

Create a VPC in AWS with address as 172.20.0.0. Create a public subnet and a private subnet. Connect Internet Gateway to the public subnet. Create an EC2 instance connect it to the public subnet. Create another EC2 instance and connect it to private subnet. Display that you are able to connect using putty to the EC2 instance in the public subnet.

Copy the key of the second EC2 instance to the EC2 instance in the public subnet. Display that you are able to ssh to the EC2 instance in the private subnet from the EC2 instance in the public subnet.

1 create vpc

In the "Create VPC" wizard:

Name tag: "MyVPC"

IPv4 CIDR block: 172.20.0.0/16

Leave other options as default (IPv6, Tenancy).

Click Create VPC.

CreateVpc | VPC Console | ChatGPT | 5. Cloud - Google Drive

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#CreateVpc:createMode=vpcOnly

Services Search [Alt+S]

VPC > Your VPCs > Create VPC

Create VPC [Info](#)

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

☒ VPC only ☐ VPC and more

Name tag - *optional*
Creates a tag with a key of 'Name' and a value that you specify.

MyVPC

IPv4 CIDR block [Info](#)
☒ IPv4 CIDR manual input ☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR
172.20.0.0
CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
☒ No IPv6 CIDR block ☐ IPAM-allocated IPv6 CIDR block
☐ Amazon-provided IPv6 CIDR block
☐ IPv6 CIDR owned by me

Tenancy [Info](#)
Default

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key	Value - <i>optional</i>	
<input type="text" value="Name"/>	<input type="text" value="MyVPC"/>	<input type="button" value="Remove tag"/>

You can add 49 more tags

CloudShell Feedback

Step 2: Create Public and Private Subnets

After creating the VPC, go to the Subnets section.

Create the Public Subnet:

Click Create subnet.

Select the VPC created in Step 1.

Name tag: "PublicSubnet"

Availability Zone: Choose one (e.g., us-east-1a).

CIDR block: 172.20.1.0/24

Click Create subnet.

Create subnet [Info](#)

VPC

VPC ID

Create subnets in this VPC.

vpc-0db17f1760532f9f3 (MyVPC)

Associated VPC CIDRs

IPv4 CIDRs

172.20.0.0/16

Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name

Create a tag with a key of 'Name' and a value that you specify.

PublicSubnet

The name can be up to 256 characters long.

Availability Zone [Info](#)

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

Asia Pacific (Mumbai) / ap-south-1a

IPv4 VPC CIDR block [Info](#)

Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.

172.20.0.0/16

IPv4 subnet CIDR block

172.20.1.0/24 256 IPs

< > ^ v

Tags - optional

Key

Value - optional

Q Name X

Q PublicSubnet X

Remove

Add new tag

You can add 49 more tags.

Remove

Add new subnet

Cancel

Create subnet

3 Create the Private Subnet:

Click Create subnet again.

Select the same VPC.

Name tag: "PrivateSubnet"

Availability Zone: Choose the same or different (e.g., us-east-1b).

CIDR block: 172.20.2.0/24

Click Create subnet.



Services

Search

[Alt+S]

Create subnet [Info](#)

VPC

VPC ID

Create subnets in this VPC.

vpc-0db17f1760532f9f3 (MyVPC)

Associated VPC CIDRs

IPv4 CIDRs

172.20.0.0/16

Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name

Create a tag with a key of 'Name' and a value that you specify.

PrivateSubnet

The name can be up to 256 characters long.

Availability Zone [Info](#)

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

Asia Pacific (Mumbai) / ap-south-1a

IPv4 VPC CIDR block [Info](#)

Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.

172.20.0.0/16

IPv4 subnet CIDR block

172.20.2.0/24 256 IPs

< > ^ v

Tags - optional

Key

Value - optional

Name

PrivateSubnet

Remove

Add new tag

You can add 49 more tags.

