

## Module 4: VPC Assignment - 1

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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

# 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.

 Vaibhav-VPC-01

### IPv4 CIDR block Info

 IPv4 CIDR manual input IPAM-allocated IPv4 CIDR block

### IPv4 CIDR

 120.0.0.0/16

### 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

Search for tags and filter results. You can add tags to this VPC and its resources. Tags are also used for cost allocation and tracking.

Vaibhav-VPC-01

IPv4 CIDR block [Info](#)

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

## IPv4 CIDR

120.0.0.0/16

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 - optional

 Name X Vaibhav-VPC-01 XRemoveAdd new tag

You can add 49 more tags.

CancelCreate VPC

⌚ You successfully created vpc-05e2a40771743807b / Vaibhav-VPC-01

VPC > Your VPCs > vpc-05e2a40771743807b

## vpc-05e2a40771743807b / Vaibhav-VPC-01

Actions ▾

### Details Info

VPC ID	vpc-05e2a40771743807b	State	Available	DNS hostnames	Disabled	DNS resolution	Enabled
Tenancy		DHCP option set		Main route table		Main network ACL	
Default		dopt-05eb69ee65ff0b1cf		rtb-0f72d7e73da0cb20e		acl-0e7a59d34d7cbda36	
Default VPC		IPv4 CIDR		IPv6 pool		IPv6 CIDR (Network border group)	
No		120.0.0.0/16		-	-	-	-
Network Address Usage metrics	Disabled	Route 53 Resolver DNS Firewall rule groups	-	Owner ID	111952067877		

CIDRs Flow logs Tags

### CIDRs Info

Address type	CIDR	Network Border Group	Pool	Status
IPv4	120.0.0.0/16	-	-	Associated

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VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Virtual private cloud Your VPCs Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections

Security Network ACLs Security groups

Subnets (6) Info Filter subnets

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4
-	subnet-0106a319f599ab40d	Available	vpc-0b03f01cba75ff067	172.31.80.0/20	-	4091
-	subnet-098f838aa75f6625b	Available	vpc-0b03f01cba75ff067	172.31.48.0/20	-	4091
-	subnet-0c130f14b2821e65a	Available	vpc-0b03f01cba75ff067	172.31.0.0/20	-	4091
-	subnet-0fa59c1c0cf77468a	Available	vpc-0b03f01cba75ff067	172.31.16.0/20	-	4091
-	subnet-0ca07fef3bfe84bc0	Available	vpc-0b03f01cba75ff067	172.31.64.0/20	-	4091
-	subnet-0e5d9322efe5f0177	Available	vpc-0b03f01cba75ff067	172.31.32.0/20	-	4091

Select a subnet

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## Create subnet Info

### VPC

#### VPC ID

Create subnets in this VPC.

vpc-05e2a40771743807b (Vaibhav-VPC-01)

#### Associated VPC CIDRs

##### IPv4 CIDRs

120.0.0.0/16

### 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.

V.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.

No preference

##### IPv4 CIDR block Info

120.0.1.0/24

## 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.

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.

#### IPv4 CIDR block Info

#### ▼ Tags - optional

Key

Value - optional

 

You can add 49 more tags.

## Create subnet Info

### VPC

#### VPC ID

Create subnets in this VPC.

vpc-05e2a40771743807b (Vaibhav-VPC-01) ▾

#### Associated VPC CIDRs

##### IPv4 CIDRs

120.0.0.0/16

### 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.

V.Private-Subnet-01

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

120.0.2.0/24



# Create subnet Info

## VPC

### VPC ID

Create subnets in this VPC.

