

WEB INFRASTRUCTURE- ALX

0. Simple web stack

1. What is a server

Is a combination of software and hardware that uses the Hypertext Transfer Protocol (HTTP) and other protocols to respond to client requests made over the World Wide Web.

2. What is the role of the domain name

To provide a simple and memorable way to identify and locate a website or other Internet resource. It can serve various purposes, such as simple identification of hostnames and hosts, addressing in networking contexts, and establishing a brand or online identity.

3. What type of DNS record `www` is in `www.foobar.com`

CNAME(Canonical Name) record

4. What is the role of the web server

To serve web pages and other resources, such as images, videos, and stylesheets, to clients, authenticate users and restrict access to certain resources based on user permissions, and also distribute incoming requests across multiple servers to improve performance and reliability.

5. What is the role of the application server

Acts as a middleware layer between the client tier and the database tier. It handles requests from clients, processes business logic, manages stateful sessions, and integrates with various services and infrastructure components. By offloading these tasks from the client and database tiers, application servers improve the scalability, security, and maintainability of applications

6. What is the role of the database

To provide a reliable and efficient way to store, manage, and retrieve data. By ensuring data integrity, security, consistency, and scalability, databases enable organizations to make informed decisions, streamline operations, and provide better services to their customers.

7. What is the server using to communicate with the computer of the user requesting the website

The server uses the Hypertext Transfer Protocol (HTTP) to communicate with the user's computer

8. Explain what the issues are with this infrastructure:

a. SPOF

(Single point of failure) the web server is a single point of failure, meaning that if the web server goes down, the entire website will be unavailable

b. Downtime when maintenance needed (like deploying new code web server needs to be restarted)

If the web server needs to be restarted for maintenance or to deploy new code, the website will be unavailable during that time

c. Cannot scale if too much incoming traffic

If the website experiences a sudden surge in traffic, the web server may become overwhelmed and unable to handle all the incoming requests. This can result in slow response times, timeouts, or even crashes.