

Web Servers

Learning Objectives

- Understand what a web server is
- Understand the difference between static and dynamic resources

Material

Servers

What is a server? The simple answer is that a server is a computer that provides services to other computers. For example, an office might have a file server - a computer connected to the office's network where office staff can read and write files to.

Resources on the web - such as images, HTML pages and JSON data - are provided by web servers. A web server usually receives and responds to requests via HTTP.

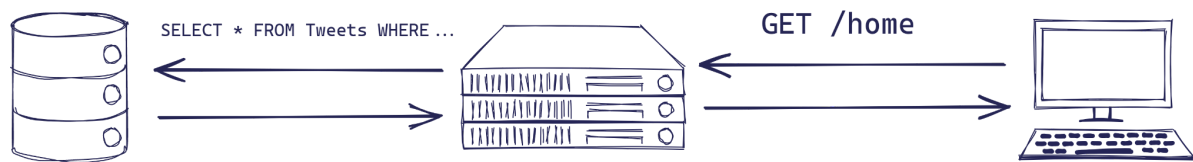
Static vs Dynamic Resources

Modern web applications need to serve two types of resources: static and dynamic. Static resources are simply files. For example, when you visit Twitter, your browser makes a request for the .png image file corresponding to the Twitter logo, then displays it for you. This file is static: it is saved on Twitter's server and is simply sent as-is when requested.



If we are creating a simple website - such as an info-page for a small business - we only need to serve static resources (e.g. html, css, js and image files). However, often the content we serve needs to be dynamic.

Let's continue the Twitter example. There isn't just one static file representing the Twitter feed, it changes over time and depends on who you're following. When we open Twitter and request our feed, the Twitter server now needs to perform some logic to work out which user we are and which tweets to show us. The details of how Twitter does this is likely quite complicated, but at some point they will need to query their database of tweets:



Unlike with static resources, if you want to serve dynamic resources, you will likely need to write some code to execute some logic which decides what to send the user back. Often - but not always - this code will query a database before sending its response.

Core Assignments

Server Selection

For each of the following applications, decide whether they will need to serve:

- A. Just static resources
- B. Just dynamic resources
- C. Both dynamic and static resources

Questions:

1. A new social media platform.
2. A chess engine API. Clients send it board positions as JSON and it returns moves as strings (e.g. "e2e4").
3. A personal CV website.
4. A single player browser game.
5. An online shop

Additional Resources

- [MDN - What is a web server?](#)