

AZ-900

Cloud: is a platform to deliver you a services such as computing, networking, analytics & storage etc.

Characteristics:

* Scalability

* Agility

* Elasticity

* High availability

* fault tolerance

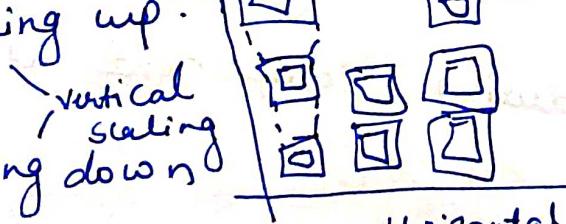
* Disaster recovery



→ Scalability: Increasing / decreasing the power of the resources is called Scalability.

size :- CPU, storage.

↑ scaling up.



↓ scaling down

Scaling IN ← → Scaling out

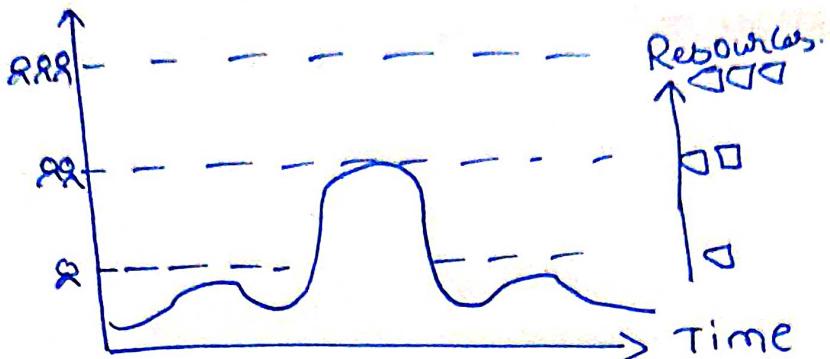
* Vertical scaling increasing / decreasing the size.

* Horizontal scaling increasing / decreasing the amount

addit. weight of work off

→ Elasticity: It is the ability to scale resources when needed (dynamically).

User.



→ if it is done automatically it is called automatic scaling.

→ Agility: It is the ability to allocate or deallocate (scale) resources quickly. It helps you to connect azure via portal, API, scripting.

→ Fault Tolerance: It is the ability of the system to remain up and running during component and service failure.

→ It will take copy of your data automatically.

→ Disaster Recovery: Taking 2 copies of your resources and setup DNS routing. (Replication)

• Also protect from physical disaster

- High Availability :- It is the measure of system uptime for user/services
- * High availability is ability to keep services running for very high uptime with less downtime.

$$\text{Availability} = \frac{\text{Uptime}}{\text{Uptime} + \text{downtime}}$$

availability	Year	Month	Day
99%. (2 ⁹)	3.65 (day)	7.31 (hrs)	14.4 min
99.9%. (3)	8.77 (hrs)	43.83 (min)	1.44 min
99.99%. (4)	52.60 (min)	4.38 (min)	8.64 (sec)

→ Azure active directory

- * It is the Microsoft multitenant cloud based directory and identity management service.
- * This helps to enable you to securely manage access to Azure services and resources of your users.
- * It also provides application management, authentication, device management, and hybrid identity.
- * Single sign-in options to Office 365, Salesforce, Dropbox etc.

★ Identity :- An object that can get authenticated it can be a user, password also applications to the owner.

★ Accounts :- An identity that has data associated with it.

★ Azure AD Account :- An identity created through Azure AD or another cloud service such as office 365 etc.

↳ Identity is stored in Azure AD and accessible to your organization cloud subscriptions.

★ Azure tenant :- It is a dedicated & trusted instance of Azure AD that's automatically created when your organization signs up for Azure cloud or Microsoft cloud services.

Azure AD directory :- Each Azure tenant has a dedicated & trusted Azure AD directory.

User subscription :- Mode of payment from which an Azure subscription is created / also used to pay for Azure services.

Azure AD uses REST API to give authorization over https.