vpc-05e2a40771743807b (Vaibhav-VPC-01) ▾

### Associated VPC CIDRs

#### IPv4 CIDRs

120.0.0.0/16

## 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.

V.Private-Subnet-02

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

Q 120.0.3.0/24 X

✓ You have successfully created 1 subnet: subnet-0afcef919772018f8



## Subnets (3/9) Info



Actions ▾

Create subnet

< 1 >



<input checked="" type="checkbox"/>	V.Public-Subnet	subnet-01caae641c6ef4f42	<input checked="" type="checkbox"/> Available	vpc-05e2a40771743807b   Val...	120.0.1.0/24	-	251
<input type="checkbox"/>	-	subnet-0c130f14b2821e65a	<input checked="" type="checkbox"/> Available	vpc-0b03f01cba75ff067	172.31.0.0/20	-	4091
<input type="checkbox"/>	-	subnet-0106a319f599ab40d	<input checked="" type="checkbox"/> Available	vpc-0b03f01cba75ff067	172.31.80.0/20	-	4091
<input type="checkbox"/>	-	subnet-098f838aa75f6625b	<input checked="" type="checkbox"/> Available	vpc-0b03f01cba75ff067	172.31.48.0/20	-	4091
<input type="checkbox"/>	-	subnet-0fa59c1c0cf77468a	<input checked="" type="checkbox"/> Available	vpc-0b03f01cba75ff067	172.31.16.0/20	-	4091
<input checked="" type="checkbox"/>	V.Private-Subnet-02	subnet-0afcef919772018f8	<input checked="" type="checkbox"/> Available	vpc-05e2a40771743807b   Val...	120.0.3.0/24	-	251
<input type="checkbox"/>	-	subnet-0ca07fef3bfe84bc0	<input checked="" type="checkbox"/> Available	vpc-0b03f01cba75ff067	172.31.64.0/20	-	4091
<input type="checkbox"/>	-	subnet-0e5d9322efef5f0177	<input checked="" type="checkbox"/> Available	vpc-0b03f01cba75ff067	172.31.32.0/20	-	4091
<input checked="" type="checkbox"/>	V.Private-Subnet-01	subnet-042069a463464126d	<input checked="" type="checkbox"/> Available	vpc-05e2a40771743807b   Val...	120.0.2.0/24	-	251

Subnets: subnet-042069a463464126d, subnet-0afcef919772018f8, subnet-01caae641c6ef4f42



	Name	NAT gateway ID	Connectivit...	State	State message	Elastic IP address	Private IP address	Network interfa...
No NAT gateways found								

Select a NAT gateway



▼ Security

Network ACLs

Security groups

▼ Network Analysis

Reachability Analyzer

Network Access

Analyzer

▼ DNS firewall

Rule groups

Domain lists

▼ Network Firewall



Services



✓ Elastic IP address 184.73.251.135 (eipalloc-05b9cc639108c9663) allocated.

VPC > NAT gateways > Create NAT gateway

## Create NAT gateway Info

A highly available, managed Network Address Translation (NAT) service that instances in private subnets can use to connect to services in other VPCs, on-premises networks, or the internet.

### NAT gateway settings

#### Name - *optional*

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

The name can be up to 256 characters long.

#### Subnet

Select a subnet in which to create the NAT gateway.



#### Connectivity type

Select a connectivity type for the NAT gateway.

- Public
- Private

#### Elastic IP allocation ID Info

Assign an Elastic IP address to the NAT gateway.

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.

NAT gateway nat-058b851817ed13618 | Nat-Gateway-01 was created successfully.

VPC > NAT gateways > nat-058b851817ed13618

## nat-058b851817ed13618 / Nat-Gateway-01

Delete

Details [Info](#)

NAT gateway ID  
[nat-058b851817ed13618](#)

Connectivity type  
Public

State  
[Pending](#)

State message [Info](#)

NAT gateway ARN  
[arn:aws:ec2:us-east-1:111952067877:natgateway/nat-058b851817ed13618](#)

Elastic IP address

Private IP address

Network interface ID

VPC  
[vpc-05e2a40771743807b / Vaibhav-VPC-01](#)

Subnet  
[subnet-01caaee641c6ef4f42 / V.Public-Subnet](#)

Created  
[Tuesday, November 8, 2022 at 14:53:59](#)  
GMT+5:30

Deleted

[Monitoring](#) [Tags](#)

### Monitoring

1h 3h 12h 1d 3d 1w



Add to dashboard

Packets out to destination (Count)

Packets out to source (Count)

Bytes out to destination (Bytes)

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VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Virtual private cloud Your VPCs Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections

Security Network ACLs Security groups

Route tables (2) Info Filter route tables

Create route table Actions

Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Owner ID
-	rtb-0f72d7e73da0cb20e	-	-	Yes	vpc-05e2a40771743807b   Val...	111952067877
-	rtb-0907f19f27ccfdce8	-	-	Yes	vpc-0b03f01cba75ff067	111952067877

Select a route table

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## 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

 X XRemoveAdd new tag

You can add 49 more tags.

CancelCreate internet gateway

The following Internet gateway was created: igw-0432207b18b177722 - Vaibhav-Internet-Gateway. You can now attach to a VPC to enable the VPC to communicate with the internet.

