SQL KONFERENZ 2026

Secure your data with private networking



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Vivicta

Session feedback



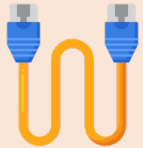
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KONFERENZ
2026

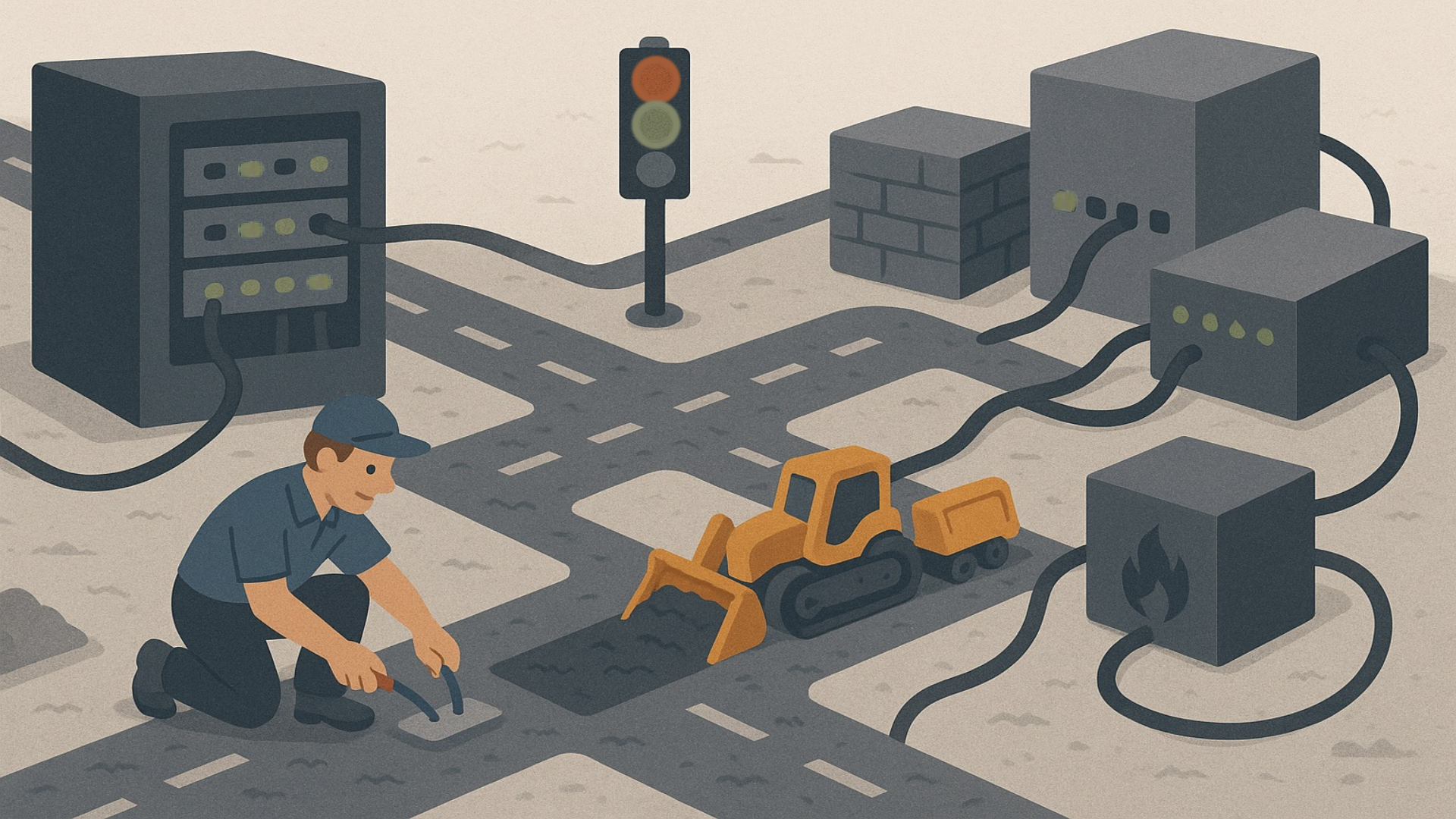
AGENDA

- Networking 101
- Networking in Azure
- Securing database network traffic
- Hybrid scenarios
- Securing Databricks
- Securing Fabric
- Private endpoint pricing

Networking 101

Networking 101 (traditional)

Physical hardware	Manual config.	Physical topology	Scaling
			
• Routers • Switches • Firewalls • Etc.	Individual device set up	Limited to ports, cabling and racks	Adding capacity = buying new gear



Networking 101 (Azure = SW Defined)

Abstracted hardware	Centralized & programmable	Dynamic scaling	Global reach	Security baked-in
				
VIRTUAL networks, firewalls, load balancer, etc.	All is software defined via APIs	Instantly; * Add * Delete * Scale-up * Scale-down	Connect across regions	Micro-segmentation

Icons from flaticon.com



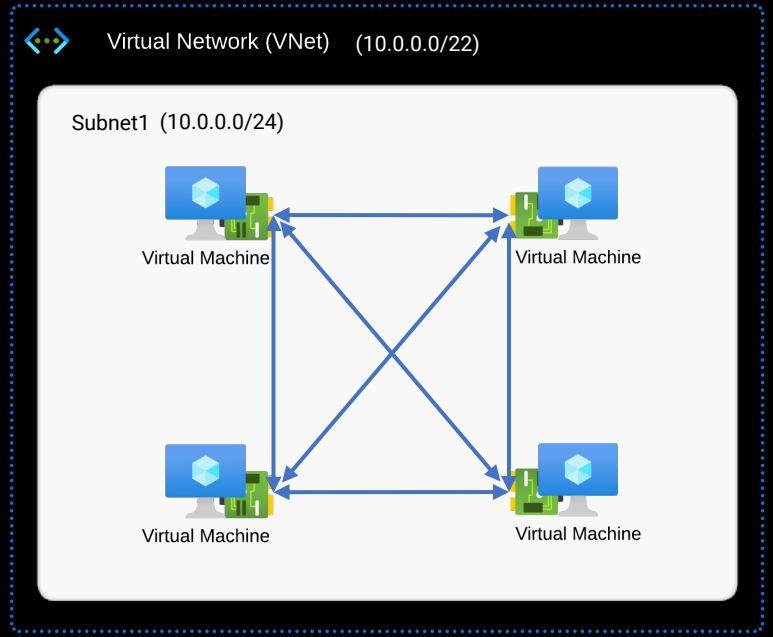
Networking in Azure



Networking in Azure

Subscription

Network mesh



- Multiple address spaces
- IPv6 support
  - with limitations
- Dual-stack (v4 + v6)

