ABSTRACT

The Digital era has started to enter this era and make all information easily obtained through internet services. Internet data services are increasing because of the growth of knowledge. However, the current internet architecture can still not respond to that problem. So that is a new appearance of the paradigm called Named Data Network (NDN). NDN changes the main focus of internet architecture from host-centric to content-centric. One of the main features is caching. NDN will use router nodes as a medium of the content. There is also a feature that can be used in NDN called freshness, which helps the network traffic get denser and takes real-time. Freshness is a period that can give content a long time. Content stored on NDN router nodes can be set when it should be fresh and un-fresh.

In this final project, a simulation of the application of freshness was carried out in making content replacement decisions on cache replacement policies in the Named Data Network (NDN). The cache Replacement Policy are Least Recently Used (LRU), FIFO, and Least Frequently Used (LFU). The simulation use an emulator named Mini-NDN.

The result of applying freshness content to the cache replacement policy in this final project is that the shorter the freshness is set, the greater the total RTT and the lower the CHR. When freshness is set to 100ms, the total RTT is above 9s, and CHR is 3%, while when freshness is increased to 20,000ms, the total RTT can reach 1.5s and CHR 8%. Freshness can be applied as a solution to the current high use of internet traffic. Because consumers want real-time data, the freshness feature can be applied. LRU policy can be used as a content replacement because it has the best performance, and LFU policy can be used if zipf distribution is used.

Keywords: *Named-Data Network, Caching, Networking*