[Attach to a VPC](#)[VPC](#) > [Internet gateways](#) > [igw-0432207b18b177722](#)

## igw-0432207b18b177722 / Vaibhav-Internet-Gateway

### Details Info

**Internet gateway ID**[igw-0432207b18b177722](#)**State**[Detached](#)**VPC ID****Owner**[111952067877](#)[Actions ▲](#)[Attach to VPC](#)[Detach from VPC](#)[Manage tags](#)[Delete](#)

### Tags

[Manage tags](#)[Search tags](#)< 1 > [@](#)**Key**      **Value****Name**      Vaibhav-Internet-Gateway



## Attach to VPC (igw-0432207b18b177722) 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.

 X

▶ AWS Command Line Interface command

Cancel

Attach internet gateway





## 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.

V.Public-Route

#### VPC

The VPC to use for this route table.

vpc-05e2a40771743807b (Vaibhav-VPC-01)

### 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

Name

V.Public-Route



Remove

Add new tag

You can add 49 more tags.

Cancel

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.

V.Private-Route

#### VPC

The VPC to use for this route table.

vpc-05e2a40771743807b (Vaibhav-VPC-01)

### 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

Name



Remove

Add new tag

You can add 49 more tags.

Cancel

Create route table



[Alt+S]



🕒 Route table rtb-016beea241f99cd2e | V.Private-Route was created successfully.

Route tables (2/4) [Info](#)

Actions ▾

Create route table

&lt; 1 &gt;



Filter route tables

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC	Owner ID
<input type="checkbox"/> -	rtb-0f72d7e73da0cb20e	-	-	Yes	vpc-05e2a40771743807b   Vai...	111952067877
<input type="checkbox"/> -	rtb-0907f19f27ccfdce8	-	-	Yes	vpc-0b03f01cba75ff067	111952067877
<input checked="" type="checkbox"/> V.Public-Route	rtb-040e51ee572a58fd1	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877
<input checked="" type="checkbox"/> V.Private-Route	rtb-016beea241f99cd2e	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877



**Route tables (1/4) [Info](#)**

Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Owner ID
-	rtb-0f72d7e73da0cb20e	-	-	Yes	vpc-05e2a40771743807b   Vai...	111952067877
-	rtb-0907f19f27ccfdce8	-	-	Yes	vpc-0b03f01cba75ff067	111952067877
<input checked="" type="checkbox"/> V.Public-Route	rtb-040e51ee572a58fd1	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877
<input type="checkbox"/> V.Private-Route	rtb-016beea241f99cd2e	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877

rtb-040e51ee572a58fd1 / V.Public-Route



[Details](#) [Routes](#) [Subnet associations](#) [Edge associations](#) [Route propagation](#) [Tags](#)

### Routes (1)

[Edit routes](#)

[Filter routes](#)

Both

< 1 >

Destination	Target	Status	Propagated
120.0.0.0/16	local	Active	No

## Edit routes

Destination	Target	Status	Propagated
120.0.0.0/16	local	Active	No
<input type="text" value="Q 0.0.0.0"/>	<input type="text" value="Q igw-0432207b18b177722"/>		No
<a href="#">Add route</a>			

[Cancel](#) [Preview](#) [Save changes](#)

## Route tables (1/4) [Info](#)

C

Actions ▾

Create route table

< 1 > ⓘ

Filter route tables

Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Owner ID
-	rtb-0f72d7e73da0cb20e	-	-	Yes	vpc-05e2a40771743807b   Vai...	111952067877
-	rtb-0907f19f27ccfdce8	-	-	Yes	vpc-0b03f01cba75ff067	111952067877
<input checked="" type="checkbox"/> V.Public-Route	rtb-040e51ee572a58fd1	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877
<input type="checkbox"/> V.Private-Route	rtb-016beea241f99cd2e	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877

rtb-040e51ee572a58fd1 / V.Public-Route



Details Routes Subnet associations Edge associations Route propagation Tags

### Explicit subnet associations (0)

Edit subnet associations

Find subnet association

< 1 > ⓘ

Subnet ID

IPv4 CIDR

IPv6 CIDR

No subnet associations

You do not have any subnet associations.

### Subnets without explicit associations (3)

The following subnets have not been explicitly associated with any route table, and are therefore associated with the main route table.

Edit subnet associations

https://us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#EditRouteTableSubnetAssociations:RouteTableId=rtb-040e51ee572a58fd1

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VPC > Route tables > rtb-040e51ee572a58fd1 > Edit subnet associations

## Edit subnet associations

Change which subnets are associated with this route table.

