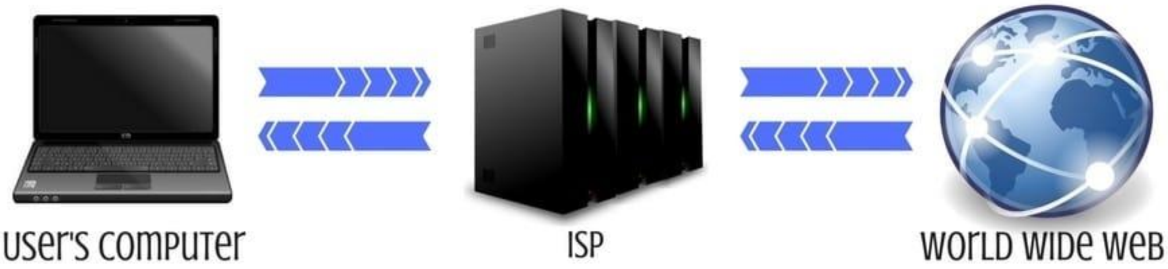
WWW Lifecycle

Let’s take a look at how a webpage is rendered; meaning, how all of these factors create a visual image that you see as a webpage. For this purposes, let’s use the google.com as example:

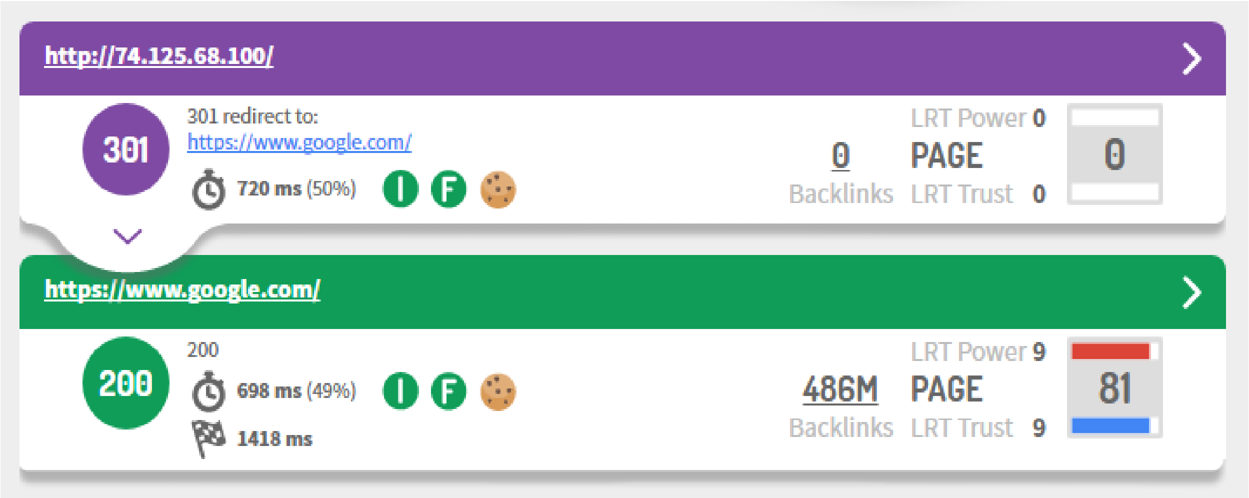
Step 1 – The computer connects with the ISP server

Right after you type the address into your website’s browser (ex. “google.com”), your PC is setting up the connection with an ISP. This is your Internet Service Provider, and every single one of them has its own dedicated server. For you, it’s kind of a gate to the whole world wide web. Every single step is made through your ISP.



Step 2 – The ISP connects with the DNS

The thing that needs to be done is to change the domain name (google.com) into an IP address – in this case, 74.125.68.100. We can compare it to a phone number, but more computer oriented. Your browser needs to know which server responds with the data you expected. That is why your browser asked for the DNS (Domain Name System) for changing the written domain name (in this case “google.com”) into the given punctuated numbers.



http://74.125.68.100/

301

301 redirect to:
https://www.google.com/

720 ms (50%)

0 Backlinks

LRT Power 0
PAGE
LRT Trust 0

0

https://www.google.com/

200

200

698 ms (49%)

1418 ms

486M Backlinks

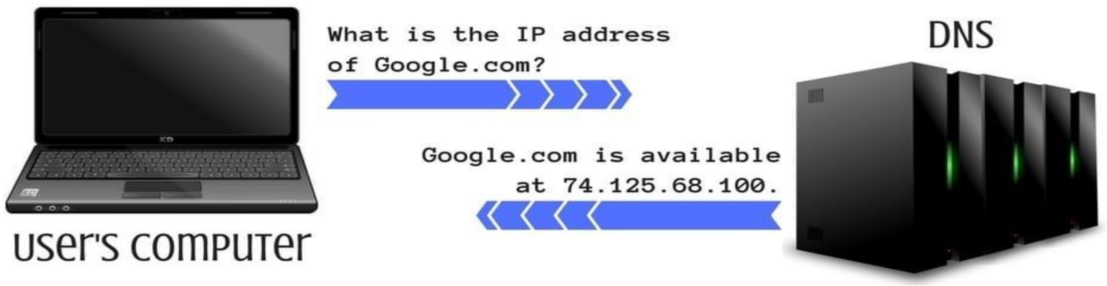
LRT Power 9
PAGE
LRT Trust 9

81

All Internet users know a lot of domain names like Google, Forbes, Yahoo and hundreds more. It's incomparably easier to remember domain names than IP addresses. That is why DNS servers are so important for us.

