MIcrosoft Azure :

1. **Resource Group**
2. **Storage Account**
3. **Virtual Machine**
4. **Virtual Network**
   Subnet
5. **Key Vault**
6. **Azure Spring Apps**
7. **Azure Postgress SQL Flexible server**
8. **Container Registry**
9. **ARM**
10. **Azure AI services**
    Congnitve Service

Azure Monitor:

1. Resource Group: -

3. Virtual Network:

Subnet
YAML File:-

LetsDevOps: YAML Pipeline Tutorial, Setting up CI/CD using YAML Pipeline, Multi Stage/Job Setup.
Azure Repo:-

Git Branching Strategy DevOps - Explained (k21academy.com)

Load-balancing:-

1. Azure Load Balancer
2. Azure Front Door
3. Azure Application Gateway
4. Azure Traffic Manager

Service	Global/Regional	Recommended traffic
Azure Front Door	Global	HTTP(S)
Azure Traffic Manager	Global	Non-HTTP(S)
Azure Application Gateway	Regional	HTTP(S)
Azure Load Balancer	Regional or Global	Non-HTTP(S)

AKV, **Azure Key Vault** to securely store access keys, token and it will manage keys, secrets, and certificates used in the Azure DevOps CI-CD pipeline

Front Door and CDN Profile:

Changing the Origin groups – change preprod to prod [Uk south], prod to preprod [UK west]

When uk south fails auto assign to uk west

Front Door and CDN profile

1.**Applicaiton gateway:** continuously monitor all the backend servers in a pool to ensure the incoming traffic is sent only **up and running servers**

what is health probe in azure application gateway

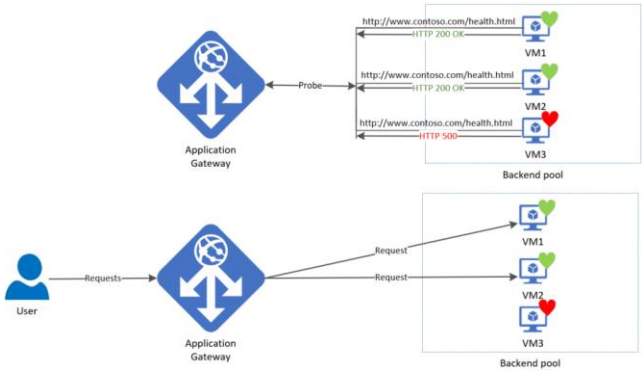
1. If prob health is **healthy,** incoming traffic will send to the up and running server
2. if prob health is **unhealthy,** automatically **stops** sending traffic to any server it considers **unhealthy**.

Configuration of application gateway

3. Configure **Frontend IP configurations** in publicly [Associated listeners" Public_Preprod"]
4. Configure **Listerner** "Public_Preprod" and port 443
5. Application gateway --> **Rules**[Public_Preprod] --> Backend targets -->Backend target UI and API --> Add multiple targets paths [Configure soap and rest internal and external]
6. Configure **Backend setting**: Create path request for UI and API, Econguring UI an API, Request HTTPs, Back end port, e.t.c
7. Configure **Backend pool:** Routing Spring app path request for UI [spring app UI url] and API [APIM], Concurring UI an API, Request HTTPs, Back end port, e.t.c
   APIM Routing the spring app api's Both rest Internal and External API's
   Soap are routing the from the static web apps
   A fully qualified domain name (FQDN)
8. **Health Probe : configuring the Api and UI**
9. Backend health : Monitoring both UI [Spring app UI url]and API [APIM] showing "healthy" Green where we configured in Backend pools
   continuously monitor all the backend servers in a pool to ensure the incoming traffic is sent only to the servers that are up and running

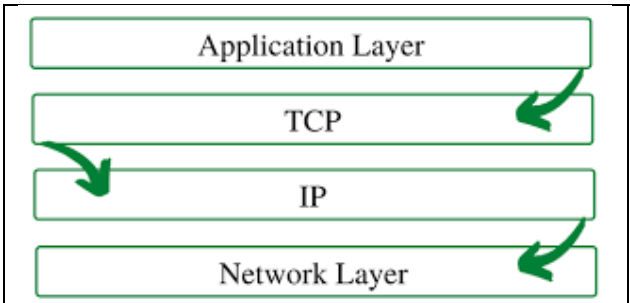
    a. **Healthy probes** receive an expected response code from the backend server.
    b. **Unhealthy** response doesn't match the expected response code or body.

