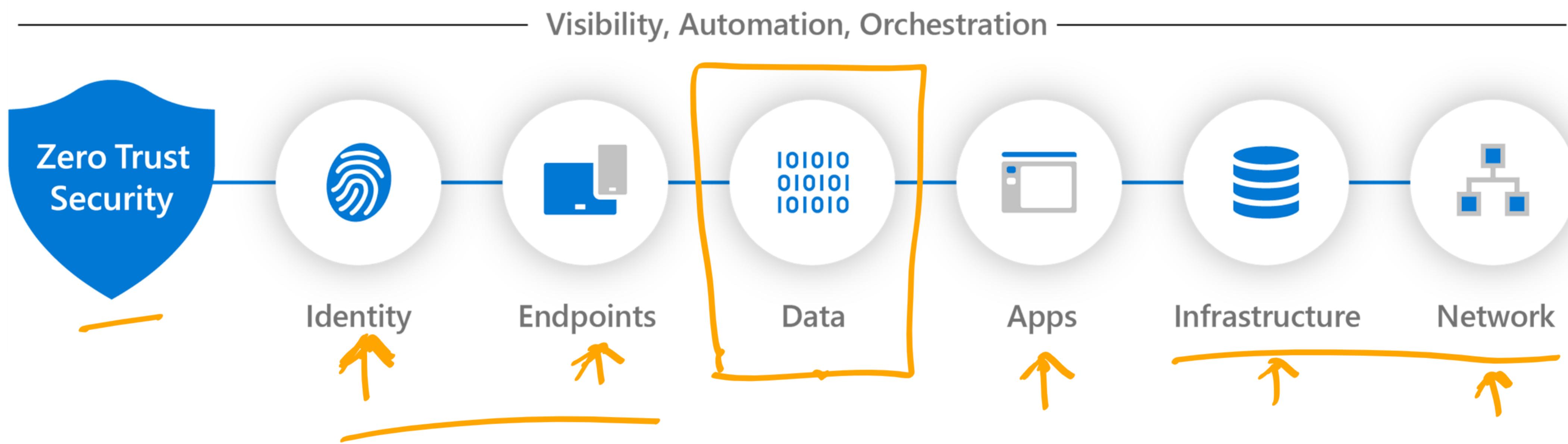
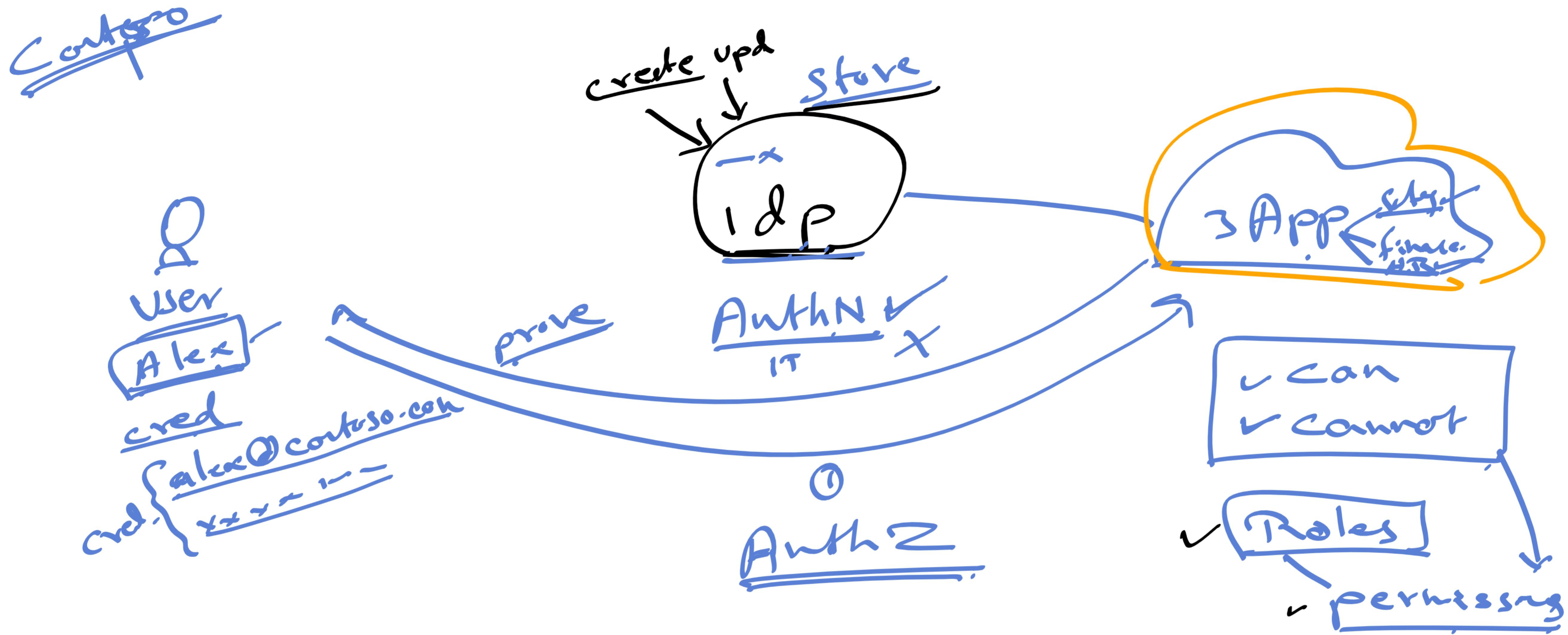


AZ - 104

Identity

- Users
- Devices
- Applications





✓ ADD S
Onprem

* GPO

- * Users
- * Dev
- * App

MS

*

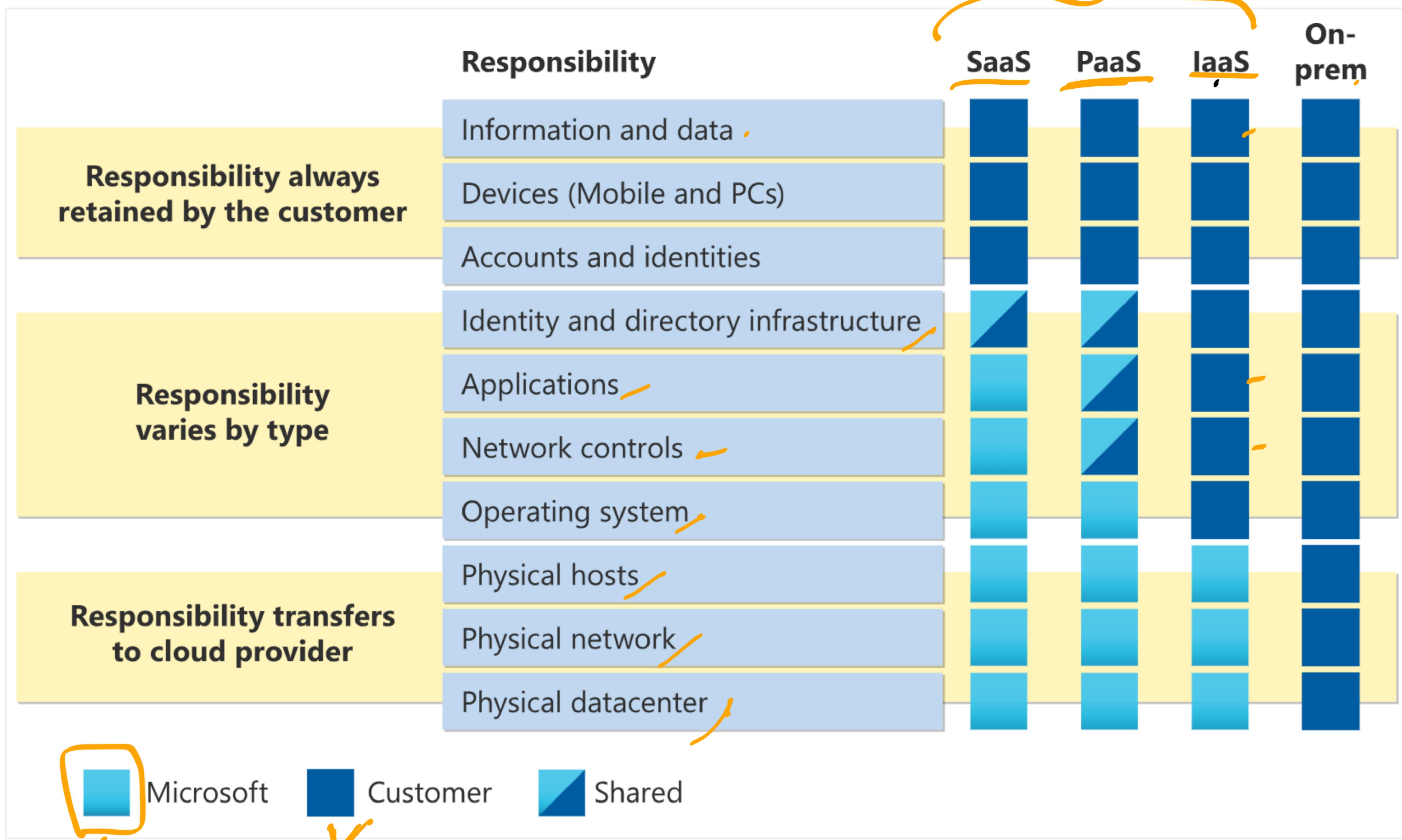
Cloud
A AD - Entral ID
I AM

*

AD - Entral Domain
Services

* GPO





ADDS

* GPO

+ Kerberos

* NTLM

[LDAP - Query]

Entra ID ~~AAD~~

* ~~GPO~~
~~ID~~

* Users / Groups

+ Dev.

+ App home.

* SAML

* OpenID Connect

+ WS-Fed.

+ OAuth

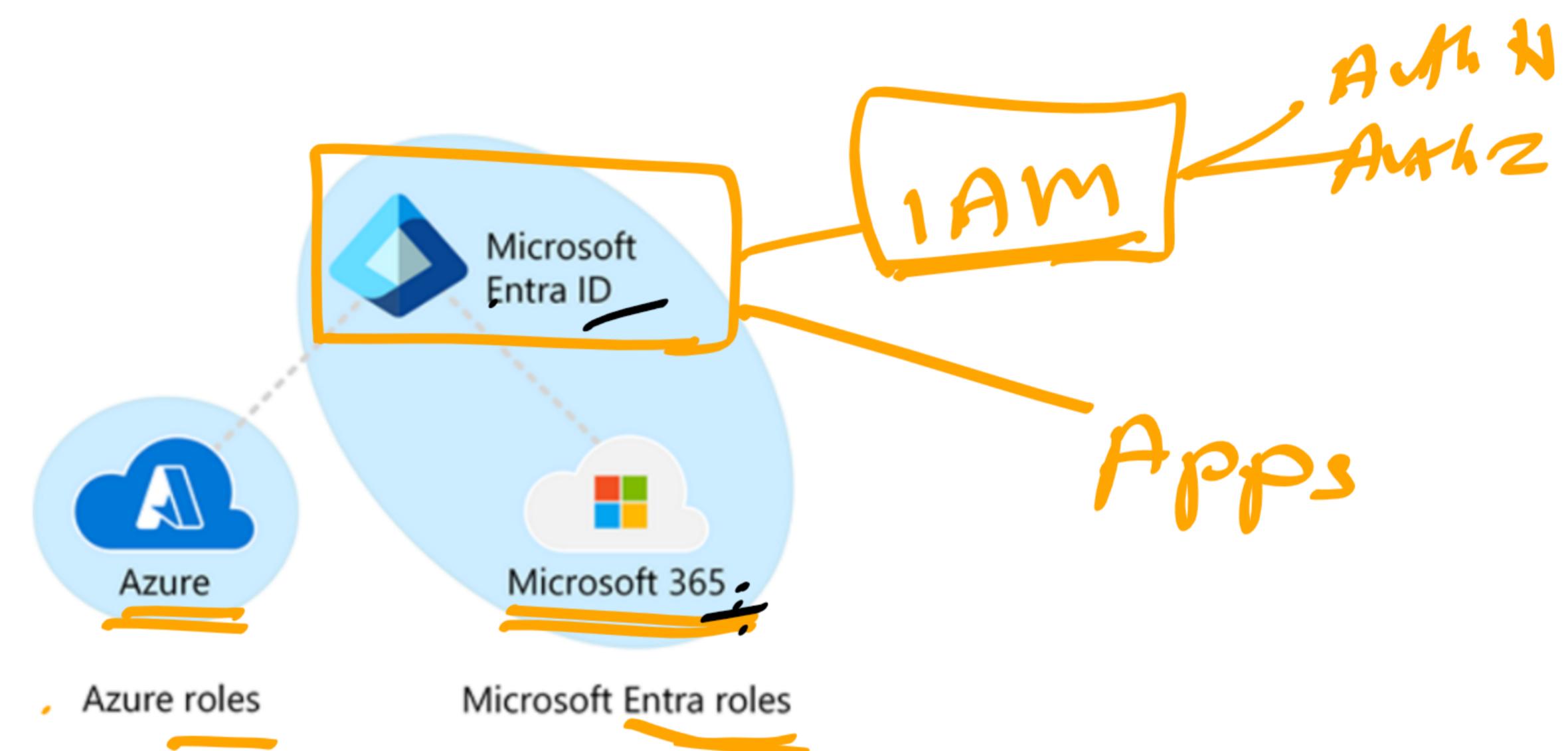
+ REST API - Query.

contoso

- * Tenant ✓ - logical instance ID
- * Directory
- M + A

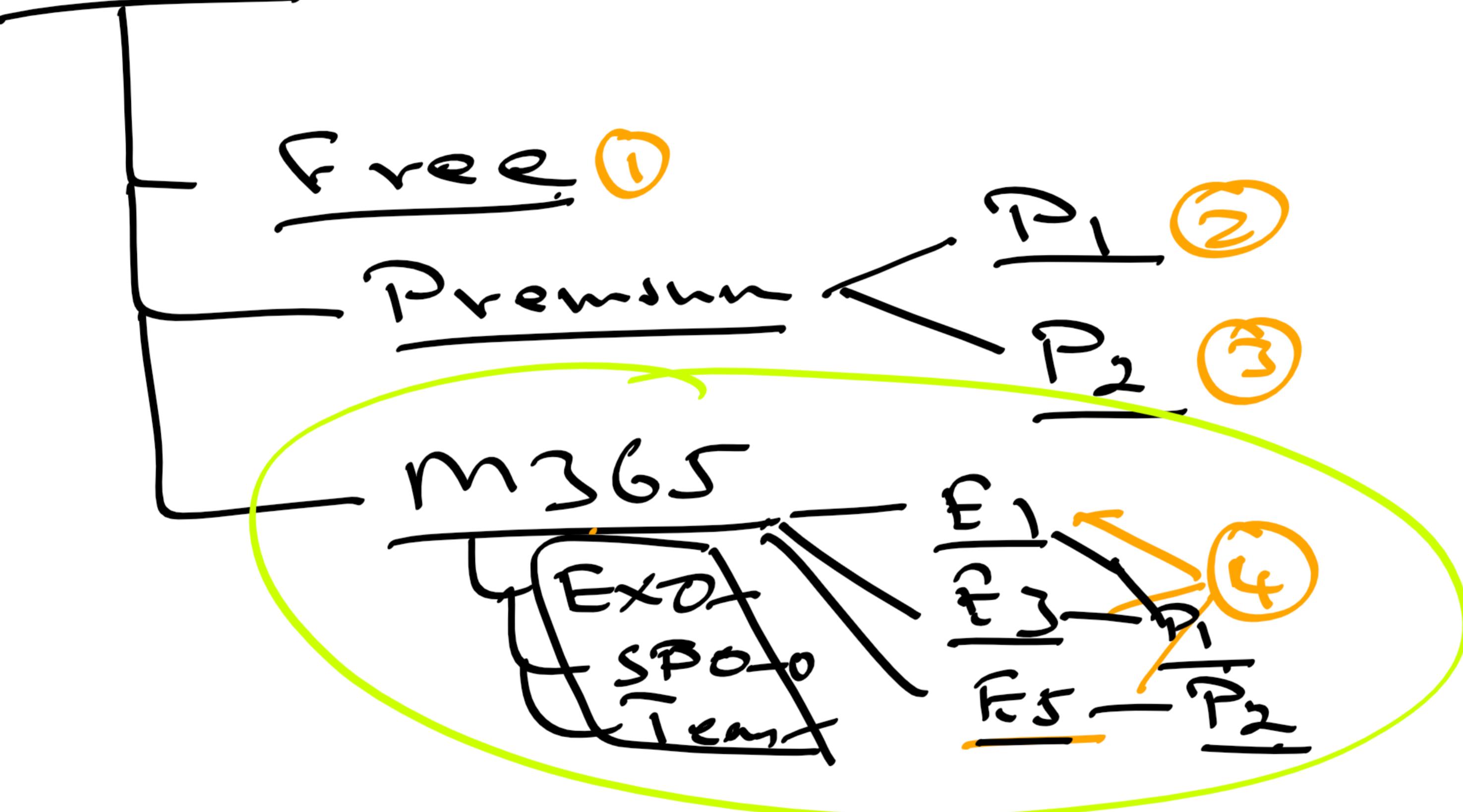
Entra ID

fabrikam



- pay as you go -  5 hrs/dy.

- per User / Licence 50k/User.
- Plan (package of features)



free

500,000 objects

P₁

Unlimited

P₂

CA

CA

mFA

mFA

mFA

PIM

PIM

1D Grav.

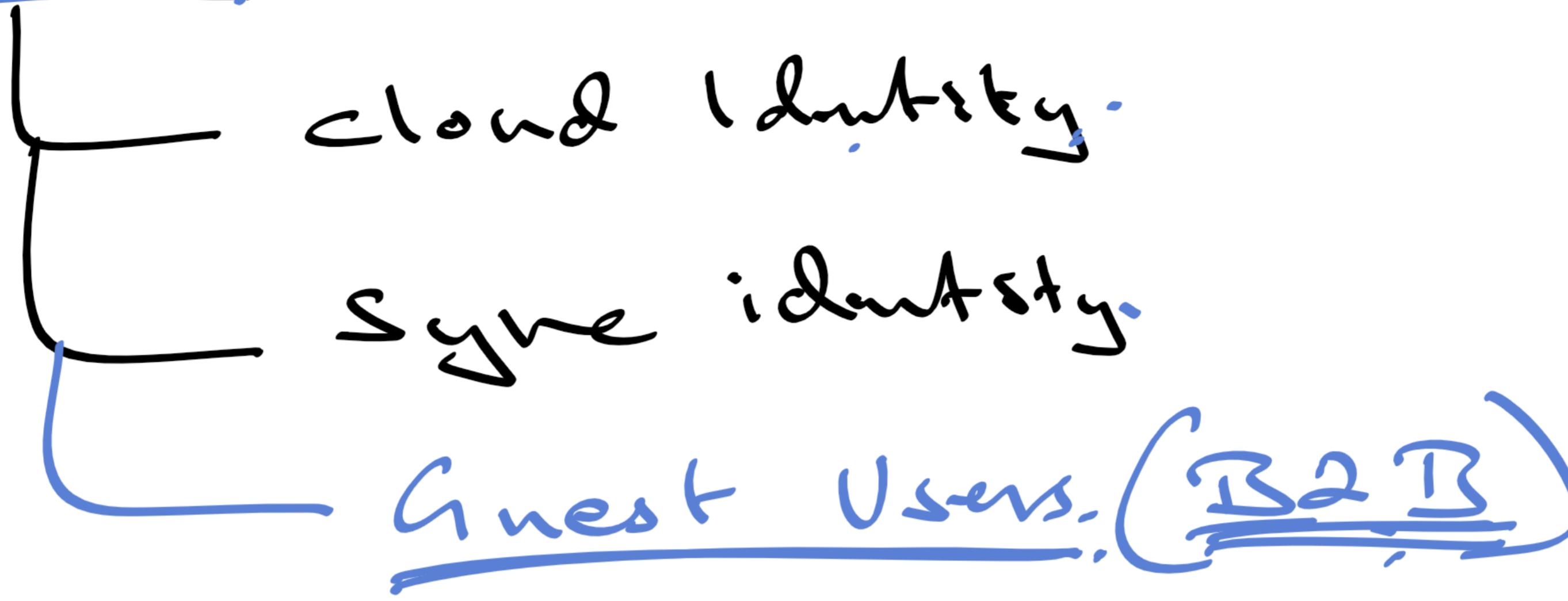
Rot.