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→ Azure AD is a managed service where you can manage the users, groups and policies using Azure AD

In Azure AD data is stored in form of object which can be anything as user, groups, devices, applications services. The object contains of username, passwords, user information, application information etc

Domain Controller or Active directory domain system (ADDS) is a controller that authenticates and is responsible for security requests. You can setup your own ADDS in azure virtual machine for your application

Azure AD editions:-

- 1) Free
- 2) Office 365 APPS
- 3) Premium P1
- 4) Premium P2

→ Azure AD defines users in three ways as.

1) cloud identity

2) Directory Synchronized identities

3) guest users

→ cloud identity these user exists only on azure AD

they are not synchronized with windows AD and office 365 AD, also called as cloud user.

→ Directory Synchronized identities these users exists in an on-premises active directory via Azure AD

connect brings these users to the azure.

→ There source is window server directory

→ guest user exists outside of azure ex AWS account etc

→ groups :- They are two types of groups

1) security group :- most common member & computer

access to share resources for group of users.

↳ It gives access to user to perform security task.

2) Office 365 :- These group provide collaboration opportunity by members access to a shared mailbox, calendar, files and [RPT, excel, word]

→ Azure AD Connect :-

It helps you to integrate/connect your on-premises directories with Azure active directory

* It provides a common identity for your users for

* It provides a common identity for your users for office 365, Azure, SaaS applications integration with

Azure AD

* password hash synchronization is a sign in method that synchronizes a hash of a user's on-premises AD password with the Azure AD.

* pass-through authentication is a sign in method that allows users to use same password on on-premises and in the cloud

→ Azure AD Connect Health

* It helps to monitor & gain access insights into AD FS

* It helps to monitor & gain insights into the synchronization between your on-premises AD DS &

* Also helps to monitor & gain insights into the synchronization that occurs between your on-premises AD DS &

Azure AD

→ Managing multiple Directory:-

- 1) Resource independence:- If one resource is change in an tenant then that change will not effect the other tenant.
- 2) Administrative independence:- The administration role assigned in a tenant have all the administration power but does not have administration power in other tenant.
- 3) Synchronization independence:- you can configure each Azure AD tenant independently to get data synchronized from on single instance. or we can use "tenant connector" to connect & synchronize data with one or more on-premises forest.

→ Azure AD B2B & B2C

- 1) Business to Business :- helps to share your services to other organizations while you being the service provider. (outlook)
- 2) Bussiness to customer :- helps to share your management solutions to customers identity access (capable to support millions to users & authentication) [gmail, yahoo]

→ Azure Policy

- 1) Browse policy definition :- It express what to evaluate and what actions to take [restrict vm to deploy to a public IP]
 - 2) Create initiative definition :- set of policy definition to help track the compliance state for a larger goal [branch office is desposed/complained]
 - 3) Scope initiative definition :- limit the scope of initiative definition to management group, subscription & resource groups
 - 4) View policy evaluation result : view the policy which is being applied and track the result
- * policy definition is a new set of rule that can be imported from github or can be written in json from scratch
- * creating a initiative definition can include one or more policies till 100 policies [requires planning]
- * once initiative definition created you can assign a scope which determines what resources/groups of resources the policy assignment enforced on.

→ When a condition is evaluated against your existing resources and found true then those resources are marked as non-complaint state.

→ RBAC Control.

- It provides fine grained access management of resources in Azure
- ↳ built on Azure Resource Manager (ARM)
 - ↳ Segregate duties within a team
 - ↳ grant only the amount of permissions to a user for a specific job.

Concepts

↳ Security principal:- giving permission to access resources [user, group, service principle & manage identity]

