

Web Infrastructure Design

1. What is a server?

A server is a computer or a system that provides resources, services, or functionality to other computers, known as clients, over a network.

2. What is the role of the domain name?

A domain name is a human-readable label that is used to identify and locate resources on the internet. It serves as a user-friendly way to access websites and other online services. Instead of remembering numerical IP addresses.

3. What type of DNS record www is in www.foobar.com?

The type of DNS record in www.foobar.com is CNAME, which otherwise means Canonical Name.

4. What is the role of the web server?

A web server is a computer that stores web server software and a website's component files (for example, HTML documents, images, CSS stylesheets, and JavaScript files). A web server connects to the Internet and supports physical data interchange with other devices connected to the web, through the HTTP protocol.

5. What is the role of the application server?

The application server generates dynamic contents by executing server-side codes such as JSP, AJAX, PHP, etc.

6. What is the role of the database?

The database helps to structure data in an organized manner, so as to facilitate efficient storage, retrieval, and management of that data.

7. What is the server using to communicate with the computer of the user requesting the website?

The server communicates through the HTTP protocol.

Infrastructure Issues

1. SPOF (Single Point Of Failure)

A SPOF or single point of failure is any non-redundant part of a system that, if dysfunctional, would cause the entire system to fail.

Having a single point of failure can be a vulnerability because it represents a potential weak link in the system that, if disrupted, can lead to downtime or loss of service.

2. Downtime when maintenance needed (like deploying new code web server needs to be restarted)

In a one server web infrastructure, there is bound to be a downtime when maintenance such as deploying a new code is needed. The server needs to be restarted to effect the changes to the code, which will lead to loss of traffic and inaccessibility of the website.

3. Cannot scale if too much incoming traffic

In a one server web infrastructure without a load balancer, the domain name points directly at the server. Too much traffic directly hitting the server will increase the load on the server, which may eventually cause slow performance from the website or application.