

Terms Explanations:

Server: A server is a computer or a system that provides services or resources to other computers, known as clients, over a network. In the context of web hosting, a server typically refers to a computer hosting websites, applications, or services accessible via the internet.

Role of Domain Name: Domain names act as human-readable addresses for websites. They map to specific IP addresses, allowing users to access websites by typing in easy-to-remember names instead of complex numerical addresses.

DNS Record for www.foobar.com: The "www" in a domain name (like www.foobar.com) typically represents a specific subdomain and is often associated with a DNS record of type 'CNAME' (Canonical Name) or 'A' (Address) that points to the server hosting the website.

Role of Web Server: A web server handles HTTP requests from clients (like browsers) and responds by serving web pages, files, or other resources. It processes requests and delivers content over the internet.

Role of Application Server: An application server hosts and operates the software applications that manage the logic and interactions between users and databases. It processes application logic, handling tasks like user authentication, data processing, etc.

Role of Database: The database stores and manages structured data. It's where information like user details, content, configurations, etc., is stored. It's accessed and manipulated by the application server based on user requests.

Communication with User's Computer: The server communicates with the user's computer using protocols like HTTP or HTTPS. When a user requests a website, the server responds by sending back the requested web pages, files, or resources using these protocols.

Issues Explanations:

SPOF (Single Point of Failure): This occurs when a single component failing can bring down the entire system. For example, if the main web server is the only one serving content and it fails, the entire website becomes inaccessible.

Downtime during Maintenance: Deploying new code or performing maintenance tasks often requires restarting servers. During this time, services might be unavailable, causing downtime and affecting user experience.

Scaling Challenges: Inability to handle high traffic might occur if the infrastructure isn't designed for scalability. When traffic exceeds server capacity, the system might become slow or crash, impacting user access.