

# Module 4: VPC Assignment-1

You have been asked to:

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

2. Type "VPC" in the search box

1. Login into AWS. Select N. Virginia

The screenshot shows the AWS Management Console search results for 'vpc'. The search bar at the top contains 'vpc'. Below the search bar, a list of services is displayed, including 'VPC' (Isolated Cloud Resources). A red arrow points from the text '3. Select VPC' to the 'VPC' service entry. The console header shows the region as 'N. Virginia' and the user as 'Hariharan Narayanan'.

3. Select VPC

The screenshot shows the AWS VPC console sidebar. The sidebar contains links to 'VPC Dashboard', 'EC2 Global View', and a 'Filter by VPC:' section with a search bar. Below these, a list of VPC resources is shown, including 'Your VPCs', 'Subnets', 'Route Tables', 'Internet Gateways', 'Egress Only Internet Gateways', 'Carrier Gateways', 'DHCP Options Sets', and 'Elastic IPs' (highlighted in orange).

The screenshot shows the AWS Elastic IP console. The console header includes a refresh button, an 'Actions' dropdown, and an 'Allocate Elastic IP address' button. Below the header, a table with columns 'Reverse DNS record', 'Associated instance ID', 'Private IP address', and 'As' is displayed. The table is empty, and a message at the bottom states 'No Elastic IP addresses found in this Region'.

5. Create a new Elastic IP

4. Select Elastic IPs

# Allocate Elastic IP address [Info](#)

## Elastic IP address settings [Info](#)

### Network Border Group [Info](#)

us-east-1

### Public IPv4 address pool

- ☒ Amazon's pool of IPv4 addresses
- ☐ Public IPv4 address that you bring to your AWS account (option disabled because no pools found) [Learn more](#)
- ☐ Customer owned pool of IPv4 addresses (option disabled because no customer owned pools found) [Learn more](#)

### Global static IP addresses

AWS Global Accelerator can provide global static IP addresses that are announced worldwide using anycast from AWS edge locations. This can help improve the availability and latency for your user traffic by using the Amazon global network. [Learn more](#)

Create accelerator [↗](#)

## 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	
name	m4a1_elastic_ip	Remove
createdBy	Hariharan Narayanan	Remove

Add new tag

You can add up to 48 more tags

Cancel

Allocate

## Elastic IP addresses (1/1)

Filter Elastic IP addresses

Public IPv4 address: 18.215.190.28

Clear filters

<input checked="" type="checkbox"/>	Name	Allocated IPv4 add...	Type	Allocation ID
<input checked="" type="checkbox"/>	-	18.215.190.28	Public IP	eipalloc-05b28af73bb73baeb

12. Verify that new elastic IP is created

6. Select region

7. Leave default pool of IPv4 addresses


8. Leave name tag as it is

8. Add createdBy tag

10. Create more Tags as needed

11. Allocate


### 13. Launch the VPC wizard

 New VPC Experience  
Tell us what you think

**VPC Dashboard**


EC2 Global View **New**

Filter by VPC:

 Select a VPC

**Launch VPC Wizard** **Launch EC2 Instances**

Note: Your Instances will launch in the US East region.

**Resources by Region**  [Refresh Resources](#)

You are using the following Amazon VPC resources

### 14. Choose to create one public and one private subnet

#### Step 1: Select a VPC Configuration

VPC with a Single Public Subnet

**VPC with Public and Private Subnets**

VPC with Public and Private Subnets and Hardware VPN Access

VPC with a Private Subnet Only and Hardware VPN Access

In addition to containing a public subnet, this configuration adds a private subnet whose instances are not addressable from the Internet. Instances in the private subnet can establish outbound connections to the Internet via the public subnet using Network Address Translation (NAT).

#### **Creates:**

A /16 network with two /24 subnets. Public subnet instances use Elastic IPs to access the Internet. Private subnet instances access the Internet via Network Address Translation (NAT). (Hourly charges for NAT devices apply.)

#### **Important:**

If you are using a Local Zone with your VPC [follow this link](#) to create your VPC.

### 15. Select

**Select**

## Step 2: VPC with Public and Private Subnets

IPv4 CIDR block:\*  (65531 IP addresses available)

IPv6 CIDR block: ☒ No IPv6 CIDR Block  
☐ Amazon provided IPv6 CIDR block  
☐ IPv6 CIDR block owned by me

VPC name:

16. Give a name to the VPC

Public subnet's IPv4 CIDR:\*  (251 IP addresses available)

Availability Zone:\*

Public subnet name:

17. Name the public subnet

Private subnet's IPv4 CIDR:\*  (251 IP addresses available)

Availability Zone:\*

Private subnet name:

18. Name the private subnet

You can add more subnets after Amazon Web Services creates the VPC.

