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Azure Network Engineer Associate (AZ-700) Bootcamp

Earn Your Azure Network Engineer Associate Badge

Reza Salehi

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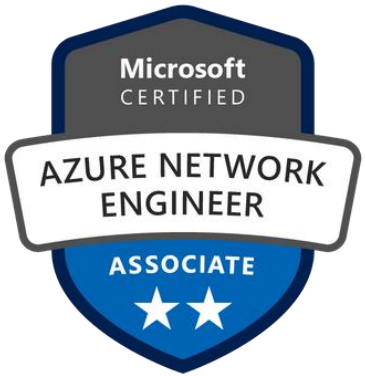
@zaalion



COURSE

Microsoft Azure Fundamentals (AZ-900) Certification Course

★★★★★ 1 review

By Reza Salehi

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TIME TO COMPLETE:
4h 37m

LEVEL:
Beginner

TOPICS:
Microsoft Azure

PUBLISHED BY:
O'Reilly Media, Inc.

PUBLICATION DATE:
October 2022

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https://learning.oreilly.com/videos/microsoft-azure-fundamentals/0636920797234/

Azure Cookbook

https://learning.oreilly.com/library/view/azure-cookbook/9781098135782/

https://www.amazon.ca/Azure-Cookbook-Recipes-Maintain-Solutions/dp/1098135792/

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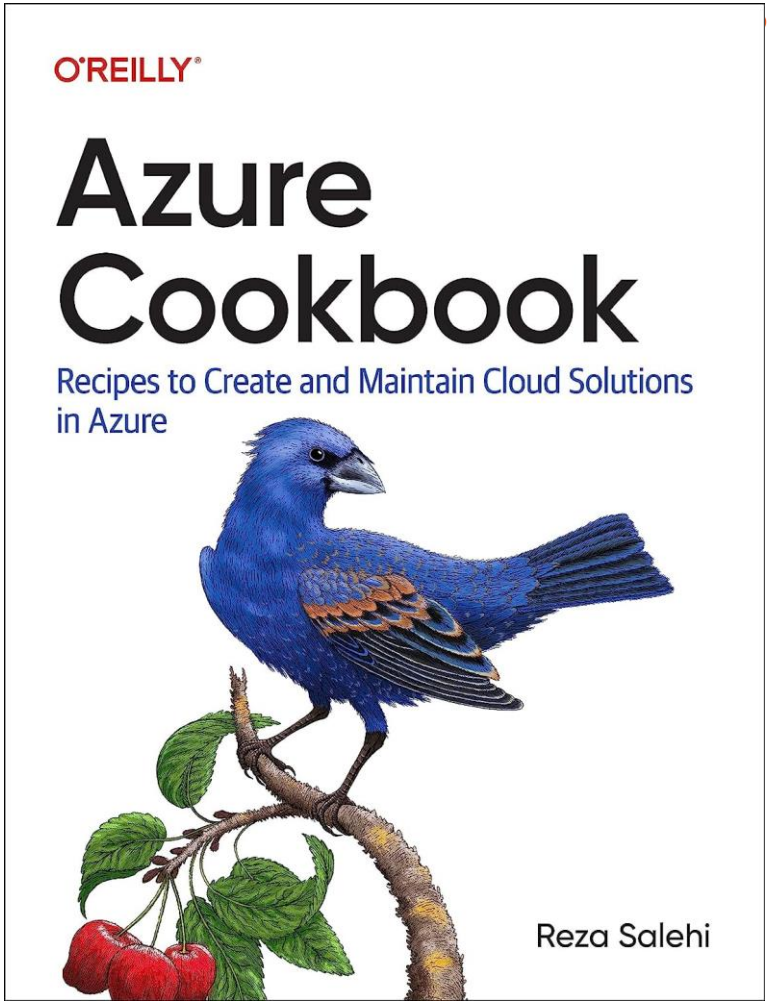
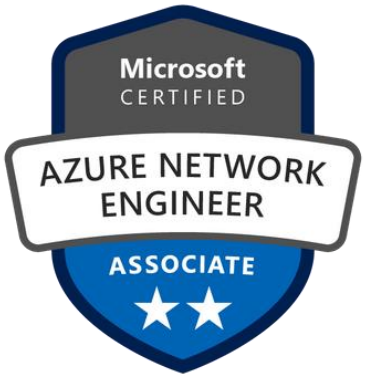


Course Overview

Learning Objectives

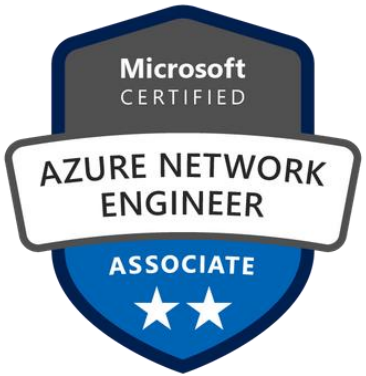
By the end of this course, you will understand:

- Learning objectives covered in Exam AZ-700: Designing and Implementing Microsoft Azure Networking Solutions
- Core Azure networking infrastructure
- Azure connectivity services
- Azure application delivery services
- Private access to Azure services
- Azure resources network security



Course Repository

https://github.com/zaalion/oreilly-az-700



Congratulations, you passed!

You've renewed your Microsoft Certified: Azure Security Engineer Associate and have extended it by **one year**.

See your results

zaalion / **oreilly-az-500** Private

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OReilly-AZ-500-Slide-Deck.pptx	Slide deck for December 22
README.md	Initial commit

README.md

oreilly-az-500

Local | Codespaces New

Clone

HTTPS | SSH | GitHub CLI

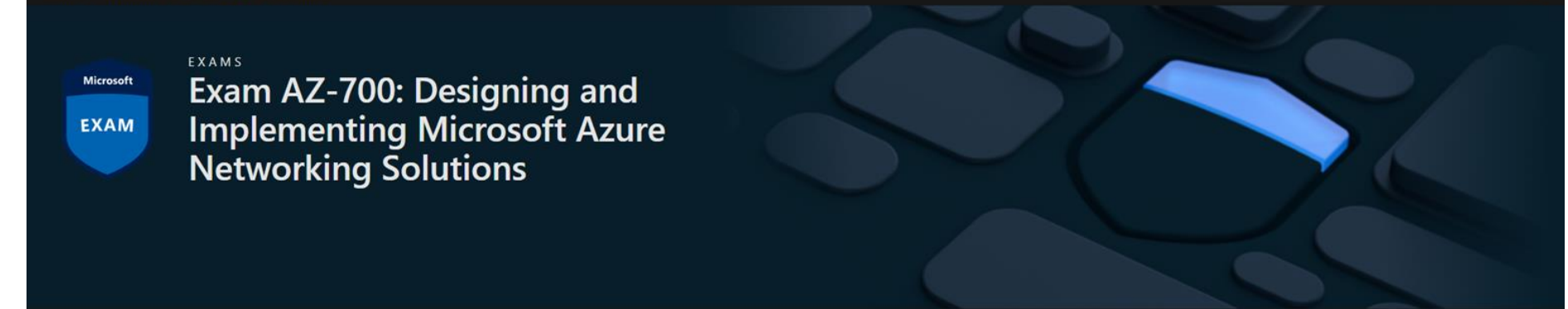
https://github.com/zaalion/oreilly-az-500.git

Use Git or checkout with SVN using the web URL.

Open with GitHub Desktop

Open with Visual Studio

Download ZIP



EXAMS

Exam AZ-700: Designing and Implementing Microsoft Azure Networking Solutions

Candidates for this exam should have subject matter expertise in planning, implementing, and managing Azure networking solutions, including core network infrastructure, hybrid connectivity, application delivery services, private access to Azure services, and network security.

Responsibilities for Azure network engineers include optimizing performance, resiliency, scale, and security of Azure networking solutions. These professionals deploy the solutions by using the Azure portal, the command line, and templates. They proactively monitor network environments to identify issues and minimize risk.

Azure network engineers work with solution architects, cloud administrators, security engineers, application developers, and DevOps engineers to deliver Azure solutions. They also assist Azure support engineers in resolving connectivity issues reported by customers.

Important

The English language version of this exam will be updated on October 31, 2023. Review the study guide linked in the "Tip" box for details on upcoming changes. If a localized version of this exam is available, it will be updated approximately eight weeks after this date. While Microsoft makes every effort to update localized versions as noted, there may be times when the localized versions of this exam are not updated on this schedule.

Passing score: 700. Learn more about exam scores.

Tip

- Watch **AZ-700 exam prep videos** on Learn
- Review the **AZ-700 study guide** to help you prepare for the exam
- Demo the exam experience by visiting our **exam sandbox**

Part of the requirements for: Microsoft Certified: Azure Network Engineer Associate
Related exams: none
Go to Learn Profile

Two ways to prepare

Self-paced | Instructor-led

Items in this collection

LEARNING PATH

AZ-700 Designing and Implementing Microsoft Azure Networking Solutions

8 Modules

Intermediate • Administrator • Application Gateway

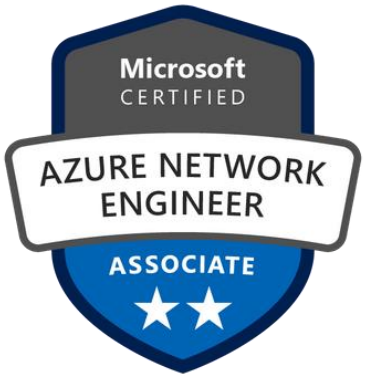
Start >

Save

Design and implement core networking infrastructure (25–30%)

Design and implement core networking infrastructure (20–25%)

- Design and implement IP addressing for Azure resources
- Design and implement name resolution
- Design and implement VNet connectivity and routing
- Monitor networks



Design and implement IP addressing for Azure resources

- Plan and implement network segmentation and address spaces
- Create a virtual network (VNet) [see 1 2]
- Plan and configure subnetting for services, including VNet gateways, private endpoints, firewalls, application gateways, VNet-integrated platform services, and Azure Bastion
- Plan and configure shared or dedicated subnets
- Plan and configure subnet delegation
- Create a prefix for public IP addresses
- Choose when to use a public IP address prefix
- Plan and implement a custom public IP address prefix (bring your own IP)
- Create a new public IP address
- Associate public IP addresses to resources

Design and implement name resolution

- Design name resolution inside a VNet
- Configure DNS settings for a VNet
- Design public DNS zones
- Design private DNS zones
- Configure a public or private DNS zone
- Link a private DNS zone to a Vnet
- Design and implement DNS private resolver [see 1 2]

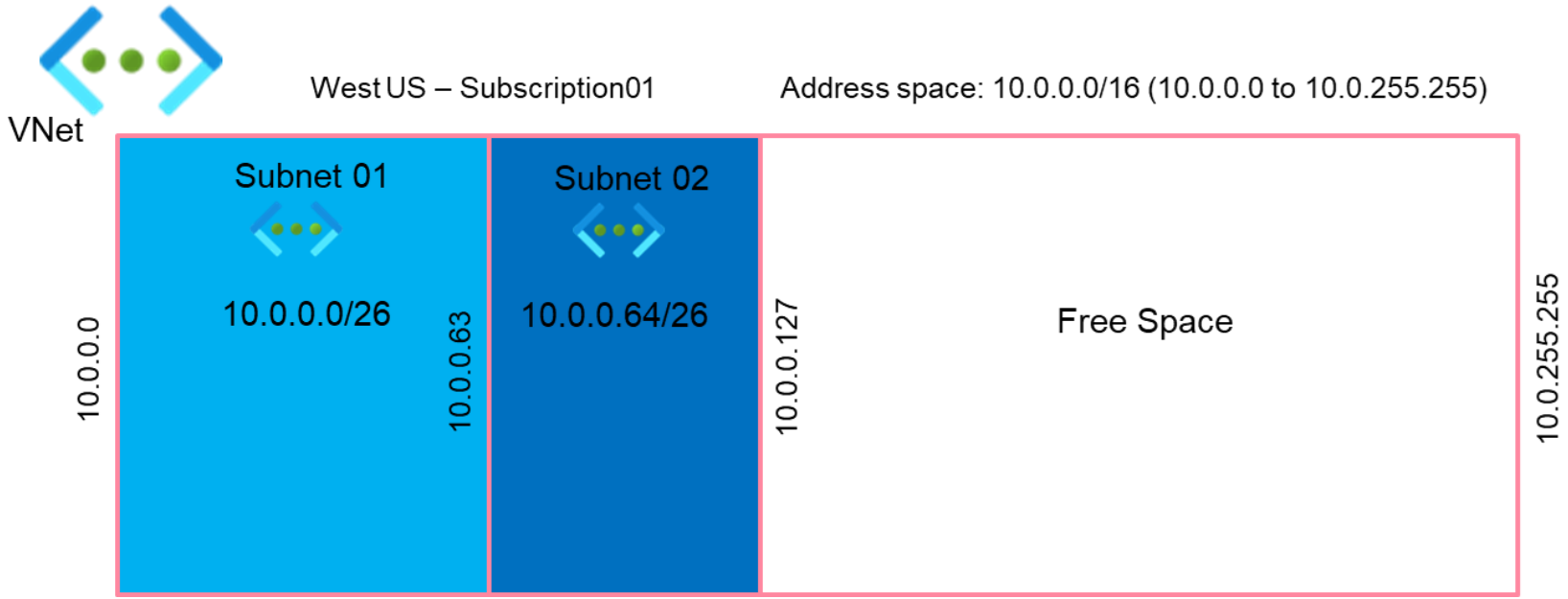
Design and implement VNet connectivity and routing

- Design service chaining, including gateway transit [also see 1 2]
- Design virtual private network (VPN) connectivity between VNets
- Implement VNet peering
- Design and implement user-defined routes (UDRs)
- Associate a route table with a subnet
- Configure forced tunneling
- Diagnose and resolve routing issues [see 1 2]
- Design and implement Azure Route Server
- Identify appropriate use cases for a Virtual Network NAT gateway
- Implement a NAT gateway

Monitor networks

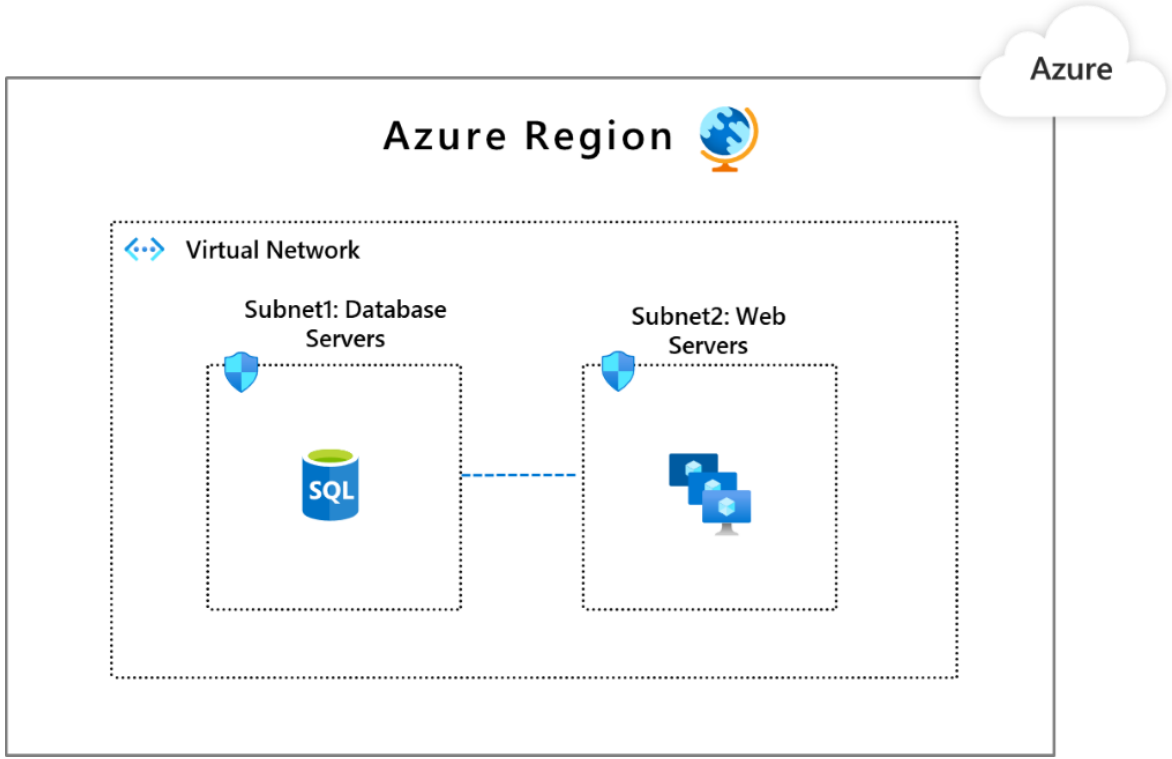
- Configure monitoring, network diagnostics, and logs in Azure Network Watcher
- Monitor and repair network health by using Azure Network Watcher
- Monitor and troubleshoot networks by using Azure Monitor Network Insights
- Activate and monitor distributed denial-of-service (DDoS) protection
- Evaluate network security recommendations identified by Microsoft Defender for Cloud Secure Score
- Evaluate network security recommendations identified by Microsoft Defender For Cloud Attack Path Analysis
- Identify network resources by using Microsoft Defender for Cloud Security Explorer

Network Address Space



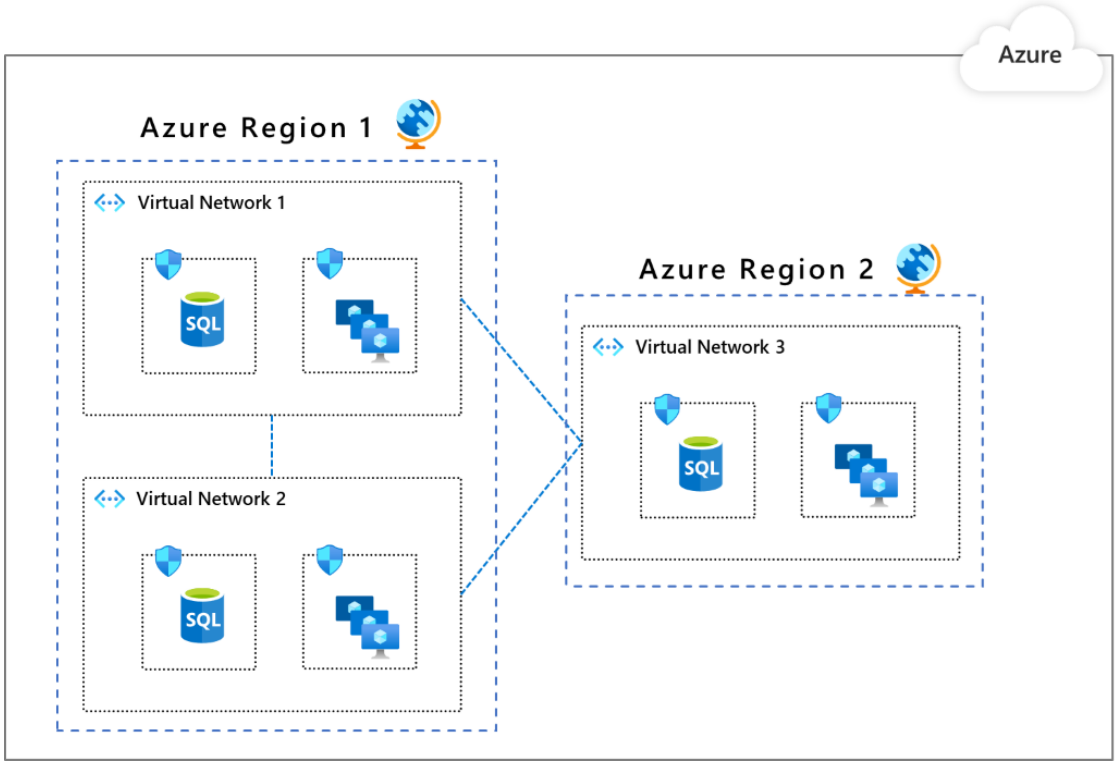
https://docs.microsoft.com/en-us/azure/virtual-network/concepts-and-best-practices

Network segmentation patterns on Azure



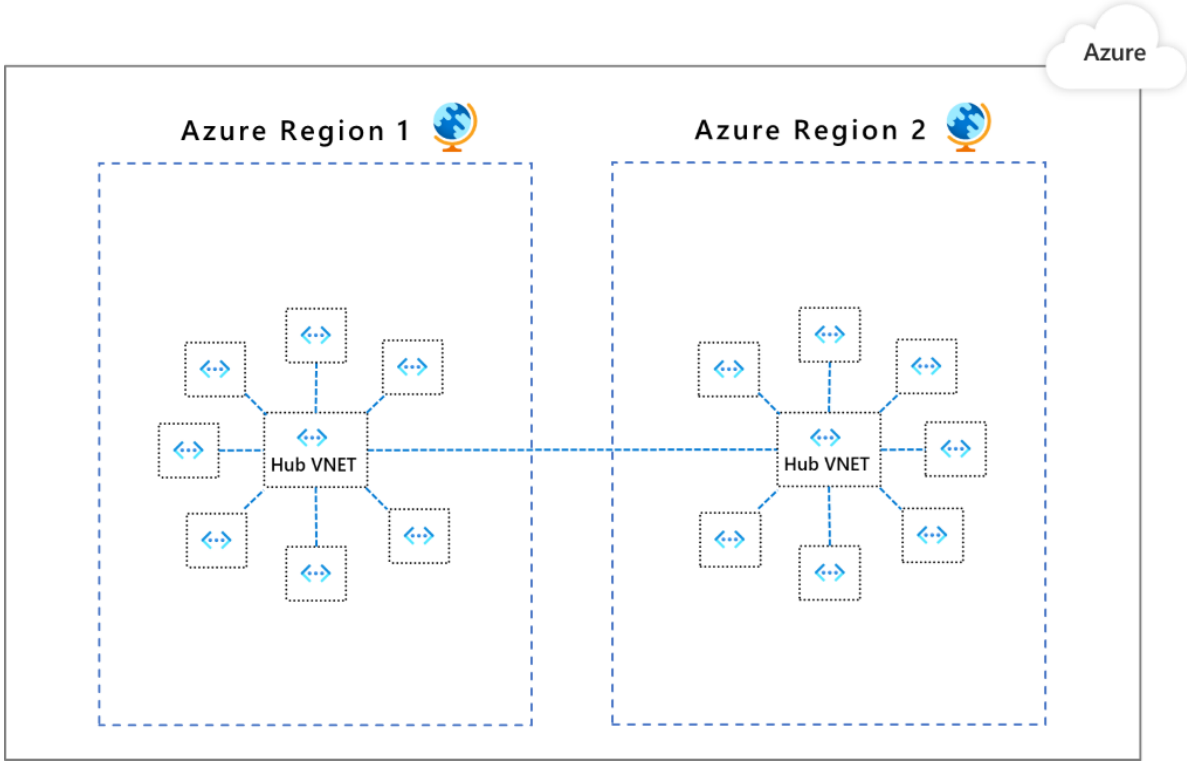
https://learn.microsoft.com/en-us/azure/well-architected/security/design-network-segmentation#pattern-1-single-vnet

Network segmentation patterns on Azure



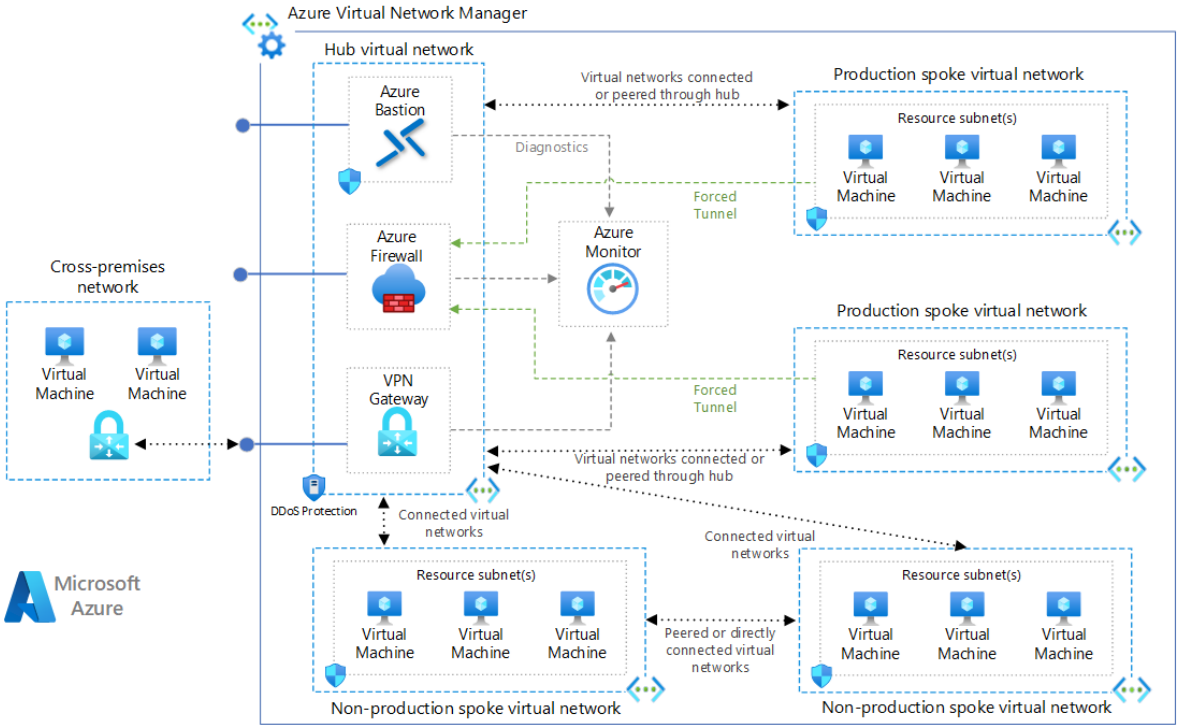
https://learn.microsoft.com/en-us/azure/well-architected/security/design-network-segmentation#pattern-2-multiple-vnets-that-communicate-through-with-peering

Network segmentation patterns on Azure



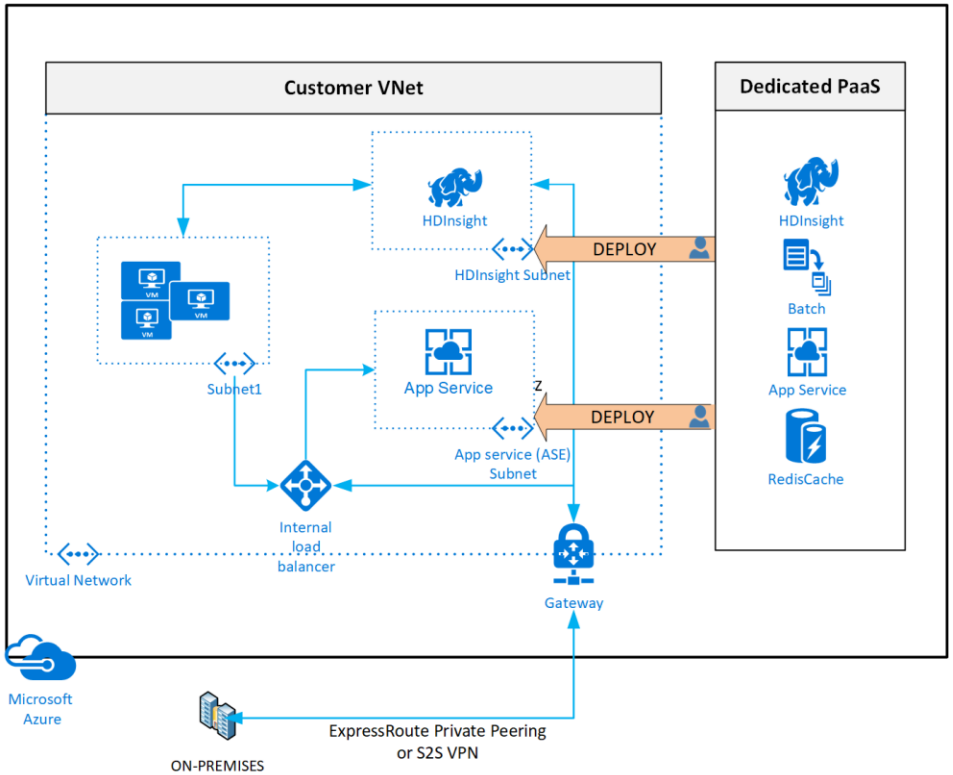
https://learn.microsoft.com/en-us/azure/well-architected/security/design-network-segmentation#pattern-3-multiple-vnets-in-a-hub-and-spoke-model

Some Resources Which Need a Subnet



https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/hub-spoke?tabs=cli

Azure Subnet Delegation



https://learn.microsoft.com/en-us/azure/virtual-network/subnet-delegation-overview

https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-for-azure-services

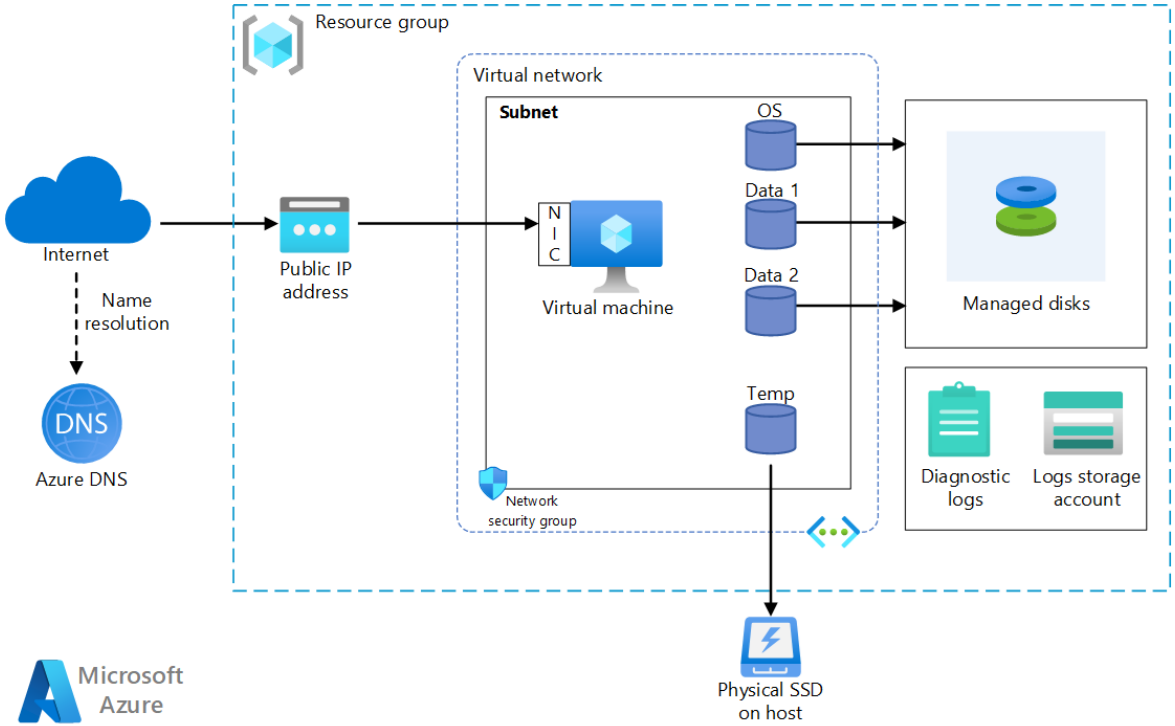
Azure Subnet Delegation

Services that can be deployed into a virtual network

Category	Service	Dedicated[1] Subnet
Compute	Virtual machines: Linux or Windows	No
	Virtual machine scale sets	No
	Cloud Service: Virtual network (classic) only	No
	Azure Batch	No[2]
Network	Application Gateway - WAF	Yes
	Azure Bastion	Yes
	Azure Firewall	Yes
	Azure Route Server	Yes
	ExpressRoute Gateway	Yes
	Network Virtual Appliances	No
	VPN Gateway	Yes
Data	RedisCache	Yes
	Azure SQL Managed Instance	Yes
	Azure Database for MySQL - Flexible Server	Yes
	Azure Database for PostgreSQL - Flexible Server	Yes
Analytics	Azure HDInsight	No[2]
	Azure Databricks	No[2]
Identity	Azure Active Directory Domain Services	No
Containers	Azure Kubernetes Service (AKS)	No[2]

https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-for-azure-services#services-that-can-be-deployed-into-a-virtual-network

