

# AZ-700 - Designing and Implementing Microsoft Azure Networking Solutions

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## Using Copilot for learning – Ideas

### Create a mind map

Prompt: Create a mindmap on Azure Load Balancer (including Basic, Standard, internal, public, Gateway), Traffic Manager, Azure Application Gateway, and Azure Front door . include decision thoughts, features, functionalities, sla, cost, and more. Do not provide sources. Please output the mindmap in markdown format suitable for import into a mindmapping tool.

Result from Copilot:

#### **# Azure Networking Services**

##### **## Azure Load Balancer**

###### **### Basic**

- Features: 300 instances, public IP addresses
- Functionalities: Layer-4 (TCP, UDP) load balancing, hash-based distribution
- SLA: 99.99%
- Cost: Free

###### **### Standard**

- Features: 1000 instances, public and private IP addresses
- Functionalities: Layer-4 (TCP, UDP) load balancing, hash-based distribution, HA ports
- SLA: 99.99%
- Cost: Pay-as-you-go

###### **### Internal**

- Features: Private IP addresses
- Functionalities: Load balancing within VNet
- SLA: 99.99%
- Cost: Based on processed data

###### **### Public**

- Features: Public IP addresses
- Functionalities: Load balancing from public internet

- SLA: 99.99%
- Cost: Based on processed data

### **### Gateway**

- Features: VPN and more
- Functionalities: Connects VNets to each other and on-premises
- SLA: 99.9%
- Cost: Based on gateway type and connection time

### **## Traffic Manager**

- Features: DNS-based traffic load balancer
- Functionalities: Geographic routing, priority routing, weighted round-robin
- SLA: 99.99%
- Cost: Pay-as-you-go

### **## Azure Application Gateway**

- Features: Web traffic load balancer
- Functionalities: SSL termination, URL-based routing, multi-site hosting
- SLA: 99.95%
- Cost: Based on gateway size and processed data

### **## Azure Front Door**

- Features: Scalable and secure entry point for web applications
- Functionalities: SSL offload, path-based routing, fast failover
- SLA: 99.99%
- Cost: Based on outbound data transfer and number of HTTP(S) requests

Then use a MindMap tool to create the Mind map like Try markmap (<https://markmap.js.org/repl>)



➔ Check the video in the zip file, too 😊

## Create a table to compare and contrast load balancing services

Prompt: Create me a table to show similarities and differences between the Azure Load Balancer products: Load Balancer, Traffic Manager, Application Gateway, and Azure Front Door. Include 3 examples on when to use which.

Result from Copilot:

Feature	Azure Load Balancer	Azure Traffic Manager	Azure Application Gateway	Azure Front Door
Scope	<a href="#">Regional<sup>1</sup></a>	<a href="#">Global<sup>1</sup></a>	<a href="#">Regional<sup>1</sup></a>	<a href="#">Global<sup>2</sup></a>
Traffic Type	<a href="#">Non-HTTP(S)<sup>1</sup></a>	<a href="#">Non-HTTP(S)<sup>1</sup></a>	<a href="#">HTTP(S)<sup>1</sup></a>	<a href="#">HTTP(S)<sup>2</sup></a>
SSL Termination	<a href="#">No<sup>3</sup></a>	<a href="#">No<sup>4</sup></a>	<a href="#">Yes<sup>5</sup></a>	<a href="#">Yes<sup>2</sup></a>
Path-Based Routing	<a href="#">No<sup>3</sup></a>	<a href="#">No<sup>4</sup></a>	<a href="#">Yes<sup>5</sup></a>	<a href="#">Yes<sup>2</sup></a>
Web Application Firewall	<a href="#">No<sup>3</sup></a>	<a href="#">No<sup>4</sup></a>	<a href="#">Yes<sup>5</sup></a>	<a href="#">Yes<sup>2</sup></a>

Here are some examples of when to use each:

1. **Azure Load Balancer:** Use this when you need to balance the load of non-HTTP(S) traffic within a region. [For example, if you have a VM in multiple Availability Zones or if you use Kubernetes<sup>6</sup>.](#)
2. **Azure Traffic Manager:** This is a good choice for on-premises scenarios, including burst-to-cloud, migrate-to-cloud, and failover-to-cloud. [Use it to upgrade or perform maintenance on your on-site datacenter without inconveniencing customers<sup>7</sup>.](#)
3. **Azure Application Gateway:** Use this when you need to balance the load of HTTP(S) traffic within a region. [It's useful when you want to protect your API Management service from OWASP vulnerabilities<sup>8</sup> or when you need to map custom domain names for your PaaS services<sup>9</sup>.](#)
4. **Azure Front Door:** Use this when you need content caching and delivery (CDN), TLS termination, advanced routing capabilities, or a web application firewall (WAF)<sup>10</sup>. [It's also useful when you have strict network security requirements and need to manage inbound HTTP and HTTPS traffic to your application<sup>11</sup>.](#)

## Create a table to compare and contrast endpoints

Prompt: Create me a table for Service Endpoint, Private Endpoint, Private Link and Private link service. Include what it is, what resources it protects or connects to, what you need to configure, what you can do with it, how it protects from data exfiltration, complexity to setup, Availability, cost. In the table add a row that lists 3 examples for use. Use only Microsoft Learn resources.

Result from Copilot:

Feature	Service Endpoint	Private Endpoint	Private Link	Private Link Service
What it is	<a href="#">A secure and direct connection to Azure services over an optimized route<sup>1</sup></a>	<a href="#">A network interface that connects you privately and securely to a service powered by Azure Private Link<sup>2</sup></a>	<a href="#">Enables you to access Azure PaaS Services and Azure hosted customer-owned/partner services over a private endpoint in your virtual network<sup>3</sup></a>	<a href="#">A reference to your own service that is powered by Azure Private Link<sup>4</sup></a>
What it protects/connects to	<a href="#">Secures your critical Azure service resources to only your virtual networks<sup>1</sup></a>	<a href="#">Connects you privately and securely to a service<sup>2</sup></a>	<a href="#">Eliminates data exposure to the public internet<sup>3</sup></a>	<a href="#">Allows consumers to access your service privately from their own VNets<sup>4</sup></a>
What you need to configure	<a href="#">Enable this resource from the subnet side while configuring service endpoints for your service<sup>1</sup></a>	<a href="#">Specify properties such as name, subnet, private-link resource, target subresource, connection approval method, request message, and connection status<sup>2</sup></a>	<a href="#">Configure private endpoints to all services that can be used as application components in Azure<sup>3</sup></a>	<a href="#">Configure your application to run behind a standard load balancer in your virtual network<sup>4</sup></a>
What you can do with it	<a href="#">Secure your critical Azure service resources to only</a>	<a href="#">Bring the service into your virtual network<sup>2</sup></a>	<a href="#">Connect your virtual network using private endpoints to all services that can</a>	<a href="#">Enable your service for Private Link access so that consumers to</a>

