

ABSTRACT

Internet traffic has experienced significant growth in the last two decades due to the increasing number of internet users demanding high-quality services, the widespread use of social media with video content, and the development of sophisticated and interactive websites. Due to the fast network growth, users have higher demand for new services with low delay, ultra-low power consumption, and high reliability, thus greatly affecting the existing communication network architecture. Therefore, the problems that are often encountered on websites are sub-optimal performance, which includes slow response times, excessive server load, limited scalability, and an inability to handle high traffic.

From the background of the problems that have been explained, the author chooses a Proxy Server as the main system. On the Proxy Server, caching is done on the edge using the Apache Traffic Server (ATS) as a method that will provide a faster response time because, of course, requests from users don't need to take a lot of time to connect to the original server, and ATS works by accepting requests. HTTP/HTTPS from the client.

With the caching solution using the ATS method, the author conducted trials using tests on multimedia websites and video on demand websites with scenarios of several numbers of users running on 2 protocols, namely HTTP and HTTPS. Tests carried out using parameters such as Hit Ratio, Throughput, Delay, and Round-Trip Time (RTT). From testing the scenario of 50 users on a multimedia website, No-Cache gets a throughput result of 0.96 MBps for HTTP, a throughput result of 0.56 MBps for HTTPS, with Cache getting a throughput result of 5.09 MBps for HTTP, a throughput result of 2.67 MBps for HTTPS. From testing scenario 2 users on the VoD website, No-Cache gets throughput results of 0.4 MBps and RTT results of 7.36 s for HTTP, throughput results of 0.54 MBps and RTT results of 5.08 s for HTTPS, with Cache getting throughput results of 8 MBps and RTT results of 0.35 s for HTTP, throughput results of 8.48 MBps and RTT results of 0.39 s for HTTPS. From the results data, there is a very significant difference between using ATS (Cache) for throughput, Delay, and RTT results better than without using ATS (No-Cache).

Keywords: Internet, Proxy Server, Apache Traffic Server, Cache, HTTP/HTTPS