0-simple_web_stack

Server:
A server is a powerful computer that stores website files and data, delivering them to users upon request.

Domain Name:
A domain name, like "www.foobar.com," is the user-friendly address used to access a website, translating into the server's IP address (8.8.8.8) via DNS.

DNS Record "www":
The "www" in "www.foobar.com" is a subdomain and a type of DNS record that points to the server's IP address, helping users reach the correct web server.

Web Server (Nginx):
The web server, like Nginx, handles incoming requests from users, retrieving and sending static content like HTML and images to the user's browser.

Application Server:
The application server processes dynamic content, executing server-side code and interacting with databases to create personalized responses for users.

Application Files (Code Base):
These files contain the website's programming code, including logic for generating dynamic content and interacting with the application server.

Database (MySQL):
The database stores structured data, such as user information or product details, which the application server accesses and modifies as needed.

User Communication:

The server uses the Hypertext Transfer Protocol (HTTP) to communicate with the user's computer, delivering requested web content over the internet.

Issues with this Infrastructure:

Single Point of Failure (SPOF):
If the single server goes down, the entire website becomes inaccessible, causing service disruption.

Downtime during Maintenance:

Performing maintenance tasks, like deploying new code, requires restarting the web server, leading to temporary website unavailability.

Scalability Challenges:

The infrastructure struggles to handle high traffic loads; adding more servers is complex due to the design's limitations.
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