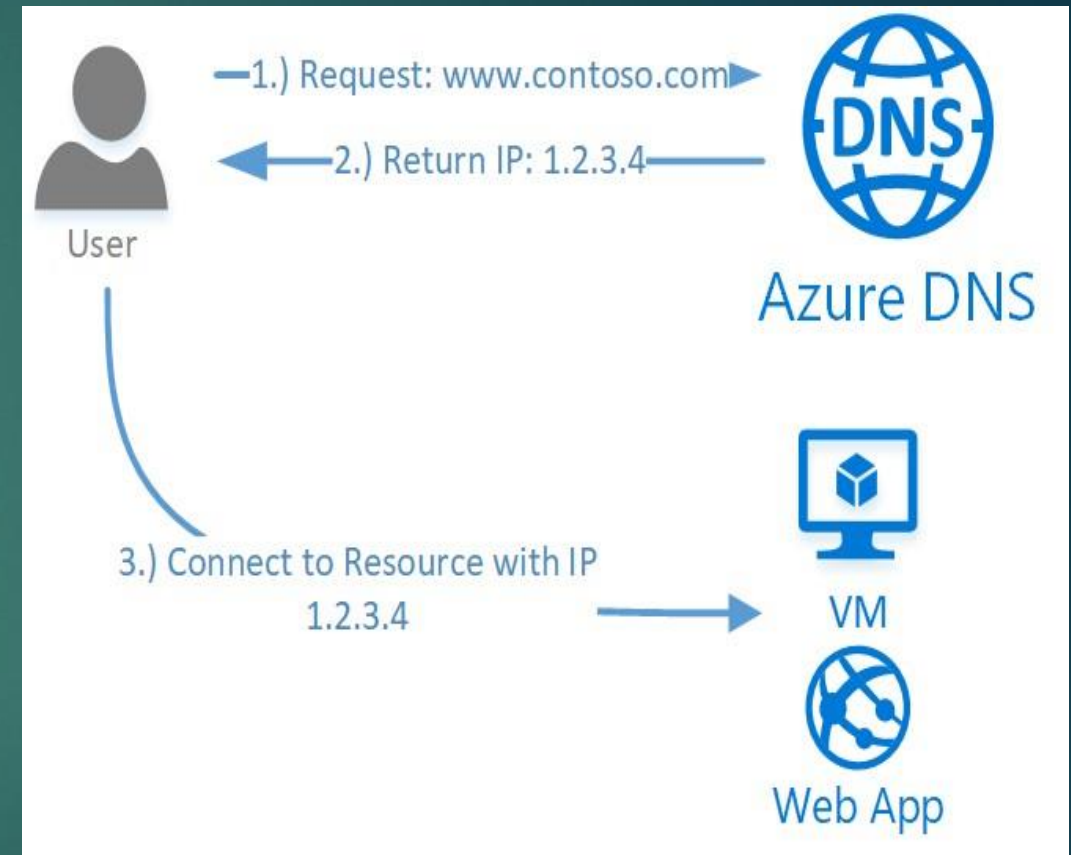# Azure DNS

Agenda

- What is Azure DNS
- Azure DNS features
- Domain
- DNS zones
- DNS records
- DNS records types
- Registrar
- Private domains
- Private domains benefits
- Pricing
- Hands-On Lab

What is Azure DNS

❑ The Domain Name System, or DNS, is responsible for translating (or resolving) a website or service name to its IP address.

❑ Azure DNS is a hosting service for DNS domains, providing name resolution using Microsoft Azure infrastructure.

❑ By hosting your domains in Azure, you can manage your DNS.

❑ Azure DNS also supports private DNS domains.

Azure DNS: Features

❑ **Reliability and Performance**
- o DNS domains in Azure DNS are hosted on Azure's global network of DNS name servers.
- o Azure DNS uses anycast networking so that each DNS query is answered by the closest available DNS server.
- o This provides both fast performance and high availability for your domain.

❑ **Seamless Integration**
- o The Azure DNS service can be used to manage DNS records for your Azure services and can be used to provide DNS for your external resources as well.

❑ **Security**
- o The Azure DNS service is based on Azure Resource Manager.
- o Your domains and records can be managed via the Azure portal, Azure PowerShell cmdlets, and the cross- platform Azure CLI.

Azure DNS: Domain

❑ The Domain Name System is a hierarchy of domains.

