0x09. Web infrastructure design

TASK 0 : 0. Simple web stack

MAIN CONCEPTS:

Server:

A server is a powerful virtual device that is able to compute, store, and manage data, devices, and systems over a network.

Domain Name (DNS):

it is made to turn the domain name for example "`foobar.com`" into an address IP "`8.8.8.8`".

DNS Record:

The type of DNS Record "`www`" that is in `www.foobar.com` is `CNAME` and this last stands for "Canonical Name" and it's a type of resource record in the DNS that share a single IP address.

Web Server:

A software component (Like Nginex), that is responsible of handling data from users and then and displays back a static content like HTML/Css pages over the protocol HTTP. (Static content).

Application Server:

A software framework that is responsible of fulfilling requests from clients by executing server-side code such as AJAX, PHP and interacting with database. (Dynamic content).

DATABASE:

A database (like MySql, SqlServer) is an electronically stored, systematic collection of data. It can contain any type of data, including words, numbers, images, videos, and files.

Communication protocol:

The server uses HTTP protocol to communicate with the computer of the user requesting the website.

ISSUES:

SPOF:

Stands for “single point of failure”, it is a part of a system that, if it fails, will stop the entire system from working.

Downtime when maintenance needed

(like deploying new code web server needs to be restarted), in fact it means the period during which an equipment or machine stops of functioning. It may be due to technical failure, machine adjustment, maintenance, or non-availability of inputs such as materials, labor and power.”

Cannot scale if too much incoming traffic

It’s all about when a system experiences a high load or is overwhelmed by excessive traffic, dynamically deactivating non-critical features can alleviate strain and prevent complete service failures.