ABSTRACT

With the rapid development of internet-based technology and media, internet usage will certainly be higher. Currently, the communication standard used worldwide is the Transmission Control Protocol or Internet Protocol Suite (TCP/IP) whose architecture is centered on the host-to-host communication model. Named Data Networking was developed to cache efficiently, which can be done with a cache policy strategy by allocating homogeneous and heterogeneous content store. In homogeneous cache, data packets stored on network routers have the same size of content store. Meanwhile, heterogeneous cache stores data packets on each router in the network having different content store sizes. There are several optimization techniques based on replacement algorithms and placement algorithms. The replacement algorithms include Least Recently Used (LRU) and Least Frequently Used (LFU). The placement algorithm includes Leave Copy Everywhere (LCE), Leave Copy Down (LCD), Probability, and Edge.

This final project discusses the policy of placing cache content store (CS) with homogeneous and heterogeneous sizes and the use of replacement and cache placement algorithms. System performance will be seen from the cache hit ratio, delay, and packet drop parameters.

In this study, a simulation was conducted to test the Cache placement scheme on an NDN network. Tests performed by changing the content store, resizing the frequency of interest and changing the Zipf size exponentially. Overall LCE Cache Deployment has the best performance compared to the other three Cache Deployments. The Cache placement Probability has better performance than LCE when the scheme changes the desired frequency at 200 and 500 frequencies. This proves that Cache placement Probability can have better performance when the network is busy.

Keywords: *Named Data Networking, LRU, LFU, Caching Policy*