NICs are routers 🤯

Routes are auto-updated



=



Needs configuration

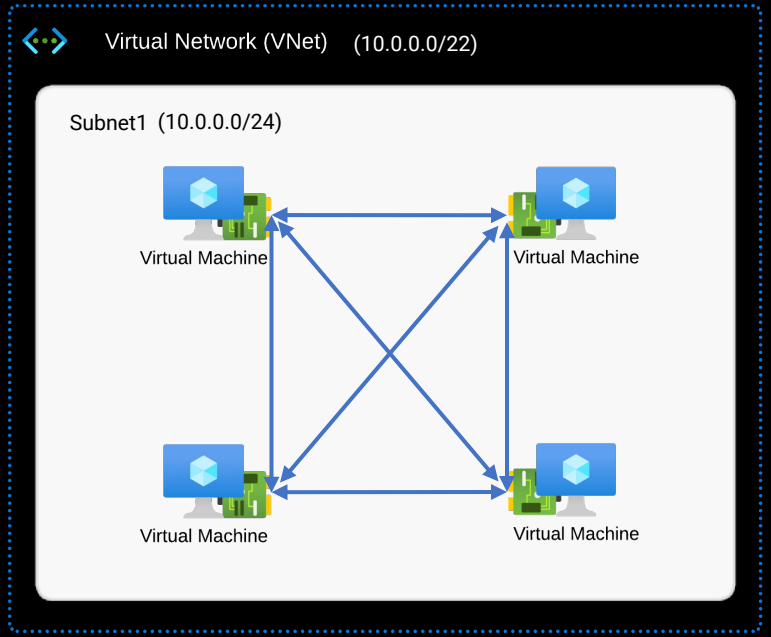
Azure NIC

On-prem router

Networking in Azure

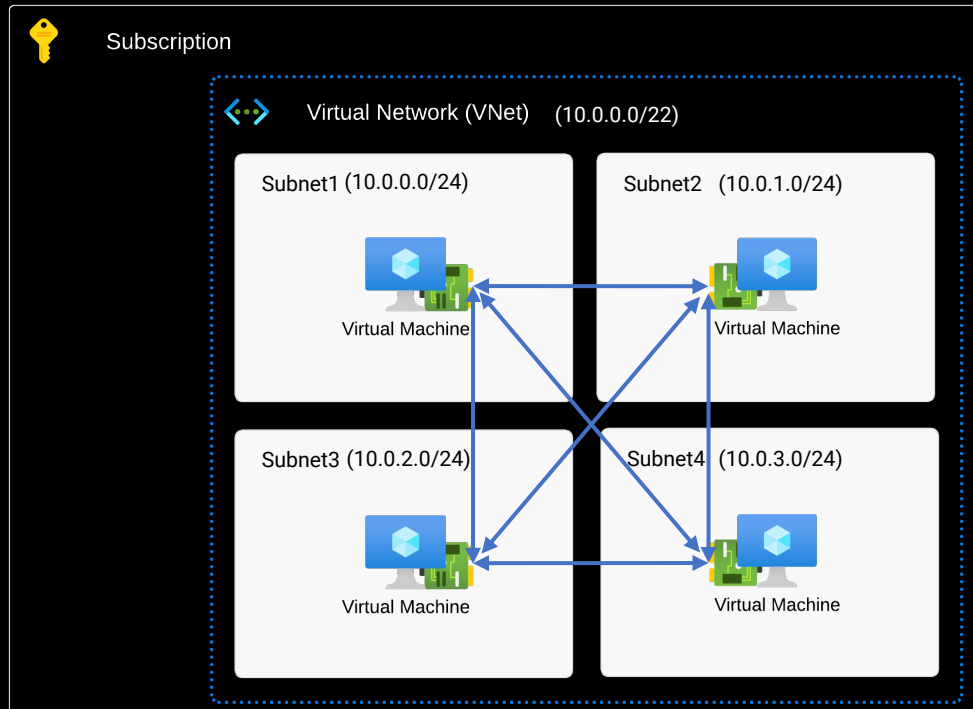
Subscription

Network mesh



- Multiple addresspaces
- IPv6 support
  - with limitations
- Dual-stack (v4 + v6)

Azure subnets



Subnet

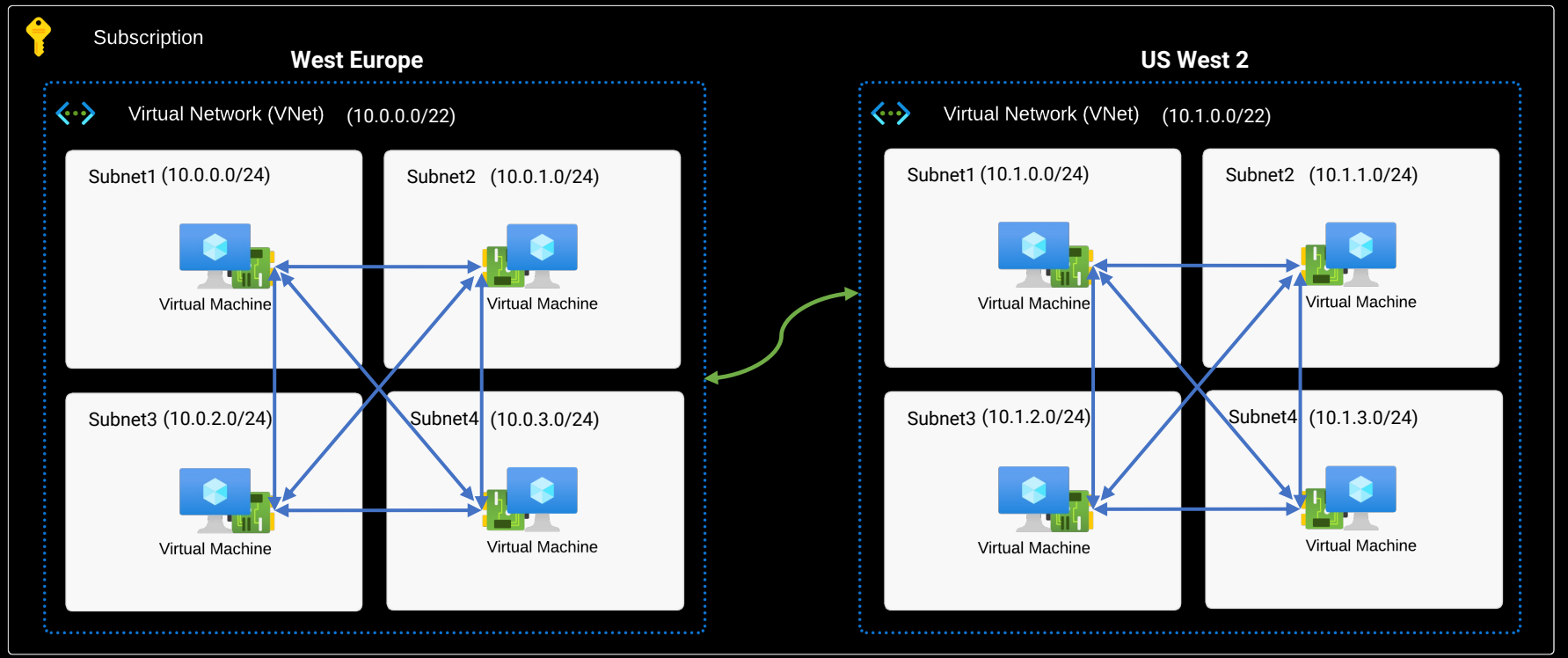
- Logical grouping of resources
- Share an IP address space
- Share routing policy (optional)

Route table (UDR)
(overrides learned routes)

- Share traffic filtering (optional)

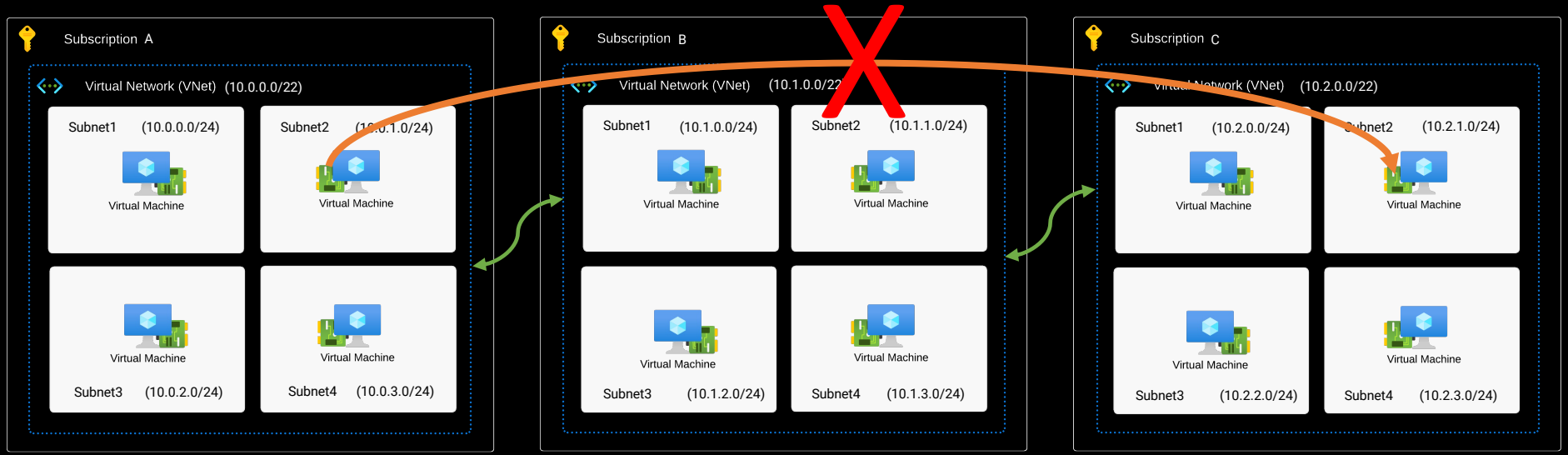
Network Security Group (NSG)

