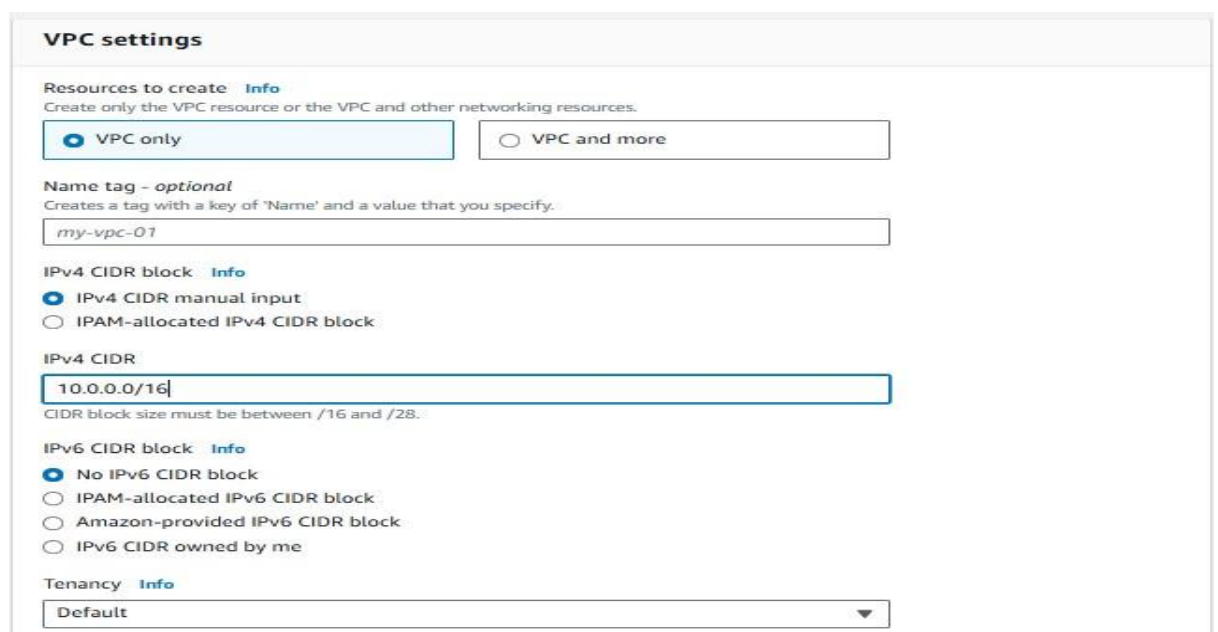


# What Is VPC

1. VPC is stands for (virtual private cloud)
2. VPC is used for Networking purpose.
3. VPC is logically isolated network.
4. There are some key components in VPC
  - Subnets
  - Route tables
  - Internet gateway
  - NAT gateway
  - Security groups

## Steps to create VPC

1. There are two steps to create VPC one is VPC only and another one is VPC and more
2. Click on create VPC
  - Click on create VPC
  - Select VPC only
  - Give the name for VPC
  - Select the IPV4 CIDR block range as shown in below figure



The screenshot displays the 'VPC settings' configuration page in the AWS Management Console. It includes sections for 'Resources to create' (with 'VPC only' selected), 'Name tag' (with 'my-vpc-01' entered), 'IPv4 CIDR block' (with '10.0.0.0/16' entered), and 'IPv6 CIDR block' (with 'No IPv6 CIDR block' selected). A 'Tenancy' dropdown is set to 'Default'.

**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* [Info](#)  
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](#)

# What is Subnet

1. Subnet is a part in virtual private cloud (VPC)
2. It allows you to control your network resources
3. Each subnet is associated with a specific availability zone and contain resources like EC2, RDS, S3 etc.
4. There are two types of subnets
  - Public subnet
  - Private subnet

## Public subnet:

1. Resources within a public subnet can communicate directly with the internet
2. There are some key components in public subnet
  - Internet gateway
  - Public IP Addresses
  - Routing

## Private subnet:

1. In private subnet we don't have direct access to the internet
2. Private subnets need additional security to access the resources like application servers, databases etc.
  - NAT gateway
  - Private IP Addresses
  - Routing

## Steps to create subnets

1. Click on create subnet
  - Select the created VPC
  - Update the subnet settings

- Give the name for the subnet
- Select the availability zone
- Select the IPV4 subnet CIDR block range
- Finally click on create subnet as shown in below figure

**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.  
Asia Pacific (Mumbai) / ap-south-1a

**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**  
10.0.0.0/27 32 IPs

▼ Tags - optional

## What is Route Tables

1. Every VPC has a default route table
2. Route table means set of rules that is routes
3. Routes are used to specifies a destination IP address range to the target (where to send the traffic) targets are internet gateway, NAT gateway, peering connection etc.
4. Subnet associations is used to create connections for public route table to public subnet and private route to private subnet

## Steps to create Route Tables

1. Click on create route table
  - Give the name for route table

- Select the created VPC
- Finally click on create route table as shown in below figure

**Route table settings**

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

route2

VPC  
The VPC to use for this route table.

vpc-08e64ad22c1a47c8f (vpc1)

## Steps to create Routes

1. Select the route 1 in route table
2. Click on routes
3. Click on edit routes and click on add routes
4. Update the routes as shown in below figure

Destination	Target	Status
10.0.0.0/16	local	Active
Q 0.0.0.0/0 X	Internet Gateway	Active
Q 0.0.0.0/0 X	igw-012a45615b97e7d9e	
	NAT Gateway	
	Q nat-010e3045f3a864b5a X	
Add route		

## What is Internet gateway

1. Internet gateway is used to provide internet access to the public server
2. After updating the public route table routes, it will provide the internet access for public server

## Steps to create Internet gateway

1. Click on create internet gateway
2. Give the name for internet gateway
3. Click on create internet gateway
4. And attach the internet gateway to created VPC
5. Update the routes for internet connection

## What is NAT gateway

1. NAT gateway means (Network Address Translation gateway)
2. NAT gateway is used to provide internet access to the private server
3. After updating the private route table routes, it will provide the internet access for private server

## Steps to create NAT gateway

1. Click on create NAT gateway
2. Give the name for NAT gateway
3. Select the subnet as public subnet
4. Click on allocate elastic IP
5. Click on create NAT gateway as shown in below figure

**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](#)

[▶ Additional settings](#) [Info](#)