AMAZON VPC (Virtual Private Cloud)

2types of network concept

CIDR (Classless Inter domain routing)

VLSM(Variable length subnet mask)

Mumbai : Region

AZ1:Subnet

AZ2:Subnet

VPC Components:

Subnet

Route tables

Internet Gateway

Net Gateway

Network ACL's

Security Groups

Peering Connections

VPN

++++++++++++++++++++++++++++++

Subnet:

A range of IP address in VPC

Ex-1

10.0.0.0/8

255.0.0.0 (SNM)

N.H.H.H

10.0.0.1 to 10.255.255.254

Ex-2

10.0.0.0/16

255.255.0.0 (SNM)

10.0.0.1 to 10.0.255.254

EX-3

10.0.0.0/24

255.255.255.0 (SNM)

10.0.0.1 to 10.0.0.254

255.0.0.0/8 =

255.255.0.0/16=

255.255.255.0/24=

Divided into 2 types

**Public Subnet**

A subnet has route to an AWS internet Gateway it called as public subnet

**Private Subnet**

There is no route from a subnet to an AWS internet gatway, it is called as Private subnet

+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Route tables

Sys A

10.0.0.5/8

SNM: 255.0.0.0

Subnet IP : 10.0.0.0

Starting IP: 10.0.0.1

End IP : 10.255.255.254

Sys A communicates to SYS B

10.0.0.10/8

Sys B

10.0.0.10/16

10.0.0.0

10.0.0.1 to 10.0.255.255

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

IGW

>> Internet Gateway is attached to a VPC

>> It provides access to the internet for instances in a VPC subnet

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**NAT Gateway**

NAT Gateway provides internet connection to your private instances

Private IP

Class -A

10.0.0.0 to 10.255.255.255

Class -B

172.16.0.0. to 172.31.255.255

Class -C

192.168.0.0 to 192.168.255.255

Public IP

+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Network ACL's**

Network Access Control Lists acts as a firewall for controlling /managing traffic in and out (inbound & outbound) of one or more subnets with in a VPC

Logical ports:

0 to 65535

Registered Ports: 1- 1023

Well-known ports- 1024 - 49151

Dynamic ports- 49152 - 65535

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Security Groups**

Specific inbound and outbound network access policies for an amazon EC2 instance

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Peering Connections (VPC Peering)**

Enables you to route traffic between two or more VPC's within same region.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**VPN**

Bridge your VPC and your onsite IT infrastructure with private connectivity

+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**VPC Scenarios**

1. VPC with Public subnet only
2. VPC with Public and Private subnet
3. VPC with Public and Private subnets and VPC peering access

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Amazon VPC products**

1. EC2
2. RDS
3. Auto Scaling
4. ELB
5. Elastic beanstalk
6. EC(ElastiCache)

+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**LAB**

**Step1:**

Create VPC with a particular subnet range (max 16 to 28 bits)

1. Go to VPC service

Machine generated alternative text: VPC Dashboard
Filter by VPC:
QSelect a \/ i Launch VPC Wizard__1 [Launch EC2 Instances Service Health
Note: Your Instances will launch in the US West (Oregon) region.
Current Status Details
Virtual Private ! Resources by Region C Refresh Resources O Amazon EC2 - US West (Oregon) Service is operating normally
Cloud View complete service health details
You are using the following Amazon VPC resources
Your VPCs
VPCs 1 NAT Gateways O Account Attributes
Subnets
See all regions See all regions
Route Tables Resource ID length management
Internet Gateways Subnets ‘4 VPC Peering Connections O
See all regions See all regions
Egress Only Internet Additional Information
Gateways
DHCP Options Sets Route Tables 1 Network ACLs 1 VPC Documentation
See all regions See all regions All VPC Resources
Elastic IPs

