

BUILD AMAZON VPC WITH PUBLIC AND PRIVATE SUBNETS (FROM SCRATCH)

- In this project I will walk you through the process of building Amazon VPC from scratch.
- Task Details:
 - Sign in to the AWS console
 - Create a New VPC
 - Create Subnets
 - Create and Configure Internet Gateway
 - Create Route Tables
 - Finally, Validate the project to show a completed lab.

TASK 1 & 2

- Task 1 is basically signing the AWS management console
- Once signed in to the console, make the default AWS Region as US East (N. Virginia) us-east-1.
- Task 2 is about creating a new VPC.
 - Name tag: VPC name(choose any proper name but I chose: MyVPC
 - IPV4 CIDR block: Enter 10.0.1.0/16
 - IPV6 CIDR block: no need to change this, make sure No IPV6 CIDR block is checked.
 - Tenancy: No need to change this, make sure Default is selected.
 - Once VPC is created, it will appear with details in the next slide

VPC DETAILS

New VPC Experience

Tell us what you think

VPC dashboard

EC2 Global View

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

Network Analysis

Your VPCs (1/2)

Info

Filter VPCs

< 1 >

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table	M
<input checked="" type="checkbox"/>	MyVPC	vpc-0c616e2210a102cfc	Available	10.0.0.0/16	--	dopt-dc2524a6	rtb-0d3e58e8a1116fb0f	ac
<input type="checkbox"/>	Default VPC	vpc-3f771342	Available	172.31.0.0/16	--	dopt-dc2524a6	rtb-ab04e7da / daufault ...	ar

vpc-0c616e2210a102cfc / MyVPC

DetailsCIDRsWith logsTags

Details

VPC ID

vpc-0c616e2210a102cfc

Tenancy

Default

Default VPC

No

Route 53 Resolver DNS Firewall rule groups

Failed to load rule groups

State

Available

DHCP option set

dopt-dc2524a6

IPv4 CIDR

10.0.0.0/16

Owner ID

475810412508

DNS hostnames

Disabled

Main route table

rtb-0d3e58e8a1116fb0f

IPv6 pool

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DNS resolution

Enabled

Main network ACL

act-03498fbad4b7fee8e

IPv6 CIDR (Network border group)

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TASK 3

- In this lab, I will create one public subnet and a private subnet in us-east1a & us-east-1b.
- For the public Subnet:
 - VPC ID: Select MyVPC from the list I created earlier
 - Subnet Name: MyPublicSubnet
 - Availability Zone: select us-east-1a
 - IPV4 CIDR block: 10.0.1.0/24
 - Then click create subnet.

TASK 3 CONTINUES...

- Private Subnet:
 - Click subnet again
 - VPC ID: Select MyVPC from the list I created earlier
 - Subnet Name: MyPrivateSubnet
 - Availability Zone: select us-east-1b
 - IPV4 CIDR block: 10.0.2.0/24
 - Then click create subnet, it appears the details in the next slide.

SUBNET DETAILS

New VPC Experience
Tell us what you think

VPC dashboard

EC2 Global View New

Filter by VPC:
Select a VPC

Virtual private cloud

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Network Analysis

Reachability Analyzer

Network Access Analyzer

Subnets (1/8) Info

Filter subnets

< 1 >

Create subnet

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses	Avail
<input type="checkbox"/>	-	subnet-0e387368	Available	vpc-e5cfab98 Default VPC	172.31.0.0/20	-	4091	us-ea
<input type="checkbox"/>	-	subnet-38e7b119	Available	vpc-e5cfab98 Default VPC	172.31.80.0/20	-	4091	us-ea
<input type="checkbox"/>	-	subnet-2a633775	Available	vpc-e5cfab98 Default VPC	172.31.32.0/20	-	4091	us-ea
<input type="checkbox"/>	-	subnet-35647f78	Available	vpc-e5cfab98 Default VPC	172.31.16.0/20	-	4091	us-ea
<input checked="" type="checkbox"/>	MyPublicSubnet	subnet-0b45fd47df45387f2	Available	vpc-087c55d8668ac31cf My...	10.0.1.0/24	-	251	us-ea
<input type="checkbox"/>	MyPrivateSubnet	subnet-04a258d3945de605f	Available	vpc-087c55d8668ac31cf My...	10.0.2.0/24	-	251	us-ea
<input type="checkbox"/>	-	subnet-9e35aaaf	Available	vpc-e5cfab98 Default VPC	172.31.48.0/20	-	4091	us-ea
<input type="checkbox"/>	-	subnet-af2825a1	Available	vpc-e5cfab98 Default VPC	172.31.64.0/20	-	4091	us-ea

