

billing, licensing, app register etc..
- use RBAC for resources.

- Access rights through single user
or group assignment
- You can assign access rights three ways:
 - direct assignment,
 - group assignment
 - rule-based assignment

Collaborate by using guest accounts
and Microsoft Entra B2B

- For existing collaborations with
other businesses

What is Azure RBAC

Azure subscriptions

- Each subscription is associated with a single Microsoft Entra directory
- RBAC
 - intended to manage resource permissions
 - You can check logs over a little

~~Allow users to reset their password~~

~~with Microsoft Entra self-service password
reset~~

Add custom domain name to Microsoft Entra ID

What are domain names in Microsoft Entra ID?

- Domain names give access to network resources.
- The most obvious resources are websites

on the internet.

- we get a domain when we create a subscription like Company1.onmicrosoft.com
- If we buy the domain company1.com, our users can have the email user@company1.com, which is literally the link that we will use to access our website.
- we can add up till 900 managed domain names

DNS Records

- the domain name could be useless without the DNS
- It's ~~not~~ checked what we will not receive by doing lookup in a public DNS DB.
- So, the DNS will lookup to:
 - web servers by using A, AAA and CNAME records.
 - email services by using MX records
 - Name servers by using NS records
 - Proof of ownership by using TXT records.
- we can manage DNS with third parties or manage it ourselves.
- we can also use powershell to manage this.

Config virtual networks

- Moving to cloud can be beneficial in terms of cost and ease.
- Azure offers multiple solutions for load balancing: Virtual Network, Load Balancer, App Gateway, Traffic manager, Peering

virtual network gateway and virtual wan

Things to know about Azure virtual network

- serves to create a virtual representation of your network in the cloud.

- characteristics

- Logical isolation of the Azure resources

- we can use it to manage VPN's in

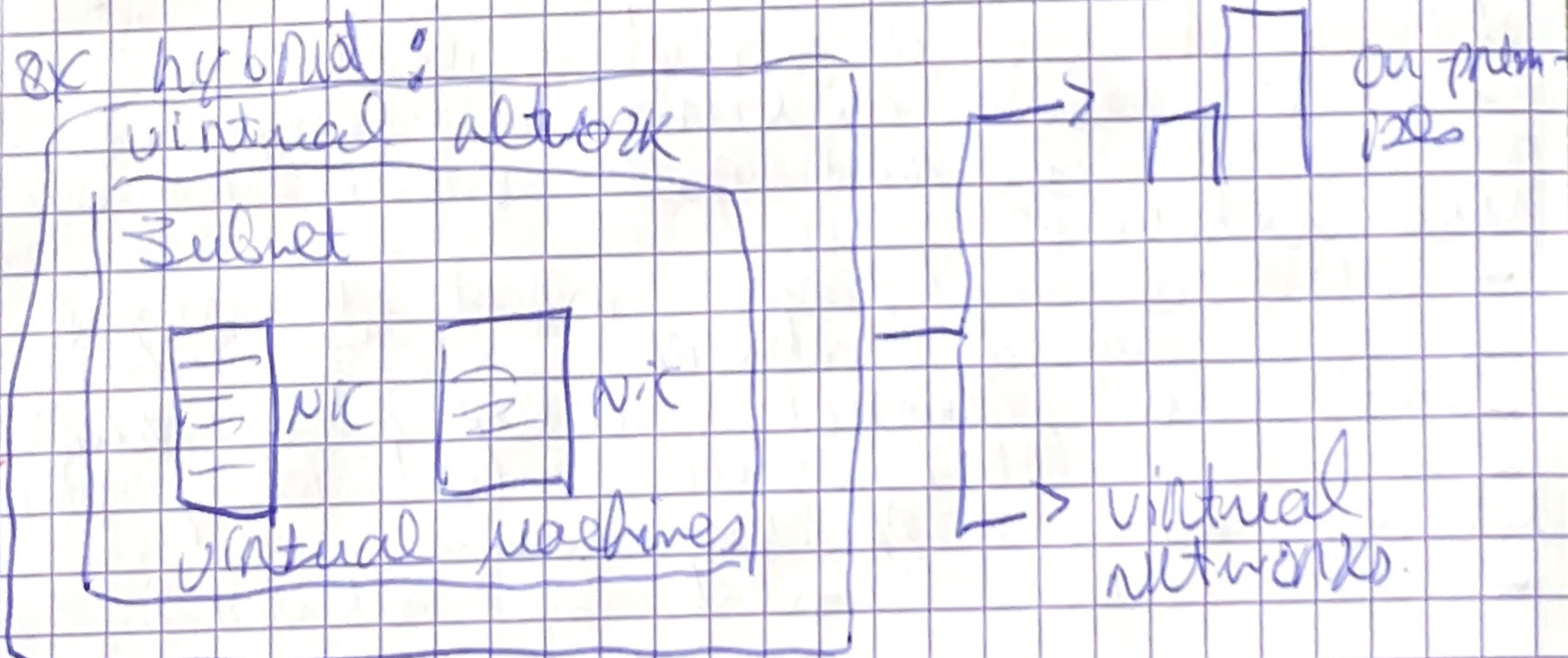
Azure.

- each virtual network has its own cloud inter-domain routing (CIDR) which we can use to link to another virtual networks and on-premises networks.

- we can create hybrid networks by linking a cloud network with a on-premises network.

- you control DNS inside of your network.

Ex hybrid:



Things to consider when using private networks (scenarios):

* create a dedicated private cloud only virtual network.

- You don't always require

a hybrid network. You should go this way in case of so and secure the communications with the private network.

