ABSTRACT

The internet plays an important role in our daily activities, especially when studying at school where we will use the internet network to search for information. The network available at SMAN 20 Bandung is considered inadequate because the available bandwidth is not fully regulated by bandwidth management so that users can use bandwidth uncontrollably. The existing bandwidth management at SMAN 20 Bandung is ineffective because the bandwidth received by each switch is not in accordance with the needs. The bandwidth available at SMAN 20 Bandung is around 400 mbps where each switch should receive 25% of the total bandwidth which is 100 mbps but in reality it is less or even exceeds the bandwidth that should be received so that irregular bandwidth problems occur. Bandwidth management is needed so that it can give priority to users who really need the internet in order to get faster and controlled bandwidth by applying the Hierarchical Token Bucket (HTB) method. The system design method uses the Network Development Life Cycle (NDLC) method. The method consists of several phases to be used, namely analysis, design, and simulation. Due to limited resources, the scale of the research is adjusted to existing resources and the results of the bandwidth management obtained will be analyzed whether it is in accordance with the target and divided according to the priorities for each user based on the limitations that have been made, namely each switch gets 25% of the total bandwidth and there are priorities in each user if there is a decrease in bandwidth from the internet service provider. After the test was carried out, it was found that the bandwidth before the research and after the research had a significant difference where the bandwidth situation after testing was more organized and there was no imbalance between users.

Keywords— [Bandwidth, Bandwidth management, SMAN 20 Bandung, Hierarchical Token Bucket, NDLC, Priority, User]