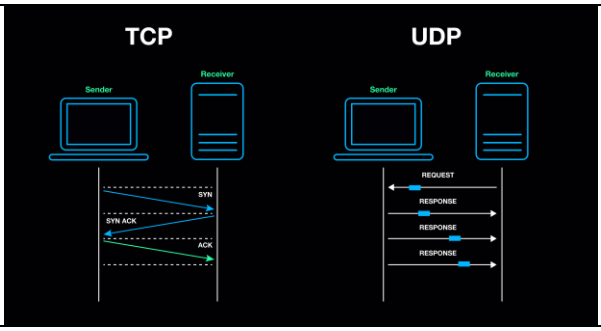
c. **Unknown** - Configuration



Transmission Control Protocol (TCP)/IP(Internet protocol)

User Datagram Protocol, or UDP -especially time-sensitive transmissions such as video playback or DNS lookups





IP(Internet protocol)

IPv4 - Old version – speed less	IPv6 - New version – speed more
32-bit decimal address	128-bit Hexa-decimal address
32-bit address space for 4.3 billion people	IPv6 offers 1,028 times more addresses than IPv4

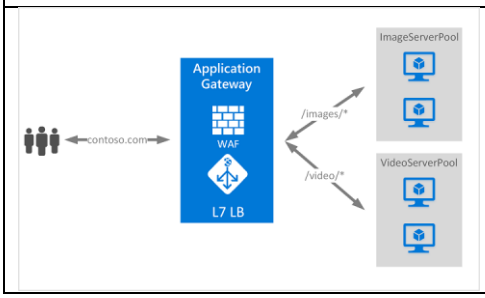
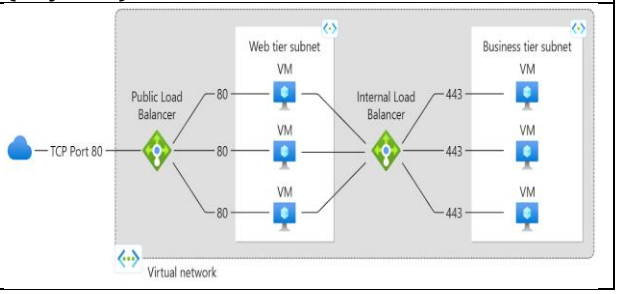
- IPv6 built-in Quality of Service (QoS).
- IPv6 has a built-in network security layer (IPsec).
- IPv6 eliminates Network Address Translation (NAT) and allows end-to-end

Difference between load balancer standard and gateway?

Azure LB operates at the network transport layer (**Layer 4**), focusing on distributing TCP and UDP traffic efficiently. I

Application Gateway operates at the application layer (**Layer 7**), providing more advanced routing, load balancing, and security features for web applications.

Applicaiton Gateway	Load Balancer

operates at the application layer (Layer 7),	LB operates at the network transport layer (Layer 4)
	