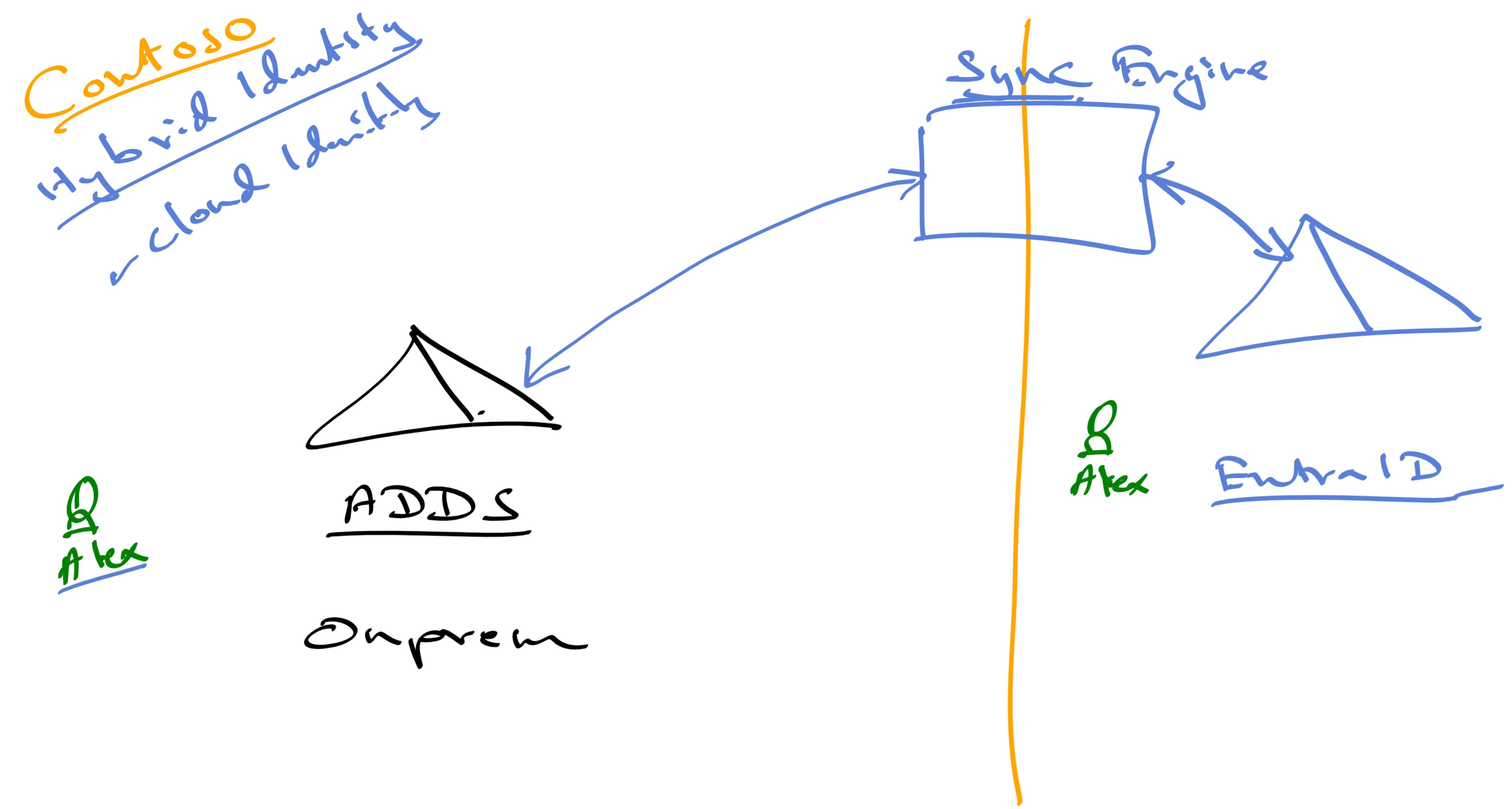
EntailD - flat structure - XO ous

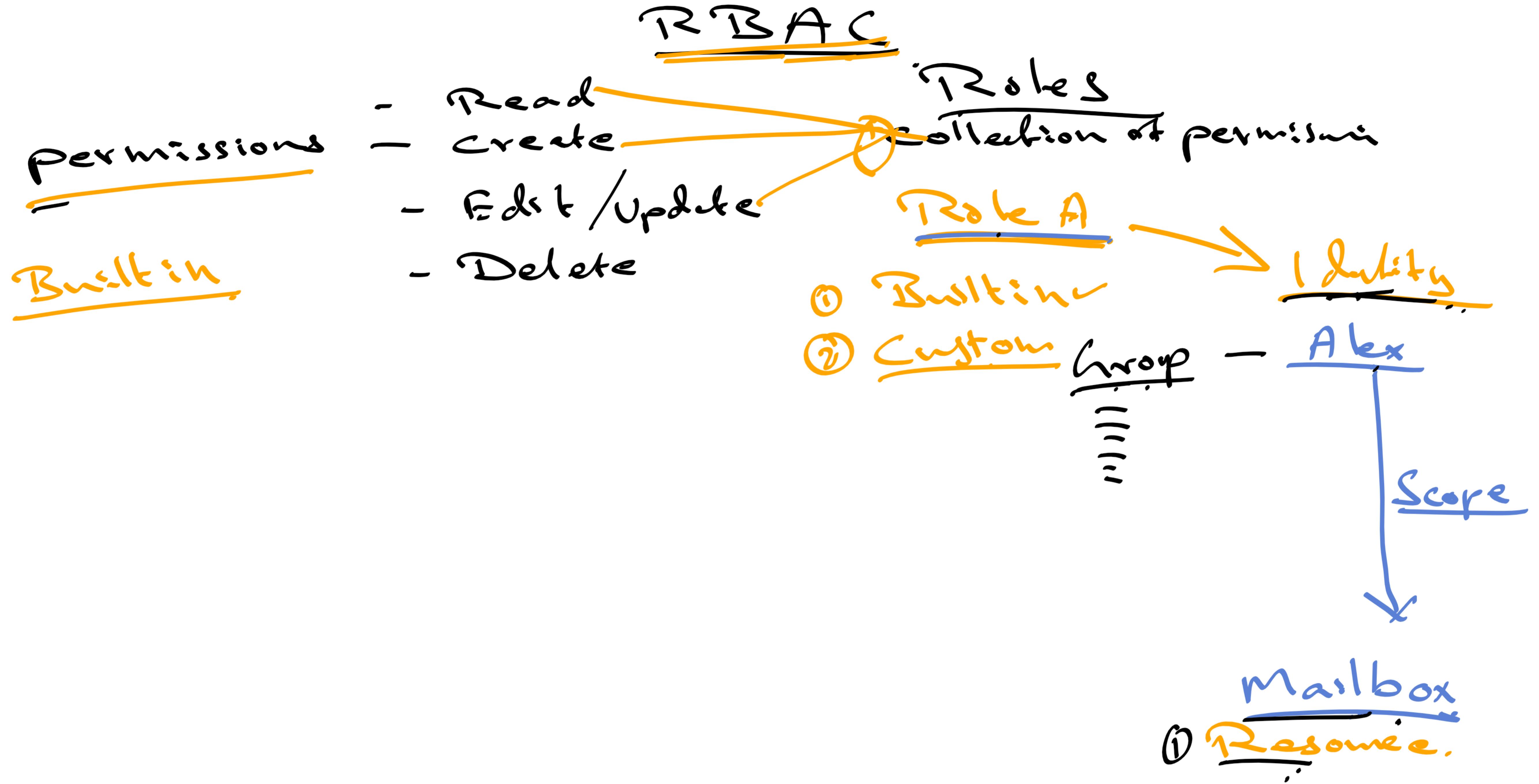
Users

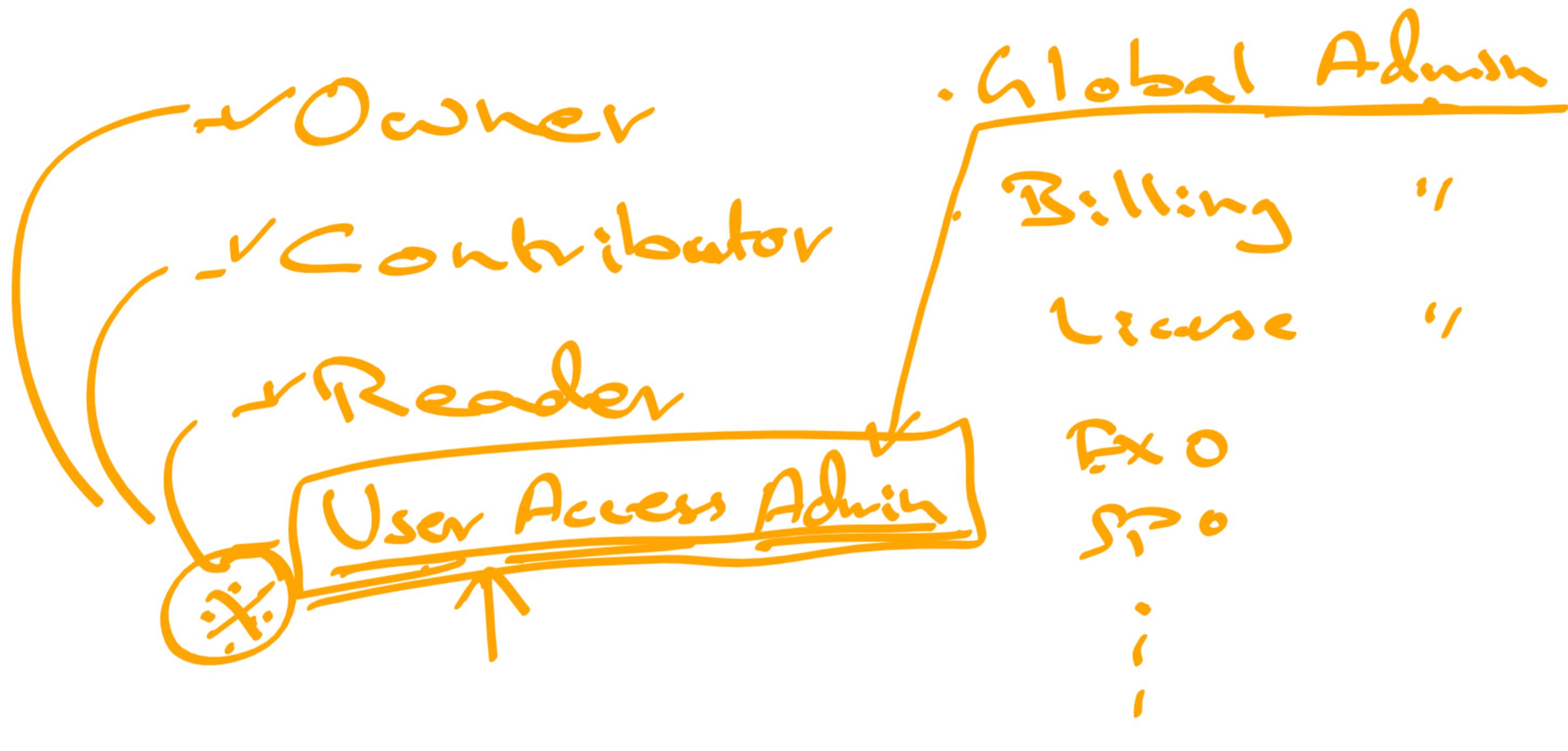
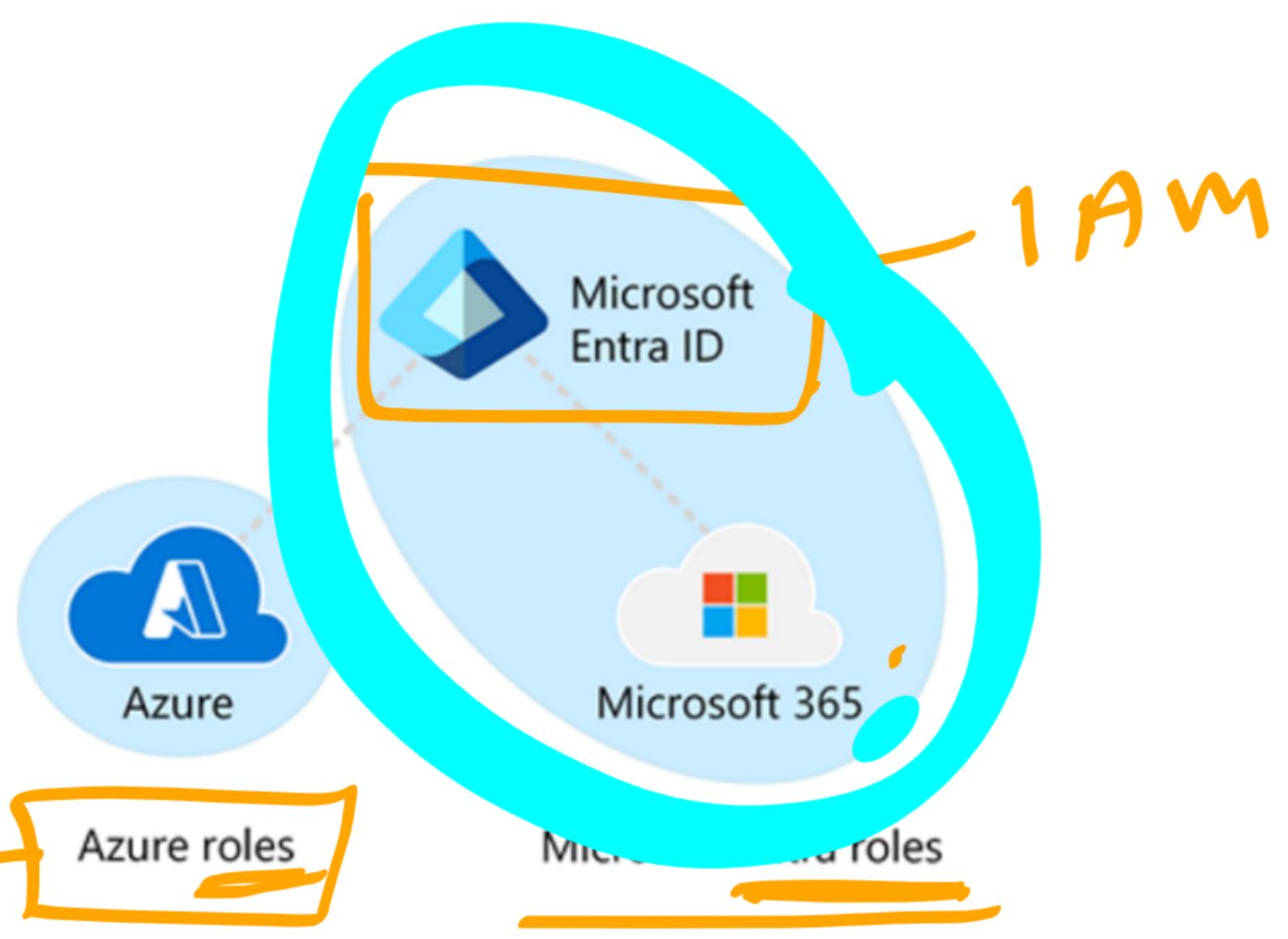
AUs
* Administrative Units

Users

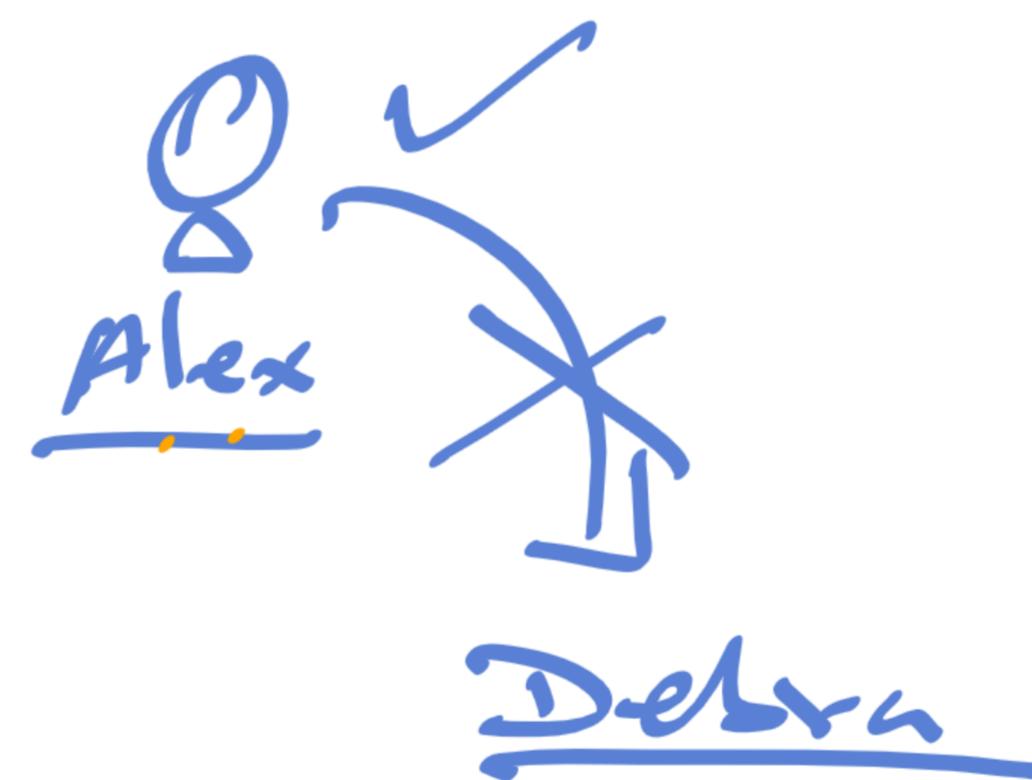








✓ Owner - Delegate perm.
• Contributor - X



✓ Subscriptions - Billing Boundary

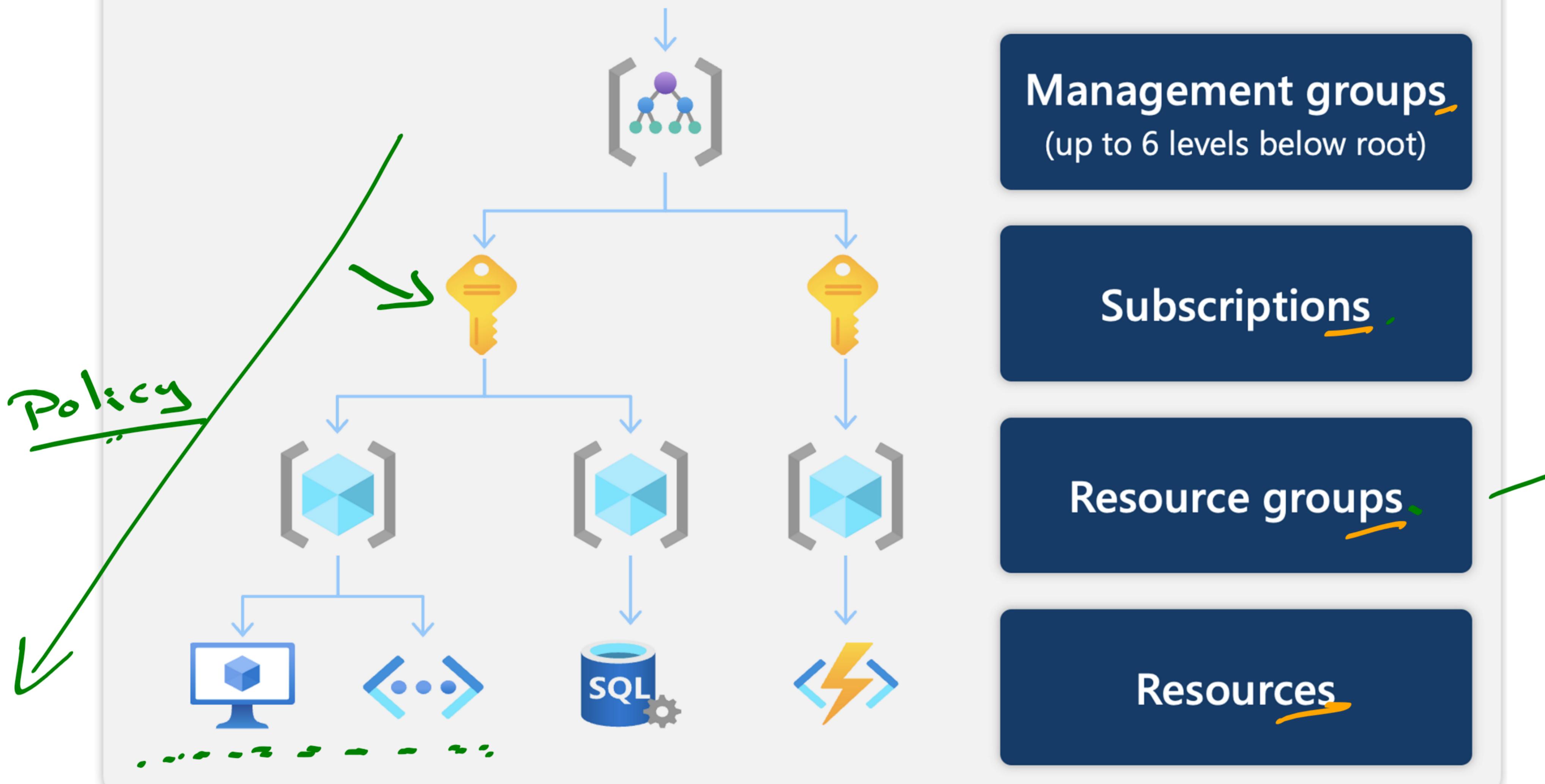
✓ Resource Groups - Logical Container

✓ Resources -

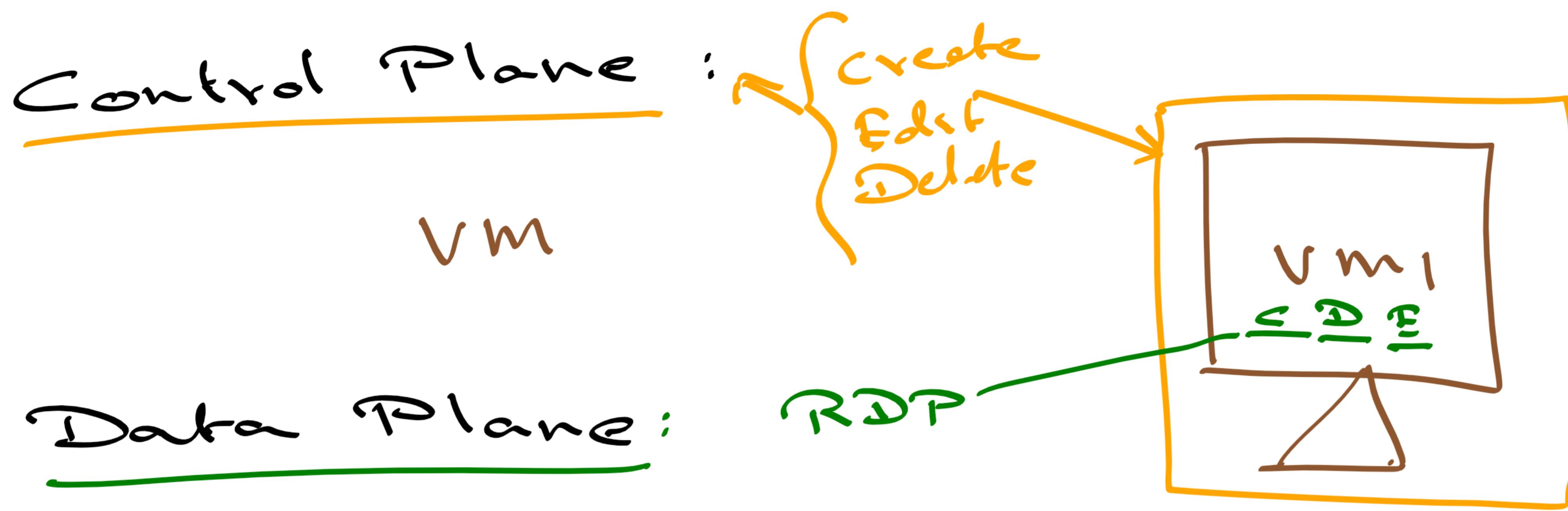
```
graph LR; V1[1 VM] --- Vnet[Vnet]; V2[2 VM] --- Vnet; V1 --- Prod[Prod]; V2 --- Dev[Dev]
```

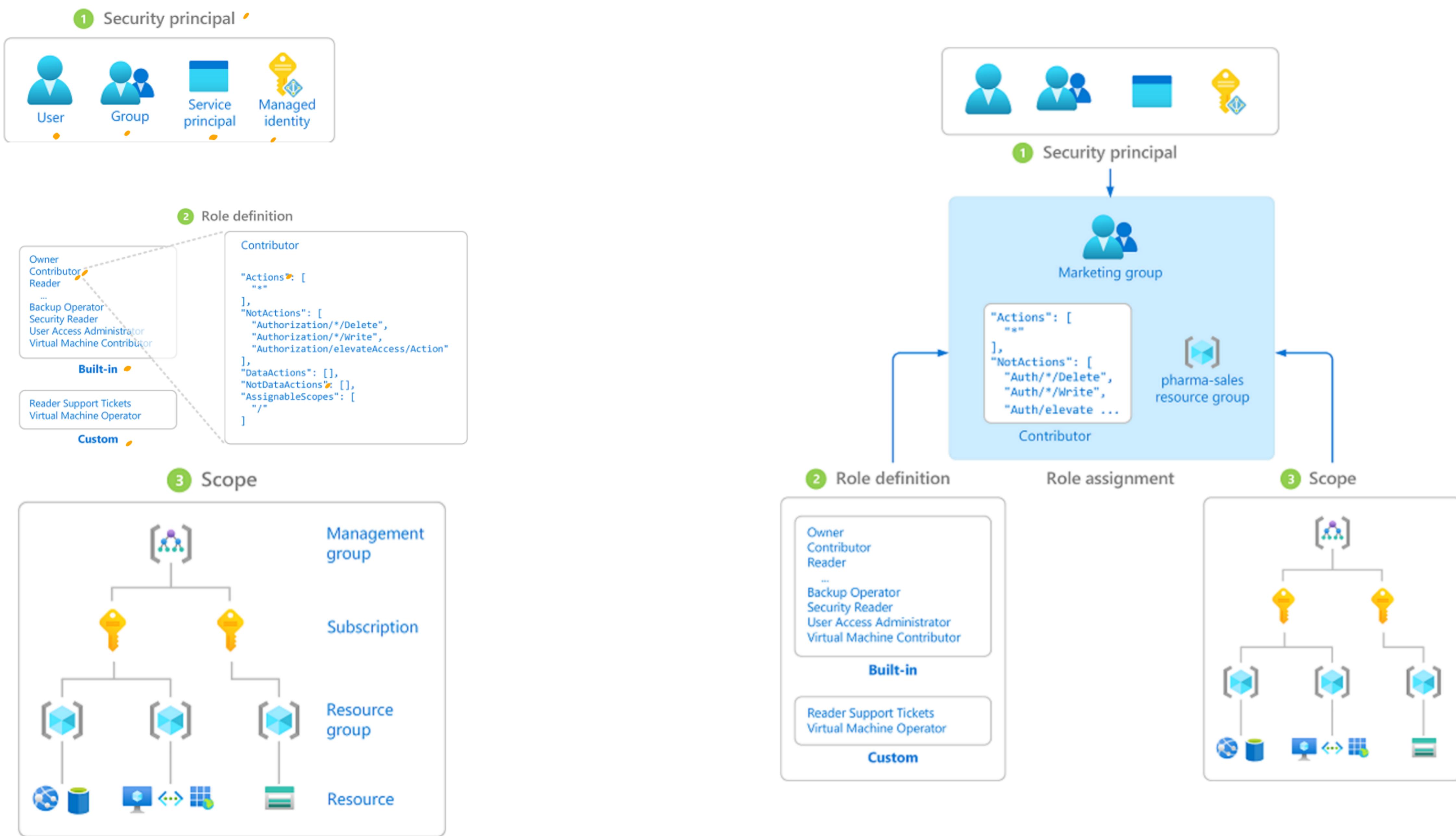
The diagram illustrates the relationship between resources. Two rectangular boxes labeled "1 VM" and "2 VM" are connected by arrows pointing to a single rectangular box labeled "Vnet". Below the "1 VM" box, the word "Prod" is written. To the right of the "2 VM" box, the word "Dev" is written.

Tenant root group



Azure Hierarchy





Authentication is the process through which you prove who you say you are.

Authorization is the process of granting an identity the permission to do something.

