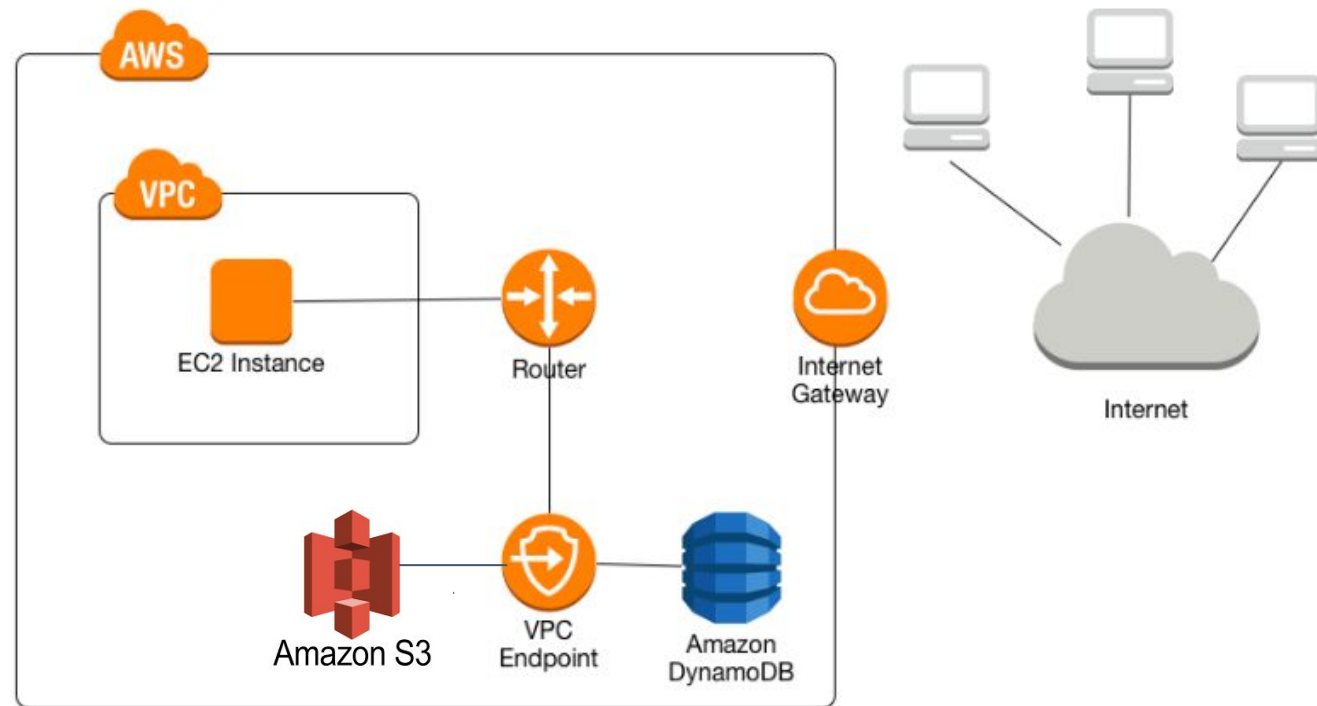


**services using HTTP  
protocol**



## Connectivity



### Virtual Private Cloud (VPC) [Info](#)

VPC that defines the virtual networking environment for this DB instance.

Default VPC (vpc-d8715da2) ▼

Only VPCs with a corresponding DB subnet group are listed.



After a database is created, you can't change the VPC selection.

### ▼ Additional connectivity configuration

#### Subnet group [Info](#)

DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.