Azure Public IP

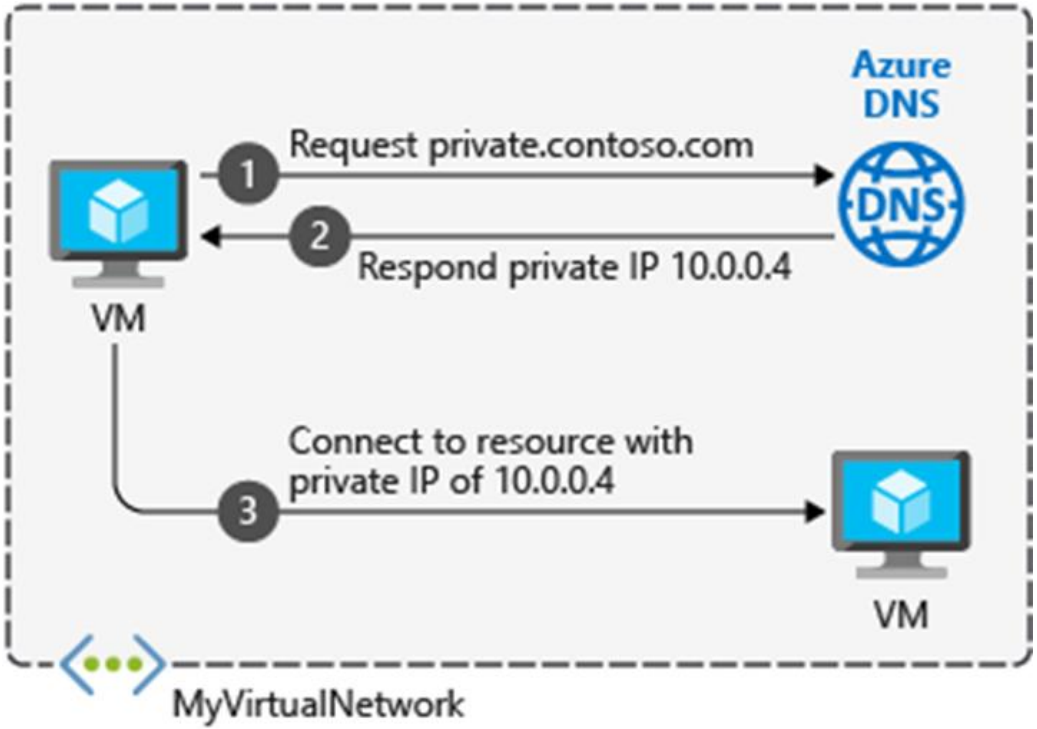


https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/n-tier/linux-vm

Azure Public DNS

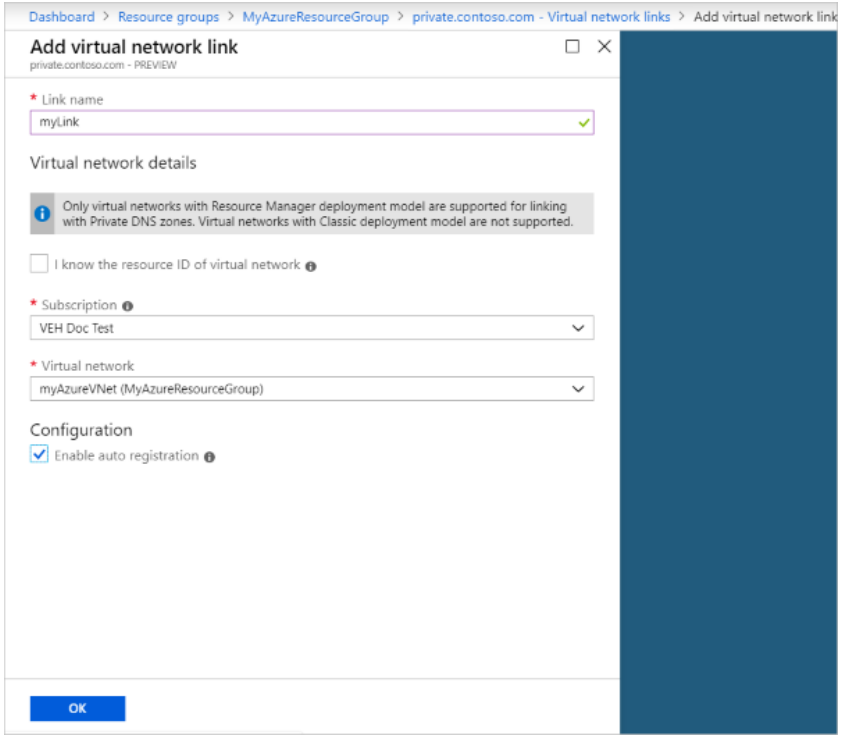
https://learn.microsoft.com/en-us/azure/dns/dns-overview

Azure Private DNS



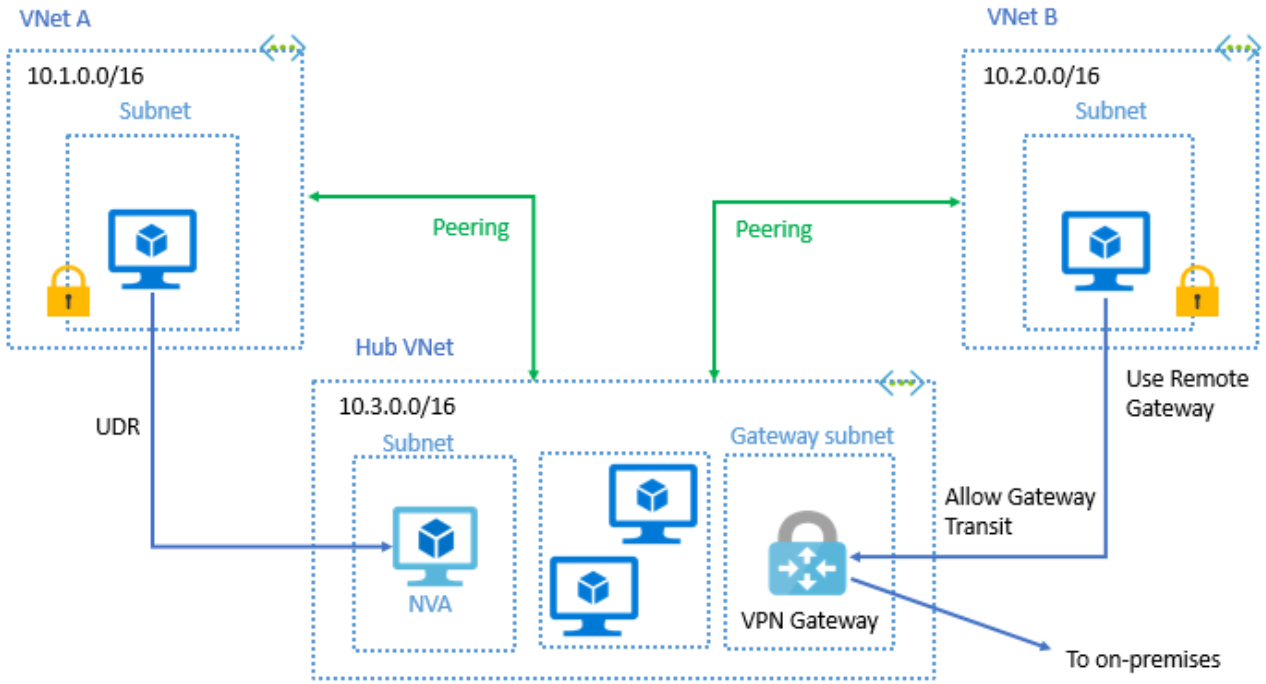
https://docs.microsoft.com/en-us/azure/dns/private-dns-overview

Link Private DNS to an Azure VNet



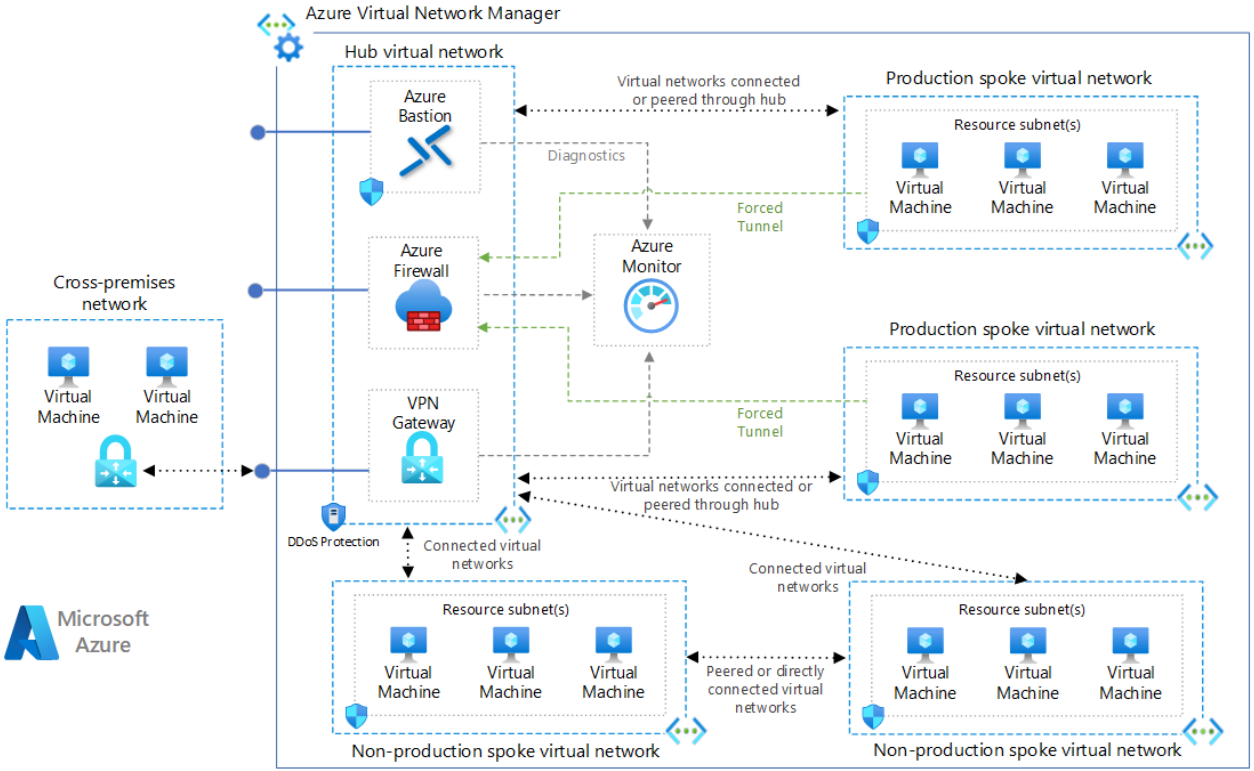
https://learn.microsoft.com/en-us/azure/dns/private-dns-getstarted-portal#link-the-virtual-network

Service Chaining



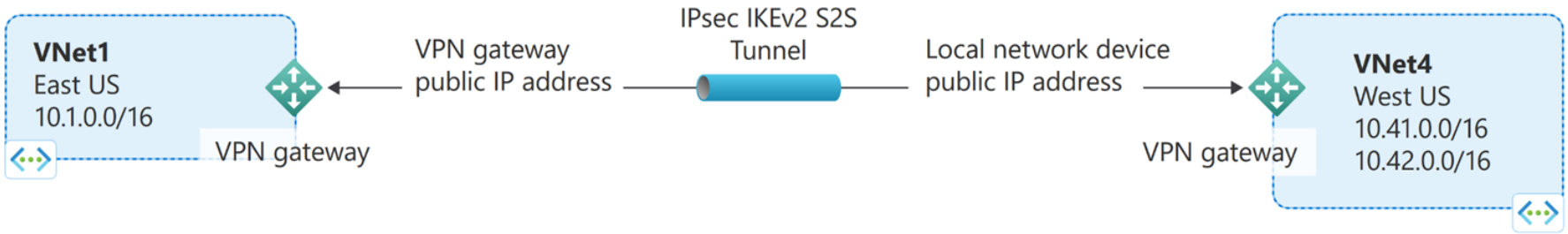
https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-peering-overview#service-chaining

Hub-spoke Network Topology



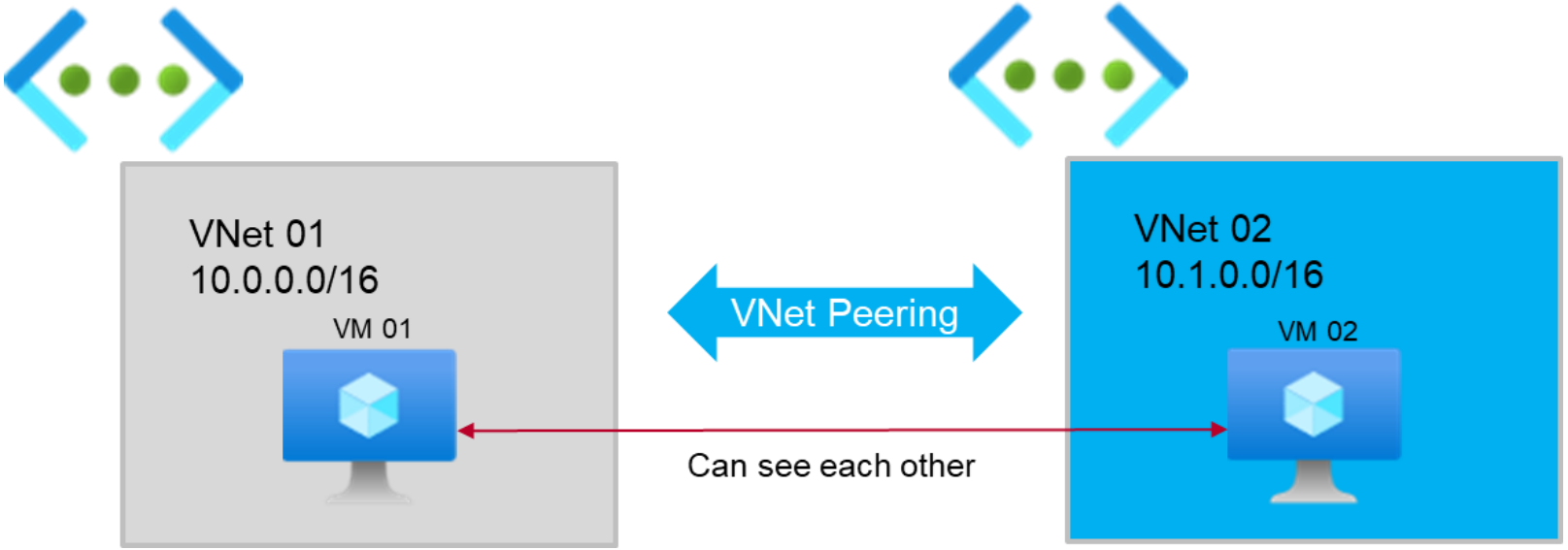
https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/hub-spoke?tabs=cli

Configure a VNet-to-VNet VPN Connection



https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-vnet-vnet-resource-manager-portal

VNet Peering



https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-peering-overview

UDR (User-defined Routes)

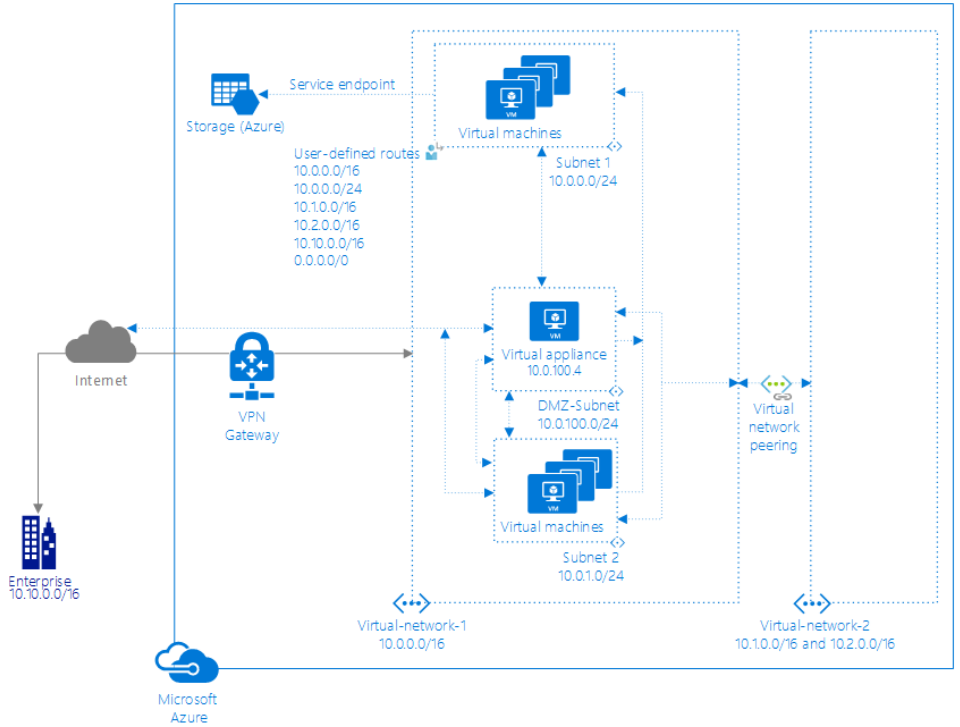
System routes

Azure automatically creates system routes and assigns the routes to each subnet in a virtual network. You can't create system routes, nor can you remove system routes, but you can override some system routes with custom routes. Azure creates default system routes for each subnet, and adds more optional default routes to specific subnets, or every subnet, when you use specific Azure capabilities.

Default

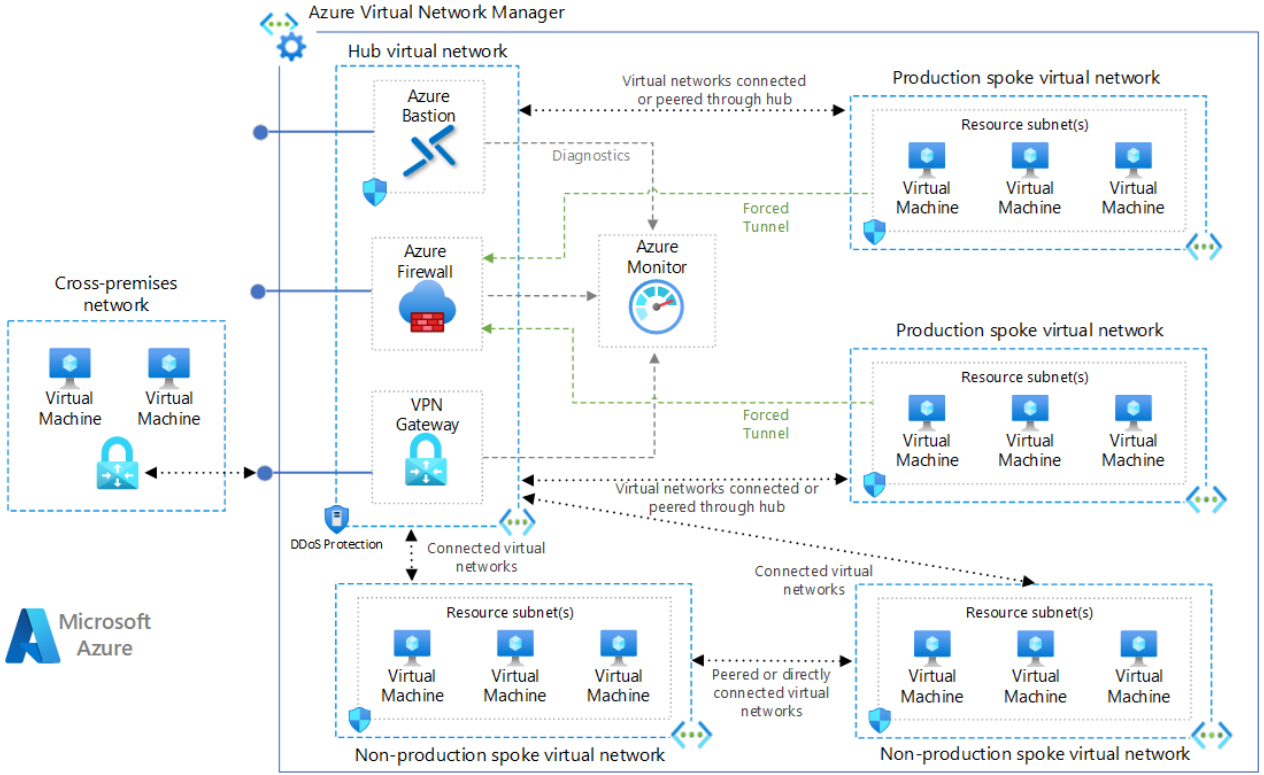
Each route contains an address prefix and next hop type. When traffic leaving a subnet is sent to an IP address within the address prefix of a route, the route that contains the prefix is the route Azure uses. Learn more about how Azure selects a route when multiple routes contain the same prefixes, or overlapping prefixes. Whenever a virtual network is created, Azure automatically creates the following default system routes for each subnet within the virtual network:

Source	Address prefixes	Next hop type
Default	Unique to the virtual network	Virtual network
Default	0.0.0.0/0	Internet
Default	10.0.0.0/8	None
Default	172.16.0.0/12	None
Default	192.168.0.0/16	None
Default	100.64.0.0/10	None



https://learn.microsoft.com/en-us/azure/virtual-network/virtual-networks-udr-overview

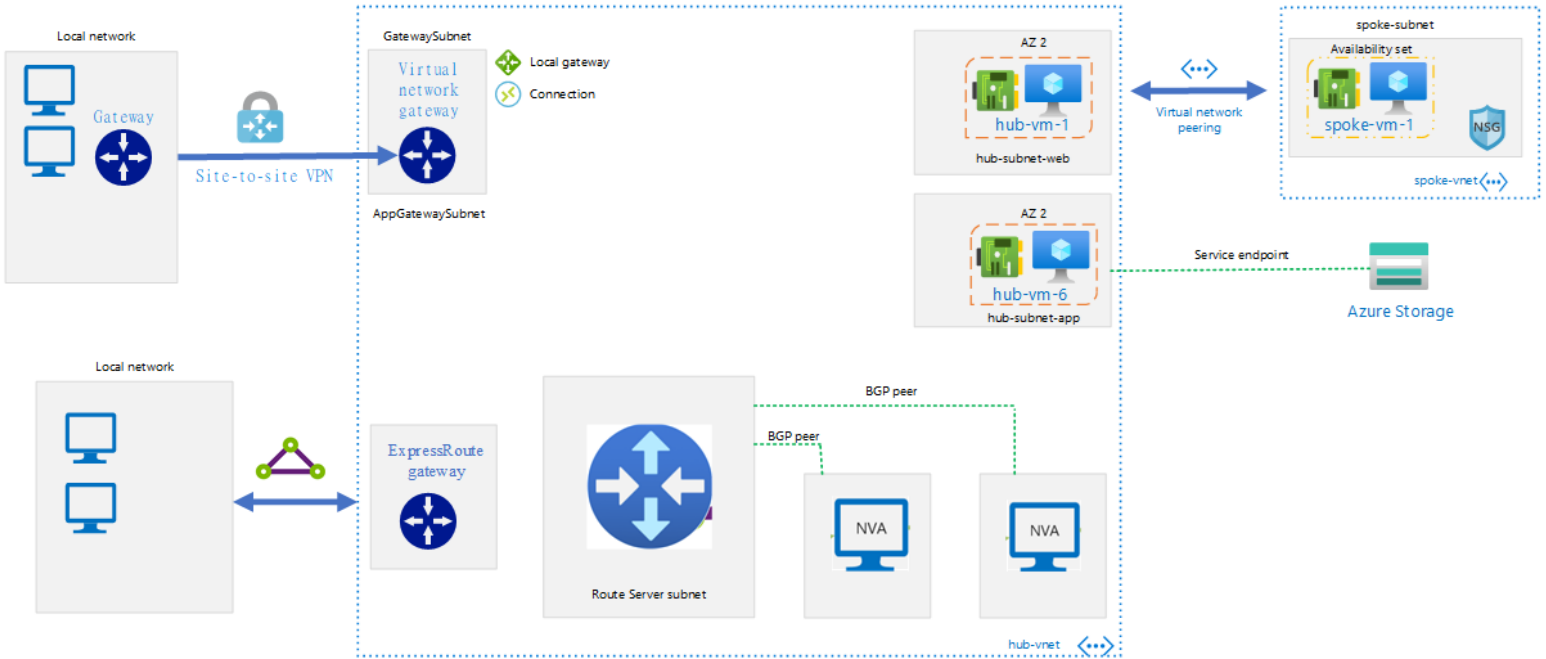
Azure Firewall Forced Tunneling



https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/hub-spoke?tabs=cli

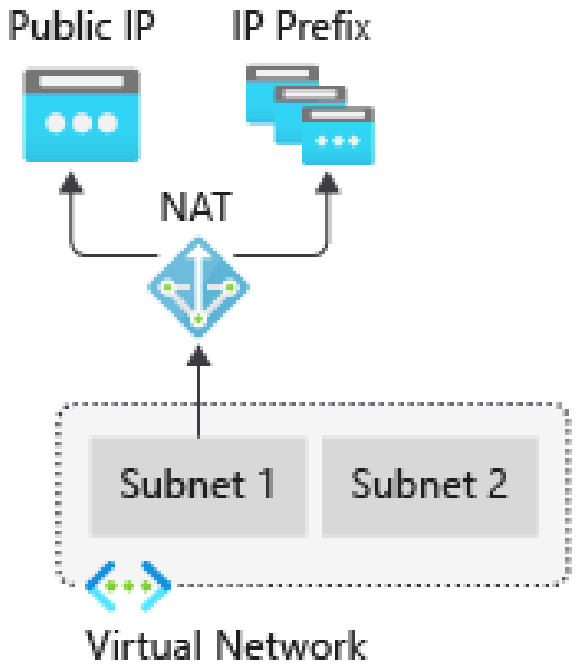
https://learn.microsoft.com/en-us/azure/firewall/forced-tunneling

Azure Route Server



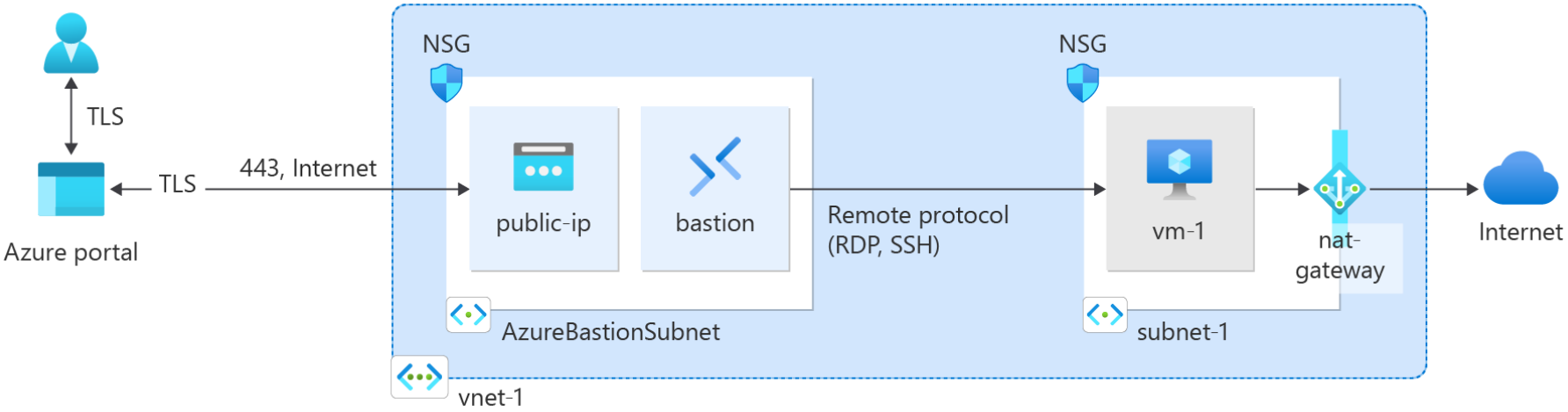
https://learn.microsoft.com/en-us/azure/architecture/example-scenario/networking/manage-routing-azure-route-server

