



Microsoft Azure services

About me



Security Architect



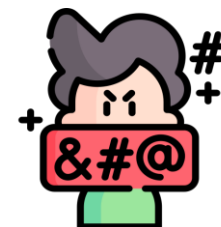
Consultant



Microsoft Certified Trainer



AI & Cybersecurity Practitioner



Developer



Freelancer



Azure @ ❤️



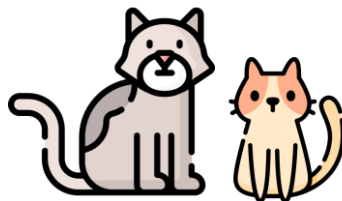
Google Cloud



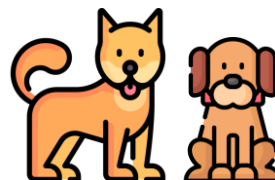
1 Husband



1 Daughter



2 Cats



2 Dogs



Crime stories



Photography



Agenda

- Azure resources
- Compute and networking
- Storage

Azure resources



Azure resources

Azure **resources** are components like storage, virtual machines, and networks that are available to build cloud solutions.



Virtual machines



Storage accounts



Virtual networks



App services



SQL databases

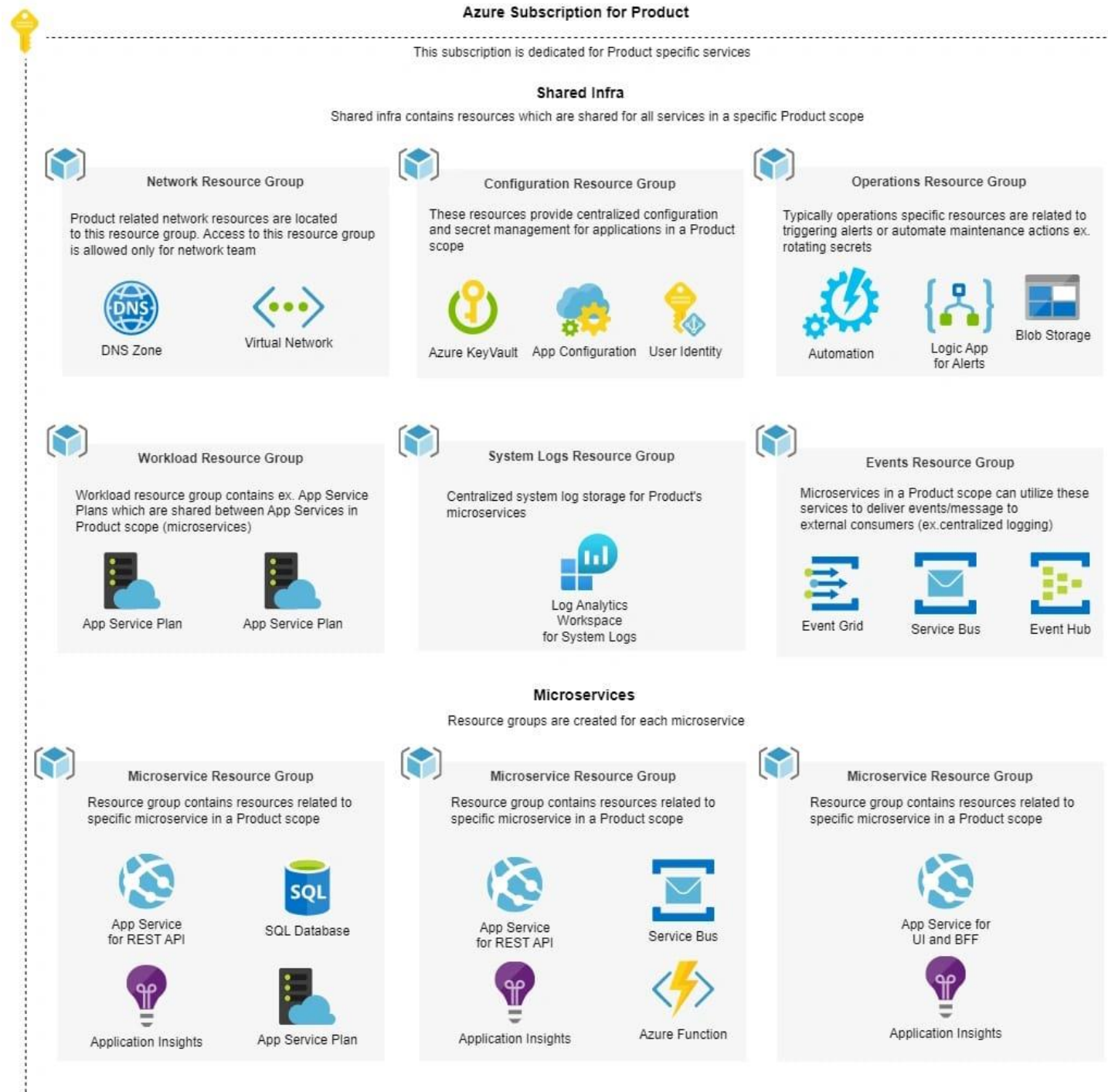


Functions

Resource groups

A **resource group** is a container you use to manage and aggregate resources in a single unit.