default ▼

#### Publicly accessible [Info](#)



Yes

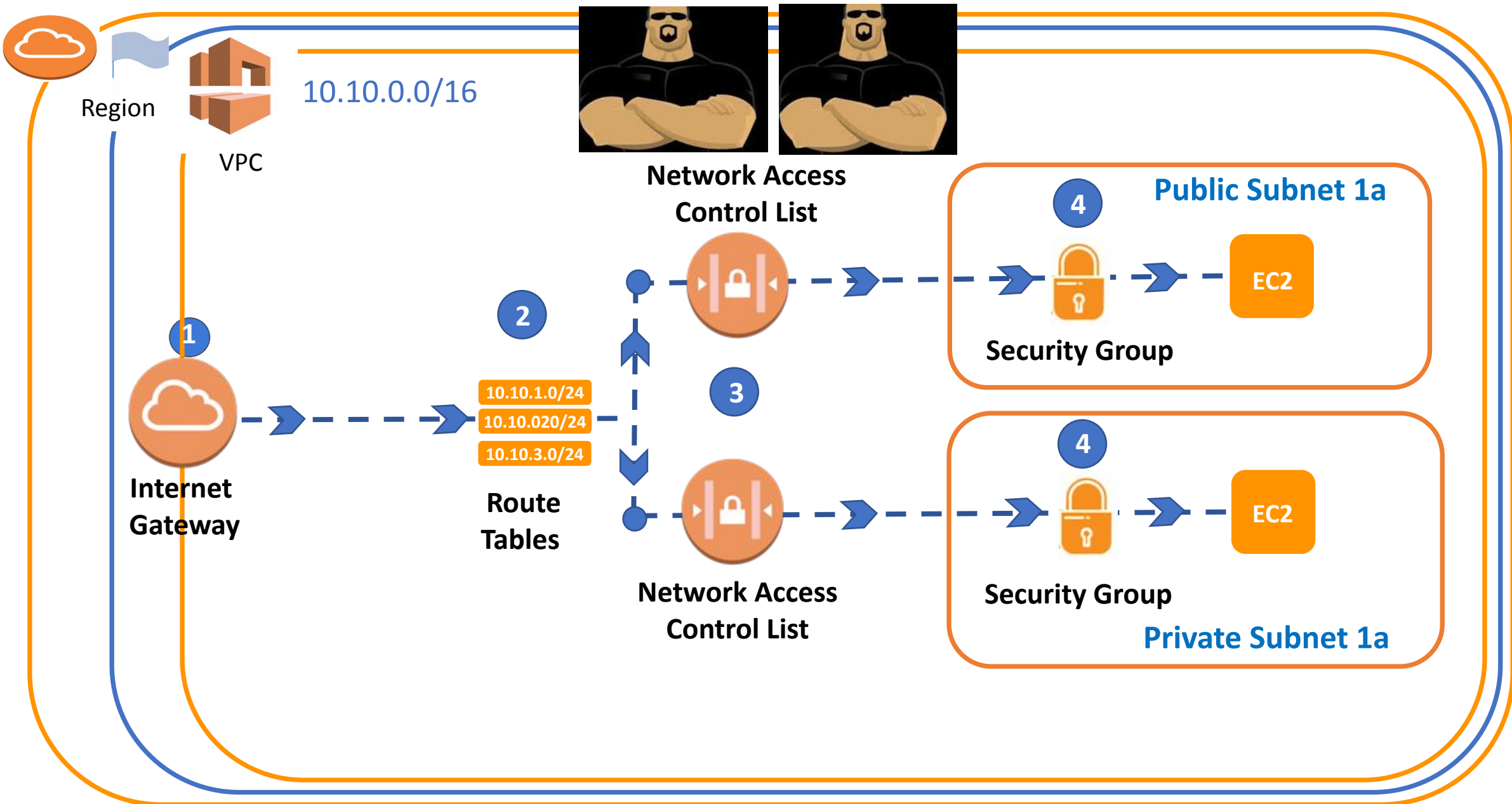
Amazon EC2 instances and devices outside the VPC can connect to your database. Choose one or more VPC security groups that specify which EC2 instances and devices inside the VPC can connect to the database.



No

RDS will not assign a public IP address to the database. Only Amazon EC2 instances and devices inside the VPC can connect to your database.

