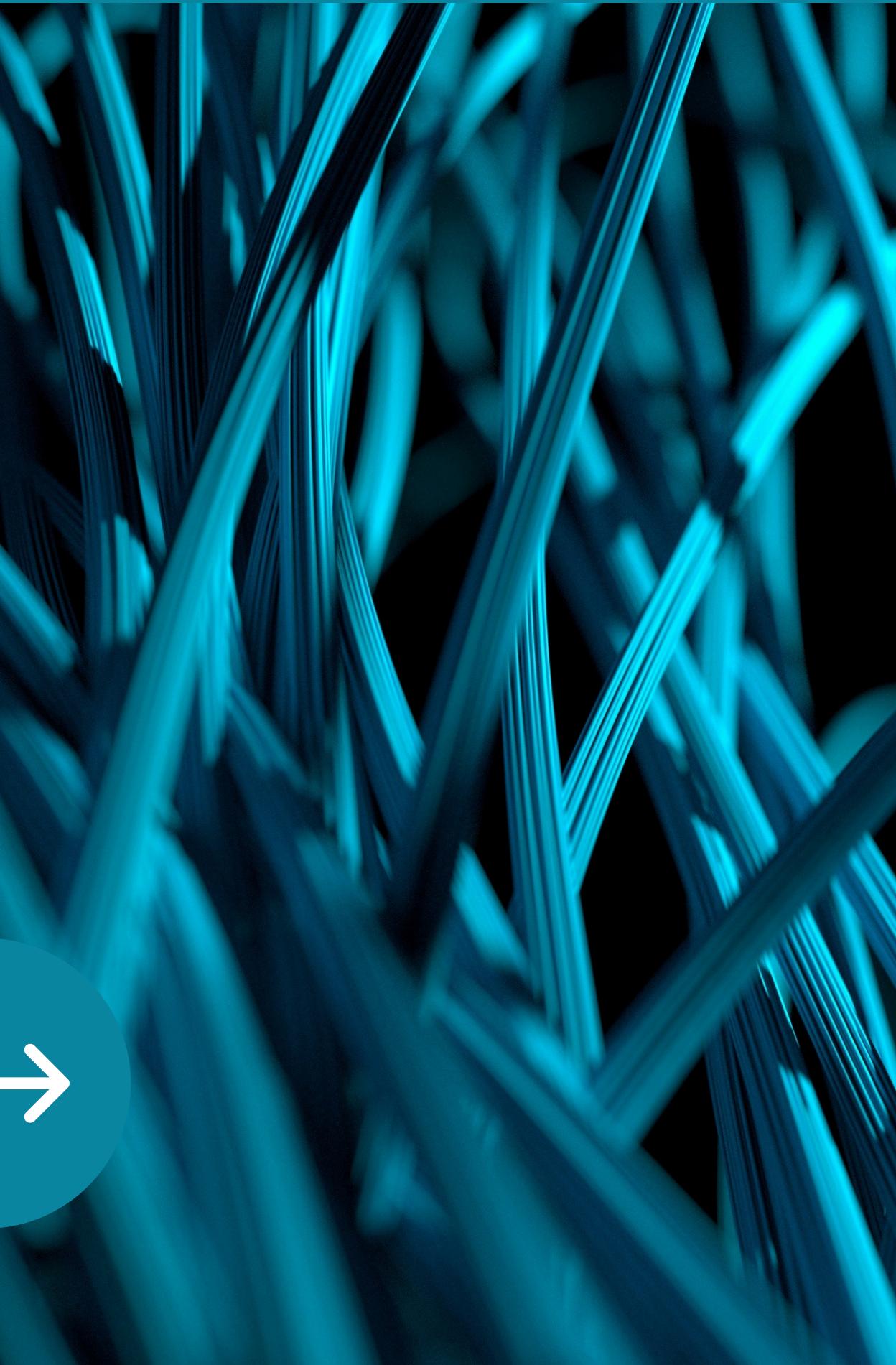


NETWORKING FUNDAMENTALS

This presentation will explore the fundamental networking principles in the cloud and their importance