VNet peering

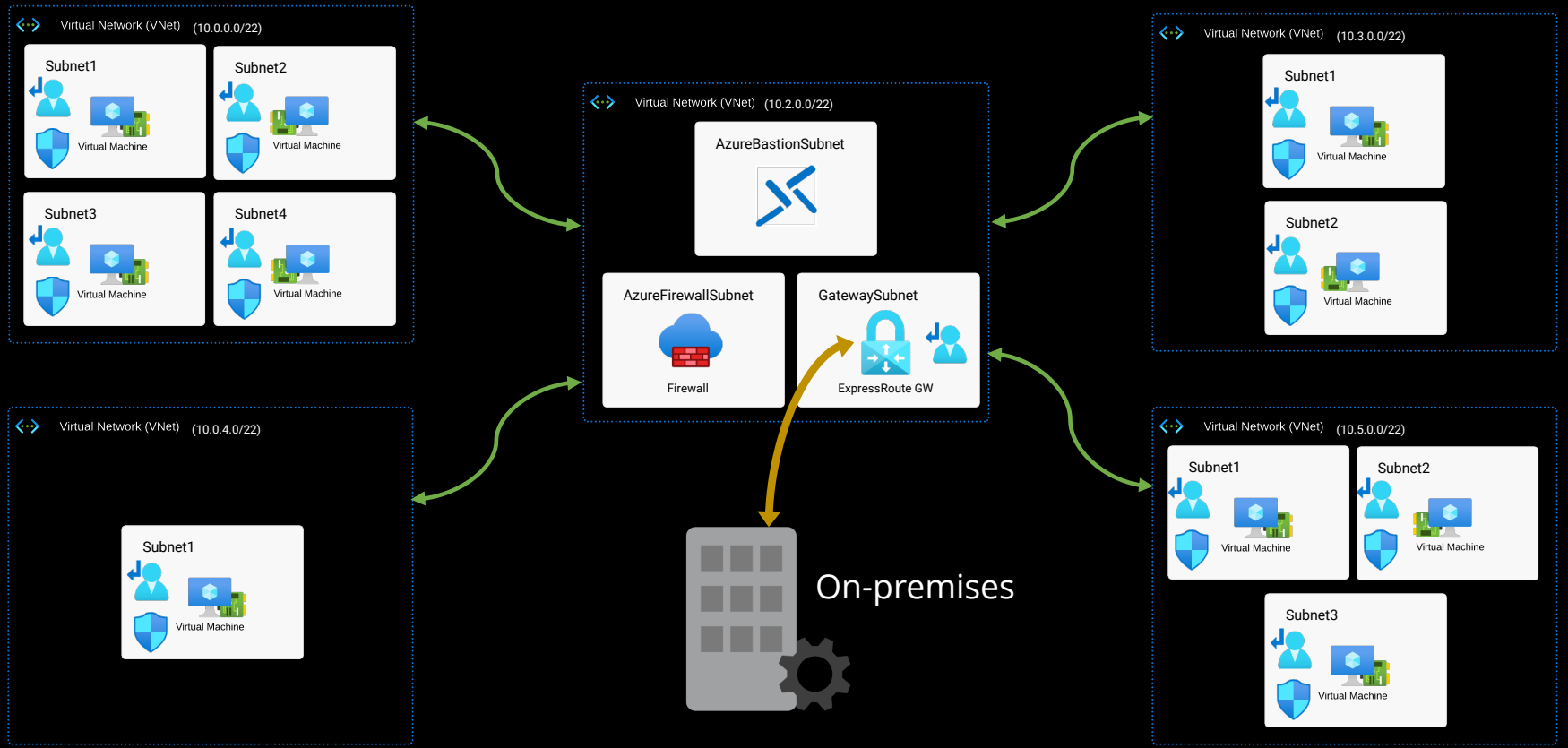


VNet peering

VNets are non-transitive



Hub and Spoke topology



Route table (UDR)





Route table for every spoke

Name	Address prefix	Next Hop type	Next Hop IP address
to-hub	0.0.0.0/0	Virtual appliance	10.2.0.132

Route table for virtual network gateway

Name	Address prefix	Next Hop type	Next Hop IP address
to-spoke-1	10.3.0.0/22	Virtual appliance	10.2.0.132
to-spoke-2	10.4.0.0/22	Virtual appliance	10.2.0.132
...	...	...	...

Network Security Group (NSG)



Filter in/outbound network traffic

- Subnet
- NIC

Integral part of Zero Trust

- “Assume breach” principle

For ease of maintenance

- Use Application Security Groups

Securing network traffic for Azure SQL DB and MI



Connecting to Azure SQL DB

~~Public endpoint~~

Service Endpoint (Azure SQL DB)

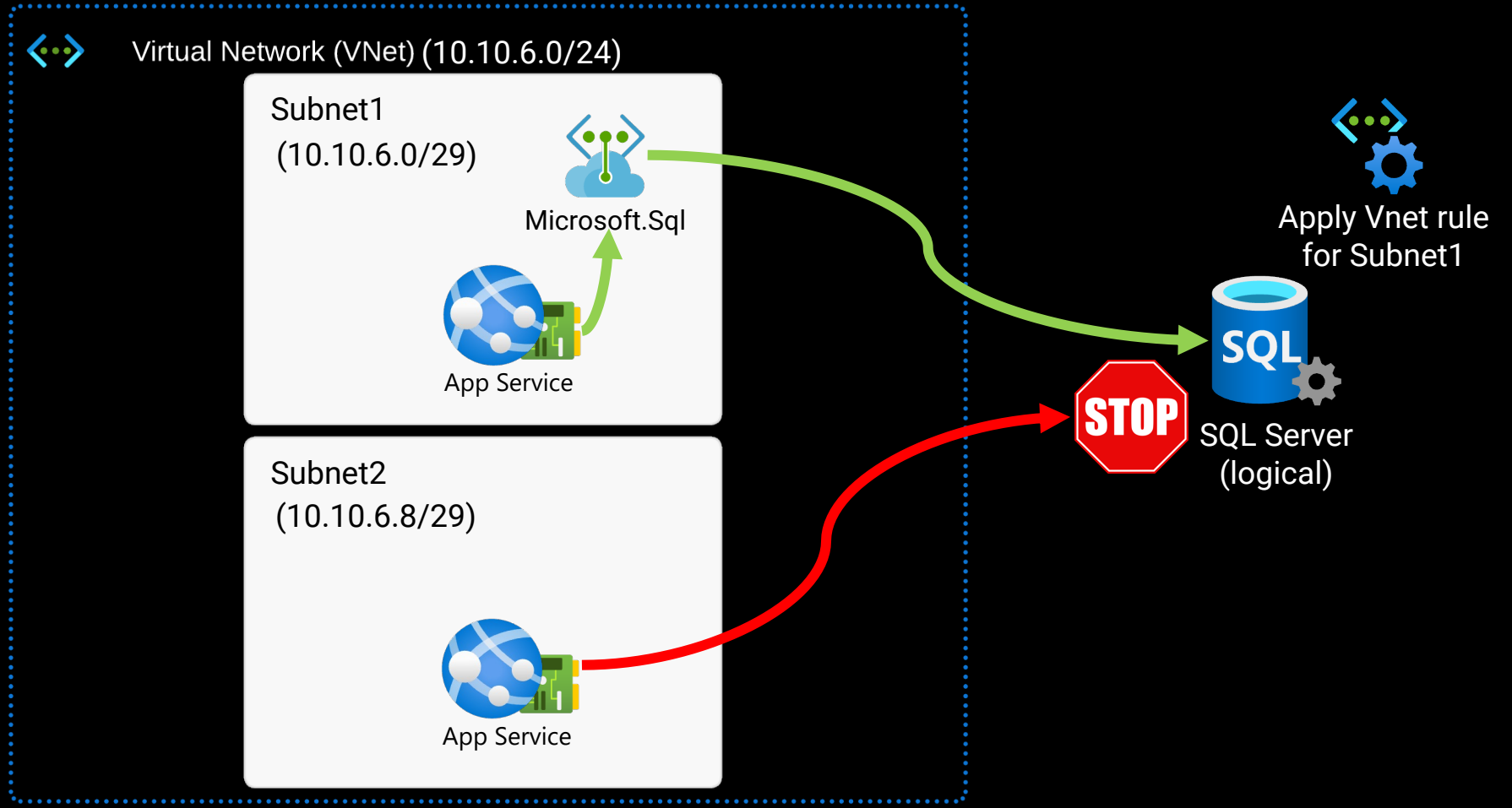
VNet-Local endpoint (Managed Instance)

Private endpoint

Service endpoint (SQLDB)



- Secure and direct connectivty
- Optimized route over Azure backbone
- Associated with subnet
- Approval on logical SQL Server

