

Cloud Computing: AZ-900 Azure Basic Fundamentals

Deployment model - Cloud model:

- Public [available to everyone through internet]
- Private [protected cloud, like your own application]
- Hybrid [public + private]

Cloud Provider

CrCP, Azure, IBM, AWS, Digital Ocean.

Implementation of Azure.

① App service. :: Comput domain

- VM, - App service - functions
- app service used to deploy application automatically.
- For applying website app service used
- Blob storage.
store image file.
- 2 MySQL for Azure
- Auto scaling and load Balancing.

Azure certification:-

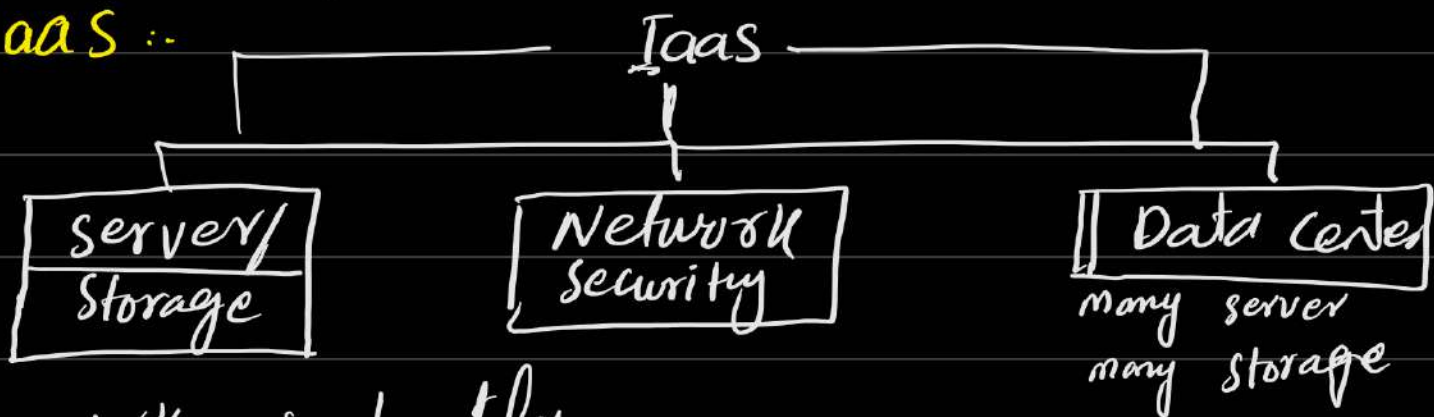
AZ-900 Basic fundamental.

- cloud concept ✓
- Azure architecture ✓
- Azure management & governance ✓

DP-900 Data fundamental → DP-201-DP-203

- Core data concept
- Relational and Non relational data
- Analytic workload on cloud.

⇒ IaaS :-



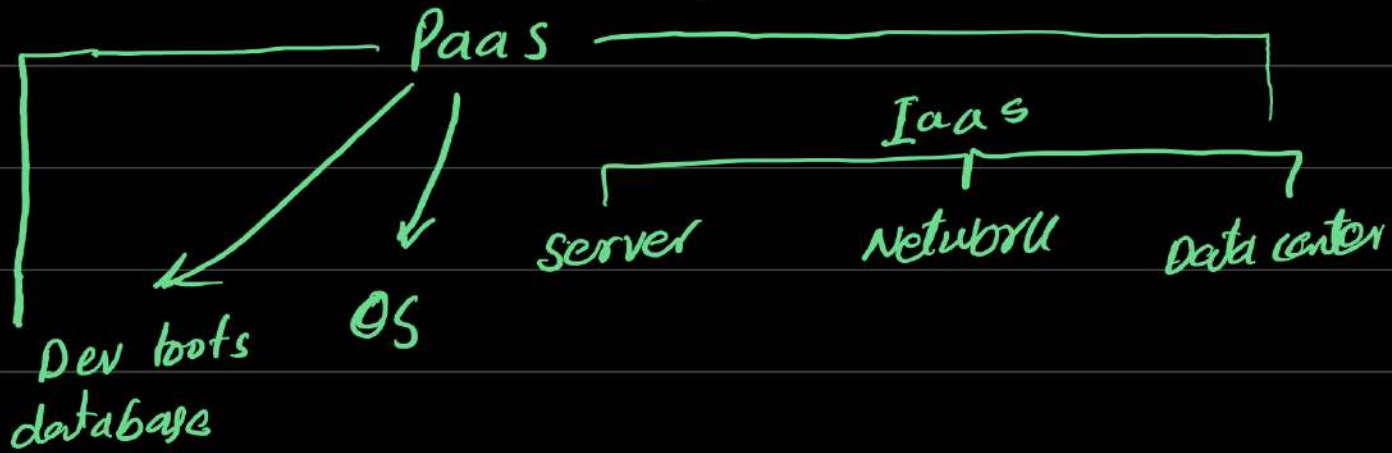
- Work instantly
- Always in control yourself.
- NO Hardware maintenance [NO need to change or maintain hardware in company.
- virtual machine
- you need handle things by own.

CAP EX VS OPEX

=> PaaS:-

Platform as a service:-

- For developers
- Build develop / Test application
- OS deployment is easy.