Azure NAT Gateway



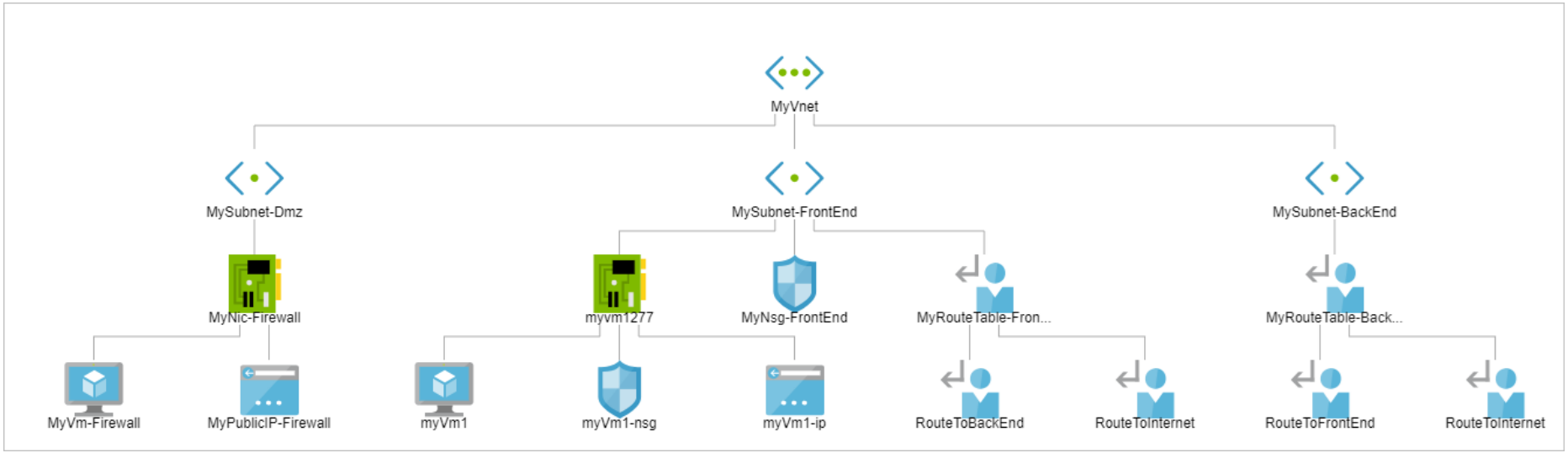
https://learn.microsoft.com/en-us/azure/nat-gateway/nat-overview

Azure NAT Gateway



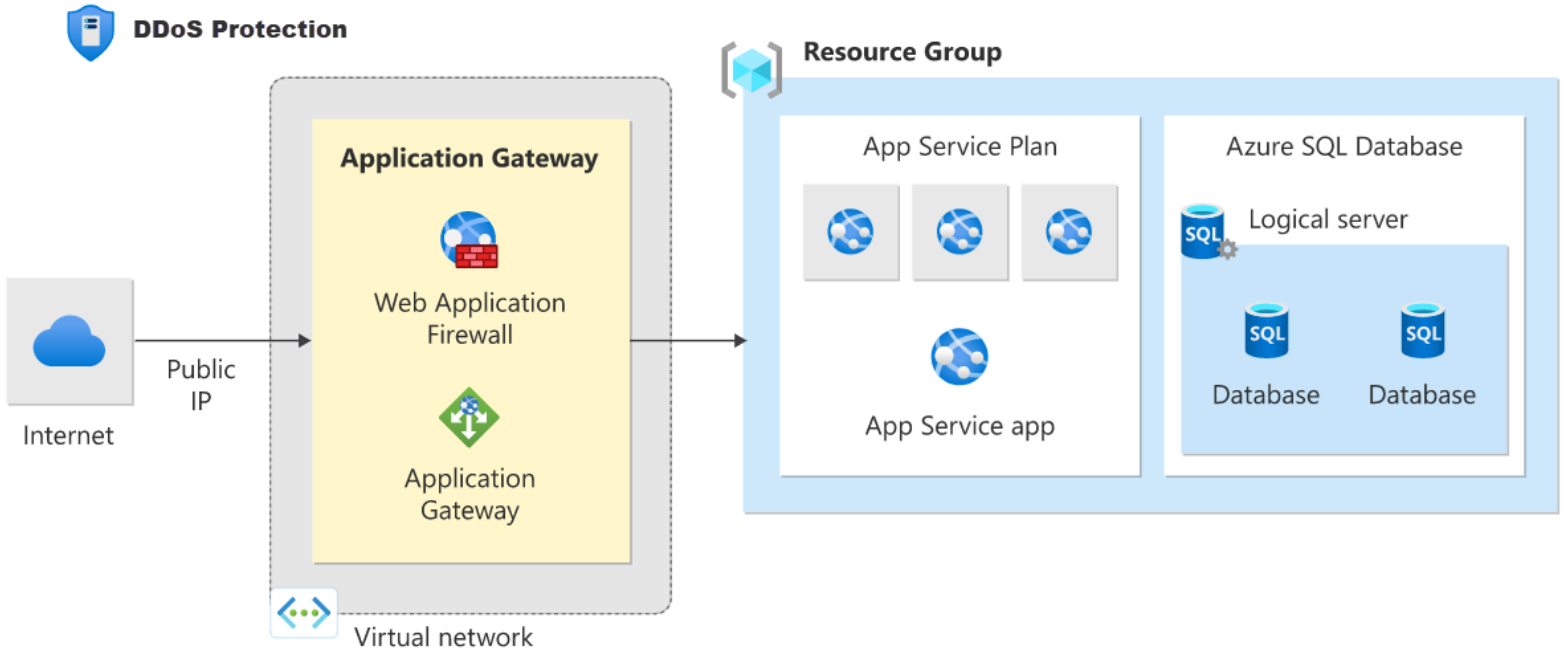
https://learn.microsoft.com/en-us/azure/nat-gateway/quickstart-create-nat-gateway-portal

Azure Network Watcher



https://learn.microsoft.com/en-us/azure/network-watcher/network-watcher-monitoring-overview

Azure DDoS Protection

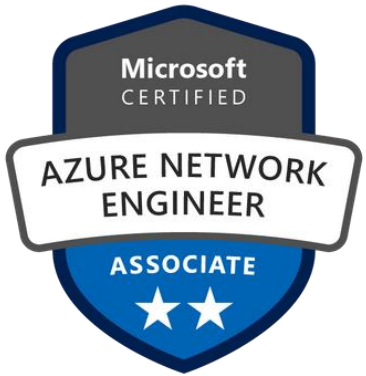


https://learn.microsoft.com/en-us/azure/ddos-protection/ddos-protection-overview

Design, implement, and manage connectivity services (20–25%)

Design, implement, and manage connectivity services (20–25%)

- Design, implement, and manage a site-to-site VPN connection
- Design, implement, and manage a point-to-site VPN connection
- Design, implement, and manage Azure ExpressRoute
- Design and implement an Azure Virtual WAN architecture



Design, implement, and manage a site-to-site VPN connection

- Design a site-to-site VPN connection, including for high availability
- Select an appropriate VNet gateway SKU for site-to-site VPN requirements
- Implement a site-to-site VPN connection
- Identify when to use a policy-based VPN versus a route-based VPN connection
- Create and configure a local network gateway
- Create and configure an IPsec/IKE policy [see 1 2 3]
- Create and configure a virtual network gateway
- Diagnose and resolve virtual network gateway connectivity issues [also see 1]
- Implement Azure Extended Network

Design, implement, and manage a point-to-site VPN connection

- Select an appropriate virtual network gateway SKU for point-to-site VPN requirements
- Select and configure a tunnel type
- Select an appropriate authentication method
- Configure RADIUS authentication
- Configure authentication by using Microsoft Entra ID [and here]
- Implement a VPN client configuration file
- Diagnose and resolve client-side and authentication issues
- Specify Azure requirements for Always On authentication
- Specify Azure requirements for Azure Network Adapter

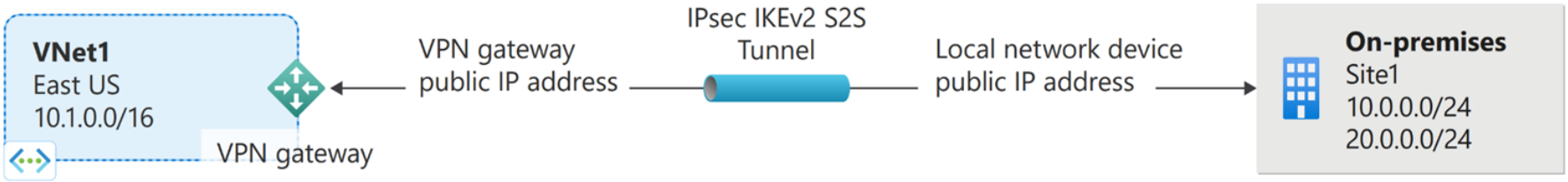
Design, implement, and manage ExpressRoute

- Select an ExpressRoute connectivity model
- Select an appropriate ExpressRoute SKU and tier
- Design and implement ExpressRoute to meet requirements, including cross-region connectivity, redundancy, and disaster recovery
- Design and implement ExpressRoute options, including Global Reach, FastPath, and ExpressRoute Direct
- Choose between private peering only, Microsoft peering only, or both
- Configure private peering
- Configure Microsoft peering
- Create and configure an ExpressRoute gateway
- Connect a virtual network to an ExpressRoute circuit
- Recommend a route advertisement configuration
- Configure encryption over ExpressRoute
- Implement Bidirectional Forwarding Detection
- Diagnose and resolve ExpressRoute connection issues

Design and implement an Azure Virtual WAN architecture

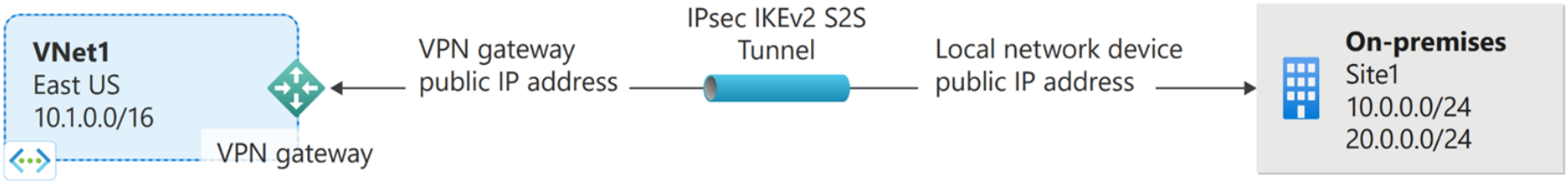
- Select a Virtual WAN SKU
- Design a Virtual WAN architecture, including selecting types and services
- Create a hub in Virtual WAN
- Choose an appropriate scale unit for each gateway type
- Deploy a gateway into a Virtual WAN hub
- Configure virtual hub routing
- Integrate a Virtual WAN hub with a third-party NVA

Azure Site-to-site VPN



https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpngateways

Azure Site-to-site VPN



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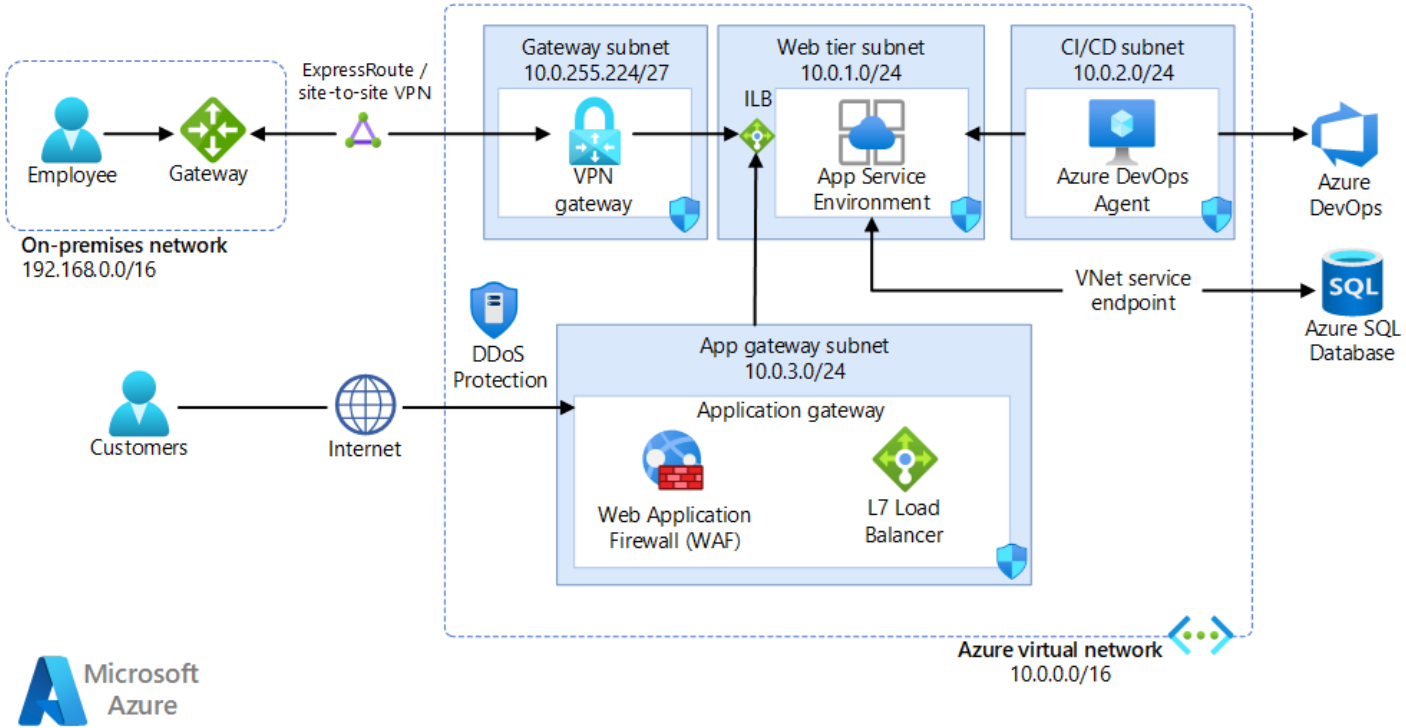
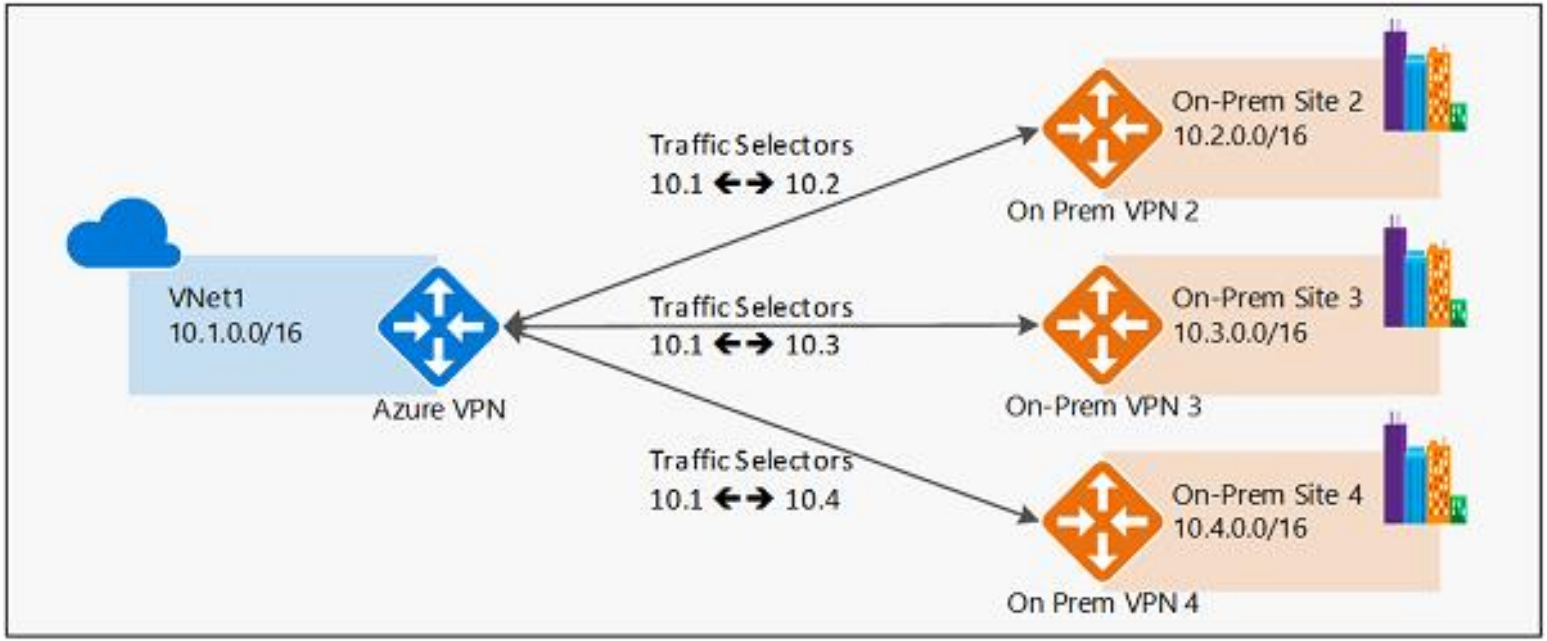
Azure Site-to-site VPN



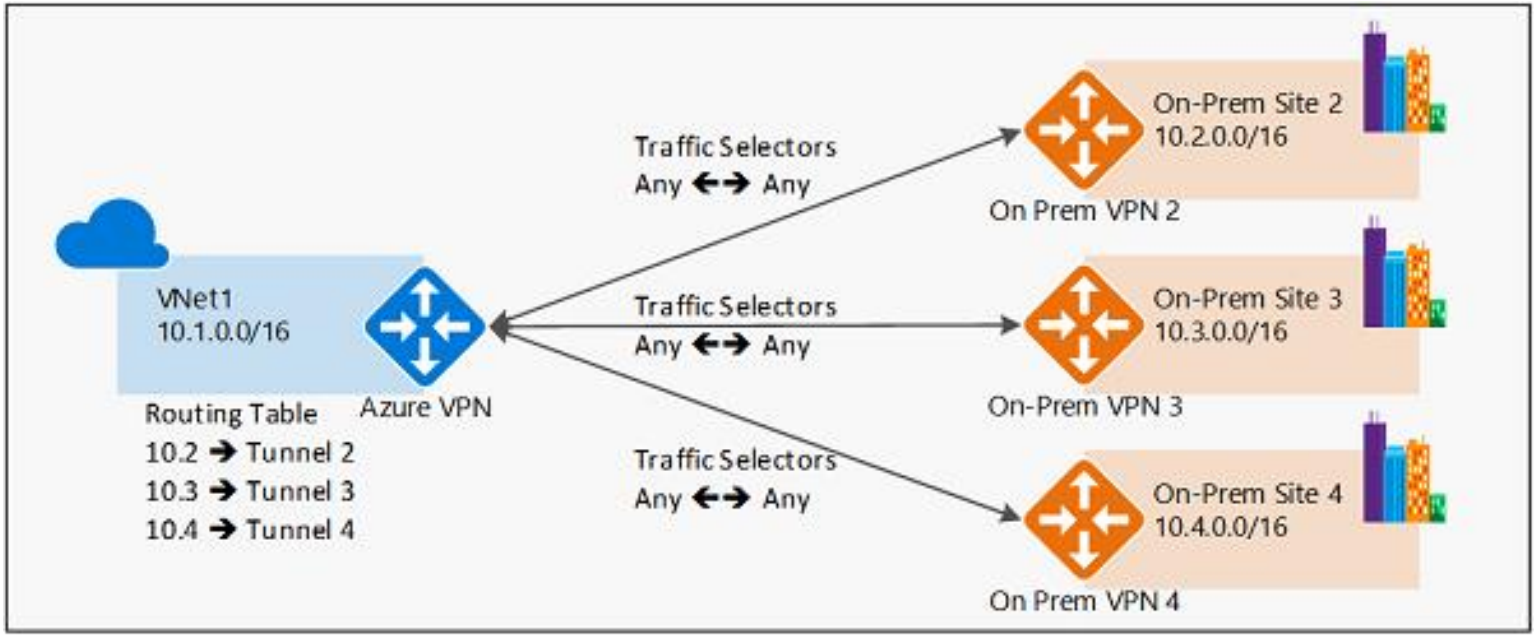
https://learn.microsoft.com/en-us/azure/architecture/example-scenario/apps/fully-managed-secure-apps

Azure Policy-based VPN



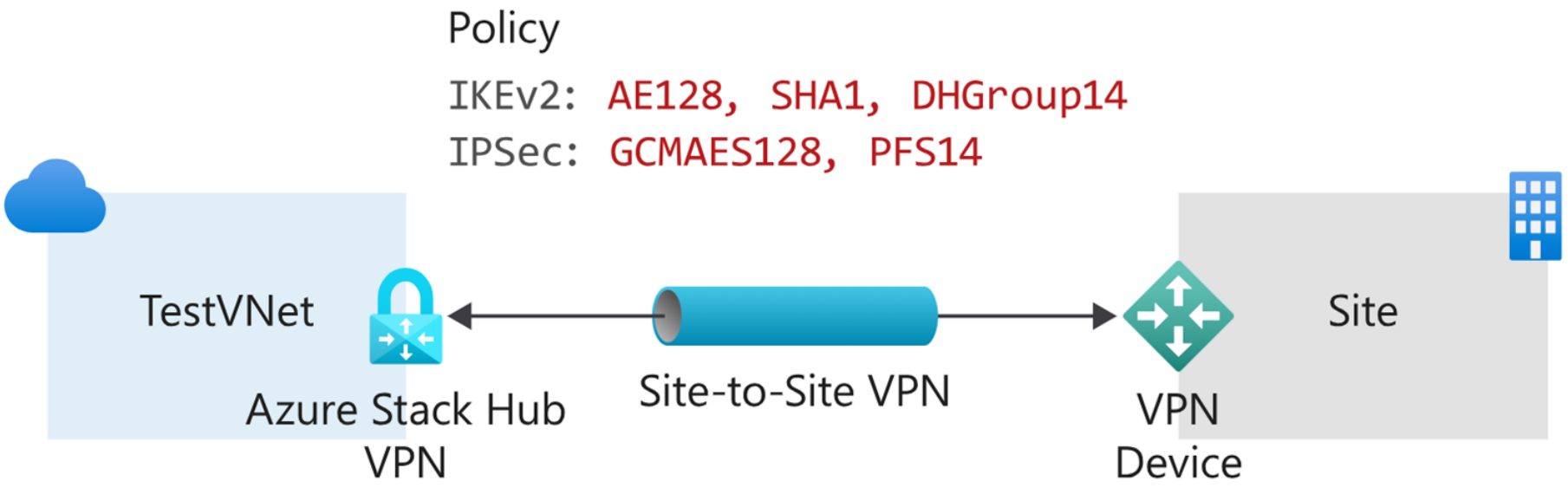
https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-connect-multiple-policybased-rm-ps

Azure Route-based VPN



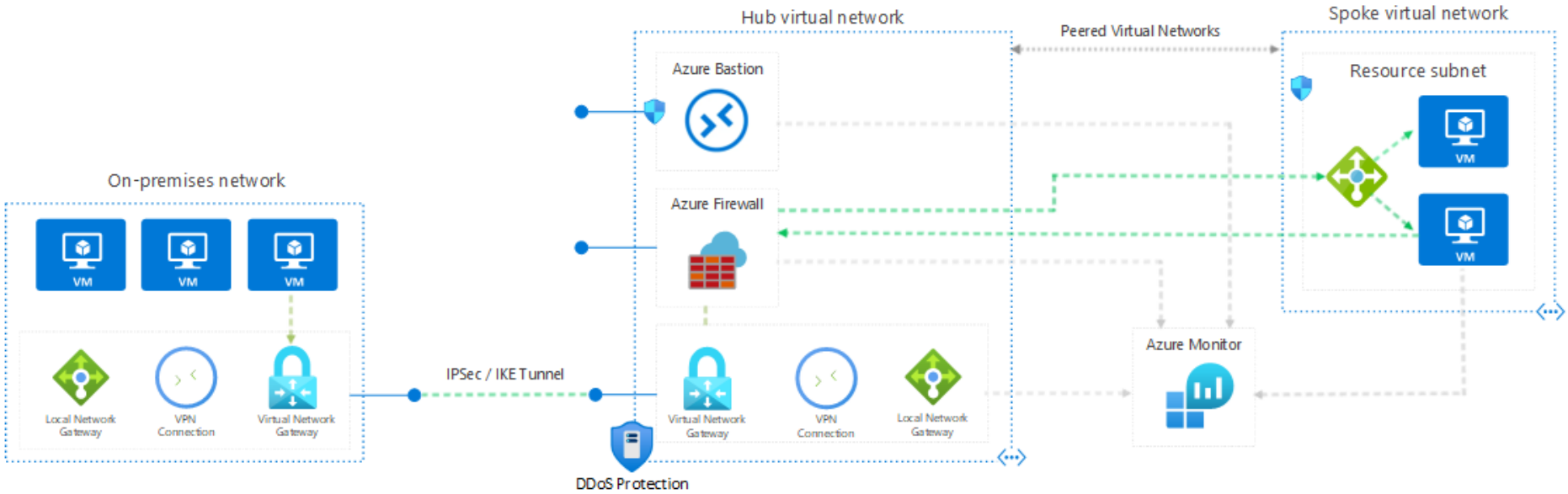
https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-connect-multiple-policybased-rm-ps

IPsec/IKE Policy for Site-to-site VPN



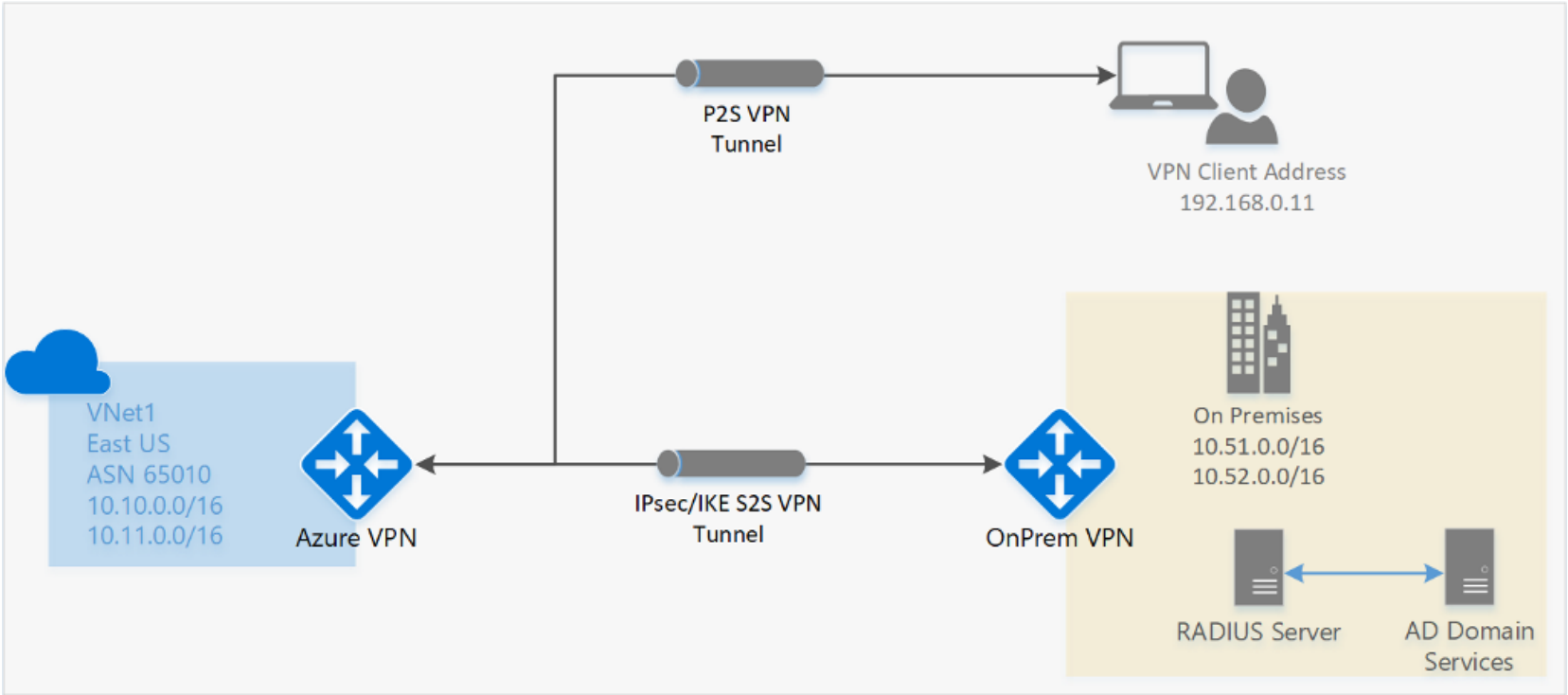
https://learn.microsoft.com/en-us/azure-stack/user/azure-stack-vpn-s2s

IPsec/IKE Policy for Site-to-site VPN



https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/dmz/secure-vnet-dmz?tabs=portal

Azure Point-to-site VPN



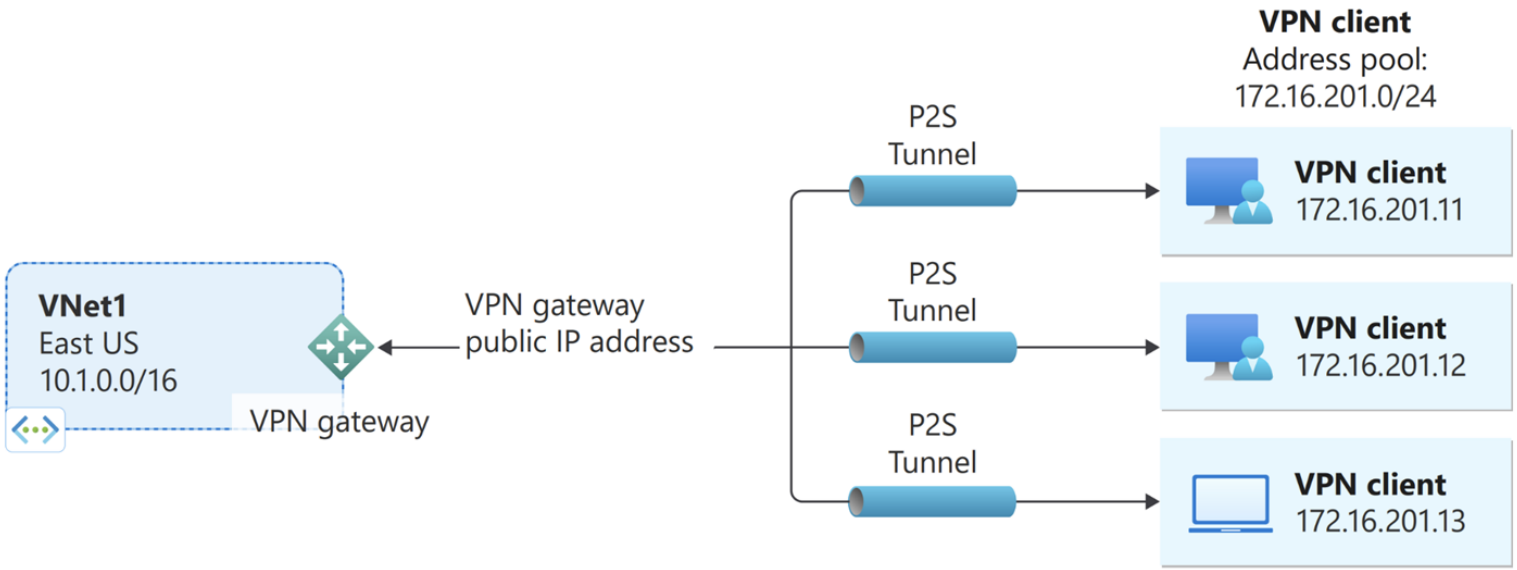
https://learn.microsoft.com/en-us/azure/vpn-gateway/point-to-site-about