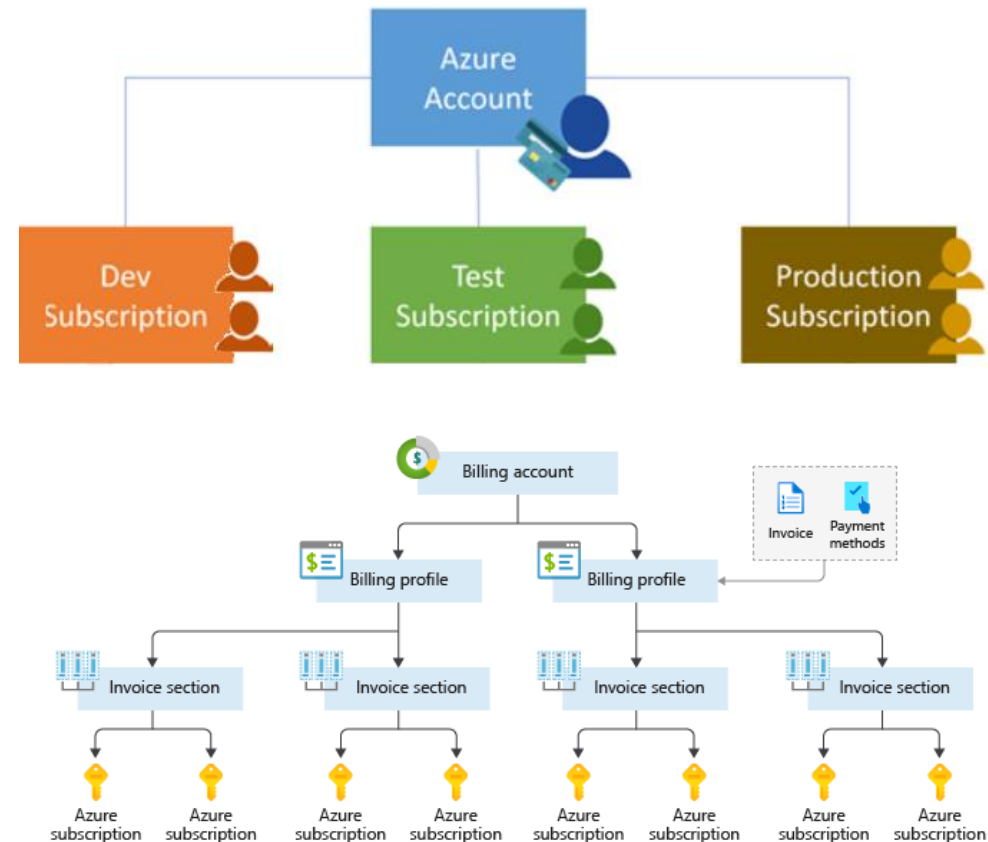
- Resources can exist in only one resource group.
- Resources can exist in different regions.
- Resources can be moved to different resource groups.
- Applications can utilize multiple resource groups.



Azure subscriptions

An Azure subscription provides you with authenticated and authorized access to Azure accounts.

- **Billing boundary:** Generate separate billing reports and invoices for each subscription.
- **Access control boundary:** Manage and control access to the resources that users can provision with specific subscriptions.



Management groups

- Management groups can include multiple Azure subscriptions.
- Subscriptions inherit conditions applied to the management group.
- 10,000 management groups can be supported in a single directory.
- A management group tree can support up to six levels of depth.