OBJECTIVES

01

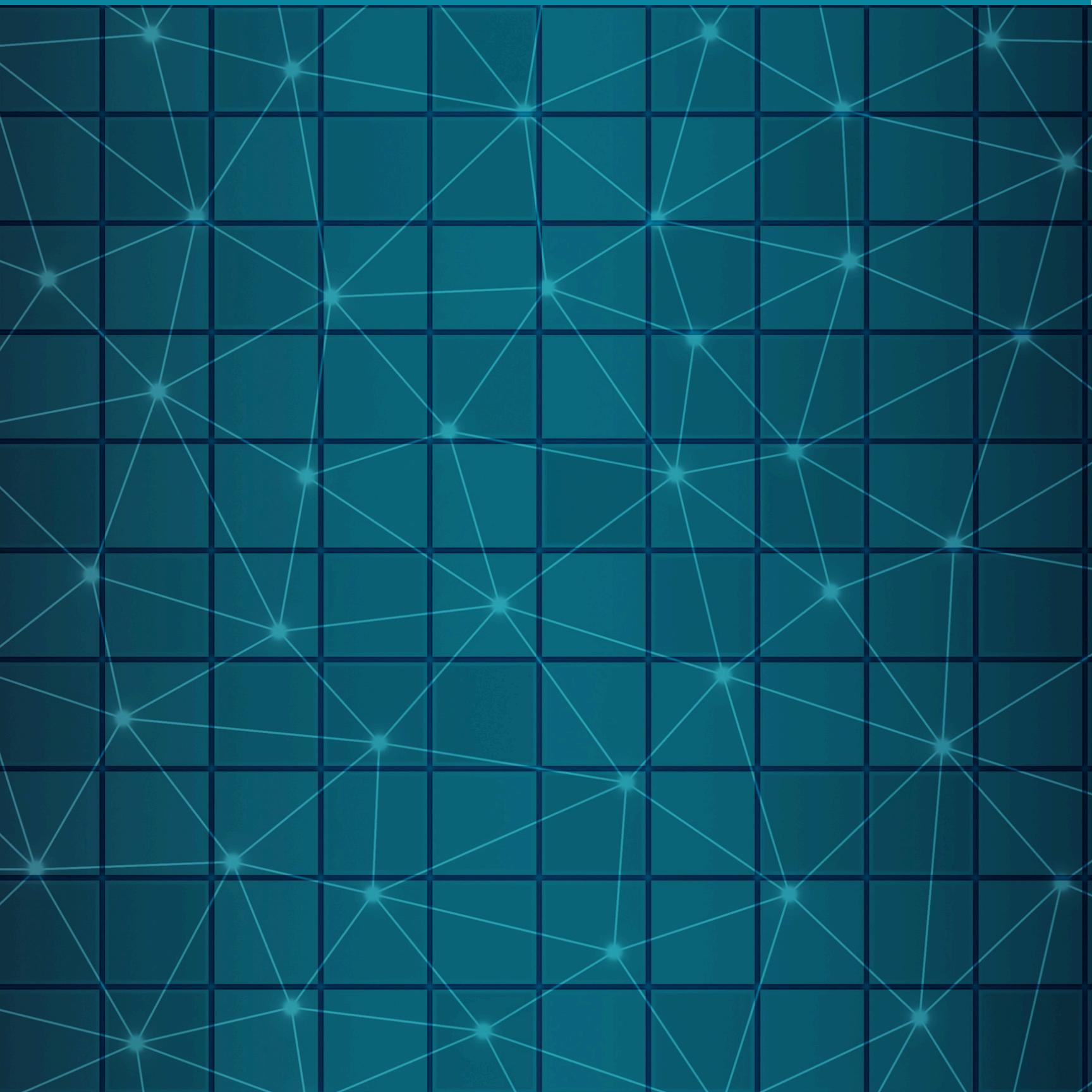
- Learn about networking fundamentals i.e IP Addressing(IPv4 and IPv6), Subnetting, VLAN, Static Routing, Dynamic Routing

02

- Understand Cloud Networking components (VPC, NAT Gateways, VPNs, Subnets, Internet Gateways, NACLs, Security Groups, DNS)