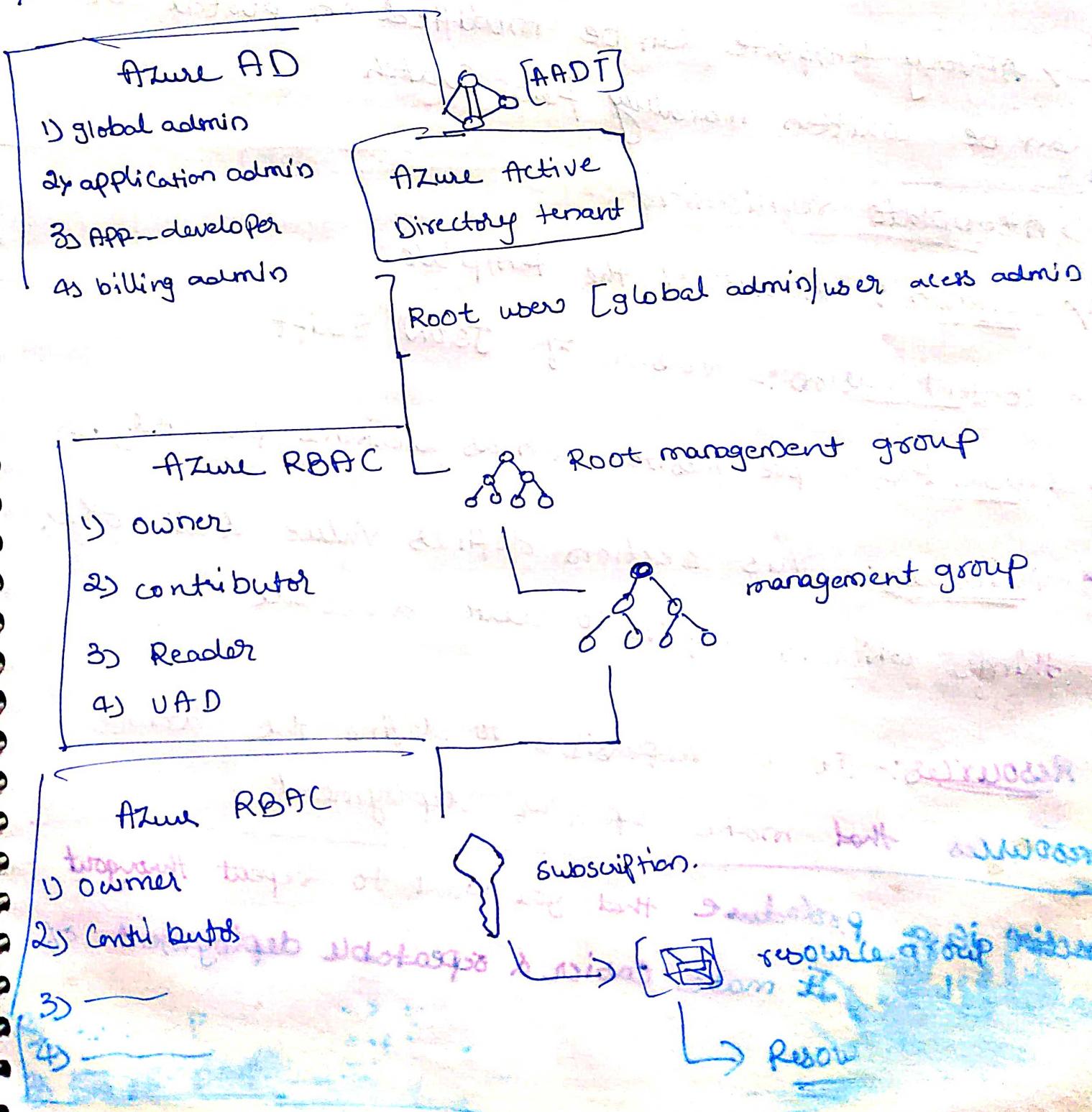
↳ Role definition:- specific task giving for the job [contributor, reader, owner etc]

↳ Scope: boundary for the level of access that is required [management group, resource group & resources]

↳ Assignment: attaching a role definition to a security principal in a particular scope.

→ A role assignment is a process of attaching a role definition to a user/group or a service principle in a managed identity at a particular scope of purpose of granting access

→ RBAC authentication



- ARM template is a JSON script that defines one or more resources to deploy into a resource group
- The template can be used to deploy resources consistently & repeatedly / deploy faster & multiple resources
- Every template can be modified in portal or can be written manually from scratch.

Template requirement

- 1) schema :- source of the template
- 2) content version :- version of JSON script
- 3) parameters :- prerequisite such as username, password, DN.
- 4) variables :- This section defines value of all other things which is required to create a resource
- 5) Resources :- It is responsible to define the azure resources that make up your deployment

Action is a procedure that you want to repeat throughout the template.