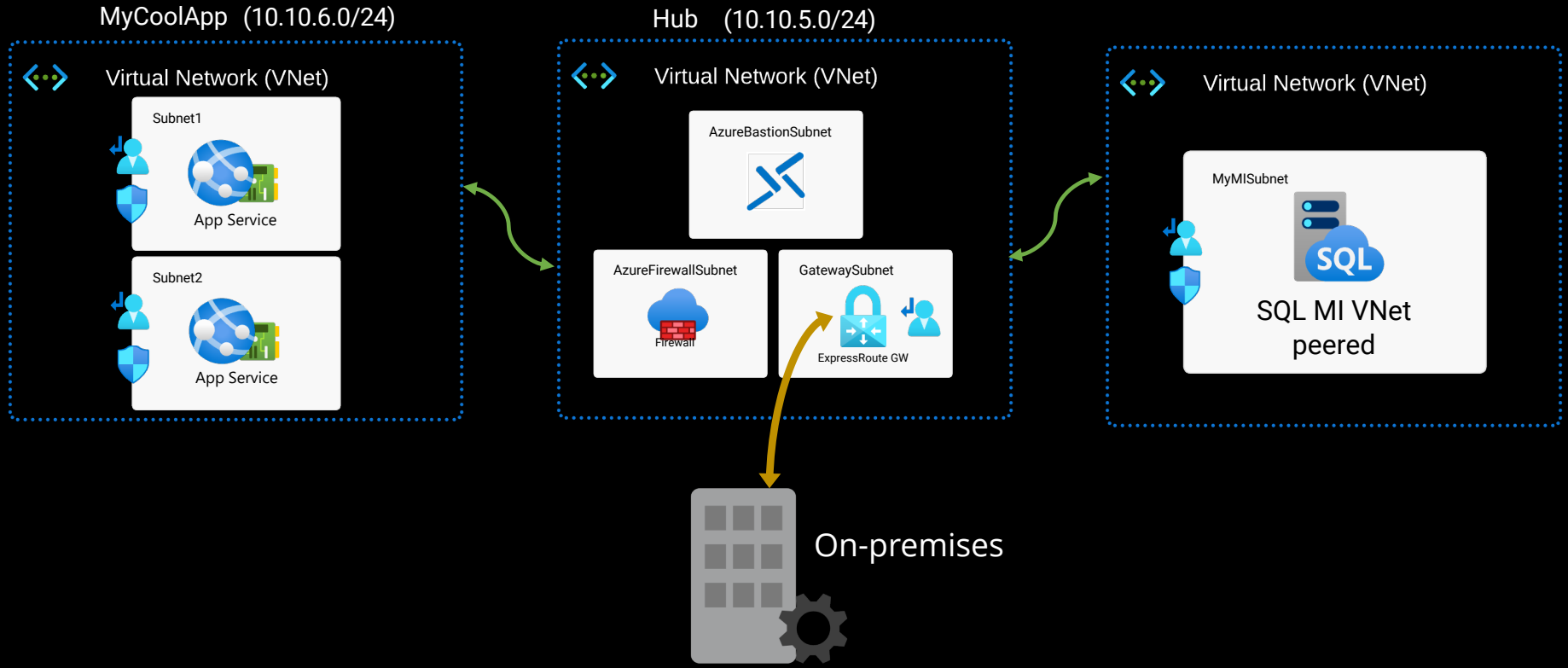

Virtual Network (VNet) (10.10.6.0/24)
Subnet1
(10.10.6.0/29)
Microsoft.Sql
App Service
Subnet2
(10.10.6.8/29)
App Service
Apply Vnet rule
for Subnet1
SQL
STOP
SQL Server
(logical)

VNet-local endpoint (MI)



- Endpoint local to MI VNet
- Supports redirect connection type
- When <> 1433 ports are required
- Less secure but higher performance

VNet local


MyCoolApp (10.10.6.0/24)
Virtual Network (VNet)
Subnet1
App Service
Subnet2
App Service
Hub (10.10.5.0/24)
Virtual Network (VNet)
AzureBastionSubnet
AzureFirewallSubnet
Firewall
GatewaySubnet
ExpressRoute GW
Virtual Network (VNet)
MyMISubnet
SQL
SQL MI VNet peered
On-premises