1. Click on **Your VPC's**

Machine generated alternative text: VPC Dashboard Create VPC Actions 
Il
Filter by VPC:
Q Select a vpc Q Filter by tags and attributes or search by keyword < < 1 to 1 of 1 > >1
• • • Name VPC ID State iPv4 CIDR iPv6 CIDR DHCP options set Main Route
Virtual Private
Cloud • Default VPC vpc-4561e73d available 172.31.0.0/16 - dopt-7a61de02 rtb-a80162d
Your VPCs
Subnets
Route Tables
Internet Gateways

1. Click on **Create VPC** button
2. Machine generated alternative text: VPCs > Create VPC
   Create VPC
   A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances. You must specify an lPv4 address range for your VPC. Specify the lPv4 address range as a
   Classless Inter-Domain Routing (CIDR) block; for example, 10.0.0.0/16. You cannot specify an lPv4 CIDR block larger than /16. You can optionally associate an Amazon-provided lPv6 CIDR block with
   the VPC.
   Name tag O
   IPv4 CIDR block* O
   lPv6 CIDR block • No lPv6 CIDR Block o
   Amazon provided lPv6 CIDR block
   Tenancy Default
   * Required
   Create
   Cancel
3. On "**Create VPC"** page, we need enter below information

**Name Tag -->** **INDVPC**

**IPV4 CIDR Block --> 192.168.0.0/16**

Leave remaining field's as default

Then click on **Create** button

Machine generated alternative text: VPCs > Create VPC
Create VPC
A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances. You must specify an IPv4 address range for your VPC. Specify the lPv4 address range as a
Classless Inter-Domain Routing (CIDR) block; for example, 10.0.0.0/16. You cannot specify an lPv4 CIDR block larger than /16. You can optionally associate an Amazon-provided lPv6 CIDR block with
the VPC.
Name tag INDVPC O
lPv4 CIDR block* [ 192.1 68.0 .OI1 j O
lPv6 CIDR block e No lPv6 CIDR Block o
Amazon provided lPv6 CIDR block
Tenancy Default
* Required Cancel Create 1

To verify **INDVPC** is created

Machine generated alternative text: VPC Dashboard Create VPC ] Actions v  , o
Filter by VPC:
Q Select a vpc Q Filter by tags and attributes or search by keyword I to 2 of 2
Virtual Private I C Name VPC ID State lPv4 CIDR lPv6 CIDR DHCP options set Main Route
II
Cloud • INDVPC vpc-0a3369c5d7ac826ea available 192.168.0.0/16 - dopt-7a61de02 rtb-0138d5d:I I
Default VPC vpc-4561e73d available 172.31.0.0/16 - dopt-7a61de02 rtb-a80162d
Your VPCs
Subnets I I
Route Tables

**Step2:**

To Create Public subnet

1. Click on **Subnets**

Machine generated alternative text: VPC Dashboard Create subnet ] Actions ‘V 0 • ø
Filter by VPC:
Q Select a vpc Q Filter by tags and attributes or search by keyword I to 4 of 4
fl Name Subnet ID State ‘ VPC IPv4 CIDR - Available IPv4’v IPv6 CIDR
Virtual Private _____
Cloud Q subnet-5022477b available vpc-4561e73d I Default V... 172.31.32.0/20 4091
Your VPCs Q subnet-5d9ca116 available vpc-4561e73d I Default V... 172.31.48.0/20 4091
‘ U subnet-9021c3cd available vpc-4561e73d I Default V... 172.31.0.0/20 4091
Subnets
Q subnet-f07a6989 available vpc-4561e73d I Default V... 172.31.16.0/20 4091
Route Tables
Internet Gateways
Egress Only Internet
Gateways