### Available subnets (1/3)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/> V.Public-Subnet	subnet-01caae641c6ef4f42	120.0.1.0/24	-	Main (rtb-0f72d7e73da0cb20e)
<input type="checkbox"/> V.Private-Subnet-02	subnet-0acfef919772018f8	120.0.3.0/24	-	Main (rtb-0f72d7e73da0cb20e)
<input type="checkbox"/> V.Private-Subnet-01	subnet-042069a463464126d	120.0.2.0/24	-	Main (rtb-0f72d7e73da0cb20e)

### Selected subnets

subnet-01caae641c6ef4f42 / V.Public-Subnet X

Cancel Save associations

✓ You have successfully updated subnet associations for rtb-040e51ee572a58fd1 / V.Public-Route.

## Route tables (1/4) [Info](#)

	Name	ROUTE TABLE ID	CURRENTLY ACTIVE	ROUTE ASSOCIATIONS	ROUTER	VPC	ROUTE ID
<input type="checkbox"/>	-	rtb-0f72d7e73da0cb20e	-	-	Yes	vpc-05e2a40771743807b   Val...	111952067877
<input type="checkbox"/>	-	rtb-0907f19f27ccfdce8	-	-	Yes	vpc-0b03f01cba75ff067	111952067877
<input type="checkbox"/>	V.Public-Route	rtb-040e51ee572a58fd1	subnet-01caa641c6ef4...	-	No	vpc-05e2a40771743807b   Val...	111952067877
<input checked="" type="checkbox"/>	V.Private-Route	rtb-016beea241f99cd2e	-	-	No	vpc-05e2a40771743807b   Val...	111952067877

### rtb-016beea241f99cd2e / V.Private-Route

[Details](#) [Routes](#) [Subnet associations](#) [Edge associations](#) [Route propagation](#) [Tags](#)

#### Routes (1)

Filter routes		Both	Edit routes	
Destination	Target	Status	Propagated	
120.0.0.0/16	local	Active	No	



Services

Search

[Alt+S]

## Edit routes

Destination	Target	Status	Propagated	
120.0.0.0/16	local	<input checked="" type="radio"/> Active	No	<button>Remove</button>
<input type="text"/> 0.0.0.0/0	<input type="text"/> nat-0b4fd6f7fd2194f24	<input type="radio"/>	<input type="radio"/>	<button>Add route</button> <button>Cancel</button> <button>Preview</button> <button>Save changes</button>

⟳ Updated routes for rtb-016beea241f99cd2e / V.Private-Route successfully

▶ Details

**Route tables (1/4)** Info


Actions ▾

Create route table

&lt; 1 &gt;


 Filter route tables

<input type="checkbox"/>	-	rtb-0f72d7e73da0cb20e	-	-	Yes	vpc-05e2a40771743807b   Vai...	111952067877
<input type="checkbox"/>	-	rtb-0907f19f27ccfdce8	-	-	Yes	vpc-0b03f01cba75ff067	111952067877
<input type="checkbox"/>	V.Public-Route	rtb-040e51ee572a58fd1	subnet-01caae641c6ef4...	-	No	vpc-05e2a40771743807b   Vai...	111952067877
<input checked="" type="checkbox"/>	V.Private-Route	rtb-016beea241f99cd2e	-	-	No	vpc-05e2a40771743807b   Vai...	111952067877

**rtb-016beea241f99cd2e / V.Private-Route**
Details Routes Subnet associations Edge associations Route propagation Tags
**Explicit subnet associations (0)**
 Find subnet association

Subnet ID

IPv4 CIDR

IPv6 CIDR

No subnet associations

You do not have any subnet associations.

Edit subnet associations

&lt; 1 &gt;



https://us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#EditRouteTableSubnetAssociations:RouteTableId=rtb-016beea241f99cd2e

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## Edit subnet associations

Change which subnets are associated with this route table.

### Available subnets (2/3)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
V.Public-Subnet	subnet-01caeae641c6ef4f42	120.0.1.0/24	-	rtb-040e51ee572a58fd1 / V.Public-Route
<input checked="" type="checkbox"/> V.Private-Subnet-02	subnet-0acfef919772018f8	120.0.3.0/24	-	Main (rtb-0f72d7e73da0cb20e)
<input checked="" type="checkbox"/> V.Private-Subnet-01	subnet-042069a463464126d	120.0.2.0/24	-	Main (rtb-0f72d7e73da0cb20e)

### Selected subnets

subnet-042069a463464126d / V.Private-Subnet-01 X    subnet-0acfef919772018f8 / V.Private-Subnet-02 X

Cancel Save associations

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