Azure Point-to-site VPN Authentication

- Certificate-based
- RADIUS
- Azure Active Directory

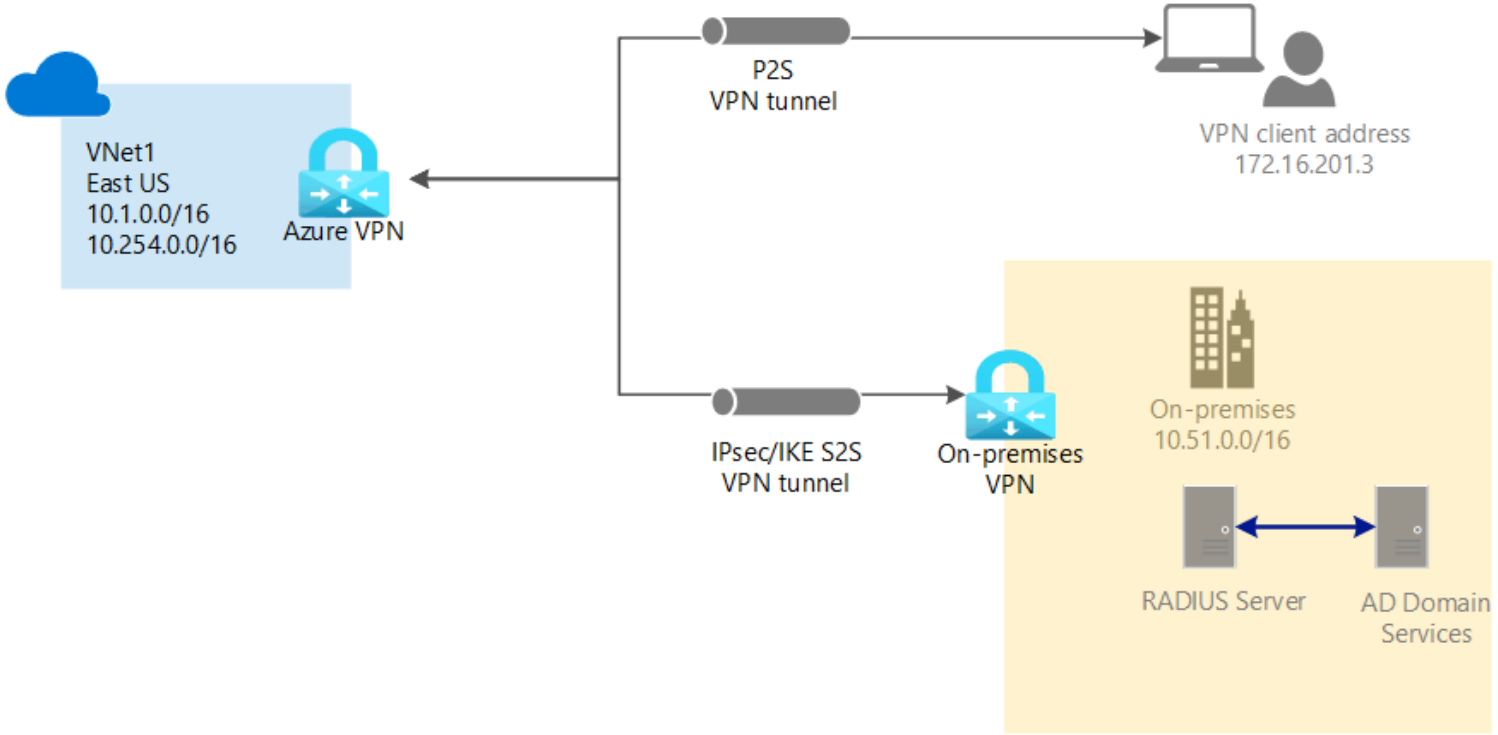
https://learn.microsoft.com/en-us/azure/vpn-gateway/point-to-site-about

Azure Point-to-site VPN Authentication: Certificate



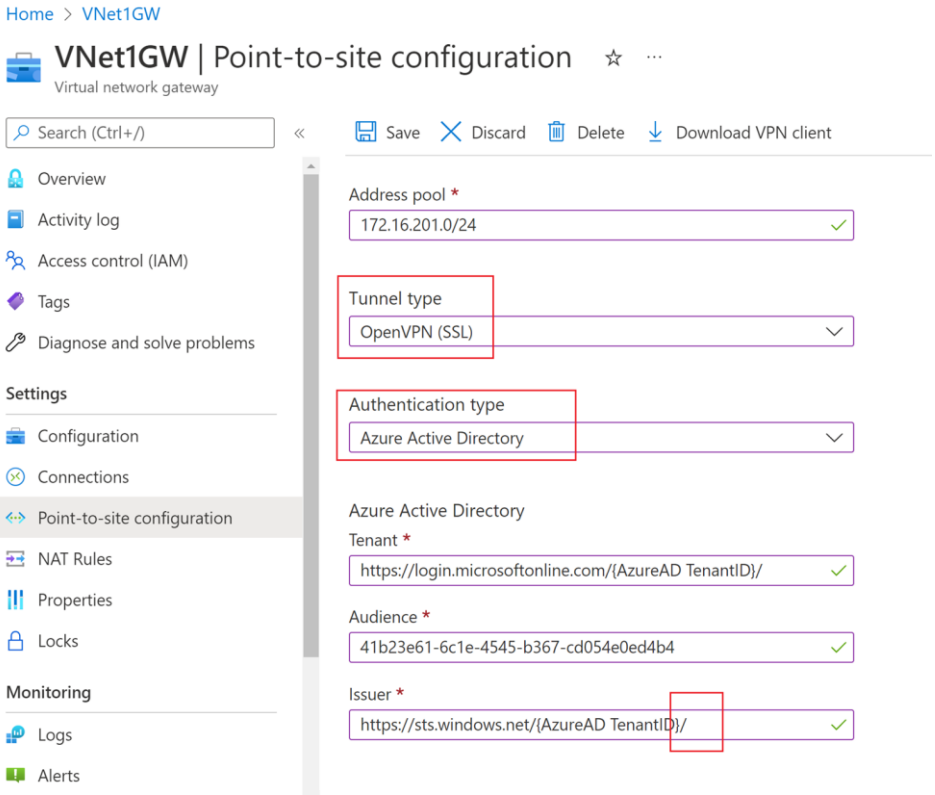
https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-point-to-site-resource-manager-portal

Azure Point-to-site VPN Authentication: RADIUS



https://learn.microsoft.com/en-us/azure/vpn-gateway/point-to-site-how-to-radius-ps

Azure Point-to-site VPN Authentication: Azure AD



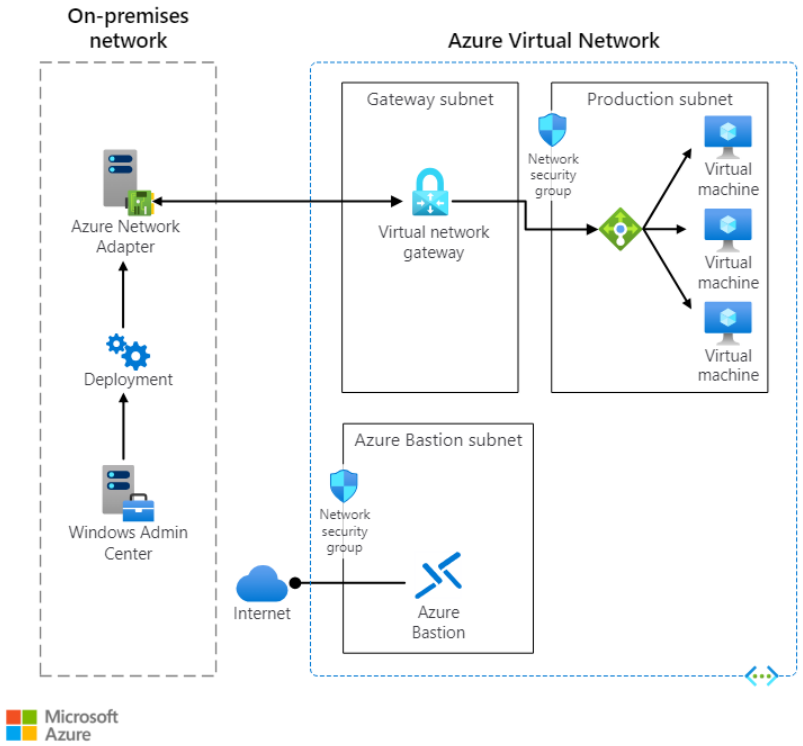
https://learn.microsoft.com/en-us/azure/vpn-gateway/openvpn-azure-ad-tenant

Always On VPN Tunnel

- Is the ability to maintain a VPN connection.
- With Always On, the active VPN profile can connect automatically and remain connected based on triggers, such as user sign-in, network state change, or device screen active.

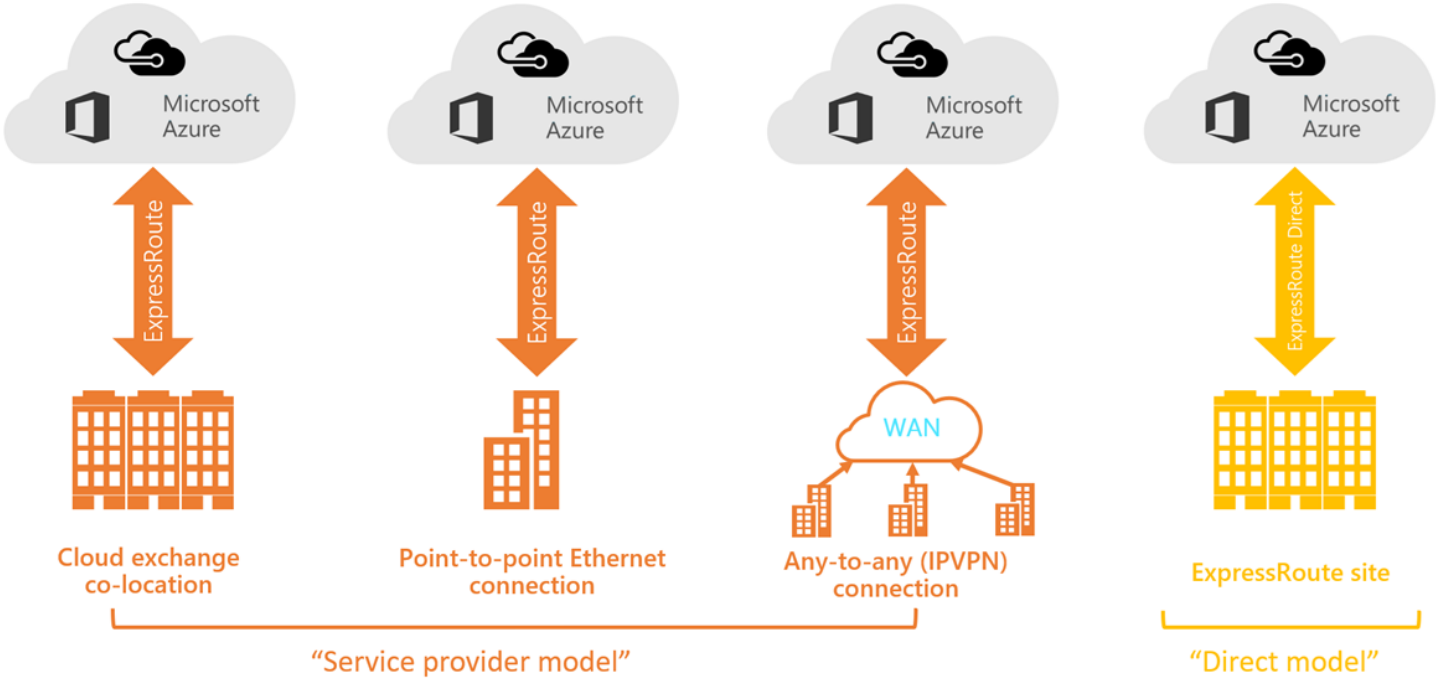
https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-always-on-device-tunnel

Azure Network Adapter



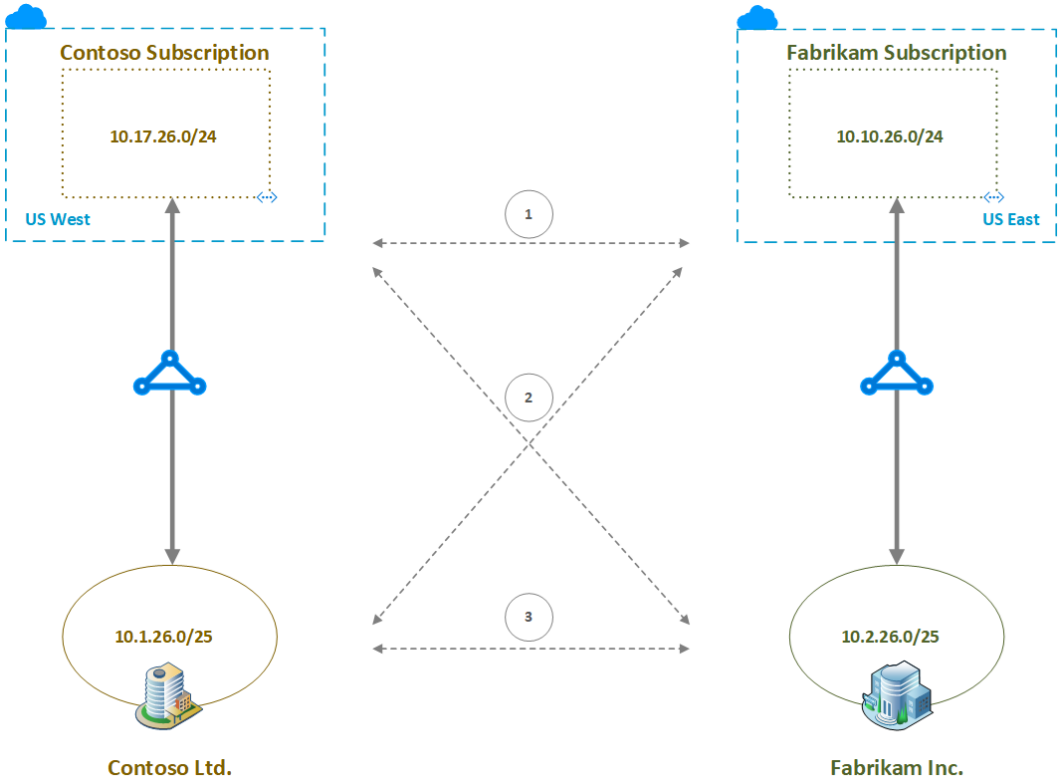
https://learn.microsoft.com/en-us/azure/architecture/hybrid/azure-network-adapter

Azure ExpressRoute Connectivity Models



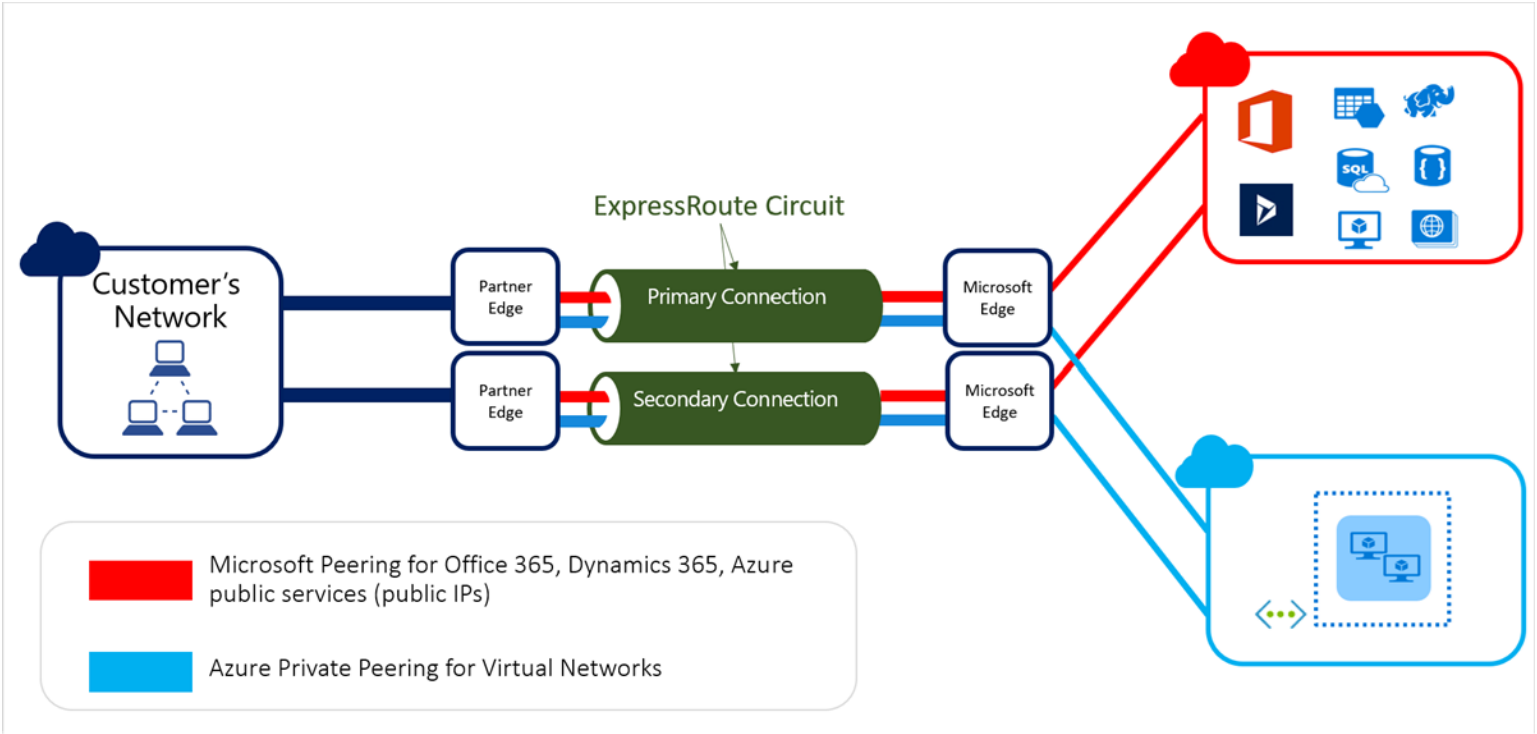
https://learn.microsoft.com/en-us/azure/expressroute/expressroute-connectivity-models

Azure ExpressRoute Cross-network Connectivity



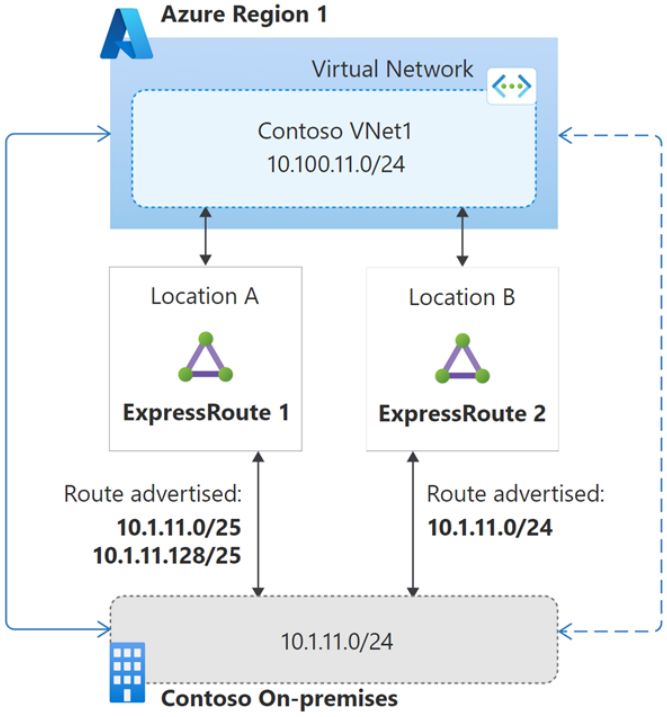
https://learn.microsoft.com/en-us/azure/expressroute/cross-network-connectivity

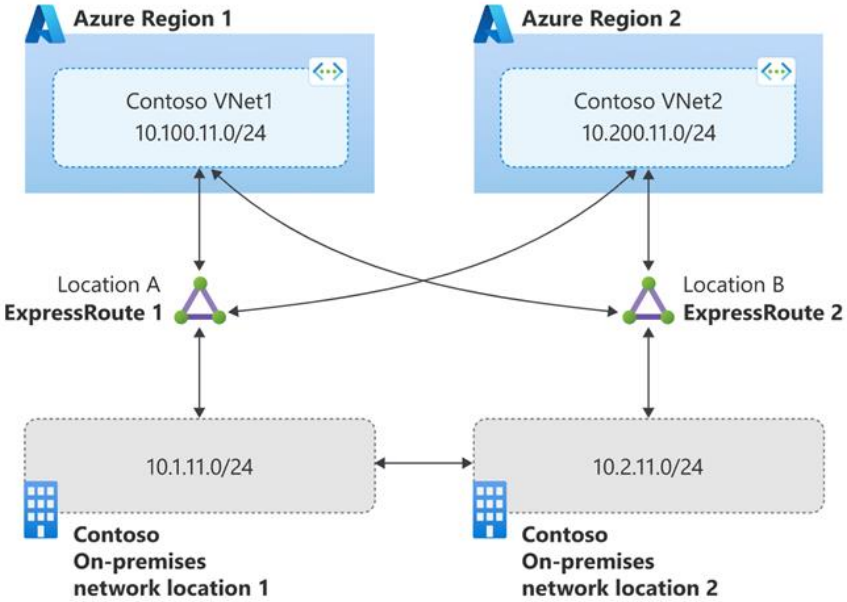
Azure ExpressRoute High Availability



https://learn.microsoft.com/en-us/azure/expressroute/designing-for-high-availability-with-expressroute

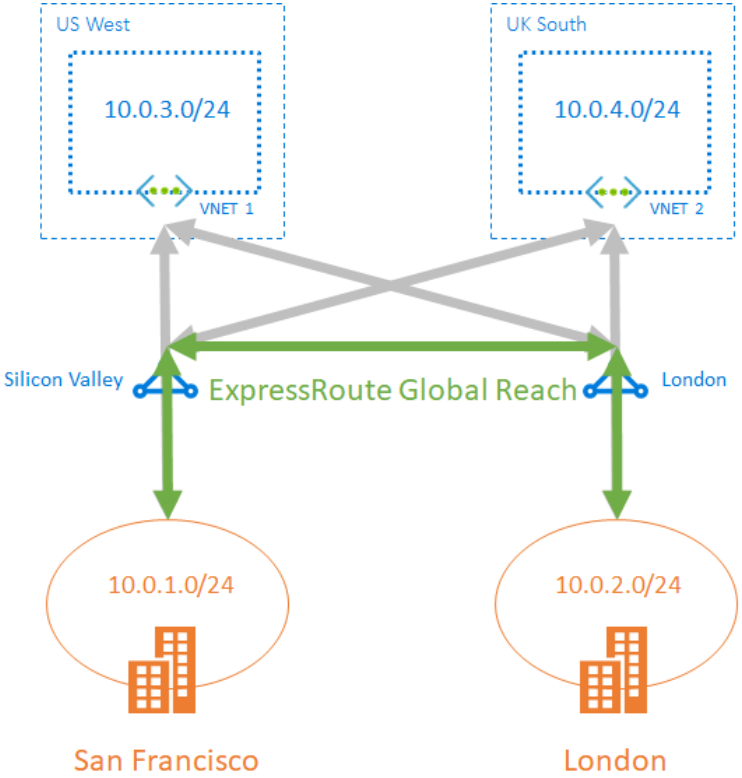
Azure ExpressRoute Disaster Recovery





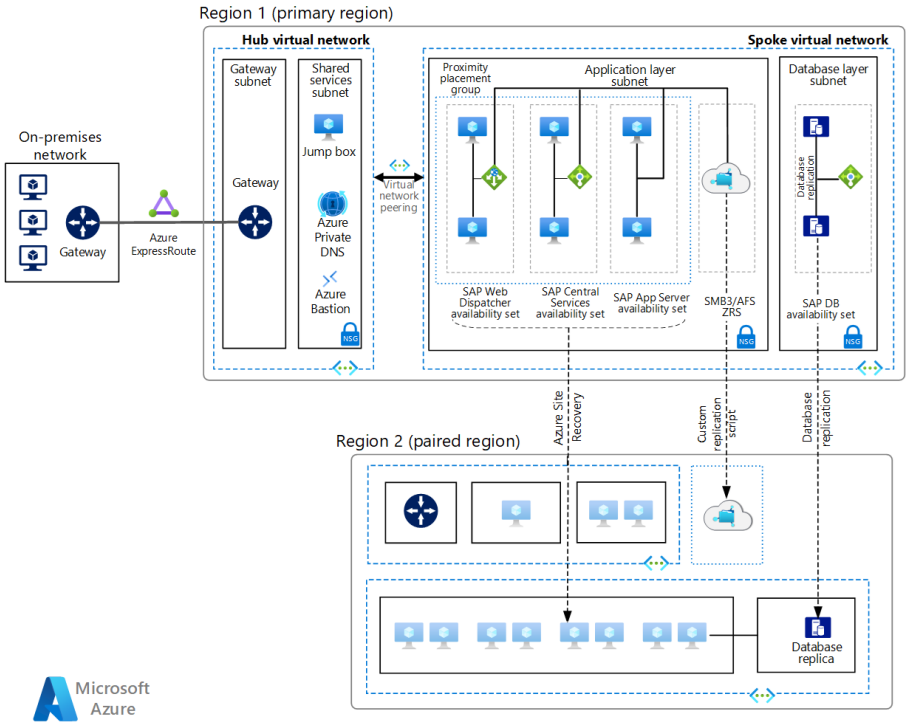
https://learn.microsoft.com/en-us/azure/expressroute/designing-for-disaster-recovery-with-expressroute-privatepeering

Azure ExpressRoute Global Reach



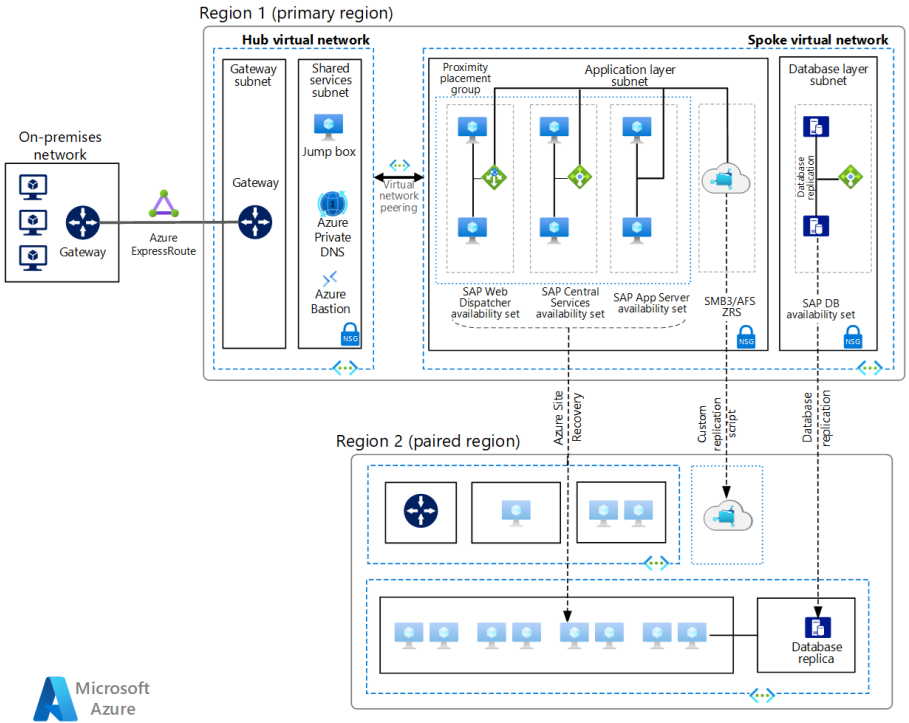
https://learn.microsoft.com/en-us/azure/expressroute/expressroute-global-reach

Azure ExpressRoute FastPath



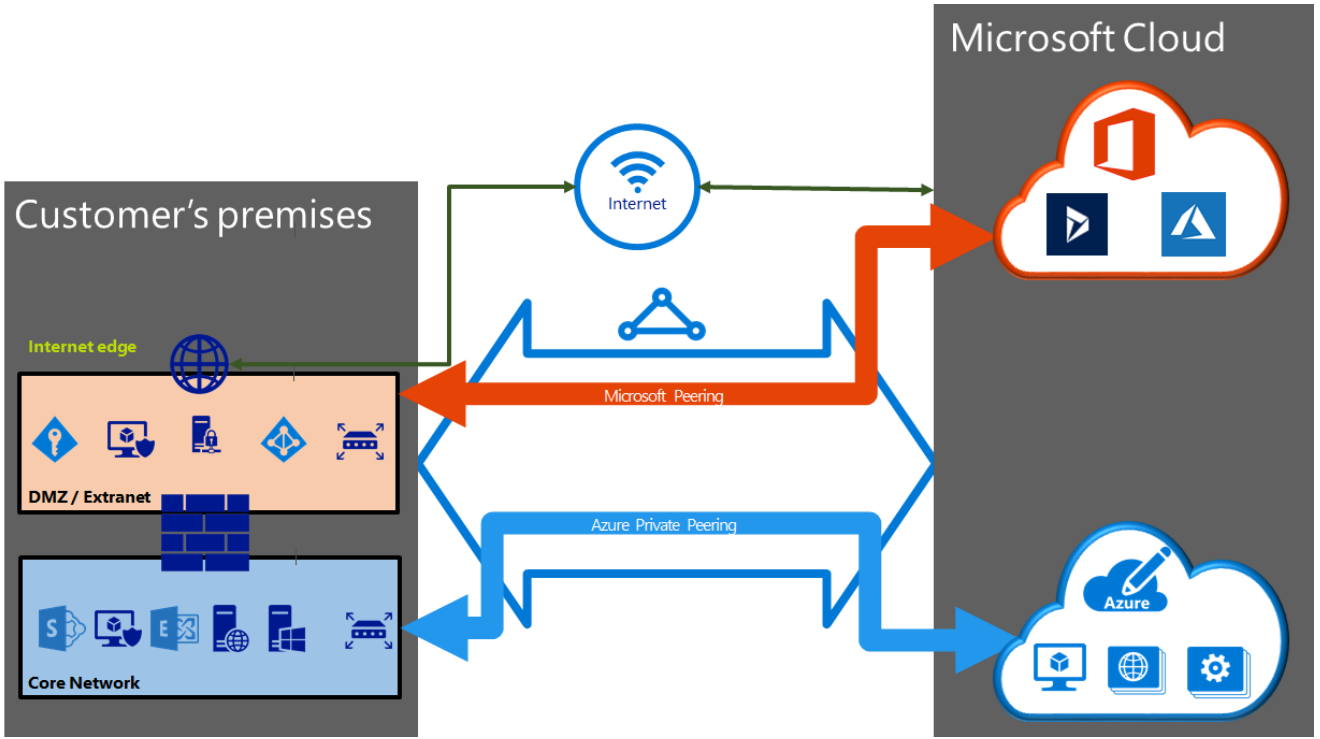
https://learn.microsoft.com/en-us/azure/architecture/guide/sap/sap-netweaver