03

- Explore Trends in Cloud Networking
- Assignments



CLOUD NETWORKING

FUNDAMENTALS

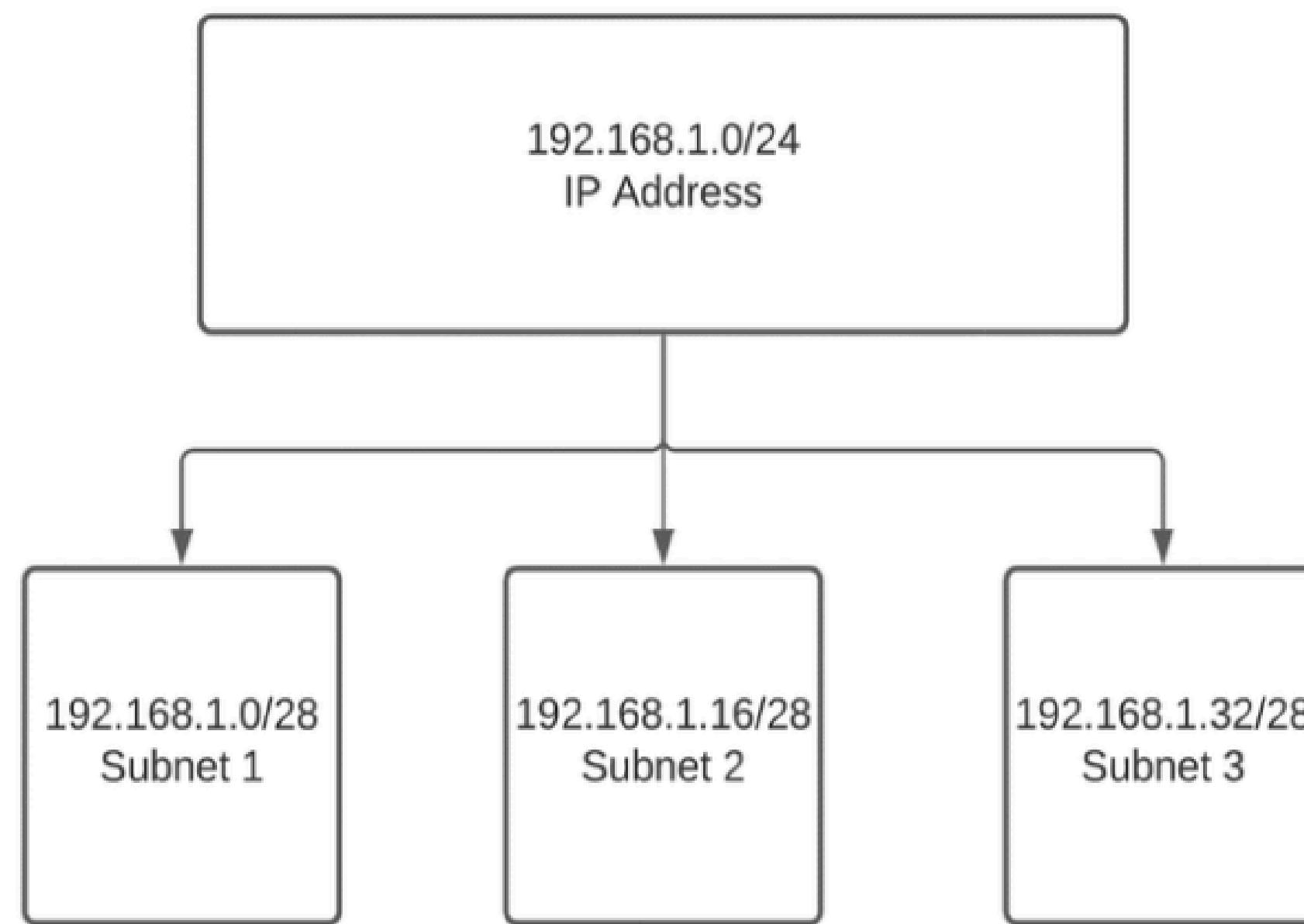
- IP Addressing(IPv4 and IPv6) – An IP address is a logical address assigned to a computing device that identifies that device on the network
- Subnetting – Subnetting is effectively taking an IP network and chopping it into smaller networks
- VLAN – VLANs provide layer 2 segmentation
- Static & Dynamic Routing – Routing tables, IGP, EGP





