DNS

**DNS :**

DNS, or the Domain Name System, is a protocol within the TCP/IP standard. DNS serves an essential role of translating the human-readable domain names, for example, [www.wideworldimports.com](http://www.wideworldimports.com), into a known IP address.

Maintains the key-value pair database of IP addresses and any host or subdomain that the DNS server has authority over. This function is often associated with mail, web, and other internet domain services.

**Domain lookup requests:**

Checks to see if the domain name is stored in the short-term cache. If so, the DNS server resolves the domain request.

If the domain isn't in the cache, it contacts one or more DNS servers on the web to see if they have a match. When a match is found, the DNS server updates the local cache and resolves the request.

If the domain isn't found after a reasonable number of DNS checks, the DNS server responds with a domain cannot be found (404) error.

**DNS Record Type:**

The following record types are the most commonly created and used:

1. A record is the host record, and is the most common type of DNS record. It maps the domain or host name to the IP address.
2. CNAME is the canonical name, or the alias for an A record. If you had different domain names that all accessed the same website, you would use CNAME.
3. MX is the mail exchange record. It maps mail requests to your mail server, whether hosted on-premises or in the cloud.
4. TXT is the text record. It's used to associate text strings with a domain name. Azure and Microsoft 365 use TXT records to verify domain ownership.

Additionally, there are the following record types:

* Wildcards
* CAA (certificate authority)
* NS (name server)
* SOA (start of authority)
* SPF (sender policy framework)
* SRV (server locations)

**Record Set**

Some record types support the concept of record sets, or resource record sets. A record set allows for multiple resources to be defined in a single record. For example, here is an A record that has one domain with two IP addresses:

[www.wideworldimports.com](http://www.wideworldimports.com). 3600 IN A 127.0.0.1

[www.wideworldimports.com](http://www.wideworldimports.com). 3600 IN A 127.0.0.2

SOA and CNAME records can't contain record sets.

**Alias record sets**

Alias records sets can point to an Azure resource. For example, you can set up an alias record to direct traffic to an Azure public IP address, an Azure Traffic Manager profile, or an Azure Content Delivery Network endpoint.

The alias record set is supported in the following DNS record types:

A

AAAA

CNAME

**What is an apex domain?**

The apex domain is the highest level of your domain. Note that the apex domain is also sometimes referred to as the zone apex or root apex. It's often represented by the @ symbol in your DNS zone records.