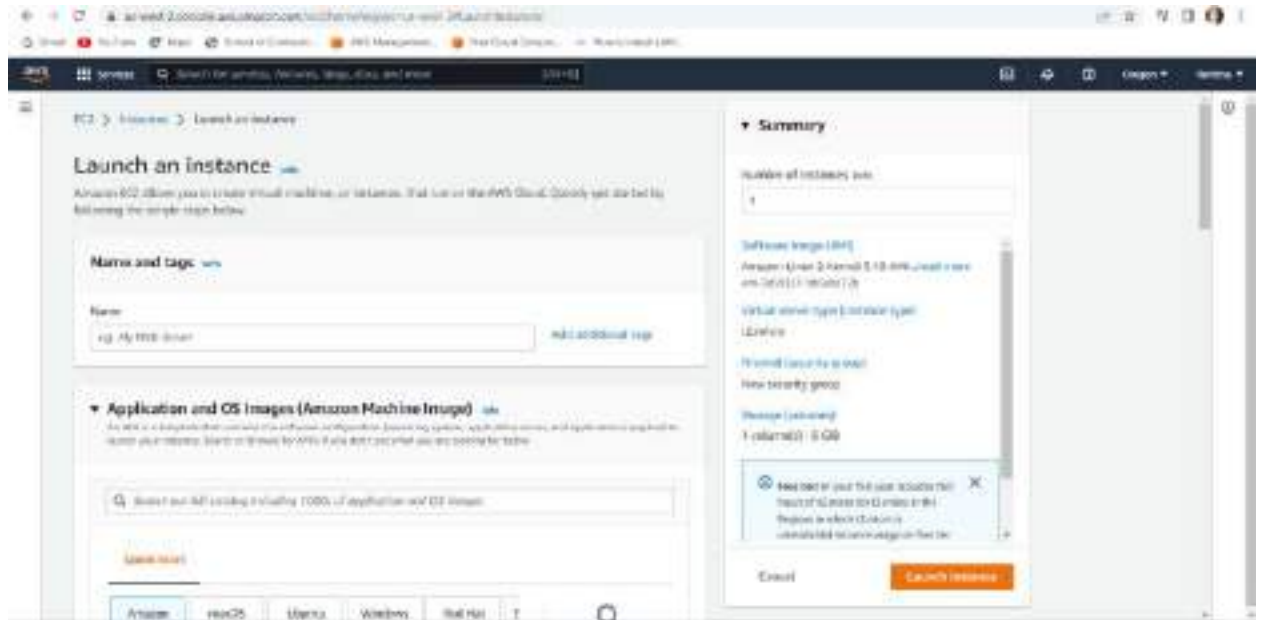
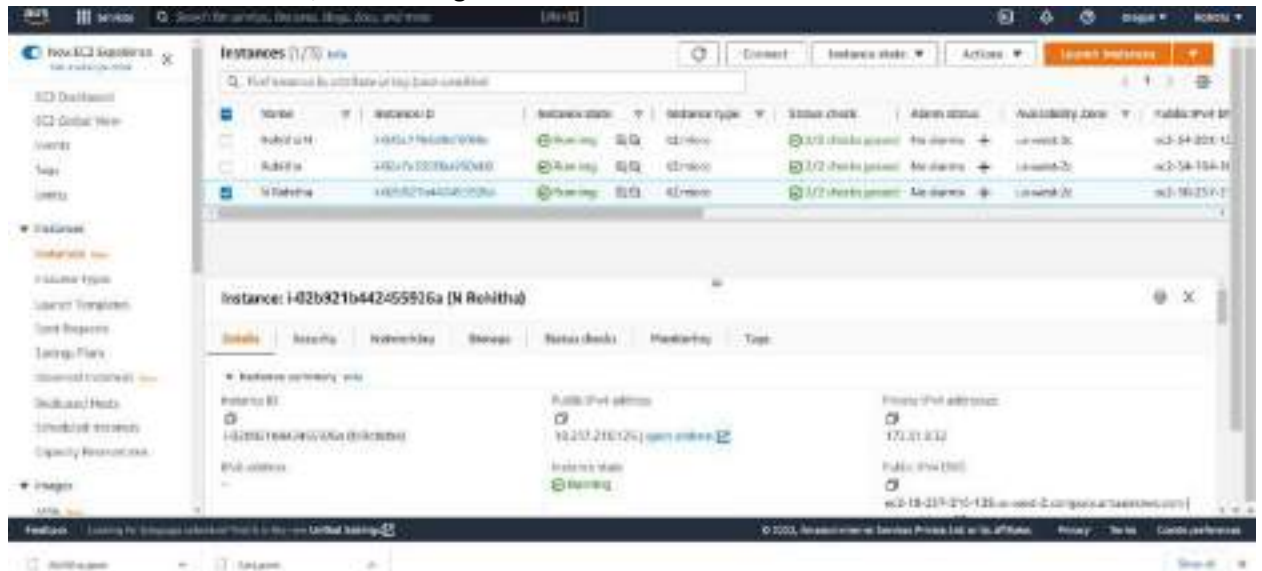


# 1. Create EC2 instance.

Go to instances and click on Launch instance.



Once instance is created , select and go to connect.



Go to SSH Client tab and copy SSH key and open windows powershell. Paste the SSH key and connect EC2 instance.

**AWS** | Services | Search for services, features, docs, and more | [All-Regions]

EC2 Instance Connect | Session Manager | **SSH agent** | EC2 serial console

Instance ID  
 i-02b3211442855326a (M100000)

1. Open an SSH agent.
2. Locate your private key file. The key used to launch this instance is `h0h1fa.pem`.
3. Run the command, if necessary, to choose your key to not publicly viewable.
 

```
chmod 400 h0h1fa.pem
```
4. Connect to your instance using its public DNS:
 

```
ec2-18-237-210-125.us-west-2.compute.amazonaws.com
```

Example  

```
ssh -i "h0h1fa.pem" ec2-user@ec2-18-237-210-125.us-west-2.compute.amazonaws.com
```

**Note:** In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI provider has changed the default AMI user name.

Feedback | Looking for Windows assistance? Visit the Windows Unified Endpoint Management | © 2021 Amazon Web Services Private Limited or its affiliates. Privacy | Terms | Contact Us

```
ec2-user@ip-172-31-8-32~
PS C:\Users\DELL> cd Desktop
PS C:\Users\DELL\Desktop> ssh -i "h0h1fa.pem" ec2-user@ec2-18-237-210-125.us-west-2.compute.amazonaws.com
The authenticity of host 'ec2-18-237-210-125.us-west-2.compute.amazonaws.com (18.237.210.125)' can't be established.
ECDSA key fingerprint is SHA256:WY1642Qt+DeShixLYG6N60CvHTP10d33x1D3C8p850.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-18-237-210-125.us-west-2.compute.amazonaws.com,18.237.210.125' (ECDSA) to the list of known hosts.

  _ _ _ _
  | | ( | | / . Amazon Linux 2 AMI
  |_|_|_|_|_|

https://aws.amazon.com/amazon-linux-2/
13 package(s) needed for security, out of 16 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-8-32 ~]$
```

```
root@ip-172-31-8-32:/home/ec2-user
[ec2-user@ip-172-31-8-32 ~]$ uptime
 15:56:14 up 17 min,  1 user,  load average: 0.42, 0.10, 0.03
[ec2-user@ip-172-31-8-32 ~]$ sudo su
[root@ip-172-31-8-32 ec2-user]#
```

## 2. Create Elastic block storage:

Create a volume storage and attach storage to machine.

Create an Amazon EBS volume to attach to any EC2 instance in the us-east-2 Availability Zone.

### Volume settings

Volume type: **gp2**  
 General Purpose SSD (gp2)

Size (GB): **100**  
 Min: 1 GB, Max: 16 TB (for the advanced usage plan)

IOPS: **300**  
 Baseline of 3 IOPS per GB with a maximum of 100 IOPS, scalable to 1000 IOPS

Throughput (MB/s): **Not applicable**

Availability Zone: **us-east-2a**

Snapshot ID (optional): **None (create volume from a snapshot)**

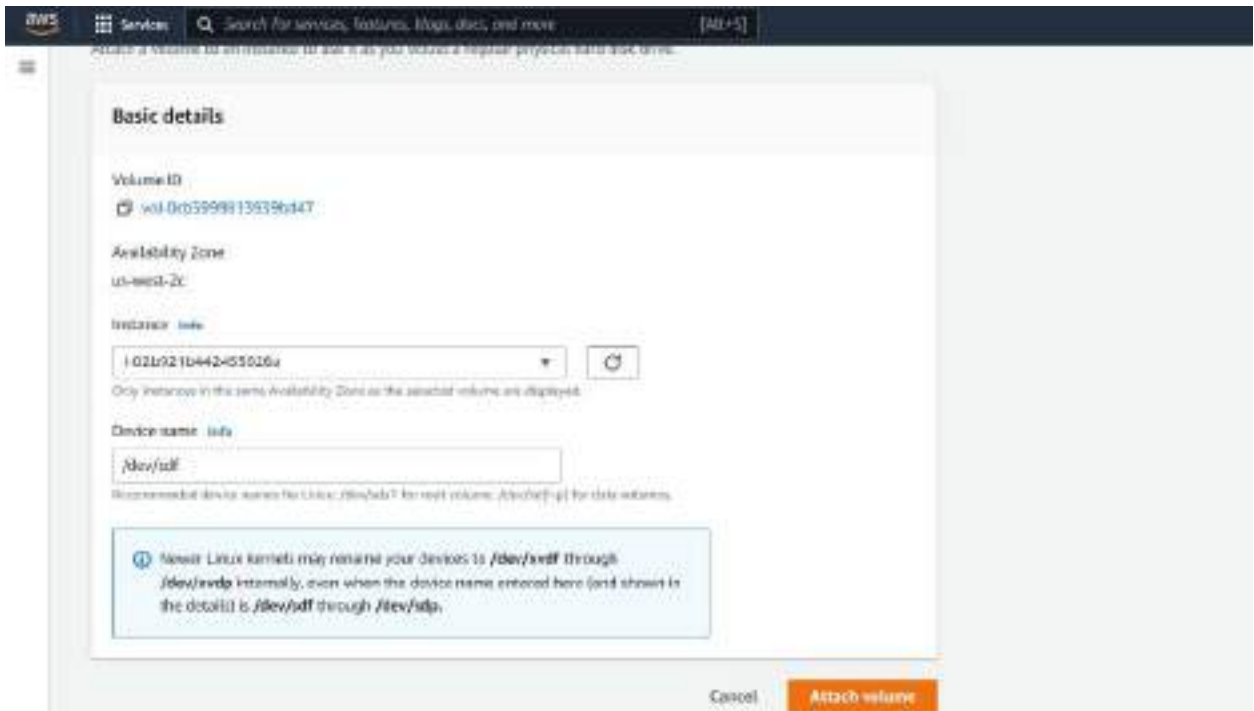
Encryption: **None**

Successfully created volume **vol-00130302-03260447**

You can now create Amazon Data Lifecycle Manager policies to automate snapshot management. Or you can create a lifecycle policy for more information, see the [Lifecycle Manager console](#).