Cloud



65,536/256= 256 SUBNETS

VPC



10.0.0.0/16= 65,536 IPs in Range



Subnet-1

Subnet-2

Subnet-3



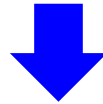
Subnet-256

10.0.1.0/24= 256 IPs

10.0.2.0/24= 256 IPs

10.0.3.0/24= 256 IPs

10.0.255.0/24= 256 IPs



10.0.2.0/32= 1 IP



10.0.2.3/32= 1 IP



-----> 10.0.255.0/32= 1 IP

$65,536 / 4096 = 16 \text{ SUBNETS}$

VPC



$10.0.0.0/16 = 65,536 \text{ IPs in Range}$



Subnet-1

Subnet-2

Subnet-3



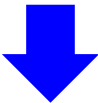
Subnet-16

$10.0.1.0/20 = 4096 \text{ IPs}$

$10.0.2.0/20 = 4096 \text{ IPs}$

$10.0.3.0/20 = 4096 \text{ IPs}$

$10.0.255.0/20 = 4096 \text{ IPs}$



$10.0.2.0/32 = 1 \text{ IP}$



$10.0.2.0/32 = 1 \text{ IP}$



----->  $10.0.255.0/32 = 1 \text{ IP}$

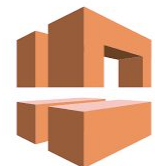


Cloud



Internet Gateway

Region



Region : **N.Virginia**  
CIDR : **10.7.0.0/16**

**VPC=clarus-vpc**

Availability Zone 1-a

Availability Zone 1-b

Availability Zone 1-c

Public Subnet 1a

Public Subnet 1b

Public Subnet 1c

10.7.1.0/24

10.7.4.0/24

10.7.7.0/24

10.7.2.0/24

10.7.5.0/24

10.7.8.0/24

Private Subnet 1a

Private Subnet 1b

Private Subnet 1c

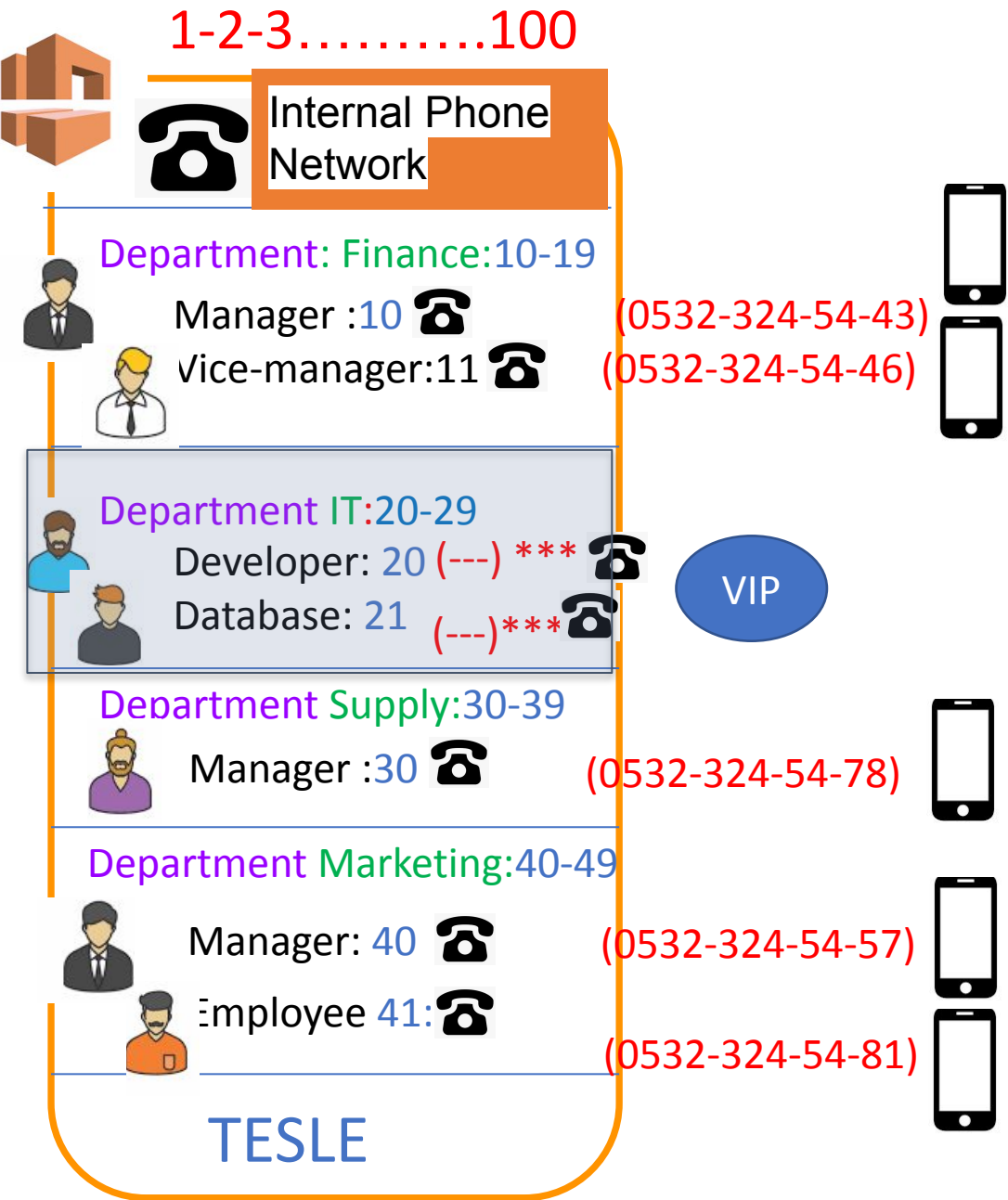
10.10.1.0/24  
10.10.020/24  
10.10.3.0/24

