ABSTRACT

Named Data Networking (NDN) is a future internet network architecture that changes the point of view in networking, which was previously host-centric to data-centric. This simple concept shift has a broad scope for how we can develop, design, and deploy networks. The difference between NDN and IP Address The existence of a caching system to store data originating from the producer (content provider) thereby reducing the load on the server.

To improve the performance of the NDN network, we need a forwarding strategy that can find the shortest path if available, can adapt to changes in network topology and determine alternative paths. Adaptive SRTT-based Forwarding (ASF) is a forwarding that is able to make forwarding decisions based on data delay retrieval and is able to find alternative paths when there is a delay in data retrieval.

In this final project, the modified ASF emulation and analysis results can improve NDN network performance with round trip time (RTT) in uniform request scenarios and the Indonesia Digital Network (IDN) topology is 59.05 ms while ASF has an RTT value of 61.96 ms. In the modified ASF zipf distribution request scenario, it has an RTT of 34.70 ms and ASF gets an RTT value of 40.79 ms. The cache hit ratio for both strategies in each scenario has almost the same value, namely 99%. The ASF strategy CPU Resource usage on 2 cores has a higher percentage of 49.81%, while for 3 cores it is 38.66% and 4 cores is 29.64%. In ASF modification, 2 cores have a percentage of 50.63%, while for 3 cores it is 46.01% and 4 cores is 33.38%, showing the use of modified ASF CPU Resource is higher than the ASF strategy.

Keyword: NDN, Forwarding Strategy, ASF, mini-NDN