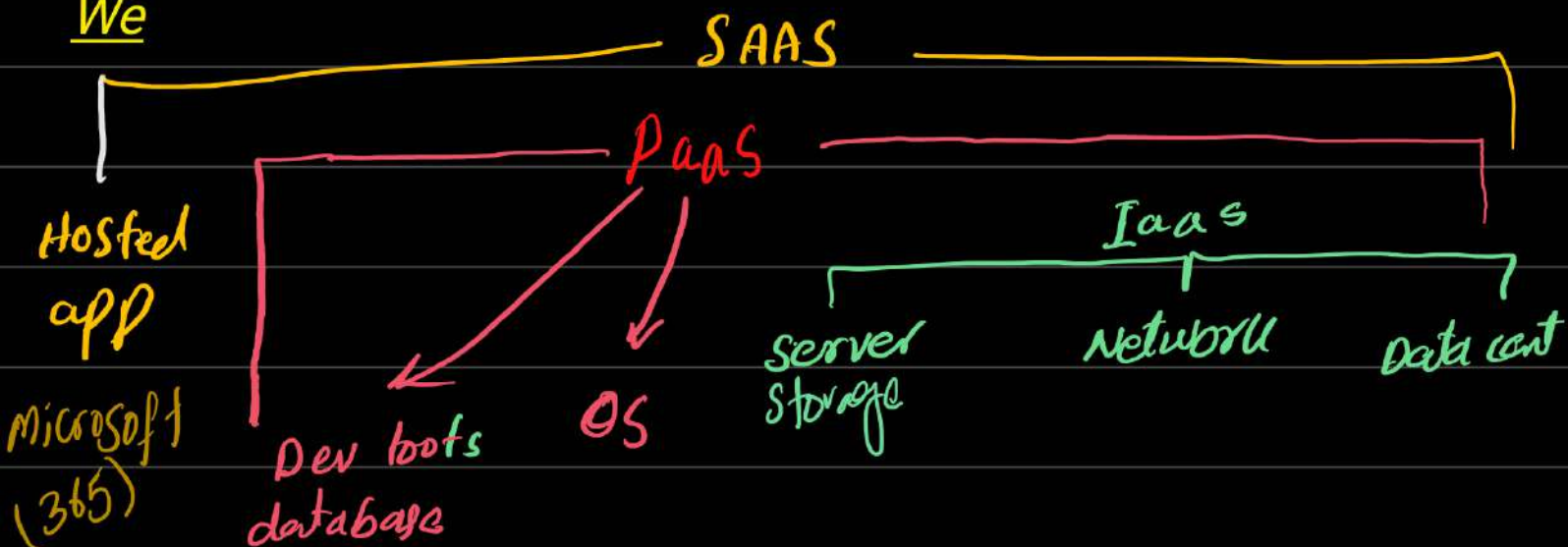


- No need to create (OS) infrastructure separately.

=> SaaS:-

- cloud based hosted application.
- worldwide access.

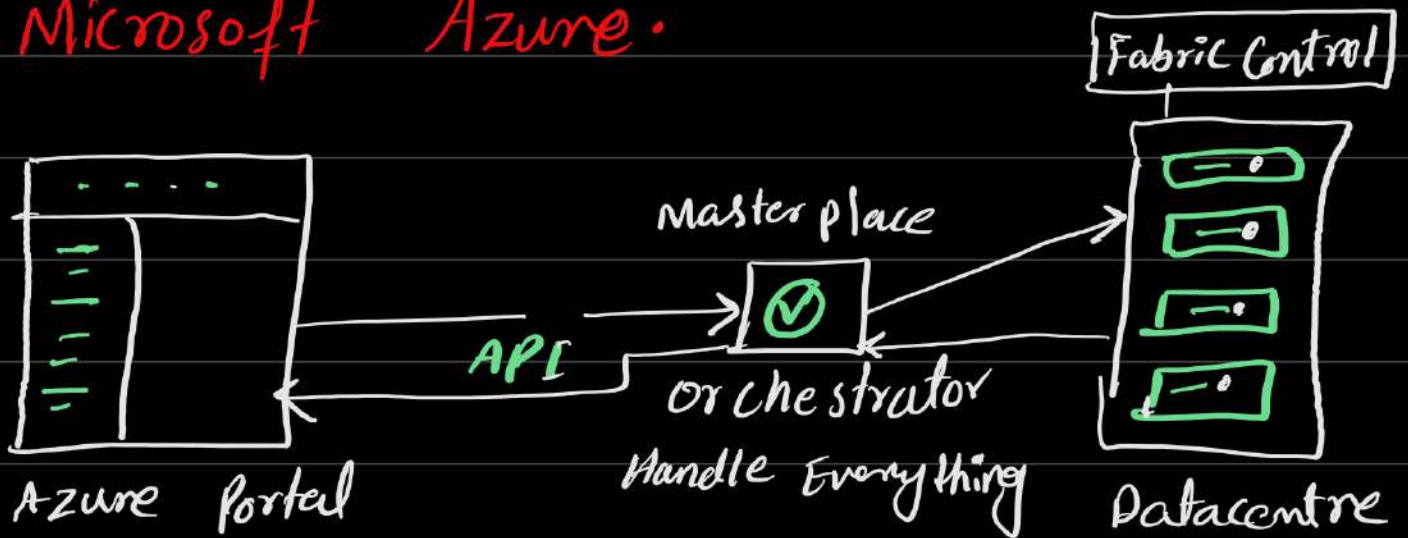
We



- microsoft azure

- power BI, Word, Excel.
- we use software from companies as service.

Microsoft Azure.



- * compute (VM)
- * Networking
- * Databases.

creat VM :-

- creat new Virtual machine.
- Add data → Networking
- Inbound and outbound Rule:-

Azure Core Service :-

Azure Region: R_1 ————— R_2

Geographies: Europe, America, Asia, Africa

Avilibility zones (AZ)?

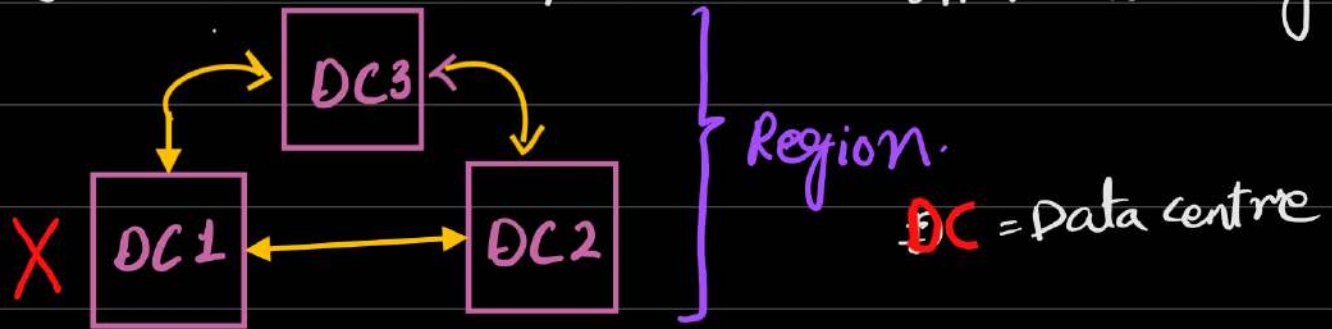
Availibility zone are unignl physical location

with independent Power and Network.

