ALX PROJECT

Web Infrastructure Design

Task 0

Explanation of Terms

1. What is a server: a server is a piece of computer hardware or software (computer program) that provides functionality for other programs or devices called "**CLIENTS**"

2. What is the role of the domain name: a domain name provides a human-readable and memorable way to access resources on the internet. It serves as a unique identifier for websites, email servers, etc.

3. What type of DNS record www is in www.foobar.com: it is a canonical (**CNAME**) record which is a type of resource record in the domain Name System (**DNS**) that maps one domain name to another.

4. What is the role of the web server: A web server is a computer software and underlying hardware that accepts requests via **HTTP** (the network protocol created to distribute web content) or its secure variant **HTTPS**. It accepts, store and process resources sent from the user agent (web browser) using **HTTP** and displays the content of that resources (web pages) or an error message.

5. What is the role of application server: the role of application server is to handle the processing and execution of application logic in a web infrastructure. It plays a crucial role in delivering dynamic content and performing business operations for web applications.

6. What is the role of database: database is a software used to create, edit and maintain database files and records, enabling easier file and record creation, data entry, data editing, updating and reporting. It also handles data storage, backup and reporting, multi-access control and security.

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

Issues

1. SPOF (Single Point of Failure): this is a flaw in the design, configuration or implementation of a system circuit or component that poses a potential risk because it could lead to a situation in which just one malfunction or fault causes the whole system to stop working. In this case, there are lots of single point of failure starting from having only one web server, application server and database.

2. Downtime when maintenance needed (like deploying new code web server needs to be restarted): the downtime period might be longer than expected because the server is dependent on one code base which at that moment, is unavailable. Users will therefore not be able to access the website and its contents which results in a bad user experience and loss of traffic.

3. Cannot scale if too much incoming traffic: the domain name points directly at the server hence doesn't contain a load balancer which allows handling increased loads easier. This poses an issue to the volume of users trying to access the website's content and can lead to poor user experience or rather set a limit to the number of users the website will be able to accommodate.