

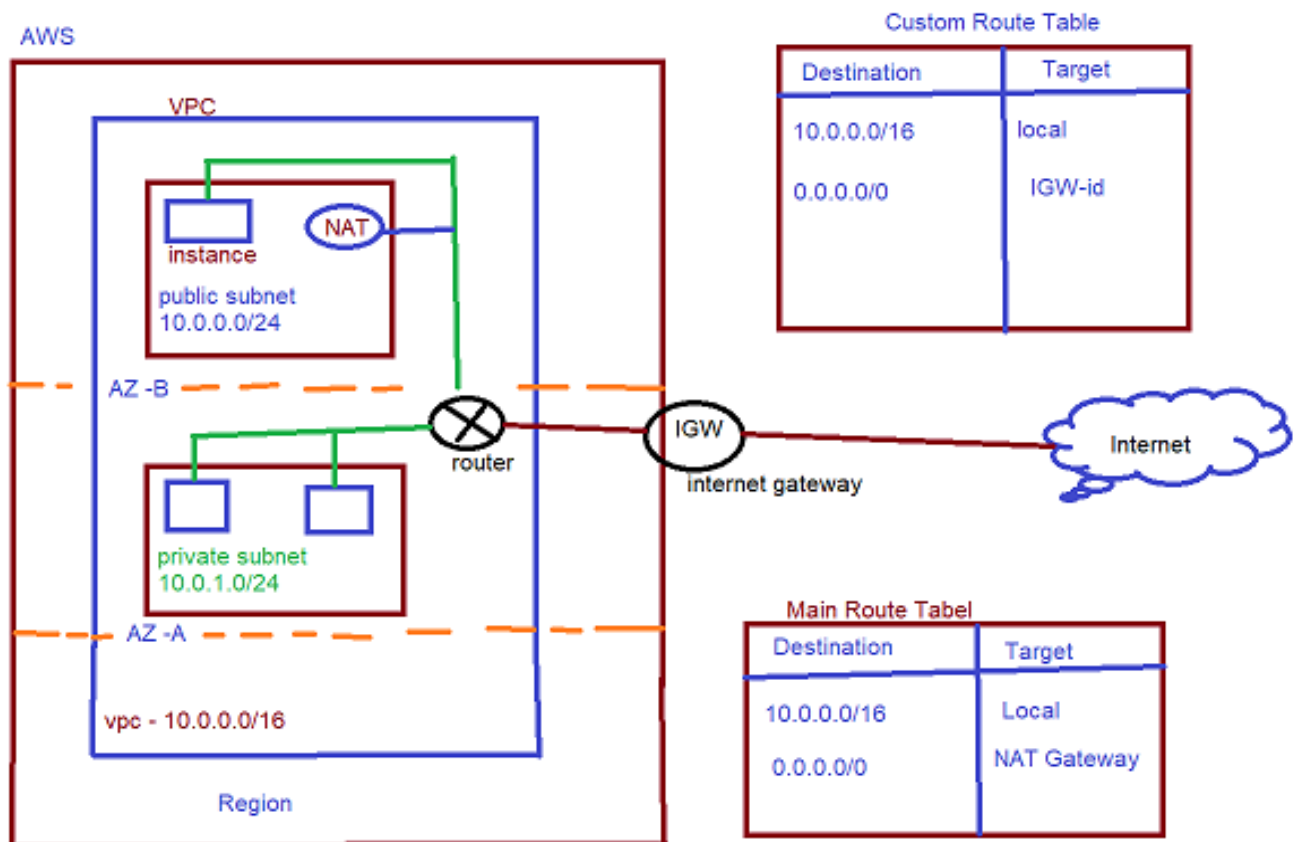
## Virtual Private Cloud (VPC)



Amazon Virtual Private Cloud (AmazonVPC) enables you to launch AWS resource into a virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS.

OR

VPC is a virtual Network or Data Centre in Side AWS of client



- It is logically Isolated from other virtual N/W in the AWS Cloud .
- Max 5 VPC can be created and 200 subnet in 1 VPC .
- We can allocate Max 5 Elastic IP .
- Once we created VPC , DHCP , NACL, and Security Group will be automatically created .
- A VPC is confined to an AWS Region and does not extend Between Region .

Notes :- 1 VPC Created => 200 Subnet and 200 Routing Table

Notes :- 1 AWS Account Provide to be 5 Elastic IP .

Notes :- VPC Created only Region Not Create by AZ (Availability Zone) .

Notes :- Subnet Created By only AZ (Availability Zone) , Not a Region .

Notes :- 1 Subnet You can Not Used to Other AZ (Availability Zone) .

- Once the VPC is Created , You can not Change CIDR Block Range .
- If you Need a different CIDR Size , Create a New VPC .

You Can However expand Your VPC CIDR by Adding New / Extra IP Address Ranges (Except Gov Cloud & AWS China ) .

NOTE S :- 1. Primary CIDR You Can Not Changed .

2. Secondary CIDR You Can Expand and Changed .

- The different Subnet's Within a VPC Can Not Overlap .

Notes :- 1. NAT Gateway Created Public Subnet . But Used to Private Network .

2. Router Created by under Region .

### **VPC Purpose:**

- Logically secure yourself from other tenants.
- Isolation.
- Logically isolate network for AWS resources.
- AWS VPC Creates a virtual Datacenter in the AWS Cloud.
- Provides Security.

### **Example**

- Some Servers are publically accessible.
- Some Server are on private subnet . ( Not reachable over internet )
- Some Servers are reachable only from on premises/Corporate data center. (Using VPN)

### **VPC Provides you control over the network**

- Select Your own IP ranges/subnets.
- Configure ACL.
- Manage routing tables.
- Internet/NAT Gateway.
- VPN

VPC Network: 10.0.0.0/16

We have Subnets within a VPC

Divide a Network into Subnets. ( of Your Required Size)

Subnet 1: 10.0.0.0/24 - Private > NAT Gateway

Subnet 2: 10.0.1.0/24 - Public > Internet Gateway

Subnet Calculator

<http://www.vlsm-calc.net/>

## Why VPC?

Improved Security with Subnets	Control of Network & IP	Security Groups & ACL	Supports new generation of Instance
Network Isolation for resources	Fixed IP	Extend Organization Network	Direct Connect / VPN
	Supports multiple AWS services	Multiple IPs to single Instance	

