Understanding DNS – Part 1

In this lesson, we will understand what is DNS Domain Name System & how does it work

We'll cover the following

Every machine that is online & is a part of world wide web www has a unique *IP address* that enables it to be contacted by other machines on the web using that particular *IP address*.

IP stands for *Internet Protocol*. It's a protocol that facilitates delivery of data packets from one machine to the other using their *IP addresses*.

2001:db8:0:1234:0:567:8:1 - this is an example of an *IP address* of a machine. The server that hosts our website will have a similar *IP address*. And to fetch content from that server a user has to type in the unique *IP address* of the server in their browser url tab & hit enter to be able to interact with the content of the website.

Now, naturally, it's not viable to type in the *IP address* of the website, from our memory, every time we visit a certain website. Even if we try to how many *IP addresses* do you think you can remember?

Typing in domain names for instance *amazon.com* is a lot easier than working directly with *IP addresses*. I think we can all agree on this;

Domain Name System

Domain name system commonly known as *DNS* is a system that averts the need to remember long *IP addresses* to visit a website by mapping easy to remember domain names to *IP addresses*.

amazon.com is a domain name that is mapped to its unique *IP address* by the *DNS* so that we are not expected to type in the *IP address* of *amazon.com* into our browsers every time we visit that website.

If you are intrigued and want to read more on *IP addresses*, you can visit this Wikipedia resource on it.

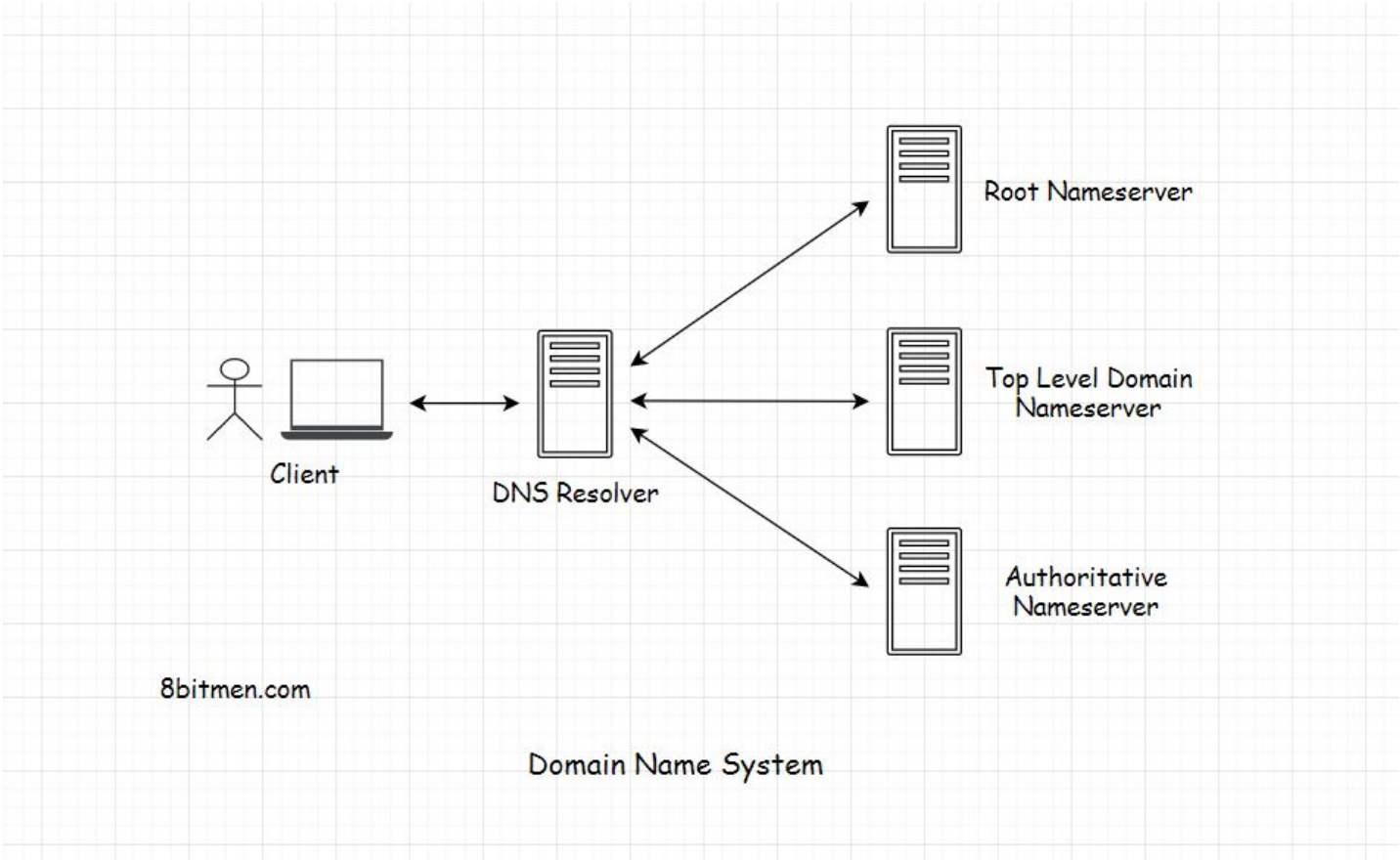
Okay!! Now let's understand how does *DNS* work?

How Does Domain Name System Work?

When a user types in the url of the website in their browser and hits enter. This event is known as *DNS querying*.

There are four key components, i.e. a group of servers, that make up the DNS infrastructure. Those are -

- *DNS Recursive Nameserver aka DNS Resolver*
- *Root Nameserver*
- *Top-Level Domain Nameserver*
- *Authoritative Nameserver*



In the next lesson let's understand how does the *DNS query lookup process* work and what is the role of these servers in the lookup process.