

ASSIGNMENT-1

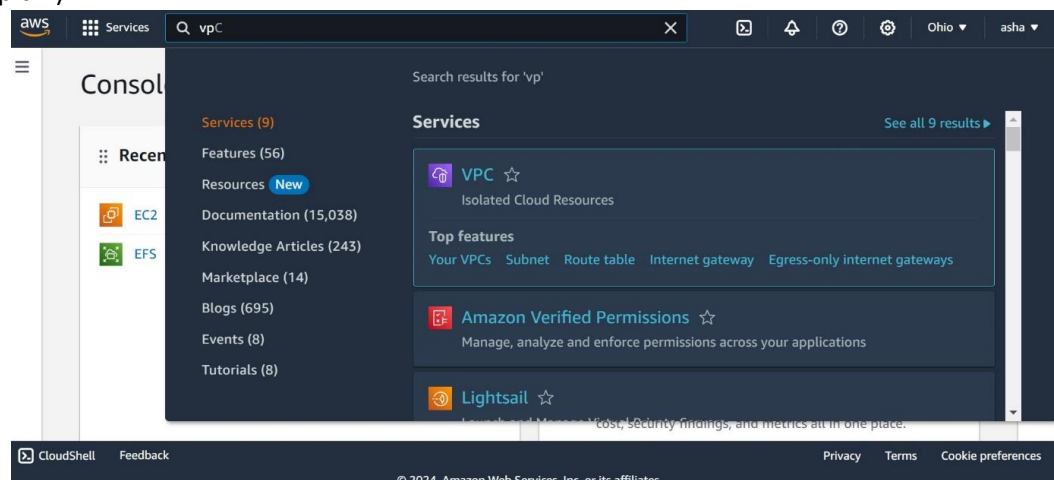
Create a VPC with 2 subnets and 2 routes tables and internet gateway

- Launching 3 instances
- Attach one instance with EBS
- Attach second instance with EFS

Create a virtual public cloud (VPC)

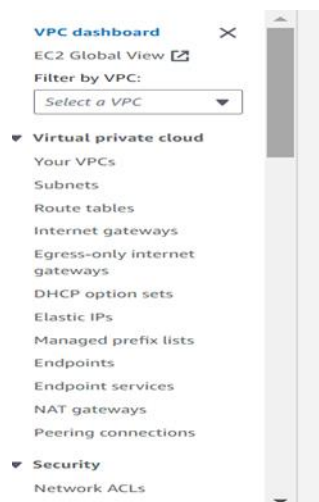
Go to AWS management console

Search for VPC in search space of AWS home page and click on VPC as shown in the figure below(pic-1)



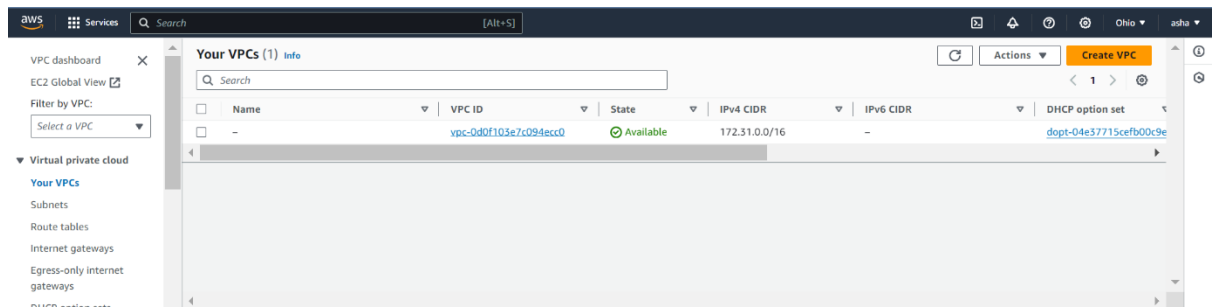
Pic 1

Now click on your VPCs option from VPC menu of VPC page as shown in the figure below(pic2)



Pic 2

You will find the page as shown in figure below (pic 3)



Pic-3

The history of your VPCs will be shown there

Now we have to click on the Create VPC option on the top right corner

By clicking it will be visible as shown in the figure on (pic-4)

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.

