






# VPC- Virtual Private Cloud

 A Virtual Private Cloud is a logically isolated section of the AWS cloud where users can launch AWS resources is a Virtual Network That they define.

## Key Features of VPC

-  Subnets
-  Internet Gateways
-  Route Tables
-  Security Groups

## Let's do the Practical:-

VPC -- Virtual Private Cloud

File Edit View

Steps to Create and set up a OWN VPC in AWS environment:

1. Create a own VPC.
2. Create a Public and Private subnet for different Available AZs(not in 1c) by assigning diferent CIDR blocks.
3. Create Internet Gateway & attach it to the your VPC.
4. Create Routing table [RT], One as Public & One as Private by associating the appropriate subnets to it.
5. Edit the Public route table's alone under Route map the IGW, not the Private route table's and leave it as it is.  
Ex:(Go to routing table select public route tables and edit routes in that Add route give Destination as 0.0.0.0/0 and target as your IGW(select which you already created))
6. Create Two Security Groups - One for Public [Edit the Inbound rules with RDP, HTTP/HTTPS, SSH and map 0.0.0.0/0 in the source] & One for Private [Edit the inbound rules give protocol as All tcp and map the SG of Public in the source].
7. Create Two windows EC2s one in public and one in private subnets with proper Security Groups.
8. Login into Public ec2 and check the internet connection.
9. Create NAT gateway and map the public subnet and allocate new Elastic IP for the internet connection to Private subnet.
10. Map the NAT gateway into Private Route Table.  
Ex:(Go to routing table select private route tables and edit routes in that Add route give Destination as 0.0.0.0/0 and target as your Nat gateway(select which you already created))
11. Now login into the Private EC2 and verify the connectivity and Internet facility.

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## Step 1: Create VPC in AWS Console

← → ↺ ap-southeast-2.console.aws.amazon.com/vpcconsole/home?region=ap-southeast-2#vpcs

