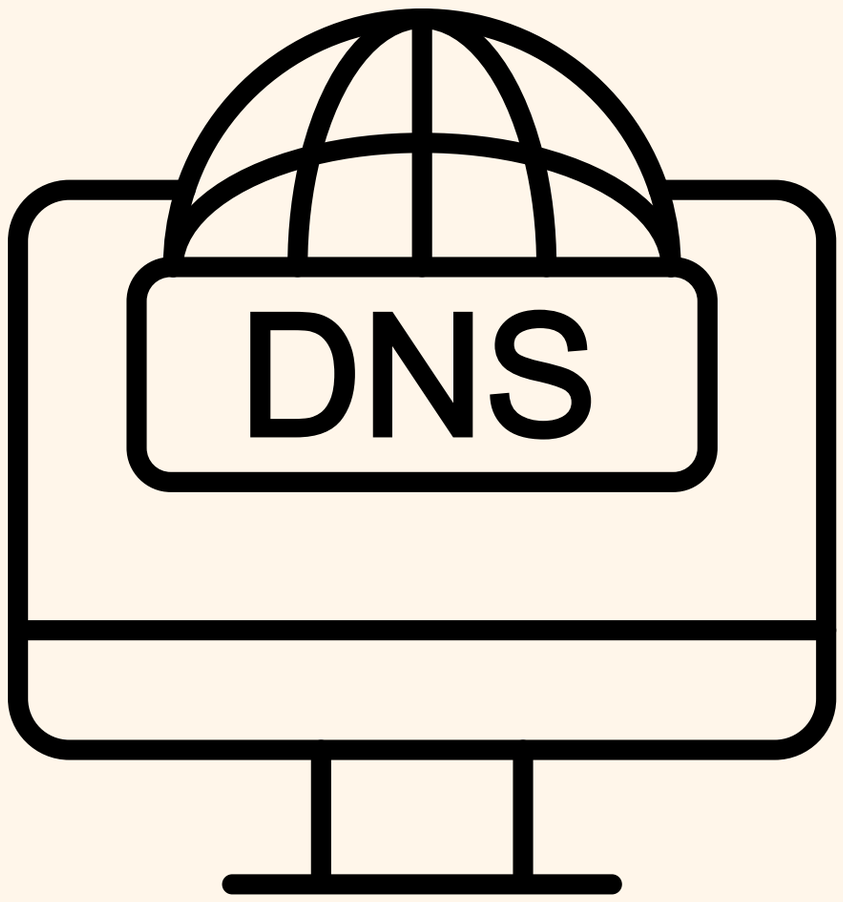
WHAT IS DNS ?

& HOW IT WORKS?



