Infrastructure First Task

What is a server?

A server is a computer program or device that provides a service to another computer program and its user, also known as the client. In a data center, the physical computer that a server program runs on is also frequently referred to as a server. That machine might be a dedicated server, or it might be used for other purposes.

In the client/server programming model, a server program awaits and fulfills requests from client programs, which might be running in the same, or other computers. A given application in a computer might function as a client with requests for services from other programs and as a server of requests from other programs.

What is the role of the domain name?

Domain Names are host names that the Domain Name System (DNS) uses to identify and map to websites and other Internet Protocol (IP) resources. A good parallel would be to think of domain names as street names. Street names are important because they help people navigate. The IP addresses, on the other hand, are the geographical location of the streets themselves
The Domain Name System (DNS) is a hierarchical naming system that helps users find their way around the Internet.

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

The "www" in "www.foobar.com" is typically used as a subdomain to denote the World Wide Web service for the domain "foobar.com." It is commonly used to host a website accessible via the internet. In terms of DNS records, the "www" subdomain typically has an "A" (Address) or "CNAME" (Canonical Name) record associated with it.

A Record: An "A" record maps a domain name or subdomain to an IPv4 address. In the case of "www.foobar.com," there would be an "A" record pointing to the IP address of the server hosting the website. This allows users to reach the website by typing "www.foobar.com" in their web browsers.

CNAME Record: A "CNAME" record is an alias record that points a domain or subdomain to another domain's canonical name. It is often used when the "www" subdomain is set up as a separate DNS entry that points to the main domain. For example, there might be a CNAME record for "www.foobar.com" that points to the canonical name of "foobar.com" itself.

What is the role of the web server?

Web servers are primarily used to process and manage HTTP/HTTPS requests and responses from the client system.

A web server can also perform several other functions, such as:

- Store and protect website data: A web server can store and protect critical website data from unauthorized users.
- Control bandwidth to regulate network traffic: A web server can help eliminate the downtime caused by high web traffic. Web hosts can set bandwidth to manage the rate of data transmission over the internet and minimize the excess network traffic.
- Server-side web scripting: The server-side web scripting feature enables users to create dynamic web pages using scripting languages such as Ruby, Python, and PHP.
- Virtual hosting: Web servers can also be used as virtual servers to run multiple applications, websites, data, and other services.

What is the role of the application server?

The application server can deliver web content and dynamic content required for displaying decision support, transaction results, or real-time analytics. However, its primary role is to enable interaction between the end user and server-side application code. These servers enhance interactive content or website components depending on the request. Application servers use web containers. These servers use more resources compared to web servers and provide a runtime environment for enterprise applications. These servers also support HTTP and RPC/RMI protocols.

What is the role of the database?

The primary purpose of a database is to store, retrieve, and update information. A database can be used to store data related to any aspect of business operations. Databases can be very large, containing millions of records, or very small, containing just a few records or even a single record.

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

Web servers and HTTP (a primer) Web browsers communicate with web servers using the Hypertext Transfer Protocol (HTTP).

SPOF

There is only one server so if the server failed, only the system will fail.

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

It’s like the previous question, only having one server will make the system stop while the maintenance or deployment.

Cannot scale if too much incoming traffic.

One server, if it fails, we’re doomed.

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