	<a href="#">your virtual networks<sup>1</sup></a>		<a href="#">be used as application components in Azure<sup>3</sup></a>	<a href="#">your service can access it privately from their own VNets<sup>4</sup></a>
<b>Protection against data exfiltration</b>	<a href="#">Restricts data exfiltration to Azure Storage<sup>5</sup></a>	<a href="#">Reduces the attack surface and the chances of data exfiltration<sup>6</sup></a>	<a href="#">Eliminates data exposure to the public internet<sup>7</sup></a>	Not explicitly mentioned in Microsoft Learn resources
<b>Complexity to setup</b>	<a href="#">Generally easier and quicker to setup with less complexity<sup>8</sup></a>	<a href="#">More complex to implement, requiring careful network planning and DNS configuration changes<sup>9</sup></a>	<a href="#">Simple to setup with minimal networking configuration needed<sup>10</sup></a>	Not explicitly mentioned in Microsoft Learn resources
<b>Availability</b>	<a href="#">Generally available in all Azure regions<sup>1</sup></a>	<a href="#">Highly available resources with an SLA as per SLA for Azure Private Link<sup>11</sup></a>	<a href="#">Generally available<sup>3</sup></a>	Not explicitly mentioned in Microsoft Learn resources
<b>Cost</b>	<a href="#">No additional costs<sup>1</sup></a>	<a href="#">Billed on an hourly basis<sup>12</sup></a>	<a href="#">Pay only for private endpoint resource hours and the data processed through your private endpoint<sup>3</sup></a>	<a href="#">No charge for private link service<sup>13</sup></a>
<b>Examples</b>	1. <a href="#">Secure Azure Storage to only your virtual networks<sup>1</sup></a>   2. <a href="#">Secure Azure SQL Database to only your virtual networks<sup>1</sup></a>   3. <a href="#">Secure Azure Cosmos DB to only your virtual networks<sup>1</sup></a>	1. <a href="#">Connect privately and securely to Azure Storage<sup>2</sup></a>   2. <a href="#">Connect privately and securely to Azure Cosmos DB<sup>2</sup></a>   3. <a href="#">Connect privately and securely to Azure SQL Database<sup>2</sup></a>	1. <a href="#">Connect privately to Azure Storage<sup>3</sup></a>   2. <a href="#">Connect privately to Azure SQL Database<sup>3</sup></a>   3. <a href="#">Connect privately to Azure hosted customer-owned/partner services<sup>3</sup></a>	1. <a href="#">Enable Azure Storage for Private Link access<sup>4</sup></a>   2. <a href="#">Enable Azure Cosmos DB for Private Link access<sup>4</sup></a>   3. <a href="#">Enable Azure SQL Database for Private Link access<sup>4</sup></a>

## Links and Information

Course materials are located at [https://aka.ms/MOC\\_AZ-700T00](https://aka.ms/MOC_AZ-700T00)

### Module 00: Intro

- Exam (brief - more on last day): <https://docs.microsoft.com/en-us/learn/certifications/exams/az-700>
- Setup for course materials (book/slides)
  - optional: Go to a private browser session / incognito session
    - Go to <https://learn.microsoft.com>
    - On the top right click "Sign in" and sign into Microsoft Learn by using your personal Microsoft account (MSA - usually ending in outlook.com, hotmail.com,...). If you do not have a personal account, you can create one at <https://account.microsoft.com/>
    - Once you are logged in with your personal account, connect your work account to this personal account by clicking on the top right and then click "Settings", then "Account Management" and click "Add account" under "Linked accounts".
    - --> It may take a few minutes to "merge" your account in the background AND you CAN already ACCESS the materials at [https://aka.ms/MOC\\_AZ-700T00](https://aka.ms/MOC_AZ-700T00)  
This is your book/slides, you can gain experience points by studying there, you will be using the same login to sign up for your exams and take any renewal exams forward.



## Module 01: Introduction to Azure Virtual Networks

- Azure Virtual Networks - <https://azure.microsoft.com/en-us/services/virtual-network/>
- What is Azure Virtual Network? - <https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-overview>
- Private IP addresses - <https://docs.microsoft.com/en-us/azure/virtual-network/private-ip-addresses>
- CIDR cheat sheet <https://networkproguide.com/cidr-subnet-mask-ipv4-cheat-sheet/> and CIDR range visualizer <https://cidr.xyz/> and Subnet Mask Cheat Sheet: [https://www.aelius.com/njh/subnet\\_sheet.html](https://www.aelius.com/njh/subnet_sheet.html) and a calculator <https://www.subnet-calculator.com/>
- Another calculator <https://www.davidc.net/sites/default/subnets/subnets.html>
- Azure Geographies and Regions <https://azure.microsoft.com/en-us/global-infrastructure/geographies>
- Naming convention <https://docs.microsoft.com/en-us/azure/cloud-adoption-framework/ready/azure-best-practices/resource-naming>
- Network subscription limits <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/azure-subscription-service-limits#networking-limits>
- The smallest supported IPv4 subnet is /29, and the largest is /2 (using CIDR subnet definitions). IPv6 subnets must be exactly /64 in size. <https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-faq>