Azure ExpressRoute FastPath



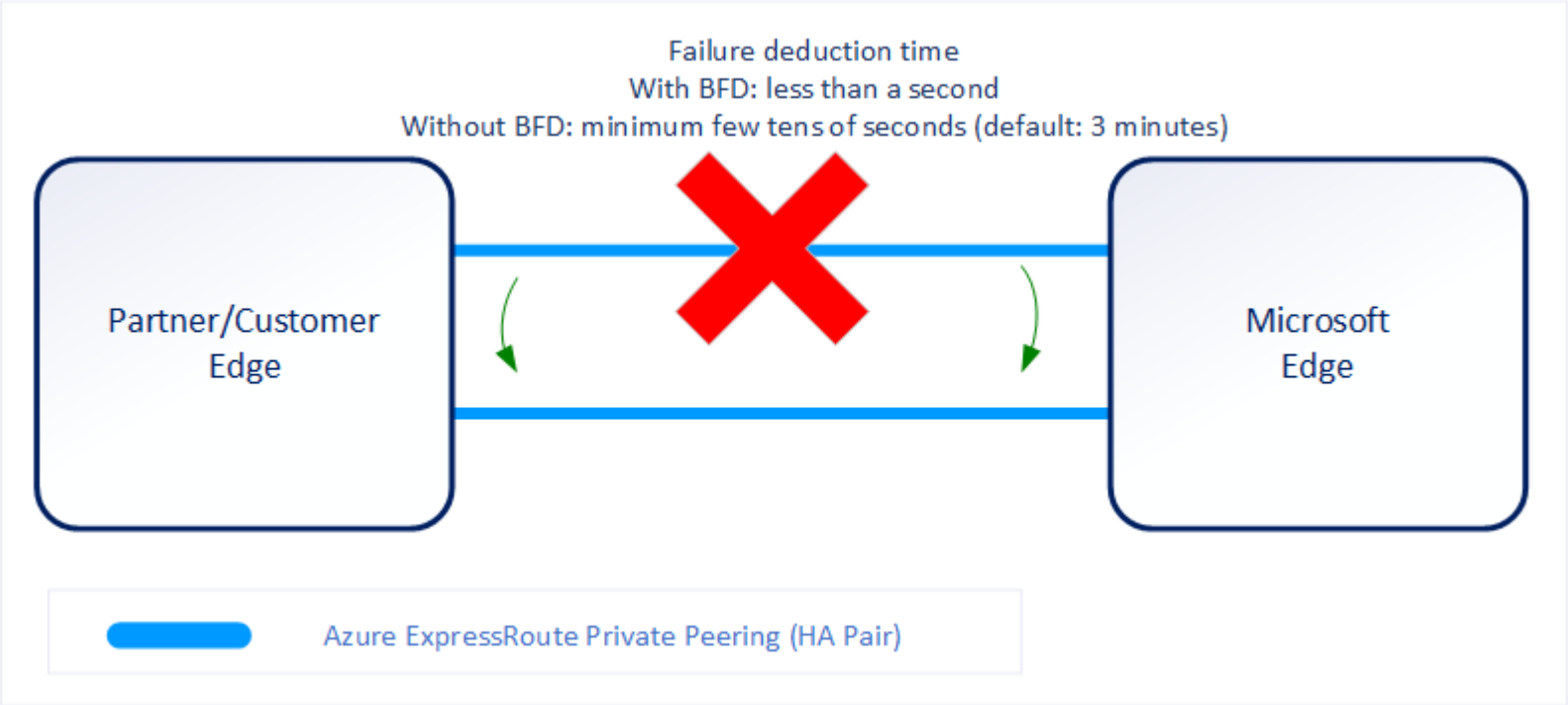
https://learn.microsoft.com/en-us/azure/architecture/guide/sap/sap-netweaver

ExpressRoute Peering (Private vs. Microsoft)



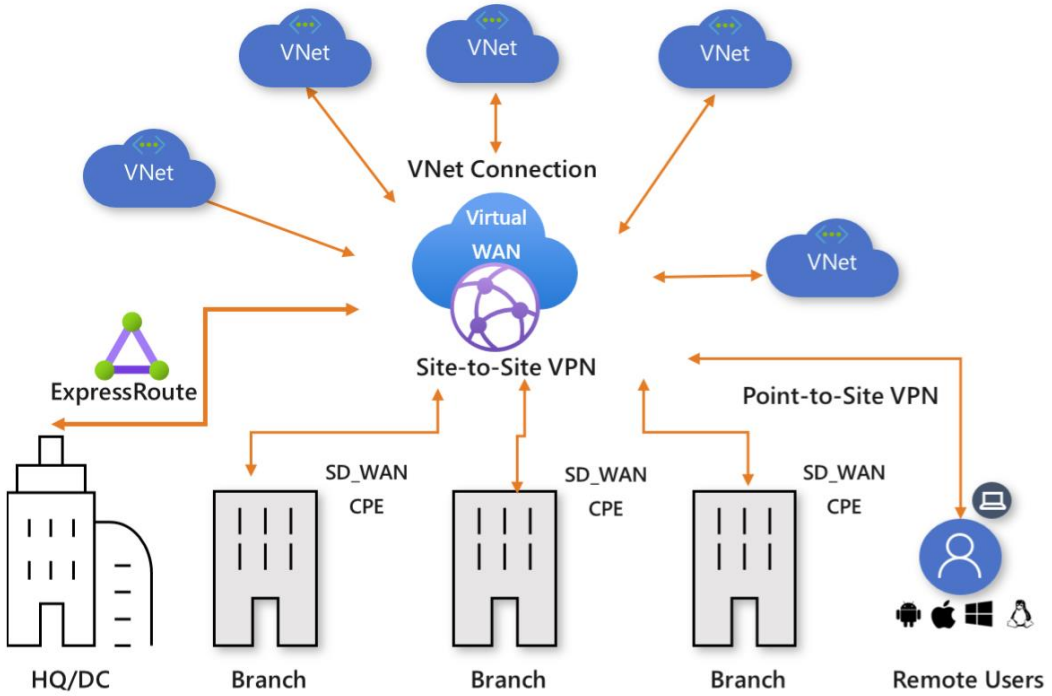
https://learn.microsoft.com/en-us/azure/expressroute/expressroute-circuit-peerings

BFD Over ExpressRoute



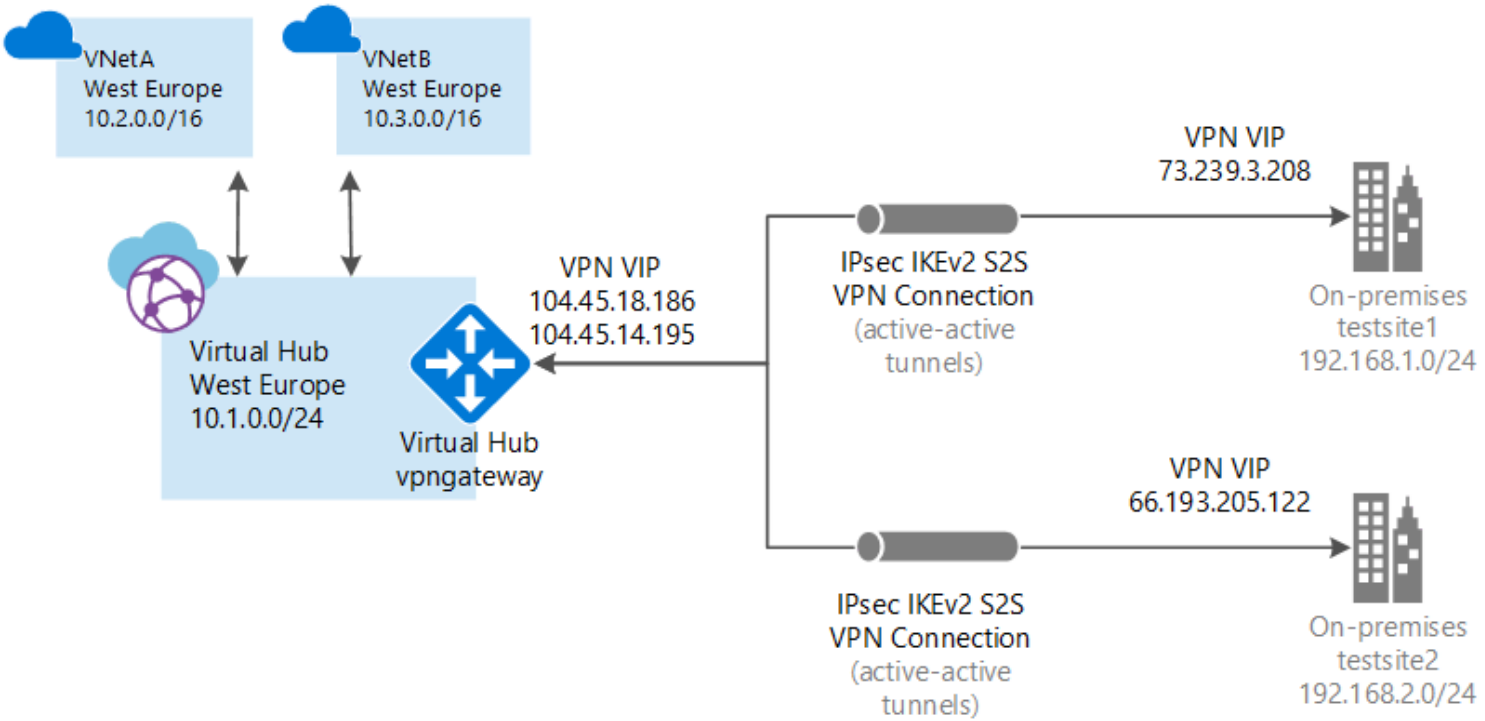
https://learn.microsoft.com/en-us/azure/expressroute/expressroute-bfd

Azure Virtual WAN



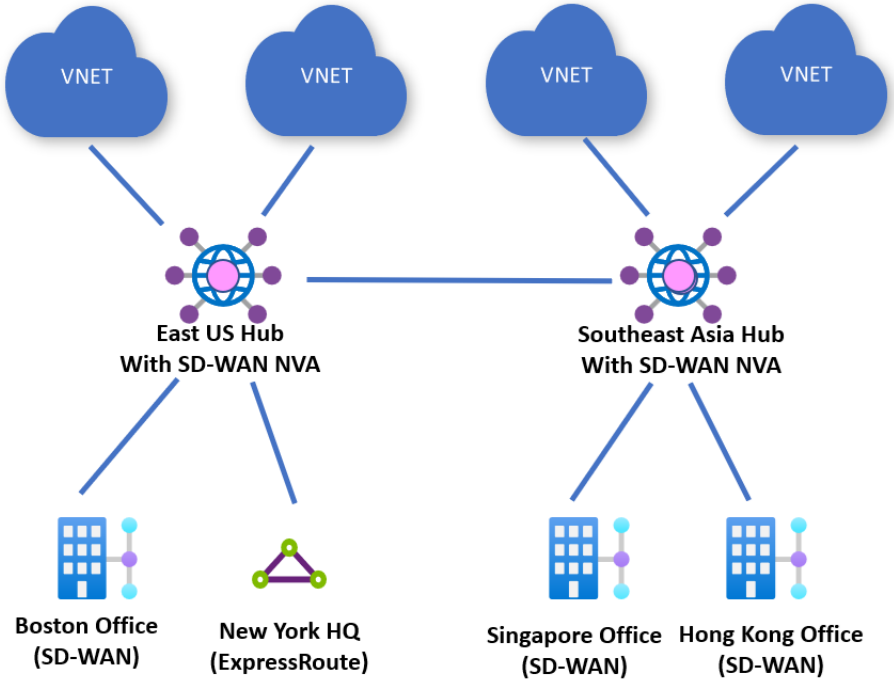
https://learn.microsoft.com/en-us/azure/virtual-wan/virtual-wan-about

Create a S2S connection using Azure Virtual WAN



https://learn.microsoft.com/en-us/azure/virtual-wan/virtual-wan-site-to-site-portal

NVAs in a Virtual WAN Hub

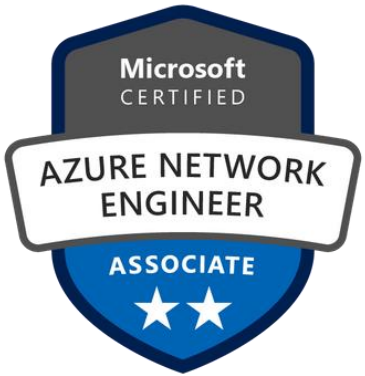


https://learn.microsoft.com/en-us/azure/virtual-wan/about-nva-hub

Design and implement application delivery services (15–20%)

Design and implement application delivery services (20–25%)

- Design and implement an Azure Load Balancer
- Design and implement Azure Application Gateway
- Design and implement Azure Front Door



Design and implement Azure Load Balancer and Azure Traffic Manager

- Map requirements to features and capabilities of Azure Load Balancer
- Identify appropriate use cases for Azure Load Balancer
- Choose an Azure Load Balancer SKU and tier
- Choose between public and internal load balancers
- Choose between regional and global load balancers
- Create and configure an Azure Load Balancer [see also 1]
- Implement Azure Traffic Manager
- Implement a gateway load balancer
- Implement a load balancing rule
- Create and configure inbound NAT rules
- Create and configure explicit outbound rules, including source network address translation (SNAT)

Design and implement Azure Application Gateway

- Map requirements to features and capabilities of Azure Application Gateway
- Identify appropriate use cases for Azure Application Gateway
- Choose between manual and auto scale [see 1 2]
- Create a back-end pool [also see 1]
- Configure health probes
- Configure listeners
- Configure routing rules
- Configure HTTP settings
- Configure Transport Layer Security (TLS)
- Configure rewrite sets

Design and implement Azure Front Door

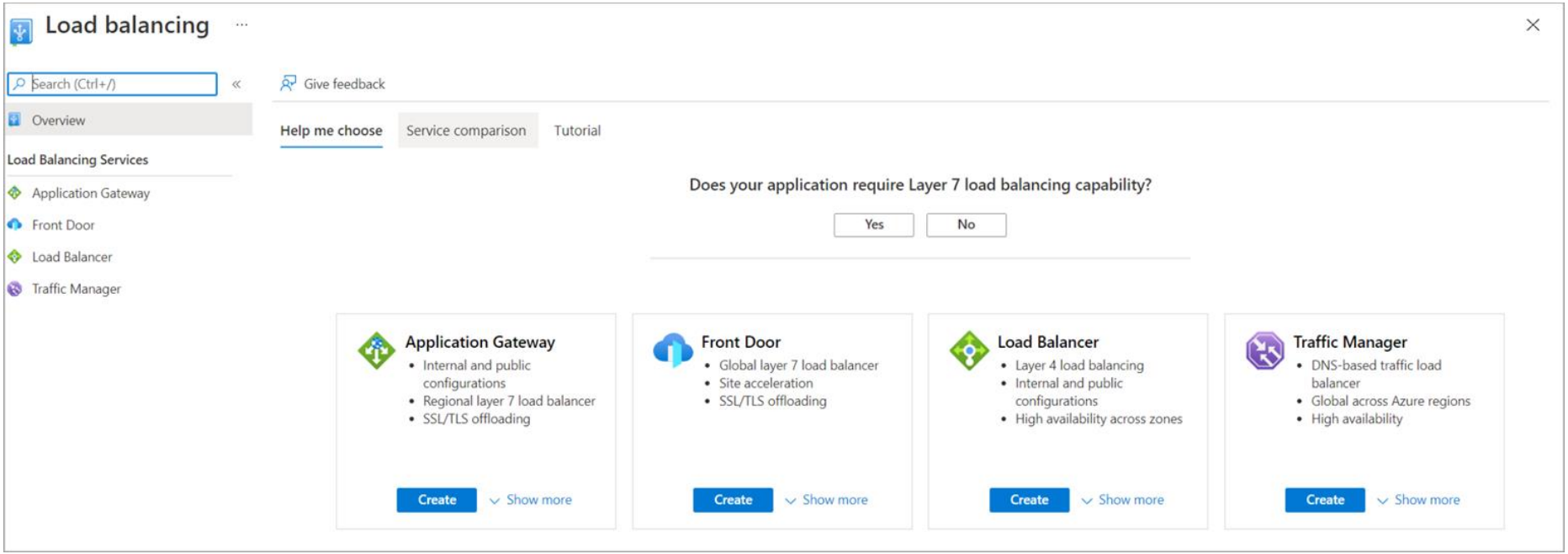
- Map requirements to features and capabilities of Azure Front Door
- Identify appropriate use cases for Azure Front Door
- Choose an appropriate tier
- Configure an Azure Front Door, including routing, origins, and endpoints
- Configure SSL termination and end-to-end SSL encryption
- Configure caching
- Configure traffic acceleration
- Implement rules, URL rewrite, and URL redirect
- Secure an origin by using Azure Private Link in Azure Front Door

Load-balancing Options

Service	Global/regional	Recommended traffic
Azure Front Door	Global	HTTP(S)
Traffic Manager	Global	non-HTTP(S)
Application Gateway	Regional	HTTP(S)
Azure Load Balancer	Regional	non-HTTP(S)

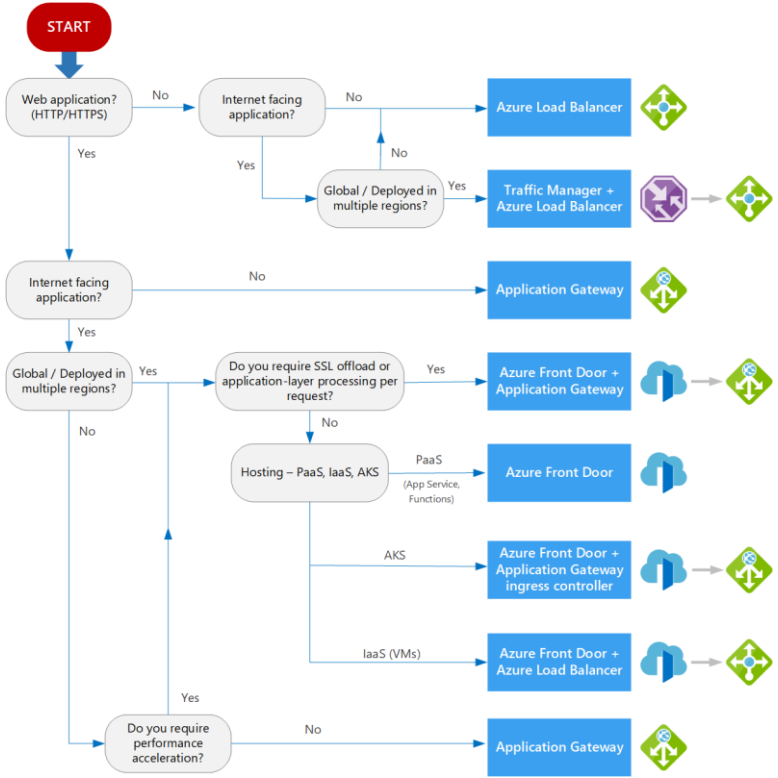
https://learn.microsoft.com/en-us/azure/architecture/guide/technology-choices/load-balancing-overview

Load-balancing Options



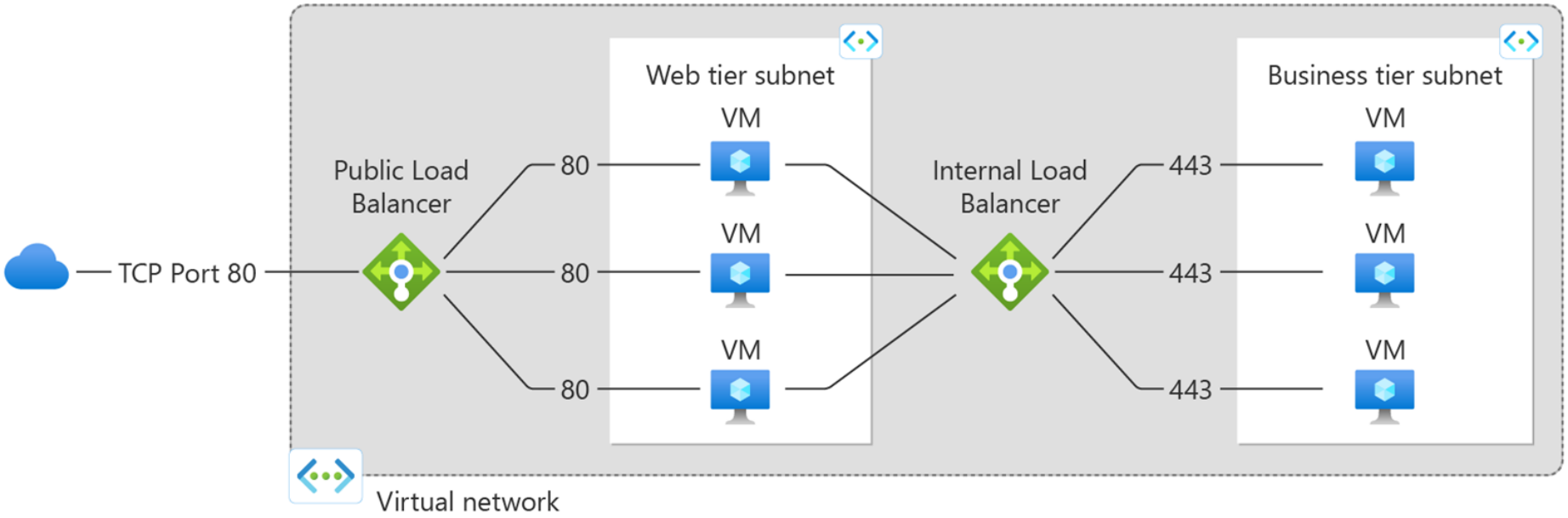
https://learn.microsoft.com/en-us/azure/architecture/guide/technology-choices/load-balancing-overview

Load-balancing Options



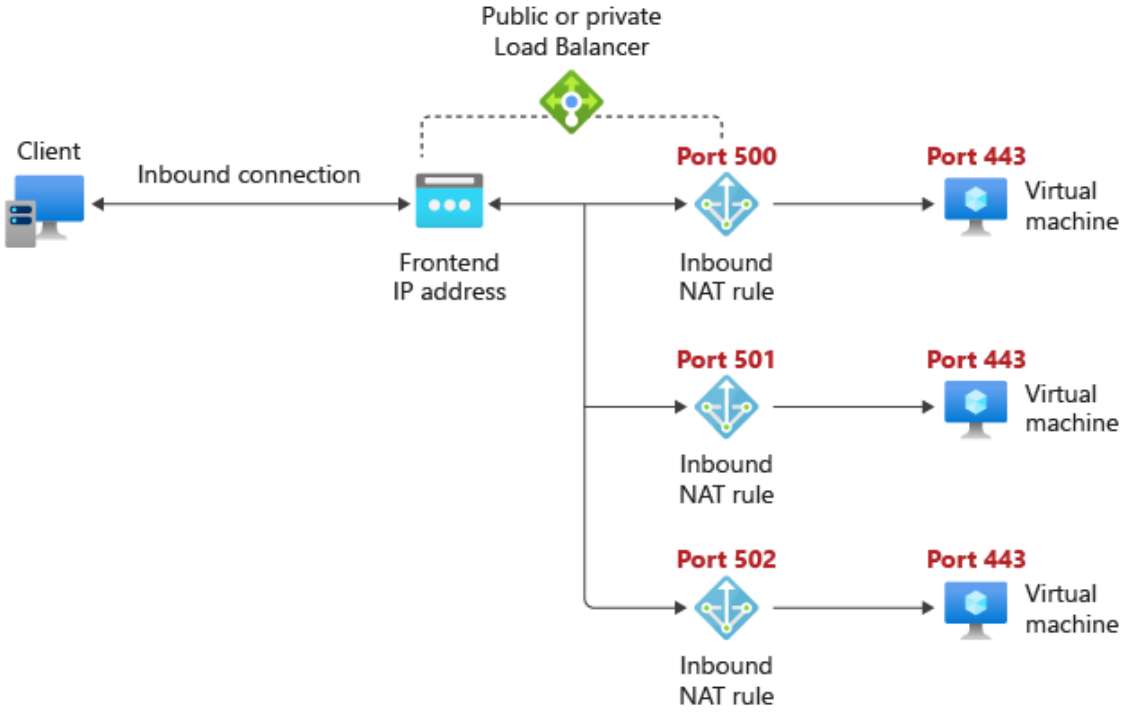
https://learn.microsoft.com/en-us/azure/architecture/guide/technology-choices/load-balancing-overview#decision-tree-for-load-balancing-in-azure

Azure Load Balancer



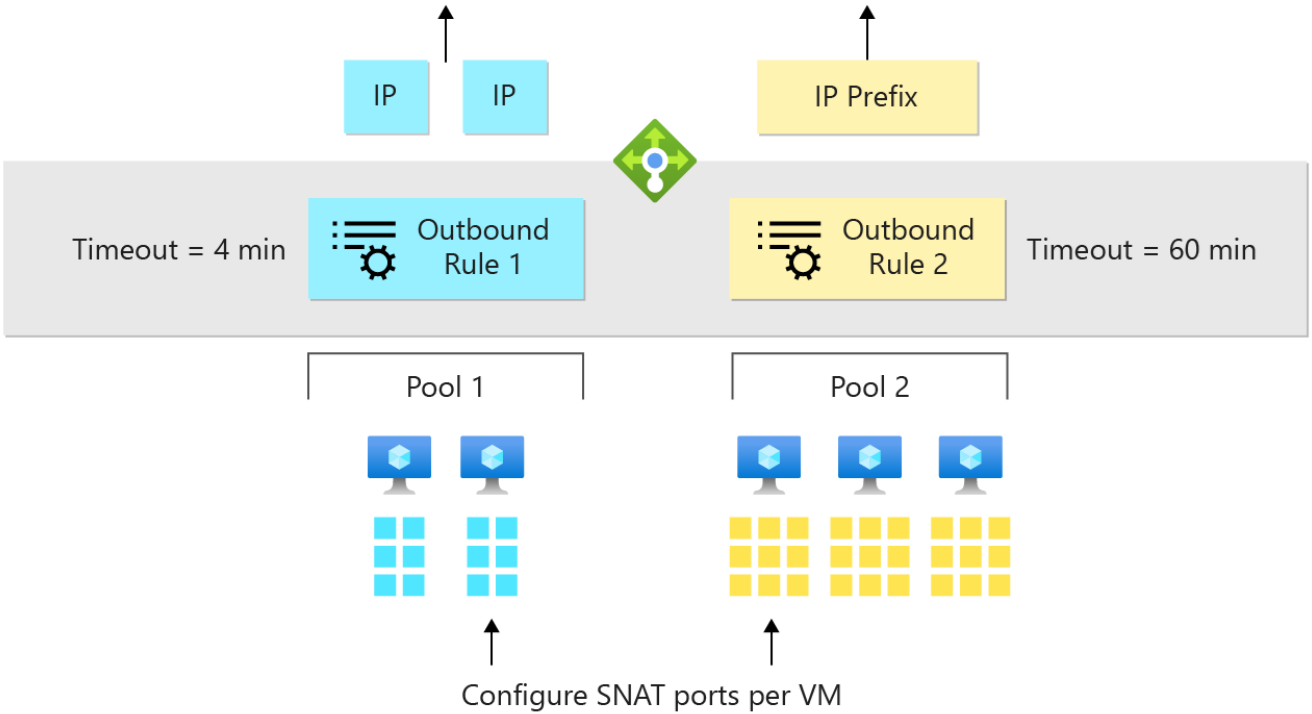
https://learn.microsoft.com/en-us/azure/load-balancer/load-balancer-overview

Azure Load Balancer Inbound NAT Rules



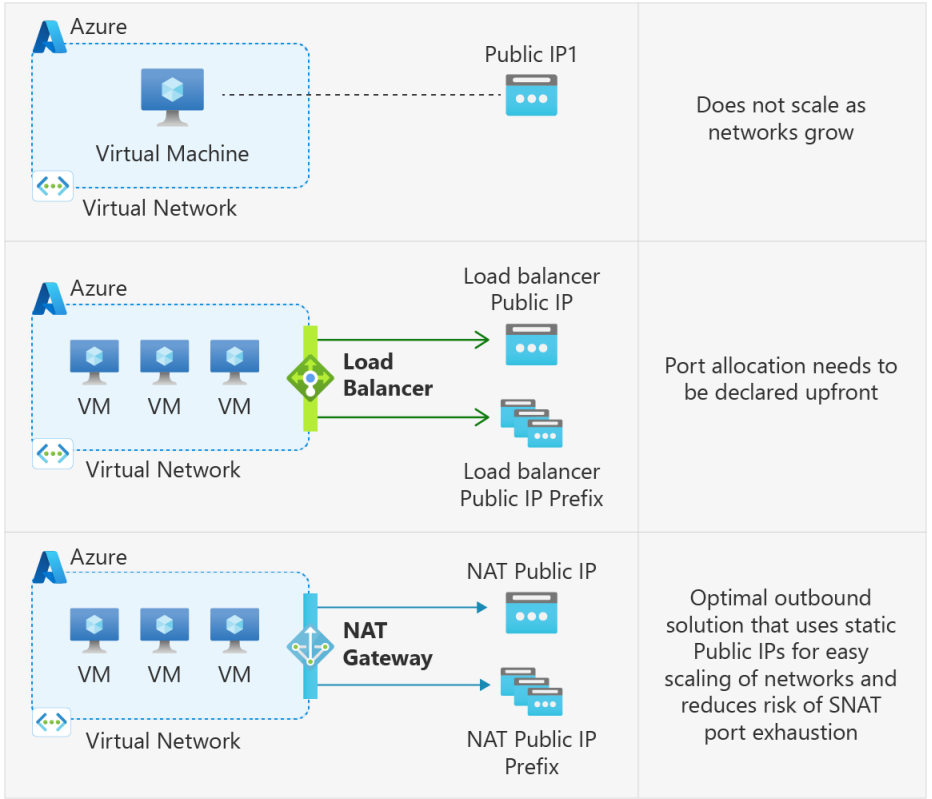
https://learn.microsoft.com/en-us/azure/load-balancer/inbound-nat-rules

