**SERVERS**

In computing, a server is a piece of computer hardware or software that provides functionality for other programs or devices, called "clients." This architecture is called the client–server model.

However, it is important to note that any computer, including a personal laptop, can serve as a server if the necessary server software is installed on it. Some common types of servers include web servers, application servers, file servers, print servers, and proxy servers.

A web server – It is a software application that is specifically designed to handle HTTP requests and serve static web pages. These pages are typically written in programming languages such as HTML, CSS, and JavaScript. There are several commonly used web server software programs available, including Nginx, Apache, and Microsoft IIS.

Application servers- An application server is a type of server software that provides an environment for running and executing applications. It is designed to handle the processing and management of dynamic content, such as web-based applications that require server-side processing.

Database- a database refers to a collection of data that is organized and stored electronically. This data can be accessed and managed through software applications, via the Internet or through a local network. Websites often use databases to store and manage information, such as user account details, product inventory, and customer orders. Common types of databases used in web applications include relational databases, NoSQL databases, and cloud-based databases.

**Load distribution**

Load distribution- A standard way of distributing the load over an array of servers to return the same preference number for each server set. Load balancers distribute the workload of a system to increase reliability, efficiency and availability. These can be hardware or software.

Software load balancers implement one or more scheduling algorithms to achieve their purpose. The most common algorithms include:

1.     Round Robin - Requests are distributed evenly across servers in a sequential manner.

2.     Least Connection - Requests are routed to the server with the least active connections.

3.     IP Hash - The server selection is based on the hash value of the client's IP address.

4.     Random - Requests are randomly assigned to servers.

5.     Weighted Round Robin - The same as Round Robin, but with different weights assigned to servers to reflect their processing power.

6.     Weighted Least Connection - The same as Least Connection, but with different weights assigned to servers based on their processing capacity.

**LOAD BALANCING ALGORITHM BASED ON LAYER CONTEXT**

1.     Layer 4 load balancing: This type of load balancing operates at the transport layer of the network stack, using information such as IP addresses and port numbers to distribute traffic.

2.     Layer 7 load balancing: This type of load balancing operates at the application layer of the network stack, using information such as HTTP headers, cookies, and URLs to distribute traffic.

3.     Layer 5 load balancing: This type of load balancing operates at the session layer of the network stack, using information such as session IDs to distribute traffic.

The choice of layer context depends on the specific needs and requirements of the web application, such as the type of traffic being handled and the level of control over traffic distribution.

Well, hope you learnt something.