### Volumes (1)

ID	Throughput	Snapshot	Created	Availability Zone	Volume state	Attach status	Attached instances
vol-00130302-03260447	-	None (0)	2023/10/25 10:01 GMT+5	us-east-2a	Available	No attach	+ -
vol-00130302-03260448	-	None (0)	2023/10/25 10:10 GMT+5	us-east-2a	Available	No attach	+ -
vol-00130302-03260449	-	None (0)	2023/10/25 21:05 GMT+5	us-east-2a	In-use	No attach	+ - <a href="#">i-0280719-43171817</a>
vol-00130302-03260450	-	None (0)	2023/10/25 21:05 GMT+5	us-east-2a	Available	No attach	+ -
vol-00130302-03260451	-	None (0)	2023/10/25 21:07 GMT+5	us-east-2a	Available	No attach	+ -



Make a file system and mount the file system.

```

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-8-32 ~]$ sudo su
[root@ip-172-31-8-32 ec2-user]# lsblk
bash: lsblk: command not found
[root@ip-172-31-8-32 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdf        202:80   0 100G  0 disk
[root@ip-172-31-8-32 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
[root@ip-172-31-8-32 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdf        202:80   0 100G  0 disk

```

```

root@ip-172-31-8-32:~/home/ec2-user

Device      Start      End  Sectors  Size Type
/dev/xvda1  4096 16777182 1677887    8G Linux filesystem
/dev/xvda128 2048    4096    2048    1M BIOS boot

Partition table entries are not in disk order.

Disk /dev/xvdf: 100 GiB, 107374182400 bytes, 209715200 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
[root@ip-172-31-8-32 ec2-user]# mdadm --create /dev/xvdf
[root@ip-172-31-8-32 ec2-user]# mdadm --detail /dev/xvdf
meta data=/dev/xvdf          inode=512          agcount=4, agsize=6553600 blks
=                             sector=512        attr=1, projfl=0
=                             cyl=1             f1000t=1, sparse=0
data =                       ncyls=4096        blocks=2631680, isize=25
=                             numit=0           asidfb=0 blks
=                             bsize=4096        eccl=1, ftype=1
log =                        -interval log     ncyls=4096        blocks=12800, version=2
=                             sector=512        raid0=0 blks, lazy-cons=1
=                             ncyls=4096        blocks=0, rmaxtime=0
realtime=noise
[root@ip-172-31-8-32 ec2-user]# mdadm --assemble /dev/xvdf /home/ec2-user/attach
[root@ip-172-31-8-32 ec2-user]# mount -t xfs /dev/xvdf /home/ec2-user/attach/
[root@ip-172-31-8-32 ec2-user]# df -h
df: option requires an argument -- 't'
Try 'df --help' for more information.
[root@ip-172-31-8-32 ec2-user]# df -hT
Filesystem      Type      Size  Used Avail  Used Mounted on
devtmpfs        tmpfs     476M   0  476M   0% /dev
tmpfs            tmpfs     62.8M   0  62.8M   0% /dev/shm
tmpfs            tmpfs     402M   0  402M   1% /run
tmpfs            tmpfs     402M   0  402M   0% /sys/fs/cgroup
/dev/xvda1      xfs       8.0G  1.9G  6.2G  24% /
tmpfs            tmpfs     97M   0   97M   0% /var/user/1000
/dev/xvdf       xfs       100G  128M  100G  1% /home/ec2-user/attach
[root@ip-172-31-8-32 ec2-user]#

```

Create some files in the file system and unmount the file system.

```

[root@ip-172-31-8-32 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdf        202:88   0  100G 0 disk /home/ec2-user/attach
[root@ip-172-31-8-32 ec2-user]# cd attach
[root@ip-172-31-8-32 attach]# pwd
/home/ec2-user/attach
[root@ip-172-31-8-32 attach]# touch {1..10}.txt
[root@ip-172-31-8-32 attach]# ls
10.txt 1.txt 2.txt 3.txt 4.txt 5.txt 6.txt 7.txt 8.txt 9.txt
[root@ip-172-31-8-32 attach]#

```

```

[ec2-user@ip-172-31-4-32 ~]$ sudo su
[root@ip-172-31-8-32 ec2-user]# cd storage
bash: cd: storage: No such file or directory
[root@ip-172-31-8-32 ec2-user]# df -hT
Filesystem      Type      Size  Used Avail Used Mounted on
devtmpfs        devtmpfs  272K  0   272K  0% /dev
tmpfs           tmpfs     483K  0   483K  0% /dev/shm
tmpfs           tmpfs     483K  48K  435K  1% /run
tmpfs           tmpfs     483K  0   483K  0% /sys/fs/cgroup
/dev/xvda1      xfs       8.0G  1.9G  6.2G  23% /
/dev/xvdf       xfs       180G  135G  100G  1% /home/ec2-user/attach
tmpfs           tmpfs     97K   0   97K   0% /run/user/1000
[root@ip-172-31-8-32 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
evm0        202:0   0     8G  0 disk
└─xvda1    202:1   0     8G  0 part /
evm1        202:00  0    100G  0 disk /home/ec2-user/attach
[root@ip-172-31-8-32 ec2-user]# cd attach
[root@ip-172-31-8-32 attach]# cd storage
[root@ip-172-31-8-32 storage]# touch {1..10}.txt
[root@ip-172-31-8-32 storage]# ls
1.txt 10.txt 1.txt 2.txt 3.txt 4.txt 5.txt 6.txt 7.txt 8.txt 9.txt
[root@ip-172-31-8-32 storage]# cd ..
bash: cd ..: command not found
[root@ip-172-31-8-32 storage]# cd ..
[root@ip-172-31-8-32 attach]# cd ..
[root@ip-172-31-8-32 ec2-user]# mount /home/ec2-user/storage
mount: /home/ec2-user/storage: no mount point specified.
[root@ip-172-31-8-32 ec2-user]# mount /home/ec2-user/attach
mount: /home/ec2-user/attach: target is busy.
[root@ip-172-31-8-32 ec2-user]# df -hT
Filesystem      Type      Size  Used Avail Used Mounted on
devtmpfs        devtmpfs  272K  0   272K  0% /dev
tmpfs           tmpfs     483K  0   483K  0% /dev/shm
tmpfs           tmpfs     483K  48K  435K  1% /run
tmpfs           tmpfs     483K  0   483K  0% /sys/fs/cgroup
/dev/xvda1      xfs       8.0G  1.9G  6.2G  23% /
/dev/xvdf       xfs       180G  135G  100G  1% /home/ec2-user/attach
tmpfs           tmpfs     97K   0   97K   0% /run/user/1000
[root@ip-172-31-8-32 ec2-user]#

```

### 3. Snapshot Screenshot creation:

Create Snapshot from any volume.

Successfully created snapshot snap-0144c8f5-kub8891 from volume vol-0011196a-451a75. If you need your snapshot to be immediately available, consider using Fast Snapshot Restore.

You can now create Amazon Data Lifecycle Manager policies to automate snapshot management. Select the volumes to back up and then create a policy. [Create snapshot lifecycle policy](#). For more information, see the [Knowledge Center article](#).

### Volumes (1)

Search

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Del
-	vol-0011196a-451a75	gp2	0 GB	100	-	snap-052783a...	2022/10/25 19:03 GMT+5...	del
-	vol-025160a4-03e009	gp2	0 GB	100	-	snap-052783a...	2022/10/25 19:10 GMT+5...	del
-	vol-0011196a-451a75	gp2	0 GB	100	-	snap-052783a...	2022/10/25 21:08 GMT+5...	del
-	vol-025160a4-03e009	gp2	100 GB	300	-	-	2022/10/25 21:06 GMT+5...	del
-	vol-08a483d1-0180c4	gp2	0 GB	100	-	snap-052783a...	2022/10/27 19:53 GMT+5...	del
-	vol-099fed2872ef110	gp2	0 GB	100	-	snap-052783a...	2022/10/27 19:52 GMT+5...	del
-	vol-0479e797c1e380a	gp2	0 GB	100	-	snap-052783a...	2022/10/27 19:55 GMT+5...	del
-	vol-0c2190a-018a4d1	gp2	100 GB	300	-	-	2022/10/25 23:41 GMT+5...	del

Select a volume above

Go to snapshots and verify.

### Snapshots (1/1)

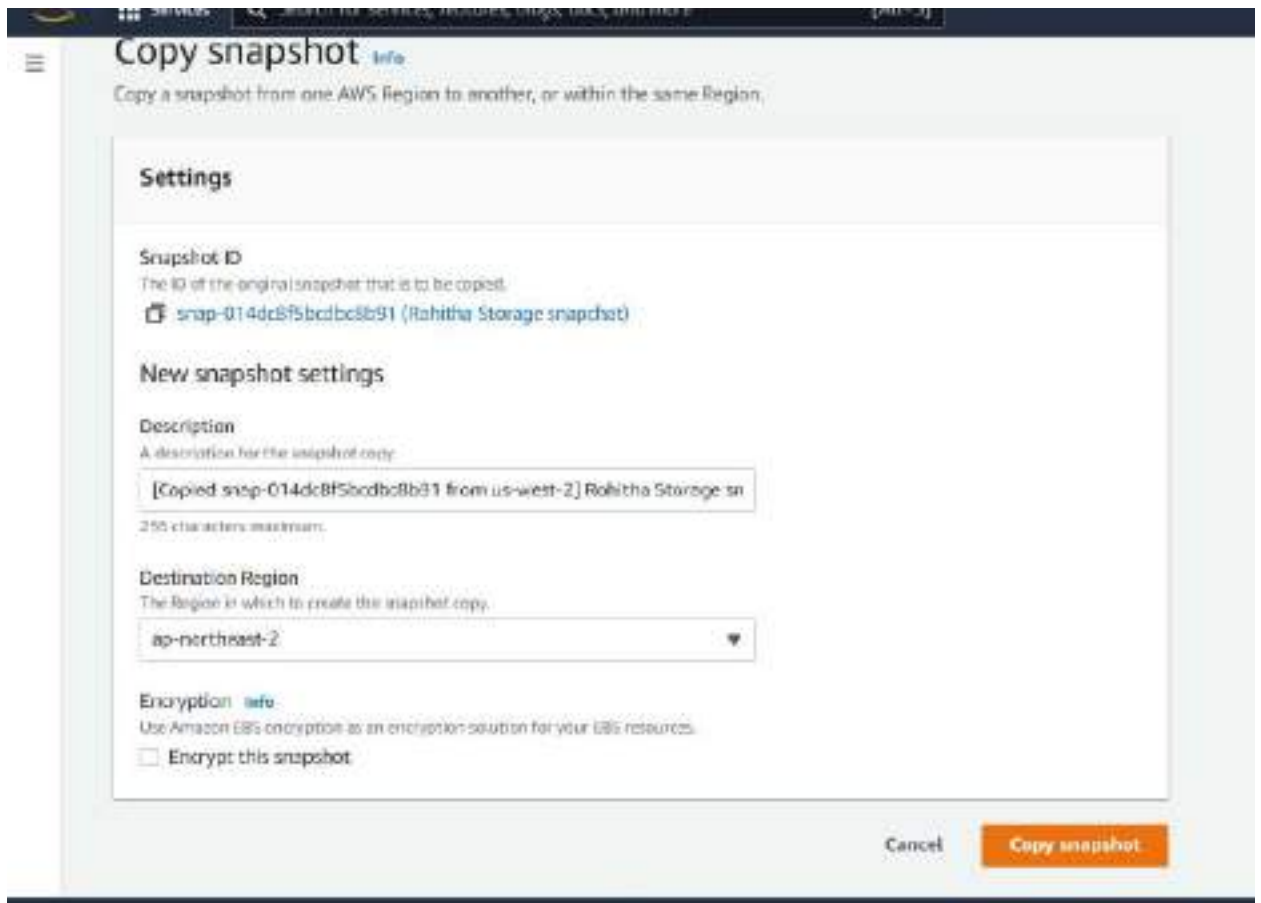
Ownership: All Search

Name	Snapshot ID	Size	Description	Storage	Snapshot status	Started
Robitka Stor...	snap-0144c8f5-kub8891	100 GB	Robitka Storage snapshot	Standard	Completed	2022/11/11 21:53 GMT+5...

Snapshot ID: snap-0144c8f5-kub8891 (Robitka Storage snapshot)

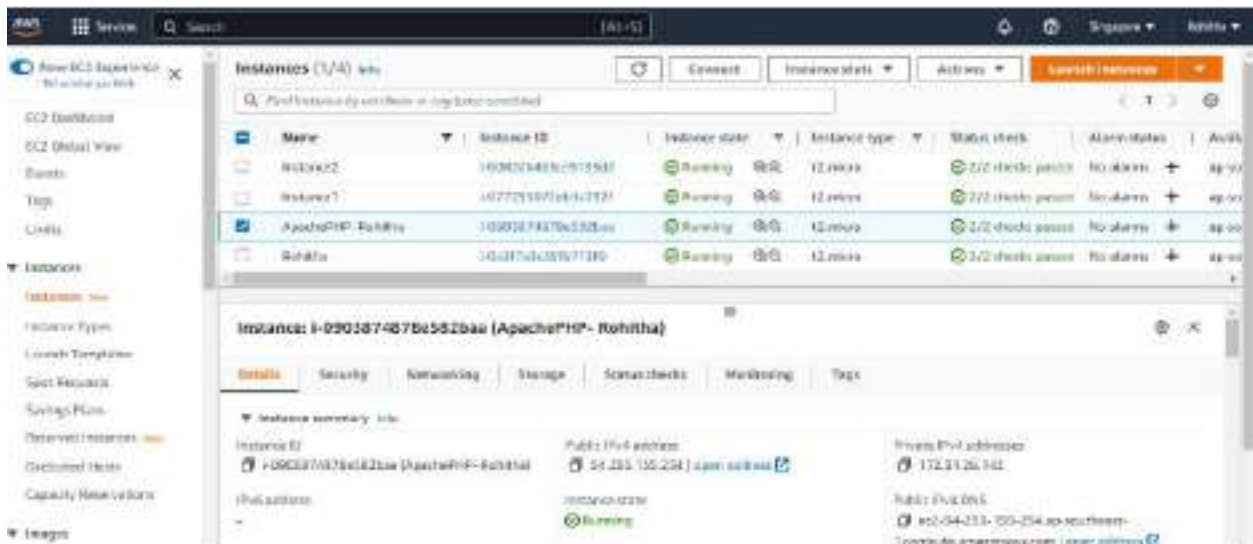
[Details](#) [Permissions](#) [Storage tier](#) [Tags](#)

Create a volume from snapshot.