Azure Load Balancer Outbound Rules



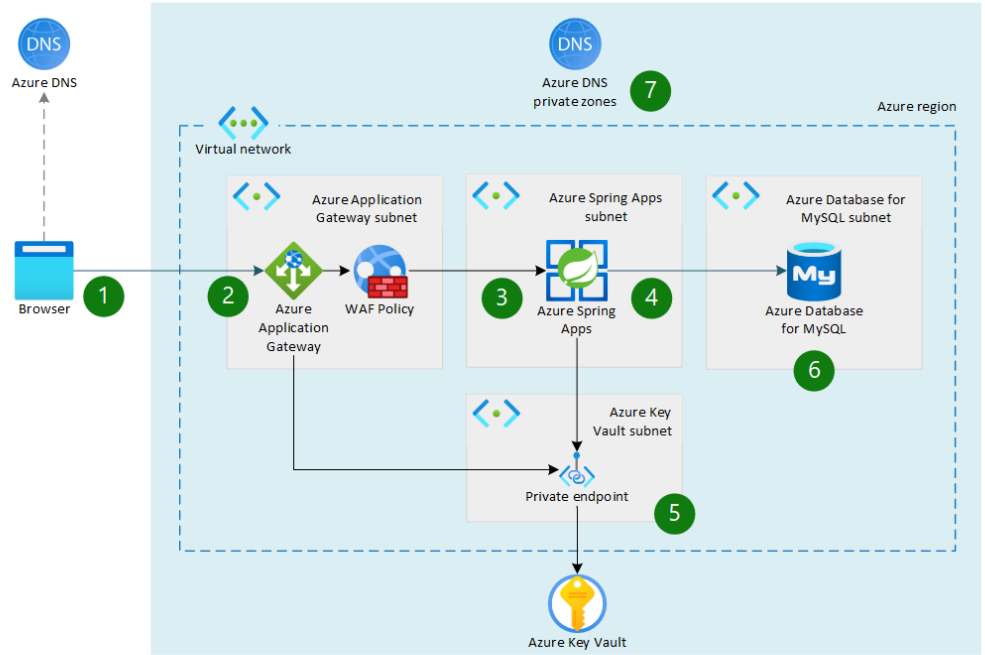
https://learn.microsoft.com/en-us/azure/load-balancer/outbound-rules

Azure Load Balancer Source Network Address Translation (SNAT)



https://learn.microsoft.com/en-us/azure/load-balancer/load-balancer-outbound-connections

Azure Application Gateway



Microsoft Azure

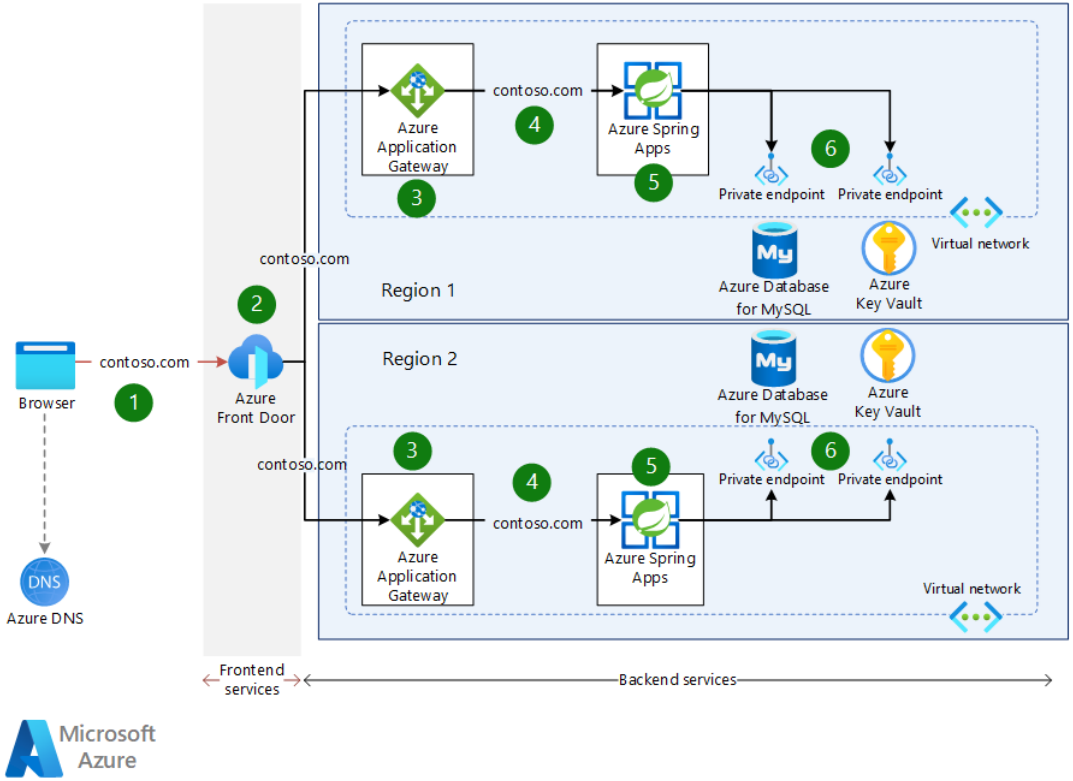
https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/microservices/spring-apps-multi-zone

Configuring Azure Application Gateway

- Create a back-end pool
- Configure health probes
- Configure listeners
- Configure routing rules
- Configure HTTP settings
- Configure Transport Layer Security (TLS)
- Configure rewrite sets

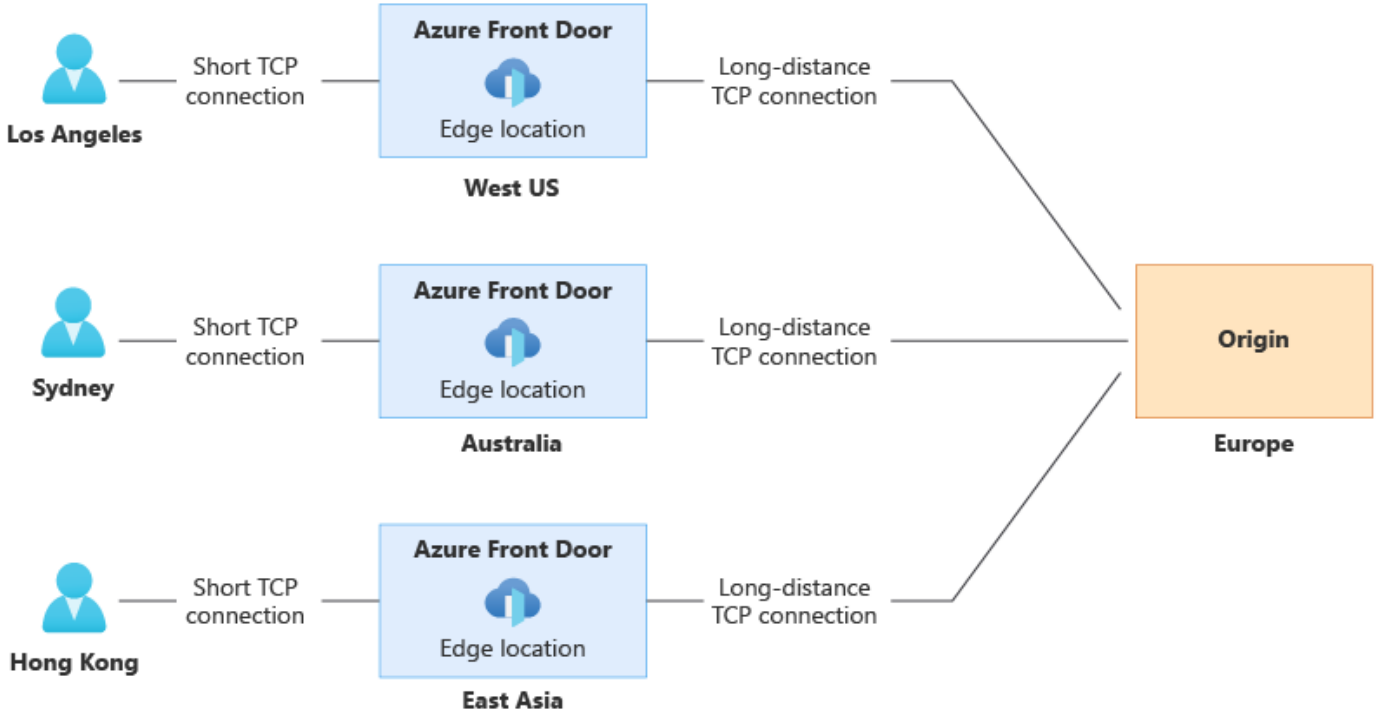
https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/microservices/spring-apps-multi-zone

Azure Front Door



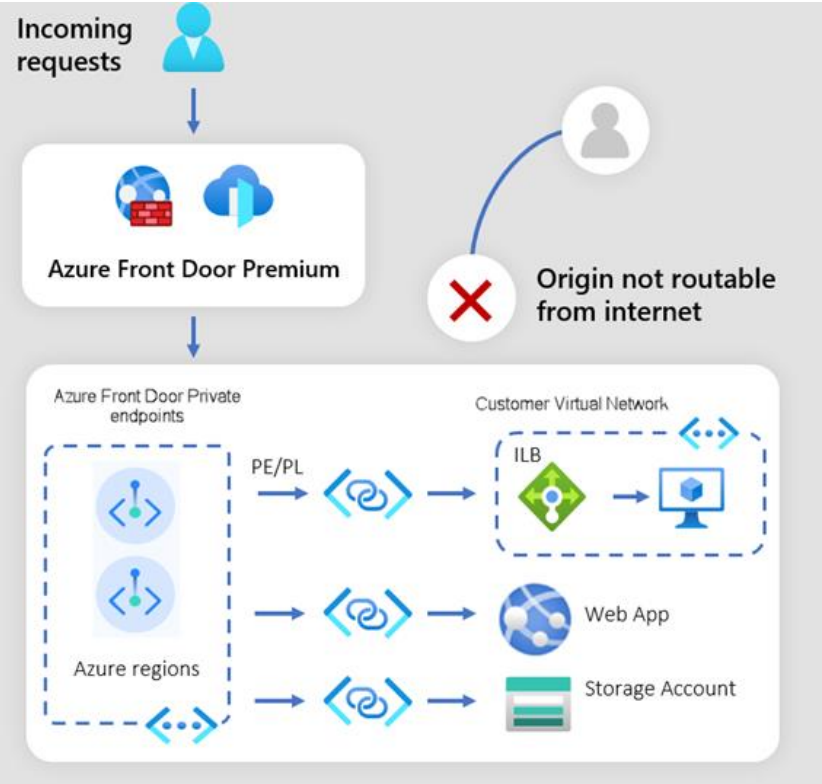
https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/microservices/spring-apps-multi-region

Azure Front Door Traffic Acceleration



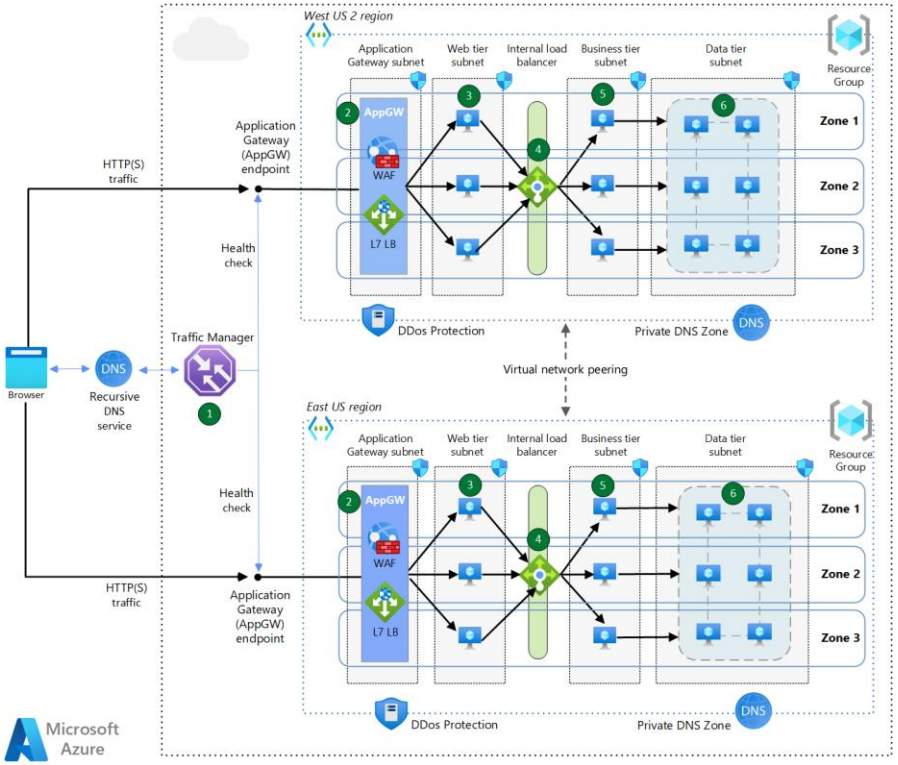
https://learn.microsoft.com/en-us/azure/frontdoor/front-door-traffic-acceleration?pivots=front-door-standard-premium

Private Link in Azure Front Door Premium



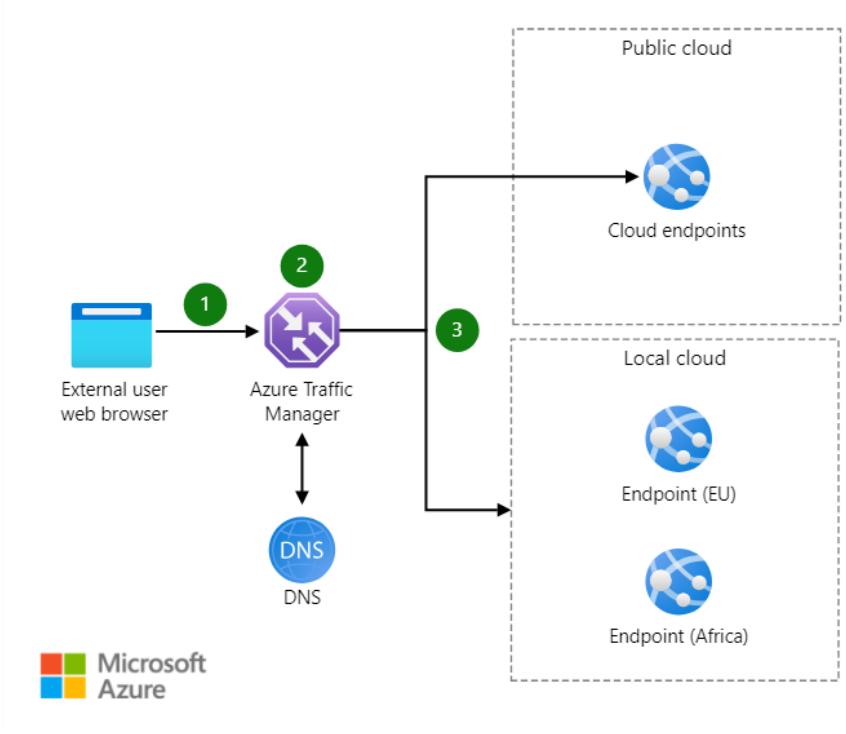
https://learn.microsoft.com/en-us/azure/frontdoor/private-link

Azure Traffic Manager



https://learn.microsoft.com/en-us/azure/architecture/high-availability/reference-architecture-traffic-manager-application-gateway

Azure Traffic Manager



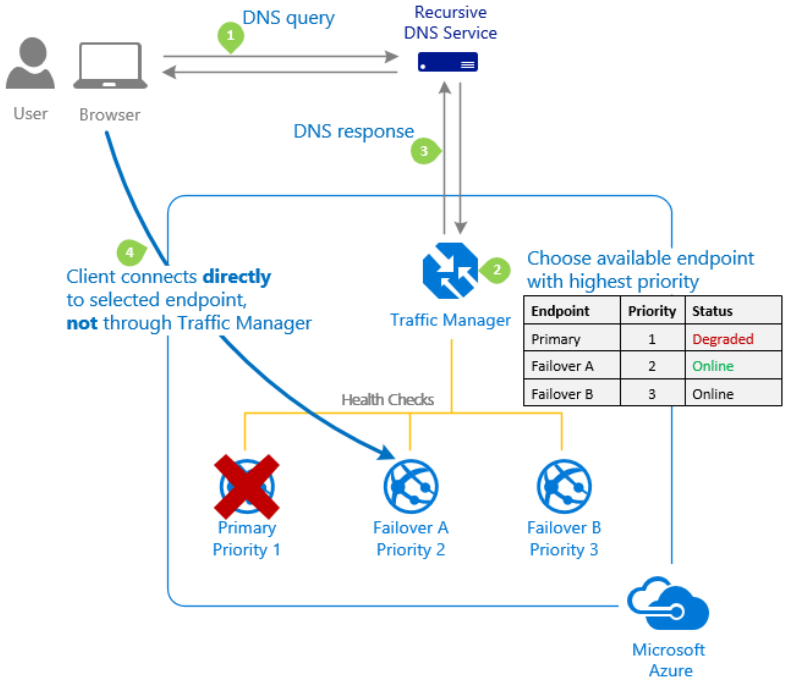
https://learn.microsoft.com/en-us/azure/architecture/example-scenario/hybrid/hybrid-geo-distributed

Azure Traffic Manager Routing Methods

- Priority traffic-routing method
- Weighted traffic-routing method
- Performance traffic-routing method
- Geographic traffic-routing method

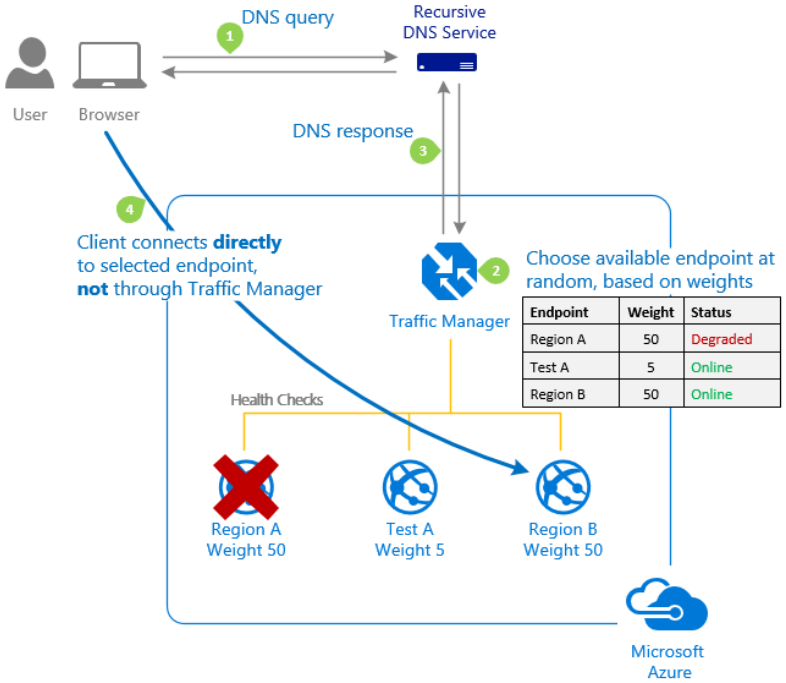
https://learn.microsoft.com/en-us/azure/traffic-manager/traffic-manager-routing-methods

Azure Traffic Manager Routing Methods: Priority Traffic



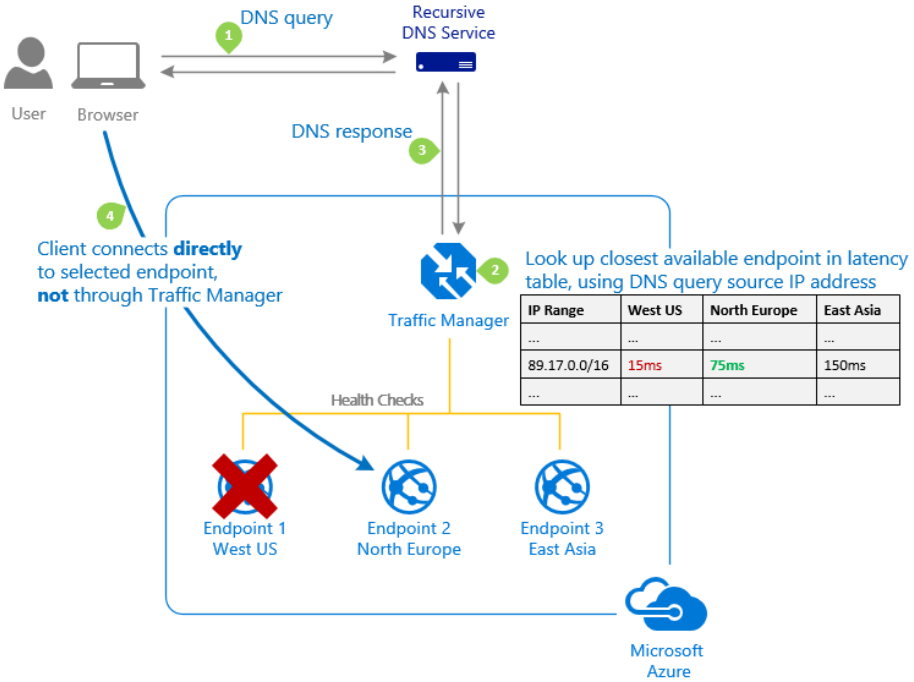
https://learn.microsoft.com/en-us/azure/traffic-manager/traffic-manager-routing-methods

Azure Traffic Manager Routing Methods: Weighted



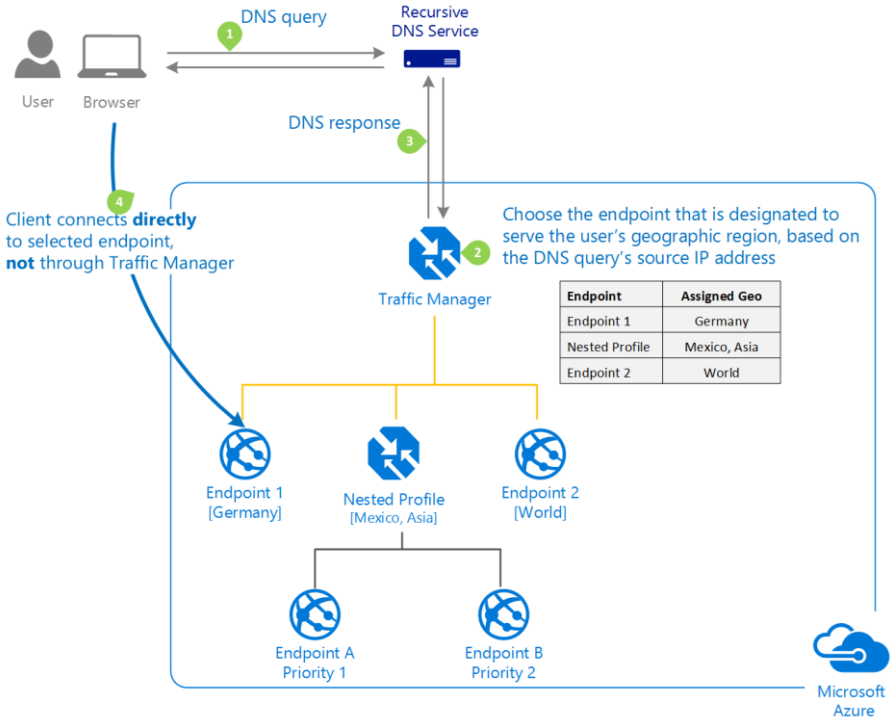
https://learn.microsoft.com/en-us/azure/traffic-manager/traffic-manager-routing-methods

Azure Traffic Manager Routing Methods: Performance



https://learn.microsoft.com/en-us/azure/traffic-manager/traffic-manager-routing-methods

Azure Traffic Manager Routing Methods: Geographic

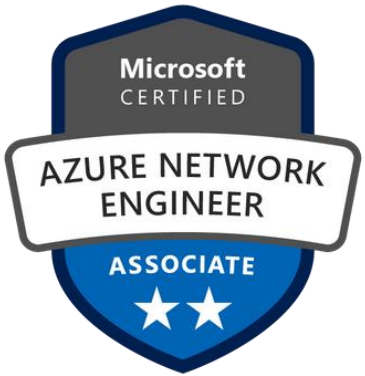


https://learn.microsoft.com/en-us/azure/traffic-manager/traffic-manager-routing-methods

Design and implement private access to Azure services (10–15%)

Design and implement private access to Azure services (5–10%)

- Design and implement Azure Private Link service and Azure private endpoints
- Design and implement service endpoints



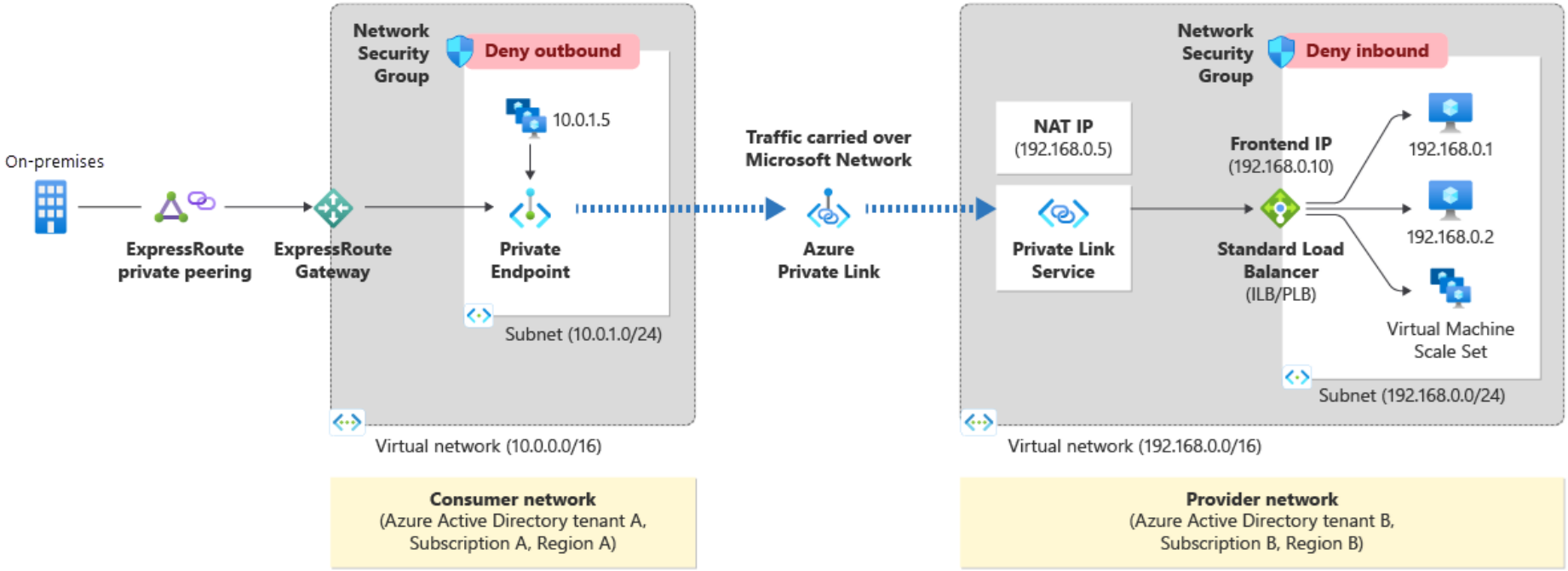
Design and implement Azure Private Link service and Azure private endpoints

- Plan private endpoints [also see 1 2]
- Create private endpoints
- Configure access to private endpoints
- Create a Private Link service
- Integrate Private Link and Private Endpoints with DNS [also see 1]
- Integrate a Private Link service with on-premises clients

Design and implement service endpoints

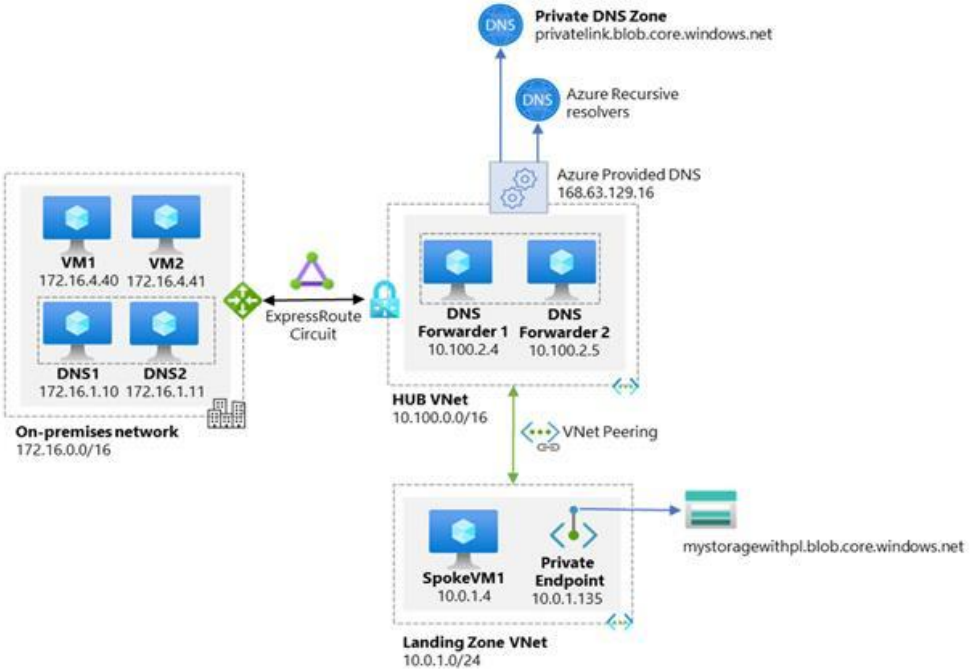
- Choose when to use a service endpoint
- Create service endpoints [also see 1]
- Configure service endpoint policies
- Configure access to service endpoints