The screenshot displays the Microsoft Azure Security Center console. The left-hand navigation pane includes sections for General (Overview, Getting started, Recommendations, Security alerts, Inventory, Workbooks, Community), Cloud Security (Secure Score, Regulatory compliance, Azure Defender, Firewall Manager), and Management (Pricing & settings, Security policy, Security solutions, Workflow automation, Coverage, Cloud connectors). The 'Security policy' option is selected. The main content area is titled 'Security Center | Security policy' and shows '12 MANAGEMENT GROUPS' and '4 SUBSCRIPTIONS'. A search bar is present. Below, a table lists management groups with their names and default policies.

Name	Default policy
mg-tenantroot (4 of 4 subscriptions)	Not assigned
mg-myhcjourney (4 of 4 subscriptions)	Not assigned
mg-myh-decommissioned (0 of 0 subscriptions)	Not assigned
mg-myh-landingzones (1 of 1 subscriptions)	Not assigned
mg-myh-corp (0 of 0 subscriptions)	Not assigned
mg-myh-online (1 of 1 subscriptions)	Not assigned
sub-myh-prd-02	Not assigned
mg-myh-sap (0 of 0 subscriptions)	Not assigned
mg-myh-platform (1 of 1 subscriptions)	Not assigned
mg-myh-connectivity (0 of 0 subscriptions)	Not assigned
mg-myh-identity (0 of 0 subscriptions)	Not assigned
mg-myh-management (1 of 1 subscriptions)	Not assigned
sub-myh-mgmt-01	Assigned
mg-myh-sandboxes (2 of 2 subscriptions)	Not assigned
sub-myh-dev-01	Not assigned
sub-myh-tst-01	Not assigned

Compute and networking



Azure compute services

Azure **compute** is an on-demand service that provides computing resources such as disks, processors, memory, networking, and operating systems.



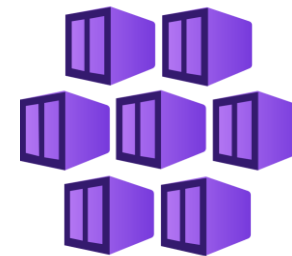
Virtual
Machines



App
Services



Container
Instances



Azure Kubernetes
Services (AKS)



Azure Virtual
Desktop

Azure virtual machines

Azure **virtual machines (VMs)** are software emulations of physical computers.

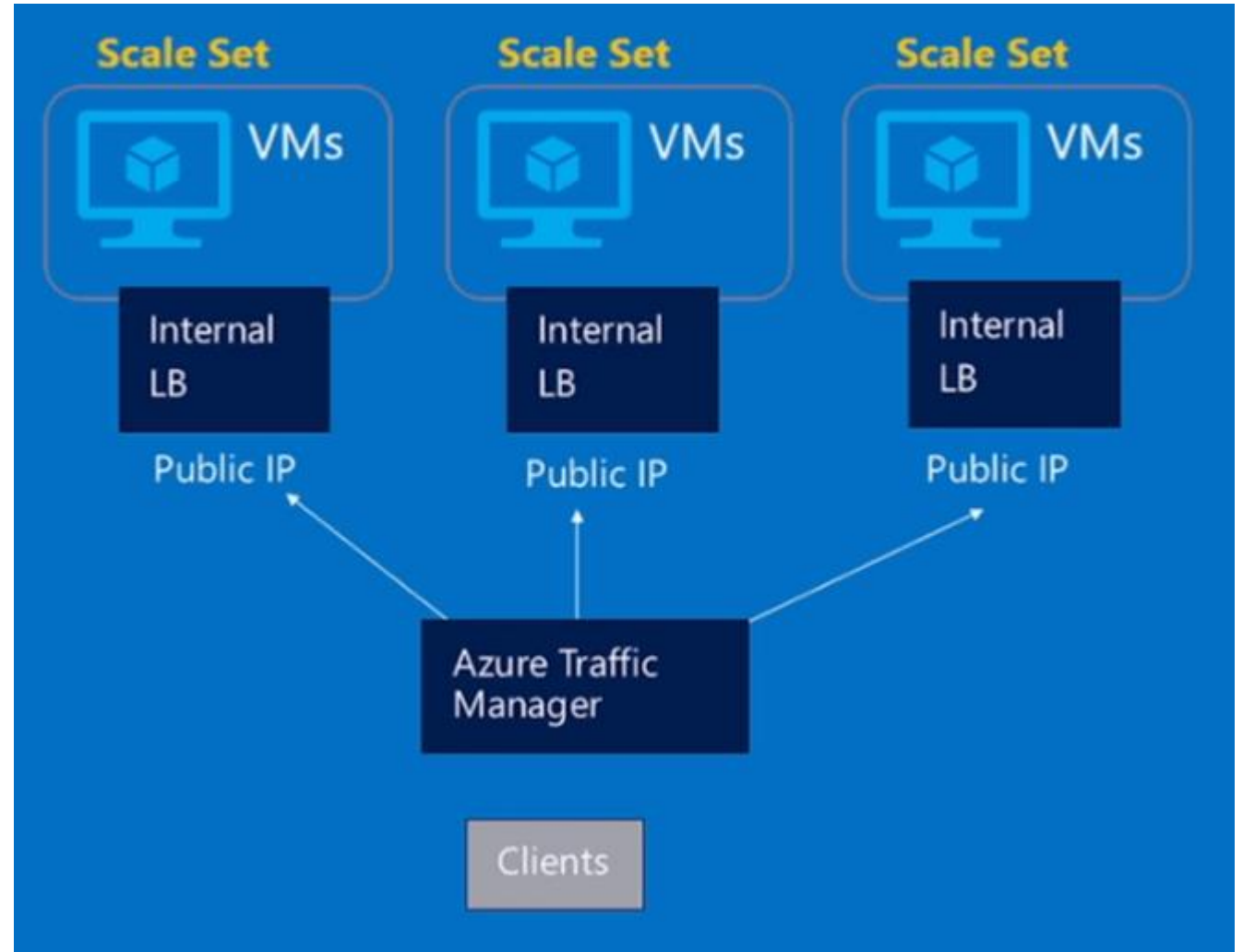
- Includes virtual processor, memory, storage, and networking.
- IaaS offering that provides total control and customization.



