# Networking in AWS

# Introduction

# Satyajit Samantaray

## Executive Summary:

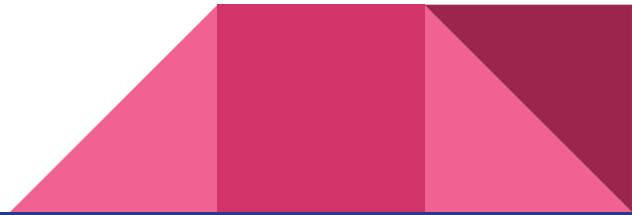
Satyajit Samantaray is a Cloud Architect at Searce with 10+ years of experience specialising in Networking,Security,Infra Modernisation and automation of infrastructure. He interacts and help the customers to build well architected, highly available, scalable solutions and also helps to build a smooth release process by leveraging CICD. In particular, Satyajit specializes in designing and implementing Landing Zones and expert in using aws security tools\services to enforce security policies and compliance requirements. He shares his knowledge by writing technical blogs and conducting training sessions on newly released services and features in the cloud with his peers and cloud Enthusiasts.

**Qualification:**
M.Tech (Systems Engineering)

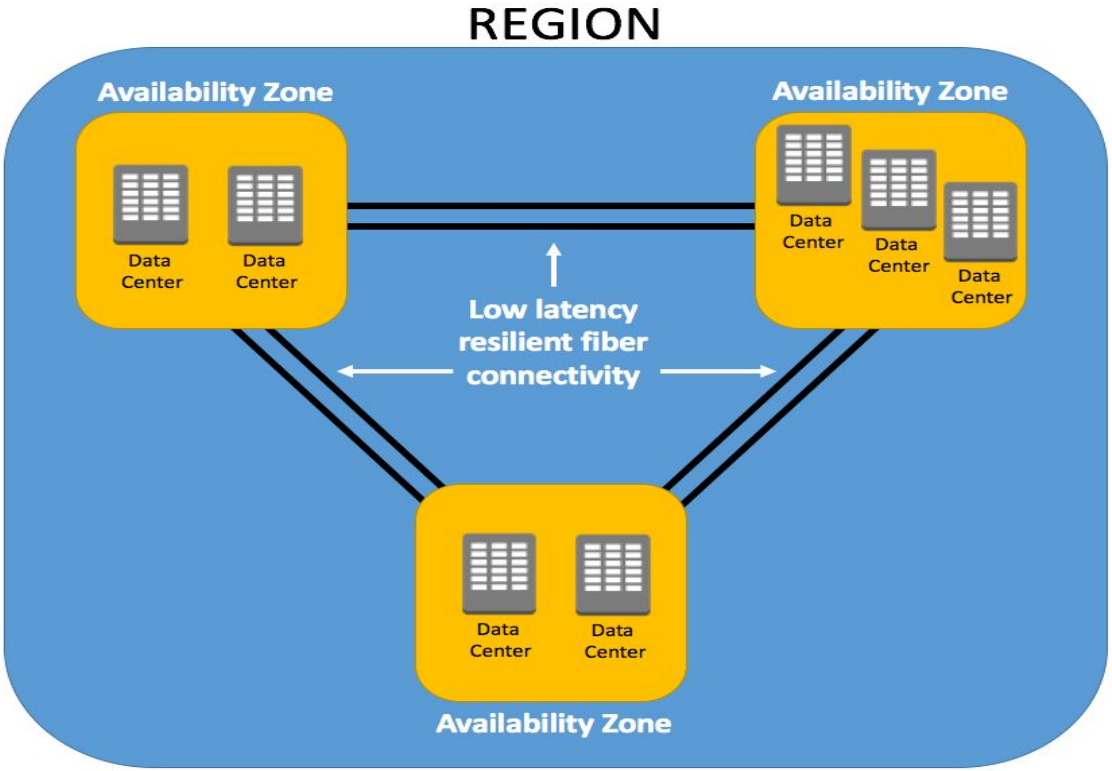
**Skillset:**
*AWS, GCP, Azure,Hadoop,Terraform, Docker, Kubernetes, Linux, Cloud Migrations,Shell Scripting*

# Agenda

1. What is Amazon Web Service & how Networking in AWS
2. Regions,Availability Zones,Datacenters
3. Networking in AWS & VPC, Subnets
4. IP Addresses and It’s Classes
5. What is Tenancy?
6. What is Subnets,Routes,Route Table,Internet Gateway
7. Nat Gateway
8. Public and Private Instance
9. VPC Peering
10. VPC Endpoint
11. VPN



# Region,Availability Zone,Data Center




# IP Address and It’s Classes

An IP address is an address having information about how to reach a specific host

1. Class A 2. Class B 3. Class C 4. Class D 5. Class E

**Class A**

IP addresses belonging to class A are assigned to the networks that contain a large number of hosts.The network ID is 8 bits long & The host ID is 24 bits long.

IP addresses belonging to class A ranges from 1.x.x.x – 126.x.x.x

**Class B**

IP address belonging to class B is assigned to networks that range from medium-sized to large-sized networks.

The network ID is 16 bits long & The host ID is 16 bits long.