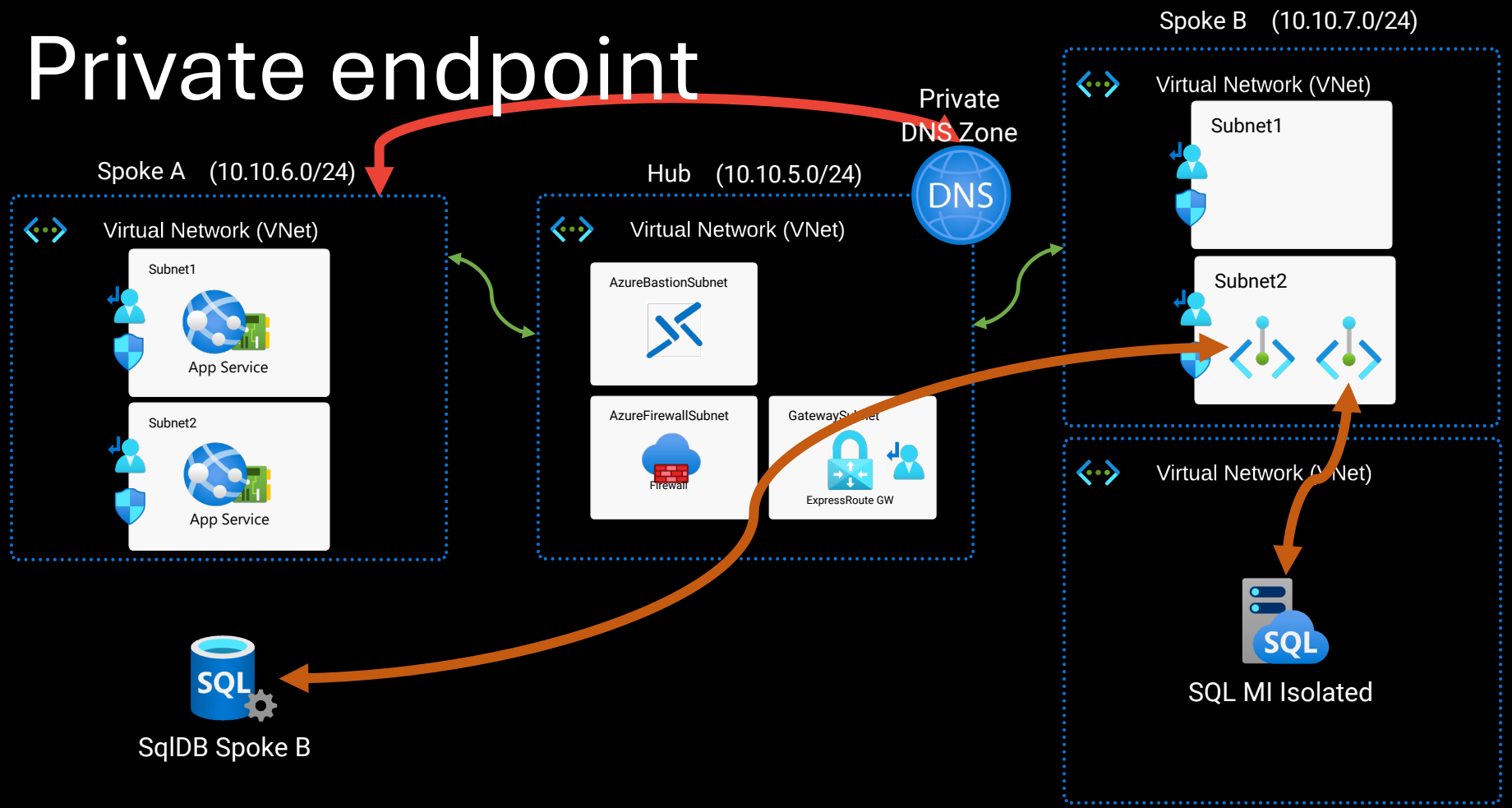
Private endpoint



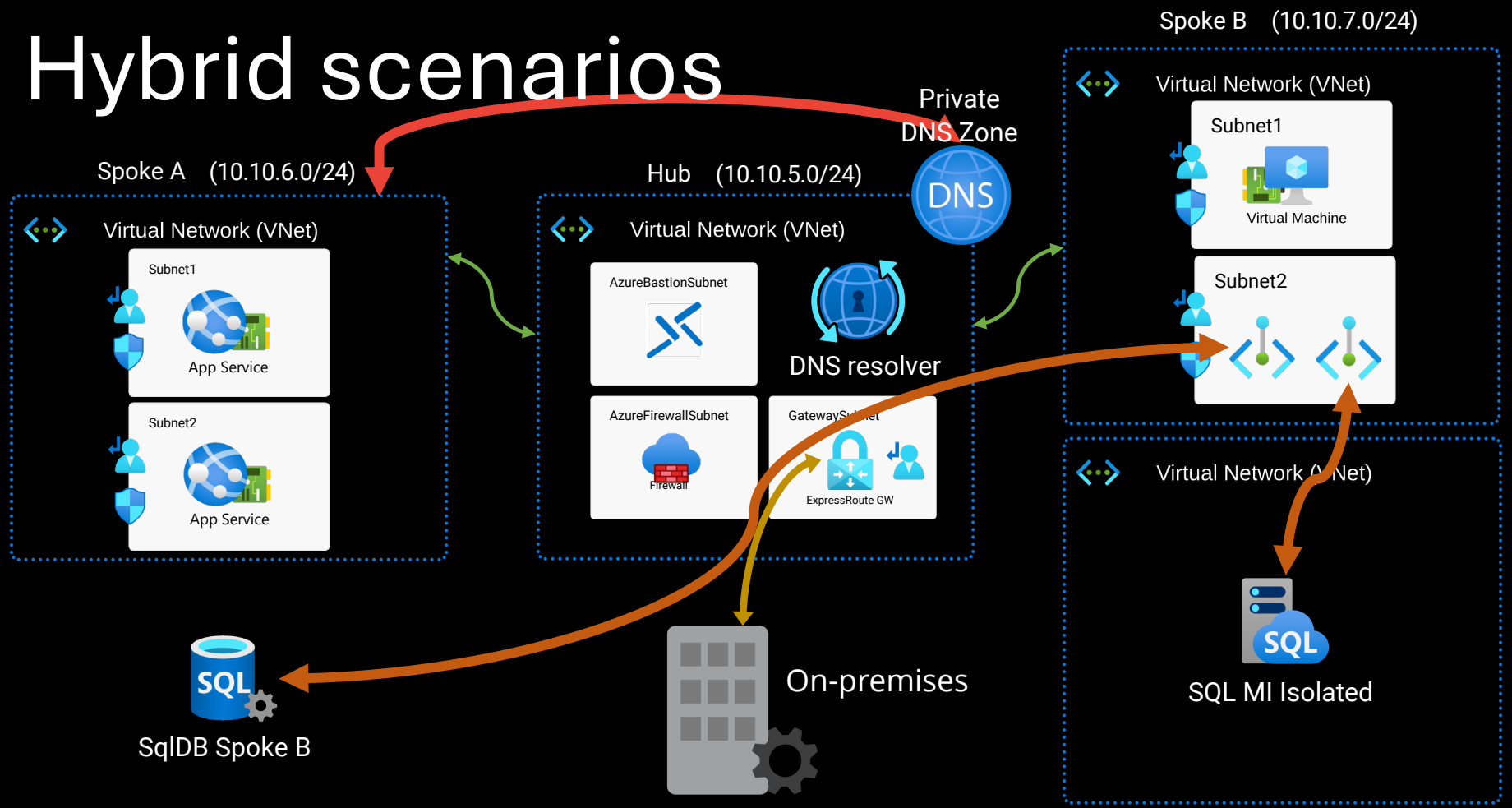


- Secure access to service in your VNet
- Is in essence a NIC
- Points to a Private Link service
- Only support proxy connection type (MI)