subnet-0b45fd47df45387f2 / MyPublicSubnet

Details | Flow logs | Route table | Network ACL | CIDR reservations | Sharing | Tags

Details

Subnet ID
subnet-0b45fd47df45387f2

Available IPv4 addresses
251

Network border group
us-east-1

Subnet ARN
arn:aws:ec2:us-east-1:266674769467:subnet/subnet-0b45fd47df45387f2

IPv6 CIDR
-

VPC
vpc-087c55d8668ac31cf | MyVPC

State
Available

Availability Zone
us-east-1a

Route table
rtb-061532b2946042b99 | PublicRouteTable

IPv4 CIDR
10.0.1.0/24

Availability Zone ID
use1-az1

Network ACL
acl-07e2d6d04132db7c3

TASK 4

- This lab, I will create and configure internet gateway
 - Name: MyInternetGateway
 - Select the internet gateway I created from the list and Attach it to the VPC
 - The details is shown below

Internet gateways (1/2) [Info](#)

Filter internet gateways

Actions [Create Internet gateway](#)

	Name	Internet gateway ID	State	VPC ID	Owner
<input checked="" type="checkbox"/>	MyInternetGateway	igw-07dc727cd1975d10d	Attached	vpc-087c55d8668ac31cf MyVPC	266674769467
<input type="checkbox"/>	-	igw-dec60ca4	Attached	vpc-e5cfab98 Default VPC	266674769467

igw-07dc727cd1975d10d / MyInternetGateway

Details Tags

Details

Internet gateway ID igw-07dc727cd1975d10d	State Attached	VPC ID vpc-087c55d8668ac31cf MyVPC	Owner 266674769467
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TASK 5

- This lab, I will create Route Tables, Public and Private.
- Create a PublicRoute Table:
 - Name: PublicRouteTable
 - VPC: select MyVPC from the list
 - Click create route table

Repeat the same steps with PrivateRoute Table.

The detail is shown in the next slide.

ROUTE TABLE DETAILS.

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

Filter route tables

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	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Owner ID
<input checked="" type="checkbox"/>	PublicRouteTable	rtb-061532b2946042b99	subnet-0b45fd47df453...	–	No	vpc-087c55d8668ac31cf My...	266674769467
<input type="checkbox"/>	PrivateRouteTable	rtb-05f2fe21e8f7998b1	subnet-04a258d3945de...	–	No	vpc-087c55d8668ac31cf My...	266674769467
<input type="checkbox"/>	Default VPC RT	rtb-958664e4	–	–	Yes	vpc-e5cfab98 Default VPC	266674769467
<input type="checkbox"/>	–	rtb-09b8047f0c547098c	–	–	Yes	vpc-087c55d8668ac31cf My...	266674769467

rtb-061532b2946042b99 / PublicRouteTable

Details

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (2)

Filter routes

Both

< 1 >

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Destination	Target	Status	Propagated
0.0.0.0/0	igw-07dc727cd1975d10d	Active	No
10.0.0.0/16	local	Active	No

FEW MORE DETAILS WITH ROUTE TABLE.

- After created with route table;
- Now associate the subnet to the route table
- Select PublicSubnet from the list and associate it with PublicRoute Table.
- Same goes with PrivateSubnet.
- Make sure not associate any subnets with the main Route Table.
- Lastly, add PublicRouteTable: add a route to allow internet traffic to the vpc
- Select PublicRouteTable:
 - Go to Routes tab and select add route
 - Destination: Enter 0.0.0.0/0 (this's mainly because you want to have access to the internet).
 - Save the changes.