SUBNETTING

Network is Reduced
Into Smaller Subnets





SUBNETTING

Network	Subnet Mask	Effective Addresses	Effective AWS Addresses
192.168.1.0	255.255.255.0	253	
Submitted To /28 Subnets			
192.168.1.0	255.255.255.240	14	11
192.168.1.16	255.255.255.240	14	11
192.168.1.32	255.255.255.240	14	11
192.168.1.48	255.255.255.240	14	11
192.168.1.64	255.255.255.240	14	11
192.168.1.80	255.255.255.240	14	11
192.168.1.96	255.255.255.240	14	11
192.168.1.112	255.255.255.240	14	11
192.168.1.128	255.255.255.240	14	11
192.168.1.144	255.255.255.240	14	11
192.168.1.160	255.255.255.240	14	11
192.168.1.176	255.255.255.240	14	11
192.168.1.192	255.255.255.240	14	11
192.168.1.208	255.255.255.240	14	11
192.168.1.224	255.255.255.240	14	11
192.168.1.240	255.255.255.240	14	11



ROUTING TABLE

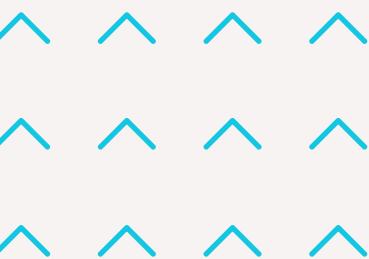
Routing Table Example	Target
172.16.1.0/24	Local
192.168.0.0/16	pcx-123456
192.168.1.0/24	pcx-654321
0.0.0.0/0	igw-123456