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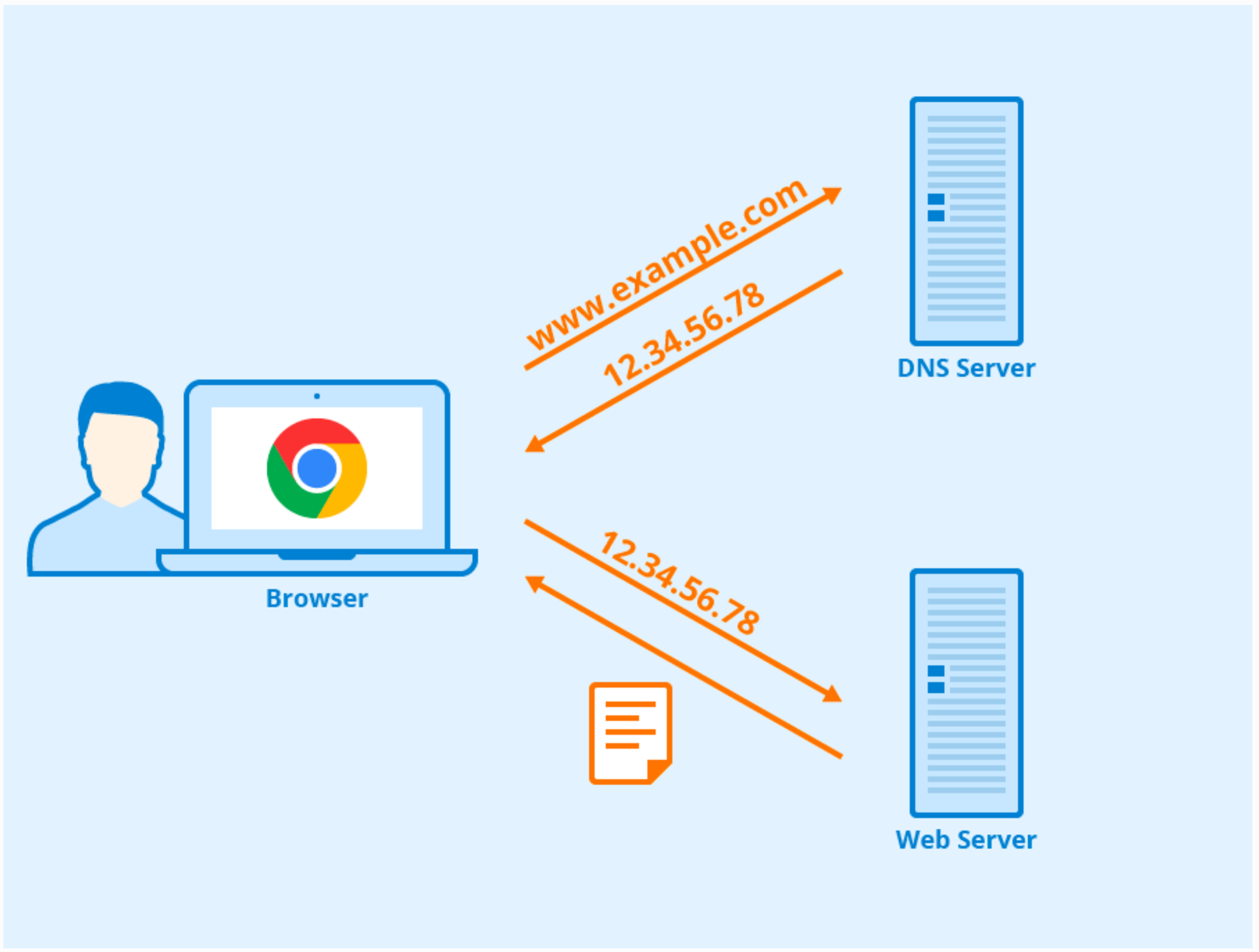
Domain Name System

The domain name system (DNS) is a directory of translations between human-readable domain names (like google.com or amazon.com) and IP Addresses at its most fundamental level.



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IP Address

Each device connected to a computer network that utilizes the internet protocol (IP) is given a numerical label known as an IP address. Location addressing and network interface identification are the two primary purposes of an IP address.

IPv4 and IPv6 are the two types of IP addresses that are currently accessible and in use.

Because there were so few IPv4 addresses left after the mid-2000s, IPv6 became increasingly popular.