IPv4 CIDR block [Info](#)

☒ IPv4 CIDR manual input
 ☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR

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](#)

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*

Remove tag

Add tag

You can add 49 more tags

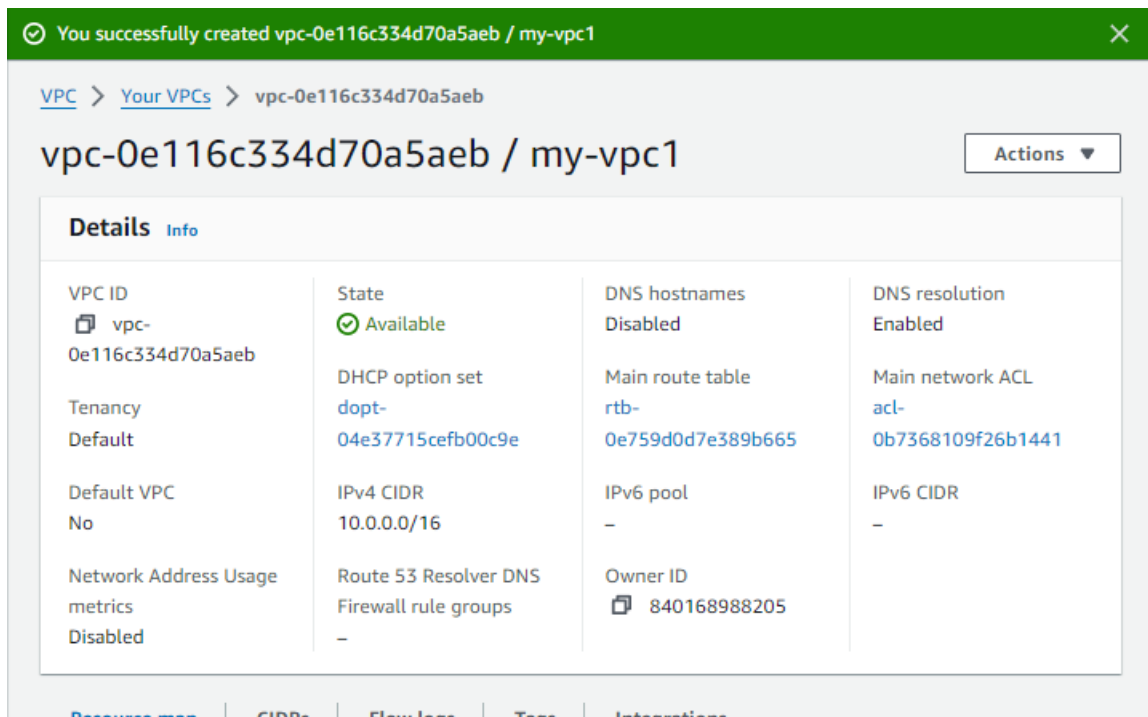
Cancel

Create VPC

Pic-4

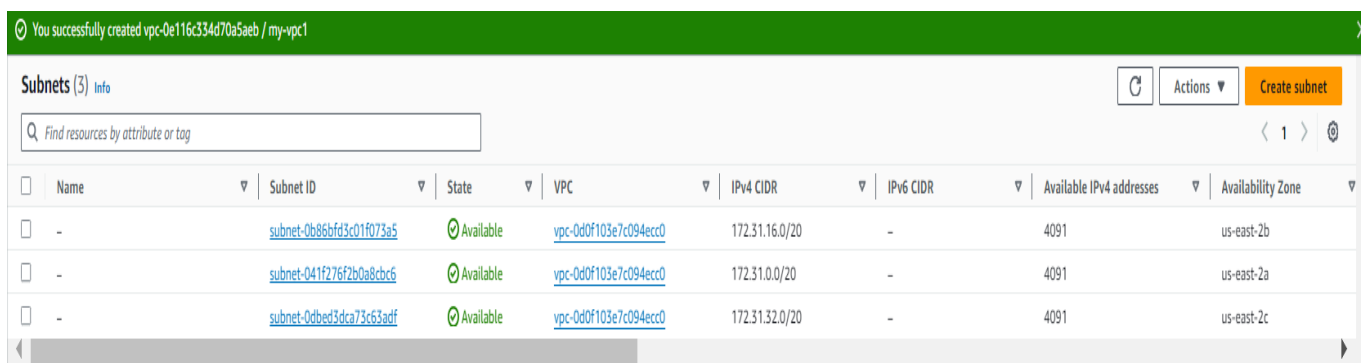
Now fill the details need to create VPC

After successful creation it will provide a message of successful of our VPC as shown in the picture below(pic-5)



Pic-5

Now click on subnets to create subnets to our custom VPC. In the subnets there will be some default subnets but we have to create a new subnet as shown in the (pic-6)



Pic-6

We have to create two different subnets one is public subnet and another will be a private subnet

For creating subnet, we have to give our custom VPC-ID, Subnet name, choose only one availability Zone, IPV4 subnet CIDR block, then finally create subnet

Creation of Public subnet as shown in the figure below (pic-7)

VPC > Subnets > Create subnet

Create subnet Info

VPC

VPC ID
Create subnets in this VPC.

vpc-0e116c334d70a5aeb (my-vpc1)

Associated VPC CIDRs

IPv4 CIDRs
10.0.0.0/16

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.

public-subnet
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.

US East (Ohio) / us-east-2a

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.

10.0.0.0/16

IPv4 subnet CIDR block

10.0.10.0/24 256 IPs

< > ^ v

▼ Tags - optional

Key	Value - optional	
Name	public-subnet	Remove

Add new tag
You can add 49 more tags.

Remove

Add new subnet

Cancel Create subnet

pic-7

Just like the public Subnet we have to create the private Subnet as shown in the below (pic 8)

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.

private-subnet
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.