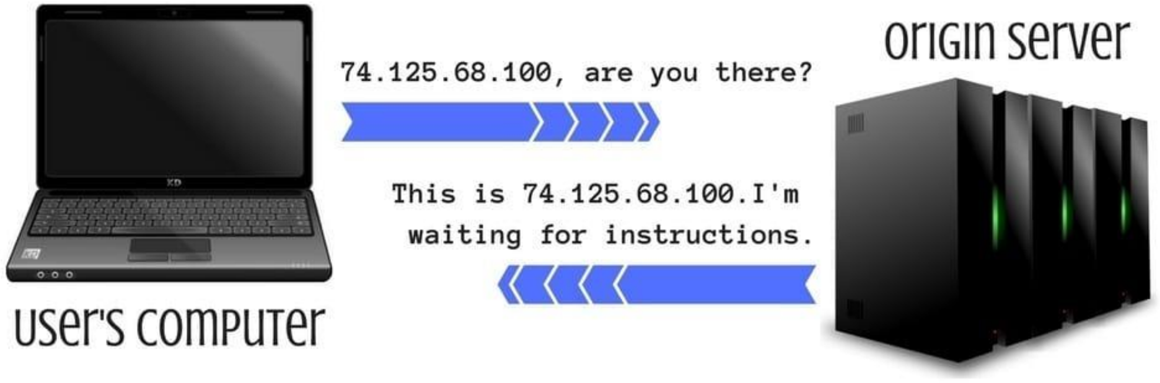
Step 3 – The DNS responds

The next step is the DNS response, indirectly via your Internet provider's server. Finally, your browser receives information from the DNS about the already changed domain name into the IP. For now, your browser knows your intention – writing "google.com" in the address bar means a connection to 74.125.68.100.


What is the IP address of Google.com?
DNS
Google.com is available at 74.125.68.100.
user's computer

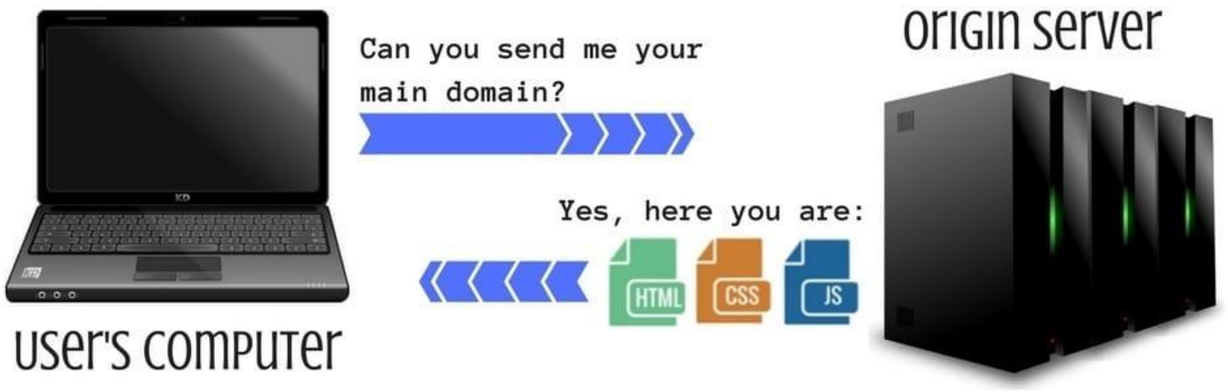
Step 4 – The user’s browser connects with the destination server

After receiving information from the DNS with the IP address, your browser connects with an origin server and asks for specific data.


origin server
74.125.68.100, are you there?
This is 74.125.68.100.I'm waiting for instructions.
user's computer

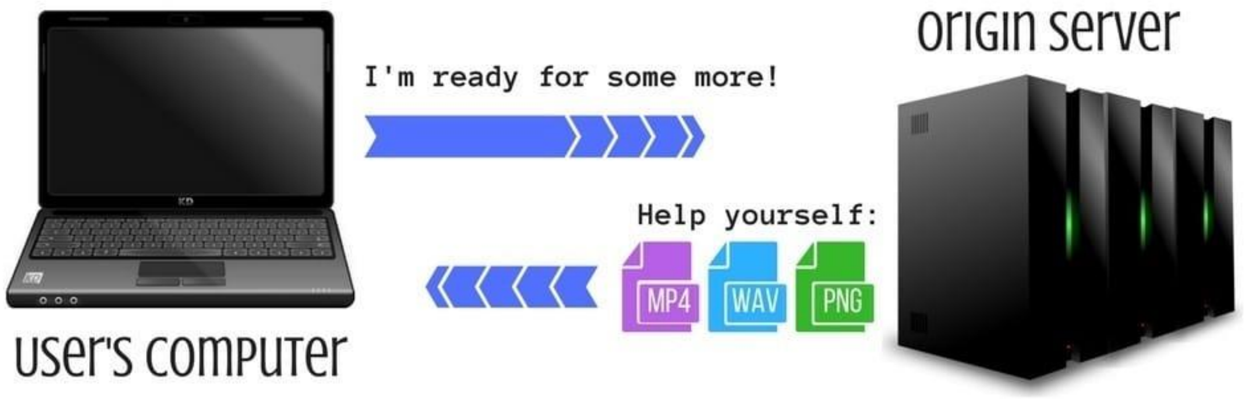
Step 5 – The server responds with the needed data

At the very beginning, the server sends a general structure of a website (HTML file), after that it sends additional data like pictures, videos, Java Scripts, CSS files and much more. In this step you should remember that the smaller size of data sent and received, the shorter the overall loading time is.



Step 6 – Additional communication between the user and server

At the last step, after finally rendering an up-to-date version of the requested web page, you will probably request additional data for e.g. other pages or files. Then the browser connects and requests more data directly, without a connection with the DNS and constantly updating cache files.



Most importantly, the proper configuration of the cache helps to improve the user experience since it is saved at several levels – the user’s browser, Internet Service Provider and end-host server.