Private endpoint



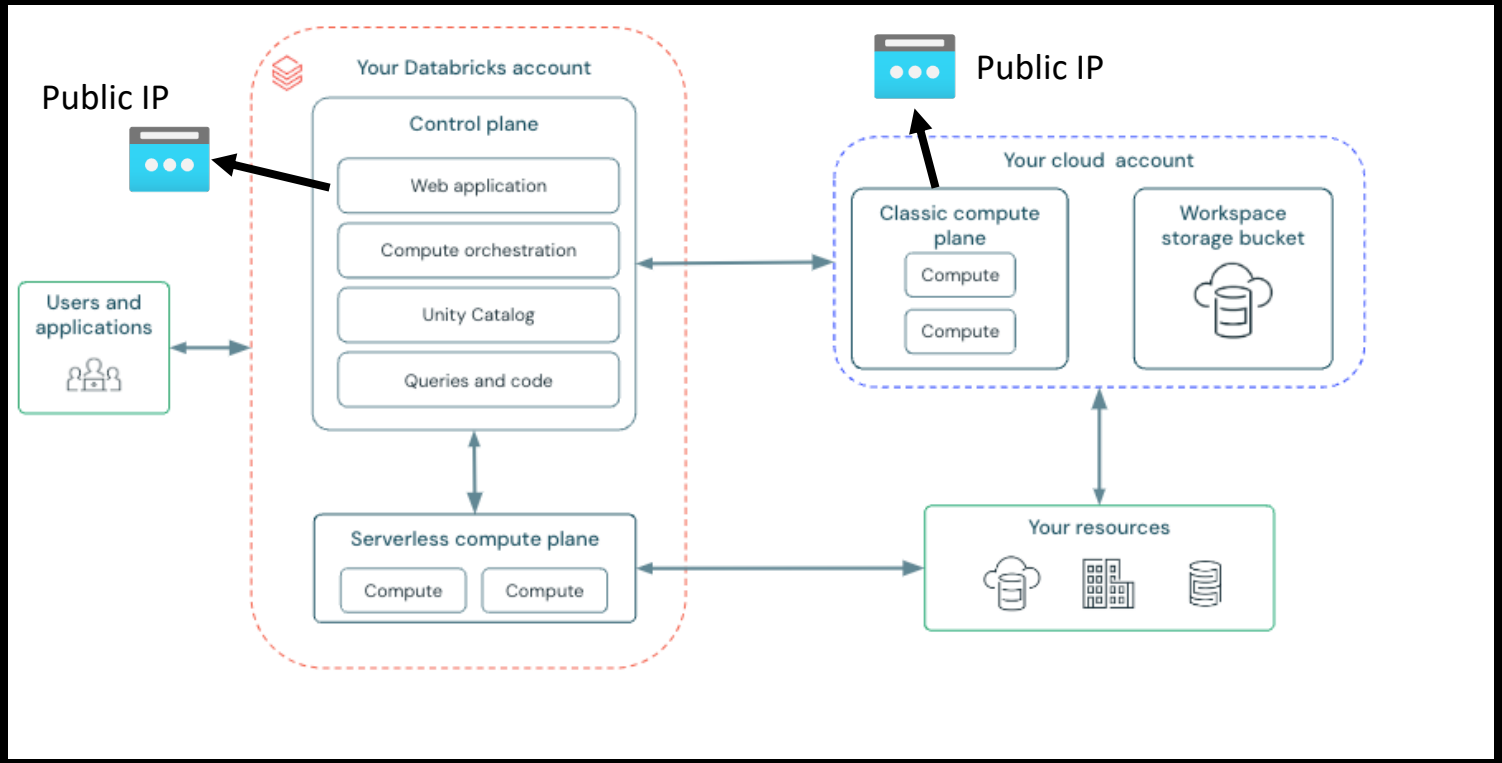
Hybrid scenarios



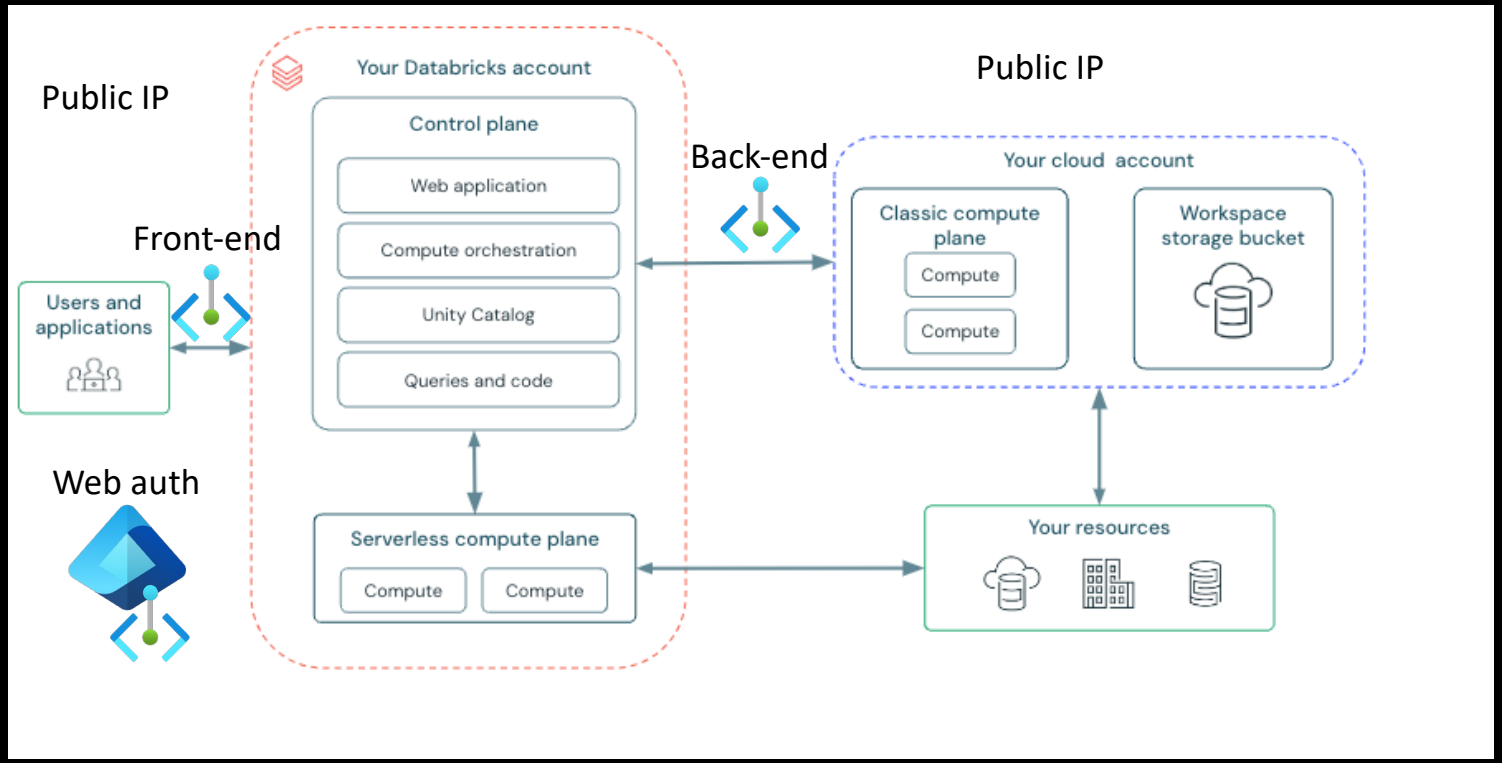
Securing network traffic for Databricks



High-level architecture



High-level architecture

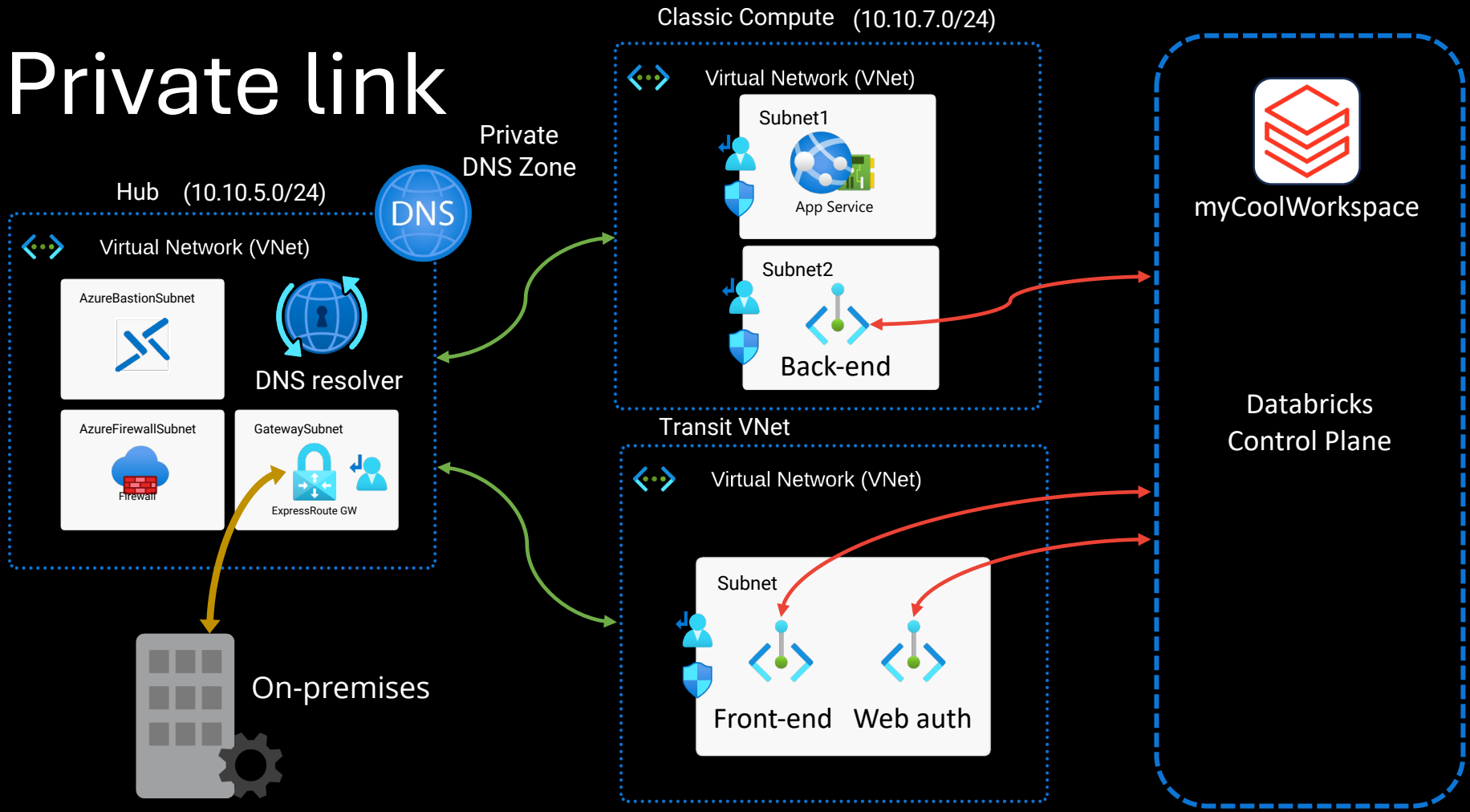


Private Link - prerequisites



- Workspace must be on Premium plan
- Workspace must use VNet injection
- Secure Cluster Connectivity enabled

Private link



Serverless compute



- Network Connectivity Configurations
- Regional construct
- Resource firewall enablement
- Private endpoint rules