For lab: in your subscription create

a) with the portal <https://microsoftlearning.github.io/AZ-700-Designing-and-Implementing-Microsoft-Azure-Networking-Solutions/Instructions/Exercises/M01-Unit%204%20Design%20and%20implement%20a%20Virtual%20Network%20in%20Azure.html>

b) with powershell

```
$ManufacturingSystemSubnet = New-AzVirtualNetworkSubnetConfig -Name  
ManufacturingSystemSubnet -AddressPrefix "10.30.10.0/24"  
$SensorSubnet1 = New-AzVirtualNetworkSubnetConfig -Name SensorSubnet1 -  
AddressPrefix "10.30.20.0/24"  
  
New-AzVirtualNetwork -Name ManufacturingVnet -ResourceGroupName  
ContosoResourceGroup -Location westeurope -AddressPrefix "10.30.0.0/16" -Subnet  
$ManufacturingSystemSubnet,$SensorSubnet1
```

c) with bash

```
az network vnet create --resource-group ContosoResourceGroup --name ResearchVnet --  
location southeastasia --address-prefixes 10.40.0.0/16
```

```
az network vnet subnet create --name ResearchSystemSubnet --vnet-name ResearchVnet  
--resource-group ContosoResourceGroup --address-prefixes 10.40.0.0/24
```

- Peerings across different subscriptions, deployment models etc  
<https://docs.microsoft.com/en-us/azure/virtual-network/create-peering-different-subscriptions>
- A great page to learn and see stories <https://www.azurecharts.com/> (i.e. SLA :) )
- NAT <https://docs.microsoft.com/azure/virtual-network/nat-gateway/nat-gateway-resource>
- Tutorial: Create a NAT Gateway <https://docs.microsoft.com/en-us/azure/virtual-network/nat-gateway/tutorial-create-nat-gateway-portal>
- DNS documentation <https://docs.microsoft.com/en-us/azure/dns/> - use the QuickStart also, including PowerShell and CLI
- Ip prefixes and reasons to use it <https://docs.microsoft.com/en-us/azure/virtual-network/ip-services/public-ip-address-prefix>
- Azure Virtual Network frequently asked questions (FAQ) VNet Peering - <https://docs.microsoft.com/azure/virtual-network/virtual-networks-faq>

## Lab Environment

Go to <https://esi.learnondemand.net/> and click Microsoft Account to sign in with your PERSONAL ACCOUNT.

### Using the CloudSlice labs

- \* Make sure to follow the instructions on the right side!
- \* Azure Resource Group (CSR) or an Azure subscription (CSS) will be available to complete the lab.
- \* Only the permissions and resources required to perform the lab objectives will be provided. --
- > You cannot create other resources OR change the names!
- \* Cloudslice labs will be available to you for 6 months.
- \* Each lab can be launched up to 10 times.
- \* Each lab has a time limit. You can extend the lab for 40 minutes for the first time and 20 minutes the second time. Try to work through the lab in one session BECAUSE all resources will be deleted once it expires - you will start from 0.
- \* All labs are independent from each other - you can skip and return later.
- \* Be patient with the labs!

## Module 02: Design and Implement Hybrid Networking

- Resource naming and tagging decision guide - <https://docs.microsoft.com/en-us/azure/cloud-adoption-framework/decision-guides/resource-tagging>
- Naming convention <https://docs.microsoft.com/en-us/azure/cloud-adoption-framework/ready/azure-best-practices/resource-naming>
- Azure VPN Gateway topologies and design <https://docs.microsoft.com/en-us/azure/vpn-gateway/design>
- About Azure VPN Gateway <https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpngateways>
- SKUs <https://learn.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpngateways#benchmark>
- VPN Gateway Pricing <https://azure.microsoft.com/en-us/pricing/details/vpn-gateway/>
- About VPN devices for connections <https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpn-devices#devicetable>
- VNGW availability zones <https://learn.microsoft.com/en-us/azure/vpn-gateway/about-zone-redundant-vnet-gateways>
- P2S protocols <https://docs.microsoft.com/en-us/azure/vpn-gateway/point-to-site-about>
- Azure Virtual WAN <https://docs.microsoft.com/en-us/azure/virtual-wan/virtual-wan-about>
- Virtual WAN cost <https://azure.microsoft.com/en-us/pricing/details/virtual-wan/>
- Create a Virtual WAN hub route table for NVAs: Azure portal <https://docs.microsoft.com/en-us/azure/virtual-wan/virtual-wan-route-table-nva-portal>

