ALX Project

Web infrastructure design

Task 0.

Definitions and Explanations.

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

A. SPOF (Single Point Of Failure); There are a lot of single points of failures starting from

having one server that contains only one web server, application server, and database.

A single point of failure is a part of a system that, if it fails, will stop the entire system

from working.

B. Downtime when maintenance is needed (like deploying a 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, isn’t available. Users

will therefore not be able to access the website and its contents which results in a bad

user experience and loss of traffic.

C. 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.