Remove

Add new subnet

Cancel

Create subnet

CloudShell

Feedback



Type here to search



Step 3: Create an Internet Gateway (IGW)

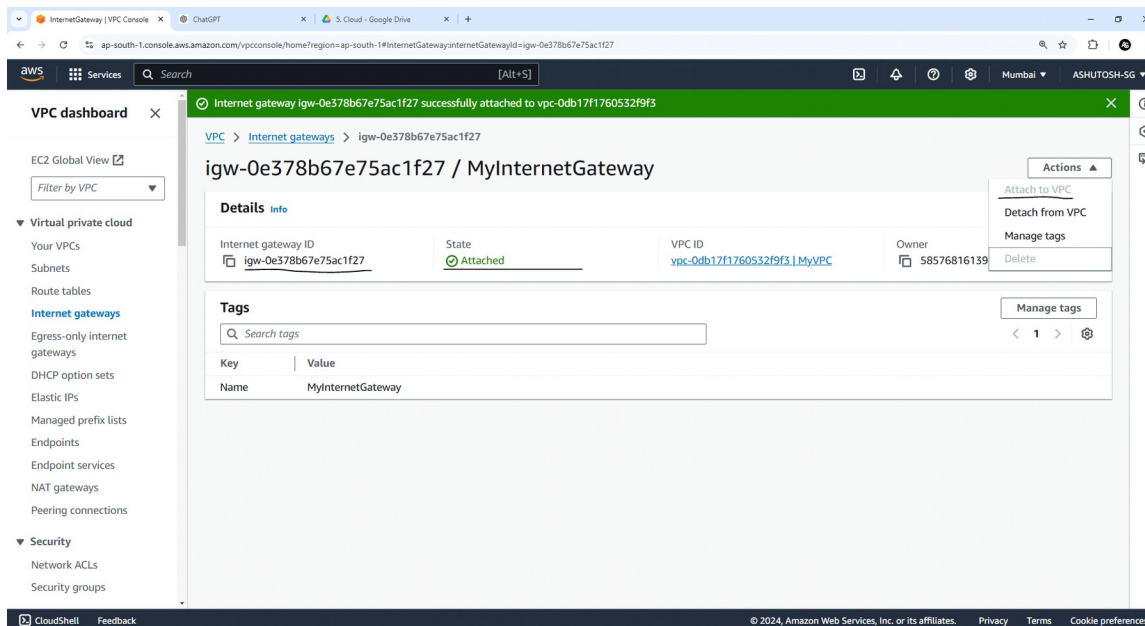
Go to the Internet Gateways section in the VPC Dashboard.

Click Create internet gateway.

Name tag: "MyInternetGateway"

Click Create and then Attach to VPC.

Select the VPC ("MyVPC") and click Attach.



Step 4: Update Route Tables for Public and Private Subnets

Configure the Public Subnet Route Table:

Go to the Route Tables section.

Select the route table associated with the PublicSubnet.

Click on the Routes tab, then Edit routes.

Add a new route:

Destination: 0.0.0.0/0

Target: Select the Internet Gateway created in Step 3.

Click Save routes.

CreateRouteTable | VPC Console

ChatGPT

5. Cloud - Google Drive

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#CreateRouteTable:

aws

Services

Search

[Alt+S]

[VPC](#) > [Route tables](#) > Create route table

Create route table [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.

VPC
The VPC to use for this route table.

vpc-0db17f1760532f9f3 (MyVPC) ▼

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key	Value - optional	
<input type="text" value="Name"/>	<input type="text" value="Public Subnet Route Table"/>	<input type="button" value="Remove"/>