Specify the details of your NAT gateway ([NAT gateway rates apply](#)).

Elastic IP Allocation ID:\*

19. Select the elastic IP created in (7)

Service endpoints

20. Create VPC. Wait for the process to complete

Enable DNS hostnames:\* ☒ Yes ☐ No

Hardware tenancy:\*

21. New VPC must be visible in the view "Your VPCs"

### Subnets (8) [Info](#)

<input type="checkbox"/>	Name	Subnet ID
<input type="checkbox"/>	m4a1_vpc_1_subnet_public	subnet-0143ffb7cb5fb4127
<input type="checkbox"/>	m4a1_vpc_1_subnet_private	subnet-01c76297ae4a15cb3
<input type="checkbox"/>	-	subnet-06e773d674ee5fd8a
<input type="checkbox"/>	-	subnet-060af38694e37fae9
<input type="checkbox"/>	-	subnet-01d3cea107de0cdf4
<input type="checkbox"/>	-	subnet-099436460fb3ecea4
<input type="checkbox"/>	-	subnet-0e40cf59fbb32cddb
<input type="checkbox"/>	-	subnet-026908bd9ed58b20f

22. Verify that subnets are created as expected.

### Your VPCs (2) [Info](#)

<input type="checkbox"/>	Name	VPC ID	State	IPv4 CIDR
<input type="checkbox"/>	m3a1_vpc_1	vpc-0ee4080ece48afd32	Available	120.0.0.0/16
<input type="checkbox"/>	-	vpc-05a4f109d9ab4c43c	Available	172.31.0.0/16

VPC Dashboard

EC2 Global View New

Filter by VPC:

 Select a VPC

 VIRTUAL PRIVATE CLOUD

Your VPCs

Subnets

24. Click to view subnets

Subnets (6) [Info](#)



Actions ▾

Create subnet

23. Create new subnet

### 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.

m4a1\_vpc\_1\_subnet\_3\_private

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.

No preference ▾

##### IPv4 CIDR block [Info](#)

 10.0.2.0/24

26. Select CIDR


#### Tags - optional

Key

 Name



Value - optional

 m4a1\_vpc\_1\_subnet\_3\_private



Remove

 createdBy



 Hariharan Narayanan



Remove

Add new tag

You can add 48 more tags.

Remove

Add new subnet

27. Create tags as needed

28. Create subnet

Cancel

Create subnet

Subnets (9) [Info](#)

 Filter subnets

<input type="checkbox"/>	Name ▾	Subnet ID
<input type="checkbox"/>	m4a1_vpc_1_subnet_public	subnet-0143ffb7cb5fb4127
<input type="checkbox"/>	m4a1_vpc_1_subnet_private	subnet-01c76297ae4a15cb3
<input type="checkbox"/>	m4a1_vpc_1_subnet_3_private	subnet-05325aa3e8b4682e9
<input type="checkbox"/>		subnet-06e773d674ee5fd8a

29. Verify that subnets are created

Filter by VPC:

- ▼
- VIRTUAL PRIVATE CLOUD
- Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

Carrier Gateways

DHCP Options Sets

Elastic IPs

Managed Prefix Lists

Endpoints

Endpoint Services

NAT Gateways

30. Open NAT Gateway page

NAT gateway settings

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

31. Name the NAT gateway

Subnet  
Select a subnet in which to create the NAT gateway.

subnet-01c76297ae4a15cb3 (m4a1\_vpc\_1\_subnet\_2\_private)

▼

32. Link to a private subnet

Connectivity type  
Select a connectivity type for the NAT gateway.

☒ Public

☐ Private

33. Choose public

34. Allocate an elastic IP

Elastic IP allocation ID Info  
Assign an Elastic IP address to the NAT gateway.

eipalloc-0aa79e2cae60df613

▼

Allocate Elastic IP

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.

35. Create tags

Key	Value - <i>optional</i>	
<div><input type="text" value="Name"/></div>	<div><input type="text" value="m4a1_subnet_1_natgw_1"/></div>	<div>Remove</div>
<div><input type="text" value="createdBy"/></div>	<div><input type="text" value="Hariharan Narayanan"/></div>	<div>Remove</div>
<div>Add new tag</div>	<div>↗ Loading tag values</div>	

You can add 48 more tags.

36. Create NAT gw

Cancel

Create NAT gateway