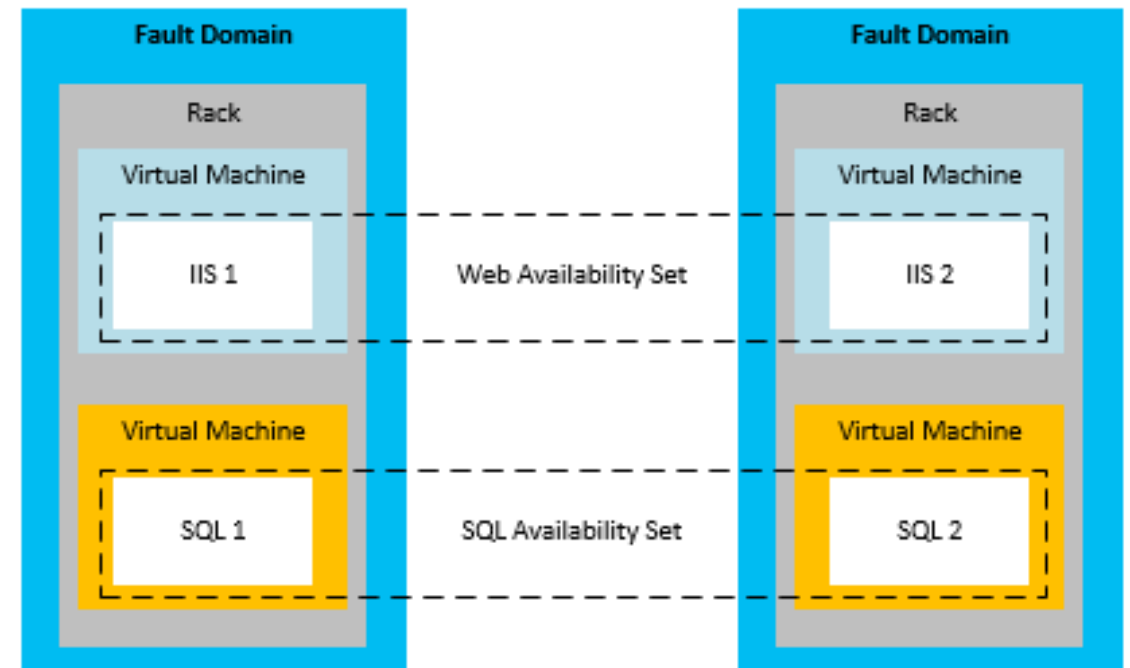
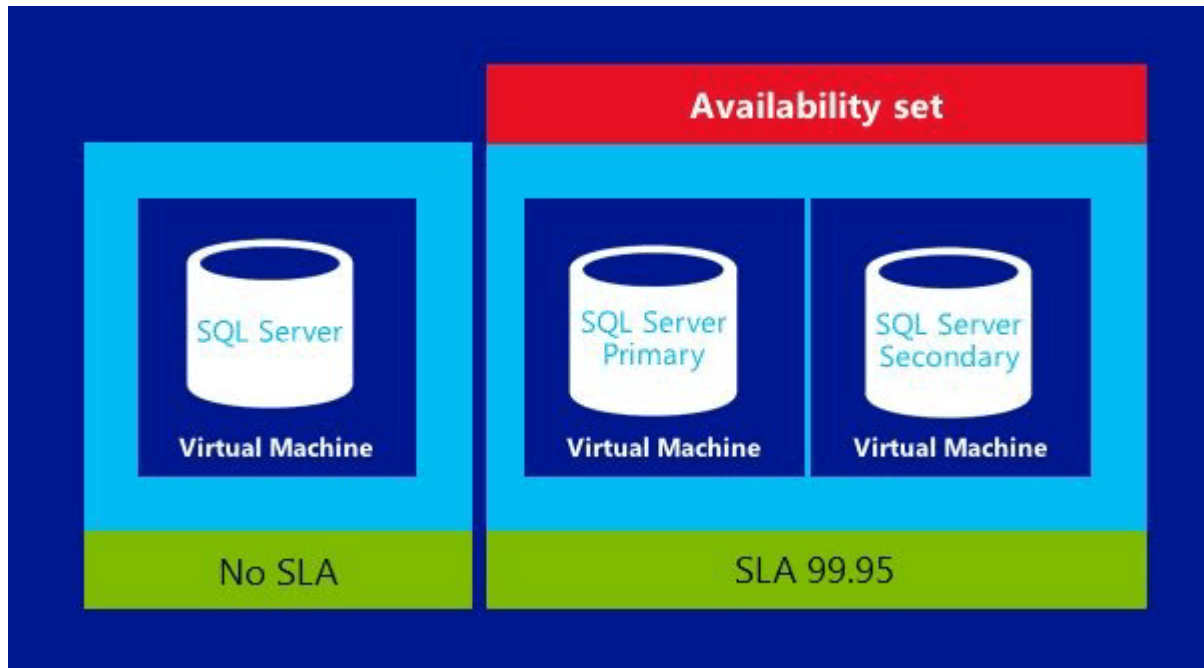
VM scale sets

