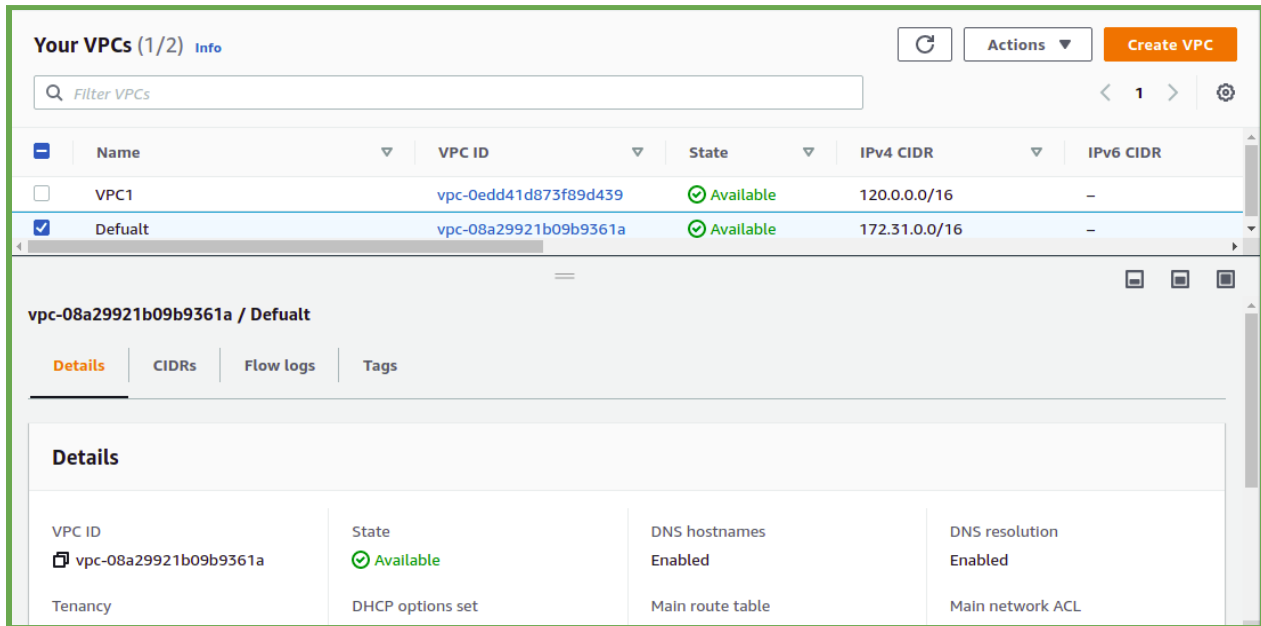


## AWS Module- 4 VPC Assignment - 1

1. Create a VPC with 120.0.0.0/16 CIDR block
2. Create 1 public subnet, 2 private subnet and make sure you connect a NAT gateway for internet connectivity to private subnet

