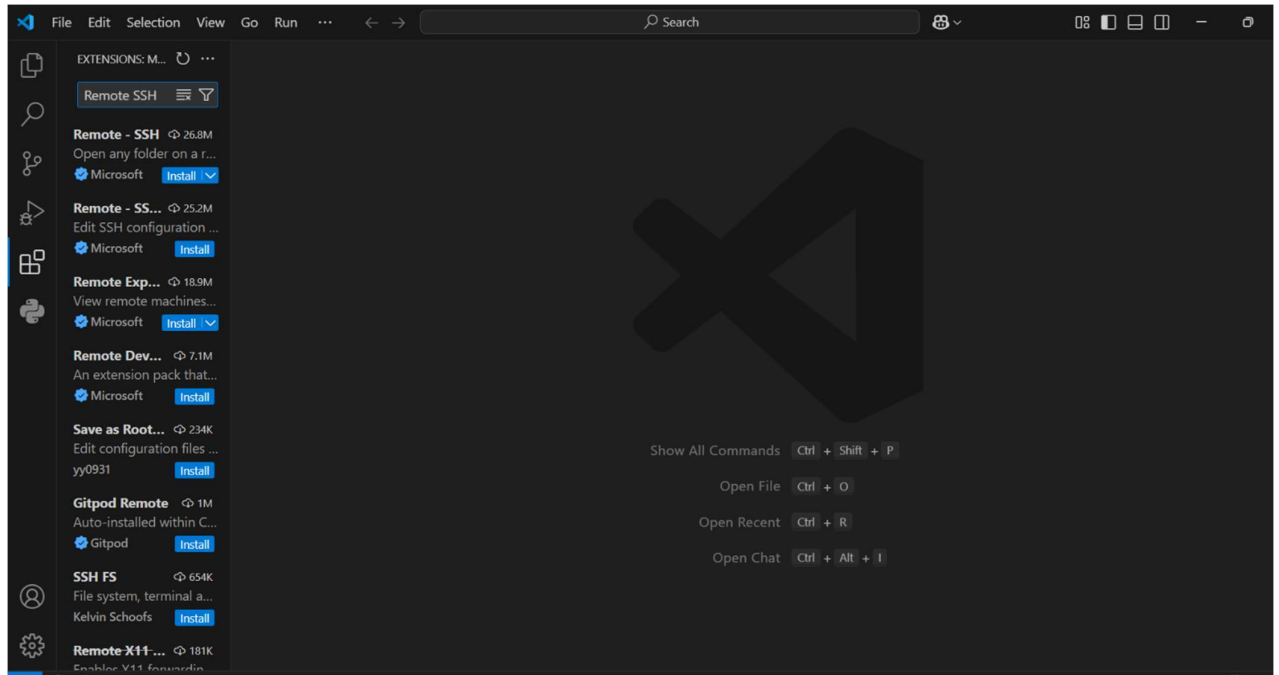
if you are prompted to continue connecting,
Type **yes** and click **enter**

