

Web Technologies Lab - Session 1

19-01-2021

Questions

1. Introduction and History of the world wide web.
2. What are web servers, mention a few popular web servers.
3. What are Web Browsers?
4. What is the URL?

World Wide Web

Sir Tim Berners-Lee an Oxford Graduate and a software engineer at CERN invented the world wide web by laying its foundation the year 1990 via 3 building blocks:

1. HTML - Hyper Text Markup Language
2. URI - Uniform Resource Identifier
3. HTTP - Hyper Text Transfer Protocol

The early web community had laid foundation to some of the widely used concepts in present day such as: Decentralization, Non-Discrimination, Bottom-Up design, Universality, Consensus.

In the present day and age, www (a.k.a w3 or the web) lays the foundation for information transfer which can be called as an information system. Where, documents and other web resources are identified by Uniform Resource Locators which may be interlinked by hypertext, and are accessible over the Internet following HTTP.

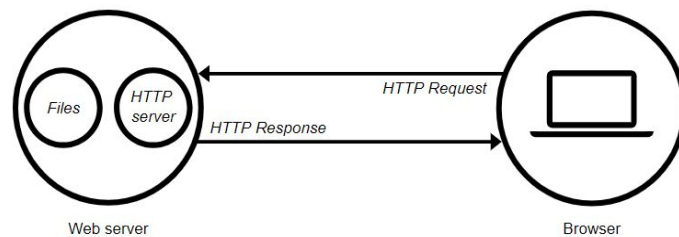
The terms Internet and World Wide Web are often used without much distinction. However, the two terms do not mean the same thing. The Internet is a global system of interconnected computer networks. In contrast, the World Wide Web is a global collection of documents and other resources, linked by hyperlinks and URIs.

Web Servers

The term web server can refer to hardware or software, or both of them working together.

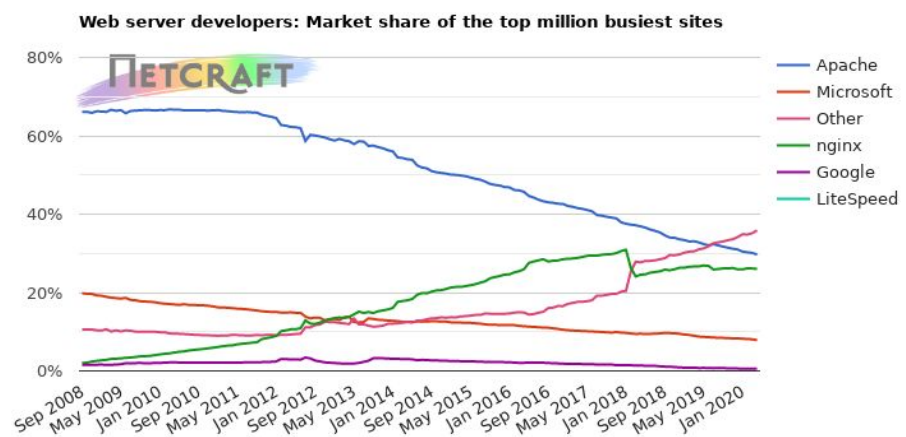
1. On the hardware side, a web server is a computer that stores web server software and a website's component files. A web server connects to the Internet and supports physical data interchange with other devices connected to the web.
2. On the software side, a web server includes several parts that control how web users access hosted files. At a minimum, this is an HTTP server. An HTTP server is software that understands URLs and HTTP. An HTTP server can be accessed through the domain names of the websites it stores, and it delivers the content of these hosted websites to the end user's device.

In generic sense combining these two aspects, we call a web server as a server software, or a system of one or more computers dedicated to running this software, that can satisfy client HTTP requests on the public World Wide Web.



Distribution of most popular server providers over the past decade.

- Apache HTTP Server
- Nginx
- Internet Information Service
- Apache Tomcat
- Lighttpd
- LightSpeed Web Server
- CERN httpd

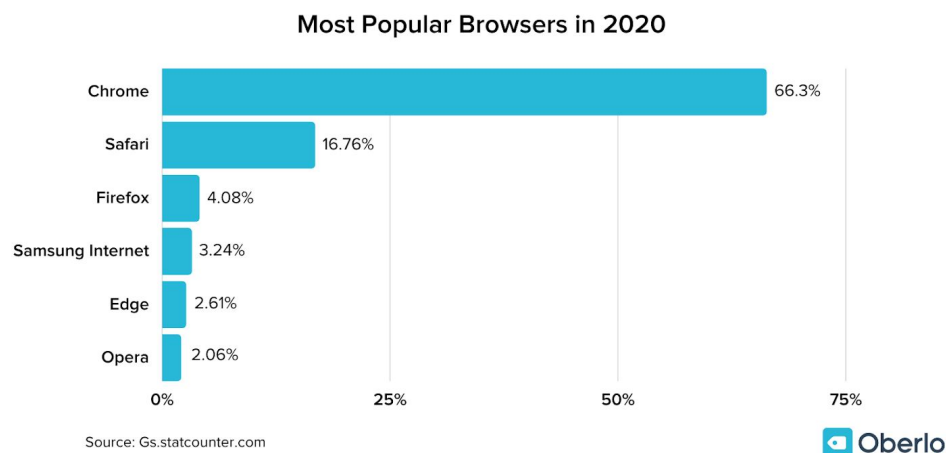


Web Browsers

A web browser (commonly referred to as a browser) is a software application for accessing information on the World Wide Web. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device.

Some additional functionalities of modern web browsers include:

1. To run Java applets and flash content, plugins are available on the web browser.
2. Browsers use internal cache which gets stored and the user can open the same webpage time and again without losing extra data.
3. Multiple web pages can be opened at the same time on a web browser
4. Options like back, forward, reload, stop reload, home, etc. provide ease of use.



URL

URL is an acronym for Uniform Resource Locator. It is the address by which computers and documents on the Internet can be located. The URL was invented by Tim Berners-Lee as mentioned before.

The URL was designed to be extensible in the sense that as new types of documents are added to the Internet, the URL would be able to adapt and uniquely identify each document with regard to each new document format's needs. These URLs usually specify the HTTP protocol and have the port number eliminated. Additionally, the hostname of a WWW address begins with two forward slashes. An example of such a URL looks like this: "http://hostname.com/".