Route  
Table

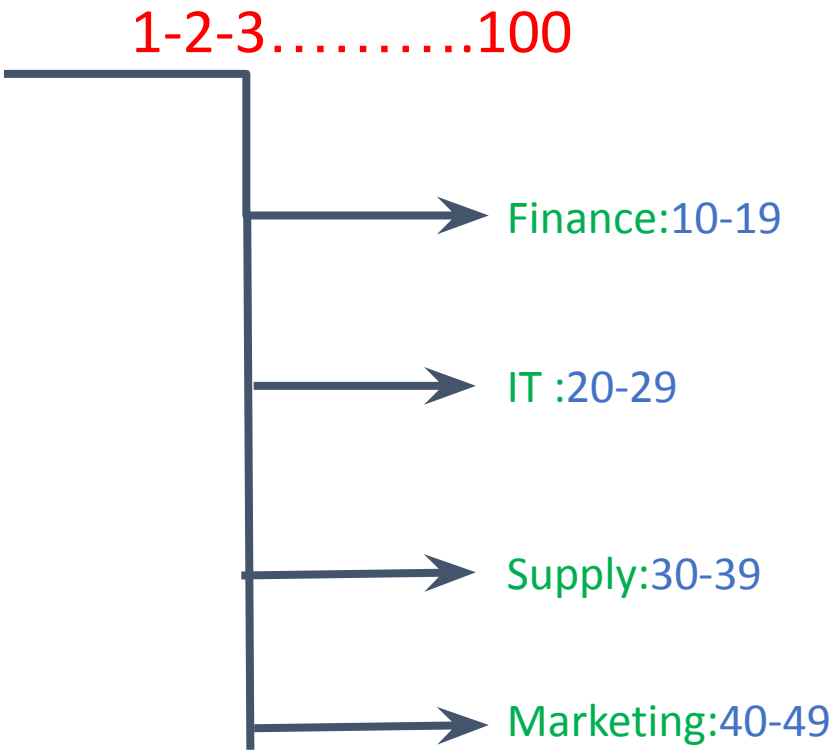
10.10.1.0/24  
10.10.020/24  
10.10.3.0/24