4. If you see the following then you are all set to go to next step

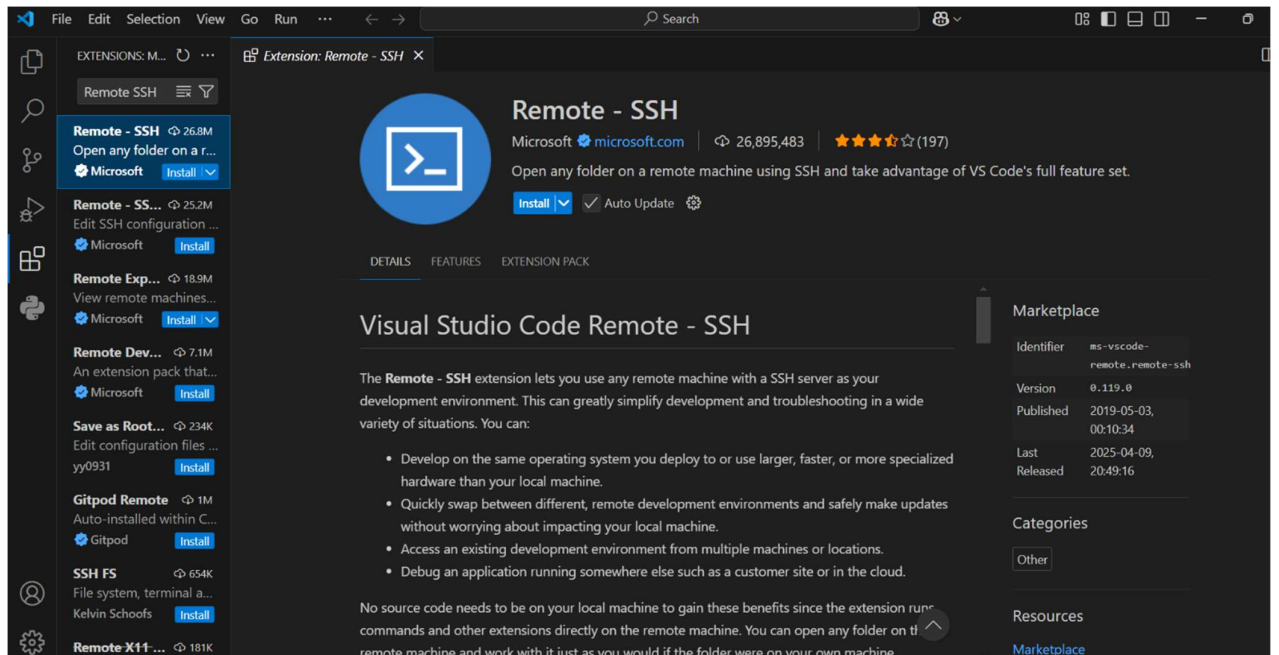
```
ec2-user@ip-172-31-19-29:~
USTR+290400@9Q3R353 MINGW64 ~/Downloads
$ ls -ltr | grep ust1.pem
-rw-r--r-- 1 USTR+290400 4096      1678 Apr 29 18:06 ust1.pem
USTR+290400@9Q3R353 MINGW64 ~/Downloads
$ ssh -i ust1.pem -p 80 ec2-user@13.218.247.130
The authenticity of host '[13.218.247.130]:80 ([13.218.247.130]:80)' can't be es
tablished.
ED25519 key fingerprint is SHA256:+68GUH7wr/C/wahcmEypCdqw/WxNZmZtUvnFmkmMkog.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '[13.218.247.130]:80' (ED25519) to the list of known hosts.
#_
~\  #####_      Amazon Linux 2023
~~~\#####\
~~~\###|
~~~\#/      https://aws.amazon.com/linux/amazon-linux-2023
~~~\V~'-'>
~~~
~~~.-.-
~~~/_/
~~~/_m/'
Last login: Tue Apr 29 17:27:44 2025 from 18.206.107.29
[ec2-user@ip-172-31-19-29 ~]$
```