US East (Ohio) / us-east-2b

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.

10.0.0.0/16

IPv4 subnet CIDR block

10.0.20.0/24 256 IPs

< > ^ v

▼ Tags - optional

Key	Value - optional	
Name	private-subnet	Remove

Add new tag
You can add 49 more tags.

Remove

Add new subnet

Cancel Create subnet

pic-8

VPC > Subnets > Create subnet

Create subnet Info

VPC

VPC ID
Create subnets in this VPC.

vpc-0e116c334d70a5aeb (my-vpc1)

Associated VPC CIDRs

IPv4 CIDRs
10.0.0.0/16

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.

public-subnet

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.

US East (Ohio) / us-east-2a

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.

10.0.0.0/16

IPv4 subnet CIDR block

10.0.10.0/24 256 IPs

Tags - optional

Key Value - optional

Name public-subnet Remove

Add new tag

You can add 49 more tags.

Remove

Add new subnet

Cancel Create subnet

pic-9

Now we created two subnets to our custom VPC successfully shown in pic 10

Subnets (5) Info

Find resources by attribute or tag

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses	Availability Zone
<input type="checkbox"/>	-	subnet-0b88bfa5c01073a5	Available	vpc-0d0f103e7c094ecc0	172.31.16.0/20	-	4091	us-east-2b
<input type="checkbox"/>	-	subnet-041f275f20a8d8c6	Available	vpc-0d0f103e7c094ecc0	172.31.0.0/20	-	4091	us-east-2a
<input type="checkbox"/>	-	subnet-0dbed3dca73c63adf	Available	vpc-0d0f103e7c094ecc0	172.31.32.0/20	-	4091	us-east-2c
<input type="checkbox"/>	public-subnet	subnet-0926f6eb50f29d8ba	Available	vpc-0e116c334d70a5aeb my...	10.0.10.0/24	-	251	us-east-2a
<input type="checkbox"/>	private-subnet	subnet-0dd0d5bb41dbf9910	Available	vpc-0e116c334d70a5aeb my...	10.0.20.0/24	-	251	us-east-2b

pic-10

Now click on Internet gateways from menu bar you will able to see as shown in pic -11