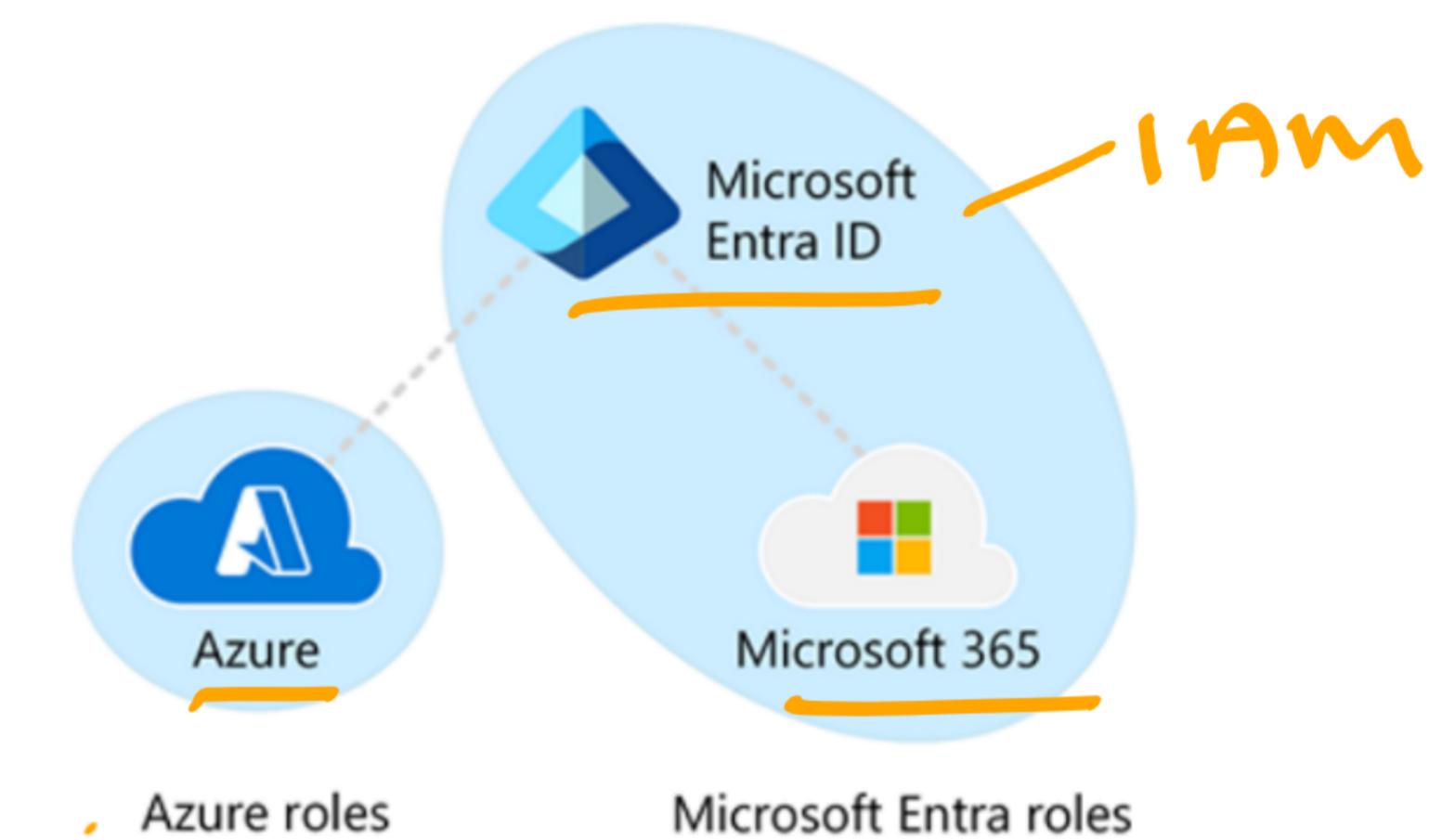
A DDS

- . Kerberos
- . NTLM
- . LDAP - Query

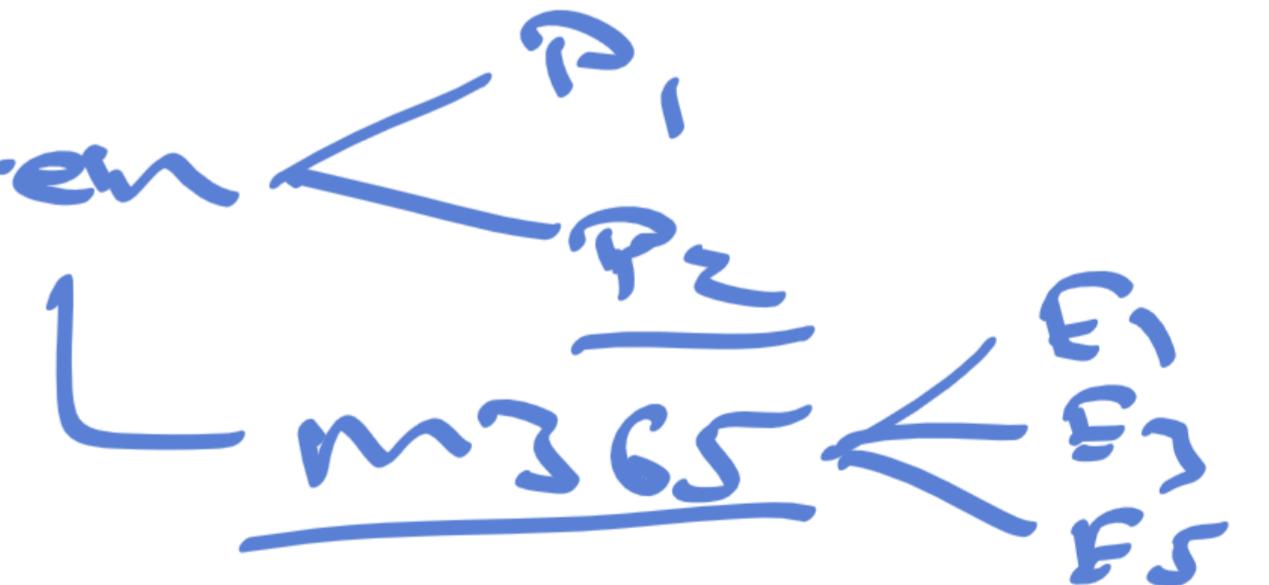
Entra ID

- * SAML
- * OpenID Connect
- * WS-Fed
- OAuth
- REST API

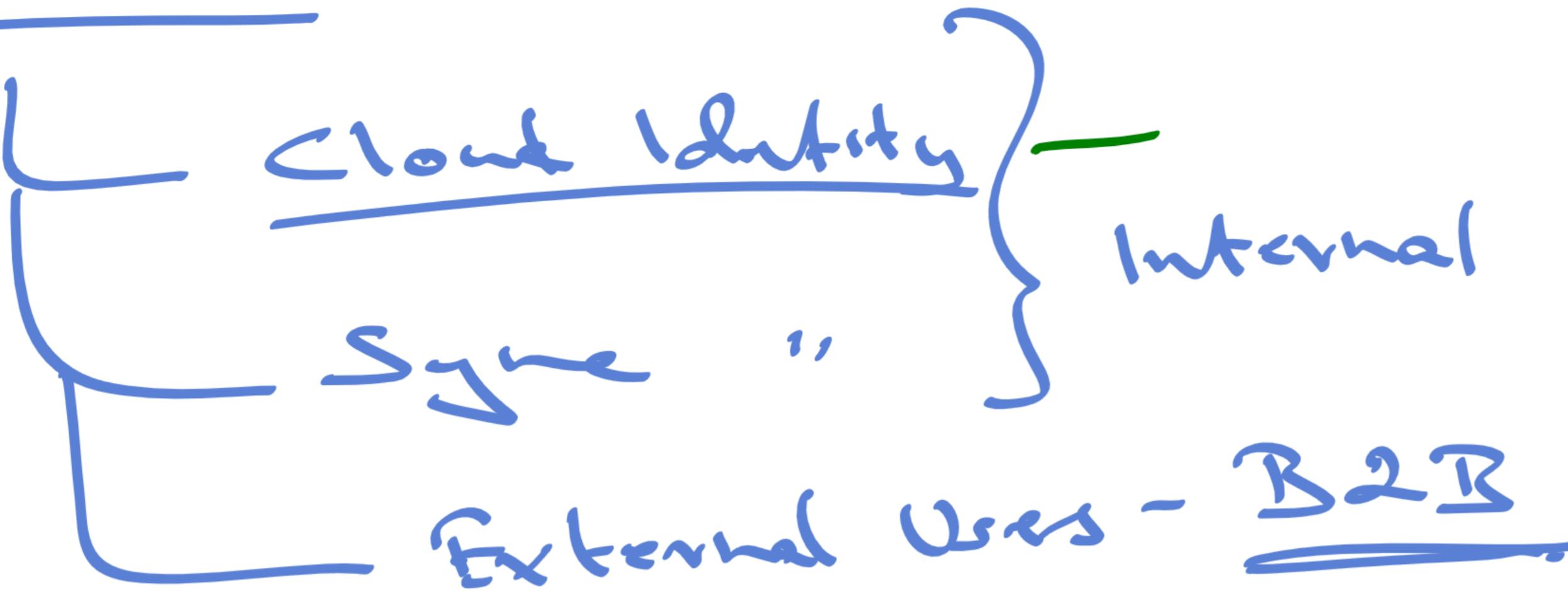
Tenant -
Identity -
Account (Id+Data)



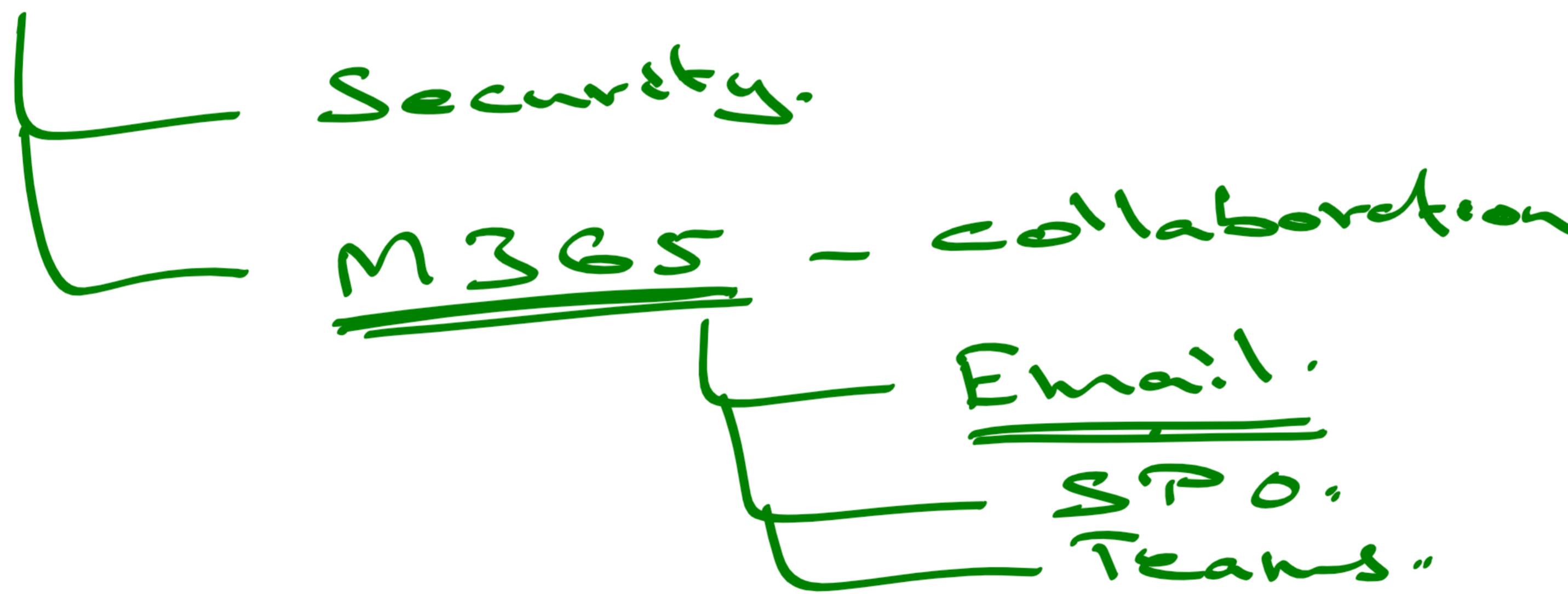
- Free
- Premium



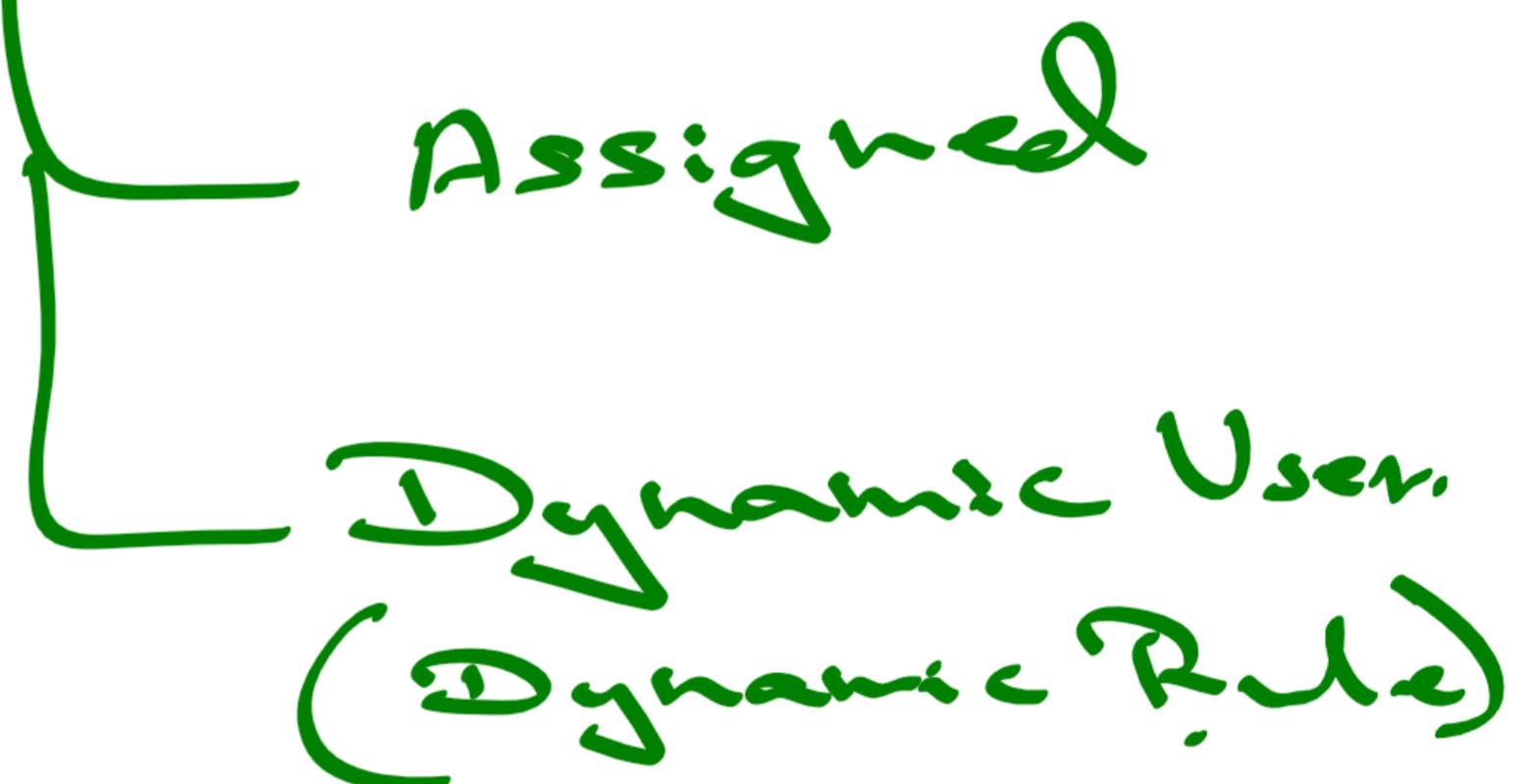
Users



Groups - Collection of Group



Member Assign

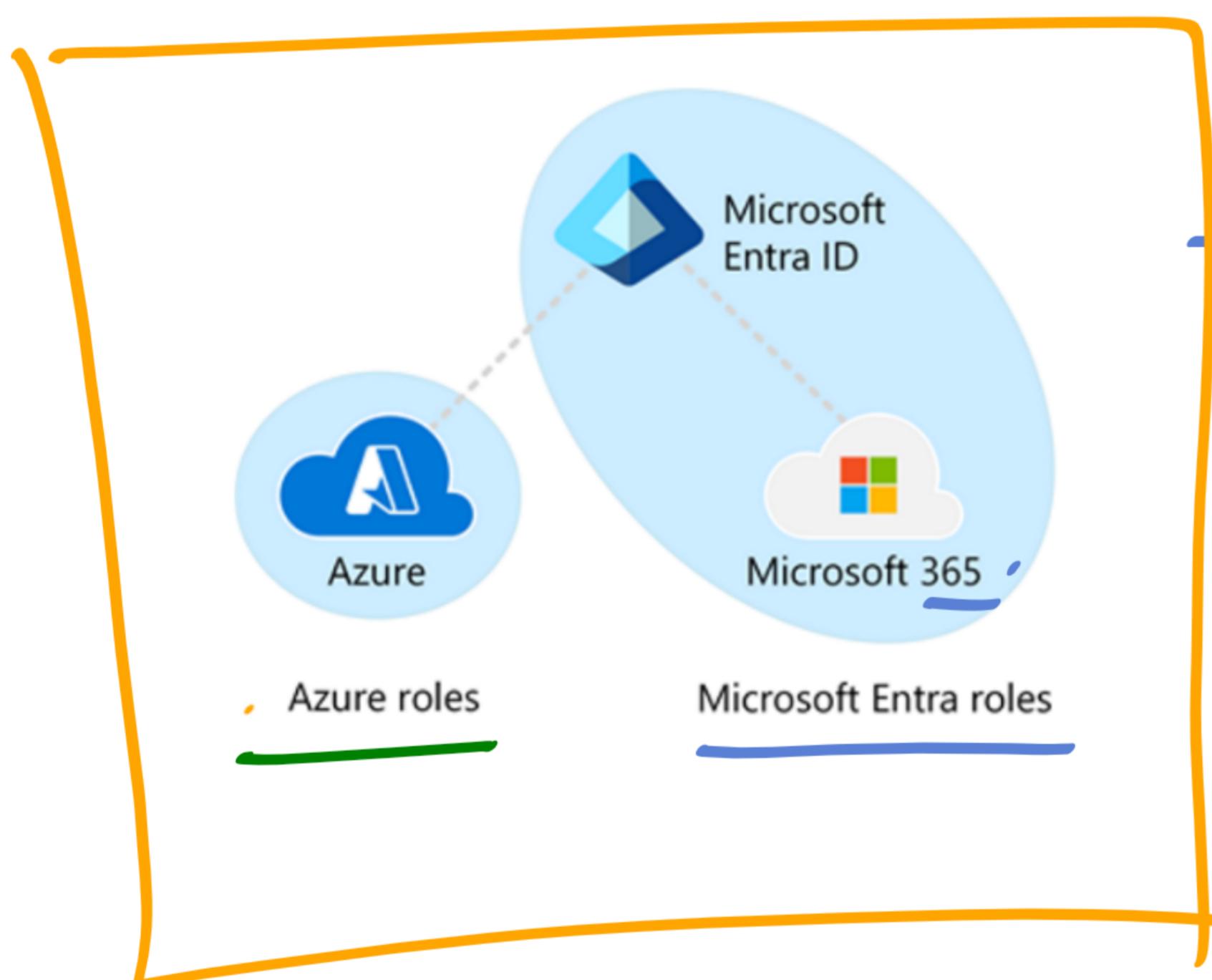


License

- Assignment

RBAC

Roles Built-in
Custom



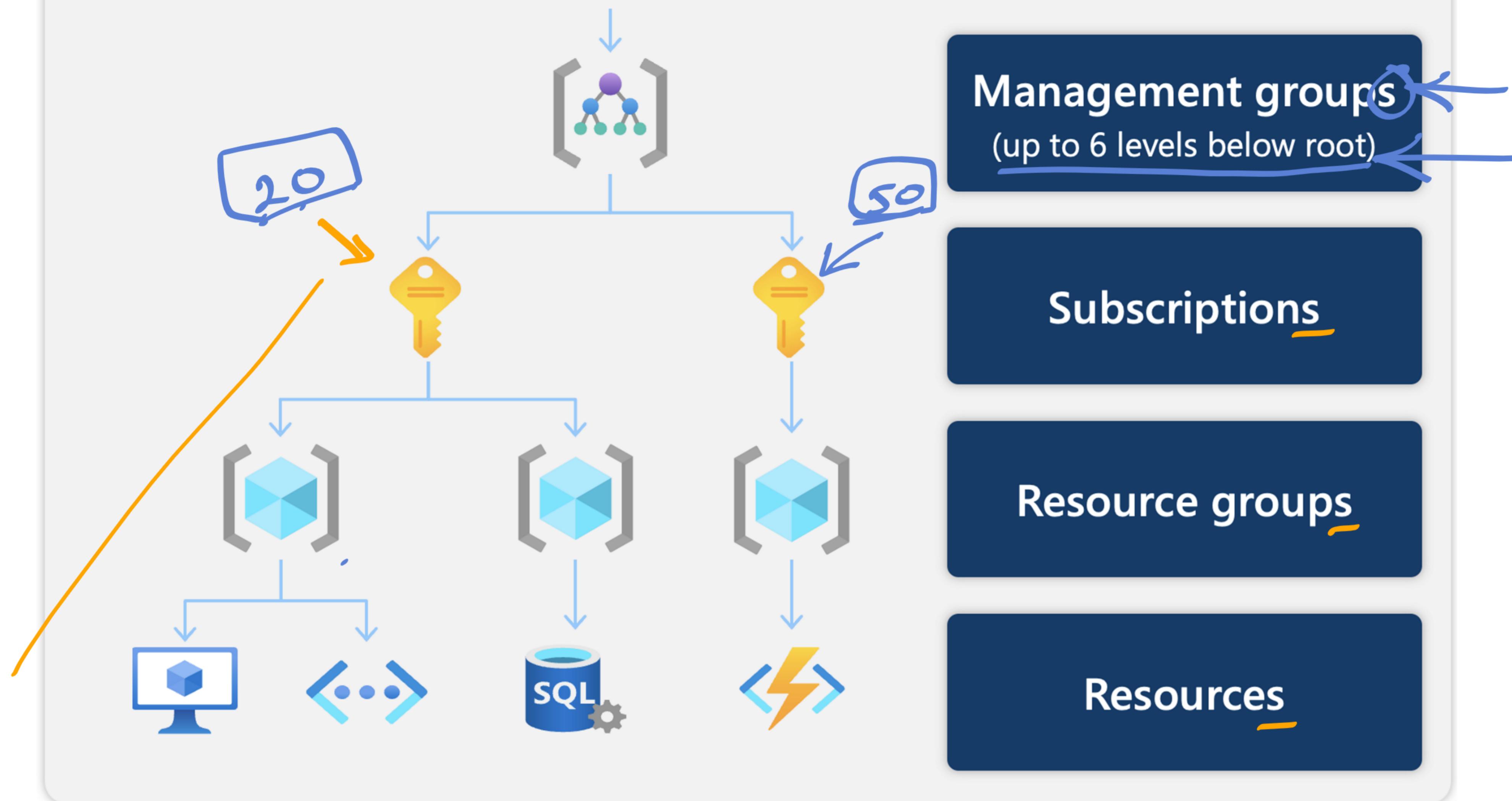
Entra Roles

- G A.
- Billing Admin
- FxO
- SPO
- Teams
- User Admin

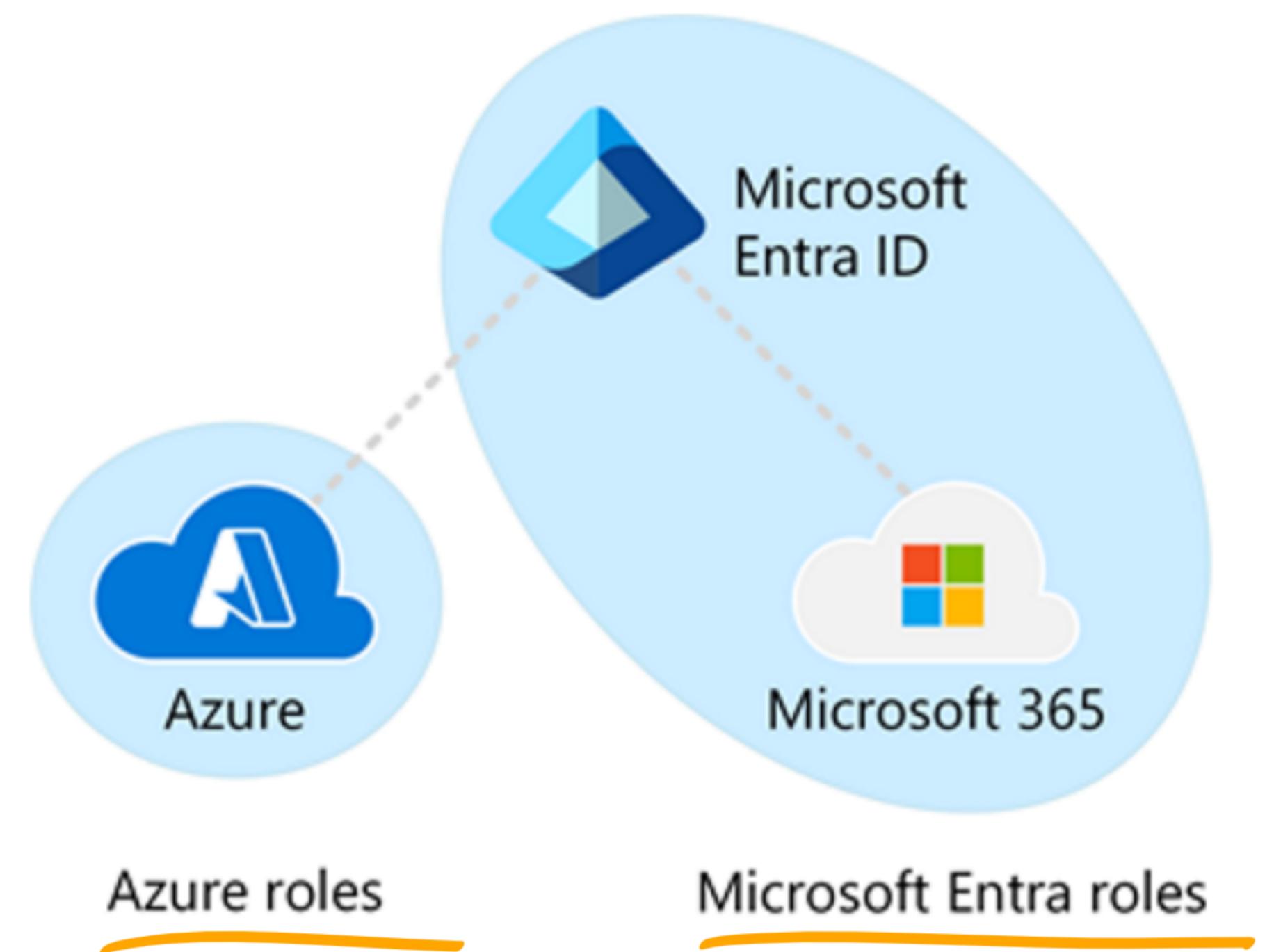
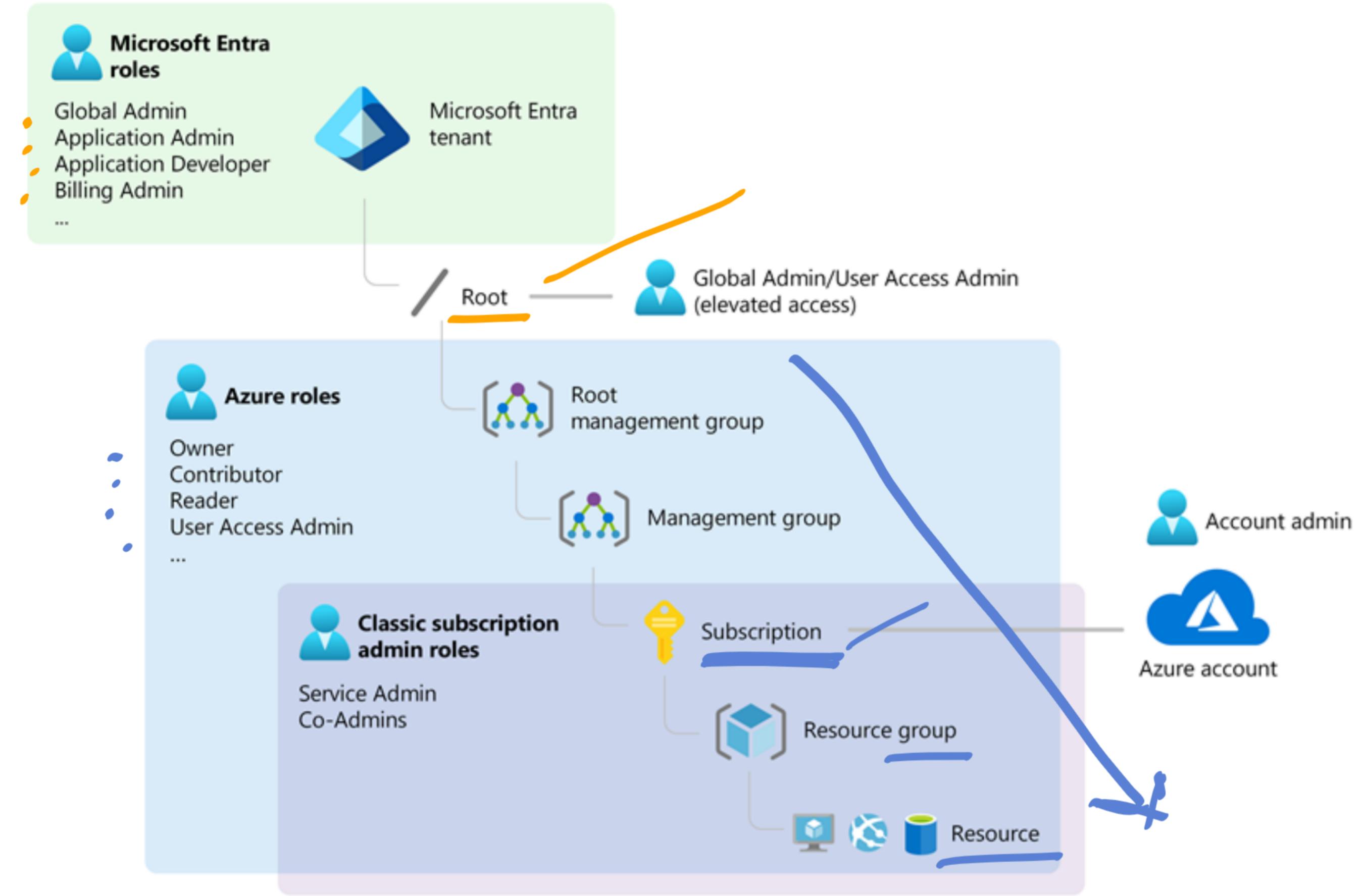
Azure Roles

