ALX Project

Web infrastructure design

Task 0.

Definitions

1. **What is a server;** A server is a device, a virtual device or computer program or providing functionality for other programs or devices, called “clients”.

2. **What is the role of a domain name;** A domain name serves to identify Internet resources, such as computers, networks, and services with a text-based label that is easier to memorize than numerical addresses (IP addresses).

3. **What type of DNS record www is in www.foobar.com;** It is a ‘cname’.

4. **What is the role of the Web Server;** The role of a Web Server is to store, process and display website contents (codebase); deliver web pages to users (basically HTML and CSS) over the protocol HTTP.

5. **What is the role of the application server;** The role of the application server is to generate dynamic contents by executing server-side code such as JSP, Ajax, PHP, etc.

6. **What is the role of the database;** The role of a database is to manage data systematically and efficiently in a well-organized manner which allows data to be easily added, accessed, updated, managed, and deleted.

7. **What is the server using to communicate with the computer of the user requesting the website;** The server communicates through HTTP protocol.

Issues with This Infrastructure

1. **Single Point of Failure (SPOF):** Since this infrastructure relies on a single server, any failure or downtime of the server would result in the entire website becoming unavailable.

2**. Downtime During Maintenance:** Deploying new code or performing maintenance on the web server or application server would require restarting services, leading to temporary downtime.

3. **Scalability Limitations:** This infrastructure cannot easily handle a sudden increase in incoming traffic. The single server may become overwhelmed, leading to poor performance or crashes.

While this one-server web infrastructure is a simple setup, it has limitations in terms of reliability, scalability, and availability. To address these issues, a more robust architecture with load balancing, multiple servers, and redundancy would be needed.