* securely extend your data center with virtual networks

- we can build traditional site-to-site VPNs to securely scale your datacenter capacity. (VPN gateway and devices)

* enables hybrid cloud scenarios

- You can make it connect with on-premises networks through your cloud network.

Subnets

- Subnets provide a way for you to implement logical divisions within your virtual network.

- This improves security, increased performance and made it easier to manage.

Things to know about subnets

- Each subnet contains a range of IP addresses that fall within the virtual network space.

- The address range must be unique on the virtual network.

- The range cannot overlap other ranges.

- the IP address space that be specified by using CIDR notation.

- You can segment the networks.

Reserved addresses

- For each subnet, reserve reserves five IP addresses, the first four and the last one.

In the CIDR 192.168.1.0 /24

- Reserved addresses (Standard practice in clouds).
 - ~~192.168.1.0~~
 - This address identifies the virtual network address.
 - ~~192.168.1.1~~
 - This will be the default gateway.
 - ~~192.168.1.2~~ and ~~192.168.1.3~~
 - Azure maps these Azure DNS IP addresses to the virtual machine endpoints (DNS resolutions).
 - ~~192.168.1.255~~
 - This value supplies the virtual network broadcast address (the address used to broadcast a message to all machines within the range).

Things to consider when using subnets

- Consider service requirements
- Consider network virtual appliances
 - Change the normal behavior of sending traffic between the subnets if you want to.
- Consider service endpoints
 - Allow connections from other dependencies of the service on the subnet.
- Consider network security groups
 - Take leverage of monitoring groups to assign rules to subnets.
- Consider private links
 - We can make private connectivity making it avoid to connect the public internet first.

Res IP addressing

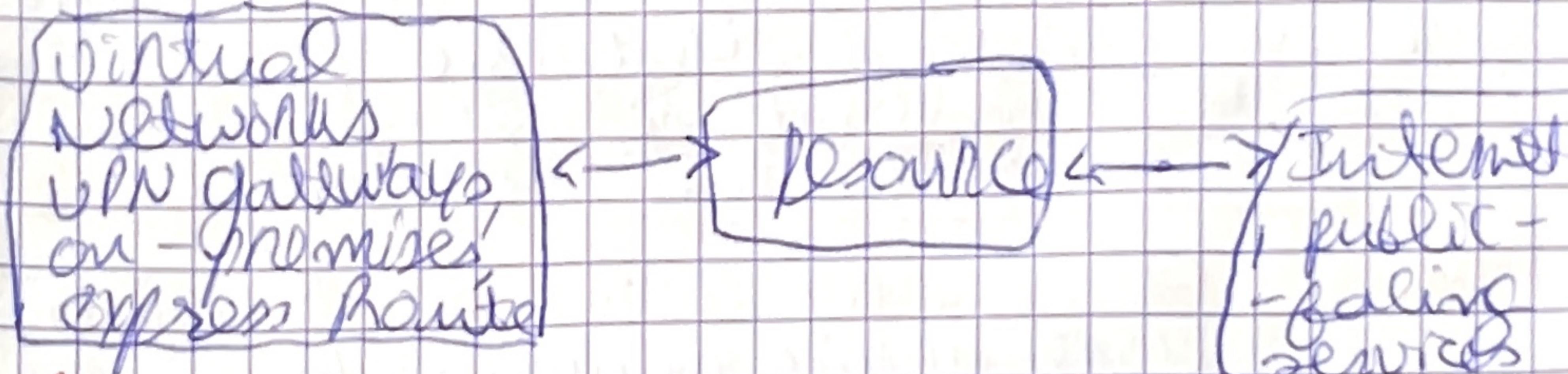
- We can assign IP addresses to Azure resources that can either be public or private.

Private

- enable communication within a secure virtual network and your on-premises networks.
- we create a private address to a resource to use VPN gateway or Azure Express Route.

Public

- To allow your Azure to communicate with the internet.



Things to know about IP addresses

- can be statically or dynamically assigned.
- you can aggregate dynamically assigned and statically per subnet.
- static don't change and are often for:
 - DNS name resolution
 - changing IP requires updating DNS records.
- IP address security models that require apps or services to have a static IP address.
- TLS/SSL certificates linked to an IP address.
- Firewall rules that allow only traffic by using IP address ranges.
- role-based virtual machines such as domain controllers and MS resources.

Associates Public IP addresses

- A public IP resource can be assigned with virtual machine network interfaces, internet-pushing load balancers, VPN Gateways and app gateways.
- Can be assigned both static and dynamic.

Things to know when assigning Public IP addresses

Resource	Public IP address association	Supports dynamic	Supports static
Virtual machine	NIC	Yes	Yes
Load Balancer	Front-end configuration	Yes	Yes
VPN gateway	IP config	Yes	Yes
Application gateway	Front-end config	Yes	Yes

Public IP address skins (a product)

- When you create a public IP address you select the basic or standard skin.
- The skin affects the IP assignment method, security, available resources and redundancy options.

Feature	Basic Skin	Standard Skin
IP assignment	Static or dynamic	Static
Security	Open by default	Secured by def., closed to internet

Resources

Network interfaces,
VM Gateways,
App Gateways and
internet-facing
load balancers

Network
interfaces
or public
standard
load balan-
cers

Redundancy

Not Zone Redundant

One re-
dundant by
default.

Allocate or assign private IP addresses

Resource

Private IP
address association

Dynamic
IP address

Resource

Private IP add. ass.

Dynamic static

Virtual machine

N/A

Yes

Yes

Internal load
balancer

Front-end conf

Yes

Yes

App gateway

Frontend conf

Yes

Yes

Private IP address assignment

- Dynamic

- default

- Next available in the range

- static

- you assign it yourself trying to
not overlap others.