Scale sets provide a load-balanced opportunity to automatically scale resources.

- Scale out when resource needs increase.
- Scale in when resource needs are lower.



VM availability sets



Azure Virtual Desktop

Azure Virtual Desktop is a desktop and app virtualization that runs in the cloud.

- Create a full desktop virtualization environment without having to run additional gateway servers.
- Reduce risk of resource being left behind.
- True multisession deployments.



Azure container services

Azure **containers** provide a lightweight, virtualized environment that does not require operating system management, and can respond to changes on demand.



Azure Container Instances: A PaaS offering that runs a container or pod of containers in Azure.



Azure Container Apps: A PaaS offering, like container instances, that can load balance and scale.



Azure Kubernetes Service: An orchestration service for containers with distributed architectures and large volumes of containers.

Azure Functions



Azure Functions: A PaaS offering that supports serverless compute operations. Event-based code runs when called without requiring server infrastructure during inactive periods.



Comparing Azure compute options

Virtual machines

- Cloud-based server that supports either Windows or Linux environments.
- Useful for lift-and-shift migrations to the cloud.
- Complete operating system package, including the host operating system.

Virtual Desktop

- Provides a cloud-based personal computer Windows desktop experience.
- Dedicated applications to connect and use, or accessible from any modern browser.
- Multiclient login allows multiple users to log into the same machine at the same time.

Containers

- Lightweight, miniature environment well suited for running microservices.
- Designed for scalability and resiliency through orchestration.
- Applications and services are packaged in a container that sits on top of the host operating system. Multiple containers can sit on one host OS.

Azure App Services

Azure **App Services** is a fully managed platform to build, deploy, and scale web apps and APIs quickly.

- Works with .NET, .NET Core, Node.js, Java, Python, or PHP.
- PaaS offering with enterprise-grade performance, security, and compliance requirements.

