

ABSTRACT

The development of multimedia technology is not only affected to the heterogeneous services that can be served but also the mobility for the user to access. The multimedia services are voice, data, and also video. The mobility access for multimedia services that give the good Quality of Service (QoS) is answered by IEEE 802.16e standard that known as mobile WiMAX, as one solution for wireless multimedia access. To QoS optimization the scheduling mechanism and queue mechanism are used on the network.

This final project will simulating the Priority Queueing (PQ) and Class Based Queue (CBQ) as scheduling mechanism on WiMAX technology especially for video packet, by measuring the system QoS based on the output simulation using Network Simulator version 2 (NS-2). The parameter of QoS are throughput, delay, and packet loss and then compare which scheduling are better on passing the video traffic.

The result of this research shown are : first scenario, CBQ scheduling with link capacity 10 Mbps, 3 Mbps, 1 Mbps, dan 0.8 Mbps shown that throughput 97.359 Kbps, 89.75 Kbps, 89.78 Kbps and 74.18 Kbps, *packet loss* 21.44 %, 27 %, 26.97 %, and 39.66 %, *delay* range 6.56 ms - 58.57 ms. PQ scheduling shown *throughput* 89.568 Kbps, 80 Kbps, 78.72 Kbps, and 66.439 Kbps, *packet loss* at 27.726 %, 34.93 %, 35.97 %, and 45.96 %, *delay* at 8.79 ms to 66.63 ms. Second scenario with 9, 13, 19, and 27 users shown for CBQ the point down from 118,239 Kbps to 49,53 Kbps, packet loss up to 3,83 % until 59,71 %, delay up to 8,149 ms until 53,72 ms. For PQ the throughput point down from 117,655 Kbps to 43,365 Kbps, packet loss up to 4,04 % until 64,73 %, and delay up to 8,716 ms until 60,29 ms. Third scenario with user's rates 0m/s, 2m/s, 15m/s, and 30m/s shown for CBQ the point down from 119,11 Kbps to 108,33 Kbps, packet loss up to 3,47 % until 8 %, delay up to 12,13 ms until 12,4 ms. For PQ the throughput point down from 118,69 Kbps to 113,46 Kbps, packet loss up to 3,46 % until 10,22 %, and delay up to 12,44 ms until 12,88 ms.

Key Words : WiMAX, QoS, PQ, CBQ, Throughput, Delay, and Packet loss