#### 4. AMI:

Create an instance and connect to Ubuntu server.



Connect to Apache and PHP server and launch a web application.



```
root@172-31-10: ~# cat /etc/os-release
NAME="Ubuntu"
VERSION="22.04.1 LTS (Jammy Jellyfish)"
ID="ubuntu"
ID_LIKE="debian"
PRETTY_NAME="Ubuntu 22.04.1 LTS"
VERSION_ID="22.04"
HOME_URL="https://ubuntu.com/"
SUPPORT_URL="https://ubuntu.com/ask"
MACHINE_ID=""
SYSTEMD_NAME=""
DOCUMENTATION="https://ubuntu.com/docs"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/+filebug"
PRIVACY_POLICY_URL="https://ubuntu.com/privacy-policy"
UBUNTU_CODENAME="jammy"

root@172-31-10: ~# apt-get install software-properties-common
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

root@172-31-10: ~# apt-get install software-properties-gui
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-gui is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

root@172-31-10: ~# apt-get install software-properties-gui
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-gui is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

```
root@172-31-10: ~# apt-get install software-properties-gui
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-gui is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

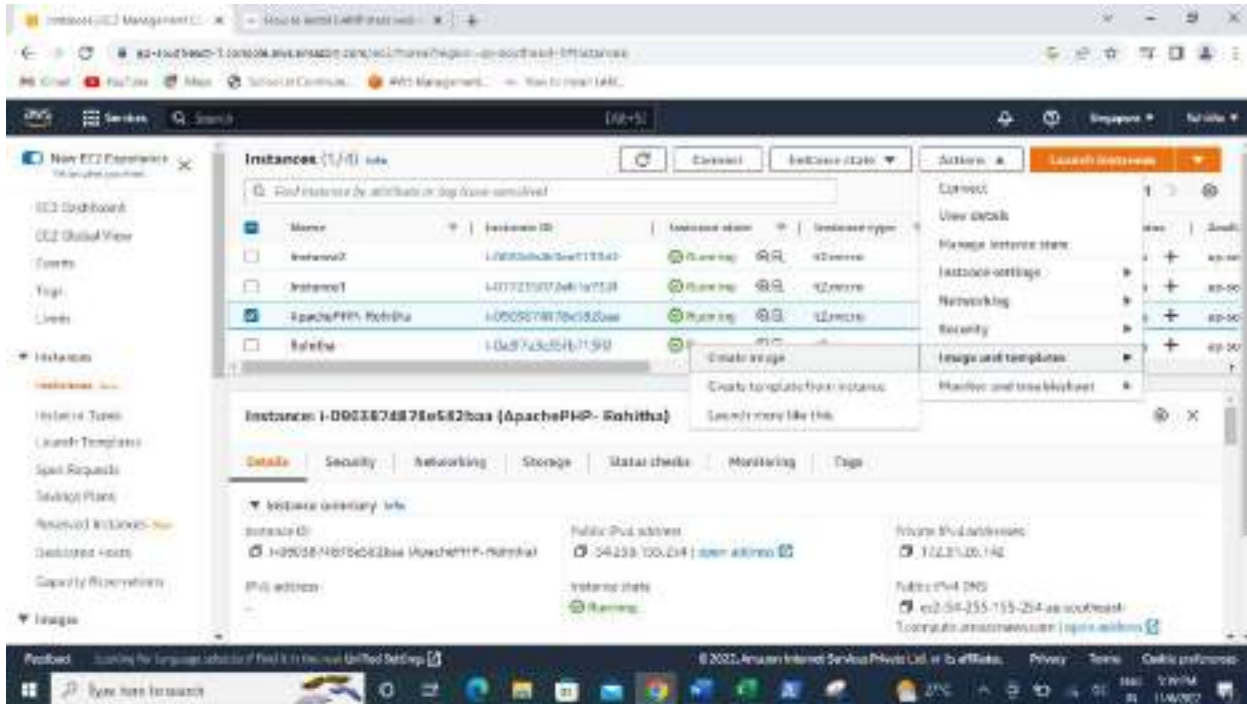
root@172-31-10: ~# apt-get install software-properties-gui
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-gui is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

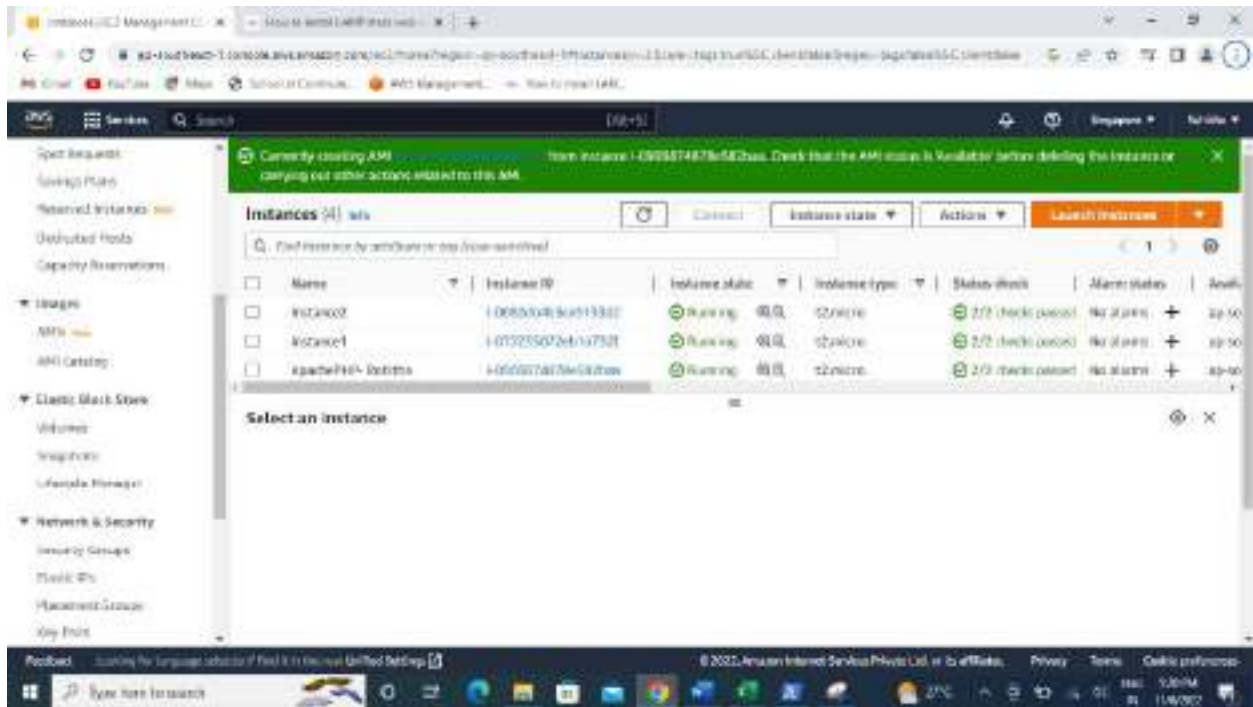






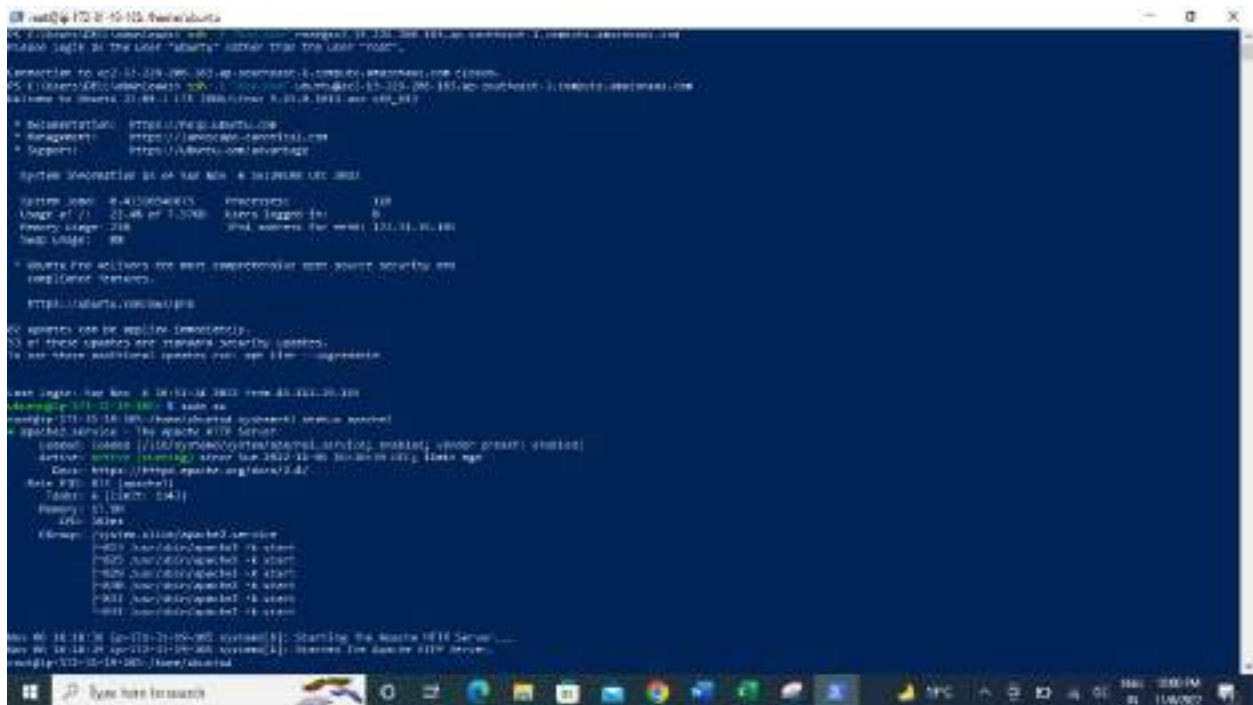
Now create an image from the instance.





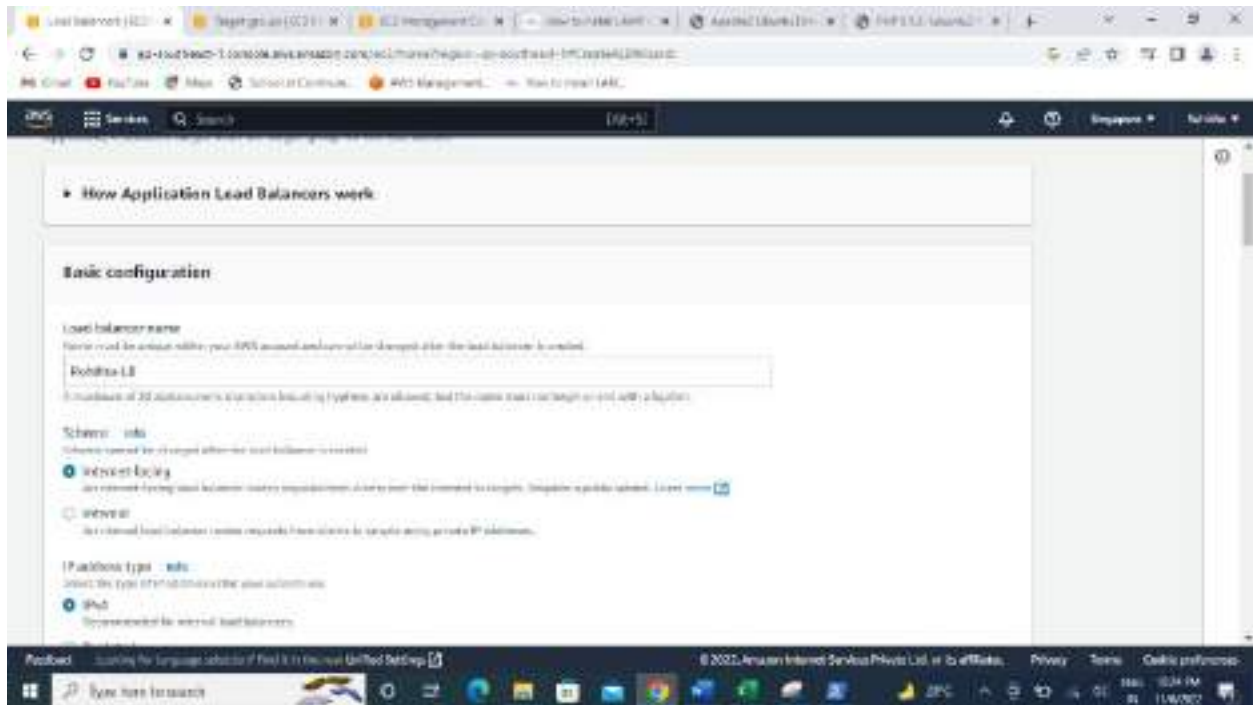
Go to AMI and select image and go to Launch instance EMI option.

Create an instance and connect to ubuntu machine.