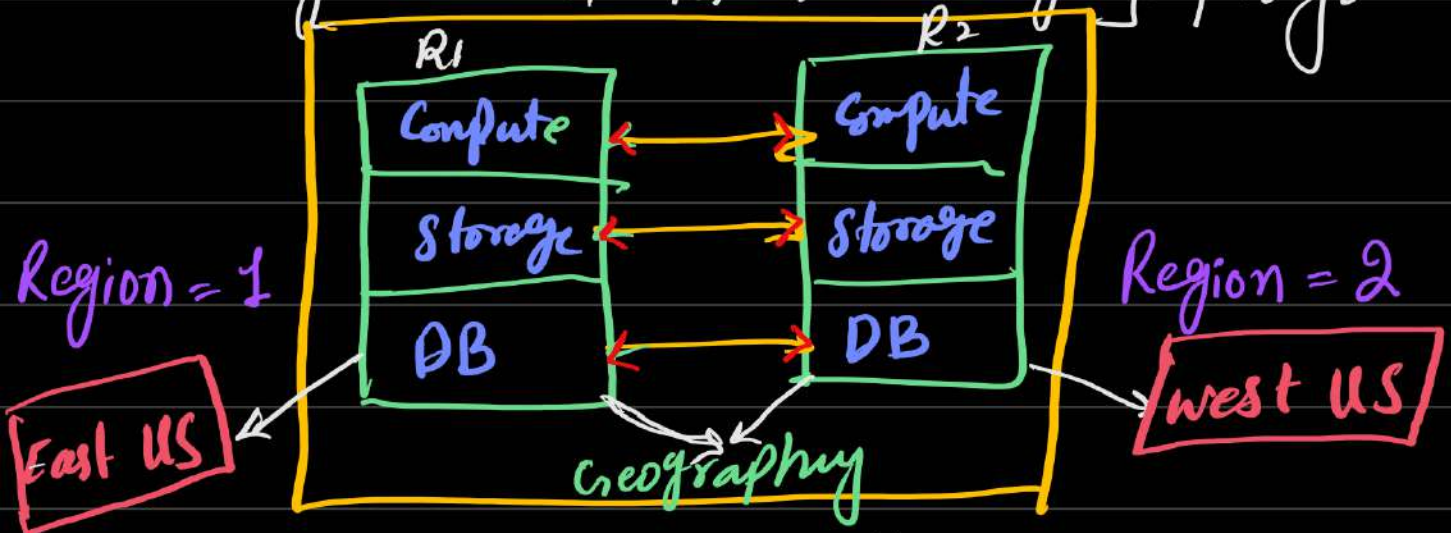


Paired Region:-

if one Data centre fail then other working.

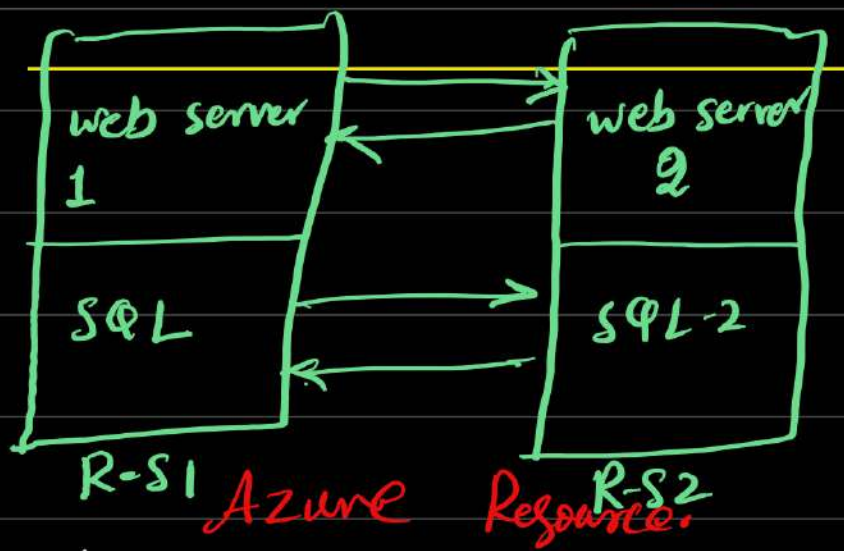


Two region with in same geography:-



- Two VM machine with in some geography like [Asia, europe] for duplicated data.
- Data Recovery.

Azure Availability set:-



= Azure shell:-

= window shell (AZ module)

= Download MSI package.

= Azure CLI

= mobile App.

Cloud Computing:-

power, storage and network of other computer on your own computer. called cloud computing.

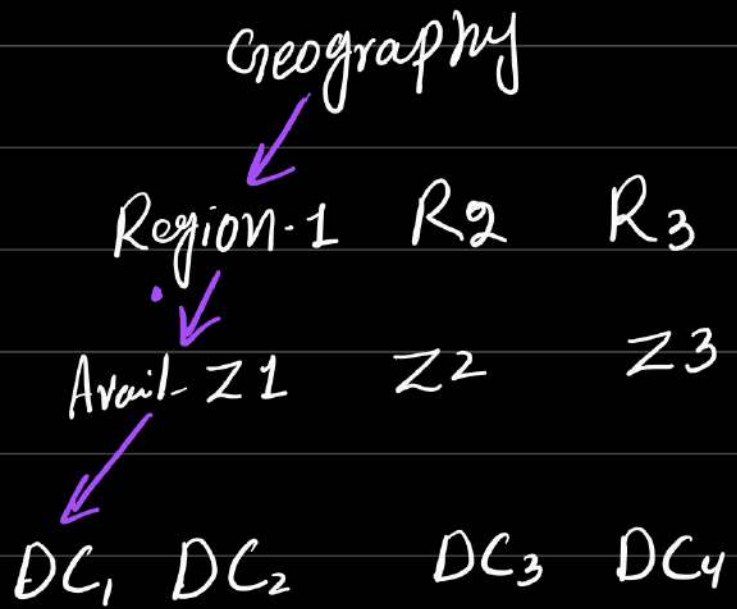
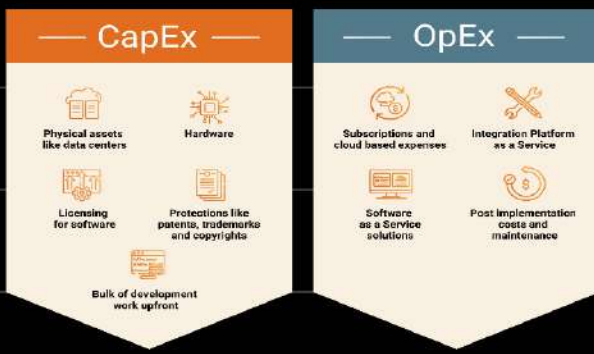
CapEX:- buy own machines and all infrastructure

OpEX:- Do not pay for products, ^{security.} Just use services from other company.

- No upfront cost

- pay for more resources when they need.