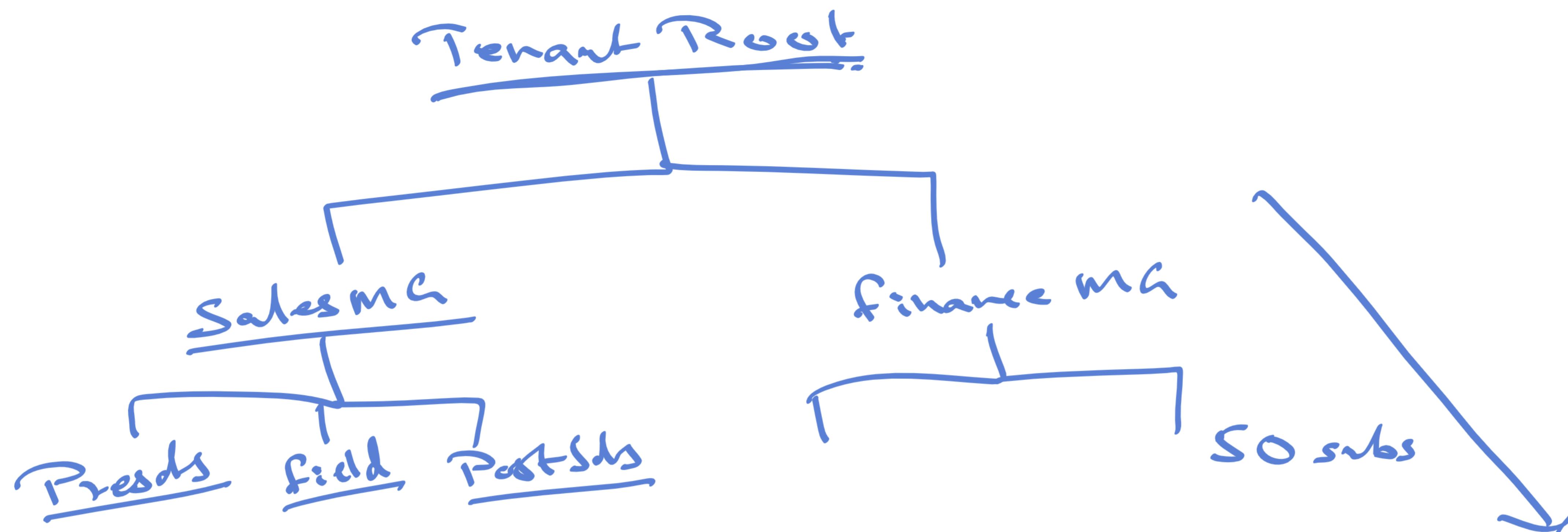
- Owner ✓ full control
- Contributor - full control
- ~~X~~ Delegate permission
- User Access Admin

Tenant root group



Azure Hierarchy

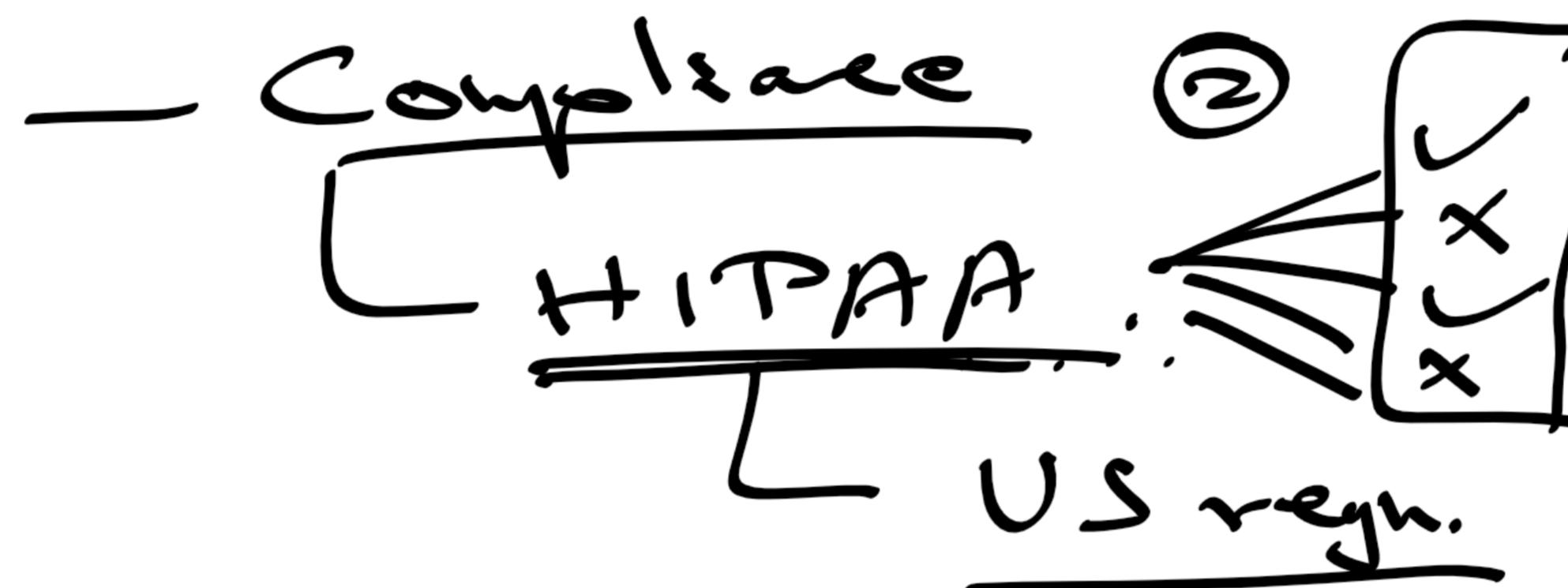




Az Policy - set of rules

Contoso - Save Cost - ①

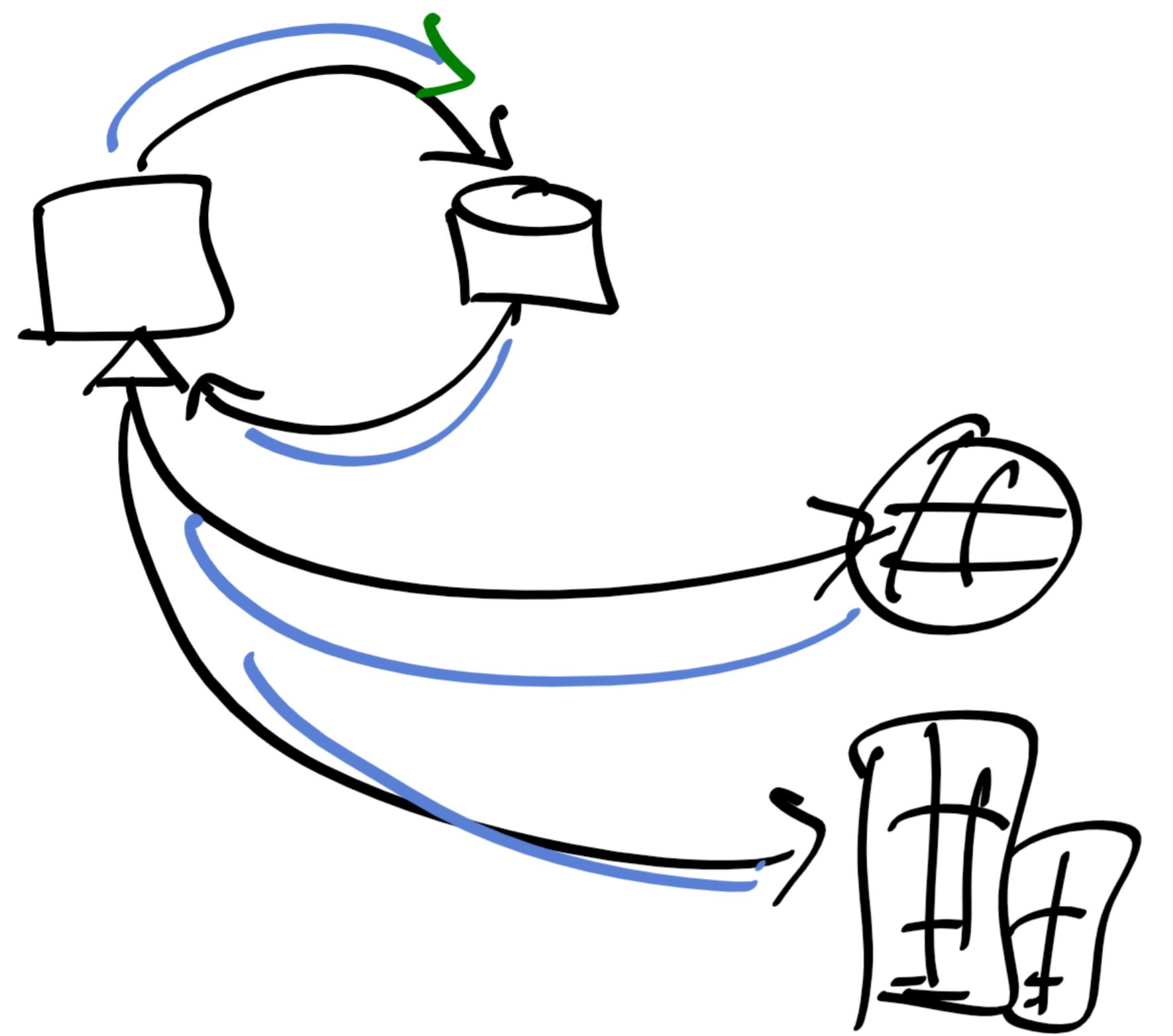
SA -
VM -



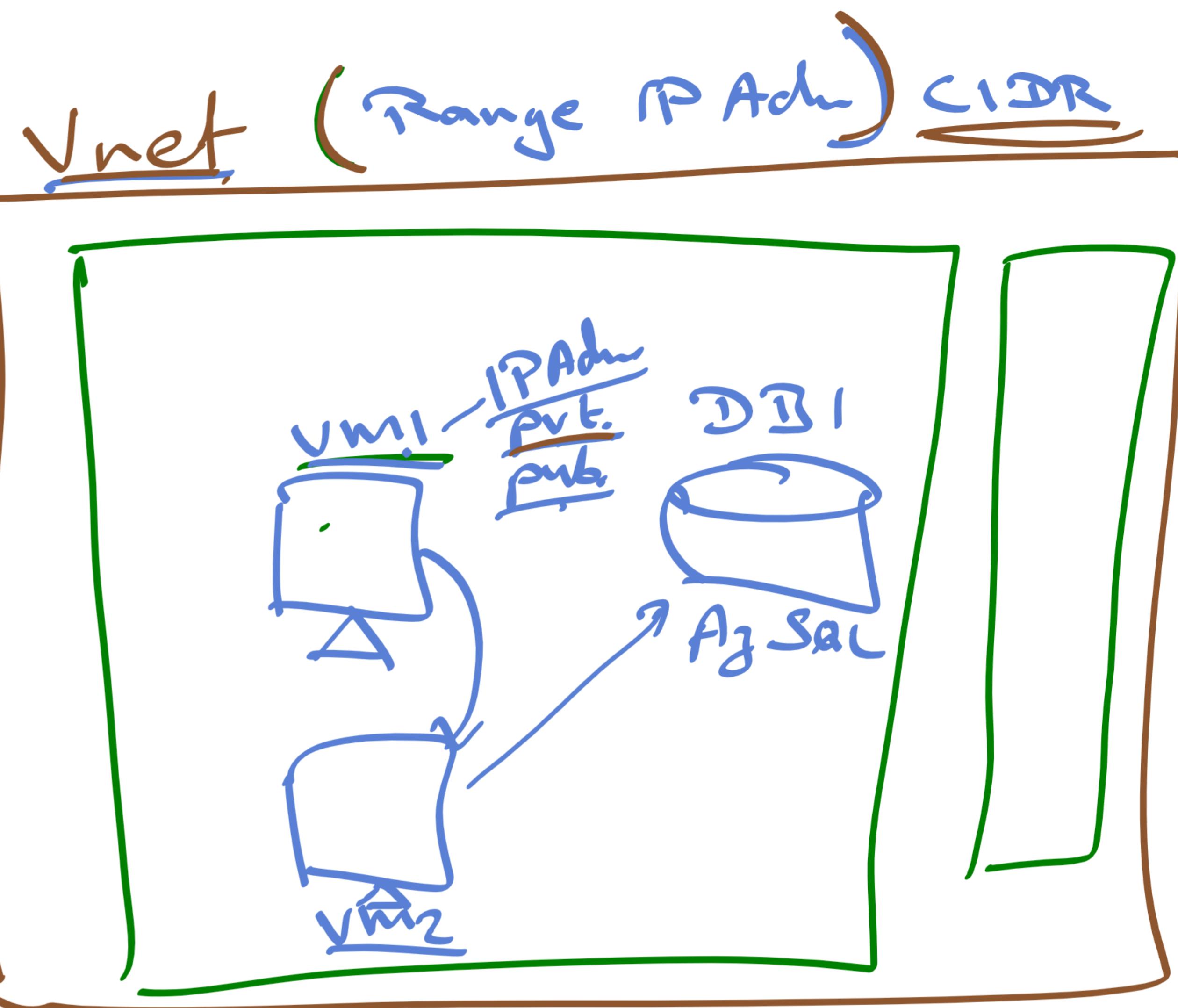
.

;

- Tag ③ :



Vnet



RFC 1918

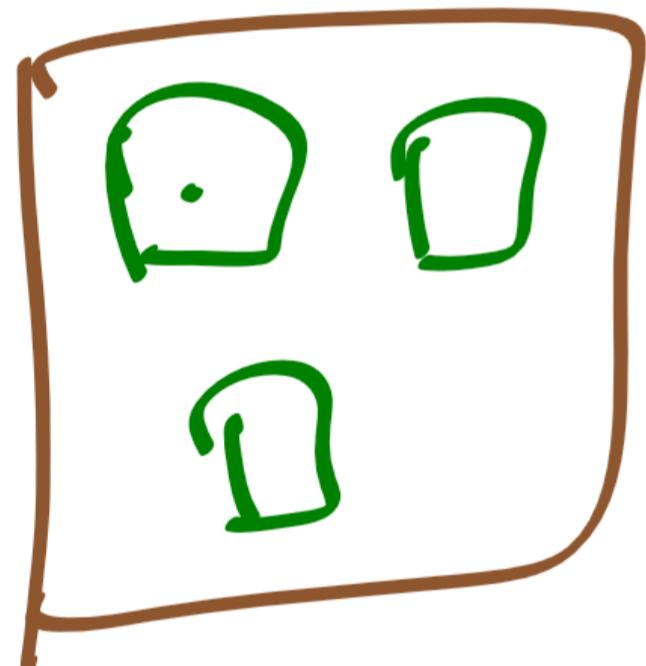
- 10.0.0.0
- 172.16.0.0
- 192.168.0.0

Vnet1 ($10.0.0.0/16$) 65,536

Subnet1 ($10.0.1.0/24$) — 256 (251)



Subnet2 ($10.0.2.0/24$) — 256



Subnet: 5 - Reserved IPs $\frac{1}{24}$ 256 (251)

10.0.1.0 - identifying Vnet.

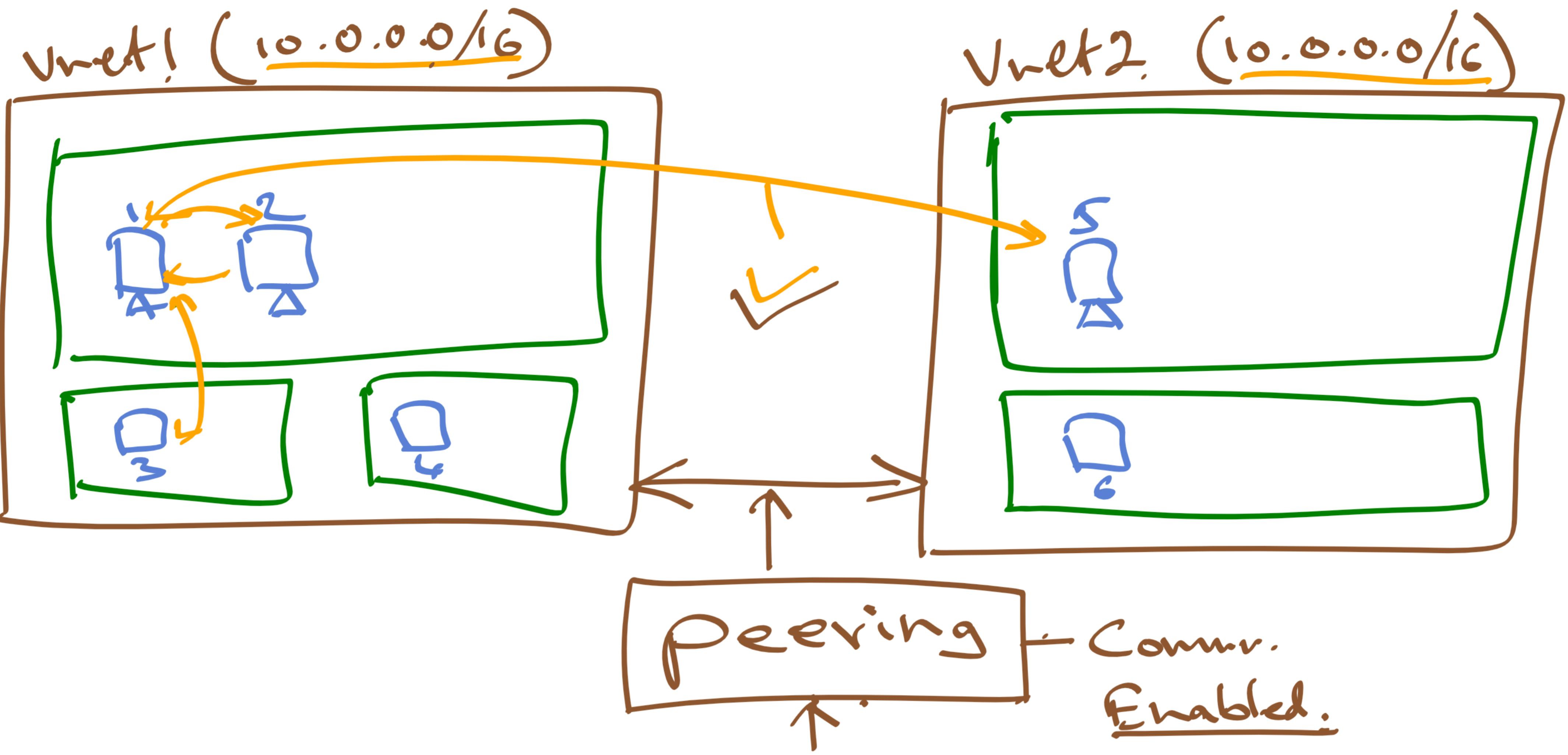
10.0.1.1 - Default GW.

10.0.1.2 } - Agnue DNS.

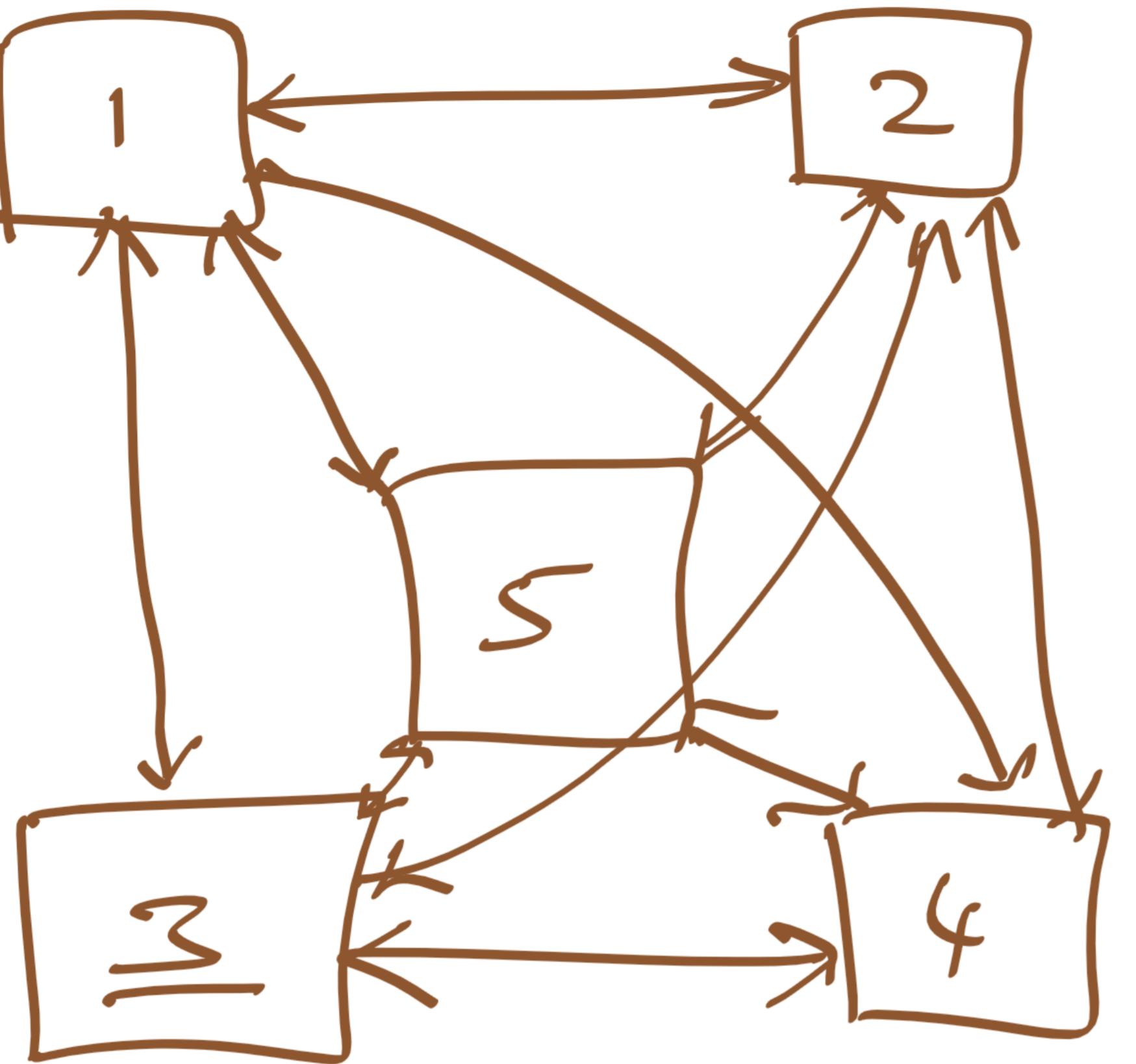
10.0.1.3 } - Virtual Broadcast IP

10.0.1.255

$\frac{1}{29}$ $\frac{8}{\downarrow}$
3



Topology

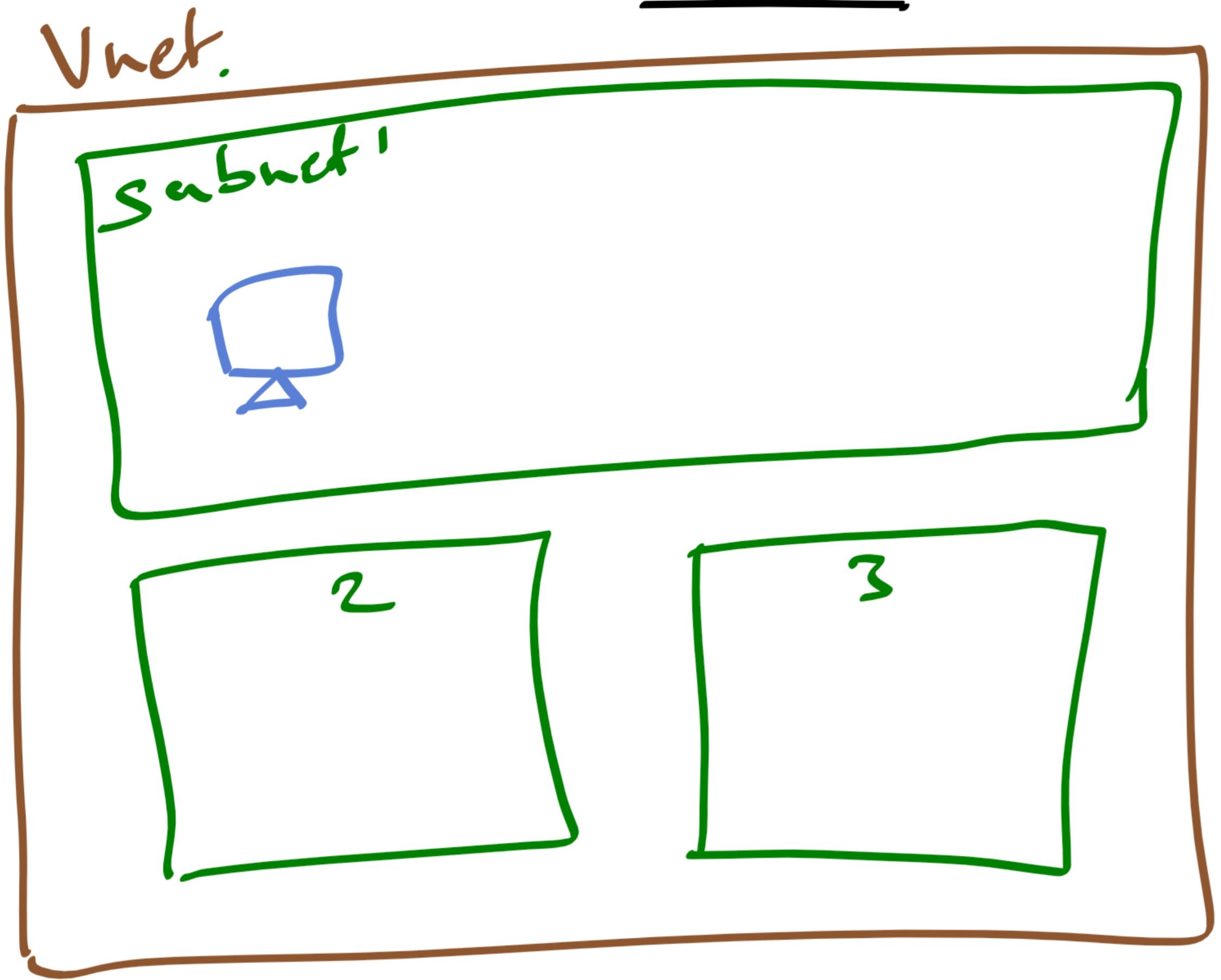


- mesh

- star
- hub

- non-transitive

Vnet - enable secure Comm.