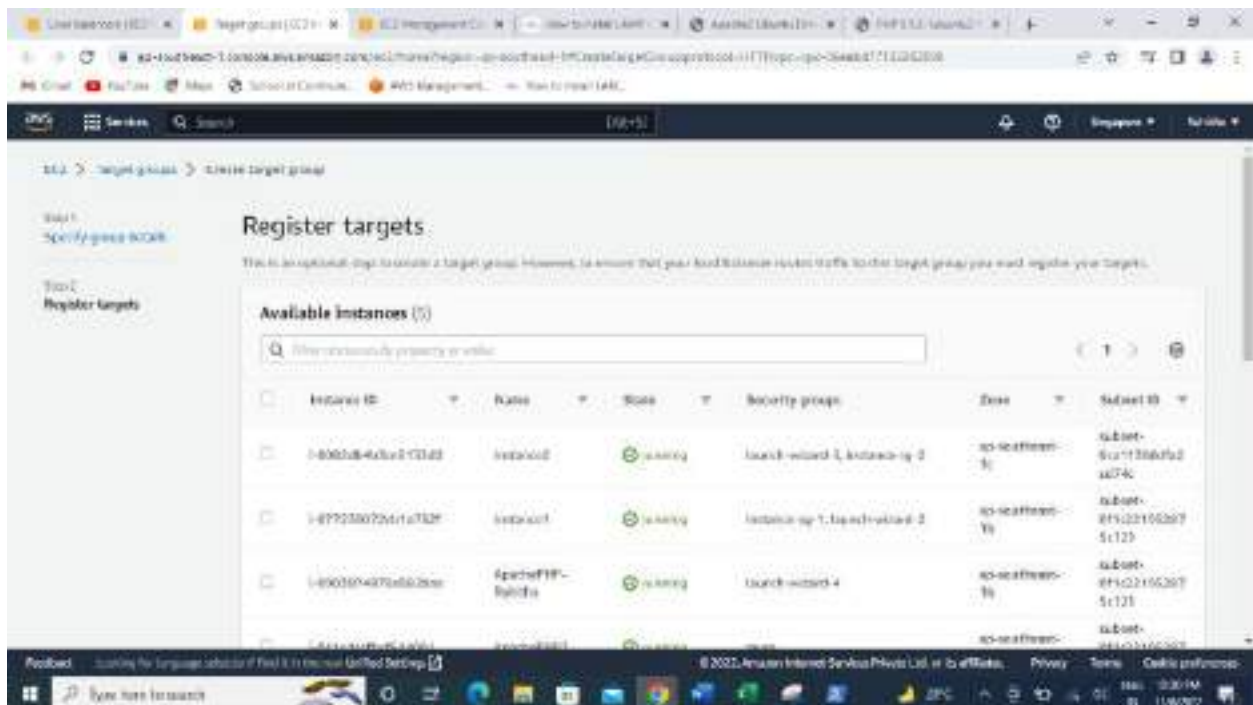


## 5. Load balancer:

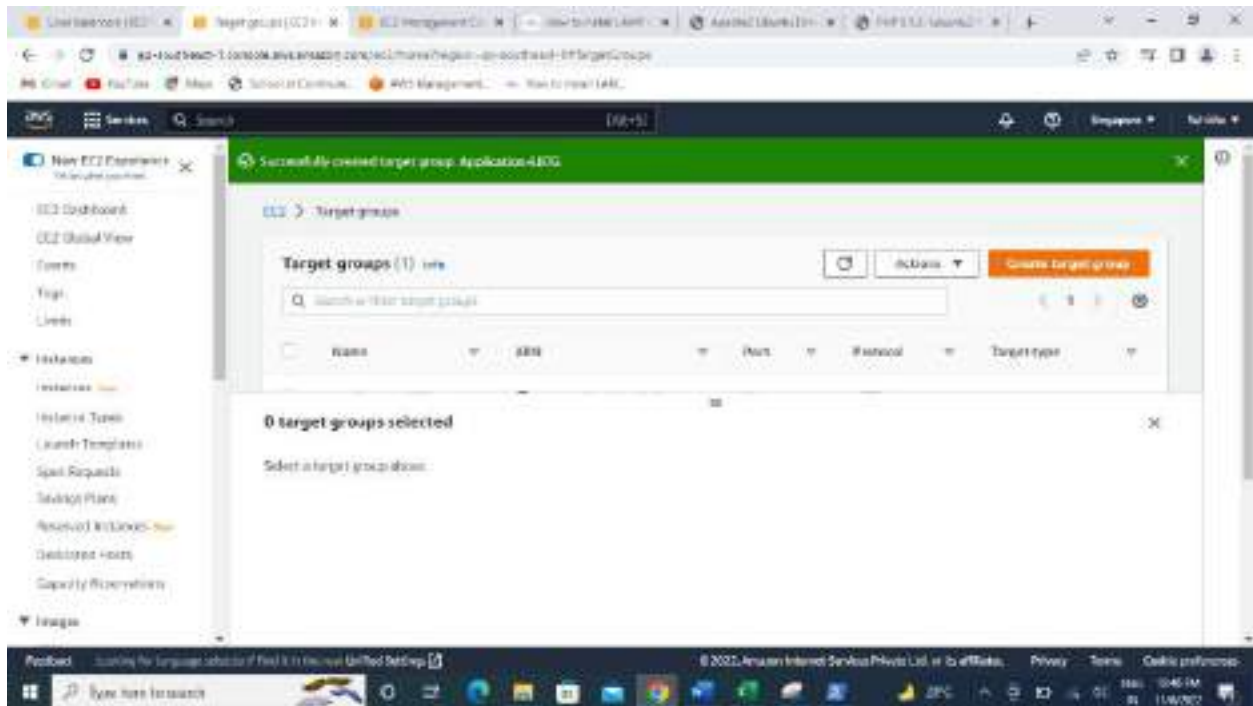
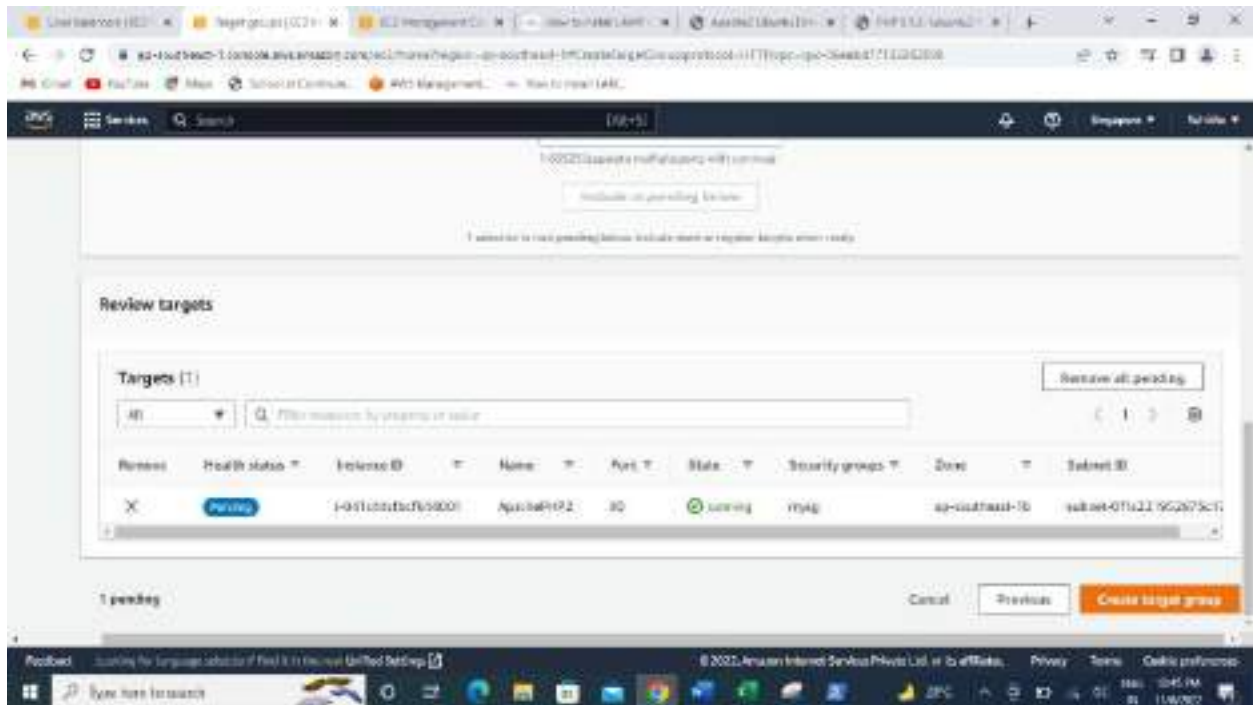
## Create Application load balancer



## Create target groups under Listeners and routing.



## Select AMI instance machine and click on Include as pending below option



Once target group is created , select TG while creating Application load balancer as below:

Load balancer (EC2) | Security group (EC2) | EC2 Management Co. | EC2 Instance Launch | Amazon CloudWatch | AWS CloudTrail

sg-1a07b6e0-1 console.aws.amazon.com/ec2/home?region=ap-south-1#instances:sg-1a07b6e0

Home | CloudTrail | IAM | AWS Management Center | You're viewing IAM

Services | Search | [9/15]

### Listener: HTTP80

Protocol: HTTP | Port: 80

Default actions: **Apply** | Application Load Balancing | Target group: tg-1a07b6e0 | HTTP | **Apply**

Create target group

**Listener tags – optional**  
 Listener tags help you organize your resources. You can add up to 50 tags to your listener.

**Add listener tag**

**Add listener**

**Add-on services – optional**  
 Add-on services are optional services that you can add to your load balancer. You can also add these services to your load balancer by enabling the "Integrate with Amazon CloudWatch" option.

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Load balancer (EC2) | Security group (EC2) | EC2 Management Co. | EC2 Instance Launch | Amazon CloudWatch | AWS CloudTrail

sg-1a07b6e0-1 console.aws.amazon.com/ec2/home?region=ap-south-1#instances:sg-1a07b6e0

Home | CloudTrail | IAM | AWS Management Center | You're viewing IAM

Services | Search | [9/15]

### Summary

Review and edit your configuration for this listener.

