



# ***NETWORK STRUCTURE & CLOUD COMPUTING***

## ***CSYE6225-SPRING2018***

### **AWS VS MICROSOFT AZURE VS GCP**

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# FOLLOWING AWS SERVICES COMPARED WITH MICROSOFT AZURE AND GCP

- VPC
- Subnets
- Security Groups
- DB's
- DNS
- Deployment tools(Cli & cloud formation)

# VPC

- AWS - core networking services in AWS. AWS allows upto 5 vpcs,low latency upto 10 gb ,by having instance assigned to same placement group
- Azure – Vnet – provides services for building networks within azure, ability to create vnet to host virtual machine, virtual appliances and PaaS services
- GCP – cloud virtual network can contain upto 7000 virtual machine instance.

# SUBNETS

- AWS - configured to group related EC2 instances within a VPC. upto 200 subnets can be configured per VPC by default
- Azure - network resources can be grouped by subnet for organisation and security. Each subnet can be assigned a route table to define outgoing traffic flow
- GCP - Google do not constrain the private IP address ranges of subnets to the address space of the parent network. Default network routes allow connectivity to/from the internet to each subnet and between subnets. Additional routes can be added to override these defaults where required

# SECURITY GROUPS

- AWS - provide an additional layer of security at the instance level. Security Groups are assigned to ENIs and define the traffic permitted to reach the target instance. Each ENI can have up to 5 Security Groups
- Azure - Traffic can be permitted or denied at the NIC or subnet level via Network Security Group (NSGs) . Each region per subscription can have up to 400 NSGs
- GCP - Each network comes with a Firewall that can be configured with rules to control the traffic that is accepted by a resource or set of resources within the network

# DBS RELATIONS AND NOSQL

- RDB's- MySQL,postgres, mysql,oracle, and aurora
- DynamoDB
- Athena – direct s3 sql queries
- **Google** – BigTable, Cloud SQL, cloud spanner, cloud datastore
- **Azure** – SQL db's, sql server stretch db's, cosmos db's, azure db for mysql and postgres

# DNS

- AWS: Amazon's Route 53 -It is designed to give developers and businesses an extremely reliable and cost effective way to route end users to Internet applications by translating names like www.example.com into the numeric IP addresses like 192.0.2.1 that computers use to connect to each other
- Azure Azure DNS – Host, fast DNS queries, rely on Microsoft DNS servers
- GCP – Google DNS - Google Cloud DNS is a scalable, reliable and managed authoritative Domain Name System (DNS) service running on the same infrastructure as Google. It has low latency, high availability and is a cost-effective way to make your applications and services available to your users

# CLOUDFORMATION

- Json and yaml based. AWS managed services to deploy AWS resources
- GCP
  - Python/Yaml based. Google managed services to deploy GCP resource
- Azure
  - Json based. Azure managed services to deploy azure resources