**Subnets**

Observer Available IPV4 column it is showing as 251

But we should get 2 power 8 Right!! (256)

That means 5 ip address are missing.

Note: In every subnet, 5 ip address are reserved.

Just search in google "Reserved ip address in AWS"

Select VPC and subnet sizing

We can see the list of ip's which are reserved.

10.0.0.0

10.0.0.1

10.0.0.2

10.0.0.3

10.0.0.255

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Note: Every subnet will be by default private.

We want to make one subnet as public.

To make subnet public its two-step process.

**Step 1:** we need to enable public IP

Select the subnet (10.0.1.0/24) --> Actions --> Edit subnet settings

---> Enable Auto Assigning public IPV4 Address -- Save

(From now, public IP will be assigned to the machines in this Subnet)

**Step 2:** Create internet gateway. And attach internet gateway to VPC.

Select Internet Gateway

(We have one default internet gateway. Do not disturb this)

Create internet gateway ---> Name Tag: MyIGW ---> Create -- Close

Observation: Status is detached.

Select the MyIGW ---> Actions -----> Attach to VPC -- Select our VPC ---> Attach.

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Now, we cannot attach Internet Gateway to subnet.

So, we create new Route table.

Select, Route tables

Observation: We have two route tables.

One route table attached to default VPC.

Another route table attached to our VPC (MyVPC)

This means, one default route table is created automatically, when we create our own VPC.

Creating new route table

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Create Route table ---> Name Tag: InternetRT ---> VPC: MyVPC ---> Create --> Close

Now, we need to connect Route table to Subnet.

Select the route table (InternetRT) ---> Subnet Associations tab ---> Edit Subnet Associations ---> Select the subnet (10.0.1.0/24) -- Save

Now, Another end to route table, we need to connect to Internet Gateway

Select the route table (InternetRT) ---> Routes tab --->Edit routes ---> Add route ----> Target: Internet Gateway , select MyIGW Destination : 0.0.0.0/0 ( Mandatory ) -- Save routes -- Close

Now, our Subnet is public Subnet.

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Now, Let’s launch webserver in public subnet.

Services ---Ec2 ---- Launch instance -- Step3 Network: MyVPC

Subnet: 10.0.1.0/24

Additional Details -- User Data

#!/bin/bash

sudo su

yum update -y

yum install httpd -y

cd /var/www/html

echo "MyGoogle-2" > index.html

srvice httpd start

chkconfig httpd on

Next -- Next -- Name Tag: WebServer ---> Next -- Security Group: WebSG31, Description: WebSG31

ADD RULE

Type Source

SSH Anywhere

HTTP Anywhere

Review and launch --- Launch -- Download keypair --> Launch-- View Instance

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Let’s Launch Database Server in Private Subnet.

Services ---Ec2 ---- Launch instance -- Step3 Network : MyVPC

Subnet: 10.0.2.0/24

Name Tag: DbServer -- ---> Next -- Security Group: DbSG31, Description: DbSG31

Change Type from SSH to MYSQL/Aurora

Type Source

MYSQL/Aurora Custom 10.0.1.0/24

(MySQL Port is open to entire subnet)

Review and launch -- Launch --> Create new keypair --> launch instances --- View instances

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Observe the private IP address of the webserver.

The series will be 10.0.1.x

Now, check the Dbserver.

It should not have public IP.

and Private IP series should be 10.0.2.x

Now, let’s check, are we able to access webserver?

Copy the public IP in the browser

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Now, let’s have some testing scenarios

1) Detach RT to public Subnet.

Select route tables --- Subnet Assocations ---> Edit Subnet Associations --- UNCHECK the subnet (10.0.1.0/24) --- Save

Result: Are you able to webserver??

Refresh the browser (Page will not be loaded)

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Let’s attach it back.

Are we able to access the webserver

2) Can we access the webserver from putty?

convert pem to ppk file and connect from putty.

Yes!! we can access, as we have opened SSH port.

Detach RT to public subnet (similar to above)

Immediately, SSH connection is lost.

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Let’s attach it back.

Are we able to access the webserver from putty.

3) Can we access database server

convert the dbserver pem file to ppk file

Select the EC2 instance ---> Connect

Observation: we get username@privateIP

Try connecting from putty.

**It fails**.

As the instance is in private subnet nor the internet is available, we cannot access from our laptop.

Deletion Process

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1) Terminate both the EC2 instances.

2) Select myVPC, delete VPC

When VPC is deleted, Internet gateways, Route tables and subnets will also be deleted automatically.

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