It makes easier & repeatable deployment of your cloud application.

- Template output is a definition of any information that you'd like to receive such as IP address of an VM.
- Azure private link provide private connectivity to azure platform as a service from virtual network.
- All the traffic from the Azure services / resources can be directed to other VNET or internet can be done by using Azure private endpoint.

Azure load Balancer:-

- The load balancer distribute inbound traffic to backend resources using some algorithm.
- balancing rules :- determines how traffic is distributed in backend resources.
- Backend resources :-
- Health probe :- It ensures that the resources in the backend is healthy.
- Load balancer uses 5 tuple hash algorithm to distribute traffic
 - 1 source IP
 - 2 dest IP
 - 3 source port
 - 4 destination port
 - 5 protocol.

- health probe allow the load balancer to monitor the status of an app
- health probe dynamically adds or removes the VMs when not responding. By default it checks every 15 seconds.
- Application Gateway:
 - an application gateway manages the request that client applications can send to a web app host.
 - an application gateway routes the traffic to a pool of web servers based on the URL of a request.
 - It is application / 7th layer routing.
 - pool of web servers can be Azure VM, VMSS, App Service and even on-premises services.
- Application gateway routing hub
 - Path based routing [contoso.image1.com] / [video.com]
 - multi-site routing [contoso.contact.com]

→ Azure traffic manager

- ★ allows you to control distribution of user traffic to service endpoints around the world
- ★ uses DNS to direct end user requests to the most appropriate endpoint
- ★ selects an endpoint based on the configuration traffic routing methods

→ Benefits

- ★ improve availability of critical application / provide automatic failover
- ★ Improve responsiveness & high performance apps. without downtime.
- ★ combine on-premises & cloud based apps.
- ★ for large, complex traffic deployments,

→ Traffic manager routing:

- 1) performance based routing [less latency]
- 2) geographic based routing [nearest location]
- 3) priority based routing [specific priority of app]
- 4) weighted base routing [even weight distribution endpoint]
- 5) multivalue for IP & weight what's available

→ Azure Storage:-

A service that can be used to store files, messages, tables, & other types of information.

- ★ Durable, Scalable, Secure, managed & accessible
- ★ mange data with multiple storage account

→ Categorize of Azure Storage:

- ★ storage for virtual machine-disks / file shares
- ★ unstructured data - Blobs & data lake stores
- ★ structured data - Tables, Cosmos DB & Azure SQL DB
- Standard storage backend by magnetic drives
- [HDD] is lowest cost
- premium storage backed by chip on card [SSD]
- faster and improve performance

→ Azure Storage Services

- Azure Containers:- stored in Blob [binary large object]
↳ unstructured data type [text & binary]
- Azure File Sharing:- serverless SMB file storage
↳ using VM also create a virtual disk in the storage

→ Azure Table storage: It is schemaless storage of structured data. It is part of Azure Cosmos DB & NoSQL store for schemaless storage of structured data.

→ Azure Queue: A messaging store for reliable messaging between application components. Used for mailing & can be upto 64kb of message stored.

→ storage account kinds:

	support service	support tier	replications
1) Blob Storage	Blob [block & append]	standard.	LRS, GRS, RA-GRS
2) Storage (general purpose V1)	Blob, file, queue, Table, Disk.	standard / premium.	LRS, GRS, RA-GRS
3) storage V2 (gp v2)	Blob, file, queue, Table, Disk.	standard / premium.	LRS, GRS, RA-GRS, ZRS & RA-ZRS
4) Block blob storage	Blob (block & append) blob only	premium	LRS, ZRS (limited regions)
5) file Storage	file only [onedrive]	premium	LRS, ZRS (multiple regions)

→ Each storage account is encrypted using SSE (Storage service encryption).

→ Replications

- ↳ LRS - 3 copies within same data center in primary region
- ↳ ZRS - 3 copies across 2-3 data center in same primary region, synchronous replication.
- ↳ GRS - 3 copies each in region pair in different data center
- ↳ RA - GRS - 3 copies within primary region & replicated with read-access to the region pair
- ↳ GZRS - 3 copies across 3 availability zones in a ~~same~~ region, primary./Pair of regions.
- ↳ RA - GZRS - 3 copies across different 3 availability Zone in 3 region pair with only read-access.