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VPC dashboard

EC2 Global View

Filter by VPC

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only internet

You successfully created vpc-0744e9c25c74aed58 / Myvpc

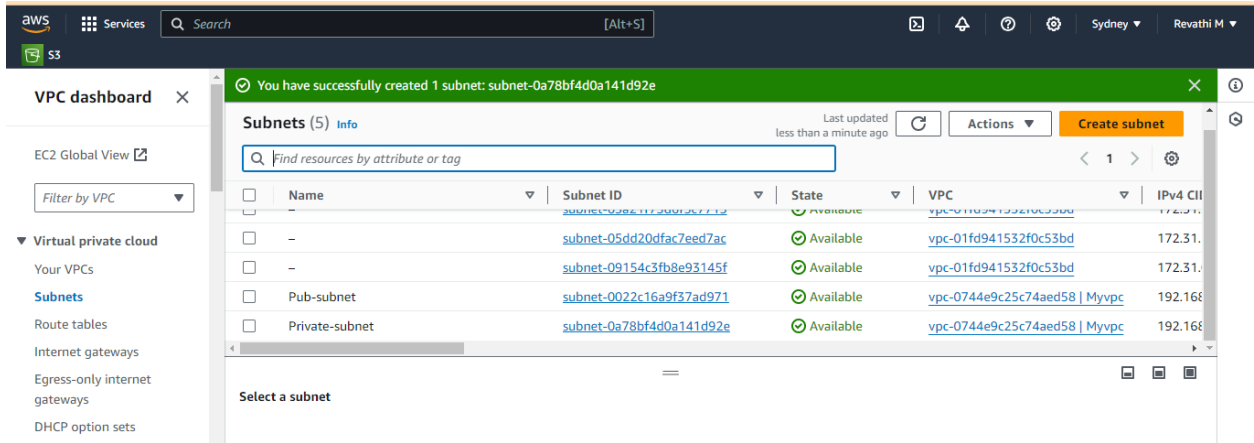
Your VPCs (2) info

Last updated less than a minute ago

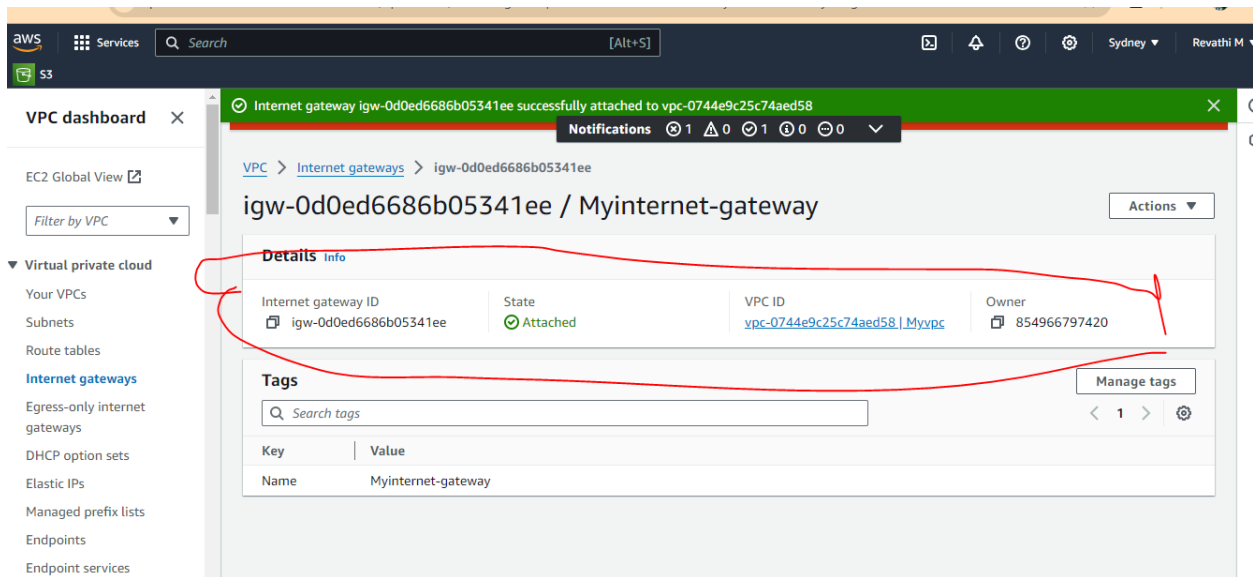
Actions Create VPC

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>	-	<a href="#">vpc-01fd941532f0c53bd</a>	Available	172.31.0.0/16	-
<input type="checkbox"/>	Myvpc	<a href="#">vpc-0744e9c25c74aed58</a>	Available	192.168.0.0/16	-

## Step 2: Create Public and Private Subnets



Step 3: Create Internet Gateway and attach to vpc



Step 4: Create a Route table and associate it with the subnet

EC2 Global View

Filter by VPC

▼ Virtual private cloud

- Your VPCs
- Subnets
- Route tables**
- Internet gateways
- Egress-only internet gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services

Name	Route table ID	Explicit subnet associ...	Edge associations	Main
-	<a href="#">rtb-0290d961590289e8e</a>	-	-	Yes
pub-route table	<a href="#">rtb-0cc5b0ac990c1980a</a>	-	-	No
-	<a href="#">rtb-0bd0a282a9edd4400</a>	-	-	Yes
private-routetable	<a href="#">rtb-090b38bcb7bb9bf81</a>	<a href="#">subnet-0022c16a9f37ad...</a>	-	No

Find subnet association

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
Pub-subnet	<a href="#">subnet-0022c16a9f37ad971</a>	192.168.0.0/20	-

**Subnets without explicit associations (1)**

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

Find subnet association

Edit subnet associations

## Step 5: Add Internet Gateway to the Route tables

VPC dashboard

EC2 Global View

Filter by VPC

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2 minutes ago **Create route table**

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main
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pub-route table	<a href="#">rtb-0cc5b0ac990c1980a</a>	-	-	No
-	<a href="#">rtb-0bd0a282a9edd4400</a>	-	-	Yes
private-routetable	<a href="#">rtb-090b38bcb7bb9bf81</a>	<a href="#">subnet-0022c16a9f37ad...</a>	-	No

**Routes (2)**

Filter routes

Destination	Target	Status	Propagated
0.0.0.0/0	<a href="#">igw-0d0ed6686b05341ee</a>	Active	No
192.168.0.0/16	local	Active	No

## Step 6: Create security groups and open the appropriate port

← → ↻ ap-southeast-2.console.aws.amazon.com/vpconsole/home?region=ap-southeast-2#SecurityGroups: ☆ ⓘ

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Internet gateways  
Egress-only internet gateways  
DHCP option sets  
Elastic IPs  
Managed prefix lists  
Endpoints  
Endpoint services  
NAT gateways  
Peering connections

▼ Security  
Network ACLs  
Security groups  
▼ DNS firewall  
Rule groups

### Security Groups (4) Info

🔄 Actions ▾ Export security groups to CSV ▾ Create security group

🔍 Find resources by attribute or tag < 1 >

<input type="checkbox"/>	Name ▾	Security group ID ▾	Security group name ▾	VPC ID
<input type="checkbox"/>	-	<a href="#">sg-058c9f258a227d30e</a>	default	<a href="#">vpc-01fd941532f0c53bd</a>
<input type="checkbox"/>	-	<a href="#">sg-02028870044db0b42</a>	public-security-group	<a href="#">vpc-0744e9c25c74aed58</a>
<input type="checkbox"/>	-	<a href="#">sg-0e1c623f4f1f45485</a>	default	<a href="#">vpc-0744e9c25c74aed58</a>

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