## Module 03: Design and Implement ExpressRoute

- ExpressRoute introduction <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-introduction>
- Azure ExpressRoute encryption <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-about-encryption>
- Azure ExpressRoute: QoS requirements <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-qos>
- Tutorial: Configure route filters for Microsoft peering <https://docs.microsoft.com/en-us/azure/expressroute/how-to-route-filter-portal>
- (comandlet): Get-AzExpressRouteCircuit -ResourceGroupName "RG" -Name "NameofCircuit"
- ExpressRoute Routing Requirements <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-routing>
- Pricing ExpressRoute <https://azure.microsoft.com/en-us/pricing/details/expressroute/>
- ExpressRoute locations: <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-locations> and providers: <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-locations#partners>
- Network Monitoring <https://docs.microsoft.com/en-us/azure/networking/network-monitoring-overview>
- Nice short way to explain VPN vs Expressroute (external) <https://aidanfinn.com/?p=22267>
- ER and encryption [Azure ExpressRoute: About Encryption | Microsoft Learn](#)
  - ➔ variations/scope of the different types of ExpressRoute <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-faqs?msclkid=bc4796dbbfe711ecb206abc1d77bba41#expressroute-sku-scope-access>
- Local, Standard, Premium--> variations/scope of the different types of ExpressRoute <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-faqs?msclkid=bc4796dbbfe711ecb206abc1d77bba41#expressroute-sku-scope-access> <https://learn.microsoft.com/en-us/azure/expressroute/expressroute-faqs?msclkid=bc4796dbbfe711ecb206abc1d77bba41#what-is-the-connectivity-scope-for-different-expressroute-circuit-skus>
- Connectivity providers and locations: <https://learn.microsoft.com/en-us/azure/expressroute/expressroute-locations>
- FastPath <https://docs.microsoft.com/en-us/azure/expressroute/about-fastpath> and setup only via Powershell
- <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-howto-linkvnet-arm#configure-expressroute-fastpath>
- BFD config <https://learn.microsoft.com/en-us/azure/expressroute/expressroute-bfd>
- Troubleshoot network link performance <https://docs.microsoft.com/en-us/azure/expressroute/expressroute-troubleshooting-network-performance>

- Azure Connectivity Toolkit (AzureCT)  
<https://github.com/Azure/NetworkMonitoring/blob/main/AzureCT/AvailabilityTesting.md>

- [Verify circuit provisioning and state](#)
- [Validate Peering Configuration](#)
- [Validate ARP](#)
- [Validate BGP and routes on the MSEE](#)
- [Confirm the traffic flow](#)

PaaS traffic via ExpressRoute <https://docs.microsoft.com/en-us/microsoft-365/enterprise/azure-expressroute?view=o365-worldwide#planning-azure-expressroute-for-office-365>

#### ExpressRoute Videos:

- Azure ExpressRoute - How to create an ExpressRoute circuit:
- <https://learn.microsoft.com/en-us/shows/azure/expressroute-how-to-create-expressroute-circuit>
- Azure ExpressRoute - How to set up Azure private peering for your ExpressRoute circuit
- <https://learn.microsoft.com/en-us/shows/azure/expressroute-how-to-set-up-azure-private-peering-your-expressroute-circuit>
- Azure ExpressRoute How to create a connection between your VPN Gateway and ExpressRoute circuit
- <https://learn.microsoft.com/en-us/shows/azure/expressroute-how-to-create-connection-between-your-vpn-gateway-expressroute-circuit>

## Module 04: Load balance non-HTTP(S) traffic

- Azure Architecture Center <https://docs.microsoft.com/en-us/azure/architecture/>
- Azure Solution Explorer (azurecharts.com) <https://azurecharts.com/solutions>
- Updates <https://azure.microsoft.com/en-us/updates>
- Load Balancing options - decision tree <https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/load-balancing-overview#decision-tree-for-load-balancing-in-azure>
- Azure Solution Explorer (azurecharts.com) <https://azurecharts.com/solutions>
- Updates <https://azure.microsoft.com/en-us/updates>
- Load Balancer Overview <https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/load-balancing-overview>
- LB cross-region (Preview) <https://docs.microsoft.com/en-us/azure/load-balancer/cross-region-overview>
- Gateway load balancer <https://learn.microsoft.com/azure/load-balancer/gateway-overview>
- Azure Traffic Manager <https://learn.microsoft.com/en-us/azure/traffic-manager/traffic-manager-overview>