1. Click on **create subnet** button
2. Fill the below information in **Create subnet** page

Name Tag --> IND-PUB-SUBNET

VPC --> INDVPC

Availability Zone: US-WEST-2A

IPv4 CIDRs --> 192.168.10.0/24

[ *Explanation:*

*SNM : 255.255.255.0*

*Subnet IP address: 192.168.10.0*

*Starting IP :192.168.10.1*

*Ending IP:192.168.10.254 ]*

Machine generated alternative text: Create subnet
Specify your subnets IP address block in CIDR format; for example, 10.0.0.0/24. lPv4 block sizes must be between a /16 netmask and /28 netmask, and can be the same size as your VPC. An lPv6
CIDR block must be a /64 CIDR block.
Name tag IND-PUB-SUBNET O
vpc-04d193ba1d55b9a76  O
VPC CIDRs CIDR Status Status Reason
192.168.0.0/16 associated
Availability Zone us-west-2a y’ O
lPv4 CIDR block* [_192.168.10.0/24j j O
* Required Cancel Create ]

To verify IND-PUB-SUBNET

Machine generated alternative text: Virtual Private
Cloud
Your VPCs
Subnets
Route Tables
Internet Gateways
Egress Only Internet
Gateways
VPC Dashboard
Filter by VPC:
Create subnet [Actions vJ
Q Filter by tags and attributes or search by keyword
Li Name Subnet ID
Li
fl subnet-5022477b
subnet-5d9call 6
subnet-9021 c3cd
subnet-f07a6989
State VPC
available
available
available
available
available
vpc-04d I 93ba1 d55b9a76 ...
vpc-4561e73d I Default V...
vpc-4561e73d I Default V...
vpc-4561e73d I Default V...
vpc-4561e73d I Default V...
IPv4CIDR
192.168.10.0/...
172.31.32.0/20
172.31.48.0/20
172.31.0.0/20
172.31.16.0/20
1< < lto5of5 > >1
Available lPv4 , lPv6 CIDR
251
4091
4091
4091
4091

**Step3:**

To Create Private Subnet

1. Click on **Subnets**

Machine generated alternative text: VPC Dashboard Create subnet ] Actions ‘V 0 • ø
Filter by VPC:
Q Select a vpc Q Filter by tags and attributes or search by keyword I to 4 of 4
fl Name Subnet ID State ‘ VPC IPv4 CIDR - Available IPv4’v IPv6 CIDR
Virtual Private _____
Cloud Q subnet-5022477b available vpc-4561e73d I Default V... 172.31.32.0/20 4091
Your VPCs Q subnet-5d9ca116 available vpc-4561e73d I Default V... 172.31.48.0/20 4091
‘ U subnet-9021c3cd available vpc-4561e73d I Default V... 172.31.0.0/20 4091
Subnets
Q subnet-f07a6989 available vpc-4561e73d I Default V... 172.31.16.0/20 4091
Route Tables
Internet Gateways
Egress Only Internet
Gateways

1. Click on **create subnet** button
2. Fill the below information in **Create subnet** page

Name Tag --> IND-PRI-SUBNET

VPC --> INDVPC

Availability Zone: US-WEST-2B

IPv4 CIDRs --> 192.168.20.0/24

[ *Explanation:*

*SNM : 255.255.255.0*

*Subnet IP address: 192.168.20.0*

*Starting IP :192.168.20.1*

*Ending IP:192.168.20.254 ]*

Machine generated alternative text: Create subnet
Specify your subnet’s IP address block in CIDR format; for example, 10.0.0.0/24. lPv4 block sizes must be between a /16 netmask and /28 netmask, and can be the same size as your VPC. An lPv6
CIDR block must be a /64 CIDR block.
Name tag IND-PRI-SUBNET O
VPC vpc-04d193ba1d55b9a76 v O
VPC C lORs CIDR Status Status Reason
192.168.0.0/16 associated
Availability Zone us-west-2b V’ O
lPv4 CIDR block* [_192.168.20.0/24 ] O
* Required Cancel [ Create ]