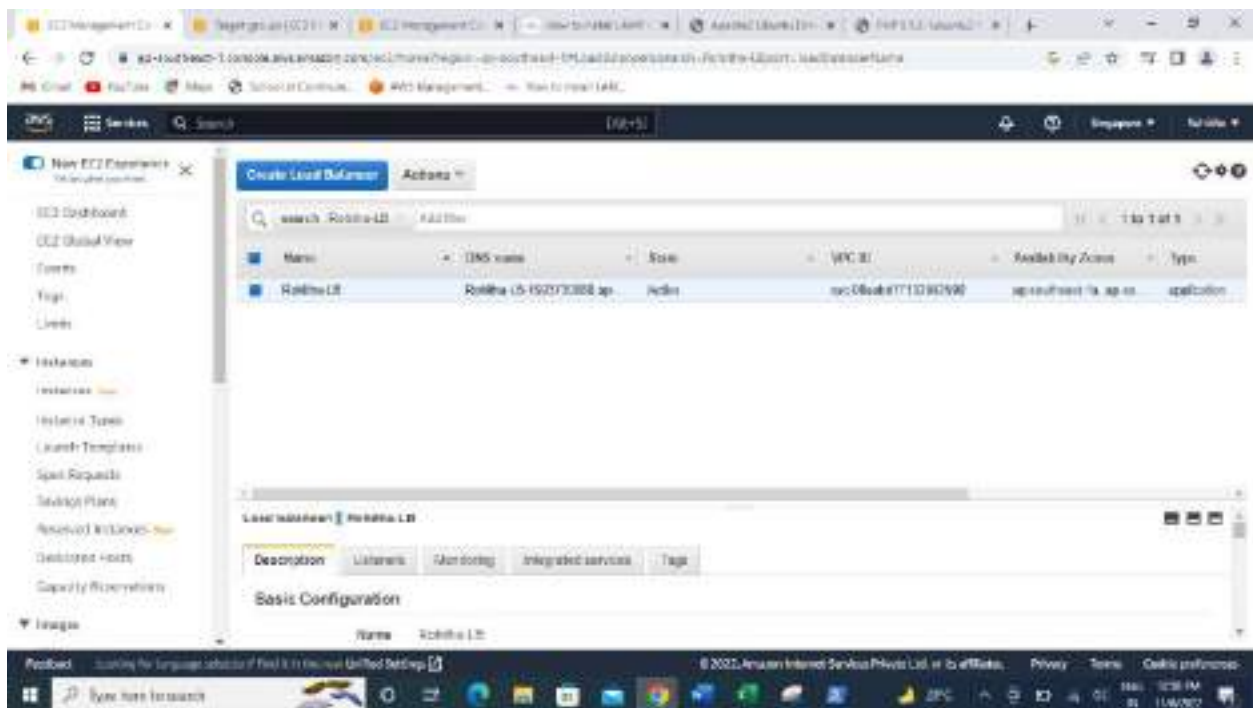
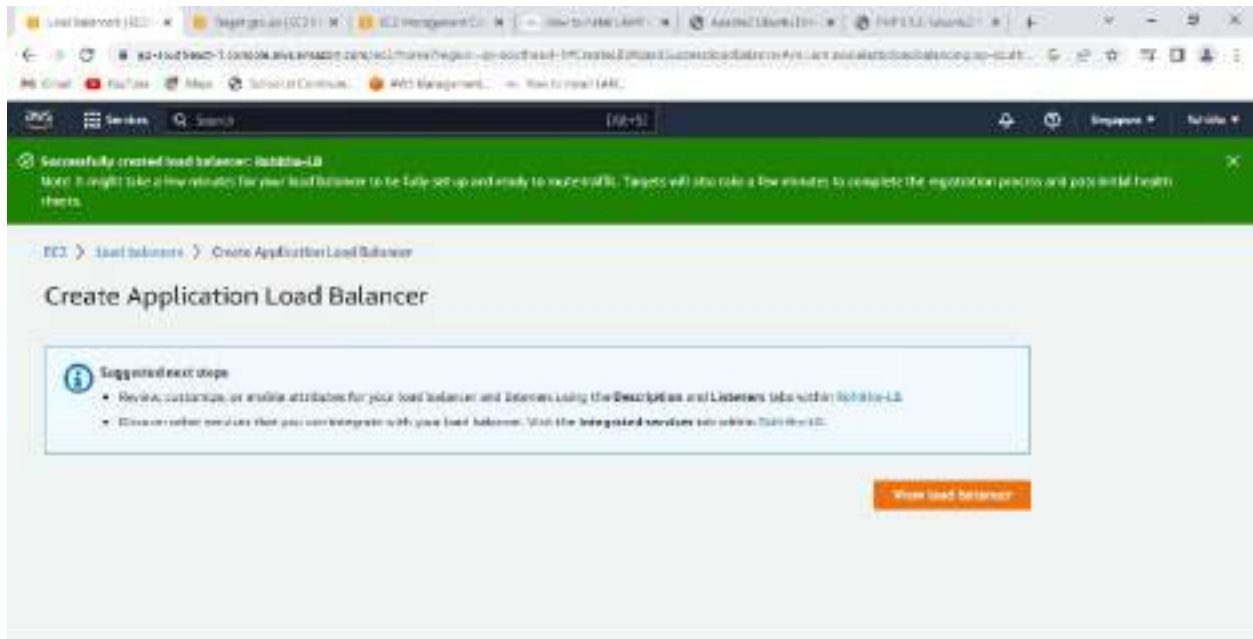
<b>Basic configuration</b> <ul style="list-style-type: none"> <li>Application Load Balancing</li> <li>HTTP</li> </ul>	<b>Security groups</b> <ul style="list-style-type: none"> <li>sg-1a07b6e0</li> <li>sg-1a07b6e0</li> </ul>	<b>Network mapping</b> <ul style="list-style-type: none"> <li>ip-1a07b6e0-1a</li> <li>ip-1a07b6e0-1b</li> <li>ip-1a07b6e0-1c</li> </ul>	<b>Listeners and target groups</b> <ul style="list-style-type: none"> <li>HTTP80</li> <li>Application Load Balancing</li> </ul>
<b>Add-on services</b> None	<b>Tags</b> None		

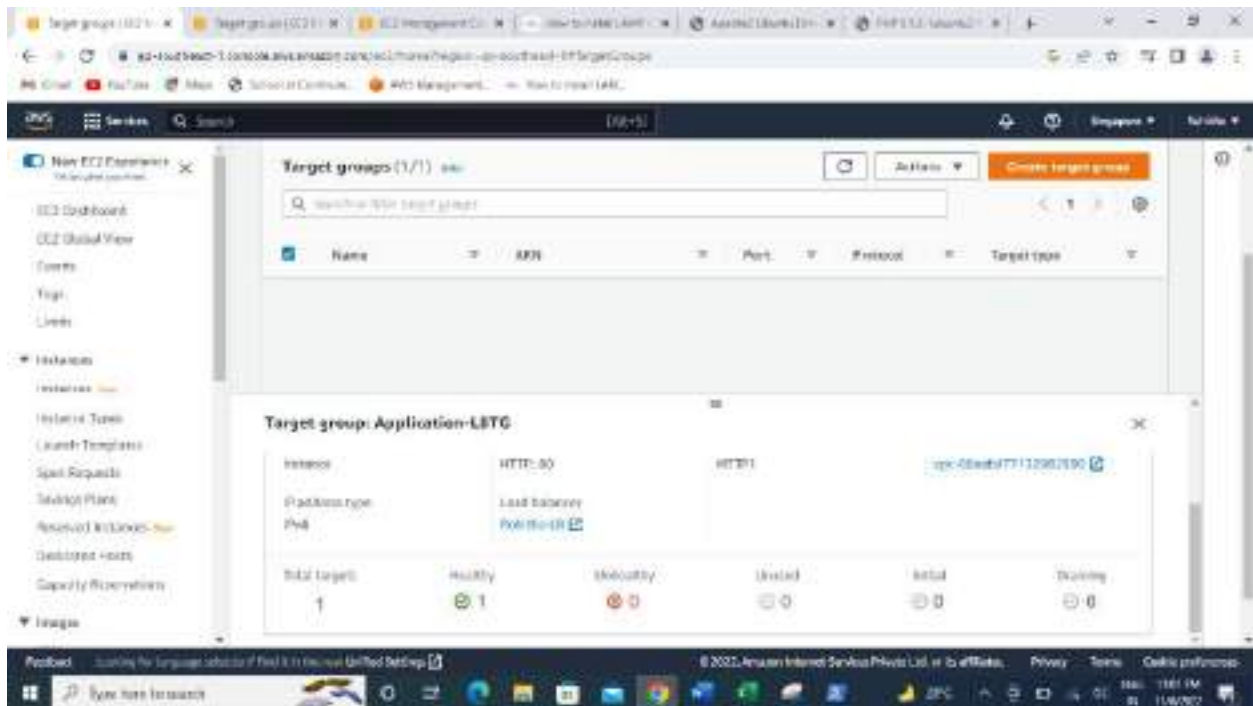
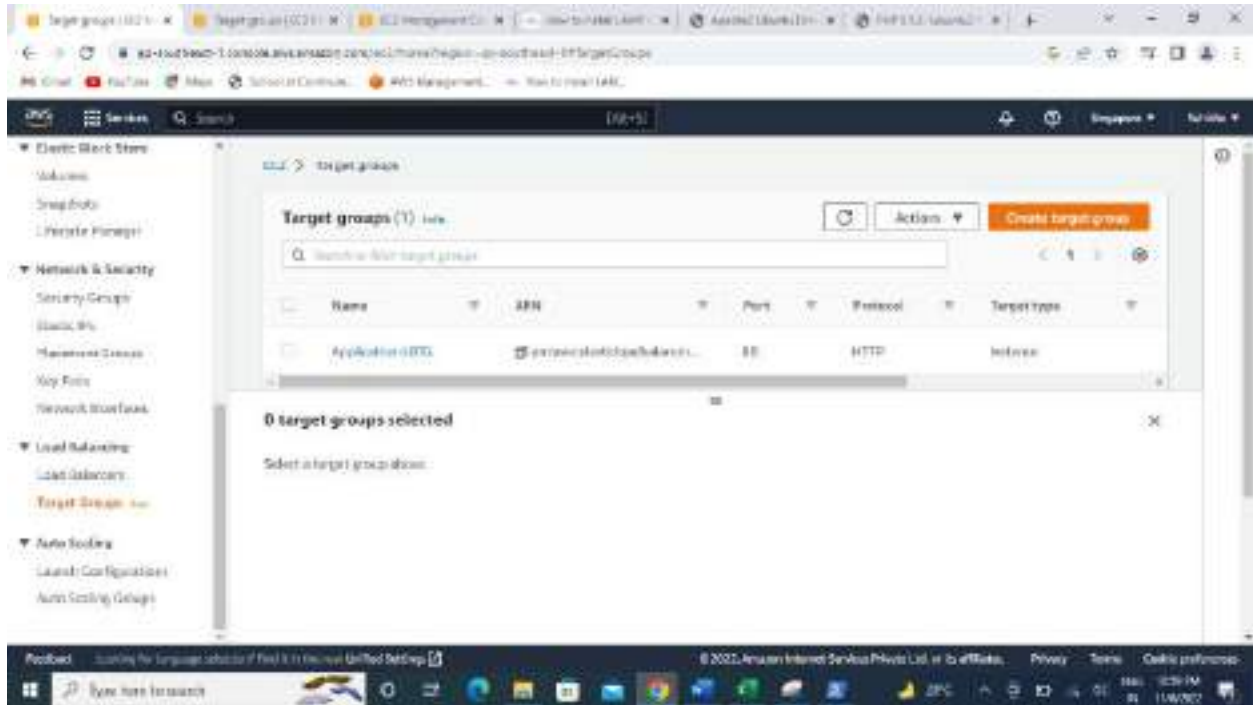
**Notifications**

Certain default attributes will be applied to your load balancer. You can view and edit them after creation by the load balancer.

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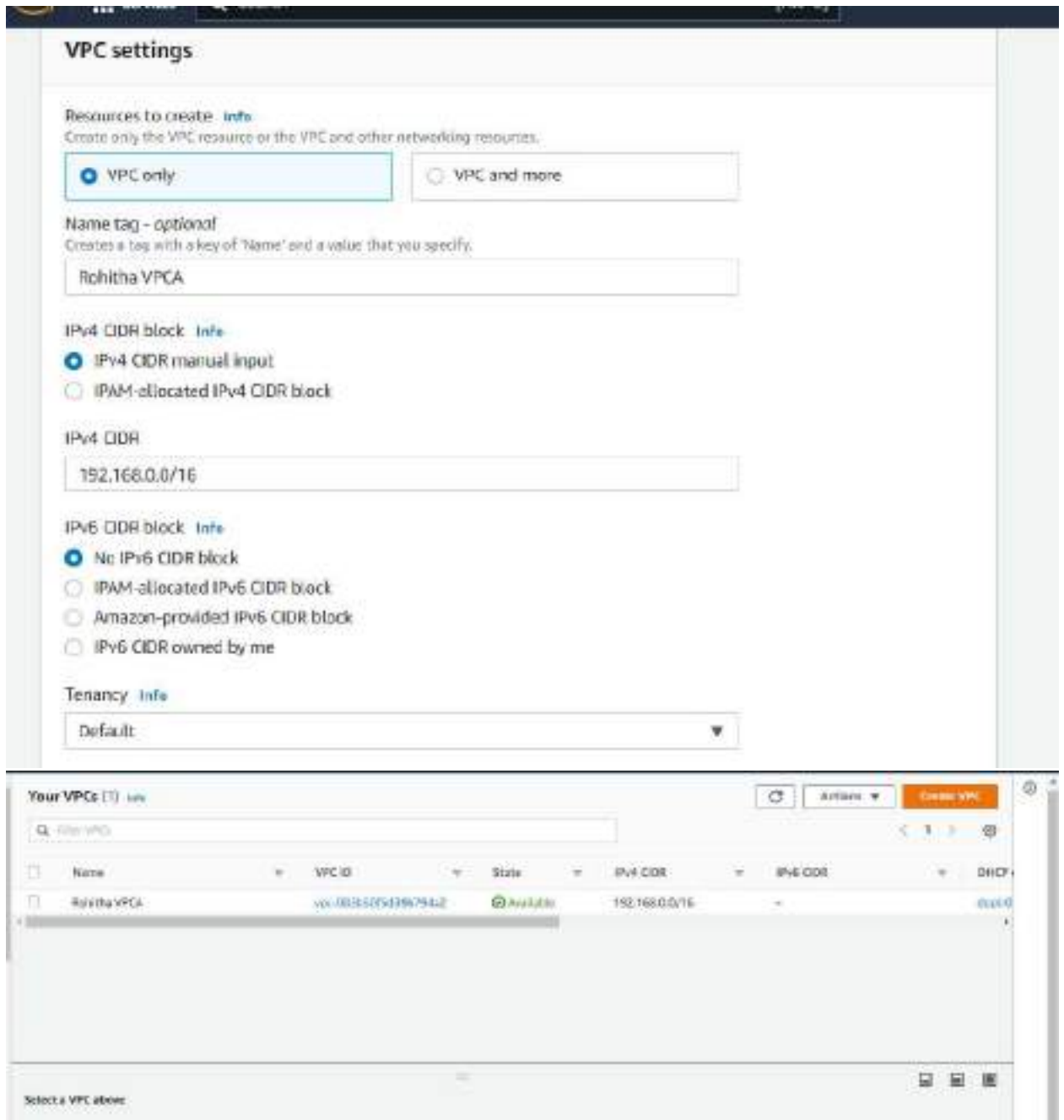


Select DNS from load balancer.



