

ALX System Engineering And Devops - Web infrastructure design

Task 0.

1. What is a server; A server is a software or hardware device that accepts and responds to requests made over a network.
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' record. A 'cname' is a type of resource in the DNS that maps one domain name to another.
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 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.
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 the infrastructure design

- SPOF (Single Point Of Failure); A single point of failure is a feature of the system design that if it fails, the system also fails. In this design if there is too many requests from the clients, resulting in too much traffic, the server will be overwhelmed as it has to cater for every user's needs by running the app logic and database requests. Thus the server's resources may not be enough and it may become unresponsive.
- Downtime when maintenance is needed (like deploying a new code web server needs to be restarted): Due to the system utilizing one server, maintenance processes will heavily impact the users especially if the application/system is accessed by users worldwide. User experience will be bad.
- Cannot scale if too much incoming traffic; With one server it is impossible to scale when traffic starts to impact heavily on the server.