To verify IND-PRI-SUBNET

Machine generated alternative text: VPC Dashboard
Filter by VPC:
I
Create subnet Actions 
04 Filter by tags and attributes or search by keyword
Name
IN D-PUB-SUBN ET
IND-PRI-SUBNET
Virtual Private
Cloud
Your VPCs
Subnets
Route Tables
Internet Gateways
Egress Only Internet
1< < lto6of6 > >1
Available lPv4 - lPv6 CIDR
Subnet ID State
VPC
lPv4 CIDR
subnet-03379bda9c704fc82
available
vpc-04d I 93ba1 d55b9a76 ...
192.168.10.0/...
251
subnet-0c942af8687716a4f
available
vpc-04d193ba1d55b9a76 ...
192.168.20.0/...
251
subnet-5022477b
available
vpc-4561 e73d I Default V...
172.31.32.0/20
4091
subnet-5d9ca116
available
vpc-4561e73d I Default V...
172.31.48.0/20
4091
subnet-9021c3cd
available
vpc-4561e73d I Default V...
172.31.0.0/20
4091
subnet-f07a6989
available
vpc-4561 e73d I Default V...
172.31.16.0/20
4091

**Step4:**

Create a Internet Gateway and attach to VPC (INDVPC)

1. Click on **Internet Gateways**

Machine generated alternative text: VPC Dashboard Create internet gateway 1 Actions V
FilterbyVPC:
Q Select a vpc Q Filter by tags and attributes or search by keyword I to
. . • Name ‘ ID A State VPC  Owner
VIrtual Private
Cloud igw-d8aO4bal attached vpc-4561e73d I D... 279492597881
Your VPCs
Su bnets
Route Tables
Internet Gateways
Egress Only Internet
Gateways

1. Click on **Create Internet Gateway** button
2. In Create Internet Gateway page

**Name Tag --> INDIGW**

Machine generated alternative text: Internet gateways > Create internet gateway
Create internet gatewa’
An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.
Name tag [ INDIGW ] O
* Required Cancel [ Create 1

1. To verify INDIGW

Machine generated alternative text: VPC Dashboard Create internet gateway 1 Actions ‘ .. ,
Filter by VPC: I
Q Select a vpc Q Filter by tags and attributes or search by keyword I to 2 of 2
. Name ID State VPC Owner
Virtual Private
Cloud INDIGW igw-040c161c03b... detached - 279492597881
Your VPCs igw-d8aO4bal attached vpc-4561e73d I D... 279492597881

1. Select INDIGW

Click **Attach to VPC**

Machine generated alternative text: Internet gateways > Attach to VPC
Attach to VPC
Attach an internet gateway to a VPC to enable communication with the internet. Specify the VPC you would like to attach below.
vpc [vpcO4ci193ba1ci55b9a7 y’ j O
AWS Command Line Interface command
d
equire Cancel Attach

Click on **attach** button

1. To verify INDIGW to VPC attachment

Machine generated alternative text: VPC Dashboard Create internet gateway 1 Actions ‘
Filter by VPC:
Q Select a vpc Q Filter by tags and attributes or search by keyword I to 2 of 2
. . Name ID State VPC Owner
Virtual Private
Cloud • INDIGW igw-040c161c03b... attached vpc-04d193ba1d5... 279492597881
Your VPCs / igw-d8aO4bal attached vpc-4561e73d I D... 279492597881
Subnets

**Step5:**

**Create PUBLIC Route Table , Associate subnet and add routing rules**

On **VPC Dashboard** panel

1. Click on "**Create Route Tables"**

Machine generated alternative text: Your VPCs , Create route table_j Actions  ... , e
Subnets Q Filter by tags and attributes or search by keyword I to 2 of 2
Route Tables
Name ‘- Route Table ID Explicit subnet association Main VPC ID Owner
Internet Gateways
Egress Only Internet rtb-0c9191b06066ef3cd - Yes vpc-04d193ba1d55b9a76 ... 279492597881
Gateways rtb-a80162d3 Yes vpc-4561e73d I Default V... 279492597881
DHCP Options Sets
Elastic IPs