* most specific

CLOUD NETWORKING

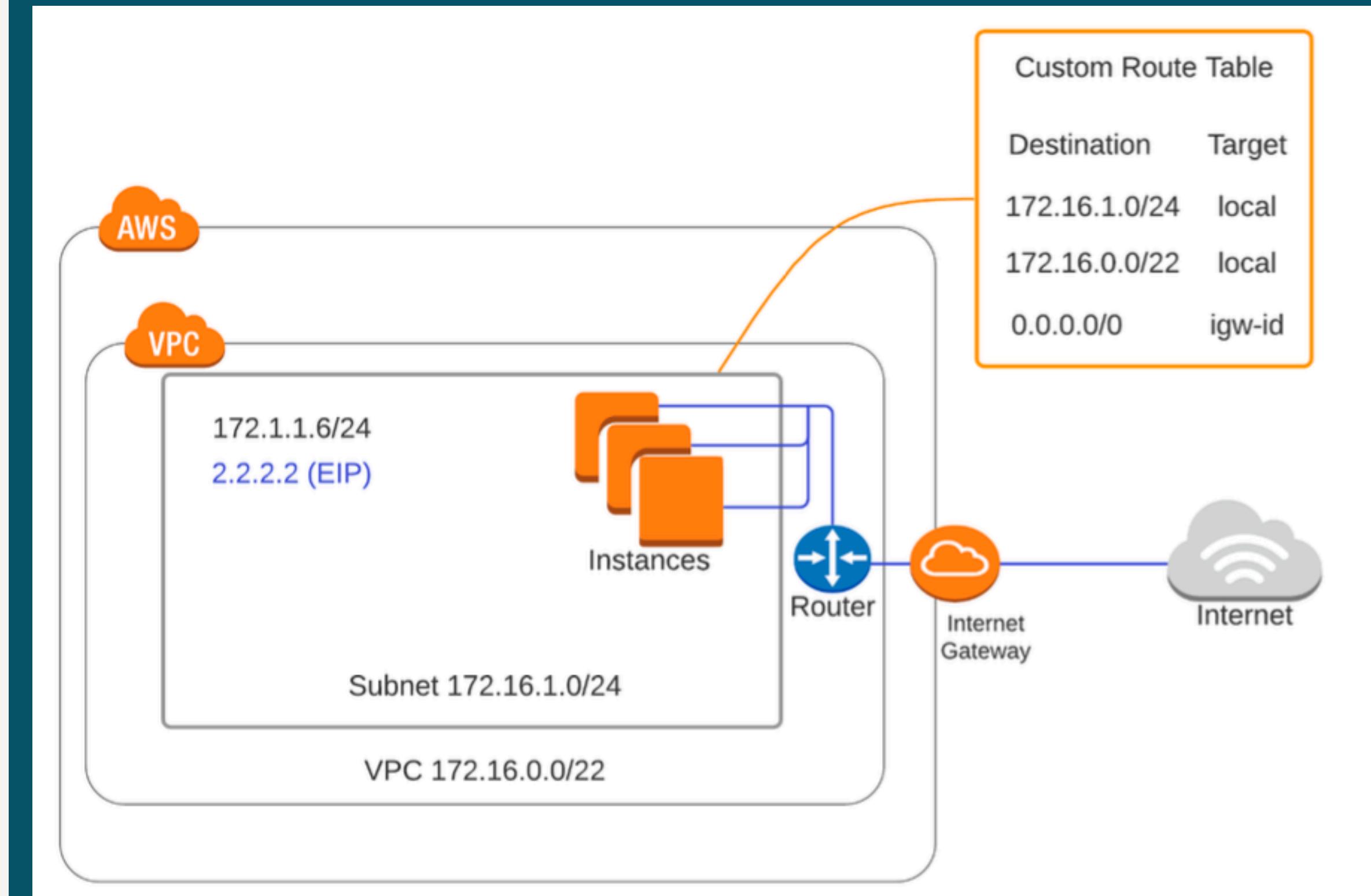
COMPONENTS

- VPC
- Internet Gateways
- NAT Gateways
- VPNs
- Subnets
- NACLs
- Security Groups
- DNS