✓ NSG

① Security Rules

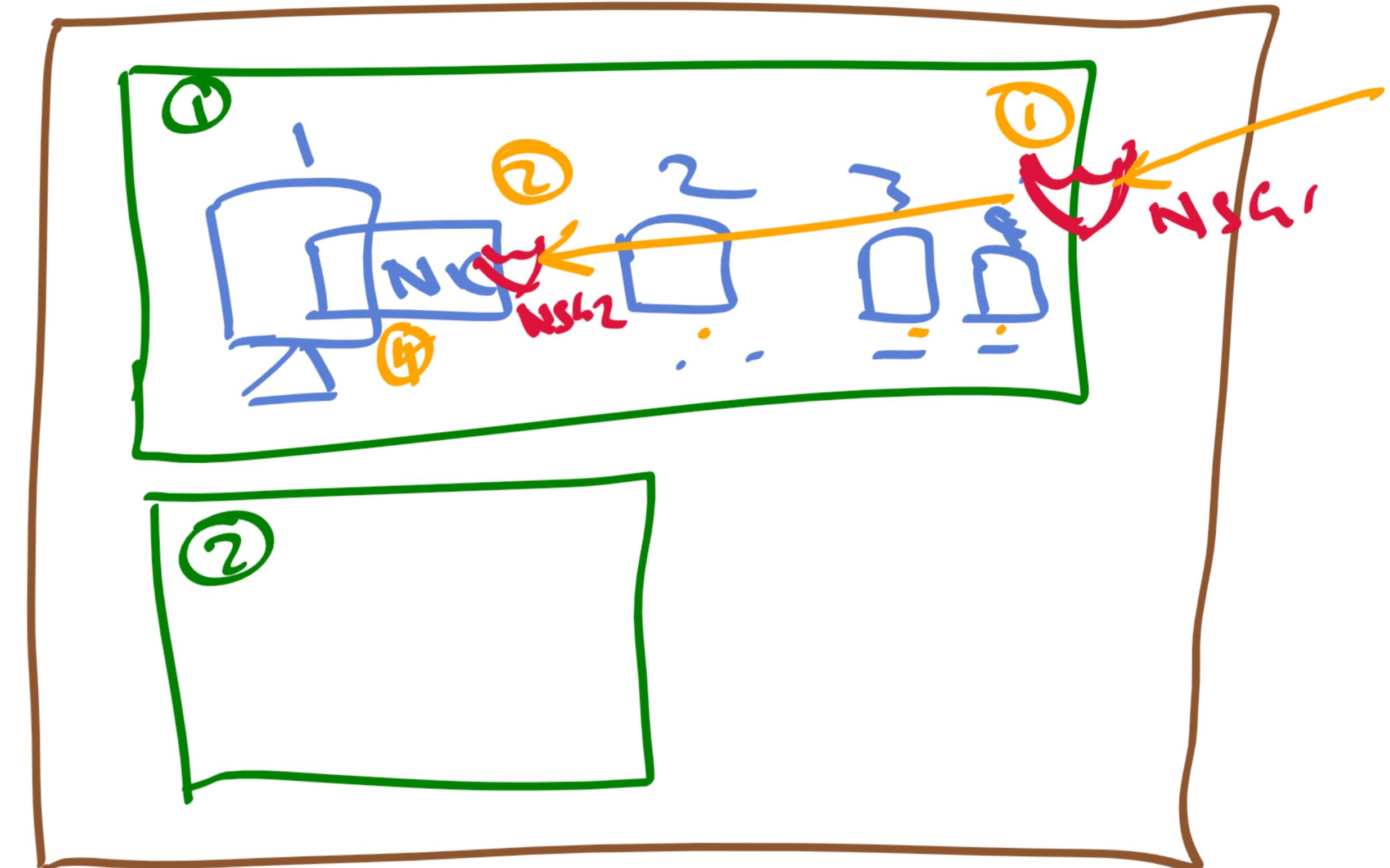
Inbound
Outbound

② Associated $\frac{N}{\omega}$

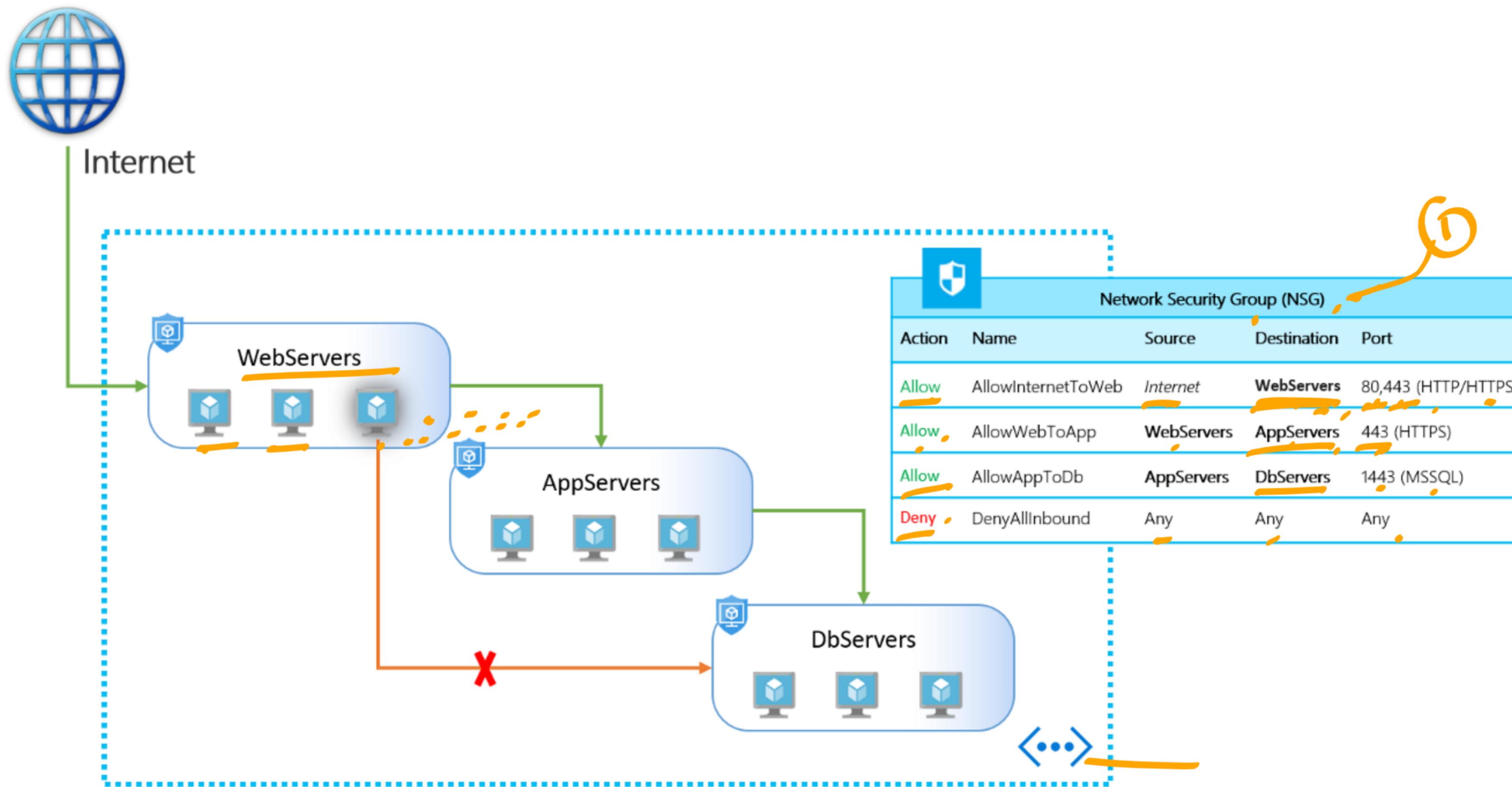
① - MIC

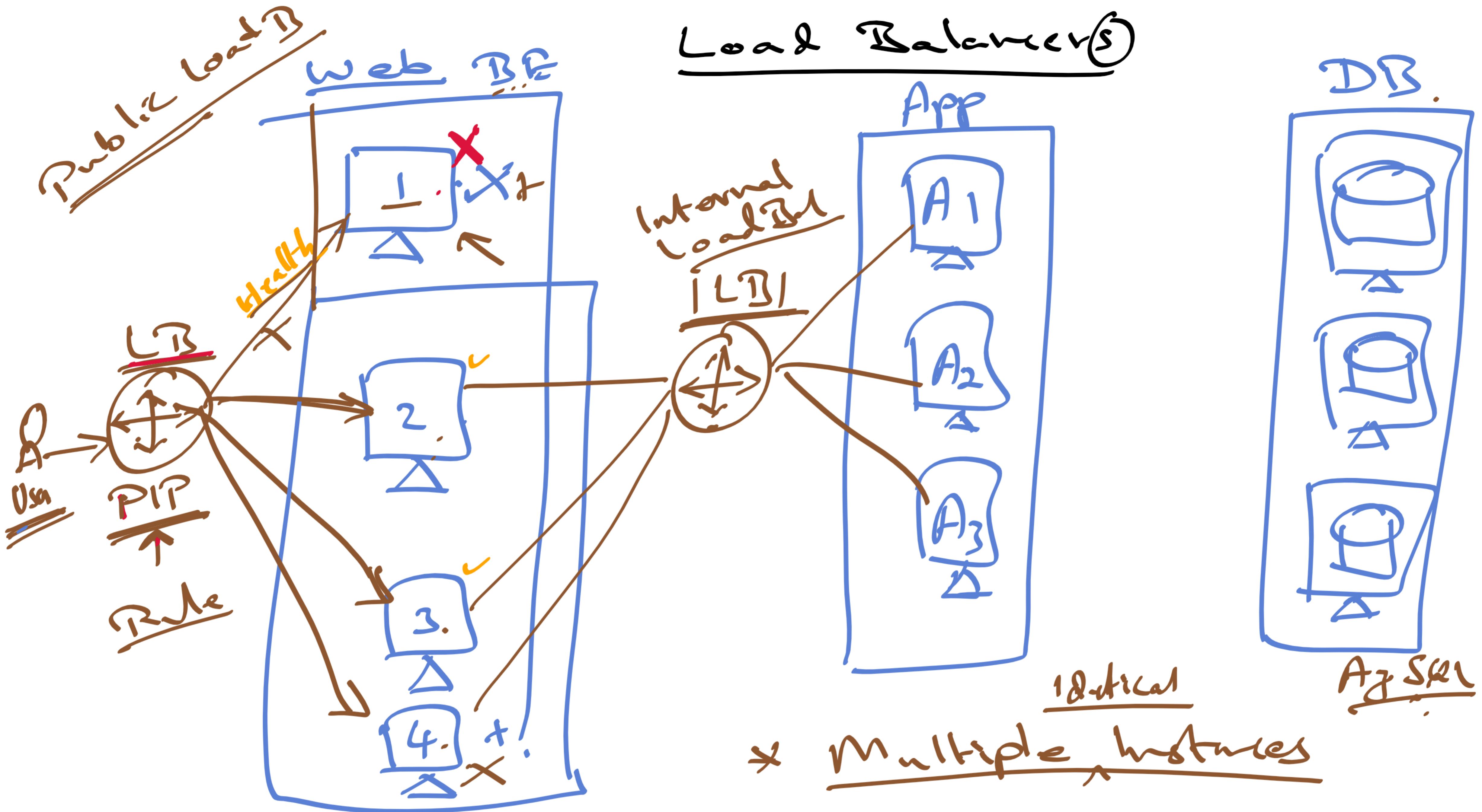
② - subnet

Vnet1



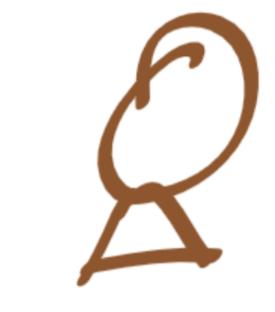
ASG:

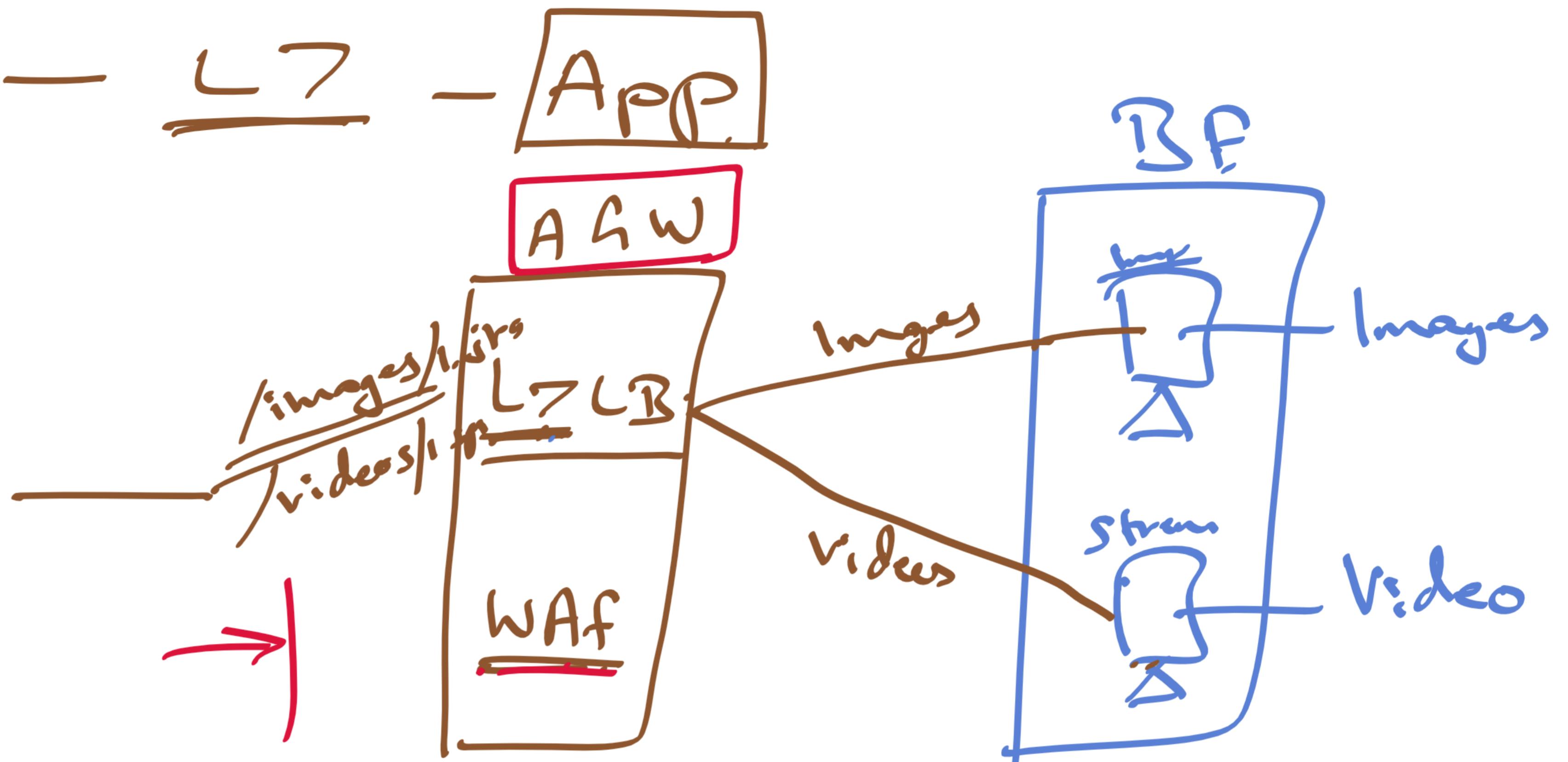


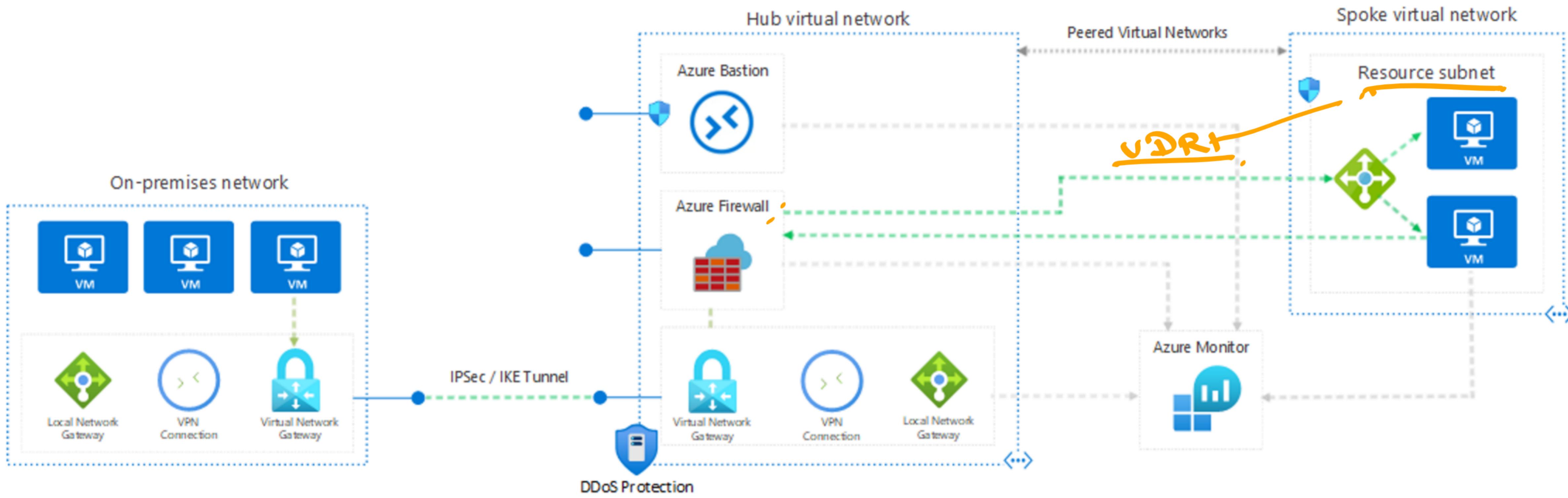


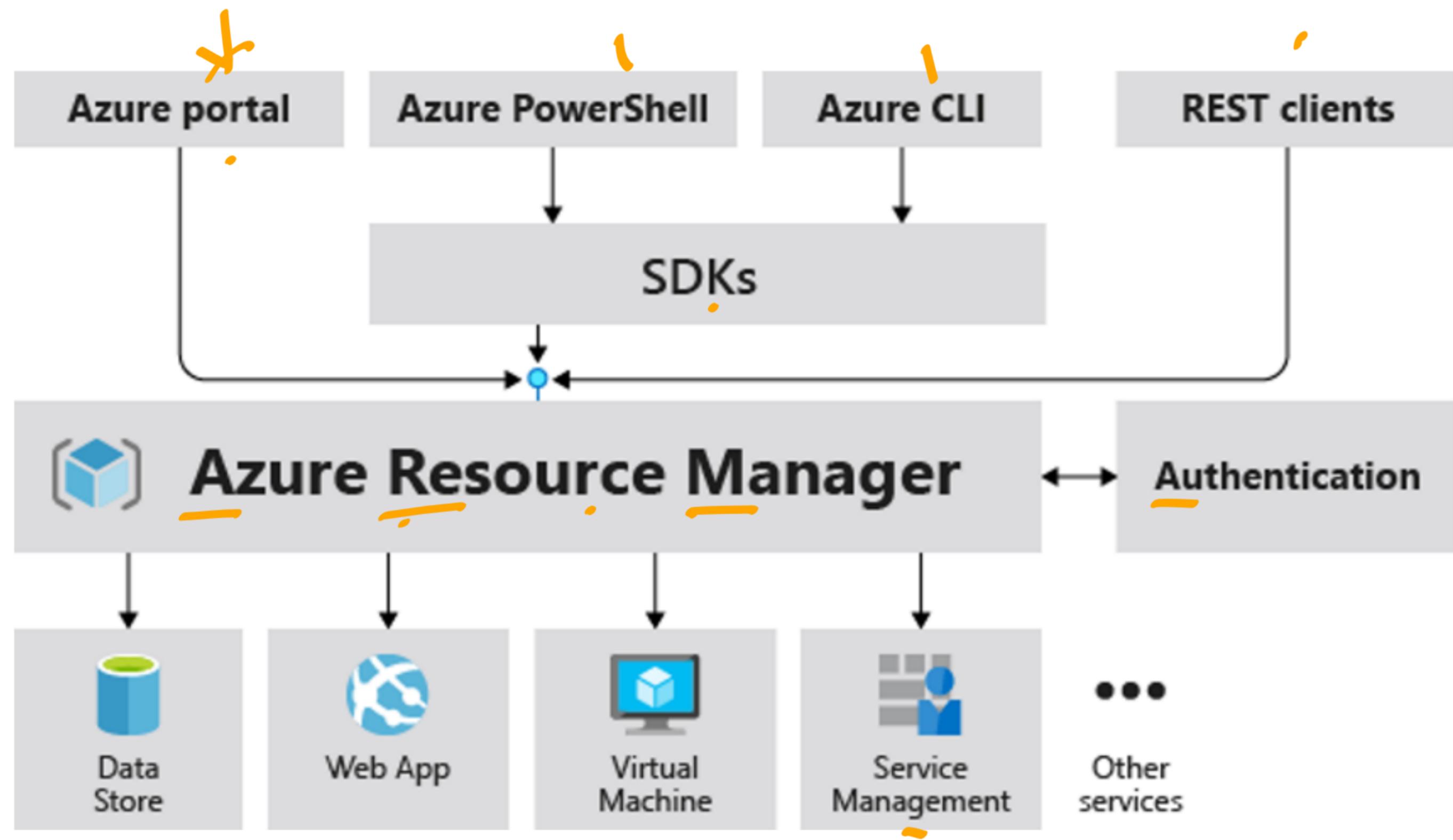
* A LB:

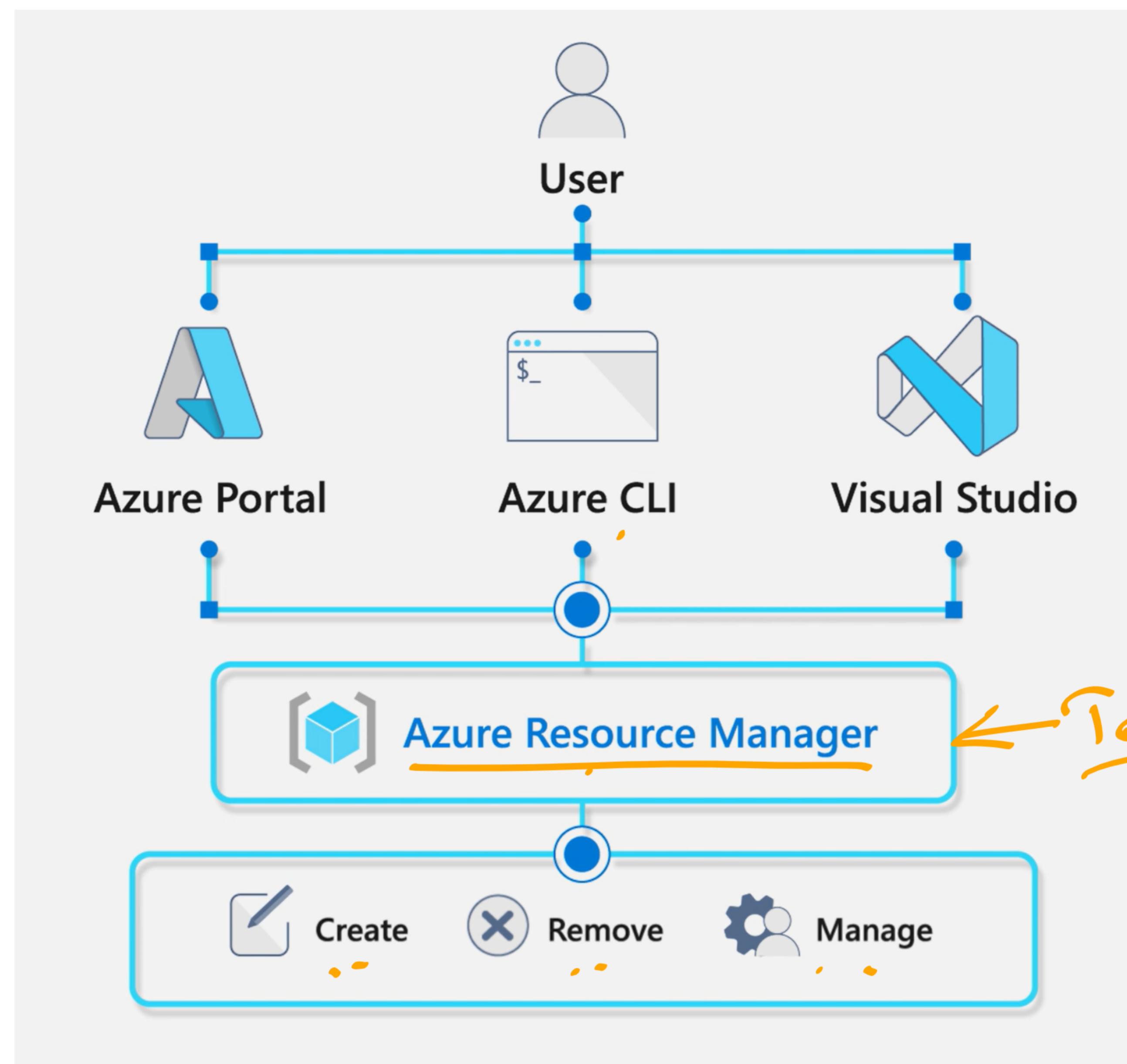
* App CW - L7 - App
+ \$\$

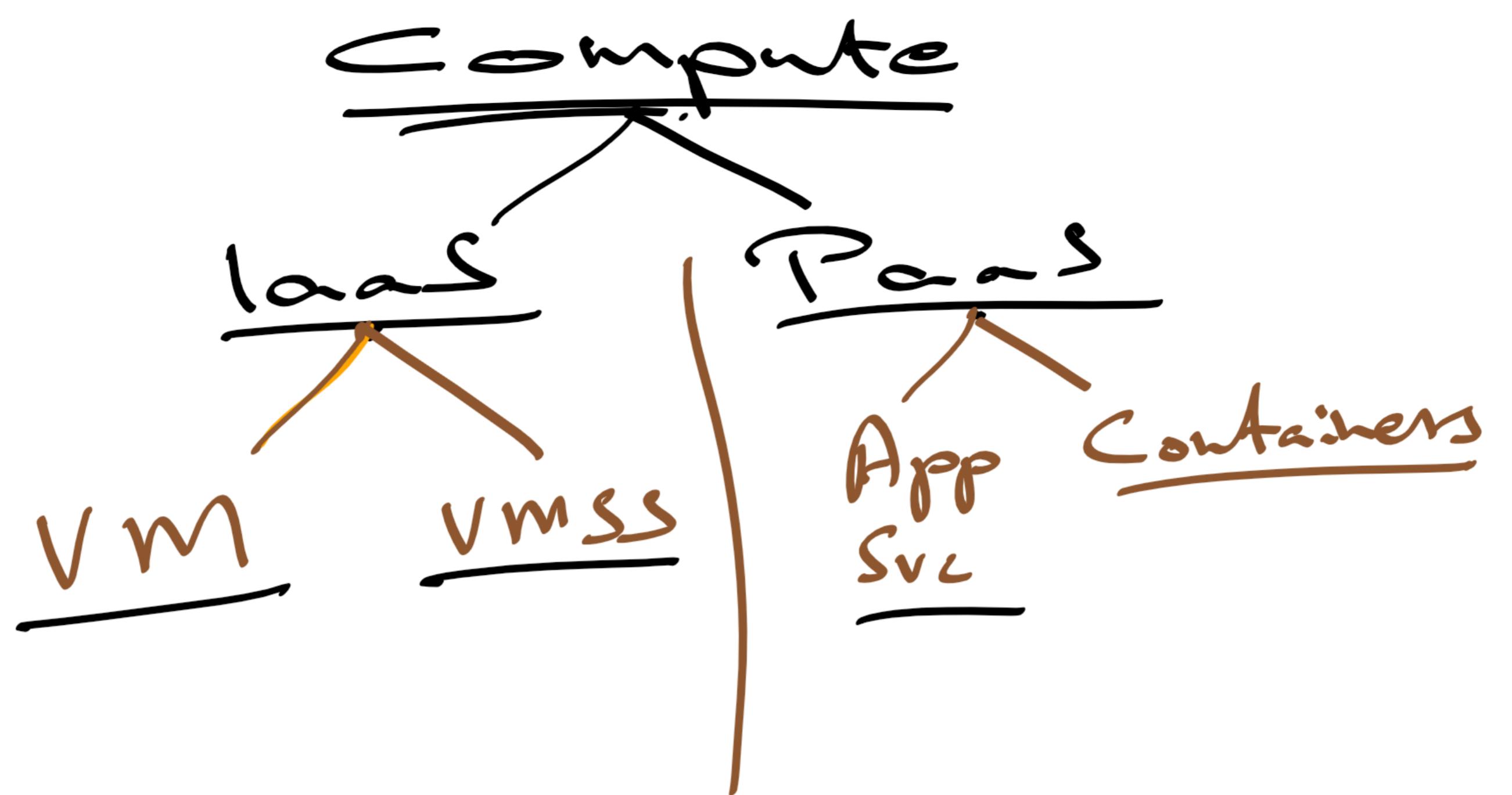
* * 
Users





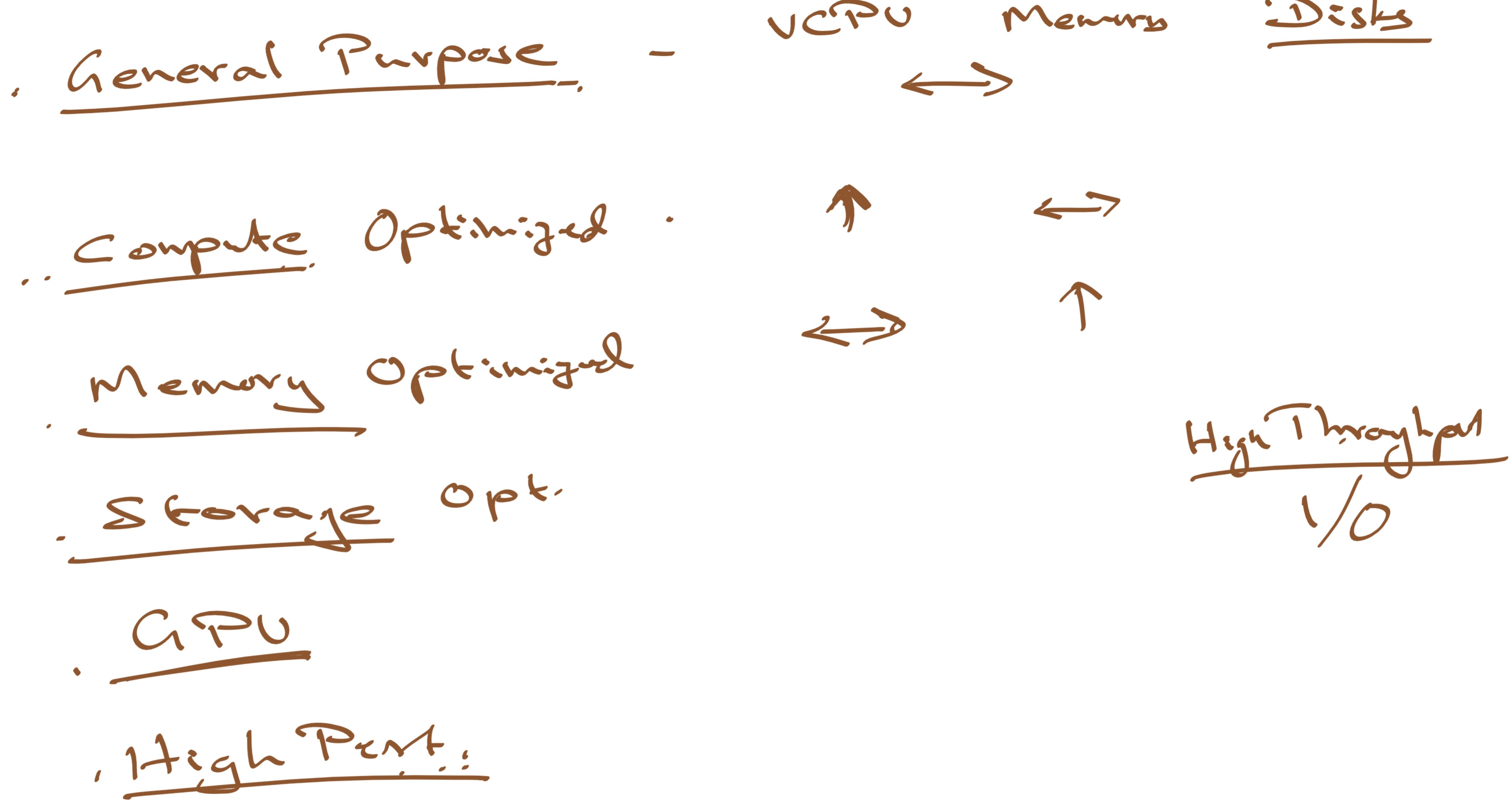


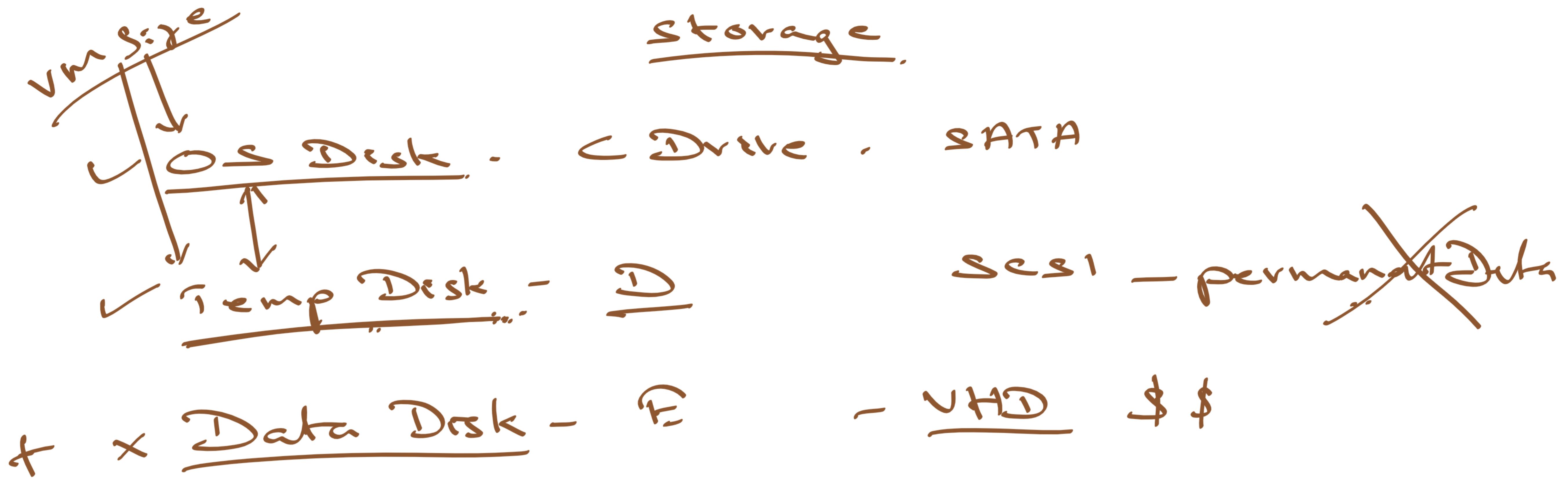




VM

- * vCPU, memory, VM Size, SKU
- * OS
- + Disk — store data
- + N/W — IP Addr
- + STC



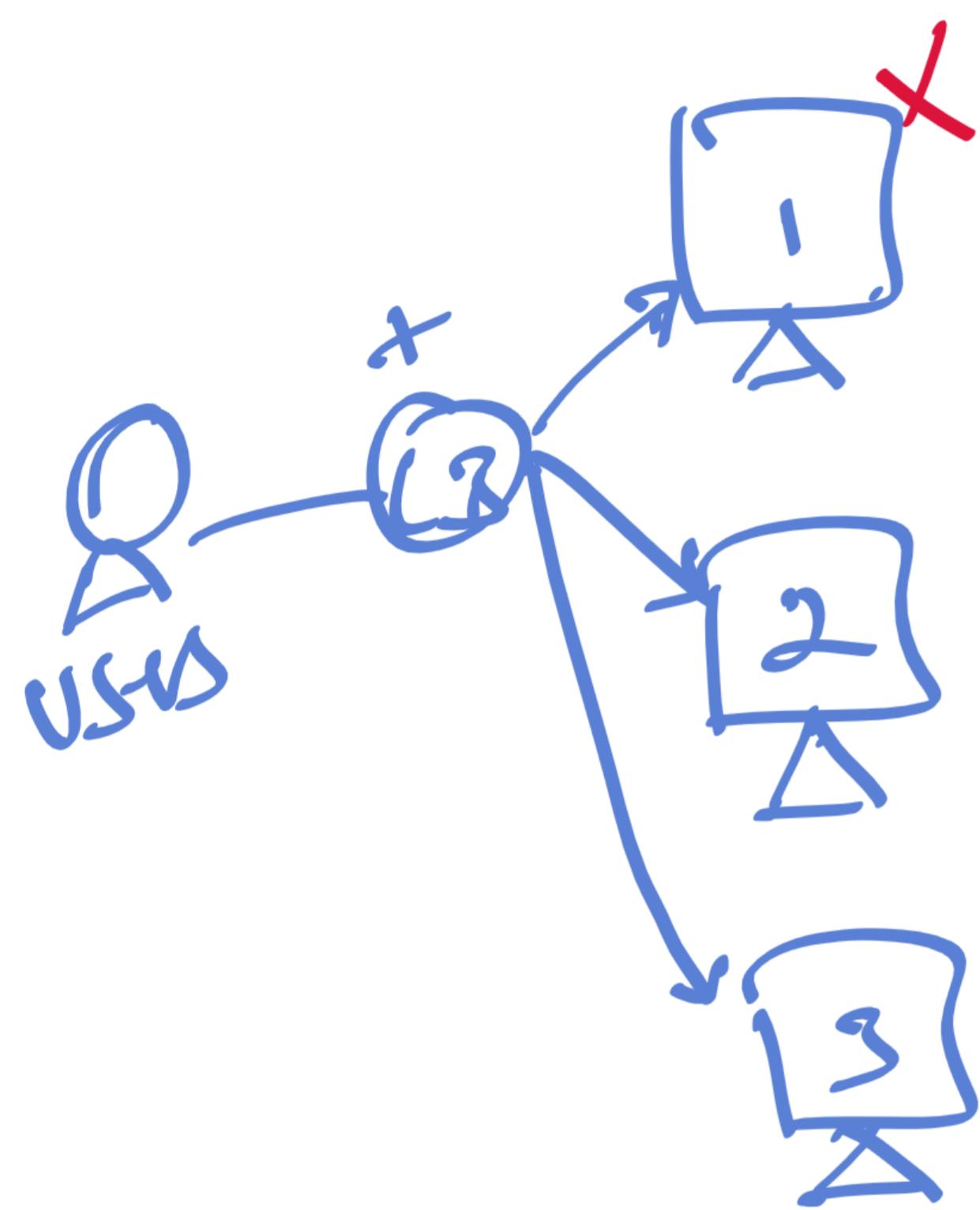


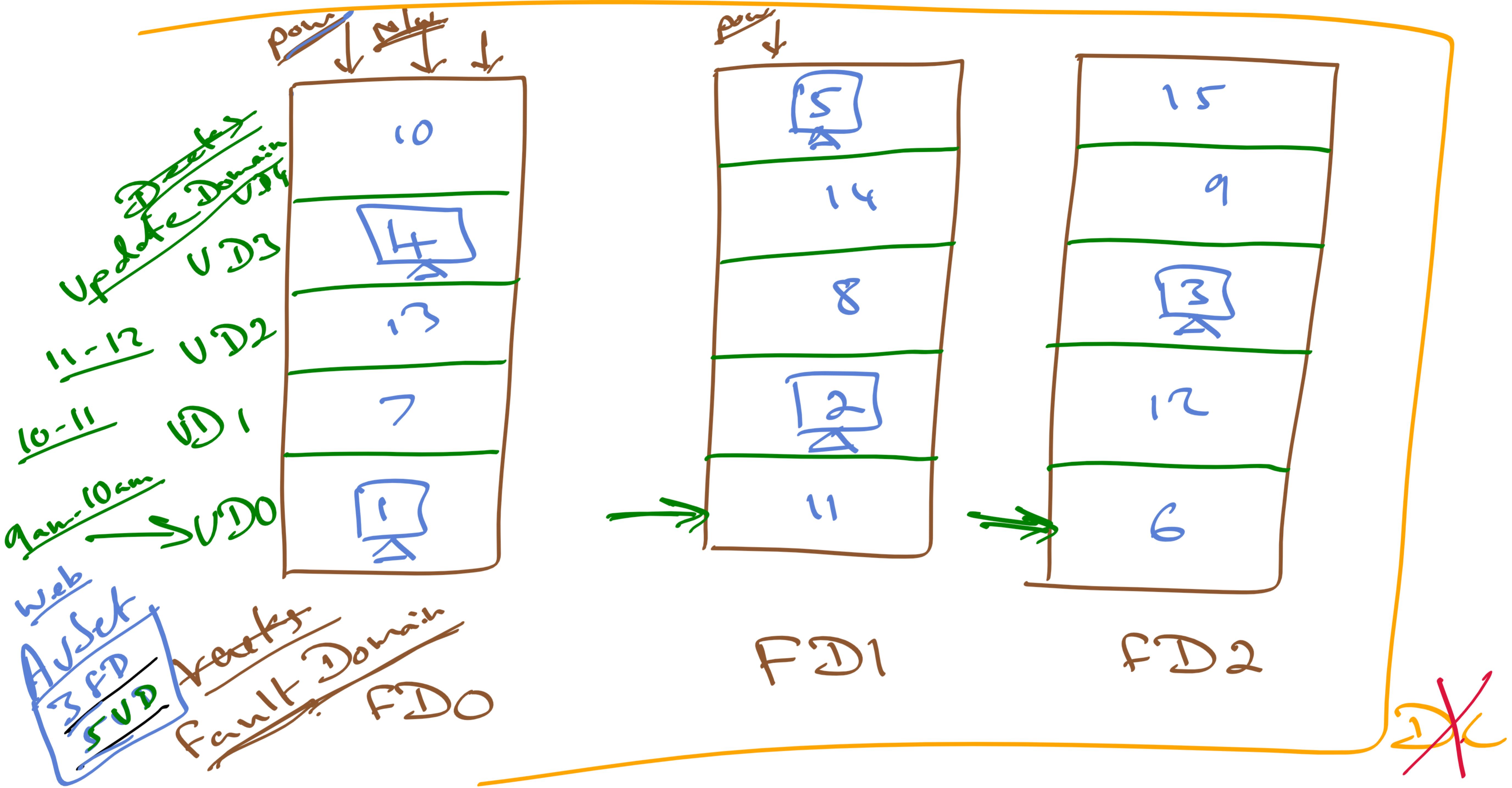
Availability VM Redundancy

- * Unplanned H/w maintenance: Live Migration Tech.
- ✓ * Planned maintenance.
- * Unexpected downtime: ✓ N/w , Desk

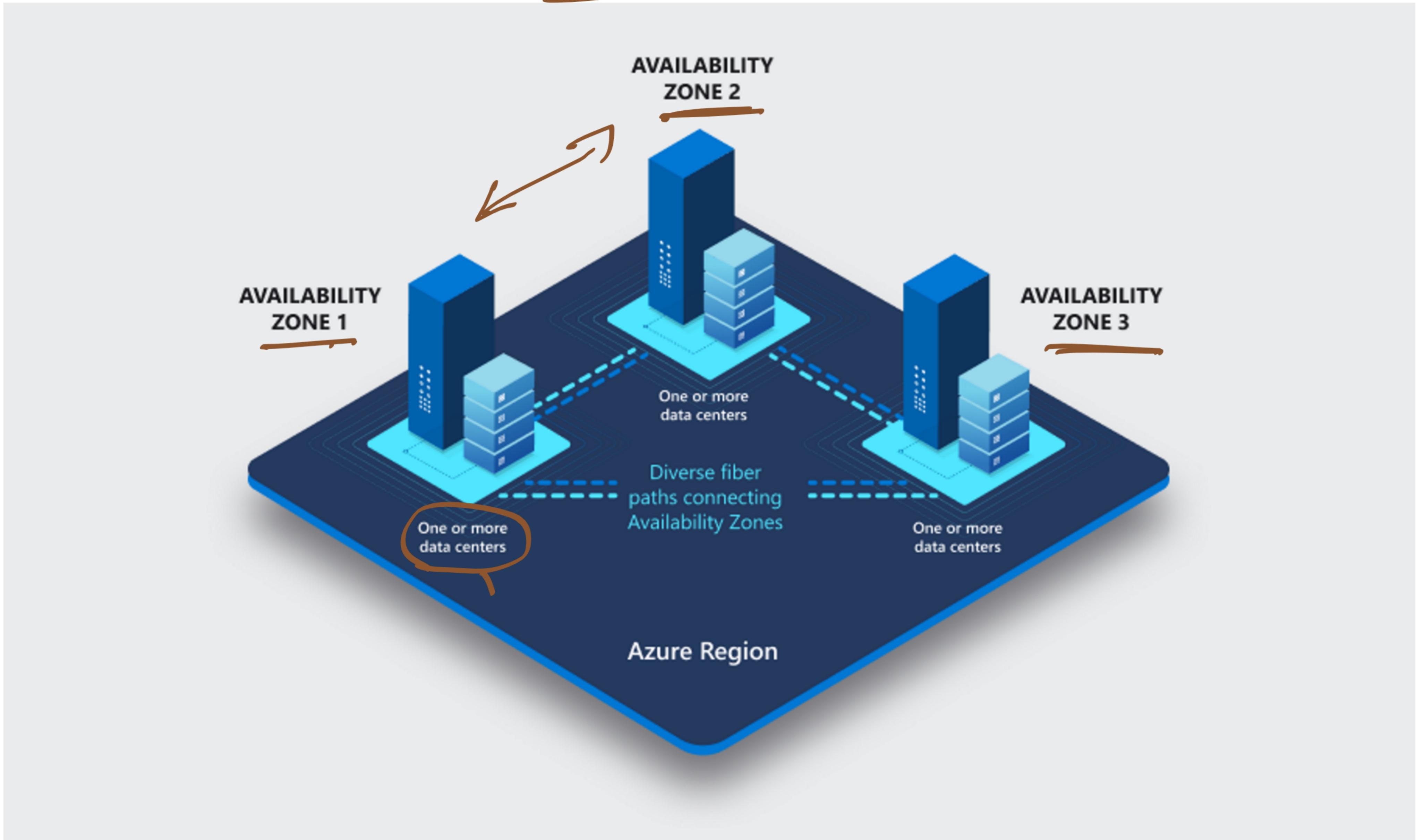
~~3 servers~~

High Availability
Availability Set H/W



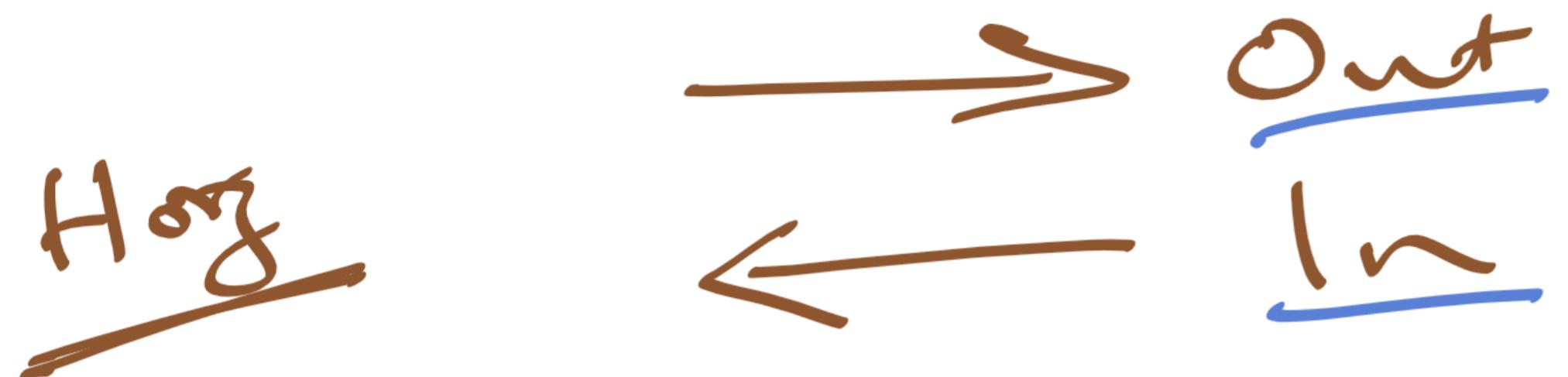


E-US Region → Availability Zone



Scalability.