Securing network traffic for Microsoft Fabric



Inbound traffic to Microsoft Fabric





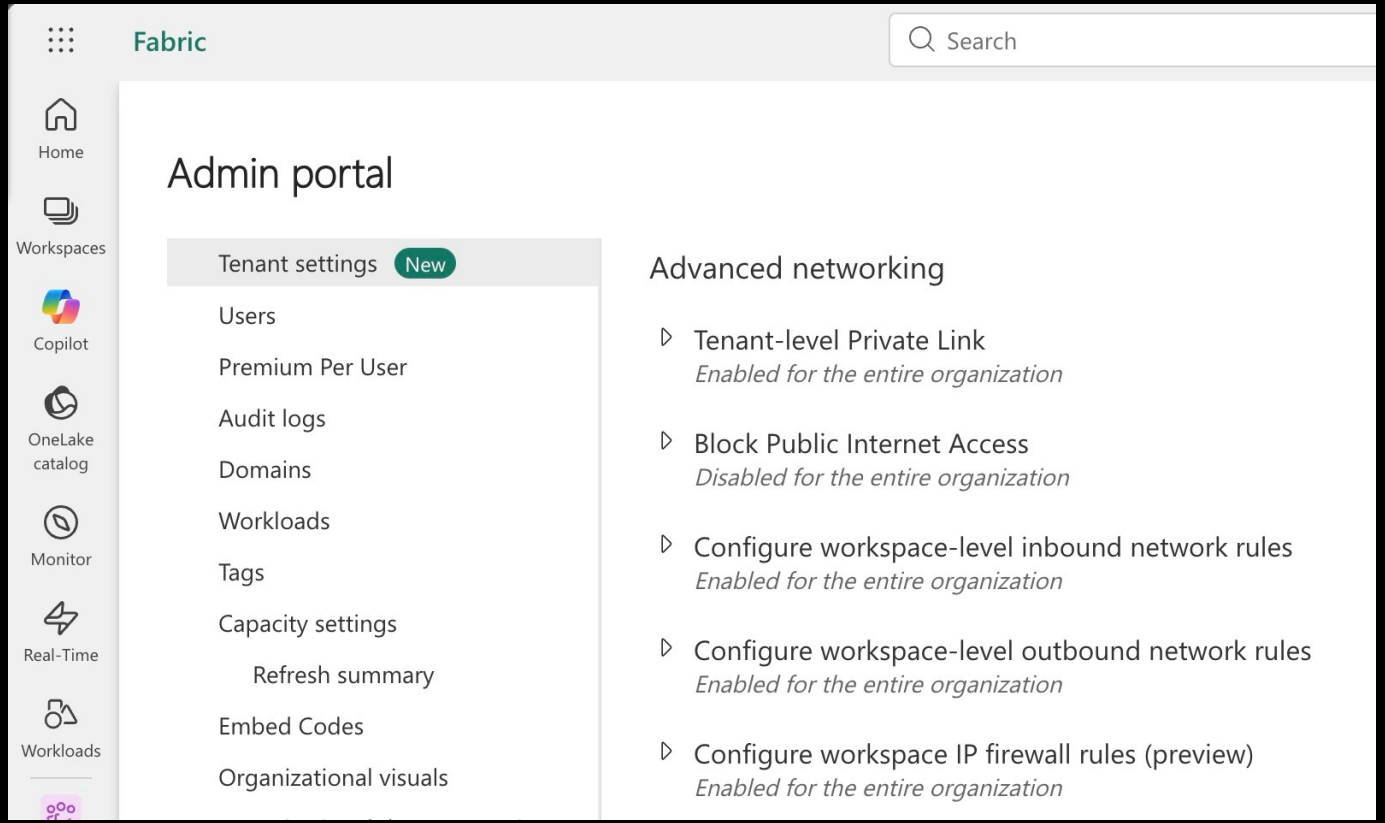
Inbound traffic protection

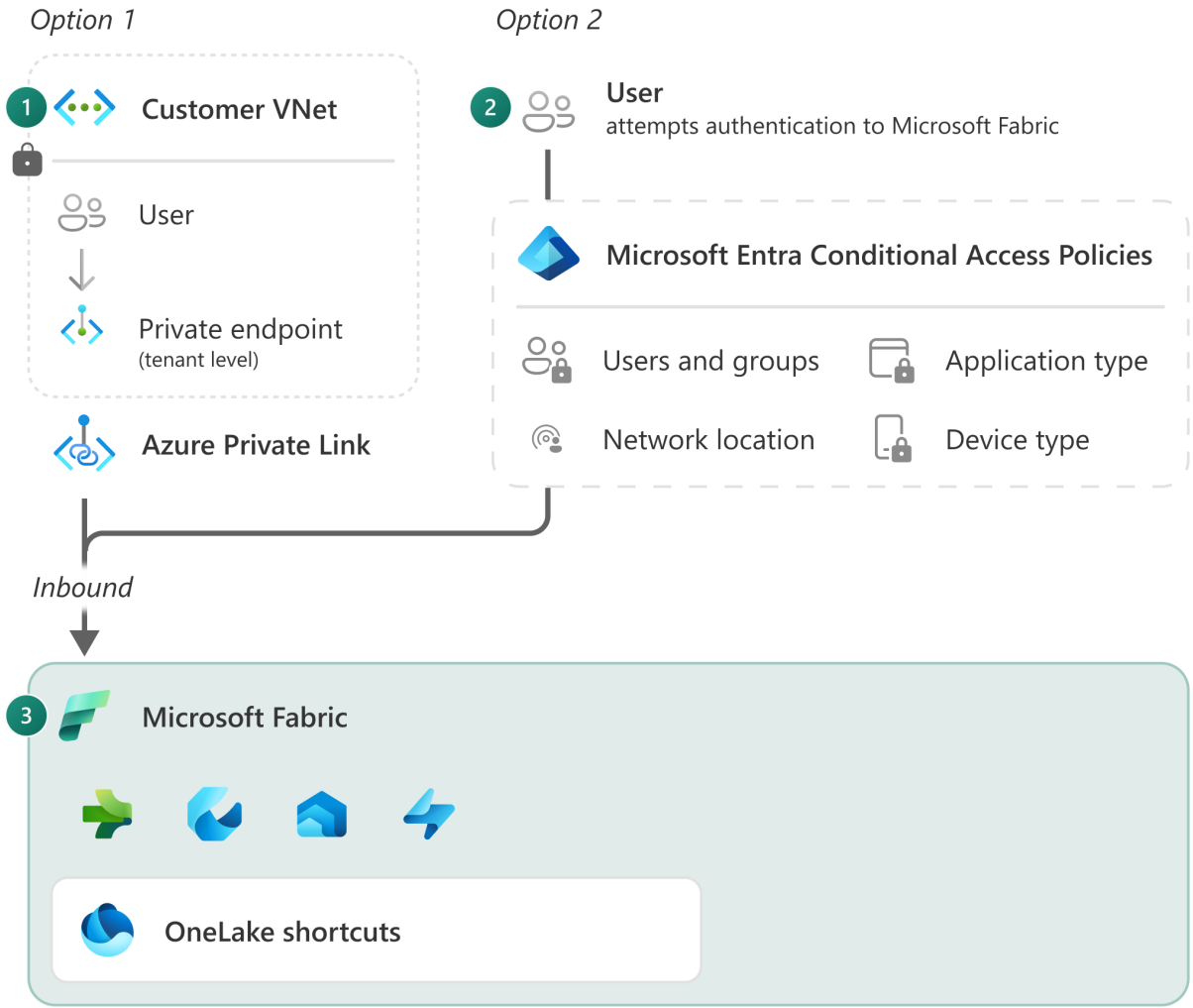
Microsoft Entra Conditional Access

Private links

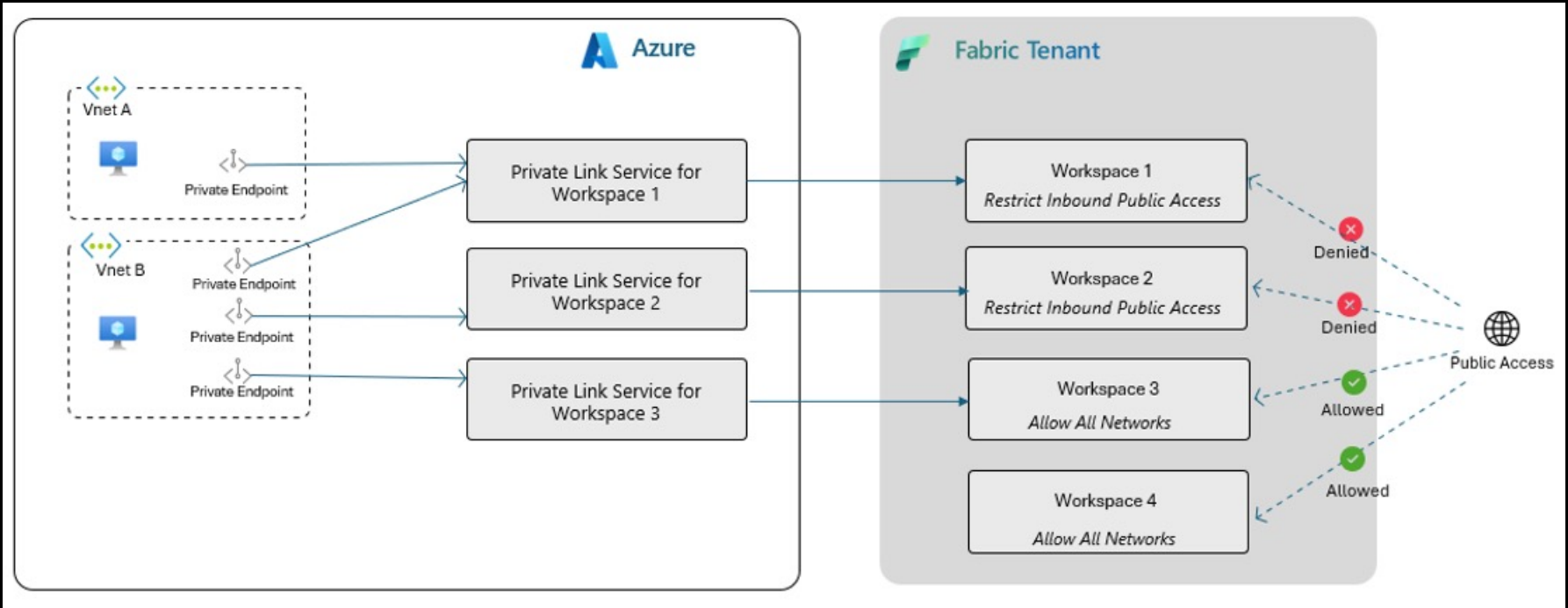
Tentant- and/or workspace-level

Fabric Admin portal settings




Option 1
Option 2
1
Customer VNet
User
Private endpoint
(tenant level)
Azure Private Link
2
User
attempts authentication to Microsoft Fabric
Microsoft Entra Conditional Access Policies
Users and groups
Application type
Network location
Device type
Inbound
3
Microsoft Fabric
OneLake shortcuts