## Module 05: Load balance HTTP(S) traffic

- Application Gateway pricing <https://docs.microsoft.com/en-us/azure/application-gateway/understanding-pricing>
- Application Gateway configuration overview - <https://docs.microsoft.com/en-us/azure/application-gateway/configuration-overview>
- QuickStart: Direct web traffic with Azure Application Gateway - Azure portal - <https://docs.microsoft.com/en-us/azure/application-gateway/quick-create-portal>
- [Tutorial: Scale and protect a web app by using Azure Front Door and Azure Web Application Firewall \(WAF\) | Microsoft Docs](#)

## Module 06: Design and Implement Network Security

- Security Benchmark <https://docs.microsoft.com/security/benchmark/azure/security-controls-v3-network-security>
- Pricing for Defender <https://azure.microsoft.com/en-au/pricing/details/defender-for-cloud/>
- DDoS --> with several screenshots show: <https://learn.microsoft.com/en-us/samples/azure/azure-quickstart-templates/ddos-attack-prevention/>
- Give Ddos lab overview: <https://learn.microsoft.com/en-us/azure/ddos-protection/test-through-simulations>
- NSG <https://docs.microsoft.com/en-us/azure/virtual-network/network-security-groups-overview>
- ASG <https://docs.microsoft.com/en-us/azure/virtual-network/application-security-groups>
- Bastion overview: <https://learn.microsoft.com/azure/bastion/bastion-overview>
- Bastion subnet: <https://learn.microsoft.com/azure/bastion/configuration-settings#subnet>
- Firewall premium features [https://docs.microsoft.com/en-us/azure/firewall/premium-features?WT.mc\\_id=Portal-Microsoft\\_Azure\\_HybridNetworking](https://docs.microsoft.com/en-us/azure/firewall/premium-features?WT.mc_id=Portal-Microsoft_Azure_HybridNetworking)
- Firewall forced tunneling <https://docs.microsoft.com/en-us/azure/firewall/forced-tunneling>
- WAF <https://docs.microsoft.com/en-us/azure/web-application-firewall/afds/waf-faq>
- Azure Architecture Center <https://docs.microsoft.com/en-us/azure/architecture/>
- Browse architectures: <https://docs.microsoft.com/en-us/azure/architecture/browse/>
- Azure Policy <https://docs.microsoft.com/en-us/azure/governance/policy/overview> --> focus on Network
- Azure Blueprints <https://docs.microsoft.com/en-us/azure/governance/blueprints/overview>
- Locks <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources?tabs=json>
- RBAC - permissions <https://docs.microsoft.com/en-us/azure/role-based-access-control/>

## Module 07: Design and Implement private access to Azure Services

- Virtual network service endpoints - <https://docs.microsoft.com/Azure/virtual-network/virtual-network-service-endpoints-overview>
- Restrict access to PaaS resources tutorial <https://docs.microsoft.com/azure/virtual-network/tutorial-restrict-network-access-to-resources>
- Private Link Documentation - <https://docs.microsoft.com/Azure/private-link/>
- What is Azure Private Link service <https://docs.microsoft.com/en-us/azure/private-link/private-link-overview>
- Quickstart - Create a Private **Link service** by using the Azure portal <https://docs.microsoft.com/azure/private-link/create-private-link-service-portal>
- Quickstart - Create a Private **Endpoint** using the Azure portal <https://docs.microsoft.com/azure/private-link/create-private-endpoint-portal>
- Azure Private Endpoint DNS configuration <https://docs.microsoft.com/en-us/azure/private-link/private-endpoint-dns>
- Integrate our app with an Azure virtual network <https://docs.microsoft.com/en-us/azure/app-service/overview-vnet-integration>
- CNI - Container Network Interface
- AKS CNI networking <https://docs.microsoft.com/en-us/azure/aks/configure-azure-cni>
- AKS kubernetes networking <https://docs.microsoft.com/en-us/azure/aks/configure-kubernetes>
- AKS kubernetes with dual-stack networking <https://docs.microsoft.com/en-us/azure/aks/configure-kubernetes-dual-stack?tabs=azure-cli%2Ckubectl>
- Kubernetes learning path <https://azure.microsoft.com/en-us/resources/kubernetes-learning-path/> (50 days from zero to hero with Kubernetes book)