1. On "Create Route Table" window

For **Name Tag --> IND-PUB-RTB**

For **VPC --> INDVPC**

Click oin **"Create"** button

Machine generated alternative text: Route Tables > Create route table
Create route table
A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.
Name tag IND-PUB-RTB O
vpc [vpc-o4d193ba1d55b9a70 ‘y j C O
* Required Cancel Create

1. Verify Route table which you created

Machine generated alternative text: Q, Filter by tags and attributes or search by keyword I to 3 of 3
Name Route Table ID Explicit subnet association Main VPC ID Owner
• IND-PUB-RTB rtb-00e73b193e1713ec7 - Yes vpc-04d193ba1d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
rtb-a80162d3 - Yes vpc-4561e73d I Default V... 279492597881

1. Click on" Subnet Associations" Tab below after you selecting the route table **"IND-PUB-RTB**".

Machine generated alternative text: Q Filter by tags and attributes or search by keyword I to 3 of 3 > >1
Name Route Table ID Explicit subnet associatior Main VPC ID Owner
• IND-PUB-RTB rtb-00e73b193e1713ec7 Yes vpc-04d193ba1d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
rtb-a80162d3 - Yes vpc-4561e73d I Default V... 279492597881
fr
Route Table: rtb-00e73b193e1713ec7
Summary Routes Subnet Associations Route Propagation Tags
Edit subnet associations

1. Click on "**Edit subnet Associations"** button

Machine generated alternative text: Route Tables > Edit subnet associations
Edit subnet associations
Route table rtb-00e73b1 93e1 71 3ec7 (IND-PRI-RTB)
Associated subnets No subnets selected
,
Q Filter by attributes or search by keyword I to 2 of 2
Subnet ID IPv4 CIDR IPv6 CIDR Current Route Table
subnet-0c942af8687716a4f I IND-PRI-SUBNET 192.168.20.0/... - Main
subnet-03379bda9c704fc82 I IND-PUB-SUBNET 192.168.10.0/... - Main

1. Select check box **"IND-PUB-SUBNET --> 192.168.10.0/24"**

Machine generated alternative text: Route Tables> Edit subnet associations
Edit subnet associations
Route table rtb-00e73b1 93e1 71 3ec7 (I ND-PUB-RTB)
Associated subnets subnet-03379bda9c7041c82
,
Q Filter by attributes or search by keyword I to 2 of 2
Subnet ID lPv4 CIDR lPv6 CIDR Current Route Table
subnet-0c942af868771 6a4f I I ND-PRI-SUBNET 192.168.20.0... - Main
• subnet-03379bda9c704fc82 I IND-PUB-SUBNET 192.168.10.0... - Main
* Required Cancel [ save]

1. Click on **"Save "**button

1. Verify **IND-PUB-SUBNET** is associated with **IND-PUB-RTB**

Machine generated alternative text: Create route table Actions y
Q Filter by tags and attributes or search by keyword I to 3 of 3
Name Route Table ID — Explicit subnet associatior Main VPC ID Owner
• IN D-PUB-RTB rtb-00e73b1 93e1 71 3ec7 subnet-03379bda9c704fc82 Yes vpc-04d 1 93ba 1 d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
rtb-a80162d3 - Yes vpc-4561e73d I Default V... 279492597881
Route Table: rtb-00e73b1 93e1 71 3ec7
Summary Routes Subnet Associations Route Propagation Tags
Edit subnet associations
I to I of I
Subnet ID IPv4 CIDR IPv6 CIDR
su bnet-03379bda9c704fc... 192.168.10.0/24 -

1. "**Add another route**" button from Routes tab

Route Destination : 0.0.0.0/0

Target : INDIGW

Machine generated alternative text: Route Tables> Edit routes
Edit routes
Destination Target Status Propagated
192.168.0.0/16 local active No
0.0.0.0/0 ‘V igw-O4Ocl6lcO3blfeacO No O
Add route
* Required Cancel [ Save routes ]