## 6. VPC :

1. Create VPC and provide range of VPC as 192.168.0.0/16



2. Create an internet gateway and attach it to VPC.

## Create internet gateway info

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

### Internet gateway settings

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

### Tags - optional

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	
Q Name	Q Rohitka-IGW	Remove

You can add up to 50 tags.

VPC > [Internet gateways](#) > Attach to VPC (igw-0273c2f015440afe0)

## Attach to VPC (igw-0273c2f015440afe0) info

### VPC

Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.

### Available VPCs

Attach the internet gateway to this VPC.

3. Create 4 subnets ( 2 public and 2 private )

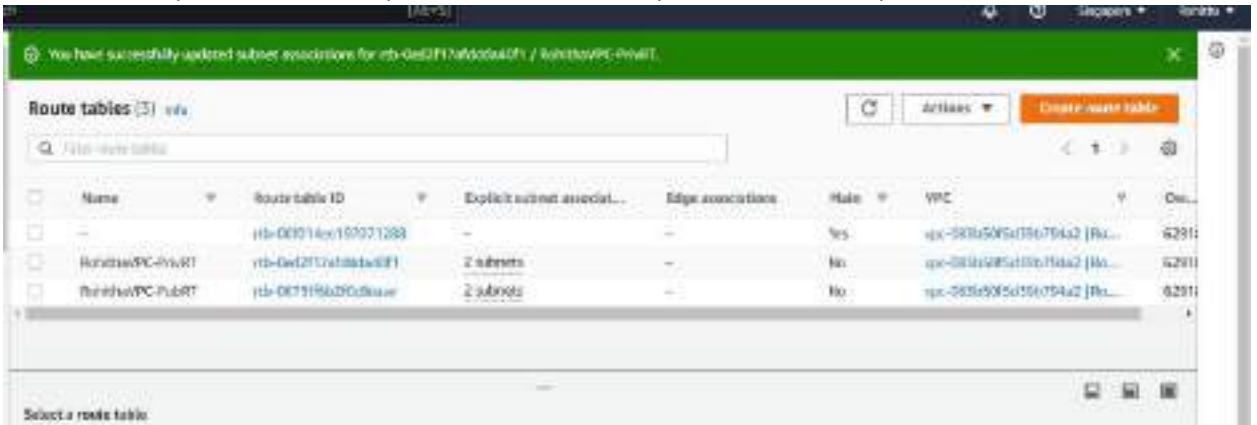
**Subnets (1/4) info**

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR
RohitkaPriv01	subnet-0af604c051c3bac1	Available	vpc-0036005d036c94a2 (Ro...	192.168.0.0/24	-
RohitkaPub01	subnet-0e1e2m1a7ufk7843	Available	vpc-0036005d036c94a2 (Ro...	192.168.1.0/24	-
RohitkaPriv02	subnet-01ac716442a0902058	Available	vpc-0036005d036c94a2 (Ro...	192.168.1.0/24	-
RohitkaPub02	subnet-084c004f0942618	Available	vpc-0036005d036c94a2 (Ro...	192.168.1.0/24	-

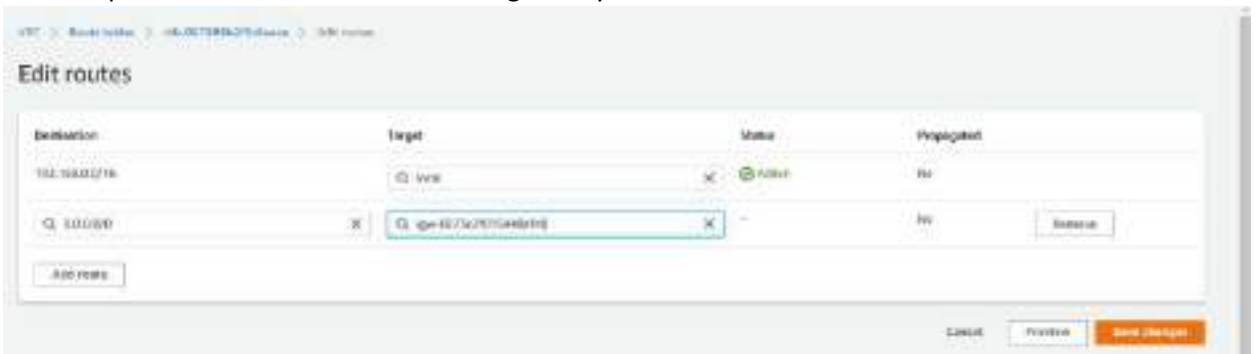
4. Create 2 route tables (public and private)



5. Associate the public subnets to public route table and private subnets to private route table.



6. Connect public route table to the internet gateway.



7. Create 2 instances (public subnet 1, private subnet 1)  
Also create new security group by allowing all traffic.

The screenshot displays the AWS Management Console interface. The top section shows the 'Security Groups' page with a table listing two security groups:

Name	Security group ID	Security group name	VPC ID	Description	Owner
default	sg-0069d94835c7303e	default	vpc-003b0d9f3e10a794a	default vpc security gr...	629103430024
IskithuVPC-A-SG	sg-0a0c0791e4f03b03e	IskithuVPC-A-SG	vpc-003b0d9f3e10a794a	IskithuVPC-A-SG	629103430024

Below the table, the 'Details' tab for the 'sg-0069d94835c7303e - default' security group is selected. It includes a 'Details' section and a 'Run Reachability Analyzer' button.

The bottom section shows the 'Instances' page with a table listing two EC2 instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
IskithuEC2-PubSMT	i-064033eefb529f7d	running	t2.micro	2/2 checks passed	No alarms	ap-southeast-1b	-
IskithuEC2-PrivSMT	i-04b00e006c077180	running	t2.micro	initialing	No alarms	ap-southeast-1b	-

8. Login to Public subnet1 machine and try to ping and ssh (ping will get success and where ssh will fail as there is no key)

```

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/powershell

PS C:\Users\DELL> cd desktop
PS C:\Users\DELL\Desktop> ssh -i "token.pem" ec2-user@54.169.203.173
Last login: Tue Nov 25 16:12:48 2022 from 103.155.31.139
Last login: Tue Nov 25 16:12:48 2022 from 103.155.31.139

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  _ | | |
  _||_|_|_|_ Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
18 package(s) needed for security, out of 27 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-192-168-2-83 ~]$ sudo su
[root@ip-192-168-2-83 ec2-user]# ssh ec2-user@192.168.0.125
The authenticity of host '192.168.0.125 (192.168.0.125)' can't be established.
ED25519 key fingerprint is 904296:1F50bP57CPjxkM4dkjPo2t7v0gq1da417ovseWdyg.
ED25519 key fingerprint is 805:51:0e:07:9e:af:5f:5e:6f:88:06:9e:b3:01:7b:c0:3a.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.0.125' (ED25519) to the list of known hosts.
Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
[root@ip-192-168-2-83 ec2-user]# client_exit; send disconnect; Connection reset
PS C:\Users\DELL\Desktop> ssh -i "token.pem" ec2-user@54.169.203.173
Last login: Tue Nov 25 16:15:34 2022 from 103.155.31.139

  _ _ _
  _ | | |
  _||_|_|_|_ Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
18 package(s) needed for security, out of 27 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-192-168-2-83 ~]$ sudo su
[root@ip-192-168-2-83 ec2-user]# ssh ec2-user@192.168.0.125
Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
[root@ip-192-168-2-83 ec2-user]# ls -l
total 0
[root@ip-192-168-2-83 ec2-user]# ls -l
total 0
[root@ip-192-168-2-83 ec2-user]# pwd
/home/ec2-user
[root@ip-192-168-2-83 ec2-user]# pwd
/home/ec2-user
[root@ip-192-168-2-83 ec2-user]# ls
[root@ip-192-168-2-83 ec2-user]# ls -l
total 0
[root@ip-192-168-2-83 ec2-user]# ls -l
total 4
-rw-rw-r-- 1 ec2-user ec2-user 1674 Nov 25 16:15 token.pem
[root@ip-192-168-2-83 ec2-user]#

```

- Copy the key pair on to Public subnet machine1 and then from Public subnet machine try to connect private subnet machine with SSH.



```

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/powershell

PS C:\Users\DELL> cd desktop
PS C:\Users\DELL\Desktop> ls

Directory: C:\Users\DELL\Desktop

Mode                LastWriteTime         Length Name
----                -
d-----          10/15/2022   6:52 PM             GIT
d-----          11/8/2022   9:21 PM             Setup
-a-----          10/25/2022   9:08 PM             1678 15.88.253.125
-a-----          11/5/2022   11:04 AM             44166 attendance.jpg
-a-----          11/2/2022   11:29 PM             1922525 AWS.docx
-a-----          11/2/2022   11:15 PM             10251 Classes schedule.xlsx
-a-----          11/2/2022   11:30 PM             436541 Doc1.docx
-a-----          10/25/2022   9:08 PM             1678 ec2-user@15.88.253.125
-a-----          9/18/2022   1:05 AM             2348 Microsoft Edge.lnk
-a-----          10/25/2022   9:08 PM             1678 Ronitha.pem
-a-----          11/15/2022  12:54 PM             1674 token.pem
-a-----          11/15/2022  12:51 PM             79528 VPC.docx
-a-----          11/4/2022   10:32 PM             1934 Zoom.lnk

PS C:\Users\DELL\Desktop> scp -i .\token.pem -r .\token.pem ec2-user@192.168.2.83:/home/ec2-user
ssh: connect to host 192.168.2.83 port 22: Connection timed out
lost connection
PS C:\Users\DELL\Desktop> scp -i .\token.pem -r .\token.pem ec2-user@192.168.2.83:/home/ec2-user
ssh: connect to host 192.168.2.83 port 22: Connection timed out
lost connection
PS C:\Users\DELL\Desktop> scp -i .\token.pem -r .\token.pem ec2-user@54.169.203.173:/home/ec2-user
token.pem
100% 1674 30.7KB/s 00:00
PS C:\Users\DELL\Desktop>

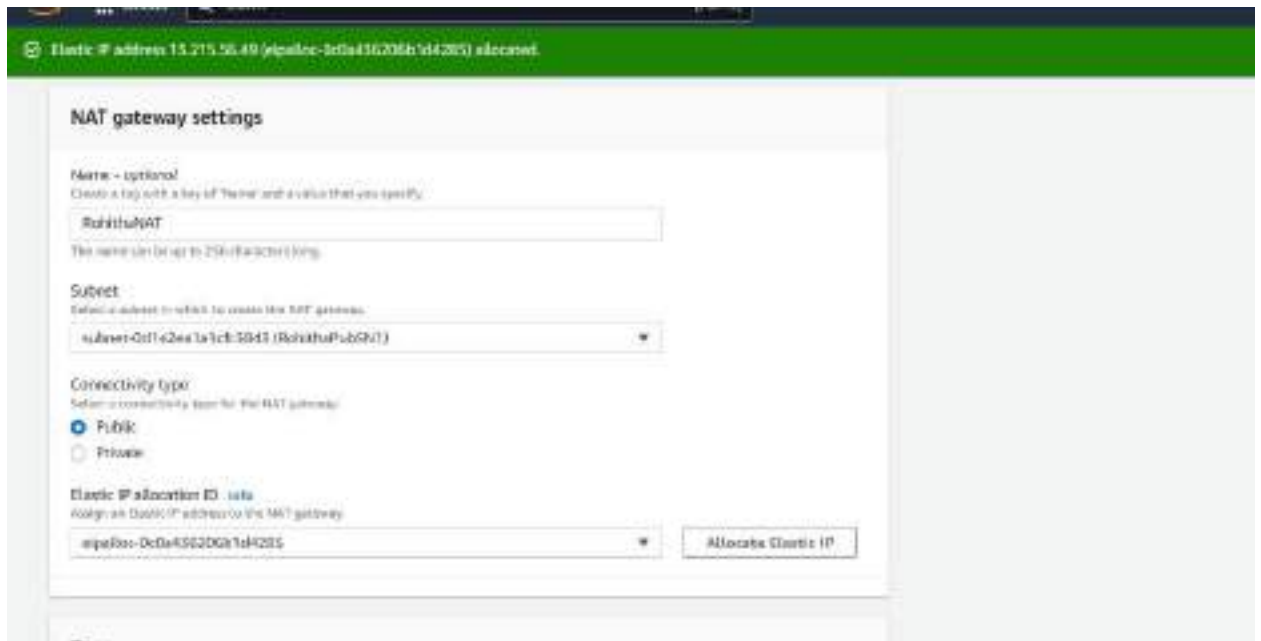
[root@ip-192-168-2-83 ec2-user]# chmod 700 token.pem
[root@ip-192-168-2-83 ec2-user]# ls -l
total 4
-rwx----- 1 ec2-user ec2-user 1674 Nov 15 16:35 token.pem
[root@ip-192-168-2-83 ec2-user]# ssh -i token.pem ec2-user@192.168.0.125

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                Amazon Linux 2 AMI

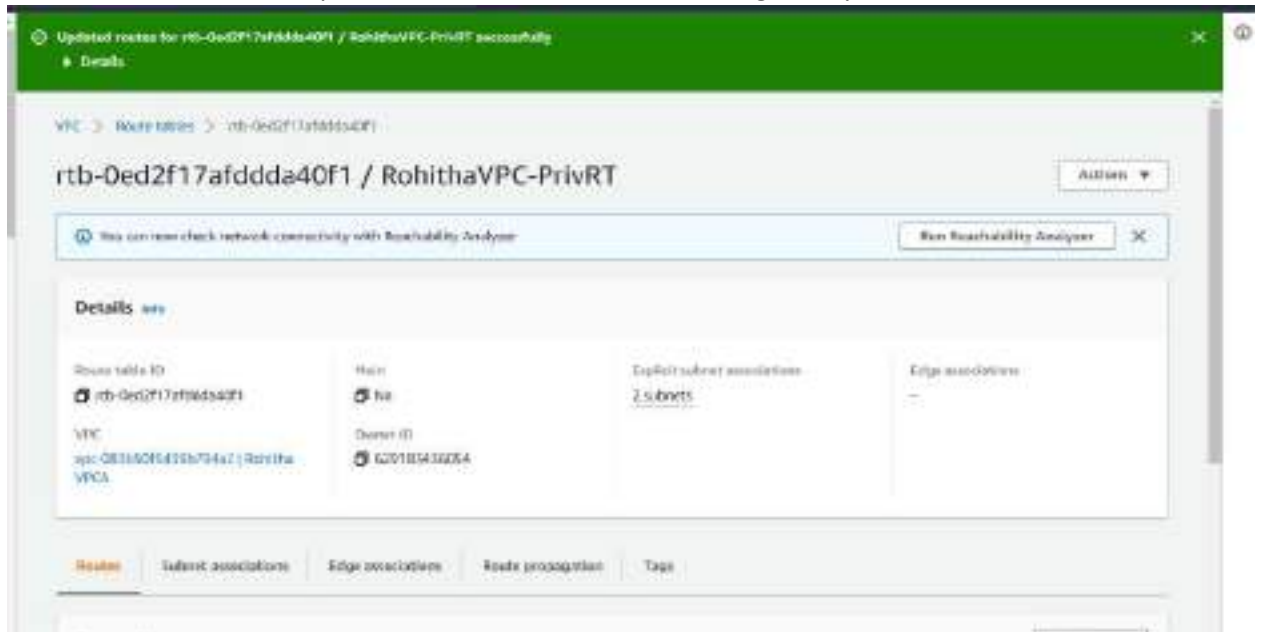
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-192-168-0-125 ~]$