## Module 08: Design and Implement Network Monitoring

- Azure Monitor Network Insights <https://docs.microsoft.com/en-us/azure/azure-monitor/insights/network-insights-overview?toc=/azure/networking/toc.json>
- SQL to Kusto query translation <https://docs.microsoft.com/en-us/azure/data-explorer/kusto/query/sqlcheatsheet> (on the left is also a Splunk to Kusto cheat sheet)
- KQL - Kusto Query Language - great for packages capture etc (SIEN --> Sentinel)
  - ➔ check out this free class <https://azure.microsoft.com/en-us/updates/free-query-language-course-la-ai/> (Pluralsight)
- Azure Monitor log queries - <https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/query-language> and examples
- <https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/examples>
- Network Watcher Service - <https://azure.microsoft.com/en-us/services/network-watcher/>
- Troubleshoot connections with Azure Network Watcher using the Azure portal - <https://docs.microsoft.com/en-us/azure/network-watcher/network-watcher-connectivity-portal>
- Azure speed test <https://www.azure-speed.com/Azure/Latency>

### Great links

Microsoft Shows <https://docs.microsoft.com/en-us/shows/>

Azure Fridays <https://docs.microsoft.com/en-us/shows/Azure-Friday/>

--> Azure Architecture Center with lots of example networks [https://docs.microsoft.com/en-us/azure/architecture/browse/?products=azure&azure\\_categories=networking&terms=firewall](https://docs.microsoft.com/en-us/azure/architecture/browse/?products=azure&azure_categories=networking&terms=firewall)

## Labs

- Learn on demand / Skillable (aka our lab provider) labs are available for 180 days at <https://esi.learnondemand.net/> and each lab can be started 10 times  
! you had to redeem the key during the course!
- Forever-link to lab instructions (if you want to run it in your own subscription, read the instructions, or watch the interactive lab simulations):  
<https://microsoftlearning.github.io/AZ-700-Designing-and-Implementing-Microsoft-Azure-Networking-Solutions/>

## FINAL

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Please take a moment and fill out the survey at

<https://www.metricsthatmatter.com/url/u.aspx?433C51195217348222> it is anonymous and optional though we would love to hear from ALL!

### Important Materials:

- Exam: <https://docs.microsoft.com/en-us/learn/certifications/exams/az-700> --> check the "Download certification skills outline" that is your study guide and checklist
- Your course materials (aka slides) [http://aka.ms/MOC\\_AZ-700T00](http://aka.ms/MOC_AZ-700T00) or the direct link at <https://learn.microsoft.com/en-us/training/paths/design-implement-microsoft-azure-networking-solutions-az-700/> - the materials do NOT expire and come sometimes with sandbox labs and knowledge checks. You can log in with your personal Microsoft account and earn experience points - you may want to connect the same personal account that you are also going to use to sign-up for the exam. Also note that you can switch the language (23 available) (bottom left of MS Learn)
- LODS at is available for 180 days at <https://esi.learnondemand.net/> and each lab can be started 10 times
- Forever-link to lab instructions (if you want to run it in your own subscription): <https://microsoftlearning.github.io/AZ-700-Designing-and-Implementing-Microsoft-Azure-Networking-Solutions/>

### Other Materials/Sites

- Microsoft Learn - a library of all Azure knowledge <https://docs.microsoft.com/en-us/learn/>
- Network Fundamentals videos <https://learn.microsoft.com/en-us/shows/Networking-Fundamentals/>
- Free eBooks <https://azure.microsoft.com/en-us/resources/whitepapers/>
- Channel 9 <https://channel9.msdn.com/Browse/AllShows>
- Blog and Updates <https://azure.microsoft.com/en-us/blog/>
- Use your company email at <https://esi.microsoft.com> to get to
  - Discounts for Exam takes --> use then your personal email then to register for the exam - here is a video how-to register for an exam <https://aka.ms/LxPEXamDiscountVideo>
  - Practice exams --> under scheduling an exam you find a box for "Practice test" if available – otherwise it may be listed under "Practice assessments" on the exam overview page
  - Exam prep session