Azure Private Link



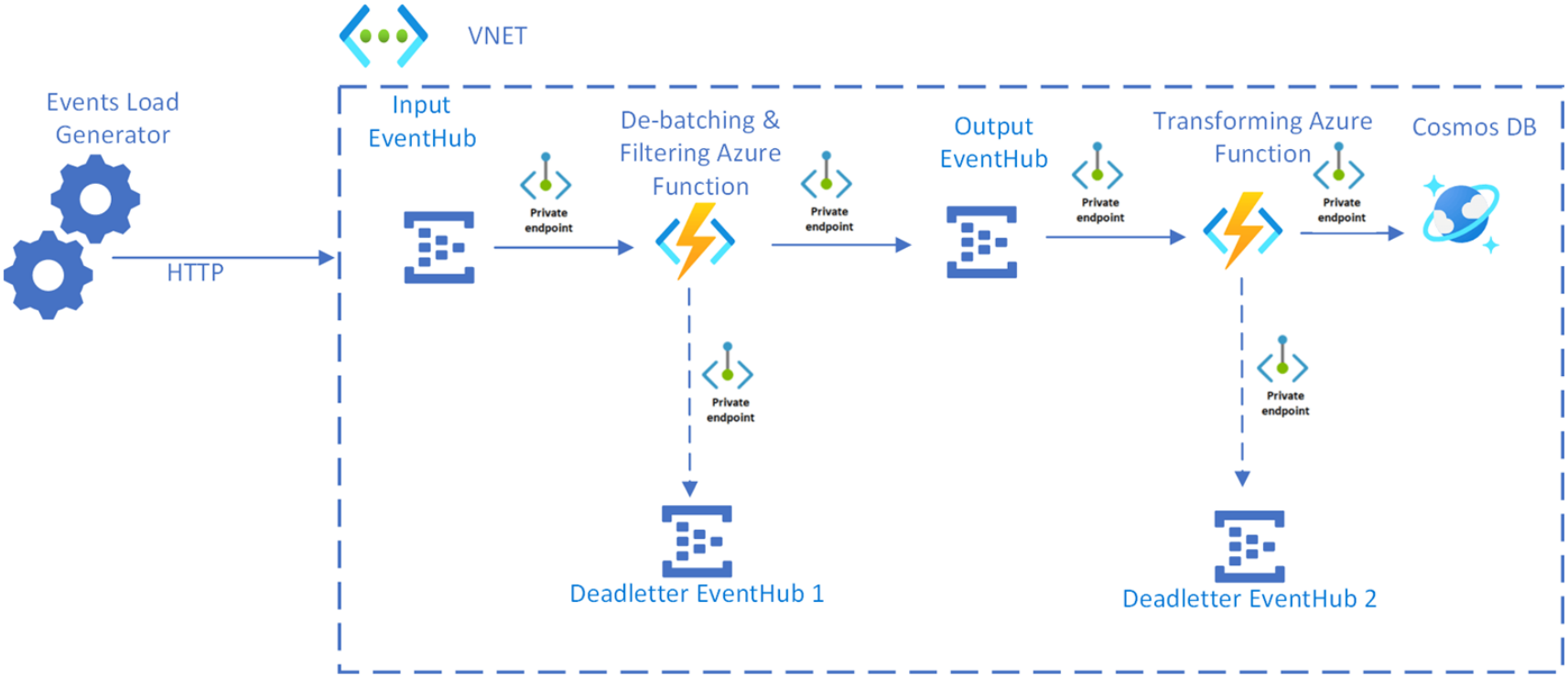
https://learn.microsoft.com/en-us/azure/private-link/private-link-service-overview

Azure Private Link and DNS Integration



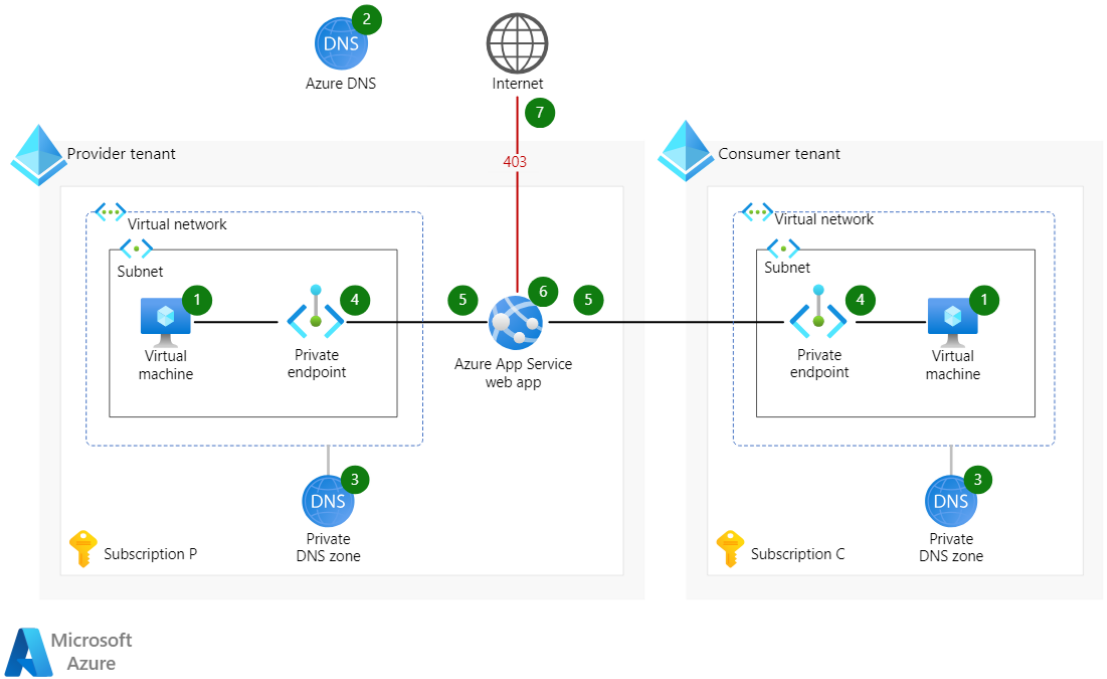
https://learn.microsoft.com/en-us/azure/cloud-adoption-framework/ready/azure-best-practices/private-link-and-dns-integration-at-scale

Azure Private Endpoint



https://learn.microsoft.com/en-us/azure/architecture/solution-ideas/articles/serverless-event-processing-private-link

Azure Private Endpoint



https://learn.microsoft.com/en-us/azure/architecture/guide/networking/cross-tenant-secure-access-private-endpoints

Azure Private Endpoint Support

Private-link resource

A private-link resource is the destination target of a specified private endpoint. The following table lists the available resources that support a private endpoint:

Private-link resource name	Resource type	Subresources
Azure App Configuration	Microsoft.Appconfiguration/configurationStores	configurationStores
Azure Automation	Microsoft.Automation/automationAccounts	Webhook, DSCAndHybridWorker
Azure Cosmos DB	Microsoft.AzureCosmosDB/databaseAccounts	SQL, MongoDB, Cassandra, Gremlin, Table
Azure Cosmos DB for PostgreSQL	Microsoft.DBforPostgreSQL/serverGroupsv2	coordinator
Azure Batch	Microsoft.Batch/batchAccounts	batchAccount, nodeManagement
Azure Cache for Redis	Microsoft.Cache/Redis	redisCache
Azure Cache for Redis Enterprise	Microsoft.Cache/redisEnterprise	redisEnterprise
Azure Cognitive Services	Microsoft.CognitiveServices/accounts	account

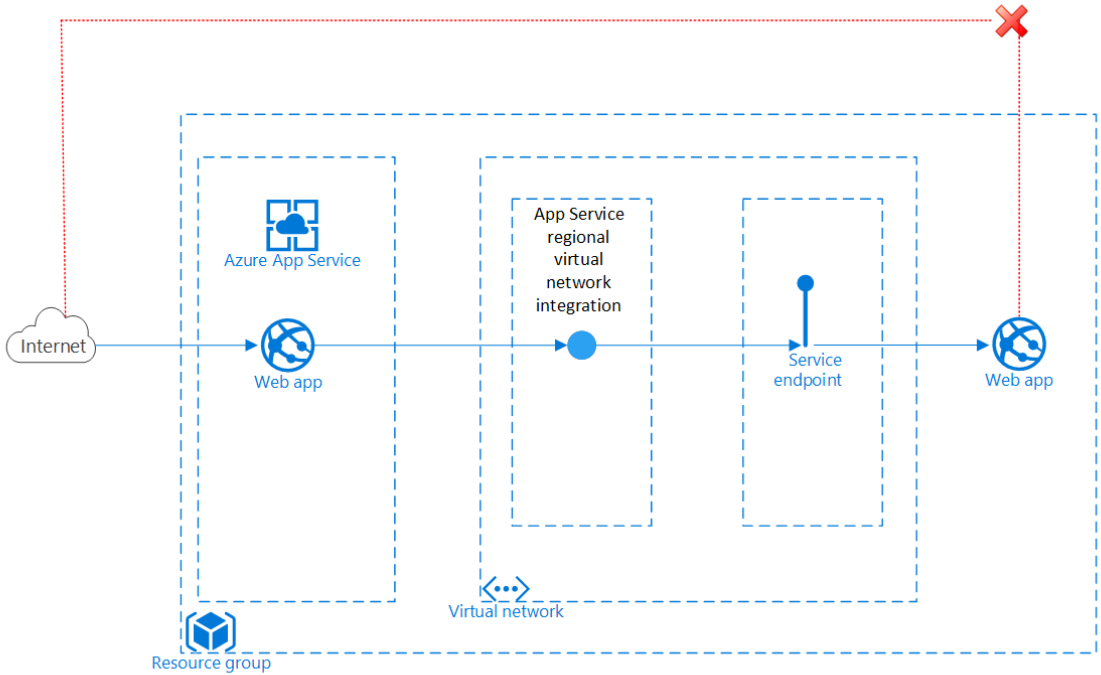
https://learn.microsoft.com/en-us/azure/private-link/private-endpoint-overview#private-link-resource

Azure Virtual Network Service Endpoints

> **Note**
>
> Microsoft recommends use of Azure Private Link for secure and private access to services hosted on Azure platform. For more information, see **Azure Private Link**.

https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-service-endpoints-overview

Azure Virtual Network Service Endpoints



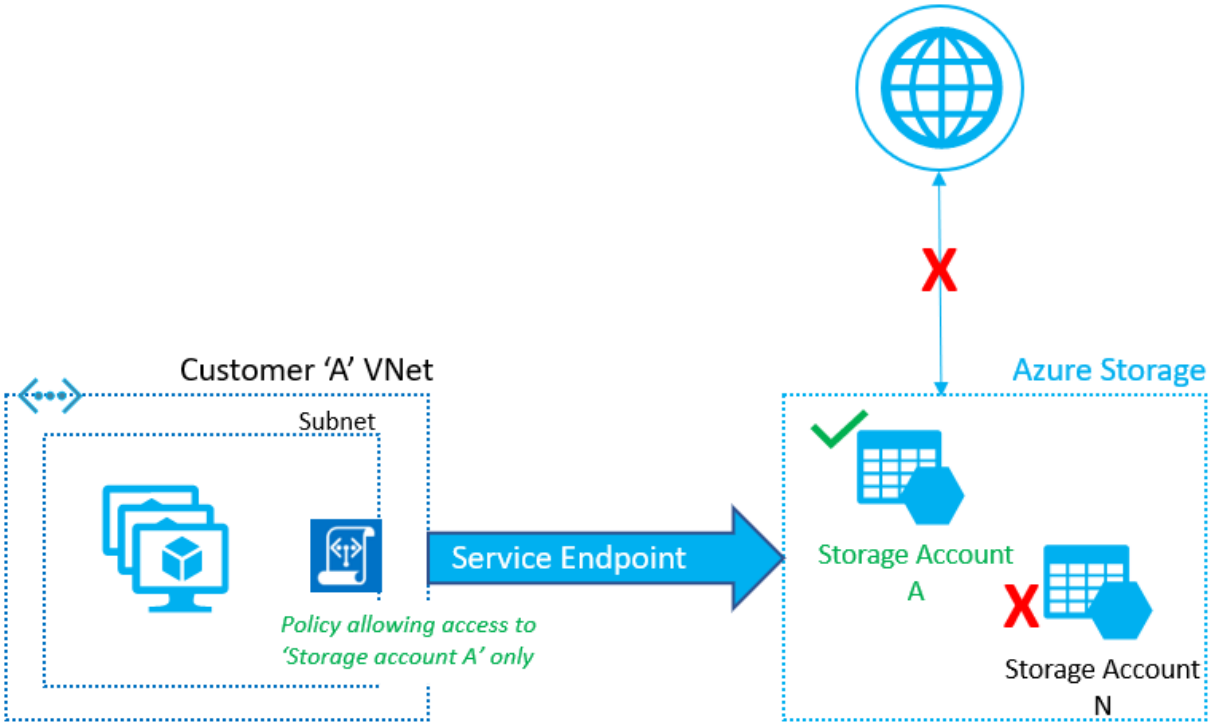
https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/app-service-web-app/multi-tier-app-service-service-endpoint

Azure Virtual Network Service Endpoints

- Azure Storage (Microsoft.Storage)
- Azure Storage cross-region service endpoints (Microsoft.Storage.Global)
- Azure SQL Database (Microsoft.Sql)
- Azure Synapse Analytics (Microsoft.Sql)
- Azure Database for PostgreSQL server (Microsoft.Sql)
- Azure Database for MySQL server (Microsoft.Sql)
- Azure Database for MariaDB (Microsoft.Sql)
- Azure Cosmos DB (Microsoft.AzureCosmosDB)
- Azure Key Vault (Microsoft.KeyVault)
- Azure Service Bus (Microsoft.ServiceBus)
- Azure Event Hubs (Microsoft.EventHub)
- Azure Data Lake Store Gen 1 (Microsoft.AzureActiveDirectory)
- Azure App Service (Microsoft.Web)
- Azure Cognitive Services (Microsoft.CognitiveServices)

https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-service-endpoints-overview

Azure Virtual Network Service Endpoints Policy

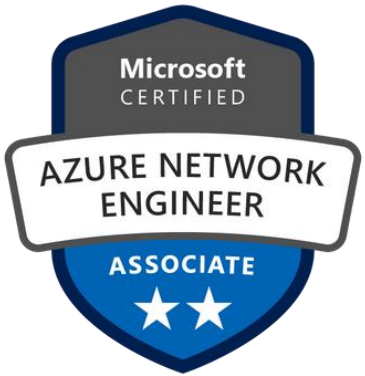


https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/app-service-web-app/multi-tier-app-service-service-endpoint

Secure network connectivity to Azure resources (15–20%)

Secure network connectivity to Azure resources (15–20%)

- Implement and manage network security groups
- Design and implement Azure Firewall and Azure Firewall Manager
- Design and implement a Web Application Firewall (WAF) deployment



Implement and manage network security groups

- Create a network security group (NSG)
- Associate an NSG to a resource
- Create an application security group (ASG)
- Associate an ASG to a network interface card (NIC)
- Create and configure NSG rules
- Interpret NSG flow logs [also see 1]
- Validate NSG flow rules
- Verify IP flow
- Configure an NSG for remote server administration, including Azure Bastion

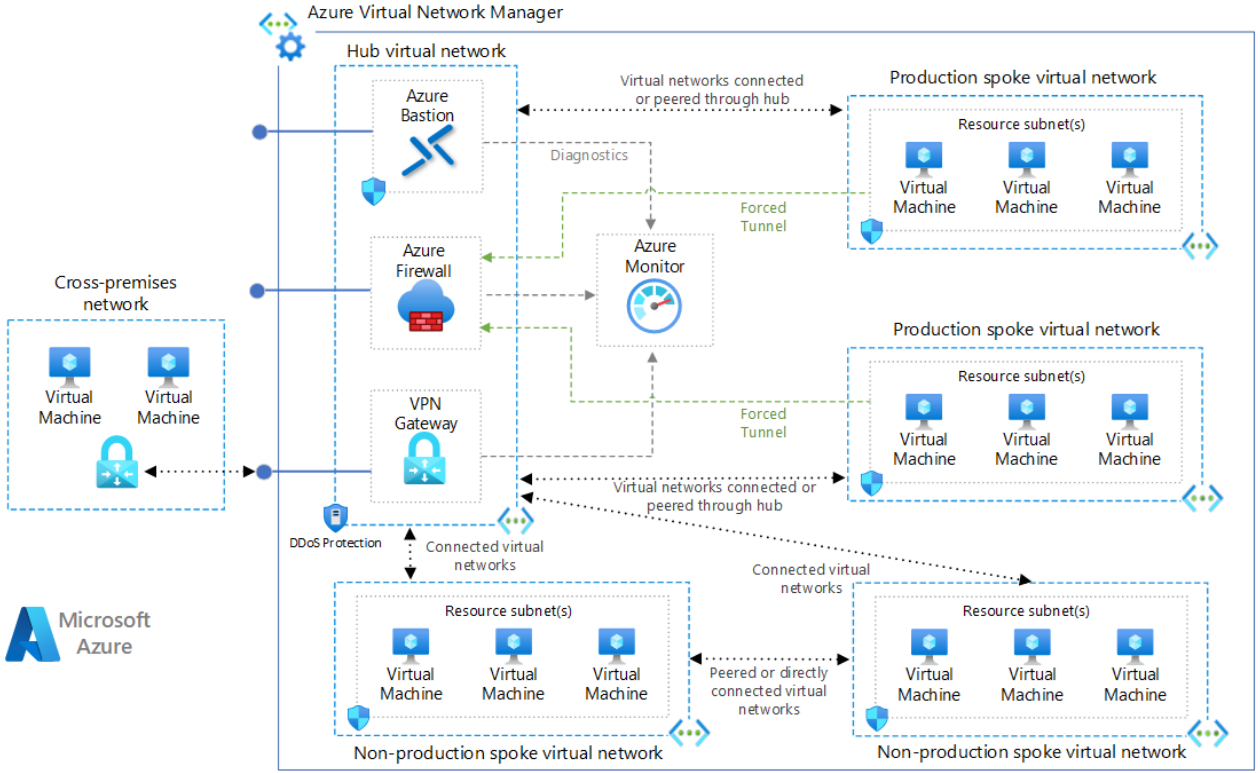
Design and implement Azure Firewall and Azure Firewall Manager

- Map requirements to features and capabilities of Azure Firewall
- Select an appropriate Azure Firewall SKU
- Design an Azure Firewall deployment
- Create and implement an Azure Firewall deployment
- Configure Azure Firewall rules
- Create and implement Azure Firewall Manager policies
- Create a secure hub by deploying Azure Firewall inside an Azure Virtual WAN hub

Design and implement a Web Application Firewall (WAF) deployment

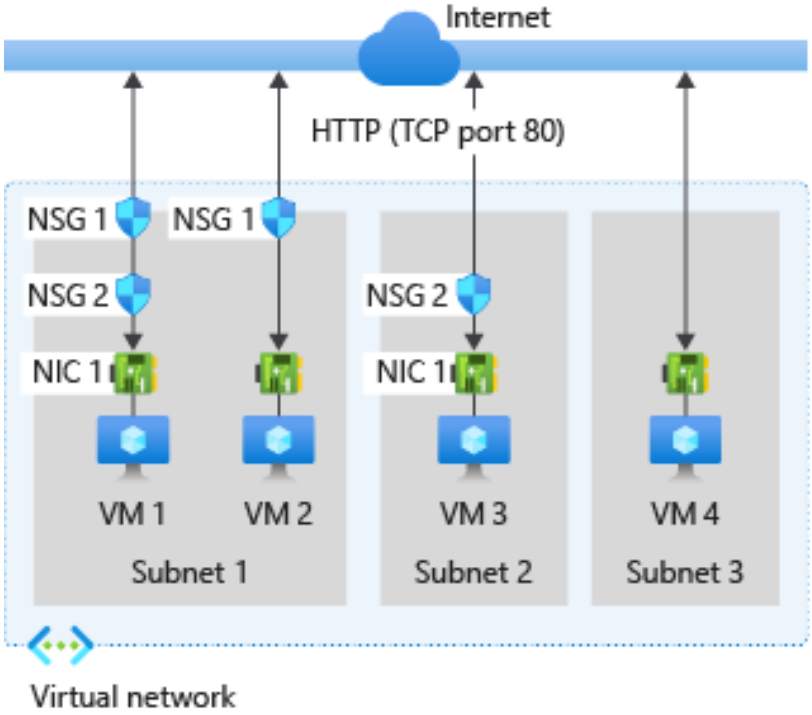
- Map requirements to features and capabilities of WAF
- Design a WAF deployment
- Configure detection or prevention mode
- Configure rule sets for WAF on Azure Front Door
- Configure rule sets for WAF on Application Gateway
- Implement a WAF policy
- Associate a WAF policy [also see 1]

Azure Network Security Groups (NSGs)



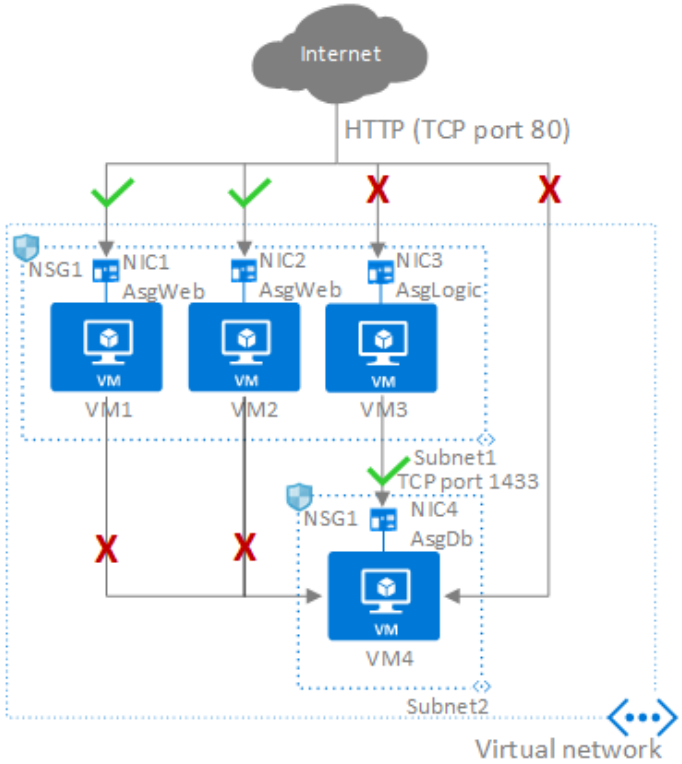
https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/hub-spoke?tabs=cli

Azure Network Security Groups (NSGs)



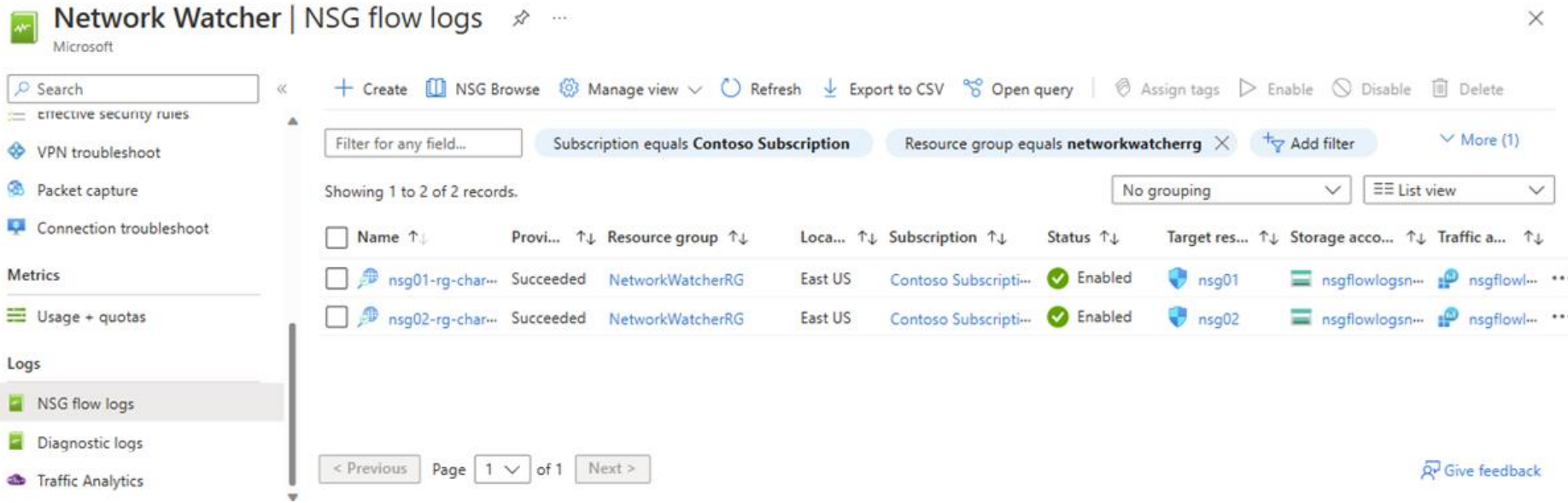
https://learn.microsoft.com/en-us/azure/virtual-network/network-security-group-how-it-works

Azure Application Security Groups (ASGs)



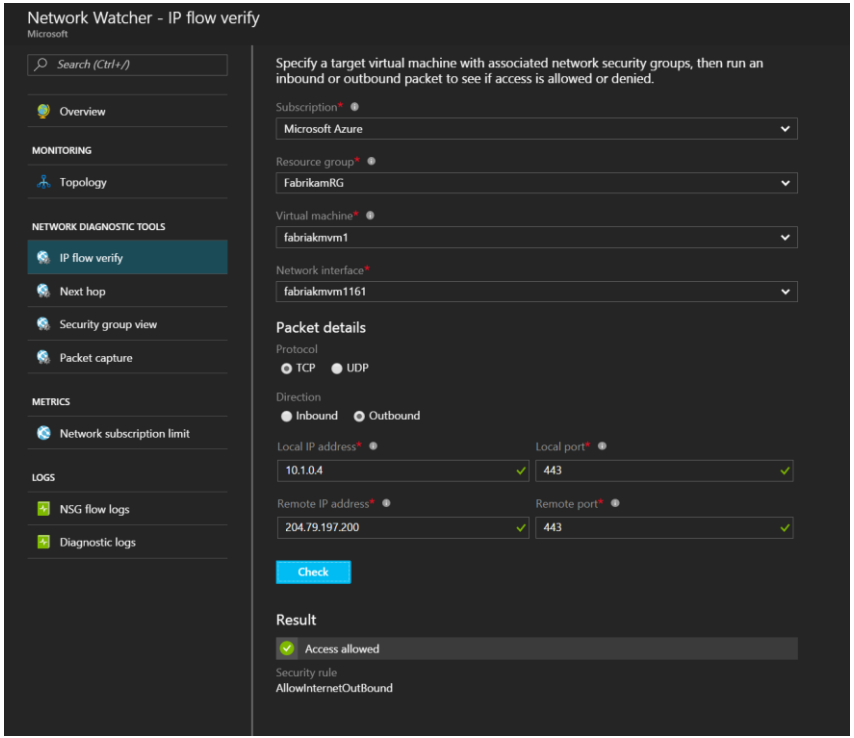
https://learn.microsoft.com/en-us/azure/virtual-network/application-security-groups

Azure Network Security Groups Flow Logs



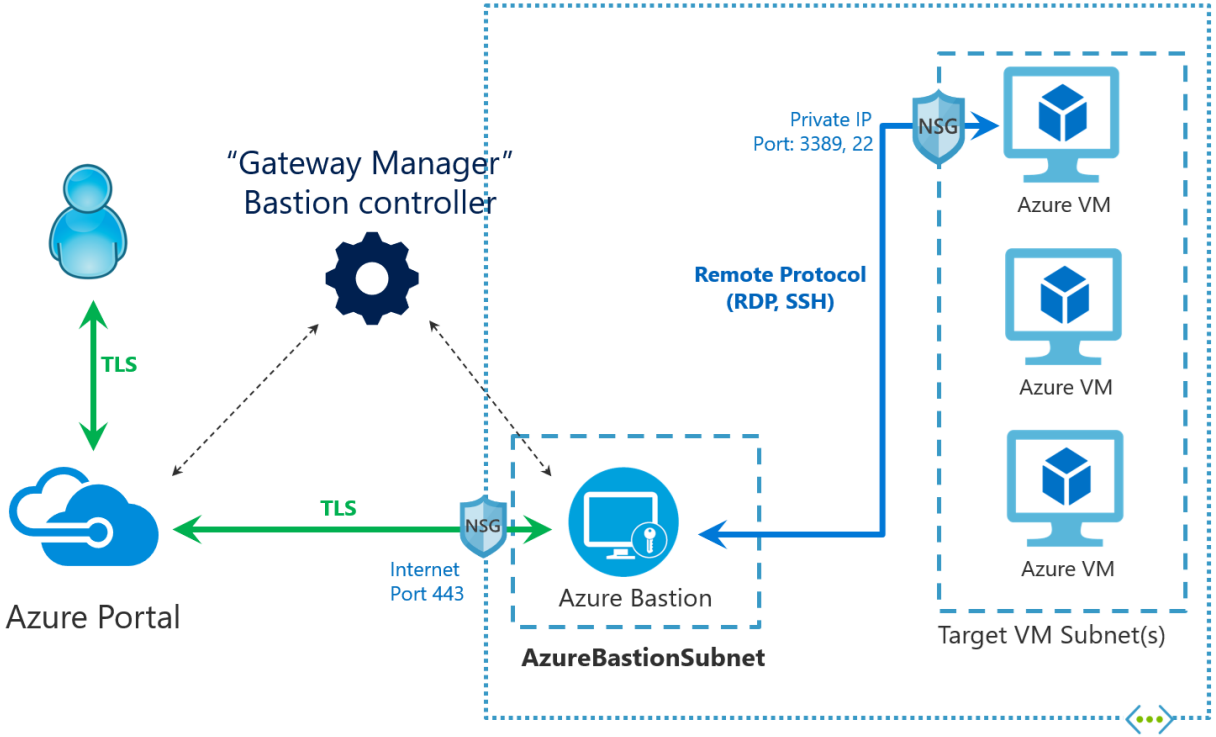
https://learn.microsoft.com/en-us/azure/network-watcher/network-watcher-nsg-flow-logging-overview

