

ABSTRACT

Time goes on, the development of the internet that is so fast can't be dammed. This results in the current internet architecture, no longer able to meet existing needs. The emergence of the Named Data Networking (NDN) architecture, overcomes the problems that existed in the previous internet architecture. However, the NDN architecture also has its own problems such as not being able to be fully implemented because there are still dependencies with the previous architecture and the benefits of NDN have not been maximized, and other problems.

In this final project, the author performs a comparative analysis of the performance of static routing on Software Defined Networking (SDN)-based NDN and NLSR routing on traditional NDN. Performance testing is done by providing 3 different topology scenarios, distinguished by the shape of the topology and the number of NDN nodes and switches used. And in scenarios 1 and 2, sub scenarios are also created or different conditions are created (the first condition is when there is only one consumer who requests data and the second condition is when there are other consumers who act as background traffic).

Based on the test results obtained in this study, the application of SDN on an NDN network has two different results. When switches are arranged side by side, NDN-SDN has less Round Trip Time (RTT) than NDN. However, when the switches are arranged separately, NDN has a smaller RTT than NDN-SDN, this difference in results occurs because there is an iterative packet structure conversion process. Meanwhile, in terms of throughput and CPU usage, almost all scenarios show that NDN-SDN is superior to NDN. In this way, overall, NDN-SDN has more benefits and advantages than NDN itself.

Keywords: *Software Defined Storage, Named Data Networking, NLSR, RTT, CPU usage, throughput.*