### Exam preparation

- Free Learning Paths Azure basics, networking, security. <https://docs.microsoft.com/en-us/learn/browse/?term=fundamentals>
- Azure Architecture Center with lots of example networks [https://docs.microsoft.com/en-us/azure/architecture/browse/?products=azure&azure\\_categories=networking&terms=firewall](https://docs.microsoft.com/en-us/azure/architecture/browse/?products=azure&azure_categories=networking&terms=firewall)

- Microsoft exam overview/types of questions possible (with videos)  
<https://learn.microsoft.com/en-us/credentials/support/exam-duration-exam-experience>
- Exam Sandbox <https://aka.ms/examdemo>
- Video on what to expect on a proctored OnVUE exam:  
<https://home.pearsonvue.com/Test-takers/Resources.aspx#what-to-expect>
- List of comfort items: <https://home.pearsonvue.com/test-takers/accommodations/comfort-aids>
- Study guide from Jason (another MTT):  
<https://www.linkedin.com/feed/update/urn:li:activity:6904861863989911552/>
- LinkedIn Study Group: <https://www.linkedin.com/groups/8705522/>

#### Other links:

- Microsoft Technical Quest - an Azure Game <https://mtq.microsoft.com/>
- Share your skills on LinkedIn  
<https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RWlmsF>
- Microsoft Shows <https://docs.microsoft.com/en-us/shows/>
- Azure Fridays <https://docs.microsoft.com/en-us/shows/Azure-Friday/>
- --> Azure Architecture Center with lots of example networks  
[https://docs.microsoft.com/en-us/azure/architecture/browse/?products=azure&azure\\_categories=networking&terms=firewall](https://docs.microsoft.com/en-us/azure/architecture/browse/?products=azure&azure_categories=networking&terms=firewall)

#### Links from the slides:

- Microsoft Learn: [learn.microsoft.com](https://learn.microsoft.com)
- Microsoft Trainer Community Channel: [aka.ms/mtcc](https://aka.ms/mtcc)
- Microsoft Technical Documentation: [learn.microsoft.com/docs](https://learn.microsoft.com/docs)
- Discounted exams and practice tests: [esi.microsoft.com/getcertification](https://esi.microsoft.com/getcertification)
- [Free Azure analyst reports, e-books, and white papers](#)
- [This Week on Channel 9](#) (on Microsoft Learn Shows)
- [Microsoft Learn exam readiness](#)
- Hosted lab access for six months: <https://esi.learnondemand.net/>

#### LxP "how-to" Videos

- Preparing for exams using resources in the Learner Experience Portal  
<https://aka.ms/LxPEXamReadinessVideo>
- Enterprise Skills Initiative: The Learner Experience Portal overview  
<https://aka.ms/LxPOverviewVideo>
- Registering for Microsoft Virtual Training Days in the ESI Learner Experience Portal  
<https://aka.ms/LxPRegisterVTDVideo>
- Scheduling a Microsoft Certification exam in the ESI Learner Experience Portal  
<https://aka.ms/LxPScheduleExamVideo>
- Registering for a Microsoft-delivered course in the ESI Learner Experience Portal  
<https://aka.ms/LxPRegistrationClassVideo>

#### Celebrate your skills

<https://aka.ms/CelebrateYourMicrosoftSkills>

Learning room for support and additional learning after the end of class:

<HTTPS://aka.ms/mttlearningroom>

Stay in touch and let us know how the exam went!

[www.linkedin.com/in/anjathelen](http://www.linkedin.com/in/anjathelen) --> please add a note that you were in this class

anjathelen@microsoft.com

Please take a moment and fill out the anonymous survey – we posted the link and you got an email from ESI in it. We love to hear from ALL of you - even if you had to leave the class early!

How did you liked the class, what was great, and how the team can improve AZ-700!

BTW, if you like the ESI program and it's benefits, make sure to let your manager and organization know!