Workspace level



Outbound traffic from Microsoft Fabric





Outbound traffic protection

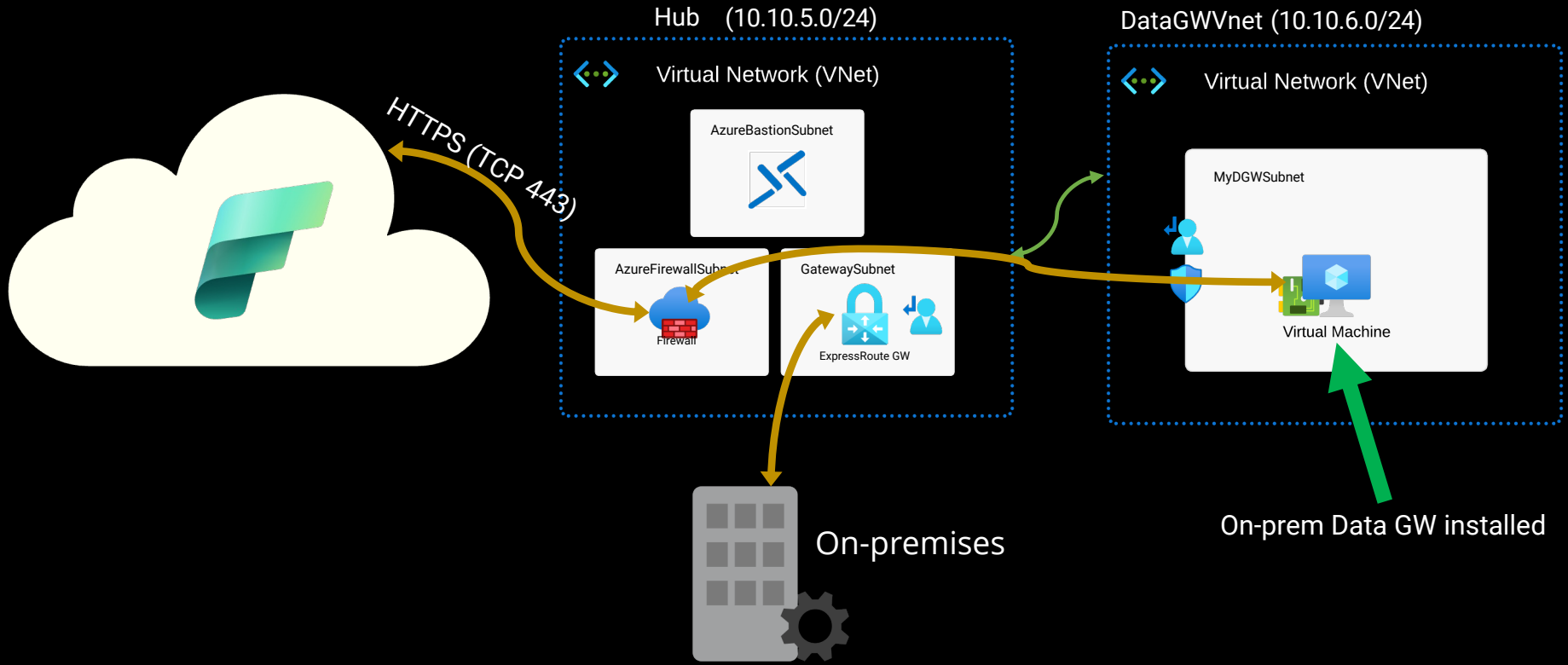
On-premises Data Gateway

VNET Data Gateway

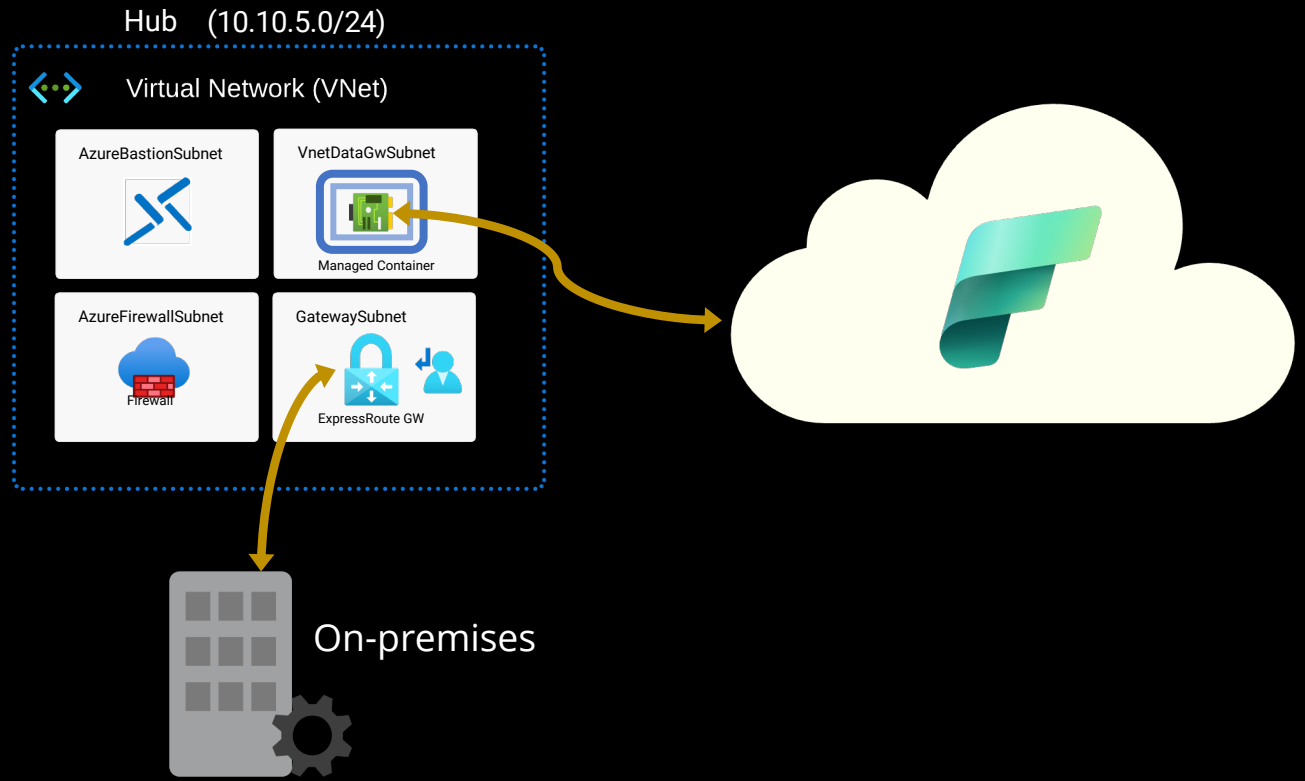
Streaming VNET Data Gateway

Managed Private Endpoint

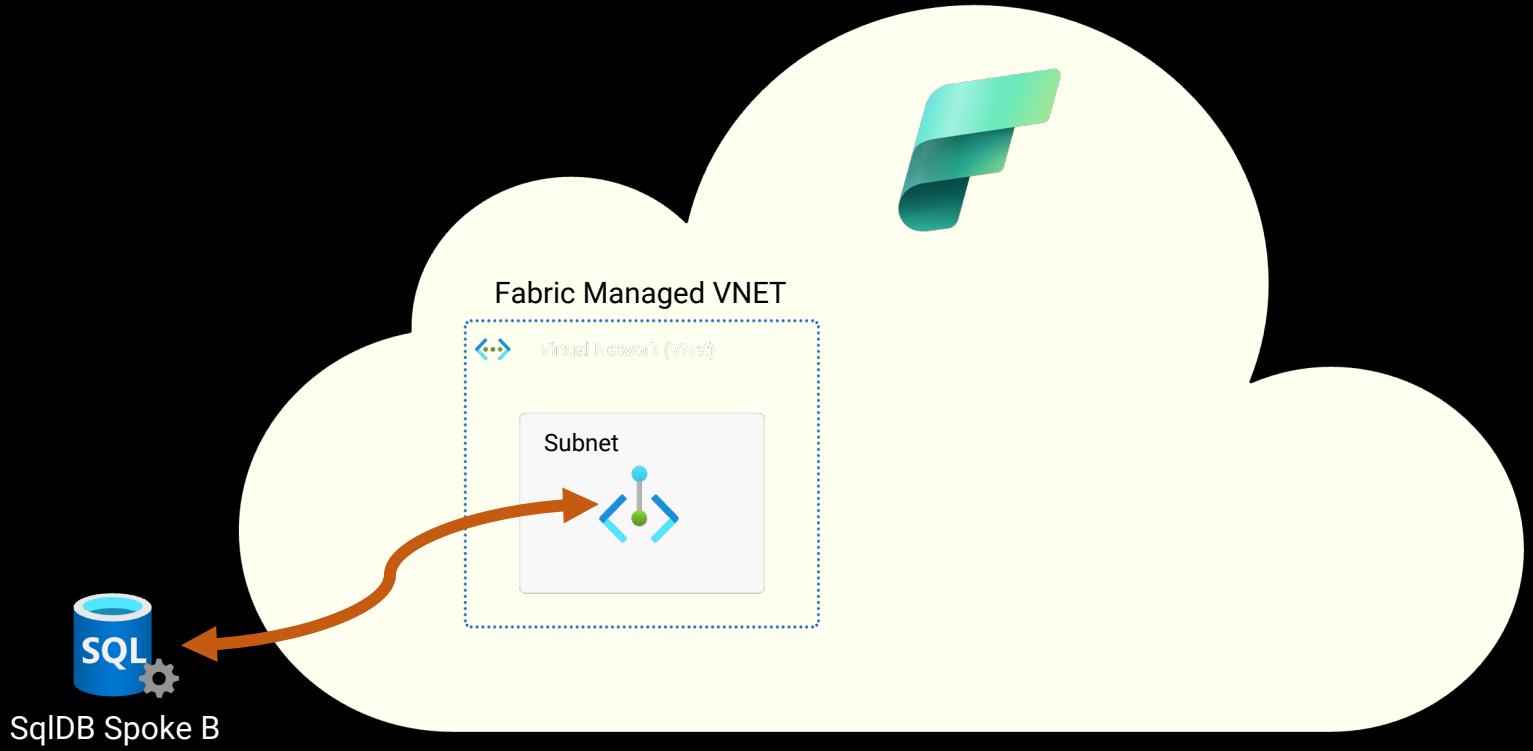
On-premises Data Gateway



(Streaming) VNET Data Gateway



Managed Private endpoint



Private endpoint pricing



Private Link Service	No charge for private link service
Private Endpoint	**$0.01** per hour
Inbound Data Processed	0-1 PB - **$0.01** per GB 1-5 PB - **$0.006** per GB 5+ PB - **$0.004** per GB
Outbound Data Processed	0-1 PB - **$0.01** per GB 1-5 PB - **$0.006** per GB 5+ PB - **$0.004** per GB

$ 7.30 monthly
€ 6.28

1 TB $ 10.24
1 PB $ 10485.76

1 TB € 8.81
1 PB € 9021.12

Demo code repository



https://github.com/RuneORakeie/secure-data-with-private-networking

Resources

Scenarios with private endpoints to Azure SQL Managed Instance (microsoft.com) (Zoran Rilak)

Zero Trust Model - Modern Security Architecture

Microsoft Fabric supported scenarios (Tenant inbound)

Microsoft Fabric supported scenarios (Workspace inbound)

Microsoft Fabric supported scenarios (Private endpoints)

Microsoft Fabric supported scenarios (Workspace outbound)

Azure Private Link pricing



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- Organizer of Data Saturday Oslo
- 30+ years experience with database technology and SQL Server specifically
- Developer, DBA, Solution Architect

- Single-track bicycling through the forests of southern Norway

Session feedback