IP addresses belonging to class B ranges from 128.0.x.x – 191.255.x.x.

## Class C

IP addresses belonging to class C are assigned to small-sized networks.The network ID is 24 bits long & The host ID is 8 bits long.

IP addresses belonging to class C range from 192.0.0.x – 223.255.255.x.

Classes D and E are reserved for multicast and experimental purposes respectively

# Private IP address

Every class of IP, (A, B & C) has some addresses reserved as Private IP addresses. These IPs can be used within a network, campus, company and are private to it. These addresses cannot be routed on the Internet, so packets containing these private addresses are dropped by the Routers.

| Class A IP Range | Subnet Mask |
|---|---|
| 10.0.0.0 – 10.255.255.255 | 255.0.0.0 |
| 172.16.0.0 – 172.31.255.255 | 255.240.0.0 |
| 192.168.0.0 – 192.168.255.255 | 255.255.0.0 |

# Tenancy

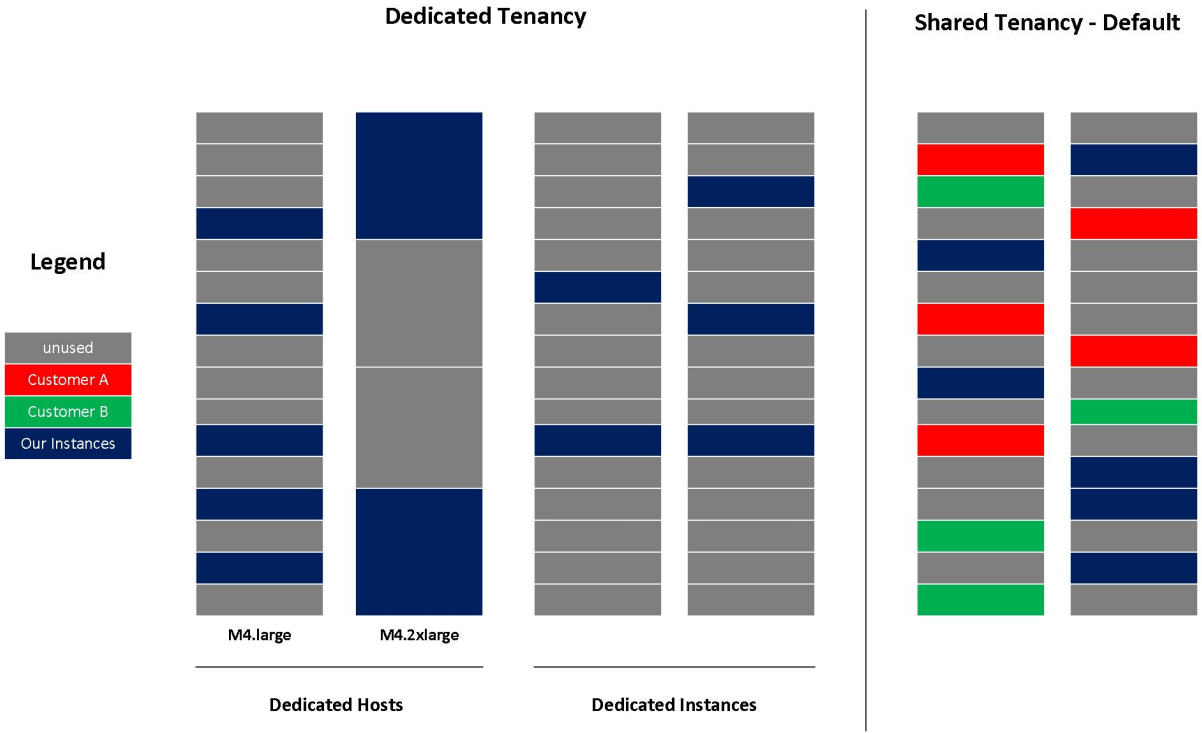
Tenancy defines how EC2 instances are distributed across physical hardware and affects pricing

**Default tenancy** is shared. You and other customers all have VM's on the same hypervisor, and the separation is programmatic.

**Dedicated tenancy** means you're the only customer running anything on that host. Which is more expensive.

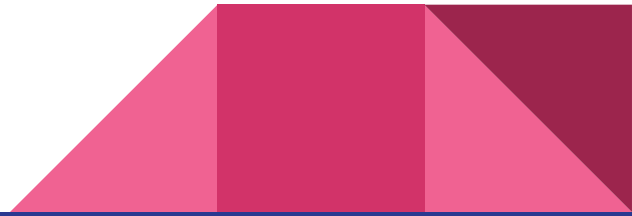
1. **Dedicated Instance**: When an instance is launched under a dedicated instance model, AWS starts your virtual machine inside “single-tenant hardware”. This means that all instances launched in this physical server will be from your account only.
1. **Dedicated Host**: When an instance is launched under a dedicated host model, AWS not only starts this instance inside single-tenant hardware but also gives the user more insight and visibility into the physical aspects of this host server.

# Tenancy


Dedicated Tenancy
Shared Tenancy - Default
Legend
unused
Customer A
Customer B
Our Instances
M4.large
M4.2xlarge
Dedicated Hosts
Dedicated Instances

# Q&A

# Thank you Very Much for joining



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