

ABSTRACT

As the need for technology grows, the demand for fast and efficient data services continues to increase. Multi Edge caching system is a solution to this problem by storing content locally at the edge of the network which allows it to be closer to the end user. By reducing latency and lessening the load on the main server, multi edge caching enables faster and resource-efficient content distribution. Apache Traffic Server is implemented as a proxy server in this research that can improve network efficiency and performance by storing frequently requested content at the network edge. This research examines system performance in terms of data access speed, bandwidth saving, and latency reduction.

To facilitate the monitoring of system performance, the author prepares a log dashboard created using the Flask framework with the Python programming language and retrieves data from several Apache Traffic Server via API and displays the data in JSON form. This research analyzes the implementation of multi edge caching in the context of multimedia websites and Video on Demand services with a focus on performance testing using HTTP and HTTPS protocols. The test results show that multi edge caching significantly improves access speed and reduces latency on both HTTP and HTTPS protocols, despite differences in cache management due to encryption on HTTPS. It also shows that multi edge caching can improve network efficiency and user experience especially in high content demand environments.

Keyword : Multi Edge Caching, Apache Traffic Server, Log Dashboard, Web Server, HTTP/HTTPS