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Understanding DNS – Part 1

In this lesson, you will learn what the domain name system (DNS) is and how it works.

We'll cover the following   ⌃

- Domain name system
- How does a domain name system work?

Every machine that is online and is a part of the 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 the delivery of data packets from one machine to another using their *IP addresses*.

2001:db8:0:1234:0:567:8:1 This is an example of a machine's *IP address*. The server that hosts our website will have a similar *IP address*. To fetch content from that server, a user has to type in the unique *IP address* of the server in their browser's URL tab and hit enter to interact with the website's content.

Naturally, it is not viable to type in the website's IP address from 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 (http://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 (http://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 (http://amazon.com)* into our browsers every time we visit that website.

If you are intrigued and want to read more about *IP addresses*, you can visit this Wikipedia resource on it (https://en.wikipedia.org/wiki/IP_address).

Okay!! Now let's explore how *DNS* works?

How does a 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, or a group of servers, that make up the DNS infrastructure. These are:

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

Domain Name System
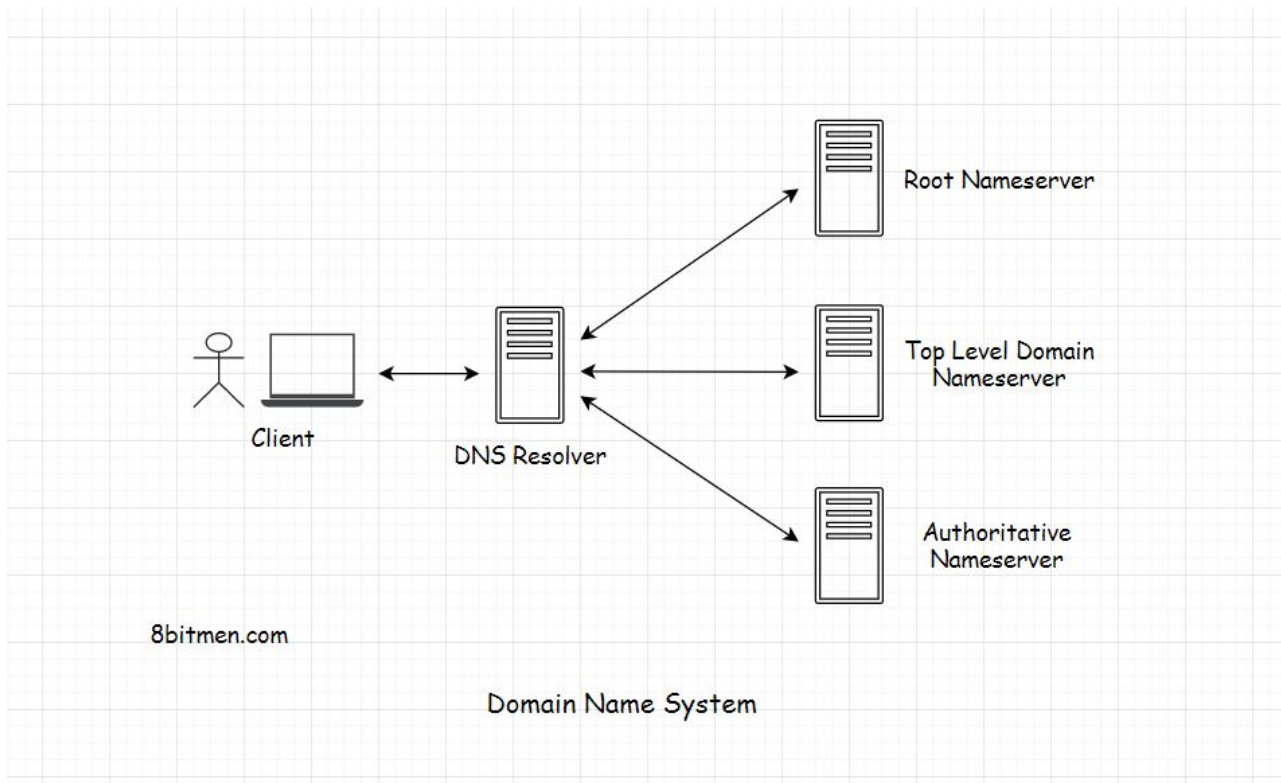
In the next lesson, you will learn how the *DNS query lookup process* works and the role of these servers in the lookup process.

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Introduction to Load Balancing

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Understanding DNS – Part 2

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