(pay-as-you-go)

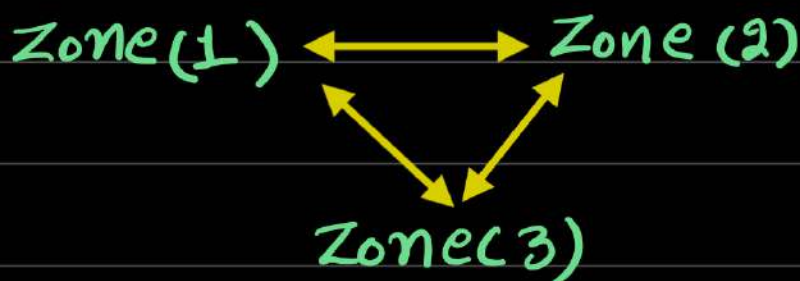


IaaS, PaaS, SaaS

SaaS	PaaS	IaaS
EXAMPLE COMPANIES Dropbox mailchimp slack Gmail	EXAMPLE COMPANIES HEROKU App Engine OPENSIFT PaaS	EXAMPLE COMPANIES amazon EC2 DigitalOcean Google Compute Engine Azure
USED BY Consumers (you & me!), Businesses	USED BY Businesses, Developers	USED BY Businesses, Developers
PROVIDES Final app product	PROVIDES Tools to host, build, and deploy app (infrastructure is abstracted away)	PROVIDES Tools to manage physical infrastructure (Servers, network, data storage)
LEVEL OF TECHNICAL UNDERSTANDING None! Just use the app.	LEVEL OF TECHNICAL UNDERSTANDING Medium. Software devs will be able to use.	LEVEL OF TECHNICAL UNDERSTANDING Very high. Senior devs/architects with lots of experience building software

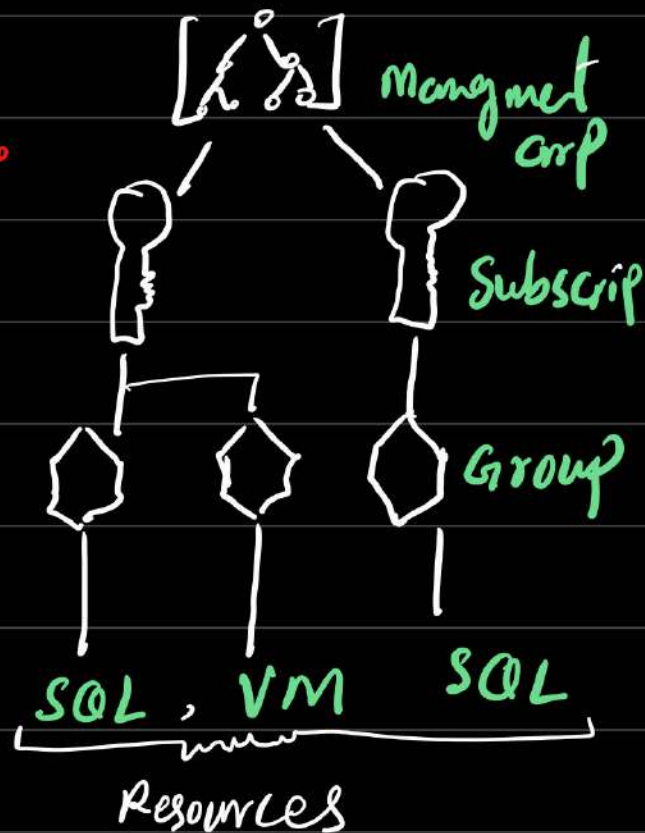
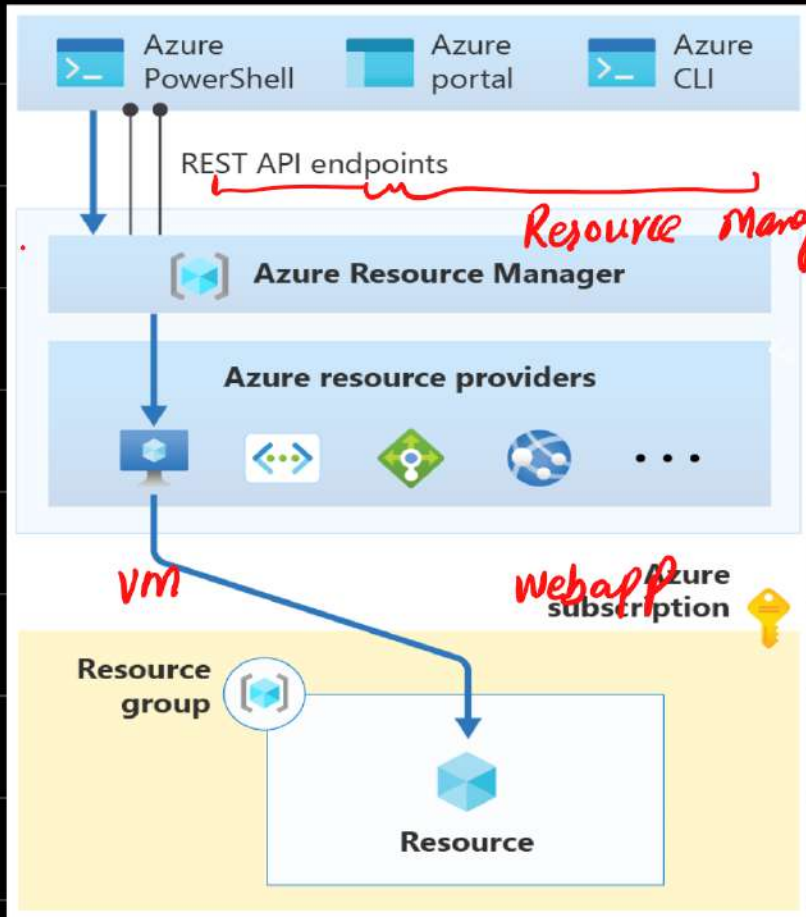
Microsoft Azure Architecture Component.

- Region Pairs [south Korea ↔ North Korea] in same geography - 300 miles distance.



* Resource Group:-

- organize resource. [management layer]
- control access.



