

## **An Algorithmic Framework to Resolve Load in Web Servers**

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### **Abstract**

With the rapid growth of web-based applications and the increasing number of Internet users, managing web traffic efficiently has become a significant challenge. When a single server is responsible for handling all incoming requests, it often becomes overloaded, resulting in increased response time and degraded performance. To ensure efficient information delivery, web traffic must be managed in such a way that no individual server is overwhelmed and all available server resources are utilized effectively. Load balancing is a widely adopted solution to address this problem. A load balancer is deployed between clients and web servers to distribute incoming user requests dynamically across multiple servers in a cluster. This distribution is typically based on server load factors such as CPU utilization, memory usage, and current request queue length. By intelligently routing requests, load balancing improves system reliability, enhances response time, and ensures high availability of web services. The present work proposes an algorithmic framework for load distribution among web servers based on real-time load factors. The proposed approach aims to prevent server overloading by continuously monitoring server performance and allocating requests to the most suitable server. This ensures balanced resource utilization and improves overall system efficiency. The framework can be beneficial for web-based application owners by reducing response delays, improving scalability, and maintaining consistent service quality under varying traffic conditions.

### **Keywords**

Web Servers, load balancing, processing time, response time, load factor, round robin algorithm.