Route  
Table

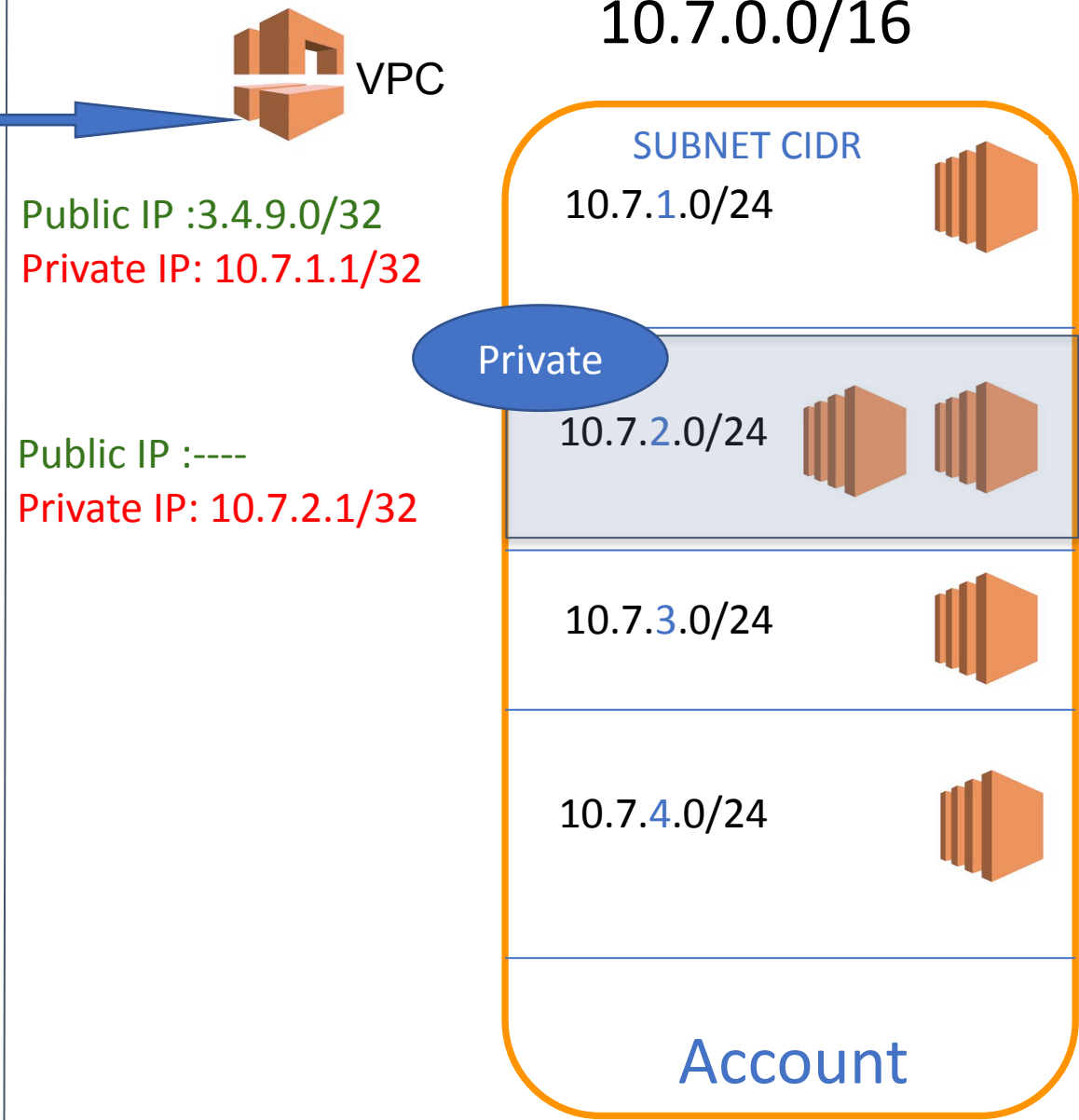