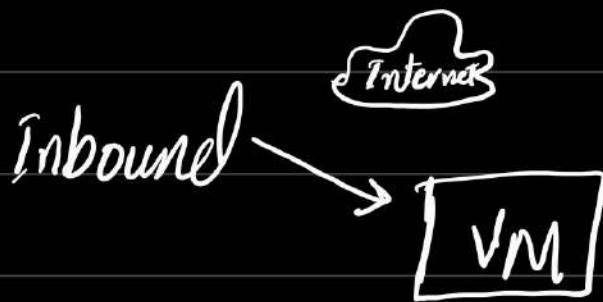
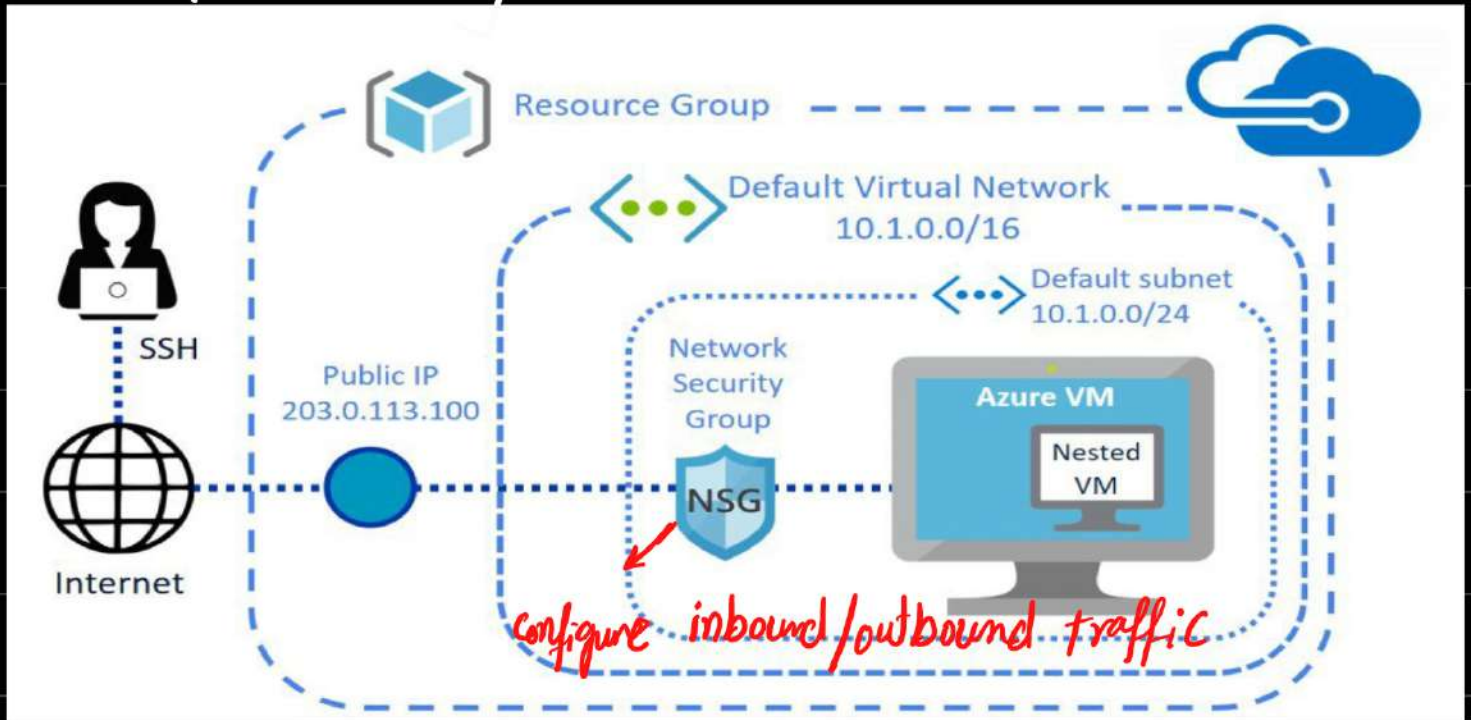
- add and delete resource from Resource group.
- each resource stay in one resource group.

* Computing Service

- Azure VM (IaaS)
- VM scale sets (automatically scaling)
more VM - for big data.

- App Service (PaaS) , build email deploy
- Azure Function.

perform compute actions based on events
use for running core service.



outbound.

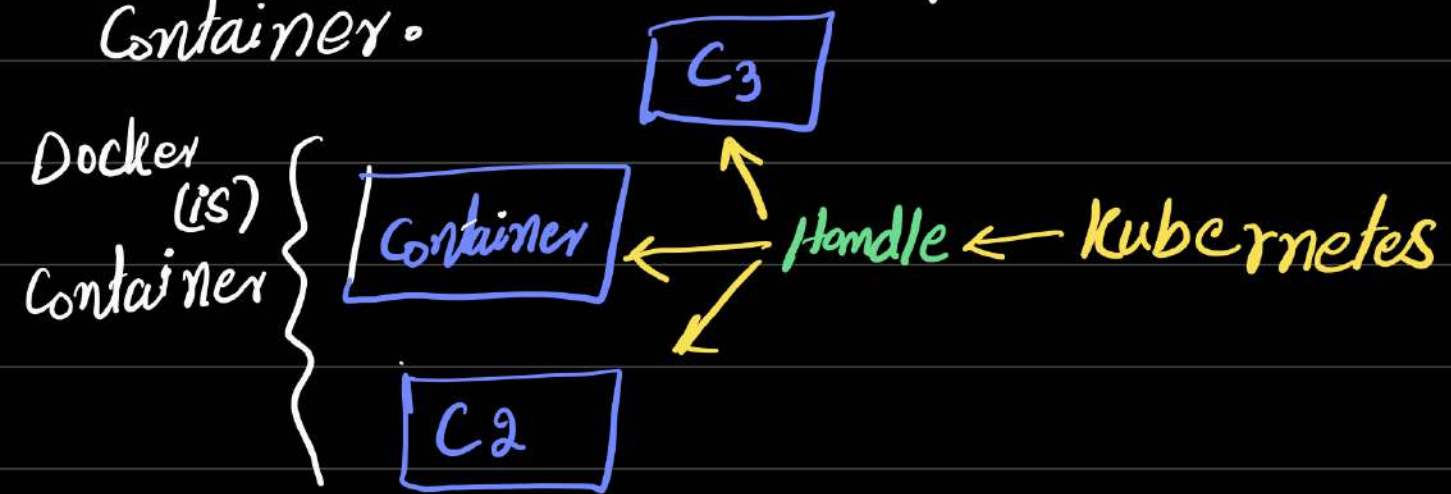
NSG = apply security limit on traffic.

* Azure container:

- Azure container Instances.
- Azure Kubernetes Service.

Kubernetes is

orchestrator handle large number of Container.



- Kubernetes do scaling, load balancing and handle many container.

DNS:-

Domain Name Service:-

★ **Azure Network Service**

- <...> Az. virtual network.
 - load balancer -(handle traffic)
 - VPN Gateway
 - Content Delivery Network.
 - Azure app gateway [management of traffic to gateway]
- => connect two vm with network service.