Create VPC as name VPC1



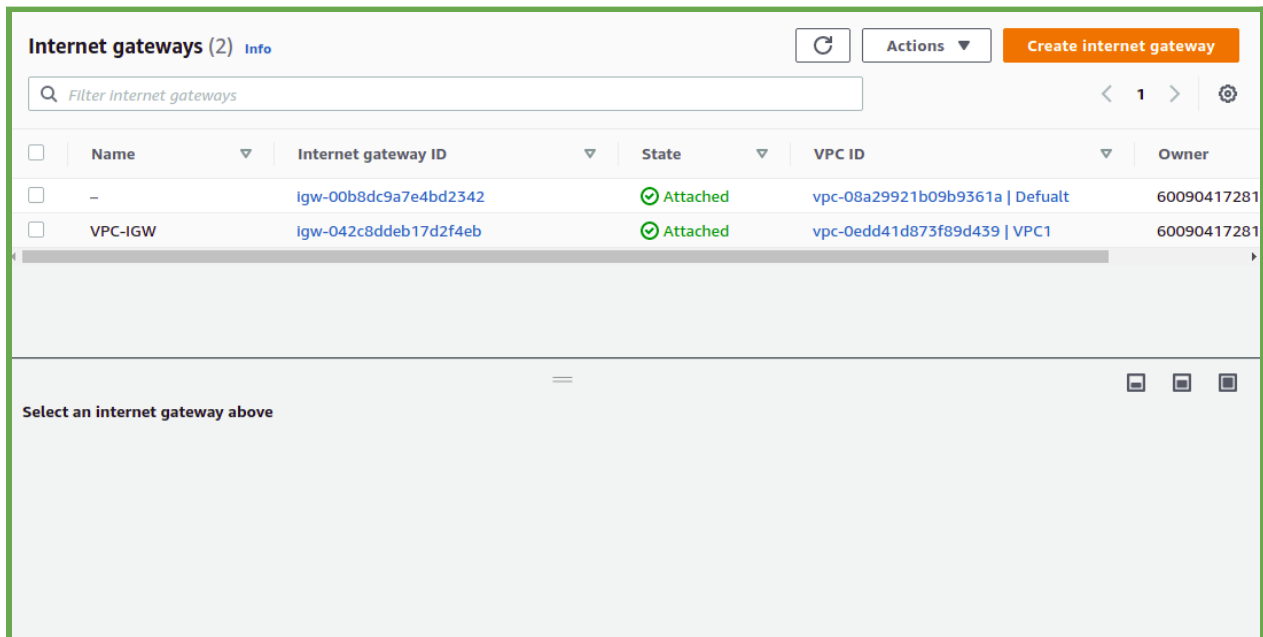
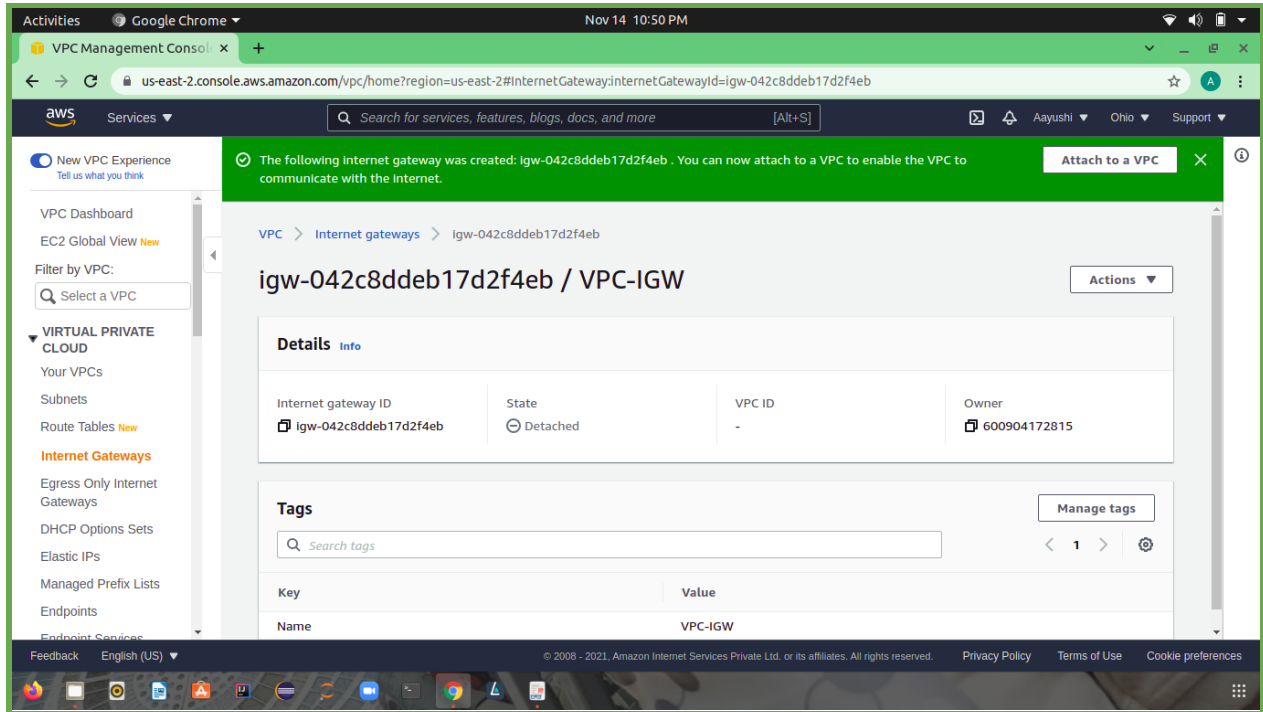
The screenshot displays the AWS Management Console interface for VPCs. At the top, it shows 'Your VPCs (1/2)' with a search bar and a 'Create VPC' button. Below this is a table listing VPCs:

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
VPC1	vpc-0eddd41d873f89d439	Available	120.0.0.0/16	-
Default	vpc-08a29921b09b9361a	Available	172.31.0.0/16	-

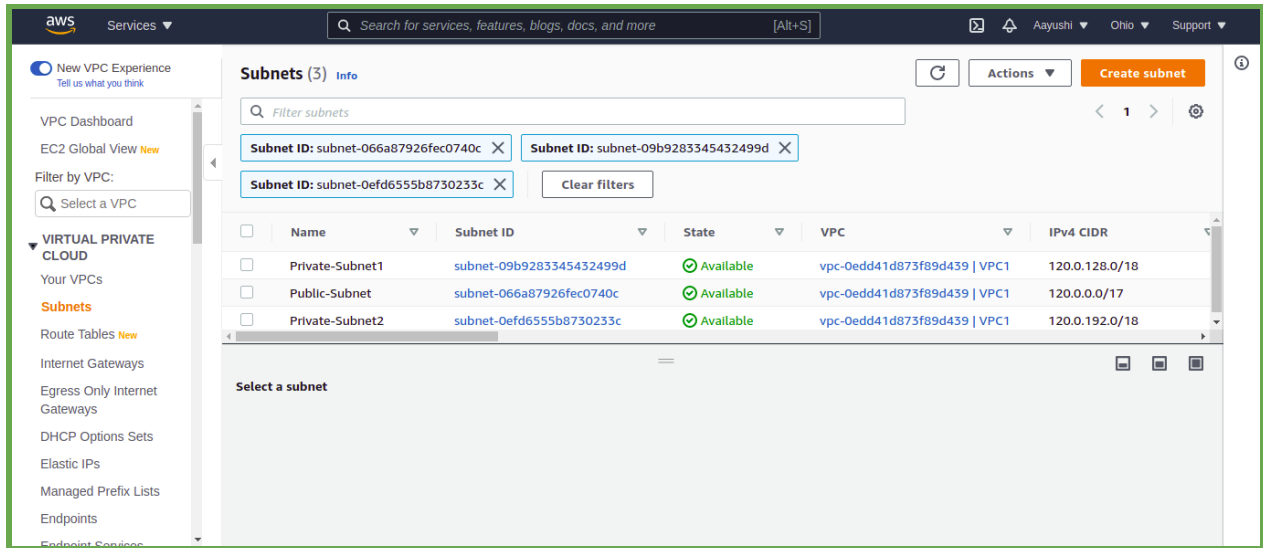
The 'Default' VPC is selected, and its details are shown below. The details include:

- VPC ID: vpc-08a29921b09b9361a
- State: Available
- DNS hostnames: Enabled
- DNS resolution: Enabled
- Tenancy: Default
- DHCP options set: Default
- Main route table: Default
- Main network ACL: Default

Create Internet Gateways and Attach to VPC

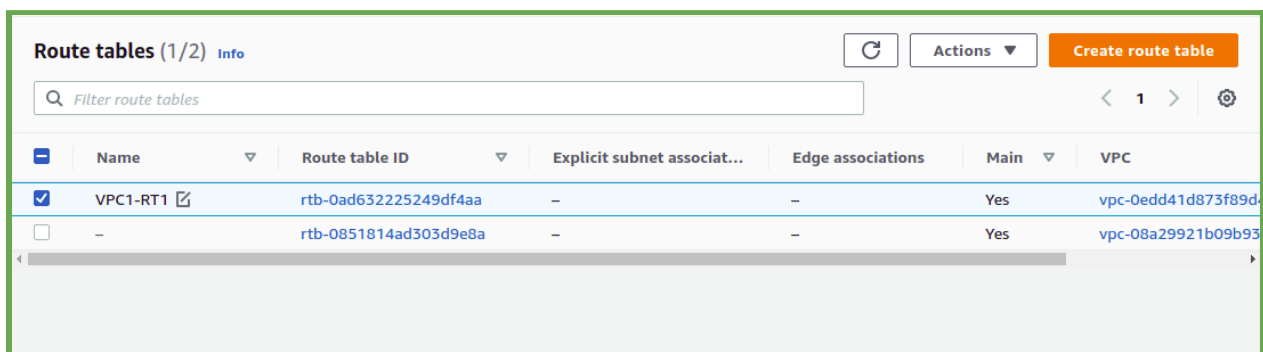
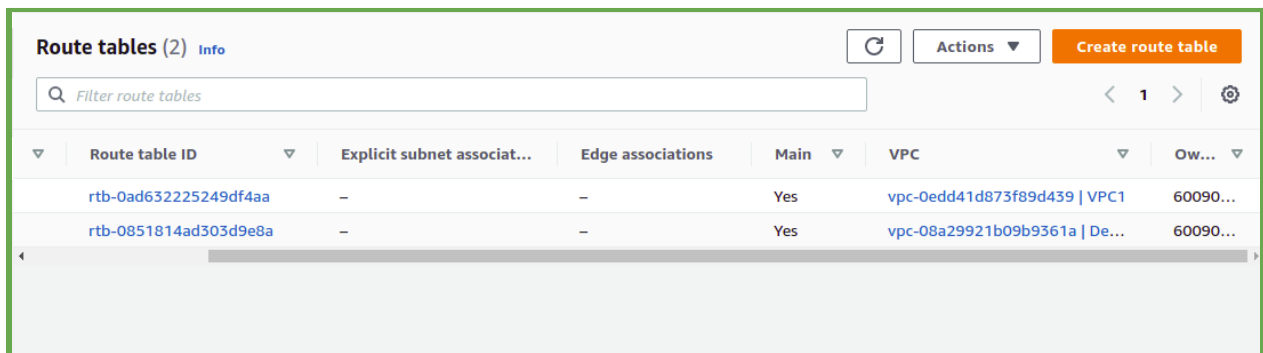