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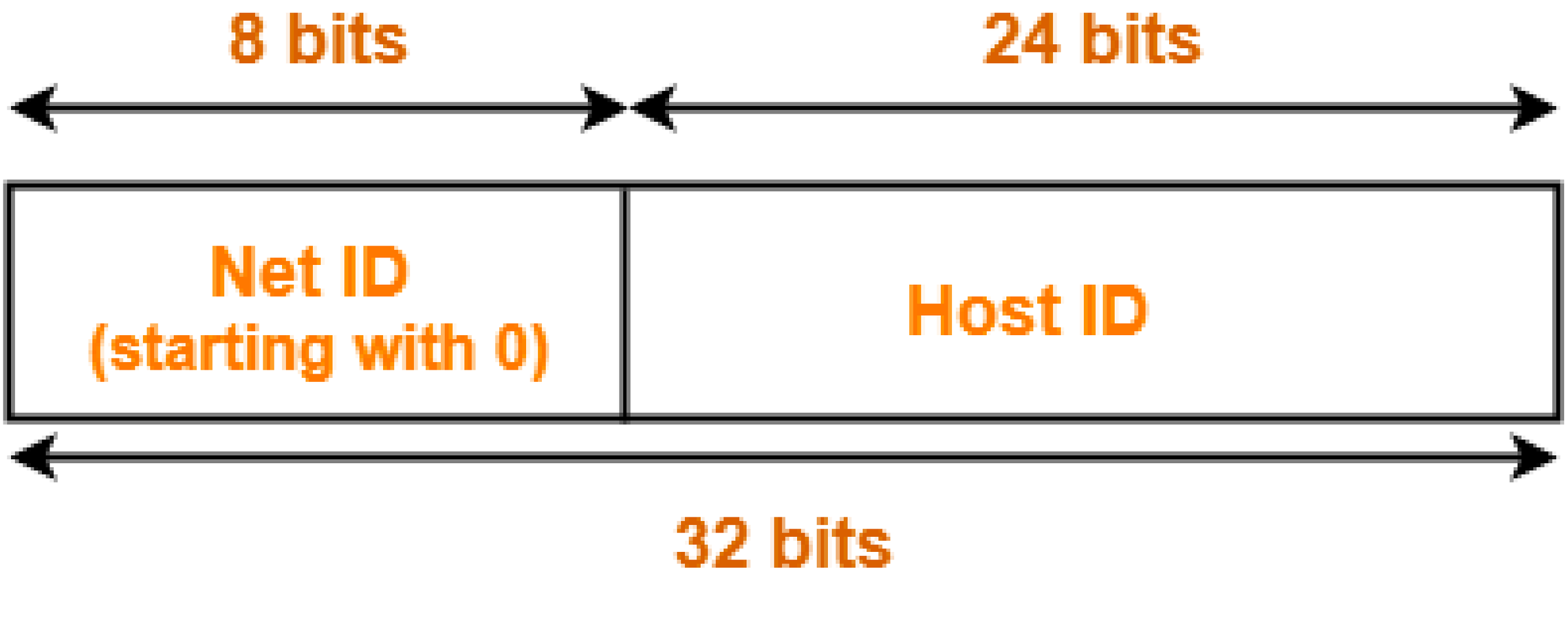
IP Classes

Class	1st octet of IP address	Default Subnet Mask	Network / Host	Number of networks	Maximum nodes in a network
A	1 - 126	255.0.0.0	N.H.H.H	126	16,777,214
B	128 - 191	255.255.0.0	N.N.H.H	16,384	65,534
C	192 - 223	255.255.255.0	N.N.N.H	2,097,152	254
D	224 - 239				
E	240 - 254				



Class A IP Address

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The root name server

Information that makes up the root zone, or the world's list of top-level domains, is stored on the root name server. In the root zone are found:

- top-level domains with generic extensions like com, org, net etc.

- country-specific top-level domains, like in for the India

- Top-level domains that have been translated to use local character sets from each country are known as internationalised top-level domains.

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Top-level domain NS

In the root zone of the DNS for the internet, a top-level domain (TLD) is the highest level of the domain name.

Most top-level domains are managed by the Internet Corporation for Assigned Names and Numbers (ICANN).

Authoritative NS

The final step in the name-server query is to find the authoritative name server. The IP address for the requested hostname will be returned to the DNS precursor if the authoritative name server has access to the requested record.

The actual DNS entries (A, CNAME, etc.) for a certain domain are stored on this server.