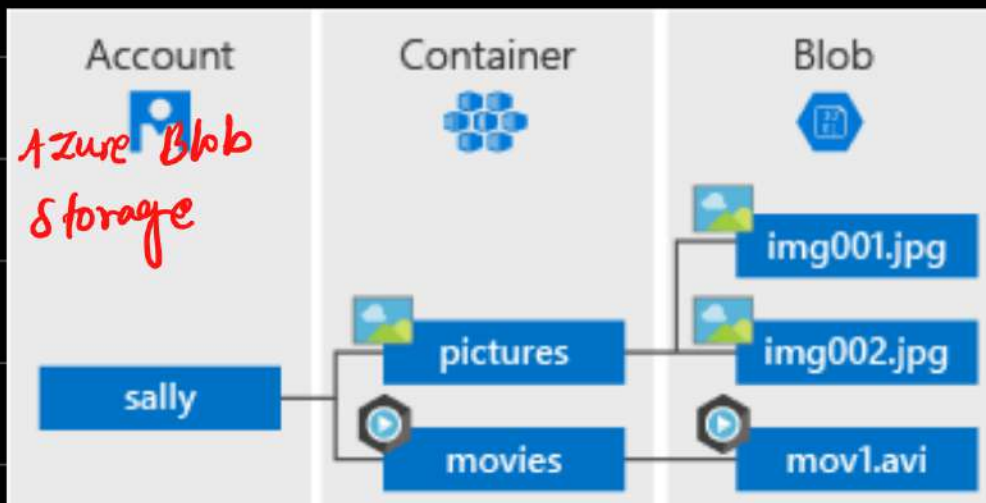
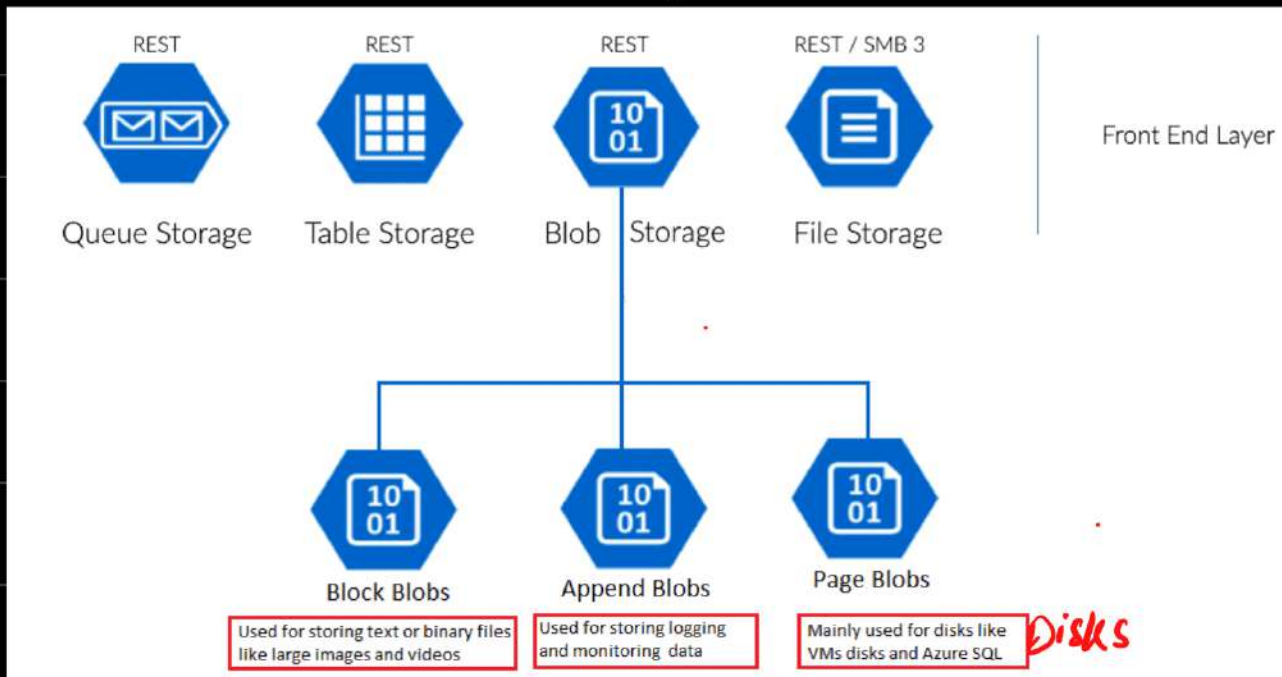
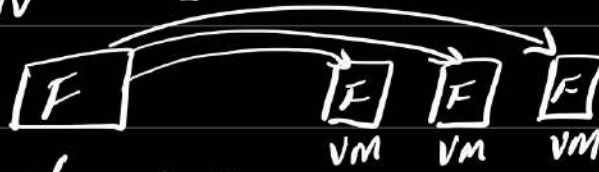
* Azure data Storage.

Azure Blob storage

- Create container

- file share.

- Table, Queue storage.



★ Azure db service:-

- Cosmos DB ^{globally} (distributed, scalable, graph, key val)
- Azure SQL (daas)
- Azure DB migration. (Fully manage)

① Create SQL DB

② Create SQL Server

③ Set firewall setting

④ add IP. to login

⑤ open Query editor.

★ IOT

Create IT hub

Create IoT device

get data from sensor.

★ Azure Big data Explore

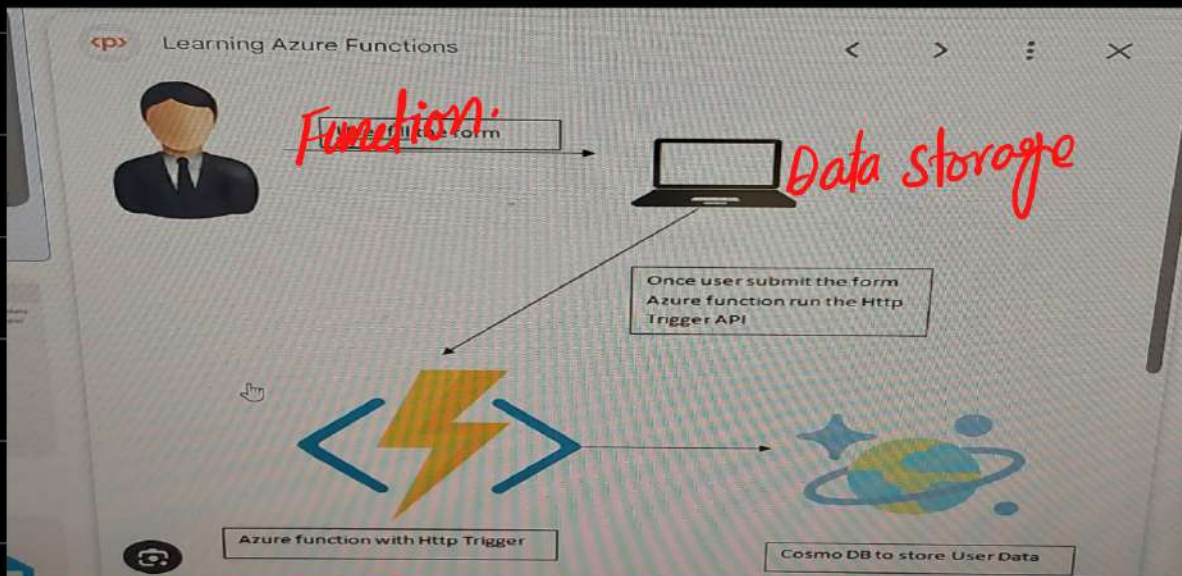
Hadoop ecosystem
Spark, Sqoop

Azure logic app - SAP, Fileshare.

