ABSTRACT

Nowadays network designer are tend to choose multiservices network which are able to pass various type of traffic such as voice, video and data through IP network. This condition makes the demand of bandwidth link become higher as well as the capacity of network node (such as switch and router). If the conditions are not fulfilled, it will lead to service quality problem, especially to traffic that are very sensitive to time variable like voice. As we know, voice is not being able to dropped or resented. One big question is whether the IP network are able to accommodate real time information especially voice which is now many in numbers. Furthermore, QoS are the ability of network to provide traffic a better service by various kind of technology included IP network. Since the network has difficulties to predict, simulation is use one method that can be used in complex network with high number of traffic.

In this final project, IP network simulations are done using simulation software, Network Simulator 2. Models that are going to be simulated include voice traffic generator, data traffic that come to the network, characteristic router on handling packet data, network topology that used on analyzing QoS parameters since its affect performance of IP network on providing traffic a better services.

It is expected that simulation results are able to describe the correlation between router ability and traffic variable, also its correlation to demand of link bandwidth that are necessary to maintain information quality. It is also expected that this final project can be applied as prototype to the purpose of network planning and performance prediction of network element.

Keyword: NGN, IP Network, QoS, Router