1. Verify Public route is added through internet gateway

Machine generated alternative text: Create route table Actions  _I * o
Q Filter by tags and attributes or search by keyword I to 3 of 3
Name Route Table ID — Explicit subnet associatior Main VPC ID Owner
• IN D-PUB-RTB rtb-00e73b1 93e1 71 3ec7 subnet-03379bda9c704fc82 Yes vpc-04d 1 93ba1 d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd No vpc-04d193ba1d55b9a76 ... 279492597881
rtb-a80162d3 Yes vpc-4561e73d I Default V... 279492597881
Route Table: rtb-00e73b193e1713ec7
Summary Routes Subnet Associations Route Propagation Tags
Edit routes
View All routes
Destination Target Status Propagated
192.168.0.0/16 local active No
0.0.0.0/0 igw-040c1 61 cO3bl feacO active No

**Step6:**

**Create Private Routing table , Associate subnet and add routing rules**

On **VPC Dash Board** panel

1. Click on "Create Route table"

On " Create Route Table " window

For Name tag: **IND-PRI-RTB**

For VPC : **INDVPC**

Machine generated alternative text: Route Tables > Create route table
Create route table
A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.
Name tag IND-PRI-RTB O
VPC [vpcO4d193ba1d55b9a7 ‘V C O
* Required Cancel Create :

1. Verify IND-PRI-RTB is created

Machine generated alternative text: I_Create route table Actions ‘  * e
Q Filter by tags and attributes or search by keyword I to 4 of 4
Name Route Table ID Explicit subnet associatior Main VPC ID Owner
IND-PUB-RTB ð rtb-00e73b193e1713ec7 subnet-03379bda9c704fc82 Yes vpc-04d193ba1d55b9a76 ... 279492597881
• IND-PRI-RTB rtb-O5acebddfdb2OcO3f - No vpc-04d193ba1d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
Route Table: rtb-O5acebddfdb2OcO3f
Summary Routes Subnet Associations Route Propagation Tags
Edit routes
View All routes
Destination Target Status Propagated
192.168.0.0/16 local active No

1. Click on "Subnet association" tab

Machine generated alternative text: Q Filter by tags and attributes or search by keyword I to 4 of 4
Name Route Table ID — Explicit subnet associatior Main VPC ID Owner
IN D-PUB-RTB rtb-00e73b1 93e1 71 3ec7 subnet-03379bda9c704fc82 Yes vpc-04d 1 93ba1 d55b9a76 ... 279492597881
• IN D-PRI-RTB rtb-O5acebddfdb2OcO3f - No vpc-04d 1 93ba1 d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
Route Table: rtb-O5acebddfdb2OcO3f
Summary Routes Subnet Associations Route Propagation Tags
Edit subnet associations
None found
Subnet ID IPv4 CIDR IPv6 CIDR

1. Click on Edit and Select check box for **IND-PRI-SUBNET --> 192.168.20.0/24**

Machine generated alternative text: Route Tables> Edit subnet associations
Edit subnet associations
Route table rtb-O5acebddfdb2OcO3f (IND-PRI-RTB)
Associated subnets subnet-0c942af8687716a4f
,
Q Filter by attributes or search by keyword I to 2 of 2
Subnet ID lPv4 CIDR lPv6 CIDR Current Route Table
• subnet-0c942af868771 6a4f I I ND-PRI-S... 192.168.20.0... Main
subnet-03379bda9c704fc82 I IND-PUB-... 192.168.10.0... rtb-00e73b1 93e1 71 3ec7
* Required Cancel Save