= create Azure Function

= select program language
work trigger to create infrastructure.

- HTTP



★ DevOps

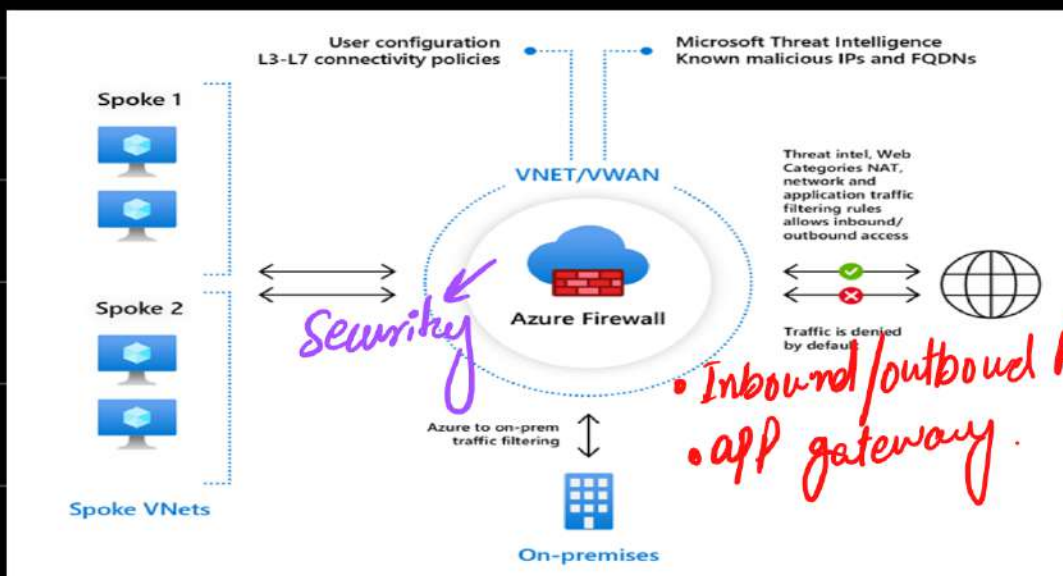
Provide development collaboration tools
including pipelines, Git repositories
cloud base load testing.

Azure app service use to create mob
apps, web,

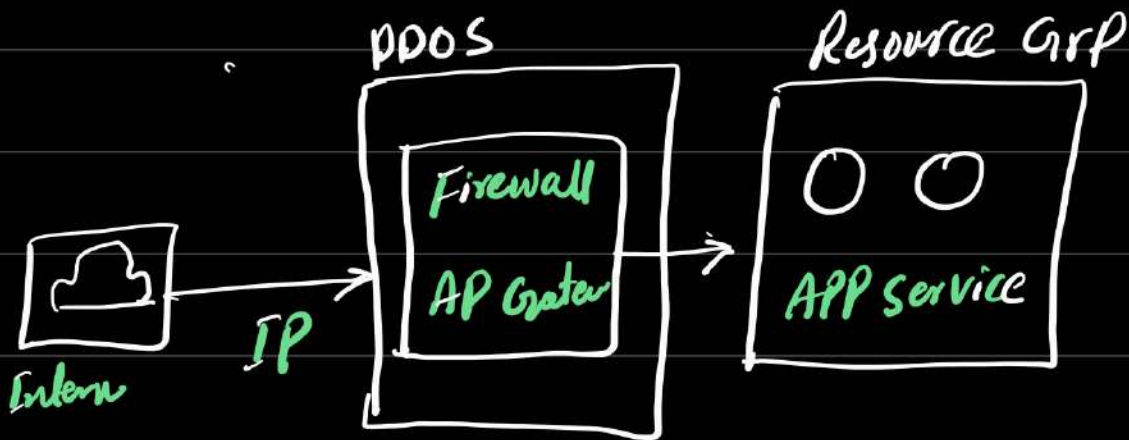
Azure, Bash powershell.