Azure App Service



Web Apps



Mobile Apps



API Apps



Logic Apps

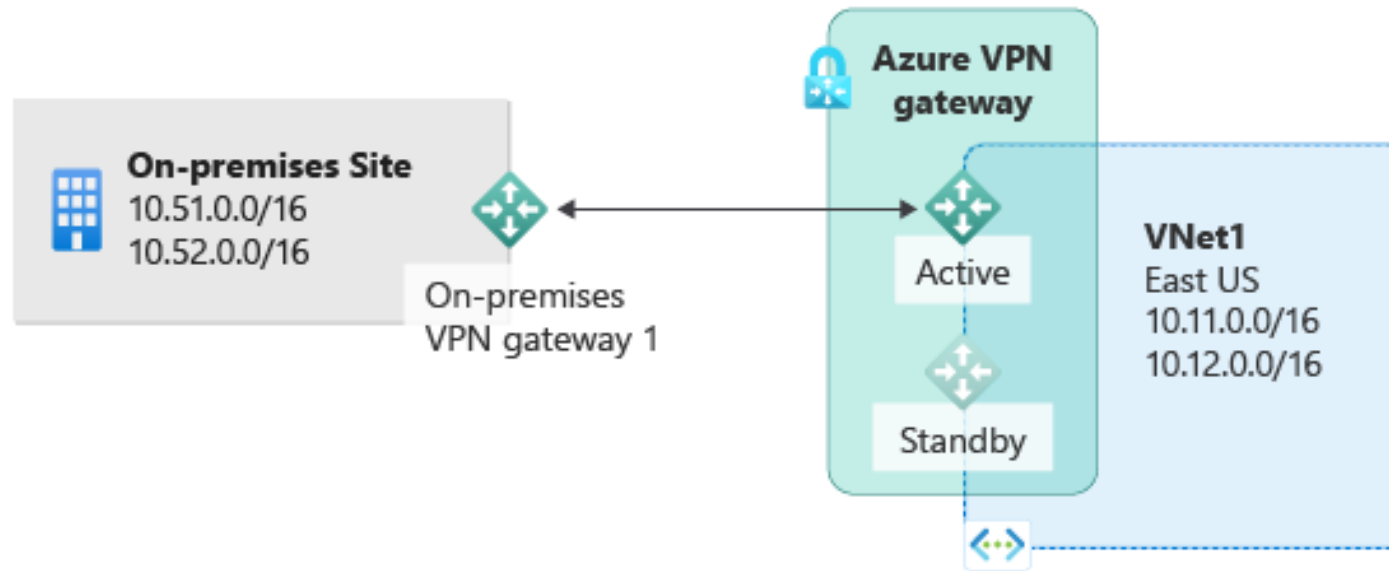
Azure networking services



Azure Virtual Network (VNet) enables Azure resources to communicate with each other, the internet, and on-premises networks.