Installing Extensions to vs code

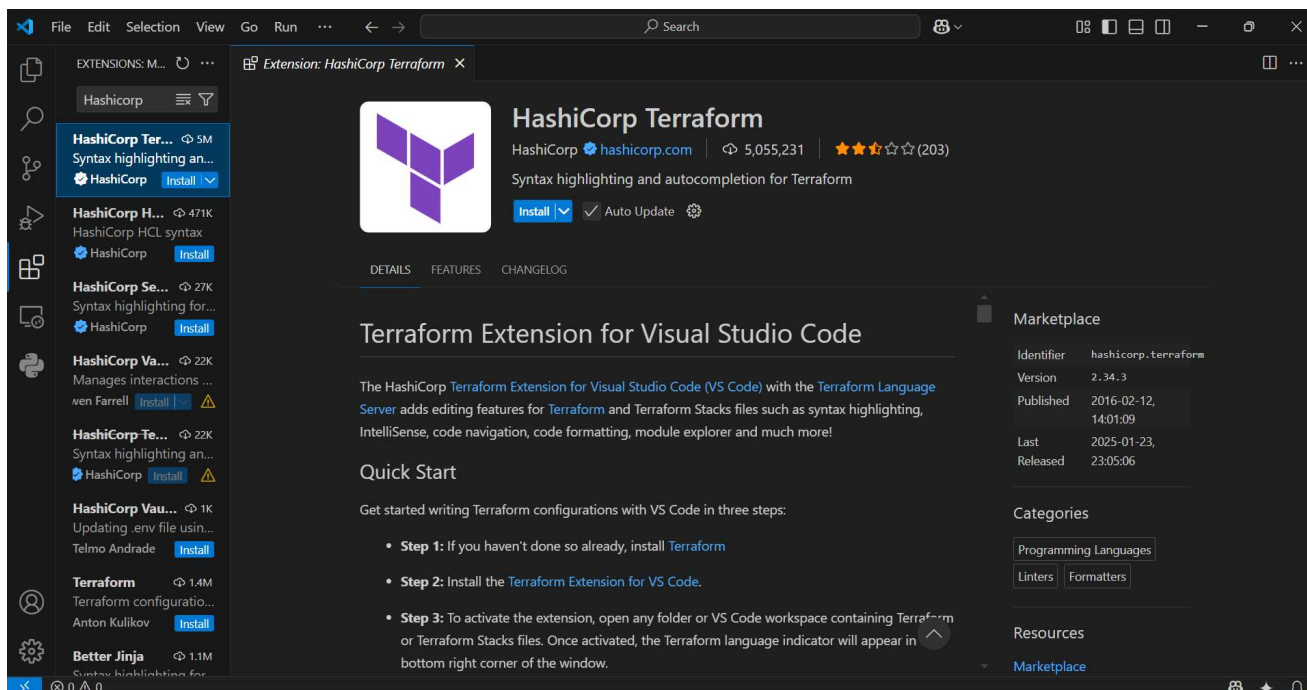
1. Open your vs code and install the following extensions
Click on Extensions in the sidebar
Enter “**Remote SSH**” in the search top
Select the first one.