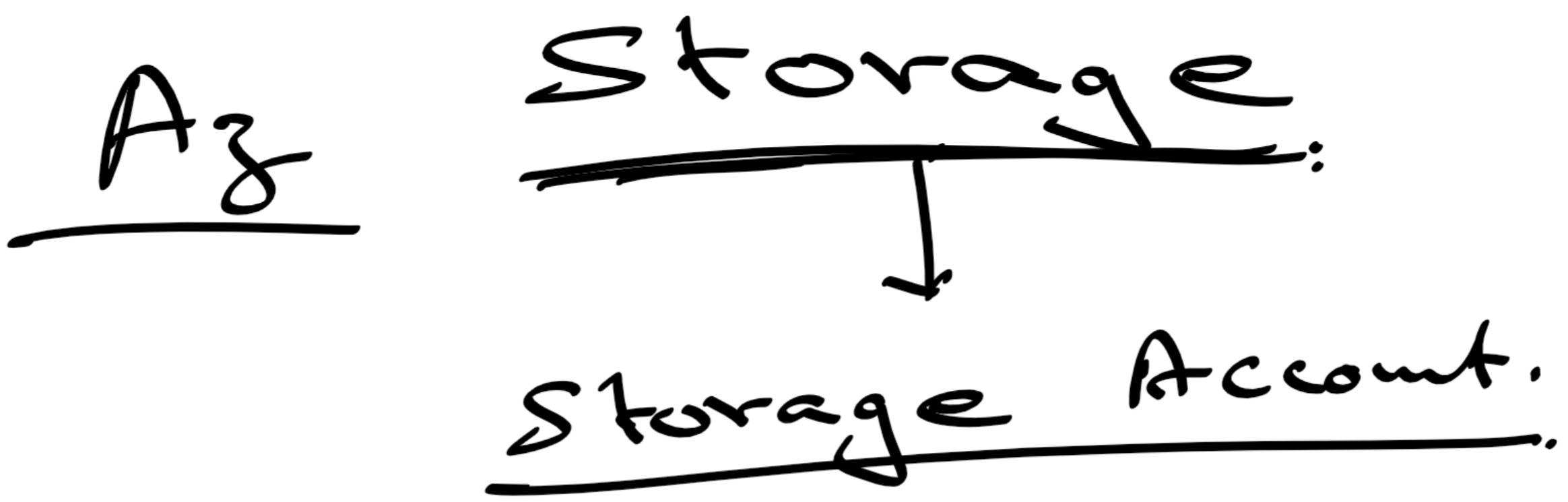
VMSS



Resizing

CPU ↑
Mem ↑

↓CPU
↓Mem



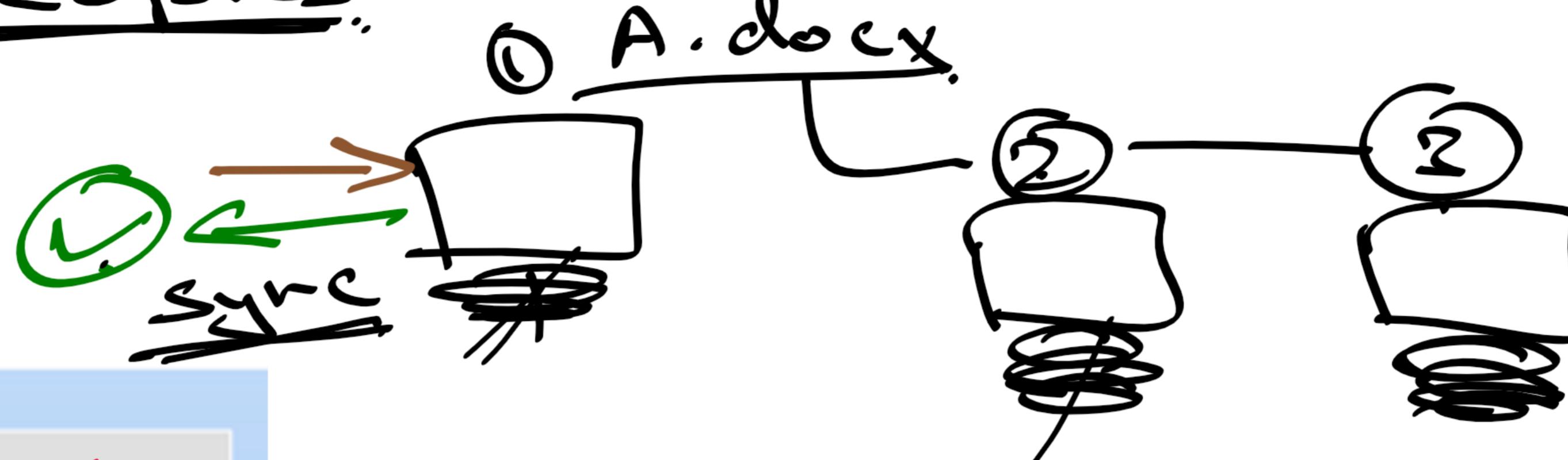
- ① Structured Data
- ② Unstructured Data Az Blob.
- ③ VM Data
 - VHD -
 - Files.

Storage Account $\triangleq \{$ Data storage -
Transfer

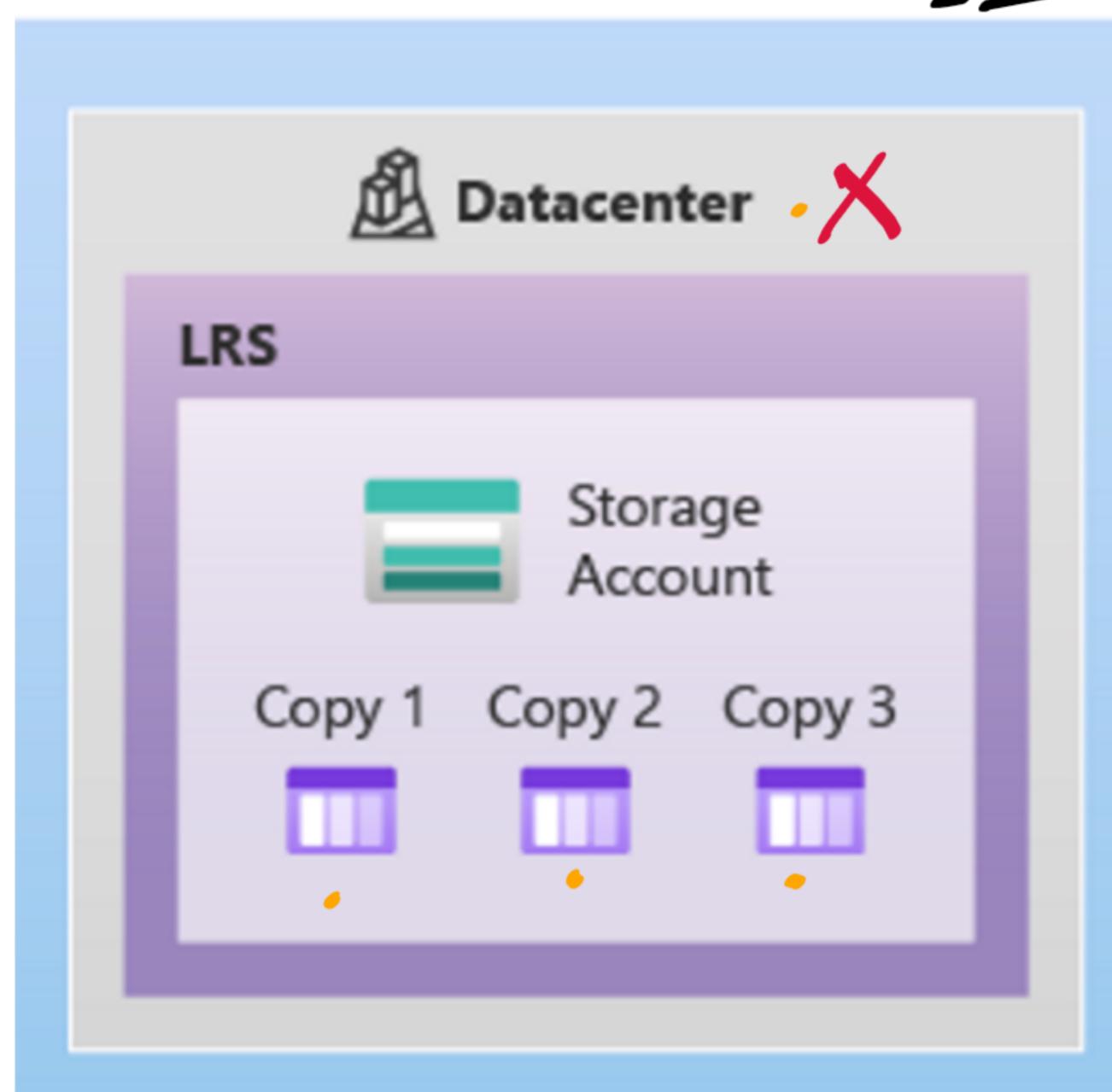
- Available
- Redundancy
- Security
- Manageability
- Scalability
- Standard - HDD: low-latency port $\$ \$$
- Premium - SSD: Bulk

SAL LRS, (11 nines)

- 3 copies:



Primary region



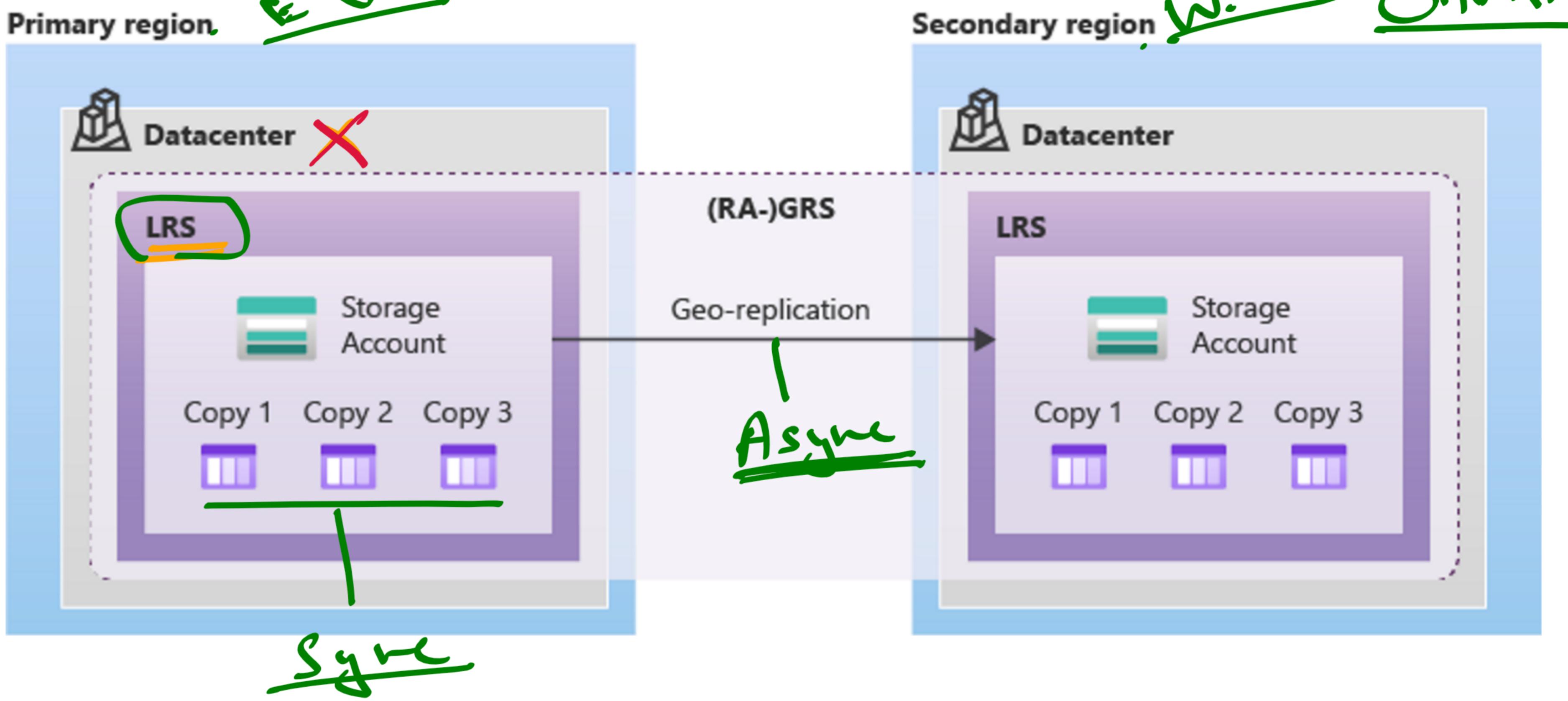
ZRS (12 nines)
- 3 copies
Primary region E-US X



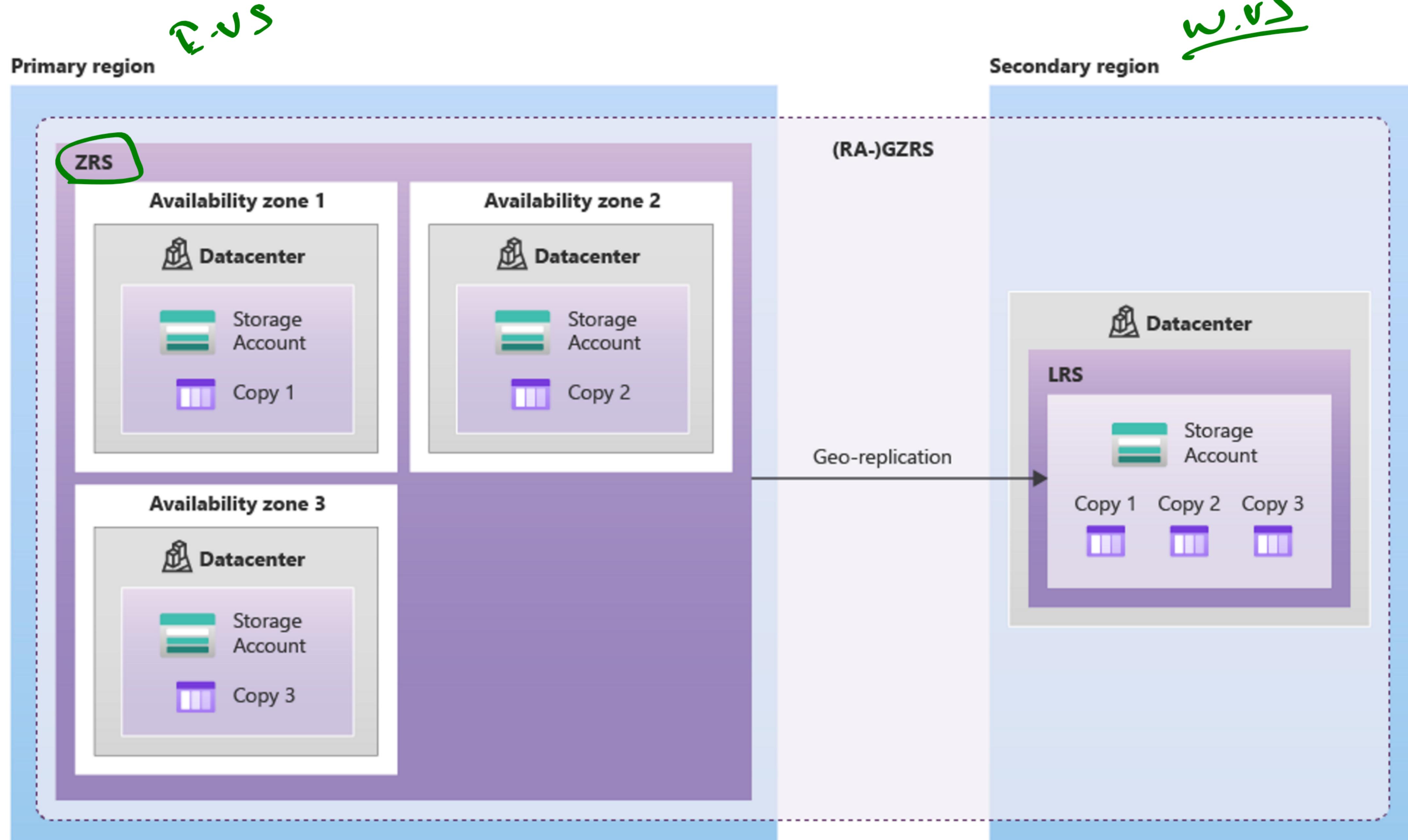
VRA - GRS (16 nines)

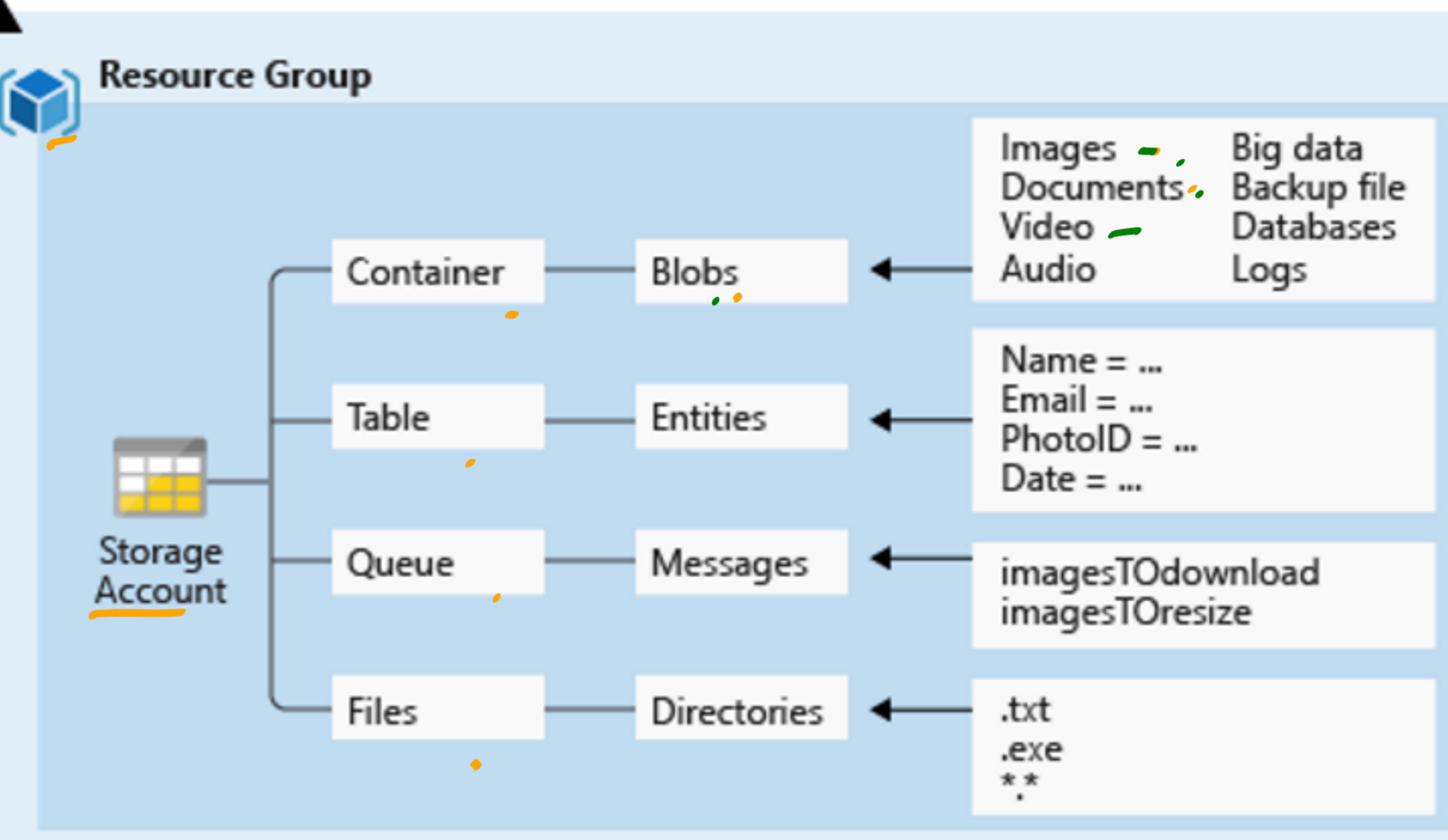
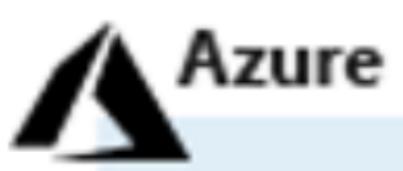
Prim.
E-US
3 copies
→ paired
geo-replic.