❑ The hierarchy starts from the 'root' domain, whose name is simply '.'.
  o Top-level domains, such as 'com', 'net', 'org', 'uk' or 'jp'.
  o Then are second-level domains, such as 'org.uk' or 'co.jp'.

❑ The domains in the DNS hierarchy are globally distributed, hosted by DNS name servers around the world.

❑ A domain name registrar is an organization that allows you to purchase a domain name, such as 'contoso.com'.

❑ Azure DNS provides a globally distributed, high-availability name server infrastructure, which you can use to host your domain.

❑ By hosting your domains in Azure DNS, you can manage your DNS record.

❑ Azure DNS does not currently support purchasing of domain names. If you want to purchase domains, you need to use a third-party domain name registrar.

Azure DNS: DNS Zones

❏ A DNS zone is used to host the DNS records for a particular domain.

❏ To start hosting your domain in Azure DNS, you need to create a DNS zone for that domain name.

❏ Each DNS record for your domain is then created inside this DNS zone.

❏ Example
  ❏ The domain 'contoso.com' may contain several DNS records, such as 'mail.contoso.com' (for a mail server) and 'www.contoso.com' (for a web site).

❏ When creating a DNS zone in Azure DNS:
  o The name of the zone must be unique within the resource group, and the zone must not exist already.
  o The same zone name can be reused in a different resource group or a different Azure subscription.
  o Where multiple zones share the same name, each instance is assigned different name server addresses.
  o Only one set of addresses can be configured with the domain name registrar.

Azure DNS: DNS Records

❑ **Record Names**
- o In Azure DNS, records are specified by using relative names. A *fully qualified* domain name (FQDN) includes the zone name, whereas a *relative* name does not.
- o For example, the relative record name 'www' in the zone 'contoso.com' gives the fully qualified record name 'www.contoso.com'

❑ **Record Types**
- o Each DNS record has a name and a type.
- o Records are organized into various types according to the data they contain.
- o The most common type is an 'A' record, which maps a name to an IPv4 address.
- o Another common type is an 'MX' record, which maps a name to a mail server.
- o Azure DNS supports all common DNS record types: A, AAAA, CAA, CNAME, MX, NS, PTR, SOA, SRV, and TXT

Azure DNS: DNS Records Types

| Record type	Full name	Function
A (IPv4) AAAA (IPv6)	Address	Maps a host name such as www.adatum.com to an IP address, such as 131.107.10.10
CNAME	Canonical Name	Assigns a custom name, such as ftp.adatum.com, to a host record, such as host1.adatum.com
MX	Mail Exchange	Points to the host that accepts email for the domain. MX records must point to an A record, and not to a CNAME record
NS	Name Server	Contains the name of a server hosting a copy of the DNS zone
SOA	Start of Authority	Provides information about the writable copy of the DNS zone, including its location and version number.
SRV	Service	Points to hosts that are providing specific services, such as the Session Initiation Protocol (SIP) or Active Directory Domain Services (AD DS)
TXT	Text	Contains custom text.

Azure DNS: Registrar

❑ A domain registrar is a company who can provide Internet domain names.

❑ They verify if the Internet domain you want to use is available and allow you to purchase it.

❑ Once the domain name is registered, you are the legal owner for the domain name.

❑ If you already have an Internet domain, you will use the current domain registrar to delegate to Azure DNS.

Azure DNS: Private Domains

❑ Azure DNS is a hosting service for DNS domains.

❑ In addition to internet-facing DNS domains, Azure DNS now also supports private DNS domains.

❑ Azure DNS resolve domain names in a virtual network without the need to add a custom DNS solution.

❑ Private DNS zones allow you to use your own custom domain names rather than the Azure-provided names.

❑ It provides name resolution for VMs within a virtual network and between virtual networks.