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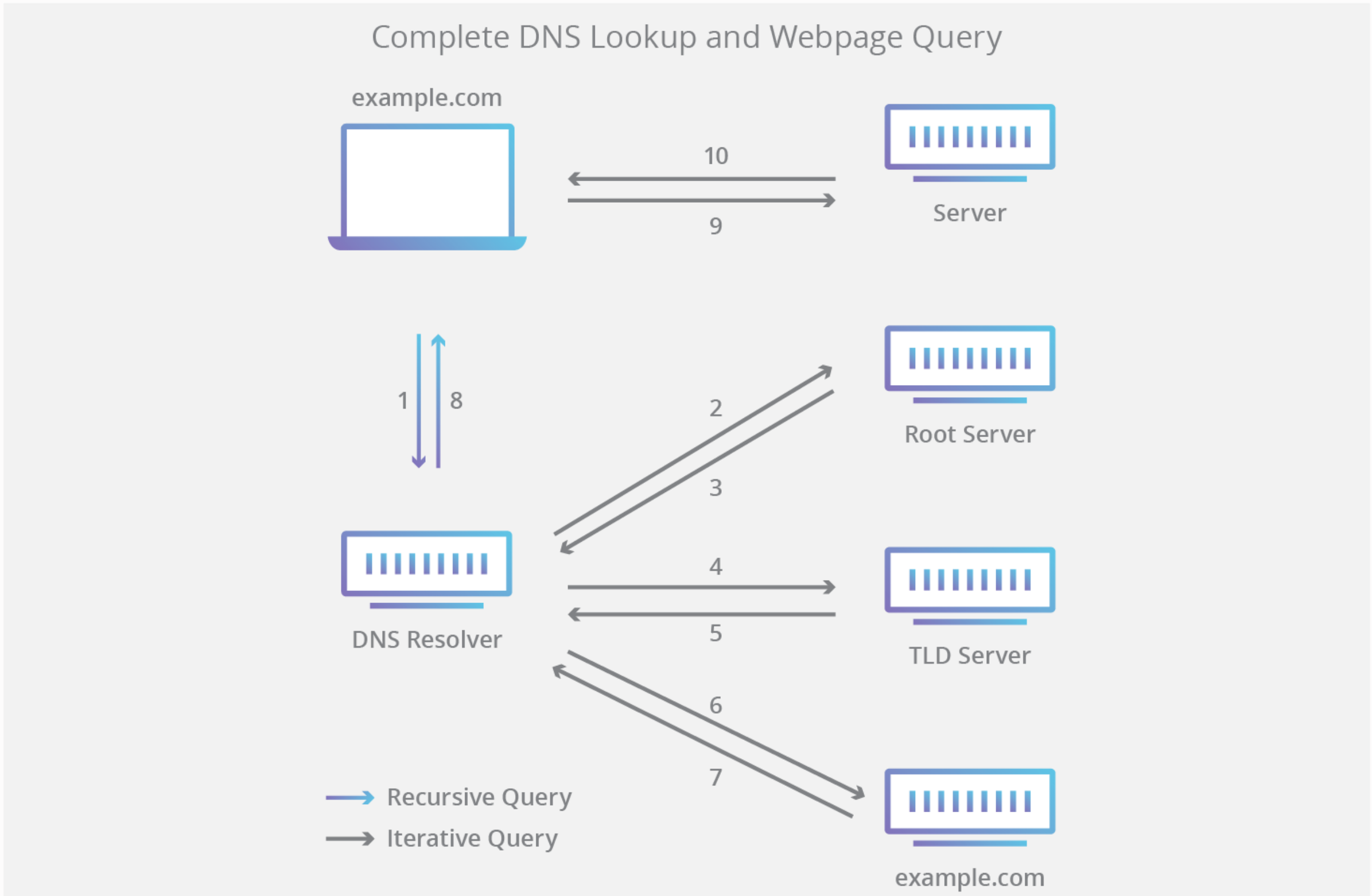
DNS Lookup & Query



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DNS Query Types

Typically, three different sorts of queries are utilised in DNS lookups.

In a perfect world, a DNS name server would be able to respond to a nonrecursive query thanks to cached record data.

DNS recursive query

The DNS client expects a DNS server to reply to a recursive query with either the resource record or, in the event that the resolver is unsuccessful, an error message.


