


## CLOUD CONCEPTS

### (AWS Core Services Overview VPC, SG & CloudFront)

- **Virtual Private Cloud** creates a network for us. It is just like physical networks created with full command and every control. For data security VPC provides multiple levels of security. Default VPC is provided by AWS which must not be deleted. VPC integrates with multiple services provided by Amazon like we saw in EC2.


A Virtual Private Network	• Use same concept as on premise network
Allow complete control of network configuration	• Ability to isolate resources inside VPC
Several layer of security control	• Ability to deny specific internet and internal traffic
Other AWS services deploy onto VPC	• Services inherent security built into network

- High availability is the number of Availability Zones i.e., number of physical data centers.
- One subnet is one Availability Zone (A physical Data center)
- Most of the applications are two to three tiers with public and private data. E.g., Your website is in public network and database is kept private.
- Security is provided by NAT Gateway




Builds upon high availability of AWS Regions and Availability Zones (AZ)

- Amazon VPC lives within a Region
- Multiple VPCs per account




Subnets

- Used to divide Amazon VPC
- Allows Amazon VPC to span multiple Azs




Route tables

- Control traffic going out of the subnets




Internet Gateway (IGW)

- Allows access to the Internet from Amazon VPC



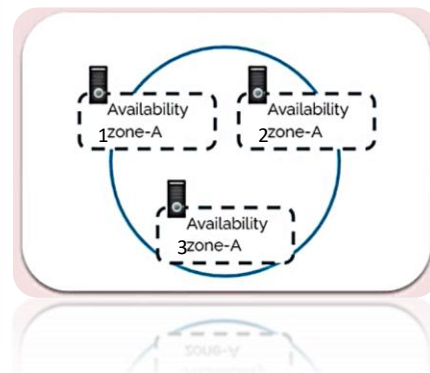
NAT Gateway

- Allows private subnet resources to access Internet



Network Access Control Lists (NACL)

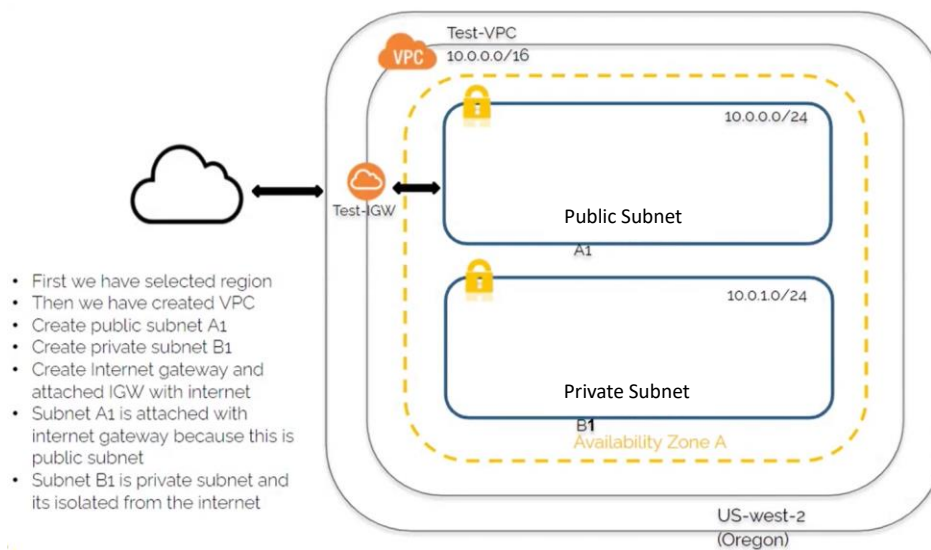
- Control access to subnets; stateless



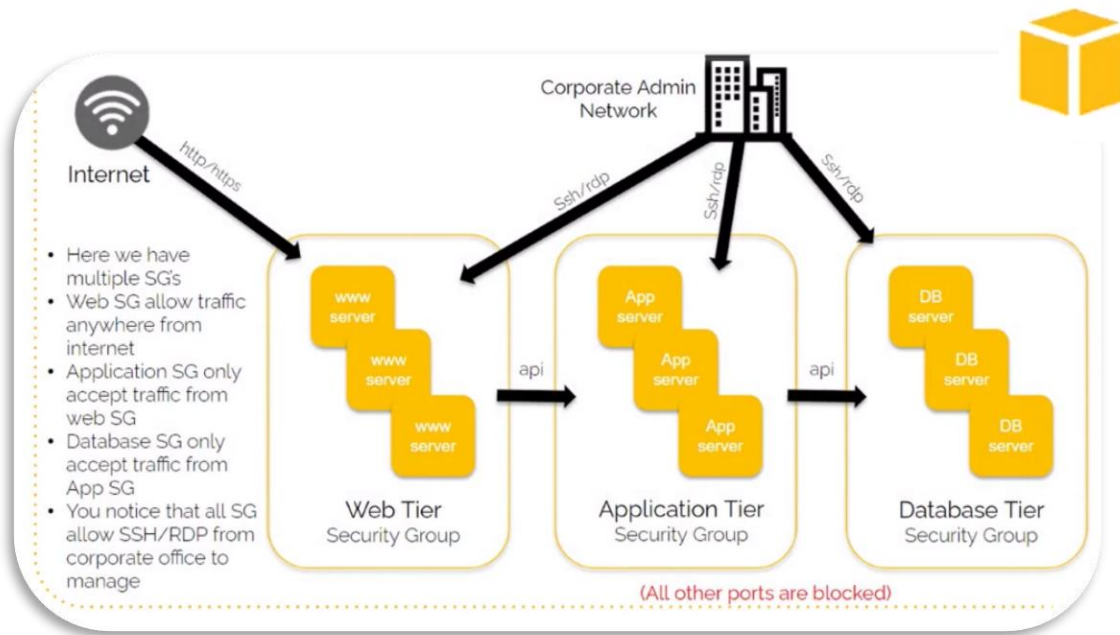
- ☐ VPC integrate will multiple AWS service
- ☐ For example with VPC we can protect our database same as on premises datacenter



- **Example Scenario:**



- **Security Groups:** Firewall at server level is a security group and control accessibility to instances.



- **Amazon CloudFront** is a web service that gives businesses and web application developers an easy and cost-effective way to distribute content with low latency and high data transfer speeds. CloudFront are managed at edge locations. Say you are in one region and your client is another region you will store the data of the client in the storage near to him for fast access. It provides fast access as well as cost-effective solutions.
- The two main components of AWS Cloud front are content delivery and dynamic content caching.

- Ping or trace route commands tells us about how hops away the destination is, hops are minimized.
- CDNs, caches or content at the edge

	Global, Growing Network
	Secure Content at the Edge
	Deep Integration with Key AWS Services
	High Performance
	Cost Effective
	Easy To Use

## USE CASES

	Static Asset Caching
	Live and On-Demand Video Streaming
	Security and DDoS Protection
	Dynamic and Customized Content
	API Acceleration
	Software Distribution