A account can have unlimited containers & a container

can have unlimited blobs

[Container]

→ Blob storage

- 1) Block blob (default) - useful for storing text or binary files
- 2) page blob - more efficient for frequent read/write operation / faster transfer speed (upto 8 TB)
- 3) Append blob - useful for logging scenario.
- 4) access tier [hot, cool, archive].

→ Blob upload tools

- 1) AZCopy (using CLI / powershell)
- 2) Azure Storage Data movement library [Dotnet lib]
- 3) Azure data factory
- 4) blobfuse [on-premises to cloud for large storage]
- 5) Azure Databox [to request SSD from Microsoft]
- 6) Azure export/import into drives.

→ Storage security

- 1) SES (storage encryption service)
- 2) authentication with AD & RBAC
- 3) SSL, HTTPS & SMB 3.0
- 4) disk encryption
- 5) shared key or access key
- 6) anonymous access

- Azure files are true directory objects while azure blobs are flat namespace
- *→ Azure files are accessed through file names & Azure blob is accessed through Container
- *→ Azure file provide shared access to the across the azure services whereas the disk are exclusive to a single virtual machine.
- Azure files :- offers fully managed file shares in the cloud that are accessible via the industry specific standard SMB protocol [server message block]
- *→ Azure snapshot is a read only access to the state of any disk/drive inside azure. It is like taking a screenshot of any webpage to see the content of webpage but cannot edit the screenshot.
- Azure file sync :- used to share the file share across the multiple users/branches. It has centralize file sync in Azure file sync
 - ↳ Backup & disaster recovery
 - ↳ file archiving

→ file sync steps

- ① Deploy the storage sync service resource
- ② prepare windows server.
- ③ install the file sync agent
- ④ Register the windows server

→ Data Box

- *→ easy, secure, fast large volume data transfer,
- *→ offline usage:- one time migration, incremental transfers, periodic updates.
- *→ online usage:- cloud archival, data aggregation, integration with on-premises workloads, pre-process data [edge], inference machine learning [edge]

→ Bastion host provide secure & seamless connectivity using rdp or ssh connectivity to your virtual Machine in virtual network

→ using bastion to protect every vm in virtual network from exposing rdp or ssh port to the outside world

- Unplanned Hardware Maintenance:- It occurs when the Azure platform predicts that the Hardware or any platform component associated w to your physical machine is about to fail.
- * When the platform predicts the failure it will issue an unplanned hardware maintenance event.
- * Azure uses live migration process to keep your hardware up & running everytime.
- Unexpected Downtime:- It occurs when a virtual machine fails unexpectedly. Then azure platform automatically migrates to a healthy physical machine in the same datacenter. Automatic migrates does the healing process.
- Planned Maintenance:- These are events which are periodic updates made to Azure platform from Microsoft.

- An availability set is a group of identical VM's running on the same availability region.
- you combine a load balancer to an availability set to evenly distribute traffic to VM.
- use managed disk attached to availability set
- two or more instances in availability sets = 99.95%.

Service level agreement.

- fault domain
 - *) fault domain defines the group of virtual machines that shares a common power source & network switch
 - *) each and every fault domain contains some racks and each racks contains VM.
 - *) If there is a failure in the fault domain then all the resources in fault domain becomes unavailable
 - *) you should place your VMs such a way that each fault domain gets only one web server / VM, one database server etc.

→ Update Domain :-

- * VM gets update domains automatically once they are put inside availability set
- * All VM's within the update domain will reboot together
- * update domain used for patching of VM & only one update domain would be updated at time.
- you can have upto 20 update domains and 3 fault domain under a availability set

→ Availability Zone :-

- * unique undisclosed physical location in an region
- * includes datacenter with independent power, cooling & networking.
- * protects datacenter failover & combines fault domain / update domain
- * provides 99.99% SLA

→ Scale Set :-

- * deploy set of identical VM, no pre provisioning VM required.
- * As demand goes up VM's are added. the process is instant, automatic or combined.