```

10. In order to get internet on your Private subnet machine then we have to Create a NAT gateway in Public subnet1.



11. Edit the route table of private subnet1 with a route to NAT gateway.



Routes [2]

Filter routes Both

Destination	Target	Status	Propagated
0.0.0.0/0	ec2-31154201aws-20644	Active	No
193.168.0.0/16	local	Active	No

12. Login to private subnet machine and try to ping google.com

```
root@ip-193-168-3-85:/home/ec2-user
64 bytes from 193.168.3.85: icmp_seq=26 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=27 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=28 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=29 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=30 ttl=63 time=1.39 ms
64 bytes from 193.168.3.85: icmp_seq=31 ttl=63 time=1.57 ms
64 bytes from 193.168.3.85: icmp_seq=32 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=33 ttl=63 time=1.57 ms
64 bytes from 193.168.3.85: icmp_seq=34 ttl=63 time=1.43 ms
64 bytes from 193.168.3.85: icmp_seq=35 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=36 ttl=63 time=1.43 ms
64 bytes from 193.168.3.85: icmp_seq=37 ttl=63 time=1.41 ms
64 bytes from 193.168.3.85: icmp_seq=38 ttl=63 time=1.45 ms
64 bytes from 193.168.3.85: icmp_seq=39 ttl=63 time=1.35 ms
64 bytes from 193.168.3.85: icmp_seq=40 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=41 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=42 ttl=63 time=1.41 ms
64 bytes from 193.168.3.85: icmp_seq=43 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=44 ttl=63 time=1.49 ms
64 bytes from 193.168.3.85: icmp_seq=45 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=46 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=47 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=48 ttl=63 time=1.36 ms
64 bytes from 193.168.3.85: icmp_seq=49 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=50 ttl=63 time=1.36 ms
64 bytes from 193.168.3.85: icmp_seq=51 ttl=63 time=1.35 ms
64 bytes from 193.168.3.85: icmp_seq=52 ttl=63 time=1.39 ms
64 bytes from 193.168.3.85: icmp_seq=53 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=54 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=55 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=56 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=57 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=58 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=59 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=60 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=61 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=62 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=63 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=64 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=65 ttl=63 time=1.37 ms
64 bytes from 193.168.3.85: icmp_seq=66 ttl=63 time=1.37 ms
64 bytes from 193.168.3.85: icmp_seq=67 ttl=63 time=1.48 ms
64 bytes from 193.168.3.85: icmp_seq=68 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=69 ttl=63 time=1.40 ms
64 bytes from 193.168.3.85: icmp_seq=70 ttl=63 time=1.37 ms
64 bytes from 193.168.3.85: icmp_seq=71 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=72 ttl=63 time=1.38 ms
64 bytes from 193.168.3.85: icmp_seq=73 ttl=63 time=1.43 ms
64 bytes from 193.168.3.85: icmp_seq=74 ttl=63 time=1.42 ms
64 bytes from 193.168.3.85: icmp_seq=75 ttl=63 time=1.48 ms
```

## 7. VPC Peering :

1. Create VPC A and 2 subnets ( one is public and one is private )

**Your VPCs (2)**

Name	VPC ID	Status	IPv4 CIDR	IPv6 CIDR	DNCP
-	vpc-07558f1e452c49d	Available	172.31.0/16	-	default
Robito-VPCA	vpc-05568f9ee4549e5	Available	10.100.0/16	-	default

Select a VPC above

**Subnets (8)**

Name	Subnet ID	Status	VPC	IPv4 CIDR	IPv6 CIDR
RobitoPrivate1	subnet-0f3e4c54c85e89b	Available	vpc-07558f1e452c49d   Ro...	10.100.0/24	-
-	subnet-004e9c48e0778e4	Available	vpc-07558f1e452c49d   Ro...	172.31.0/30	-
-	subnet-0341603211a64453	Available	vpc-07558f1e452c49d   Ro...	172.31.0/30	-
RobitoPublic1	subnet-0c9116016279e1	Available	vpc-05568f9ee4549e5   Ro...	10.100.1/24	-
-	subnet-0f160a0e07ae2e2	Available	vpc-07558f1e452c49d   Ro...	172.31.46.0/20	-

Select a subnet

2. Create 2 route tables ( one is public and one is private )

**Route tables (4)**

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Dis...
-	rtb-0c4eaf44715b2b	-	-	Yes	vpc-07558f1e452c49d   Ro...	6201
RobitoPCFWRT	rtb-0f09ae17d31f8e34	-	-	No	vpc-05568f9ee4549e5   Ro...	6291
RobitoPCFWRT	rtb-0c2643f09343d7	-	-	No	vpc-05568f9ee4549e5   Ro...	6291
-	rtb-01708a795e44423b	-	-	Yes	vpc-05568f9ee4549e5   Ro...	6291

3. Associate public route table with public subnet and private route table with private subnet.

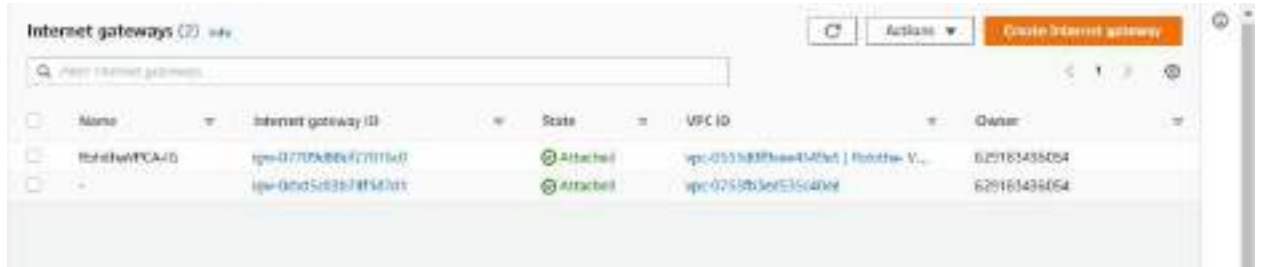
You have successfully updated subnet associations for rtb-0c2643f09343d7 / RobitoPCFWRT.

**Route tables (4)**

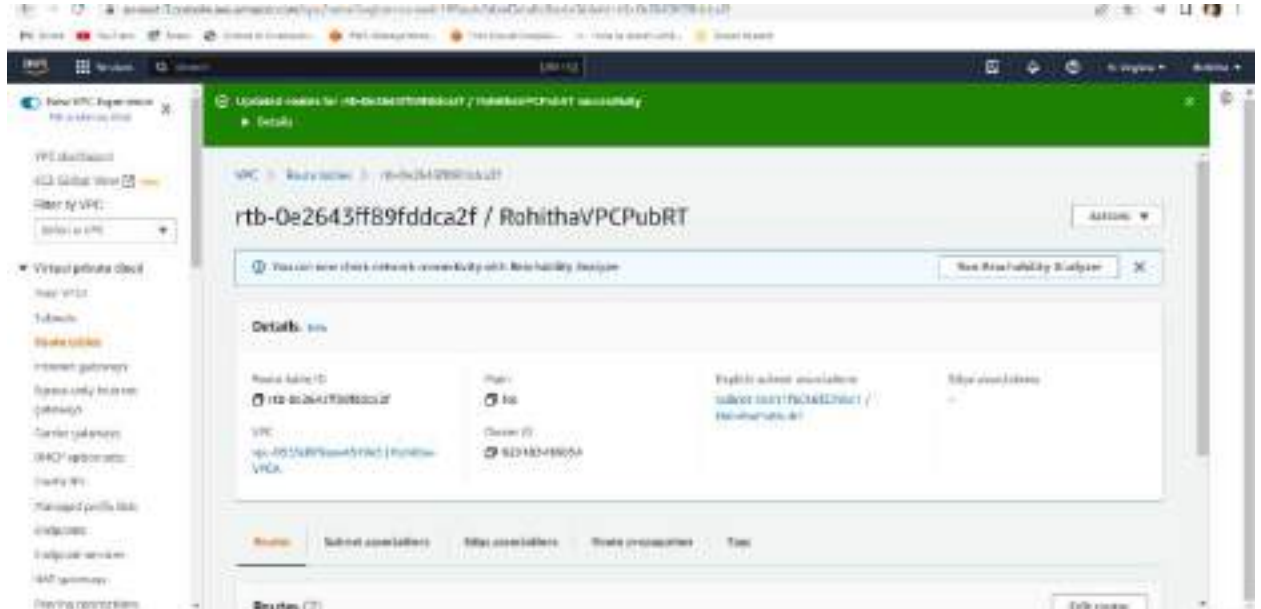
Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Dis...
-	rtb-0c4eaf44715b2b	-	-	Yes	vpc-07558f1e452c49d   Ro...	6201
RobitoPCFWRT	rtb-0f09ae17d31f8e34	subnet-0f3e4c54c85e89b...	-	No	vpc-05568f9ee4549e5   Ro...	6291
RobitoPCFWRT	rtb-0c2643f09343d7	subnet-0c9116016279e1...	-	No	vpc-05568f9ee4549e5   Ro...	6291
-	rtb-01708a795e44423b	-	-	Yes	vpc-05568f9ee4549e5   Ro...	6291

Select a route table

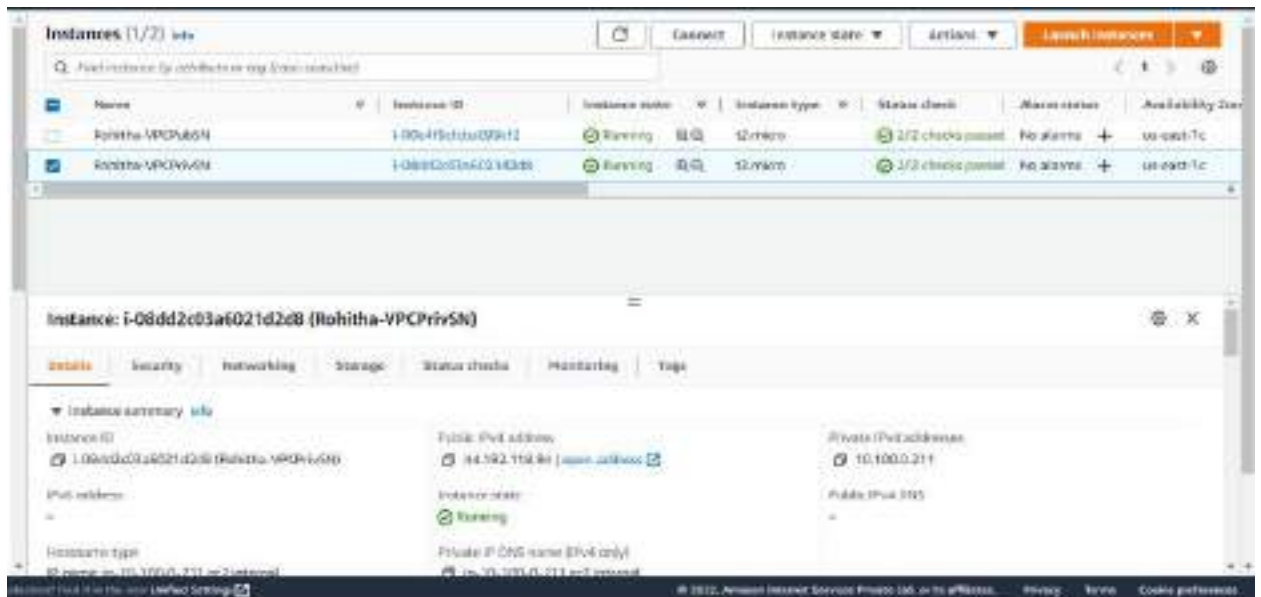
4. Create internet gateway and attach it to VPC.