1. Click on **save** button
2. Verify IND-PRI-SUBNET is associated with IND-PRI-RTB table

Machine generated alternative text: Create route table Actions ‘
O,
Q Filter by tags and attributes or search by keyword I to 4 of 4
Name Route Table ID — Explicit subnet associatior Main VPC ID Owner
IN D-PU B-RTB rtb-00e73b1 93e1 71 3ec7 subnet-03379bda9c704fc82 Yes vpc-04d 1 93ba1 d55b9a76 ... 279492597881
• IN D-PRI-RTB rtb-O5acebddfdb2OcO3f subnet-0c942af868771 6a4f No vpc-04d 1 93ba1 d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
Route Table: rtb-O5acebddfdb2OcO3f
Summary Routes Subnet Associations Route Propagation Tags
Edit subnet associations
I to I of I
Subnet ID IPv4 CIDR IPv6 CIDR
subnet-0c942af868771 6a... 192.168.20.0/24 -

1. Click on **Routes** tab, and verify how many routes are present

Machine generated alternative text: F Create route table Actions ‘
Q Filter by tags and attributes or search by keyword < < 1 to 4 of 4 > >1
Name - Route Table ID Explicit subnet associatior Main VPC ID Owner
IN D-PUB-RTB rtb-00e73b1 93e1 71 3ec7 subnet-03379bda9c704fc82 Yes vpc-04d 1 93ba 1 d55b9a76 ... 279492597881
• IN D-PRI-RTB rtb-O5acebddfdb2OcO3f subnet-0c942af868771 6a4f No vpc-04d 1 93ba1 d55b9a76 ... 279492597881
rtb-0c9191b06066ef3cd - No vpc-04d193ba1d55b9a76 ... 279492597881
Route Table: rtb-O5acebddfdb2OcO3f
Summary Routes Subnet Associations Route Propagation Tags
Edit routes
View All routes
Destination Target Status Propagated
192.168.0.0/16 local active No

**Note: NO NEED TO ADD INDIGW IN THIS PRIVATE ROUTE TABLE**

**Step7:**

**To Launch Windows instance in Public Subnet**

1. Open the AWS management console
2. Click on services
3. Click on EC2 Services

Machine generated alternative text: Services  Resource Groups  VPC • EC2
EC2 Dashboard Resources
Events I
You are using the following Amazon EC2 resources in the US West (Oregon) region:
Tags
O Running Instances O Elastic IPs
Reports
. . 0 Dedicated Hosts O Snapshots
Limits
O Volumes O Load Balancers
INSTANCES O Key Pairs 2 Security Groups
Instances O Placement Groups
Launch Templates ___________________________________________________________________________
Spot Requests
Learn more about the latest in AWS Compute from AWS re:lnvent by viewing the EC2 Videos c.
Reserved Instances
Dedicated Hosts
Create Instance Migrate a Machine
Scheduled Instances
Capacity Reservations To start using Amazon EC2 you will want to launch a Use CloudEndure Migration to simplify, expe
virtual server, known as an Amazon EC2 instance, automate large-scale migrations from physic
IMAGES . and cloud-based infrastructure to AWS.
AMIs Launch Instance y’
. Get started with CloudEndure Migration [‘
Bundle Tasks
Note: Your instances will launch in the US West (Oreaonì reaion

Machine generated alternative text: EC2 Dashboard  [ Launch Instance v onnect Actions 
Events
Tags Q Filter by tags and attributes or search by keyword
Reports You do not have any running instances in this region.
Limits
First time using EC2? Check out the Getting Started Guide.
Click the Launch Instance button to start your own server.
Instances
Launch Templates Launch Instance]
Spot Requests
D acnn,nrI Inc+nnnnc.

Machine generated alternative text: 1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review
Step 1: Choose an Amazon Machine Image (AMI) Cancel and Exit
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our
user community, or the AWS Marketplace; or you can select one of your own AMIs.
Lwindows X
QuickStart(19) 1< < ltol9ofl9AMls > >I
My AMIs (0) Microsoft Windows Server 2019 Base - ami-0bff712af642c77C9 Select j
Windows Microsoft Windows 2019 Datacenter edition. [English]
AWS Marketplace (643) Free tier eligible 64-bit (x86)
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Community AMIs (13179) ____________
Microsoft Windows Server 2019 Base with Containers - ami-0a6b38f2d62C0cC94 [ Select
Free tier only : j: Windows Microsoft Windows 2019 Datacenter edition with Containers. [English] 64-bit (x86)