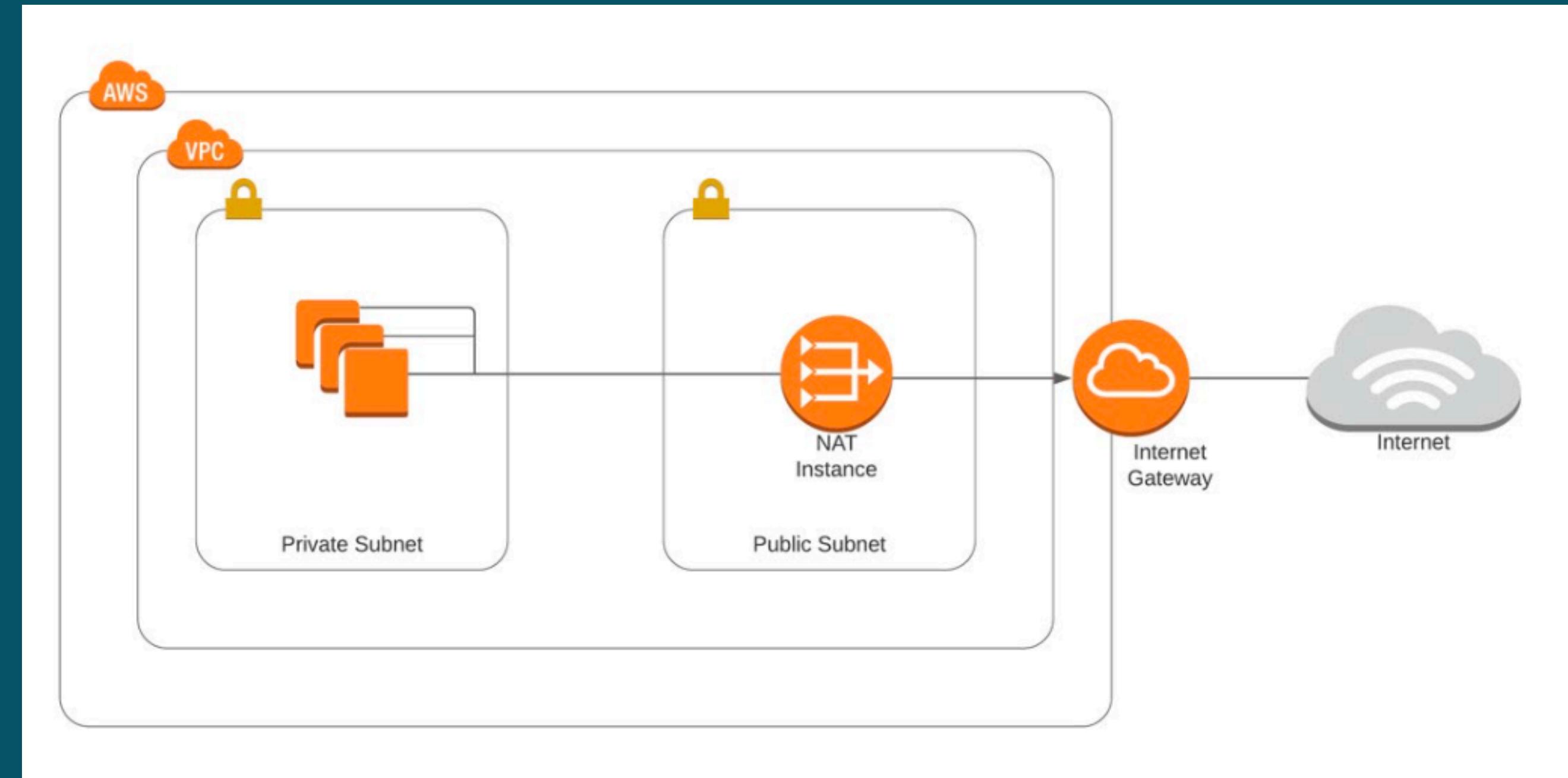


INTERNET GATEWAY



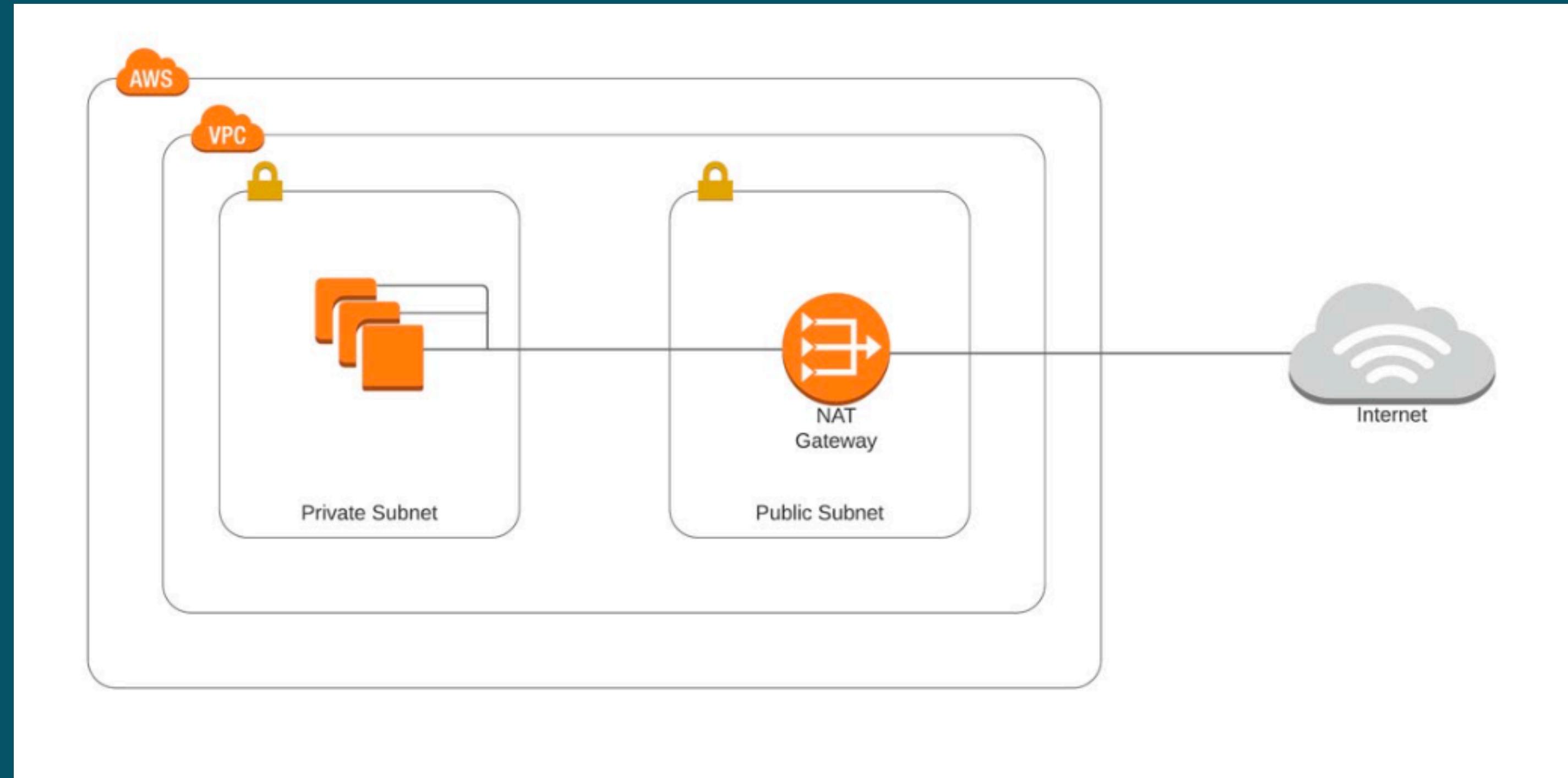


NAT INSTANCE

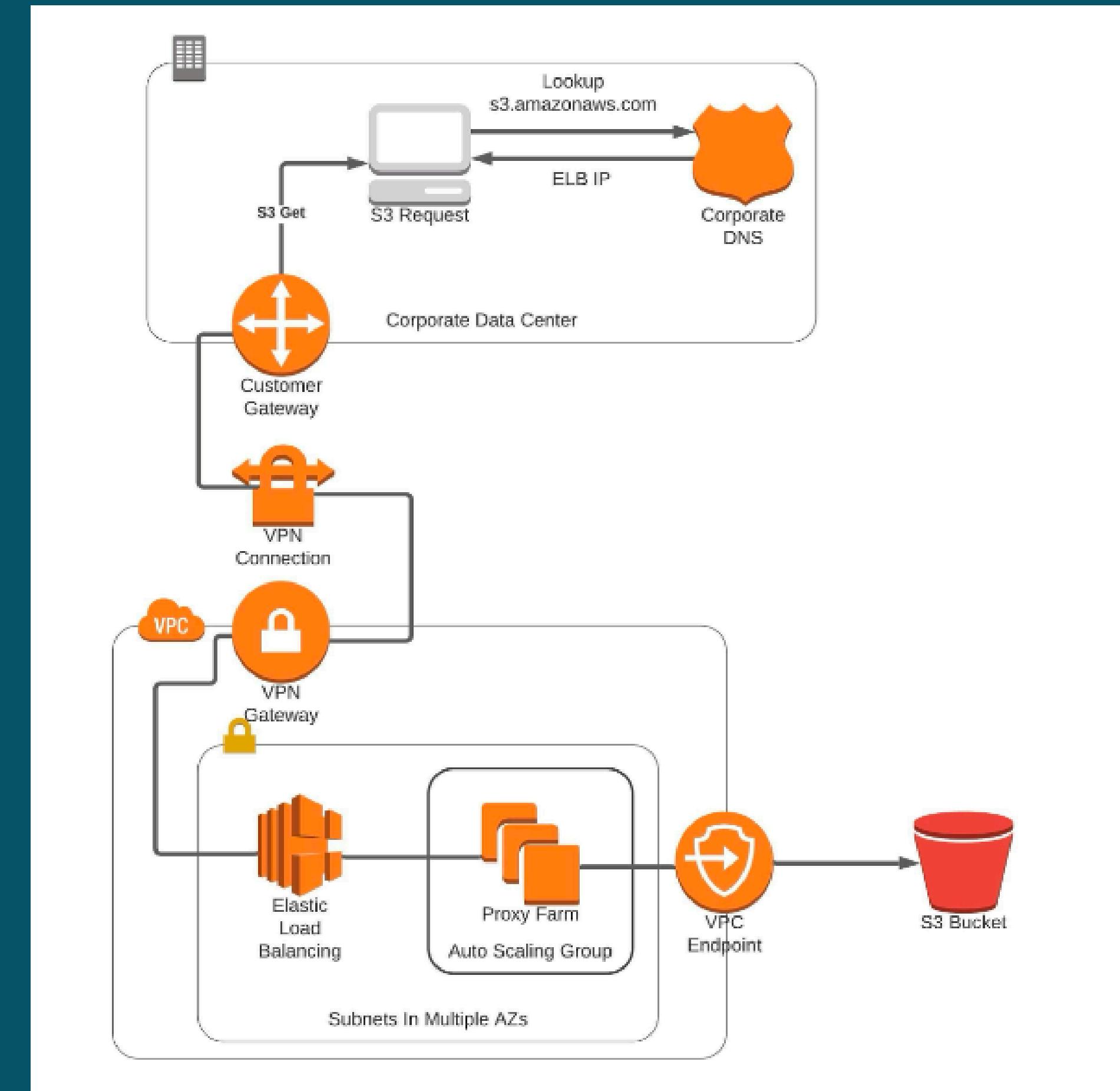