**Create Subnets**  
**1 public subnet**  
**2 private subnet**



## Create Route Table

Auto Generated route table and provide name



Now, edit route and add new rule and IGW also

VPC > Route tables > rtb-0ad63225249df4aa > Edit routes

## Edit routes

Destination	Target	Status	Propagated
120.0.0.0/16	<input type="text" value="local"/>	Active	No
<input type="text" value="0.0.0.0/0"/>	<input type="text" value="igw-042c8ddeb17d2f4eb"/>	-	No

## Edit subnet association

VPC > Route tables > rtb-0ad63225249df4aa > Edit subnet associations

## Edit subnet associations

Change which subnets are associated with this route table.

**Available subnets (1/2)**

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	Public-Subnet	subnet-05fcf16989cc5a3b1	120.0.0.0/17	-	Main (rtb-0ad63225249df4aa / VPC1-RT1)
<input type="checkbox"/>	Private-Subnet	subnet-046c483bcf72d55e8	120.0.128.0/17	-	Main (rtb-0ad63225249df4aa / VPC1-RT1)

**Selected subnets**

## Create NAT Gateways with public subnet

NAT gateways (1/1) Info

Filter NAT gateways

Actions

Create NAT gateway

Name	NAT gateway ID	Connectivit...	State	State message	Elastic IP address
VPC1-NGW	nat-055b0ece11877e48e	Public	Pending	-	-

nat-055b0ece11877e48e / VPC1-NGW

Details

Monitoring

Tags

Details

**Create instance for public**  
Add VPC and Subnet and also enable it  
Add security group and take ALL ICMP - IPv4

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. 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 instances1Launch into Auto Scaling Group

Purchasing option☐ Request Spot instances

Networkvpc-0edd41d873f89d439 | VPC1Create new VPC

Subnetsubnet-066a87926fec0740c | Public-Subnet | us-east-1Create new subnet32763 IP Addresses available

Auto-assign Public IPEnable

Placement group☐ Add instance to placement group

Capacity ReservationOpen

Domain join directoryNo directoryCreate new directory

Cancel

Previous

Review and Launch

Next: Add Storage

## 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	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
All ICMP - IPv4	ICMP	0 - 65535	Anywhere 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop

Add Rule

**Warning**

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

## Created Instances

New EC2 Experience  
Tell us what you think

EC2 Dashboard  
EC2 Global View  
Events  
Tags  
Limits

Instances  
Instances **New**  
Instance Types  
Launch Templates  
Spot Requests  
Savings Plans  
Reserved Instances **New**  
Dedicated Hosts  
Capacity Reservations