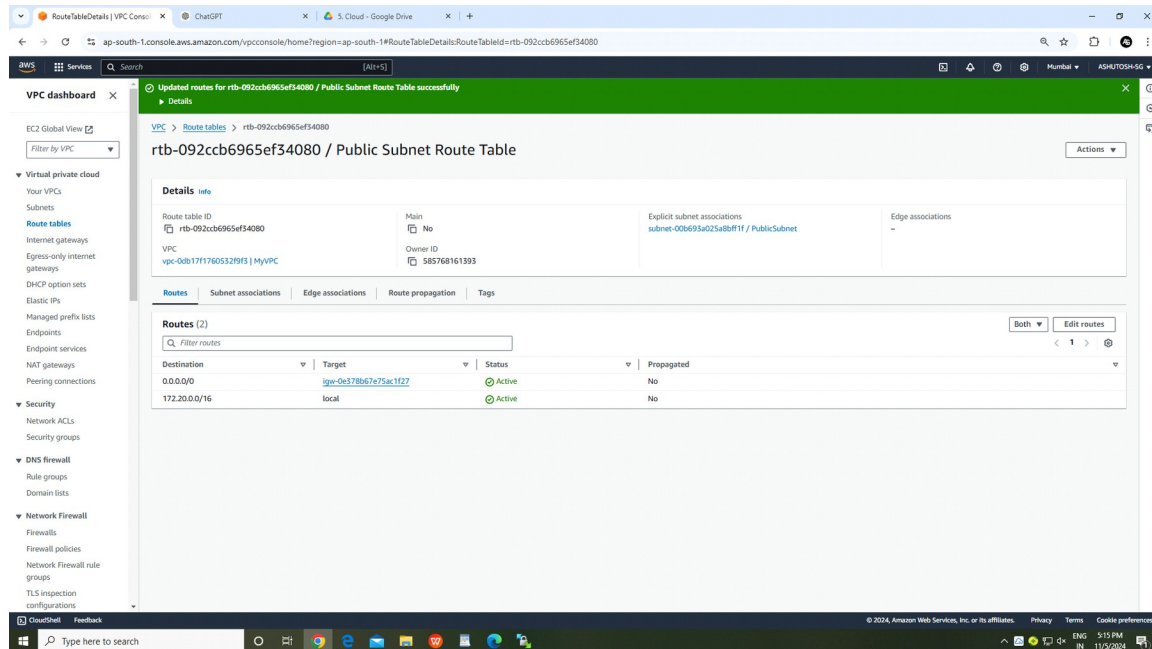
You can add 49 more tags.

Cancel

Create route table

CloudShell

Feedback



Step 5: Launch EC2 Instance in the Public Subnet

Go to the EC2 Dashboard and click Launch Instance.

Select an Amazon Machine Image (AMI) (e.g., Amazon Linux 2).

Choose an Instance Type (e.g., t2.micro).

In the Network section, select the VPC ("MyVPC") and Subnet ("PublicSubnet").

In the Configure Security Group section:

Create a new security group or select an existing one.

Add an inbound rule to allow SSH (port 22) from your IP address.

Key Pair: Create a new key pair (**.pem**) download and save it; you will need it for SSH).

Click Launch Instance.

Launch an instance | EC2 | ap-south-1 | ChatGPT | 5. Cloud - Google Drive

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:

public_instance_key Create new key pair

Network settings

VPC - required vpc-0db17f1760532f9f3 (MyVPC) 172.20.0.0/16

Subnet subnet-00b693a025a8bfff1f PublicSubnet VPC: vpc-0db17f1760532f9f3 Owner: 585768161593 Availability Zone: ap-south-1a Zone type: Availability Zone IP addresses available: 251 CIDR: 172.20.1.0/24 Create new subnet

Auto-assign public IP Enable Additional charges apply when outside of free tier allowance

Firewall (security groups) Create security group Select existing security group

Security group name - required public This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-./!@#%&'()*+,-=:[]{}|~`

Description - required launch-wizard-1 created 2024-11-05T11:50:25.804Z

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0) Remove

Type	Protocol	Port range	Source type	Source	Description - optional
ssh	TCP	22	Anywhere	0.0.0.0/0	e.g. SSH for admin desktop

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.