Internet gateways (1) Info

Search

	Name	Internet gateway ID	State	VPC ID	Owner
<input type="checkbox"/>	-	igw-097aee110f350f4a	Attached	vpc-0d0f103e7c094ecc0	840168988205

pic -11

click on create internet gateway and create you will get as shown in pic -12

Again, after giving the name of your internet click on the create internet gateway

VPC > Internet gateways > Create internet gateway

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
Creates 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	
<input type="text" value="Name"/>	<input type="text" value="my-internet-gateway"/>	<input type="button" value="Remove"/>

You can add 49 more tags.

pic -12

After the successful creation of internet gateway, we have to attach to VPC as shown in the pic below (pic-13)

ⓘ The following internet gateway was created: igw-03207d711f9ea54df - my-internet-gateway. You can now attach to a VPC to enable the VPC to communicate with the internet.

VPC > Internet gateways > igw-03207d711f9ea54df

igw-03207d711f9ea54df / my-internet-gateway [Actions](#)

Details [Info](#)

Internet gateway ID	State	VPC ID
igw-03207d711f9ea54df	Detached	-

Tags

Key	Value
Name	my-internet-gateway

pic -13

Then click on Actions and click on Attach to VPC

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-027ace10fc960f4a	Detached	vpc-0d0f103e7cd94ecc0	840168988205
my-internet-gateway	igw-03207d711f9ea54df	Attached	vpc-0e116c334d70a5aeb my-vpc1	840168988205

pic -14

igw-03207d711f9ea54df / my-internet-gateway

Details

Internet gateway ID: igw-03207d711f9ea54df
 State: Detached
 VPC ID: -

Tags

Key	Value
Name	my-internet-gateway

pic -15

Now we have selected our custom VPC in that Available VPCs so we already created it our custom VPC and finally click on Attach internet gate

Now we created internet gateway to our custom VPC successfully

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-027ace10fc960f4a	Attached	vpc-0d0f103e7cd94ecc0	840168988205
my-internet-gateway	igw-03207d711f9ea54df	Attached	vpc-0e116c334d70a5aeb my-vpc1	840168988205

pic -16

Now we have to create 2 route tables (one is public and another one is private). Click on Route tables from menu bar and click on Create route table

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID
-	rtb-07f636c4e8be8a829	-	-	Yes	vpc-0d0f103e7cd94ecc0	840168988205
-	rtb-0e759d0d7a389b665	-	-	Yes	vpc-0e116c334d70a5aeb my-vpc1	840168988205

pic -17

Public route table creation

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.

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="public-routetable"/>	<input type="button" value="Remove"/>

You can add 49 more tags.

pic -18

After providing VPC to the route table click on create route table

Route table rtb-02134504a49b48709 | public-routetable was created successfully.

VPC > Route tables > rtb-02134504a49b48709

rtb-02134504a49b48709 / public-routetable Actions

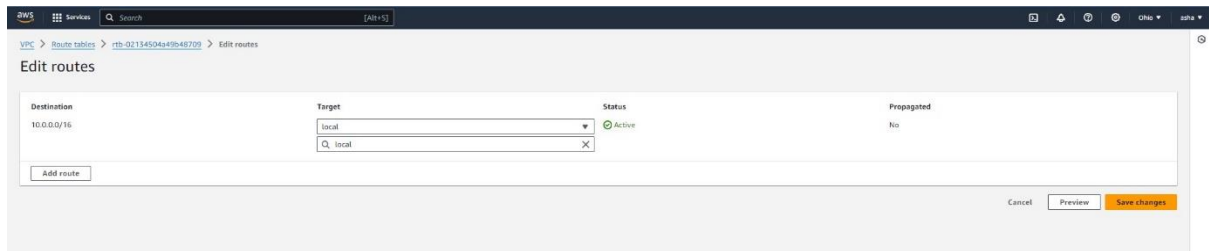
Details Info

Route table ID rtb-02134504a49b48709	Main No	Explicit subnet associations -	Edge associations -
VPC vpc-0e116c334d70a5aeb my-vpc1	Owner ID 840168988205		