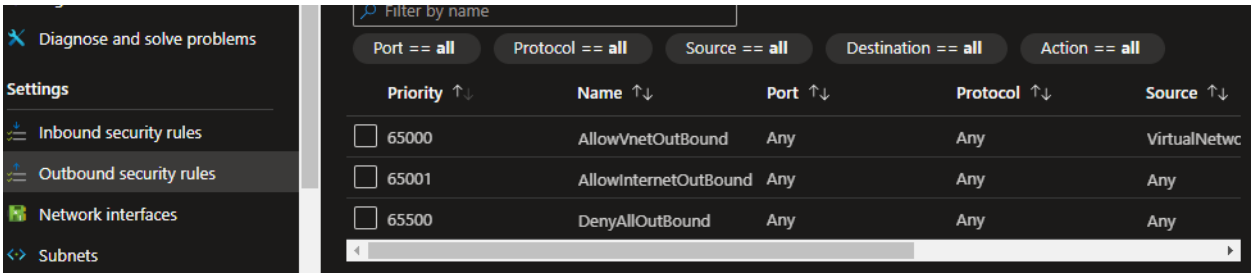
- **Frontend IP Addresses:** gateway supports one public or private IP address, linked to listeners after creation.
- **Listeners**: Listeners are incoming connection requests, accepting requests that match their configured protocol, port, hostname, and IP address. Ports:
- **Protocols**:TCP/IP
- **Application Gateway rules**
- **Backend Settings**
- **Backend Pools:** Backend pools route requests to backend servers that serve the requests.
- **Health Probes and Backend health** : monitors the health, automatically removing unhealthy instances. It continually monitors unhealthy instances, reintegrates them into the healthy pool once they become available and respond positively to health probes.

<u>Differences between an Internet Gateway and NAT Gateway are</u>:

Internet Gateway (Igw)	NAT
allows both inbound and outbound access to the internet	NAT Gateway only allows outbound access to the internet
We can connect to services outside or internal and external services	We can connect to services outside or external services

NSG and ASG:

Network Security Group is the Azure Resource that you will use to **enforce and control** the network traffic with, whereas **Application Security Group** is an object reference within a **Network Security Group**.



Azure Storage:

These are the objects

1. Azure **Container's** Storage
2. Azure **Blobs** Storage
3. Azure **Files** Storage
4. Azure **Queues** Storage
5. Azure **tables** Storage

Three access tiers for the **Blob Storage:**

- **The hot tier** is for the frequently needed data.
- **The cool tier** is for the less frequently needed data.
- **The cold tier** is for your archives.

5. File Storage - You can **store files** there that can be accessed from different **Virtual Machines**.
2.Table Storage: Cheaper, more scalable storage for your structured **data** and **big data** analysis

Azure AD:

Why Azure Active Directory?

Suppose you have a large organization with a lot of developers. Some Azure services must be available to all developers for them to perform their responsibilities. When the administrator gives them a unique username and password for each service, they can access services like Azure Cloud, Sonar-Cloud, or azure storage services. It might be challenging for administrators and employees to manage many user logins at once.

Azure Active Directory (AD) enters the scene in this situation. Administrators can easily manage numerous user logins with Azure AD. To access each service, administrators must provide a **single login and password** in Microsoft Azure. You can also manage the permissions on Azure cloud or sonar cloud, Office portal, Office 365 data with the organizations.

Who uses Active Directory?

1. IT administrators
2. Developers
3. Users
4. Online Service Subscribers

Types of AD

1. AAD
2. Hybrid AAD
3. AAD DS [Domain Services]

Difference Azure AD and Azure AD B2B

1. Creating new Azure AD B2B tenant
2. Link with excisting Azure AD B2B tenant to azure subscription

Azure Data Lake:

A no-limits data lake and Azure DA is **huge storage repository**, where we can store the data in object format

Data lake service provided by Microsoft service

2 parts of azure data lake

1. **Azure data analytics:** to run big data job in our data which is stored in azure data store
2. **Azure data store:** we can store any amount data or any size

Pay for only use:

- when **job not** running you no need to pay,
- when run time of job,we accumulate the cost

What is the difference between http and https ports?

- The HTTP transmits the data over port number 80.
- The HTTPS transmits the data over port number 443.
- HTTP will always be faster than HTTPS
- HTTP used to load webpages using hypertext links, servers to communicate by exchanging data following a Transmission Control Protocol (**TCP**) connection.

Tell Me About a Problem You Solved at Your Prior Job:

REALTIME ISSUES

1.Recent what you face major issue?

Founding 404 issue in pre, Controller to restcontroller in code, affected to while importing of swagger in missing operation and getting 404 issue

2.Fail over and Fail back,
Fail Over : config pro to prepr UI

Missing proUI url in host variable getting 403 forbidden issue,

Add proUI url in to the prepr host variable