Summary

Number of instances 1

Software Image (AMI) Canonical, Ubuntu, 24.04, amd64...read more ami-0dee22c13ea7a9a67

Virtual server type (instance type) t2.micro

Firewall (security group) New security group

Storage (volumes) 1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Launch instance Preview code

Step 6: Launch EC2 Instance in the Private Subnet

Follow the same steps as above to create another EC2 instance in the PrivateSubnet.

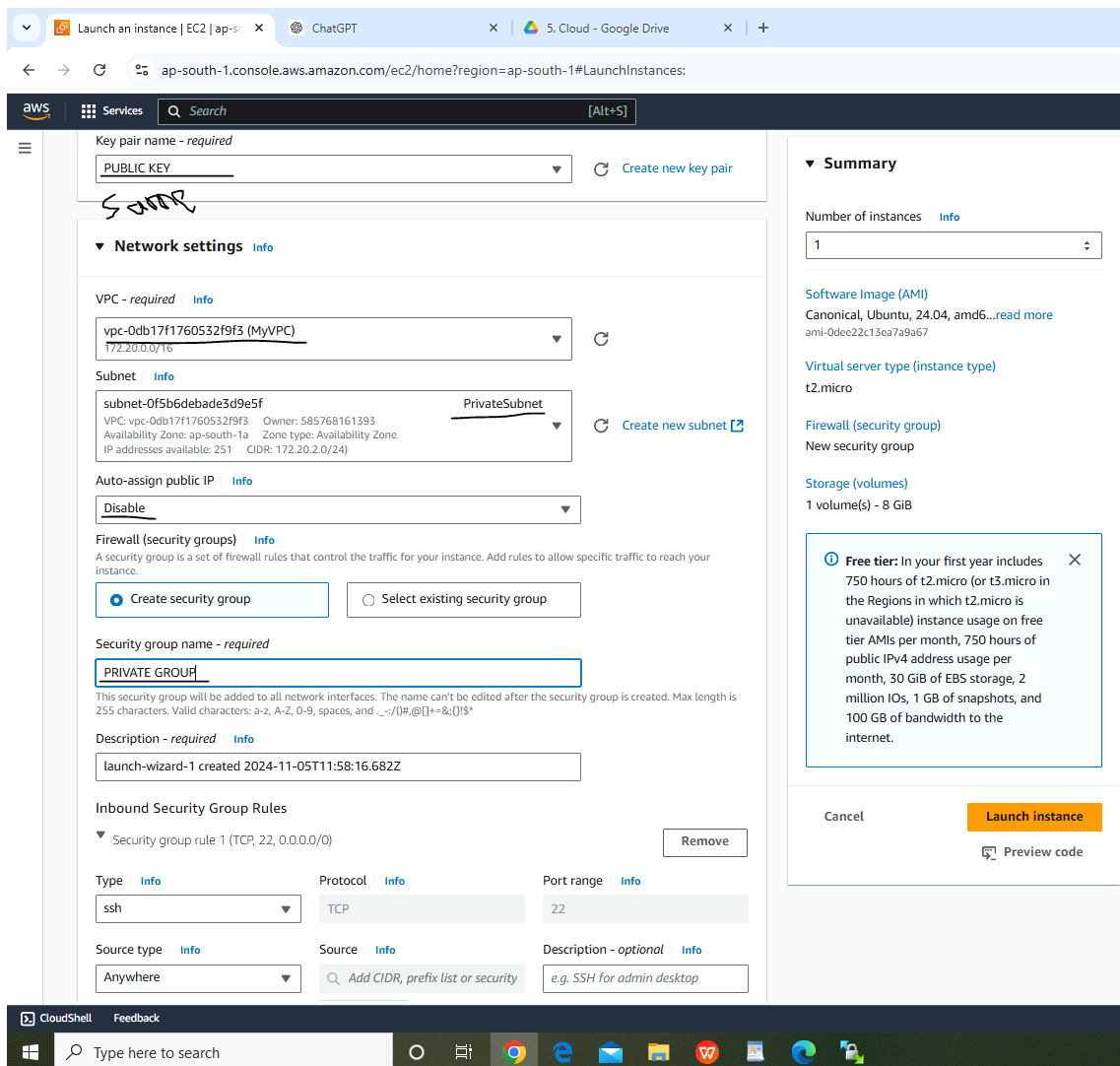
Choose the same AMI (KEY)

EDIT NETWORK SETTINGS

In the Network section, select the VPC ("MyVPC") and Subnet ("PrivateSubnet").