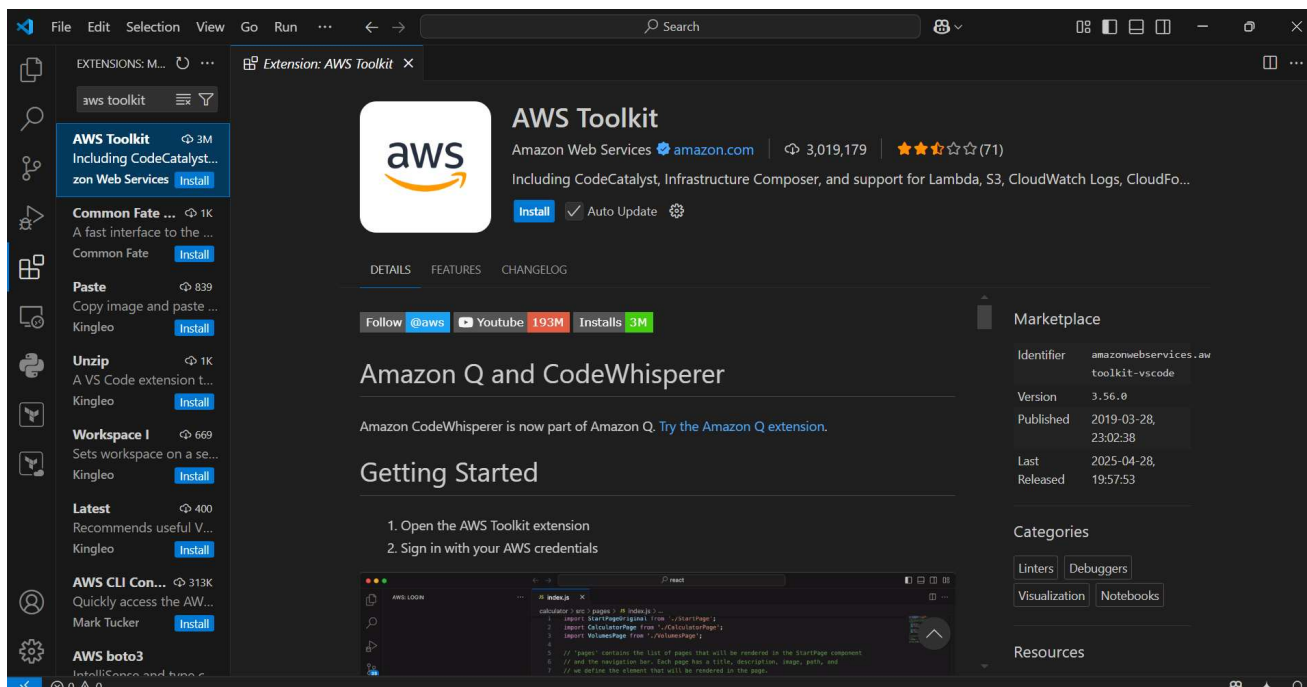
2. Click on Install



3. Install HashiCorp Terraform Extension
Search HashiCorp in the search bar
Click on first one
Click on Install



4. Install AWS Toolkit Extension
search **aws toolkit** in the extension search bar
Click on the first one and click on Install



Connecting your ec2 from vscode

1. Copy the pem file to the .ssh folder of your local machine
Execute the command in git bash and check the paths of the pem file and .ssh folder before copying
`cp <pem file path> <.ssh folder path>`
Example:-
Here In my case I have the pem file in my Downloads folder
Make sure you are in the home directory of the user (your employee id user)

Run the following command if you are in the same path and you have your pem file in the **Downloads** folder

1. `pwd`
check you are at the home directory of user
here its: `/c/Users/290400`
2. `ls .ssh`
to check you have the folder and it has config file in it
3. `cp Downloads/ust1.pem .ssh`
copies the pem file to the .ssh folder
4. `ls .ssh`
checking weather copy is successful

```
MINGW64:/c/Users/290400
USTR+290400@9Q3R353 MINGW64 ~
$ pwd
/c/Users/290400
USTR+290400@9Q3R353 MINGW64 ~
$ ls .ssh
config id_ed25519 id_ed25519.pub known_hosts known_hosts.old
USTR+290400@9Q3R353 MINGW64 ~
$ cp Downloads/ust1.pem .ssh
USTR+290400@9Q3R353 MINGW64 ~
$ ls .ssh
config id_ed25519 id_ed25519.pub known_hosts known_hosts.old ust1.pem
USTR+290400@9Q3R353 MINGW64 ~
$ |
```

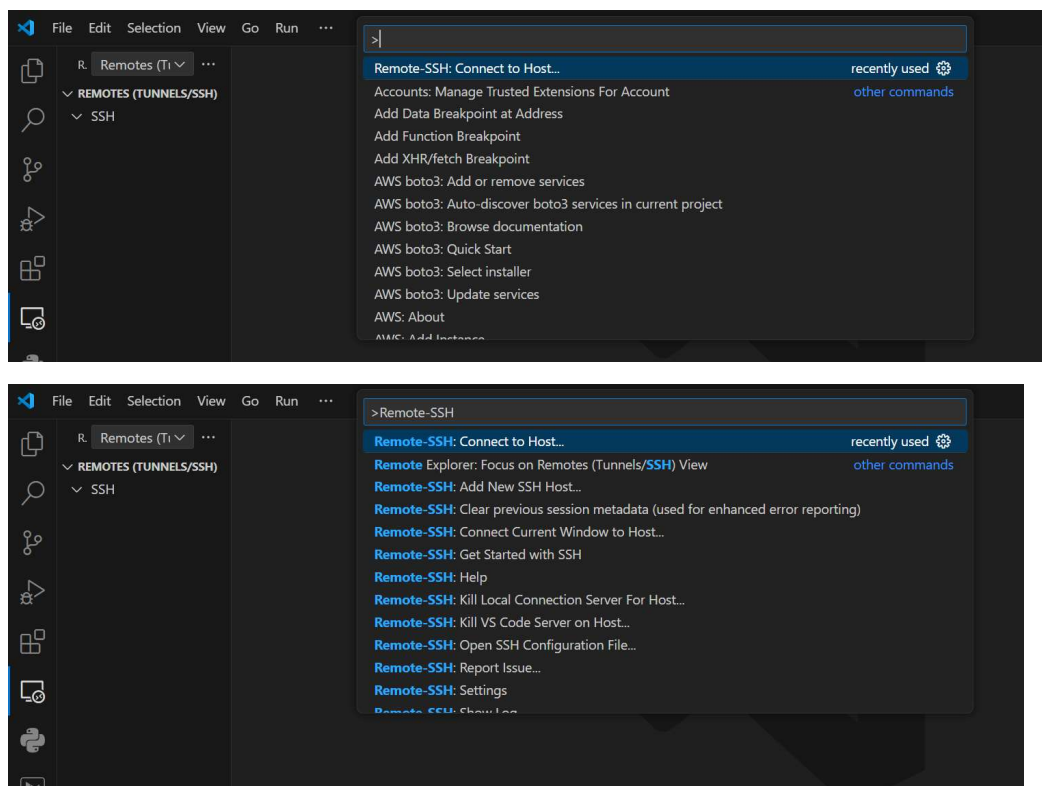
Now the relative path of the pem file should be something like below:

~/ssh/ust1.pem (replace with your key name)

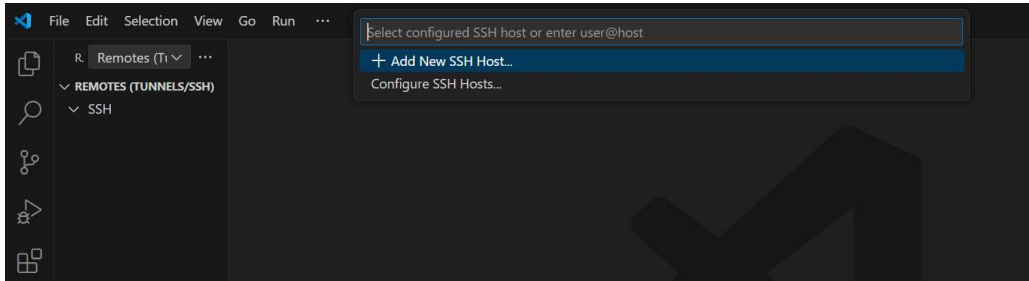
make a note, we need it in the next step

In vscode click F1 (check whether you have turned fn lock)

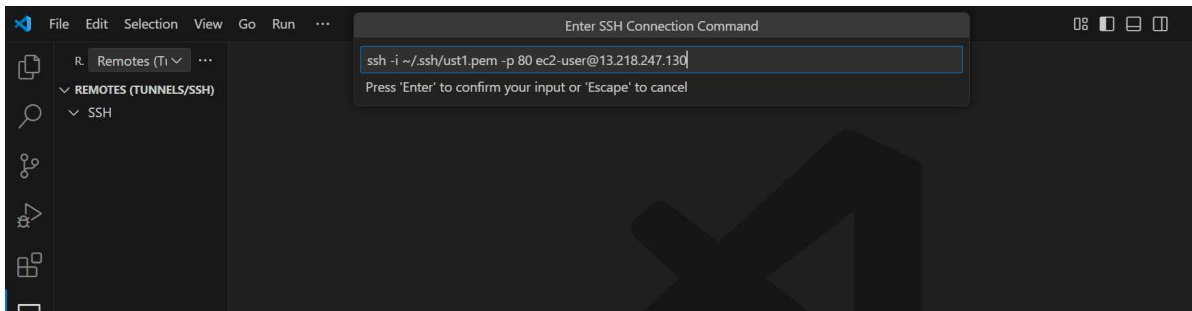
Enter Remote SSH in the search bar and select Remote SSH as shown below



Now you will be shown 2 options like this, select first option i.e., **+Add New SSH Host..**

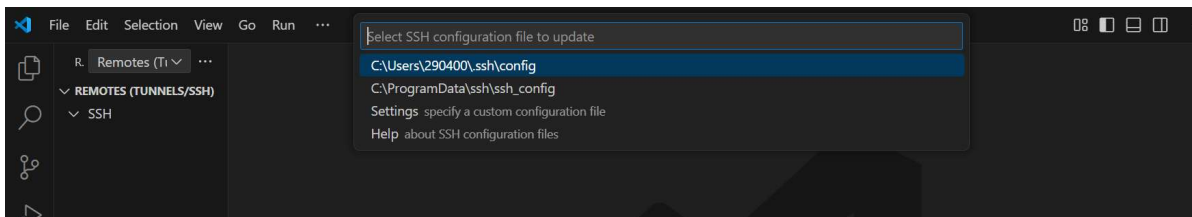


Then Enter the following command by replacing your key-pair (pem file) name and your ec2 instance public IP