pic -19

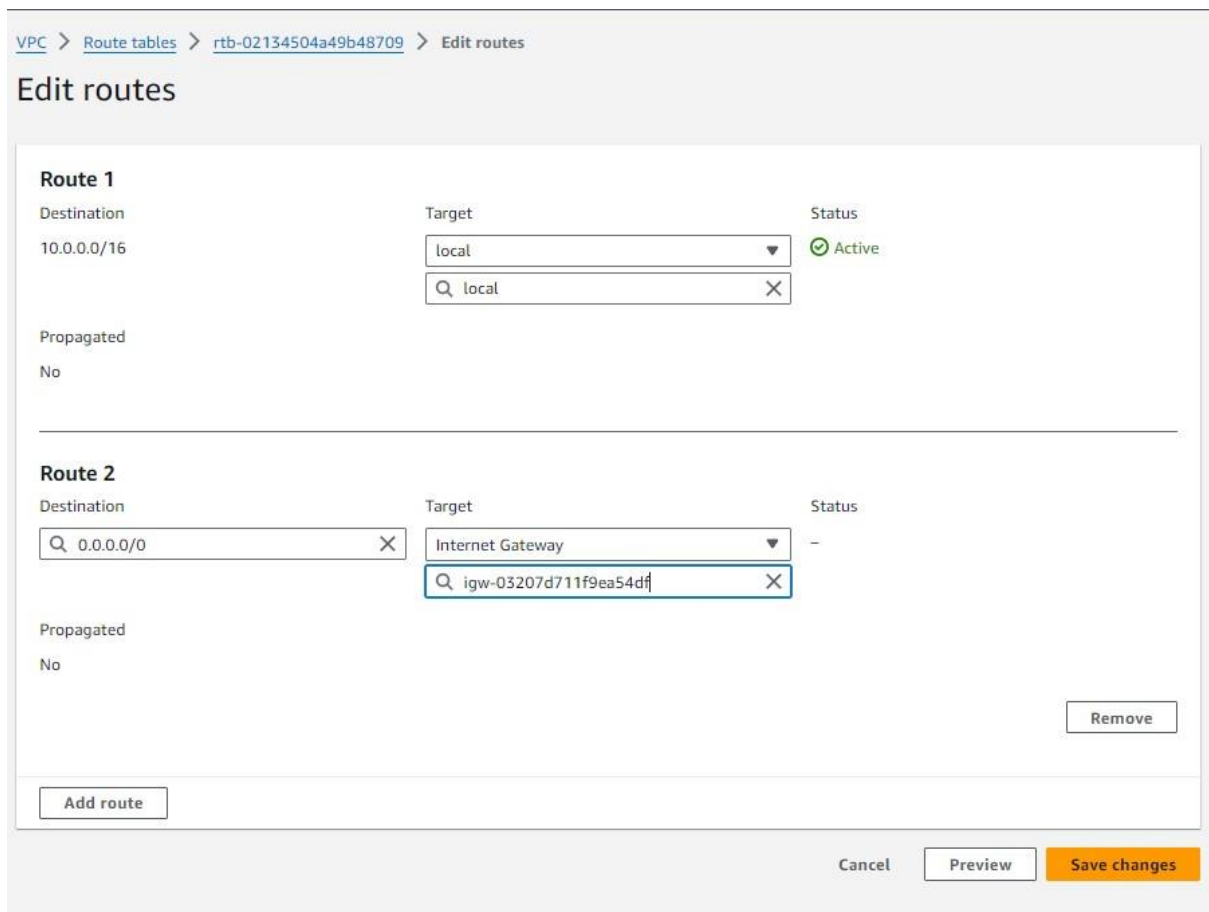
We have successfully created a public route table