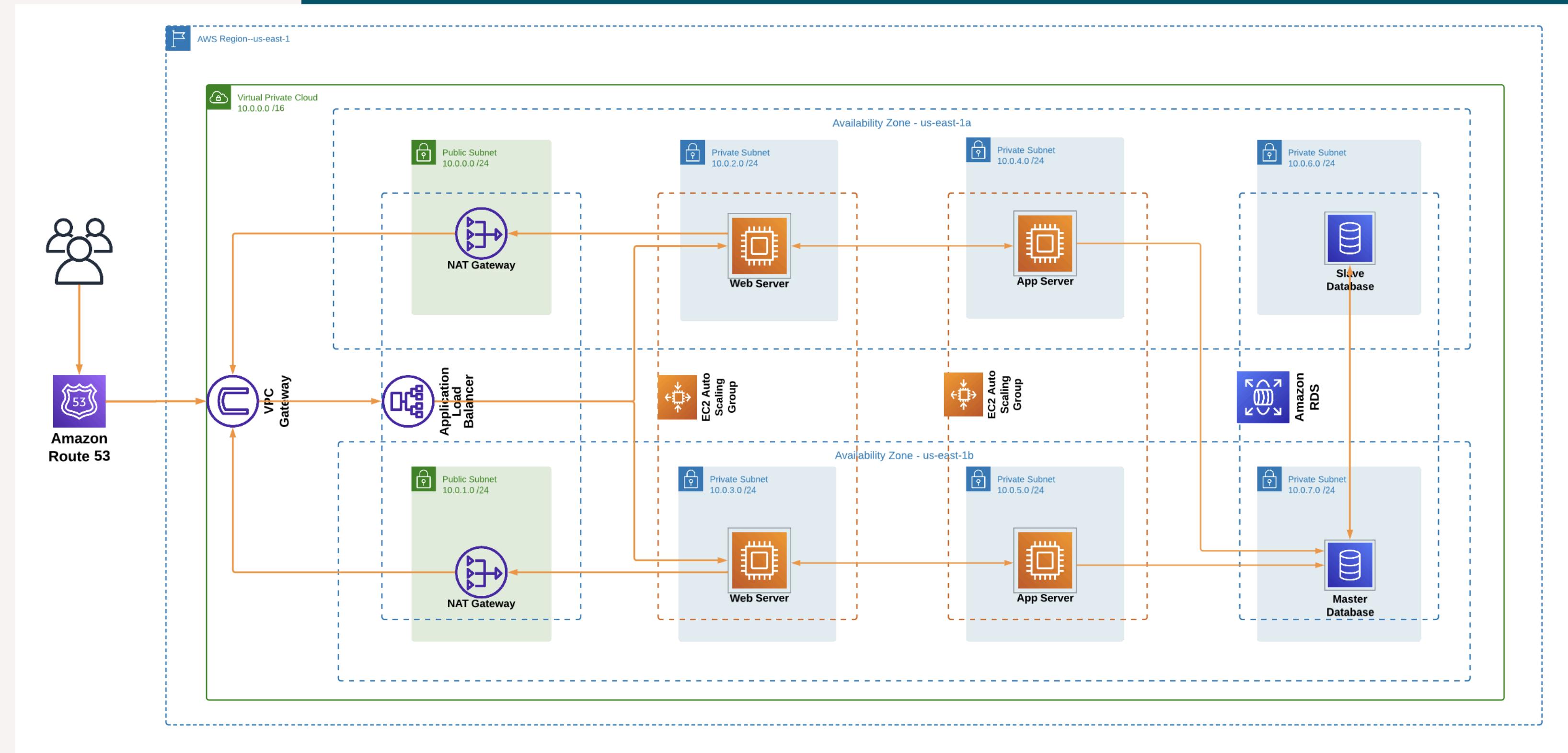
NAT GATEWAY



CUSTOMER/VPN GATEWAYS



CASE STUDY





CLOUD NETWORKING ASSIGNMENT

- Design a 3-tier architecture diagram with a routing table, subnets, Database, EC2 Instance and NAT Gateway explaining what each component does
- Write an article/blog about what happens when you search www.google.com on your browser