Machine generated alternative text: 1. Choose AMI 2. Choose Instance Type 3. Configure Instance
Step 3: Configure Instance Details
Purchasing option I _i Request Spot instances
4. Add Storage
5. Add Tags 6. Configure Security Group
7. Review
vpc-04d193ba1d55b9a76 I INDVPC
“
subnet-03379bda9c704fc82 I
IND-PUB-SUBNET I w
251 IP Addresses available
Enable
y
C Create new VPC
Create new subnet
Placement group
Capacity Reservation
Add instance to placement group
¡ Open
V C Create new Capacity Reservation
Domain join directory
lAM role
No directory
¡ None
V ð. .
‘..., Create new directory
‘ C Create new lAM role
Cancel Previous Review and Launch j Next: Add Storage
Network
Subnet
Auto-assign Public IP
(‘)
c)

Machine generated alternative text: 1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review
Step 6: Configure Security Group
A security group is a set of firewall rules that control the traffic for your instance, On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a
web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one
below. Learn more about Amazon EC2 security groups.
Assign a security group: Create a new security group
Select an existing security group
Security group name: launch-wizard-i
Description: launch-wizard-i created 2019-10-1 7T08:34:29.587+05:30
Type j Protocol Port Range Source Î Description ¡
RDP y TCP 3389 Custom v 0.0.0.0/0  e.g. SSH for Admin Desktop
Add RuIeJ
A Warning
Cancel Previous Review and Launch

Machine generated alternative text: E- Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review
Step 7: Revew Instance Select an existing key pair or create a new key pair X
aunch details. ethe launch pro
A key pair consists of a public key that AWS stores, and a private key file that you store. Together, they
A Improve your instances’ allow you to connect to your instance securely. For Windows AMIs, the private key file is required to
Your instances may be accessib obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to ddresses only.
You can also open additional po securely SSH into your instance. rvers. Edit security groups
Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more
. about removing existing key pairs from a public AMI.
AMI Details _____ EdItAMI
Create a new key pair y
‘, Microsoft Windows Se Key pair name
Free tier Microsoft Windows 2019 Dat Win_Oregon_keypair -
eligible Root Device Type: ebs Virtuaiiz Download Key Pair
If you plan to use this AMI for an applicati _______________________________________________________________________________________
You have to download the private key file (*.pem file) before you can continue. Store
Instance Tvne . . . . . . Edit instance type
‘ it in a secure and accessible location. You will not be able to download the file again
after iVs created. . .
Cancel Previous Launch
Cancel

**Step7:**

**To Launch Windows instance in Private subnet under INDVPC**

Machine generated alternative text: 1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review
Step 6: Configure Security Group
A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a
web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one
below. Learn more about Amazon EC2 security groups.
Assign a security group: •Create a new security group
Select an existing security group
Security group name: launch-wizard-2
Description: launch-wizard-2 created 2019-10-1 7T08:42: 10.097+05:30
Type ¡ Protocol Port Range Source ¡ Description ¡
RDP y 3389 Custom y’ 0.0.0.0/0 e.g. SSH for Admin Desktop O
Add Rule
Cancel Previous Review and Launch

Machine generated alternative text: Launch Instance  :onnect [Actions b]  0 • o
Q Filter by tags and attributes or search by keyword  < < 1 to 2 of 2 > >1
Name Instance ID Instance Type Availability Zone Instance State Status Checks Alarm Status Public DNS (IPv4)
WIN-PUB i-0652597fc92a53ae8 12.micro us-west-2a  running O 2/2 checks.. None
WIN-PRI i-0771 5aa8703a80ac5 t2.micro us-west-2b  running  Initializing None

**Step8:**

**To Connect to Public Subnet instance**

**Step9:**

**To Connect to Private Subnet Instance**