→ VM extensions are used to opt for certain service in your VM such as antivirus protection or custom script deployment.

→ Custom Script Extension:- It can be used to automatically launch or deploy the Azure resources. It also helps to execute VM customization task post configuration.

* Extensions have 90 mins to run, protect/encrypt sensitive information.

→ You can install CSE from Azure portal by accessing Azure VM extension blade.

→ It requires PowerShell cmdlets file to execute the script. For PowerShell we use "Set-AzVmCustomScriptExtension".

→ Desired State Configuration:- DSC is a management platform in Windows PowerShell that enable deploying and managing configuration data for Software Services and managing the environment in which these services run.

→ A DSC is basically used for creating a configuration script to be deployed. It consists of

- * Configuration block
- * Node block
- * Resource description block.

→ The windows powershell comes with built in set of configuration resources for example, file resource, log resource etc

→ App Service plan:

→ It defines a set of compute resources for a web app to run. It determines performance, price & feature.

→ In simple terms a app service plan is a scale unit for a web app or any app service.

→ App service plan Scaling

- * free tier:- upto 10 apps, 1Gb disk space, No-autoscale, NO deployment slot & only 1 instances at once.
- * shared tier:- upto 100 apps, 1Gb disk space, NO-autoscale, 2 deployment slot & only 1 instances at once

- Basic tier :- for dev/test, unlimited apps service, 10GB disk space, no-auto scale & deployment slots & 3 instances at once
- Standard tier :- for production, unlimited apps, 50GB space, autoscalable, 5-deployment slots & upto 10 instances of VM at once
- Premium tier :- for more features, unlimited apps, 250GB space, autoscalable, 20-deployment slots & upto 30 instances at once
- Isolated tier :- for company, unlimited apps, 1TB space autoscalable, 20-deployment slots & upto 100 instances at once.

- App Service Plan Scaling :-
 - 1) Scale up
 - 2) Scale outboth will have manual & custom scaling option.
- AutoScale setting are grouped in profiles
- most languages support lot of logging agents/jetty .log files with no

App Service

* It includes webapps, API apps, mobile apps & function apps.
* It includes webapps, API apps, mobile apps & function apps.
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* It includes webapps, API apps, mobile apps & function apps.

- fully managed environments
 - paaS offering for building & deploying highly available cloud apps for web & mobile
 - platform handles infrastructure so developers focus on core web app services
 - developer productivity using .Net, .Net Core, Java, Python & a host of others.
 - provides enterprise grade security & compliance
 - It also can be done using CI/CD pipeline & GitHub.

continuous deployment

- * work in single source control
 - * whenever code updates are pushed to source control, then the website / web apps will automatically pick up updates
 - * a continuous deployment workflow publishes the most recent updates from a project
 - * portal / devops portal to continuous deployment from or Azure devops.

→ Deployment slots:- are the waiting area or the slot which has to be deployed on the project can be automatically deployed from deployment slots.

→ It has zero downtime, And ~~deplo~~ auto-deploy is
only & enable only on Linux apps

- you need a standard web app tier for backup & restore manually or automatically.

→ Application insights :- It will monitor your live applications.

- AppInsights: It helps to monitor your live applications. It will automatically detect performance anomalies and include powerful analytics tools to diagnose issues and understand what user do in your app.
- we can use App Insights for app hosted on-premises or cloud or hybrid.

- or cloud or hybrid.
- ★ request rates, response time & failure alert
- ★ dependencies rates responsive time & failure rates
- ★ page view & local performance

→ Containers: It is an isolated place which typically provide lightweight isolation from the host and other containers but doesn't provide as strong a security boundary as a virtual machine.

* It runs on user mode portion of an operating system and can be tailored to contain just the needed services for your apps, using fewer system resources.

* You can deploy single container using Docker via CLI or deploy multiple container by an orchestrator such as Azure Kubernetes Service.

* Use Azure Disk for local storage for single node or Azure Share (SMB share) for storage shared by multiple nodes or servers.

* If a single node in a cluster gets failed then within no-time less impacting your app the node is switched in other container inside the cluster.

