DNS

DNS

Domain Name System is a Protocol which translate from Domain Name to IP.

Where is DNS?

DNS Cache

Browser

Router

ISP

Next ISP…etc

Where is DNS Record in Browser?

Google DNS?

How the Domain Name System (DNS) Works

How DNS Work

https://www.verisign.com/en_IN/website-presence/online/how-dns-works/index.xhtml#:~:text=DNS%20syncs%20up%20domain%20names,internet%20can%20use%20IP%20addresses.&text=In%20fact%2C%20Verisign%20processes%20more,the%20internet%20fast%20and%20reliable.

https://www.iana.org/

https://root-servers.org/

https://www.iana.org/domains/root/servers

https://www.netnod.se/dns/dns-root-server-faq

The 8 steps in a DNS lookup

1. A user types ‘example.com’ into a web browser and the query travels into the Internet and is received by a DNS recursive resolver.
2. The resolver then queries a DNS root nameserver (.).
3. The root server then responds to the resolver with the address of a Top Level Domain (TLD) DNS server (such as .com or .net), which stores the information for its domains. When searching for example.com, our request is pointed toward the .com TLD.
4. The resolver then makes a request to the .com TLD.
5. The TLD server then responds with the IP address of the domain’s nameserver, example.com.
6. Lastly, the recursive resolver sends a query to the domain’s nameserver.
7. The IP address for example.com is then returned to the resolver from the nameserver.
8. The DNS resolver then responds to the web browser with the IP address of the

Once the 8 steps of the DNS lookup have returned the IP address for example.com, the browser is able to make the request for the web page:

1. The browser makes a HTTP request to the IP address.
2. The server at that IP returns the webpage to be rendered in the browser.

What are the root servers?

Does the root zone contain all the DNS data?

Does all Internet traffic go through the root servers?

Who are the root server operators?

Is it true that there are only 13 root servers?

A is the most important root server, isn't it?

There are 4 DNS servers involved in loading a webpage:

DNS recursor

Root Server

TLD Server

Authoritative Server

DNS Recursor

The DNS recursor is a server designed to receive queries from client machines through applications such as web browsers.

Root Server

The root servers are the entry points to the Domain Name System (DNS), It contains the root zone, which contains information about what Top Level Domains (TLDs) exist, and the addresses of the each TLD.

TLD Server

It hosts the second level domains of a hostname (example.com, within the TLD ".com").

Authoritative Server

It will return the IP address for the requested hostname back to the DNS Recursor

DNS Poisoning

When unauthorized domain names or IP add are inserted into it.

DNS Cache may become corrupted