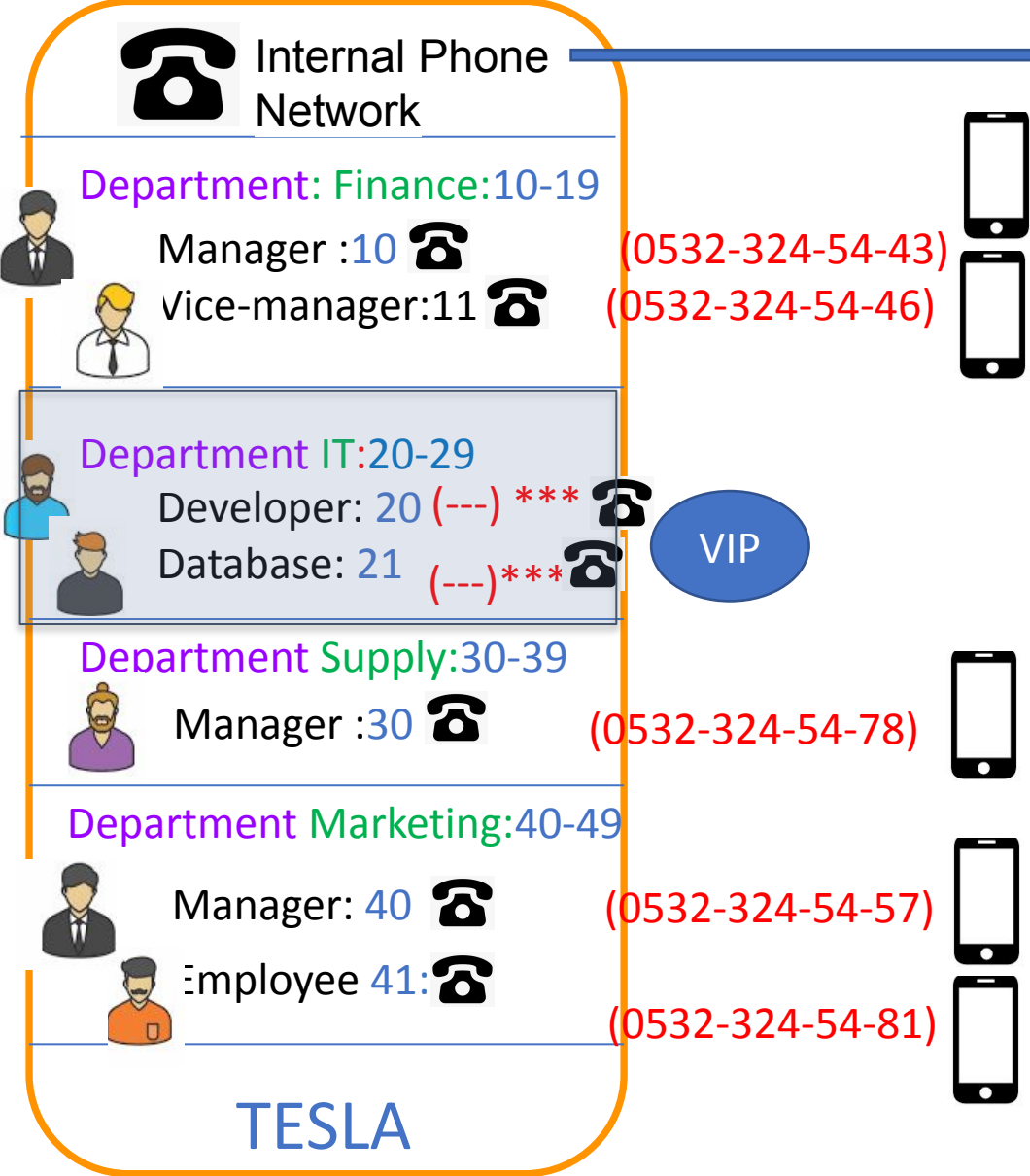
# Internal Phone Number Range:



# Internal Phone Number Range:



Internal Phone Number Range: → CIDR  
1-2-3-4-5.....100 10.7.0.0/16



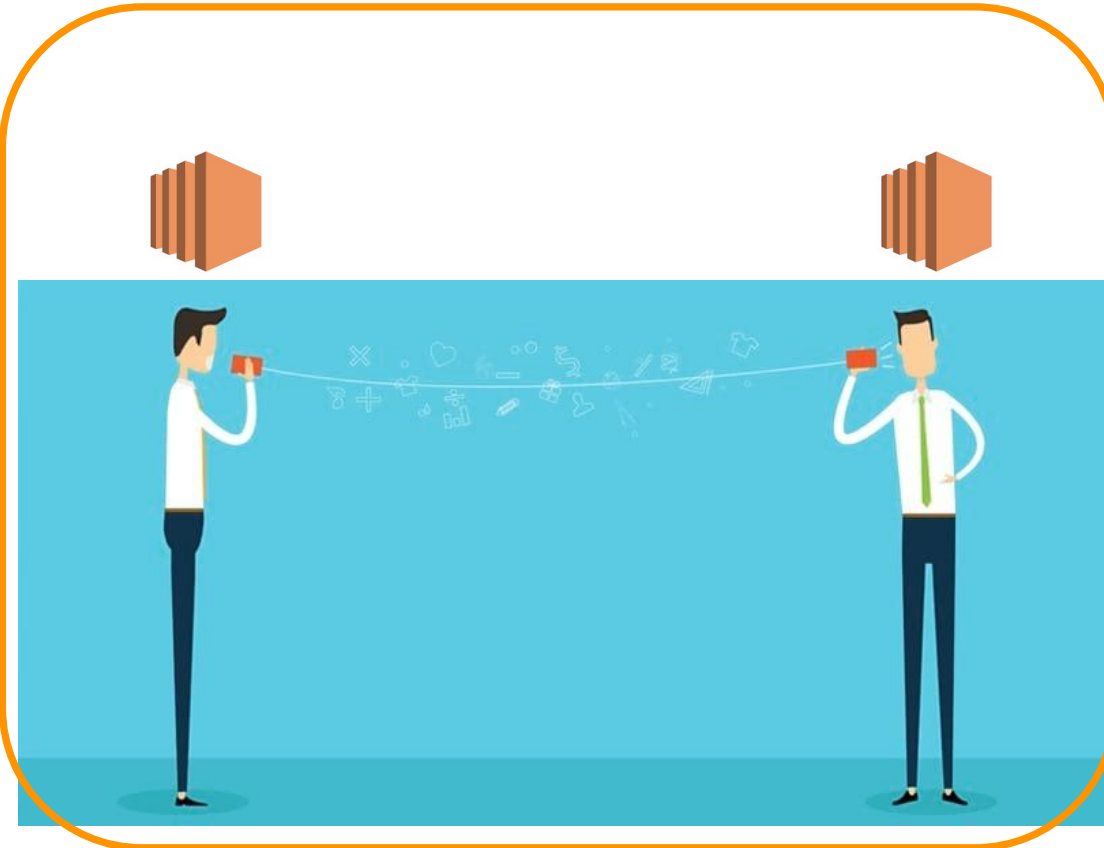


VPC CIDR Block

Labeling

Internal Communication

$10.7.0.0/16 = 65000 \text{ IP} = 65000$



# How is it possible to use the same CIDR block for all of us?

SSN:01-A-2345-4563



SSN:02-C-98756H64

VPC 1=House 1



VPC 2=House 2



## VPC CIDR IP POOL

10.7.0.0/16 = 65000 IP



## AWS PUBLIC IP POOL



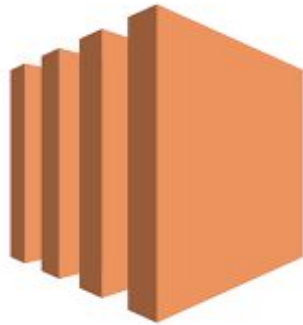
VPC



10.7.1.0/32

10.7.2.0/32

175.0.0.1/32



**Private Subnet**



**Public Subnet**

Create **VPC**

- *Name tag:* **clarus-vpc**

Create **IGW**

- *IPv4 CIDR block:* **10.7.0.0/16**

IGW Action Menu:  
**Attach IGW to VPC**

Set the VPC Route Table:  
**00000:/0 > IGW**

VPC Action Menu:  
**Edit DNS Hostname**

Name Default Route Table: **default-labvpc**



Cloud



Region



VPC

10.10.0.0/16



Local



2



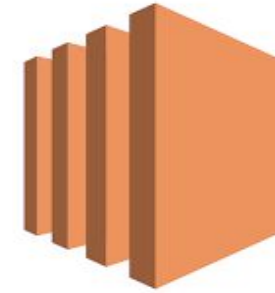
Internet  
Gateway

10.10.1.0/24  
10.10.020/24  
10.10.3.0/24

Route  
Tables



- Name tag: **clarus-vpc-a**
- IPv4 CIDR block: **10.7.0.0/16**



### us-east-1a

- **public**
- clarus-az1a-public-subnet
- us-east-1a

10.7.1.36

**10.7.1.0/24** 10.7.1.85

- **private**
- clarus-az1a-private-subnet
- us-east-1a

10.7.2.76

**10.7.2.0/24**

Spare...

us-east-1a  
10.7.3.0/24

### us-east-1b

- **public**
- clarus-az1b-public-subnet
- us-east-1b

**10.7.4.0/24**

- **private**
- clarus-az1b-private-subnet
- us-east-1b

**10.7.5.0/24**

Spare...

us-east-1b  
10.7.6.0/24

### us-east-1c

- **public**
- clarus-az1c-public-subnet
- us-east-1c

**10.7.7.0/24**

- **private**
- clarus-az1c-private-subnet
- us-east-1c

**10.7.8.0/24**

Spare...

us-east-1c  
10.7.9.0/24

**1- All** Subnets are associated with  
Default Route Table **Implicitly**

Conclusion

2- By default all subnets are  
**PUBLIC !!!!!** a.Local  
b.0000/0 >>>>IGW

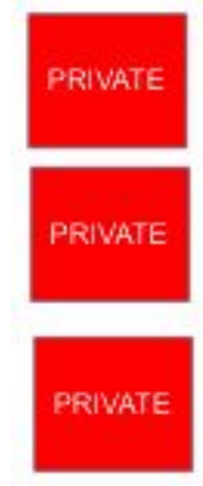
Current= 6 Public  
Desired= 3 Public 3 Private