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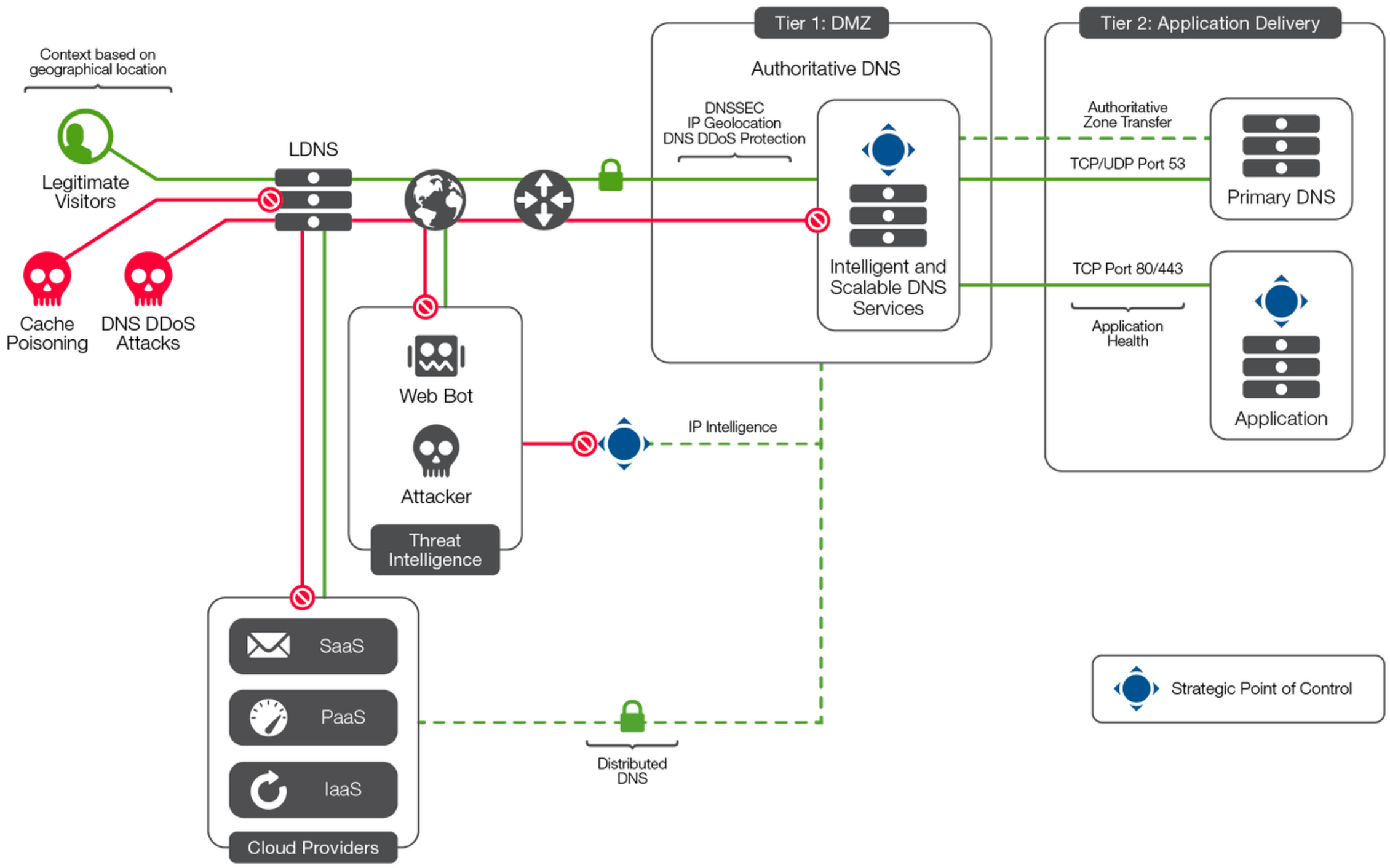
DNS Scale Architecture



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