→ Azure Container instances

- ★) Pass service.
- ★) fast startup time
- ★) public IP connectivity & DNS name
- ★) Hyper visor level security.
- ★) custom size.
- ★) persistent storage
- ★) Linux and windows container
- ★) co-scheduled groups.
- ★) VNET deployment

→ Container group:- It is a collection of containers that gets scheduled on the same host machines.

★) The containers in a group share lifecycle, local network & storage volume & resources.

→ A Docker is a platform which allow developers to host application in an container

→ A container is a standalone package that contains everything that is needed

→ Azure Kubernetes Services :- It is an container orchestration platform for the docker containers that manages container based applications and their associated networks & storage component.

- *→ manages health monitoring & maintenance.
- *→ performs simple cluster scaling.
- *→ enable master node to be fully managed by microsoft.
- *→ you're responsible only for managing the agent node.

→ AKS terminology

1) pool :- group of identical nodes with configuration.

2) Nodes :- individual VM running containerized APPS.

3) pods :- single instances of an app. a pod can

contain multiple containers.

4) Deployment :- one or more identical pods managed

by Kubernetes

by YAML file describing a deployment

5) Manifest :- YAML file describing a deployment

6) Kubelet :- It is a Kubernetes agent that processes

the orchestration requests from cluster master. to check if the container

nodes have proxy enabled.

- Kubernetes on Azure also has its own
 - * Kubernetes network
 - * Kubernetes storage
 - * Kubernetes security & compliances
 - * AKS scaling.
- Kubernetes has build in auto scalers , cluster autoscaler scales based on compute resources.
- Virtual Kubelet :- It is an open source Kubernetes kubelet implementation.
 - * The virtual kubelet register itself as a node and allow developers to deploy pods and containers with their own APIs . It supports by ecosystem of provider such as Azure, AWS etc
- Azure Backup:
 - * Azure backup based service used to backup & restores data in microsoft cloud
 - * automatic store management
 - * multiple storage option
 - * unlimited data storage
 - * Data encryption
 - * Application Consistent backup

- Azure recovery service vault is used to backup and restore the data from Azure services or from on-prem services
- ★ you can create upto 25 recovery service vault per region.
- ★ It also has identity management service with an private endpoint connection for backup & site recovery
- To backup & recover data from Azure to on-prem devices
 - 1) download the recovery service agent file
 - 2) download the vault credentials to validate the services to be backed-up
 - 3) after that you can schedule a backup in days week or monthly. then there also the retention period of the data to be backed-up
 - 4) choose file and folder via onlin or by using microsoft Azure Data box or by azure import-export

- VM Data Protection :-
 - * Managed snapshot provide quick & simple option for backing up VMs that use managed disks
 - * Azure Backup supports application-consistent backups for both windows & linux VM's
 - * Azure Site Recovery protects your VM from a major disaster scenario when region experiences an outage.

- Implementation of VM Backup
 - ① use a recovery service vault in the region where you are performing your VM backups & choose replication by default GRS is chosen
 - ② Take Snapshot (recovery points) of your data at defined intervals. These snapshots are stored in recovery service vault
 - ③ for Backup extension to work, the AZ VM agent must be installed on the AZ VM
- restoring your data is simple visit recovery management setting to recover the data

→ Data protection manager (DPM) is a tool to backup your business / systems centered related data for Business continuity and Data recovery [BCDR]

→ DPM is an enterprise solution the configures facilities and manages backup and recovery of enterprise machines and data. its part of system center suite

→ Microsoft Azure Backup server [MABS] is a product sever used to backup on-prem physical servers, VMs, and apps running on them

→ Soft delete is an option in azure where blob objects recovery when it is modified or deleted by an app.

→ soft delete enables you to save and recover your data when blob or blob snapshot are deleted.

→ It retained for 14 days addition state to save workloads running on

→ Azure site Recovery replicates workloads running on physical and vm from a primary site to a secondary site location.

→ Azure Monitor:- It is azure provided collecting and analyzing data to determine the performance, health & availability of your business app
*) It also help you increase uptime by proactively notifying you of critical issues.

→ fundamental tool for azure monitor.

↳ metric explorer

↳ log analytics.

↳ alert & action notification.