Now select the ssh config where the Host details should be added

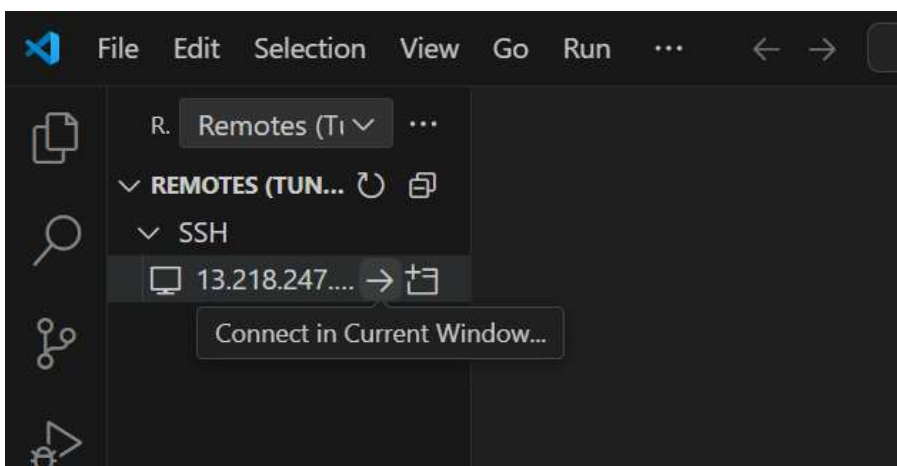
Select the first one (.ssh folder should be present in your home directory of user)