Images

Instances (1/2) Info

Filter Instances

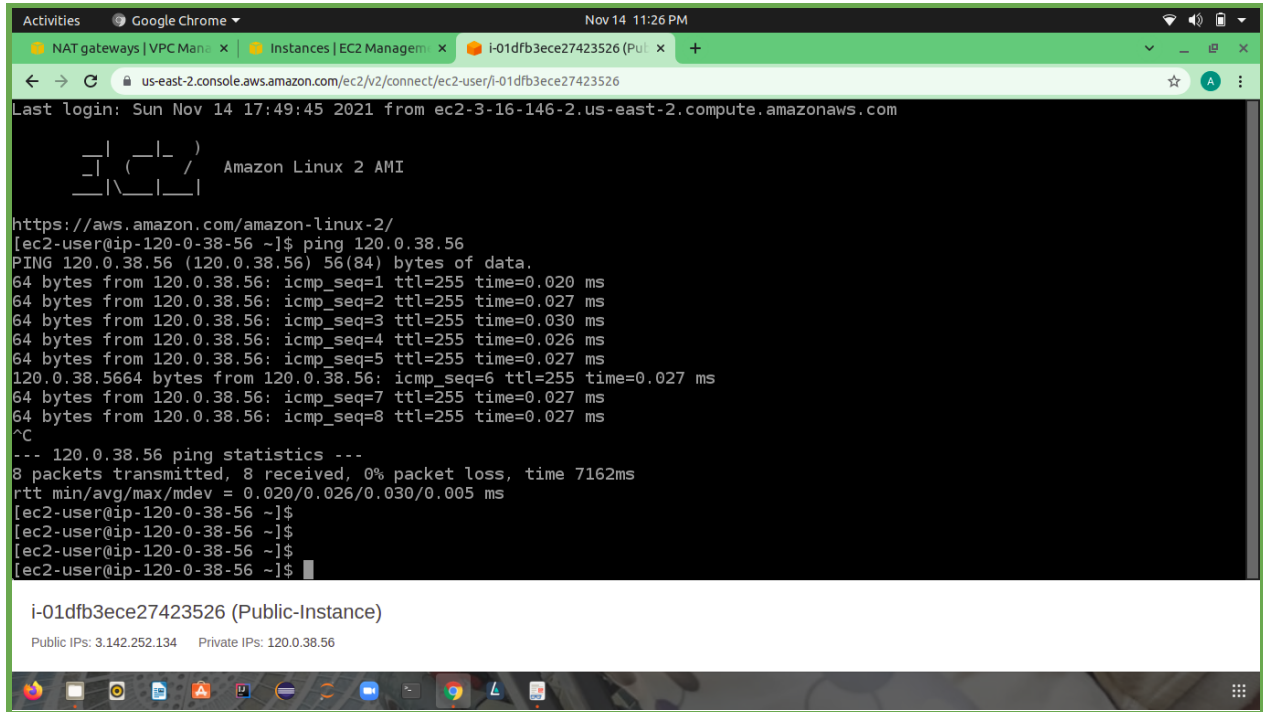
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	Public-Instance	i-01dfb3ece27423526	Running	t2.micro	2/2 checks passed	No alarms	us-east-2a
<input checked="" type="checkbox"/>	Private-Instan...	i-07c6a0029ba19747b	Running	t2.micro	Initializing	No alarms	us-east-2b

Instance: i-07c6a0029ba19747b (Private-Instance1)

Instance summary Info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-07c6a0029ba19747b (Private-Instance1)	-	120.0.134.255
IPv6 address	Instance state	Public IPv4 DNS
-	Running	-

Now connect as show below and ping: google.com by bastion host



The screenshot shows a terminal window with a black background and white text. At the top, there's a header bar with "Activities", "Google Chrome", and "Nov 14 11:26 PM". Below this, a browser-like address bar shows "us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-01dfb3ece27423526". The main terminal area displays the following text:

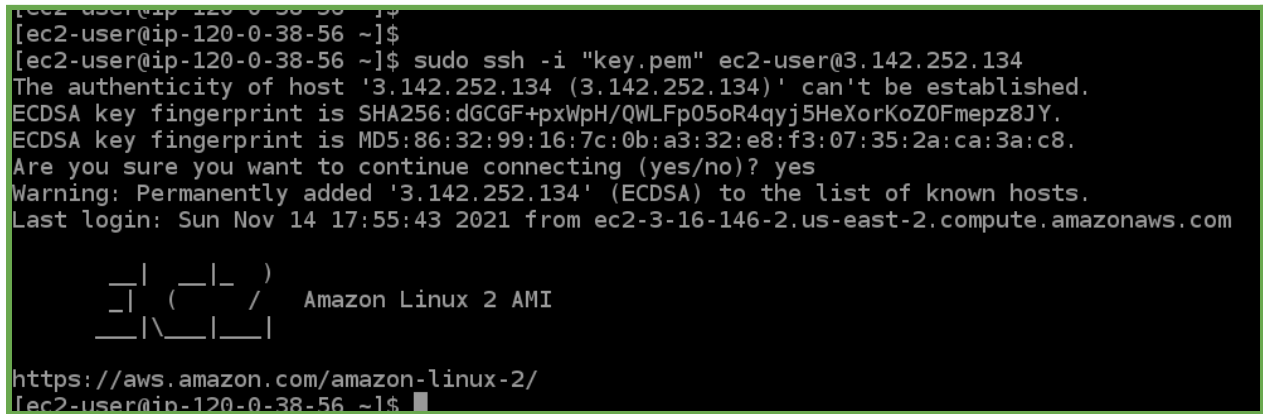
```
Last login: Sun Nov 14 17:49:45 2021 from ec2-3-16-146-2.us-east-2.compute.amazonaws.com

 _ | ( _ | )
 _ | ( _ | /   Amazon Linux 2 AMI
 _ | \ _ | _ |

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-120-0-38-56 ~]$ ping 120.0.38.56
PING 120.0.38.56 (120.0.38.56) 56(84) bytes of data.
64 bytes from 120.0.38.56: icmp_seq=1 ttl=255 time=0.020 ms
64 bytes from 120.0.38.56: icmp_seq=2 ttl=255 time=0.027 ms
64 bytes from 120.0.38.56: icmp_seq=3 ttl=255 time=0.030 ms
64 bytes from 120.0.38.56: icmp_seq=4 ttl=255 time=0.026 ms
64 bytes from 120.0.38.56: icmp_seq=5 ttl=255 time=0.027 ms
120.0.38.56: 64 bytes from 120.0.38.56: icmp_seq=6 ttl=255 time=0.027 ms
64 bytes from 120.0.38.56: icmp_seq=7 ttl=255 time=0.027 ms
64 bytes from 120.0.38.56: icmp_seq=8 ttl=255 time=0.027 ms
^C
--- 120.0.38.56 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7162ms
rtt min/avg/max/mdev = 0.020/0.026/0.030/0.005 ms
[ec2-user@ip-120-0-38-56 ~]$
[ec2-user@ip-120-0-38-56 ~]$
[ec2-user@ip-120-0-38-56 ~]$
[ec2-user@ip-120-0-38-56 ~]$
```

Below the terminal output, there's a white box containing the instance ID "i-01dfb3ece27423526 (Public-Instance)" and its IP addresses: "Public IPs: 3.142.252.134" and "Private IPs: 120.0.38.56". At the bottom, there's a taskbar with various application icons.

Make vi key.pem file



The screenshot shows a terminal window with a black background and white text. The terminal output is as follows:

```
[ec2-user@ip-120-0-38-56 ~]$
[ec2-user@ip-120-0-38-56 ~]$ sudo ssh -i "key.pem" ec2-user@3.142.252.134
The authenticity of host '3.142.252.134 (3.142.252.134)' can't be established.
ECDSA key fingerprint is SHA256:dGCGF+pxWpH/QWLFp05oR4qyj5HeXorKoZ0Fmepz8JY.
ECDSA key fingerprint is MD5:86:32:99:16:7c:0b:a3:32:e8:f3:07:35:2a:ca:3a:c8.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '3.142.252.134' (ECDSA) to the list of known hosts.
Last login: Sun Nov 14 17:55:43 2021 from ec2-3-16-146-2.us-east-2.compute.amazonaws.com

 _ | ( _ | )
 _ | ( _ | /   Amazon Linux 2 AMI
 _ | \ _ | _ |

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-120-0-38-56 ~]$
```

Activities Google Chrome Nov 14 11:29 PM

NAT gateways | VPC Man... Instances | EC2 Managem... i-01dfb3ece27423526 (Pub...