→ Metrics:- are the numerical value that describe some aspect of a system at a point in time. They are lightweight and capable of supporting near real time scenario.

→ Log:- contains different kinds of data organised into records with different sets of properties for each type.

→ Azure Advisor:- It is personalized cloud consultant that helps you to follow the best practices to optimize your azure deployments.

*) It analyses your resource configuration and usage telemetry and recommend solution to make your resource healthy and cost effective, with high available & performance.

Activity Log: send data to Log Analytics for advanced search & alerts. stores information to Event Hub, storage account to storage account analyse data with Power BI
It shows all the activity in any resource group, subscription or any tenant.

→ Alerts proactively notify you when important conditions are found in your monitoring data

→ you can create alert rule to be notify before any failures for action group for any resource group or resources.

→ log analytics: A service that helps you collect and analyse data generated by resources in your cloud and on-prem.

environment

environment
• write log queries and interactively analyse their result
• data from window

→ write log queries and interactively analyse the generated data from windows, sources

→ connector sources → future storage.

Linux, SCOM & Frame

yellowish brown stem of mortise

monophyly of Alstroemeriaceae, Sibthoff's Flora 610

- Network Watcher :- It provides tools to monitor, diagnose, view metric and enable or disable logs
- It is a regional service. It provides scenario level monitoring so you can diagnose problems at any end to end network level view
- It also provides visual representation of your network using element
- Connection Monitor is a feature of network watcher that can monitor connection between an end point and an VM. It does regular monitoring and informs you about latency and network topology
- The network watcher performs few task to verify the monitoring such as
 - ① IP flow
 - ② Next hop
 - ③ effective security rules
 - ④ VPN trouble shoot
 - ⑤ packet capture
 - ⑥ connection trouble shoot
- Network watcher also has log feature for ingress & egress traffic.

DNS Records

→ A record :- used to convert / map FQDN to an IPv4 address

→ AAAA record :- used to convert / map FQDN to an IPv6

→ AAAA record :- used to convert / map FQDN to an IPv6 address

→ ANAME record :- This is used to allow you to point the root of your domain to a hostname or FQDN

→ CNAME (Canonical name) :- an record that points to another domain

or Subdomain, but never an IP address

→ SOA (Start of authority) :- stores information about domains and is used to direct how a DNS Zone propagates to secondary name servers.

→ Name Server (NS) :- specifies which name servers are authoritative for domain or sub-domain

→ Mx record :- uses mail server to map where to deliver email for a domain.

→ TXT records :- allow admins to add limited human & machine readable notes used for email validation, site & ownership.

→ SPF record :- used for email verification, framework policies

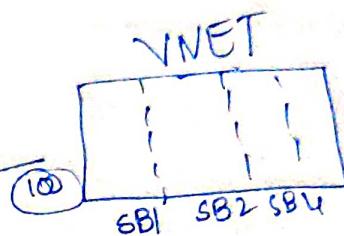
→ SRV (service) :- allows services such as instant messaging or VoIP to be directed to a separate host & port location.

→ Azure DNS

① Public Zone

→ host A/AAAA

→ CNAME



② Private Zone

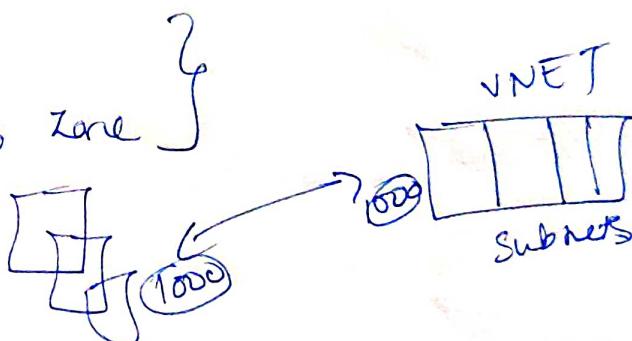
→ manual registration

→ automatic registration

→ A, CNAME, TXT, SRV

} only ② private zone can be associated to a VNET
upto 100 VNET can be associated to a zone

③ Resolution is collection of Zone



upto 1000 zones and VNETS can be associated with each other

Internet.

→ Azure DNS do resolves the query to the Internet.