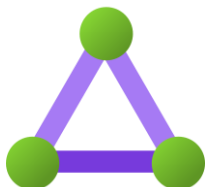
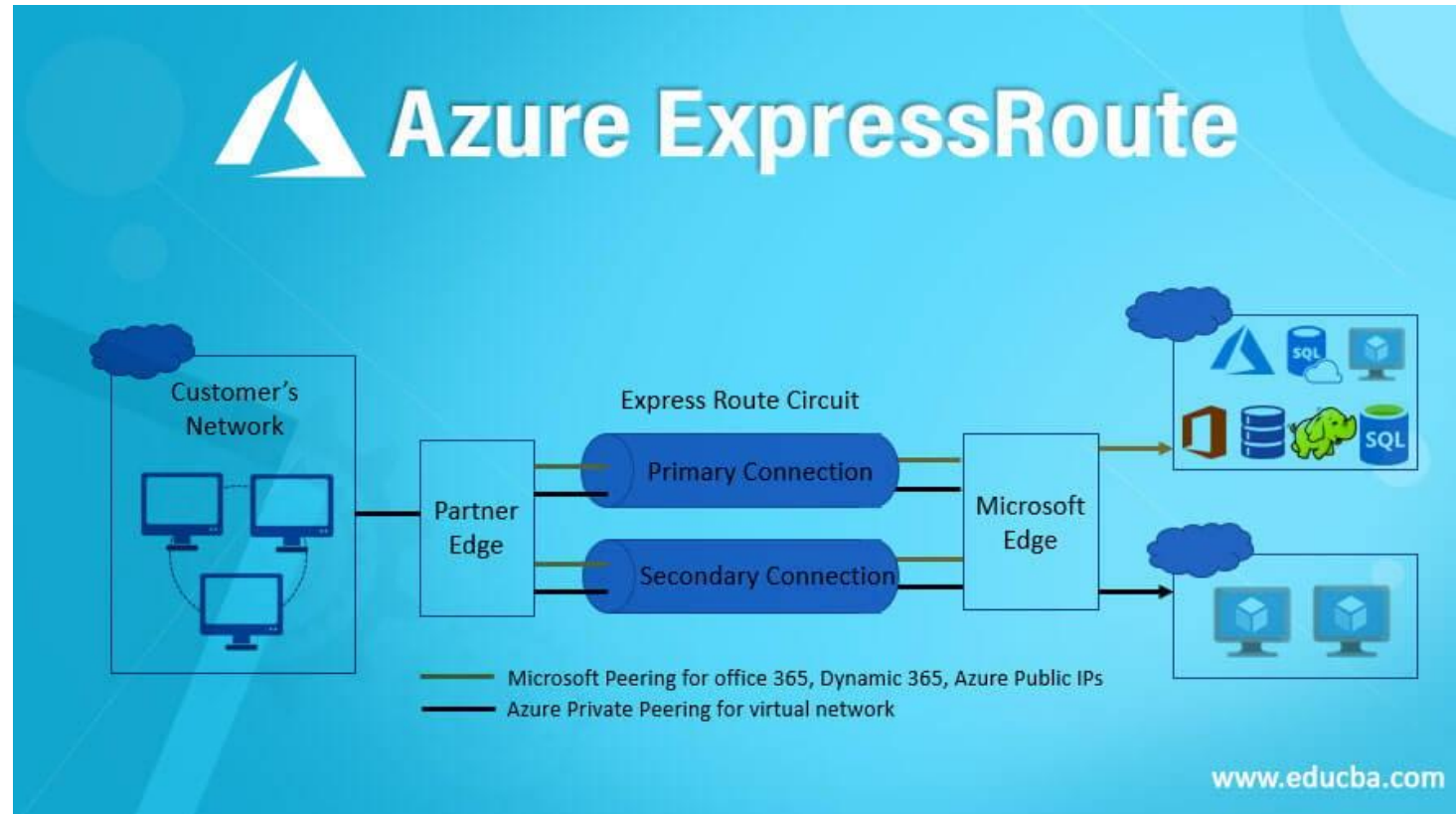
- Public endpoints, accessible from anywhere on the internet.
- Private endpoints, accessible only from within your network.
- Virtual subnets segment your network to suit your needs.
- Network peering connects your private networks directly together.

Azure networking services: VPN Gateway



VPN Gateway is used to send encrypted traffic between an Azure virtual network and an on-premises location over the public internet.

Azure networking services: ExpressRoute



ExpressRoute extends on-premises networks into Azure over a private connection that is facilitated by a connectivity provider.



Azure DNS

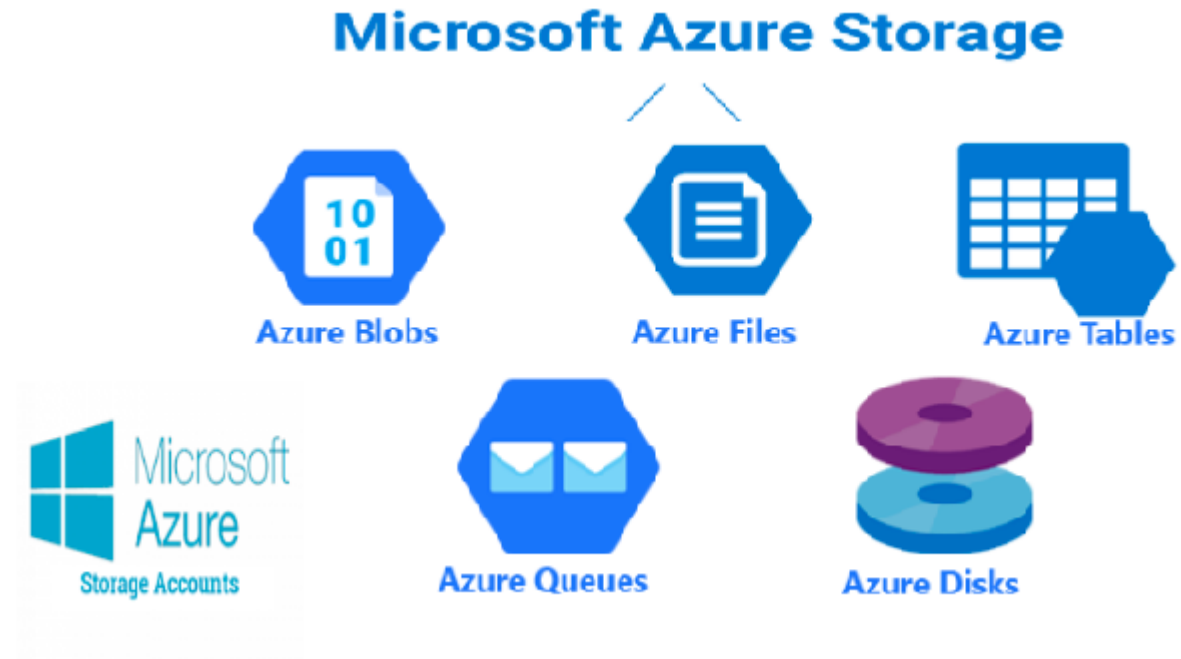
- Reliability and performance by leveraging a global network of DNS name servers using Anycast networking.
- Azure DNS security is based on Azure resource manager, enabling role-based access control and monitoring and logging.
- Ease of use for managing your Azure and external resources with a single DNS service.
- Customizable virtual networks allow you to use private, fully customized domain names in your private virtual networks.
- Alias records support alias record sets to point directly to an Azure resource.