us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-01dfb3ece27423526

```
-----BEGIN RSA PRIVATE KEY-----
MIIEogIBAAKCAQEAmTpQh0I4QeieFLkt5B3KMgEKQ9IKqIsGxKUQyib8n27fid7I
ERnLPVjSVhNUR9TPb0RBxn64C+C6hZkStRwRwm/D2Ut4RuxqgXu1xTB2SyMyBb1
BsAUCKUj/0+V4K/4L4NtFMiNRZFS0x5cg+vvBnZ05VbSxZmwqgcUjHFx4p+pTF1
BsAUCKUj/0+V4K/4L4NtFMiNRZFS0S5cg+vvBnZ05VbSxZmwqgcUjHFx4p+pTF1
L58SHb7uEKYN8lvn+wyaJwdIcStaPRj/TMjFvxGEQSOwdFJHsZWpIa7lXydvI1/u
J7djuLaAVQ8rUM3a1hM//i+sg2ZAaPbyBSt4/6Njw4BGrR06E6k7aeSypk0T0oD
L58SHb7uEKYN8lvn+wyaJwdIcStaPRj/TMjFvxGEQSOwdFJHsZWpIa7lXydvI1/u
Uza73MQPHHADkugx+LzHJqSdbuXPT/Y9Mws3BwIDAQABAoIBAGrbh9TE0Yb10pkp
Kx/SxpdoskfyxUPH4EzvCm+Vp65KRtyig0jAWJPghakRghW9S4qdBGHxLVjb0Dj
B83YgFL5XrwBeKvLKpbouwmaXHVYw9H0qgZc91wKDG5x3bnl+5/2qnCKp0BK84Vj
B83YgFL5XrwBeKvLKpbouwmaXHVYw5H0qgZc91wKDG5x3bnl+5/2qnCKp0BK84Vj
A2KYpZvECrFA+tZlzh0TIgn26ga4a9Y1aR0BdVZCMPyQii1SeQBEIevGFHvd7d39
oQd7y980xXNj6WMkAPHF3RgJ3EEfAaBHZqfEk/9e1rkYt6Go0k+jP04sVx0ZPCHl
1kw5ty6qzFiNqiMg06fqXt8oKmwKV9Vqn1jkt17DTVLg2gejhnV1E4ECgYEAt8Q
T3/oc2Pm57K8QvL69QF8rSn4EZypBE4xGoHvqA6n++bRCs/mEZfMeL57efY1FcGJ
TPRHYv+mDWGLCHqbcA7fVd9gxdEyqAHcGSpjAbmMeoI4EzWpEvswGmn4FbJ0G6ql
edGuJ/NYRP64e1vt/pPHqHD8iCXB8+sBSxAs7ocCgYBVrK609+PzRQuiadbHmVUB
OQxH00SALdNgX0Z+mu/3Yt/nkGJG2Suz/z9IIEfcVh/r180wxGH1mz0Uv6PMh54X
yq6WiJdTmTwjMo+grCiYbT3dV+jBJk8o0Ai2K8se7EL0xCP4yh6tmEtjXm8gBmf
1n77o0HgF5ptyP9H3MCrAOKBgHhWc4k8B8hTe0ckpXwTUIj8y8/qY8iWl11GsXoa
ekAK0bjYSStBCqf2ZWw0ao4YebKHlwdRG0IewWI2hSffmXL8k2NElSkh/8S7P19z
J0CmV7Is8RauRPx+0iV+V+4mz45mKzEMdMBFhDE/5exDfIH9hZq+A0QYUqm7df
4qh/AoGAV+YYGYwDowU1Ml82riuArN9URVBieagBQk86Dw+3TgEf8a+iq/Ehx6sS
-- INSERT --
```

1,30 Top

i-01dfb3ece27423526 (Public-Instance)

Public IPs: 3.142.252.134 Private IPs: 120.0.38.56

Activities | Google Chrome | Nov 14 11:29 PM

```
[ec2-user@ip-120-0-38-56 ~]$
[ec2-user@ip-120-0-38-56 ~]$
[ec2-user@ip-120-0-38-56 ~]$ ping google.com
PING google.com (142.250.191.142) 56(84) bytes of data:
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=1 ttl=35 time=17.8 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=2 ttl=35 time=17.9 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=3 ttl=35 time=17.9 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=4 ttl=35 time=17.8 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=5 ttl=35 time=17.9 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=6 ttl=35 time=17.8 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=7 ttl=35 time=17.9 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=8 ttl=35 time=17.9 ms
64 bytes from ord38s29-in-f14.1e100.net (142.250.191.142): icmp_seq=9 ttl=35 time=17.9 ms
^C
--- google.com ping statistics ---
9 packets transmitted, 9 received, 0% packet loss, time 8011ms
rtt min/avg/max/mdev = 17.854/17.908/17.961/0.158 ms
[ec2-user@ip-120-0-38-56 ~]$
```