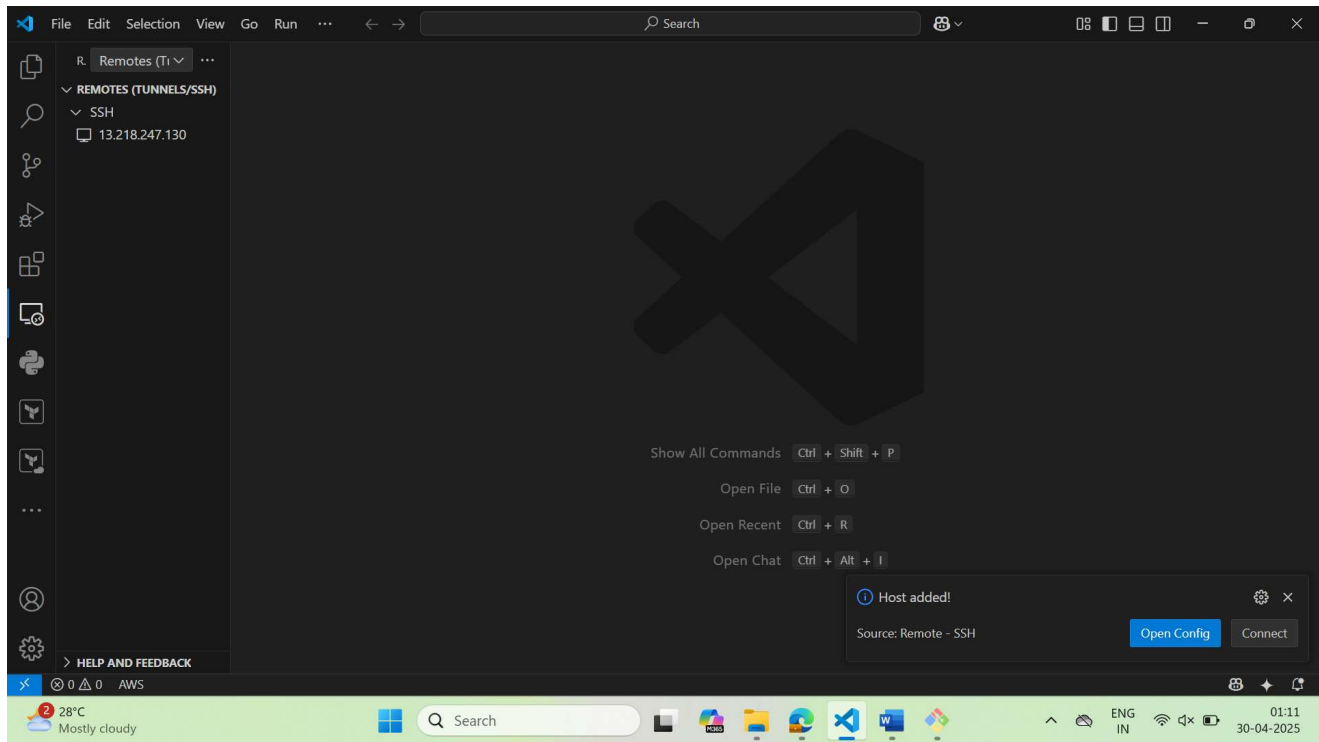


After that you should be able to see the Public IP in the left side as below (if adding host is successful)

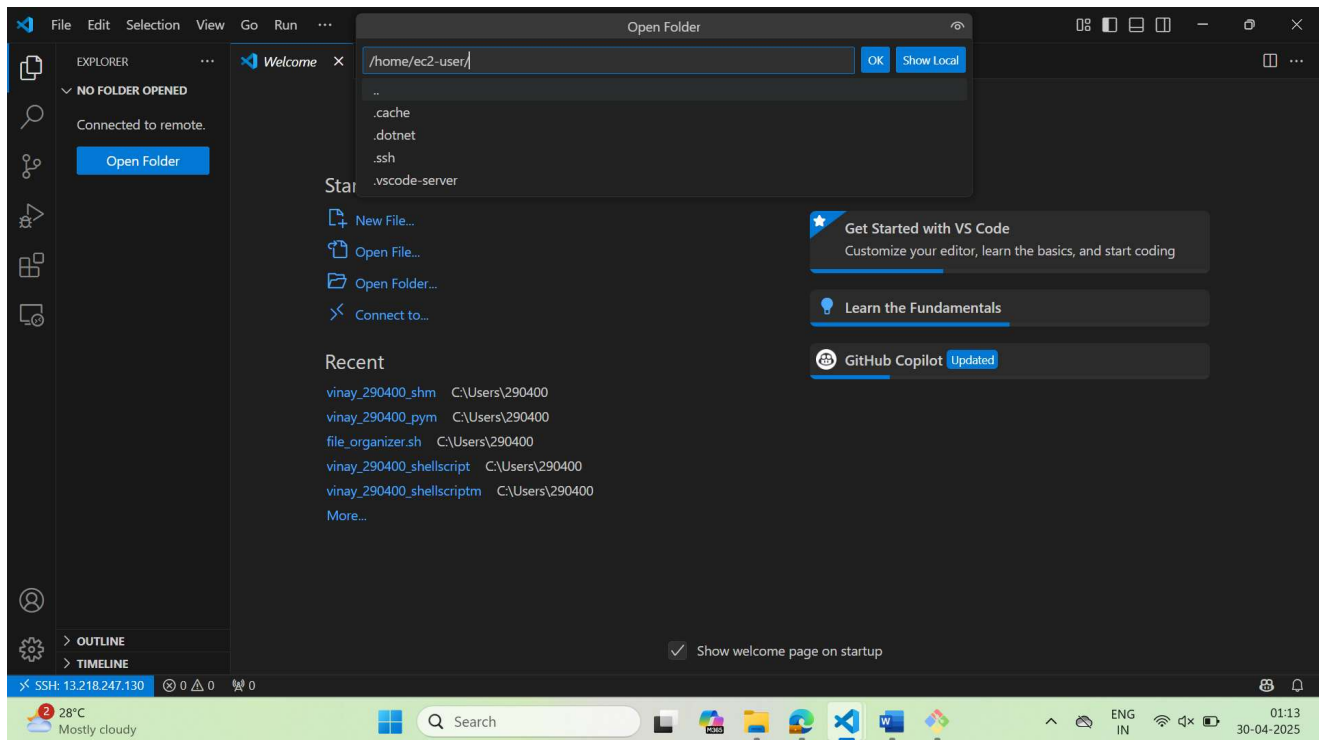
You will be prompted to connect to the instance on the right bottom, click on connect

Note: If you miss the above option you can choose the connect option present in the left side as below (click on right pointing arrow beside the Public IP)





A new window will be opened and select the folder to be open from the Remote ec2 instance



If everything works well you will get the folders as below