Click Launch Instance.

ALWAYS REMEMBER



Step 7: Connect to the Public EC2 Instance via SSH (using Putty)

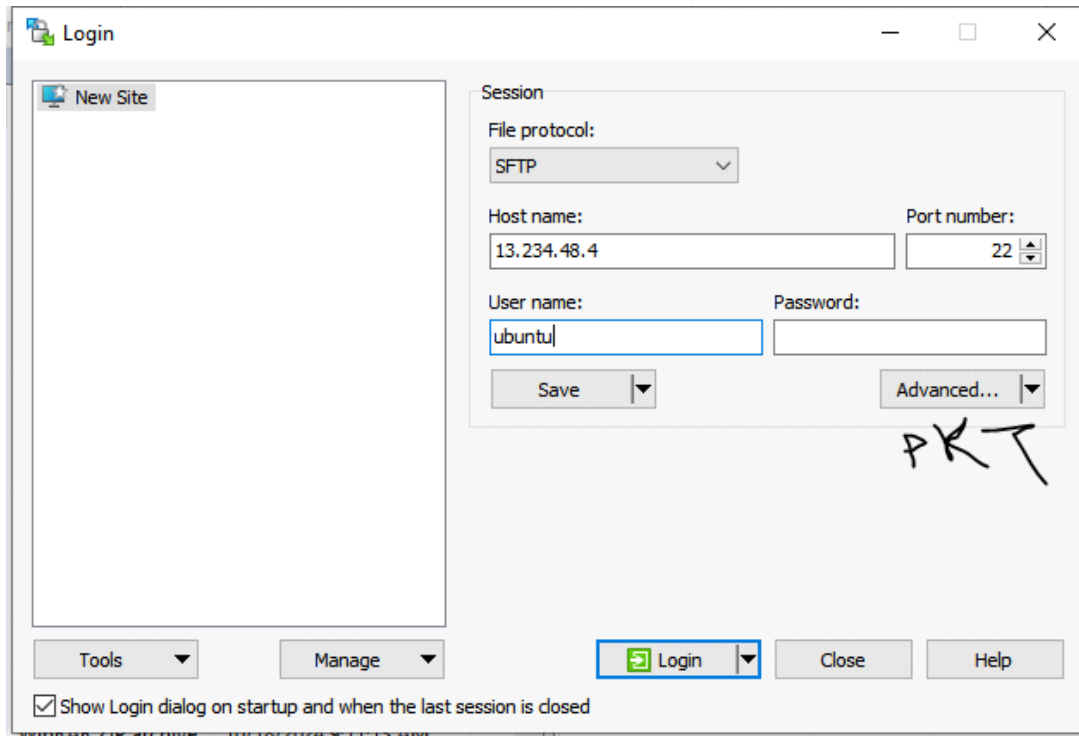
Open Putty (Windows) and enter the Public IP of the public EC2 instance.

Under Connection → SSH → Auth, browse to the private key file (in .pem format) for the public EC2 instance and select it.

Click Open to connect to the EC2 instance. You should be logged into the EC2 instance in the Public Subnet.