❑ Additionally, you can configure zones names with a split-horizon view - allowing a private and a public DNS zone to share the same name.
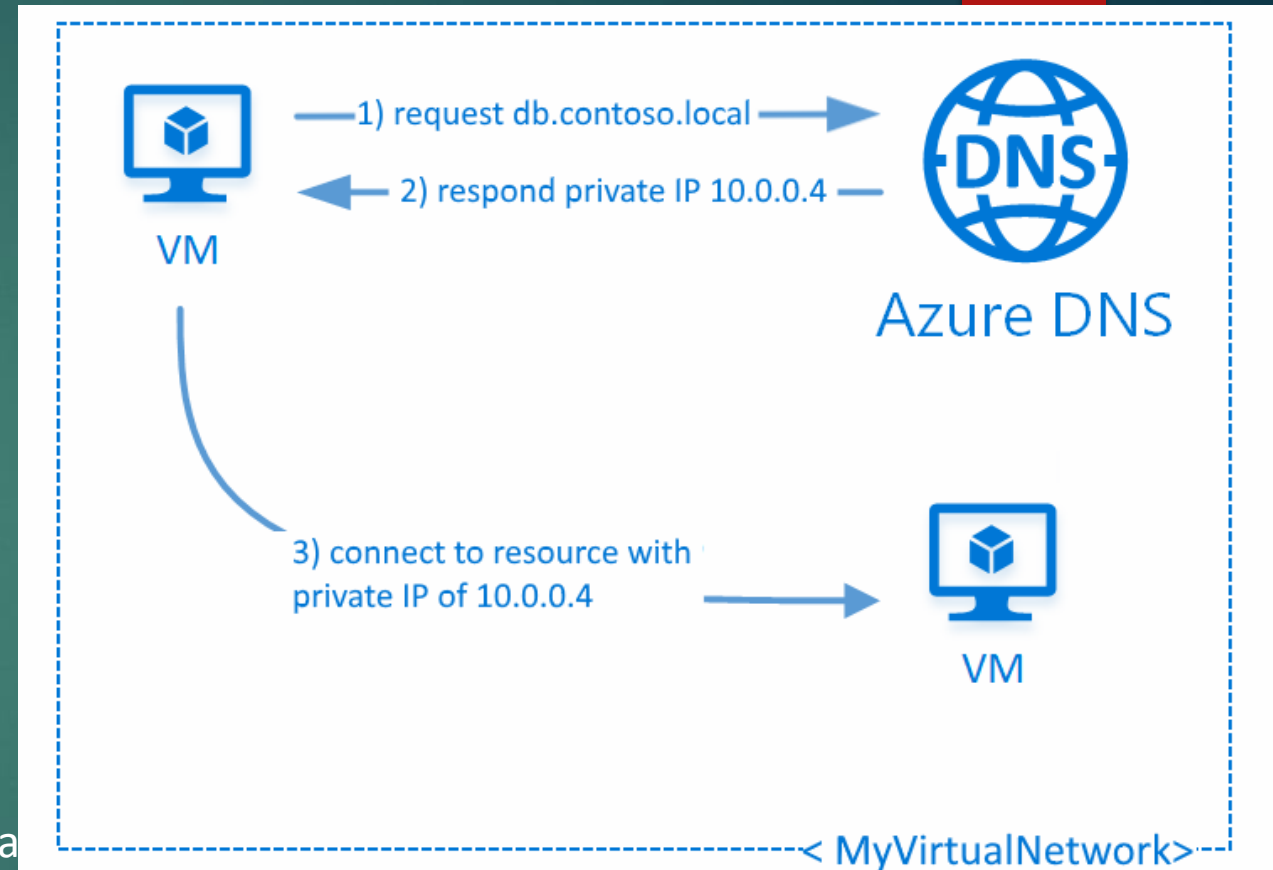
Azure DNS: Private Domains Benefits

❑ **Removes the need for custom DNS solutions**
- o DNS zone management can now be done using Azure's native infrastructure, which removes the burden of creating & managing custom DNS solutions.

❑ **Automatic hostname record management**
- o Along with hosting your custom DNS records, Azure automatically maintains hostname records for the VMs in the specified virtual networks.

❑ **Hostname resolution between virtual networks**
- o Unlike Azure-provided host names, private DNS zones can be shared between virtual networks. This capability simplifies cross-network and service discovery scenarios such as virtual network peering.

❑ **Split-horizon DNS support**
- o Azure DNS allows you to create zones with the same name that resolve to different answers from within a virtual network and from the public Internet.

❑ **Familiar tools and user experience**

❑ **Use all common DNS records types**

Azure DNS: Pricing

❏ Azure DNS billing is based on the number of DNS zones hosted in Azure and the number of DNS queries received.

DNS	PUBLIC ZONES	PRIVATE ZONES
First 25 hosted DNS zones	$0.50 per zone per month	No Charge
Additional hosted DNS zones (over 25)	$0.10 per zone per month	No Charge
First billion DNS queries/month	$0.40 per million	No Charge
Additional DNS queries (over 1 billion)/month	$0.20 per million	No Charge

Thank You