Now click on Actions, click on Edit routes



pic -20

click on Add route. Select 0.0.0.0/0 as Destination



pic -21

Select Internet gateway from drop down list, we have selected use id like this igw-0e3f2f05c80bab751 and choose that one to our Internet gateway

finally click on Save changes

Then click on Subnet associations and Edit subnet associations

The screenshot shows the AWS Management Console interface for a route table. The 'Subnet associations' tab is selected. The top section, 'Explicit subnet associations (0)', shows no associations. The bottom section, 'Subnets without explicit associations (2)', lists two subnets: 'public-subnet' and 'private-subnet'. The 'public-subnet' has an IPv4 CIDR of 10.0.10.0/24, and the 'private-subnet' has an IPv4 CIDR of 10.0.20.0/24. Both subnets have an 'Edit subnet associations' button next to them.

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
public-subnet	subnet-0926ffeb50f29...	10.0.10.0/24	-
private-subnet	subnet-0dd0d5bb41cb...	10.0.20.0/24	-

pic -22

Select public subnet check box and Save associations

The screenshot shows the AWS Management Console interface for a route table. The 'Route tables' tab is selected. The route table 'rtb-02134504a49b48709 / public-routetable' is selected. The 'Details' section shows the route table ID, VPC, main status, owner ID, explicit subnet associations, and edge associations. The 'Routes' section shows two routes: '0.0.0.0/0' and '10.0.0.0/16'. The '0.0.0.0/0' route is active and has a target of 'igw-03207d711f9ea54df'. The '10.0.0.0/16' route is active and has a target of 'local'. The 'Propagated' status for both routes is 'No'.

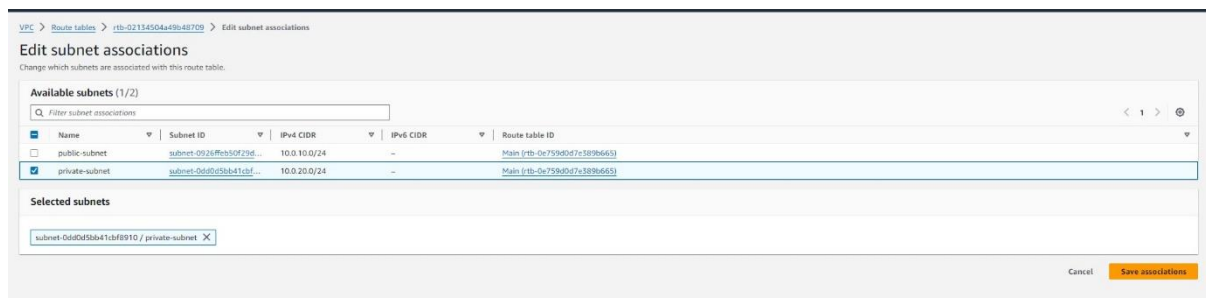
Destination	Target	Status	Propagated
0.0.0.0/0	igw-03207d711f9ea54df	Active	No
10.0.0.0/16	local	Active	No

pic -23

Create one more route table (private-subnet) and associate with private subnet.

*Note: To the private route table, we are no giving internet gateway access to private, because we want to make it as private subnet

Now we created two route table to our custom VPC successfully

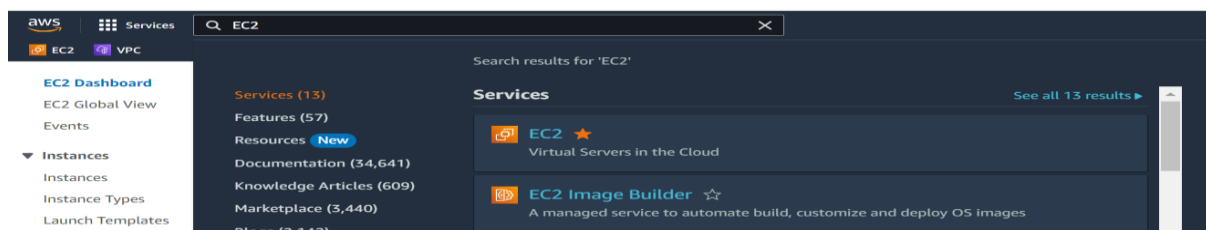


pic -24

VPC with 2 subnets and 2 route tables and internet gateway successfully created.