## Option-1

DEFAULT RT

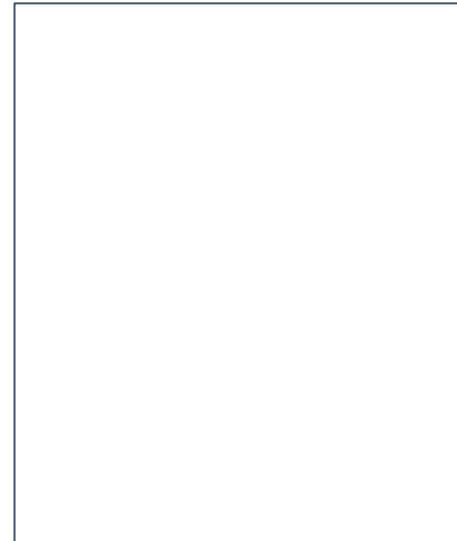


PRIVATE RT



## Option-2

DEFAULT RT



PUBLIC RT



PRIVATE RT





## Public Route Table Steps

Create a new Route Table  
for Public Subnets

Associate 3 Public Subnets  
with Public Route Table

Set Routes: a.Local  
b.0000/0 >>>>IGW

Modify Auto-Assign IP  
Settings-Subnet Action  
Menu-Edit subnet settings

Default Route Table of VPC  
3 Public Subnets  
Internet Connectivity



Create 3 Public and  
3 Private Subnets



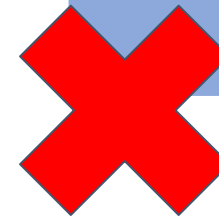
## Private Route Table Steps

a.Local

Create a new Route Table  
for Private Subnets

Associate 3 Private Subnets  
with Private Route Table

Route Table of Private  
3 Private Subnets  
Internet Connectivity

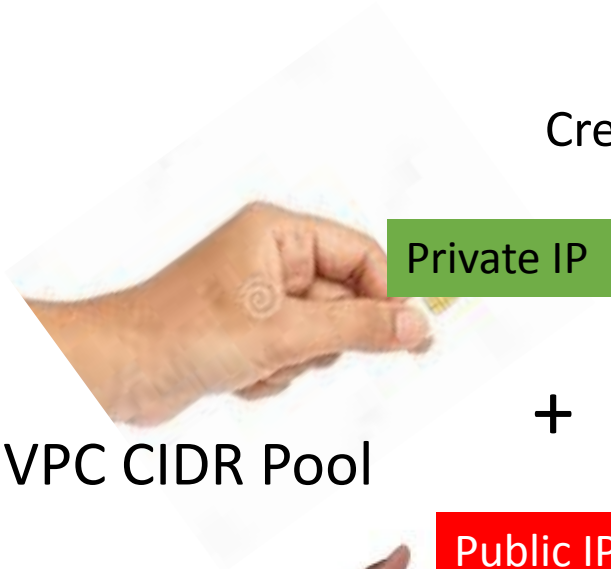


# Launching an Instance



Create in Public Subnet

Create in Private Subnet

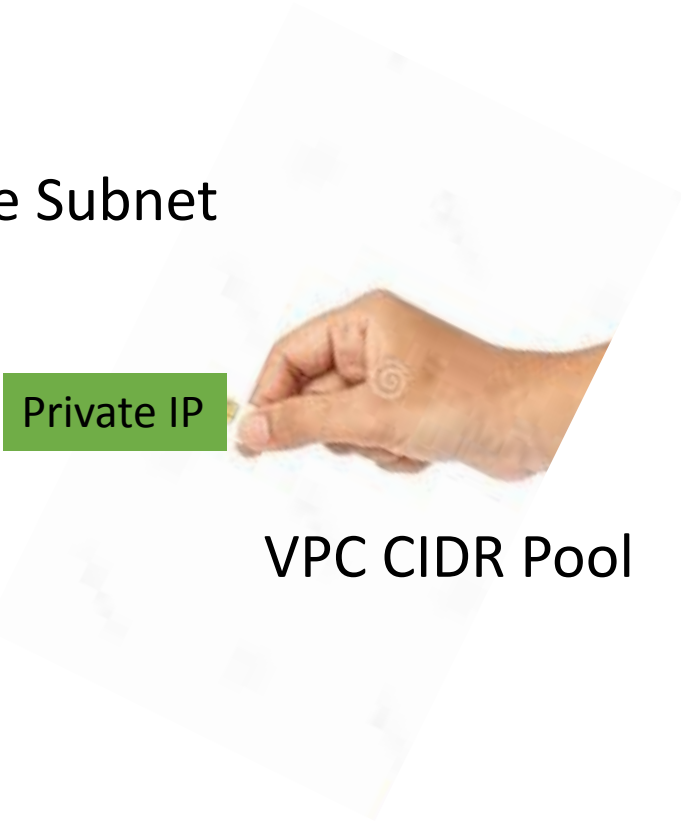


+



(Auto Assign IP )

AWS IP POOL





Route Tables



**Private Subnets**  
Internet Connectivity

**Public Subnets**  
Internet Connectivity