Microsoft Azure datacentre are
organized and made available by
Region. ✓

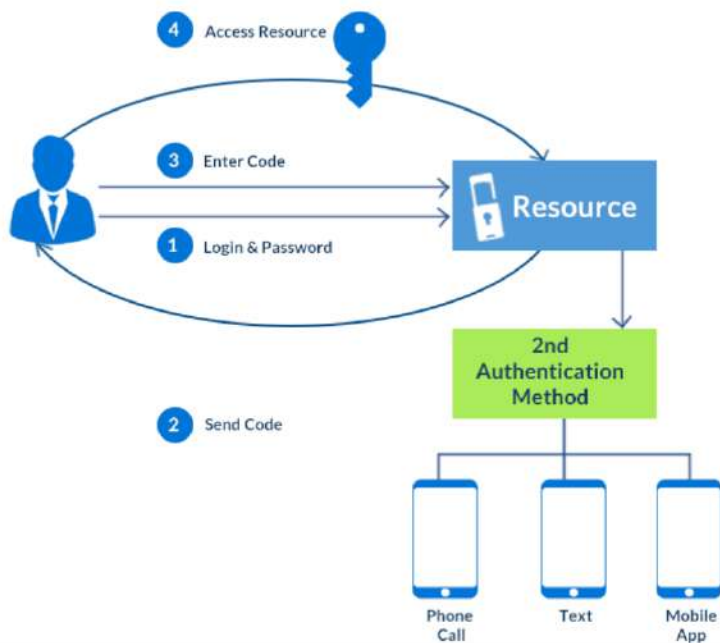
security



★ Azure DDoS Protection:-



Multi Factor Authentication



★ AIP & ATP

APP information protection
ATP Thread protection

★ Key Vault

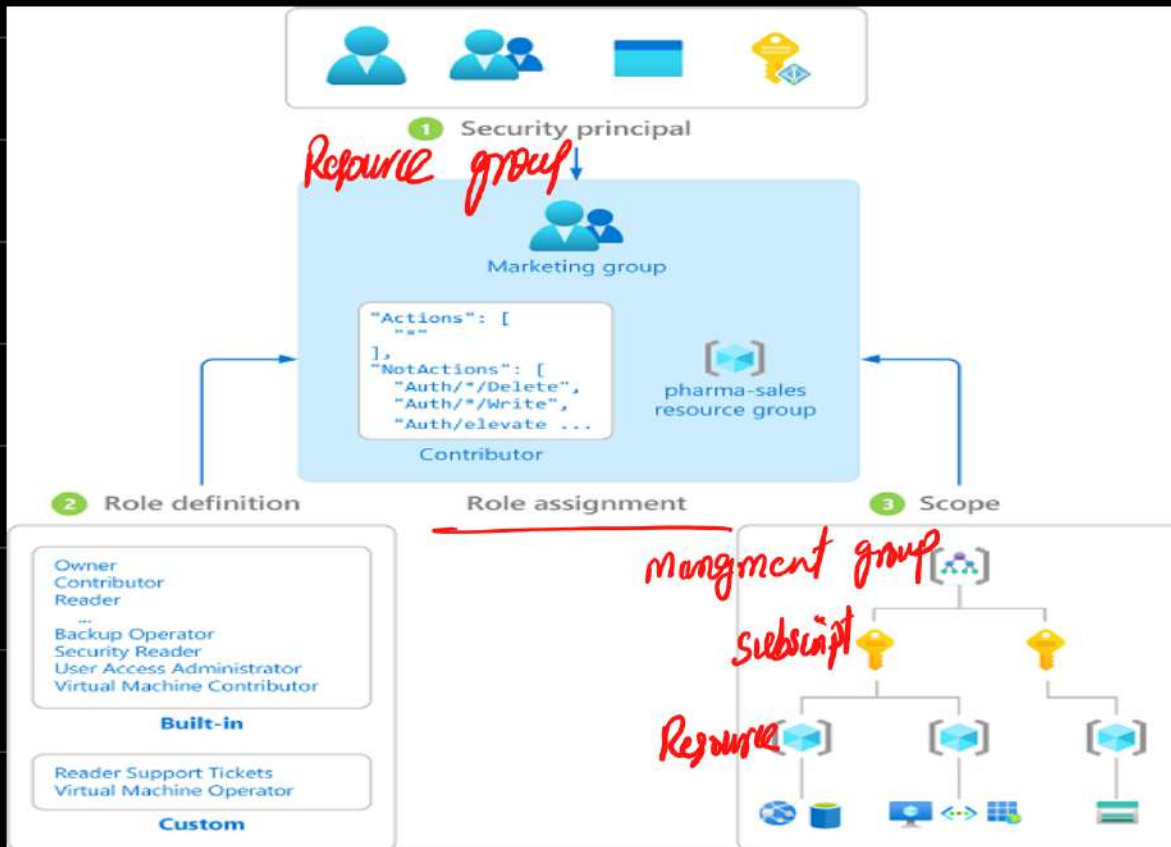
- secret management
- key management

Secure control access permissions and
access logging. (encryption/decrypt data)



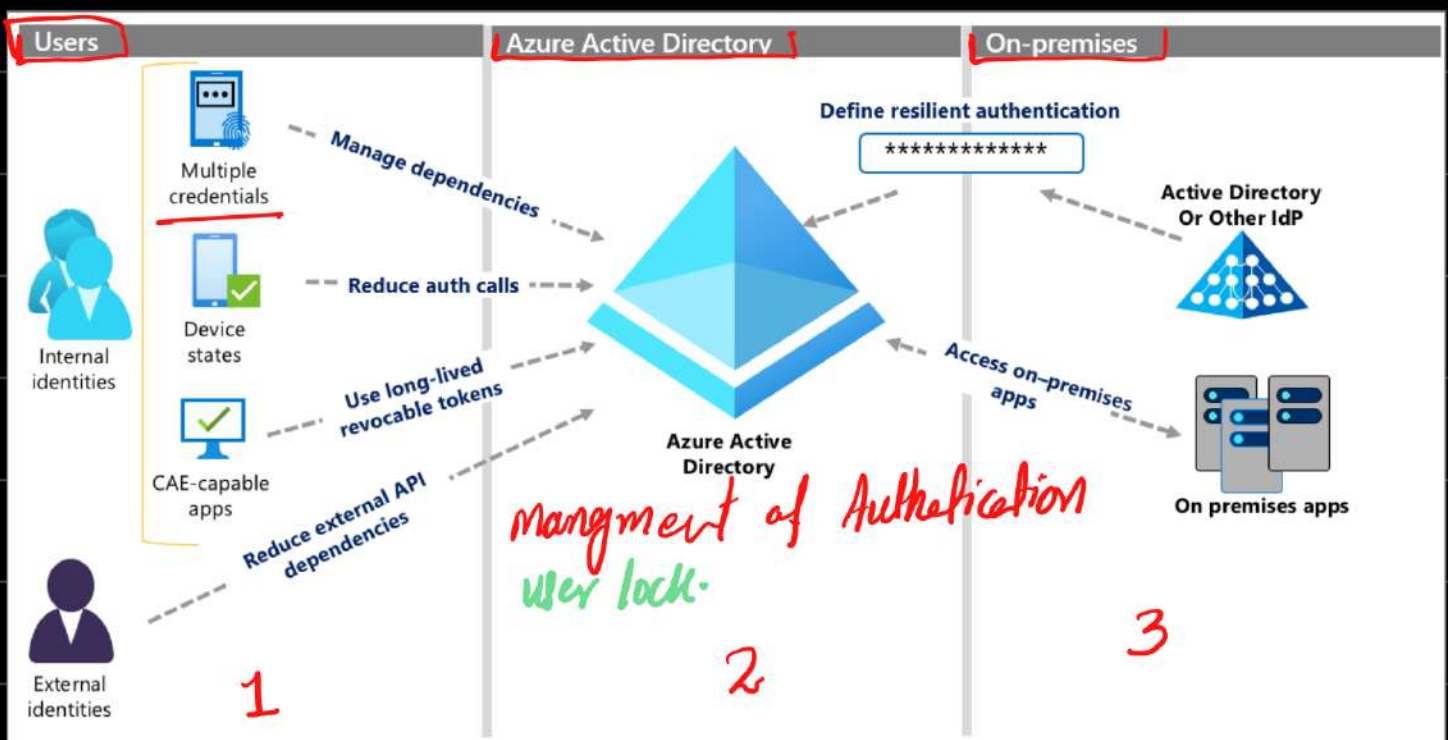
★ Access control:- IAM

Role assignment in resource group.
different role apply to user, view
read, write etc.



★ AD

To manage authentication user and access.
External/Internal source.



* Tags:-

- name - value pair.
- provide metadata for Azure resource.
- apply at resource, resource group & subscription.

• Name + value

Reference:

<https://youtu.be/j26eNpUU0zM?si=14a3mlfd6PF3MmcP>

<https://www.passnexam.com/microsoft/az-900/1>