Geo - RS
W.US
3 copies
E-US



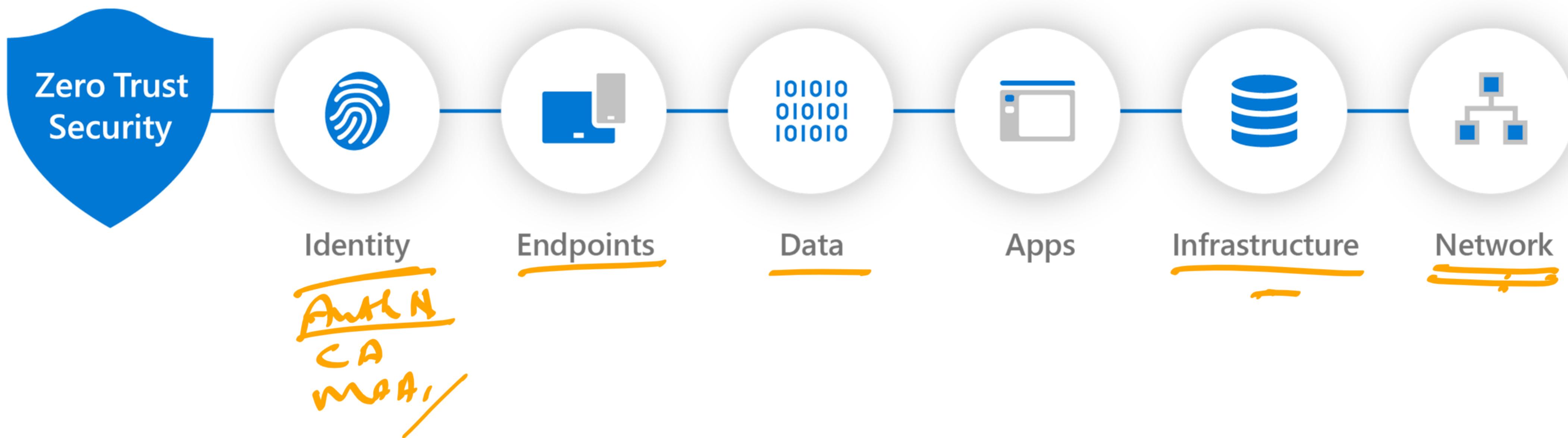
GZRS





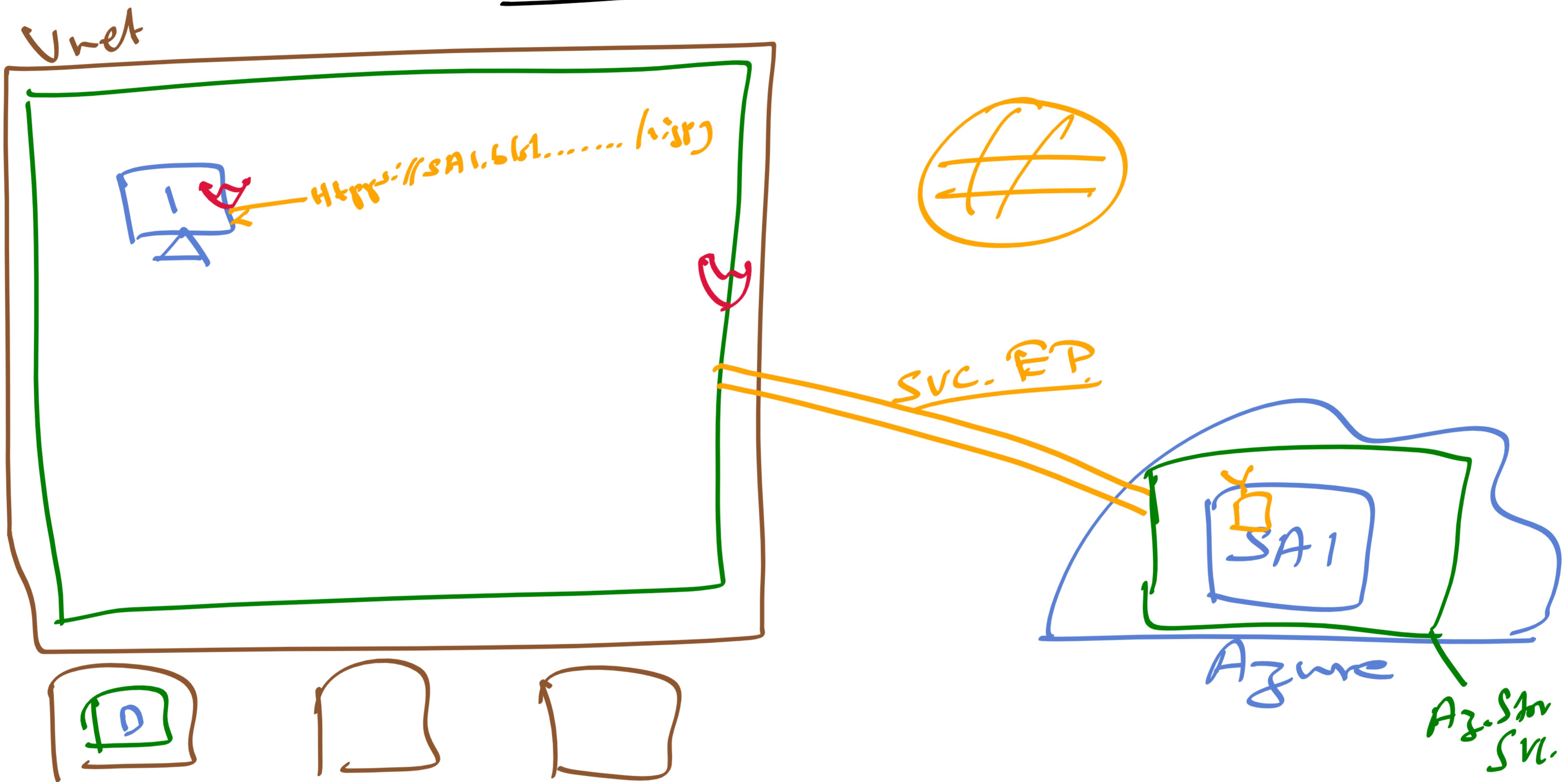


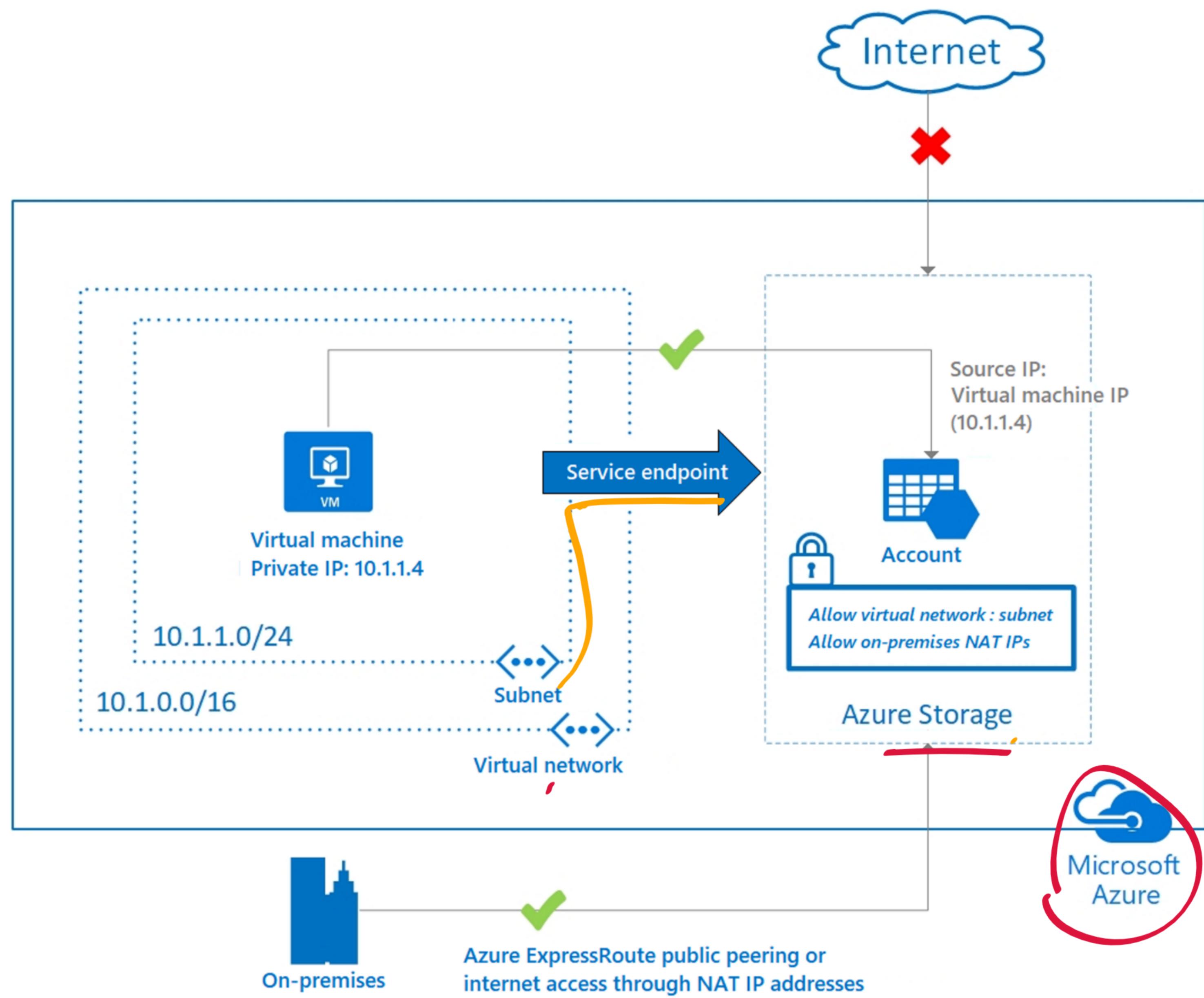
Visibility, Automation, Orchestration



SA

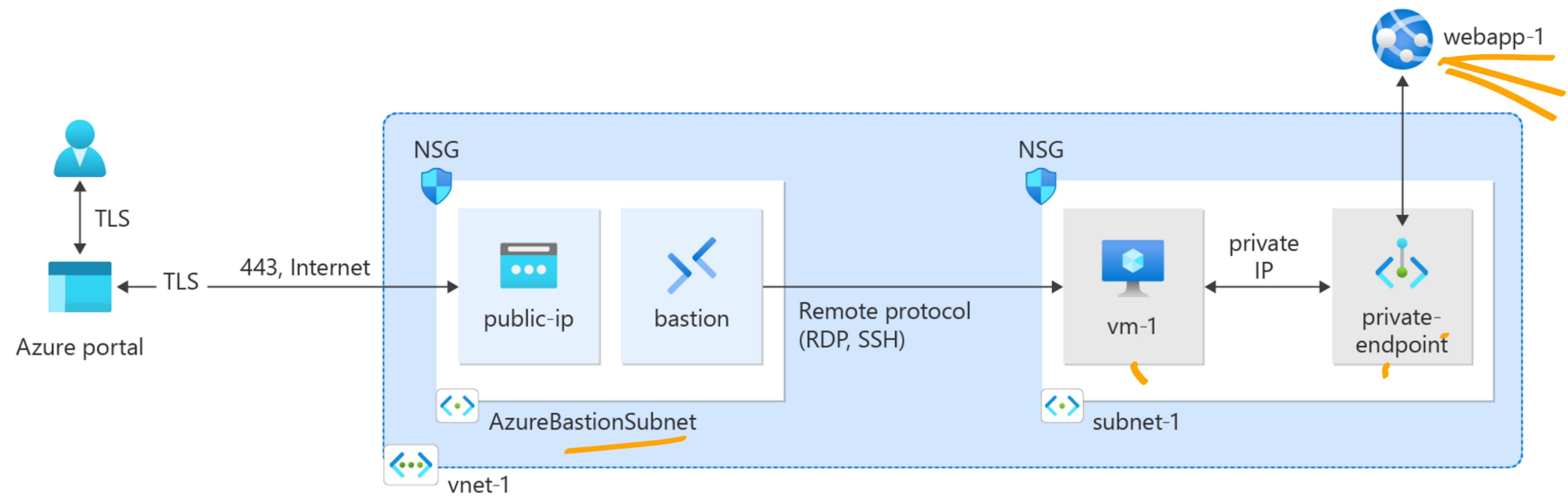
Service Endpoint

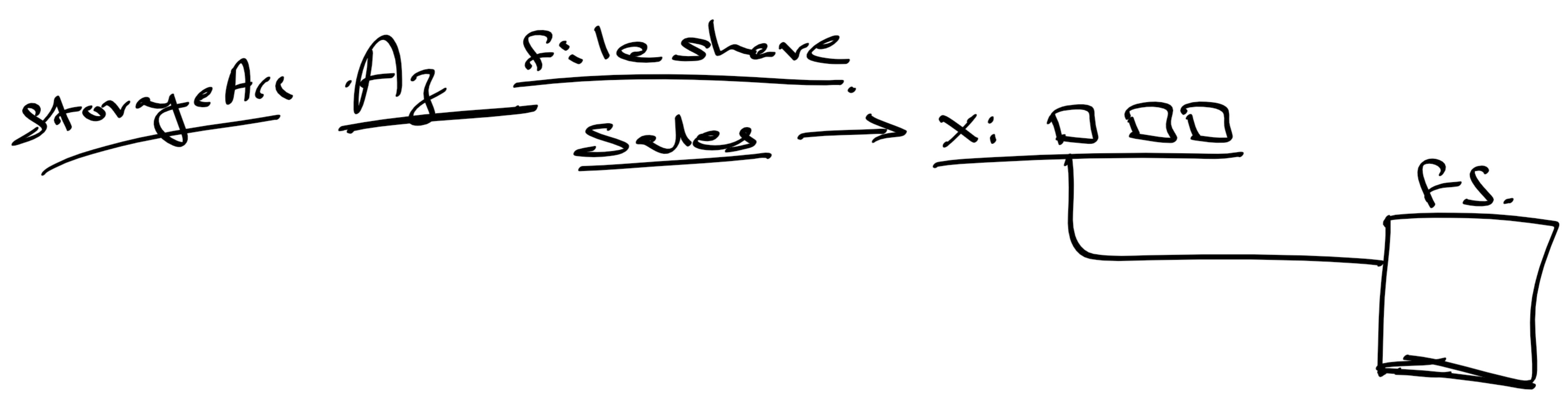


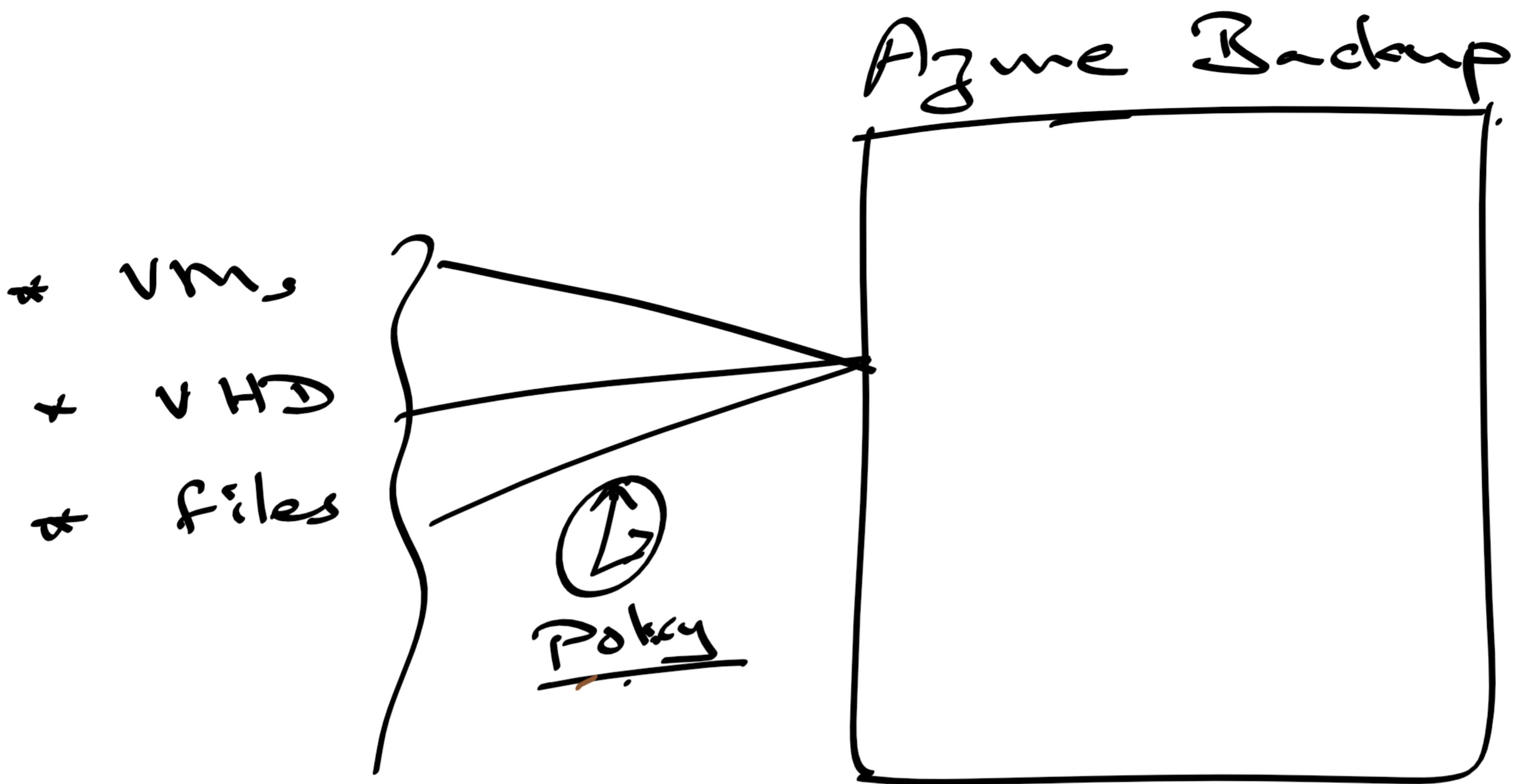


WAN

Back bone
N/w







Online

- 3pm
- RTO - 2 hrs
- Up - 5pm
- RPO - 30 mins ✓
- 2.30pm last backup

RTO - Recovery Time Objective - Time.

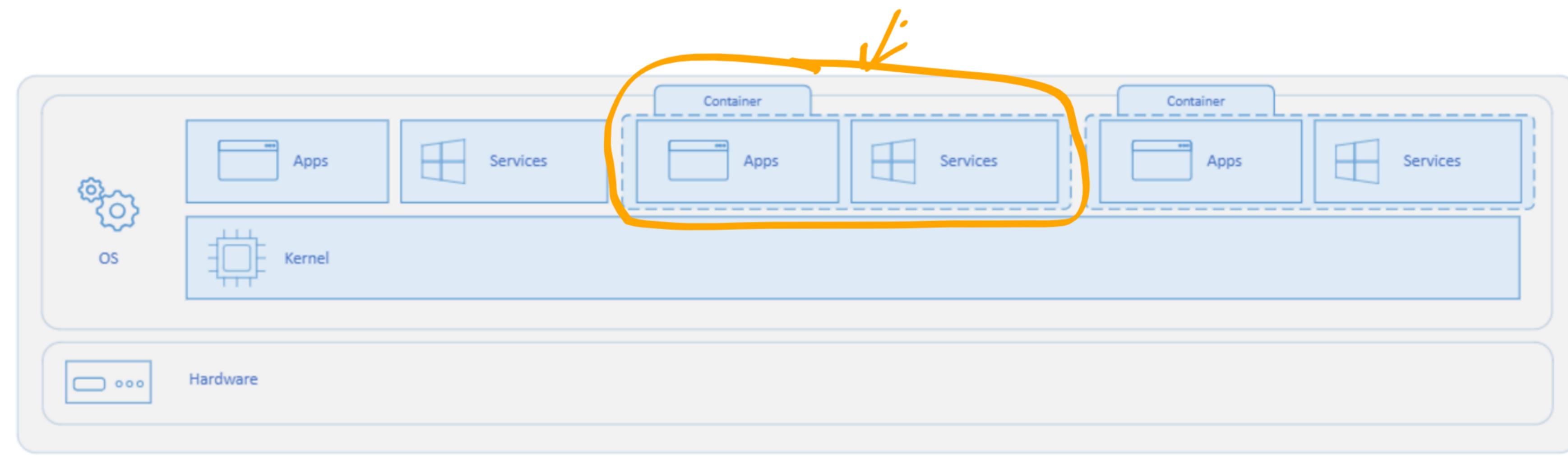
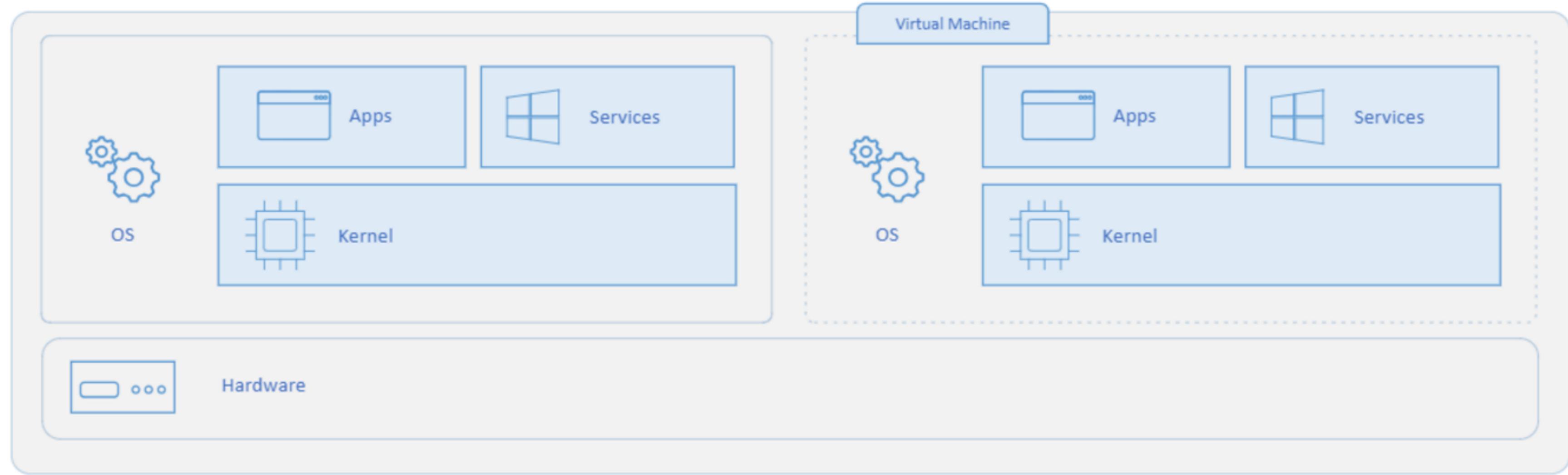
RPO - Recovery Point Objective -

PaaS

Azure App Services.



	<u>free</u>	<u>Share & Dev/Test</u>	<u>Basic</u>	<u>Std Prod</u>	<u>Prem</u>	<u>Iso</u>
<u>APP</u>	<u>10</u>	<u>100</u>	<u>Unlimited.</u> <u>100</u>	<u>Unlim</u>	<u>50GB</u>	<u>250GB</u>
<u>Disk</u>	<u>1 GB</u>	<u>10B</u>	<u>10GB</u>	<u>0</u>	<u>5</u>	<u>20</u>
<u>Deploy slots</u>	<u>0</u>	<u>0</u>	<u>Upto 3</u>	<u>10</u>	<u>30</u>	<u>100</u>
<u>Instances</u>				<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>Autoscaling</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>✓</u>		
	<u>Plan</u> <u>10</u>	<u>Avg VMs</u>		<u>180</u>	<u>VMs</u>	<u>M/W</u>



ACR
!



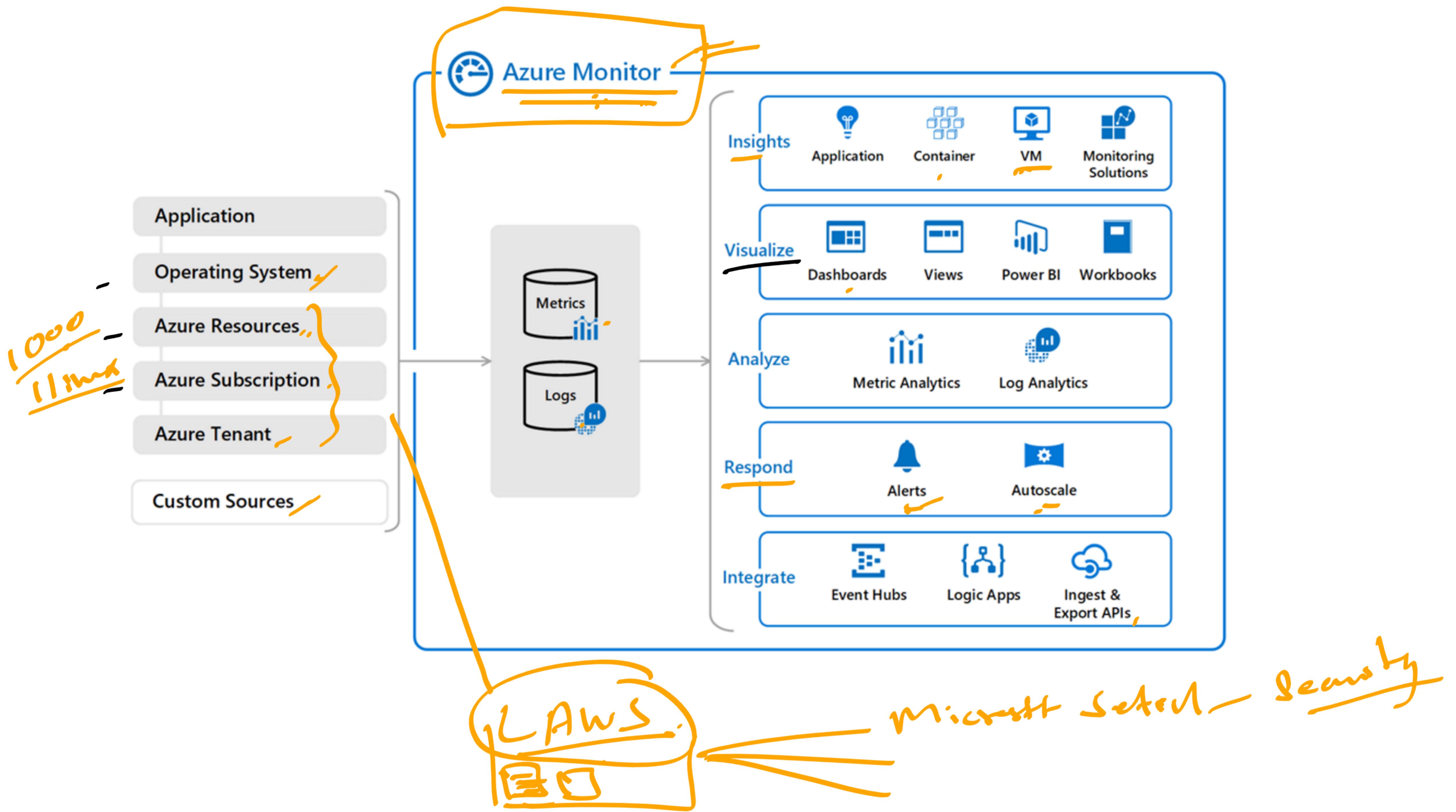
Azure Monitor

Events :

Logs :

Alerts :

Incidents:



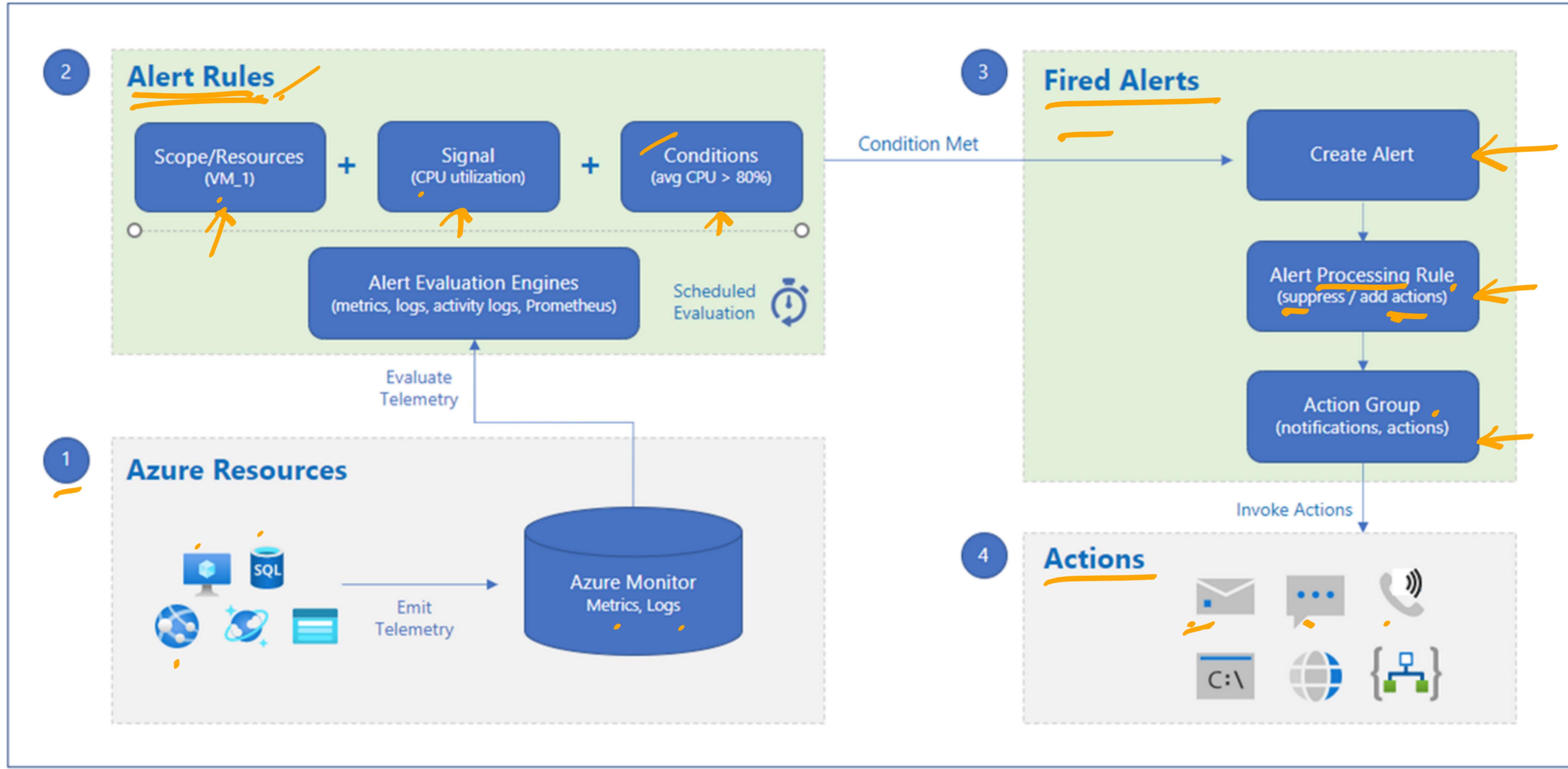
Az. Tenant:

Central ID: →

Svc. Health

Subscription ← Activity log.

Az. Resources ← Metrics
Logs.



 Alerts boundary
 External boundary