5. Add public subnet to internet gateway.



6. Create 2 EC2 machines.



```

root@ip-10-100-1-55:/home/ec2-user
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\DELL> cd desktop
PS C:\Users\DELL\Desktop> ssh -i "peering.pem" ec2-user@44.195.1.130
Last login: Thu Nov 17 06:28:28 2022 from 103.155.11.155

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Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
1 package(s) needed for security, out of 1 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-10-100-1-55 ~]$ sudo su
[root@ip-10-100-1-55 ec2-user]# ssh 10.100.0.211
The authenticity of host '10.100.0.211 (10.100.0.211)' can't be established;
ECDSA key fingerprint is SHA256:fl+yn3nPY1jk0107c2ohky0TManx4ivvA+5R1imlbp4,
ECDSA key fingerprint is MD5:b6:00:77:d8:3d:80:07:fd:a4:8a:b0:a7:f4:f5:0c:5c.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.100.0.211' (ECDSA) to the list of known hosts.
Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
[root@ip-10-100-1-55 ec2-user]# pwd
/home/ec2-user
[root@ip-10-100-1-55 ec2-user]# ls -l
total 4
-rw-rw-r-- 1 ec2-user ec2-user 1674 Nov 17 06:30 peering.pem
[root@ip-10-100-1-55 ec2-user]#

```

```

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\DELL> cd desktop
PS C:\Users\DELL\Desktop> scp -i peering.pem ~/.peering.pem ec2-user@44.195.1.130:/home/ec2-user
./peering.pem to each file or directory
PS C:\Users\DELL\Desktop> scp -i peering.pem ~/.peering.pem ec2-user@44.195.1.130:/home/ec2-user
peering.pem                                100% 10.0K  0.00/s  00:00
PS C:\Users\DELL\Desktop>

[root@ip-10-100-1-55 ec2-user]# ls -l
total 4
-rw-rw-r-- 1 ec2-user ec2-user 1674 Nov 17 06:30 peering.pem
[root@ip-10-100-1-55 ec2-user]# chmod 777 peering.pem
[root@ip-10-100-1-55 ec2-user]# ls -ltr
total 4
-rwxrwxrwx 1 ec2-user ec2-user 1674 Nov 17 06:30 peering.pem
[root@ip-10-100-1-55 ec2-user]# ssh -i peering.pem ec2-user@10.100.0.211

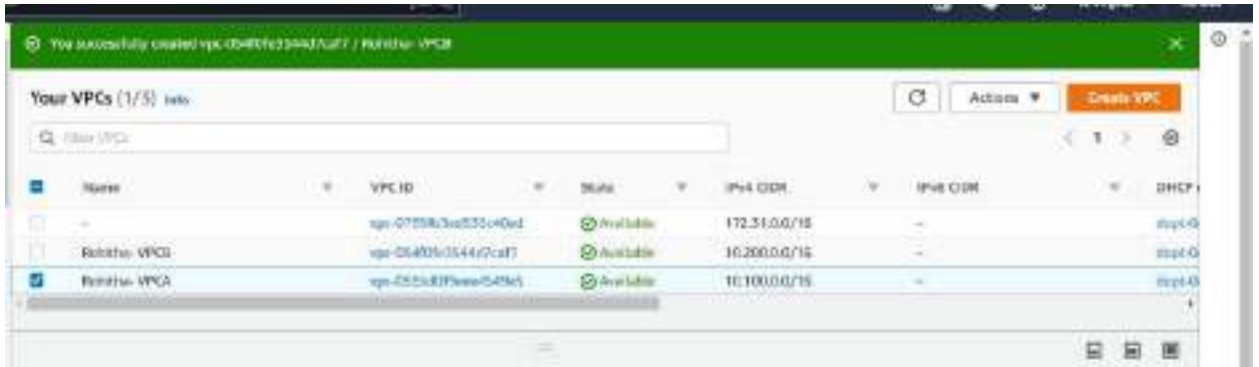
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  _|_ (  _|_ /
  _|\_|_|_|

Amazon Linux 2 AMI

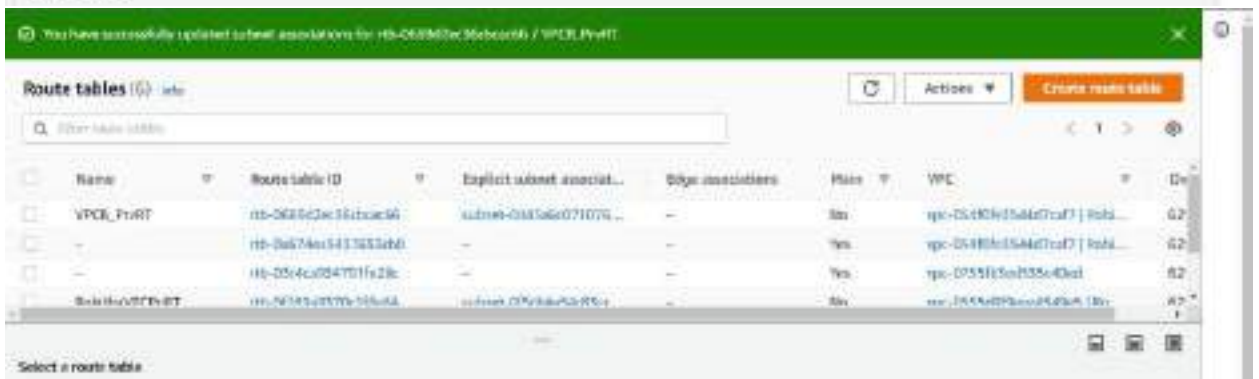
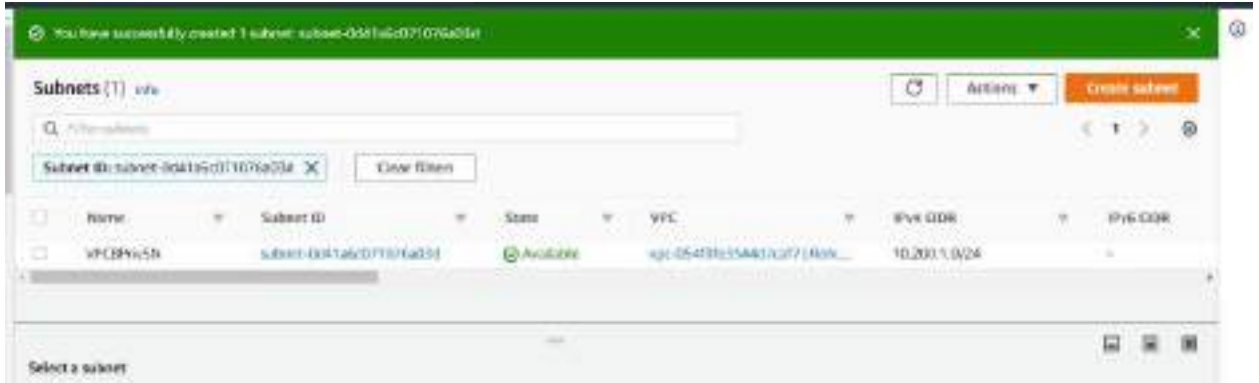
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-100-0-211 ~]$

```

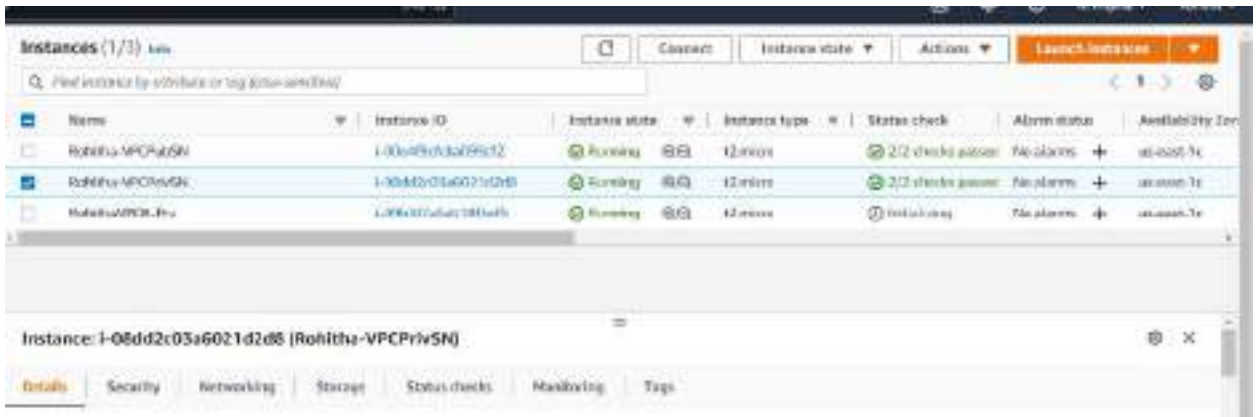
7. Create VPC B machine.



8. Create private subnet and route table.



9. Create EC2 instance.



10. Create peering connection.

Peering connections (1/1) [Add](#) Refresh Actions Create peering connection

Name	Peering connection ID	Status	Requester VPC	Accepter VPC	Requester CIDR
VPC Peering A_B	pcx-0570657e63102d8c1	Peering in progress	vpc-055a03f9ee9f468c5 / R...	vpc-0549863584d7c27 / R...	10.100.0.0/16

Your VPC peering connection pcx-0570657e63102d8c1 / VPC Peering A\_B has been established. To send and receive traffic across the VPC peering connection, you must add routes to the joined VPC in one or more of your VPC route tables. [Add](#) Modify my route tables now

Peering connections (1/1) [Add](#) Refresh Actions Create peering connection

Name	Peering connection ID	Status	Requester VPC	Accepter VPC	Requester CIDR
VPC Peering A_B	pcx-0570657e63102d8c1	Active	vpc-055a03f9ee9f468c5 / R...	vpc-0549863584d7c27 / R...	10.100.0.0/16

pcx-0570657e63102d8c1 / VPC Peering A\_B

```
[root@ip-10-100-0-211 ec2-user]# ssh ec2-user@10.200.1.174
ssh: connect to host 10.200.1.174 port 22: connection timed out
[root@ip-10-100-0-211 ec2-user]# exit
exit
[ec2-user@ip-10-100-0-211 ~]# exit
logout
Connection to 10.100.0.211 closed.
[root@ip-10-100-1-55 ec2-user]# ls -ltr
total 4
-rwxrwxr-x 1 ec2-user ec2-user 1674 Nov 17 06:38 peering.pem
[root@ip-10-100-1-55 ec2-user]# scp -i peering.pem -r peering.pem ec2-user@10.100.0.211:/home/ec2-user
peering.pem
[root@ip-10-100-1-55 ec2-user]# ssh -i peering.pem ec2-user@10.100.0.211
Last login: Thu Nov 17 16:26:50 2022 from 10.100.1.55

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 _/_/ \_/_/_/   Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-10-100-0-211 ~]# sudo su
[root@ip-10-100-0-211 ec2-user]# ls -ltr
total 4
-rwxrwxr-x 1 ec2-user ec2-user 1674 Nov 17 16:58 peering.pem
[root@ip-10-100-0-211 ec2-user]# ssh -i peering.pem ec2-user@10.200.1.174
```