- use **putty gen** software to convert .pem to. ppk file

by using **winscp** software copy pem file to local to ec2 instance



- move pem file to the public instance BY DRAG AND DROP

follow below commands:-

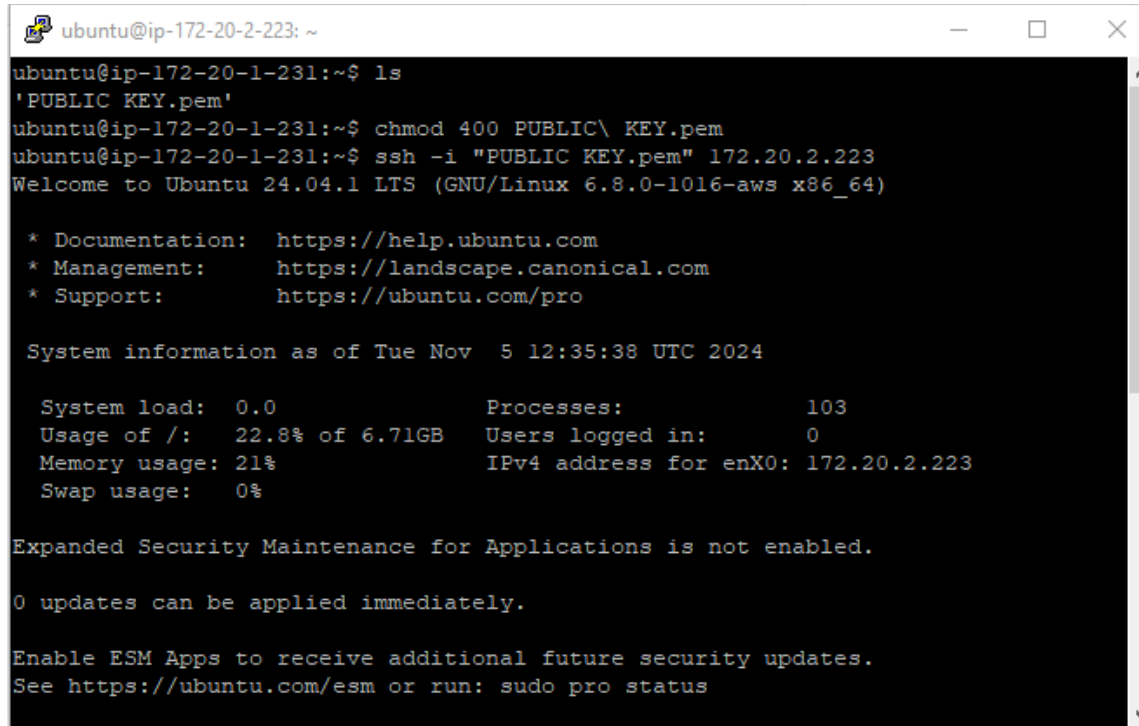
```
ubuntu@ip-172-20-1-231:~$ ls
```

```
'PUBLIC_KEY.pem'
```

```
ubuntu@ip-172-20-1-231:~$ chmod 400 PUBLIC_KEY.pem
```

```
ubuntu@ip-172-20-1-231:~$ ssh -i "PUBLIC_KEY.pem" 172.20.2.223
```

Finally we connected the private subnet instance from a public subnet instance (that is also called **Bastion host**)

A terminal window titled 'ubuntu@ip-172-20-2-223: ~' with standard window controls. The terminal shows a user logging into an Ubuntu instance via SSH. The user runs 'ls' and sees 'PUBLIC KEY.pem'. They then run 'chmod 400 PUBLIC\ KEY.pem' and 'ssh -i "PUBLIC KEY.pem" 172.20.2.223'. The terminal displays the Ubuntu 24.04.1 LTS welcome message, documentation links, system information (date, load, processes, memory, swap, users, IP), and security maintenance status.

```
ubuntu@ip-172-20-1-231:~$ ls
'PUBLIC KEY.pem'
ubuntu@ip-172-20-1-231:~$ chmod 400 PUBLIC\ KEY.pem
ubuntu@ip-172-20-1-231:~$ ssh -i "PUBLIC KEY.pem" 172.20.2.223
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Tue Nov  5 12:35:38 UTC 2024

System load:  0.0                Processes:           103
Usage of /:   22.8% of 6.71GB    Users logged in:    0
Memory usage: 21%                IPv4 address for enX0: 172.20.2.223
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
```