Storage



Storage accounts

- Must have a globally unique name.
- Provide over-the-internet access worldwide.
- Determine storage services and redundancy options.



Storage redundancy

Redundancy configuration	Deployment	Durability
Locally redundant storage (LRS)	Single datacenter in the primary region	11 nines
Zone-redundant storage (ZRS)	Three availability zones in the primary region	12 nines
Geo-redundant storage (GRS)	Single datacenter in the primary and secondary region	16 nines
Geo-zone-redundant-storage (GZRS)	Three availability zones in the primary region and a single datacenter in the secondary region	16 nines

Azure storage services



Azure Blob: Optimized for storing massive amounts of unstructured data, such as text or binary data.



Azure Disk: Provides disks for virtual machines, applications, and other services to access and use.



Azure Queue: Message storage service that provides storage and retrieval for large amounts of messages, each up to 64 KB.



Azure Files: Sets up a highly available network file share that can be accessed by using the Server Message Block protocol.



Azure Tables: Provides a key/attribute option for structured nonrelational data storage with a schema-less design.

Storage service public endpoints

Storage service	Public endpoint
Blob Storage	<code>https://<storage-account-name>.blob.core.windows.net</code>
Data Lake Storage Gen2	<code>https://<storage-account-name>.dfs.core.windows.net</code>
Azure Files	<code>https://<storage-account-name>.file.core.windows.net</code>
Queue Storage	<code>https://<storage-account-name>.queue.core.windows.net</code>
Table Storage	<code>https://<storage-account-name>.table.core.windows.net</code>

Azure storage access tiers

Hot	Cool	Cold	Archive
Optimized for storing data that is accessed frequently.	Optimized for storing data that is infrequently accessed and stored for at least 30 days.	Optimized for storing data that is infrequently accessed and stored for at least 90 days.	Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements.

Azure Migrate

- Unified migration platform.
- Range of integrated and standalone tools.
- Assessment and migration.



Azure Data Box

- Store up to 80 terabytes of data.
- Move your disaster recovery backups to Azure.
- Protect your data in a rugged case during transit.
- Migrate data out of Azure for compliance or regulatory needs.
- Migrate data to Azure from remote locations with limited or no connectivity.





File management options

AzCopy

- Command-line utility.
- Copy blobs or files to or from your storage account.
- One-direction synchronization.

Azure Storage Explorer

- Graphical user interface (similar to Windows Explorer).
- Compatible with Windows, MacOS, and Linux.
- Uses AzCopy to handle file operations.

Azure File Sync

- Synchronizes Azure and on-premises files in a bidirectional manner.
- Cloud tiering keeps frequently accessed files local, while freeing up space.
- Rapid reprovisioning of failed local server (install and resync).

Stale poszukuję nowych możliwości i ekscytujących wyzwań. Jeśli chcesz się ze mną skontaktować, proszę, skorzystaj z poniższych kanałów:



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GitHub - slajdy: <https://github.com/beatazalewa/Conferences/>

GitHub – linki:

<https://github.com/beatazalewa/Sierpniowe-kolonie-na-chmurze-Azure-2025/>