Create Three EC2 Instances

Search for EC2 in search space of AWS home page and click on EC2



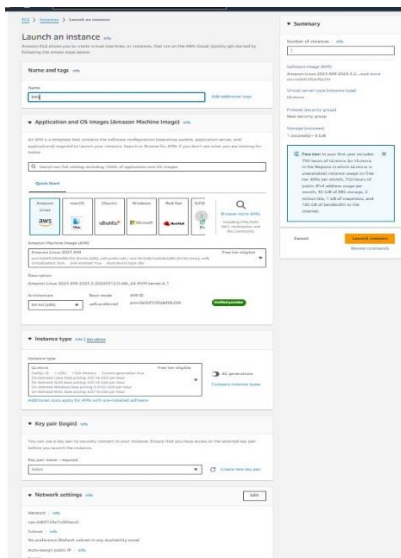
Pic-25

Now Create one ec2 instance to the elastic block storage (EBS).

We have to give the details for our ec2(EBS)

Instance type, key pair(login), network setting.

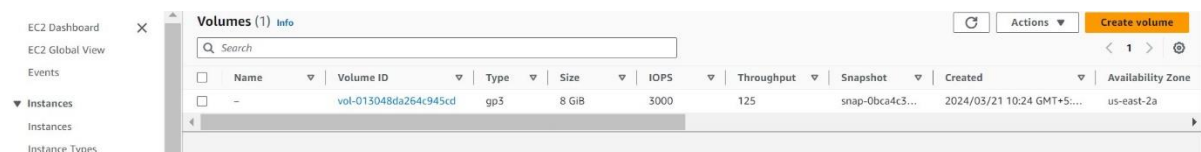
Finally click on the launch instance



Pic -26

Now we created EBS EC2 instance successfully.

Now click on Elastic Block Store option from EC2 instance menu
Then click on the volumes



Pic -27

Create volume for EBS so that we have to give the details for volume

Type, size, availability zone.

Finally click on create volume

Create volume info

Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.

Volume settings

Volume type info
 General Purpose SSD gp3 info

☒ General Purpose SSD gp3 is now the default selection. gp3 provides up to 20% lower cost per GB than gp2. [Learn More](#) info

Size (GiB) info

 Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS info

 Min: 5000 IOPS, Max: 16000 IOPS. The value must be an integer.

Throughput (MiB/s) info

 Min: 125 MiB, Max: 5000 MiB. Bursting: 125 MiB/s.

Availability Zone info

Snapshot ID optional info

Encryption info
☐ Encrypt this volume. Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

Tags - optional info
 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.

No tags associated with the resource.

You can add 50 more tags.

Snapshot summary info

☒ Click refresh to view backup information
 The volume type that you select and the tags that you assign determine whether the volume will be backed up by any Data Lifecycle Manager policies.

Pic-28

Once the volume has been created it will display as below

Successfully created volume vol-025551f4521952dac

Volumes (2) info

<input type="checkbox"/>	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone
<input type="checkbox"/>	-	vol-013048da264c945cd	gp3	8 GiB	3000	125	snap-0bca4c3...	2024/03/21 10:24 GMT+5:...	us-east-2a
<input type="checkbox"/>	-	vol-025551f4521952dac	gp3	100 GiB	3000	125	-	2024/03/21 10:27 GMT+5:...	us-east-2a

Pic -29

click on the actions and in actions attach the volume