Azure Network Security Groups Flow Logs



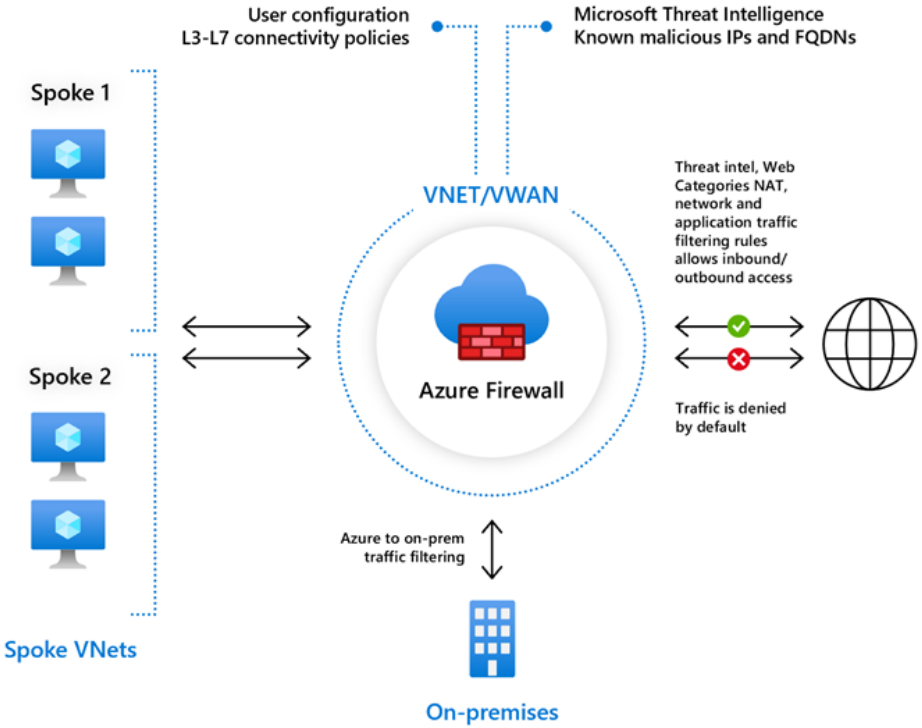
https://learn.microsoft.com/en-us/azure/network-watcher/network-watcher-ip-flow-verify-overview

NSG Access and Azure Bastion



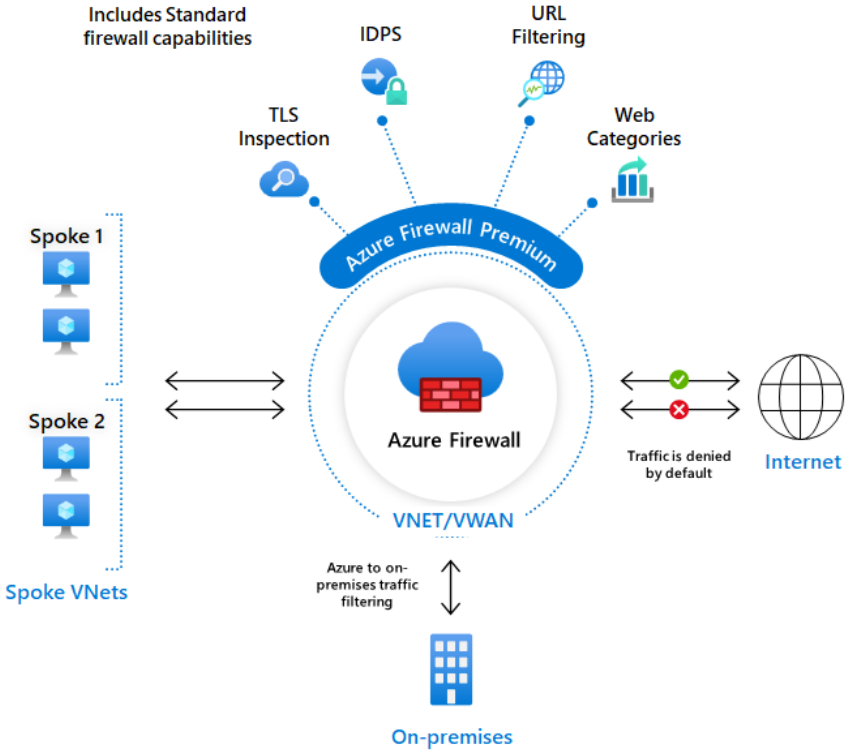
https://learn.microsoft.com/en-us/azure/bastion/bastion-nsg

Azure Firewall



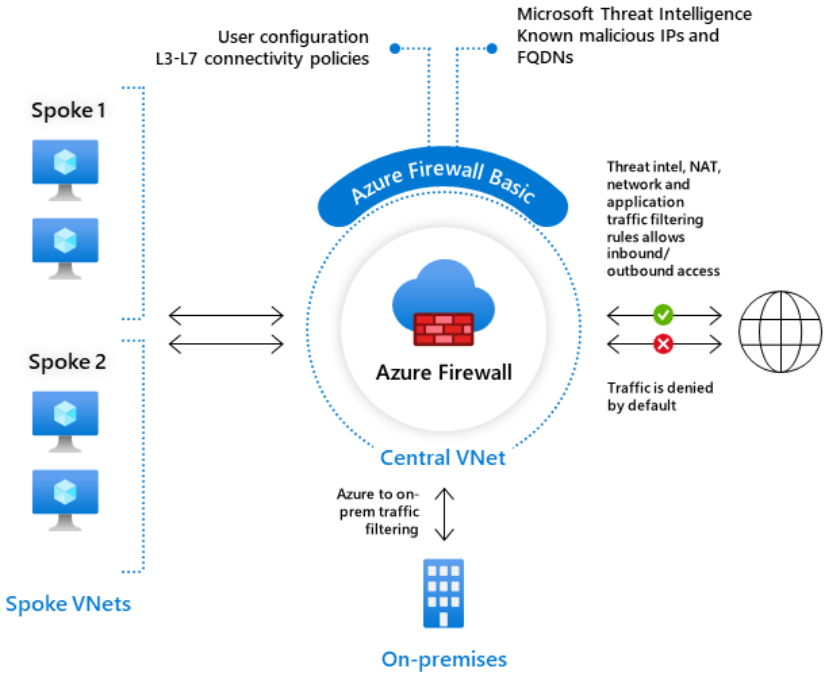
https://learn.microsoft.com/en-us/azure/firewall/overview

Azure Firewall Premium



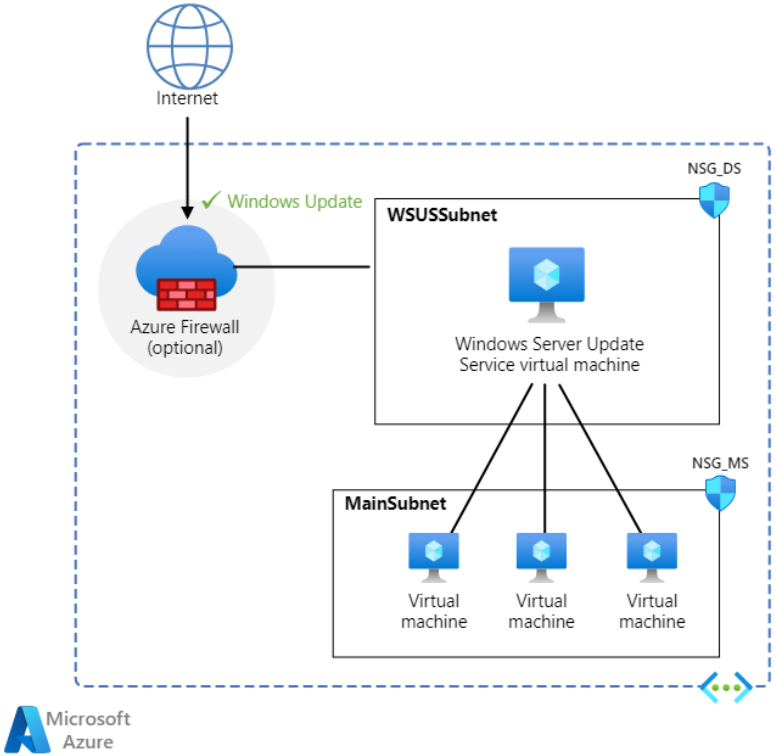
https://learn.microsoft.com/en-us/azure/firewall/overview

Azure Firewall Basic



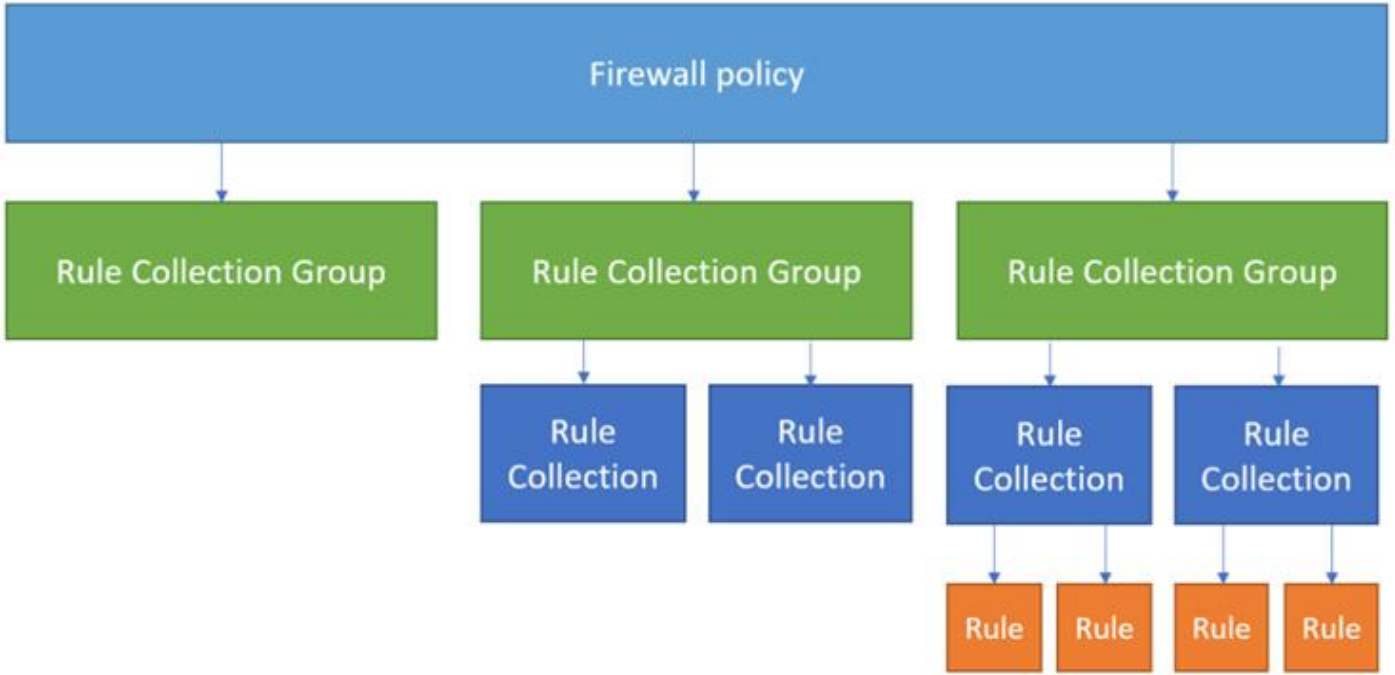
https://learn.microsoft.com/en-us/azure/firewall/overview

Azure Firewall



https://learn.microsoft.com/en-us/azure/architecture/example-scenario/wsus/

Azure Firewall Rules



- Set of Rule Collections

- Set of Rules
- Define Priority
- Determine Allow/Deny

- Define 5-Tuple traffic
- DNAT, Application, Network

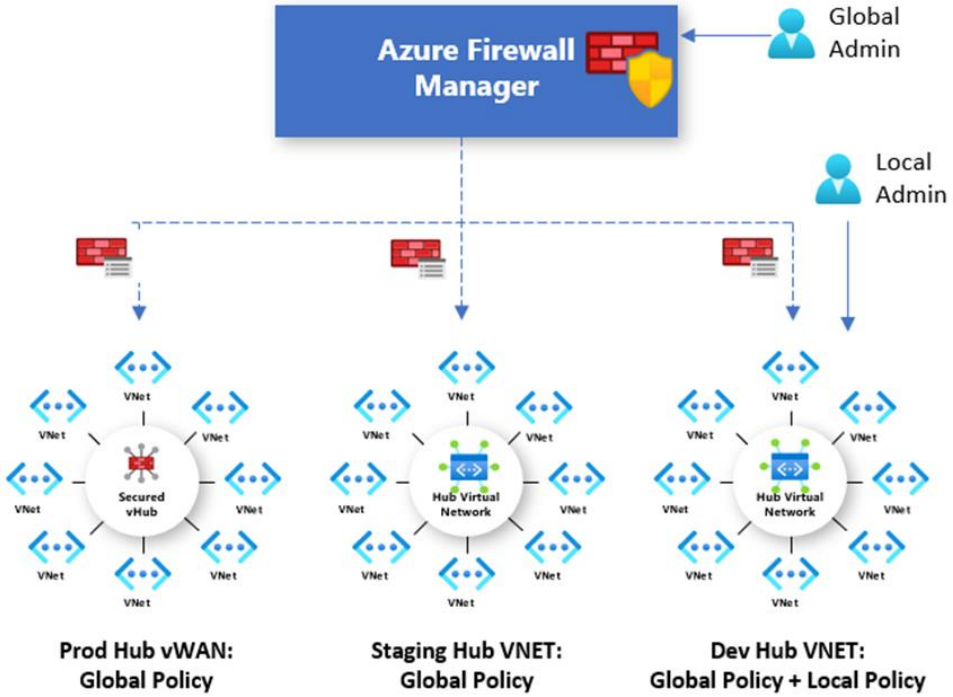
https://learn.microsoft.com/en-us/azure/firewall/policy-rule-sets

Azure Firewall Rules

- DNAT
- Network
- Application

https://learn.microsoft.com/en-us/azure/firewall/policy-rule-sets

Azure Firewall (Manager) Policy



https://learn.microsoft.com/en-us/azure/firewall-manager/policy-overview

Azure WAF (Web Application Firewall)

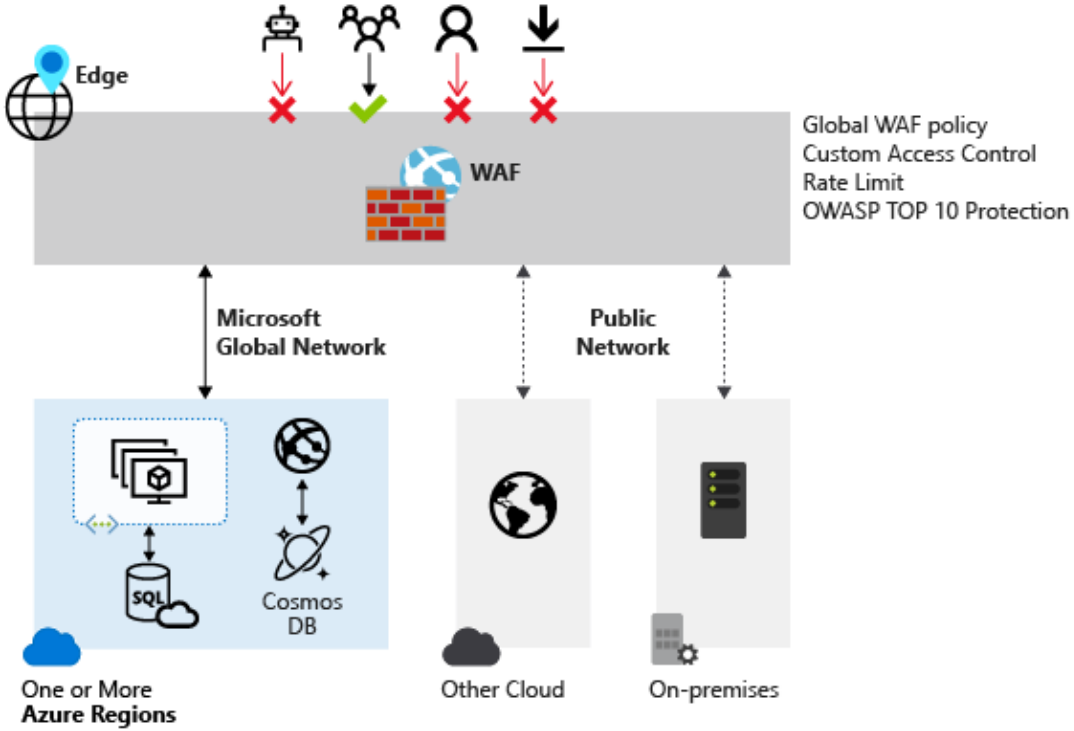
Front Door

Application Gateway

CDN

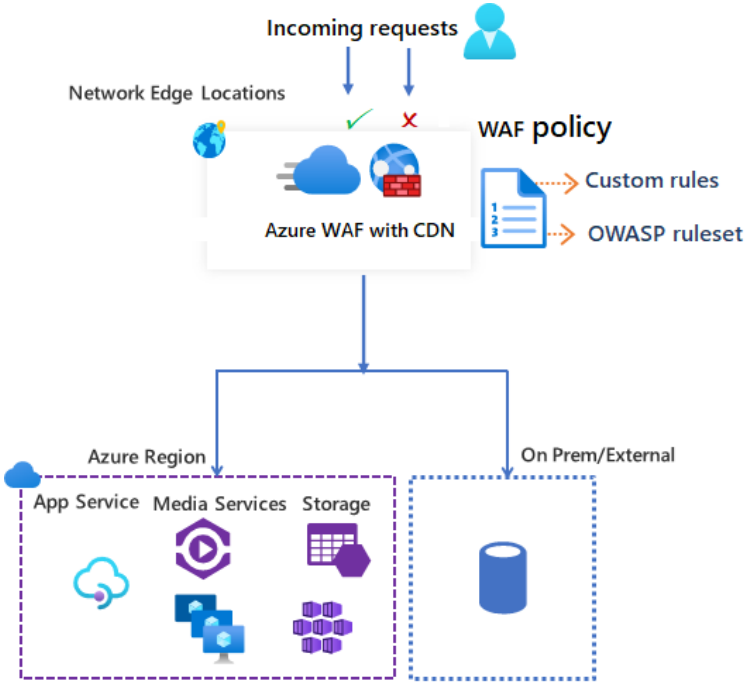
https://learn.microsoft.com/en-us/azure/web-application-firewall/overview

Azure WAF (Azure Front Door)



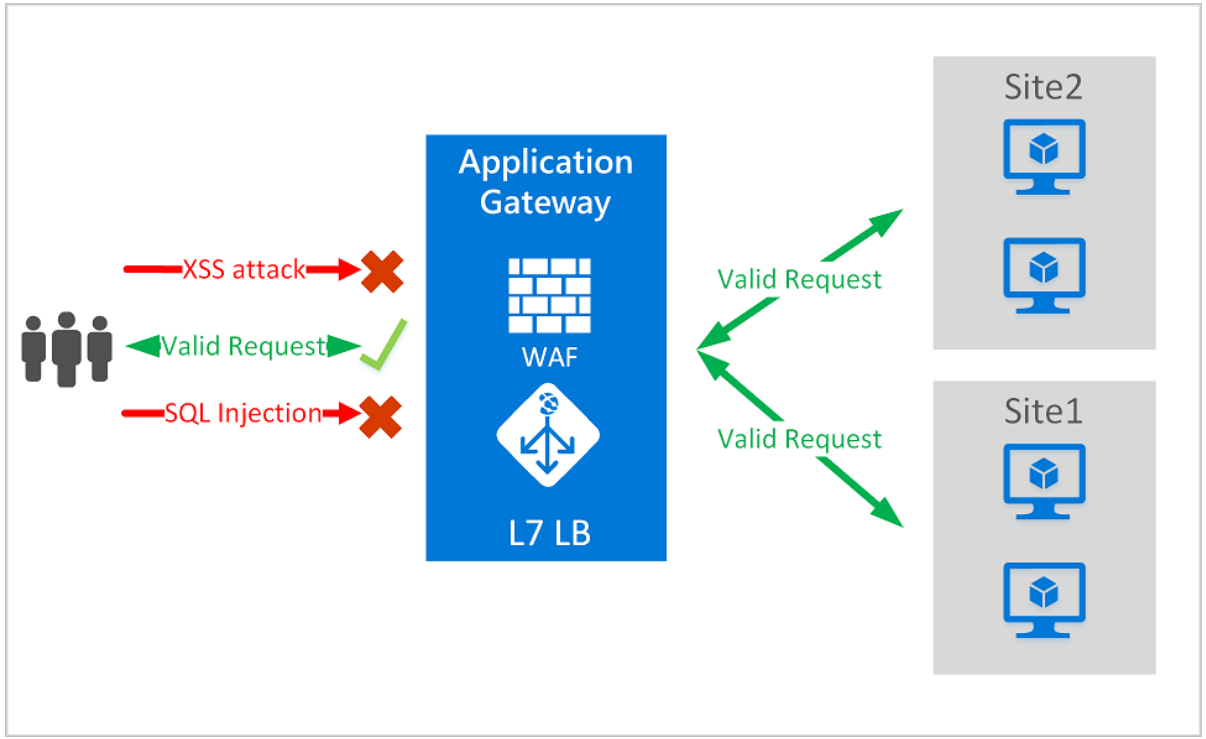
https://learn.microsoft.com/en-us/azure/web-application-firewall/afds/afds-overview

Azure WAF (Azure CDN)



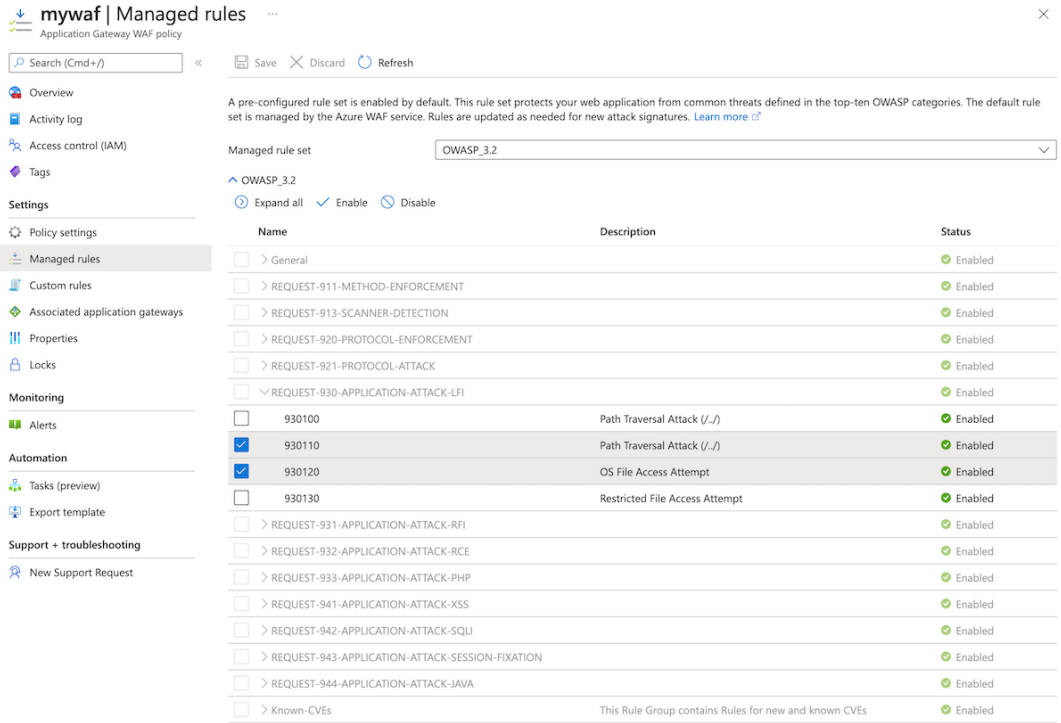
https://learn.microsoft.com/en-us/azure/web-application-firewall/cdn/cdn-overview

Azure WAF (Azure Application Gateway)



https://learn.microsoft.com/en-us/azure/web-application-firewall/ag/ag-overview

Azure WAF Managed Rules



https://learn.microsoft.com/en-us/azure/web-application-firewall/ag/application-gateway-crs-rulegroups-rules?tabs=owasp32

Azure WAF Custom Rules

Azure PowerShell

Copy

```
$AllowRule = New-AzApplicationGatewayFirewallCustomRule `
    -Name example1 `
    -Priority 2 `
    -RuleType MatchRule `
    -MatchCondition $condition `
    -Action Allow `
    -State Enabled

$BlockRule = New-AzApplicationGatewayFirewallCustomRule `
    -Name example2 `
    -Priority 2 `
    -RuleType MatchRule `
    -MatchCondition $condition `
    -Action Block `
    -State Enabled
```

https://learn.microsoft.com/en-us/azure/web-application-firewall/ag/custom-waf-rules-overview

The Exam

AZ-700 Exam FAQ

- Number of Questions between 40-60 (~45)
- Duration: 120 minutes
- See the exam sandbox
- There ARE hands-on labs
- Passing Score 700 (on a scale of 1-1000)

AZ-700

- Exam AZ-700: Designing and Implementing Microsoft Azure Networking Solutions
- Study guide for Exam AZ-700
- Sample exam sandbox

Schedule exam

Exam AZ-700: Designing and Implementing Microsoft Azure Networking Solutions

United States

$165 USD*

Price based on the country or region in which the exam is proctored.

Languages: German, English, Spanish, French, Italian, Japanese, Korean, Portuguese (Brazil), Chinese (Simplified), Chinese (Traditional)
Retirement date: none

This exam measures your ability to accomplish the following technical tasks: design and implement core networking infrastructure; design, implement, and manage connectivity services; design and implement application delivery services; design and implement private access to Azure services; and secure network connectivity to Azure resources.

Schedule exam >

MeasureUp practice test for Designing and Implementing Microsoft Azure Networking Solutions
All objectives of the exam are covered in depth so you'll be ready for any question on the exam.

⊕ Add

Select exam options

AZ-104: Microsoft Azure Administrator

Where do you want to take your exam?

At a test center

OnVUE Online at my home or office

I have a Private Access Code

Where do you want to take your exam?

At a test center

OnVUE Online at my home or office

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Prepare for your online exam at your home or office

Your computer

Use a personal computer that has a reliable webcam and internet connection.

Run system test.

Your testing space

The room should be a distraction-free, private place.

See acceptable spaces and view permitted comfort aid list.

Your photo ID

We'll verify your government-issued identification (ID) when you arrive for your exam.

Review admission & ID policies

What to expect

Check in for your OnVUE exam 30 minutes before your appointment time.

Watch our short video to get familiar with the process.

Questions?

Check out the OnVUE FAQs and minimum technical requirements.

Cart

Review and confirm contact information to avoid issues on test day.

Description	Details	Price	Actions
		165.00	Remove

Available Products

In addition to scheduling your exam, you might be interested in the following products.

Microsoft Official Practice Test powered by MeasureUp - 30 day online access
Get a discount on available Microsoft Official Practice Test for Microsoft certification exams (Fundamentals, Role-based, or Specialty) 30-day online access.

Special offer: Regularly priced at USD 99.00! Click here for details

More Details

USD 80.00

Add to Order

It’s time to test your system

Order #: 0064-8802-7606

Your appointment is confirmed! An order confirmation containing important exam day information has been sent to: zaalion@gmail.com

What's next?

Run a system test

We need to verify that the computer and internet connection you plan to use on exam day meet the minimum requirements for online testing. It’ll just take 5 minutes to run:

- Equipment and internet connection checks
- Exam simulation

Description	Details	Order Information	Price
			165.00

English (US)

System Test

I confirm that on my exam day I will be using this same testing space, computer, and internet connection.

Alert! Work computers generally have more restrictions that may prevent a successful test. Ensure you are not behind a corporate firewall, and shut down any **Virtual Private Networks** (VPNs) or **Virtual Machines**.

1. Copy Access Code

Click **'Copy Access Code'.**

This code will authorize you to perform a system test.

690-635-235

Copy Access Code

2. Download OnVUE

Click **'Download'.**

Download

3. Run OnVUE

Run the OnVUE application from your Downloads folder.

Course Repository

https://github.com/zaalion/oreilly-az-700

COURSE

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★★★★★ 1 review

By Reza Salehi

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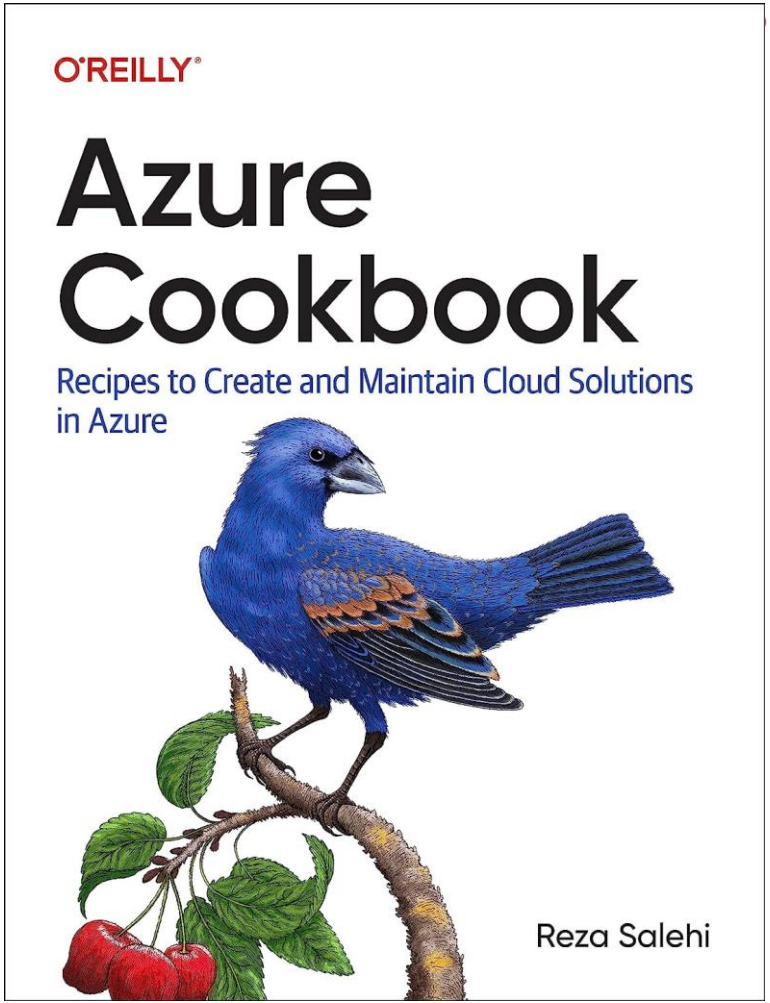

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@zaalion